OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 33

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1885

MICRO PHOTO INC
CLEVELAND. OHIO

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE

VOLUME XXXIII.

OCTOBER 6 TO DECEMBER 29, INCLUSIVE.

1885.

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1885.

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DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

INDEX OF PATENTS AND PATENTEES FOR THE QUARTER YEAR, OCTOBER TO DECEMBER, 1885.

ERRATA.

327,515, page 3, in title, name of assignee, for "Charles V. Stoddard" read *Charles V. Goddard.*

327,855, page 79, strike out all after number—title, drawing, and claims—and insert CANCELED.

327,925, page 98, in title, name of assignee, for "Charles Paxton" read *Charles Parton.*

327,952, page 104, line 8, first claim, and line 10, second claim, for "pitman-chair" read *pitman, chair.*

328,122, page 152, in title, for "Bottle for Ink" read *Bottle for Ink, Medicine, &c.*

328,159, page 160, line 3, second claim, for "rock-shaft" read *rack-shaft.*

328,367, page 211, in title, for "Caroline R. Waterbury, executrix," read *Cornelius R. Waterbury, executor.*

328,372, page 213, in title, after residence of inventors insert *assignors to the Rote Automatic Brake Company, Mansfield, Ohio.*

328,487, page 248, in title, residence of assignee, for "Northfield, Mass." read *Northfield, Minn.*

328,801, page 325, in title, after residence of inventor insert *assignor of one-half to Frederick Heberling.*

328,869, page 340, strike out all after number—title, drawings, and claims—and insert WITHDRAWN.

328,973 and **328,974,** page 378, in title, residence of inventor, for "Boston, Mass." read *Chelsea, Mass.*

328,995, page 384, in title, residence of assignees, for "Brockport, Mass." read *Rockport, Mass.*

329,017, page 390, in title, name of assignee, for "John W. Hoys" read *John W. Hays.*

329,195, page 435, in title, names of assignees, for "William F. Sayler and Frederick C. Sayler" read *William F. Sayles and Frederick C. Sayles.*

329,309, page 466, in title, name of assignee, for "Duncan Veasey" read *Duncan Veazey.*

329,371, page 483, line 1, first claim, for "hammer" read *harrow.*

329,460 and **329,461,** page 512, name of assignee, "Schuyler Electric Light Company, Hartford, Conn." read *Schuyler Electric Light Company of New York.*

329,865, page 616, in title, name of assignee, for "Dewees Fabric Trimming Company, (Limited,)" read *Dewees Fabric Trimmer Company, (Limited.)*

329,882, page 629, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

329,966, page 650, strike out all after number—title, drawings, and claims—and insert WITHDRAWN.

330,176, page 706, in title, residence of inventor, for "Boston, Mass." read *Cambridge, Mass.*

330,127, page 778, strike out all after number—title, drawings, and claims—and insert WITHDRAWN.

330,539, page 805, strike out all after number—title, drawing, and claims—and insert CANCELED.

330,669, page 837, in title, after residence of inventor, insert *assignor to the Bennett & Wilson Manufacturing Company.*

330,726, page 853, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

330,814, page 872, in title, for "Tug-Fasteners" read *Tub-Fasteners.*

331,327, page 1015, in title, residence of assignee, for "Indiana" read *Indianapolis, Ind.*

331,406, page 1036, in title, residence of assignee, for "Whitewater, Wis." read *Milwaukee, Wis.*

331,600, page 1091, in title, names of inventors, for "John D. Antley" read *John D. Antley.*

331,741, page 1131, in title, residence of inventor, for "Tiskiliva" read *Tiskilwa.*

331,761, page 1145, in title, names of inventors, for "Christian C. Schwaner" read *Christian C. Schwaner.*

331,811, page 1155, in title, residence of inventor, for "Hanover, Mass." read *Hanover, N. H.*

331,949, page 1195, names of assignees, for "Steinfelse" read *Steinfelser.*

332,135, page 1242, in title, name of assignees, for "Flynn & Co." read *Flinn & Co.*

332,400, page 1313, in title, for "assignor to Crawford McCreery" read *assignor, by mesne assignments, to Robert S. McCreery.*

332,674, page 1381, in title, after residence of inventor, insert *assignor to the Transit Apparatus Company, (Limited.)*

333,079, page 1490, in title, after "(No Model)" insert *Patented in England Sept.* 29, 1882, *No.* 4,646.

333,454, page 1587, strike ont all after number—title, drawing, and claims—and insert WITHDRAWN.

16,314, (design,) page 2, in title, after residence of inventor, insert *assignor to George W. Ennis & Co., Philadelphia, Pa.*

4,635, (label,) page 762, name of registrant, for "Edwin S. Burnham" read *Edward S. Burnham.*

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

OCTOBER–DECEMBER, 1885.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 33—No. 1. TUESDAY, OCTOBER 6, 1885. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of October 6, 1885.

Patents	471	No. 327,509 to No. 327,979, inclusive.
Designs	10	No. 16,309 to No. 16,318, inclusive.
Trade-Marks	21	No. 12,614 to No. 12,634, inclusive.
Labels	6	No. 4,589 to No. 4,594, inclusive.
Reissue	1	No. 10,649.
Total issue	509	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	4	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	2	.....
California	16	.....	New Jersey	22	2
Colorado	3	.....	New Mexico Territ'y	1	.....
Connecticut	18	.....	New York	88	7
Dakota Territory	2	.....	North Carolina	.....	.....
Delaware	.....	.....	Ohio	41	.....
District of Columbia	4	.....	Oregon	.....	.....
Florida	.....	.....	Pennsylvania	41	4
Georgia	2	.....	Rhode Island	7	.....
Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	44	4	Tennessee	1	.....
Indiana	13	.....	Texas	3	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	9	.....	Vermont	.....	.....
Kansas	7	.....	Virginia	4	.....
Kentucky	3	.....	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	1	.....
Maine	.....	1	Wisconsin	12	.....
Maryland	5	2	Wyoming Territory	.....	.....
Massachusetts	45	5	United States Army	.....	.....
Michigan	15	.....	United States Navy	.....	.....
Minnesota	6	.....			
Mississippi	2	.....	Total to citizens of the United States	451	26
Missouri	21	1			
Montana Territory	2	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic	.....	.....	Germany	2	.....
Austria-Hungary	1	.....	Holland	.....	.....
Barbadoes	.....	.....	Italy	.....	.....
Belgium	1	.....	Malta	.....	.....
Bermuda	.....	.....	New South Wales	1	.....
British Columbia	.....	.....	New Zealand	1	.....
Canada	9	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	2	.....
Corea	1	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	30	1
England	11	1			
France	1	.....			

DESIGNS.

16,309.—PLAQUE.—*Otto Arnold*, Buckau, Magdeburg, Prussia, Germany. Application filed August 13, 1885. Serial No. 174,351. Term of patent 7 years.

16,310.—VEGETABLE-DISH.—*James Barlow*, Trenton, N. J. Application filed July 25, 1885. Serial No. 172,682. Term of patent 3½ years.

16,311.—BOTTLE.—*Henry Berry*, Birmingham, Conn. Application filed June 23, 1885. Serial No. 169,576. Term of patent 7 years.

16,312.—EASEL.—*Eugene B. Crocker*, Pawtucket, R. I. Application filed August 21, 1885. Serial No. 175,012. Term of patent 7 years.

16,313.—WATCH-CHAIN.—*Eugene A. Cory*, Providence, R. I. Application filed July 1, 1885. Serial No. 170,424. Term of patent 7 years.

16,314.—RUG.—*Henry Finck*, New York, N. Y. Application filed August 28, 1885. Serial No. 175,607. Term of patent 3½ years.

16,315.—CURTAIN.—*R. Paul Hemming*, Philadelphia, Pa., assignor to *George W. Ennis & Co.*, same place. Application filed August 31, 1885. Serial No. 175,850. Term of patent 3½ years.

16,316.—HANDKERCHIEF.—*Catholina Lambert*, New York, N. Y. Application filed September 2, 1885. Serial No. 176,036. Term of patent 3½ years.

16,317.—RUNNING-HEAD FOR WASHING-MACHINES.—*Ethen D. Mantonya*, Utica, Ohio. Application filed August 28, 1885. Serial No. 175,606. Term of patent 14 years.

16,318.—CLOTH FABRIC.—*Charles S. Messinger*, Brooklyn, N. Y. Application filed June 9, 1885. Serial No. 168,183. Term of patent 3½ years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,614.—CIGARS.—*J. R. Bravo & Son*, Susquehanna Depot, Pa. Application filed August 29, 1885.

"The words 'GRAND CHIEF, BROTHERHOOD OF LOCOMOTIVE FIREMEN,' together with engraved portrait of F. W. Arnold."

12,615.—CIGARS.—*J. R. Bravo & Son*, Susquehanna Depot, Pa. Application filed August 29, 1885.

"The words 'GRAND CHIEF, BROTHERHOOD OF LOCOMOTIVE ENGINEERS,' together with the engraved portrait of P. M. Arthur."

12,616.—SHOES.—*N. Curtis & Co.*, Boston, Mass. Application filed September 2, 1885.

"The word 'CURTIS.'"

12,617.—EMBROCATION.—*Elliman Sons & Co.*, Slough, county of Birmingham, England. Application filed August 29, 1885.

"The picture of a hunter, farrier, man, and dog, and the picture of a hunter, huntsman, man, and hounds."

12,618.—TOILET-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 28, 1885.

"The word 'COMMONWEALTH.'"

12,619.—TOILET-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 17, 1885.

"The arbitrarily-selected word-symbols 'CALUMET BOUQUET.'"

12,620.—TOILET-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 18, 1885.

"The word 'CLUB-BATH.'"

12,621.—TOILET-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 29, 1885.

"The word-combination 'VIOLET COLOGNE TABLET.'"

12,622.—MEN'S AND BOYS' HATS.—*Patrick Lynch & Co.*, Philadelphia, Pa. Application filed September 3, 1885.

"Two clasped hands and the plain capital letters 'H. P. U.'"

16,623.—REMEDY FOR CATARRH AND FOR BRONCHIAL AFFECTIONS.—*James H. Macdonough*, New York, N. Y. Application filed September 11, 1885.

"The arbitrary word-symbol 'KALIODIDE.'"

12,624.—ROASTED COFFEE.—*Mayer Brothers & Co.*, New York, N. Y. Application filed August 31, 1885.

"The arbitrarily-selected words 'QUEEN OF JAVA.'"

12,625.—BEST QUALITY GALVANIZED SHEET-IRON.—*John Merry*, New York, N. Y. Application filed May 23, 1885.

"A pictured lion couchant and the word 'LION.'"

12,626.—LINIMENT.—*Isham H. Peterson* and *Hilding Stevenius*, Newark, N. J. Application filed August 25, 1885.

"The letters 'P L.'"

12,627.—RAZORS, SCISSORS, SHEARS, POCKET AND OTHER KNIVES.—*Reinhard, Dinkelmann & Co.*, St. Louis, Mo. Application filed August 19, 1885.

"The words 'THE CABINET,' with the symbol of a shield between them."

12,628.—WINES.—*Clarence M. Root*, New York, N. Y. Application filed September 1, 1885.

"The letter-symbol 'C' and the word 'CUZOL.'"

12,629.—PIANO-FORTES.—*Thomas F. Scanlon*, Boston, Mass. Application filed August 31, 1885.

"The arbitrarily-adopted fanciful name 'NEWHALL & CO.'"

12,630.—PIANO-FORTES.—*Thomas F. Scanlan*, Boston, Mass. Application filed August 31, 1885.

"The arbitrarily-adopted fanciful name 'LADD & CO.'"

12,631.—CORDS, LINES, TWINES, AND ROPES.—*Silver Lake Company*, Boston, Mass. Application filed August 31, 1885.

"The word 'BALTIC.'"

12,632.—MANUFACTURED FERTILIZER.—*D. Scott & Bro.*, Elkton, Md. Application filed September 1, 1885.

"The words 'SURE GROWTH' and the representation of a sheaf of wheat and a bone."

12,633.—CORDS, LINES, TWINES, AND ROPES.—*Silver Lake Company*, Boston, Mass. Application filed September 10, 1885.

"The word 'BENGAL.'"

12,634.—BINDERS' TWINE.—*L. Waterbury & Co.*, New York, N. Y. Application filed July 13, 1885.

"A circular tag made of tin securely attached to the twine."

LABELS.

4,589.—Title: "IRON PHOSPHATES" (FOR A BEVERAGE.)—*Charles Beck*, Baltimore, Md. Application filed September 9, 1885.

4,590.—Title: "FRY'S GREAT RHEUMATIC CURE AND BLOOD PURIFIER".—*John W. Fry*, Allegheny, Pa. Application filed September 14, 1885.

4,591.—Title: "RICE AND RYE" (FOR A PREPARATION OF EXTRACT OF RICE WITH RYE WHISKY.—*Edward Greey*, New York, N. Y. Application filed September 3, 1885.

4,592.—Title: "MADAM GILMORE'S LONDON BLOOD SYRUP."—*James J. Maher* and *Benedict F. Maher*, Augusta, Me. Application filed August 22, 1885.

4,593.—Title: "SIMON'S BLACK," (FOR HARNESS, CARRIAGES, &c.) *Georgine Simon Savigny*, Jersey City, N. J. Application filed June 30, 1885.

4,594.—Title: "BLOOD, RYE & BEEF" (FOR A MEDICINE FOR CONSUMPTION, &c.)—*Edward J. Sherlock*, Brooklyn, N. Y. Application filed September 10, 1885.

PATENTS

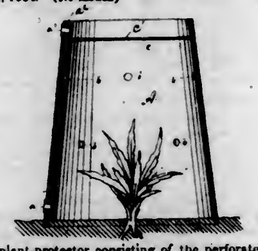
GRANTED OCT. 6, 1885.

327,509. BUSHING AND BUNG. ALBERT E. ALDRIDGE, Chicago, Ill. Filed Aug. 11, 1885. (No model.)



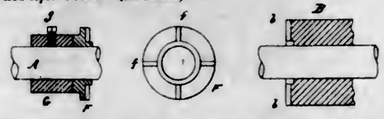
Claim.—A bushing and bung for closing the bung-hole in a barrel and other articles, constructed substantially as herein described and shown, consisting of a bushing, A, to be secured to a stave in a barrel, a bung, B, with suitable devices for uniting it with the bushing, and an annular space or chamber, I, in the bushing, as and for the purpose set forth.

327,510. PLANT-PROTECTOR. GEORGE ANDERSON, New York, N. Y. Filed Sept. 29, 1884. (No model.)



Claim.—A plant-protector consisting of the perforated shell A and the cover *c*, the latter being located within the shell, near the upper end thereof, and provided with a raised lip, a^2, and an eyelet, a', for hinging said cover to said body, substantially as set forth.

327,511. SPOOL-WINDER. FRANK H. BARBER, Holyoke, Mass., assignor of one-half to the George R. Dickinson Paper Company, same place. Filed Apr. 3, 1885. (No model.)

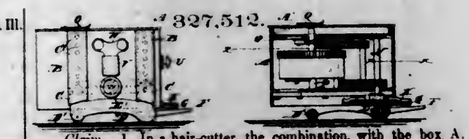


Claim.—1. The combination, with the shaft A and the spools B and B', of the collar C, secured to said shaft, and having two arms, K, two pinions, D, adapted to rotate on said arms, the gears E and E', meshing with said pinions, and the sleeves O and O', connected with said gears and spools, substantially as set forth.

2. The combination, with the shaft A, of the collar C, secured thereto, and having arms K, and cylindrical portions L, provided with grooves *l*, the pinions D, adapted to rotate on said arms, the gears E and E', having cylindrical projections M M', fitting over the said portions L, and provided with screws *m*, engaging said grooves, substantially as set forth.

3. The combination, with the shaft A, of the collar C, secured thereto, and having arms K, the pinions D, adapted to rotate on said arms, the gears E and E', meshing with said pinions, and having cylindrical parts N, and the slotted sleeves O and O', splined to said parts N, and having clamping-ears and bolts, whereby the adjustment of the sleeves relative to the gears, to accommodate different lengths of spools, may be effected, as set forth.

327,512. HAIR-CUTTING MACHINE. VLADIMIR S. BEKOFSKY, Jonchuan, Corea. Filed Mar. 31, 1885. (No model.)

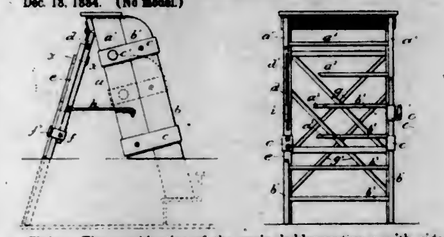


Claim.—1. In a hair-cutter, the combination, with the box A, of the pockets B on the sides of the same, the legs C, united by the pieces D and having apertures C', the springs E, the pins *c* on the ends of the same, the push pins or buttons E', adapted to act on the springs E, a comb held on the front ends of the pieces D, a cutting device above the comb, and a clock-work mechanism contained in the box and adapted to operate the cutting device, substantially as herein shown and described.

2. In a hair-cutter, the combination, with the fixed toothed cutting-plate G, having parts H punched out and bent upward, of the reciprocating toothed cutting-plate K, resting on the plate G and having slots through which the parts H pass, the lugs L on the plate K, and the eccentric disk M, mounted on a shaft, N, operated by a clock-work mechanism in the box, substantially as herein shown and described.

3. In a hair-cutter, the combination, with a box, of adjustable legs held on the sides of the same, a roller, D', held between the legs, the comb F, projecting from the legs, a cutting device above the comb, and a clock-work mechanism contained in the box for the purpose of operating the cutting device, substantially as herein shown and described.

327,513. STEP-LADDER. EDSON M. BENJAMIN, Hartford, Conn. Filed Dec. 18, 1884. (No model.)

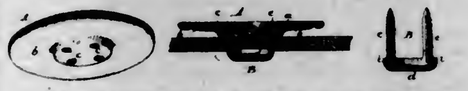


Claim.—The combination of the main ladder-section *a* with side bars and steps, the sliding ladder-section *b* with its side bars and steps, the straps *c* with the clamp-screws *c'*, and the leg-section *d*, hinged to the ladder and bearing the sliding leg-section *e*, with T-shaped straps *i*, passing through slots in the legs, and strap *f*, bearing the clamp-screw *f'*, and a tie-rod, *h*, all substantially as described.

327,514. WATERPROOFING COMPOUND. DAVID BLACKBURN, Montreal, Quebec, Canada. Filed Apr. 16, 1885. (No specimens.) Patented in Canada Mar. 26, 1885, No. 21,323.

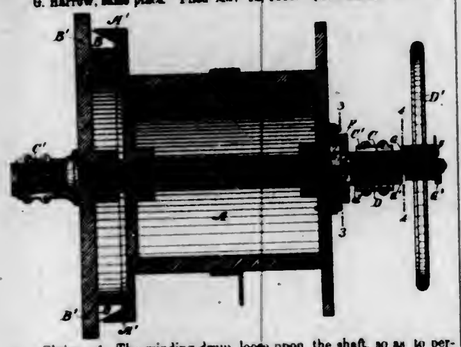
Claim.—The waterproofing compound composed of glue, soap, flour, salt, and water in substantially the proportions specified.

327,515. BUTTON. BENJAMIN H. BRADLEY, Philadelphia, Pa., assignor to Charles V. Staddard, Brooklyn, N. Y. Filed Jan. 3, 1883. (No model.)



Claim.—In combination with the button-body having the openings through the rear face, the pronged fastening having a flanged or cupped head, whereby the fabric may be confined and compressed between the flange of the fastening and the rear face of the body, to prevent the threads or fibers from being separated by the strain.

327,516. FRICTION-DRUM. Alfred Briggs, Ottumwa, Iowa, assignor to James T. Hackworth, Allen Johnston, Will T. Major, and Albert G. Harrow, same place. Filed May 12, 1885. (No model.)



Claim.—1. The winding-drum loose upon the shaft, so as to permit it to rotate independently thereof and to slide thereon, the cone-gear fast upon the shaft, the plate E, a collar confining said plate, and the screw and its threaded recess, all borne by and combined with said shaft, substantially as specified.

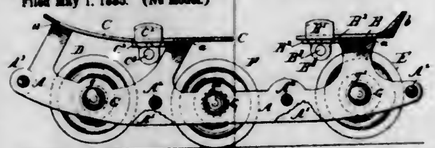
2. In combination with the drum and cone, a screw having shoulders c' c^2, plate E, flanged collar F, and the slotted shaft C, having the screw-threaded recess and carrying all said parts, whereby the drum is adapted to be moved both ways with the screw, substantially as set forth.

3. In combination with the drum and cone, a screw having shoulder c^2, plate E, flanged collar F, secured to the drum, and the slotted shaft C, having the screw-threaded recess and carrying all said parts, whereby the drum is moved away from the cone, substantially as specified.

4. In combination with the tightening-screw connected to and operating the friction-drum and working in a threaded recess in the drum-shaft, a lock for said screw to hold it against undesired movement in its recess, said lock being also mounted upon said drum-shaft, substantially as specified.

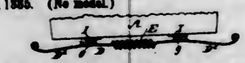
5. In combination with the shaft C, the tightening-screw, and the threaded recess in said shaft, the locking-pawl carried upon the screw, and the ratchet, all borne and rotating with the shaft, substantially as specified.

327,517. ROLLER-SKATE. Lucas P. Britt, Jr., New York, N. Y. Filed May 1, 1885. (No model.)



Claim.—A roller-skate having detachable and interchangeable parts, substantially as specified, convertible into an ice-skate with double runners, as set forth.

327,518. VEHICLE-SPRING. John P. Buchholtz, Philadelphia, Pa. Filed Feb. 12, 1885. (No model.)



Claim.—1. As a new article, a vehicle-spring consisting of two flat end plates connected together by a spiral, substantially as described.

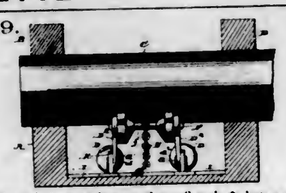
2. A vehicle-spring consisting of a single plate of metal flattened at both ends and formed into a spiral at its center, substantially as described.

3. The combination, with a vehicle-body and side bars, of springs for connecting the two, said springs having flat end plates, which are attached to the side bars and to the body, and connected together at their inner ends by a spiral spring, substantially as described.

4. In a side-bar vehicle, the combination, with the body A and the side bars, B B, of the springs D, having the flat ends D' D', and the central spiral, E, said springs being connected at their outer ends to the side bars and at points between the outer ends and the spiral to the body, substantially as described.

327,519. JOURNAL-LUBRICATOR. William H. Burdsh and Frederick C. Burdsh, Cleveland, Ohio. Filed Mar. 13, 1885. (No model.)

Claim.—1. The combination of the journal-box and the shaft or axle with the shaft carrying a set of rollers working against the axle and



a loose endless chain working on the roller-shaft between the rollers to carry up the lubricant, as set forth.

2. The combination of the journal-box and the shaft or axle with the rollers mounted on a separate shaft, which is formed angular between the rollers, and an endless chain working around the angular portion of the shaft to deliver lubricant thereto and diffuse it toward the rollers, as set forth.

3. The combination of the journal-box, the shaft or axle journaled therein, the pivoted weighted arms, the rollers journaled therein and bearing against the shaft, and the endless chain passing over the roller-shaft, for the purpose set forth, substantially as described.

4. The combination of the journal-box, the shaft or axle journaled therein, the frame located in the journal-box, the bent weighted arms pivoted to said frame, rollers journaled in said arms and bearing against the shaft or axle, and the endless chain on the roller-shaft, for the purpose set forth, substantially as described.

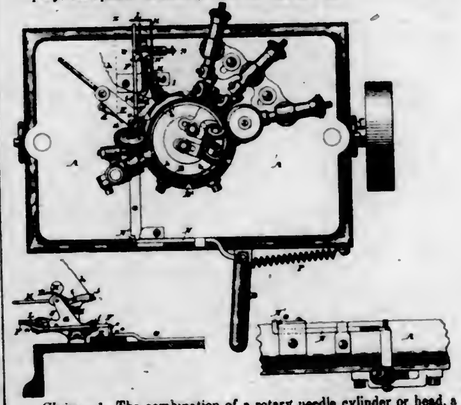
327,520. RAILROAD-TORPEDO. Charles Burnham, Philadelphia, Pa. Filed Apr. 7, 1885. (No model.)



Claim.—1. In a railroad-torpedo, a case adapted to contain percussion-caps or detonating material, which is provided as to either its top or bottom with a sunken channel to receive and contain the strap, substantially as shown and described.

2. In a railroad-torpedo, in combination with a case, either the cap or cup of which is provided with a sunken channel or transverse recess, a strap the central portion of which is adapted to said recess, and suitable means for retaining said strap fixedly within said recess, substantially as described.

327,521. STOP-MOTION MECHANISM FOR KNITTING-MACHINES. John Byfield, Lowell, Mass., assignor to the Byfield Manufacturing Company, same place. Filed May 12, 1884. (No model.)



Claim.—1. The combination of a rotary needle cylinder or head, a friction-pawl mounted upon an axis outside of said cylinder in a position to operate upon the periphery of the needle-head, as a break or dog, a spring for causing said pawl to engage with the needle-head, a lever for locking and holding said pawl in a retracted position, and an unbalanced lever held in a passive or inoperative state by the tension of the yarn, and which acts upon and trips said locking lever when the yarn breaks, becomes slack, or runs out, substantially as described.

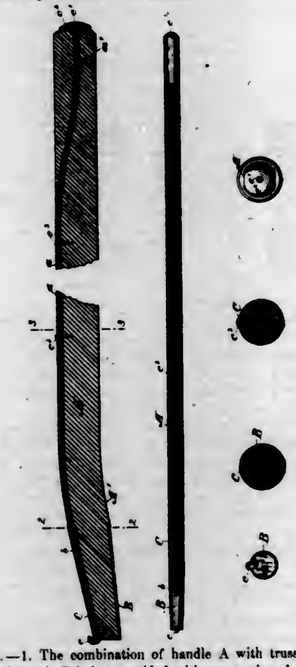
2. The combination of a needle cylinder or head, a friction-pawl mounted upon an axis outside of said cylinder in a position to operate upon the periphery of the needle-head, as a brake or dog, a spring for causing said pawl to engage with the needle-head, a lever for locking and holding said pawl in a retracted position or removed from contact with said head, an unbalanced lever held in a passive or inoperative position

by the tension of the yarn, and which acts to trip said locking-lever by the descent of its heaviest arm when the yarn breaks, becomes slack, or runs out, and a pair of stationary yarn-guiding eyes, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination of the needle-head B B^2, the friction-pawl E, the spring d, the levers F, H, and L, the stand I, provided with two yarn-guiding eyes, the conical-pointed bolt J, provided with the groove m, to engage with the lever L, and the spring l, all arranged and adapted to operate substantially as and for the purposes described.

4. The combination of the needle-head B B^2, the pivoted friction-pawl E, the levers F and H, the spring d, the gear-wheels B' and C', the shipper-lever D, the spring P, the catch-rod N N', and the locking-bolt O, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

327,522. HANDLE FOR PITCHFORKS AND OTHER IMPLEMENTS. Marvin S. Cadwell, Lansing, Mich., assignor to Mary Cadwell, same place. Filed Apr. 16, 1885. (No model.)



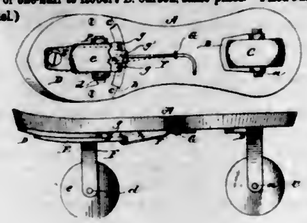
Claim.—1. The combination of handle A with truss-rod C and ferrule B, said ferrule B being provided with an opening, b, a short distance from its inner end, through which said truss-rod is inserted to specially strengthen the handle at the inner end of said ferrule, substantially as specified.

2. The combination of wood handle A, having longitudinal groove a and diagonal hole a', with truss-rod C, passing through said groove and hole, substantially as specified.

3. The combination of wood handle A, having longitudinal groove a and diagonal hole a', with ferrule B, having opening b, and truss-rod C, passing through said groove, diagonal hole, and opening, substantially as specified.

4. The combination of wood handle A, having groove a and hole a', with ferrule B, having opening b, and truss-rod C, having bent end c, threaded end c', and nut c^2, said truss-rod passing through said groove a, hole a', and opening b, substantially as specified.

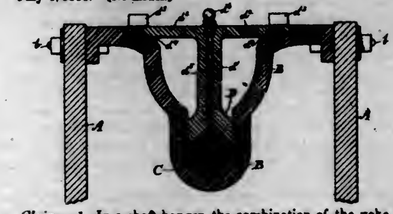
327,523. ROLLER-SKATE. W. Scott Canaday, New Castle, Ind., assignor of one-half to Robert B. Carson, same place. Filed Jan. 31, 1885. (No model.)



Claim.—1. The combination, with the plate D, circular in contour at its rear end, and provided with stops c, formed by recessing the plate, of a plate, E, carrying a bracket having a journaled roller and pivoted to the plate D, and a spring connecting plate E with the foot-rest, as set forth.

2. In a roller-skate, the combination, with the foot-rest, of a plate circular in contour at its rear end and having stops at its rear corners, a pivoted plate having a fixed bracket carrying a journaled roller, ears g g on said plate, said ears being turned inwardly, an ear, g', and a spring connecting said ear and the foot-rest, substantially as set forth.

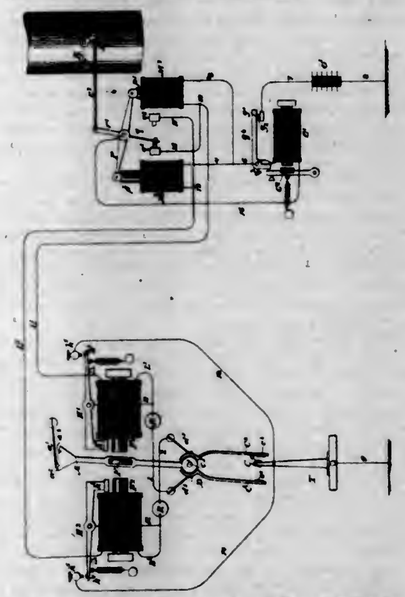
327,524. SHAFT-HANGER. John Crivill, Chicago, Ill., assignor to the Webster & Comstock Manufacturing Company, same place. Filed July 6, 1885. (No model.)



Claim.—1. In a shaft-hanger, the combination of the yoke B, cast in one piece, and a cap provided with a hollow stem, d', and arms d^2 d^2, substantially as and for the purposes set forth.

2. The combination of the yoke B, cast in one piece, and adjustable cap D, said cap having a hollow stem, d', arms d^2 d^2, adjustably secured to said yoke, and flanges d, substantially as and for the purposes set forth.

327,525. ELECTRIC VALVE-OPERATOR. Charles L. Clarke, New York, N. Y. Filed Dec. 1, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a circuit-closing arm, two contact-arms, two electro-magnets for controlling the positions of said contact-arms, means, substantially such as described, for moving said contact-arms when said circuit-closing arm has impinged against one or the other through the agency of said electro-magnets, a valve and electro-magnetic devices, substantially such as described, for operating said valve through the agency of said circuit-closing and contact arms.

2. The combination, substantially as hereinbefore set forth, of a circuit-closing arm operated by variations in a force, two contact-arms applied thereto and capable of moving in one direction or the other according to the direction of movement of said circuit-closing arm, a detent for normally retaining said arms in one or the other of two positions, two electro-magnets, means for vitalizing one or the other of the same accordingly as said circuit-closing arm is actuated by an increase or a decrease in the expenditure of the force, a circuit-closing device

applied to each of the electro-magnets and serving, when the corresponding electro-magnet is vitalized, to complete a shunt-circuit around the points through which its circuit is closed, a valve, and means, substantially such as described, for opening or closing said valve, accordingly as one or the other of said electro-magnets is vitalized.

3. The combination, substantially as hereinbefore set forth, of a circuit-closing arm operated by variations in a force, two contact-arms applied thereto and capable of moving in one direction or the other accordingly as said circuit-closing arm is moved in one direction or the other, two electro-magnets, means for vitalizing one or the other of the same accordingly as said circuit-closing arm is actuated by an increase or a decrease in the expenditure of the force, a circuit-closing device applied to each of said electro-magnets and serving to complete a shunt-circuit around the corresponding contact-points, and a valve operated through the instrumentality of said circuit-closing and contact-arms.

4. The combination, substantially as hereinbefore set forth, of an arm responding to variations in heat or pressure, two electro-magnets through one or the other of which an electric circuit is completed by the action of said arm, a valve, damper, or other device for controlling said force, mechanical connections between said electro-magnets and said valve whereby the latter is opened or closed accordingly as one or the other electro-magnet is vitalized, and means, substantially such as described, for automatically causing said magnet to be demagnetized after it has so operated said valve.

5. The combination, substantially as hereinbefore set forth, of a circuit-closing arm responding to variations in temperature, pressure, or other force, a valve, damper, or other device for governing said force, an electro-magnetic device for operating said valve or device, an electric circuit in which said electro-magnetic device is included, a circuit-interrupting device, an electro-magnet for actuating the same, a shunt-circuit around said electro-magnet device, in which said electro-magnet is included, and connections for the same, and a circuit-closing device actuated by said electro-magnetic device, whereby said shunt-circuit is completed when said valve has been moved a predetermined distance in one direction or the other.

6. The combination, substantially as hereinbefore set forth, of a battery, an electric circuit, a circuit-closing device, an electro-magnet included in said circuit, an arm moved by said electro-magnet, a circuit-interrupting device through which the connections of said circuits are made, an electro-magnet for operating said interrupting device, a shunt-circuit around the first-named electro-magnet, in which the second electro-magnet is included, and a circuit-closing arm operated by the first-named electro-magnet, whereby the connections of said shunt-circuit are controlled.

7. The combination, substantially as hereinbefore set forth, of a battery, an electric circuit for the same, a device for controlling the connections of said circuit, a valve, damper, stop-cock, or other similar device, an electro-magnetic device included in said circuit for operating said valve or similar device, a circuit-interrupting device included in said circuit, an electro-magnet for operating said interrupting device, a shunt or branch of said circuit, in which shunt or branch said electro-magnet is included, and means for completing the connections of said branch when said valve or similar device has been operated.

8. The combination, substantially as hereinbefore set forth, of a battery, two circuits therefor, a circuit-closing lever whereby one or the other of said circuits may be completed, two electro-magnets respectively included in said circuits, their armatures, an armature-lever supporting said armatures, a valve, damper, or other similar device operated by said lever, a shunt or branch circuit of the first-named circuits, the connections of which are automatically completed by the movement of said lever.

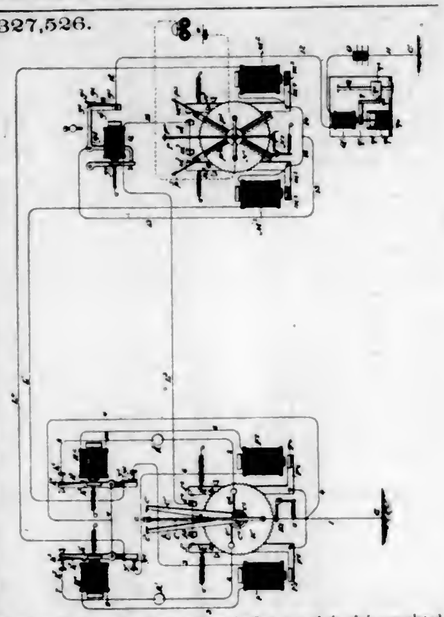
9. The combination, substantially as hereinbefore set forth, of the battery O', the circuit-closing arm T, the contact-arms C' and C², the conductors L' and L², the electro-magnets F' and F², respectively included in said conductors, the electro-magnets M' and M², also respectively included in said conductors, the armature-lever P, applied to the last-named electro-magnets, the valve or similar device, R, operated by the movements of said lever, the arm q, and contact-points q' and q^2, the electro-magnet G', and the conductor including the same, and the circuit-interrupting points g' and g^2, operated by said electro-magnet G'.

10. The combination, substantially as hereinbefore set forth, of a normally-open electric circuit, a circuit-closing device responding to variations in temperature, pressure, or other force, a valve or other device for controlling said force, electro-magnetic devices controlled by the operation of said circuit-closing device for operating said valve or other device, and a circuit-interrupter serving to automatically interrupt said circuit when said valve or other device has been operated by the completion of the circuit.

327,526. TELEMETER SYSTEM. Charles L. Clarke, New York, N. Y. Filed Mar. 30, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a battery, a circuit-closing point for automatically completing a circuit for said battery, means for automatically completing a second or

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shunt circuit around said point when the first-named circuit is completed, one or more electro-magnets included in the circuit of the battery, an indicating device operated through the instrumentality of said electro magnet or magnets, a third circuit, the connections of which are completed by circuit-closing points controlled by said electro-magnets when they are vitalized, and a device for interrupting the connections of said battery operated by currents traversing said third circuit.

2. The combination, substantially as hereinbefore set forth, of a circuit-closing and a contact-point, a battery, a circuit for the same the connections of which are completed by said points, means for completing a circuit around said points, an electro-magnet for separating said points, one or more indicating devices, electro-magnets included in said circuits for operating said indicating devices, a third circuit for said battery, the connections of which are completed by the armature-levers of said electro-magnets when they have been vitalized, and a circuit-interrupting device operated by currents traversing said third circuit.

3. The combination, substantially as hereinbefore set forth, of a circuit-closing point, means for moving the same in either of two directions, two contact-points, against the one or the other of which it is caused to impinge according to the direction of its movement, a battery, two lines leading from said contact-points, respectively, and connected with the battery, whereby the circuit of the latter is completed through one or the other of the lines, accordingly as contact is made with one or the other contact-point, electro-magnetic devices included in said lines, respectively, a third line leading from said battery, and circuit-closing points for completing the connections of said third line at various places, which points are under the control of said electro-magnetic devices, whereby a current traversing either of the first-named lines and actuating the corresponding electro-magnetic devices will serve to complete the connections of the third line.

4. The combination, substantially as hereinbefore set forth, of a battery, two lines, means for completing a circuit for either of said lines, electro-magnetic devices included in said lines, respectively, means for completing the circuit-connections of either of said lines and thereby operating the corresponding electro-magnet devices, a third main line, the connections of which are normally interrupted at various points, means, substantially such as described, for completing the connections of said third line at such points by the operation of all of said electro-magnetic devices contained in either of the first-named lines, and a circuit-interrupting device for severing the connections of both of said lines when the last-named connections have been completed.

5. The combination, substantially as hereinbefore set forth, of a battery, a conductor leading therefrom, a circuit-controlling device for completing the connections of the same, two or more electro-magnets included in the circuit thus completed, their armatures and armature-levers, contact-points carried upon said levers, contact-stops respectively applied to said points, a second conductor leading from said battery to one of said contact-points, a conductor leading from the corresponding contact-stop to a second of said contact-points, and so on throughout the series, whereby a circuit of said second conductor is completed when all of said

electro-magnets have been vitalized and their armature-levers have responded, an electro-magnet included in the circuit of the second conductor, and a contact-stop and contact-point caused to temporarily separate from each other when the last-named electro-magnet is vitalized, through which point and stop the primary circuit of said battery is normally established.

6. The combination, substantially as hereinbefore set forth, with a circuit-closing point and means for moving the same in either of two directions, of a battery, two lines, through the one or the other of which a circuit is completed by said point, and means for interrupting the normal connections of either of said lines when the circuit through the other line is completed.

7. The combination, substantially as hereinbefore set forth, with a movable circuit-closing point and two contact-points, of a battery, two lines respectively leading from said contact-points, two interrupting devices, one being included in each of said lines, and means, substantially such as described, for operating each interrupting device by currents traversing the other line.

8. The combination, substantially as hereinbefore set forth, with a movable circuit-closing point and two contact-points, of a battery, two lines respectively leading to said contact-points, an interrupting device included in each line, two shunt-circuits respectively applied to said contact-points, two electro-magnets, one or the other of which is vitalized by the contact of said circuit-closing point, whereby the interrupting device of the other line is actuated and the connections of the corresponding shunt-circuit are subsequently completed.

9. The combination, substantially as hereinbefore set forth, of a circuit-closing point responding to variations in temperature or other changes, a second circuit-closing point, an electrical apparatus for causing said second point to move synchronously with the movements of the first point, a contact-point capable of being placed in any required position relative to said second point, means, substantially such as described, for permitting said contact-point to be moved forward by the movements of said second point, a battery the connections of which are completed through the second circuit-closing point and the contact-point, and a signaling device included in the circuit of said battery.

10. The combination, substantially as hereinbefore set forth, of a circuit-closing point responding to variations in temperature, pressure, or other changes, an indicating-arm, electrical devices for causing the same to register the position of the circuit-closing point, two circuit-closing and registering arms respectively applied to the opposite sides of said indicating-arm, a local battery, the connections of which are completed by the contact of said indicating-arm with either of said registering-arms, a signaling device included in the circuit of said battery, and means, substantially such as described, whereby either of said registering-arms may be normally placed in a given position and be advanced therefrom by the movements of said indicating-arm while maintaining the circuit of said battery complete.

11. The combination, substantially as hereinbefore set forth, with an indicating-arm, means for moving the same step by step, and a movable contact-arm, of a contact-point consisting of a platinum plate secured to said contact-arm and projecting into the path of said indicating-arm, a battery having one pole connected with said indicating-arm and the other pole connected with the contact-arm, and a yielding frictional connection between said contact-arm and its support, whereby it may be advanced by the normal movements of the indicating-arm, and the circuit-connections of said battery maintained complete.

12. The combination, substantially as hereinbefore set forth, of a device responding to variations in pressure, temperature, or other changes, an indicating device and electrically-operated devices for causing said indicating device to register the movements of the first-named device, and a device for indicating the failure of said devices to operate, which consists of an electro-magnet, its armature and armature-lever, a dash-pot for preventing said armature from responding to the normal magnetism of said electro-magnet, but permits a retarded movement of the same, and a visual or other indicating device operated by said armature when it has responded.

13. The combination, substantially as hereinbefore set forth, with a movable circuit-controlling device, an indicating device, a battery, and electro-magnetic devices for operating the latter correlatively with the movements of the former, of an alarm device for indicating the failure of said electro-magnetic device to operate, consisting of an electro-magnet, a circuit through which is completed when said circuit-controlling device is operated, its armature, means for causing said armature to respond slowly, and an indicating device operated when said armature has responded.

14. In a device for indicating changes in pressure, temperature, time, or the equivalent, a star-wheel, a pawl for actuating the same having faces forming an angle less than the re-entrant angle of the teeth of the wheel and so organized as to advance the wheel nearly the distance corresponding to a tooth during its forward movement, and to be withdrawn without causing a retrograde movement, and a retaining-pawl for completing the forward movement, substantially as described.

15. The combination, substantially as hereinbefore set forth, in an indicating device, of the star-wheel N', and the pawl n, having the faces n' and n^2, the latter of which is approximately in the line of movement of the pawl while the former is approximately perpendicular to the face n^4 of the tooth adjacent to the pawl.

16. The combination, substantially as hereinbefore set forth, in an apparatus for indicating changes in temperature, pressure, &c., of an arm responding to such changes, means for moving the same step by step in response to the changes, a flexible yielding contact-arm for the same, and means, substantially such as described, whereby the latter may be moved by said arm without being thrown out of contact therewith.

17. The combination, substantially as hereinbefore set forth, in an apparatus for indicating changes in temperature, pressure, &c., of an arm responding by a step-by-step motion to such changes, a contact-arm applied thereto and serving to register the extreme movement of said arm by being advanced by the latter, an alarm device, and a battery the connections of which are completed through said alarm device by the contact of said arm with said contact-arm.

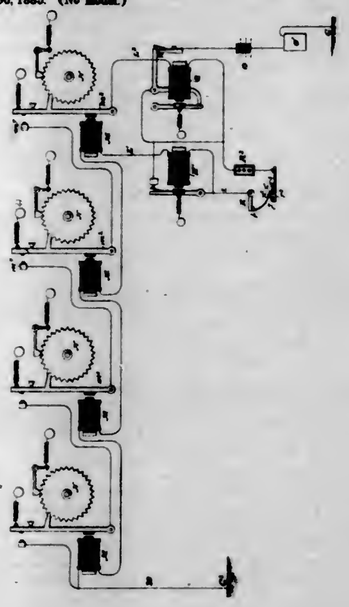
18. The combination, substantially as hereinbefore set forth, in an apparatus for indicating changes in temperature, pressure, &c., of a circuit-closing device operating to complete the connections of either of two circuits, an interrupting device for each of said circuits, each of which is operated by the completion of the other circuit, and a yielding contact constituting the interrupting-point of each of said interrupting devices.

19. The combination, substantially as hereinbefore set forth, in a telemeter system, with a circuit-closing device for completing the connections of either of two circuits, of an interrupting device for each circuit, each of which is operated by the completion of the other circuit, a device for completing a shunt-circuit around the points through which each of said circuits is completed, and means for causing the shunt-circuit to be formed after the interrupting device of the other circuit has been operated.

20. The combination, substantially as hereinbefore set forth, with a series of teeth, of two driving-pawls acting in opposite directions upon the same, the one pawl acting to move said series through a distance less than the space of a single tooth in one direction and the other pawl to move said series an equal distance in the opposite direction, and a locking-pawl serving to move said series the remaining distance, represented by a tooth, when either driving-pawl has acted.

21. In a telemeter system, the combination, substantially as hereinbefore set forth, of a battery, a main line, one or more electro-magnets included therein, a circuit-closing and a contact point for completing the connections of said battery through said main line, an indicating-arm, means for advancing said arm synchronously with said circuit-closing point, a second line, the connections of which are completed by the operation of said electro-magnets, and a device for interrupting the connections of said battery, which device is operated by currents traversing the connections of said second line.

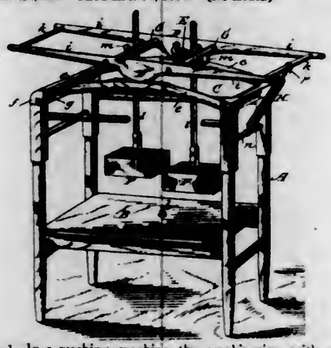
327,527. TELEMETER. Charles L. Clarke, New York, N. Y. Filed Mar. 30, 1885. (No model.)



Claim.—1. The hereinbefore-described method of controlling the circuit-connections of a battery for the purpose of operating one instrument correlatively with the movements of another, which consists in completing them at one point, causing a shunt or second circuit to be thereby established around that point, completing the connections of a third circuit at various points through the instrumentality of the current caused to traverse the circuit or circuits already completed, and automatically interrupting all the circuits of the battery through the instrumentality of the current caused to traverse the circuit last completed.

2. The hereinbefore-described method of controlling the circuit-connections of a battery for the purpose of operating one instrument correlatively with the movements of another, which consists in completing the connections at one point, causing a shunt or second circuit to be thereupon established around that point, thereupon interrupting the connections at the first point, completing the connections of a third circuit at various points, and automatically interrupting the circuit at the second point through the instrumentality of the current caused to traverse the circuit last completed.

327,528. WASHING-MACHINE. John D. Cohee and George R. Gamble, Frankfort, Ind. Filed Mar. 30, 1885. (No model.)

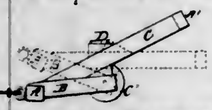


Claim.—1. In a washing-machine, the combination, with curved side bars connected to end braces, of rockers and spiral spring connecting said rockers to the side bars, and plungers attached to rollers of the rocker-frame, substantially as and for the purpose set forth.

2. In a washing-machine, a suitable frame having a platform with a pivot for supporting the suds-tub, in combination with a hinged frame consisting of curved side bars, and end braces and rockers, and spiral springs connecting the rockers to the side bars, and plungers attached to rollers, as shown, and for the purpose set forth.

3. A washing-machine consisting of a suitable frame for supporting the suds-tub, and provided with a hinged top frame having curved side bars, rockers, and spiral springs connecting them to the side bars, and a spring helper connecting the rockers to the main frame, and suitable plungers adjustably connected to transverse rollers, substantially as and for the purpose specified.

327,529. BUCK-POLE. Benjamin F. Cook, Santa Maria, Cal. Filed Apr. 2, 1884. (No model.)



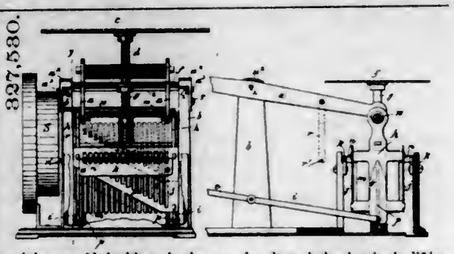
Claim.—1. The buck-pole having a rearward-extending frame provided with a wheel or roller journaled in the free ends thereof, in combination with levers adapted to lift the buck-pole from the stubble, substantially as described.

2. The buck-pole having a rearward-extending frame provided with a wheel or roller journaled in the free ends thereof, in combination with levers to lift the buck-pole from the stubble and a seat arranged on the frame of the wheel and levers, substantially as described.

327,530. WEIGHING-SCALE. Moses G. Cook, Lynn, Mass. Filed May 2, 1884. (No model.)

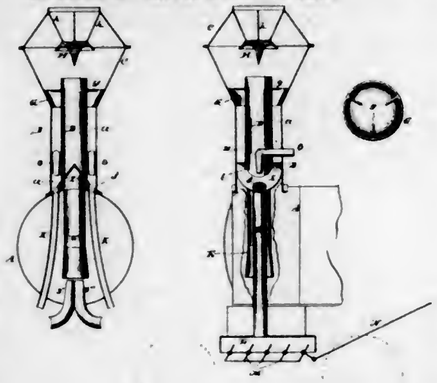
Brief.—Improvement on Cook, No. 267,776, dated November 21, 1882. The cap a^2 is provided with adjusting-screws a^3 a^3, bearing against the pivot 2, so as to move the beam laterally; also, to prevent any sliding of the beam while in use.

Claim.—In a scale or weighing apparatus, the combination, with the scale-beam having the pivoted frame A, provided with weight-lifting plates having slots of increasing length in succession, with the upper slot-terminals in line with one another, of horizontal weight-supporting bars secured in a weight-receptacle, and having notches corresponding in number and position with the slots in the lifting-plates, and a series of



weights provided with projections passing through the slots in the lifting-plates and resting in the notches of the supporting-bars and adapted to be lifted therefrom by the slotted plates in the movement of the scale-beam, substantially as described.

327,531. SPARK-ARRESTER. John C. Courtney and James W. Nelson, Streator, Ill. Filed Feb. 10, 1885. (No model.)



Claim.—1. In a spark-arrester, the combination, with the outer shell and inner stack, of a tapered or conical ring for supporting the upper end of the stack and an inclined diaphragm surrounding the lower end of said stack, substantially as set forth.

2. In a spark-arrester, the combination, with the outer shell and inner stack, of the conical ring or shell or sleeve provided with the inwardly-projecting lugs, substantially as set forth.

3. In a spark-arrester, the combination, with the outer shell and inner stack, of a deflector located within the shell above the stack, a device for supporting the upper end of the stack, an inclined diaphragm surrounding the stack near the lower end thereof and provided with one or more openings, and a pipe connected with said diaphragm.

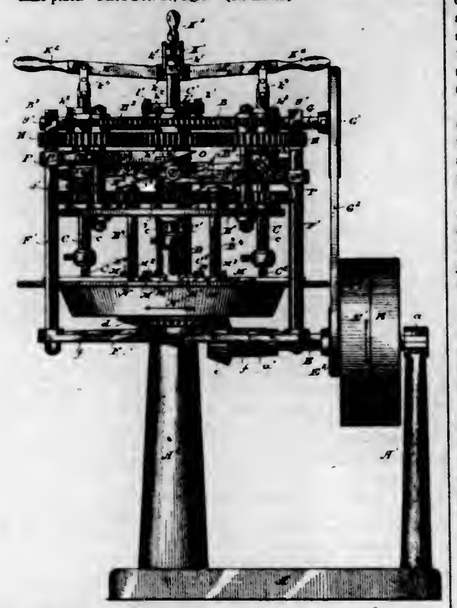
4. In a spark-arrester, the combination, with the outer shell and inner stack, of a deflector located above the stack, a conical ring or sleeve provided with inwardly-projecting lugs for supporting the upper end of the stack, the double inclined diaphragm, an ash-pan having a dumping bottom, and pipes connecting the space between the shell and stack with the ash-pan, substantially as set forth.

327,532. CALENDAR. Stephen J. Cox, New York, N. Y. Filed Dec. 19, 1884. (No model.)



Claim.—A calendar containing the dates of each day of the month throughout the year, each figure or numeral in juxtaposition, with an illustration representing the moon's phase at each particular date, essentially as shown and described.

327,533. NUT-TAPPING MACHINE. Christopher G. Cross, Chicago, Ill., assignor to William H. Banks and Orlando P. Briggs, both of same place. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination of two or more rotary and longitudinally-movable tap-spindles, a revolving frame or reel having bearings for said spindles, holders for supporting two or more nut-blanks in position to be operated upon by the taps, connections between the opposite spindles constructed to produce from a longitudinal movement of one spindle a longitudinal movement of the other spindle, means constructed to rotate the tap-spindles alternately in opposite directions, and means for simultaneously and intermittingly changing the direction of rotation of the opposite spindles during the rotation of the reel and at times when the spindles arrive at the terminations of their respective longitudinal movements, substantially as described.

2. The combination of two or more longitudinally-removable tap-spindles, a revolving frame or reel having bearings for said spindles, revolving supports for two or more nut-blanks, means connecting the opposite spindles constructed to produce from a longitudinal movement of one spindle a longitudinal movement of the other spindle, wheels mounted concentric with the several spindles, driving-gear to rotate said wheels in opposite directions, suitable clutch devices upon the several spindles to connect said spindles alternately with the said wheels, levers for operating said clutches, and a stationary cam-ring for intermittingly actuating the levers during the rotation of the reel, substantially as and for the purpose set forth.

3. The combination, with holders for supporting two nut-blanks, of two rotary and longitudinally-movable tap-spindles, means constructed to rotate said spindles alternately in opposite directions, and a centrally-pivoted lever connected at its ends with the said tap-spindles, substantially as and for the purpose set forth.

4. The combination, with two or more rotary and longitudinally-movable tap-spindles, of a revolving reel affording bearings for said spindles, means for supporting two or more nut-blanks upon the said reel, means constructed to rotate the tap-spindles alternately in opposite directions, a centrally-pivoted lever or levers connected with the opposite tap-spindles for imparting from the longitudinal movement of one spindle an equal longitudinal movement to the other spindle, and a support for the pivotal point of the lever or levers applied to rotate with the reel, substantially as and for the purpose set forth.

5. The combination of a series of rotary and longitudinally-movable tap-spindles, means for rotating said spindles alternately in opposite directions, a revolving reel carrying the said spindles and constructed to support a series of nut-blanks, a stationary vertical shaft axially supporting said reel, a plate, L′, bolted to the upper end of the reel and extending over the end of the said axial shaft, a post, L, upon said plate, and levers K K′, centrally pivoted to said post and connected at their ends with the tap-spindles, substantially as and for the purpose set forth.

6. The combination, with the reel having two vertically-operated parts, B and B′, a series of longitudinally-movable tap-spindles mounted rotatably in said reel, an axial shaft, A^3, supporting said reel, a sleeve, D, surrounding said shaft, means for revolving said sleeve upon the shaft, wheels H and I, mounted, respectively, upon the parts B and B′ concentric with the tap-spindles, means for actuating the said wheels H and I from the said sleeve constructed to cause their rotation in opposite directions, movable clutches upon the said spindles between the wheels H and I constructed to alternately connect said wheels with the spindles, and means for actuating said clutches, substantially as described.

7. The combination, with a reel, two or more rotary and longitudinally-movable tap-spindles mounted in said reel, and means for rotating the spindles, of an annular casting, N, rigidly connected with the reel, and adjustable plates M, secured to said casting and constructed to support the nut-blanks, substantially as described.

8. The combination, with a reel, two or more rotary and longitudinally-movable tap-spindles mounted therein, and means for rotating the spindles, of an annular casting, N, rigidly connected with the reel, plates M, for holding nut-blanks provided with horizontal flanges m', and adjustable plates M′, secured to said plates M, substantially as and for the purpose set forth.

9. The combination, with a rotary and longitudinally-movable tap-spindle and means for rotating the spindle, of a casting, N, provided with holders for the nut-blanks, and a vertical aperture, N^2, located at the rear of the nut-holders and constructed to permit the escape of the finished nuts when the latter are displaced by the insertion of a nut-blank in the holders, substantially as described.

10. The combination, with a rotary and longitudinally-movable tap-spindle and means for rotating the spindle, of a casting, N, provided with a recess, N′, and an aperture, N^2, plates M, attached to the said casting and provided with vertical portions m, having horizontal flanges m' and inclined flanges m^2, and adjustable plates M′, secured to said plates M and having horizontal bearing-surfaces opposed to the flanges m', substantially as and for the purpose set forth.

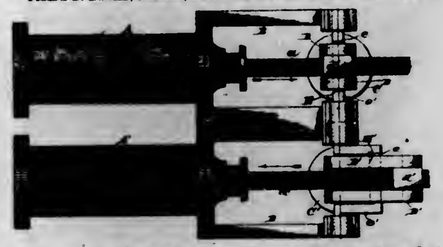
327,534. CAR-COUPLING. George W. Cutter, Philadelphia, Pa. Filed June 1, 1885. (No model.)



Claim.—1. The combination, in a car-coupling, of a draw-head, a pivoted coupling-hook, the head of which is adapted to engage with a shoulder or projection upon the draw-head, a spring-controlled buffer operating in connection with the coupling-hook, a crank and chain connection applied to the car, and a cam-lever connected with both chain and coupling-hook and adapted as to its cam-surface to act against the draw-head as an abutment or resisting device, substantially as and for the purposes set forth.

2. The combination of the draw-head, the pivoted coupling-hook, the spring-controlled buffer, the crank and chain, and a cam-faced yoke-lever pivoted to the coupling-hook connected with the chain and adapted as to its cam-faces to act against the draw-head as a resisting-abutment, as and for the purposes set forth.

327,535. EQUALIZER FOR DUPLEX STEAM PUMPING-ENGINES. Joseph D. Davies, Natchez, Miss. Filed Jan. 10, 1885. (No model.)



Claim.—1. The combination, with a pair of main cylinders, of a pair of auxiliary cylinders the pistons of which are actuated by the pistons of the main cylinders, each of the auxiliary cylinders offering a variable resistance to the piston of one of the main cylinders during the first part of its stroke, and imparting that force to the other main piston during the last part of its stroke by means of the other auxiliary cylinder, substantially as set forth.

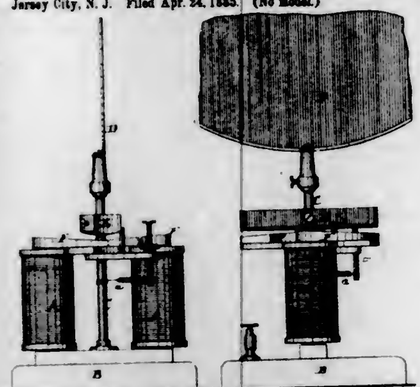
2. The combination, with a pair of main cylinders, of a pair of auxiliary cylinders the pistons of which are connected with the pistons of the main cylinders by vibrating beams and rock-arms, whereby the auxiliary pistons are driven by the main pistons without cramping, substantially as set forth.

3. The combination, with a pair of main cylinders and a pair of auxiliary cylinders the pistons of which are driven by the pistons of the main cylinders, of a chamber communicating with the two auxiliary cylinders in front of the pistons, and provided with means for admitting and retaining any required pressure of steam, substantially as set forth.

4. The combination, with a pair of main cylinders and a pair of auxiliary cylinders the pistons of which are actuated by the pistons of the main cylinders of a chamber common to the two auxiliary cylinders in front of the pistons, and cushioning-chambers connected with the auxiliary cylinders in the rear of the pistons, substantially as set forth.

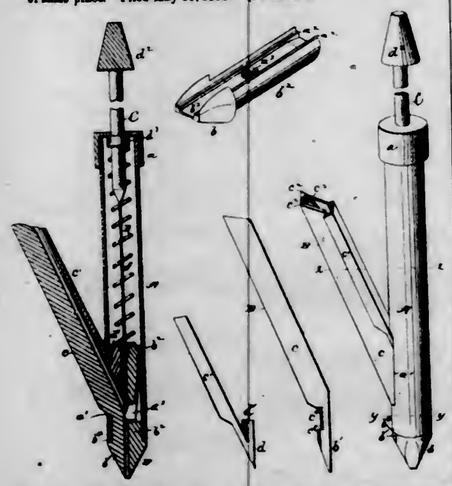
5. The combination, with a pair of auxiliary cylinders adapted to exert a variable force upon the main pistons, with which the pistons of the auxiliary cylinders are connected, of a cushioning chamber or chambers communicating with the auxiliary cylinders behind the pistons, and adapted to regulate the said variable force, substantially as set forth.

327,536. ELECTRO-MAGNET FOR SIGNALS. William E. Davis, Jersey City, N. J. Filed Apr. 24, 1885. (No model.)



Claim.—The electro-magnet A, having projecting arms F F, inclined on their upper sides, in combination with the armature E, which is above said arms, and which has a convex lower face, substantially as described.

327,537. STAPLE-DRIVER. David Dodsworth, Springfield, Ohio, assignor of two-thirds to William Legg and Ephraim W. McMillen, both of same place. Filed May 18, 1885. (No model.)

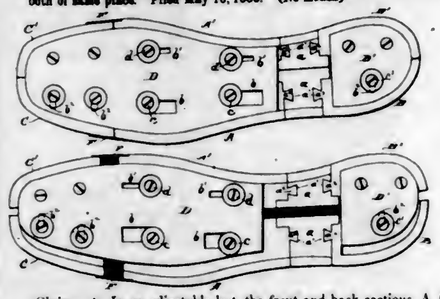


Claim.—1. The stock A, having the opening at *a'*, in combination with the two-part drive-point *b b'* and chute and carrier *c c'*, constructed and fastened in the stock substantially as and for the purposes described.

2. The combination of the stock A, having the opening *a'*, the two-part chute and carrier *c c'*, provided with the part *b'*, foot *d*, recess *c²*, locking-shoulder *c³*, and lug *d'*, the part *b b²*, and the spring *a²*, substantially as and for the purposes described.

3. The combination, with the stock A, two-part drive-point *b b'*, and chute and carrier *c c'*, constructed and fastened in the stock, as set forth, of the drive-rod C and spring D, substantially as and for the purposes described.

327,538. ADJUSTABLE LAST. David Dodsworth, Springfield, Ohio, assignor of two-thirds to William Legg and Ephraim W. McMillen both of same place. Filed May 18, 1885. (No model.)

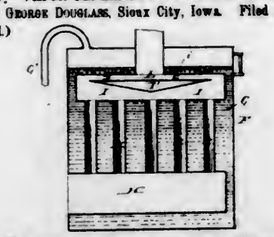


Claim.—1. In an adjustable last, the front and back sections, A A' B B', provided with dovetail tongues *a²*, in combination with the connecting-keys *a a*, of graduated sizes, having the dovetail grooves *a'*, substantially as and for the purposes described.

2. In an adjustable last, the longitudinal sections A A' B B' C C', in combination with the slotted plates D D' E E' and the set-screws *c c' d*, substantially as and for the purposes described.

3. In an adjustable last, the combination of the sections A A' B B' C C', the connecting-keys *a a*, in graduated sizes, the surface-plates F F', the slotted plates D D' E E', and the set-screws, substantially as and for the purposes described.

327,539. VAPOR-GENERATOR FOR BATHS AND BATH APPARATUS. George Douglass, Sioux City, Iowa. Filed Apr. 18, 1884. (No model.)



Claim.—The portable steam-generator consisting of a vessel with a horizontal fire-box located in the interior thereof and entirely surrounded by water, except at the exterior opening, a series of flues passing therefrom, a chamber to which the flues pass in the upper portion of said vessel and over the fire-box, a deflector suspended in said chamber, an escape-pipe leading therefrom, and a steam-connecting pipe projecting from the top of said vessel, the whole combined and adapted to serve in connection with a bath-closet, substantially as and for the purpose specified.

327,540. APPARATUS FOR MEASURING THE LENGTH OF FABRICS. Edward H. Eisenhart, New York, N. Y. Filed Sept. 4, 1884. (No model.)

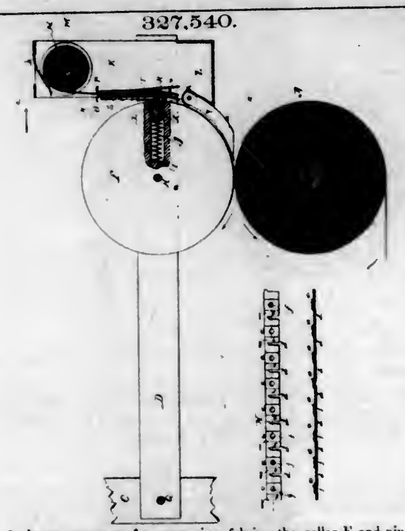
Claim.—1. In combination with a winding-reel, the roller F of predetermined dimensions, the roll carrying tape bearing consecutive numbers or indicating-marks, and means, substantially as described, for carrying a section of the tape to the material operated on, substantially as and for the purposes described.

2. In combination with a winding-reel for fabrics, the roller F of predetermined dimensions, a roller carrying tape having an adhesive agent on its back and consecutive indicating-marks on its face, damping-rolls in the path of the back of said tape, and means, substantially as described, for carrying a section of the tape to the material operated on, substantially as and for the purposes described.

3. In combination with a winding-reel for fabrics, the roller F of predetermined dimensions, the movable pin L, carried by said roller, the roller carrying tape bearing consecutive numbers or indicating-marks, and a plate, P, against which the tape travels, said plate having an opening or slot, Q, substantially as and for the purposes set forth.

4. In an apparatus for measuring fabrics, the roller F, carrying the movable pin L, in combination with the tape N, bearing consecutive numbers or indicating-marks, the slotted plate P, and spring T, substantially as set forth.

327,540.



5. In an apparatus for measuring fabrics, the roller F and pin L, in combination with the tape bearing indicating-marks, the plates O P, between which the tape travels, the plate T, and the guide Y, substantially as set forth.

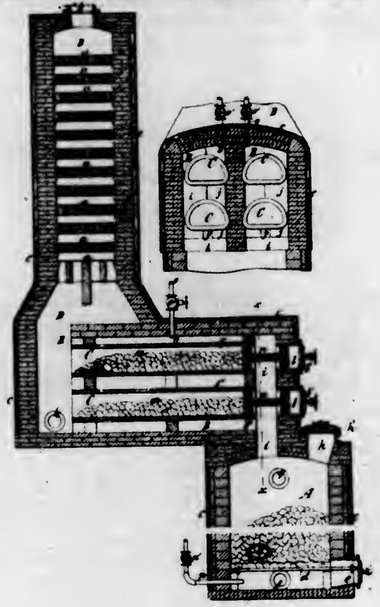
6. In a machine for measuring fabrics, the roller F and pin L, combined with the tape N, having an adhesive agent on its back and a face bearing indicating marks, guides for the tape, and damping-rolls X against which the tape may move, substantially as set forth.

7. In a device for measuring fabrics, the roller F, carrying the movable pin L, in combination with the tape N, having apertures *f* and slits *d*, substantially as set forth.

8. The roller F, carrying the pin L, in combination with the series of tags bearing consecutive indicating-marks, and the rollers X, the tags having an adhesive agent on one side and arranged to move against the dampened rollers X, substantially as set forth.

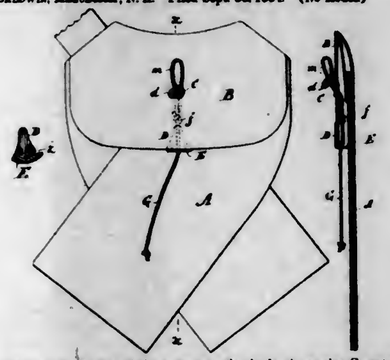
9. The casing E, containing the tape N, having slits *d* and apertures *f*, the guides O P, guides S, spring T, having lugs V W, the rollers X, and guide Y, in combination with the roller F, carrying the pin L, substantially as set forth.

327,541. METHOD OF MAKING ILLUMINATING-GAS. Walter P. Elliott, New Brunswick, N. J. Filed Jan. 12, 1885. (No model.)



Claim.—The improvement in the method of making illuminating-gas, consisting in charging a generating-furnace with fuel, in blowing up the furnace, and passing the products of combustion through the retort-chamber and around the retorts, in then decomposing steam in the furnace and passing the resulting water-gas through the retort-chamber and around the retorts, in admitting hydrocarbon liquid directly into the retort-chamber and vaporizing it around the retorts, whereby the vapor as soon as formed is taken up by the water-gas, and in delivering both the gas and the products of distillation from those ends of the retort-chamber and retorts which are most distant from the generating-furnace, where they mingle together, substantially as herein described.

327,542. NECKTIE OR CRAVAT. Francis J. Perrin and Fred C. Baldwin, Manchester, N. H. Filed Sept. 30, 1884. (No model.)



Claim.—1. In a necktie or cravat, the body A, eyelet C, catch D, ring *d*, and cord G, combined and arranged to operate substantially as set forth.

2. In a necktie or cravat, the body A, having the flap B, provided with the eyelet C, the cord G, provided with the loop *m*, and the catch D, provided with the slot *z*, combined and arranged to operate substantially as described.

3. In a necktie or cravat, the cord G, having a loop or noose at its upper end, in combination with shield or flap B, provided with the eyelet C, a catch or means for securing the cord when the tie or cravat is in position for use, and means for preventing the loop or noose of the cord from being accidentally drawn through said eyelet, substantially as set forth.

4. The improved necktie or cravat herein described, the same consisting of the body A, flap B, provided with the eyelet C, cord G, provided with the loop *m* and ring *d*, and the catch D, provided with the slot *z*, substantially as set forth.

327,543. MANUFACTURE OF FURS. Henry Fontain, Lyons, France. Filed June 1, 1885. (No model.) Patented in France Aug. 8, 1884, No. 163,695; in Belgium Apr. 24, 1885, No. 63,621; in England Apr. 27, 1885, No. 5,106; and in Italy May 9, 1885, XXXVI, 275.



Claim.—As a new article of manufacture, fur the surface of which is figured and different in appearance in different places, the same being produced by the pressure of dies, substantially as specified.

327,544. NAIL-MACHINE. Franklin A. Gleason, Brooklyn, N. Y. Filed Oct. 15, 1884. (No model.)

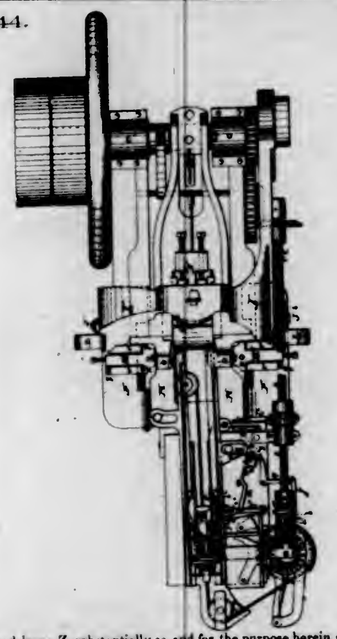
Claim.—1. In a nail-machine, the combination of the shaft A with the clutch C and loose pinion *d*, the clutch C being constructed of the rings *a* and *b*, spring *f*, pivoted pawl *h*, and supporting projection *m*, and the pinion *d*, having tooth *l*, substantially as described.

2. The clutch C, composed of the rings *a b*, spring *f*, and pivoted pawl *h*, and which has the tongue *c* on the ring *b*, in combination with the collar *e*, having recess to receive said tongue, substantially as described.

3. The combination of the eccentric *k* with the rod 15, box 17, having internal shoulders, rod 16, having collars 19, spring 18, and elbow *r²*, substantially as and for the purpose herein shown and described.

4. The combination of the vibrator B with the lever X, pivoted thereto, said lever having arm *b²* and tooth *c²*, and with the lever Y, having forked piece *d²*, nipper-slide H, having cam *g²*, nipper-jaw *n*, hav-

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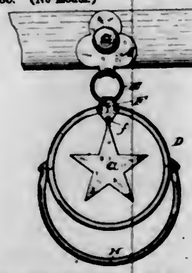
ing pin f^3, and lever Z, substantially as and for the purpose herein shown and described.

5. The combination of the pivoted heading-lever F with mechanism, substantially as described, for swinging it on its pivot, said lever having ribs *r*, and with the socket E, header D, and frame M, having perforated guide portion *t*, substantially as and for the purpose herein shown and described.

6. The combination of the driving-shaft G, cutter-lever I, and rotary pivot J, having projection *s*, with the double hook L, header-lever F, socket E, header D, and perforated frame portion *t*, substantially as herein shown and described.

7. The combination of the pivot J and its cam *s*, having ball-socket, with the double hook L, having ball projection *u*, and with the heading-lever F, substantially as herein shown and described.

327,545. SHADE-PULL. Arthur F. Gregory, New York, N. Y. Filed Aug. 5, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, of the hanger, the pendent ring, the ends of which are riveted to a clip, and the link for suspending the ring by the clip from the hanger.

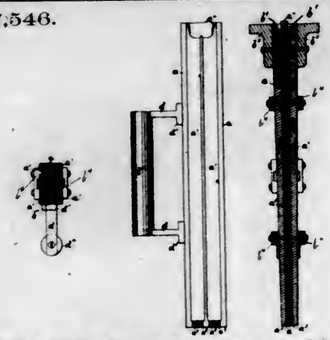
2. The combination, substantially as before set forth, of the ring and the clip to which the ends of the ring are riveted, and which has a stud-pin within the opening of the ring for the suspension of an ornament

327,546. MOLD FOR CASTING PRINTERS' LEADS. Hans C. Hansen, Boston, Mass. Filed Apr. 14, 1884. (No model.)

Claim.—1. In combination, the side molds, *b b*, and the central mold, *a*, having one or more recesses, *a'*, on its opposite faces, and a handle, *d''*, secured to its front edge, as and for the purpose set forth.

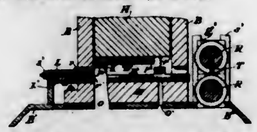
2. In combination, the central mold, *a*, having one or more recesses, *a' a'*, on each side, and an upper dividing-edge, *a''*, projecting above the top of the side molds, with the side molds, *b b*, and the flaring mouths

327,546.



b' b' in their upper ends, substantially in a manner and for the purpose set forth.

327,547. MACHINE FOR MAKING METAL SEALS. Henry K. Harker, Cincinnati, Ohio, assignor to W. P. Bruce and H. C. Bruce, both of same place. Filed Nov. 24, 1884. (No model.)



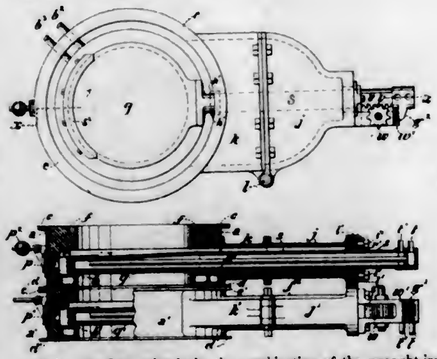
Claim.—1. In a machine for making seals of the kind described, one or more feed-rolls arranged at the side of the machine and provided (one or both) with a projecting lip, T, of elastic substance, arranged to rotate with such roll and intermittently feed the lead rope, operated by and in constant relation to the mechanism for reciprocating the shear and punch heads, substantially as and for the purpose described.

2. The reciprocating head provided with one or more pairs of punches for forming the wire-holes and with the cutting-knife and push-block for cutting off and pushing out the prepared seal and having attached the upper portion of the circular guide-channel, arranged as and for the purposes set forth.

3. The adjustable abutment-block in two parts with interposed elastic cushion, as and for the purposes set forth.

4. The combination of abutment-block L in two parts with interposed cushion *r*, the reciprocating head H, having shear-knife K, push-block P, and punches *p'* thereon, the guide-channel in two parts, D' D^2, and the intermittent feed-rolls R R', having one or more projecting elastic lips, T, on the peripheries thereof, arranged substantially as and for the purposes set forth.

327,548. VALVE. John M. Hartman, Philadelphia, Pa. Filed Aug. 22, 1884. (No model.)



Claim.—1. In a valve-body, the combination of the wrought-iron casing *a*, the annular flanged top and bottom pieces, *c d*, respectively, and the flanged ring *b*, mounted upon said bottom piece, said elements being arranged substantially as set forth.

2. The combination, with a pair of slide-valves arranged consecutively in a continuous passage, of an intermediate escape-orifice and a closing-door applied thereto in such manner as to open under light pressure, substantially as and for the purposes set forth.

3. The combination, with the valve-body, of the nozzle *k*, the cap *j*, and the hinge *l* intermediate between said nozzle and cap.

4. A hollow slide-valve adapted to move in horizontal bearings, and having the internal surfaces of its back and face inclined, so as to converge toward the point farthest from the stem, in combination with an inlet-pipe for water, and a hollow stem whose internal diameter is equal to the greatest vertical height of the interior of said valve-disk, whereby the trapping of steam within said disk is prevented, substantially as set forth.

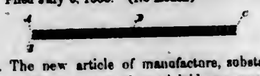
5. The combination, with the hollow cylindrical valve-stem *s*, having an internal water-supply pipe, *t*, of the teeth *v v*, the periphery of whose ends coincides with that of the stem, the packing-ring *n'*, whose width is not less than the distance between two teeth, and the pinion *w*, engaging with said teeth, the whole arranged and operating substantially, as set forth.

6. The combination, with the valve-disk, of the hollow shield s^2, applied around the end thereof, and projecting beyond the valve proper, substantially as and for the purposes set forth.

7. The combination, with the valve-stem, of the gland *r'*, having a sleeve, *u*, which is of less diameter than the opening in the cap, and having laterally-projecting eyes *l'*, the screw-studs *i'*, whereby said gland is secured to the cap, the stems of said studs being of much smaller diameter than said eyes, and the inclined set-screws *m'*, bearing upon said studs, whereby the adjustment of the gland is effected, substantially as set forth.

8. The combination, with the gland, of the packing-ring *n'*, constructed in lapping segments, and the radial set-screws *o'*, arranged to bear upon said segments, substantially as set forth.

327,549. MANUFACTURE OF CHAIR-BACKS, &c. Herbert J. Harwood, Littleton, assignor to the Harwood Manufacturing Company, Leominster, Mass. Filed July 6, 1885. (No model.)



Claim.—1. The new article of manufacture, substantially as described, consisting of two veneers of wood laid one upon the other and cemented together and having the grain of one crossing that of the other, a covering embossed or pebbled and colored and cemented upon the outer surface of one of such veneers, all being essentially as set forth.

2. A new article of manufacture, consisting of two veneers of wood laid flatwise one upon the other and glued or cemented together with the grain of one crossing that of the other, a covering embossed or pebbled and glued or cemented on the outer surface of one of such veneers, and a water-proof finishing-covering applied to the pebbled surface, all being essentially as set forth.

327,550. SPINNING RING AND TRAVELER. Horace L. Hayden, Boston, Mass., assignor of one-half to Henry C. Goodspeed, same place. Filed Mar. 18, 1884. (No model.)

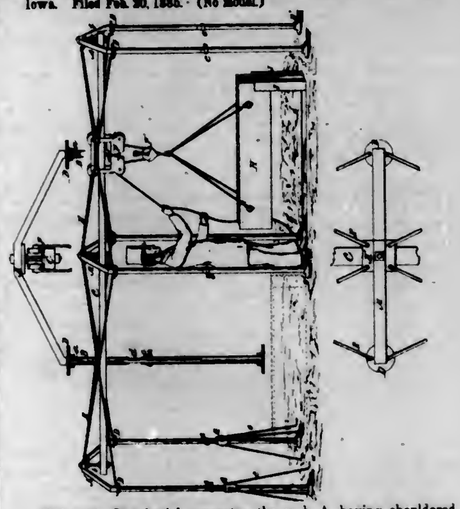
Brief.—The traveler consists of an elongated body of soft metal carrying several hardened steel hooks, whereby the friction of the yarn upon the traveler may be varied. The traveler runs in an annular race formed between an inner solid and outer adjustable ring.



Claim.—1. The combination of the inner and outer rings, the latter being adjustable, the said rings forming between them an annular race enlarged at the bottom, and a traveler composed of a body fitting in the race and a series of hooks, all substantially as described.

2. In combination with a traveler-ring having an annular race, as described, a traveler consisting of a body of soft metal and having hardened-steel hooks, as set forth.

327,551. BURIAL APPARATUS. John C. Herrmann, Cedar Rapids, Iowa. Filed Feb. 20, 1885. (No model.)



Claim.—1. In a burial apparatus, the arch A, having shouldered ends *a' a'*, in combination with tubular posts B B, substantially as shown and described.

2. In a burial apparatus, the arch A, having flange A', with holes to receive the ends of guy-rods, and shouldered ends *a a*, adapted to slip into tubular posts, substantially as specified.

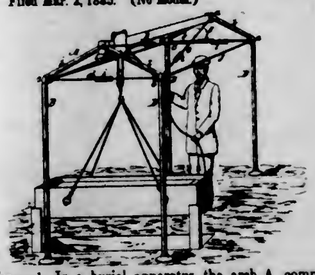
3. In a burial apparatus, the adjustable tubular post B, provided with sleeve G and braces *e e*, substantially as and for the purpose set forth.

4. In a burial apparatus, the combination of arches A A A, having flanges or lugs A', the tubular posts B B, having flanges D' D', and the guy-rods E E, having angular or hooked ends adapted to slip into the holes in said flanges, substantially as specified.

5. In a burial apparatus, the combination of one wide arch and two narrower arches, constructed substantially as described, and a longitudinal rail, C, depending from the center of said arches, and adapted to serve as a support and track for a block-and-tackle carriage, substantially as set forth.

6. The described burial apparatus, consisting of one wide arch and two narrower arches, having adjustable and removable tubular posts, and provided with flanges A' A' and D D, the guy-rods E E, having angled or hooked ends, the removable rail C, depending from the arches by central studs, *b b b*, a carriage, F, adapted to move from end to end of the rail or track and provided with block and tackle, and the guides J J, substantially as and for the purpose set forth.

327,552. BURIAL APPARATUS. John C. Herrmann, Cedar Rapids, Iowa. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a burial apparatus, the arch A, composed of the center piece or key, *a*, having a socket to receive the end of the rail D, and side horns adapted to slip into the ends of the side pieces, *b b*, the corner-blocks *c c*, connected with posts B, and having horns to retain the lower ends of the side pieces, *b b*, in combination with said side pieces, substantially as specified.

2. In a burial apparatus, the combination of center piece, *a*, side pieces, *b b*, corner-blocks *c c*, tie-rod *d*, and posts B B, substantially as set forth.

3. In a burial apparatus, the combination of two arches, constructed substantially as specified, with the center rail, D, and the parallel tie-rods *f f*, substantially as set forth.

4. In a burial apparatus, the combination of two arches, constructed substantially as shown, with the diagonal guy-rods *e e*, having tightening-nuts *i i*, and the center rail, D, substantially as set forth.

5. In a burial apparatus, the combination of two arches, constructed substantially as specified, with the center rail, D, parallel tie-rods *f f*, and diagonal guy-rods *e e*, made adjustable, all constructed, arranged, and adapted to operate substantially as specified.

6. In a burial apparatus, the center piece, *a*, having a socket for the end of the rail D, lugs for the guy-rods *e e*, and horns at an angle corresponding with side pieces, *b b*, and adapted to slip into their ends, substantially as set forth.

7. In a burial apparatus, the corner-blocks *c c*, having an upwardly-extending horn at an angle corresponding with the side pieces, *b b*, and adapted to slip into the ends thereof, a downwardly-extending portion, whereby it is connected with the post B, and lateral lugs to receive the ends of connecting-rods *d e f*, substantially as set forth.

327,553. PAPER-CLIP. Isaac W. Heysinger, Philadelphia, Pa. Filed Apr. 14, 1885. (No model.)



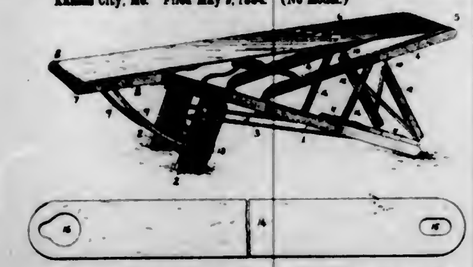
Claim.—1. A spring paper or other clip consisting of the opposite clamping-jaws A and C, provided with the detachably-pivoted bearing C^2 A^1, the spring-supporting sockets a^2 a^2, the transverse spring B, supported at its opposite ends in the said sockets a^2 a^2, and the heel or support A^1, impinging, under pressure, against the middle of said spring, the whole constructed to operate substantially as and for the purposes described.

2. In a paper-clip consisting of the base A, vibrating clamping-jaw C, provided with jaw C^1, hood C^2, and opposite thumb-lever C^3, and spring B, one or more pointed pins, D, projecting upwardly from the said base, and adapted to perforate and hold in place papers, &c., when forced down upon the said pins by the compression of the jaw C, each of said pins D being covered and protected by the blades C^2, or their equivalent, formed upon and integral with the said jaw C^1, substantially as described.

3. A paper-holding clip consisting of a fixed jaw, adapted to rest, as a base, upon a table, and a centrally-pivoted vibrating upper jaw provided with a broad-faced clamping-lip at its forward extremity, and a thumb-lever at its rear, together with one or more flat plate-springs supported in terminal sockets at one end, attached to one jaw, and impinged upon at its center by a heel or support upon the opposite jaw, said spring or springs occupying a slot or space sufficiently large to permit the supporting-pins of one jaw to be hooked into the open journal-boxes of the other, so that the whole shall be held firmly in place, and pressure applied to the clamping-jaw by the tension of the said spring, substantially as described.

4. A paper-holding clip consisting of a fixed jaw, adapted to rest upon a table or be attached to a tablet or board, and a centrally-pivoted vibrating spring clamping-jaw attached thereto, supported by a pivoted bearing in one jaw seated in one or more open journal-boxes in the other, and held in place by the upward pressure of a flat plate-spring supported at its ends in sockets upon one jaw, and impinged upon at its center by a heel or support upon the other jaw, the said spring extending transversely across the base, and having its terminal supports beyond the side lines of the said pivoted bearings of the clamping-jaw, substantially as and for the purposes shown and described.

327,554. CONVERTIBLE RECLINING-CHAIR. Nuhon N. Horton, Kansas City, Mo. Filed May 9, 1884. (No model.)



Claim.—1. In a reclining-chair, the combination, with a frame, 1, and its legs 2, of a hinged foot-rest, 8, notched braces 9, studs projecting from the legs 2, and buttons or detents 13, pivoted to said legs and engaging the braces 9, substantially as and for the purposes set forth.

2. In a reclining-chair, the combination of a frame, a hinged foot-rest braced and held in position, substantially as described, and a hinged back supported by suitable braces, with a pair of brace-rods, each having an elongated slot at one end and a key-hole slot at the other for engagement with projections from the frame and back of the chair, as set forth.

327,555. PAPER BOX. Henry A. House, Bridgeport, Conn., assignor to the Compressed Paper Box Company, same place. Filed Dec. 8, 1883. (No model.)



Claim.—1. A box-body consisting of a cup-shaped section having a hollow bead, *a*, near the lower end, and a cylindrical section, B, confined within the flange of the outer section, substantially as set forth.

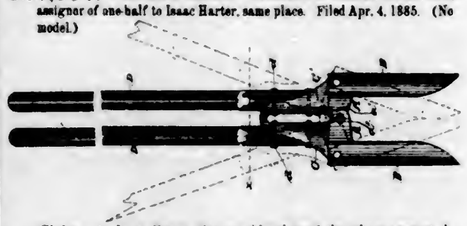
2. The annular inner section of a box-body, consisting of one piece of material drawn to a tapering form in cross-section, substantially as set forth.

327,556. METHOD OF FINISHING PICTURE-FRAMES. Henry C. Johnson and Julius Kohler, Chicago, Ill., assignors of one-half to Charles O. Baxter, St. Louis, Mo. Filed Jan. 13, 1885. (No specimens.)

Claim.—1. The process of finishing moldings, picture-frames, and other articles having raised ornamental designs thereon, which consists in applying to the molding or other article metal leaf, as usual in gilding, then applying to the surface a dark-colored mixture, and then wiping or cleaning off the colored coating from the raised parts, leaving a dark antique ground and raised portions having some metallic color, substantially as and for the purposes specified.

2. The process of finishing moldings, picture-frames, and other articles having raised ornamental designs thereon, which consists in applying to the molding or other article metal leaf, as usual in gilding, then applying to the surface a dark-colored mixture, and then wiping or cleaning off the colored coating from the raised parts, then coloring all or portions of the raised parts in imitation of one or more metals, substantially as and for the purposes specified.

327,557. POST-HOLE DIGGER. Frederick E. Kohler, Canton, Ohio, assignor of one-half to Isaac Harter, same place. Filed Apr. 4, 1885. (No model.)



Claim.—1. In a digger, the combination of the ring-segment A, provided with an inward expansion and socket-piece, and the ring-segment A′, provided with a corresponding inward expansion and sockets C′, said sockets lying in the same transverse plane, and the hinge secured to said ring-segments independently of the sockets, as described.

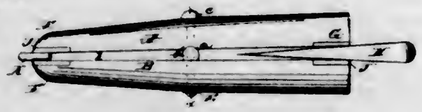
2. The combination of a ring-segment, A, having the inward expansion, the socket C, provided with an offset, F, the ring-segment A′, having an inward expansion, and the sockets C, provided with an offset, F′, the ring-sections being pivoted together, substantially as set forth.

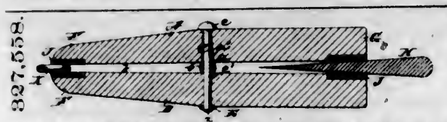
3. The combination of the ring-segments A A′, hinged directly together and adapted to carry the shovels, each being provided with a handle-receiver situated on a vertical line inside of the lines of the shovels and arranged transversely opposite to each other across the hinge-line, whereby the handles are, when closed, comparatively close together without being in contact or passing each other, substantially as set forth.

4. In a digger, a connecting device between the handle and shovel consisting of a ring-segment, A, provided with a hinge-holder or pivot-holder at the end and with an inward expansion, as at *a*, between the ends carrying an upward-projecting handle-socket.

327,558. HOLDING-TOOL FOR JEWELERS AND ENGRAVERS. August Kuder, Jersey City, N. J. Filed Mar. 12, 1885. (No model.)

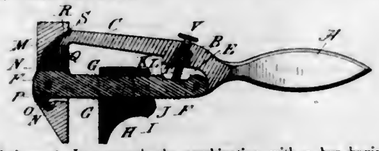
Claim.—1. A tool for engravers and similar artisans, embodying in its construction a pair of levers provided at each end with pads or gripping-surfaces adapted to be alternately or at will brought into position for operation by means of a wedge, substantially as shown and described.





2. A tool for engravers and similar artisans, embodying in its construction a pair of gripping-levers pivoted on a transverse bar and held in position by a pin passing through the same and a wedge for operating and retaining the said levers firmly in a holding or gripping position, substantially as shown and described.

327,559. WRENCH. Albert Langstrom, Council Bluffs, Iowa. Filed July 7, 1885. (No model.)



Claim.—1. In a wrench, the combination, with a bar having a sliding jaw secured thereon, of an automatically tilting jaw pivoted thereto, substantially as set forth.

2. In a wrench, the combination, with a pivoted bar and a sliding jaw, of an automatically tilting jaw pivoted to said bar, substantially as set forth.

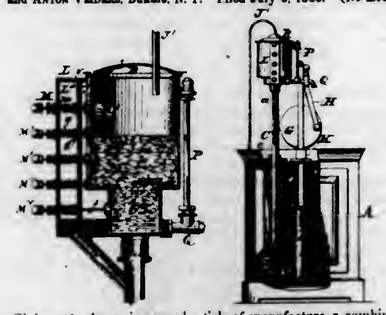
3. In a wrench, the combination, with a pivoted or hinged bar and a sliding jaw, of an automatic tilting jaw pivoted to said bar, and devices for locking the said tilting jaw, substantially as set forth.

4. In a wrench, the combination, with a pivoted bar and a sliding jaw, of a tilting jaw pivoted to the bar, said jaw being recessed and provided with a spring adapted to impinge against the jaw and bar, substantially as set forth.

5. In a wrench, the combination, with a pivoted bar and an adjustable jaw, of an automatic tilting jaw, a lever connected therewith and a spring inserted between the bar and lever, substantially as set forth.

6. In a wrench, the combination, with a recessed handle, a bar pivotally secured therein, and a sliding jaw secured on said bar, of an automatically tilting jaw pivoted or hinged to the bar, a lever connected with the tilting jaw, and a set-screw connected with the lever and adapted to impinge against the bar and lock the tilting jaw against movement, substantially as set forth.

327,560. MEASURING DEVICE FOR OIL-TANKS. Jean P. Lauer and Anton Veiders, Buffalo, N. Y. Filed July 6, 1885. (No model.)

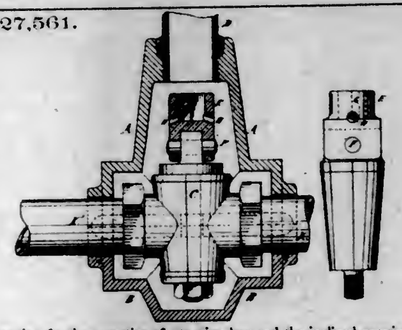


Claim.—1. As an improved article of manufacture, a combined oil-tank and measuring device, consisting, essentially, of a suitable tank, A, having a stationary pump, B, and suitable mechanism for operating the same, the oil-conducting-pipe J, hollow standard C′, carrying on its upper end the receiving-vessel C, provided with contracted portion C″, a series of escape-valves located within a double chamber attached to said receiving-vessel, and a discharge-duct from the said double chamber through the hollow standard, the whole being constructed and organized substantially in the manner as and for the purpose stated.

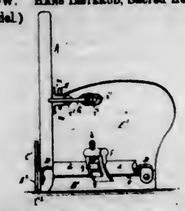
2. The combination, with the reservoir C, having the contracted portion C″, of the double valve-chamber L′ L″ and a series of valves, M, and a suitable return-pipe, the whole being constructed and combined in a manner substantially as and for the object stated.

327,561. CASING FOR STREET-COCKS IN GAS AND WATER SERVICE. Edward Lindsley, Cleveland, Ohio. Filed Dec. 17, 1883. (No model.)

Claim.—In combination with the casing formed of the upper and lower sections, A B, and the tube D, the key-seat having the upper opening for the reception of a turning-key and the inclined openings extending from the said opening.



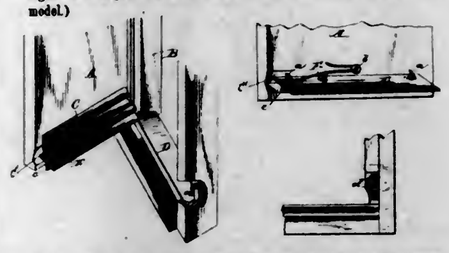
327,562. PLOW. Hans Lieteriud, Sacred Heart, Minn. Filed Mar. 2, 1885. (No model.)



Claim.—1. A plowshare having a lip, *b*, and lug *e* attached thereto, in combination with a mold-board, E′, having plate *d* and lug *g*, said plate *d* adapted to overlap said lip *b*, and a yoke-frame, F, provided with set-screw *h*, and adapted to be attached to said lugs, substantially as set forth.

2. The combination of share B′, having lip and lug *b e*, mold-board E′, having plate and lug *d g*, yoke-frame F, having set-screw *h*, beam A, and adjustable perforated lever G, connecting said mold-board and beam, substantially as and for the purpose set forth.

327,563. WEATHER-STRIP. Austin Lowe, Minneapolis, Kans., assignor to George W. Barney, Warsaw, Ind. Filed May 15, 1884. (No model.)



Claim.—The door-frame having a stop, *d*, secured thereto, in combination with the door recessed, as shown at C′, and provided with hooks *a a*, carrying a strip, E, and torsion-spring F, consisting of a single bar looped at one end and attached centrally to the door, the opposite end being bent, so as to embrace the strip E and project beyond the same, so as to contact with the stop *d*, substantially as shown, and for the purpose set forth.

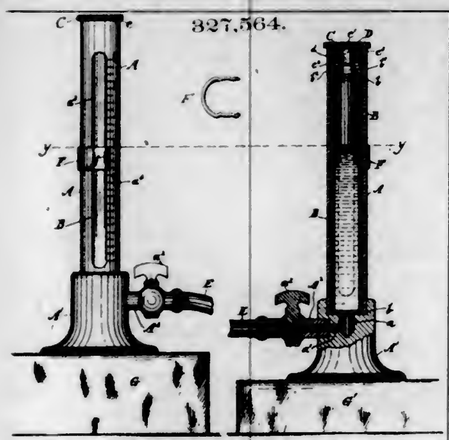
327,564. HYDROSTATIC LEVELING-INSTRUMENT. James Macdonald, New York, N. Y. Filed June 11, 1885. (No model.)

Claim.—1. The combination, in a hydrostatic leveling-instrument, of the standards A A, united by means of a flexible tube, ring-clasps or indicators F F, one or more stop-cocks, a^2 a^2, and conoidal cup-shaped valves D D, with the perforated tops C, substantially as and for the purposes specified.

2. In a hydrostatic leveling-instrument, the conoidal cup-shaped valves D D, provided with supports for loosely sustaining the same in suitable positions respectively near perforations or vents in the tops of the standards, whereby a pressure of liquid within one or the other of said valves may automatically close the vent, substantially as described.

3. The combination, with the standards, of a hydrostatic leveling-instrument, of the perforated cap C, valves D D, and a perforated plate, c^2, for sustaining said cup-valves loosely in an upright position, substantially as specified.

327,564.



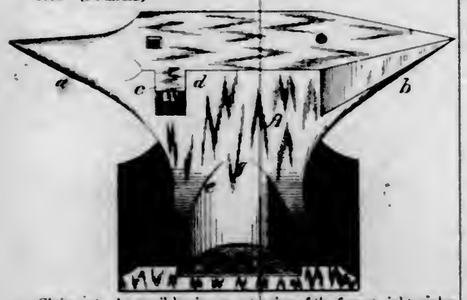
4. The combination of the perforated caps C C, cups D D, and plates c^2 c^2, each of the latter being provided with one or more air-passages at the side of and adjacent to said cups, substantially as and for the purposes specified.

327,565. NECKTIE HOLDER AND FASTENER. Albert G. Mack, New York, N. Y., assignor to Charles B. Poor, East Orange, N. J. Filed Mar. 23, 1885. (No model.)



Claim.—A scarf retainer or fastener consisting of a loop for engaging with the collar stud or button provided with a guard, *d*, a pin, *b*, adapted to engage and fasten the neckband of the scarf, and a pin, *a*, bent at a right angle with the pin *b* for securing the device in place on the scarf, substantially as described.

327,566. ANVIL. John Mackert, Springfield, Ohio. Filed Dec. 15, 1884. (No model.)



Claim.—1. An anvil having an extension of the face at right angles with the body part formed by a bracket-shaped piece overhanging the base and integral with said body part, the face of said bracket-shaped piece being in the same plane with the face of the latter, as and for the purpose set forth.

2. The combination, in an anvil, of the body having a round horn at one end and a square horn at the opposite end, of a part projecting at right angles from the body and having its face in the same plane with the face of the latter, substantially as and for the purpose set forth.

3. In an anvil, a staving or upsetting plate formed on one or both sides of the same with vertical side walls, a part of the latter being in line with the side wall of the body of the anvil, as and for the purpose set forth.

4. In an anvil, the combination of one or more stave-plates formed in the side or sides of the same and a bracket-shaped piece extending from the top part at right angles with the face of said extended part in the same plane with the face of the body part and formed in a single piece with the latter, as and for the purpose hereinbefore set forth.

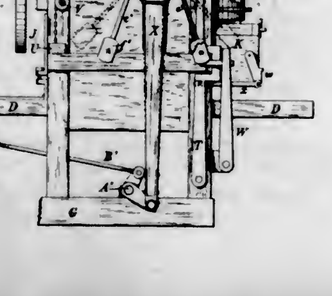
5. In a smith's anvil, a round horn at one end, a square horn at the opposite end, a stave-plate formed in either side of the same with its face parallel with the base, a bracket-shaped part projecting at right angles from the body with its face in the same plane with the anvil-face, and the latter having a round hole at one end and a square hole at the other, as set forth.

327,567. PEPTONE-PEPSIN. Morris B. Manwaring, Bayonne, N. J., assignor to the New York and Chicago Chemical Company, of New York. Filed May 11, 1885. (Specimens.)

Claim.—1. The method of producing peptone-pepsin by the action of a solution of pepsin on an acidulated mixture of coagulated egg albumen with water, whereby a peptone-pepsin is produced, which is thereafter reduced to scale form by evaporation in the manner described.

2. The improved peptone-pepsin consisting of a composition in scale form of pepsin with peptonized egg albumen.

327,568. VAPOR-STOVE. Frederick Marquart, Cleveland, Ohio. Filed Aug. 30, 1884. (No model.)



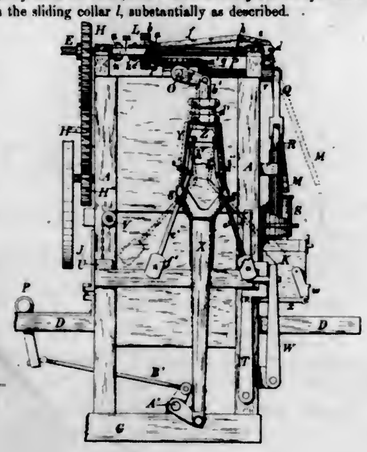
Claim.—In a vapor-stove, the combination, with the supply-pipe, of the generator and burner consisting of a ring, a commingling-chamber arranged within said ring and provided with a central tube or tubes, a perforated diaphragm surrounding said tube and forming the top of said commingling-chamber, a tube leading from the jet-orifice to said commingling-chamber, and a tube leading from the generator to the jet-orifice, substantially as described.

327,569. BRICK-MACHINE. Gaylord Martin, Milwaukee, Wis. Filed Dec. 6, 1884. (No model.)

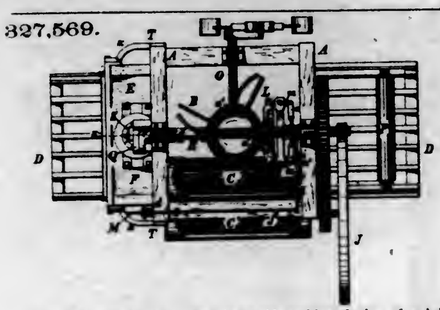
Claim.—1. In a brick-machine, a clutch mechanism consisting of the lever M, connecting-bar *f*, lever *g*, sliding collar *l*, eyebolts *o o'*, toggle-links *n n'*, levers *m m'*, driving-arm *k*, friction-shoes *c c'*, and friction-wheel *b* on the driving-shaft, substantially as and for the purposes set forth.

2. In combination with the press-box K of a brick-machine, the reciprocating plunger F, provided with the cut-off lip *v*, and having its lower surface inclined upward and outward for a distance greater than one-half its width, substantially as described.

3. In combination with the driving-shaft of a brick-machine, the friction-clutch L, consisting of the friction-wheel *b*, friction-shoes *c c'*, arranged to act on the periphery of the wheel, levers *m m'*, driving-arm *k*, keyed on the shaft, links *n n'*, and adjustable eyebolts *o o'*, inserted in the sliding collar *l*, substantially as described.



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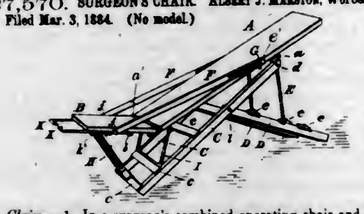
4. The combination, with the mold-pushing device of a brick-machine, of the divided pitman X, the parts of which are connected together by a weighted lever and link, substantially as and for the purposes set forth.

5. In a brick-machine, the divided pitman X, consisting of the sliding rod *b'*, frame Y, weighted levers *e' e'*, and links *h h'*, substantially as described.

6. The combination, in a brick-machine, of the pug-mill B, driven from the main shaft E by bevel-gears *a a'*, and the crushing-rollers C C', operated from the main shaft by a suitable train of gearing, substantially as described.

7. The combination, in a brick-machine, of the press-box K, stone-door K', arms *x x*, levers T T, pulleys V V, chains *l' l'*, and weights U U, substantially as described.

327,570. SURGEON'S CHAIR. Albert J. Marston, Worcester, Mass. Filed Mar. 3, 1884. (No model.)

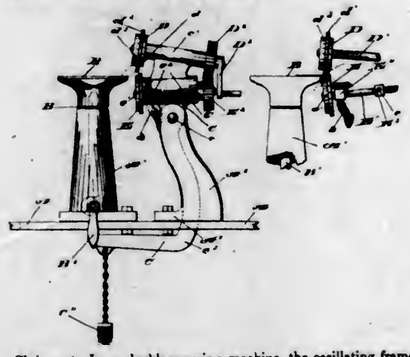


Claim.—1. In a surgeon's combined operating chair and table, the combination of the parts A B, hinged at their inner ends and covered on top with canvas, woven wire, or similar material, with the long legs C C, cross-pieces c, short legs D D, bail-brace E, arms F F, studs G, thumb-screws *c'*, supporting-braces H, and bail-brace I, constructed, hinged, and fastened together, substantially as shown and described, for the purposes stated.

2. The combination of the parts A B with the arms F F, provided with longitudinal slots and holding thumb-screws, long legs C C, provided with cross-pieces c, short legs D D, provided with notches *e*, and suitable holding-buttons, brace H, provided with a longitudinal slot and thumb-screw, brace I, and brace E, substantially as and for the purposes set forth.

3. The combination of the parts A B with adjustable foot-rests K K, their holding-buttons *b*, guides k^2, the supporting-frame, slotted arms F F, and thumb-screws *c'*, substantially as shown and described.

327,571. DOUBLE-SEAMING MACHINE. Robert W. Maske, Chicago, Ill. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a double-seaming machine, the oscillating frame C and the folder-disks D and E, journaled therein, in combination with the work-bed B, vertically adjustable at will to work in conjunction with either of the flanges of the folder-disks, substantially as and for the purpose set forth.

2. In a double-seaming machine, the folder-disks D and E, the latter having the horizontal folding-flange *e'*, and the former having the horizontal flange d^3 and the vertical flange d^3, whose rim *d'* is adapted to bear against the horizontal flange *e'* of the disk E, in combination with the bed B and means for adjusting its height at will to work in conjunction with either the flange d^3 and d^3 or the flange d^3 and *e'*, substantially as set forth.

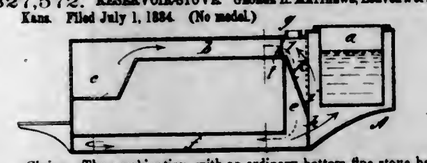
3. In a double-seaming machine, in combination with the bed, the folder-disk frame having the bearings for the spindles of the folder-disks, the folder-disks having their spindle-bearings in said frame, and provided with the folder-flanges adapted to compress the seam between them, and between one of them and the work-bed, a bearing for one of said folder-disk spindles adapted to yield toward the axis of the other disk, means for advancing said frame toward the bed, and a rigid stop on the standard located and adapted to arrest the yielding bearing as the frame advances and force the disks together, substantially as and for the purpose set forth.

4. In a double-seaming machine, in combination with the bed, the oscillating folder-frame, and the upper folder-disk journaled therein, and means for rocking said frame on its pivot to move said folder-disk toward the bed, the lower folder-disk provided with the bearing-box adapted to slide in the frame toward the axis of the upper disk, and a rigid stop to arrest said box as the frame moves toward the bed, substantially as set forth.

5. In a double-seaming machine, in combination with the bed and means for raising and lowering it, the oscillating folder-disk frame pivoted below and outward from the edge of the work-bed, the folder-disks having their bearings in said frame and adapted to compress the seam between them, and the lower-disk spindle provided with a bearing-box adapted to slide in said frame to and from the axis of the upper disk, substantially as set forth.

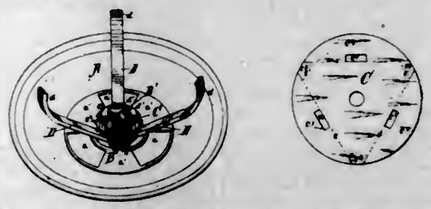
6. In a double-seaming machine, in combination, the folder-disk frame C, the folder-disk journaled in fixed bearings therein, the folder-disk D, journaled in the bearing-boxes E^3 and E^4, the former pivoted to the frame C and the latter sliding therein toward and from the axis of the disk D, and the spring E^5, located and adapted to force said box E^4 away from the axis of the disk D, substantially as and for the purpose set forth.

327,572. RESERVOIR-STOVE. George H. Matthews, Leavenworth, Kans. Filed July 1, 1884. (No model.)



Claim.—The combination, with an ordinary bottom-flue stove having an opening, *h*, in its back plate, *i*, in line with flue *f*, and a plate, *k*, above the same, of the extension A, secured to or formed on the back end of the stove, and a reservoir suspended in the said extension, a space being formed between the extension and the sides and bottom of the reservoir whereby the products of combustion, instead of passing direct from the flue *f* to the outlet, as in an ordinary stove, may be directed through opening *h*, under plate *k*, around the reservoir, and out through passage *l* above the plate *k*, substantially as set forth.

327,573. FLUE-STOP. Warren McArthur, Chicago, Ill. Filed July 25, 1884. (No model.)



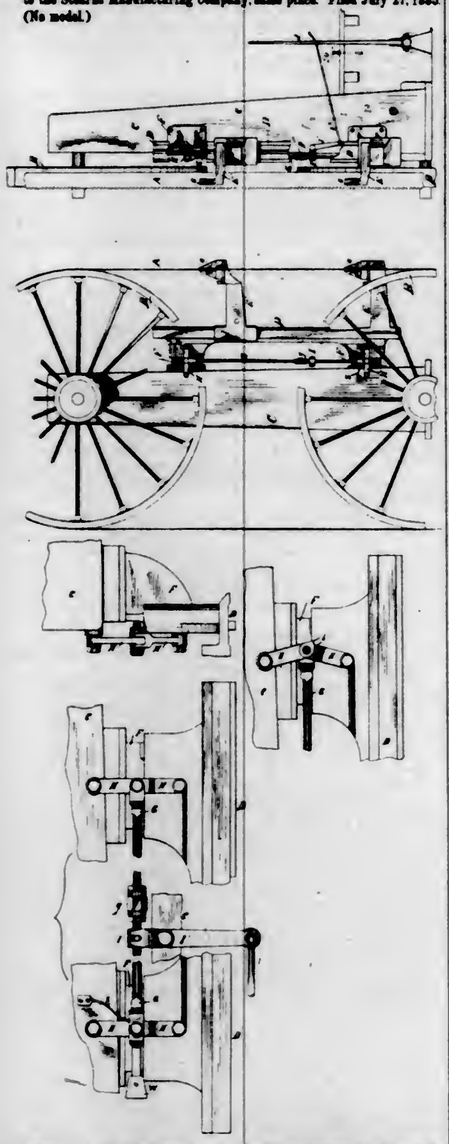
Claim.—1. The flue-stop furnished with swinging falcrumed retaining-levers D and the screw or equivalent means for operating said levers, substantially as specified.

2. The combination of the disk A, stamped with a cavity, a^2, the nut B, the screw B' B^2 B^3, and the bent levers or pivoted swinging arms D, substantially as specified.

3. The combination of the disk A and the plate C, having the apertured turned-up portions c^2 and the lip c^4, with the arms D and their operating device, substantially as specified.

4. The combination, with the disk of a fine-stop, of the plate C, secured to said disk and having shoulders, and a register-valve held to the disk by said shoulders, substantially as specified.

327,574. BAND-SAW MILL. James S. Miller, Erie, Pa., assignor to the Stearns Manufacturing Company, same place. Filed July 27, 1885. (No model.)

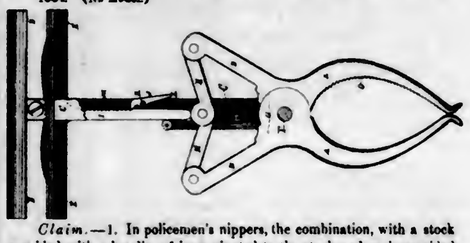


Claim.—1. In a band-saw saw-mill, the combination, substantially as described, of a laterally-movable part which guides the saw-toggles H H and H H, connecting said laterally-movable part with a fixed part of the frame, and a rod connecting said toggles so they will move simultaneously.

2. In a band-saw saw-mill, the combination, substantially as set forth, of the post C, the guide-column D, mounted and movable on the ways F', which extend from said post, the toggles H H and H H, connecting said guide-column with said post, the rod G, connecting said toggles so they will move simultaneously, and the lever I', for moving said rod.

3. In a band-saw saw-mill, the combination, substantially as set forth, of the main post C, having ways F F extending therefrom, the guide-column D, mounted on said ways, toggles H H and H H, connecting said guide-column with said post, the rod G, connecting said toggles so they will move simultaneously, and the levers I' I², link *i*, and treadle I⁴, for moving said rod G.

327,575. POLICEMAN'S NIPPERS. John M. Mitchell, Waterbury, assignor of one-half to George W. Jepson, Meriden, Conn. Filed Oct. 13, 1884. (No model.)



Claim.—1. In policemen's nippers, the combination, with a stock provided with a handle, of jaws pivoted to the stock and each provided with an arm, toggle mechanism, and connections for operating the jaws through their arms, and devices for opening and for locking the jaws, substantially as set forth.

2. In policemen's nippers, the combination, with a stock provided with a handle having a movable section, of jaws pivoted to the stock and each provided with an arm, and operating mechanism connecting the arms of the jaws and the movable section of the handle, substantially as set forth.

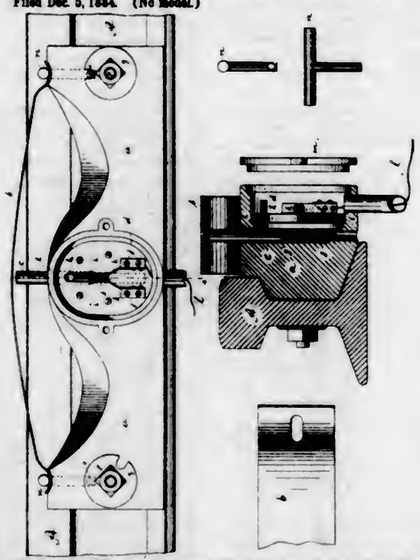
3. In policemen's nippers, the combination, with a stock provided with a handle, of jaws pivoted to the stock and each provided with an arm, mechanism for closing the jaws, a spring for opening them, and a pawl for locking them, substantially as set forth.

4. In policemen's nippers, the combination, with a stock provided with a handle having a movable section which slides upon the stock, of jaws pivoted to the stock and each provided with an arm, a bar secured to the movable section of the handle and provided with a ratchet, toggle-connection between such bar and the arms of the jaws, a spring inclosed by the handle and arranged for opening the jaws, and a pawl engaging with the ratchet for locking the jaws, substantially as set forth.

5. In policemen's nippers, the combination, with two jaws, either or both of which have their inner faces serrated, of means for operating the jaws, substantially as set forth.

6. In policemen's nippers, the combination, with a stock, of a handle located upon one of its ends and having a movable section, jaws pivoted to the opposite end of the stock, and each provided with an outwardly-extending arm, and toggle mechanism and connections between the movable section of the handle and the arms of the jaws for operating the jaws, substantially as set forth.

327,576. RAILWAY-SIGNAL. Frank I. Myers, New York, N. Y. Filed Dec. 5, 1884. (No model.)



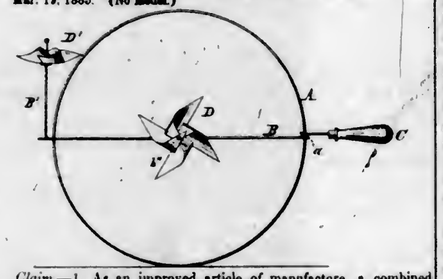
Claim.—1. The combination of plate *a*, adapted to be bolted to a rail between tread and foot, and having chamber *d*, with a vertically-sliding rod, *c*, entering said chamber, and adapted to make metallic contact with plates *k*, and with a spring, *b*, bearing upon rod *c*, substantially as specified.

2. The combination of plate *a*, adapted to be bolted to a rail, and having a bulge to fit against the web between tread and foot, with the vertically-sliding rod *c*, entering a chamber, *d*, in plate *a*, and with spring *b* above rod *c*, and adapted to force it down in metallic contact with plates *k*, substantially as specified.

3. The combination of plate *a*, adapted to be bolted to a rail, and having chamber *d*, and an isolating-plate, *i*, within said chamber, with the sliding rod *c*, and spring-plates *k*, which are secured to the isolating-plate, and with the spring *b*, which bears on rod *c*, substantially as specified.

4. The combination of plate *a*, adapted to be bolted to a rail, with a vertically-sliding rod, *c*, and spring-plates *k*, contained in a chamber, *d*, within plate *a*, and with a spring, *b*, secured to plate *a* by the T-shaped pins *n*, substantially as specified.

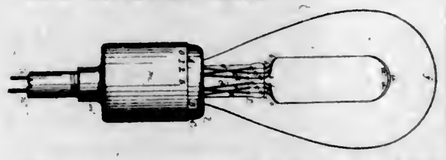
327,577. TRUNDLING-WHEEL. John J. Myers, Buffalo, N. Y. Filed Mar. 19, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a combined trundling-wheel and handle consisting, essentially, of an endless hoop, A, the handled rod B, embracing the body of the hoop by an eye, *a*, and the bifurcated portion *b*, one branch of which terminates in a standard, B', carrying a toy, D', substantially in the manner as and for the object specified.

2. The combination, with the endless hoop A, of the handled rod B, having the eye *a* and fork *b*, one end of which terminates in the standard B', carrying toy D', said rod being provided with laterally-projecting pins carrying toys D, substantially in the manner as and for the use and purpose stated.

327,578. INCANDESCENT ELECTRIC LAMP. John Nelson, Rockford, Ill. Filed Feb. 9, 1883. (No model.)



Claim.—1. A lamp-receiving socket having a suitable conducting-connection with the electric generator, said socket provided with a corrugated or grooved circuit-closing surface and a corrugated or grooved non-circuit-closing surface to engage the circuit-closing surface of a lamp, substantially as and for the purpose hereinbefore set forth.

2. The combination, with a lamp-receiving socket provided with a corrugated or grooved circuit-closing surface and a corrugated or grooved non-circuit-closing surface, of a lamp having a shank provided with circuit-closers adapted to engage the circuit-closing and non-circuit-closing surface of the socket, substantially as and for the purpose hereinbefore set forth.

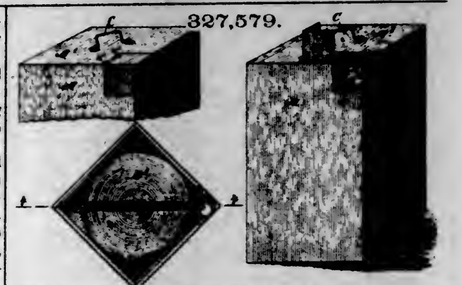
3. The combination, with the circuit-closers of the lamp and with the circuit-closing and non-circuit-closing surface of the socket, of the index-letters and numerals, or their equivalents, substantially as and for the purpose set forth.

327,579. SHIPPING-CAN. Edwin Norton, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed July 6, 1885. (No model.)

Claim.—1. The combination, with a round sheet-metal can having a side spout or nozzle, of a square wooden case inclosing the same, having one corner cut away to receive said spout, substantially as specified.

2. The combination of a square or rectangular wood case, A, having an opening *a*, at one of its upper corners, with a round or cylindrical sheet-metal can, B, provided with a spout, *b*, at its side fitting in said opening *a*, and a removable cover or flap, *a'*, to close said opening *a*, substantially as specified.

3. The combination of a round sheet-metal can having a spout or



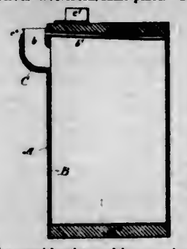
nozzle at its side, and a vent-duct leading from said nozzle across the upper end of the can, with a wood case inclosing said can having one corner cut away to receive said nozzle, and a sheet-metal flap or cover hinged to the top of said case to close the opening at the corner thereof, substantially as specified.

4. The combination of round can B, having a spout or nozzle, *b*, at its side, and a vent-duct, *b'*, raised above the surface of the can-head, with wood case A, inclosing said can, and having its cover A' fitting against the upper end of said can, and provided with a groove, a^6, for said raised vent-duct *b'*, and provided with an opening, *a*, at its corner to receive said nozzle *b*, and a hinged flap, *a'*, substantially as specified.

5. The combination, with round can B, having nozzle or spout *b* at its side, of an inclined vent-duct, *b'*, leading from said nozzle across the end of the can, substantially as specified.

6. The combination, with round can B, having nozzle or spout *b* at its side, of an inclined vent-duct, *b'*, leading from said nozzle across the end of the can, and a cork, *c*, closing said vent and nozzle, substantially as specified.

327,580. SHIPPING-CAN. Edwin Norton, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed July 17, 1885. (No model.)



Claim.—1. The combination, with a can having a curved or vertical mouthed nozzle attached to the side or body of the can near its top, of a case or jacket inclosing the same, provided with a side shield to protect said nozzle, substantially as specified.

2. The combination, with a can provided with a nozzle at its side, of a jacket inclosing said can, provided with a shield to protect said nozzle, and a hinged cap to cover the mouth of said nozzle, substantially as specified.

3. The combination of sheet-metal can B, provided with a pouring-nozzle, *b*, at its side, and a vent-tube, *b'*, leading from said nozzle across the top head of the can, of a case or jacket having a sheet-metal body, A, and wood heads A' A^2, and provided with a nozzle-protecting shield, C, secured to said body A, and a cap, *c'*, hinged to said head A', substantially as specified.

4. The combination, with a sheet-metal can, B, of a curved nozzle, *b*, made in two parts, one a seamed and curved part and the other a straight and seamless part to receive the cork, substantially as specified.

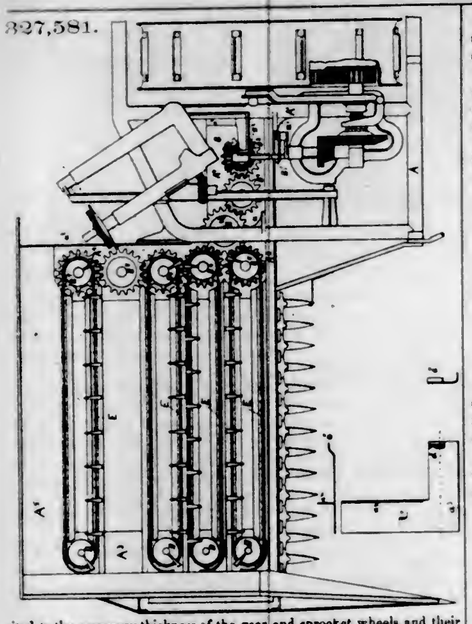
5. The improved nozzle, consisting of a seamed curved part and a seamless mouth part, substantially as specified.

6. The combination, with a sheet-metal can having a side nozzle, of a case or jacket encircling the same, consisting of a sheet-metal body, A, having an opening, *c*, for the nozzle, a shield, C, to protect the nozzle, and wood heads, substantially as specified.

327,581. HARVESTING-MACHINE. La Verne W. Noyes, Chicago, Ill., assignor to William Deering, same place. Filed Oct. 27, 1884. (No model.)

Claim.—1. In combination, substantially as hereinbefore set forth, the front and rear sills of the grain-platform and the plates A^3 and A^4 securing them together, the horizontal gear and sprocket wheels, all in one plane, having their bearings on the plate A^3, and constituting a continuous train deriving motion in series from the first, and the carrying-chains running in horizontal planes carried by the sprocket-rim on said gear and sprocket wheels, whereby the thickness of the platform is lim-

327,581.



ited to the necessary thickness of the gear and sprocket wheels and their supporting-plate.

2. In combination, substantially as hereinbefore set forth, the carrying-chains running in a horizontal plane, their links standing edgewise, and the trip-teeth pivoted on the upper side of the links and having the heels h'', as long as the width of the links, the rails having the grooves on their upper faces for the chains, and the slotted sheathing secured to the upper surfaces of said rails, close above the chains, whereby the trip-teeth are kept upright by their heels bearing against the lower sides of the links and the sides of the grooves, and not by their carrying-teeth bearing against the sides of the slots in the sheath.

3. In an endless conveyer for a grain-harvester, for the purpose of driving the endless chains, the combined gear and sprocket wheels having the cup-shaped web b, and the spindle b', rigid with the web, in combination with the hollow bearing-piece b^2, adapted to receive the spindle, substantially as set forth.

4. In an endless conveyer for a grain-harvester, the chain composed of the detachable links formed of wire, having the converging sides terminating in the hooks turned outward in the same plane, and with the hook-lip turned up in a plane at right angles to the plane of the two sides, in combination with the trip-tooth pivoted on and adapted to rock over the side of said link, substantially as set forth.

5. For the purpose of a separable chain, the detachable link made of wire, having the sides e e, converging toward the open end and terminating in the hooks e' e', turned outward in the same plane with the sides e e, and having the closed end turned to form a hook on each side at right angles to the plane of the sides, substantially as set forth.

327,582. BATTERY-ELECTRODE. John B. Odell, Chicago, Ill. Filed June 26, 1884. (No model.)



Claim.—1. In an electrode, a supporting-wire located entirely within the same, substantially as set forth.

2. In an electrode, a supporting-wire arranged vertically and entirely within the same, as set forth.

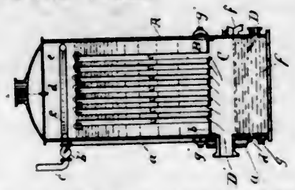
3. An electrode provided with a supporting-core arranged vertically within the same, substantially as set forth.

4. The combination, with the base having the upwardly-projecting stem, of a wire located within the stem and base to strengthen the same, as set forth.

5. The combination, with the base having the upwardly-projecting stem, of a wire arranged within the stem and base to strengthen the same, said wire having its ends bent, substantially as set forth.

6. In an electrode, the combination, with the base having an upwardly-projecting stem, of a wire located within the stem and base to strengthen the same, and having its ends bent in opposite directions at right angles to its body, as set forth.

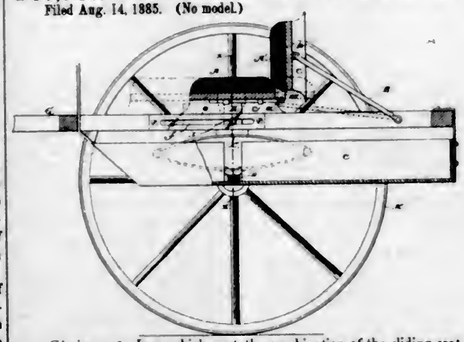
327,583. FEED-WATER HEATER. Robert O'Neill, Leadville, Colo. Filed Feb. 9, 1885. (No model.)



Claim.—1. In a feed-water heater, the shell A, divided into two compartments by a plate, b, the upper one containing pipes c, in combination with the float-case a, substantially as and for the purpose set forth.

2. The combination of a shell or case, A, provided with outlet D and inlet D', float-case a attached thereto, float-ball g, rod a', valve b', and circular spray-pipe d.

327,584. VEHICLE-SEAT. George W. Payne, Little Neck, N. Y. Filed Aug. 14, 1885. (No model.)



Claim.—1. In a vehicle-seat, the combination of the sliding seat-section, a back section pivotally connected thereto and adapted to lie in a horizontal position in line with or at right angles to such front section, according to the position thereof, and a locking device for holding the section in position, as set forth.

2. The combination, with the back section, of a sliding seat-section pivotally connected to the back section, and a locking device carried by said sliding section, adapted to clamp the same in position and maintain the back section at an angle thereto, substantially as described.

3. The combination, with the sliding section, of a back section pivotally connected thereto, brace-rods connected to the back section and the vehicle, and a locking device carried by said sliding section and adapted to hold the back section at an angle thereto, substantially as described.

4. In a road-cart, the combination, with the body and axle thereof, of a seat made in two sections, pivotally connected together, and adapted to be arranged at an angle to each other, the line of gravity of said seats falling through the axle when in their folded position, substantially as and for the purpose described.

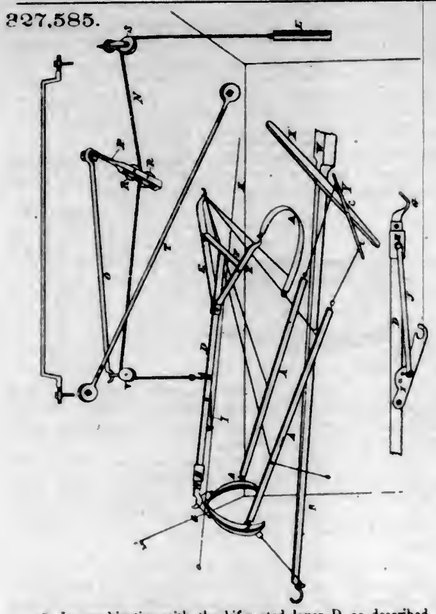
5. In a vehicle, the combination, with the recessed side bars, of a seat made in two sections, pivotally connected together, brace-rods connected to the rear folding section, and plates, as H, connected to the sliding section, and carrying thumb-screws to clamp the section in position, substantially as described.

6. In a vehicle, the combination of the sliding section A, a back section, A', pivotally connected thereto, brace-rods B, connected to the back section, slotted plates e e, secured to recessed side bars of the vehicle, a plate, H, secured to the sliding seat-section and working in said recesses of the vehicle-bars, and clamping-bolts I, working in the slotted plates and apertures of the plates H, substantially as described.

327,585. DEVICE FOR HANGING HARNESS. Thomas H. Pendergast, Louisville, Ky. Filed Oct. 9, 1883. (No model.)

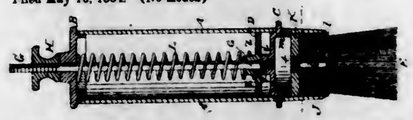
Claim.—1. The bifurcated lever D, provided with the cross-bar F, as described, having hinged hook G, sleeve H, link J, and trigger I, in combination with line K, substantially as described, and for the purpose set forth.

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2. In combination with the bifurcated lever D, as described, the bar T, the swinging lever O, having angle-arm P and sheaves R and V, the sheave S, the cord N, and weight L, by which the lever O is operated, substantially as described, and for the purpose set forth.

327,586. MARKING-BRUSH. Clarence E. Perry, Newton, Mass., assignor to himself, Elihu Smead, and John B. Turner, all of same place. Filed May 10, 1884. (No model.)



Claim.—1. In a marking brush, substantially such as described, the brush E, provided with the tube h, in combination with the thimble J, plug C, and packing-ring K, substantially as specified.

2. In a marking-brush, the tubular tank A, a brush connected thereto, the plug C, provided with the chamber m and duct v, and the nipple i, in combination with the valve D, having ducts z, substantially as described.

3. In a marking-brush, the combination of the tubular tank A, a brush, E, connected to the lower end of said tank, a plug, C, above said brush, provided with a chamber, m, with a duct, v, and with a nipple, i, a valve, D, provided with ducts z, a cap, B, at the upper end of said tank, a spring interposed between said cap and valve for holding the latter normally in contact with said nipple, and a rod extending through said cap, to the lower end of which said valve is fixed, whereby the latter may be withdrawn from the nipple to permit the flow of ink to the brush, substantially as described.

4. The improved marking-brush herein described, the same consisting of the body A, cap B, plug C, having chamber m, nipple i on said plug, provided with duct v, valve D, having ducts z, stem O, nut H, spring L, thimble J, packing K, and brush E, having the tube h, constructed, combined, and arranged substantially as specified.

327,587. BAND-CUTTING FEEDER FOR THRASHERS. A. Sanders Platt, Mac-o-Chesk, Ohio. Filed Feb. 28, 1885. (No model.)



Claim.—1. In a band-cutting feeder for a thrasher, the combination of the trough, the endless carrier in the lower part thereof, provided with backwardly-curved fingers a, a cutter for severing the band of the sheaf, and a revolving feeder located between the cutter and the thrasher-cylinder end of the trough, and provided with fingers curved in the opposite direction to the rotation of the feeder, to regulate the feed of the straw from the cutter after the band has been cut, substantially as described.

2. In a band-cutting feeder for a thrasher, the combination of the trough, the endless carrier in the lower part thereof, provided with backwardly-curved fingers a, a cutter for severing the band of the sheaf, a revolving feeder located between the cutter and the thrasher-cylinder end of the trough, and provided with fingers curved in the opposite direction to the rotation of the feeder, and an elastic cushion for exerting a downward pressure on said feeder, substantially as described.

3. The combination of the trough provided with the openings, the endless carrier passing through said openings, and the clearing-fingers projecting over said openings in line with said carrier, substantially as described.

4. In a band-cutting feeder for a thrasher, the combination of a trough having recesses formed in its bottom at the thrasher end thereof, a bar in front of said recessed end, having recesses corresponding with those in the bottom of the trough, and provided with fingers or tongues projecting over said recesses, an endless carrier in the trough passing through its recesses, and a cutter for severing the band of the sheaf, substantially as described.

5. In a band-cutting feeder for a thrasher, the combination of a trough, an endless carrier passing through openings at the bottom thereof, fingers or tongues projecting over said openings, a chute below that end of the trough, and a cutter for severing the band of the sheaf, substantially as described.

6. In a band-cutting feeder for a thrasher, the combination of the trough, the endless carrier, the cutter for severing the band that binds the sheaf, the cone-spreaders on opposite sides of the cutter, and the lateral cutters on the cone-spreaders, substantially as described.

7. The combination of the trough, the endless apron composed of sprocket-chains having rearwardly-curved fingers, the cutter, and the yielding revolving feeder provided with fingers and located above the carrier in front of the cutter, substantially as described.

8. The shaft H, provided with cone-spreaders L, in combination with the curved rods forming the arched support therefor, and the lateral knives on the outer surface of the cones, substantially as and for the purpose specified.

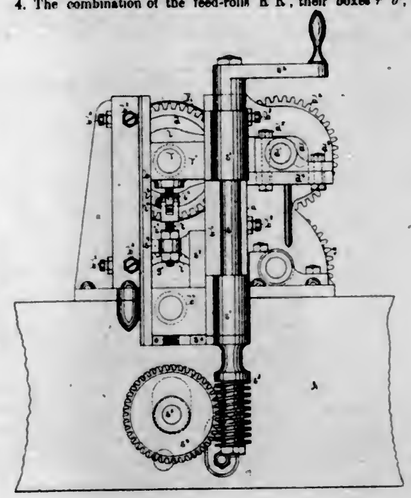
327,588. PLANING-MACHINE. Frank J. Plummer, Boston, Mass. Filed Aug. 3, 1885. (No model.)

Claim.—1. The combination of the worm-gear s^3, provided with suitable mechanism for revolving the same, the worm-wheel s^4, shaft s^5, and pinions s^7 s^7, attached thereto, and rack-bars s^8 s^8, connected to the boxes r' r' of the upper feed-roll, substantially as described.

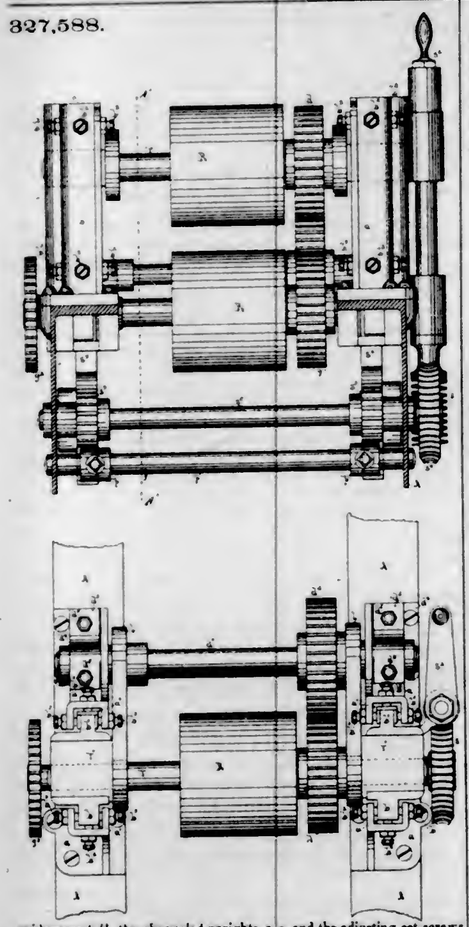
2. In combination with the vertically rising and falling guideways b' b', the worm-gear s^3, provided with suitable mechaniam for revolving the same, the worm-wheel s^4, shaft s^5, and pinions s^7 s^7, attached thereto, and rack-bars s^8 s^8, connected to the boxes r' r' of the upper feed-roll, substantially as described.

3. The combination of the worm-gear s^3, provided with suitable mechanism for revolving the same, the worm-wheel s^4, shaft s^5, and pinions s^7 s^7, attached thereto, and rack-bars s^8 s^8, adjustably connected to the boxes of the upper feed-roll by the screw-rods t t and nuts t' t', substantially as described.

4. The combination of the feed-rolls R R', their boxes r' b^4, the



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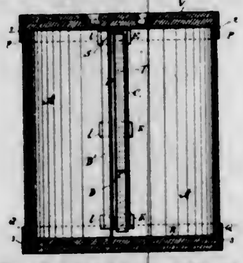


guideways *b b'*, the channeled uprights *a a*, and the adjusting set-screws *b² b²*, substantially as described.

5. The combination of the vertically-moving upper feed-roll, R, and its shaft *r*, pinion *d*, links *l l*, and longitudinally-moving shaft *d'* and pinion *d²*, substantially as described.

6. The combination of the vartically-moving upper feed-roll, R, and its shaft *r*, pinion *d*, links *l l*, and longitudinally-moving shaft *d'* and pinion *d²*, attached thereto and revolving in bearings upon each side of the frame A, substantially as described.

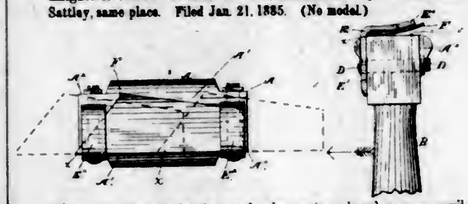
327,589. SHIPPING-DRUM. James H. Preater, Brooklyn, N. Y. Filed May 18, 1885. (No model.)



Claim.—1. The cylinder A, of straw or mill board, in combination with the sheet-metal strip C, attached to one edge of the said straw-board, and having its edge folded over the metal strips D D', that are U-shaped and united together and securely attached to the other edge of the said cylinder, one edge of the strip D being folded back, and the folded sheet-metal junction-strip T, substantially as set forth.

2. The combination, in a drum, of a cylinder of straw board or similar material, two U-shaped strips of sheet metal, D D', set back to back and soldered, the strip D' being adapted to receive and be united to one edge of the straw-board, the sheet-metal strip C, and a fastening device for attaching together the strips C and D upon the edges of such straw-board, heads for the package, and hoops around the cylinder at its junction with the heads, substantially as specified.

327,590. PLOW-SHARPENER. Joshua C. Price, Taylorville, Ill., assignor of one-half to John W. Price, Marshall Sattley, and Archibald Sattley, same place. Filed Jan. 21, 1885. (No model.)

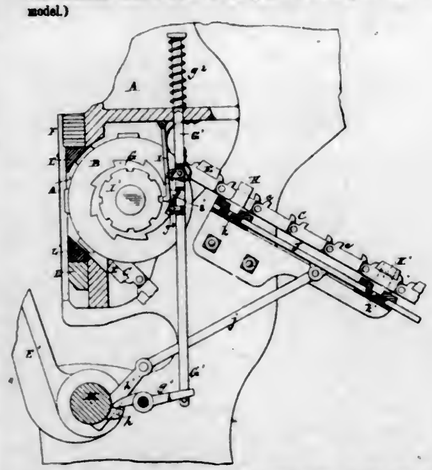


Claim.—1. In a device for use in sharpening plowshares, an anvil provided with clamp-arms extended across a slight distance from and approximately parallel with its hammering-face, substantially as described, and for the purposes set forth.

2. The combination of the anvil-head having a hammering-face, A', and faces A^2, arranged at the opposite corners of said head, and set slightly back from the side edges thereof, and the clamps E, having their arms E' removably held to faces A^2, whereby they may be changed to the opposite side of the anvil-head, substantially as and for the purposes set forth.

3. The combination of the anvil-head having face A' and face A^2, and provided with slots C, cut transversely through the head, opening at its ends on faces A^2, and elongated at right angles to the plane of face A', the L-shaped clamps E, and bolts passed through one of the arms of clamps E and through slots C, all arranged and operating substantially as and for the purposes set forth.

327,591. CONSECUTIVE PRINTING ATTACHMENT FOR PRINTING-PRESSES. Charles Racine, Chicago, Ill. Filed Aug. 11, 1883. (No model.)



Claim.—1. In a printing-press, the combination of the type-bed and rotatable drum B, arranged to project through the said bed and adapted to present consecutively a series of type-forms to print simultaneously with the main form of the press, substantially as set forth.

2. In a printing-press, the combination of the type-bed and rotatable drum B, arranged to project through the said bed, and adapted to present consecutively a series of type-forms that are carried by an endless carrying-belt to print simultaneously with the main form of the press, substantially as set forth.

3. In a printing-press, the combination of a rotatable drum, B, arranged to project through the bed of the press, and adapted to present consecutively a series of type-forms to print simultaneously with the main forms, and connections with the press-platen, essentially as set forth, for intermittently rotating said drum, substantially as set forth.

4. In a printing-press, the combination of the type-bed and rotatable drum B, arranged to project through the said bed, and adapted to present consecutively a series of type-forms to print simultaneously with the main form, with the endless carrying-belt C, and form feeding and discharging heads K K', and connections with the press-platen, essentially as herein described, for intermittently rotating said drum B and operating said form feeding and discharging heads K K', substantially as set forth.

5. In a consecutive printing attachment for printing-presses, essentially as herein described, the combination of the platen rock-shaft H, provided with lug or tappet *h*, rock-arm *g'*, and sliding bar G', provided with spring-pawl *g*, with the type-bed and drum B, provided with ratchet-wheel G, as set forth.

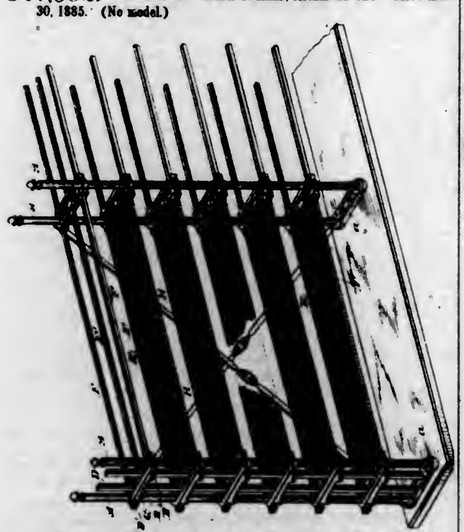
6. In a consecutive printing attachment for printing-presses, the combination of the locking-spring I, having inclined grooved lug *i*, with the sliding bar G', receiving motion from the press-platen, substantially as described, and for the purpose set forth.

7. In a consecutive printing attachment for printing-presses, essentially as herein described, the combination of the form-carrying belt C with the feeding and discharging heads K K', having simultaneous movement in opposite directions, for the purpose set forth.

8. In a consecutive printing attachment for printing-presses, the combination of the drum and form carrying belt C with the feeding and discharging slides K K', cam-plate J, link *j*, and the platen rock-shaft H, for the purpose set forth.

9. In a consecutive printing attachment for printing-presses, an endless form-carrying belt formed of links having dovetailed cleats inclined toward each other for receiving and holding movable forms E, essentially as described, and for the purpose set forth.

327,592. SHELVING. Hugh T. Reed, Richmond Ind. Filed Mar. 30, 1885. (No model.)



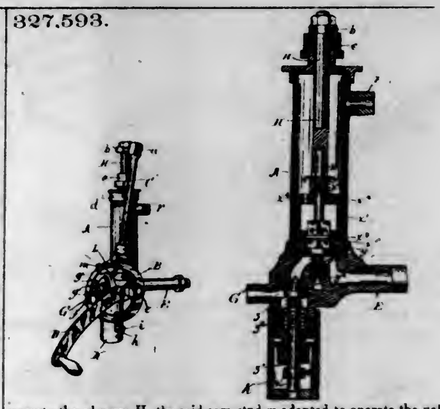
Claim.—1. The knockdown shelving, substantially as before described, composed of corner pillars, cleats slipped on said pillars, and independently-detachable shelves supported on the cleats, but otherwise independent of the pillars.

2. The combination, substantially as before set forth, of the corner pillars provided with vertical series of holes, projecting cleat-supporting pins inserted in said holes, and the shelf-sustaining cleats which are slipped on the pillars and have sockets to receive and cover the supporting-pins.

3. The metallic shelf composed of wire-cloth or its equivalent stretched on a frame of channel-iron, the strands of the wire-cloth being bent around said frame and projecting into the channel thereof, substantially as before set forth.

4. The combination, substantially as before set forth, of the corner pillars, the metallic shelf, and the shelf-supporting cleats provided with hooks or lugs for hooking onto the ends of the shelf.

327,593. SIRUP-PUMP FOR SODA-WATER APPARATUS. Augustus E. Reed, Fall River, Mass. Filed Sept. 6, 1884. (No model.)



Claim.—1. The combination, in a sirup-pump, of the body A, plunger H, provided with a compound valve, *x'*, the valve *z*, provided with the screw-bolt *h*, attached to its valve-stem, the valve *y*, eccentric B, rod C, having the eccentric-strap L, with cam-stud *m* and lever D, all arranged and adapted to operate substantially as and for the purposes set forth.

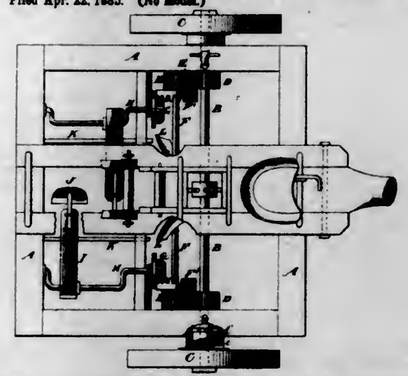
2. In a sirup-pump, the combination of the eccentric B, provided with the cam-stud *m*, the eccentric-band L, and the rod C, adapted to operate the plunger H, the said cam-stud *m* adapted to operate the valve *z* by means of the bolt *h*, all substantially as and for the purposes set forth.

3. In a sirup-pump, the valve *z*, provided with the stem *z'*, guide screw-bolt *h*, and wheel *i*, and spring z^2, arranged to be operated substantially as and for the purposes specified.

4. In a sirup-pump, the combination of the eccentric B, provided with the stud *m* and the crank D, and adapted to operate with the independent valve *z*, provided with the stem *z'* and guide-bolt *h*, substantially as and for the purposes set forth.

5. In a sirup-pump, the independent valve *z*, in combination with a projection attached to the stem of said valve and a suitable eccentric provided with a cam, all adapted to operate substantially as and for the purposes set forth.

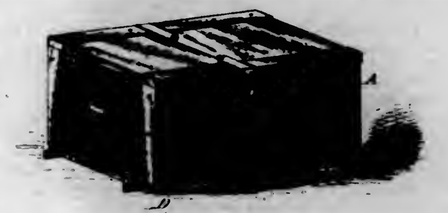
327,594. COTTON-CHOPPER. John B. Robinson, Wilford, Tenn. Filed Apr. 22, 1885. (No model.)



Claim.—A cotton-chopper having two hoes, J J, crossing each other from opposite directions, having handles pivoted on opposite sides of the frame and connected by separate trains of mechanism with the same drive-shaft, whereby the two hoes chop the same row of plants from opposite directions.

327,595. COMBINED TRUNK AND BED. Mary A. Rooney, De Smet, Dak. Filed May 1, 1885. (No model.)

Claim.—A combined trunk and bed, consisting of the sides A, adapted to be turned down to form supports, the top or cover C, divided so that one-half is hinged at each end to the end portions, B, which end portions are hinged to the bottom portion or supports, E, and provided



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with suitable stops, all substantially as shown and described, whereby the structure is made for interchangeable use, either as a trunk or bed, as set forth.

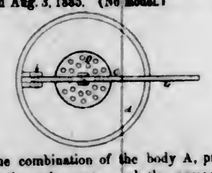
327,596. BOOT OR SHOE CALK. William Rosenfield, Manistee Mich. Filed Dec. 2, 1884. (No model.)



Claim.—1. The combination, with the calk-holding nut having its main portion wider at one end than at the other and provided with the projecting blades, of the screw-threaded calk adapted to be screwed into and removed from said nut, substantially as described.

2. The combination, with a shoe-sole and its inserted calk-holding nut provided with projecting blades, of the screw-shanked calk adapted for insertion into and removal from said nut, substantially as described.

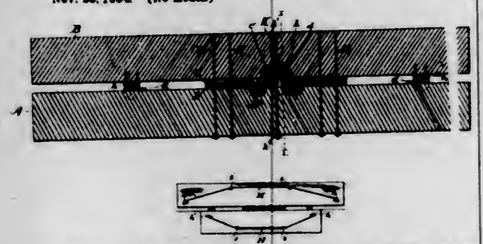
327,597. WASTE-COCK FOR SINKS, &c. Samuel D. Samuels, Boston, Mass., assignor, by mesne assignments, to himself and Samuel Hano, same place. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination of the body A, provided with the open-top chamber E, the valve-seat *e*, and the passage *a*, arranged in it, as represented, with the valve B, and its grooved stem C, and with the spring F and the strainer D applied to such stem and within the said chamber, all being substantially and to operate as set forth.

2. The combination of the lever G and its pitman C, with the body A, provided with the open-top chamber E, valve-seat *e*, and passage *a*, arranged in such body, as represented, and with the valve B, its grooved stem C, and the spring F and strainer D applied to such stem, all being essentially as represented.

327,598. FIFTH-WHEEL. Albert Sanford, Oshkosh, Wis. Filed Nov. 25, 1884. (No model.)



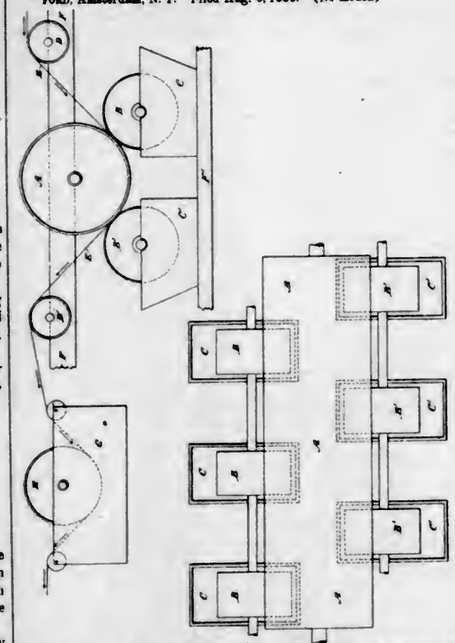
Claim.—1. The combination, with the beam and the bolster, of the plate on the beam provided with the hemispherical projection and the broad flat bearing-surface, the corresponding plate on the bolster having the hemispherical cavity, and the broad flat bearing-surface provided with the friction-rollers and the king-bolt, substantially as described.

2. The combination, with the beam and the bolster, of the plate on the beam provided with the hemispherical projection and the broad flat bearing-surface, the corresponding plate on the bolster having the hemispherical cavity and the broad flat bearing-surface, and the two-part king-bolt having its joint within the hemispherical projection of the beam-plate and above the beam, substantially as described.

3. The combination, with the beam and bolster, of the beam-plate having the hemispherical projection and the broad flat bearing-surface, the bolster-plate having the hemispherical cavity, and the bearing provided with the friction-rollers, the king-bolt passing down through both plates, and the segmental plates applied to the beam and bolster, respectively, whereby the bolster is prevented from sagging under the load, and the king-bolt and central plates are relieved of strain, substantially as described.

4. In a sled, the combination, with the bolster and beam, arranged substantially parallel and close to each other, of the truss-rods applied to the bolster and extending from the top toward its ends, as described, and the other truss-rods reversely applied to the beam, substantially as described, for the purpose specified.

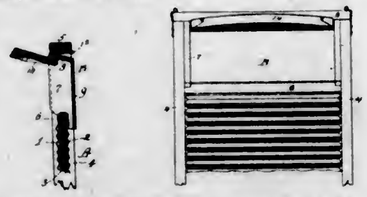
327,599. APPARATUS FOR DYEING AND SIZING. Stephen Sanford, Amsterdam, N. Y. Filed Aug. 6, 1885. (No model.)



Claim.—1. In combination with the sizing-box G of a sizing-machine, the color-pulleys B B and B′ B′, and the color-boxes C C and C′ C′, substantially as and for the purposes set forth.

2. In combination with the sizing-box G of a sizing-machine, the color-pulleys B B and B′ B′, and the color-boxes C C and C′ C′, and the yarn-conducting rollers A D D′, substantially as and for the purposes set forth.

327,600. WASH-BOARD. Jas. T. Sargent, Cleveland, Ohio. Filed May 1, 1884. (No model.)



Claim.—1. In combination with a double-faced wash-board, a removable and reversible soap-box, substantially as set forth.

2. A wash-board having, in combination, a head-piece connecting the ends of the side bars, a cross-bar located at the upper end of the rubbing-face, and a removable soap box inserted between the head-piece and cross-bar, substantially as set forth.

3. In a wash-board, the combination of a cross-bar located at the upper end of the rubbing-face, and a removable and reversible soap-box located above the cross-bar and constructed, when in operative position, to form a drainage slit or opening between its back board and the cross-bar, substantially as set forth.

4. In combination with a wash-board, a removable and reversible soap-box located above the cross-bar supporting the upper end of the rubbing-face, and having the lower end of its back board overlapping the cross-bar, and forming, with the cross-bar, a slit or opening for the escape of water from the soap-box, substantially as set forth.

5. In a double-faced wash-board, a head-piece connecting the ends of the side bars, in combination with a cross-bar located at the upper ends of the rubbing-faces, and a removable and reversible soap-box adapted to be inserted between the head-piece and cross-bar from either side of the board, substantially as set forth.

6. In a double-faced wash-board, the combination of a head-piece connecting the ends of the side bars, a cross-bar located at the upper ends of the rubbing-faces, and a removable and reversible soap-box having a slit or opening at its lower edge for the discharge of water and adapted to be inserted between the head-piece and cross-bar from either side of the board, substantially as set forth.

7. In a double-faced wash-board, a removable and reversible soap-box, in combination with a reversible protector attached to the soap-box, substantially as set forth.

8. In a double-faced wash-board, a removable and reversible soap-box, in combination with a protector pivotally attached to said box, substantially as set forth.

9. In a wash-board, the combination of the side bars projecting above the rubbing-face, the cross-bar located at the upper end of the rubbing-face, and a removable soap-box adapted to be supported in place by the side and cross-bars, substantially as set forth.

327,601. WASH-BOARD. Jas. T. Sargent, Cleveland, Ohio. Filed Apr. 1, 1885. (No model.)



Claim.—1. In a wash-board, a brand-board pivoted to the side bars and constructed to be rotated in the opening in the head of the wash-board, substantially as and for the purpose set forth.

2. In a wash-board, a brand-board pivoted to the side bars and constructed to be rotated in the opening in the head of the wash-board, in combination with a suitable stop whereby to prevent too great a length of rotary motion, substantially as set forth.

3. In a wash-board, a brand-board pivoted to the side bars and constructed to be rotated in the opening in the head of the wash-board, in combination with a suitable stop whereby to prevent too great a length of rotary motion, and a catch to hold it in place when rotated to position, substantially as set forth.

4. In combination with a wash-board frame, a pivoted rotary brand-board, made with its pivotal points outside the plane of the brand-board itself, substantially as set forth.

5. In a wash-board, a brand-board provided with side pieces, said side pieces being pivotally connected to the side bars, said brand-board and side pieces being constructed to rotate in the opening in the head of the wash-board, whereby a soap-box may be formed on either side of the wash-board, substantially as set forth.

6. In a wash-board, a brand-board pivoted to the side bars at a point below the center of the opening between the cross-bar 6 and head-piece 5, said brand-board being constructed to oscillate in said opening, substantially as set forth.

327,602. INSTRUMENT FOR THE FOCAL MEASUREMENT OF OPTICAL LENSES. Frederic Scharff, Rochester, N. Y., assignor to Charles F. Young, same place. Filed June 12, 1885. (No model.)

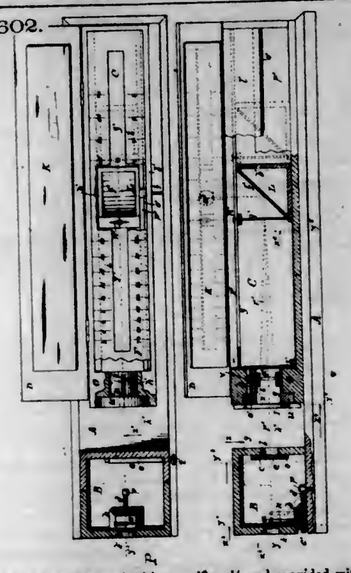
Claim.—1. The box B of an instrument for measuring the focal distances of optical lenses, formed with opposing openings through opposite sides thereof, and provided with a lens, *e*, and an object, *a*, longitudinally adjustable therein, in combination with the scale-box C, joined to the box B, and formed with an opening opposite said openings in the box B, and provided with an adjustable lens, *a′*, and slide L, substantially as described.

2. In combination with the scale-box C of an instrument for the focal measurement of optical lenses, provided with a tilting cover, D, and scale F, a slide, L, provided with an object-glass, *d′*, inclined mirror *f′*, an index, *n′*, the cover D, having a reflecting-mirror, K, upon its inner surface, substantially as and for the purpose specified.

3. In combination with the scale-box C of an instrument for the focal measurement of optical lenses, provided with a tilting cover, D, and scale F, a slide, L, within the scale-box, provided with an object-glass, *d′*, inclined mirror *f′*, an index, *n′*, the cover D having a reflecting-mirror, K, upon its inner surface, said slide being provided with a handle, *f*, reaching to the exterior of the scale-box, and fitted to move longitudinally within the latter, substantially as described.

4. The combination, in an instrument for the focal measurement of optical lenses, of the scale-box C, provided with a tilting cover, D, and mirror K, a scale, F, and slide L, within the scale-box, said slide being provided with an object-glass, *d′*, inclined mirror *f′*, an index, *n′*,

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the scale-box being formed with an orifice, *h′*, and provided with a lens-tube, *g*, inserted therein, and an adjustable slide, *i*, for holding a lens, *a′*, fitted within the lens-tube, with means, substantially as shown, to adjust said lens-slide within the tube, substantially as and for the purpose set forth.

5. In combination with the scale-box C of an instrument for the focal measurement of optical lenses, a lens-tube, *g*, formed with a head or band, *u*, and longitudinal slot *x*, a lens-slide, *i*, fitted adjustably within the lens-tube, said slide being formed with a part, *v*, reaching out through the slot *x*, and an adjusting-screw fitted to the part *v*, substantially as shown and described.

6. In combination with the object-box B of an instrument for the focal measurement of optical lenses, formed with orifices *k* and *l*, an adjustable cross-wire or object, *a*, held within the box by a standard, *n*, in position to cross centrally the orifice *k*, a block, *b*, for holding the standard *n*, and longitudinal adjusting-screw *d*, fitted to the block *b*, to move the cross-wire or object *a* toward or from the orifice *k*, substantially as shown and described.

7. The scale-box C of an instrument for the focal measurement of optical lenses, having one side thereof formed with the overlapping parts *l′* and *p′*, with a space, *o′*, between them, in combination with a slide, L, for the mirror and object-glass, fitted to move longitudinally within the scale-box, and bent handle *f*, for the slide occupying said space *o′*, and reaching to the outside of said scale-box, substantially as and for the purpose specified.

8. The combination, in an instrument for the focal measurement of optical lenses, of the scale-box C, provided with a tilting cover, D, mirror K, and scale F, and a slide, L, within the scale-box for holding the object-glass, mirror, and index *n′*, for the scale, and a screen, G, for the light, substantially as shown.

327,603. BITTERS. Peter Schwind, Le Mars, Iowa. Filed Apr. 17, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used as a medicine for the treatment of disease and as a tonic, consisting of water, whisky, bay-leaves, juniper-berries, nutmeg-blossoms, French saffron, cinnamon, masterwort-root, and sweet-flag, in the proportions specified.

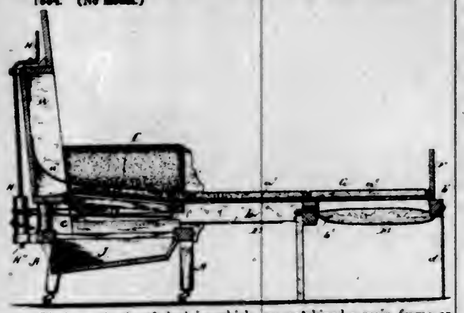
327,604. BUTTON. Dilman B. Shantz, Berlin, Ontario, Canada. Filed May 27, 1885. (No model.)



Claim.—1. A button consisting of a ring, A, having flange B and rim C, inserted disk D, having covering material E, plate F, and inserted concavo-convex disk G, covered with a material, I, as set forth.

2. A button consisting of a ring, A, having flange B and rim C, inserted ornamental front disk, D, and inserted concavo-convex disk G, covered with a material, I, as set forth.

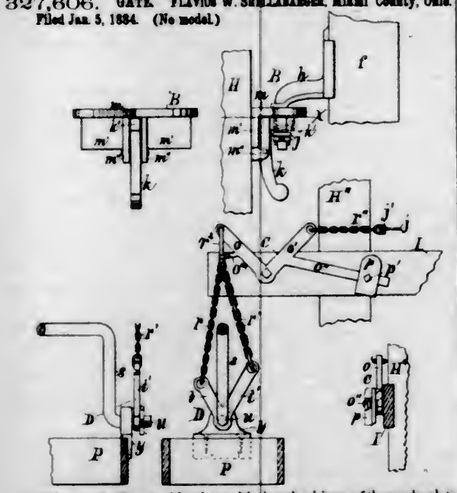
327,605. SOFA-BED. William J. Shaw, Chicago, Ill. Filed May 9, 1884. (No model.)



Claim.—1. A sofa-bed in which are combined a main frame or support, a fixed or rigid back piece, the frame C, hinged or jointed to the lower part of the said back piece, the seat-frame E, made in folding sections *b* and *b'*, the former of which sections slides in the main frame, and mattress-supporting fabric, substantially as and for the purposes specified.

2. A sofa-bed in which are combined a main frame or support, A, a rigid or fixed back piece, B, the frame C, hinged or jointed to the lower part of the piece B, the seat-frame E, made in folding sections, one of which slides in the frame A, mattress-supporting fabric, the crank H, and the cords I I and their pulleys, all adapted and arranged for operation together, substantially as and for the purposes specified.

327,606. GATE. Flavius W. Shellabarger, Miami County, Ohio. Filed Jan. 5, 1884. (No model.)



Claim.—1. The combination, with the wheel-iron, of the angle-plate D, having arms *t* and *t'* on the outer end of the journal of said wheel-iron, the chains *r* and *r'*, extending upward from said arms, respectively, the pivoted right-angled plate C, having a lateral arm or lever extending therefrom provided with a weight, and means for adjusting the latter for the purpose of keeping the wheel-iron perpendicular, as set forth.

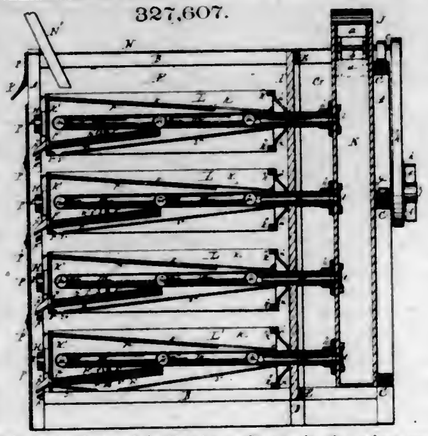
2. In a self-closing gate, the combination, with the lower hinge devices, the pull-rod, and the wheel-iron having the two-armed plate attached thereto, and chains connected therewith, as described, of the intermediate right-angled plate pivoted between the wheel-iron and the pull-rod and connected with the latter, and having a lever and weight for adjusting the wheel-iron and keeping the same perpendicular, as and for the purpose set forth.

3. The combination, with the slotted plate *m*, having ears *m''*, and the tripper *k*, pivoted between the latter, of the gate-pintle *k*, having the flanges *i*, adapted to engage the head *k'* of the tripper upon either side to retain the pintle in the center of the slot, at the angle of the same, when the gate is closed, as set forth.

327,607. MIDDLINGS-PURIFIER. Charles H. Stedman, Rockford, Ill. Filed Feb. 9, 1883. (No model.)

Claim.—1. The combination, with a sieve and its oscillating supporting-frame, of air-tubes mounted to oscillate with said supporting-frame, whereby the points of discharge are maintained in their fixed relation to the sieve, and the blast kept uniform under the various movements of the same, substantially as described.

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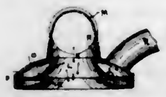
2. The combination of a sieve-supporting frame mounted to oscillate about its axial center, a sieve supported in said frame, air-tubes fixed in the frame below the sieve to discharge the blast rearward, and an inclined bottom arranged below the air-tubes, provided with an opening at or near the head end, whereby the middlings are carried toward the head of the frame while the dust is carried backward by the blast, substantially as and for the purpose set forth.

3. The combination of the oscillating sieve-supporting frame, mounted to oscillate about its axial center, a sieve supported therein, the air-tubes fixed to oscillate with the frame and arranged under the sieve, and an air-supply pipe and a blast-fan, substantially as described.

4. The combination of a series of sieves, a bar connected thereto for oscillating the same, a slotted crank-arm and pitman, and a wrist-pin having a pivotal connection with the pitman and made adjustable in the slotted crank-arm by means of a clamping-bolt connection, substantially as and for the purpose set forth.

5. The combination, with the sieve-frame having the sieves supported therein, of a dust-receptacle arranged at the tail end of the sieve-frame and extending out beyond the sieves, said dust-compartment having its side and end walls covered with a woven fabric or pervious material to permit the escape of the air from said dust-chamber while preventing the escape of the dust therefrom, substantially as and for the purpose set forth.

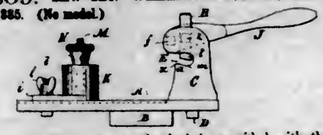
327,608. VENTILATOR. Frederick H. Smith, Winchmore Hill, County of Middlesex, England. Filed Oct. 14, 1884. (No model.) Patented in England Oct. 22, 1881, No. 4,638.



Claim.—1. For ventilating purposes generally, the combination of the disk E, having an opening, I, in the center thereof, the perforated false cover J, having a central opening, K, therein concentric with but smaller than the opening I in the disk E, the neck L, attached to or forming part of the false cover J, and the outlet pipe or chimney M, external to the neck L, the whole constructed, arranged and operating so that the warm or vitiated air escaping by the outlet pipe or chimney M shall induce currents of cold or fresh air to be drawn in through the holes P in the false cover J, and be caused to traverse the spaces between the disk E and the false cover J, and between the neck L and the outlet pipe or chimney M, substantially as hereinbefore described, and illustrated in the drawings hereto annexed.

2. For ventilating purposes generally, the combination of the disk E, having an opening, I, in the center thereof, the perforated false cover J, having a central opening, K, therein concentric with but smaller than the opening I in the disk E, the neck L, attached to or forming part of the false cover J, the cover O, the fresh-air inlet R, and the outlet pipe or chimney M, external to the neck L, the whole constructed, arranged, and operating so that the warm or vitiated air escaping by the outlet pipe or chimney M shall induce currents of cold or fresh air to be drawn in through the holes P in the false cover J, and be caused to traverse the spaces between the disk E and the false cover J, and between the neck L and the outlet pipe or chimney M and the cover O, substantially as hereinbefore described, and illustrated in the drawings hereto annexed.

327,609. SAW-SET. William O. Smith, Boston, Mass. Filed Aug. 22, 1885. (No model.)

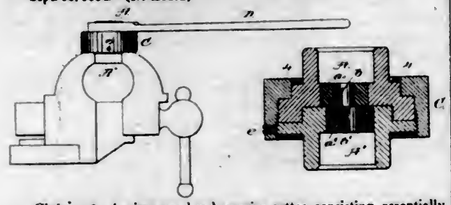


Claim.—1. In a saw-set, the bed A, provided with the flange B and slot *w*, the rest K, provided with the recess L, rod M, nut N, bolt *b*, and nut *l*, and the standard C, provided with the anvil *a*, handle J, bar H, and bolt D, combined and arranged to operate substantially as described.

2. In a saw-set, a standard carrying an anvil, a setting-bar, and a handle for operating said bar, said standard being adapted to be revolved or turned laterally on the bed of the set to enable the point of the saw-tooth to be bent or set at right angles to its body, in combination with a suitable rest or support for the saw, substantially as described.

3. In a saw-set, the standard C, provided with the anvil *a*, bar H, handle J, and bolt D, in combination with the bed A and means for properly supporting the saw while being set, substantially as set forth.

327,610. ROD-CUTTER. Charles F. Stackpole, Lynn, Mass. Filed Sept. 15, 1884. (No model.)

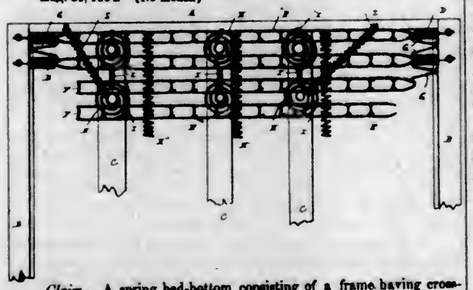


Claim.—1. An improved rod or wire cutter, consisting, essentially, of a pair of concentric die-blocks provided with a pair of eccentric dies having rod-receiving orifices and a collar adapted to retain the die-blocks in proper relation with each other and permit rotary movement thereof, for the purpose set forth.

2. An improved rod or wire cutter, consisting, essentially, of a pair of concentric die-blocks adapted to be rotated on their common axial point with relation to each other, as specified, and provided with a retaining-collar and a pair of dies having a comuon axial point eccentric with relation to the axial point of the die-blocks, substantially as set forth.

3. An improved rod or wire cutter, consisting, essentially, of a pair of concentric die-blocks having meeting-faces and provided with a pair of dies having suitable rod-receiving orifices, the said dies arranged in the die-blocks concentric with each other and eccentric with the said die-blocks, and means for retaining the die-blocks in proper relation with each other and yet permit the rotation of one or the other on the axis common to both, substantially as set forth.

327,611. BED-BOTTOM. David F. Stambaugh, St. Louis, Mo. Filed Aug. 21, 1884. (No model.)

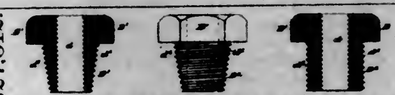


Claim.—A spring bed-bottom consisting of a frame having cross-pieces supporting spiral springs, a web of flat-linked chains connected to the frame by spring-coils having a restricted play, the said chains resting on the spiral springs and connected one to the other by transverse coils, and coils connecting the spiral springs to the frame, the several parts being connected and operating substantially as and for the purpose specified.

327,612. NUT. Frank G. Stark, New York, N. Y. Filed Oct. 23, 1884. (No model.)

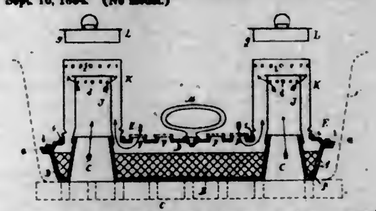
Claim.—1. The nut described, having the undivided projection D^3 in the acting face adapted to generate friction in the material against which it acts without allowing itself to be compressed, all substantially as herein specified.

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2. A nut having a projection, D^3, and provided with a screw-thread, d^3, on the exterior of a different pitch from the interior threads, in combination with the bolt B B', and timbers or other articles or material, A' A^3, to be confined, arranged for joint operation as herein specified.

327,613. LAMP-STOVE. John E. Stephens, Detroit, Mich. Filed Sept. 10, 1884. (No model.)



Claim.—1. In a lamp or heater having a tank or reservoir and a draft-flue passing upward through such tank, a cylindrical flue surmounting said draft-flue and an outer shell surrounding said cylindrical flue, leaving a space between the same, which forms a combustion-chamber around the inner flue, substantially as and for the purpose specified.

2. In a lamp stove or heater, the combination, with a burner-chamber and a tank or reservoir provided with draft-openings in its cover, and having open connection with the burner-chamber, of dampers arranged to control said openings for the purpose of regulating the supply of air through the tank to the burner-chamber, substantially as specified.

3. A lamp-stove having a tank with an air-flue passing upward through the same, in combination with the flue J and the shell K, surrounding such flue and forming a combustion-chamber around such flue, and having a series of perforations, *f*, near the top of such shell, substantially as set forth.

4. In a lamp stove or heater, the combination, with a combustion-chamber provided with a series of perforations, as specified, of a cover, L, having a depending flange of depth sufficient to close the perforations when in use, substantially as and for the purpose specified.

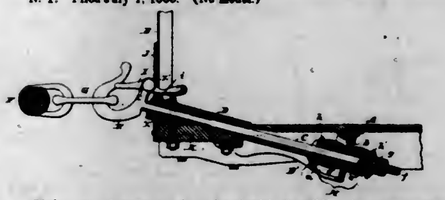
5. In a lamp-stove having a tank or reservoir, a combustion-chamber and a cover having openings therein, in combination with pivoted dampers arranged in pairs and constructed to close or disclose each pair of openings simultaneously, substantially as described.

6. In combination with the fluid-reservoir, a vapor-burner consisting of two concentric cylinders, the inner one having a closed top and forming an air-duct discharging the air circumferentially near its top and near but below the top of the outer cylinder, while the latter conducts the vapor toward the point of discharge of the air from the inner cylinder, whereby a more concentrated ring-flame is obtained, substantially as described.

7. In a vapor-stove, a vapor-burner consisting of two cylinders placed concentrically within each other, the inner cylinder forming an air-flue, which discharges the air circumferentially near its closed top, while the outer cylinder communicates with the vapor-generating chamber and conducts said vapors to the point of discharge of air from the inner cylinder, in combination with an air-passage into the vapor-generating reservoir, and an adjustable draft-flue for conducting the vapor into the outer cylinder, for the purposes of regulating or extinguishing the flame, substantially as described.

8. In a lamp-stove, the tank A, the absorbent and non-combustible brick B, the flue C, cover D, draft-openings F, dampers G, connecting-lever H, perforated flue J, and concentrator K, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

327,614. TRAM-CAR DRAW-HEAD. John Stephenson, New York, N. Y. Filed July 1, 1885. (No model.)



Claim.—1. A tram-car draw-head with the sliding bar terminating in a hook and behind the hook two legs to support a lever suspended to make contact at its forward end with the hook, substantially as and for the purpose set forth.

2. A tram-car draw-head with its sliding bar terminating in a hook and behind the hook two lugs holding a lever capable of vibration on its axis, the lighter end making contact with and closing the mouth of the hook, as and for the purpose set forth.

3. A tram-car draw-head with a hook and sliding bar, and a lever with one end closing the mouth of the hook, and its opposite end curved upward in a suitable form to receive under it the operating-toe of the boot, as and for the purpose set forth.

4. A tram-car draw-head with the mouth of the draw-head hook closable by a lever having its outer end closing the mouth of the hook and the inner end weighted to hold the hook closed, substantially as and for the purpose set forth.

5. A tram-car draw-head provided with a hook, and with a lever passing through the dash-apron, as and for the purpose set forth.

6. A tram-car draw-head constructed with a sliding bar having a flat part passing through the dash, and the front section, D, of the socket placed above the nose-piece, with the central part of the sliding bar through a chamber in the nose-piece, and the shank of the sliding bar, with its spring, in the rear portion of the socket, beneath the nose-piece and the floor of the platform, as and for the purpose set forth.

7. A tram-car with a spring draw-head having its sliding bar front section flat, or nearly so, with hook outer end and a lever closing the mouth of the hook, the front section of the socket on the upper side of the nose-piece, the middle section extending through the nose-piece and platform-floor, and rear section of the socket carrying in its lodge a spring opersting as both draw and bumper springs, as and for the purpose set forth.

8. A tram-car with a hook draw-head holding the car-whiffles locked in the hook by a lever closing the mouth of the hook automatically and capable of letting out the whiffles when tilted by the driver's toe raising the inner end, substantially as described.

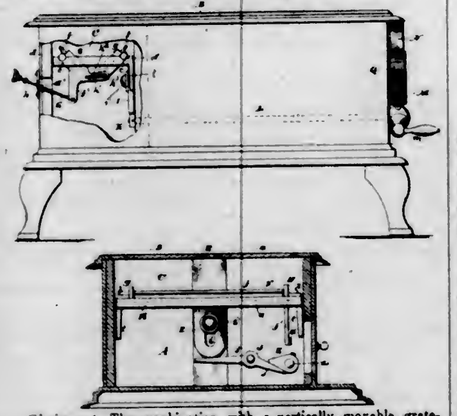
9. A tram-car with draw-head having its sliding bar recoiled by a spring below the platform-floor, with the head of sliding bar elevated above its floor and the flat section of the bar passing forward through holes in the dasher sufficiently to permit the easy coupling of the poles or whiffles, substantially as described.

10. A tram-car draw-head with the front section of the sliding bar flat and located above the nose-piece, the middle section extending through the nose-piece, and the third or tail section holding the spring below the car-floor, as and for the purpose set forth.

11. A tram-car draw-head with a flat front section of its sliding bar above the platform-floor, and the tail section below the floor, and passing through a spring held in its ledge, and acting as a bumper and draw-spring, with an additional draw-spring on the tail of the sliding bar, outside of the socket, as and for the purpose set forth.

327,615. ADJUSTABLE GRATE FOR STOVES AND FURNACES.

Jeremiah Stever, Bridgeport, assignor of one-third to Isaac Edward Booth, Jr., Trumbull, Conn. Filed Sept. 18, 1884. (No model.)



Claim.—1. The combination, with a vertically-movable grate-frame and dumping grate-sections mounted therein, of a counter-weight and devices for connecting the counter-weight and grate-frame, substantially as set forth

2. The combination, with a vertically-adjustable grate-frame and dumping grate-sections pivotally mounted therein, of a rock-shaft, devices connecting the rock-shaft and grate-frame, and an adjustable counter-weight connected with an arm attached to one end of the rock-shaft, substantially as set forth.

3. The combination, with a vertically-adjustable grate-frame and dumping grate-sections mounted therein, of a rock-shaft, counter-weight, and friction locking mechanism, substantially as set forth.

4. The combination, with a vertically-movable grate-frame and means for automatically elevating the same as the fuel is consumed, of dumping grate-sections mounted in said frame and devices for dumping the grate in any position in its vertical adjustment, substantially as set forth.

5. The combination, with a vertically-adjustable grate-frame, a counter-weight, and connecting devices for automatically elevating the grate as the bed of fuel is being consumed, of dumping grate-sections journaled in the grate-frame, one of said sections having an arm upon which is supported and moves an arm or stud on the other section, substantially as set forth.

6. The combination, with a vertically-adjustable grate-frame, a rock-shaft, a counter-weight, and connecting devices for automatically elevating the grate as the fuel is being consumed, of a segmental rim and eccentric block for locking the grate in any desired position, substantially as set forth.

7. The combination, with a vertically-adjustable grate-frame, of a rock-shaft journaled within the stove and means for transmitting motion from the rock-shaft to the grate and a counter-weight adjustably connected with the rock-shaft, substantially as set forth.

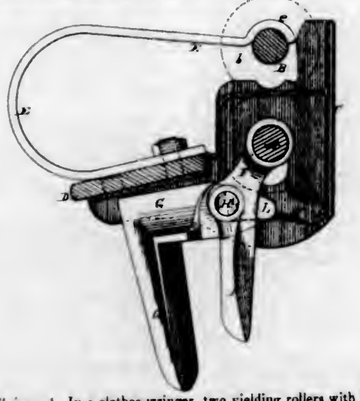
8. The combination, with the grate-frame provided with a depending arm, of a pivoted arm, a rock-shaft provided with a tappet, and an adjustable counter-weight, substantially as set forth.

9. The combination, with a vertically-adjustable grate-frame, the dumping grate-sections, one operated by the other, of a rod pivoted to one grate-section and provided at its outer end with a handle and collar, substantially as set forth.

10. The combination, with a vertically-movable grate-frame provided with depending corner guides, of a dumping-grate mounted on said frame, substantially as set forth.

327,616. CLOTHES-WRINGER.

Charles K. Stetson, Boston, assignor to Levi Ladd, Needham, Mass. Filed Aug. 20, 1884. (Model.)



Claim.—1. In a clothes-wringer, two yielding rollers with suitable springs and two end frames connected by a cross-bar, in combination with clamping devices consisting of two jaws pivoted to each other, one of said jaws having its upper end formed as a ring or strap embracing the journal of the lower roller, while the other at its upper end has an outward projection bearing against a shoulder on the end frame, for the purpose set forth.

2. In combination with the rollers and end frames of a clothes-wringer, a clamping device at each end of the machine formed in two parts pivoted to each other by means of a stud cast upon one member of each pair of clamps and passing loosely through the other member, said clamps and end frames being both pivoted upon the journals of the lower roller, substantially as and for the purpose set forth.

3. In combination with the rollers and frame of a clothes-wringer, a clamping device in two parts pivoted to each other, one of the clamp-jaws having a cylindrical stud cast upon it forming a pivot for the other jaw, and also having an outward projection cast upon it to engage with a shoulder or recess of the end frame, substantially as set forth.

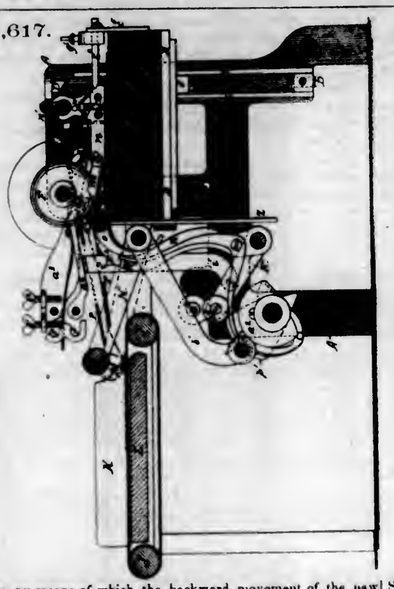
4. In a clothes-wringer, a clamping device consisting of two jaws pivoted to each other, one of said jaws having cast upon its upper end an outwardly-projecting lug, L, in combination with the end frames provided with the shoulder K, substantially as set forth.

327,617. PAPER-FEEDING MACHINE.

Robert J. Stuart, Poughkeepsie, N. Y., assignor to the Sedgwick Manufacturing Company, same place. Filed June 6, 1881. (No model.) Patented in England Apr. 2, 1881, No. 1,458.

Claim.—1. In a paper-feeding machine, in combination with the regulating pressure-foot Y, levers S^2 and S^3, each having an inclined

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surface by means of which the backward movement of the pawl S' is determined, substantially as described.

2. In a paper-feeding machine, the combination of an adjustable rubbing device and an adjustable holding device with a pivoted separating-plate, substantially as described.

3. In a paper-feeding machine, in combining with the pivoted buckling devices a pivoted separating-plate having a reciprocating movement, substantially as described.

4. In a paper-feeding machine, in combining with the buckling devices a pivoted separating-plate having a reciprocating motion, and during the operation of separation an upward and downward movement, substantially as described.

5. In a paper-feeding machine, in combination with buckling devices and a paper-supporting table, a separating-plate pivoted in vibrating arms, substantially as described.

6. In a paper-feeding machine, in combining with the buckling devices and a table or support for paper, a pivoted reciprocating separating-plate having one or more frictional surfaces which co-operate with other rotary frictional surfaces to remove a sheet from a pile of paper, substantially as described.

7. In a paper-feeding machine, the combination of an adjustable rubbing device with a pivoted holding device, both working upon the surface of a paper sheet to lift the edge and separate it from a pile of paper, and the supporting-table, substantially as described.

8. In a paper-feeding machine, the combination of a pivoted reciprocating separating-plate, an adjustable reciprocating arm with frictional rubbing surface, an adjustable roll or holding device with a table or support for paper, and mechanism, substantially as described, for moving said table automatically.

9. In a paper-feeding machine, in combination with a buckling device and paper-supporting table, a separating-plate with one or more frictional surfaces which are introduced beneath a sheet of a pile of paper, and co-operate with a frictional surface upon the other side thereof in the removal of the sheet, substantially as described.

10. In a paper-feeding machine, the combination of a separating-plate and a pivoted arm or toe with the belt or clutch shifter, substantially as described.

327,618. GAS-FURNACE.

William Swindell, Allegheny, Pa. Filed Aug. 7, 1884. (No model.)

Claim.—1. The combination, in a furnace having air-heating chambers and a bridge-wall, of hot-air flues leading from the air-heating chambers to the bridge-flues, gas-distributing mains and branch pipes, gas-flues arranged above the air-flues and converging toward the bed, and bridge-flues for receiving the air and gas from their respective flues and delivering them to the bed, substantially as and for the purposes described.

2. In a gas-furnace having gas-pipes, the combination of the gas-pipes with brick discharge-nozzles having sockets for receiving the ends of the pipes, and chambered recesses extending beyond the sides of the sockets and around the pipes for receiving and retaining the packing in place in the nozzles around the pipes, substantially as and for the purposes described.

3. In a gas-furnace, the combination of gas distributing and discharge

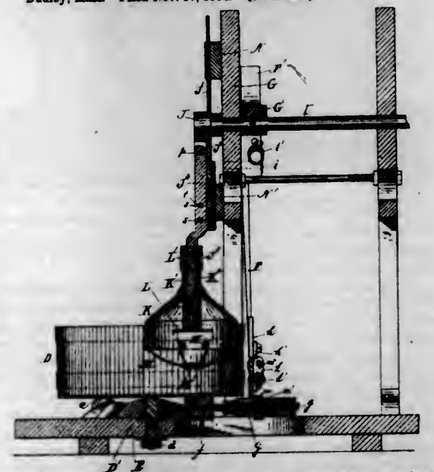
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pipes, with brick nozzles having sockets to receive the ends of the gas-pipes, and expanded or enlarged discharge ends, substantially as and for the purposes described.

327,619. ATMOSPHERIC WASHING-MACHINE.

David E. Taylor, Dudley, Mass. Filed Nov. 17, 1884. (No model.)



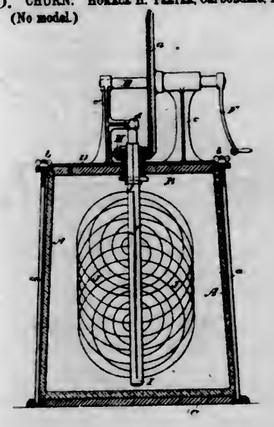
Claim.—1. The combination, with the socketed stem or plunger K' and hollow adjustable plunger K, of hinged arm J^3 J^2, pin s, and tightening-clamp L', said parts being constructed and arranged in relation to each other substantially as and for the purpose set forth.

2. The combination, with pivoted swinging arm J^3 J^2, of the vertically and horizontally slotted reciprocating slide J', and operating-crank I' I^2, substantially as and for the purpose set forth.

3. The combination, with the hollow plunger K, provided with arm J^2 J^3, and shaft I, of the reciprocating slide J', lever F F', spring f', cam G', link-arm H', pawl *k*, and ratchet *m*, substantially as and for the purposes set forth.

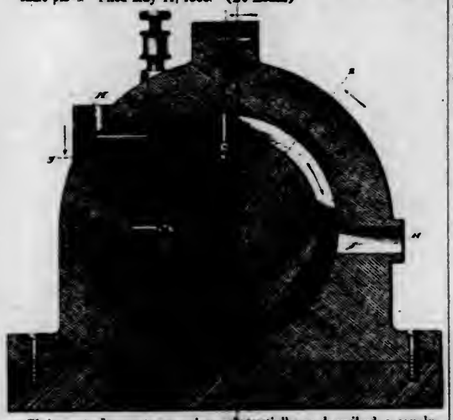
327,620. CHURN.

Horace H. Tester, Carbondale, Ill. Filed May 17, 1884. (No model.)



Claim.—An improved dasher or beater for churns and other similar machines, constructed with a stock, I, having perforations through it at suitable distances apart, as described, and with wings J J, formed of wire passed through the holes in the stock, each wing being formed in volutes having different centers, and the wires of one crossing the wires of the other volute, substantially as herein specified.

327,621. **ROTARY ENGINE.** George E. Tolver, Newport, Mo., assignor of two-thirds to Henderson W. Poundstone and Eli Schepf, both of same place. Filed May 11, 1885. (No model.)



Claim.—1. In a rotary engine, substantially as described, a revolving steam-wheel having formed therein a peripheral channel, combined with the case-ring, having formed integral therewith an inwardly-projecting flange, *b*, fitting in and partially closing said channel, substantially as and for the purpose specified.

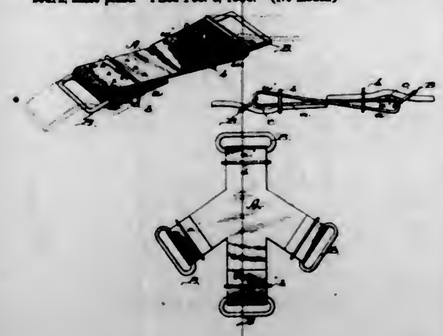
2. In a rotary engine, substantially as described, the combination, with a revolving steam-wheel having a peripheral channel formed therein between the flanges *f*, of a case-ring provided with inwardly-projecting flange *b*, constructed to close a portion of said channel, and provided with a recess to receive a packing-block, and the packing-block *a'* inserted in said recess and projecting beyond the edges of said flange, as and for the purpose specified.

3. In a rotary engine, substantially as described, a revolving steam-wheel provided with a peripheral channel and slots, as described, combined with valves, as *c*, adapted to slide in said slots, and provided with shoulders *c'*, constructed to limit the outward throw of said valves, as set forth.

4. In a rotary engine, substantially as described, the steam-wheel B, recessed around its entire periphery to form a peripheral channel, E, having flanges *f* surrounding said channel upon either side, and having slots F formed in the body of said wheel and terminating at the base of said flanges, and slots F' formed in the inner walls of said flanges, combined with the valves *c*, sliding in said slots in the wheel and guided by the slots in the flanges, as set forth.

5. In a rotary engine, substantially as described, a case-ring made in two parts, with an exhaust-port through one part and the other part formed with an inwardly-projecting flange, *d*, having shoulders *d'*, and a packing-block, *a'*, inserted in a recess in said flange, and a steam-inlet through said part adjacent to said shoulder, substantially as herein shown and described.

327,622. **BUCKLE.** Alison W. Tourgee and Linson De F. Jennings, Mayville, N. Y., assignors to Linson De Forrest Jennings and S. E. Kilbourn, same place. Filed Feb. 6, 1885. (No model.)

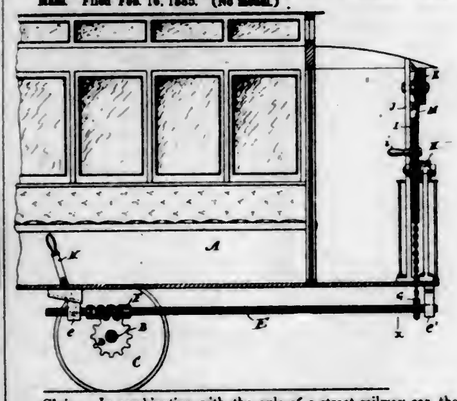


Claim.—1. The metallic plate A, formed with the double inclined plane *a a'*, and provided with the transverse frictional bar *c*, the sliding band *b*, and the transversely-slotted bearing or loop B, substantially as and for the purpose specified.

2. The metallic plate A, constructed as described, with the corrugations upon the reverse side to that of the fastening device, in combination with the sliding thimble or band *b*, substantially as and for the purpose specified.

3. The metallic plate A, constructed as described, with two or more double inclined planes, each provided with the transverse frictional bar *c*, the sliding band *b*, and transversely-slotted bearing or loop B, whereby a double or compound buckle or clasp is provided for holding two or more straps leading in the same or different directions, substantially as and for the purpose specified.

327,623. **STREET-CAR MOTOR.** Wilbert C. Trussell, Boston, Mass. Filed Feb. 16, 1885. (No model.)



Claim.—In combination with the axle of a street-railway car, the worm-wheel D, worm F, shaft E, sprocket-wheels G and I, and chain M, substantially as shown, and for the purposes described.

327,624. **COMBINED LOCK AND LATCH.** Lawrence Van Alstyne, Sharon, Conn. Filed Feb. 6, 1885. (Model.)



Claim.—1. In a lock, a bolt adapted to have longitudinal movement, a locking-piece for said bolt reaching up upon either side thereof, and having notches for the reception of the key from either side of the door, whereby the locking-piece may be rotated or moved circumferentially to bring it into engagement with the bolt, all substantially as described, and for the purpose set forth.

2. In a lock, a bolt adapted to have longitudinal movement, a locking-piece for the same adapted to be operated from either side of the door and moved so as to close the key-hole upon the other side, and to engage with the bolt to lock it in place, substantially as described.

3. In combination, the notched bolt *a*, a locking-piece consisting of a piece of metal nearly semicircular in cross-section, means for holding the locking-piece against movement longitudinally, tangs on said piece registering with the notches *d d* in the bolt, and notches in the piece for the reception of the key, all substantially as described.

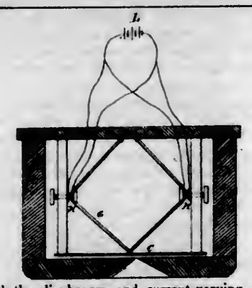
4. In a lock, and in combination, a bolt having notches *d d*, the locking-piece partially surrounding the same and having pairs of tangs A A', notches 10 10 for the key, and an intact portion, 9, whereby when the locking-piece is operated upon one side of the door to lock the bolt in place the said intact portion will move across the key-hole upon the opposite side and close the same, all substantially as described.

5. In combination with a bolt for a lock, a locking-piece nearly semicircular in cross-section and adapted to be moved circumferentially, a series of indentations in the piece, and a spring-catch, 13, substantially as described.

327,625. **TELEPHONE.** Henry E. Waite, New York, N. Y., assignor to Charles F. Livermore, trustee, same place. Filed Apr. 25, 1884. (No model.)

Claim.—1. The combination, in a telephone, of a case, a diaphragm, a yielding support, substantially as described, connected to the diaphragm and case, projections upon the support extending therefrom at opposite

327,625.



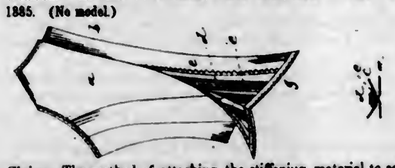
sides parallel with the diaphragm, and current-varying devices carried upon said projections for controlling the current going to line, substantially as described.

2. A telephone embodying in its construction a case, a diaphragm, a yielding support extending from the case to diaphragm, substantially as described, projections upon said support parallel to the diaphragm, carrying electrodes, and adapted to vary the condition of the current in the circuit passing through the electrodes, substantially as described.

3. The combination, in a telephone, of a case, a diaphragm, toggle-levers connecting the diaphragm and case, and means connected with the levers for controlling the current on the line, substantially as described.

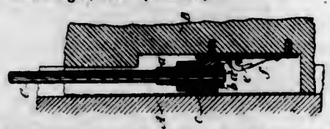
4. The combination, in a telephone, of a case, a diaphragm, toggle-levers connecting the diaphragm and case, and electrodes connected to the levers and adapted to vary the current in the line passing through said electrodes, substantially as described.

327,626. **METHOD OF ATTACHING STIFFENINGS TO DRESS-WAISTS.** Edward K. Warren, Three Oaks, Mich. Filed Mar. 7, 1885. (No model.)



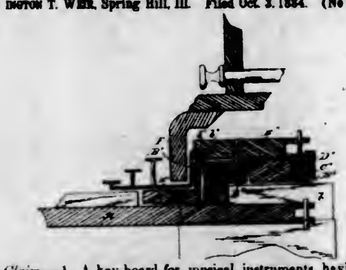
Claim.—The method of attaching the stiffening material to seams by placing it in the open seam after the main seam is sewed, and attaching it to the fabric by stitching its sides to the inside portion of the open seam without connecting it with the main seam, substantially as described.

327,627. **SASH-CORD FASTENER.** Charles C. Webb, New York, N. Y. Filed Aug. 3, 1885. (No model.)



Claim.—In combination, the window-cord, the sash, the split collar encircling the cord and tapering on its exterior, a second collar encircling the first collar and tapering on its interior, a ring attached to the said second collar, and a hook adapted to engage therewith, and secured to the window-sash, all substantially as described.

327,628. **KEY-BOARD FOR MUSICAL INSTRUMENTS.** Worthington T. Weir, Spring Hill, Ill. Filed Oct. 3, 1884. (No model.)



Claim.—1. A key-board for musical instruments having the first, second, fourth, fifth, and seventh keys of the different octaves on one support, and the third and sixth on another, one or both of said supports being movable a half-step with reference to each other, substantially as shown, and for the purposes specified.

2. A key-board for musical instruments having the third and sixth keys of the several octaves supported separately from the other keys on a movable bearing, whereby said keys may be shifted a half-step to the right or left with reference to the other keys, substantially as shown, and for the purpose set forth.

3. In a key-board for musical instruments, the combination of a frame, D, having the bars D' D², and supporting the first, second, fourth, fifth, and seventh keys, with the sliding bar D³ interposed between said bars D' D², and supporting the third and sixth keys, substantially as shown, and for the purposes specified.

4. The combination of the bar D² and the sliding bar D³, each supporting the keys herein enumerated, substantially as shown, and for the purpose specified.

5. In a key-board for musical instruments, the combination of a bar, D³, and frame D, supporting the keys, as herein described, with the frame C, said bar D³ and frame D being movable with reference to each other and to the frame C, as shown, and all together movable upon a way or ways, B² B³, substantially as shown, and for the purpose specified.

6. The combination of the bar D³, frame D, and keys E, hinged to said bar and frame, substantially as described, said bar D³ being arranged to tilt upward at its front edge and raise the front ends of the keys E, substantially as shown, and for the purpose specified.

7. The combination, with a sliding frame, D, seated upon ways B² B³, and having the keys E hinged to its rear portion, of an open frame, C, surrounding said frame D in about the same plane, and hinged thereto at the rear, while its front is free to be raised to lift the front ends of the keys E, substantially as shown and described.

8. The combination, with a frame, D, seated upon ways B² B³ and supporting the keys E, of an open frame, C, surrounding said frame D in about the same plane held (temporarily at least) against lateral movement in said frame C, and hinged thereto at its rear, while its front is free to be raised to release it from the organ and raise the keys E, and then drawn longitudinally to shift the entire key-board to the right or left, substantially as shown and described.

9. A peg-board, B', or similar board, extending upward from the key-board A, and a face-board, F, projecting downward a short distance in front of said board B', and almost touching the key-board A, thus excluding the interior of the instrument from view, and at the same time leaving a space for the bent arms of the keys E, substantially as shown and described.

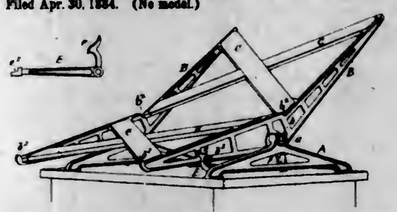
10. A horizontal board, B⁴, lying over the key-board A, a peg-board, B', extending upward at the rear of the board B⁴, and a face-board, F, projecting downward a short distance in front of said board B', and almost touching the board B⁴, thus excluding the interior of the instrument from view, and at the same time leaving a space for the bent arms of the keys E, substantially as shown and described.

11. In a key-board for musical instruments, a series of keys, E, passing over a board, B', then downward in front of the same, and then forward horizontally beneath the face-board F, substantially as shown, and for the purpose set forth.

12. The keys E, having their outer portions bent downward, then forward, and then upward, substantially as shown and described.

13. In a key-board for musical instruments, a key or keys having a forked arm or end, E', substantially as and for the purposes herein set forth.

327,629. **STAND FOR TYPE-CASES.** Heber Wells, Paterson, N. J. Filed Apr. 30, 1884. (No model.)



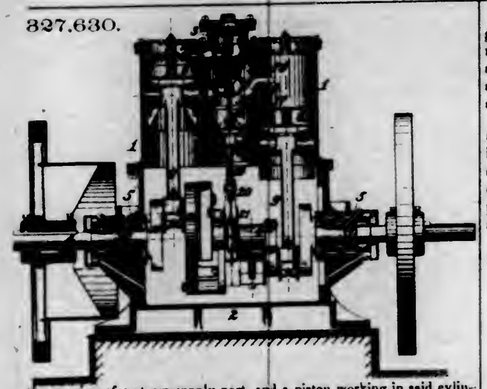
Claim.—1. In a stand for supporting type-cases, the combination of the side pieces, A, provided with half-round openings *a* and stops *h*, the frame-work B C, provided with the trunnions *b* and lipped portions *b²*, and the lugs or projecting pieces F, constructed and operating substantially as and for the purpose set forth.

2. In combination with the side pieces, A, and frame-work B C, constructed and operating substantially as described, of the movable lever E, one end of which is curved, as at *e*, and its opposite end cut away, substantially as and for the purpose specified.

327,630. **REDUCING CLEARANCE IN STEAM-CYLINDERS.** H. Herman Westinghouse, New York, N. Y., assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Aug. 15, 1885. (No model.)

Claim.—1. The combination of a steam-cylinder having a clearance-reducing block fixed to its head, and extending therefrom to or near

327,630.

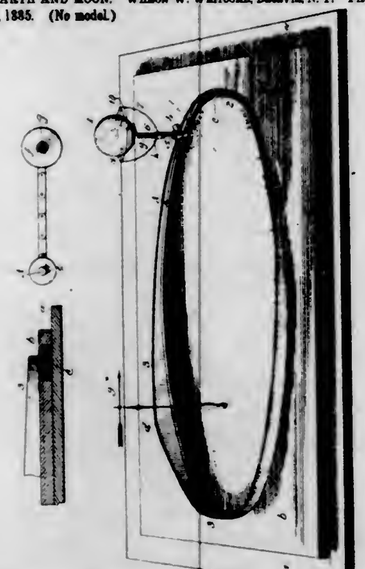


the opening of a steam-supply port, and a piston working in said cylinder and laterally cut away or recessed, so as to work close to and clear of said block in its traverse in the cylinder, substantially as set forth.

2. The combination of a steam-cylinder, a clearance-reducing block fixed to a head of the cylinder and having an inclined or curved face extending from said head to or near the opening of a steam-supply port, and a piston working in said cylinder and having a lateral recess inclined or curved in conformity with the face of the reducing-block, substantially as set forth.

3. The combination of a pair of steam-cylinders, an intermediate valve chest or chamber, a main distribution-valve working therein, a port leading from the end of one cylinder directly or in substantially a right line into the valve-chamber and governed by a piston on one end of the valve, a port leading from the valve-chamber in position to be governed by a piston on the opposite end of the valve into the other cylinder at or near the level of the adjacent packing-ring of the piston of said cylinder when at the end of its stroke, and a clearance-reducing block extending from said port to the cylinder-head, substantially as set forth.

327,631. DEVICE FOR REPRESENTING THE MOTIONS OF THE EARTH AND MOON. Wilson W. Whitcomb, Batavia, N. Y. Filed July 3, 1885. (No model.)



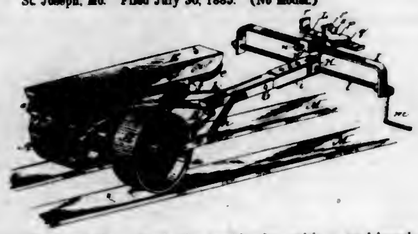
Claim.—1. In a planetarium, in combination with a guiding-track for earth and moon representative bodies, a track coincident therewith and ascending and then descending in the line of travel of said bodies, the said inclined track acting upon the moon-representing body to raise and lower the same, substantially as and for the purpose specified.

2. In a planetarium, in combination with a traveling globe-supporting standard, a ball or globe having a support movable longitudinally on said standard, and an ascending and descending track acting upon said ball, substantially as and for the purpose specified.

3. In a planetarium, the combination, with an earth-representing globe mounted upon a standard, of a moon-representing globe or ball mounted on a frame fixed to a loose sleeve on said standard, a collar on said standard having a projecting roller, an elliptical guiding-track for said standard, and an ascending and descending track for the said roller, substantially as and for the purpose specified.

4. In a planetarium, the combination, with traveling globes representing the earth and moon, of a standard supporting the same, and having at its base a wheel, an undercut channel of elliptical form receiving said wheel and forming a guiding-track for the globes, a handle flexibly connected to said standard and traveling in said channel, and a track imparting to the moon representation a vertical movement, substantially as and for the purpose specified.

327,632. TRUCK FOR MOVING HOUSES. Edward W. Whitehead, St. Joseph, Mo. Filed July 30, 1885. (No model.)

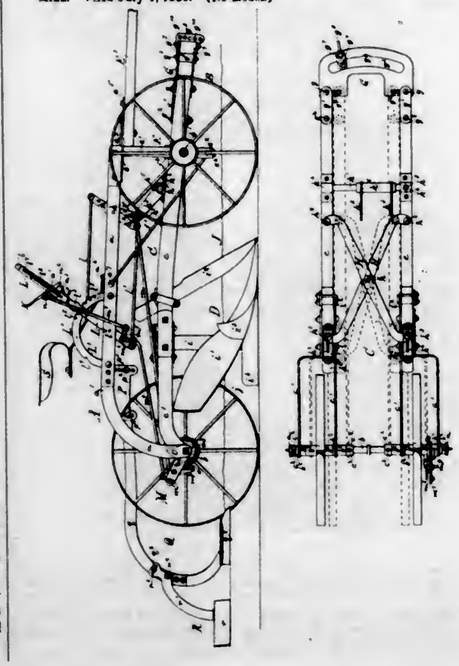


Claim.—1. In a truck, the combination, with a sand-board supported thereby, of a bolster pivoted to the sand-board, and one or more flexible stays passing around grooved pulleys connected to the bolster and their ends attached to the axle of the truck or other fixed object, substantially as and for the purpose described.

2. The combination, with a truck, of the hounds and tongue, the latter provided with a swiveled block, a feeding or adjusting screw passing through the same and having its bearings in a bracket, and a clamping device connected thereto, substantially as and for the purpose set forth.

3. A truck provided with elliptic springs and upright spiral springs located between the sections thereof, a sand-board and bolster, and flexible stays extending around grooved pulleys on the bolster and attached to the axle, in combination with a feeding or adjusting screw passing through a swiveled block, a bracket to form bearings for the screw, and a clamping device adjustably connected to the bracket, substantially as and for the purpose specified.

327,633. SUGAR-CANE CULTIVATOR. Edward Wiard, Litchfield, Minn. Filed July 1, 1885. (No model.)



Claim.—1. The combination, with the tongue E', connected to a yoke, E, which turns on the king-bolt e^4, of the plow-beams c c, connected at their front ends by coupling draft-plates G, in which are curved slots g^2, concentric with the king-bolt and notches g^4 about centrally of their length, and an automatic laterally-moving clevis, g^4, comprising coupling-arm g^3 and a draft-bolt, o^4, substantially as and for the purpose described.

2. In a cane-cultivator, the combination of a main frame, A, supported by wheels B B' on a rigid rear axle, *b*, and a swinging front axle-yoke, E, with a vertically and horizontally adjustable plow-frame, C, swinging vertically upon the rear axle and having the clevis applied to it, substantially as and for the purpose set forth.

3. The laterally-expansible plow-frame C, having shear-plates H, with a common fulcrum, *h*, end fulcrums, h^2, on the plow-beams *c*, sliding end pins, h^3, and slotted guide-plates h^4, secured to the plow-beams, substantially as and for the purpose set forth.

4. The combination, with the wheeled main frame A, and the plow-frame C, and suitable connections, of the hand-lever L, elevating-lever k^4, toggle-joint K, and parallel connecting rods *l l'*, arranged on both sides of the fulcrums of said levers, substantially as and for the purpose set forth.

5. The combination of the rear axle, *b*, fastened by its ends rigidly to the main frame A, the laterally and centrally adjustable forked plow-frame C, having forked ends *c'*, and adjustable plates G, rear wheels, B', and collars c^3, having set-screws c^3, substantially as and for the purpose set forth.

6. The combination, with the main or supporting frame A, mounted on four wheels, of the plow-frame C, carrying right and left plows D, and shaver Q, having knives q' q^2, separated to form relief-passage q^4, and the scraper R, substantially as and for the purpose described.

7. In a sugar-cane cultivator having a supporting wheeled frame, A, the combination, with the shaver Q and scraper R, of two corresponding centrally and laterally adjustable plows, D D, having right and left mold-boards and furrow side cutters, substantially as and for the purpose described.

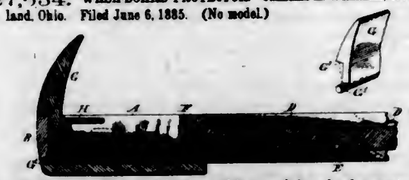
8. The combination of the wheeled frame A, plow-frame C, toggle-joint elevating mechanism K, levers L k^4, notched arc L', and connecting-rods *l l'*, for raising and lowering the plow-frame by hand, substantially as described.

9. The combination of the wheeled frame A, plow-frame C, levers L k^4, connecting-rods *l l'* *m* m^4 m^2, handle N, and elevating mechanism M, substantially as and for the purpose set forth.

10. The combination of the main frame A, mounted on four wheels, the plow-frame C, carrying two corresponding right and left handed plows, and provided with yoke F and braces *f'*, and the horizontally-turning yoke E, having tongue E' attached to it, substantially as and for the purpose described.

11. The right and left plows D D, applied upon the plow-frame C and main frame A, and provided with landsides which converge toward each other as they extend backward, and with cutters i^2, substantially as and for the purpose described.

327,634. WASH-BOARD PROTECTOR. Charles H. Williams, Cleveland, Ohio. Filed June 6, 1885. (No model.)



Claim.—1. The combination, with a wash-board, of a protector pivoted in the side rails thereof, and near the junction of the branding-board and cap-piece, and cut away to receive said cap-piece, and a fastening device for maintaining said protector in operative position, substantially as specified.

2. A protector for a wash-board, provided at its lower corners with pivots, and having its upper surface cut away to receive and conform to the edge and lower surface of a cap-piece, substantially as specified.

3. In a wash-board, the combination of the protector G, the side rails, A, and the spring-catch H, substantially as shown and described.

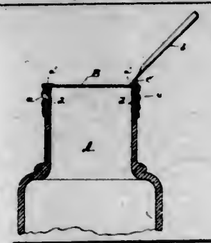
4. In a wash-board, the combination of the side rails, A, cross-bar B of the protectors G G, and spring-catches H H, substantially as shown and described.

327,635. CAP FOR MUSTARD-BOTTLES. Ferdinand Wolff, Hoboken, N. J. Filed Mar. 27, 1885. (No model.)

Claim.—1. The combination of ring *a*, having flange *a'* and cover *b*, with the disk B, secured beneath flange *a'*, substantially as specified.

2. The combination of bottle A, having neck *d*, with flanged ring *a*, and disk B, the flange of ring *a* projecting beyond the inner edge of the neck *d*, and with cover *b*, substantially as specified.

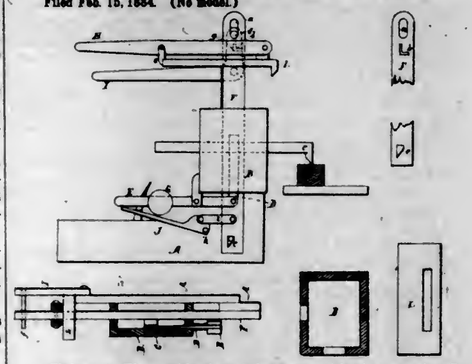
327,635.



327,636. PROCESS OF TREATING BUTTER. Emma J. Woodruff, Chicago, Ill. Filed Aug. 17, 1885. (No specimens.)

Claim.—The herein-described method of treating butter, consisting in adding to the milk white-wine rennet, sugar, salt, bicarbonate of soda, bicarbonate potassium, alum, and butter, in about the proportions herein specified, substantially as and for the purpose set forth.

327,637. SAW-MILL DOG. Elon G. Woodworth, Allegheny, Pa. Filed Feb. 15, 1884. (No model.)



Claim.—1. The combination of the frame A, having top plate L, vertically and laterally adjustable support F, provided with slots *a b c*, adjustable holder B, sliding upon said adjustable support, dog C, carried by the head B, levers H and I, provided with pins *g* and *f*, and pawl *e*, substantially as described.

2. The combination of the frame A, having top plate L, vertically and laterally adjustable support F, provided with slots *a b* at its upper end and *c* at its lower end, adjustable dog-holder B, sliding upon support F, dog C, lever H, attached to plate L and provided with pin *g*, lever I, attached to support F and having pin *f*, pawl *e*, attached to lever H and adapted to engage with plate L, wedge D in the holder B secured to lever E, and adjustable weight G, substantially as described.

3. The combination of the frame A, having top plate L, vertically and laterally adjustable support F, provided with slots *a b* at its upper end and *c* at its lower end, adjustable dog-holder B, dog C, wedge D in holder B and secured to lever E, lever H, attached to plate L and provided with pin *g*, lever I, attached to support F, and having pin *f*, lever J, attached to frame A, and link *i*, secured to lever J and support F, substantially as described.

327,638. PIPE-REAMER. Matthew T. Wyatt, Quebec, Quebec, assignor of one-half to William Fullarton Ramsay, Montreal, Canada. Filed Sept. 29, 1884. (No model.)

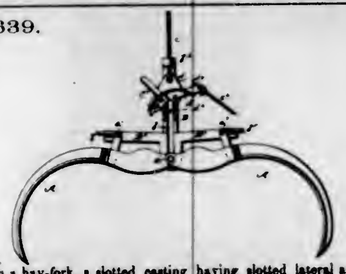


Claim.—The herein-described tool for cleaning the bowls of tobacco-pipes, consisting of an enlarged head or handle and a tapering stock having wings or blades projecting radially from it and extending beyond the end of such stock, substantially as and for the purposes set forth.

327,639. HORSE HAY-FORK. Enoch S. Yeutter, Ottawa, Ill., assignor of one-half to Charles S. Cullen and Rector C. Hitt, same place. Filed Sept. 10, 1884. (No model.)

Claim.—1. In a hay-fork, the combination, with a vertically-slotted casting having lateral arms, of the fork-tines having their inner ends pivoted together and adapted to rise and fall in the slot and fulcrumed adjustably in the lateral arms, substantially as shown and described.

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2. In a hay-fork, a slotted casting having slotted lateral arms, in combination with a pair of fork-tines fulcrumed in the arms and pivoted together at their inner ends, and a lifting-latch sliding vertically in the slotted casting, substantially as shown and described.

3. In a hay-fork, the casting B, formed with serrations d^2, in combination with the latch-plate C, having a beveled lug, d', upon its rear side, substantially as and for the purpose set forth.

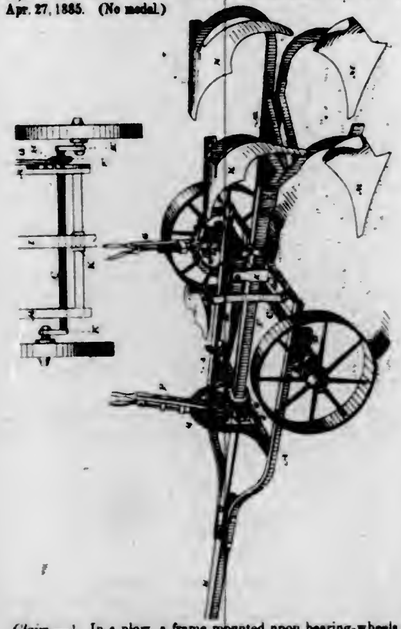
4. The plate or casting B, having slot b and serrations d^2, in combination with the latch-plate C, cast with a beveled projection, d', and the suspending-cord e, passed through both the latch-plate and the slotted casting and secured to a block upon its other side, substantially as and for the purpose set forth.

5. The casting B, having slot b and slotted arms B', in combination with the tines A, connected at their inner ends by a pivot, a, working in the slot b and fulcrumed at a' in the slotted arms, substantially as and for the purpose set forth.

6. The slotted casting B, having slotted arms B', and the tines A, fulcrumed in the slotted arms and having a projecting pivot-pin, a, connecting their inner ends, in combination with the plate C, latch C', having shoulder c', and tripping-lever C^2, substantially as and for the purpose set forth.

7. A hay-fork having its tines made of angle-iron, substantially as and for the purpose set forth.

327,640. SULKY-PLOW. John T. Ziegler, Santa Cruz, Cal. Filed Apr. 27, 1885. (No model.)

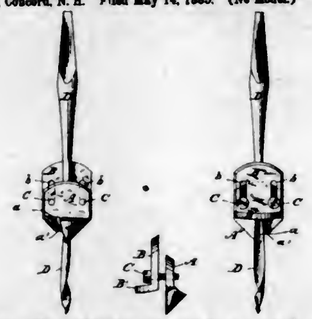


Claim.—1. In a plow, a frame mounted upon bearing-wheels with a central horizontal rotating plow-beam journaled at the front extending rearwardly through the slotted standard and having the plows M and N secured to it, in combination with a lever, whereby the rear portion may be raised and lowered, substantially as herein described.

2. In a plow, a frame mounted upon wheels having a central horizontal plow-beam with its front end journaled to the front of the frame in a loose box which will permit its rear end to be elevated or depressed about this box as a fulcrum, a toothed segment and lever connected with the beam at this point by which it may be reversed, a slotted guide inclosing the rear portion of the beam, and a lever by which the rear end may be raised and depressed, in combination with bearing-wheels supported upon the oppositely-cranked ends of a straight axle which turns in boxes on the frame, and a pinion secured to the axle with a lever and a toothed segment, whereby the axle may be rotated in its boxes and the relative position of the wheels changed, substantially as herein described.

3. In a plow, a frame mounted upon wheels having a central horizontal plow-beam journaled upon it and extending rearwardly with plows M and N fixed to it, as shown, in combination with a pinion secured to the beam and journaled to the clutch-lever, a toothed segment engaging said pinion, and a holding-spring and notched rack engaging the pawl and serving the double purpose of the fulcrum for the segment and a brace for the frame which supports the front end of the plow, substantially as herein described.

327,641. COUNTERSINK. George W. Abbott and George S. Forbes, Concord, N. H. Filed May 14, 1885. (No model.)



Claim.—The combination, substantially as set forth, with the part A, having a semi-conic enlargement, A', provided with groove a and cutting-edge a', which comprises the countersink, of the adjustable part B, provided at its lower end with flange B', convexed on its bottom, which comprises the gage, and the screws C, whereby said parts are secured to a bit, all constructed and operating in the manner specified.

327,642. PEN-HOLDER. Horace F. Atwood and Edward Wallis Jr., Rochester, N. Y. Filed Mar. 24, 1885. (No model.)



Claim.—1. The improved pen-holder consisting of a case or body containing in one end the two pen sockets or holders, each adapted for projection when the other is retracted, whereby two pens may be used in one holder without interference.

2. In a pen-holder, the combination of the case or body, the pinion, and the two slides engaging said pinion, and each provided with a pen-receiving socket.

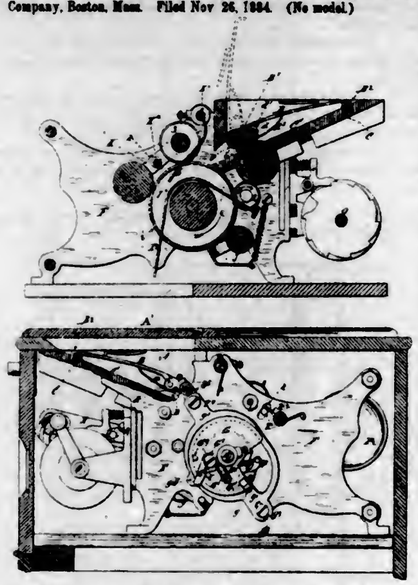
3. In a pen-holder, the combination of two pen-carriers or slides at the same end of the holder and intermediate connecting devices, substantially as described, to effect the retraction of one slide as the other is projected, whereby one or the other of the pens may be brought into position for use at will.

327,643. METHOD OF MAKING PICTURE-FRAME MOLDING. C. O. Baxter, St. Louis, Mo., assignor of one-half to Henry C. Johnson and Julius Kozisek, Chicago, Ill. Filed Dec. 16, 1884. (No model.)



Claim.—The herein-described method of producing antique picture-frame molding, which consists in first casting the body of the molding of a composition with suitable designs in its face, then coating it with shellac, upon which is added a coat of oil, then covering it with metal leaf—such as gold, silver, or copper, according to the effect desired—then shading it by means of a suitable coloring substance, and, finally, adding a coat of colorless varnish or equivalent material, substantially as set forth.

327,644. REGISTERING AND CANCELING BALLOT-BOX. John B. Benton, Roselle, N. J., assignor to the Standard Cancelling Ballot Box Company, Boston, Mass. Filed Nov 26, 1884. (No model.)



Claim.—1. In a ballot-box, a device for canceling ballots and a register for registering the number of ballots canceled, consisting of mechanism contained within the ballot-box and actuated by an external handle, in combination with a retaining device consisting, essentially, of a retaining-pawl and a suitable bearing for engaging such pawl, and thereby automatically arresting the rotation of the prime shaft of the said mechanism at the conclusion of every actuating movement of the said handle, and means for manually effecting the disengagement of said pawl and thereby permitting a repetition of the actuating movement of the said handle.

2. In a ballot-box, a device for canceling ballots, and mechanism for feeding ballots thereto, operated by the rotation of a prime shaft actuated by an external handle, and a retaining device consisting, essentially, of a retaining-pawl and a suitable bearing for engaging said pawl, and thereby arresting the rotation of the said shaft, and stopping the actuating movement of the said external handle at a prescribed point, in combination with a movable cover for the opening, through which ballots are fed to the said canceling device, and means for connecting the said cover to the said retaining device, whereby the disengagement of the said pawl from its bearing is effected by the movement of the said cover.

3. The combination, in a ballot-box, of a ballot-canceling device actuated by the rotation of a shaft connected with an external handle, a movable cover for closing the opening through which ballots are fed to the said canceling device, suitably connected with a movable locking-catch, and a seat for the said catch formed in or upon a disk affixed to the said shaft, whereby the said catch is held in engagement with its seat, and prevents any rotation of the said shaft, except when the said cover occupies the position in which it closes the said opening.

4. In a ballot-box substantially such as described, the combination of the swinging frame g', provided with the pins g and g^2, and the disk G, rigidly affixed to the prime shaft I, provided with the radial slit G', and having pivoted to it the retaining-pawl G^2, with the movable cover B, suitably connected with and adapted to impart the required swinging movements to the said frame g', substantially as and for the purposes set forth.

5. The ballot-receiving table C' and the feed-roller D, in combination with the cover B, the cam b, and the idler-roller d, substantially as and for the purpose set forth.

6. The combination, as herein set forth, of the ballot-receiving table C', provided with the transverse rib C, the feed-roller D, the cover B, provided with the downwardly-turned flange B^2, the cam b, and the idler-roller d.

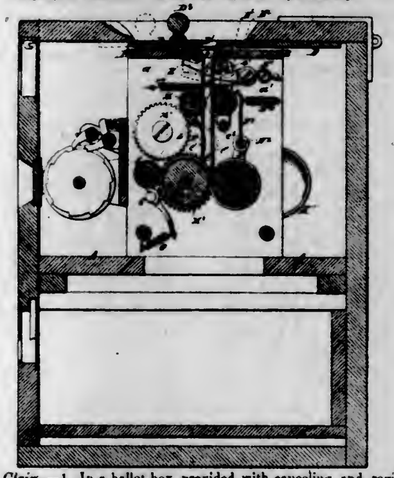
7. The circumferentially-grooved printing-roller I, and the correspondingly-grooved friction-roller 3, and means for feeding a ballot between the printing-roller I and the friction-roller 3, in combination with the fingers L, the rock-shaft L', the arm L^2, the tripping-lever l, provided with the projection l^2, the impelling-pawl H', and the notched crank-wheel M, whereby power is transmitted from the prime shaft to actuate the register each time a ballot is fed through between the printing-roller I and the friction-roller 3.

8. In a ballot-box, a counting-register suitably connected with and actuated by the rotation of a loose wheel supported upon the prime shaft of the machine and driven by an impelling-pawl pivoted to a disk affixed to the prime shaft and adapted to engage a shoulder or notch formed in the periphery of the said loose wheel, and means for automatically tripping the said pawl out of engagement with the said shoulder and thereby preventing the said pawl from rotating the said loose wheel during every rotation of the printing-roller, which occurs without the presence of a ballot, between the printing-roller and a friction-roller, which presses the ballot upon the faces of type formed in the periphery of the printing-roller.

9. In a ballot-box containing a grooved printing-roller and a register actuated by an external handle, mechanism, substantially such as described, for arresting the movement of the printing-roller at the conclusion of each actuating movement of the handle, in combination with the fingers L, the rock-shaft L', and means, substantially such as described, for rendering the actuation of the register dependent upon the position of the fingers L relatively to the bottom of the grooves in the printing-roller.

10. The combination, as herein set forth, of the rock-shaft L', provided with fingers L, adapted to be rocked in a prescribed direction by the passage of a ballot through the canceling apparatus, and provided with a crank-arm, L^2, the tripping-lever l, provided with the projection l^2, and the arm l^3, and the pin N', inserted in the pitman N, for transmitting from the crank-wheel M the power required to operate the register.

327,645. REGISTERING AND CANCELING BALLOT-BOX. John B. Benton, Roselle, N. J., assignor to the Standard Cancelling Ballot Box Company, Boston, Mass. Filed Feb. 12, 1885. (No model.)



Claim.—1. In a ballot-box provided with canceling and registering apparatus, and with a receiving-cell for receiving a ballot preparatory to its being fed to the canceling apparatus, the combination, substantially as herein set forth, of the sliding cover D for the said receiving-cell, the swinging frame F, provided with the stop-pins f and f^3, the disk 2, affixed to the shaft I, and provided with the notch f' in its periphery, and having pivoted upon its face the retaining-pawl F', as and for the purposes described.

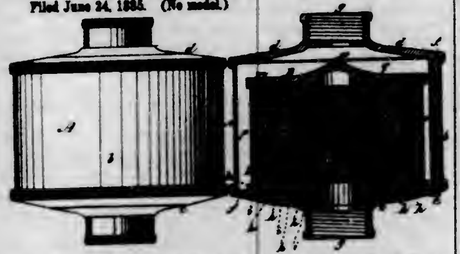
2. The receiving-cell C, having each of its side walls provided with a series of parallel slots, C', in combination with a detector for detecting the presence of a ballot in the cell, consisting, essentially, of a series of fingers, L^3, having a common support, and means for moving the said fingers to and fro in parallel planes intersecting the receiving-cell, whereby, when a ballot is present in the receiving-cell, the collision of the fingers L^3 therewith diminishes their range of movement, and hence varies the position of a tripping device connected and moving concurrently with the detector for the purpose of preventing the transmission of power to operate the registering apparatus when no ballot is present in the receiving-cell, and for permitting the transmission of such power when a ballot is present in the receiving-cell.

3. The arm L, affixed to the detector rock-shaft L', provided with the fingers L^3, adapted to swing in planes intersecting the path through which a ballot is fed into the apparatus, in combination with the spring l' and the cam-wheel H, as and for the purposes set forth.

4. In combination with a detector consisting, essentially, of the fingers L^3, having a common support and adapted to move to and fro in planes intersecting the path by which the ballot is fed into the appara-

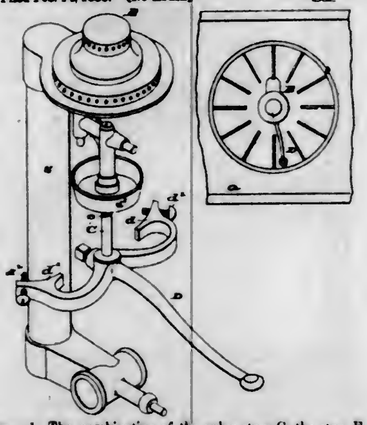
tes, a suitably-recessed rotating cam driven by the actuating or prime shaft 1 of the machine for moving the fingers L^2 out of the path by which the ballot is fed into the machine, and a spring for moving the fingers into the said path when the position of the recess in the said rotating cam permits such movement.

327,646. FILTER. CHARLES W. BENEHAN, Jr., Boston, assignor to Charles H. Kelley, Revere, and Francis C. Perkins, Somerville, Mass. Filed June 24, 1885. (No model.)



Claim.—The combination, with the casing A, composed of a cylindrical main portion, *b*, and two heads, *c* and *d*, having inlet and discharge apertures *g*, of a series of vertically-arranged cylindrical-spaced screens, A, of different diameters, resting at one end upon the head *c*, the annular chamber *p*, between the outer screen and casing, the central chamber, *r*, communicating with the aperture *g*, an imperforate deflecting-cap, B, placed over the other end of the screens and bolted to the head *c*, suitable flanges, K, formed on the inner faces of the cap and head, whereby the screens are separated and the spaces between them filled with a filtering medium, all combined and arranged to operate as herein described.

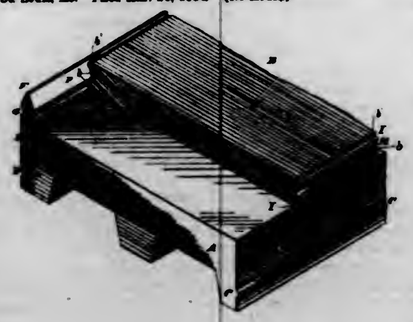
327,647. VAPOR-BURNER STOVE. WILLIAM BLEIBNER, St. Louis, Mo. Filed Feb. 14, 1885. (No model.)



Claim.—1. The combination of the valve-stem C, the stop E, the lever D, the extension *d*, and the adjustable projection d^2, substantially as described.

2. The combination of the valve-stem C, the stop E, and the lever D, having the extensions *d d'*, and the screws d^2 d^3, substantially as described.

327,648. STEREOTYPE-PLATE AND HOLDER. E. RUTLEDGE BOOTH, St. Louis, Mo. Filed Mar. 26, 1884. (No model.)

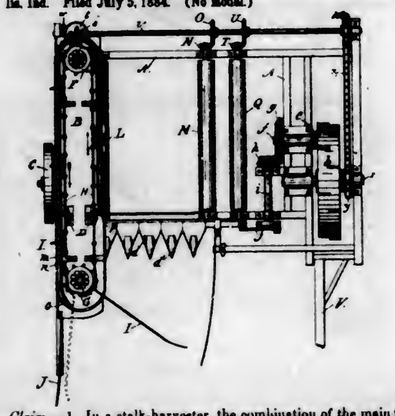


Claim.—1. The combination of the main frame mounted on carrying-wheels, cutting-knives mounted on said frame and operated by one of said carrying-wheels and intermediate connecting mechanism, a conveyer-belt mounted on said main frame, a belt having gathering-arms hinged thereto, as shown and described, and mounted on a table, one end of which is vertically adjustable in relation to said main frame, means for driving said belt, and guides for controlling the position of said gathering-arms, all combined and arranged to co-operate substantially as and for the purpose specified.

2. In a stalk-harvester, a chain-belt mounted on a pair of sprocket-wheels, a table one end of which is vertically adjustable, gathering-arms hinged to said chain so as to swing outward therefrom, as shown and described, guides for controlling the position of said arms, and means for driving said sprocket-wheels and belt in different positions, all combined substantially as and for the purpose specified.

3. In a stalk-harvester, the combination, with main frame A, carrying-wheels *b* and *c*, cutters *d*, and the intermediate mechanism connecting wheel *b* and scythe *d*, of table B, mounted on said main frame and vertically adjustable in relation thereto, chain-belt H, arms I, guides *m n*, sprocket-wheels F and G, shaft *q*, coupling *s*, shaft *r*, and intermediate mechanism connecting driving-wheel *b* with shaft *r*, all substantially as and for the purpose specified.

327,649. STALK-HARVESTER. GEORGE G. F. BOSWELL, Indianapolis, Ind. Filed July 5, 1884. (No model.)



Claim.—1. In a stalk-harvester, the combination of the main frame mounted on carrying-wheels, cutting-knives mounted on said frame and operated by one of said carrying-wheels and intermediate connecting mechanism, a conveyer-belt mounted on said main frame, a belt having gathering-arms hinged thereto, as shown and described, and mounted on a table, one end of which is vertically adjustable in relation to said main frame, means for driving said belt, and guides for controlling the position of said gathering-arms, all combined and arranged to co-operate substantially as and for the purpose specified.

2. In a stalk-harvester, a chain-belt mounted on a pair of sprocket-wheels, a table one end of which is vertically adjustable, gathering-arms hinged to said chain so as to swing outward therefrom, as shown and described, guides for controlling the position of said arms, and means for driving said sprocket-wheels and belt in different positions, all combined substantially as and for the purpose specified.

3. In a stalk-harvester, the combination, with main frame A, carrying-wheels *b* and *c*, cutters *d*, and the intermediate mechanism connecting wheel *b* and scythe *d*, of table B, mounted on said main frame and vertically adjustable in relation thereto, chain-belt H, arms I, guides *m n*, sprocket-wheels F and G, shaft *q*, coupling *s*, shaft *r*, and intermediate mechanism connecting driving-wheel *b* with shaft *r*, all substantially as and for the purpose specified.

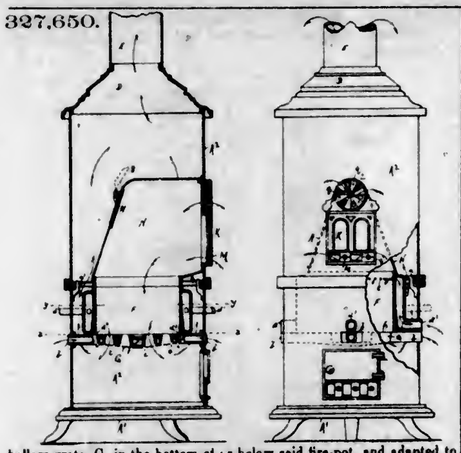
327,650. HEATING-STOVE. JAMES BOYD, St. Paul, Minn. Filed Dec. 6, 1884. (No model.)

Claim.—1. In a heating-stove, an outer casing or shell, A^2, closed at the bottom and having an exit-flue leading from its top, a fire-pot, F, suspended in said outer shell, with a space between it and said shell, a hollow grate, G, in the bottom of or below said fire-pot, and adapted to permit a current of air to pass through and be discharged from the lower side of its bars, an inner shell, H, above said fire-pot, and connected on one side to said outer shell, A^2, a fuel-door, K, leading into said inner shell through said outer shell, and means for supplying air to said fire-pot downwardly through said grate, substantially as set forth.

2. The combination of an outer shell closed at the bottom, an exit-flue leading from the top thereof, a hollow fire-pot suspended within said outer shell, and provided with openings which communicate with the exterior air and with other openings which communicate with the fuel-space, a hollow grate provided with openings which communicate with the outer air, and with other openings which communicate with the space below the grate, and an inner shell within the outer shell and above the fire-pot which shuts off direct communication between the fire-pot and the upper part of said outer shell, as set forth.

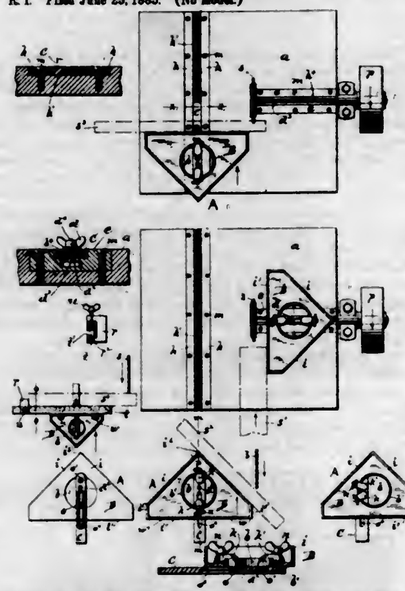
3. In a heating-stove, an outer casing or shell, A^2, closed at the bottom and having an exit-flue, E, leading from its top, a fire-pot, F, suspended in said outer shell, with a space between it and said shell, a

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hollow grate, G, in the bottom of or below said fire-pot, and adapted to permit a current of air to pass through and be discharged from the lower side of its bars, and inner shell, H, having damper N above said fire-pot and connected on one side to said outer shell, A^2, a fuel-door, K, leading into said inner shell through said outer shell, and means for supplying air to said fire-pot downwardly through said grate, substantially as set forth.

327,651. SAW-TABLE GAGE. JOSEPH D. BRADSHAW, Providence, R. I. Filed June 25, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the gage for circular saws hereinbefore described, consisting of the flanged frame B, substantially triangular in outline, provided with a flanged circular opening in its base, a slotted tongue adjustably secured to the under side of the frame, and dogs or clamps for retaining the tongue in position, substantially as shown, and for the purpose set forth.

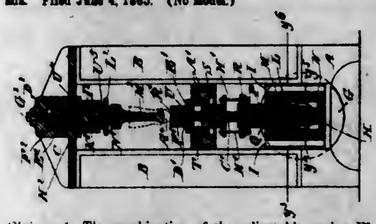
2. The gage for circular saws herein described, consisting of the frame B, substantially triangular in outline, provided with the flanged circular opening *b* in its base, the slotted tongue C, adjustably secured to the under side of said frame, and dogs or clamps *k k'*, for retaining the tongue in position, substantially as shown, and for the purpose hereinbefore set forth.

3. The combination, with a circular sawing or other analogous machine having a table provided with one or more guides, *h e*, or their equivalent, of the gage A, herein described, consisting of the flanged triangular-shaped frame B, having a circular opening, *b*, in its base, and the tongue C, adjustably secured to said frame by means of dogs or clamps *k k'*, said tongue being adapted to slide freely in the guides *h e*, as and for the purpose set forth.

4. The combination, with the saw-gage herein described, consisting of the flanged triangular-shaped frame B, having the circular opening *b* formed in its base, and the tongue C, adjustably secured thereto, of the T-headed bolt d^4, said bolt passing through an opening, d^3, formed in the tongue C and adapted to engage the groove d^2 of the recess h^4, formed in the table-guide *e*, substantially as shown, and for the purpose set forth.

5. The saw-gage hereinbefore described and shown, consisting of the flanged triangular-shaped frame B, provided with the circular opening *b* in its base, the slotted tongue C, adjustably secured to the under side of the frame by means of the screw-connected dogs *k k'*, and the slotted gage-bar *t*, adjustably secured by means of bolts *w* to the vertical flange *i'*, forming the longest side of the frame, as set forth.

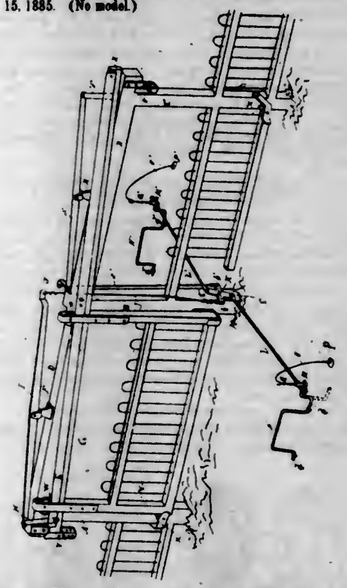
327,652. HEEL-MACHINE. GUILLAUME BRISEBOIS, Quebec, Quebec, Canada. Filed June 4, 1885. (No model.)



Claim.—1. The combination of the adjustable spring E^2, plunger K^2, having resisting-arm M^2 hinged thereto, mold F', having surface L', and knife-edge C^2, plunger R', having holes S', and rods A^2, with an operating mechanism, the whole substantially as described, for the purposes set forth.

2. The combination of the rigidly-retained cylinder D^2, screw G^2, followers F^2 and H^2, spring E^2, cylinder I^2, plunger K^2, having a screwed neck, U^2, placed therein, hinge N^2, resisting-arm M^2, and bar A^2, the whole constructed and arranged substantially as described, for the purposes set forth.

327,653. GATE. JAS. N. BUCKNER, Windsor, Ontario, Canada. Filed Apr. 15, 1885. (No model.)



Claim.—1. The combination, with a gate-frame and a track centrally pivoted to the cross-girt thereof, of two levers pivoted upon said girt and connected with opposite ends of said track, two bails, each having a crank and arranged in the road-bed, one on each side of the gate, the bell-crank K, pivoted to the center post, B, the cords J J', connecting the inner ends of said levers with the bell-crank, and the rods I, I', connecting said bails with the bell-crank, substantially as and for the purposes specified.

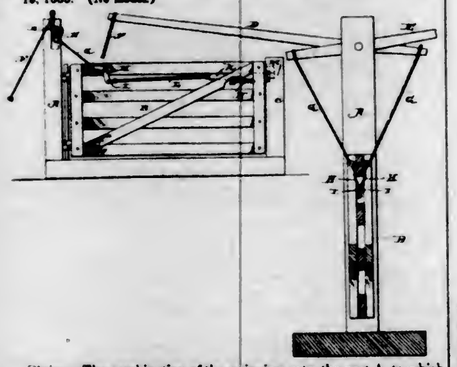
2. The combination, with a gate, a gate-frame consisting of the posts A B C and girt D, and a track, E, pivotally and centrally secured

to said girt and supporting the gate, of the adjustable stops U U', links H T, levers I S, crank-lever K, and cables J J', adjustably secured thereto, substantially as and for the purposes specified.

3. In combination with a gate supported by means of wheels running upon an overhung track, which is centrally and pivotally supported upon the cross-girt of the gate-frame, a bracket, F, secured to said girt and forming the fulcrum of a lever, I, which is pivotally connected with one end of the track E, the cable J, connected with the inner end of said lever, bell-crank K, and bail N, carrying a crank, M, the parts being constructed and operating substantially as and for the purposes specified.

4. In a gate, substantially as described, the combination, with a pivoted track, levers I S, pivotally connected with the outer ends thereof, four-armed lever K, pivoted to the central post of the gate-frame, the cables J J', connecting two arms of said lever K with the inner ends of said levers I S, bails N N', connected to the other arms of the lever K, and carrying cranks, the springs o o', and chains Q Q', connecting the same with the cranks, substantially as and for the purpose specified.

327,654. FARM-GATE. John C. Budd, Defiance, Ohio. Filed Apr. 15, 1885. (No model.)



Claim.—The combination of the swinging gate, the post A, to which the gate is hinged, and the post C, against which the gate closes, said post having the notch M, with the levers D E, fulcrumed to the post A, the bent levers H, fulcrumed to the gate, and connected directly to the inner ends of the levers D E by the cords or ropes G, and the spring-actuated latch K, secured to the gate and connected to the free ends of the levers H by the cord L, substantially as described.

327,655. INGOT FOR PLATED WIRE. Levi L. Burdon, Providence, R. I. Filed Sept. 24, 1884. (No model.)



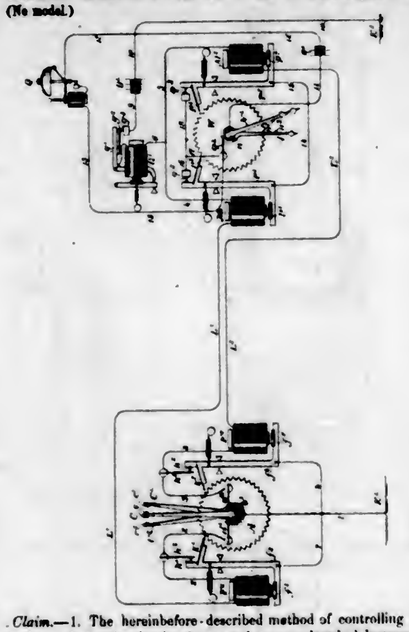
Claim.—The method or process herein described of making compound ingots, which consists, first, in suitably preparing the surface of the cylindrical base-metal core; secondly, in covering said surface with solder, followed by fusing the solder and turning off or truing its surface, thirdly, in inserting the core within the metallic tube, the latter being suitably prepared and adapted for its reception; and, lastly, in introducing the shell with its inclosed core within a suitably-heated furnace or flame-jet, thereby re-fusing the solder, thus uniting or welding the core and tube, and completing the cylindrical compound ingot, after which it is adapted to be rolled and drawn down into seamless wire, substantially as described and set forth.

327,656. FLEXIBLE MATCH-LIGHTING DEVICE. Daniel R. Carroll, New Orleans, La. Filed Nov. 11, 1884. (No model.)



Claim.—In a repeating-match or tape-lighting device, the combination, with the half-box section or shell B, having an opening, *b*, in its rim, and serving to carry the tape in the form of a loose roll, of the larger or receiving half-box section A, having an opening, *c*, in its rim and spring or pressure-guide *f*, and teeth *g*, arranged to ignite the tape as it passes from said opening, and the pivoted lid A, essentially as shown and described.

327,657. METHOD OF OPERATING CIRCUITS IN TELEMETER SYSTEMS. Charles L. Clarke, New York, N. Y. Filed Aug. 20, 1884. (No model.)

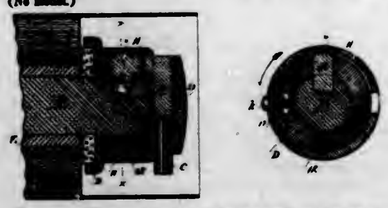


Claim.—1. The hereinbefore-described method of controlling the connections of electric circuits for operating one electrical instrument correlatively with the operation of another, which consists in completing a circuit-connection at one point, thereby causing the connections of a shunt-circuit to be automatically completed at a second point around the first-named point, interrupting the circuit through the first-named point, temporarily interrupting the circuit at a third point, and causing the connections of the circuit to be interrupted at the second point before it is again closed at the third point.

2. The hereinbefore-described method of controlling the connections of an electric circuit for operating one electrical instrument correlatively with the movements of another, which consists in controlling the connections of the same at one point, thereby automatically causing a circuit to be established around that point at a second point, then interrupting the connections at the first-named point, temporarily interrupting the connections at a third point, and subsequently interrupting the circuit at the second point.

3. The hereinbefore-described method of controlling the circuit-connections of a battery for the purpose of operating one instrument correlatively with the movements of another, which consists in completing a circuit for the battery at a given point, subsequently causing a second circuit to be automatically completed around that point, interrupting the first-named circuit, and finally interrupting the second circuit at a third point.

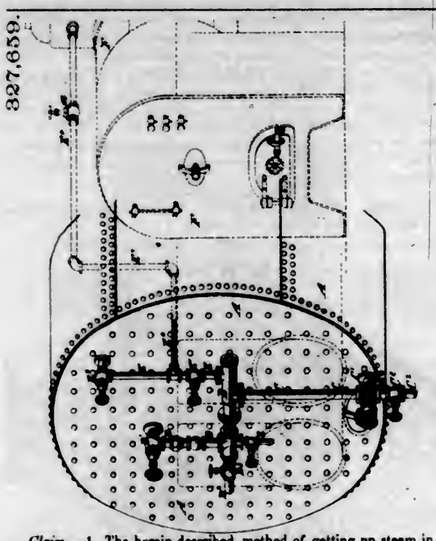
327,658. CAP FOR CARRIAGE-AXLES. John O. Couch, Middlefield, Conn., assignor to John I. Holly, New York, N. Y. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination, with the cap D and the notched ring H, of the locking-pin *a*, head *b*, and bolt *c*, in one piece or permanently connected, substantially as set forth.

2. The combination, with the cap D, locking-pin *a*, bolt *c*, and ring H, of the spring-plug 12, and flanged pusher-plug *k*, substantially as set forth.

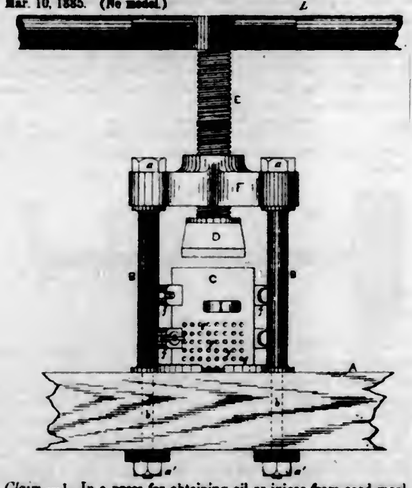
327,659. METHOD OF GETTING UP STEAM IN STEAM-BOILERS. William Crane, Brooklyn, N. Y. Filed Aug. 11, 1884. (No model.)



Claim.—1. The herein-described method of getting up steam in a steam-boiler, consisting in first getting up steam in another or supplemental boiler, in then simultaneously circulating and heating the water in the main boiler before the fires are lighted in the furnaces thereof by an injecting current of steam from the other or supplemental boiler, and in starting the fires in the furnaces of the main boiler after the water therein has become so uniformly heated by steam from the other or supplemental boiler as to greatly lessen the liability of strain due to unequal expansion by the heat of the fires in said furnaces, substantially as herein set forth.

2. The herein-described method of getting up steam in a main boiler, consisting in first getting up steam in another or supplemental boiler, in then simultaneously circulating and heating the water in the main boiler before the fires are lighted in the furnaces thereof by an injecting current of steam from the other or supplemental boiler, whereby water is drawn from one part of the main boiler, heated, and discharged into another part thereof, and in starting the fires in the furnaces of the main boiler after the water therein has become so uniformly heated by steam from the other or supplemental boiler as to greatly lessen the liability of strain due to unequal expansion by the heat of the fires in said furnaces, substantially as herein set forth.

327,660. POWER-PRESS. Frank W. Cross, Washington, D. C. Filed Mar. 10, 1885. (No model.)



Claim.—1. In a press for obtaining oil or juices from seed-meal or fruits and other matters to be pressed, the combination, with the power mechanism, of a corrugated and perforated jacket to receive the basket or receptacle containing the meal or other substance to be pressed, as set forth.

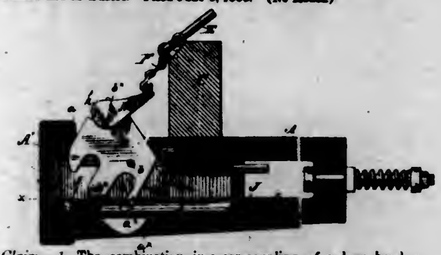
2. In a press for obtaining oil or juices, the combination, with the power mechanism and receiving-jacket C, of a basket or receptacle for the substance to be pressed, said receptacle consisting of a perforated bottom and perforated and hinged sides, as set forth.

3 In a press, as described, a jacket, C, for holding the meal-basket, said jacket being made in two or more parts detachably secured together and provided with handles H, said parts having corrugations or channels a, as set forth.

4. In a press, as described, the combination, with the perforated basket M, of the perforated plates P, upon which the residual matter is deposited, as set forth.

5. In a power-press for the extraction of oil or juices, the combination, with the power-transmitting mechanism, of the removable perforated and corrugated jacket C, the hinged and perforated basket M, and the perforated plates P, as set forth.

327,661. CAR-COUPLING. George W. Curtis, Philadelphia, Pa., Asahel G. Darwin, Glen Ridge, N. J., and Charles C. Davis, Philadelphia, Pa.; said Darwin and Curtis assignors to said Charles C. Davis, for himself and as trustee. Filed June 5, 1885. (No model.)



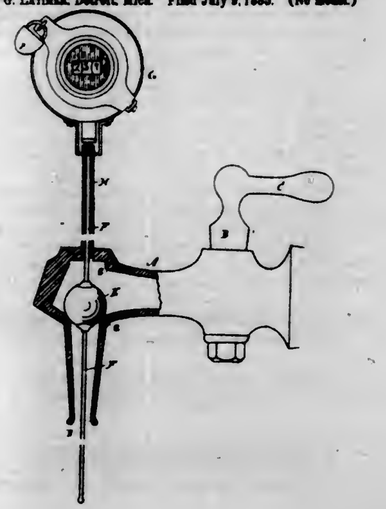
Claim.—1. The combination, in a car-coupling, of a draw-head, a pivoted coupling-hook, the head of which is adapted to engage with a shoulder, notch, or projection upon the draw-head, a spring-buffer, a seat within the draw-head, and a coupling-link adapted to said seat, substantially as and for the purpose set forth.

2. The combination, in a car-coupling, of a draw-head, a pivoted coupling-hook, the head of which is adapted to engage with a shoulder, notch, or projection upon the draw-head, a spring-buffer, a seat within the draw-head for a coupling-link, and a recess below the level of said seat, substantially as and for the purposes set forth.

3. In a car-coupling of the class herein set forth, the combination of a slotted draw-head, a pivoted coupling-hook provided with a hooking nose, a depending leg, a supplemental notch, and a supplemental leg, a spring-buffer, a seat within the draw-head for a coupling-link, and a coupling-link, substantially as set forth.

4. In a car-coupling of the class herein described, the combination of a slotted draw-head, a pivoted coupling-hook provided with a hooking nose, a depending leg, a supplemental notch, and a supplemental leg, a spring-buffer, a seat within the draw-head for a coupling-link, and a recess below the level of said seat, substantially as and for the purposes set forth.

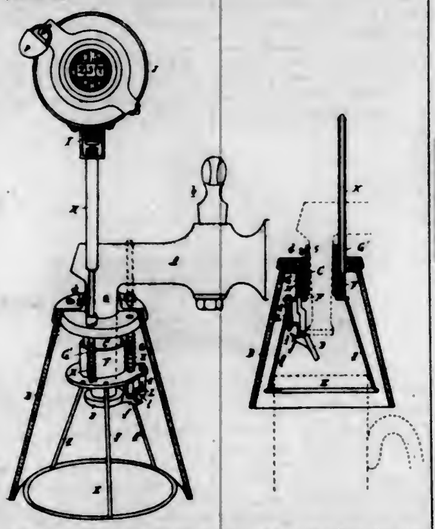
327,662. BEER-REGISTERING FAUCET. David W. Davis and William G. Latimer, Detroit, Mich. Filed July 9, 1885. (No model.)



Claim.—1. A faucet provided with a registering device and a valve having a stem connected with said registering device, as described, whereby pressure on said stem operates said registering device, as set forth.

2. A faucet having circular valve-seats *a*, surrounding the vertical passage thereof at its junction with the horizontal passage, in combination with a ball-valve seated upon the seats *a* and secured through its axis to a rod, as a means for operating a registering device, substantially as and for the purposes specified.

327,663. REGISTERING ATTACHMENT FOR FAUCETS. David W. Davis and William G. Latimer, Detroit, Mich. Filed July 9, 1885. (No model.)



Claim.—1. In an attachment for the purpose described, the combination of the following parts: a tube adapted to be slipped over the faucet and having means for securing it thereto, a hinged valve arranged to be seated against the mouth of the faucet, a conically-shaped frame having a vertical play, a suitable tension device arranged to resist the upward play of the conical frame and keep the valve-disks normally closed, a registering device, and an actuating connection thereto operated by the vertical displacement of the conical frame, all arranged and operating substantially as described.

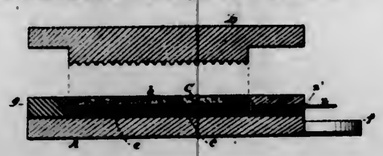
2. In an attachment for the purpose described, the combination of the following parts: an inverted cup or shell, a tube passing centrally through said cup and having means for attaching it to the end of a faucet, a hinged valve below said tube adapted to be seated against the mouth of the faucet, a movable frame having vertical play, a tension device resisting the upward play of the movable frame and keeping the valve-disk normally closed, a registering device, and an actuating connection between the registering device and the movable frame, all arranged and operating substantially as described.

3. In an attachment for the purpose described, the combination of the inverted cup B, the tube C, having flange *c*, the hinged valve-disk D, having the heel-extension *f*, the stop *l*, the conical frame or cage E, having ferrule F, the guide-rods G, the coil-springs H, the actuating-rod G′, and the register J, all arranged and operating substantially as described.

4. In combination with the register J, having actuating thumb-piece I, the vertically-movable frame E and the actuating-rod G′, inclosed within the tube K, all combined and operating as described.

5. In combination with the movable frame E, the coil-spring H, the hinged valve-disk D, having heel-extension *f*, and the stop L, having spring-bolt *l*, all arranged and operating substantially as described.

327,664. PRESS-BOX FOR EXTRACTING OIL FROM SEED. John Davis, Charleston, S. C. Filed Aug. 27, 1885. (No model.)

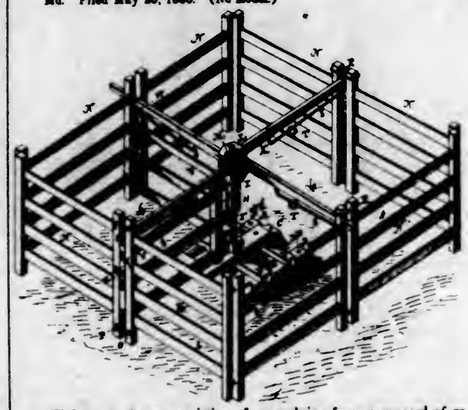


Claim.—1. In combination with metal press-box A, provided with longitudinal grooves *e*, perforated plate *c*, cork mat C, and a metal top, B, substantially as shown, and for the purposes described.

2. In combination with a press-box containing a mat of cork-wood, a stem, *z*, provided with a head, S, said stem passing through the aperture or orifice *z′*, substantially as shown, and for the purpose described.

3. In combination with a top, B, a press-box, A, provided with grooves *e* and pan *f*, cork-wood mat C, perforated plate *c*, and stem *z*, having head S, the parts being constructed substantially as shown, for the purposes set forth.

327,665. PEN FOR LIVE STOCK. Benjamin Dawson, Leonardtown, Md. Filed May 20, 1885. (No model.)



Claim.—1. A pen consisting of a revolving fence composed of removable panels, and removable partitions within the pen, the whole arranged on a vertical central post having a sled-base, substantially as specified.

2. A pen consisting of a movable pivotal post, a hub with radial arms, and an inclosing fence supported by said arms, said fence being formed of a series of double panels, each pair being hinged and removably secured, one pair to the other, substantially as and for the purpose specified.

3. A pen-support consisting of a vertical post having a sled-base, a vertically-adjustable block provided with radial arms, and means, substantially as described, for securing the said arms in vertical adjustment, as set forth.

4. A pen-tether consisting of a pivotal post mounted on a sled-support, a hub with radial arms adjustable vertically on said post, and a fence formed of panels hinged together in pairs, and having their coincident ends removably secured, one to the other, and clamping the arms between them, substantially as and for the purpose specified.

5. A pen consisting of a pivotal post, a hub thereon with radial arms, extended guides and rings on the arms, a fence supported by said arms, and formed of panels hinged together in pairs and removably secured together at the coinciding ends, and removable panels extending from the hub to the inclosing fence on a line with the arms, substantially as and for the purpose specified.

327,666. PISTON-PACKING. George Delagneau, Hastings, Nebr., assignor to John H. Graham, same place. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination of the piston having the annular flange and the hollow piston-rod, the expansible-packing-ring, the rod passing through the hollow piston, the cam affixed thereto, push-pins bearing on the inclines of the cam and extending through the annular flange, the springs bearing between the inner side of the packing-ring and the push-pins, the arm secured to the outer end of the cam-rod, and a screw bearing on the free end of said arm, substantially as described.

2. The combination of the piston having the annular flange and the hollow piston-rod, the expansible packing-ring, the rod passing through the hollow piston-rod, the cam affixed thereto, push-pins bearing on the inclines of the cam and extending through the annular flange, the springs bearing between the inner sides of the packing-ring and the push-pins, the arm secured to the outer end of the cam-rod, the plate

having the scale and the bearing-screw, said plate being secured to the hollow piston-rod, and the indicator-hand on the cam-rod, for the purpose set forth, substantially as described.

327,667. RAILWAY-SLEEPER. Plimmon H. Dudley, New York, N. Y. Filed May 22, 1885. (No model.)



Claim.—1. The combination, with a metallic sleeper or bowl, of an elastic block to be seated on the sleeper or bowl to form a support for the rail, and a metal band independent of the sleeper or bowl, permanently secured upon and encircling and closely confining the block, substantially as herein described.

2. The combination, with a metallic sleeper or bowl and a railway-rail, of an elastic block seated upon the sleeper or bowl and supporting the rail, a band independent of the sleeper or bowl surrounding the block and provided with laterally-projecting lugs or ears, clamps for engaging the base-flange of the rail, and bolts connecting the sleeper or bowl and clamps and passing through the lugs or ears on the said band, substantially as herein described.

3. The combination, with a metallic sleeper or bowl having a block-seat at the top and a removable or false bottom fitted to said seat, of an elastic block seated on the sleeper or bowl to form a support for a railway-rail, substantially as herein described.

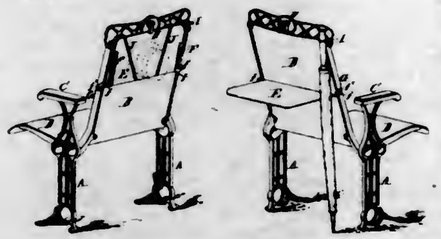
4. The combination, with a metallic sleeper or bowl having at the top a block-seat surrounded by upwardly-projecting flanges or ribs, of a removable or false bottom fitted within the flanges or ribs and by them confined laterally, and an elastic block seated within the flanges or ribs and also held laterally in place thereby, substantially as herein described.

5. The combination, with a railway-rail and an elastic block supporting the same, of a metallic sleeper or bowl having at the top a block-seat and having its base portion flaring or inclined downward and outward away from the block-seat, and also having on the concave under side a downwardly-projecting partition or flange which extends transversely to the length of the sleeper or bowl and to the line of the rail, substantially as herein described.

6. The combination, with the rails A, of the metallic sleepers or bowls B, placed below the rails, the blocks C, seated on the sleepers or bowls and supporting the rails, and a cross-bar or tie-rod, the ends of which form clamps bearing on the base-flanges of the rails, and are secured to the sleepers or bowls, substantially as herein described.

7. The combination, with a metallic sleeper or bowl having at the top a block-seat and slots extending in opposite directions from said seat, of a block in said seat, a rail supported on said block, clamps for securing the rail, and bolts D, for securing said clamps passing through the slots in the sleeper or bowl, and having elongated heads *d*, which may be withdrawn from said slots when the bolts are tilted outward into an inclined position, substantially as herein described.

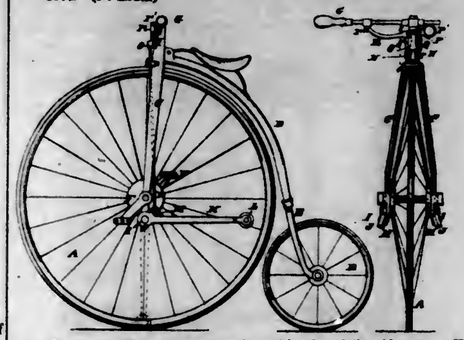
327,668. CHAIR. Leo Ehrlich, St. Louis, Mo. Filed May 29, 1884. (No model.)



Claim.—1. The combination, with the back of a seat, of the shelf or support E, having straps to support a hat and hinged at the same, so as to admit of being folded up against the back and being let down in position for use, substantially as set forth.

2. The combination, with the back of a seat, of the support E, provided with hinge-arms bent angularly at *f*, substantially as and for the purpose set forth.

327,669. BICYCLE. Leo Ehrlich, St. Louis, Mo. Filed Nov. 17, 1884. (No model.)

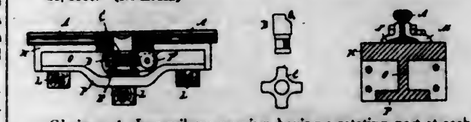


Claim.—1. The combination, in a bicycle, of the side props, K, secured to the yoke or frame C by inclined hinges H I J, a hand lever or rod in proximity to the steering-lever, and rods connecting the legs with such hand lever or rod.

2. The combination, in a bicycle, of side props or legs hinged to the yoke or frame, rods connected to the legs and connecting the legs to a lever above the large wheel, and spring-catches to hold such lever in its elevated or depressed position, for the purpose set forth.

3. The combination, in a bicycle, of side props or legs, K, connected to the yoke or frame C by inclined hinges having a broad bearing, side projections, M, the legs connected by rods N and head O to a lever, R, and spring-catches to hold the lever in elevated or depressed position.

327,670. RAILROAD-CROSSING. Eugene Fontaine, Toledo, assignor of one-half to William A. Kettenring, Defiance, Ohio. Filed June 25, 1885. (No model.)

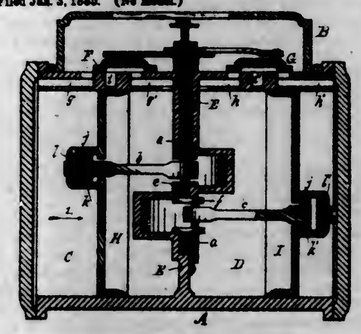


Claim.—1. In a railway-crossing having a rotating post at each intersection thereof, a rail-support consisting of an upper and under plate and supporting-web between the two, in combination with clips for securing the rails to the upper plate, substantially as set forth.

2. In a railway-crossing constructed substantially as described, and in combination with the rail-support, a spring which will counteract any tendency of such support to deflect under the weight of passing trains, substantially as specified.

3. In a railway-crossing, a rail-support consisting of an upper and a lower plate and supporting-web between the two, said web being cut away at the center, and the rotating post carrying a segment operating in the cut-away portion of said web, substantially as described.

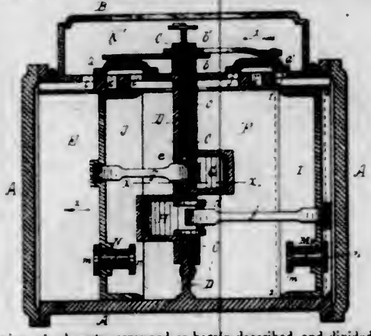
327,671. PISTON WATER-METER. George H. Fox, Boston, Mass. Filed Jan. 3, 1885. (No model.)



Claim.—1. In a crank water-meter, a piston loosely secured to the connecting-rod, whereby the latter and its operating-crank are permitted to move onward while the piston remains at rest just prior to the completion of a stroke, substantially as and for the purpose stated.

2. The combination, with a rotary shaft provided with a crank and its connecting-rod, of a reciprocating piston loosely attached to the extremity of the latter, whereby at certain stated times the crank and rod may move while the piston remains stationary, substantially as stated.

327,672. PISTON WATER-METER. George H. Fox, Boston, Mass. Filed Dec. 20, 1884. (No model.)



Claim.—1. A meter arranged as herein described, and divided into two measuring-chambers separated by a partition provided with hollow oppositely-disposed recesses, substantially as described, and for the purposes herein set forth.

2. The combination, with a piston and its cylinder, of a device operating to increase the water-space in front of the piston proportionaliy to the advance of said piston at the moment of closing the adjacent outlet and inlet ports, substantially as herein described.

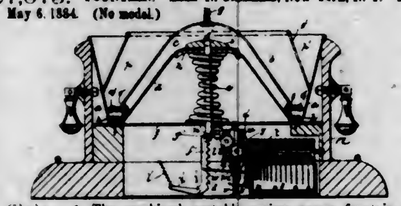
3. The combination, with a piston and its cylinder, of a device operating to decrease the water-space in rear of the piston proportionally to the retreat of said piston at the moment of closing the adjacent outlet and inlet ports, substantially as and for purposes herein set forth.

4. The combination, with a piston and its cylinder, of a device operating to increase or diminish the water-space upon either side of the piston at the moment of closing both the adjacent outlet and inlet ports, substantially as described.

5. The plunger, as a mechanical device for effecting the variations in the capacity of the water-space on either or both sides of the piston, and operating substantially for the purposes herein set forth.

6. The combination of a cylinder and its pistons with their operative mechanism and the compensating plungers, substantially as stated.

327,673. FOUNTAIN. Ella N. Gaillard, New York, N. Y. Filed May 6, 1884. (No model.)



Claim.—1. The combined portable spring-power fountain and music-box, having the respective spring-power mechanism geared to one and the same key-post, substantially as described.

2. The combined portable spring-power fountain and music-box, having the respective spring-power mechanism geared to one and the same key or winding-post, the music-train having a trip-catch, and the fountain-spring having the tripper arranged therewith for releasing said trip-catch, substantially as described.

3. In a combined portable fountain and music-box, the combination of a tripper, *f'*, with the spring-stop *c'* of the music-barrel, and with the rod *j*, actuated by the fountain-spring when forcing the water-jet, and having pin *g'*, and said music-barrel having holes *c'* for releasing the music-barrel by the action of the fountain-spring, to furnish the music when the fountain plays, substantially as described.

4. In a combined portable fountain and music-box having spring-power mechanism for actuating the fountain, the combination of the stop-catch with the music-barrel for automatically stopping the play of the music during the run of the music driving-spring, the notched tripping-bar for releasing said catch, said notched bar being connected with the fountain-spring mechanism for periodically tripping said stop during the run of the fountain-spring, substantially as described.

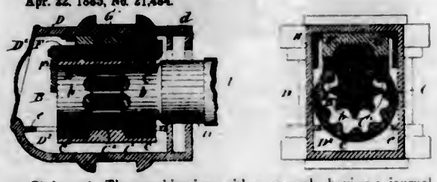
327,674. VENT. George W. Gillette, New York, N. Y. Filed July 28, 1885. (No model.)



Claim.—1. In a vent, the combination of an inclosing case and cover having perforations to admit the passage of air, with an elastic slitted valve, and a perforated packing against which the valve when closed is made to bear, both the valve and the packing being inclosed by the case and cover, substantially as described.

2. In combination with the stem A, having a nozzle, B, and bush C, the metallic case *a* and cover *d*, and the elastic slitted valve *b* and packing *c*, said valve and packing being inclosed by the case and cover, the same being retained within the nozzle by means of the bush, substantially as described.

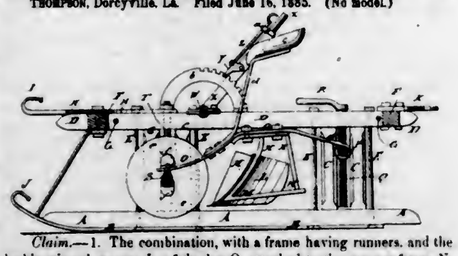
327,675. JOURNAL-BEARING. Louis Goulloud and Charles Page, Montreal, Quebec, Canada, assignors, by direct and mesne assignments, to the Union Bearing and Lubricator Company, same place and Portland, Me. Filed Apr. 10, 1885. (No model.) Patented in Canada Apr. 22, 1885, No. 21,484.



Claim.—1. The combination, with a car-axle having a journal of less diameter than the axle proper, of a ring of greater diameter than such axle, resting upon and rotated by such journal, and carrying the brass of the bearing, substantially as described.

2. The combination, with the journal, of a ring resting on and rotated by the same, forming a bearing-surface for the brass and acting as a lubricator, all substantially as herein set forth.

327,676. CANE-SCRAPER. Alfred R. Gourrier and Joseph M. Thompson, Doreyville, La. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with a frame having runners, and the double-winged scraper L, of the bar O, attached to the scraper-frame N, and the bar and swiveled screws P Q, connected with the rear end of said bar, and the bar, chains, armed shaft, and lever connected with the forward end of the said bar, substantially as herein shown and described.

2. In a cane-scraper, the combination, with the frame having runners, and the rear end of the bar O, carrying the double-winged scraper, of the bar P, having screw-holes in its ends, and the swiveled screws Q, substantially as herein shown and described, whereby the heel of the scraper can be readily raised or lowered as set forth.

3. In a cane-scraper, the combination, with the frame having runners, the slide-rods T, and the forward end of the bar O, carrying the scraper, of the bar S, the short chains U, the shaft W, having arms V, and the lever X, substantially as herein shown and described, whereby the point of the scraper can be readily raised and lowered, as set forth.

4. In a cane-scraper, the combination, with the forward end of the bar O, carrying the scraper, and the bar S, carrying the said forward end, of the rotary circular colter *e* and the angle-irons *f*, substantially as herein shown and described, whereby the soil, grass, weeds and vines will be cut in advance of the said scraper, as set forth.

327,677. VENTILATED MATTRESS. Peter Goutkvenier, Chicago, Ill., assignor of one-half to R. T. Votte, same place. Filed July 2, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a covering fabric for mattresses formed with a series of reticulated openings, essentially as set forth.

2. A mattress composed of a filling, B, and an enveloping fabric, A, formed with a series of reticulated openings, *a*, essentially as and for the purpose set forth.

327,678. MANUFACTURE OF PAINT FROM METALLIC LEAD. William E. Harris, New York, N. Y. Filed Sept. 20, 1884. (No specimens.)

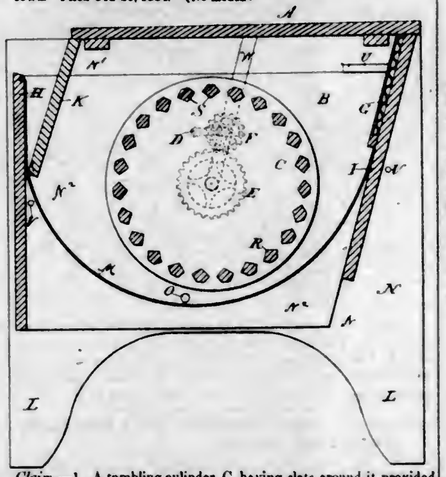
Claim.—The process of making paint from metallic lead, and which consists in burning lead in contact with coke, coal, or charcoal, and condensing the fumes, substantially as described.

327,679. GATE-LATCH. Felix A. Harvey, McLeansborough, Ill. Filed May 26, 1885. (Model.)



Claim.—The combination, with the frame H, having the corrugated parts O, of the slide K, having the corrugated flanges N, the prong L, projecting from the slide, and of a screw for locking the slide in place, substantially as herein shown and described.

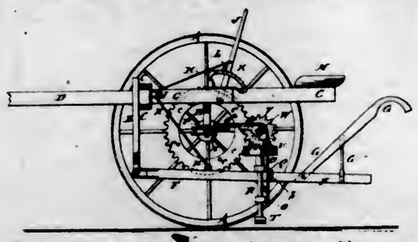
327,680. WASHING-MACHINE. Henry T. Henderson, Keokuk, Iowa. Filed Oct. 29, 1884. (No model.)



Claim.—1. A tumbling cylinder, C, having slats around it provided with removable slats having springs with holding-shoulders to provide for removal.

2. A tumbling-cylinder washing-machine constructed with the tumbling cylinder C, adapted to receive clothing to be washed and provided with gearing to turn it by, with the suds-tank having a bent sheet-metal bottom connecting with compound end boards, N, having parts with the grain across each other, and with the wash-board G, wringer-holder H, and inclosing-lid A, combined to form one article of manufacture, substantially as set forth.

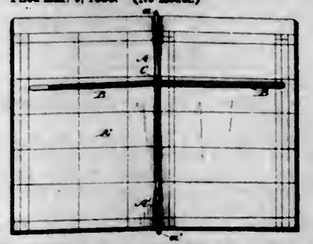
327,681. COTTON-CHOPPER ATTACHMENT FOR CULTIVATORS. Hans Henriksen, Duarte, Cal. Filed July 23, 1885. (No model.)



Claim.—1. A cotton-chopper attachment for cultivators, constructed substantially as herein shown and described, and consisting of the rod N, the angular frame O Q, hinged to the said rod and provided with arms S to rest upon the plow-beams, the shafts R R W Y, journaled to the frame O Q, the cutters T, attached to the shafts R R, the gear-wheels U V, U V, connecting the shafts R R with the shaft W Y, and the gear-wheels *b c*, for connecting the said shaft W Y with the wheel of a cultivator, as set forth.

2. The combination, with the axle B, the wheel A, and the plow-beams F of a cultivator, of the rod N, attached to the cultivator-axle, the angular frame O Q, hinged to the rod N and provided with arms S resting upon the said plow-beams, the shafts R R W Y, journaled to the said angular frame, the cutters T, attached to the shafts R R, the gear wheels U V, U V, connecting the shafts R R with the shaft W Y, and the gear-wheels *b c*, connecting the shaft W Y with the wheel A of the cultivator, substantially as herein shown and described, whereby the cotton-chopper attachment will be operated by the advance of the cultivator, and will be made to conform itself to the surface of the ground, as set forth.

327,682. BOOK AND COPY HOLDER. Amos Hockett, Wilmington, Ohio. Filed Mar. 9, 1885. (No model.)

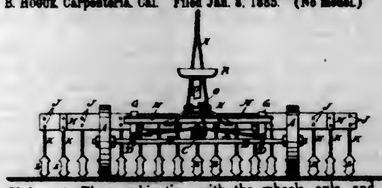


Claim.—1. As an improved article of manufacture, a book and copy holder made substantially as herein shown and described, the same consisting of a central hooked rod adjustable in its length and a holder sliding upon said hooked rod at right angles thereto, as set forth.

2. In a book and copy holder, the rod A, constructed, as shown and described, with a hook, *a*, at one end, and having at the opposite end a sliding hook, *a'*, the shank of which, A', slides upon the rod A, whereby said rod may carry a holder, B, and both holder and rod may be adjusted and attached to the books, as set forth.

3. The rod A, having a hook at one end and a sliding hook, *a'*, at the opposite end, in combination with the holder B, sliding upon the rod A, substantially as herein shown and described.

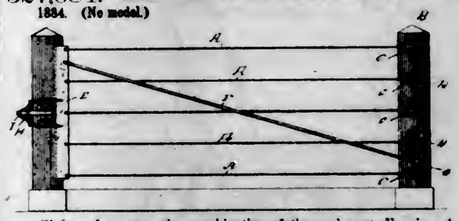
327,683. COMBINED CULTIVATOR AND WEED-CUTTER. Lundy B. Hogue, Carpenteria, Cal. Filed Jan. 8, 1885. (No model.)



Claim.—1. The combination, with the wheels, axle, and tongue A B C, and the braces D E, of the hinged draw-bars G, and the long cross-beam H, alternating standards K, and teeth L, substantially as herein shown and described.

2. In a combined cultivator and weed-cutter, the combination, with the wheels A, axle B, tongue C, and braces D E, the hinged draw-bars G, and the long cross-beam H, provided with standards K, and teeth L, of the cross-bar M and the forked lever N, substantially as herein shown and described, whereby the said draw-bars and beam will be kept in place and can be readily raised from the ground, as set forth.

327,684. GATE. Adam Holeman, Bronson, Kans. Filed June 24, 1884. (No model.)

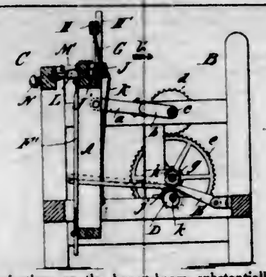


Claim.—In a gate, the combination of the end post, E, wires A, and connections to the rear post, with the stiffening-rod F, secured to the top of the post E at one end, and the hinge G, having the several holes G', for adjusting the rod F, said hinge being placed upon the lower portion of the stationary post B, substantially as and for the purpose set forth.

327,685. TERRY-LOOM. Thomas Holt, Jr., Midland Park, and James Mellor, Paterson, N. J.; said Mellor assignor to said Holt. Filed Feb. 20, 1884. (No model.)

Claim.—1. The combination, with a loom-frame and lay, of projections on the breast-beam, a swinging reed, pivoted projections on said swinging reed, and means, substantially as described, for raising and lowering the projections on the swinging reed to bring them into or out

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of line with the projections on the breast-beam, substantially as herein shown and described.

2. The combination, with a loom-frame and lay, of projections on the breast-beam, a swinging reed, projections pivoted on the lower part of the swinging reed and projecting through the lay, a sliding frame on the lay, and a lever and cam for raising and lowering said sliding frame, substantially as herein shown and described.

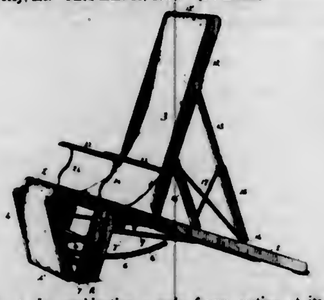
3. The combination, with the loom-frame, a lay, and mechanism for operating the latter, of a reed having its lower edge adapted to swing toward and from the rear surface of the lay, projections pivoted to the swinging edge of the reed and extending through slots in the lay toward the breast-beam, projections on the breast-beam, a sliding frame on the lay for the purpose of raising the projections pivoted to the reed, a lever passed through the sliding frame, a cam for raising the said lever, and intermediate mechanism for operating the cam from the lay-operating mechanism, substantially as herein shown and described.

4. The combination, with the loom-frame, a lay, and mechanism for operating the latter, of a reed having its lower edge adapted to swing toward and from the rear surface of the lay, projections pivoted to the swinging edge of the reed and extending through slots in the lay, adjustable projections on the breast-beam, which projections extend toward the lay, a lever and cam for alternately raising and lowering the projections pivoted on the reed, and intermediate mechanism for operating the said cam from the lay-operating mechanism, substantially as herein shown and described.

5. The combination, with the loom-frame, a lay, and mechanism for operating the latter, of a reed having its lower edge adapted to swing toward and from the rear surface of the lay, projections L, pivoted to the swinging edge of the reed and extending through slots in the lay, each of which projections L has a shoulder in its upper edge, projections on the breast-beam, a lever and cam for alternately raising and lowering the projections on the reed, and intermediate mechanism for operating the said cam from the operating mechanism of the lay, substantially as herein shown and described.

6. The combination, with the loom-frame and a lay, of the reed G, having its bottom bar, J, adapted to swing toward and from the outer surface of the lay, the springs K, for pressing the bar J toward the lay, the projections or arms L, pivoted to the bar J and passing through slots I in the lay, the sliding frame F on the lay, the screws N on the breast-beam, and a lever and cam for automatically raising and lowering the frame F, substantially as herein shown and described.

327,686. SURGEON'S OR RECLINING CHAIR. Nubson N. Horton, Kansas City, Mo. Filed Mar. 18, 1884. (No model.)



Claim.—1. In combination, a main frame resting at its rear extremity directly upon the floor, a pair of extensible legs supporting its forward extremity, a back hinged thereto, braces connecting said main frame and back, and a canvas or other stretcher, substantially as set forth.

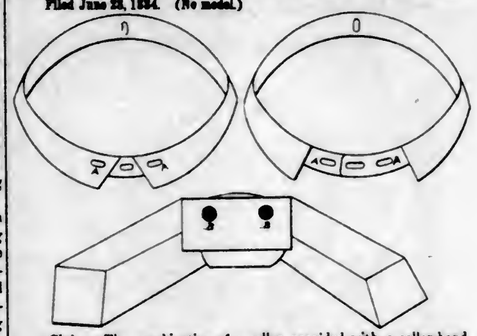
2. In combination, the main frame 1, resting at its rear extremity directly upon the floor, the extensible legs 7 7', supporting the forward extremity of said main frame, braces 9, for holding said legs, back 12, hinged to the main frame, braces 15, for supporting said back, and a canvas or other stretcher, substantially as set forth.

3. In combination, the main frame 1, bearing at its rear extremity directly upon the floor, legs 7, supporting its forward extremity, foot-rest frame 4, hinged to said main frame and having the rung 4', braces 6, supporting said foot-rest frame, back 12, hinged to said main frame and having the rung 12', canvas 3, stretched between said rungs 4' and 12', and the braces 13, supporting said back and bearing upon the main frame, substantially in the manner and for the purpose set forth.

4. The combination, with the main frame and the hinged back, of a brace supporting said back, said brace being formed for a portion of its length of a number of blocks or sections hinged together end to end, and having a sliding sleeve placed thereon for holding any desired number of said sections in line, as and for the purposes set forth.

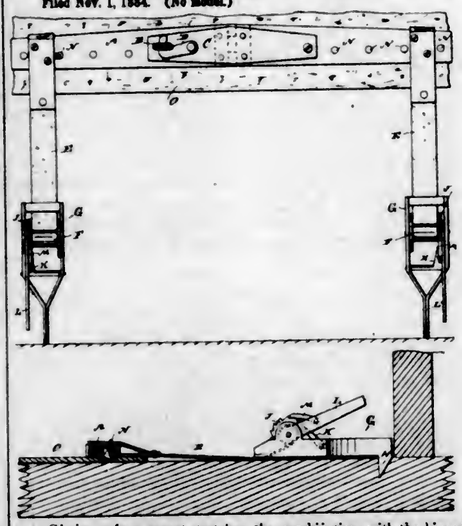
5. The combination, with the base-frame and the back-frame, of the braces 13 13, constructed at their lower ends of a number of blocks or sections, 15 15, hinged together end to end, the sliding sleeves 16 16, placed on said braces, and the cross-rods 17, connecting said sleeves, substantially as and for the purposes set forth.

327,687. COLLAR AND CRAVAT. Hazen P. Huntoon, Boston, Mass. Filed June 23, 1884. (No model.)



Claim.—The combination of a collar provided with a collar-band and flexible portion of ordinary construction, and having the button-holes A A set equidistant from the front opening of collar, as described, with a cravat having buttons set thereon at points to permit their engagement with the button-holes in the collar, as set forth.

327,688. CARPET-STRETCHER. John M. Hurst, Coalville, Utah. Filed Nov. 1, 1884. (No model.)



Claim.—In a carpet-stretcher, the combination, with the hinged bar A, having pins N, of the hasp C, the staple B, the hook-latch D, the bands E, the frames G, and pulleys in the frames, on which pulleys the bands can be wound, substantially as herein shown and described.

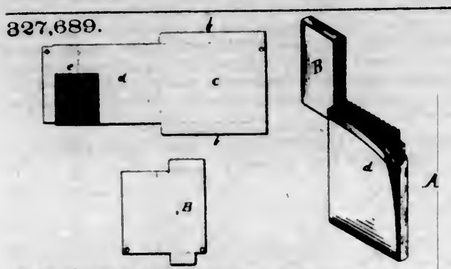
327,689. MATCH-BOX. William F. Hyatt, Brooklyn, N. Y. Filed Jan. 8, 1885. (No model.)

Claim.—1. A match-box, the body constructed of one piece of metal, having the sides *b b*, bottom *c*, and loose end *d*, substantially as shown and described.

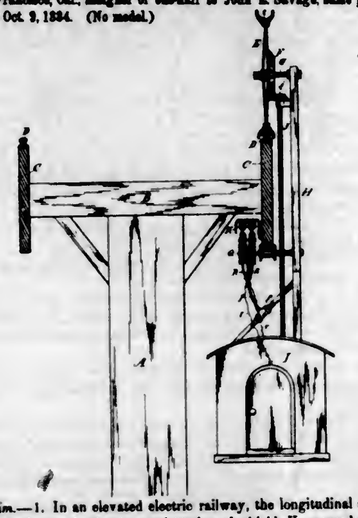
2. A match-box, the body constructed of one piece of metal, having the loose end *d*, in combination with the friction-surface *e*, substantially as shown and described.

3. In a match-box, the body constructed of one piece of metal, the sides *b b*, bottom *c*, loose end *d*, and friction-surface *e*, substantially as shown and described.

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327,690. ELEVATED ELECTRIC RAILWAY. Andrew Jackson, San Francisco, Cal., assignor of one-half to John E. Savage, same place. Filed Oct. 2, 1884. (No model.)



Claim.—1. In an elevated electric railway, the longitudinal strips, C, carrying the track, the inverted-U-shaped shield K, secured to the inner surfaces of said strips, and the electric wires O, suspended from and under said shield and suitably insulated therefrom, substantially as and for the purpose herein described.

2. In an elevated electric railway, the shield K and the electric wires O, in combination with the means by which they are suspended and insulated from said shield, consisting of the metal bracket L, the vulcanized-rubber pieces M, secured in and suspended from said bracket, and the metal clamps N, clamping the rubber pieces and suspending the wires, substantially as herein described.

3. In an electric railway having the suspended wires O, through which a current of electricity is sent, the traveling car or receptacle I, containing an electric motor, the rollers Q, carried by said car and adapted to travel under the wires, and the metallic brushes T, supported and carried by the car and adapted to travel in contact with the wires behind the rollers Q, said brushes having an electric connection with the electric motor, substantially as and for the purpose herein described.

4. In an elevated electric railway having the suspended wires O, through which a current of electricity is sent, the traveling car or receptacle I, suspended by a wheel from a suitable track and containing an electric motor, the rollers Q, supported from and by the car by arm P and adapted to travel under the wires, the metallic brushes T, traveling against the wires behind the wheels and mounted on metallic spring-strips S, supported by metal arms R from arm P, and the wires *r*, connecting the arms R with the electric motor in the car, substantially as herein described.

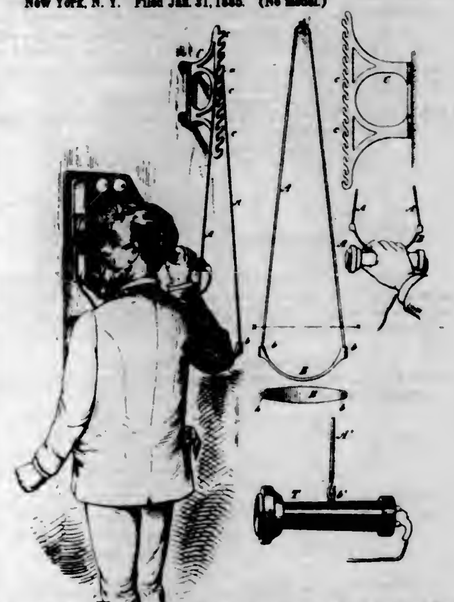
5. In an elevated electric railway, the track D, supported on longitudinal strips C, carried by cross-beams of a line of posts, the car or receptacle I, containing an electric motor, the wheel E on the track, suspending said car and driven by suitable mechanism, as described, from the electric motor, the continuous suspended electric wires O, the mechanism for taking the current from said wires to the motor, consisting of the metallic brushes T and an electric connection between them and the motor, substantially as herein described.

327,691. TOP ROLL FOR SPINNING MACHINERY. David Jackson, Pawtucket, R. I. Filed Oct. 25, 1884. (No model.)



Claim.—A shaft or spindle for top rolls of spinning-machines, having a rounded shoulder, *s*, and a curvilinear groove, *m*, and also having a rectangular groove, *i*, supplied with an oiled filler, *k*, in combination with the internally-grooved shell-roll *c* and wire clasp *o*, formed of triangular-shaped material and carried in the groove in the shell, substantially as described, and for the purposes specified.

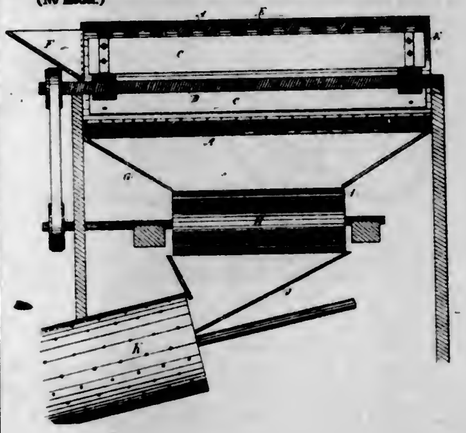
327,692. ARM-REST FOR TELEPHONE USES. Frank G. Johnson, New York, N. Y. Filed Jan. 31, 1885. (No model.)



Claim.—1. In combination with a transmitter of a telephone, the hanging arm-rest, consisting of the suspension-rod A A and arm-piece B, attached to the side wall, D, above and at the side of the telephone-transmitter, substantially as and for the purposes set forth.

2. The combination, with a transmitter of a telephone, of the supporting-bracket C, having any desired projections *c c*, and hanging arm-rest, consisting of the suspension-rod A A and arm-piece B, substantially as and for the purposes described.

327,693. GRAPE STEMMER AND CRUSHER. George Johnston, San Francisco, and Edwin G. Smith, Sacramento, Cal. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a grape stemming and crushing apparatus, a horizontal casing with revolving arms or blades within it, in combination with the stationary spirally-arranged guides, substantially as herein described.

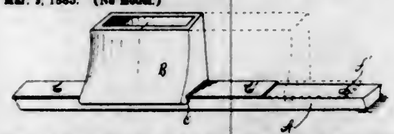
2. In a grape crusher and stemmer, a horizontal casing with the arms or blades revolving within it, the spirally-arranged guides secured in the upper portion, and the screws passing through slots in the casing, whereby the angle of the spirals may be regulated, substantially as herein described.

3. In combination with the horizontal casing with its separating blades and guides, the directing chute or hopper into which the grapes fall from the casing and the corrugated rotating rollers between which they pass, substantially as herein described.

4. The corrugated crushing-rollers having the exterior perforated cover of elastic material, in combination with concave metallic plates fixed in the depression of each roller, substantially as herein described.

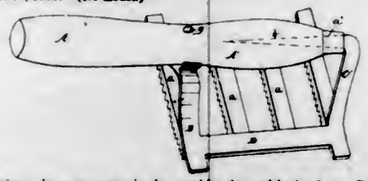
5. In a grape-crushing apparatus, the stemming and crushing mechanism, as herein shown, in combination with an inclined perforated rotating cylinder and a chute by which the pulp is delivered into the said cylinder, substantially as herein described.

327,694. **BELT-HOLE COVER.** DANIEL KANE, Norwich, Conn. Filed Mar. 9, 1885. (No model.)



Claim.—In combination with a bed-plate having an elongated belt-opening, the box B, adapted to slide on said bed-plate, and provided with wings or extensions C C, which, as box B is moved to ship the belt, conceal the bed-plate opening, substantially as and for the object specified.

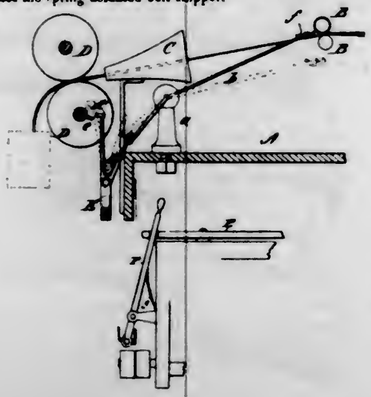
327,695. **CURRY-COMB.** WILLIAM P. KELLOGG, Troy, N. Y. Filed Mar. 27, 1885. (No model.)



Claim.—In a curry-comb, the combination, with the frame D, having the support B, provided with the concave seat S, and the support C, provided with the tang *b*, of the duplex handle A A', provided with the ferrule *a'*, the handle being driven onto the tang and held to the seat by a pin, *g*, passing through a hole in the seat and handle, substantially as described.

327,696. **STOP-MOTION FOR RAILWAY-HEADS.** CHESTER P. KING, Phœnix, R. I. Filed Aug. 23, 1884. (No model.)

Brief.—A concave plate, carried on the long arm of a pivoted lever, rests on the sliver close in front of the drawing-rolls and prevents broken sliver from winding on the rolls. The short arm of the lever rests against a dog pivoted to the trip-lever. When the sliver breaks, the dog is thrown forward and its claw engages a lug on the shaft of the lower calender-roll, which, by its momentum, raises the dog and trip-lever, which releases the spring-actuated belt-shipper.



Claim.—The combination, with the draft-rolls and a belt-shifting spring-actuated lever, of the pivoted lever *b*, provided with the plate or arm *f*, arranged in front of said draft-rolls, the catch-lever E and dog attached thereto, and the calender-rolls, one of which has a lug for engaging said dog, substantially as shown and described, for the purpose specified.

327,697. **GALLOPING HORSE.** HENRY LACASSE, Auburn, N. Y. Filed Aug. 29, 1884. (No model.)



Claim.—1. The combination of the stirrups with the forward wheel by means of the bell-crank pitman *i*, connecting them with the crank *b*, substantially as and for the purposes specified.

2. The combination of the pitman *f*, lever *m*, and bar *n*, for moving the fore legs properly, as specified.

3. The combination of the frame *c*, wheel *a*, sliding head, and pitman *f*, constructed and arranged as specified.

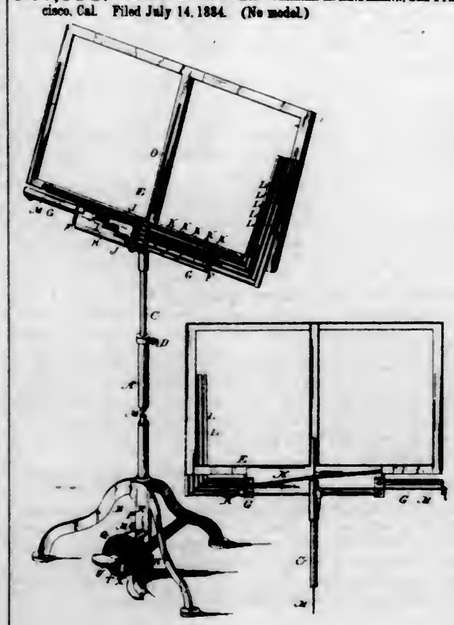
4. The combination of the pitman *f*, lever *m*, and bar *n* with the swiveling-frame supporting the body on the wheel *a*, as specified.

5. The combination of the lever *g* with the front and rear crank movements, as specified.

6. In combination with the jointed pitman *i*, hinged at the rump of the animal, as described, the hind legs, constructed and arranged as specified.

7. The combination of the forward and rear axles of the wheels, whereby all the wheels are made propellers of the automaton, substantially as described, so as to cause the wheels to revolve by alternately bearing upon the stirrups and back of the animal, as specified.

327,698. **MUSIC-LEAF TURNER.** CHARLES H. LOUDEMANN, San Francisco, Cal. Filed July 14, 1884. (No model.)



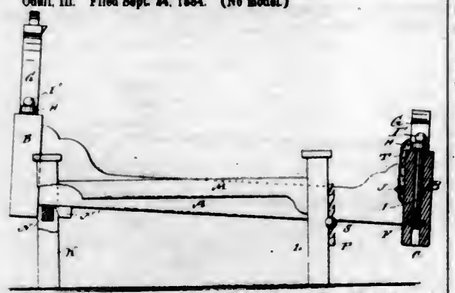
Claim.—1. In a music-leaf turner, a plate carrying short racks placed diagonally upon it, so as to successively engage pinions by which the arms are moved, guide-rods extending in line from each end of this plate through guiding-openings, a cord attached to the end of one of these arms extending horizontally to a direction-pulley, and thence downward to an actuating-treadle, and a spiral spring having one end fixed to the rack and the other connected with the opposite one of these arms, so as to return the plate when released by the cord, as herein described.

2. In a music-leaf turner, the leaf-turning arms, with pinions pivoted in the center of the music-support, the plate having short racks arranged diagonally across it, guides extending outward from its ends, one of which has a spring connected with it and the other a cord passing over direction-polleys downward through the central stand and around a roller upon which it is coiled, together with a ratchet-wheel fixed to the shaft of said roller, a foot-lever loosely fulcrumed upon the shaft and carrying a pawl engaging the ratchet, and a holding-spring, substantially as herein described.

3. In a music-leaf turner, the music-supporting frame, the leaf-turning arms, with pinions pivoted to the center of the music-support, a plate having the short racks arranged diagonally across it, guides extending outward from its ends, one of which has a spring connected with it and the other a cord which passes over direction-pulleys downward through a central stand and around the roller, with the pawl and the ratchet mechanism by which said cord may be wound upon the roller, and a second lever fulcrumed upon the roller-shaft, having its end constructed to raise the pawl and release the ratchet-wheel, whereby the movement of the roller may be reversed and the cord uncoiled therefrom by the action of the spring, as herein described.

4. In a music leaf-turner, the leaf-turning arms with pinions, the short actuating-racks and connecting mechanism, cord, and foot-lever, as shown, the stand which may be telescopic, so as to be lengthened and shortened, together with a take-up roller or drum around which the cord passes, whereby the length of the cord will be adjusted to the height of the stand, as herein described.

327,699. **ADJUSTABLE BEDSTEAD.** CONRAD H. MATTHIESSEN, Odell, Ill. Filed Sept. 24, 1884. (No model.)

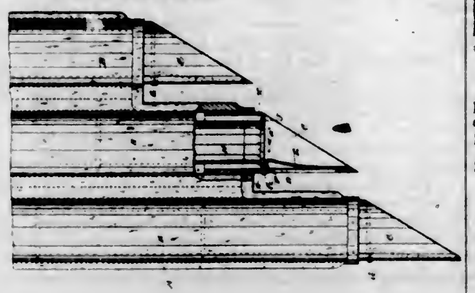


Claim.—1. The combination, with the frames K and L, of the rails M uniting them, the plates P, secured to the legs of the frame L, and having upwardly-projecting teeth, and the rod R, having heads S on the ends, substantially as herein shown and described.

2. The combination, with a bedstead, of a supporting-frame having a rigid cross-piece for supporting the head end of the bedstead, and a vertically-adjustable cross-rod for supporting the foot end of the bedstead, substantially as herein shown and described.

3. The combination, with the bedstead side rails, A, having longitudinally-apertured end posts, B, of the end pieces, G, the eyes H, the apertured projecting plates F, and the screw-bolts I, substantially as herein shown and described.

327,700. **CARTRIDGE-POUCH.** CHARLES MCCLURE, Champaign, Ill. Filed Feb. 17, 1885. (No model.)

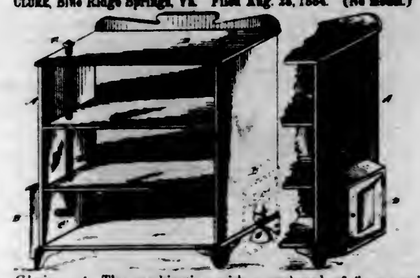


Claim.—1. The cartridge holder or pouch comprising the series of vertical tubes, with their lower ends disposed in step form, and the series of mouth-pieces having lower beveled ends and connected to the lower ends of said tubes, said mouth-pieces having cartridge-holding springs, substantially as described, and for the purposes set forth.

2. The combination, with the pouch A, provided with tubes B, of the mouth-pieces C, having beveled lower ends and slots D, and the springs E in the mouth-pieces, substantially as herein shown and described.

3. The combination, with the pouch A, having tubes B, of the mouth-pieces C, having beveled ends and slots D, and springs E, having bends F and catches G on their upper ends, substantially as herein shown and described.

327,701. **CUPBOARD OR KITCHEN-CABINET.** WILLIAM T. MCCLURE, Blue Ridge Springs, Va. Filed Aug. 28, 1884. (No model.)



Claim.—1. The combination, with a cupboard, of flues passing through the same, and lamp-receptacles arranged to support lamps, with their chimneys in communication with said flues, substantially as specified.

2. The combination, with a kitchen-cabinet having hot-air and smoke flues passed from the bottom through the shelves and out at the top of the same, of a lamp-receptacle communicating with said flues, substantially as specified.

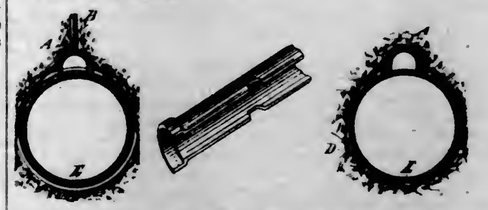
3. The combination, with a cupboard or kitchen-cabinet, of hot-air and smoke flues, and a lamp-receptacle below the bottom shelf of said cupboard or cabinet, substantially as specified.

327,702. **DIE FOR MAKING THILL-COUPLINGS.** HENRY A. MCDERMID and WALTER WILLIAMSON, Cleveland, Ohio. Filed Feb. 3, 1885. (No model.)



Claim.—Shaping-dies for thill-irons curved longitudinally to correspond with the longitudinal curve of the thill, the one die provided with a groove, and the other die with a corresponding tongue arranged to curve the intervening plate in a U shape in cross-section, varying in depth or width as may be required to fit the thill, substantially as set forth.

327,703. **GAS-MAIN.** JOHN H. MCELROY, Pittsburg, Pa. Filed Aug. 20, 1885. (No model.)

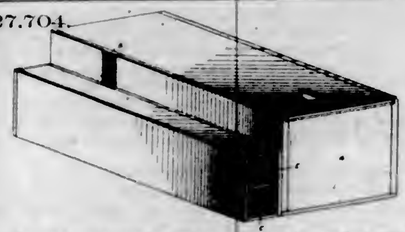


Claim.—In a system of pipes for conveying gas from a leak in any part of a main into the open air by means of the U-shaped pipe A, in combination with the stand-pipe B, the diaphragm C, and the tar-paper D, substantially as herein set forth.

327,704. **RAT-TRAP.** HENRY MCGILLIS, Darlet, Ga. Filed Mar. 2, 1885. (No model.)

Claim.—1. In a rat-trap, the combination, with a receptacle divided into two or more compartments communicating with each other, and provided with bedding and an exit-door, of one or more passages leading thereto and communicating therewith through openings in the wall of the receptacle, and a slide adapted to cut off said communication.

327,704.



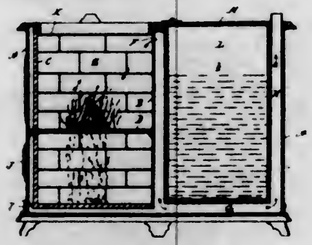
2. As a new article of manufacture, the herein-described rat-trap, consisting, essentially, of the receptacle divided into two or more compartments communicating with each other, and provided with bedding, an exit-door, and removable covers, and one or more passages leading to and communicating with the receptacle through openings in the wall of the receptacle, and a sliding door to cut off said communication.

327,705. STOVE-PIPE. Michael Healy, Cohoes, N. Y. Filed Mar. 7, 1885. (No model.)



Claim.—The combination, with pipes A B, forming an intermediate smoke-flue, of the dampered pipe C within pipe B, the said pipe B being closed at the ends and communicating at top and bottom with the outside air, whereby the products of combustion may be divided in their outward passage and the draft regulated, as described.

327,706. LAUNDRY-STOVE. Frederick J. Moeller, East Saginaw, Mich. Filed Mar. 18, 1885. (No model.)



Claim.—In a stove of the character described, the combination of the outer inclosing-case with the chamber *b*, and the chamber *a*, provided with damper J, the flue F between said chambers, the horizontal flue G beneath the chamber *a*, the vertical flue H, and the extension of the flue G beneath the chamber *b*, of the check-damper I, arranged beneath the said damper J and closing the front end of the extension of the flue G, substantially as described.

327,707. APPARATUS FOR MINING THE BEDS OF RIVERS AND STREAMS. John R. Moffitt, Chinese Camp, Cal. Filed May 12, 1884. (No model.)

Claim.—1. The herein-described apparatus, comprising a suitable frame capable of being moved up and down, a supporting mast or derrick, the elevators, a disintegrating and screening apparatus, a concentrating-machine, a settling trough or chamber, a water-supply tank, a power-shaft, the bucket-wheel, the pit or crib, and the counter-shafts transmitting motion to the several moving parts of the apparatus.

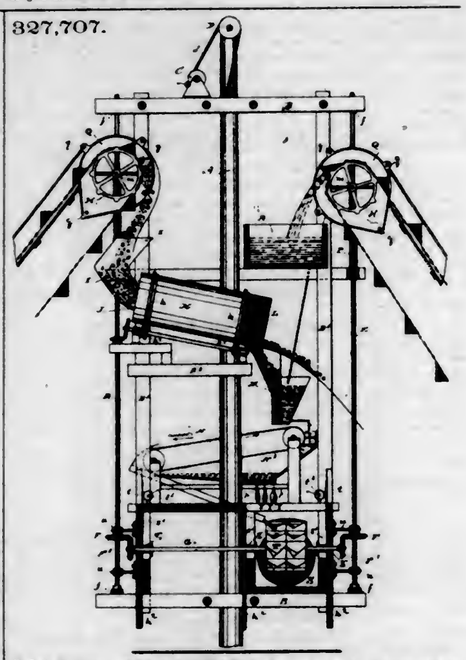
2. The apparatus described, comprising the elevator, spout, disintegrating and separating barrel, the concentrating device, feed-hopper, receiving trough, draw-off outlets, and a water-supply.

3. The combination of the supporting-mast, the frame B B' the wheel pit or crib S, the power-wheel and shaft, the supply and waste outlets S^1, and a hose or water conductor having connection with a head or source of water-supply.

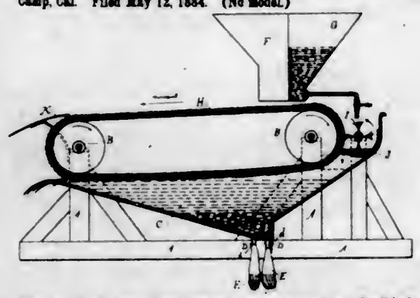
4. The combination, with the line of hydraulic hose, of the ways or troughs *z*, formed of section-timbers united by cross-slats *z'* and ropes z^2 z^3, substantially as described.

5. The combination, with and upon the frame or cage B B', of the upright shafts E, the swinging hangers formed of the three arms P P' P'', the wheel-frames Q Q, having circular openings, the rag-wheels and shaft, and the bevel-gears m^2 *h*.

327,707.



327,708. WET-ORE CONCENTRATOR. John R. Moffitt, Chinese Camp, Cal. Filed May 12, 1884. (No model.)



Claim.—1. A concentrating-surface composed of a flexible back-projecting fiber and a backing of textile material, also flexible, substantially as described.

2. The combination, with the flexible back having the inserted fibers, of the canvas backing cemented thereto and turned up along the edges, substantially as described.

3. The combination, with an endless traveling concentrating-belt having a brush or stiff fiber surface, of the washing-out device consisting of the brush-roller I, water-receptacle J, in which it revolves, and a water-supply, substantially as described.

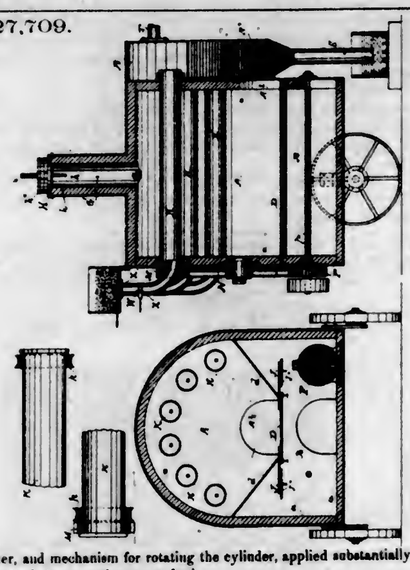
4. In an ore-concentrator, the combination, with the endless traveling concentrating-belt, of the settling-trough C, having a gradual inclination from the rear of the machine and a more precipitate inclination from the front, and strainer-bags E at the junction of the inclines, substantially as set forth.

327,709. RETORT AND CRUCIBLE FURNACE. John R. Moffitt, Chinese Camp, Cal. Filed Apr. 11, 1885. (No model.)

Claim.—1. The combination of the close combustion-chamber adapted to contain a body of incandescent fuel, having an outlet governed by an adjustably-weighted valve and receiving a supply of air under pressure from a chamber beneath the fuel-surface, and the retorts or crucibles located in the combustion-chamber over the fire and mechanism for imparting rotation to them, substantially as described.

2. The combination, with the crucible-cylinder situated within a close combustion-chamber over the fire and having the ends extended outside of said chamber and closed to the atmosphere, of a feeding mechanism or apparatus adapted to afford the introduction of the matter into the cylinder and to exclude the air at the time of feeding, a hood or chamber closing the other end, with discharge-pipes terminating under

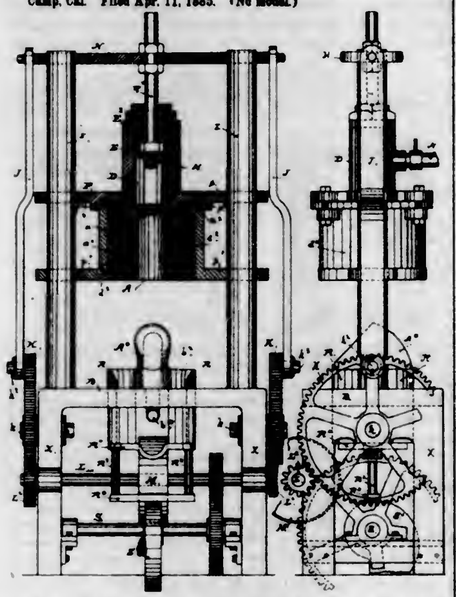
327,709.



water, and mechanism for rotating the cylinder, applied substantially as described, for operation as set forth.

3. The herein-described furnace, consisting of the retort-cylinders within and extending through a close combustion-chamber to permit feeding in at one end and discharge at the other end, a feed apparatus combined with one end for introducing the matter to be heated and for excluding air while feeding, a means for excluding air from the discharge end of the retort-cylinder, consisting of the hood and discharge-pipes terminating under water, a mechanism by which rotation is imparted to the said cylinders, a fuel-supporting surface, and a fan-blower or equivalent air-supplying apparatus to deliver and distribute a body of air beneath and through the fuel into the combustion-chamber, and an outlet leading from the said combustion-chamber controlled by a valve, substantially as set forth.

327,710. HEEL-STIFFENER MACHINE. John R. Moffitt, Chinese Camp, Cal. Filed Apr. 11, 1885. (No model.)



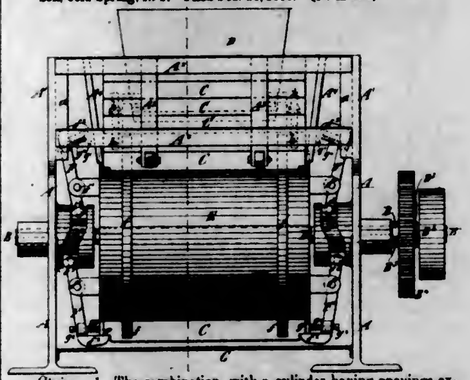
Claim.—1. The combination of a suitable frame, a metallic or hard surface die, a hollow elastic or expansible surface die having its cavity filled with liquid, a liquid-cylinder having connection with this cavity of the die and fitted with a piston or plunger as a means for expanding the die, and mechanism for bringing one die against the other and for operating the liquid-pressure by which the elastic-surface die is expanded, substantially as hereinbefore described.

2. The combination of the stationary metallic or hard surface die, the hollow elastic or expansible surface die confined within a movable head and surrounded by an unyielding case or shell, and the movable wedges adapted to enter between this case or shell and the sides of the elastic die at the time of operation as the two dies are brought together, substantially as hereinbefore described, for the purpose set forth.

3. In a machine for the purposes described, the combination of the movable head containing the hollow elastic die, the liquid-cylinder communicating with the hollow or cavity of the said die and fitted with a piston or plunger operated as described, and the stationary metallic or hard surface die mounted on a bed in relation to the movable die, substantially as set forth.

4. The combination, with the hollow elastic die or former within the surrounding case or shell, of the wedges and the rigid die, said wedges being adapted to press the elastic die into any unevenesses, curves, or angles of the rigid die, substantially as set forth.

327,711. MACHINE FOR SANDING BRICK-MOLDS. Arthur Naylor, Cold Spring, N. Y. Filed Feb. 26, 1885. (No model.)



Claim.—1. The combination, with a cylinder having openings extending lengthwise in its periphery, and having cam-shaped or inclined flanges or ribs extending circumferentially between said openings, the forward ends of said flanges or ribs having a greater projection from the cylinder than the rear ends thereof, of a mold hopper or rack wherein the molds are supported by the cam-shaped flanges or ribs, and from which the molds pass into the mold-seats at the openings of the cylinder as the said openings successively pass under the hopper or mold-rack, substantially as and for the purpose described.

2. The combination, with a hopper or rack for molds, of a cylinder arranged to rotate under the hopper or rack, and provided with openings or mold-seats in its periphery, and with cam-shaped flanges or ribs extending circumferentially between said openings, and hinged retainers on the mold-rack, whereby the pile of molds will be lifted in case the sanded molds are not removed from the cylinder, substantially as herein described.

3. The combination, with a mold-rack and a cylinder provided with openings extending lengthwise of its periphery, and forming mold-seats, and with cam-shaped flanges extending circumferentially between said openings, and on which the pile of molds in the rack rests, of levers pivoted to and carried by the cylinder, and having catches or hooks at their ends for grasping molds and cams, whereby the levers and catches or hooks are operated to grasp and release molds, substantially as herein described.

4. The combination, with the mold-rack and cylinder provided with longitudinal openings and mold-seats, and with cam-shaped circumferential flanges or ribs, of a sand-hopper and a hinged door or valve which is held closed by said flanges until an opening in the cylinder is reached, substantially as herein described.

5. The combination, with the cylinder E, having openings and mold-seats *e e'*, and cam-shaped flanges or ribs *f*, of the hopper or rack wherein molds will be supported by the said flanges or ribs on the cylinder, the levers F, pivoted to the cylinder, and having at their outer ends hooks or catches f^3, and spring-actuated guard-plates *g*, and cams for operating said levers to grasp and release molds, substantially as herein described.

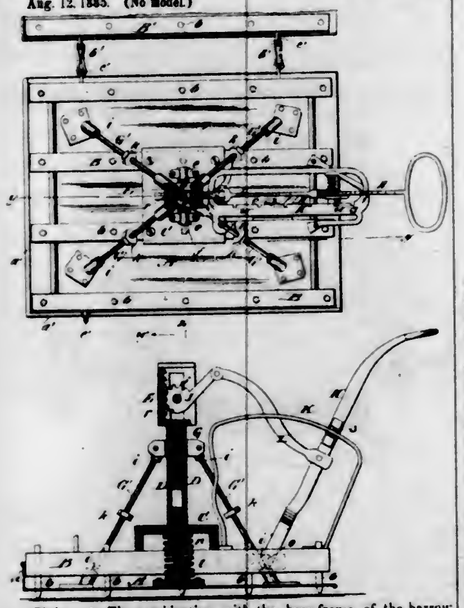
327,712. SASH-HOLDER. George W. Naylor, Jersey City, N. J. Filed May 19, 1885. (Model.)

Claim.—A spring sash-holder made, substantially as herein shown and described, with a U-shaped bend in its outer part, with holes in the corners of its short arm to receive fastening-screws, and with recesses in its side edges directly over the screw-holes to give access to the fastening screws, as set forth.

327,712.



327,713. HARROW. Philip Nelson, Las Vegas, N. Mex. Filed Aug. 12, 1885. (No model.)

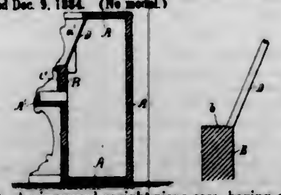


Claim.—1. The combination, with the base-frame of the harrow having attached teeth *b*, and the plate A, adjustable up and down over said teeth, of the triple guide for said plate consisting of the central stem or post, D, the pin *l* of the plate A in sliding tubular connection with said post, the tubular guides D' D', and the rods *d d*, substantially as specified.

2. In combination with the harrow-frame having attached teeth *b*, and the plate A, the stem or post D, and the spider-frame G G', having its stay-rods G' connected by reverse screw-threads *i* at their opposite ends with the head G of the spider-frame and with the plate A, essentially as and for the purposes herein set forth.

3. The combination, with the plate A, the harrow-frame having attached teeth *b*, and the stem or post D, of the spider-frame G G', the tubular guides D', the rods *d*, the slotted frame-piece E, having a rack, *r*, the boxes and slides *e g*, the shaft *f*, the arms h, connecting said shaft with the spider-frame, the toothed lever J, the rod I, and the lever H, substantially as shown and described.

327,714. UPRIGHT-PIANO CASE. Henry S. Parmelee, New Haven, Conn., assignor to the Mathushek Piano Manufacturing Company, same place. Filed Dec. 9, 1884. (No model.)



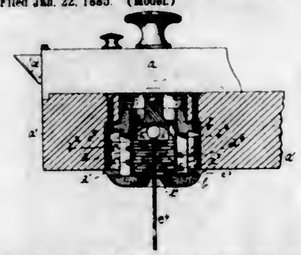
Claim.—1. An improved upright-piano case having a fixed music rest or supporter forming a permanent part of the front, and located above the space occupied by the cover when the latter is raised, substantially as described.

2. In an upright-piano case, the combination, with a narrow cover hinged or pivoted above the key-board, of a fixed music rest or holder set rigidly and permanently recessed in the front of the casing above the space occupied by the cover when raised, substantially as and for the purposes set forth.

3. The combination, with the casing A, having the front B and the narrow key-board A', of the narrow cover C, hinged or pivoted above the key-board, and the inclined fixed rest D, set rigidly and permanently in the front above the space occupied by the cover when raised, as specified.

4. The combination, with the case A, of the front B, with its fixed rest D, ledge *b*, panels *a* and moldings *a'*, the key-board A' and the key-cover C, as specified.

327,715. LOCK. Archibald W. Paull and Daniel L. Heiskell, Wheeling, W. Va.; said Heiskell assignor to James Paull, Wellsburg, W. Va. Filed Jan. 22, 1885. (Model.)

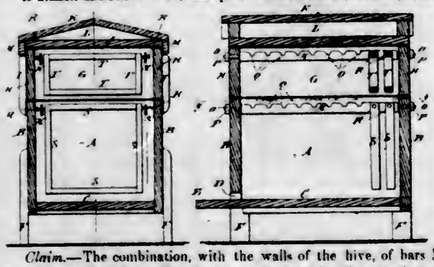


Claim.—1. A lock having several superposed slotted tumblers mounted within a frame whose slots form a continuous passage for the insertion of a key, by the rotation of which the said tumblers may be moved beyond the limits of said frame, or inward within the limits of the same, substantially as and for the purposes described.

2. A lock having several superposed slotted tumblers mounted within a frame, whose slots form a continuous passage for the insertion of a key, by the rotation of which the said tumblers may be moved beyond the limits of said frame, or inward within the limits of the same, said tumblers being of a length substantially equal to the diameter of the frame, so that a too great inward movement of the tumblers will cause them to project from the opposite side of the frame, substantially as and for the purposes described.

3. The combination, in a lock, of a rotatory cylinder or frame mounted within an outer recessed case, and several superposed slotted sliding tumblers arranged in said cylinder so that their slots will form a continuous passage for the insertion of a key, said key having cams of unequal radii, which in turning the key engage said tumblers and move them out of and into said recesses, the projecting portions of each of said tumblers being of a length proportioned to the throw of the proper cam on the key, substantially as and for the purposes described.

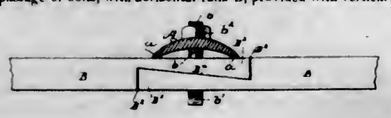
327,716. BEE-HIVE. Joseph J Pearson, Batesville Miss., assignor to himself and John M. Cox, same place. Filed June 23, 1885. (Model.)



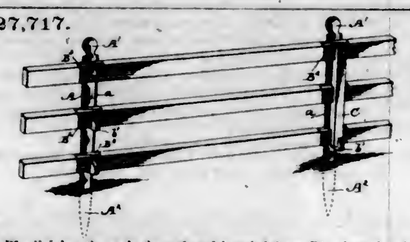
Claim.—The combination, with the walls of the hive, of bars N, having screws O and nuts P at their ends for securing them to the said walls, and having recesses Q in their upper edges to receive pins R, attached to the upper corners of the comb-frames, substantially as herein shown and described.

327,717. FENCE. James H. Phillips, Richmond, Va. Filed June 4, 1885. (No model.)

Claim.—The combination of a cast-iron fence-post having a pointed lower end, a concavo-convex body, acute edges *a*, and perforations for the passage of bolts, with horizontal rails B, provided with vertical cross-

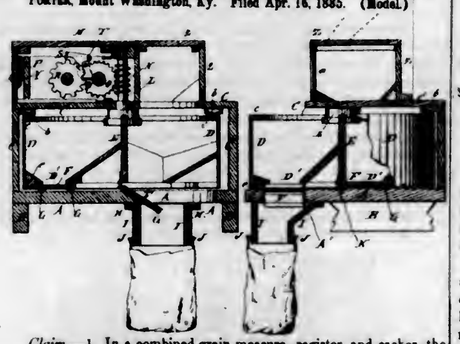


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cuts B^2 adjoining the ends thereof, and beveled faces B^4, adapted to become dovetailed together and united by a single bolt, substantially as and for the purpose described.

327,718. GRAIN MEASURE, REGISTER, AND SACKER. John F. Porter, Mount Washington, Ky. Filed Apr. 16, 1885. (Model.)

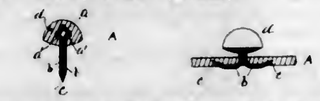


Claim.—1. In a combined grain measure, register, and sacker, the combination, with the measuring-wheel D and its casing A C, of the worm N, worm-wheel O, having long tooth Q, gear-wheel R, turned by the said long tooth, the pawl S locking the said wheel R and provided with an arm, U, to be engaged by the said long tooth, the index-fingers V W, attached to the journals of the said wheels, and the frame P, substantially as herein shown and described, whereby the amount of grain passing through the machine is registered, as set forth.

2. In a combined grain measure, register, and sacker, the combination, with the casing M, attached to the casing of the measuring-wheel, and the frame P, carrying the registering mechanism, of the locking-plate Y, substantially as herein shown and described, whereby the said mechanism will be held in gear and can be readily thrown out of gear, as set forth.

3. The combination of the base plate, the wheel having compartments provided with trap-doors hinged at one end and provided at their opposite or free ends with anti-friction rollers, the casing C, and anti-friction rollers journaled to the casing and bearing upon the rim of the wheel, whereby the said wheel has anti-friction bearings above and below, substantially as set forth.

327,719. BUTTON AND FASTENER. George W. Prentice, Providence, R. I. Filed Sept. 29, 1884. (No model.)



Claim.—1. A button having a head composed of leather pulp or analogous material, and a one-piece wire shank consisting of the prongs *b b*, pointed at their ends, and the triangular-shaped body portion embedded in the button-head, and provided with the apex *c*, and having shoulders *a'*, and the central opening or eye, whereby the material of the button-head is forced into said eye to firmly secure the shank in place, substantially as described.

2. A button having a head composed of leather pulp or analogous material, and a one-piece half-round wire shank consisting of the duplex-pointed prongs *b b*, and an enlarged body portion bent into form, and having a central opening or eye, the body portion embedded in the button-head, with the material of said head pressed into the central eye of the shank, so as to adhere to the flat sides of said shank, substantially as shown and described.

327,720. CIRCULAR WIRE BRUSH. Benjamin F. Quimby, Boston, Mass. Filed June 9, 1884. (Model.)

Claim.—As an improvement in metallic scratch-brushes, the holder A, formed in one piece and with two or more annular grooves, *a*, for the reception of a corresponding number of rows of wire bunches, B, having

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the fastening-wires *d*, and staples *e*, driven thereover, as described, a separate and independent wire, *d*, being employed for each groove, as set forth.

327,721. TUBE-FORMING MACHINE. John L. Reuter, San Francisco, Cal., assignor to W. W. Montague, same place. Filed July 16, 1885. (No model.)



Claim.—1. In a tube-forming machine, a bed on which the sheet is laid, a roller adapted to travel on the bed over the sheet, a clamp on the periphery of the roller for securing the edge of the sheet, and suitable guides for holding the roller down on the sheet, substantially as herein described.

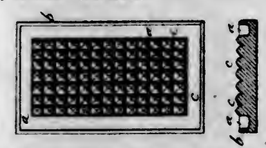
2. In a tube-forming machine, the bed A, having guide-frames *a* at each end, in combination with the roller B, the loose guide-wheels *b* on the roller-shaft, and arranged to travel under the guide-frames *a* and hold said roller down, and a clamp on the periphery of the roller arranged to secure the edge of the sheet, substantially as herein described.

3. In a tube-forming machine, the bed A, in combination with the roller B, the rocking clamping bar or plate E on its periphery, the lever D on the roller-shaft, and the link F, connecting the lever with the clamping bar or plate, substantially as herein described.

4. In a tube-forming machine, the bed A, having a longitudinal channel, *a'*, in combination with the roller B, the rocking clamping-bar E on the periphery of the roller, seated in the channel *a'* when at rest, the lever D, by which the roller is advanced, and the link F, connecting the clamping-bar with the lever, by which the clamp is effected, substantially as herein described.

5. In a tube-forming machine, the combination of the bed A, having the guide-frames *a* on its ends, and a longitudinal channel, *a'*, the roller B, the loose guide-wheels *b* on the roller-shaft bearing under the end frames, *a*, the clamping-bar E on the periphery of the roller, and seated when at rest in the channel *a'*, the lever D on the roller-shaft, and the connecting-link F, between the lever and the clamping-bar, substantially as herein described.

327,722. CARD-TABLE. Alexander Rodgers, Muskegon, Mich. Filed May 15, 1885. (No model.)

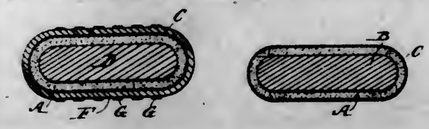


Claim.—1. In card-tables, a table-top provided with the encircling-channel *a* and a series of parallel grooves, *c c*, as and for the purpose specified.

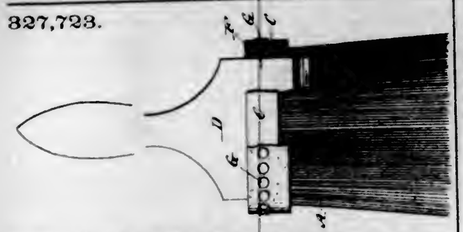
2. In card-tables, a table-top having two series of parallel grooves or flutings, *c c*, crossing each other at an angle, and an edge channel, *a*, substantially as and for the purpose set forth.

327,723. MANUFACTURE OF FLAT BRUSHES. Henry Rosenthal, New York, N. Y. Filed Feb. 24, 1885. (Model.)

Claim.—The method, substantially as herein shown and described, of making brushes, consisting in placing the bristles around a core, passing a metal band or ferrule around the upper ends of the bristles, which

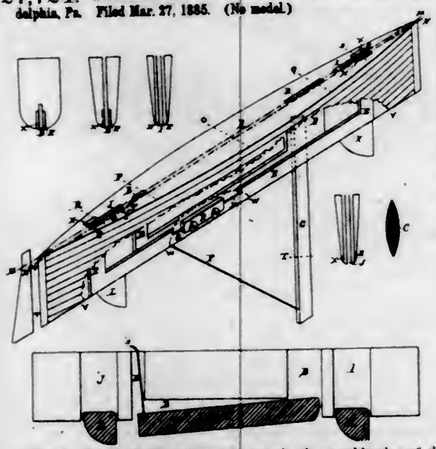


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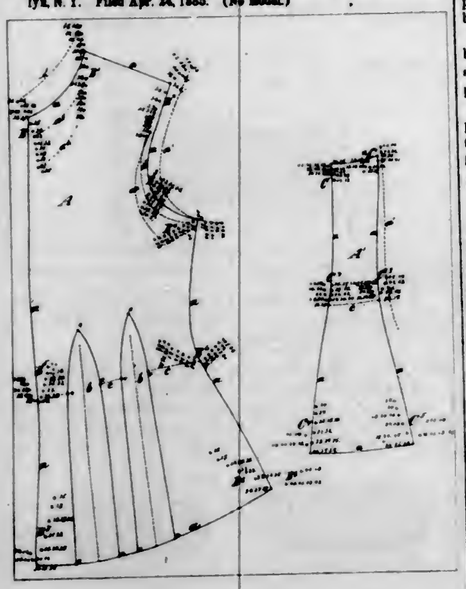
are cemented together, and then forcing out the core by introducing the handle, as set forth.

327,724. BALLAST FOR SHIPS. George W. Scheiberborn, Philadelphia, Pa. Filed Mar. 27, 1885. (No model.)



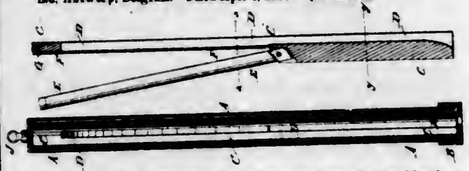
Claim.—In a ballasting device for vessels, the combination of the weighted center-board pivoted at its forward end to the center-board box, the movable ballast located on ways in the hold, and the ropes F and G, the one secured to the after end of the center-board, the other to one end of the movable ballast, both passing over pulleys within the vessel, all so connected that as the weighted center-board is lowered the movable ballast is shifted aft, substantially as described.

327,725. CHART FOR LAYING OUT PATTERNS. John J. G. C. Schmidt, New York, assignor of one-half to Richard W. Beyrich, Brooklyn, N. Y. Filed Apr. 24, 1885. (No model.)



Claim.—The chart for laying out patterns for garments, having several series of holes or perforations, as herein described, and also having other perforations, °, indicating the position of gores, the holes in the several series being designated by corresponding figures indicating the bust-measure for which each hole is intended, whereby provision is afforded for laying out a pattern after obtaining the bust-measure only, substantially as herein set forth.

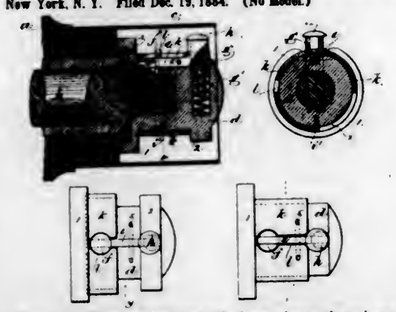
327,726. APPARATUS FOR TAKING SOUNDINGS. Herman Schoenig, Antwerp, Belgium. Filed Apr. 4, 1885. (No model.)



Claim.—1. In an apparatus for taking soundings, the combination, with the case A, having an air-tight upper end, and at its lower end a screw-cap having a center opening, of the rod C, having a longitudinal groove, D, and a hinged section at its upper part, and the strip F, to receive the water-mark, secured in place by the said hinged section, substantially as herein shown and described.

2. In a sounding apparatus, the combination, with the tube A and perforated cap B, of the grooved rod C, hinged section E, and the pin G, for the purpose set forth, substantially as set forth.

327,727. CAP FOR CARRIAGE-AXLES. John M. Schorb, Jr., Plainfield, N. J., assignor to Carrie L. Schorb, same place, and John I. Holly, New York, N. Y. Filed Dec. 19, 1884. (No model.)



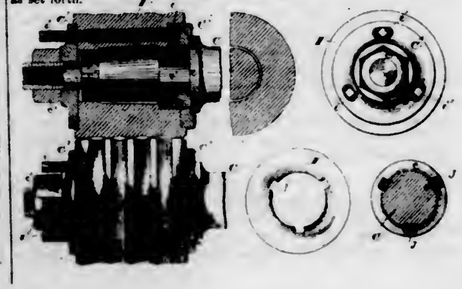
Claim.—1. The combination, with the carriage axle and cap, of a pivoted lever, *e*, having a button, *h*, at one end and a fork at the other end, the locking-pin *f*, connected to the fork, the spiral spring *g'*, and pin *g* within a hole in the cap, and acting against the lever beneath the button-head, substantially as specified.

2. The combination, with the carriage axle and cap, of a locking-bolt passing through the cap into a recess in the axle, and a ring or band surrounding the cap and capable of being turned to retain the bolt in its place, substantially as specified.

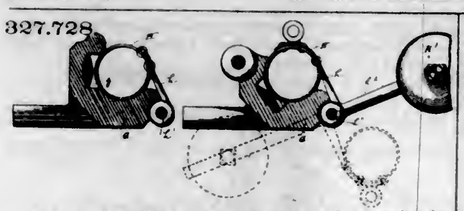
3. In a cap for carriage-axles, the combination, with the locking-pin *f*, the lever *e*, and pin *g*, of a ring or band, *k*, slotted at *i* and *l*, and the pin *i'*, for limiting the movement of said band *k*, substantially as and for the purposes set forth.

327,728. ROLLING-MILL. Charles Schuls, Cleveland, Ohio. Filed May 7, 1885. (No model.)

Claim.—1. In a rolling-mill plant, the combination of a series of overhanging rolls removably mounted on their respective shafts and arranged to form a continuous train, each shaft provided with flanges and nuts for embracing the ends of the rollers and tightening the same, and set-screws for adjusting the rollers lengthwise on the shafts, substantially as set forth.



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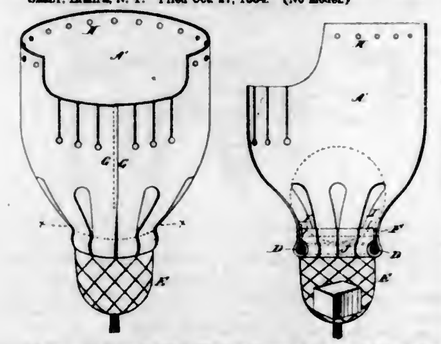


2. In a rolling-mill plant, the combination, with an overhanging roll removable mounted on a shaft provided with collars for embracing the ends of the roll, and nuts for tightening the collars, the shaft and roll, respectively, provided with one or more splines and engaging grooves, for causing the shaft and roll to revolve together, of set-screws extending longitudinally through the roll and through the outside flange or washer, so as to be operated in front, said set-screws abutting against the rear flange or washer and arranged to adjust the roll lengthwise on the shaft and to back the roll from its seat, substantially as set forth.

3. The combination, with the guide G, provided with a channel, *g*, of the tube H, hinged to the guide, and so arranged that a pressure from within will open the tube outward and open the channel in the guide, substantially as set forth.

4. The combination, with a continuous train of overhanging rolls and guides arranged between the sets of rolls, of brackets secured to the train-frame for supporting the guides, the arrangement of parts being such that the brackets are adjustable vertically or lengthwise of the train, and the guides adjustable laterally, substantially as set forth.

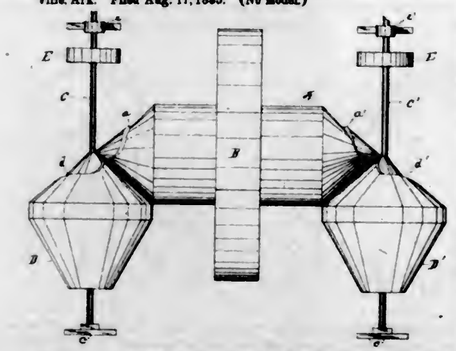
327,729. POCKET FOR BILLIARD AND POOL TABLES. David W. Seely, Elmira, N. Y. Filed Oct. 27, 1884. (No model.)



Claim.—1. A pocket for billiard and pool tables, consisting of an upper pocket to receive and hold the balls, and an additional connecting lower pocket to receive and hold the chalk, substantially as described.

2. In a pocket for billiard and pool tables, the upper pocket, A', lower pocket, E, and connecting-channel J, through which channel the chalk is to pass from the upper to the lower pocket, and the balls to be retained in the upper pocket separately as shown.

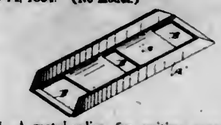
327,730. GEAR FOR TRANSMITTING MOTION. John B. Sims, Yellville, Ark. Filed Aug. 17, 1885. (No model.)



Claim.—1. A gear for transmitting motion, composed of two cones set at right angles to each other, each of said cones being formed with a volute extending from its apex to its circumference, these volutes intermeshing one with the other, substantially as described.

2. The combination, with horizontal shaft A, whose ends are conical and have volutes formed thereon from the apex to the circumference, of conical gears secured to shafts at right angles to shaft A, said gears having volutes formed thereon which coincide and intermesh with the volutes on the horizontal shaft, substantially as described.

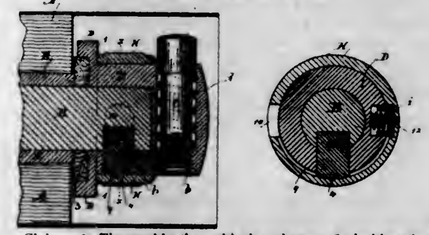
327,731. METAL SPLICE FOR UNITING THE ENDS OF CANE STRIPS FOR CHAIR-SEATINGS. Francis A. Sinclair, Mottville, N. Y. Filed June 14, 1884. (No model.)



Claim.—1. A metal splice for uniting cane strips, consisting of a plate having side flanges and transverse slots, substantially as herein shown and described.

2. The combination, with a metal plate having three transverse slots, of two cane strips having their ends passed over the plate and through the middle slot, then under the plate and through the end slots from the bottom upward, substantially as herein shown and described.

327,732. CAP FOR CARRIAGE-AXLES. Otis A. Smith, John T. Smith, and John O. Couch, Middlefield, Conn., assignors to John I. Holly, New York, N. Y. Filed Feb. 27, 1885. (No model.)

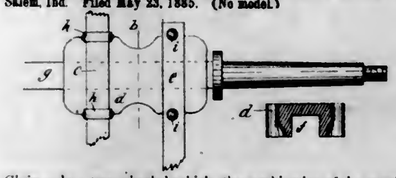


Claim.—1. The combination, with the axle-cap, of a locking-pin, *a*, head *b*, and bolt *c*, the latter passing transversely through the cap, and the spring *d* around said bolt, substantially as set forth.

2. The combination, with the cap D, locking-pin *a*, head *b*, and bolt *c*, of the band H surrounding the cap and having an opening at which the pin may be pressed back out of the axle, substantially as set forth.

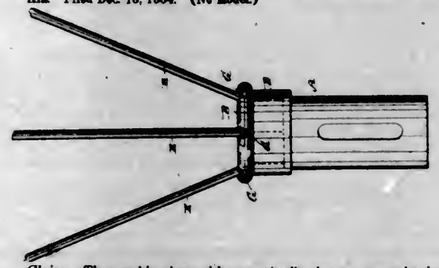
3. The combination, with the cap D, locking-pin *a*, head *b*, and bolt *c*, passing transversely through the cap, of the spring *d*, surrounding the bolt, the band H, around the cap, having an opening for the locking-pin and a cavity, and the spring-lock *i*, substantially as set forth.

327,733. TWO-WHEELED VEHICLE. Granville G. Sowder, North Salem, Ind. Filed May 23, 1885. (No model.)



Claim.—In a two-wheeled vehicle, the combination of the coupling-iron *d*, having a groove adapted to receive and fit the axle, a spring adapted to support the body, and a shaft, both secured to said coupling-iron and to the axle by clips or bolts, substantially as specified.

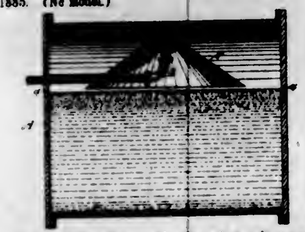
327,734. JOINT FOR UMBRELLAS. Samuel W. Staats, Grand Bay, Ala. Filed Dec. 18, 1884. (No model.)



Claim.—The combination, with an umbrella ring or runner having a hollow bead provided with apertures, of umbrella ribs or braces hav-

ing cross-pieces on the ends, and of the ring or sleeve D, substantially as herein shown and described.

327,735. SEPARATOR. Linus Stewart, San Francisco, Cal. Filed June 1, 1885. (No model.)

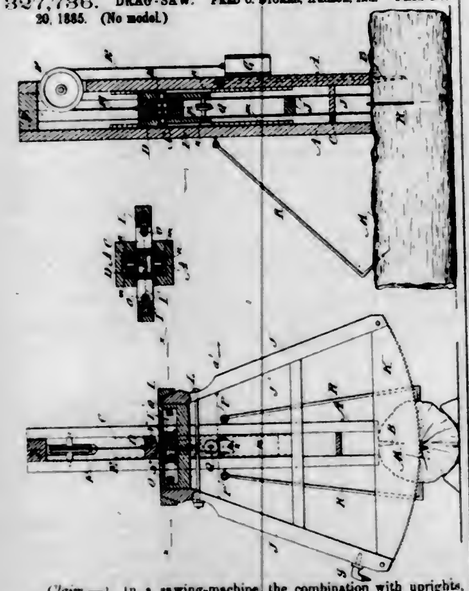


Claim.—1. In a boiler, the combination of an exit steam-pipe, having its upturned end inclosed by the boiler, and a shield or protecting-plate supported by the pipe and lying in close proximity to the water in the boiler, substantially as set forth.

2. In a steam-boiler, the combination of the exit steam-pipe B, the upturned end of which is inclosed by the boiler, with the conical or inverted funnel-shaped shield secured on the exit-pipe below its top, substantially as herein described.

3. In a steam-boiler, the combination of a steam exit-pipe, entering and projecting within the boiler, and an independent protecting shield or plate having a central perforation, through which the end of the pipe tightly passes, the said shield or plate lying between the end of the pipe and the water and in close proximity to the latter, all constructed and operating as herein described.

327,736. DRAG-SAW. Fred C. Storrs, Hudson, Ind. Filed Feb. 20, 1885. (No model.)

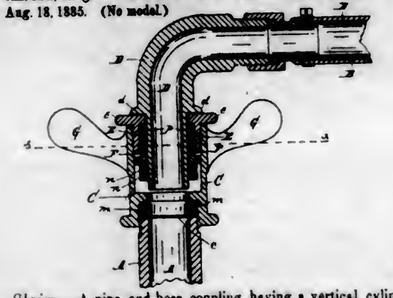


Claim.—1. In a sawing-machine, the combination with uprights, of a vertically-sliding box between the same, a box pivoted in the vertically-movable box, and a saw-frame having a longitudinal slot in its top cross-piece, through which slot the above-mentioned pivoted box passes, substantially as herein shown and described.

2. In a sawing-machine, the combination, with the uprights A, of the sliding box D, the box H, pivoted in the sliding box, a saw-frame having a top cross-piece, I, provided with a longitudinal slot in which the box H is located, the pulley Q, pivoted in the box D, the pulleys N in the box H, the pulleys O at the ends of the slot in the top piece of the sawing-frame, and of the ropes P, secured to the side bars of the sawing-frame and passed over the pulleys Q, N, and O, and secured to the ends of the box H, substantially as herein shown and described.

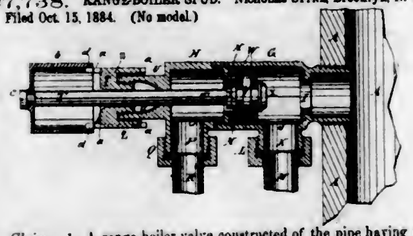
3. In a sawing-machine, the combination, with the uprights A, of the vertically-sliding box D, the box H, pivoted in the box D, a saw-frame having its top piece, I, provided with a longitudinal slot, I', in which the box H is placed, and of cords secured to the side bars of the sawing-frame passed over pulleys, and having their other ends secured to the ends of the box H, substantially as herein shown and described.

327,737. PIPE AND HOSE COUPLING. William Strowe, Indianapolis, Ind., assignor of one-half to Charles Aschbacher, same place. Filed Aug. 18, 1885. (No model.)



Claim.—A pipe and hose coupling having a vertical cylindrical sleeve, C, provided with a screw-threaded socket, c, to receive the end of the water-pipe A, the pipe D, starting and turning in the sleeve C, branching off horizontally above the sleeve, and connecting with the hose B, the shoulder *d* on said pipe D, the collar E, screwed from above into the sleeve C and being provided with the circular flange *e*, as described, the inner collar, F, the elastic packing *p*, and the nuts or locking device *n n*, forming means to secure a water-tight joint where the pipe D passes through and operates in the flange *e* of the collar E, the handles or arms G G, secured to the sleeve C for the purpose specified, all arranged and constructed as described, and for the purpose specified.

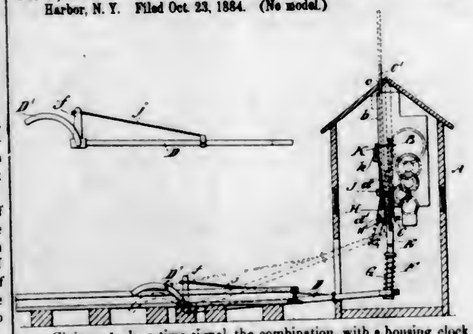
327,738. RANGE-BOILER SPUD. Nicholas Stine, Brooklyn, N. Y. Filed Oct. 15, 1884. (No model.)



Claim.—1. A range-boiler valve constructed of the pipe having an end opening and two side openings, two valve seats or ports, one seat or port being disposed intermediately of said side openings, and the other at the opposite side of one of the side openings, and two valves on a common stem, said valves being placed between the valve-seats, whereby the movement of the valves may alternately open and close said ports, substantially as and for the purpose set forth.

2. In a range-boiler valve, the combination, with the pipe having valve-seats and connection with the boiler, the circulation and waste pipes, valve-stem T, and the water-back, of the stuffing-box U, the cap Y, having side grooves, Z, and end inclines, *a*, and the hollow cylindrical rotating handle *b*, having interior lugs, *d*, substantially as herein shown and described, whereby the valve can be readily shifted, drawn tightly to either seat, and locked in place, as set forth.

327,739. TIME-SIGNAL. Stephen J. Swayze and John C. Lane, Sag Harbor, N. Y. Filed Oct. 23, 1884. (No model.)

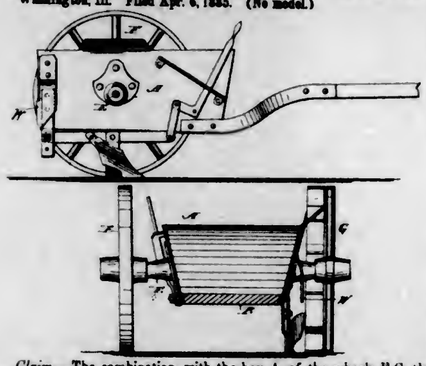


Claim.—1. In a time-signal, the combination, with a housing clock mechanism therein, a sliding board, and means for operating the same, of a signal-board in front of the said sliding board and operated thereby, substantially as herein shown and described.

2. In a time-signal, the combination, with a housing clock mechanism therein, a sliding board provided with a projection, H, and means for operating the same, of the signal-board C' in front of the said sliding board, a button engaging the lower end of the signal-board, and means for operating the button from the sliding board, substantially as herein shown and described.

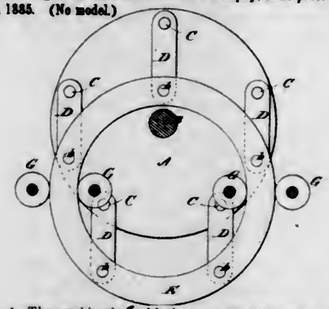
3. The board C, provided with the projection H and rod H', and the signal-board C', provided with cleat J, in combination with button K and rod *d*, all arranged to operate as and for the purposes set forth.

327,740. GRADING AND DITCHING MACHINE. Benjamin Tomas, Washington, Ill. Filed Apr. 6, 1885. (No model.)



Claim.—The combination, with the box A, of the wheels F G, the latter having buckets, and of the knife W, secured to the box at the inner side of the wheel G, substantially as herein shown and described.

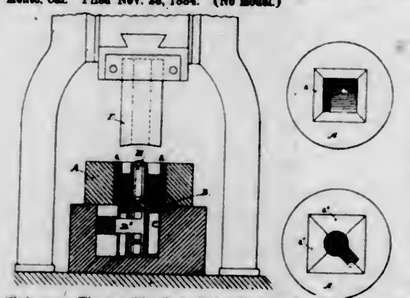
327,741. MECHANICAL MOVEMENT. Mark B. True, Newburyport, Mass., assignor to himself and James S. Murphy, same place. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination, with the rotatable disk, plate, or wheel A and the spindles or axles C C, carried by it, of the circular rod or ring E, arranged to occupy an eccentric position in relation with the disk A, and the cranks D D, connecting said ring and disk, substantially as and for the purpose or purposes herein set forth.

2. The combination of the rollers G G with the eccentrically-arranged ring E, the cranks D D, the spindles or axles C C, and the rotatable disk A, essentially as and for the purposes herein described.

327,742. MACHINE FOR MAKING NUTS. Stephen Uren, Sacramento, Cal. Filed Nov. 28, 1884. (No model.)

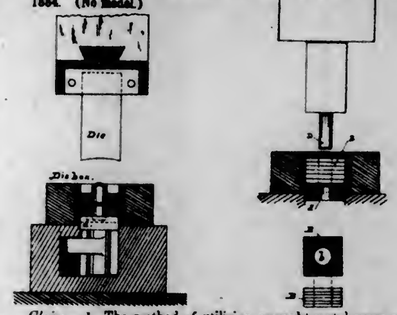


Claim.—1. The combination of the die-box, movable support, removable bottom, center pin, and die or plunger, substantially as herein described.

2. The combination, with a die-box having a cavity of suitable form the bottom of which is composed of a removable block, of the center pin, and the die or plunger.

3. The combination, with the die-box A, of the removable side pieces or cheek-pieces *a a*, the loose block B, of corresponding shape to the cavity, inclosed between the faces of the die-box, and the die or plunger F, substantially as herein described.

327,743. PROCESS OF UTILIZING SCRAP FOR THE MANUFACTURE OF NUTS, &c. Stephen Uren, Sacramento, Cal. Filed Nov. 28, 1884. (No model.)

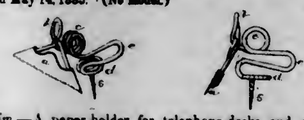


Claim.—1. The method of utilizing wrought-metal scrap and such waste material, as herein described, in the manufacture of nuts for bolts and like forms and articles, which consists in cutting the waste material into slabs or plates having or approaching to the outline of the blank or article, in producing a pile from such slabs or plates, in heating the pile, and then introducing it while in this condition into a die-box of suitable shape and applying pressure to it by means of a die-head or plunger fitted to the die-box, substantially as herein set forth.

2. The herein-described method or process of manufacturing nut-blanks for bolts and other articles and forms, consisting in forming a pile of the shape and outline, or approximating to the shape and outline, of the article from scraps of the waste metal, then heating the pile to welding-heat and then subjecting it to pressure or the action of a drop-press while confined in a die-box the cavity of which has the form of the blank or article to be produced, substantially as set forth.

3. In the process of manufacturing from scrap material nut-blanks and other articles having an eye or aperture through them, the method or process of producing and fixing such eye or aperture, which consists in providing an aperture in the parts or pieces of which the pile is formed, and then inserting a pin or plug into the aperture of the pile after the heating operation and before pressure, substantially as set forth.

327,744. SPRING-CLIP. Smith A. Waterman, West Troy, N. Y. Filed May 14, 1885. (No model.)



Claim.—A paper-holder for telephone-desks and analogous purposes, consisting of a metallic plate, a spring, and a screw, the spring being bent to form handle *b*, coil *c*, loop *e*, and head *d*, carrying the screw, whereby the device may be used as described.

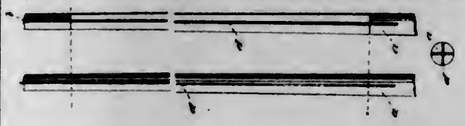
327,745. FASTENING FOR RAILROAD-RAILS. Leander E. Whipple, Hartford, Conn. Filed June 6, 1885. (No model.)



Claim.—1. The rail-fastening device having lips on the upper side to embrace the base of the rail and ductile lips on the under side to engage the edges of the tie.

2. The fastening consisting of the plate B, having the extended ends, and the lip *d*, formed thereon, and the separate plate *e*, adapted for attachment thereto.

327,746. WHIP-CORK. Robert M. Wilson, Edward M. Spear, and Maynard F. Prince, Springfield, Mass. Filed Mar. 21, 1885. (No model.)



Claim.—As an improved article of manufacture, a whip-core consisting of a tapered rattan piece having longitudinal saw-kerfs and flat whalebone strips fitted into and secured in said kerfs by glue, substantially as described.

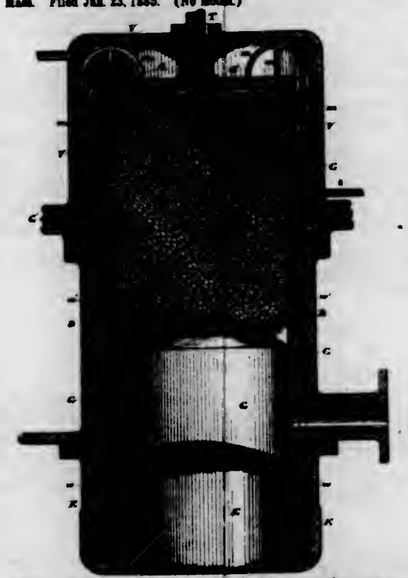
327,747. WASH-BOARD HOLDER. Henry M. Wines, Centre Moriches, N. Y. Filed June 11, 1885. (No model.)



Claim.—1. The combination, with a wash-tub, A, and a wash-board, B, of the lugs C, attached to the bottom of the said wash-tub, and having side recesses, D, and raised sockets F, and the hooks E, attached to the side bars of the said wash-board, and engaging with the said socket-lugs, substantially as herein shown and described, whereby the said wash-board will be held securely in place while being used, as set forth.

2. The combination, with a wash-tub and a wash-board placed therein, of the socketed lugs, C, secured in said tub, and the hooks E, attached on the side bars of the wash-board, substantially as described, whereby, when the said hooks are engaged with the said lugs, the wash-board will be held in place, as set forth.

327,748. HOT-AIR ENGINE. James A. Woodbury, Winchester, Joshua Merrill, George Patten, and Edward F. Woodbury, Boston, Mass. Filed Jan. 23, 1885. (No model.)

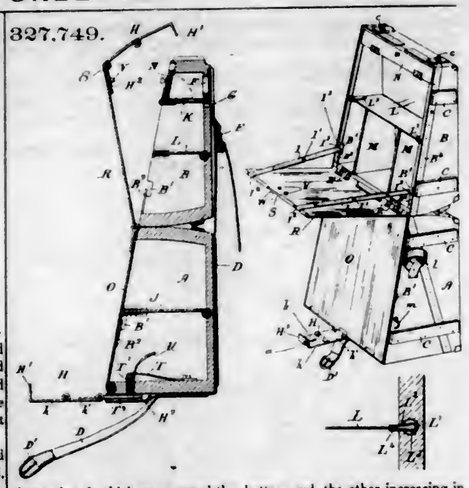


Claim.—1. In an air-engine provided with an annular regenerator-chamber surrounding and inclosing the reverser-cylinder and extending to or into the heater, two sets of regenerator-plates in said regenerator-chamber, the lower set made of iron and the upper set made of copper, substantially as and for the purposes described.

2. In an air-engine, a cooler-chamber surrounding and inclosing the periphery of that portion of the reverser-cylinder in which the packing of the reverser-piston works and the whole upper end of said reverser-cylinder except a central hub for a guide for the reverser piston-rod, substantially as described.

3. The combination of the reverser-cylinder G', the water-chamber A, surrounding and inclosing the periphery and upper end of said cylinder, and two rows of bent pipes *m m*, having their lower ends inserted through the flange of the cylinder G' and their upper ends inserted through the head of said cylinder, substantially as described.

327,749. TRUNK. Henry F. Wulff, San Antonio, Tex. Filed May 9, 1885. (No model.)



Claim.—1. A trunk formed of two vertical sections hinged to each other at the top of the trunk, the front section of the same, when closed, decreasing in thickness toward the bottom and the other increasing in thickness toward the bottom, and each section being provided with a lid or cover for covering its inner side, said lids or covers being hinged to each other, substantially as herein shown and described.

2. A trunk formed of two longitudinal sections hinged to each other at the top of the trunk, each section being provided with a lid or cover for its inner opening, the said lids or covers being hinged to each other, and the lid of the rear section being hinged to the bottom of the said section at the front edge of the said bottom, substantially as herein shown and described.

3. In a trunk, the combination, with the sections A B, hinged to each other and provided with notches B' in the beveled edges of their end pieces, and with the prongs B^3, of the lids O R, hinged to each other, and the rod S in the free end of the lid R, substantially as herein shown and described.

4. In a trunk, the combination, with the sections A B, hinged to each other by means of hinges having rods R^3, of the lids O R, hinged to each other, the lid R being provided at the hinged edge with hooks R', adapted to catch on the rods R^3 in the hinges, substantially as herein shown and described.

5. In a trunk, the combination, with the sections A B, both provided with notches B' in their beveled edges of their end pieces, and with prongs B^3, of the lids O R, hinged to each other, and the straps I, having eyes I^2 and hooks I^2 at the ends, substantially as herein shown and described.

6. In a trunk, the combination, with the sections A B, hinged to each other, of a lock in the bottom part of the front of the section B, and the hinged hasp H, held on the front part of the bottom of the section A, substantially as herein shown and described.

7. In a trunk, the combination, with the sections A B, hinged to each other, of the lock F, held in the lower part of the front of the section B, above which lock the transverse slot G is provided in the front of the section B, and of the hinged hasp H, held on the front part of the bottom of the section A, substantially as herein shown and described.

8. In a trunk, the combination, with the side pieces provided with apertures extending from the edges inward, and slots extending from the apertures to the inner surface of the side pieces, of the longitudinally-slotted tubes provided with flanges projecting from the edges of the slots, which tubes are adapted to be inserted in the apertures in the side pieces, the flanges of the tube projecting through the slots in the side pieces and serving to hold the ends of the shelves or partitions, substantially as herein shown and described.

9. In a trunk, the combination, with the section A, having apertures L' L^3 in its sides, and the hinged shelf J, of the flanged tubes L^3 L^4, substantially as described.

10. In a trunk, the combination, with the section B, of the hinged adjustable shelves L, and the partitions M, substantially as shown and described.

11. In a trunk, the combination, with the sections A B, hinged to each other, of the spring T on the inner bottom surface of the section A, the staple T', held on the free end of the same and passed through the bottom of the section A, the strap U, for raising the staple, and the hasp H, pivoted to a plate, H^2, provided with apertures, substantially as herein shown and described.

12. In a trunk, the combination, with the sections A B, hinged to each other, of the spring T on the inner bottom surface of the section A, the staple T', held in the free end of the same and passed through the bottom of section A, the strip U, for raising the staple, the hasp H, pivoted to a plate, H^2, provided with apertures, and of the lids O R, hinged to each other, the rod S on the free end of the lid R, and the pins Y, projecting from the inner surface of the lid R near its free edge, substantially as herein shown and described.

13. In a trunk, the combination, with the sections A and B, hinged to each other, of the plate T^2, forming a pocket on the bottom of the section A, the spring T, the staple T', the plate H^2, the hinged hasp H, hinged to the said plate, and the lock F, held in the front of the section B, near the bottom, substantially as herein shown and described.

327,750. BAG-HOLDER FOR TRUCKS. Walter S. Yothers and Joseph W. Yothers, Kartham, Pa. Filed June 12, 1885. (No model.)



Claim.—1. The combination, with a truck, of rods on the same, sliding clips on the rods, bows pivoted to the clips, and springs on the clips resting against the pivoted ends of the bows, substantially as herein shown and described.

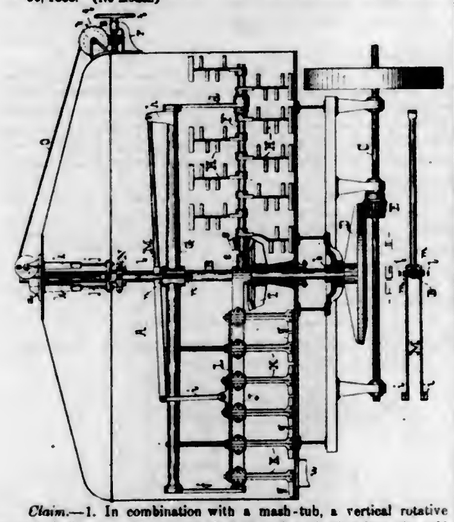
2. The combination, with a truck, of rods on the same, the clips E, having slots H, through which the rods on the bars pass, and bows pivoted to the clips, substantially as herein shown and described.

3. The combination, with a truck, of rods D on the same, the clips E, each having one end forked and the other provided with a hook, G, said clips also having slots through which the rods D pass, and bows pivoted to the clips, substantially as herein shown and described.

4. The combination, with a truck, of rods D on the same, the clips E, provided with the slots H, having beveled ends, said clips each having a forked and a hooked end, and bows pivoted to the forked ends of the clips, substantially as herein shown and described.

5. The combination, with the truck A, of the rods D, the clips E, having slots H, forked ends F, and hook ends G, the bows J, having shoulders J', and the spring K, substantially as herein shown and described.

327,751. MASH-MACHINE. John R. Ady, Baltimore, Md. Filed June 30, 1885. (No model.)



Claim.—1. In combination with a mash-tub, a vertical rotative central shaft, a scraper-arm attached to and projecting from the said shaft, a series of scrapers on bars supported by the said scraper-arm adapted to be elevated or depressed within the said arm, and means to effect their elevation and depression, substantially as specified.

2. In combination with a mash-tub having a central rotative shaft, a series of scrapers attached to the lower end of scraper-bars, the whole of which are united to a rod and adapted to be elevated and depressed together, a cross-beam secured to the central shaft to support the outer end of the scraper-arm, a lever pivoted to the said cross-beam and united by suitable devices to the scraper-rods, and winding mechanism to raise the said lever and elevate the scraping mechanism, substantially as specified.

327,752. HORSESHOE. C. Madison Alexander, Brightwood, D. C. Filed Nov. 11, 1884. (No model.)

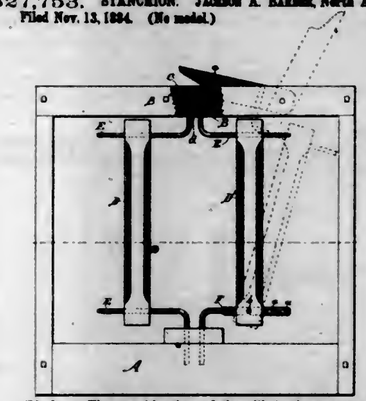


Claim.—1. A metallic or other suitable band, in combination with a primary and an auxiliary horseshoe, to bind the same together at their heels, straps or other suitable means being used to keep the bands in place, substantially as set forth.

2. An auxiliary and detachable horseshoe having an upwardly and inwardly turned toe-clip, an upwardly-turned close-fitting heel-piece, and a series of openings in its surface to receive and retain detachable calks adapted to be dropped in from its upper side, in combination with bands to confine its heels to a primary shoe, as and for the purpose set forth.

3. An auxiliary and detachable horseshoe having an upwardly and inwardly turned toe-clip, an upwardly-turned close-fitting curved heel-piece to embrace the heel of the primary shoe, and bands to embrace the heels of both shoes, substantially as and for the purpose set forth.

327,753. STANCHION. Jackson A. Barber, North Adams, Mich. Filed Nov. 13, 1884. (No model.)



Claim.—The combination of the sill A, the two top rails B, the stanchion D, the two hooks E, screw-threaded into the said stanchion, the lower hook pivoted in the beam A, the upper hook pivoted between the rails B, the stanchion D', slotted at its lower end, the hook E, screw-threaded into the stanchion and pivoted between the rails B, and the hook F, pivoted at one end in the sill A, provided with holes along its other end, and the pivot *b*, joining the stanchion D' and the hook F, substantially as shown and described, whereby the two stanchions are made adjustable to and from each other, and are both pivoted at top and bottom independent of each other, for the purpose specified.

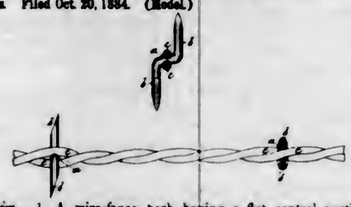
327,754. CULTIVATOR. David W. Bash, Chatsworth, Ill. Filed Aug. 5, 1885. (No model.)



Claim.—1. A cultivator provided with a series of shovels or blades arranged in gangs and capable of an adjustment on an arc of a circle and a vertical adjustment, substantially as and for the purpose specified

2. In a cultivator, the combination, with the shovels or blades thereof and the arms having their ends rounded, of an intermediate connection between the shovels or blades and arms, consisting of a bracket having a hole to receive the rounded end of the arm, a set-screw to retain the bracket thereon, and a bolt, nut, and slot for adjustably connecting the shovel or blade to the bracket, substantially as and for the purpose specified.

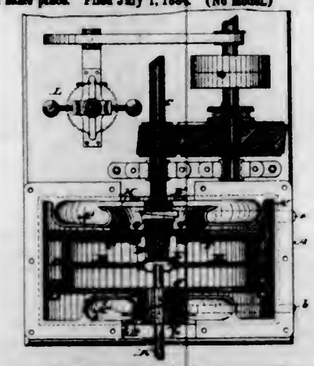
327,755. BARBED FENCE. George M. Bemrower, Cherry Vale, Kans. Filed Oct. 20, 1884. (Model.)



Claim.—1. A wire-fence barb having a flat central portion and two pointed ends standing nearly at right angles to the plane of the said flat portion, substantially as shown and described.

2. The combination, with two fence-wires twisted together, of a barb having a flat central portion and two pointed ends standing nearly at right angles to the plane of the said flat portion, the barb being held between the fence-wires, which grasp the said flat portion of the barb, substantially as shown and described, whereby the barb is journaled between the fence-wires to swing parallel with the fence and to be sprung back to a position transverse to the said wires by the action of the latter, as set forth.

327,756. CENTRIFUGAL CREAMER. Henry Behling, Philadelphia, Pa., assignor of two-thirds to Louis Krantter and George H. Orcutt, both of same place. Filed July 1, 1884. (No model.)



Claim.—1. A hollow cylinder having a hub, within the interior portion of which is a pocket, E', having pipes leading radially therefrom to near the inner side of the circumferential wall of the cylinder, in combination with a supply-pipe passing through one of the ends of the said cylinder into the said pocket, and bent pipes F, opening at one end inside of the cylinder near the inner side of the circumferential wall, and having at the other ends thereof cocks opening outside of one of the ends of the cylinder near the hub, substantially as described.

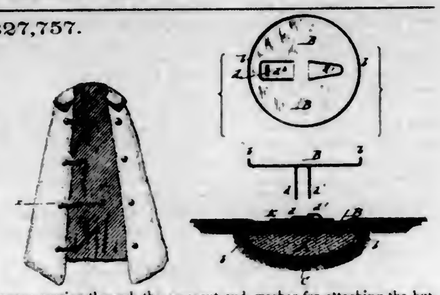
2. A cylinder having a hub formed with a pocket, E', and pipes E, leading therefrom and provided with an opening, J, in combination with a guard, J', inlet-pipe K, an annulus, K', having a flange, K'', flange A'', and pipe *b*, substantially as and for the purpose set forth.

3. A centrifugal milk and cream separator composed of a hollow cylinder provided with a hub having a bearing in a suitable casing, said hub having a pocket within said cylinder and pipes leading from said pocket to near the circumferential wall thereof, milk-discharge pipes open at both ends leading from the side of said cylinder, cocks in said pipes, and a cream-outlet formed by a guard, J', and annulus K' on the opposite side from the milk-discharge, substantially as described.

327,757. BUTTON FOR FUR GARMENTS. Hermann F. Bundehl, New York, N. Y. Filed Feb. 19, 1884. (No model.)

Claim.—1. The combination of a button consisting of a core or body of flexible material, a flanged base-disk having tongues integral therewith, a fur covering, and a washer having transverse slots, said

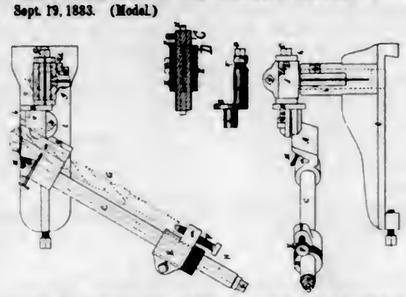
327,757.



tongues passing through the garment and washer for attaching the button to the garment, substantially as set forth.

2. The combination of a button consisting of a body or core of felt or other yielding material, a flanged base-disk, tongues made integral with the base-disk, one of the tongues having a slot, an exterior covering, and a slotted washer, through which the tongues are passed, said tongues interlocking with the washer and with each other, substantially as set forth.

327,758. MECHANISM FOR SUPPORTING AND GUIDING DRILLS WHILE BEING GROUND. John Birkinhead, Mansfield, Mass. Filed Sept. 19, 1883. (Model.)

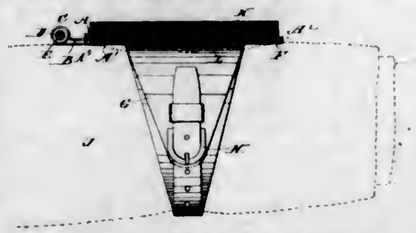


Claim.—1. The tool-rest, substantially as described, in combination with mechanism for supporting it and adjusting it vertically and horizontally, and allowing of it being turned, essentially as set forth, such mechanism, as described, consisting of the tool-rest clamp *e d*, the disk B and its journals *b* and *c*, the clamping-bearing *f*, and its screw *g* and journal *h*, and the clamping part *i* and its screw *k*, arranged and adapted as represented.

2. The combination of the pivotal screw F, and its clamp E, and the eccentric and contractile sleeve D, with the tool-rest A and its shank C, all being arranged and adapted to operate in manner substantially as set forth.

3. The combination of the tool-holding arm I and its carrying-shaft H with the tool-rest A and its shank C, all being adapted and arranged substantially as set forth.

327,759. HOLDER FOR TABLETS AND PENCILS. Peter Boyle, Chicago, Ill. Filed Apr. 28, 1885. (No model.)

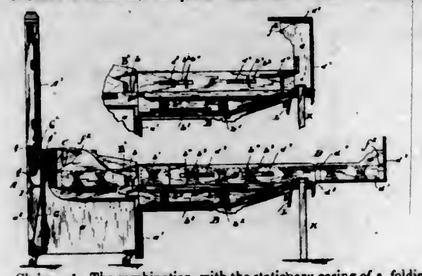


Claim.—1. A tablet and pencil holder formed of two plates united by a strip, which is bent to form a pencil-holding loop, substantially as herein shown and described.

2. In a tablet and pencil holder, the plates united by a strip bent to form a pencil-holding loop, the same also having means, substantially as described, for the connection thereof to the arm, as set forth.

3. In a tablet and pencil holder, the plate A and the plate A', having the flange A^2 and notch F, which plates are united by the strip B, substantially as herein shown and described.

327,760. FOLDING BED. Silas S. Bradshaw, Chicago, Ill., assignor to Samuel S. Chisholm, same place. Filed Jan. 14, 1885. (No model.)



Claim.—1. The combination, with the stationary casing of a folding bed, of a sectional bed-frame comprising a body-section hinged at fixed points to the stationary casing, and a head-section hinged to the body-section, and a strap or straps, I, attached to the stationary casing and the head-section for limiting the downward movement of the latter, substantially as and for the purpose set forth.

2. The combination, with the stationary casing of a folding bed, and a bed-frame comprising a body-section hinged to the casing, and a head-section hinged to the body-section, of a spring or springs applied to resist the unfolding or straightening out of said body and head sections, substantially as and for the purpose set forth.

3. The combination, with the stationary casing of a folding bed, of a bed-frame comprising a body-section hinged to the casing and a head-section hinged to the body-section, and springs B', attached to the body-section and engaging the head-section, substantially as and for the purpose set forth.

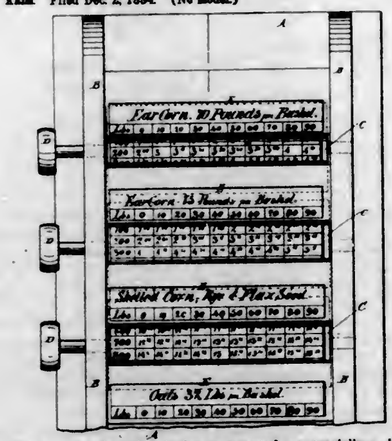
4. The combination, with the body-section of a sectional folding bed-frame and a foot-section hinged to the body-section, of slides upon the body-section flexibly connected with the foot-section, substantially as and for the purpose set forth.

5. The combination, with the body-section of a sectional folding bed-frame and a foot-section hinged to the body-section, of slides upon the body-section flexibly connected with the foot-section and adapted to abut at their ends against the side rails of the foot-section, substantially as and for the purpose set forth.

6. The combination, with the body-section of a sectional folding bed-frame and a foot-section hinged to the body-section, of slotted slides D', stops d^3, secured to the ends of the body-section and entering the slots of the slides, and links d^4, connecting the foot-section with the slides, substantially as described.

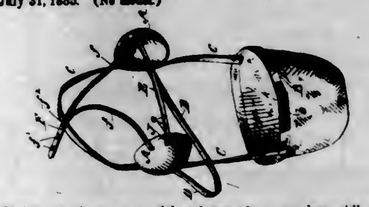
7. The combination, with the stationary casing of a folding bed and a folding bed-frame, of hinged panels in the back of the casing, cords G and G', connecting the bed-frame with the panels, and suitable guide-pulleys for the said cords, substantially as and for the purpose set forth.

327,761. CALCULATING DEVICE. Charles M. Brady, Newton, Kans. Filed Dec. 2, 1884. (No model.)



Claim.—A calculating device constructed substantially as herein shown and described, and consisting of the plate A, having flanges B, provided with a series of pivoted rollers, C, and cross-stripe E above the rollers, the said stripe bearing the name or names of the substance or substances to which the corresponding roller is appropriated, and a row of eleven spaces containing the letters "lbs.," the zero, and the nine tens in consecutive order, and the said rollers bearing eleven annular spaces divided by longitudinal lines into a series of horizontal spaces, the first annular row of spaces containing hundreds, and each of the other spaces containing the quotient and remainder found by dividing the hundreds at the left of the said space plus the tens above the said space by the number of pounds in a bushel of the said substance or substances, as set forth.

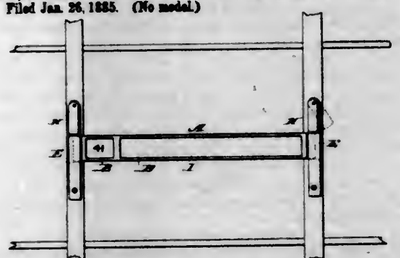
327,762. HORSE-BLINDFOLD. James Brick, Clifton, N. J. Filed July 31, 1885. (No model.)



Claim.—1. As a new article of manufacture, a horse-blindfolding device provided with blinders A A, and muzzle B, attached to the main head-strap C of the device, substantially as and for the purposes set forth.

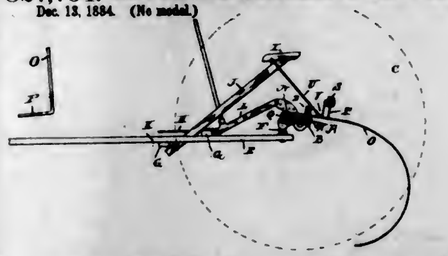
2. The device herein shown and described, consisting of the strap C, having muzzle B and blinders A attached to it, in combination with the strap E, connecting the blinders, and strap F, for supporting them, as set forth.

327,763. LABEL-HOLDER. Edward A. Cannon, Pewaukee, Wis. Filed Jan. 26, 1885. (No model.)



Claim.—The combination, with two brackets, D, having tongues E and latches H, of the slotted holder A, having tenons or tongues G on the ends, substantially as herein shown and described.

327,764. HORSE HAY-RAKE. Robt. S. Carr, Hamilton, Ohio. Filed Dec. 13, 1884. (No model.)



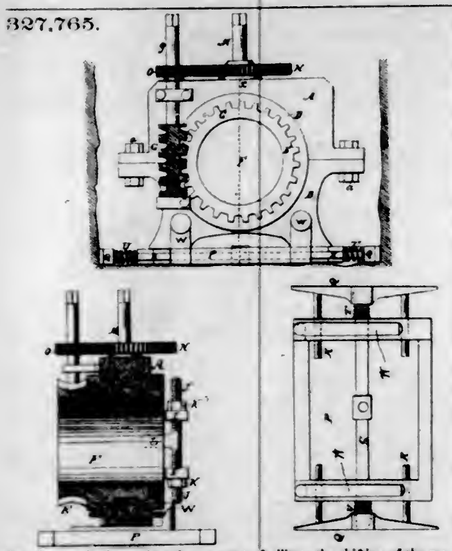
Claim.—1. The cleaner-bar, the suspending rods thereof, and the rocking rake-head provided with a rear top rib bearing directly against and supporting the suspending rods and adapted to move away from the rods as the rake-head rocks, combined and arranged to operate substantially as set forth.

2. The combination, substantially as set forth, of the rake-head A, having the outwardly-opening groove M in its front face and the notches N, leading through the upper shore of said groove, the rake-teeth with angular bends engaging said groove through said notches, the mortised top rib, D, or equivalent retainer over the teeth at the rear of the rake-head, and the keeper-bar Q, reaching from end to end of the rake-head and removably secured against the front edge of the rake-head and closing said groove.

327,765. PIPE-COUPLING MACHINE. Samuel Coburn, Altoona, Pa. Filed Feb. 20, 1885. (No model.)

Claim.—1. In a pipe-coupling machine, a standard composed of an upper and lower part removably bolted together, a revolving wheel having bearings in the standard and provided with a central opening, and a jaw-clamping device carried by the wheel and having an opening in line with the opening in the wheel, all constructed to act in combination so

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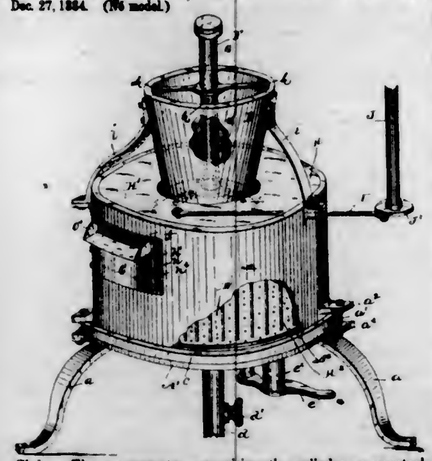


that the standard may be taken apart to facilitate the shifting of the machine, as set forth.

2. In a pipe-coupling machine, a standard composed of two parts removably bolted together and having an annular recessed bearing for the jaw-clamping wheel, an interior wheel having an annular collar or boss taking into the recess in the standard and provided with a central opening, a jaw-clamping device carried by the wheel, and means, as described, for imparting motion to the machine, substantially as set forth.

3. A bed-plate, oppositely-arranged adjustable binding-plates located thereon, and guides carried thereby, in combination with a pipe-coupling machine adapted to rest and move upon the guides, substantially as shown and described.

327,766. ORE-SEPARATOR. Ezra Coleman, New York, N. Y. Filed Dec. 27, 1884. (No model.)

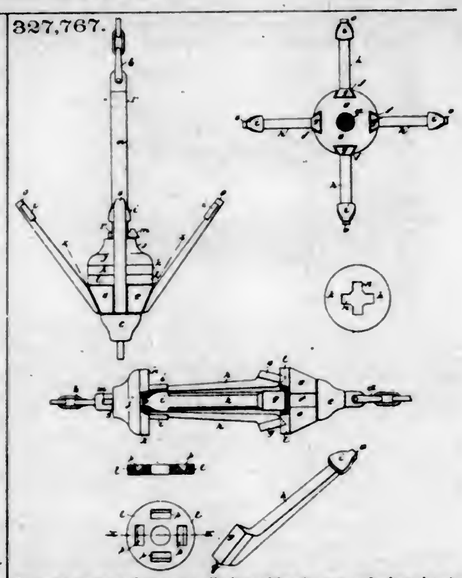


Claim.—The ore-separator comprising the cylinder or receptacle having an overflow opening, the bottom plate provided with an annular water-tight packed chamber, and concentrically therewith with a valved supply-pipe, the supplementary foraminated bottom or diaphragm, a valved discharge-pipe, the agitator or stirrer consisting of a disk provided with pendent arms, and a supporting-shaft, pitman, a rotary crank-shaft, and the hopper having a centrally-supported sleeve supporting the shaft of the agitator or stirrer, substantially as and for the purpose specified.

327,767. ANCHOR. Daniel L. Cole, Brooklyn, N. Y. Filed June 27, 1885. (No model.)

Claim.—1. An anchor comprising a shank, *a*, and a cylinder, *e*, provided with grooves, and the notched cylinders *k l*, combined with the arms *h*, having the enlarged portions *g* to fit in the grooves in the cylinder *e*, so as to project outwardly in position for use, and adapted to be withdrawn from said grooves and secured between the cylinders *k l* in position for disuse, substantially as described.

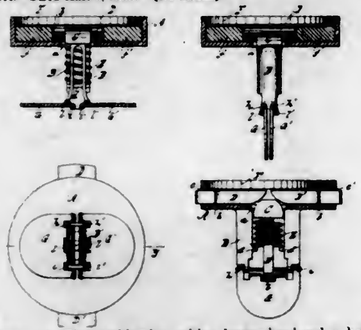
327,767.



2. An anchor comprising a shank, *a*, crown-piece *c*, and cylinder *e*, having grooves *f*, combined with arms *h*, having enlarged portions *g*, and flukes *i*, and a cap-piece, *j*, and means for holding said cap-piece rigidly against said cylinder, as herein shown and described.

3. The combination, in an anchor, of a shank, *a*, crown-piece *c*, grooved cylinder *e*, and arms *h*, having enlarged portions *g*, and flukes *i*, with the cap-piece *j*, and slotted cylinders *k l*, movable on said shank, and means for locking said cap-piece and cylinders in position, substantially as specified, for the purposes described.

327,768. BUTTON. Léon P. Conard, London, England, assignor of one-half to Charles Ferdinand Veit and George Dickman, both of same place. Filed Mar. 6, 1885. (No model.)

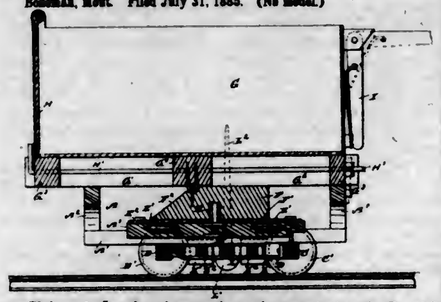


Claim.—1. The combination, with a button-head and a hollow or slotted shank secured thereto, of the elastic rod B', the spring-supported cap C, formed on or secured to said rod, the push-pieces D D' in the button-head, constructed to engage the spring-supported cap, and the leaf or leaves hinged to the shank and pivoted to the elastic rod, substantially as and for the purpose specified.

2. The combination, with the button-head and the hollow or slotted shank secured thereto, of the guideway *b*, formed in the button-head, the push-pieces D D', which fit in the guideway and extend out beyond the edge of the button-head, the forked elastic rod B', the spring-supported cap C, formed on or secured to said rod and extending into the button-head in position to be acted on by the push-pieces, the leaves hinged to the shank and pivoted to the elastic rod, and the disk which closes the button-head, substantially as shown and described.

3. The combination, with the button-head and the hollow or slotted shank secured thereto, of the guideway *b*, formed in the button-head, the push-pieces D D', which fit the guideway and extend out beyond the edge of the button-head, the elastic rod, the spring-supported cap C, formed on or secured to said rod, and extending into the button-head in position to be acted on by the push-pieces, and the leaf hinged to the shank and pivoted to the elastic rod, substantially as shown and described.

327,769. DUMPING-CAR. Stephen W. Cook and Henry Sumner, Bozeman, Mont. Filed July 31, 1885. (No model.)



Claim.—1. In a dumping-car, the truck-frame A, the axles B and C, the wheels B' and C', the hinged frame D, the friction-rollers E', and the pin E, in combination with the bed-plate F, having an incline, F^2, the disk F', the car-frame G', and the car-body G, substantially as shown and described.

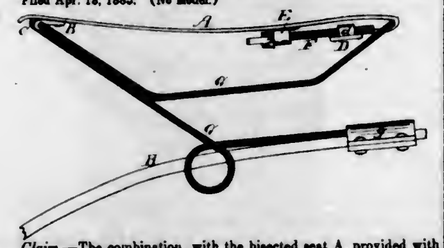
2. In a dumping-car, the truck-frame A, consisting of the side beams A', the end cross-beams A^2, and the bed-plate A^3, the pin E, the friction-rollers E', and the keepers E^2, in combination with the car bed-plate F, having an incline, F^2, the disk F', the car-frame G', hinged to the bed-plate F, the car-body G, and the handle I, substantially as shown and described.

3. In a dumping-car, the truck-frame A, consisting of the side beams A', the end cross-beams A^2, and the bed-plate A^3, in combination with the axles B, attached to the side beams A', wheels B', the hinged frame D, the axle C, and the wheels C', substantially as shown and described.

4. In a dumping-car, the truck-frame A, the axles B and C, the wheels B' and C', and the hinged frame D, in combination with the guide D', the brake-shoes K', the bars K^2, the cams L', the bars L, and the lever L^2, substantially as shown and described.

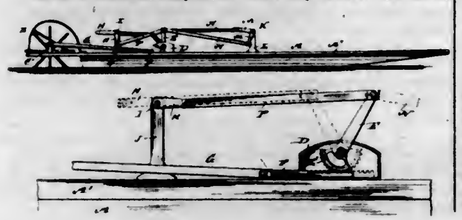
5. In a dumping-car, the truck-frame A, the pin E, the friction-rollers E', and the keepers E^2, in combination with the bed-plate F, having an incline, F^2, the disk F', the car-frame G', consisting of the side beams G^2, the end cross-beams G^3, and the center beam, G^4, hinged to the bed-plate F, the car-body G, the hinged door H, and the locking-rod H', substantially as shown and described.

327,770. BICYCLE-SADDLE. Luther S. Copper, Cleveland, Ohio. Filed Apr. 18, 1885. (No model.)



Claim.—The combination, with the bisected seat A, provided with the plates B B at the rear, the lacing-cord *a*, and the plate D, having nut *d*, and the plate E, provided with thumb-screw F at forward end, of the spring-supports G G, formed from one piece of wire and bent into the shape shown and attached to said seat A, and secured to the backbone H of bicycle by clip *g*, substantially in the manner described, and for the purpose specified.

327,771. BOAT-PROPELLING DEVICE. Newton C. Corkeran and Robert J. Thompson, Demiphan, Mo. Filed July 28, 1885. (No model.)





Claim.—1. The combination, in a boat, of a stern-wheel, crank-arms on the ends of the shaft thereof, sliding racks in front of the wheel, pitmen connecting said racks and crank-arms, levers having segmental gear-teeth meshing with said racks, a shaft journaled between the said racks and stern-wheel, provided with a crank-arm between its ends and crank-arms at its ends, and rods connecting the pivoted toothed levers with the crank-arms on the said crank-axle, substantially as set forth.

2. In a boat-propelling device, the stern-wheel having crank-arms on the ends of its shaft, sliding racks in front of said wheel, pitmen connecting said crank-arms and racks, pivoted levers having segmental gear-teeth meshing with said racks, crank-shafts journaled in front and rear of said levers and provided with crank-arms on their ends, and rods pivotally connecting said crank-arms and the upper ends of the pivoted toothed levers, substantially as set forth.

3. In a boat-propelling device, the stern-wheel B, mounted on the shaft B', the crank-arms C, placed in opposite positions on the shaft B', the pitmen G, and the racks F, pivotally connected, in combination with the alternately-rocking levers E, pivotally attached in the boxes D, and provided with the segmental gears E', substantially as shown and described.

327,772. HORSESHOE. Richard B. Corcoran, Fort Custer, Mont. Filed June 17, 1885. (No model.)



Claim.—1. A horseshoe extending backward from the toe portion of the hoof only a portion of the length of said hoof, whereby the frog and quarters of the hoof rest upon the ground as in their natural state, substantially as described.

2. A horseshoe made about three-fourths the length of the hoof, beginning with the toe portion, substantially as described.

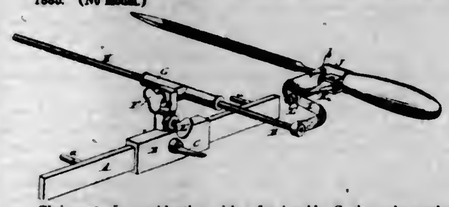
3. A horseshoe constructed to extend backward from the toe portion of the hoof only a part of the length of said hoof, and countersunk therein to preserve the general plane of the under side of a natural hoof, substantially as described.

327,773. NUT-LOCK. Morris G. Crane, Newton, Mass. Filed May 19, 1884. (No model.)



Claim.—A nut composed of a succession of coils of metal, each coil being provided with several turns of thread to fit the bolt with which the nut is to be used, the threads of one coil with relation to those of a succeeding coil being normally disturbed or out of the wind required to fit the bolt, substantially as described.

327,774. SAW-FILING MACHINE. James W. Dale, Du Bois, Pa., assignor of one-third to George B. McClelland, same place. Filed May 29, 1885. (No model.)



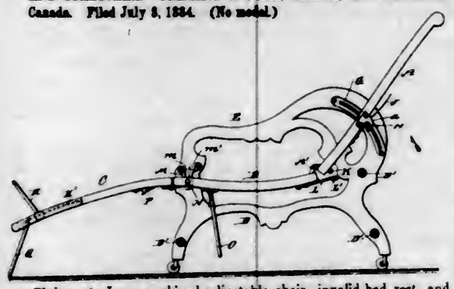
Claim.—1. In combination with a fixed guide, G, the reciprocating rod H, having the offset-arm at its end, the file-holder jointed to said arm, and the adjusting-screw K, whereby the axis of the file may be adjusted with reference to that of the rod.

2. The bar A and sliding clamp B, in combination with the vertically-swiveled block D and its clamping-screw, the horizontally-swiveled sleeve and its clamping-screw, and the sliding rod having the lateral arm with the file-holder attached thereto.

3. In a saw-filing device, the combination of the guide-bar A, the slide B, the sleeve G, united to the slide by horizontal and vertical pivots, and the sliding rod H, connected to a file-holder attached to a lateral arm.

4. In a saw-filing device, a round rod arranged so that it may be reciprocated and rotated in a fixed guide, in combination with a file-holder united thereto by an adjustable connection, substantially as described, adapted to permit the longitudinal axis of the file to be adjusted parallel with or with a divergence from the axis of the rod.

327,775. COMBINED ADJUSTABLE CHAIR, INVALID-BED REST, AND STRETCHER. Frederick T. Dodge, Carleton, New Brunswick, Canada. Filed July 8, 1884. (No model.)



Claim.—1. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with the supports D, having arm-rests, of a seat-frame removably secured to the said supports at the forward end, a leg-rest pivoted to the front of the seat-frame, a back-rest pivoted to the rear end of the seat-frame independently of the supports, rack-bars secured on the arm-rests, a shaft journaled in the back-rest and provided on its ends with pinions for engaging with the rack-bars on the arm-rests, and of a spring-catch secured on the back-rest for the purpose of locking the said shaft and preventing it from revolving, substantially as herein shown and described.

2. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with supports D, having arm-rests, of the seat-frame removably secured to the said supports at its forward end, a leg-rest pivoted to the front of said frame, the back-rest hinged to the rear end of the seat-frame independent of the supports, the rack-bars G on the sides of the arm-rests, the shaft H, held removably on the back of the back-rest and provided on its ends with pinions engaging with the racks in the bars G, and of a spring-catch for locking the shaft in place, substantially as herein shown and described.

3. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with supports D, having arm-rests, of the seat-frame removably secured to the said supports at its forward end, a leg-rest pivoted to the front of the seat-frame, a back-rest hinged to the rear end of the seat-frame independent of the supports, the rack-bars G on the sides of the arm-rests, the removable shaft H, journaled in the back-rest, the pinions H' on the ends of the shaft, the cog-wheel I on the shaft, and the spring J, secured on the rear side of the back-rest and provided with a tooth, *d*, substantially as herein shown and described.

4. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with supports D, having arm-rests, of the seat-frame removably secured to the said supports at its forward end, the leg-rest pivoted to the front of the seat-frame, the back-rest hinged to the rear end of the seat-frame independent of the supports, the rack-bars G on the sides of the arm-rests, the shaft H, having pinions H' on its ends, the hooks *a* on the side bars of the back-rest, and the pivoted hooks *b* on the side bars of the back-rest, substantially as herein shown and described.

5. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with the supports D, having arm-rests, a seat-frame, a back-rest hinged to the same, and means for securing the seat-frame and back-rest to the said supports, of spring locking-bars secured on the inner or rear ends of the side bars of the seat-frame, and of studs secured on the side bars of the back-rest and adapted to catch on the above-mentioned springs, substantially as herein shown and described.

6. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with the supports D, having arm-rests, a seat-frame, a back-rest hinged to the same, and means for securing the seat-frame and back-rest to the said supports, of the spring-bars L, secured to the bottom edges of the seat side bars at the rear ends, which springs have apertures *l*, the headed studs K, projecting from the rear edges of the back-rest side bars at the lower ends, and of the bar L', uniting the free ends of the spring-bars L, substantially as herein shown and described.

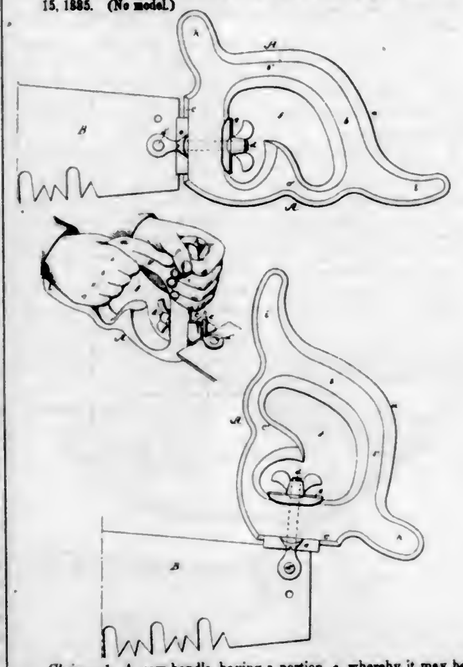
7. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with the supports D, having arm-rests, the seat-frame having a hinged back-rest, and means for securing the said seat-frame and back-rest to the supports, of the leg-rest having hooks P, and of the U-shaped bar O, pivoted to the under side of the seat-frame, near the front end, substantially as herein shown and described.

8. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with the supports D, having arm-rests, the seat-frame having a hinged back-rest, and means for securing the said seat-frame and back-rest to the said supports, of the leg-rest having hooks P, the U-shaped bar O, hinged to the under side of the seat-frame, near the front end, the U-shaped rod Q, hinged to the leg-rest, and of the foot-rest R on the leg-rest, substantially as herein shown and described.

9. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with the supports D and the back-rest A, of the seat-frame having its rear end hinged to the back-rest, and provided with studs N, projecting from the sides of the frame at the front ends, and of the plates M, provided with notches *m* and *m'*, at different elevations above the bottom of the support, substantially as herein shown and described.

10. In a combined adjustable chair, invalid-bed rest, and stretcher, the combination, with supports having arm-rests, of a removable seat-frame having a leg-rest hinged on its front end and a back-rest on its rear end, and provided with automatic spring-catches for locking the back-rest on the seat when the back-rest is swung down, and with a bar and catch for locking the leg-rest and seat-frame together, substantially as herein shown and described.

327,776. HANDLE FOR CROSSCUT-SAWS. Christopher Eisenhardt, Philadelphia, Pa., assignor to Hamilton Disston, Horace C. Disston, William Disston, and Jacob S. Disston, all of same place. Filed May 15, 1885. (No model.)



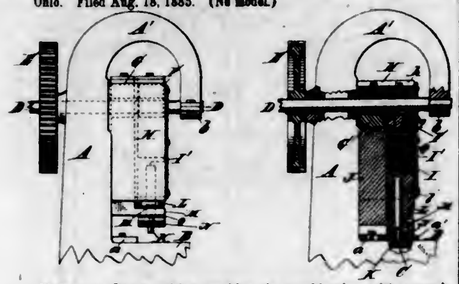
Claim.—1. A saw-handle having a portion, *c*, whereby it may be attached either to the end or top of a saw-blade, a hand-hold, *f*, a grip portion, *a*, and a projection, *i*, said grip portion extending above and in rear of the hand-hold and permitting the convenient grasp of the handle whether the latter is attached to the end or top of the blade, and said projection *i* providing an additional hand-hold above the grip *a* when the handle is attached to the top of the blade, all substantially as specified.

2. A saw-handle having a portion, *c*, whereby it may be attached either to the end or top of the saw-blade, an opening, *f*, a grip portion, *a*, extending above and in rear of said opening, and projections *h* and *i* at the extremities of said grip portion *a*, all substantially as and for the purpose set forth.

3. A saw-handle having a portion, *c*, whereby it may be attached either to the end or top of a saw-blade, and having hand-holds *b b'*, substantially at right angles to each other, and an opening, *f*, between said hand-holds and the portion *c*, all substantially as and for the purposes set forth.

4. A saw-handle having a portion, *c*, whereby it may be attached either to the end or top of a saw-blade, two hand-holds, *b b'*, substantially at right angles to each other, an opening, *f*, between said hand-holds and the portion *c*, and projections *h i* at the extremities of said hand-holds *b b'*, all substantially as set forth.

327,777. METAL-PUNCHING MACHINE. George Enge, Cincinnati, Ohio. Filed Aug. 18, 1885. (No model.)



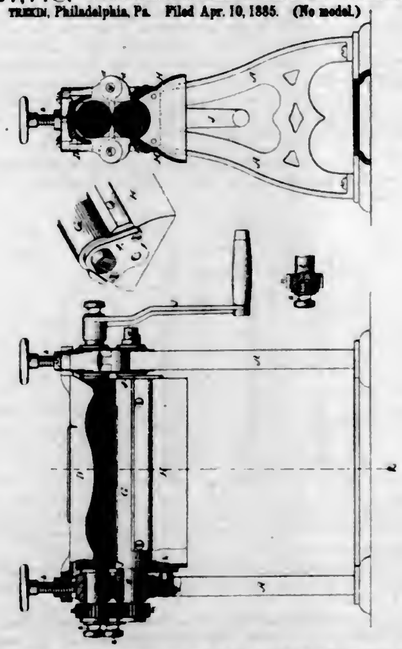
Claim.—1. In a punching-machine, the combination, with a punching-plunger or slide, I K, of a slide-head, J, provided with a presser and stripper foot, both slides being mounted within a suitable frame and actuated by suitable driving mechanism, so as to punch the metal and hold and strip it, substantially as herein set forth.

2. In a punching-machine, the combination, with the main frame or standard A, having the overhanging brace-arm A' and shaft-bearing *b*, housing H *h k*, actuating-shaft D, upon which is rigidly mounted the eccentric F and cam G, and the spur-wheel E, of the slide-head I, provided with a punch, K, for perforating the sheet or bar of metal, and a slide-head, J, provided with a presser and stripper foot, N M *m m'*, for exerting a pressure upon said metal during the descent and ascent of the punch through it and to serve as a stripper, substantially as herein set forth.

3. In a punching-machine, the combination, with a slide-head, J, having foot-piece M and presser and stripper plate N, of the adjustable intermediate wedge-shape plates O P and screws *n*, substantially as and for the purpose specified.

4. In a punching-machine, the combination, with slide-head I and punch K, of a plate, L, bolts *l'*, and set-screw *l*, for adjustably and detachably securing said punch in place, substantially as herein set forth.

327,778. PHOTOGRAPH-BURNISHING MACHINE. William G. Entrekin, Philadelphia, Pa. Filed Apr. 10, 1885. (No model.)



Claim.—1. The combination of the burnishing-roll and its bearings with a petticoat enveloping the lower portion of the said roll and hung to the shaft of the same, so as to be thrown to one side or the other to expose the roll, as set forth.

2. The combination of the frame, the upper and lower rolls, the pins *x*, the spur-wheel *w* on the lower roll, and the locking-segment *w*, as set forth.

3. The combination of the frame, the upper and lower rolls, a spur-wheel hung to the frame, a spur-wheel secured to the spindle of one of the rolls, and a spur-wheel held in place on the spindle of the other roll by means of a thumb-nut, *s*, in the end of the spindle, as set forth.

327,779. BANJO. Albert C. Fairbanks, Boston, Mass. Filed Apr. 21, 1882. (No model.)

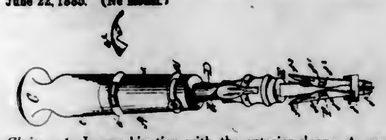


Claim.—1. In a banjo or other parchment-head instrument, the metal bell-shaped device C, having its mouth at or near the parchment head thereof, for the purposes set forth.

2. In a banjo or other parchment-head instrument, the metallic bell-shaped device C, having its mouth arranged near the parchment head, but not in contact therewith, so as to be left free to vibrate independently thereof, substantially as described, as and for the purposes set forth.

3. In a banjo or analogous instrument, the sheet-metal bell-shaped device C, having its mouth portion arranged near the parchment head and provided with a series of sound-holes, T, near the mouth thereof, substantially as described, as and for the purposes set forth.

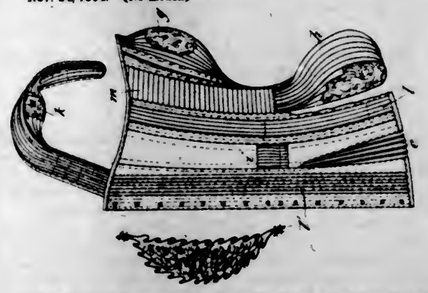
327,780. SCREW-DRIVER. Noah Fellers, McComb, Ohio. Filed June 22, 1885. (No model.)



Claim.—1. In combination with the exterior sleeve, A, composed of the parts *a* and *a'*, and formed with transverse slots *a'*, provided with spring-pawls *a*², arranged in reverse order, the interior detachable sleeve, B, formed with exterior ratchets, *b'*, to register with the slots and engage with the pawls of the exterior sleeve, and formed with interior spiral groove, the bit-shank D, formed with exterior spiral ribs to engage the grooves of the revoluble sleeve, and the hand-grip piece C, formed with a tubular shank to set over the exterior of the central section, substantially as described.

2. In combination with the bit-shank D, provided with pins or studs *f*², the spring-catches F, formed with slotted bearings *f'*, arranged to slide vertically on the studs of the shank, and a sliding collar, *f'*, passed over the spring-catches, substantially as and for the purpose stated.

327,781. CORSET. Sherwood B. Ferer, Lakewood, N. J. Filed Nov. 24, 1884. (No model.)



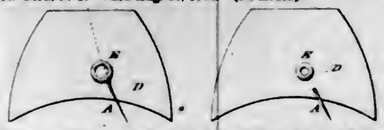
Claim.—1. In corsets, a plaited section inserted between two other sections of the body of the corset, with the plaits running vertically, or with the length of the corset, and said section having its plaits held by cross-stitching for more or less of its length, as set forth, whereby the plaits in the cross-stitched portion are held from expansion, and expansion is allowed to the plaits in the unstitched portion, so that the corset can easily conform to the shape of the wearer.

2. In corsets, a plaited section inserted in the body of the corset, and forming a part of said body, lined with a corresponding plaited section, and having the plaits confined at suitable points by stitching, substantially as shown and described, whereby the said section is adapted to receive padding, and expansion of the outer layer can be made outwardly, and of the inner layer outwardly, as may be required.

3. In corsets, a plaited section, as A, inserted in the body of the corset and forming a part of the said body, and said section formed of a piece of plaited material folded upon itself, and having the plaits at its ends near the waist-line confined by rows of stitching, substantially as set forth, whereby a pocket is formed which is free to expand fully at the edge of the corset, and is adapted to receive padding.

4. In corsets, the shoulder-strap *d*, formed of plaited material confined at the ends, and having an expansible portion, substantially as shown and described, whereby a pocket is formed in said strap for padding.

327,782. PIN-FASTENER FOR NECKTIES. Wheeler Fenteneers, New York, N. Y. Filed Aug. 20, 1884. (No model.)



Claim.—The combination of the shield D, the eyelet E, secured thereto, as shown, with a portion of its trunk extended so as to form an interspace between the flange *b* of the eyelet and the adjacent side of the shield, and the pin having its upper end bent around the eyelet in the said interspace and passed through the lower portion of the shield with its point on the opposite side thereof, substantially as specified.

327,783. SEAL FOR RAILROAD-CARS, &c. Lewis A. Foote, Lansing, Mich. Filed Apr. 29, 1885. (No model.)

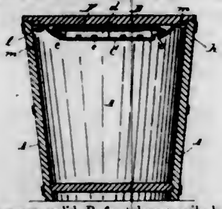


Claim.—1. In a sealing device, a disk having a threading-aperture and a shoulder depending from the roof of the aperture, in combination with a shackle, one end of which passes beyond said shoulder, while the other abuts against it, and a securing-pin, as set forth.

2. A sealing-disk having a rear slotted projection to receive the lower end of the shackle, and a shoulder to receive the upper end, in combination with the shackle and securing-pin, substantially as described.

3. The combination, with the sealing-disk and shackle, of a roughened pin cast with the sealing-disk.

327,784. COVER FOR TOBACCO-PAILS. William N. Ford, Indianapolis, Ind. Filed June 4, 1885. (No model.)



Claim.—1. A cover or lid, B, for tobacco-pails, having a perforated pan, C, hinged or pivoted to its under side, a clamp or fastener, *l*, for securing and keeping said pan C to the cover or lid B, the projections or ribs *d d d*, extending upward from the bottom of the pan C, and the blanket F, all arranged as described, and for the purpose specified.

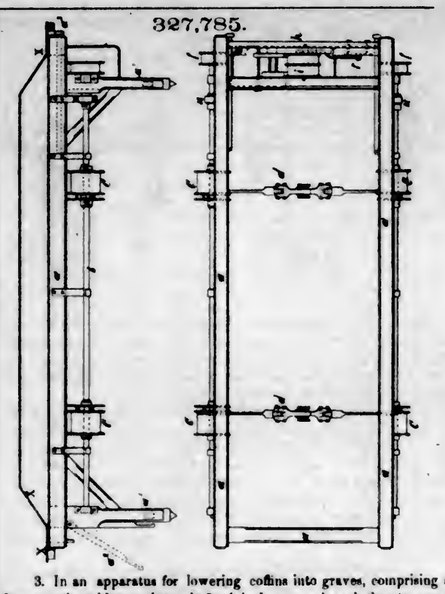
2. A cover or lid for tobacco-pails, consisting of the cover proper, B, the pan C, hinged or pivoted to the under side of the cover B, and having perforations *c c c*, with upward-turned flanges and projecting ribs *d d d*, the clamp or fastener *l*, to secure the pan C to the lid B, and the blanket F, to lay on top of the ribs *d d d*, all substantially arranged as described, and for the purpose specified.

327,785. APPARATUS FOR LOWERING COFFINS INTO GRAVES. Franz Gamper, Salzburg, Austria-Hungary. Filed Dec. 11, 1884. (No model.)

Claim.—1. In an apparatus for lowering coffins into graves or tombs, the combination, with the frame or bier *a*, of the rotating shafts *b b*, journaled at the side of said frame and carrying the rope-drums *c c*, the disengaging devices *d d*, constructed and arranged substantially as described, and the ropes *s s*, connecting the drums and disengaging devices, whereby when the coffin is lowered into the grave the disengaging devices will be automatically released from the coffin, as set forth.

2. In an apparatus for lowering coffins into graves, the combination, with a supporting-frame or bier provided with drum-shafts carrying rope-drums, of retaining devices connected with said shafts and adapted to hold the same in check, and disengaging devices which support the coffin while it is descending into the grave or tomb, and which automatically release said coffin when said disengaging devices come in contact with the bottom of the grave or tomb, substantially as described.

327,785.

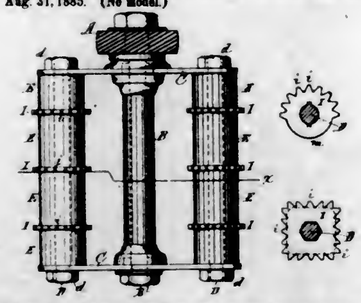


3. In an apparatus for lowering coffins into graves, comprising a frame-work or bier, *a*, drum-shafts *b b*, drums *c c* keyed thereto, ropes *s s*, and automatically-disengaging devices by which the coffin is supported when descending, the combination, with said shafts *b b*, of a pair of drums, *i i*, located between said shafts, pulleys *l l* upon the ends of said shafts, ropes *r r*, connecting the drums *i i* with the pulleys *l l*, a train of gearing, m' m^2 m^3, &c., and a speed-controlling fan, *m*, all constructed and arranged substantially as described.

4. In an apparatus for lowering coffins into graves, the combination, with the frame *a*, and the devices, substantially as described, for lowering the coffin into the grave and for controlling the rate of movement of the coffin, of an adjustable governor connected with the fan gearing or train, substantially as described.

5. In an apparatus for lowering coffins into graves, the combination, with the shafts *b b*, and the fan-gearing m' m^3, of the brake-jaws *f f*, and the adjusting-screws *g g*, substantially as described.

327,786. PEDAL FOR VELOCIPEDES. Charles H. Gates, Worcester, Mass., assignor of one-half to Sullivan Forehand, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. A pedal for bicycle-cranks the foot-supporting bars in which are furnished with annular rows of projections, substantially as and for the purpose set forth.

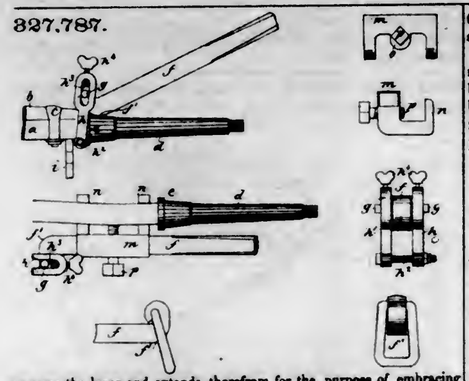
2. A pedal for bicycle-cranks the foot-supporting bars in which are provided with sparred washers, as I, inserted between supporting-sections E, substantially as set forth.

3. The combination, substantially as described, of the end plate, C, the rectangular rods D, tubular sections E, spurred washers I, and clamping devices *d*, for the purpose set forth.

327,787. IMPLEMENT FOR STRAIGHTENING AXLES. James A. Grosse, Southbridge, Mass., assignor of one-half to Theodore Harrington, same place. Filed July 29, 1885. (No model.)

Claim.—1. An implement for removing the spring from or straightening the axles of vehicles while in place on the vehicle, comprising a lever having a bearing or seat portion for engaging the axle-arm near the flange, combined with a fulcrum-piece consisting of a loop, which

327,787.

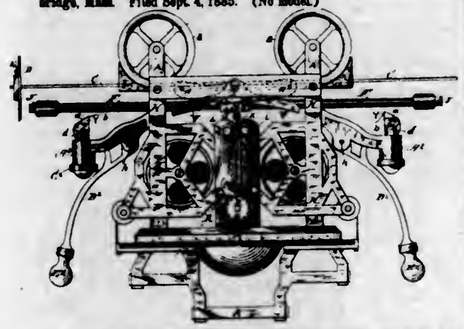


engages the lever and extends therefrom for the purpose of embracing the axle, and bearing on the opposite side of the axle from the lever and at the opposite side of the flange of the axle, substantially as described.

2. In an implement for straightening axles of vehicles while in place on the vehicle, the combination of a lever bent or offset at its end, and provided with a fulcrum-bearing portion on the offset, with a fulcrum-piece composed of two side pieces for embracing the axle, adjustably connected with the fulcrum-bearing portion of the lever, and a transverse bearing-piece adjustable in length for the purpose of varying the distance between the side pieces, substantially as described.

3. As an improved article of manufacture, an apparatus for straightening the axles of vehicles without removal from the vehicle, comprising a lever and fulcrum-piece for removing vertical bend or spring of the axle, and a box fitting upon the said lever, provided with lugs and a pressing device for removing lateral bend or curvature from the axle, substantially as described.

327,788. STORE-SERVICE APPARATUS. John Goodale, Cambridge, Mass. Filed Sept. 4, 1885. (No model.)



Claim.—1. In a cash and parcel carrying apparatus, a car provided with a yielding buffer and a spring-catch, in combination with an abutment for said buffer and a flange for the engagement of said catch, substantially as described, for the purpose specified.

2. In a cash and parcel carrying apparatus, a car provided with a moving buffer and brake-operating mechanism connected therewith and operated thereby, in combination with an abutment for said buffer, substantially as described, for the purpose specified.

3. In a cash and parcel carrying apparatus, a car provided with a moving buffer and brake-operating mechanism in connection therewith and operated thereby, and with a spring-catch, in combination with an abutment for said buffer and a flange for the engagement of said catch, substantially as described, for the purpose specified.

4. A buffer for a cash and parcel carrying apparatus, consisting of a sliding rod arranged upon and extending from end to end of the car, and adapted to act at either end of the car, substantially as described, for the purpose specified.

5. A moving buffer for a cash and parcel carrying apparatus, arranged upon the car, in combination with a lever mechanism connected to said buffer and carrying a brake shoe or shoes, and all arranged, from the movements of the buffer, to secure frictional resistance to the travel of the car and a release thereof, substantially as described, for the purpose specified.

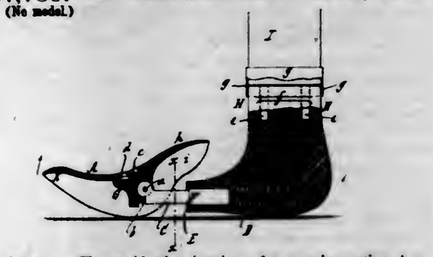
6. A moving buffer for a cash and parcel carrying apparatus, arranged upon the car, in combination with a lever mechanism connected to said buffer and carrying a brake shoe or shoes arranged, from the movements of the buffer, to secure frictional resistance to the travel of the car upon the wire or other way for the car and a release thereof, substantially as described, for the purposes specified.

7. In a car of a cash and parcel carrying apparatus, the combination of a moving buffer, F, a lever mechanism connected thereto, brake-shoe carried by said lever mechanism, a strap, K, and a spring-barrel, M, for winding and unwinding said strap, the strap being connected to said buffer and barrel, substantially as described, for the purpose specified.

8. In a car of a cash and parcel carrying apparatus, the combination of a moving buffer, F, a lever mechanism connected thereto, a brake-shoe carried by said lever mechanism, a strap, K, a spring-barrel, M, for winding and unwinding said strap, the strap being connected to said buffer and barrel, and a guide roll or rolls, L, for the travel of said strap, substantially as described, for the purposes specified.

9. In a cash and parcel carrying apparatus, a retaining device consisting in part of a stationary flange, D, and a spring-catch or toe-piece, Y, hinged to a carrier-block, Z, backed by a spring and arranged to move in a suitable guideway of the car, substantially as described, for the purpose specified.

327,789. LAST. Leopold Graf, Newark, N. J. Filed July 23, 1885. (No model.)



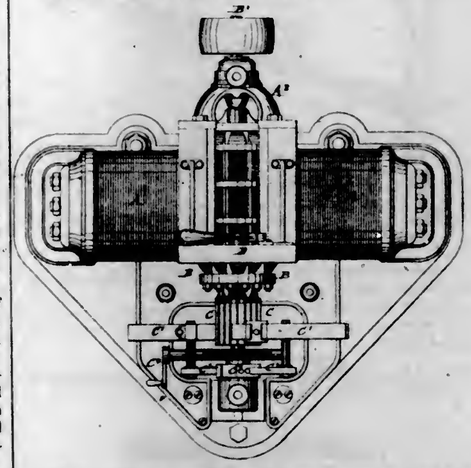
Claim.—1. The combination, in a last, of an anterior portion, A, a posterior portion, B, a rod, C, having a shoulder or abutment, and to which the anterior portion is pivoted to swing in a vertical plane, and a stop, *b*, movable with the anterior portion and adapted to strike the shoulder or abutment on the rod to limit the swinging movement of the said anterior portion, substantially as described.

2. The combination, in a last, of the posterior portion, B, the rod C, the slotted anterior portion, A, the bracket G, the screw *c*, passing through the slot in the anterior portion and engaging the bracket, and an adjustable stop, *b*, substantially as described.

3. The combination, in a last, of the posterior portion, B, the rod, or arm C, the bracket G, pivoted to the latter, the anterior portion, A, adjustable lengthwise on the bracket, and the stop *b*, substantially as described.

4. The combination, with a last, of lugs or shoulders *f f'*, adapted to hold a fastening device, *g*, substantially as set forth.

327,790. DYNAMO-ELECTRIC MACHINE. Edgar Grauert, New York, N. Y. Filed Jan. 2, 1885. (No model.)

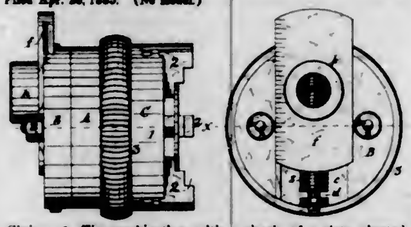


Claim.—1. A supporting-frame for a sectional armature, consisting of supporting disks or heads, longitudinal connecting-bars, and a series of recessed and separated core-plates fitted to said bars, substantially as set forth.

2. In a dynamo-electric machine, an armature composed of supporting-disks, induction-coils open at the sides and provided with cores formed of a series of recessed and separated core-plates, and longitudinal supporting-bars that engage the recesses of the core-plates, and are attached to the end disks of the armature, substantially as set forth.

3. In dynamo-electric machines, an armature composed of a series of induction-coils open at the sides and provided with cores which are formed of a series of core-plates, intermediate washers, and central connecting screw-rods, substantially as set forth.

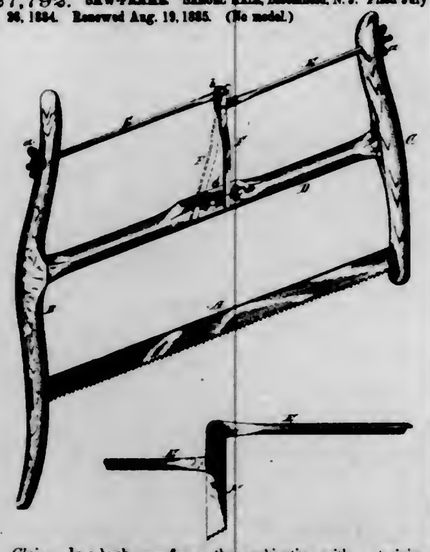
327,791. LATHE-CHUCK. Fred L. Gregory, Niagara Falls, N. Y. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination, with a chuck, of a plate pivoted on the chuck concentric with the axis thereof, and clamped adjustably thereon, a slide arranged to be movable radially on said plate, and provided with a hub for attachment to the mandrel, and an adjusting-screw for setting said slide in its required position in relation to the axis of the chuck, substantially as described and shown.

2. In combination with a chuck, the plate A, rigidly attached thereto and provided with the undercut annular flange *a*, the bolts *b*, having their heads extending into the undercut portion of said flange, the plate B, provided with holes for the reception of the bolts *b b*, and with the diametrical groove *c* and bearings *d d* in said groove, the screw *s*, having journals *e e* in said bearings, and the slide *f*, provided with the half-nut *g* and with the hub A, substantially as described and shown.

327,792. SAW-FRAME. Samuel Hale, Bloomfield, N. J. Filed July 26, 1884. Renewed Aug. 19, 1885. (No model.)



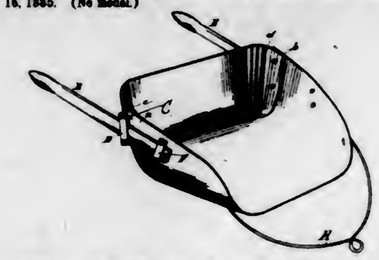
Claim.—In a back-saw frame, the combination, with a straining-lever, of two straining-rods pivoted thereto at their inner ends, and having their outer ends screw-threaded and extending through the arms of the frame, and provided with thumb-nuts, substantially as and for the purpose specified.

327,793. JOINT FOR PIPES, &c. Henry M. Hall, Philadelphia, Pa. Filed Apr. 17, 1885. (No model.)



Claim.—A pipe, rod, &c., in combination with the socket B, fitting on the outside of the said pipe, and having a tapering outside screw-threaded portion, and a nut, C, having its interior opening threaded and tapering, but of greater pitch than the taper of the said socket, said parts being arranged, combined, and operating substantially as and for the purpose set forth.

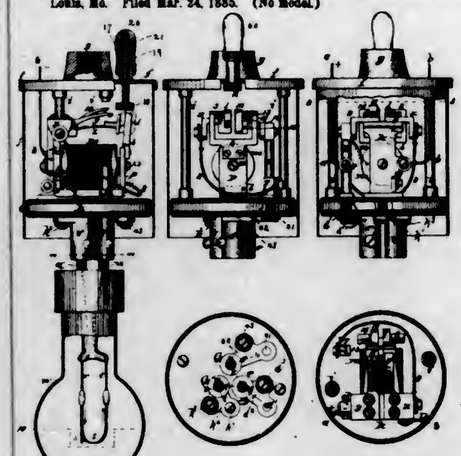
327,794. SCRAPER. William Haslup, Sidney, Ohio. Filed July 16, 1885. (No model.)



Claim.—1. A scraper made from a single piece of metal formed with cuts 1 and 2, to form an extension, 4, said extension being bent upwardly to form an inclined back, and its ends turned inwardly to form curved corners inside of the scraper, substantially as described.

2. A scraper made from a single piece of metal cut to form an extension, 4, said extension being bent up to form an inclined back, and having its ends turned inwardly to form rounded corners, and lapped over the sides *b*, and secured thereto by bolts C, having bars D connected to their other ends to form handle-clamps, substantially as described.

327,795. INCANDESCENT ELECTRIC LAMP. Charles Hessler, St. Louis, Mo. Filed Mar. 24, 1885. (No model.)



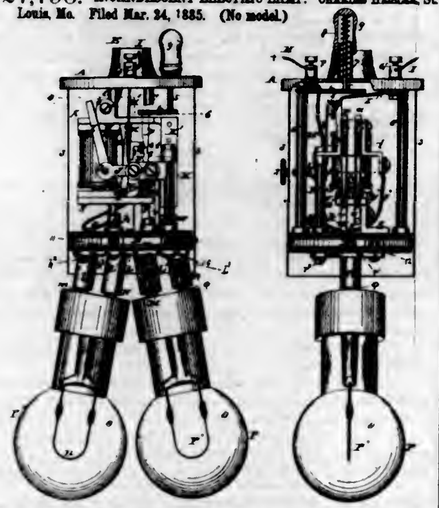
Claim.—1. In an apparatus for switching in a new electric lamp or filament on the failure of the one in use, an electro-magnet, two or more catches or detents on the armature thereof, a series of springs engaging with the said catches, and means actuated by successive operations of the electro-magnet for releasing the springs to form successively the circuits of the unused lamp or filaments, substantially as set forth.

2. In an apparatus for switching in a new electric lamp or filament when the one in use fails, an electro-magnet in a high-resistance shunt around the first lamp or filament, catches or detents on the armature of the electro-magnet, a series of springs provided with pins which engage with the said catches or detents, a series of contact-arms, one in the line of reaction of each spring, each of the latter, with its corresponding contact-arm, forming the terminals of one of the unused lamps or filaments, and means actuated by successive operations of the electro-magnet, whereby the springs are released and make contact successively with their respective contact-arms, substantially as and for the purpose set forth.

3. In an apparatus for switching in a new incandescent lamp or filament on the failure of the one in use, an electro-magnet in a shunt-circuit around the first lamp or filament, the armature *p* thereof, head 4, catches 3 and 16, pins 2, 13, 14, and 15, heads 1 and 12, springs *z* and 11, contact-arms *y* and 10, both the said springs being connected with the same pole of the generator, and each of the said contact-arms being connected with the opposite pole through a different filament, substantially as and for the purpose set forth.

4. The combination, with two or more incandescent lamps or filaments, one of which is in the main circuit of an electric lighting system, of an electro-magnet in a high-resistance shunt-circuit, the said electro-magnet being wound with copper wire and with German-silver wire, for the purpose set forth, and being provided with means for closing the circuit of a succeeding lamp or filament when the one in use is destroyed, substantially as described.

327,796. INCANDESCENT ELECTRIC LAMP. Charles Hessler, St. Louis, Mo. Filed Mar. 24, 1885. (No model.)



Claim.—1. The combination, with two or more incandescent lamps or conducting filaments, one of which is in the main circuit of an electric lighting system, of an electro-magnet in a high-resistance shunt-circuit, the said electro-magnet being provided with means for closing the circuit of a second lamp or filament when the first is destroyed or fails for any other reason, substantially as set forth.

2. The combination, with two incandescent lamps or conducting filaments, an electro-magnet in a high-resistance shunt around the first lamp or filament, and means operated by the action of the electro-magnet for switching in the second lamp or filament when the first is destroyed, of means, also operated by the action of the electro-magnet, for closing the circuit around both lamps or filaments, substantially as and for the purpose set forth.

3. In an apparatus for switching in a new incandescent or filament on the failure of the one in use, and electro-magnet, a catch or detent on the armature thereof, a series of spring-actuated bars engaging with the said catch, and means actuated by successive operations of the magnet, whereby the said bars will be successively released and close the circuit of new lamps or filaments, substantially as set forth.

4. In an apparatus for switching in a new electric incandescent lamp or filament on the failure of the one in use, an electro-magnet in a high-resistance shunt around the first lamp or filament, a catch or detent on the armature thereof, a series of spring-actuated notched bars engaging with the said catch, and a series of contact arms or springs arranged in pairs, one of each pair forming one terminal of one of the unused lamps or filaments, and means actuated by successive operations of the magnet, whereby the notched bars are released and make contact successively between the terminals of all the pairs, substantially as and for the purpose set forth.

5. In an apparatus for switching in a new incandescent lamp or filament on the failure of the one in use, an electro-magnet, T, in a shunt-circuit around the first lamp or filament, an armature, X, catches *c* and *t*, bars or rods *o* and *p*, ratchet-teeth *b*, *q*, *r*, and *s*, and springs *g h* and *x y*, arranged in pairs, one spring of each pair being connected with one pole of the generator, and each of the other springs being connected with the opposite pole through a different lamp or filament, substantially as and for the purpose set forth.

6. The combination, with two or more electric lamps or filaments, one of which is in the main circuit of an electric lighting system, of an electro-magnet in a high-resistance shunt-circuit, the said electro-magnet being provided with means for closing the circuit of a succeeding lamp or filament when the one in use is destroyed, the coils of the said electro-magnet being also saturated with moisture-proof material, substantially as and for the purpose set forth.

7. The combination, in a single device, of a socket or support provided with means for attaching two or more incandescent lamps and electro-magnet switch and cut-out devices, the electro-magnet being wound with German-silver wire and having one of its poles hinged or pivoted and extending out into the range of the other pole, substantially as and for the purpose set forth.

327,797. ELECTRIC MOTOR. Moritz Immisch, London, England. Filed Jan. 29, 1883. (No model.) Patented in England Sept. 30, 1882, No. 4,665.

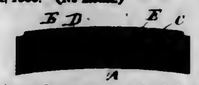


Claim.—1. The combination, with that class of electromotors in which there are as many contact-brushes employed as there are pole-pieces in the field-magnets and the number of armature-coils is one less than the number of field-poles, of a commutator consisting of two series of segments, upon both of which each brush bears simultaneously, the number of segments being four times the number of armature-coils employed, four segments in two pairs belonging to each armature-coil, and being so connected and having such an angular displacement in relation to each other as to insure the current being taken off by a negative brush from a segment belonging to one pair and being in one series when a positive brush bears on a segment of the other pair in the other series, substantially as and for the purpose specified.

2. The combination, with that class of electromotors in which there are as many contact-brushes employed as there are pole-pieces in the field-magnets and the number of armature-coils is one more than the number of field-poles, of a commutator consisting of two series of segments, upon both of which each brush bears simultaneously, each series containing the same number of segments as there are armature-coils, the inner end of each successive coil being connected to successive segments in one series and the outer end of such coils to successive segments in the other series, and the two series of segments having such an angular displacement in relation to each other that when a brush of one sign bears on a segment in one series which is connected to one end of any given coil a brush of the opposite sign is bearing on that segment in the other series to which the other end of the same coil is connected, substantially as and for the purpose specified.

3. The commutator having two series of segments connected to the armature-coils in the manner described, the two series having an angular displacement in relation to each other depending upon the number of field-poles and armature-coils employed, the amount of such angular displacement being the reciprocal of the product of the number of armature-coils into the number of field-poles, or, expressed as an arc, is equal to $\frac{360}{A \times F}$ where A equals the number of armature-coils and F equals the number of field-poles, substantially as and for the purpose specified.

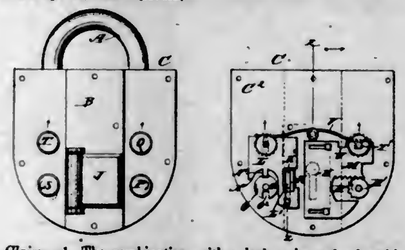
327,798. STEREOTYPE-BLOCK. Maurice Joyce, Washington, D. C. Filed June 11, 1885. (No model.)



Claim.—1. A wooden stereotype-block having longitudinal slits or kerfs and expanding-wedges forced into the kerfs, whereby the block is curved, as set forth.

2. The combination, with wooden block A, having longitudinal kerfs in its face, of the expansion-wedges C, which are forced into said kerfs, and the stereotype or similar plate D, secured to said block, substantially as described.

327,799. KEY-HOLE GUARD. Joseph Krenn, Armstrong, Nebr. Filed Apr. 21, 1885. (Model.)



Claim.—1. The combination, with a lock-casing, of a door hinged to the outer surface of the front plate of the casing for closing the key-hole externally, and a plate sliding on the inner surface of said front plate for closing the key-hole internally, substantially as shown and described.

2. The combination, with a lock-casing, of a door hinged to the outer face of the casing for closing the key-hole thereof, a locking-plate for holding the door closed, and a sliding plate on the inside of the casing for closing the key-hole from the inside, substantially as herein shown and described.

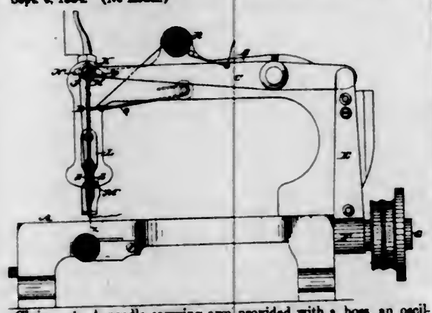
3. The combination, with a lock-casing and the hinged door J, provided with the hook K, of the sliding plate L, provided with the prong N', the button Q, for operating said plate, and a disk, O, having notches therein, and provided with a button, P, for holding the said plate raised, substantially as herein shown and described.

4. The combination, with a lock-casing, of the door J, having the hook K, the sliding plate L, having notches L' and N and the prong N', the disk O, having notches O' O², of different depth, the button P, for turning the disk O, and the button Q, for moving the said plate, substantially as herein shown and described.

5. The combination, with a lock-casing, of the sliding plate M, provided with the toothed recess R and the notches U, the toothed disk R', the buttons S T, and the spring V, substantially as described.

6. The combination, with a lock-casing and the hinged door J, of the sliding plates L M, the buttons for operating and the buttons for locking the said plates, and the spring V, acting on both plates, substantially as herein shown and described.

327,800. **SEWING-MACHINE.** Thos. Lamb, Philadelphia, Pa. Filed Sept. 6, 1884. (No model.)



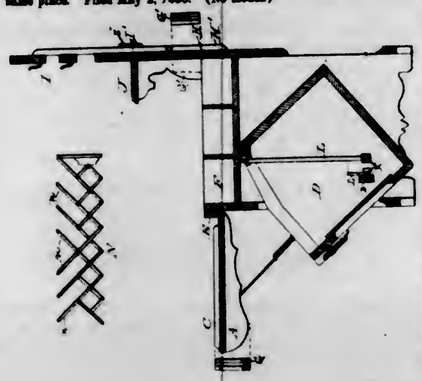
Claim.—1. A needle-carrying arm provided with a boss, an oscillating block fitted in said boss, and a screw connected with said block, the boss being slotted at top and bottom, and the block perforated at coincident places, whereby the needle may be passed through the boss and block and connected with the block by said screw, and whereby the needle may prevent displacement of the block, all of said parts being arranged and combined substantially as and for the purpose set forth.

2. In a sewing-machine, a needle-carrying arm in combination with a boss slotted at top and bottom attached to said arm, and a block having a perforation adapted to oscillate in said boss and be retained therein by the needle, substantially as and for the purpose set forth.

3. In a sewing-machine, the arm B, in combination with the pivoted arm C, provided with boss H, having upper and lower slots, block J, having perforation *a*, a needle having a shoulder, *c*, screw K, guide L, having jaws *d d*, and screw M, substantially as and for the purpose set forth.

4. In a sewing-machine, a needle in combination with a needle-carrying arm, C, provided with the boss H, having the eye N and lip P, the arm Q, and friction-disk R, substantially as and for the purpose set forth.

327,801. **KITCHEN-CABINET.** William W. Langley, Union City, Ohio, assignor of one-half to Henry Reitenour and George W. Reitenour, same place. Filed May 2, 1885. (No model.)

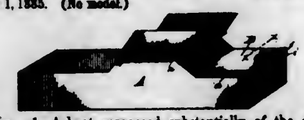


Claim.—1. A kitchen-cabinet having a bin of general rectangular shape, hung pivotally by means of bolts passing through the sides of said cabinet and through the ends of the bin near one corner thereof, said bolts having their inner ends supported by hangers secured to the cabinet-frame, substantially as and for the purpose specified.

2. A kitchen-cabinet having a suitable frame, and a top hinged thereto by means of angle-hinges, and supports or stays for said table, consisting of pivoted rods sliding one on the other, substantially as and for the purpose specified.

3. A kitchen-cabinet having a suitable frame, a top hinged thereto by angle-hinges, sides for said top, having tenoned ends fitting mortises in the frame, and supports or stays consisting of rods pivoted, respectively, to the table and to the frame and sliding one on the other, substantially as and for the purpose specified.

327,802. **BUGGY-BOOT.** John W. Lenk, Cincinnati, Ohio. Filed June 1, 1885. (No model.)



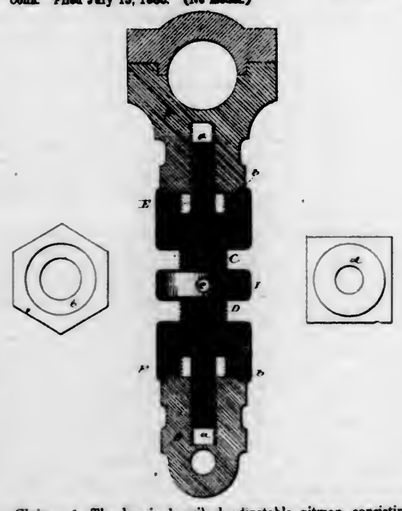
Claim.—1. A boot composed substantially of the skeleton-frame adapted to fit the edges of the buggy-body, and covered with fibrous material stretched over and secured to the frame, and finished by the molding *d*, secured upon and over the edges of the frame, substantially as specified.

2. In combination with the frame *a*, the leather C, secured by the hook-seam *l*, substantially as specified.

3. In combination with the frame *a* and the covering C secured upon it, the molding *d*, provided with the hooks *e*, bent over the edges of the frame, substantially as specified.

4. In combination with the buggy A, the boot B, composed of the frame *a*, and covering C, secured to the buggy on pivots *n*, fixed to the frame and turning in the sides of the buggy, substantially as specified.

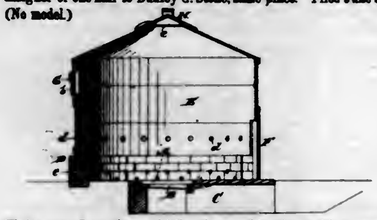
327,803. **ADJUSTABLE PITMAN.** Edward P. Lewis, Waterbury, Conn. Filed July 13, 1885. (No model.)



Claim.—1. The herein-described adjustable pitman, consisting of the two heads A B, combined with a connecting-rod having its central portion or body screw-threaded at its ends, with an extension therefrom at each end of less diameter than the body, said extension also screw-threaded, the one with a right-hand and the other with a left-hand thread, the heads constructed with corresponding screw-threads to receive the said extensions, and a collar on each end of the body of the rod correspondingly screw-threaded to the thread at that end of the rod, the said collars adapted to bear against the respective heads, substantially as described.

2. The herein-described adjustable pitman, consisting of the two heads A B, combined with a connecting-rod having its central portion or body screw-threaded at its ends, with an extension therefrom at each end of less diameter than the body, said extension also screw-threaded, the one with a right-hand and the other with a left-hand thread, the heads constructed with corresponding screw-threads to receive the said extensions, and a collar on each end of the body of the rod correspondingly screw-threaded to the thread at that end of the rod, the said collars adapted to bear against the respective heads, the one constructed with a concentric projection and the other with a corresponding concentric recess in the bearing-faces, substantially as described.

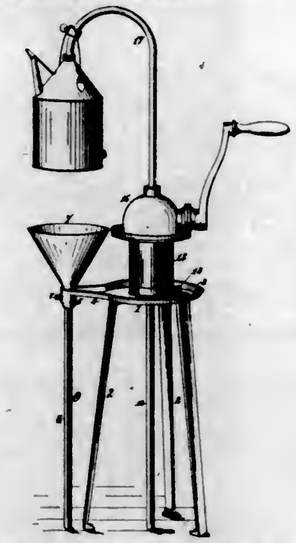
327,804. **CHARCOAL-KILN.** Walter A. Lovelace, Negaunee, Mich., assignor of one-half to Dudley G. Stone, same place. Filed June 30, 1885. (No model.)



Claim.—1. In a charcoal-kiln, the combination, with a central underground fire-place, A, having a grate, B, and a horizontal underground draft-flue, C, extending from beneath said fire-place to a point outside the kiln, of a portable dome-shaped hood, E, composed of a single thickness of iron plates, and having doors F G, a series of lateral openings, *d*, near the bottom, and a circular opening, *e*, at the top closed by a cap, H, substantially as described.

2. In a charcoal-kiln, the combination of a central underground fire-place, A, having grate B, a horizontal underground draft-flue, C, extending from beneath said fire-place to a point outside the kiln, a circular wall, D, having lateral openings *c*, and a dome-shaped hood, E, located on said wall and having a circular opening, *e*, at the top closed by a cap, H, and a series of lateral openings, *d*, near its lower edge, said kiln being provided with a door, F, located partly in the hood and partly in the foundation-wall, substantially as described.

327,805. **TABLE FOR PUMPS.** Henry E. Marchand, Allegheny City, Pa. Filed Mar. 10, 1885. (No model.)

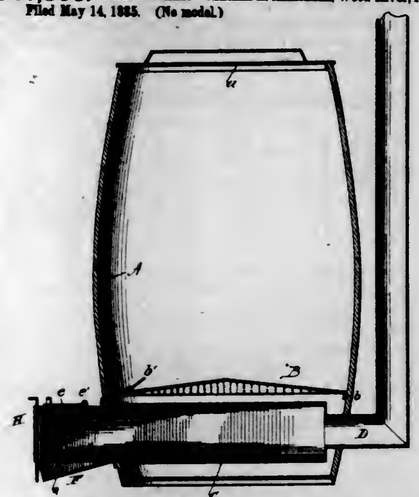


Claim.—1. The combination of the flanged table having an orifice surrounded by a collar, 10, and provided with a laterally-projecting neck having a pendent hollow nipple to connect with a pipe leading to the oil-tank, and a socket extending through the nipple, a pump case or cylinder fitting the collar and having a discharge-pipe, a drip-cup having a tube secured in the socket of the neck.

2. The table composed, essentially, of a metal plate cast with the marginal flange 3, the collar 10, surrounding an orifice through the plate for receiving a pump case or cylinder, a socket for receiving a drip funnel or cup, and a pendent nipple, 5, for connecting with a pipe leading to the oil-tank, substantially as described.

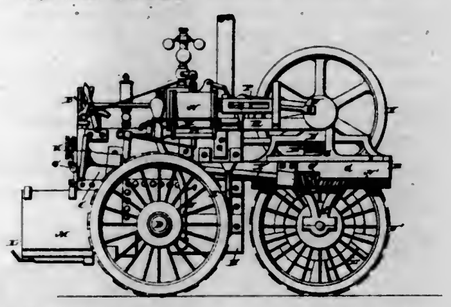
3. The metallic table or plate 1, provided with the marginal flange 3, the collar 10, and the socketed nipple 5, in combination with a pump cylinder or case secured in the collar, a drip funnel or cup secured in the socketed nipple, a discharge-pipe having its mouth arranged over the funnel or cup, and pipes for connecting the pump cylinder or case and the drip funnel or cup with a tank, substantially as described.

327,806. **FEED-COOKER.** Charles H. Marshall, Wood River, Nebr. Filed May 14, 1885. (No model.)



Claim.—The removable fire-box E, open at its ends and provided at its outer end with grate-bars, a feed-opening, *e*, and door which is located above the grate-bars, a vertical sliding door, H, an inclined plate, F, with side pieces, *g g*, attached to said fire-box under the grate-bars, in combination with the receptacle A, having the casing C and draft-pipe, substantially as shown, and for the purpose set forth.

327,807. **TRACTION-ENGINE.** Sanders Mason, Homer, Ohio. Filed July 30, 1885. (No model.)

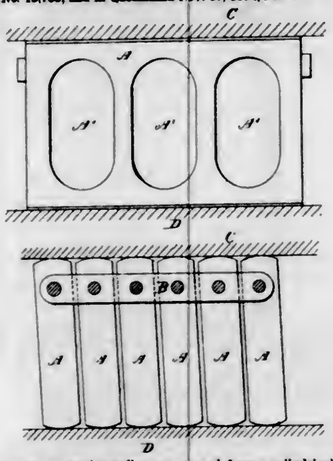


Claim.—1. In a traction-engine, the combination of the main frame having the forwardly-projecting circular frame formed with the annular downwardly-projecting flange, the circular wheel-supporting frame having the rim provided with inclined cogs, the worm engaging the said cogs and secured upon a shaft extending to the rear end of the machine, the shaft journaled above the center of the circular frames and having the pinion at its lower end and suitable connection for revolving it from the drive-shaft, and the vertical shaft having a pinion meshing with the central pinion, and journaled in a bearing upon the circular turning-frame, and provided with a pinion meshing with a cogged rim upon the drive-wheel, as and for the purpose shown and set forth.

2. In a traction-engine, the combination of the drive-shaft having a feather near its fly-wheel, the bearing for the said shaft having the transverse ways upon its forward side, the bevel-pinion sliding upon the feather and having a grooved collar upon its inner face, the cogged rack sliding in the way upon the bearing and having a strap fitting in the groove of the collar of the pinion, a lever having cogged segments at both ends, one engaging the cogged rack, a shaft having a hand-lever at its rear end and having a cogged segment at its forward end meshing with the lower segment upon the lever, and a crown-wheel meshing with the bevel-pinion when the latter is slid inward, and secured upon a shaft driving the main axle, as and for the purpose shown and set forth.

3. In a traction-engine, a horizontal boiler supported upon the drive-wheels, a forwardly-extending frame secured to the front end of the boiler and supporting the drive and steering mechanism, said frame and mechanism being supported by a single steering-wheel, and a water-tank secured to the under side of the front end of the boiler, substantially as and for the purpose set forth.

327,808. **BEARING-ROLLER FOR BRIDGES, &c.** John A. McDonald, Sydney, South Wales. Filed Oct. 16, 1884. (No model.) Patented in South Australia Aug. 22, 1884, No. 490; in Victoria Aug. 28, 1884, No. 3,324; in New South Wales Oct. 6, 1884, No. 10,338; in England Oct. 18, 1884, No. 13,783, and in Queensland Nov. 17, 1884, No. 7.



Claim.—1. A bearing-roller constructed from a cylindrical body by removing a segment thereof from opposite sides of its diametrical axis, for the purpose set forth.

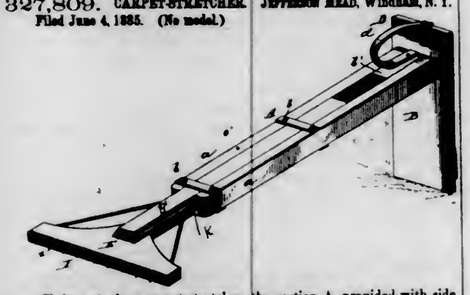
2. A bearing roller constructed from a cylindrical body by removing a segment thereof from opposite sides of its diametrical axis, said roller having recesses or openings formed in its flat portion, for the purpose specified.

3. A rolling bearing for bridges and other structures, consisting of one or more rollers constructed from a cylindrical body by removing a segment thereof on the opposite sides of its diametrical axis, in combination with such structure and the bed-plate thereof.

4. A rolling bearing consisting of a series of flat rolls constructed from cylindrical bodies by removing a segment thereof on opposite sides of their diametrical axis, in combination with a link or coupling-bar for coupling the rolls together and causing them to move in unison, for the purpose specified.

5. The combination, with a bridge or other structure and the bearing-plate thereof, of a compound rolling bearing composed of a series of flat rolls, A, coupled together and interposed between said bearing-plate and structure for the purpose specified.

327,809. **CARPET-STRETCHER.** Jefferson Mead, Windham, N. Y. Filed June 4, 1885. (No model.)

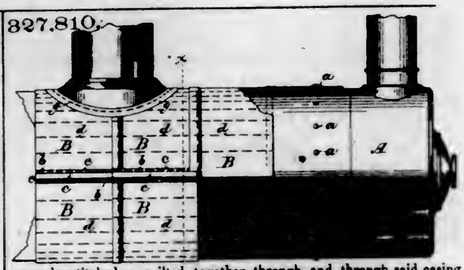


Claim.—1. In a carpet-stretcher, the section A, provided with side pieces having on their inner edges longitudinal grooves, a spring-catch having an end which passes through one of the side pieces, a sliding bar or section provided with longitudinal tongues, and recesses with inclined edges, with which the spring-catch engages, a cross-head attached to said sliding bar and provided with teeth, the parts being organized substantially as shown, and for the purpose set forth.

2. In a carpet-stretcher, the combination of the sliding sections, constructed substantially as shown, one of said sections being provided with a rounded end, the board B, located at right angles with respect to said section, and attached thereto by means of a spring, D, substantially as set forth.

327,810. **NON-CONDUCTING BOILER-COVERING.** Thomas Merriam, Milwaukee, Wis. Filed Oct. 30, 1884. (No model.)

Claim.—1. A non-conducting covering for steam boilers, pipes, &c., composed of the wire casing D and the non-conductor-of-heat filling C, coarsely stitched or quilted together through and through said casing and filling and coated with fire-proof cement, or some similar adhesive substance, applied thereto over said wire casing D, so as to fill the meshes of said casing, substantially as and for the purposes set forth.

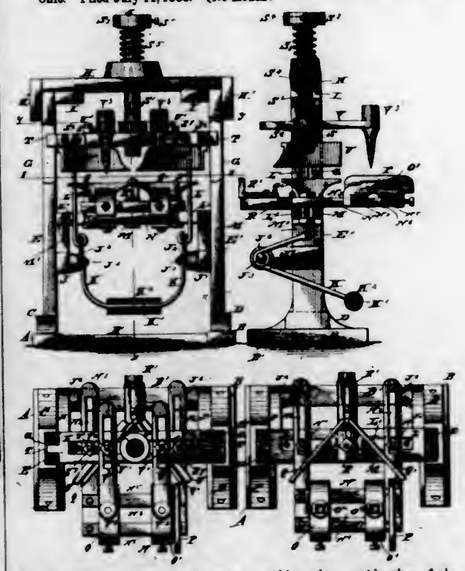


2. A non-conducting covering for steam boilers, pipes, &c., formed in sections B B, each composed of a wire casing, D, and a non-conductor-of-heat filling, C, said sections being coated with fire-proof cement and bound together with overlapping edges by wire *e e*, substantially as and for the purposes set forth.

3. In a non-conducting covering for steam boilers, pipes, &c., the combination of the sections B B, each composed of a wire casing, D, and a non-conductor-of-heat filling, C, with binding-strips *g g*, whereby said sections are strengthened and fitted about projections on the surfaces to be covered, substantially as and for the purposes set forth.

4. A non-conducting covering for steam boilers, pipes, &c., formed in sections B B, each composed of a wire casing, D, and a non-conducting filling, C, said sections being laid with overlapping edges, and provided at their ends with metallic couplings *c c*, substantially as and for the purposes set forth.

327,811. **SLATE-DRESSING MACHINE.** Adam H. Meyers, Melmore, Ohio. Filed July 11, 1885. (No model.)



Claim.—1. In a slate-dressing machine, the combination of the main frame having the vertically-slotted standards, the longitudinally-slotted transverse bar M, the shearing-knives, and hinged bar carrying the adjustable stop arranged thereon, the horizontally-adjustable frame N, carrying the laterally-adjustable anvils, the upper vertically-moving bar carrying the punches and shearing-knives, and the draw-rods connecting the said bar with the treadle, substantially as specified.

2. In a machine for trimming and punching slate, the horizontally-adjustable frame carrying the laterally-adjustable anvils and trimming-knife, and adapted to serve with a main frame having a slotted beam, as M, substantially as specified.

3. The combination, with the main frame having the vertically-slotted standards and the rearwardly-extending arms J J, of the longitudinally-slotted bar S, moving in the slots of the standards and carrying the adjustable shearing blades and punches, the treadle, and draw-rods connecting the treadle with the said moving bar, substantially as specified.

4. The combination, with the main frame, of the stem S, passing through an aperture in the top bar thereof and surrounded by a spiral spring, the vertically-moving bar S, secured to the lower end of the said stem, the cutting device, the treadle, and draw-rods connecting the treadle with the vertically-moving bar, substantially as specified.

5. The combination, with the main frame having the vertically-slotted uprights and the slotted stationary lower horizontal bar, the hinged stop, and the adjustable covering, knives arranged on the said bar, the longitudinally-slotted vertical slide-bar, its adjustable punch-arms, with punches, of the vertically-arranged spring-actuated guide-stem passing down through the top beam of the main frame, and draw-rods connecting the hinged treadle with the vertically-moving slotted bar, substantially as specified.

6. The combination, with the longitudinally-slotted transverse stationary bar M, provided with the rear hinged adjustable stop, R, of the horizontally-adjustable frame provided with the adjustable anvils, substantially as specified.

327,812. **CLOVER-HULLER.** Abraham Miller and John N. Kahler, Newark, Ohio, assignors to the Newark Machine Company, same place. Filed Feb. 11, 1884. (No model.)



Claim.—1. A detainer for a clover machine or separator, consisting of a strip of material, B^3, provided at its edge with tongues B' and throats B^3, the extremities of the tongues being dressed away at the corners and the bottoms of the throat left full at the corners, substantially as and for the purposes described.

2. A detainer for a clover machine or separator, consisting of a strip of material, B^3, provided at its edge with tongues B', rounded at their extremities, and throats B^3, rounded at the bottom, substantially as and for the purposes described.

3. A detainer for a clover machine or separator, consisting of a strip of material having tongues B' at its edge, said tongues being provided with rounded corners at their outer extremities, substantially as described.

4. A detainer for a clover machine or separator, consisting of a strip of material having tongues B' at its edge, the throats between the tongues being provided with rounded inner edges or bottoms, substantially as described.

5. The combination, in a detainer for a clover machine or separator, of two pieces of leather having tongues B' at their edges, with washers and rivets passing through the two pieces of leather and headed on the washers, substantially as described.

6. A detainer for a clover machine or separator, consisting of two plies of material united together, with their adjacent surfaces in contact and formed integral with coincident tongues B' at their edges, said coincident tongues being in contact, substantially as described.

327,813. **WATERPROOFING FABRIC.** Frank S. Mitchell, Philadelphia, Pa., assignor to Thomas J. Martin, Edwin Martin, and William L. Martin, same place. Filed July 24, 1885. (No specimens.)

Claim.—1. The herein-described process of treating fabrics to render them impervious to moisture, which consists in first saponifying a vegetable acid with an alkali, as caustic soda, then adding a salt of alumina dissolved in water and boiling until the combination of fatty acid and alumina separates from the water, washing this insoluble compound, then rendering it again soluble by boiling with an alkali, which affords a bath into which the fabrics are to be immersed, then dried, and finally passed through a second bath consisting of salts of alumina, substantially as and for the purposes set forth.

2. The herein-described process of treating fabrics to render them impervious to moisture, which consists in immersing the fibrous material in an aqueous solution of alkali, fatty acid, and a salt of alumina, then drying and afterward passing it through a bath consisting of a strong solution of a metallic salt, substantially as shown and described.

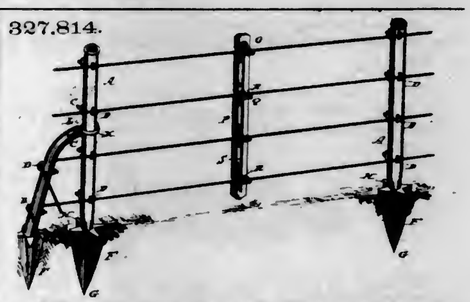
3. A process of waterproofing fabrics, which consists in introducing into the fibers of the fabric a substance in a soluble form, consisting of a fatty acid, aluminous salt, and an alkali, and after the fabric has become thoroughly permeated therewith passing the same through a bath of sulphate of alumina, which renders the soluble substance insoluble, substantially as shown and described.

327,814. **FENCE.** James T. Montgomery, Deerfield, Va. Filed Jan. 15, 1885. (No model.)

Claim.—1. The combination, with the end and corner posts of a fence, of the clasps consisting of two parts hooked together at one end, provided with curved portions adapted to embrace the posts to which the said clasps are applied, and provided at their opposite ends with projecting ends, forming together a bracket upon which the upper end of a curved tubular post may be placed, substantially as and for the purpose herein set forth.

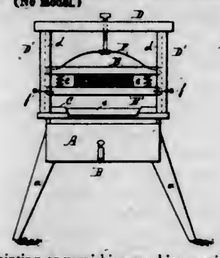


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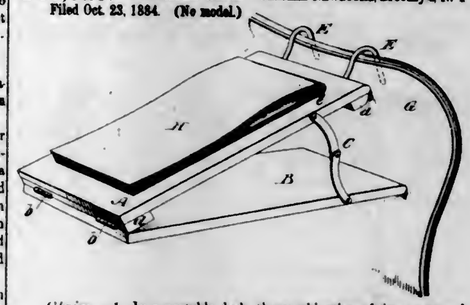
2. The combination of a fence-post, a two-part clasp fitted around the same and having projecting ends fitting closely together, and a curved tubular brace the lower end of which is driven into the ground, and the upper end of which receives the ends of the said clasping device, substantially as and for the purpose herein set forth.

327,815. **PAINTING-MACHINE.** Amos K. Nesbitt, Alton, Ill. Filed Aug. 21, 1885. (No model.)



Claim.—A painting or varnishing machine consisting of a body receptacle, A, having legs *a a* and faucet B, a table, C, having the gutter *c*, a frame, D, with vertical posts D' D', having the grooves *d d*, brushes E E', pins *f f*, and springs *e e* and F, arranged substantially as and for the purposes herein described.

327,816. **PORTABLE DESK.** Charles Newbours, Brooklyn, N. Y. Filed Oct. 23, 1884. (No model.)



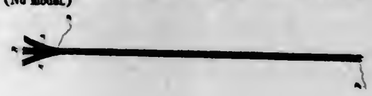
Claim.—1. In a portable desk, the combination of the upper and lower boards hinged together at one end, and one or more hooks attached to and projecting from the free end of the upper board for use in suspending it, substantially as specified.

2. The combination, with the hinged boards A B, of one or more swiveling suspension-hooks, E, applied to the forward end of the upper board, A, of the desk, essentially as and for the purposes described.

3. The combination, with the boards A B, hinged together at their rear ends, and one or more projecting suspension-hooks applied to the forward end of the upper one, A, of said boards, of a brace for holding the boards at a proper angle in relation with each other when spread apart to form a desk, essentially as specified.

4. In a portable desk, the combination of the hinged boards A B, the swiveling hooks E E, the brace C, and the fastening D, substantially as and for the purposes herein described.

327,817. **STIFFENING-CORD FOR CORSETS.** Isaac Newman, New Haven, and Gilbert H. Blakesley, Bristol, Conn. Filed Sept. 19, 1884. (No model.)



Claim.—A stiffening-cord composed of hair and coarse straight fiber bound together by a binder wound around them, substantially as set forth.

327,818. BOTTLE-STOPPER. Stephen S. Newton, Brooklyn, N. Y. Filed May 27, 1885. (No model.)



Claim.—1. In a bottle-stopper, the combination of a discharge-tube provided near its lower end with flanges and a flexible coupling-tube having a contracted inward extending part, *c*, held between said flanges, and a cylindrical part adapted to fit over the neck of a bottle, the lower flange of the discharge-tube being situated between the neck of the bottle and the part *c* of the coupling-tube, whereby the discharge-tube is held in an upright position relative to the bottle-neck, substantially as set forth.

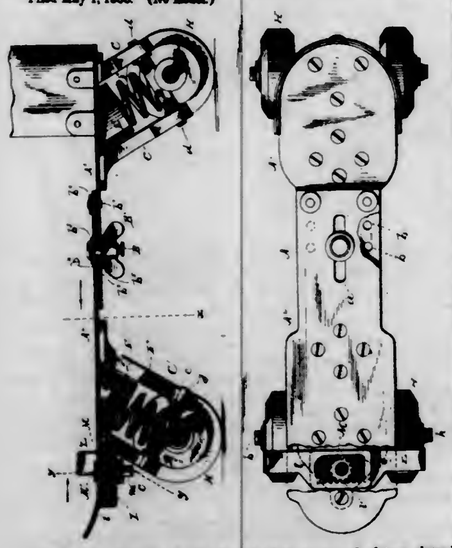
2. In a bottle-stopper, the combination, with a discharge-tube provided at its lower end with flanges *d* and E, of a flexible coupling-tube having its upper end contracted and provided with rib c' and groove c^2, said contracted portion lying between the flanges, the outer edge of the lower one, *d*, of which is turned up into the groove to unite the coupling and discharge-tube, substantially as set forth.

3. In a bottle-stopper, the combination, with a discharge-tube provided at its lower end with a flange, *d*, and with a flange, E, situated above flange *d*, and the downward-projecting spurs *e*, carried by the upper flange, of a flexible coupling adapted to unite the discharge-tube with the neck of a bottle having a portion lying between the flanges *d* and E, with which portion the spurs *e* engage to assist in securing the discharge-tube and coupling, substantially as set forth.

4. In a bottle-stopper, the combination, with a discharge-tube and a flexible coupling uniting the discharge-tube with the neck of a bottle, of an elastic clamping-ring arranged to encircle the coupling and secure it to the neck of a bottle, substantially as set forth.

5. In a bottle-stopper, the combination of the discharge-tube, the movable hood F *f* at the upper end of the discharge-tube, the valve formed in one piece with the movable hood, and a perforated plate arranged above the valve and within the reduced part *f* of the hood, substantially as set forth.

327,819. ROLLER-SKATE. Frederick G. Osborn, Newark, N. J. Filed May 1, 1885. (No model.)



Claim.—1. A skate having its sole-plate composed of two slotted overlapping sections, one of which is provided with a longitudinal series of lateral perforations and the other with a stud, as b', rigidly secured by the disks b^2, and an adjusting-bolt having similar disks and its opposite ends adapted to prevent the nut from leaving the bolt when loosened thereon, substantially as specified.

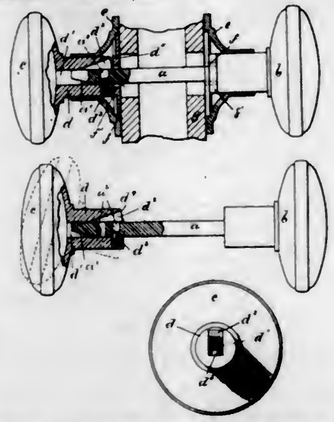
2. A skate having its sole-plate composed of two overlapping sections, one of which is provided with perforations and the opposite one with studs b', having disks b^2, for rigidly securing the studs to the said section, so that the projected free ends of the said studs may be readily inserted and removed from the perforations, substantially as specified.

3. The combination of the bolt B, having its opposite ends headed, the disks b^2 and b^4, arranged on the said bolt above and below one of the sole-plates, and the thumb-nut arranged on the bolt beneath the sole-plate to serve in a roller-skate, substantially as specified.

4. The combination, with a skate sole-plate and its hangers, of the axle, the axle-plate constructed as described, the spring arranged between the same and the sole-plate, and the pin for fixing the axle to the axle-plate, substantially as specified.

5. In a roller-skate, the combination of the two similar toe-clamping sections having their shanks slotted, as at *l*, to present an opposite toothed and plain edge, the vertical shaft passing through the said slots, and the pinion rigidly secured to said shaft and engaging the said toothed edges to move one clamp over the other in opposite directions, substantially as specified.

327,820. KNOB ATTACHMENT. Emery Parker, New Britain, Conn. Filed July 17, 1884. (Model.)



Claim.—1. A knob with a connected spindle, the latter having near its free end an engaging shoulder or opening, in combination with a removable knob having a shank with a spindle-socket, and an inward-projecting lug or pin within the socket, the latter having an enlargement opposite the lug, all substantially as described.

2. In combination with a knob and connected spindle having the engaging shoulder or opening, a removable knob having a shank with a spindle-socket, a rounded end on the shank, an engaging lug within the socket, and an enlargement opposite the lug, all substantially as described.

3. In combination with a knob and connected spindle having the engaging shoulder or opening and a beveled end, a removable knob having a shank with a spindle-socket, an engaging lug within the socket, and an enlargement of the socket, all substantially as described.

4. In combination with a lock or latch, a knob with a connected spindle and the removable knob, each provided with means for connecting the parts, substantially as described, a door, a rose, and an inner rose bearing a central projecting boss, all substantially as described.

5. In combination with a lock-hub having a spindle-hole, a spindle adapted to fit loosely within said hole and bearing near its free end an engaging shoulder or opening, and a removable knob having a shank with a spindle-socket, and an engaging shoulder within the socket, whereby the said spindle and knob may be removably connected to each other, and the rose or like means for holding said knob and spindle in alignment with each other, all substantially as described.

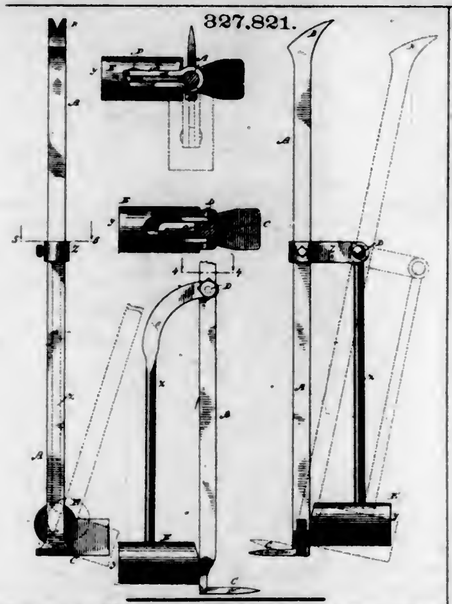
327,821. BOX-OPENER. Frank L. Perry, Baltimore, Md. Filed Aug. 3, 1885. (No model.)

Claim.—1. A lever-bar for a box-opener having a claw, B, at one end and a right-angular blade, C, at the other end, in combination with a hammer, E, pivoted to the lever-bar, substantially as set forth.

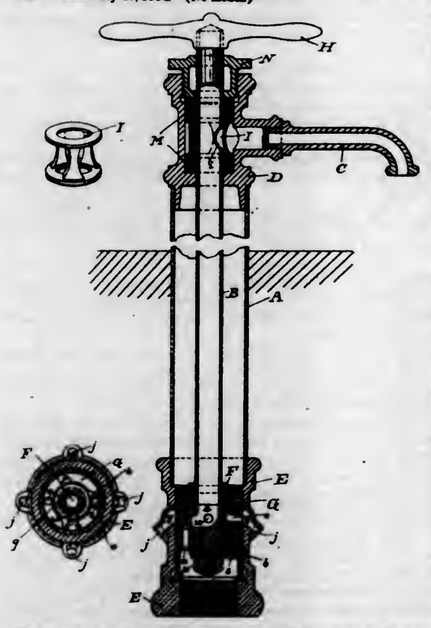
2. A lever-bar for a box-opener having a claw, B, at one end and a right-angular blade, C, at the other end, in combination with a hammer, E, pivoted to the lever-bar by means of a sleeve, Z, substantially as set forth.

3. A lever-bar for a box-opener having a right-angular blade, C, and a double-faced hammer pivoted to the lever-bar, so that both faces of the hammer may be used, substantially as set forth.

327,821.



327,822. HYDRANT. Fritz Pfeifer and Heinrich Ruppel, Cleveland, Ohio. Filed July 29, 1884. (No model.)



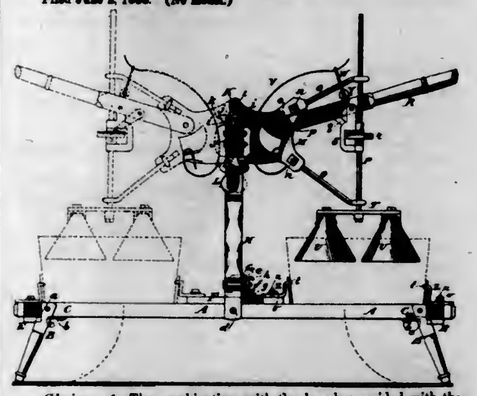
Claim.—In a hydrant, the combination, with a valve device constructed as shown and described in F, G, and E, and with a protecting-pipe, as A, and central discharge-pipe, as B, with delivery-hole *i*, and handle H, of the head-piece D, with the delivery-spout C, and a stuffing-box contained therein and adapted to pack said discharge-pipe within the head-piece above and below the delivery-hole, said stuffing-box composed of the layers of packing M M, of the perforated and sleeved seat I, and of the nut N, with washer, the whole for the purpose set forth, and substantially as shown and described.

327,823. WASH-BOARD. Peter Pfeiffer, Durhamville, N. Y. Filed May 11, 1885. (No model.)

Claim.—1. A wash-board the wearing or washing portion of which is composed of slats or strips of wood arranged at an angle within the frame, said slats being placed side by side and in immediate contact with each other, as set forth.

2. A wash-board the sides of which are grooved or channeled, as described, having the beveled pieces F and G and the intermediate slats, E, arranged between the pieces F and G, said slats being arranged in close contact and confined at their ends in the channels D, as set forth.

327,824. WASHING-MACHINE. James W. Rhoades, Fostoria, Ohio. Filed June 2, 1885. (No model.)



Claim.—1. The combination, with the bench provided with the socket open at one side, of the standard hinged to the bench to move at its hinged end into and out of the open side of the socket, substantially as described.

2. The combination, with the bench and hinged standard, of the slotted wall at the base of the standard, the threaded bolt connected to the standard and passing through the slot of the wall, and a nut on the end of the bolt to secure the standard to the wall, substantially as described.

3. The combination of the bench, the hinged standard, the slotted wall at the base of the standard, formed with a recessed side, the threaded bolt connected to the standard and passing through the slot of the wall, the washer to the bolt fitting in the recess of the wall, and the nut to the bolt, substantially as described.

4. In a washing-machine, the combination of the standard, the plunger-shifting arm, having a swivel-connection therewith and provided with a hook, a double gravity-pawl pivoted to the post to engage with the hook of the arm to whichever side of the standard the plungers may be turned, the guide-rods connected to said arm, the plunger-shaft sliding in said arms and having a plunger connected therewith, and a lever for operating the plunger, substantially as described.

5. In a washing-machine, the combination of the standard provided with a socket at its upper end, the head swiveled in said socket, the plunger-shifting arm hinged to said head, the guide-rod connected to said arm, the plunger-shaft sliding in said rods and having a plunger connected therewith, and a lever for operating the plunger, substantially as described.

6. In a washing-machine, the combination of the standard, the socket at the upper end of the standard formed with slots, the head swiveled in said socket, and the plunger-shifting arm hinged to said head and to fit into the slots of the socket, substantially as described.

7. In a washing-machine, the combination, with the plunger-arm, the plunger-shaft, and the operating-lever, of a spring connected to said arm and lever to lift the lever and shaft, substantially as described.

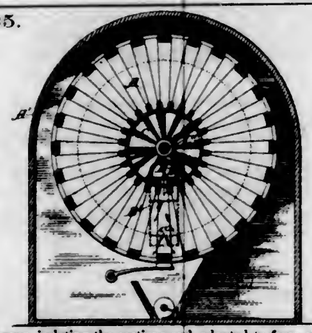
8. In a washing-machine, the combination of the arm formed with the hooks opening in opposite directions and located one above the other, the lever connected to said arm, the plunger-shaft connected to said lever, and the spring having one end secured by said hooks and the other end connected with the operating-lever, substantially as described.

9. In a washing-machine, the combination of the arm, the lever connected thereto, the plunger-shaft connected to the lever, and the spring connected at one end to said arm, and at the other end having a link-connection with the operating-lever, substantially as described.

327,825. DUST-COLLECTOR. William Richardson, Milwaukee, Wis., assignor to the Milwaukee Dust Collector Manufacturing Company, same place. Filed Feb. 25, 1885. (No model.)

Claim.—The combination, in a suitable casing, of a dust-collecting balloon provided with a slotted tube or chamber, a fan connecting with the balloon-center for exhausting therefrom, and a fan connected to said

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slotted channel, isolating the sections and adapted to force air through said isolated sections, as and for the purpose set forth.

327,826. SLED KNEE. Ole A. Sather, Jackson, Minn. Filed June 27, 1885. (No model.)



Claim.—The combination, with the runner and the cross-beam, of the knee having on its lower end longitudinal flanges to embrace the sides of the runner, and a central stud to enter the body of said runner, and having on its upper end a tenon rounded on its upper side, and cylindrical extensions at the opposite ends, a cap-plate having in its under side a single half-rounded mortise closed at its ends, and fitting down over the sides and ends of the tenon, and having its upper side flanged to embrace the cross-beam, and the staples or stirrups embracing the cylindrical extensions of the tenon, and passing through corresponding apertures in said plate near each end of the mortise, substantially as set forth.

327,827. WIRE-FENCE POST. John Schaefer, Marine, Ill. Filed Apr. 3, 1885. (No model.)



Claim.—1. In a fence, the intermediate post, D, having horizontal slots d^3 therein, and provided with a screwed portion, *d*, and with a separately-formed side, *d'*, secured to it and having diagonal slots d^3, substantially as described and shown, and for the purpose set forth.

2. In a fence, the combination of the corner posts, A, having screwed portions *a*, holes *a'*, rollers a^2, ratchets a^4, and pawls a^5, the wires B and the intermediate posts, D, having horizontal slots d^3, diagonal slots d^3, and the screwed portions *d*, substantially as described and shown, and for the purpose set forth.

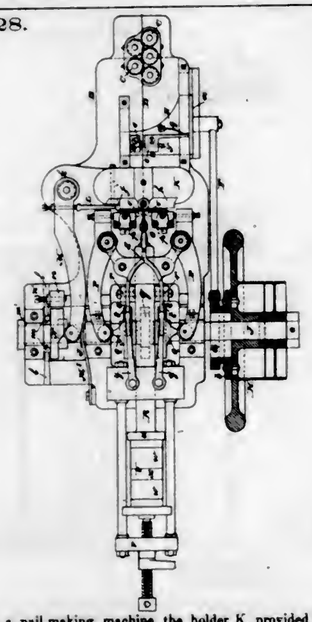
3. A post for wire fences, provided in one of its corners with a downwardly-inclined slot, and having a horizontal slot cut in its adjacent face and communicating with the said inclined slot, the said post being provided with a screw-point, whereby it may be inserted, held, and rotated within the ground, substantially as set forth.

4. A fence-post having a corner notch, inclined as described, and a horizontal slot communicating with the inner end of the said notch, substantially as set forth, and provided at its lower end with means whereby it may be held and rotated within the ground, for the purpose described.

327,828. NAIL-MAKING MACHINE. John M. Schlaff, Philadelphia, Pa. Filed Dec. 6, 1884. (No model.)

Claim.—1. In a nail-making machine, the sliding plate E, having a fixed jaw provided with a horizontal angular projection, and a movable jaw having an adjustable pin, in combination with the bed B, having guideways attached thereto, the said plate E having a depending flange and resting on the said bed B, substantially as described.

327,828.



2. In a nail-making machine, the holder K, provided with a stationary jaw and a movable jaw, in combination with adjustable arm L, pivoted lever M, having a roller at one end, shaft J, having cam N, and boss *n*, having a screw-threaded opening, and an adjusting-screw, substantially as described.

3. In a nail-making machine, a cutting device actuated by a cam mechanism, in combination with a trimming device operated by a projection on the operating-shaft, substantially as described.

4. A feeding meghanism consisting of a sliding plate provided with a clamping device thereon, in combination with rod F, a yoke, eccentric G, having flanged portion *b*, wheel H, shaft J, and means, substantially as described, for rotating said shaft, substantially as and for the purpose set forth.

5. In a nail-making machine, the bed B, having projection *l*, provided with rollers *m*, and boss *n*, carrying a screw, in combination with pivoted lever M, substantially as and for the purpose set forth.

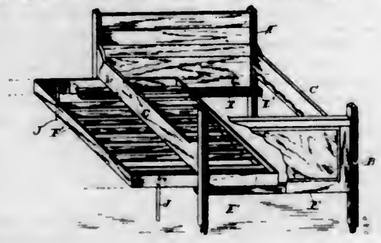
6. In a nail-making machine, the lever S, having arms pivotally secured and provided with a trimming device secured to the front thereof, and projecting downward, in combination with spring *y*, and shaft J, having a flange provided with the projection *t*, substantially as and for the purpose set forth.

7. The holder K, in combination with the lever M, cam N, shaft J, plate E, having a clamping device thereon, and connected by a rod to a yoke, and an eccentric on which the sail yoke works, the eccentric being mounted on said shaft J, substantially as described.

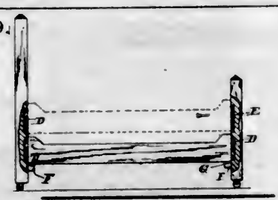
8. A nail-making machine composed of a bed, holding, cutting, and trimming devices, a rotary shaft-operating mechanism connected with each of said devices, and a rotary shaft whereby motion is communicated from the said rotary shaft to each of said devices in proper succession, substantially as described.

327,829. DOUBLE BED. Henry S. Simpson, Connersville, Ind. Filed Aug. 6, 1884. (No model.)

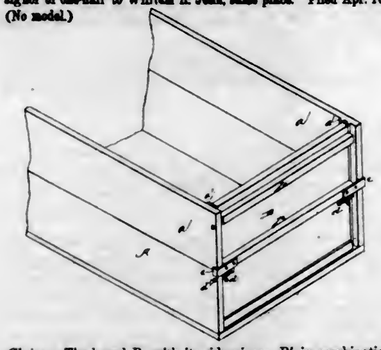
Claim.—The combination, with a bedstead, of transverse supporting-guides at the head and foot thereof below the side rails, C C, laterally movable trundle-bed frame sustained by said guides, and pivoted folding legs recessed in the ends of said frame, substantially as described.



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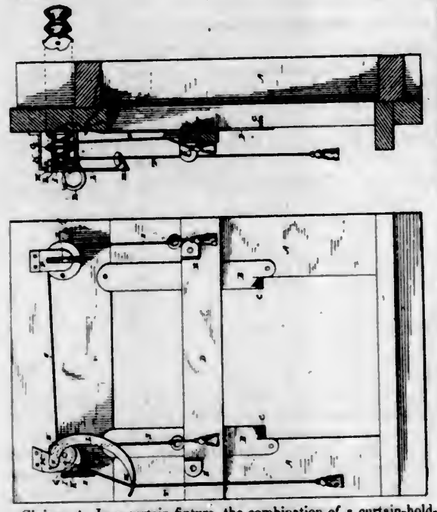


327,830. WAGON END-GATE. Robert M. Skiles, Van Orin, Ill., assignor of one-half to William H. John, same place. Filed Apr. 16, 1885. (No model.)



Claim.—The board B, with its side pieces, B', in combination with the angular plates *b*, having lugs *b'*, the bolts *d*, hooked irons *c*, and braces *e e'*, all constructed and arranged for operation, substantially as and for the purpose set forth.

327,831. CURTAIN-FIXTURE. Morgan H. Sly, Adrian, Mo., assignor of one-half to P. F. Wood, same place. Filed Oct. 21, 1884. (No model.)

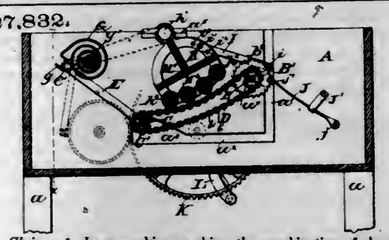


Claim.—1. In a curtain-fixture, the combination of a curtain-holding strip having sliding bearings in a window-frame with a double roller projecting at right angles to the window-frame at one side thereof, a single roller projecting at right angles to the frame on the other side, a ratchet-wheel on the double roller, a pivoted arm with a pawl engaging with said ratchet, a cord passing over both rollers and supporting the curtain-holding strip, and a cord attached to one part of the double roller and operating the same, the whole combined substantially as and for the purpose specified.

2. In a curtain-fixture, a curtain-holder having lipped pieces on one side, in combination with strips on the window-frame, said strips projecting inside of the frame and provided with stops at the lower end and extending from the top of the inside of the frame to about the middle thereof, substantially as and for the purpose specified.

327,832. WASHING-MACHINE. Otto E. Smith, Janesville, Wis. Filed Jan. 28, 1885. (No model.)

327,832.



Claim.—1. In a washing-machine, the combination of the wash-box with an endless slotted apron arranged in the arc of a circle, with one end in a lower horizontal plane than the other end of said apron, the lower end of which is suspended from spring hangers or straps and capable of movement vertically, and a rubbing-frame to be moved back and forth in the arc of a circle over said apron, substantially as set forth.

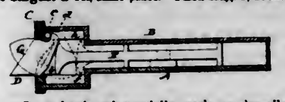
2. In a washing-machine, the combination of the wash-box and swinging rubber with the endless apron D, the roller C, with scalloped heads C', adapted to receive the inner surfaces of the slots of which the apron is composed, and the journals *c*, the stops E, with ends *e*, to receive the journals *c*, and the springs G, from which the said stops are suspended, substantially as set forth.

3. In a washing-machine, the wash-box A, the side pieces whereof are formed with the L-shaped grooves $a' a^3$, the latter having an end enlargement, a^3, and the former having a central enlargement, a^4, fitted with a notched plate, F, on each side, in combination with the springs G, straps E *e*, and endless slotted apron D, provided with the rollers B C, having journals *b c*, respectively, the former journals resting within the notches in the plates F and the latter journals being received in perforations in the ends *e* of the straps E, substantially as set forth.

4. In a washing-machine, the combination, with the wash-box and endless apron suspended from spring hangers or straps, of the rubber frame H, suspended from bearings in the top of the box sides and extending across the wash-box and having downward extensions on each side connected by rounded plate H^3, in which are journaled corrugated rubbing-rollers h^2 h^2, arranged in the arc of a circle, substantially as set forth.

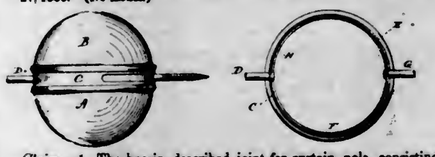
5. In a washing-machine, the combination of the wash-box A, endless slotted apron D, rollers B C, and rubber-frame H, carrying rollers h^2 h^2, with the ratchet-wheel b^2, secured to the journal of the roller B, pawl I, pivoted to the rubber-frame H, spring-pawl J, with tension-button J', and gear-wheel, pinion, link, and lever for communicating revolving motion to the apron D and reciprocating motion to the rubber-frame H, substantially as set forth.

327,833. KNOB-LATCH. William R. Sparks, New Haven, Conn., assignor to Sargent & Co., same place. Filed Aug. 3, 1885. (No model.)



Claim.—In a latch substantially such as described, a bolt, D, adapted to be drawn into the case through the face-plate, combined with a lever, G, hung to the bolt, the case constructed with grooves in the path of said lever, substantially as described, the said grooves serving as guides through which the lever moves.

327,834. CURTAIN-POLE JOINT. James Spencer, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed July 27, 1885. (No model.)

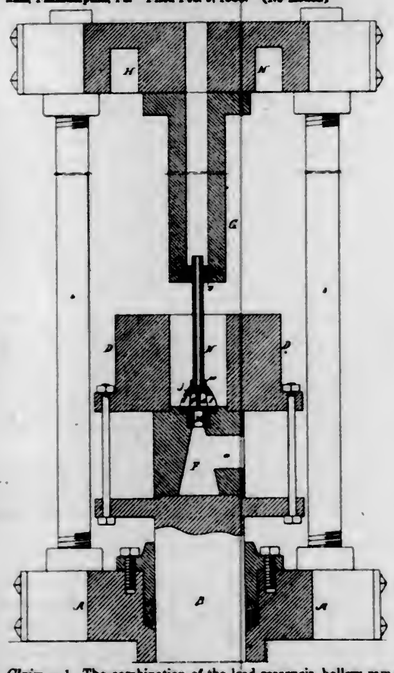


Claim.—1. The herein-described joint for curtain-pole, consisting of the outer ring or shell having a shank, D, rigidly fixed thereto and extending therefrom in a radial direction and in a horizontal plane, the shell constructed with a slot, E, opposite the fixed shank and in the same horizontal plane, combined with a ring, F, arranged within the shell and in the plane of the before-mentioned slot, the said inner ring having a shank, G, rigidly fixed thereto and extending radially therefrom through the said slot E in the outer shell, and in substantially the same plane as the shank D of the shell, substantially as described.

2. The ring C, constructed with a rigid shank, D, projecting radially therefrom, the said ring constructed with a slot, E, opposite the said shank and in the plane of the ring, a ring, F, arranged within said ring

C, and adapted to freely turn therein in the plane of the ring, the said ring F constructed with a rigid shank, G, projecting radially therefrom and through the said slot E in the ring C, the two parts A B, attached to the respective edges of the ring C to substantially close the ring, substantially as described.

327,835. ATTACHMENT FOR LEAD-PIPE PRESSES. James Tatham, Philadelphia, Pa. Filed Feb. 9, 1885. (No model.)



Claim.—1. The combination of the lead-reservoir, hollow ram, and hollow column of a lead-pipe press with the hollow core, core-holder, and die, said core-holder resting upon the top of the hollow column and being contained within the lead-chamber of the reservoir but unconfined vertically by said reservoir, as set forth.

2. The combination of the lead-reservoir, hollow ram, and hollow column of a lead-pipe press with a structure comprising the hollow core, core-holder, and die, said core-holder being contained in the lower portion of the lead-reservoir, and being of tapered or conical form, as set forth.

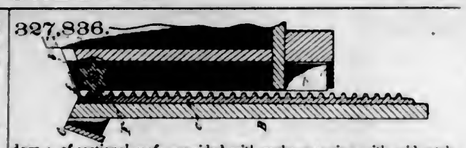
3. The combination of the lead-reservoir, hollow ram, and hollow column of a lead-pipe press with the die, a core-holder resting upon the hollow column and supporting the core close to the delivery end of the same, and a hollow core, N, projecting above the lead-reservoir, adjustable in the core-holder, and having a tapering end projecting into the die, as set forth.

4. The combination of the die, the threaded core N, having a tapering end, P, and the core-holder J, having a threaded opening for the core N, and a tabular projection bearing on said core above the thread, as set forth.

327,836. RAILWAY-CAR. John Trenthan and Henry A. Billings, Dayton, Ohio. Filed June 11, 1885. (No model.)

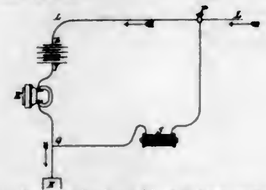
Claim.—The combination, with a car provided upon its sides with shafts F, carrying pinions *b*, vibrating guides I, ratchets *d*, and locking-





dogs *e*, of sectional roofs provided with racks engaging with said ratchets, and stops *f*, for limiting the downward movement of the roofs and supporting the same when hung by the side of the car, substantially as described.

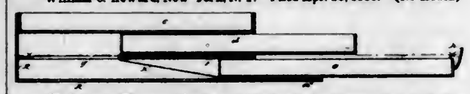
327,837. TELEPHONIC APPARATUS. Silvanus P. Thompson, Bristol, England. Filed Apr. 25, 1885. (No model.) Patented in England Mar. 19, 1885, No. 3,564.



Claim.—1 The combination, with an electro-magnetic telephone instrument and battery, of a shunt-circuit, and an induction-plug therein, whereby the steady battery-current is permitted to flow through the electro-magnet of the telephone-instrument, but the fluctuating voice-currents are prevented from flowing through said shunt-circuit, substantially as described.

2. The combination, with an electro-magnetic telephone-instrument, of a shunt-circuit around said instrument, and an induction-plug in said shunt-circuit, said induction-plug having low resistance, but a high co-efficient of self-induction, substantially as described.

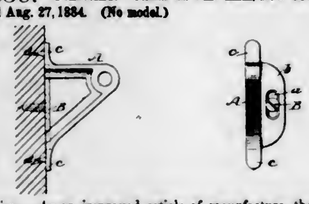
327,838. SHOW-BOX. Walter C. Thompson, Brooklyn, assignor to William C. Howard, New York, N. Y. Filed Apr. 28, 1885. (No model.)



Claim.—1. The combination, with the body A, provided with the partition *f*, having the slot or opening *g*, of the trays *d e*, connected by the cord or tape *h*, substantially as described.

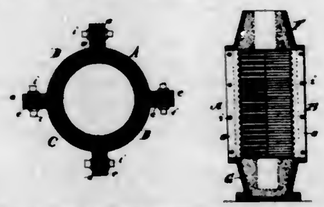
2. The combination, with the body A, provided with the tray *c*, cover B, and the partition *f*, having the slot or opening *g*, of the trays *d e*, connected by the cord or tape *h*, substantially as described.

327,839. BRACKET. James A. Van Kirk, New Brunswick, N. J. Filed Aug. 27, 1884. (No model.)



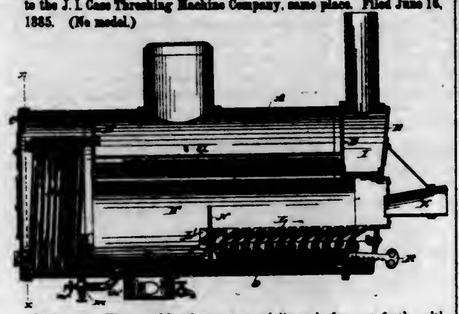
Claim.—As an improved article of manufacture, the bracket A, provided with the slot *a* and the spurs *d*, as set forth.

327,840. MOLD FOR CASTING ROLLS. William W. Wallace, Frankfort, Ind., assignor to the Wallace Manufacturing Company, same place. Filed June 4, 1884. (No model.)



Claim.—A mold for casting corrugated rolls, consisting of three or more segmental sections having coupling-flanges *e*, and the bolts or clamps connected with said flanges for securing the parts rigidly together, substantially as herein set forth.

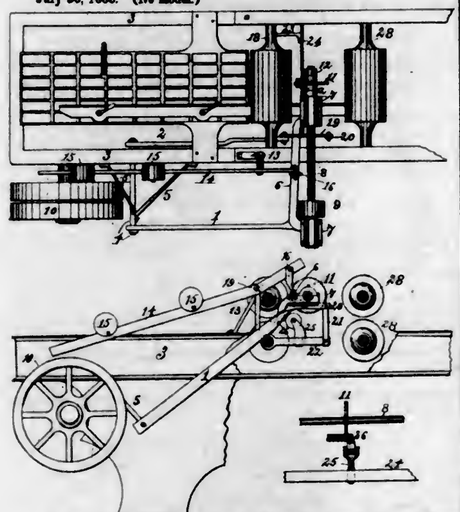
327,841. STEAM-BOILER. James Walrath, Racine, Wis., assignor to the J. I. Case Threshing Machine Company, same place. Filed June 16, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, with the direct and return flues and the combustion-chamber into which said flues open, of a hollow coil in the said combustion-chamber, both ends of which coil communicate with the interior of the boiler.

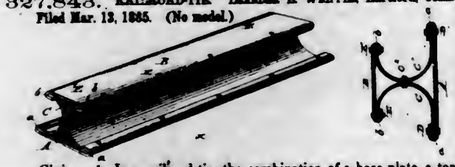
2. The combination, substantially as before set forth, of the hollow coil in the combustion-chamber, the valve and pipe for connecting it with the lower portion of the water-space of the boiler, and the blow-off cock.

327,842. FLOORING-MACHINE. Judson T. West, Hope, Ark. Filed July 30, 1885. (No model.)



Claim.—The combination, with a flooring-machine, of the edging attachment consisting of the bars 1 and 2, pivoted to the frame 3 of said flooring-machine by the bar 4, and bearing on their front ends beam 6, supporting gudgeon-boxes 7, bearing the shaft 8, circular saw 11, borne on said shaft and gaged by washers 12, bars 22 and 23, to which is welded the transverse bar 24, arm 25, bearing in its upper end the friction-roller 26, hook 16, its lower end hooked under the beam 6 and its upper end pivoted to the short end of the balance-beam 14, and balance-beam 14, pivoted on braces 13 and bearing balance-weights 15, all substantially as shown and described, and for the purposes set forth.

327,843. RAILROAD-TIE. Leander E. Whipple, Hartford, Conn. Filed Mar. 13, 1885. (No model.)



Claim.—1. In a railroad-tie, the combination of a base-plate, a top plate, and two intervening plates of curved or angular form in cross-section, arranged to bear against each other.

2. The railroad-tie consisting of a flanged top plate, the flanged base-plate, and the substantially-semicircular plates O O', seated against each other and within the flanges of the top and bottom plates, substantially as described and shown.

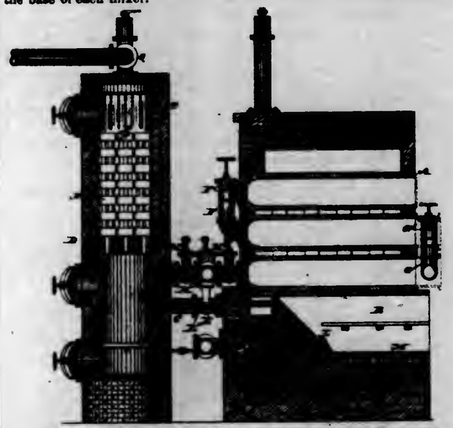
3. In a railroad-tie, a top plate and two supporting-plates therefor, seated against each other midway of their height and separated at their upper and lower edges.

4. In a railroad-tie, the combination of a base-plate, a top plate, and two curved supporting-plates united midway of their height by bolts or rivets, substantially as described and shown.

5. In a railroad-tie, the base-plate and the top plate, in combination with the curved supporting-plates, and the rivets or bolts connecting the supporting-plates with each other and with the top and bottom plates respectively.

327,844. GAS-GENERATING APPARATUS. Thomas R. White, Philadelphia, Pa. Filed July 7, 1885. (No model.)

Brief.—Gas from benches of coal-distilling retorts, oil-vapors, products of combustion from a furnace, and heated air are passed in a heated condition into one or two mixing-chambers having fuel-chambers below and loosely-laid brick above, and provided above the brick with suspended iron chains for removing certain impurities from the gas. The retorts of each bench are connected at alternated ends by valved pipes, and valved pipes connect the lower retort of each bench with each mixer. The hydrocarbon-oil vaporizer is placed in the lower and rear portion of the retort-furnace and is connected to each mixer. An air-pipe opening above a water-pan in the base of the retort-furnace connects with the base of each mixer.



Claim.—1. Two or more benches of retorts and mixers, said retorts having pipes with valves at opposite ends, and connected with said mixers by pipes having valves, in combination with a furnace, substantially as and for the purpose set forth.

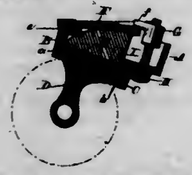
2. Two or more benches of retorts and mixers, said retorts having pipes with valves at opposite ends and connected to said mixers by pipes having valves, in combination with a furnace, a generator for hydrocarbon vapor located on the walls of said furnace, and connected to the said mixers by pipes having valves therein, substantially as described.

3. A mixer in combination with a furnace provided with a water-pan, M, a pipe, L, having an opening above the said water-pan, and extending through the walls of the said furnace into the said mixer, substantially as described.

4. A mixer connected by pipes to either one or both of two benches of retorts, and having brick flues therein, substantially as described, and iron chains pending above said bricks, substantially as described.

5. Mixers having bricks therein so arranged as to form flues, and metallic chains P, which depend from the mixer above said bricks, substantially as described.

327,845. ROLLER-SKATE. James Wilkie, Detroit, Mich. Filed Jan. 10, 1885. (Model.)



Claim.—1, In a roller-skate, the hanger D, having a pivot-pin formed on one end, adapted to fit in a seat in the bracket A, and the bolt *b*, adapted to pass through an opening in the bracket and engage with the other end of the hanger, in combination with the screw-head H, whereby the bolt *b* is held in its seat, as set forth.

2. The combination, with the bracket A, of the plate F, having a lug, *e*, at one side, the nut G, and adjusting-screw H, and the hanger D, pivoted in the frame at *a*, and at *b* to a removable bolt, substantially as specified.

327,846. SURGICAL BLADE AND HANDLE. Charles Willis, Baltimore, Md. Filed Aug. 19, 1885. (No model.)



Claim.—1. The handle for surgical blades, formed with a slot or kerf at its end and provided with a fixed pin lying across the slot with its longest side at an angle to the length of the handle, substantially as and for the purpose described.

2. The handle for surgical blades, formed with a slot or kerf at its end, and a recess at the base of the slot, and provided with a fixed pin lying across the slot with its longest side at an angle to the length of the handle, substantially as and for the purposes described.

3. The handle for surgical blades, formed with a slot or kerf at its end, and provided with a pin lying across the slot and a slide to bind a blade to the handle, substantially as and for the purposes described.

4. The blade for surgical use formed with a shank made with a slot terminating in an enlargement and provided with a tail extending rearwardly from the shank, substantially as described.

5. The blade formed with a shank made with a slot terminating in an enlargement and provided with a rearwardly-extending tail, in combination with a handle formed with a slot in its end and provided with a fixed pin lying across the slot, with its longest side at an angle to the length of the handle, and a slide to fit over the tail of the blade, substantially as and for the purpose described.

327,847. MEDICAL COMPOUND. Stephen D. Willis, Terre Haute, Ind. Filed Aug. 3, 1885. (No specimens.)

Claim.—A compound for the treatment of diseases herein named, composed of rhubarb, Cape aloes, (mild,) golden-seal, blue cohosh, capsicum, powdered licorice, glycerine, and elecampane, in about the proportions specified.

327,848. SKATE. Samuel Wimslow, Worcester, Mass. Filed June 6, 1885. (No model.)



Claim.—1. In a roller or other skate, the combination, with two pairs of laterally-movable clamping-jaws, one pair at the heel and the other near the toe, of clamp-arms curved inward beneath the foot-plate and prolonged toward the shank portion, the extremities of each pair of arms being connected by a pivot-bolt which moves in a central longitudinal slot in the foot-plate, a clamping-lever pivotally mounted upon one of said pivot-bolts and carrying upon its end a boss, a similar boss upon the other pivot-bolt, and a threaded adjusting-bar connecting the two, substantially as described.

2. In a roller or other skate, the combination, with two pairs of clamping-arms having their prolonged and united ends connected by a reversely-threaded bar, of pivot-bolts uniting the extremities of said arms and moving in central longitudinal slots in the foot-plate, substantially as described.

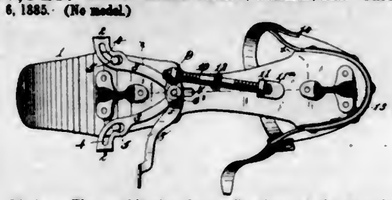
3. In a roller or other skate, the combination, with clamping-jaws carried by arms which are curved inward and toward the shank portion of the skate, of pivot-bolts which unite the prolonged ends of said arms, central longitudinal slots in the foot-plate in which said bolts move, a clamp-lever pivotally mounted on one of said bolts and a boss upon the other, and a reversely-threaded bar connecting said boss with a similar boss upon the end of the lever, substantially as described.

4. In a roller or other skate, the combination, with a foot-plate having clamping-jaws carried by arms lying beneath the plate and actuated by a lever mounted upon the bolt connecting said arms, of a rod or brace uniting the brackets or hangers, the clamping devices being arranged between the said rod and the foot-plate, substantially as described.

5. The combination, with the foot-plate of a roller-skate and the hanger carrying the axle of the rollers, of the bracket attached to the foot-plate and constructed with the smooth-surface recess 26 and transverse smooth-surfaced opening 28, the cushion 21, the tension-plate 22, having the rigidly-attached non-rotating screw-stud 25, rising and falling without turning in the said recess, and the screw-nut 27, arranged in the transverse opening and rotating on the screw-stud, said nut held against upward and downward movements by the upper and lower walls of the transverse opening, substantially as described.

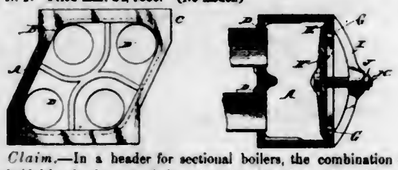
6. The combination, with the foot-plate of a roller-skate and the hanger carrying the axle of the rollers, of the bracket 16, constructed with the interior boss, 26*, the smooth-surfaced recess 26, and the smooth-surfaced transverse opening 28, formed below said boss, the cushion 21, the tension-plate 22, having the rigidly-attached non-rotating screw-stud 25, adapted to rise and fall in the said smooth-surfaced recess without turning, and the screw-nut 27, bearing against the upper and lower walls of the transverse opening and rotating upon the screw-stud, substantially as shown and described.

327,849. SKATE. Samuel Wimslow, Worcester, Mass. Filed June 6, 1885. (No model.)



Claim.—The combination, in a roller-skate, of the foot-plate 1, having the central longitudinal slot 7, the pivot-bolt 6, arranged to move in said slot, the front clamping-arms, 3, guided at their outer ends beneath the foot-plate and connected at their inner ends to the said pivot-bolt, the lever 8, connected with the pivot-bolt and having a short arm extending beyond the said pivot-bolt, the screw block or eye 9, swiveled on the short arm of the lever, the screw block or eye 11, centrally swiveled to the rear part of the foot-plate, and the right and left screw engaging the said screw blocks or eyes, substantially as described.

327,850. HEADER FOR SECTIONAL BOILERS. Robert R. Zell, Brooklyn, assignor to the Safety Steam Generator Company, New York, N. Y. Filed Mar. 24, 1885. (No model.)



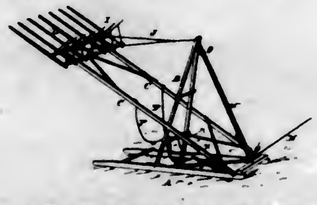
Claim.—In a header for sectional boilers, the combination of a rhomboidal header-box, consisting of a single casting and having at its outer end an inwardly-extending flange faced off on its inner side, the interiorly-located cover-plate faced off at its outer edge and provided with one or more guards, the fastening-bolt, and the yoke, all constructed and arranged substantially as and for the purpose herein shown and specified.

327,851. ROTARY BRUSH. Conrad Acker and Gottlob Michler, St. Louis, Mo. Filed Nov. 10, 1884. (No model.)



Claim.—A rotary brush comprising a cylindrical body formed with rabbets and depressions in the ends of its shell and provided with tufts of bristles, disks formed with crank-handles and having marginal flanges and teats occupying, respectively, the rabbets and the depressions, and a bolt by which the disks are secured to the cylinder, substantially as set forth.

327,852. HAY RICKER AND LOADER. Judson Allen, Hannibal, Mo., assignor of one-half to John Oliver Hogg, same place. Filed Apr. 6, 1885. (No model.)

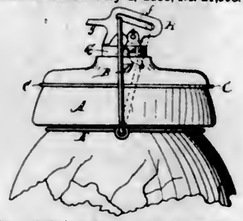


Claim.—1. The combination of the base, the fork-frame hinged at one end thereto, the short derrick-frame hinged on the receiving side of the fork-frame and movable freely past the fork-frame in either direction, a rope connecting the derrick-frame and fork-frame, and hoisting-tackle.

2. In a hay ricker or loader, the combination of the base, the hinged fork-frame C, the derrick B, having the lower end hinged at a point between the extremities of the fork-frame when in its receiving position, a flexible connection, J, between the outer end of the derrick and the fork-frame, the hoisting mechanism, and the stop-rope P, fastened at its respective ends to the fork-frame and the derrick, as and for the purpose set forth.

3. In a hay-ricker, the combination of the base, the pivoted fork-frame, the derrick hinged to the said base, the stop-rope fastened at its respective ends to said fork-frame and derrick, and the weight depending from said rope at an intermediate point, substantially as and for the purpose set forth.

327,853. FRUIT-JAR. Henry L. Becker, Rochester, N. Y., assignor of one-half to Frederick Will, same place. Filed Aug. 1, 1885. (No model.) Patented in Canada July 4, 1885, No. 21,998.

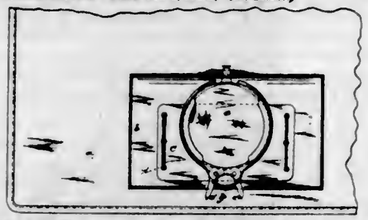


Claim.—1. In a fruit-jar, the combination of the cover having a circular boss at its top, and a cup-shaped cap fitted on the boss, and provided with the fastening devices, by which the cover is secured to the jar, as set forth.

2. In a fruit-jar, the combination of a cover having a circular boss on top, provided with side lugs, and a cup-shaped cap fitted thereon, provided with side openings embracing the lugs, to prevent the cap from turning, the cap being provided with the fastening devices that secure the cover to the jar, as set forth.

3. In a fruit-jar, the combination of a cover having a circular boss provided with side lugs, a cup-shaped cap fitted thereon, provided with openings that embrace the lugs, to prevent the cap from turning, a slotted rocker pivoted on top of the cap, and a neck-wire turning in bearings at the neck of the jar, and fitted in the slot of the rocker, as herein shown and described.

327,854. SAFETY-POCKET FOR WATCHES. William C. Bristow, Newark, N. J. Filed Oct. 1, 1884. (No model.)



Claim.—1. The combination, with the pocket having an opening at the bottom thereof, of grasping-jaws arranged therein and provided with finger-pieces which project through said opening, substantially as and for the purposes set forth.

2. In combination, the perforated and grooved plate *c*, adapted to be stitched to the pocket, and the levers fulcrumed on said plate and adapted to grasp and hold the watch in said pocket, substantially as and for the purposes set forth.

3. In combination, the perforated plate *c*, adapted to be sewed to the inside of the pocket, and levers fulcrumed on said plate to hold the watch, said levers being curved to conform to the shape of the watch, so as to prevent withdrawal, and concaved to fit around the edge to prevent lateral displacement.

4. In combination, in a watch-protector, grasping-arms curved to hold the watch between and prevent withdrawal, said arms being concaved to fit around the edge of said watch to prevent lateral displacement, and actuated by a spring to hold said arms into engagement with the watch, substantially as set forth.

327,855. PUNCH-CUTTING MACHINE. Lien B. Benton, Milwaukee, Wis., assignor to Benton, Waldo & Co., same place. Filed Feb. 29, 1884. (No model.)

Claim.—1. In a punch-cutting machine, the combination of a fixed standard or frame, a swinging frame suspended therefrom by a universal-joint connection, a holder for the punch-blank, having a support connected with said swinging frame by a universal-joint connection, a cutting-tool, and mechanism for rotating the same, a leaf attached to the fixed standard for holding the pattern, an index-rod attached to the swinging frame for tracing the pattern, and a pattern, substantially as and for the purposes set forth.

2. In a punch-cutting machine, the combination of a fixed frame or standard, A, an oscillating or swinging frame, T, attached thereto by a universal-joint connection, a work-holder, R, a rotating cutter, a support, D, for the pattern, and an index-rod, C, for tracing said pattern, substantially as and for the purposes set forth.

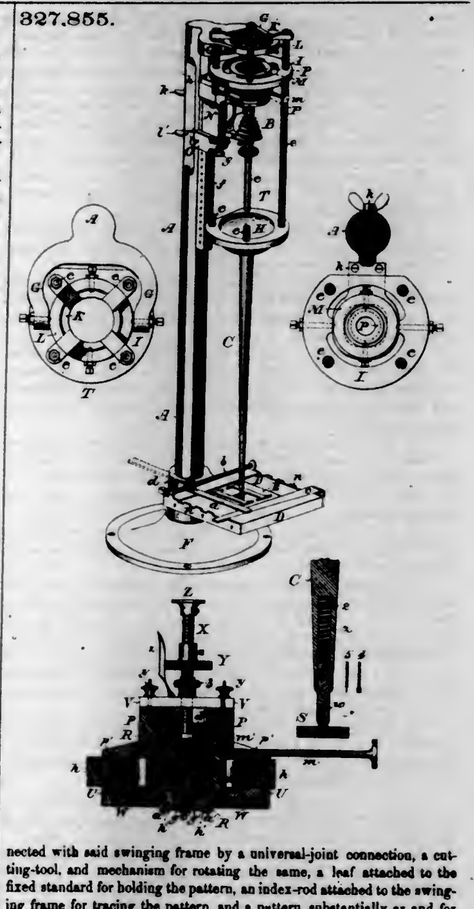
3. In a punch-cutting machine, the combination of a standard or frame, A, an oscillating frame, T, composed of the upright rods *e e*, ring K, and disk H, and suspended at the top from standard A by a universal-joint connection, an index-rod, C, attached to and depending from said frame, a leaf, D, adjustably attached to standard A, and provided with gage *a*, laterally adjustable on rod *b*, together with a lathe-head, B, attached to the standard A, and provided with a cutting-tool, a holder, R, for the reception of the punch-blank, and a support, P, for said holder R, connected with swinging frame T by a universal-joint connection, substantially as and for the purposes set forth.

4. In a punch-cutting machine, the combination, with a fixed frame or standard, A, of a lathe-head, B, provided with a tool, *o*, and adjustably attached to said standard, of a pattern, E, a support, D, for said pattern, together with a support for the punch-blank, connected by a universal joint with said standard A, and provided with a rod for tracing the pattern and giving a corresponding movement to the work, substantially as and for the purposes set forth.

5. In a punch-cutting machine, the combination of the standard A, from which is suspended by a universal-joint connection the oscillating frame T, the work-holder support P, embracing and bearing upon the bracket A, which is secured to and projects from the block N, a universal-joint connection between said support P and frame T, together with a rotating cutter or tool, a support, D, for the pattern, and an index for tracing said pattern and moving the work correspondingly, substantially as and for the purposes set forth.

6. The combination, in a punch-cutting machine, of standard A, provided with a vertical way, *f*, a block, N, adjustably attached upon said

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way to the standard, and adjustable block O, also attached upon said way to the standard A, and provided with the micrometer adjusting-screw *g*, which engages with a threaded socket in block N, and with the pin *r'*, which engages with a graduated series of holes cut in the way *f*, the oscillating frame T, suspended by a universal-joint connection from standard A, a work-support, P, resting upon a bracket, *h*, attached to and projecting from the block N, and connected with said oscillating frame by a universal joint, together with a rotating cutter and an index-rod for tracing the pattern, substantially as and for the purposes set forth.

7. In a punch-cutting machine, the work-holder R, composed of shell *a'*, lining *g'*, back *b'*, and cap *d'*, and provided with the stem X, substantially as and for the purposes set forth.

8. In a punch-cutting machine, the work-holder R, provided with a socket for the reception of the blank, and with the stem X, substantially as and for the purposes set forth.

9. In a punch-cutting machine, the combination of the work-support P with the detachable holder R, provided with the threaded stem X, pivoted therein, cross-head V, and graduated disk Y, together with spring-catch *z*, substantially as and for the purposes set forth.

10. The combination, in a punch-cutting machine, of the standard A, work-support P, the bracket *h*, attached to the block N, the oscillating frame T, and the universal-joint connection, as described, between said swinging frame and said work-support P, substantially as and for the purposes set forth.

11. In a punch-cutting machine, the combination of the standard A, block N, adjustably attached thereto and provided with bracket *h*, the work-support P, secured in and bearing upon said bracket *h*, and the rotary cutter, both attached to block N, substantially as and for the purposes set forth.

12. In a punch-cutting machine, the combination of the holder R, constituting a facing-jig, and a clamping device, substantially as and for the purposes set forth.

13. The combination, in a punch-cutting machine, of a graduated series of followers, 8, *w*, 4, and 5, by which the distance of the cut from the face of the character is determined, and the work-holder R, with means, as described, for adjusting its height, whereby the depth of the cut is regulated, substantially as and for the purposes set forth.

14. The combination, in a punch-cutting machine, of the work-holder R, cross-head V, and graduated disk Y, together with the cutting-tool, substantially as and for the purposes set forth.

15. The combination, in a punch-cutting machine, of a follower, 8, for tracing the pattern, a work-holder, R, an adjustable cross-head, V, for regulating the height of said holder, and a cutting-tool, substantially as and for the purposes set forth.

16. In a punch-cutting machine, the combination of an index-rod, C, a series of tracing-followers, 8, *w*, 4, and 5, the blank-holder R, and the rotary cutting-tool, substantially as and for the purposes set forth.

17. In a punch-cutting machine, the blank-holder R, composed of a hardened shell, *a'*, that constitutes a facing-jig, and an interior clamping device, substantially as and for the purposes set forth.

18. In a punch-cutting machine, the combination of an index-rod, C, and a tracing-follower, 8, constructed so that a follower of one size may be substituted for one of another size, substantially as and for the purposes set forth.

19. In a punch-cutting machine, a graduated series of followers, 8, *w*, 4, and 5, for tracing the pattern, whereby the punch is cut and finished by a succession of cuts, substantially as and for the purposes set forth.

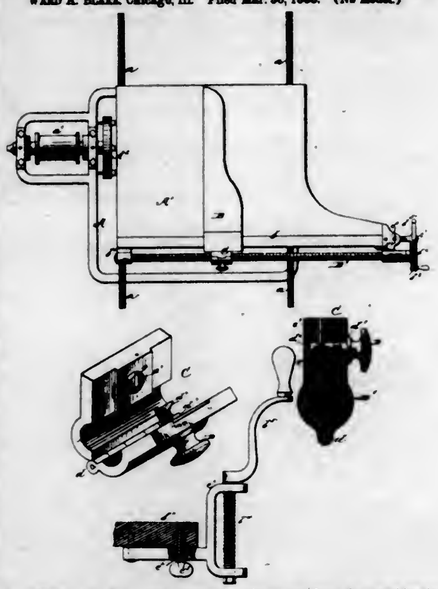
20. In a punch-cutting machine, the combination of a rotary cutter, the means for holding and giving the proper lateral movement to the punch-blank and for maintaining the same throughout its movement in a plane at right angles to the axis of the cutter, substantially as and for the purposes set forth.

21. In a punch-cutting machine, the combination of an index-rod, C, adjustable in length so as to reproduce patterns according to different scales, as desired, and a rotary cutter, o, substantially as and for the purposes set forth.

22. In a punch-cutting machine, the combination of a tapering tool, a work-holder, a pattern, and an index by which said pattern is traced and the cut of the tool directed, said tool or work-holder being adjustable in the line of the axis of said tool, or nearly so, and in a plane at right angles, or nearly so, to the axis of said tool, so as to produce, by the movement of the index about said pattern, a series of cuts varying in depth and proximity to the outline of the finished character or design, substantially as and for the purposes set forth.

23. In a punch-cutting machine, the combination of a tapering rotary tool and a work-holder, said tool or work-holder being adjustable in the line of the axis of said tool or in a line parallel thereto, or nearly so, a pattern and an index arranged to trace said pattern and at the same time to move said tool or work-holder in a plane at right angles, or nearly so, to the axis of said tool in paths corresponding to the travel of said index, and varying in proximity to the outline of the finished character or design, substantially as and for the purposes set forth.

327,856. MACHINE FOR TRIMMING STEREOTYPE-PLATES. Edward A. Blake, Chicago, Ill. Filed Mar. 30, 1885. (No model.)

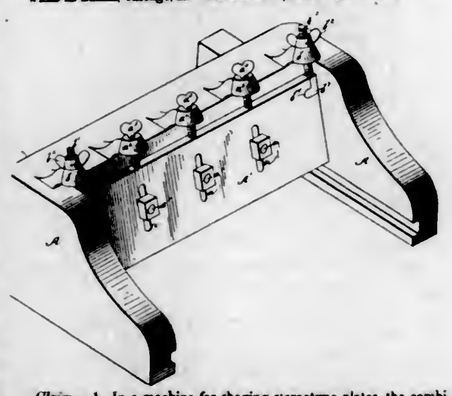


Claim.—1. In a stereotype-trimming machine, the combination, with the feeding-screw, of a sliding gage, a box or sleeve made in two parts hinged together, one of which is slightly larger than the rod, and the other threaded to correspond thereto, and a latch for securing the hinged box in a closed position, substantially as and for the purpose set forth.

2. In a stereotype-trimming machine, the combination, with the screw-feeding shaft B', of the sliding gage B and the two-part box C, hinged together and provided with the latch D, formed with the inclined hook d^2 on its shank, and the recess *e*, and projection *e'*, substantially as and for the purpose set forth.

3. In a stereotype-trimming machine, the combination, with the feeding-screw B', provided with the hand-wheel b^3, formed with worm-teeth b^4, of the worm-screw b^4, the frame *c'*, pivoted on the main frame and provided with the slot c^2, and the set-screw c^3, substantially as and for the purpose set forth.

327,857. MACHINE FOR SHAVING STEREOTYPE-PLATES. Edward A. Blake, Chicago, Ill. Filed Mar. 30, 1885. (No model.)

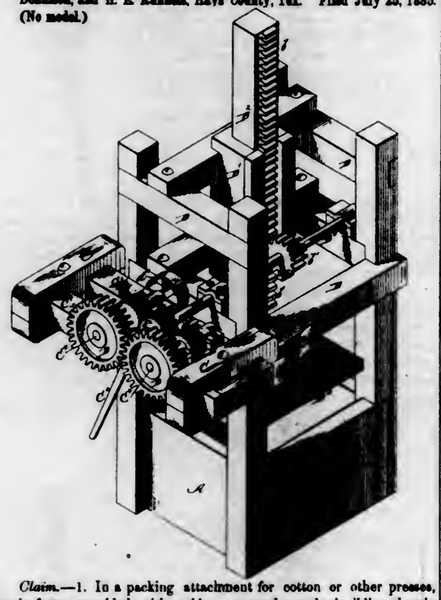


Claim.—1. In a machine for shaving stereotype-plates, the combination, with the cutter-head, of an adjustable cutter-blade, and a bolt from which it is hung, and by which it is evenly adjusted, substantially as and for the purpose set forth.

2. In a machine for shaving stereotype-plates, the combination, with the cutter-head, the adjustable blade, and means for clamping it in position, of a pair of headed screws, to which the blade is detachably suspended, and set-nuts thereon for aiding in the even adjustment of the knife, substantially as and for the purpose set forth.

3. The combination, with the frame A, having lugs *b*, of the cutting-blade A', formed with recesses b^1, the screws or bolts b^1, having heads or hooks b^2 on one end, and the thumb-nuts b^3, substantially as and for the purpose set forth.

327,858. PACKING ATTACHMENT FOR COTTON-PRESSES. John R. Bradford, San Marcos, assignor of one-half to S. F. McAllister, B. F. Donalson, and H. E. Rannels, Hays County, Tex. Filed July 25, 1885. (No model.)



Claim.—1. In a packing attachment for cotton or other presses, a main frame provided with guides, a cogged standard sliding therein and carrying the packing-piston, and an operating-shaft carrying a pinion engaging the standard, and a driving-pinion on its end, in combination with two shifting driving-shafts, each provided with a pinion, which are engaged with the operating-shaft alternately to raise and lower the plunger, substantially as and for the purpose set forth.

2. In a packing attachment for cotton or other presses, the combination, with the operating-shaft stationary on the main frame, of a sliding sash or frame, a pair of driving-shafts journaled thereon and geared together, and carrying driving-pinions, and a lever fulcrumed on the main frame for shifting the sliding frame and its shafts, substantially as and for the purpose set forth.

3. The frame B, guide B', standard B^2, having the plunger B^2 and rack-teeth *b*, and the operating-shaft B^4, carrying the pinions *b'* b^3, in combination with the sliding frame C', shafts C^4 C^4, having gears D and pinions *d*, and the shifting-lever C^2 and its sector-rack C^3, all constructed and arranged to operate substantially as and for the purpose set forth.

327,859. MACHINE FOR MAKING COMBINED SLAT AND WIRE FENCES. William I. Brant, Covington, Ohio. Filed Sept. 18, 1884. (No model.)

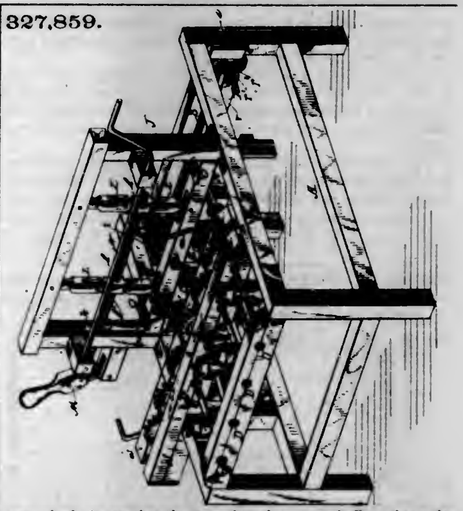
Claim.—1. In an apparatus for manufacturing slat fences, a series of shafts, D' D', rigidly attached to tubes D D, divided longitudinally and provided with spool-containing boxes, slotted, as described, the shafts being turned in unison by a series of gear-wheels rigidly attached thereto, a cross-bar provided with a series of grooved supports, above which operates a presser-bar carrying gages, and a shaft with fingers for feeding the slats under the presser-bar, and a reel for winding the fencing thereon, the parts being organized and combined substantially as shown, and for the purpose set forth.

2. In a machine for manufacturing slat and picket fences, as described, spool-boxes, each slotted, as described, and divided into two compartments to independently receive spools, and notched at their upper edges, in combination with tension devices arranged to bear upon the ends of the spools, each consisting of a dished plate having projecting portions to engage with the notches, and a retaining-bolt with set-screws, as shown.

3. In a device for manufacturing combined wire and slat fences, the rotary flat shaft, tube D, secured thereto and longitudinally divided thereby, said shaft being provided with a spool-carrying box rigidly attached to it and intersected by a bolt, with tension devices for retaining the spools within the box, substantially as shown.

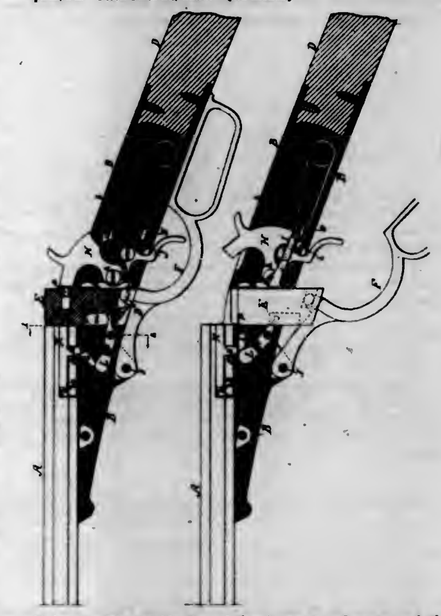
4. In a device for making combined slat and wire fences, as described, a series of shafts carrying the spools of wire, and provided with

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gear-wheels for rotating the same in unison, a vertically-reciprocating presser-bar operated by a toggle-joint, a shaft provided with projecting fingers for passing the slats under the presser-bar, and a removable and collapsible reel, constructed as described, and provided with a ratchet-wheel, an operating-lever for rotating the same, so as to draw and wind the fence upon and toward the reel, substantially as shown, and for the purpose specified.

327,860. BREECH-LOADING FIRE-ARM. Henry Bebbe, Philadelphia, Pa. Filed June 11, 1885. (No model.)



Claim.—1. The combination of the frame of a fire-arm and the sliding breech-block adapted thereto with an operating-lever connected to the breech-block and pivoted to the frame, the said lever or block having a T-headed slot open at the end, and the other having a T-head adapted to the slot, substantially as set forth.

2. The combination of the frame of a fire-arm and the hammer having a slot at its rear with a spring secured to the frame, and having one end, *g'*, adapted to the slot in the hammer, and a stop on the frame to limit the movement of the spring, substantially as set forth.

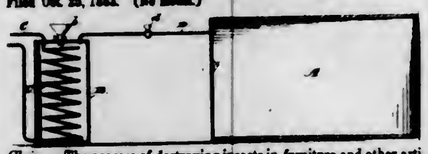
3. The combination of the barrel of a fire-arm and an extractor carried by the barrel with a sliding breech-block, a lever to impart an outward movement to the extractor and acted on by the sliding breech-

block, devices, substantially as described, to disengage the lever from the extractor at the end of its outward movement, and a spring to return the extractor to its closed position.

4. The combination of the barrel of a fire-arm having an extractor, K, and a return-spring therefor, with a lever, L, pivoted to the frame and having a yielding nose to act on the extractor, but adapted to be released therefrom at the end of its outward movement, substantially as set forth.

5. The combination of the barrel of a fire-arm having an extractor, K, and a return-spring therefor, with a lever, L, pivoted to the frame and having a yielding nose to act on the extractor, and a beveled projection, *p*, to release the yielding nose from the extractor at the end of the outward movement of the latter, substantially as and for the purpose set forth.

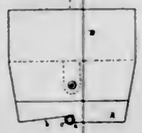
327,861. PROCESS OF DESTROYING INSECTS. Edward Chace, Washington, D. C., assignor to himself and A. H. Chace, same place. Filed Oct. 25, 1882. (No model.)



Claim.—The process of destroying insects in furniture and other articles, which consists in placing the article within a closed chamber strong enough to stand pressure, heating naphtha in a separate vessel shut off from the chamber until it is vaporized and the vapor is made quite hot and put under great pressure, and then admitting such vapor suddenly into the chamber, substantially as and for the purpose described.

327,862. RING-SPINNING FRAME. Charles H. Chapman, Groton, assignor to the Eureka Spindle Company, Ayer, Mass. Filed Apr. 2 1885. (No model.)

Brief.—In order to better direct the thread into slots of the spirally-slotted spindle-tip, the thread-guard is made with a projecting point, *a*, and a long inclined side, *b*. The guard is also bold and made adjustable in a split holder by means of a retaining-screw.



Claim.—1. The spindle *c*, constructed to extend upward through and above the bobbin, and having its tip centrally drilled and spirally slotted, combined with the thread-guard A, having the projecting point *a* and inclined side *b*, as shown and described.

2. The thread-guard A, having the inclined side *b*, projecting point *a*, and slot *d*, combined with the split holder B by means of the retaining-screw *e*, as shown and described.

327,863. BOLSTER FOR SPINNING-SPINDLES. Charles H. Chapman, Groton, assignor to the Eureka Spindle Company, Ayer, Mass. Filed May 18, 1885. (No model.)

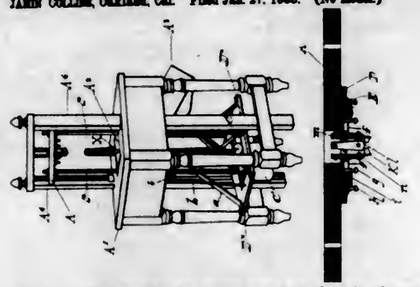
Brief.—The bolster is composed of a non-metallic step, a metallic bolster-bearing above it extending substantially to the line of the band-pull, and a non-metallic bearing above, all being compressed and held together by a screw-cap attached to and forming an extension of the bolster-case.



Claim.—1. A spindle, its sleeve-whirl, and bolster-case, combined with a compound or sectional bearing consisting of a lower non-metallic section adapted to receive the foot of the spindle, an intermediate metallic section adapted to support the spindle against the band-pull, and an upper auxiliary non-metallic section adapted to afford additional support to the spindle and steady it against vibration, as described.

2. The bolster-case B, provided with the non-metallic step-bearing *c*, located at the bottom of the case, and with the metallic bolster-bearing resting upon the step-bearing and extending above the neck of the bolster-case, combined with the retaining-cap *f*, provided with the auxiliary non-metallic bearing *e*, and adapted to sleeve the neck of the bolster-case and hold such auxiliary bearing firmly against the metallic bolster-bearing, as set forth.

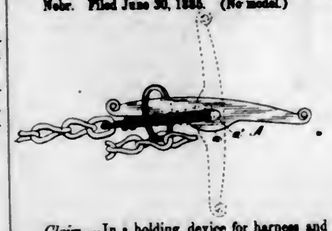
327,864. MACHINE FOR CUTTING CORN FROM THE COB. Benjamin Collins, Oakland, Cal. Filed Jan. 27, 1885. (No model.)



Claim.—1. In a machine for cutting corn from the cobs, the combination, with the head-block, of the plate D, having the dovetail grooves and studs, the slide E, having studs, the springs connecting the said plates and slides, and the knives, arranged and adapted to operate substantially as specified.

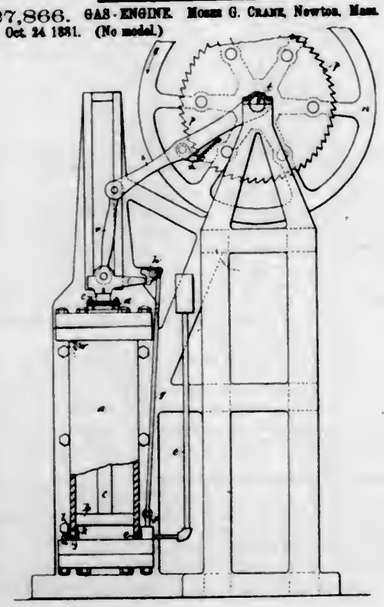
2. The combination, with the main frame having the vertical guide-standards, of the cross-head carrying the segmental yielding cutters, the vertically-moving frame D×, having the bars *a*, provided with the guide-apertures, the rods connecting the said frame with the cross-head, the guides or pulleys, and the ropes having counterbalance-weights and connected with the frame D×, substantially as shown and described.

327,865. SPRING-LINK FOR CHAINS. Albert W. Cox, Hastings, Nebr. Filed June 30, 1885. (No model.)



Claim.—In a holding device for harness and chains, the combination, with the holding-bar having an oblong slot, of the spring-link B, made of a single piece of metallic wire or rod, the wire being passed through the slot in the bar, and so bent as to form two separate loops spread apart from each other and held in said slot, the end opposite the loops having a holding-ring, substantially as and for the purpose set forth.

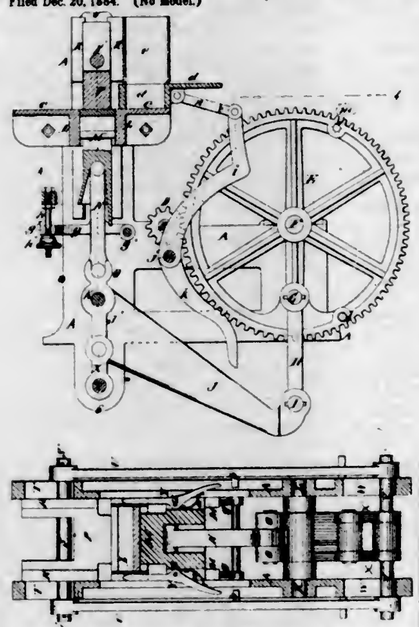
327,866. GAS-ENGINE. Moses G. Crane, Newton, Mass. Filed Oct. 24 1881. (No model.)



Claim.—1. In a gas-engine, the cylinder and piston therein, the said cylinder containing upon one side of the piston an elastic fluid or gas, combined with means for introducing and exploding an explosive compound in the said cylinder on the other side of the piston, and connecting mechanism between the piston and the machinery to be actuated thereby, arranged to be operative on the said machinery only on the return-stroke of the piston produced by the expansion of the air compressed by the outstroke of said piston incident to the explosion, substantially as and for the purpose described.

2. A cylinder provided with a piston dividing it into two compartments, one containing an elastic fluid or gas to be compressed, and to thereafter exert a useful effect by expansion, and the other receiving an explosive compound acting by explosive force to drive the piston against the body of elastic fluid or gas and compress it, and means to utilize the effective force of the compressed fluid or gas, substantially as described.

327,867. BRICK-MACHINE. Louis Dernelle, Cheltenham, Mo. Filed Dec. 20, 1884. (No model.)



Claim.—1. The combination, with the upper and lower plungers, of the vibrating lever J, fulcrumed at K, the toggle-bar N, interposed between the lower plunger, M, and the head J′ of said lever above its fulcrum, the rods U, connected at their upper ends to the upper plunger, P, vertical guides for confining said rods against lateral movement, and the toggle-links connecting the lower ends of said rods with the lower side of the head J′ of the lever J, substantially as and for the purposes set forth.

2. The combination of the under brick-mold plunger with spring-arms, rods connected to the upper plunger having projections acting on said spring-arms, and a charger having inclines acting to release the arms from the projections, substantially as set forth.

3. The combination, with the upper and lower plungers and vertical guides for confining them against lateral motion, of the rods U, connected to the upper plunger, P, the arms Y, carried by the lower plunger, M, and adapted to be engaged by the rods U for elevating the lower plunger, as described, and the charger *d*, adapted to disengage said arms Y from the rods U, as and for the purposes set forth.

4. The combination, with the upper and lower plungers, of the rods U, connected to the upper plunger, provided with lugs or steps *b*, the arms Y, pivoted to the lower plunger, M, and adapted to be engaged by the said rods U, and the charger *d*, all constructed and arranged to operate substantially as set forth.

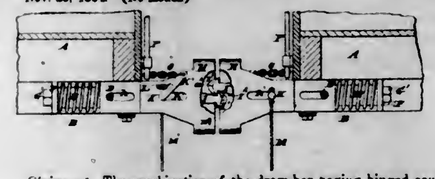
5. The combination of the main frame slotted at top and bottom, as described, the upper plunger, P, the paired rods U, the vibrating lever J, the toggle-link *x*, the toggle-bar N, and the lower plunger, M, all constructed and arranged to operate substantially as and for the purposes set forth.

327,868. THILL-COUPLING. Samuel H. Dickerson, Dayton, Ohio, assignor of one-half to Louis Hillman, same place. Filed Aug. 10, 1885. (No model.)



Claim.—The concavo-convex flanged box E and the spring F, constructed substantially as described, in combination with the clip B of a vehicle and its shaft-iron and bolt, the several parts being connected and used as herein set forth.

327,869. CAR-COUPLING. Joseph C. Doerr, St. Louis, Mo. Filed Nov. 28, 1884. (No model.)



Claim.—1. The combination of the draw-bar having hinged coupling-hook and a spring-buffer movable on the draw-bar, and having bearing upon an arm of the coupling-hook to hold it in engagement with the coupling-hook of the other car.

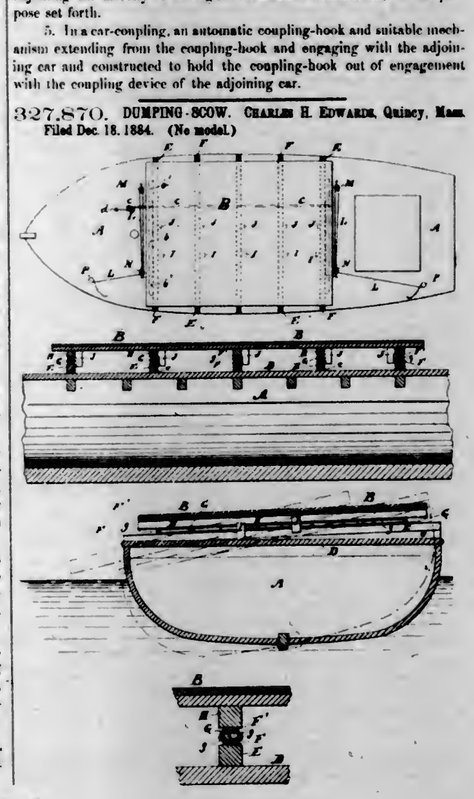
2. A car-coupling hook constructed to automatically couple with a similar hook of an approaching car and a rod or equivalent device constructed to retain the hook in uncoupling position by engagement with the adjoining car.

3. The combination of the coupling-hook working in a vertical plane and an arm extending from the pivot-bolt of the coupling-hook engaged by a projection of a buffer working on the draw-bars, and a spring forcing the buffer-projection against the arm of the coupling-hook, substantially as and for the purpose set forth.

4. The combination, with the pintle fixed to a gravitating coupling-hook, of an arm or rod upon said pintle constructed to engage with an adjoining car directly or through intermediate mechanism, for the purpose set forth.

5. In a car-coupling, an automatic coupling-hook and suitable mechanism extending from the coupling-hook and engaging with the adjoining car and constructed to hold the coupling-hook out of engagement with the coupling device of the adjoining car.

327,870. DUMPING-SCOW. Charles H. Edwards, Quincy, Mass. Filed Dec. 18, 1884. (No model.)



Claim.—1. In a floating vessel, the combination, with the deck having bars or ways extending crosswise thereof, of a movable platform extending across the deck, and having supporting-pieces corresponding with the ways on the deck, and stops to prevent too great movement of the platform, all arranged substantially as described, so that the platform may be projected a little way at one side of the vessel, and thus careen the vessel and dump the load, as set forth.

2. The combination, with the deck of a vessel, of bars or ways extending crosswise thereof, a platform across the deck having supporting pieces corresponding with the deck-bars, and anti-friction rolls between the deck-bars and the platform-supports, substantially as described.

3. The combination, with the deck of a vessel, of bars or ways extending across the same, a platform across the deck having supporting-pieces corresponding with the deck-bars, stops *b* beneath the platform, and movable pieces *b'* at each side of said stops, whereby the platform is locked in position against movement in either direction, substantially as described.

327,871. COMPOUND FOR HARNESS-OIL. Charles M. Ely, Lexington, Ky., assignor to William Cassius Goodloe, same place. Filed Jan. 26, 1885. (No specimens.)

Claim.—The described compound for harness-oil, composed of one gallon of paraffine-oil, one quart of neat's-foot oil, one pint of dissolved gum, one and one-half ounce of gum-arabic, dissolved, one pint of raw linseed-oil, one-half pound of ivory-black, substantially as set forth.

327,872. COLTER FOR PLOWS. Otha A. Ewen, Canton, Ohio. Filed Jan. 24, 1885. (No model.)



Claim.—1. The combination of a plow, the bar I, secured against one face of the plow-standard, the plate I', clamped against the forward end of bar I and overlapping the face of the standard opposite to that against which bar I lies, the colter supported at its upper end by bar I, and having its lower end seated upon the upper surface of the plow-point, and the tension-bolt H, which holds the point of the colter in place, substantially as set forth.

2. The combination of a plow, the bar I, secured against one face of the plow-standard, and provided with a groove, *i*, in its inner face, the plate I', clamped against the forward end of bar I, and overlapping for a short distance the face of standard opposite to that against which bar I lies, the colter supported at its upper end between bar I and plate I', and having its lower end seated in a recess in the plow-point, and the tension-bolt H, lying in said groove *i* between the bar I and the standard, having its front end attached to the colter and provided with a nut, *h*, which engages with its rear end and bears against the rear edge of the colter, substantially as set forth.

3. The combination of a plow, the reversible colter G, having its lower end seated upon the plow-point, the bar which supports the upper end of the colter, and a tension-bolt which holds the point of the colter in its seat, substantially as set forth.

327,873. METALLIC-BUTTON SHANK. Edward N. Foote, Northampton, Mass. Filed Feb. 5, 1885. (No model.)



Claim.—1. As a new article of manufacture, a metallic-button shank consisting of a wire center coated with solder, substantially as set forth.

2. A solder-coated metallic-button shank, substantially as described, made from solder-covered wire, substantially as set forth.

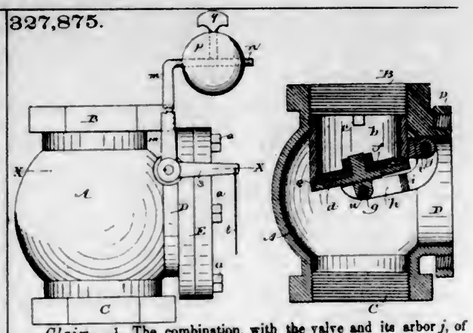
327,874. PAINTING AND GRAINING TOOL. Joseph Hanhebl, Long Island City, N. Y. Filed Aug. 16, 1884. (Model.)



Claim.—1. The combination, with a pad of felt or analogous material, of a sleeve or handle having struck-up springs or tongues bearing against the said pad, substantially as and for the purpose set forth.

2. The combination of a pad of felt or analogous material, a handle for the same, and a connecting-sleeve having struck-up springs or tongues, substantially as and for the purpose set forth.

327,875. VALVE. Osborn B. Hall, Malden, assignor of one-half to Caleb C. Walworth, Boston, Mass. Filed Nov. 15, 1884. (No model.)



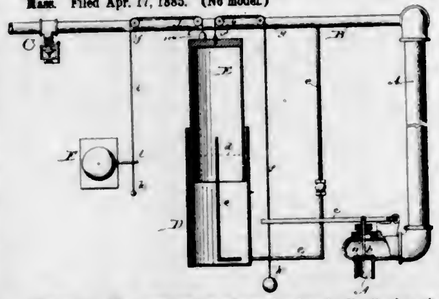
Claim.—1. The combination, with the valve and its arbor *j*, of arm *m*, rigidly secured to the arbor, and having an angle, *n*, extending therefrom on the side opposite the valve, and weight *p*, mounted on said angle *n*, whereby the weight tends to hold the valve to its seat when closed, and when it opens and the weight has passed the axis of arbor *j* it accelerates the opening of the valve, substantially as specified.

2. The combination, with the valve, its arbor *j*, arm *m*, rigidly secured to the arbor, and having an angle, *n*, extending therefrom on the side opposite the valve, and weight *p*, mounted on said angle, of arm *s*, also secured to and projecting from said arbor, substantially as specified.

3. The combination, with the valve supported upon arbor *j*, of arm *m*, secured to said arbor and provided with weight *p*, arranged to hold the valve to its seat when subjected to the intended or normal pressure to which the weight is adjusted, and to accelerate the opening of the valve after the weight has passed the apex of its arc-like path, substantially as specified.

4. The combination, with the valve, its supporting-arbor *j*, and a weighted arm secured to said arbor and arranged to hold the valve to its seat when subjected to the intended or adjusted pressure, and to accelerate the opening of the valve after the weight has passed the apex of its arc-like path, of an attachment adapted and arranged to be connected with and to actuate an alarm, substantially as specified.

327,876. AUTOMATIC FIRE-EXTINGUISHING APPARATUS. Osborn B. Hall, Malden, assignor of one-half to Caleb C. Walworth, Boston, Mass. Filed Apr. 17, 1885. (No model.)

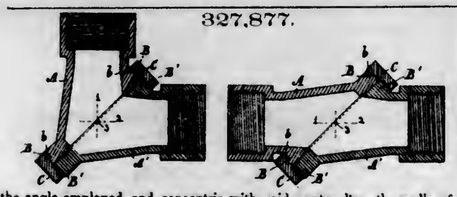


Claim.—1. The combination of supply-pipe A, distributing-pipes B, extinguishers C, tanks D E, valve *a*, and lever *c*, alarm F, and cords *f i*, the one double-weighted connected to the alarm at one end and the other end supported by tank E, and respectively connected with said valve-lever and the alarm, and adapted as the tank falls to first render the alarm operative and then to open the valve, substantially as specified.

2. The combination, with tank E and an operative alarm, of cord *i*, duly supported above the tank and connected with said alarm, and provided with a lesser weight below the alarm, and also connected with a superior weight at the opposite end adjusted to rest upon and move with the tank, until by the falling of the latter the alarm is rendered operative by the action of the cord and its weights, substantially as specified.

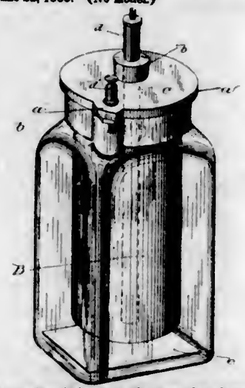
327,877. UNIVERSAL ANGLE COUPLING AND UNION. Horace F. Hodges, Boston, assignor to Charles F. Payne, Groveland, and George H. Spencer and Charles T. Crocker, Fitchburg, Mass. Filed Mar. 1, 1884. (No model.)

Claim.—In a universal angle coupling and union, a face or screw-head set at an angle other than ninety degrees with its pipe-connection, and concentric with the produced center line of said pipe-connection where it intersects the plane of said face, and having a circular central opening enlarged to a diameter equal to or exceeding the greatest diameter of the elliptical opening formed by cutting the pipe-connection at



the angle employed and concentric with said center line, the walls of said coupling tapering gradually and regularly from near the enlarged circular opening in the center of its oblique face to near the point of its pipe-connection, substantially as and for the purpose specified.

327,878. ELECTRIC BATTERY. Charles W. Holtzer, Boston, Mass. Filed June 22, 1885. (No model.)



Claim.—1. In an electric battery, the negative electrode consisting of a carbon cup provided with a cover integral with it, the said cover having an opening for the reception of the positive electrode, and being extended over the edge of the jar to support the cup, substantially as described.

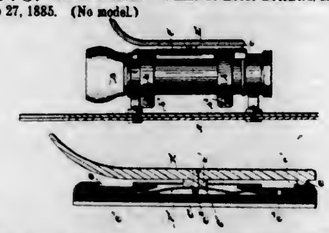
2. An electric battery consisting of a glass jar, a cup and cover attached thereto forming the negative electrode, and an insulating bushing or sleeve placed in the cover, and a positive electrode supported by the said insulating bushing or sleeve, substantially as described.

3. The agglomerated cup B, provided with a cover integral with it, the said cover having an opening, combined with the insulating bushing or sleeve *b*, supporting the positive electrode *d*, the said insulating bushing or sleeve fitting air-tight into the said opening, substantially as described.

4. The cup B, its cover C, and flange *a'*, combined with the screw *d''*, extended through the said flange to form a locking device for the negative electrode, substantially as described.

5. In an agglomerate battery, the cup B, cover C, and binding-post *d''*, combined with the zinc rod *d* and the zinc plate *e*, substantially as described.

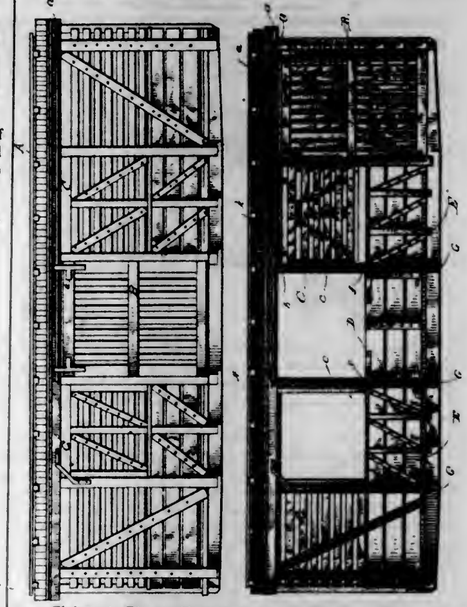
327,879. REIN-HOLDER. Willis F. Hood, Deerfield, Mich. Filed June 27, 1885. (No model.)



Claim.—1. A rein-holder consisting of a supporting-plate concaved upon one side and having grooves upon the other to receive the attaching-loops, and a latch having a boss at its lower end which rests against the supporting-plate and toward which it is drawn by a spring secured to the latch between its ends, and engaging with a recess or recesses in the plate, substantially as described.

2. In a rein-holder, the combination, with a supporting-plate having a concave face and provided with transverse grooves upon its opposite face, of a latch having a boss at its lower end which rests against said plate, and a spring secured to the latch between its ends, said spring lying in a recess in the plate and having its ends engaging with the latter, said plate being provided with screw-holes, substantially as described.

327,880. STOCK-CAR. Charles C. James and Charles W. James, Dayton, Ohio; Edwin C. James administrator of said Charles C. James, deceased. Filed July 9, 1885. (No model.)



Claim.—1. The combination of the movable sectional doors of the car and the central outside sliding door with the inside and outside tracks or rods, substantially as set forth.

2. The sides of a combined coal and stock car having the sectional doors sliding on rods inside of car, and the central outside door sliding on rods outside of said car, substantially as described.

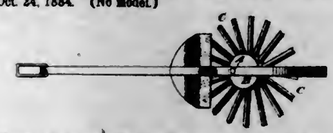
327,881. WASH-BOARD. Melvin Jinkin, Conesus Centre, N. Y. Filed Dec. 5, 1884. (No model.)



Claim.—1. The combination, in a wash-board, of the rubbing-surface A and the transverse staples B', secured in transverse equidistant rows across the said surface, so as to retain soap thereon, and having their joints broken, so as to direct the descending lather from one row to the lower adjacent row, substantially as specified.

2. In a wash-board, the combination of the rubbing-surface A, provided with the transverse equidistant channels D, with the transverse staples B', secured to the rubbing-surface in transverse rows between the channels, and so arranged that adjacent rows break joints, substantially as specified.

327,882. POTATO-DIGGER. Noah Keeler, Wallace, N. Y. Filed Oct. 24, 1884. (No model.)

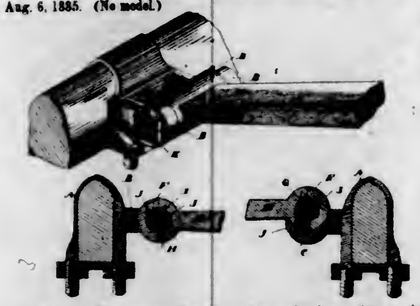


Claim.—In potato-diggers, the combination, with a lifting-plow, of a rotary shaft carrying arms extending below the rear thereof and arranged to serve both as a dirt-sifter and a centrifugal thrower of potatoes of useful size to one side of the furrow, substantially as described.

327,883. LINIMENT. Charles P. Kerr, Leesburg, Ohio, assignor to Rebecca J. Kerr, same place. Filed July 1, 1885. (No specimens.)

Claim.—A liniment composed of fusel-oil, alcohol, gum-camphor, sulphuric ether, oil of cinnamon, oil of wintergreen, spirits of turpentine, and curcuma in the proportions set forth.

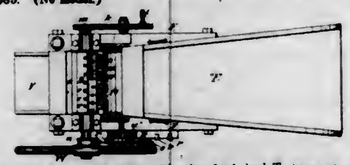
327,884. THILL-COUPLING. John A. Kneedler, Grant, Pa. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination of a wide eye having a slot opening into one-half of the bore of the eye, lips having slots opening into one-half of their bores, and a bolt composed of two halves fitting in the bore of the eye and the perforations of the lips, as and for the purpose shown and set forth.

2. In a thill-coupling, the combination of the clip having two forwardly-projecting perforated lips having slots opening from above into the rear halves of the perforations, the thill-iron having the wide eye at its inner end having a transverse slot opening into the forward half of the bore of the eye, and a bolt consisting of two halves fitting in the perforations of the lips and eye, having heads or flanges at the ends bearing against the outer sides of the lips, each half of the bolt being of the same thickness as the width of the slots in the lips and eye, as and for the purpose shown and set forth.

327,885. TOBACCO-CUTTING MACHINE. George Le Clair, Mexico, N. Y., assignor of one-half to C. Cortland Brown, same place. Filed Apr. 15, 1885. (No model.)



Claim.—1. In combination with the feed-bed T, two sets of cutting-blades, *a a'*, secured stationary on the end of said bed, and arranged alternately, with one set projecting beyond the other set, the rotary cutter-head B, arranged with its axis parallel to the plane of the stationary cutting-blades, and cutters projecting different distances from the head B, to pass between the projecting stationary blades and across the front of the same, substantially as set forth.

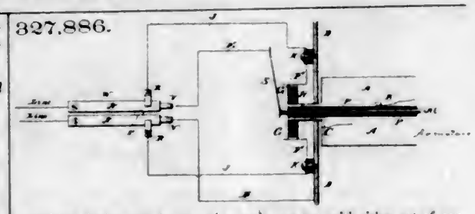
2. In combination with the feed-bed T, two sets of cutting-blades, *a a'*, secured stationary on the end of said bed, and arranged alternately, and with one set projecting beyond the other set, the rotary cutter-head B, arranged with its axis parallel to the plane of the stationary cutting-blades, a series of cutters, *b b*, distributed over the length of and secured to the rotary cutter-head, and projecting into the spaces between the projecting stationary cutting-blades, and the cutter *c*, secured lengthwise on the rotary cutter-head, and having a continuous cutting-edge, substantially as specified and shown.

3. The combination of the stationary cutter A, composed of two sets of blades, *a a* and *a' a'*, secured adjustably endwise to their carrier, and arranged alternately, and one set projecting with its cutting-edges beyond those of the other set, the cutter-head B, pivoted in front of the stationary cutter A, the blades *b b*, secured adjustably endwise to one side of the aforesaid cutter-head, and arranged in range with the spaces between the projecting blades of the stationary cutter, and the blade *c*, having a continuous cutting-edge, and secured adjustably to the opposite side of the rotary cutter-head B, all constructed and combined substantially in the manner specified and shown.

327,886. MAGNETO-CALL FOR TELEPHONES. Albert H. Low, Denver, Colo. Filed June 2, 1885. (No model.)

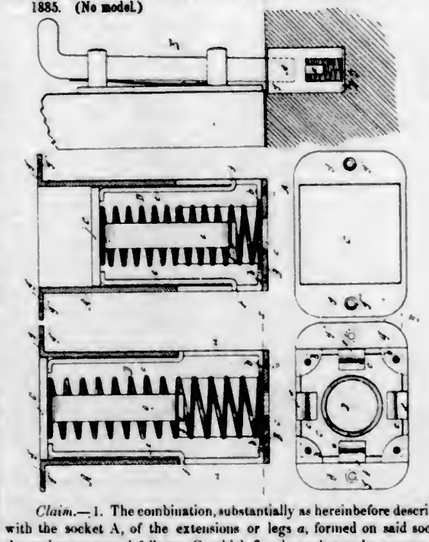
Claim.—The within-described improvement in magneto calls or generators for telephonic systems, the same consisting in the combination, with a magneto-machine provided with the usual connections for producing alternating currents, of a commutator for furnishing continuous currents of one direction, a switching device, one set of contacts connected with the alternating-current terminals, and another set of contacts connected with the continuous-current terminals, between which the

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switching device may be moved to make contact with either set of contacts, whereby either kind of current may be used at the will of the operator, substantially as set forth.

327,887. BOLT. Eugene Logar, New York, N. Y. Filed Jan. 29, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with the socket A, of the extensions or legs *a*, formed on said socket, the spring-supported follower C, which fits the socket and can move longitudinally therein, and the stops *e*, which are secured to the follower and adapted to engage the lower edge of the socket.

2. The combination, substantially as hereinbefore described, with the socket A, the extensions or legs *a*, formed on said socket, the spring-supported follower C, which fits the socket and can move longitudinally therein, the stops *e*, which are secured to the follower and adapted to engage the lower edges of the socket, and the disk B, secured to the extensions or legs *a*, formed on the socket, and provided with a hole or holes, *e*.

327,888. FLOATING CURRENT-MOTOR. William Main, Brooklyn, N. Y., assignor to the River and Rail Electric Light Company, of Ohio County, W. Va. Filed Aug. 11, 1885. (No model.)

Claim.—1. In a water-power mechanism, an endless chain carrying floats traveling in a path perpendicular to the direction of the propelling-current, said floats resting when in operative positions in planes oblique to the direction of the current.

2. In a water-power mechanism, the combination of endless chains traveling in a path perpendicular to the direction of the propelling-current with floats pivoted to said chains, substantially as described and shown.

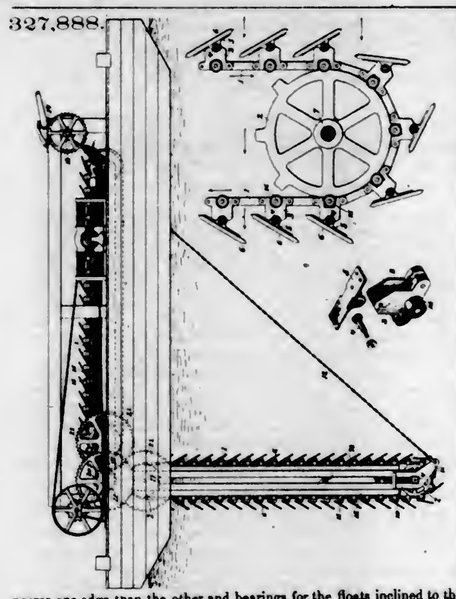
3. In a water-power mechanism, the combination of endless chains traveling in a path perpendicular to the direction of the current with floats pivoted to said chains, and two sets of oppositely-inclined bearings for each float arranged on opposite sides of the float-pivots, substantially as described and shown.

4. In a water-power mechanism, endless chains carrying pivoted floats and provided with oppositely-inclined bearings for the floats, one bearing on each side of the float-pivot, substantially as shown and described.

5. In a water-power mechanism, the combination of endless chains with reversible floats pivoted near their centers to said chains and bearings for the floats fixed to the chain and inclined to the path of travel, substantially as described and shown.

6. In a water-power mechanism, the combination, with an endless chain, of a float pivoted to the chain between its edges and slightly

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nearer one edge than the other and bearings for the floats inclined to the chain, substantially as described, and for the purpose set forth.

7. In a water-power mechanism, the combination of endless chains, brackets having inclined ends projecting therefrom, and floats pivoted to the extremities of the brackets and resting upon the inclined ends of the brackets as bearings, substantially as described and shown.

8. The combination of the float 6, bracket 5, attached thereto, shoulder-bolt 4, provided with a lock-nut on which bracket 5 is loosely pivoted, and brackets 3, projecting from the chain and supporting the bolt, whereby the pivotal wear is thrown upon the nut and the bracket attached to the float, substantially as described, and for the purpose set forth.

9. The combination, with a chain water-power mechanism in which the path of the floats is transverse to the direction of the current, of rigid guide-pieces for the float-carrying chains.

10. The combination, in a water-power mechanism, of endless chains traveling in a path perpendicular to the current, floats carried thereby, rigid guide-pieces for the floats, and friction-rollers between the chains and the guide-pieces, substantially as described and shown.

11. The combination, in a water-power mechanism, of endless chains moving in vertical paths about sprocket-wheels, mounted on horizontal shafts, with reversible floats pivoted to said chains, substantially as described and shown.

12. The combination, in a water-power mechanism, with endless chains moving in vertical paths about sprocket-wheels mounted on horizontal shafts, of floats pivoted a little off their centers to said chains and provided with doubly-inclined bearings thereon, substantially as described and shown.

13. The combination of two pivoted water-power, mechanisms geared to a single shaft with two clutches, one between each of the power mechanisms and the shaft, whereby either of the mechanisms may be detached from the shaft, as desired.

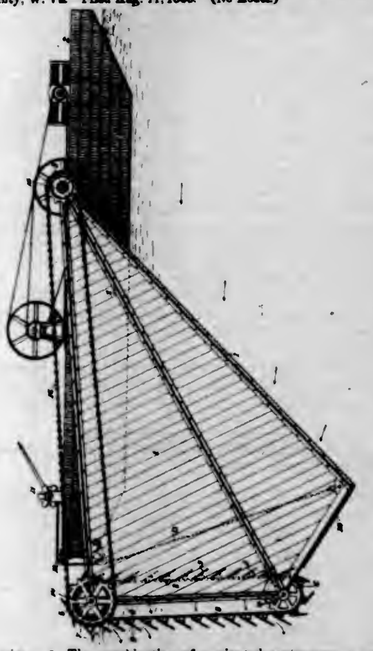
14. In a water-power mechanism, the combination of a floating support, a horizontal main shaft journaled thereon, two or more frames journaled concentrically with said shaft, sprocket-wheels carried by horizontal shafts journaled in said frames, endless chains running upon the sprocket-wheels, reversible floats, resting when operative in planes oblique to the path of the chains, carried by the chains, and means for raising and lowering the free ends of the frames, substantially as described, and for the purpose set forth.

15. The combination, with the main shaft of a water-power mechanism journaled to the supporting structure, of a fixed sleeve loosely surrounding the shaft and serving as an arbor for the frame carrying the power mechanism, a second sleeve loosely mounted upon the shaft and geared to the power mechanism, and a clutch between the second sleeve and the shaft, substantially as shown, and for the purposes set forth.

16. The combination of a chain-power mechanism in which the path of the floats is perpendicular to the direction of the current with a supporting-frame therefor, to one end of which the power mechanism is attached and which is pivoted at the other end to a floating support, and means for raising and lowering the free end of the frame, substantially as described and shown.

17. The combination, with a boat or other floating support, of frames pivoted thereto, shafts and sprocket-wheels mounted on the free ends of said frames, endless chains carried by the sprocket-wheels, reversible floats, operative to propel the chain in both directions, attached to the chains, and means for raising and lowering the free ends of the frame and the mechanism carried thereby, substantially as described and shown.

327,889. FLOATING CURRENT-MOTOR. William Main, Brooklyn, N. Y., assignor to the River and Rail Electric Light Company, of Ohio County, W. Va. Filed Aug. 11, 1885. (No model.)



Claim.—1. The combination of a pivoted water-way, a water-power mechanism mounted therein, a supporting boat or scow, and means for raising and lowering the free end of said water-way, substantially as described and shown.

2. The combination of a water-power mechanism, a water-way of approach therefor pivotally mounted upon a floating support and provided with a downwardly-inclined bottom for deflecting the water upward upon the power mechanism, and means for raising and lowering the free end of said water-way.

3. The combination, with a boat or scow, of two plank-covered frames, one of said frames being pivoted on each side of and outside of the boat, the said frames extending beyond one end of the boat, a water-power mechanism mounted between and connecting the free ends of the frame and located, therefore, in plan view, outside of the contour of the boat, and means for raising and lowering the free ends of the frame and the water-power mechanism mounted thereon, this construction permitting the entire pivoted mechanism to be elevated so as not to interfere with ready movement of the float in shallow water, substantially as described and shown.

4. The combination, with a boat or scow, of two frames pivoted at their ends, one on each side of the boat, planking covering each frame, a water-power mechanism mounted between and connecting the free ends of the frames, and at the end of the water-way formed thereby, and means for raising and lowering the free ends of said frames, substantially as described and shown.

5. The combination, with a boat or other floating support, of two frames pivoted at their ends, one on each side thereof, planking covering each of said frames, a water-power mechanism mounted between and connecting the free ends of the frames, transverse planking between the frames below the water-power mechanism forming an inclined surface for deflecting the water upward upon the mechanism, whereby a converging water-way of approach is formed which does not permit the water to escape except in the direction of the current and after it has acted upon the power mechanism, and means for raising and lowering the free ends of the frames, substantially as described and shown.

6. The combination of a chain-power mechanism in which the path of the float is horizontal and perpendicular to the direction of the current with a supporting-frame therefor, to one end of which the power

mechanism is attached and which is pivoted at the other end to a floating support, and means for raising and lowering the free end of the frame, substantially as described and shown.

7. The combination, with a boat or a floating support, of two quadrilateral frames, shaped substantially as shown and pivoted at their ends, one on each side of the float, planking covering said frames, a water-power mechanism mounted between and connecting the free ends of said frames, a plank bottom, 10, connecting the frames below the power mechanism and forming a deflecting-surface which serves as a bottom for the water-way, which has the planking of the frames for its sides and the bottom of the boat for its top, and means for raising and lowering the free ends of said frames and the water-power mechanism thereon mounted, substantially as described and shown.

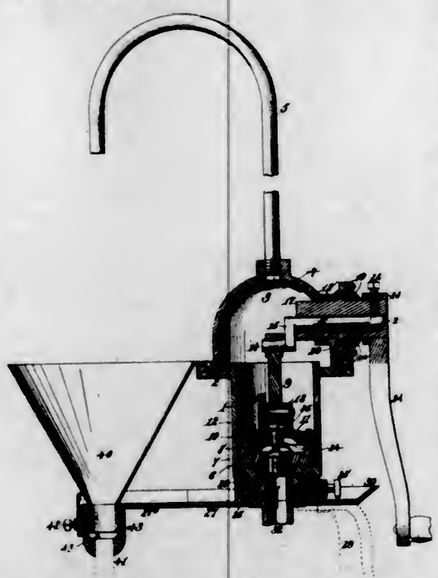
8. The combination, with a boat or other floating support, of plank-covered frames pivoted thereto, vertical shafts with sprocket-wheels mounted thereon, carried by the free ends of said frames, endless chains carried by the sprocket-wheels, reversible floats, operative to propel the chain in both directions, attached to the chains, and means for raising and lowering the free ends of the frames and the mechanism carried thereby, substantially as described and shown.

9. The combination, with a boat or other floating support, of frames pivoted thereto and rigidly connected at their free ends, vertical shafts mounted in the free ends of the frames and provided with sprocket-wheels mounted thereon, endless chains carried by the sprocket-wheels, reversible floats pivoted upon the chains, and means for raising and lowering the free ends of the frames.

10. In a water-power mechanism, the combination of vertical shafts, sprocket-wheels, mounted thereon, endless chains carried by the sprocket-wheels, and reversible floats attached to the chains, substantially as described and shown.

11. In a water-power mechanism, the combination of vertical shafts, sprocket-wheels mounted thereon, endless chains carried by the sprocket-wheels, and floats pivoted to the chains, substantially as described and shown.

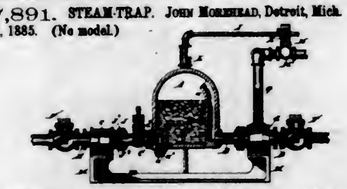
327,890. MEASURING-PUMP. Henry E. Marchand, Allegheny, Pa. Filed Nov. 13, 1884. (No model.)



Claim.—1. In a single-acting measuring-pump, the combination, with the cylinder having an air-reservoir, of a valved piston, an eduction-pipe having annular valve-seats and communicating with said cylinder, and a double check-valve in said pipe, consisting of a large and a small valve-disk mounted upon the same valve-stem, the ends of the stem passing through and being guided by wire screens in the pipe, substantially as described.

2. In a measuring-pump, the combination, with the outlet-pipe leading to the pump-cylinder, of a check-valve composed of two imperforate disks, the upper a large and the lower a small one, both mounted upon the same stem and engaging with the upper surfaces of annular valve-seats projecting from the inner surface of the pipe, said valves being lifted from their seats by the lifting of the fluids through the outlet-pipe, substantially as described.

327,891. STEAM-TRAP. John Morehead, Detroit, Mich. Filed Feb. 5, 1885. (No model.)



Claim.—1. A steam-trap consisting of a chamber provided with an inlet and outlet pipe at one side of the center of gravity, said inlet-pipe axially connected with a steam-pipe, and the outlet-pipe axially connected with a discharge-pipe, a valve located in the outlet-pipe arranged to open when the vessel is tilted, and vice versa, said vessel having an upwardly-extended interior pipe to admit condensed water, and a channel to carry the water from the chamber into the outlet-pipe, said chamber with said interior pipe and said channel all constructed in an integral casting, substantially as described.

2. The combination, with a chamber communicating with an inlet-pipe and an outlet-pipe at one side the center of gravity, and constructed with an upwardly-extended interior pipe to admit condensed water, and a channel to carry the water from the chamber to the outlet-pipe, of a pipe to return the condense water to the boiler, a steam-pipe, D, communicating with the inlet-pipe, check-valves located in the steam-pipe and the return-pipe, a steam-pipe, G, connected with the steam-space of the boiler, and with the inlet-pipe between its check-valve and the chamber, said steam-pipe provided with a valve arranged to be closed when the chamber is in a horizontal position, and vice versa, said chamber having an oscillatory connection with the steam-pipe D and the return-pipe, all arranged to operate substantially as and in the manner described.

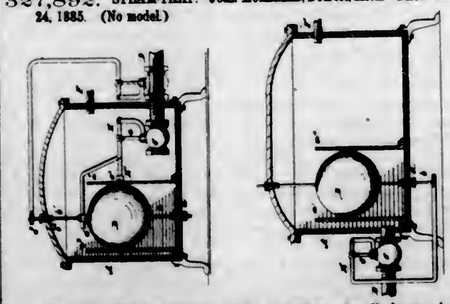
3. In a steam-trap, a chamber constructed to communicate with an inlet and an outlet pipe at one side the center of gravity, having an interior pipe to communicate with the inlet-pipe upwardly extended, said chamber provided with a channel to carry the water from the chamber to the outlet-pipe, having end openings, and a hand-hole to facilitate cleansing the same, and a vent-orifice, all constructed of an integral casting, substantially as described.

4. The combination, with a tilting chamber, of inlet and outlet pipes connected therewith at one side the center of gravity, said pipes axially connected with a steam-pipe and a waste-pipe, a valve located in the outlet-pipe arranged to open automatically when the chamber is tilted, and vice versa, an automatic air-valve connected with said chamber, said chamber provided with an interior pipe to admit condensed water to the chamber and carry the steam above the surface of the water, and a channel to carry the water from the lowest point of the chamber, when the same is tilted, to the discharge-pipe, substantially as described.

5. The combination, with a chamber having an inlet and an outlet pipe communicating therewith at one side the center of gravity, of a valve located in or connected with said outlet-pipe, said valve and inlet-pipe having an oscillatory union with journal-bearings in the manner specified, supports for said bearings, and a bar secured upon said support having an adjustable roller thereon for tripping the valve, substantially as described.

6. The combination, with a chamber having an inlet and an outlet pipe communicating therewith at one side the center of gravity, of check-valves in said inlet and outlet pipes, a steam-pipe communicating with the inlet-pipe between the check-valve and trap, and with the steam-space of the boiler, a valve located in said steam-pipe provided with an operating-lever, said chamber having connected therewith an arm provided with an adjustable weight, and an adjustable bar, I, to tilt said lever as the chamber tilts, substantially as and for the purpose described.

327,892. STEAM-TRAP. John Morehead, Detroit, Mich. Filed Mar. 24, 1885. (No model.)

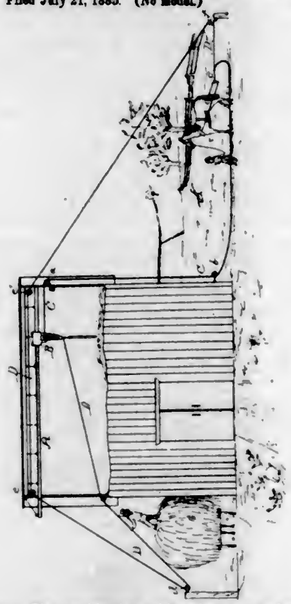


Claim.—1. The combination, with a chamber, of a discharge-pipe having a valve located therein provided with an operating-lever, and a float engaged with said lever, said float provided with a vertical hollow stem, *b*, and vertical stem *b'*, affording an outlet to the float, and serving to guide it so as to rise and fall perpendicularly, said stems extended to the exterior of the chamber, whereby the float may be engaged with said lever, either upon the inside or outside of said chamber, substantially as described.

2. The combination, with a chamber, of a discharge-pipe having a valve located therein provided with an operating-lever, and a float engaged with said lever, said float arranged to rise and fall perpendicularly, and provided with a vertical hollow stem, *b*, extended through a stuffing-box, *a*, to the exterior of the case, substantially as described.

3. In a steam-trap, the combination of the chamber A, having a discharge-pipe, D, provided with a valve, C, and a lever connected with the valve, a float rising and falling in a straight vertical line in the chamber, and a hollow stem extending from the float and projecting through and beyond the wall of the chamber, substantially as described, to permit the lever of the valve to be connected with the float, either inside or outside the chamber, as set forth.

327,893. DEVICE FOR OPERATING HAY-CARRIERS. John H. Morgan, Jr., Naaman, assignor of one-half to John H. Morgan, Sr., Yorkville, Ill. Filed July 21, 1885. (No model.)



Claim.—1. The combination, with a hay-carrier, hay-fork, and track on which the same travels, of the ropes C and D, as described.

2. The combination, with the hay-carrier and hay-fork, of the ropes C and D and pulleys *d* and *f*.

3. The combination, with the hay-carrier and track on which the same travels, of ropes C and D, pulleys *d* and *f'*, and single-tree *e*, substantially as and for the purpose set forth.

4. The combination, with hay-carrier and track on which the same travels, of the draft-rope C, return-rope D, pulleys *d* and *f* and *e e'*.

5. The combination, with the hay-carrier and track on which the same travels, of the elevator-rope C and return-rope D, and pulleys for directing and determining the course of said ropes.

327,894. FARM-GATE. L. T. Nichols, Ellington, Minn. Filed June 9, 1885. (No model.)



Claim.—1. The gate A, having strip C fixed to its rear vertical piece, and the triangular wind piece or vane D, secured thereto, combined with the chain or rope *g*, and ropes *g' g²*, passing, respectively, over pulleys F F^2, F F', and F^3, and posts G and I, upon which pulleys F^2 and F^3 are placed, substantially as and for the purposes set forth.

2. In a gate-actuating mechanism, the trip H, bent at its upper end at *h* and *h'*, and in its lower part at h^2 and at h^3, where it is journaled to the ground, combined with a rope or chain attached to said bend *h*, and connecting with the gate-latch and with the weighted cord or chain *k*, attached to its upper part, *h'*, substantially as shown, and for the purposes described.

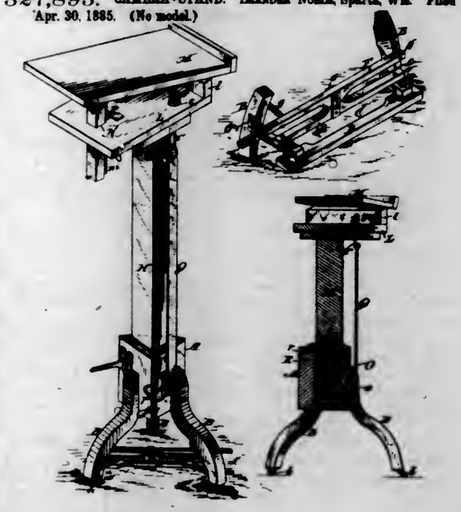
3. The trip H, having two upper bends, *h* and *h'*, journaled to the ground at h^3, and attached at its upper bend, *h*, to the rope or cord connecting with the gate-latch, and the pulley on the upper end of the contiguous post, in combination with the weighted cord K, passing over the same and attached at one end to the bend *h'* of the trip, whereby, when the trip is turned outward or away from the gate the said rope is kept tant and ready for action, substantially as described.

4. The combination of the gate, its latch *b'*, and the rope *g*, connected thereto, with the pulleys F F F' on piece C, the wind-board D, the automatically-closing weighted cord *l*, attached to wind-board D, and passing over the pulley on post M, and opening cords or chains *g' g²*, operated as described.

5. The gate-trip H, made in two parts, one of which is tubular and into which the end of the other slides, in combination with means for securing the parts when adjusted, substantially as described.

6. In a farm-gate constructed substantially as described, and having an upwardly-extended rear post, A', a lever-piece, C, fixed thereto and provided with pulleys F F F' and cords for operating the gate, and having at its rear the triangular vane D, combined with the post M, cord or chain *l*, and weight L, whereby the gate will present the least space to the wind and be balanced by the wind-vane and automatically closed by the weight, all as shown and described.

327,895. CAMERA-STAND. Leander Noble, Sparta, Wis. Filed Apr. 30, 1885. (No model.)



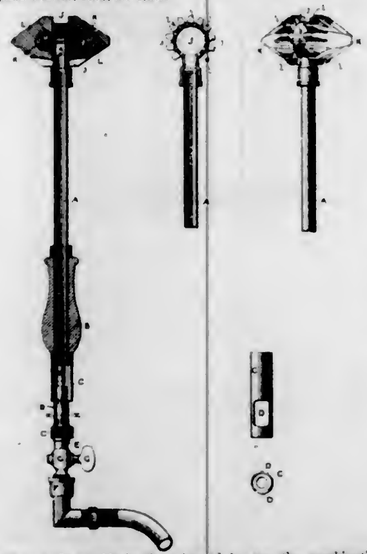
Claim.—1. The combination, with the base having rollers or casters, of the bearing-frame hinged or pivoted at one edge thereto, the lever connected with and adapted to depress said bearing-frame, and a spring whereby said parts are given an upward tension, substantially as set forth.

2. The combination, with the base having an opening and the standard inserted therethrough, of the brake-block, the lever engaged with said block, and the spring whereby to actuate such lever, substantially as set forth.

3. In a camera-stand, a vertically-adjustable standard, a top board supported thereon and provided with a pivoted leaf, a rack-bar, and pawl, in combination with the means for operating the standard, consisting of a strap connected thereto and to the top board, and the guide and drive pulleys around which the strap passes, substantially as and for the purpose set forth.

4. The combination of the base having a vertical opening, the standard inserted therein, the guide and drive pulleys journaled to the base, and the strap having its upper end secured to the upper end of the standard and its lower end disposed around the guide and drive pulleys, and secured to the lower end of the standard, substantially as set forth.

327,896. **SOLDERING-IRON.** George Oulton, Liverpool, County of Lancaster, England. Filed Mar. 16, 1885. (No model.) Patented in England Feb. 20, 1885, No. 2,323.



Claim.—1. In a soldering-iron heated by gas, the combination of a supply-pipe, a hollow handle, a perforated chamber at the upper end thereof, and the bits arranged on opposite sides of said chamber, as and for the purpose set forth.

2. In a soldering-iron heated with a gas-jet, the combination, with the burner, of a copper bit having a number of channels at its broader end which provide greater surface of metal upon or around which the flame may impinge or play.

3. In a soldering apparatus, the combination, with two or more bits, of a chamber between their bases supplied with gas through the handle and having a series of orifices for gas-jets round the bases of the bits, by which means, when a bit is held vertically upward while another is in use, the former will be surrounded by and clothed with the flames of the burning gas.

4. The combination of the burner or connecting-piece J with the two copper bits L, forming a soldering-iron of T shape to be heated by a gas-flame, substantially as described.

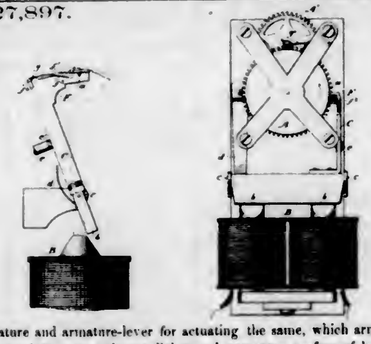
5. In a soldering-iron, the combination, with the pipe or handle A, through which the gases are supplied, of the burner J and the copper bits L, substantially as and for the purposes described.

6. In a soldering-iron heated by gas, the combination of the hollow handle, the bits secured thereto, a supply-pipe, and a connection, substantially such as shown, between the handle and supply-pipe, whereby the iron may be rotated upon the supply-pipe, but not moved longitudinally thereof.

327,897. **SECONDARY ELECTRIC-CLOCK MOVEMENT.** Chester H. Pond, Brooklyn, N. Y. Filed Jan. 14, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with the driving-wheel of an electric clock, of an electro-magnet, its

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armature and armature-lever for actuating the same, which armature is supported from an axis parallel to and presents a surface of less width than the polar extremities of the electro-magnet and moves in an arc of a circle tangent to the line of said poles.

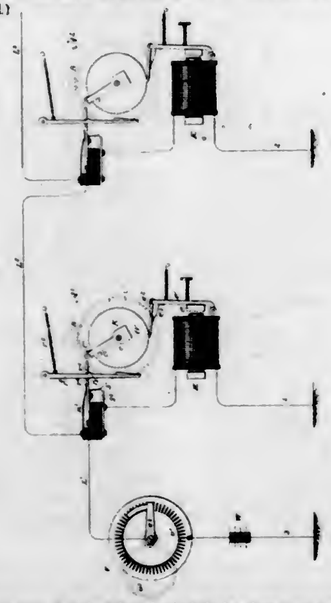
2. The combination, substantially as hereinbefore set forth, with the driving-wheel of a clock-movement, of an electro-magnet, its armature presenting a polar surface of less width than the poles and moving in an arc tangent to the line of the poles of said electro-magnet, and a driving-pawl for said driving-wheel moving in a direction at right angles to the teeth of the same.

3. The combination, substantially as hereinbefore set forth, with the driving-wheel of an electric clock, of an electro-magnet, its armature and armature-lever, and a driving-pawl consisting of an arm actuated by said armature-lever, and having formed therein an opening through which extends an arm whereby a tooth of said wheel is engaged by each movement of the same in a given direction, substantially as described.

4. The combination, substantially as hereinbefore set forth, of an electro-magnet, its armature and armature-lever, the driving-wheel of a clock-movement, and a pawl for engaging the same, which pawl consists of an arm having formed therein an opening, and an arm extending beneath said opening, which, when driven in one direction, advances a tooth of said wheel to and through said opening, and when driven in the opposite direction permits a tooth to pass beneath the spring, substantially as described.

5. The combination, substantially as hereinbefore set forth, of the electro-magnet, its armature-lever, the extension F, having the opening f' and the arm f^2 and the spring g, and the driving-wheel A, organized substantially as described.

327,898. **ELECTRICAL ATTACHMENT FOR WINDING CLOCKS IN SERIES.** Chester H. Pond, Brooklyn, N. Y. Filed Jan. 14, 1885. (No model.)



Claim.—1. A series of mechanical clocks, electro-magnetic devices for winding the same, and a circuit-controlling device applied to each

clock for completing a circuit through said winding devices, one at a time, thereby successively actuating such devices.

2. The combination, substantially as hereinbefore set forth, with a series of clock-movements, of an electro-magnetic device applied to each of said movements, a battery for actuating said electro-magnetic devices, a circuit-controlling device for each clock which respectively serve to interrupt the connections with the succeeding clocks of the series, substantially as described, thereby causing said battery to actuate said electro-magnetic devices successively.

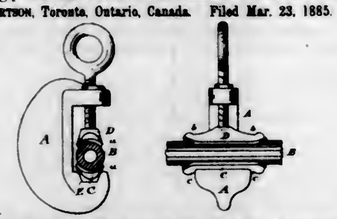
3. The combination, substantially as hereinbefore set forth, with a series of electro-mechanical clocks, of a battery for operating the same, means, substantially such as described, for completing the circuit of said battery through said clocks successively, and means for interrupting the connections through each succeeding clock when the connections of one are completed.

4. The combination, substantially as hereinbefore set forth, of a series of clocks, a battery, electro-magnetic devices applied to each of said clocks for winding the same intermittently, and a circuit-controlling device for each clock for completing a circuit through the corresponding winding device and interrupting the connections with the succeeding clock, thereby actuating said devices successively.

5. The combination, substantially as hereinbefore set forth, with a series of electro-mechanical clocks, of a battery, a main line leading to said clocks and connecting them with said battery in multiple arc, and a circuit-controlling device applied to each clock for interrupting the circuit-connections of all the succeeding clocks in said series by the operation of the preceding clock in said series and for re-establishing said connections.

6. The combination, substantially as hereinbefore set forth, with the battery W and the clock mechanism, of the main-line sections L' and L^2, the circuit-closing arm r^4, the circuit-closing points s' and s^2, the conductor l, means for winding the clock, operated by currents traversing said conductor, and the contact-springs n', organized substantially as described.

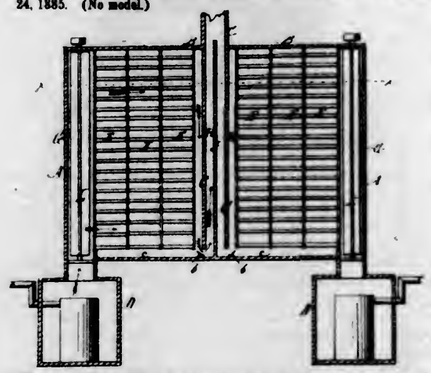
327,899. **DEVICE FOR STOPPING LEAKS IN WATER-PIPES.** W. H. Robertson, Toronto, Ontario, Canada. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a device for stopping leaks in pipes, the combination, with a clamp, A, provided with a screw and formed with a seat, E, of cups C and D, one of said cups fitting in the seat of the clamp, and the other adapted to have the screw bear against it, and both formed with sharp edges a, substantially as described.

2. A device for stopping leaks in pipes, consisting of the two elongated cups C and D, formed with sharp edges on their inner faces to enter a pipe, and having notches b and c on their exterior faces, substantially as and for the purpose described.

327,900. **DRIER.** William H. Rogers, Williamson, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a drier, the combination of a chamber in which the material to be dried is placed, a furnace for supplying the heat to do the drying, a flue-space in the outer side of the chamber, fans or blowers located in this flue-space for driving the heat inward through the material to be dried, a flue-space in the inner side of the chamber for conducting the heat downward, and an exit-flue for receiving the heat and vapor at the bottom and conducting it off, as set forth.

2. In a drier, the combination of two drying-chambers, a central escape-flue common to both, flue-spaces in the outer and inner sides of both chambers, and fans or blowers located in the outer flue-spaces for forcing the air through horizontally to the exit-pipe, as herein shown and described.

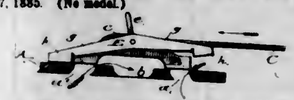
3. In a drier, the combination of two drying-chambers, a central escape-flue common to both and provided with a central partition that extends above the chambers, the flue-spaces in the outer and inner sides of both chambers, fans or blowers located in the outer flue-spaces for forcing the air through horizontally to the exit-pipe, and spaces for the vapors at the bottom of the chambers, as set forth.

327,901. **FOLDING CHAIR.** Robert Shelley, New York, N. Y., assignor of one-half to Owen J. Flynn. Filed May 31, 1884. (No model.)



Claim.—The folding chair described, consisting of the back-standards A, having back A', rod d, and cross-bar a, the legs B, having recesses b and b', the seat C, pivoted to the legs B at c, and having side rails, C', with slots c', the whole combined and adapted to serve as and for the purposes set forth.

327,902. **CUT-OFF VALVE.** Peter O. Solie, Portland, Dak. Filed Mar. 27, 1885. (No model.)

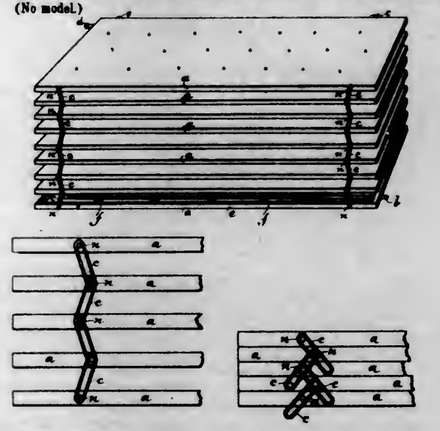


Claim.—1. The combination, with a slide-valve, of a rectangular frame or cut-off device pivoted thereto at or near its center, a pin secured to the cut-off, and suitable stops adapted to rock the cut-off to close the ports, substantially as herein described.

2. A cut-off attachment pivoted to and inclosing a slide-valve and suitable stops for changing the position of the cut-off and thereby close the ports, substantially as herein described.

3. The valve-chest A, provided with a valve-stem, C, a rod, D, and suitable stops, d d', secured thereto, in combination with a slide valve, B, and inclosing cut-off pivoted thereto, and a pin, e, adapted to engage the stops, substantially as and for the purpose described.

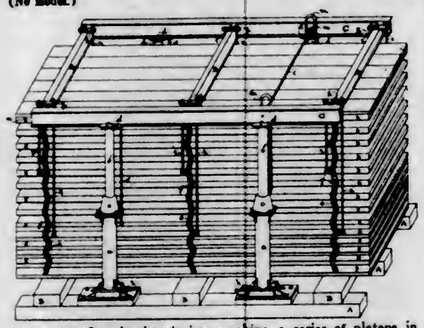
327,903. **LUMBER-DRIER.** Gleason F. Starkweather, Pullman, assignor to Edward G. Shumway, Hyde Park, Ill. Filed Mar. 21, 1885. (No model.)



Claim.—In a lumber-drier, a series of platens in a pile, each platen provided with sustaining-pins n, said pins set zigzag from the top to the

bottom of the said pile, with the links *c* hung obliquely upon the said pins and connecting the said platens to each other, all constructed and adapted to operate substantially as and for the purpose set forth.

327,904. LUMBER-DRIER. Gleason F. Starkweather, Pullman, assignor to Edward G. Shumway, Hyde Park, Ill. Filed June 20, 1885. (No model.)



Claim.—1. In a lumber-drying machine, a series of platens in a pile adapted to have lumber between them, in combination with the outer frame provided with a movable upper frame and with posts *b*, and cylinders *a*, said posts telescopic in said cylinders, substantially as and for the purpose set forth.

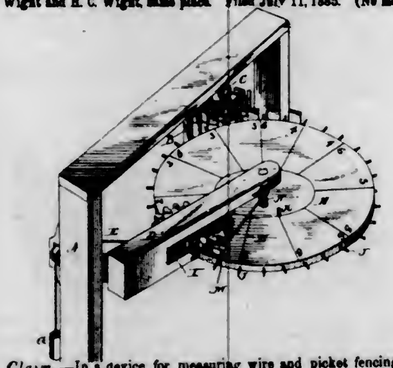
2. In a lumber-drying machine, the rods *s*, provided with the stops *t*, having one end connected to the upper frame, the other end loosely connected to the frame below and adapted to limit the upward going of the upper frame, in combination with the outer frame having a movable upper frame and a series of platens in a pile, substantially as and for the purpose set forth.

3. The rods *r r*, having their bottom ends connected to one of the platens, their top ends provided with a stop, and connected to the upper frame in such a manner as to permit said rod to slide loosely in the said connection, in combination with a series of platens in a pile and an upper frame, substantially as and for the purpose set forth.

4. The upper frame with the posts *b* and cylinders *a*, and with a series of platens in a pile, of the toothed rack *m*, pinion *n*, and shaft *o*, adapted to equalize the movement of said posts and upper frame, substantially as and for the purpose set forth.

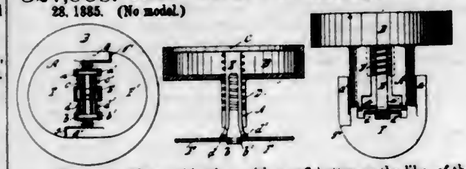
5. In a lumber-drying machine, the combination of a pile of platens adapted to have lumber placed between them, an outer frame provided with an upper frame and with posts *b* telescopic within the cylinders *a*, rods *s*, adapted to limit the movement of said upper frame, and supporting-rods *r r*, all substantially as and for the purpose set forth.

327,905. MEASURING DEVICE AND REGISTER FOR FENCING MATERIAL. John B. Thim, Dayton, Ohio, assignor of one-half to C. Wight and H. C. Wight, same place. Filed July 11, 1885. (No model.)



Claim.—In a device for measuring wire and picket fencing, the combination of an arm having a horizontal slot in its outer portion and pivoted to swing in a horizontal plane, a pulley journaled near the roll to be measured, a cord or chain secured to the arm and passing over the pulley and provided with a weight at its other end, a spur-disk journaled in the outer end of the slot in the arm and having an upwardly-projecting stud upon its upper face, a cogged disk journaled upon the downwardly-facing side of the slot in the arm and engaged by the stud upon the face of the spur-disk, and a hammer having a beveled head engaging the cogs of the disk and secured to the free end of a spring-arm having a coil near its secured end, and secured near the outer end of the side of the slotted arm, as and for the purpose shown and set forth.

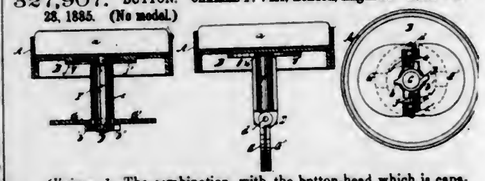
327,906. BUTTON. Charles F. Vett, London, England. Filed Feb. 28, 1885. (No model.)



Claim.—1. The combination; with a cuff-button or the like, of the hinged shoes F F', means for extending or folding these shoes, and the extensions G G', formed on the same, substantially as and for the purpose specified.

2. The combination, substantially as hereinbefore described, with the hollow button-head and a hollow or slotted shank, of a spring-supported disk C, adapted to fit in the hollow button-head and move therein in the direction of the shank, two shoes, F F', hinged to the shank, the extensions G G', formed on said shoes, and a forked rod to which the shoes are pivoted and which connects the same with the spring-supported disk.

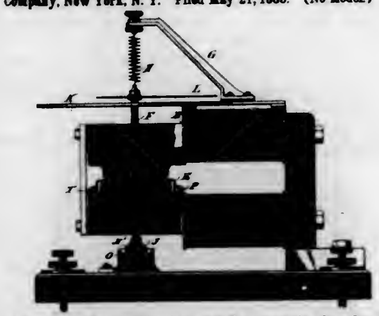
327,907. BUTTON. Charles F. Vett, London, England. Filed Feb 28, 1885. (No model.)



Claim.—1. The combination, with the button-head which is capable of rotary motion and the yielding stops *h h'* and *j j'*, formed in the button-head, of the rod C, secured to the button-head, the independent shank F, surrounding the rod and adapted to be retained by the yielding stops in the button-head, the shoe or shoes hinged to said shank, and means for extending or folding the shoe or shoes, substantially as shown and described.

2. The combination, with the button-head which is capable of rotary motion and the yielding stops *h h'* and *j j''*, formed in the button-head, of the rod C, secured to the button-head, the independent shank F, surrounding the rod and adapted to be retained by the yielding stops in the button-head, the shoe or shoes hinged to said shank, and the cam D, secured to the rod and adapted to act upon the shoe or shoes, substantially as described.

327,908. ELECTRICAL MEASURING-INSTRUMENT. Edward Weston, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed May 21, 1885. (No model.)



Claim.—1. The combination, with the opposed poles of a magnetic system, of a conductor mounted to rotate or move across the lines of magnetic force at substantially right angles thereto, means for opposing the movement of the conductor, and a scale for indicating its change of position or the current units corresponding thereto.

2. The combination, with a practically uniform magnetic field, of a conductor mounted to rotate or move across the lines of force at substantially right angles thereto, means for passing a current through the conductor, a spring connected with the conductor for opposing its movement, and a scale for indicating its change of position or the units of current corresponding thereto.

3. The combination, with the opposing poles of a magnetic system, of a conducting-disk or its equivalent suspended or supported between said poles, so as to rotate or turn about its center, electrical connections for passing a current radially through the disk, a spring for opposing the movement of the disk, and a scale for indicating its change of position or the units of current corresponding thereto.

4. The combination, with the opposing poles of a magnetic system, of a conducting-disk secured to a spindle extending centrally through the poles, a spring-support for the spindle, electrical connections for passing an electric current radially through the disk, and a pointer and scale for indicating the change of position of the disk, as set forth.

5. The combination, with the opposing poles of a magnetic system, one containing an annular groove or recess for holding a fluid-conductor, of a conducting-disk having a flange that extends into the annular groove, the disk being suspended or supported so as to rotate or turn in the magnetic field in a plane cutting the lines of force, a spring or springs for opposing the movement of the disk, and a pointer and scale for indicating its change of position or the units of current corresponding thereto.

6. The combination, with opposing magnetic poles, of a spindle extending centrally through them and carrying at its end a metal cup containing a light substance—such as cork—a mercury-receptacle into which the said cup extends, a torsion spring or springs by which the spindle is suspended or supported, a conducting-disk on the spindle and between the magnetic poles, an annular mercury-chamber in one of the poles, into which the periphery of the disk extends, and a pointer and scale for indicating the change of position of the disk or the units of current corresponding thereto.

7. The combination, with opposed magnetic poles, of a conductor arranged to rotate or turn about a center in a direction at substantially right angles to the lines of force through which it moves, a device for opposing the movement or rotation of the conductor, and a pointer and scale for indicating the change of position of the same or the current-units corresponding thereto.

8. The combination, with the poles of a magnetic system, of a conductor supported in the field produced by the same, an arm secured to one of the poles, a torsional spring connection between the arm and the conductor, and circuit-connections for passing a current from the center to the end or edge of the conductor, or conversely, as set forth.

9. The combination, with opposed magnetic poles, of a conductor arranged to rotate or turn about a center in a direction at substantially right angles to the lines of force through which it moves, a spindle carrying the conductor and passing through the poles, and a support for said spindle, consisting of two torsion-springs secured to a stationary or adjustable head, as set forth.

10. The combination, with the conductor in a magnetic field, of a spindle carrying said conductor, torsion-springs secured to a stationary or adjustable head, and a universal joint between the springs and the spindle, as set forth.

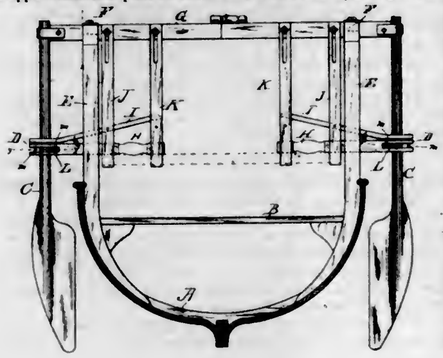
11. The combination, with the cores of a magnetic system and iron pole-pieces bolted to the cores and formed one with a flat end, the other with a circular groove or recess, of a conductor supported or suspended between the poles and a device for opposing its rotation, as and for the purposes specified.

12. The combination, with the opposing poles of a magnetic system, one formed with a flat end, the other with a circular groove or recess in its end and provided with an aperture or tap-hole for drawing off the fluids that may be placed in the said recess, of a flanged disk supported or suspended between the poles and means for opposing its rotation, all as set forth.

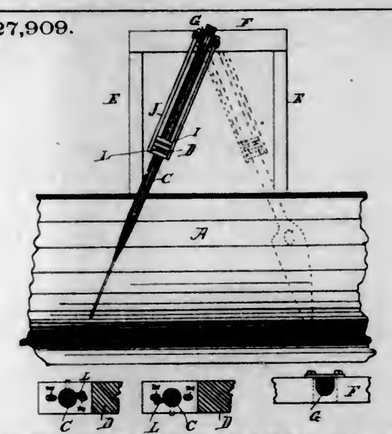
327,909. OAR OR PADDLE FOR PROPELLING BOATS. George Willard, Hyde Park, Ill. Filed Feb. 11, 1885. (No model.)

Claim.—1. In a row-boat, the combination of uprights or supports carrying an upper transverse piece or bar, a lower transverse operating bar or bars swinging therefrom, and oars attached to or connected with the outer ends of such upper and lower transverse bars, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

2. In a row-boat, the combination of uprights or supports carrying an upper transverse piece or bar, a lower transverse operating bar or



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bars swinging therefrom and provided with hand-holds, and oars attached to or connected with the outer ends of such upper and lower transverse bars, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

3. In a row-boat, the combination of uprights or supports carrying an upper transverse piece or bar, hangers depending from such upper bar and suspending a lower transverse operating bar or bars, and oars attached to or connected with the outer ends of such upper and lower transverse bars, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

4. In a row-boat, the combination of uprights or supports carrying an upper transverse piece or bar, hangers attached thereto by loose sleeve-connections and oscillating thereon and suspending a lower transverse operating bar or bars, and oars attached to or connected with the outer ends of the lower transverse bar or bars, and to or with the outer ends of the upper transverse piece or bar by loose sleeve-connections and oscillating thereon, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

5. In a row-boat, the combination of uprights or supports carrying an upper transverse piece or bar, hangers attached thereto by loose sleeve-connections and oscillating thereon and suspending a lower transverse operating bar or bars, and oars attached to or connected with the outer ends of the operating bar or bars, whereby they may be moved forward and backward in the operation of rowing while remaining in the water, substantially as described.

6. In a row-boat, an operating bar or piece provided at its outer end or ends with a vertical oar-lock and a horizontal slot, in combination with an oar-shaft working in such vertical oar-lock, and provided with a horizontal pin or stud working in such horizontal slot, substantially as described.

7. In a row-boat, an operating bar or piece provided with one or more vertical holes inside or outside of the oar-lock, or both, in combination with a lever, I, pivoted to the hanger J, and provided with vertical pin or pins working in such vertical hole or holes, substantially as described.

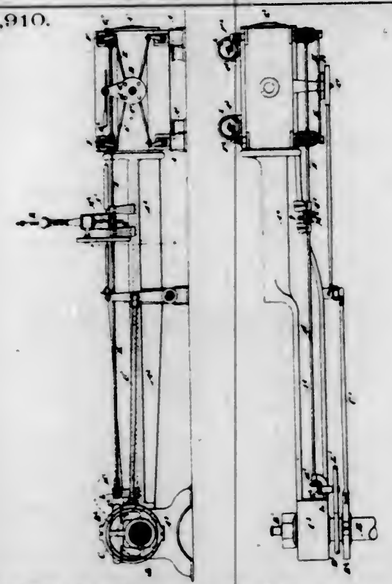
8. In a row-boat, the combination of upright or supporting standards, a transverse operating bar or piece provided with a vertical receptacle or oar-lock, and a horizontal slot and vertical hole or holes in its outer end or ends, a pivoted lever provided with pin or pins at its outer end, which fit in the hole or holes in the operating-bar and pass down through the horizontal slot, and oars whose shafts pass up through the oar-locks or receptacles in the operating-bar and provided with a stud or pin, which rests in the horizontal slot in the outer end of the operating-bar, and which by striking against the vertical pin or pins on the pivoted lever prevents the oar from being turned more than half around until the outer end of the pivoted lever and its vertical pin or pins are raised, substantially as described.

9. In a row-boat, the combination of uprights or standards, upper and lower transverse bars supported by such standards and connected and operating together, and an oar having more of its blade on one side of its longitudinal axis than the other, whereby it will be caused to feather in the water, substantially as described.

327,910. STEAM-ENGINE. Albert A. Wilson, Brooklyn, assignor to himself, and N. F. Palmer, Jr., & Co., New York, N. Y. Filed June 17, 1885. (No model.)

Claim.—1. In combination with a governor, as R, the shafts M and N and the three bevel gear-wheels M' N' P, arranged to set the shaft N forward and backward as the position of the wheel P is tem-

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porarily changed, and with the yoke J, cam W, and connections, as sleeve H and pins H^3, for liberating the main steam-valves, all substantially as herein specified.

2. In combination with a governor, as R, the short sleeve H, having pins H^3, the sleeve G, having perforated flanges G', turned by proper means to give the desired opening motion, and the valve-shaft F, having flange F' and holes *f*, arranged to effect the liberation and closing of the valve by the endwise movement of H at any period, as herein specified.

3. In a steam-engine, a train of mechanism, as $B\ B^2\ C\ C'\ D\ E\ F$, for operating the valves to admit steam to act on the piston, means, as $X\ F^2$, for closing each valve so soon as liberated, independent mechanism, as the flange H' and pins H^3, for engaging each valve with the opening means, so as to allow the disengagement at any period in the stroke, an independent train of mechanism, as $G\ G'\ I\ J\ J'\ W\ N$, for determining such period, and a governor to automatically control such mechanism, all combined and arranged for joint operation substantially as herein specified.

327,911. PRINTING-TELEGRAPH RECEIVER. Aloys Wirsching, Brooklyn, N. Y. Filed Sept. 25, 1884. (No model.)

Claim.—1. The combination of a type-wheel, mechanism for moving and controlling the same, a printing-pad, a printing electro-magnet and intermediate devices, and a positive stop for the latter, whereby said printing electro-magnet, when energized, imparts the motion for the taking of an impression, while the printing itself is effected by the inertia of the pad or intermediate parts, substantially as specified.

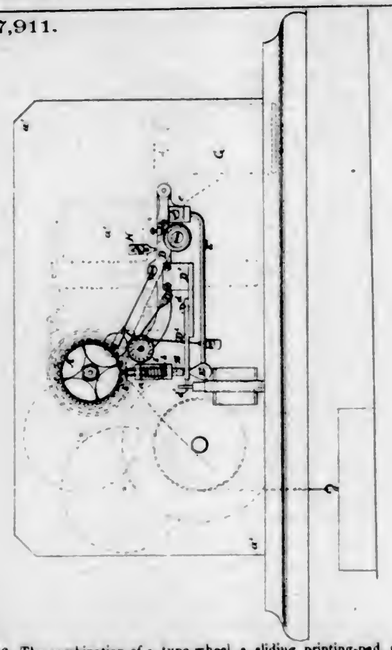
2. The combination, with a type-wheel, mechanism for moving and controlling the same, and a printing-pad, of electro-magnetically-controlled devices and a positive stop for the latter arranged to partially raise said pad and impart to it sufficient momentum to complete its rising movement by inertia, substantially as herein specified.

3. The combination of a type-wheel, mechanism for moving and controlling the same, an electro-magnet or electro-magnets serving to control said mechanism for moving the type-wheel, and a printing-pad with a printing electro-magnet and connecting devices, and a positive stop for the latter, so arranged as to partially raise said pad and impart to it sufficient momentum to complete its rising movement by inertia, substantially as herein specified.

4. The combination of a type-wheel, mechanism for moving and controlling the same, an electro-magnet or electro-magnets serving to control said moving mechanism, and a printing-pad with devices for partially raising said pad and imparting to it sufficient momentum to complete its rising movement by inertia, and with a stop to positively arrest the motion of said raising devices at the required moment, substantially as herein specified.

5. A printing-pad and a device for guiding the same in its rectilinear motions radially relatively to a type-wheel, the whole shaped or arranged to positively prevent any turning motion of said pad, in combination with a type-wheel, devices for operating the latter, and devices for operating the pad, substantially as herein specified.

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6. The combination of a type-wheel, a sliding printing-pad, a device for guiding said pad in its rectilinear motions radially relatively to the type-wheel, and a retractor for said pad with mechanism constructed and arranged to act by contact upon said pad, substantially as described.

7. The combination of two or more type-wheels, a printing-magnet, a printing-lever, and a stop for the latter with a hinged part or tongue carried by said printing-lever and adapted, when the latter is operated, to cause the paper to rise and strike one of the type-wheels (according to the position of said hinged part) by the force of inertia exerted or transmitted through the hinged tongue, substantially as herein specified.

8. The combination of two type-wheels, two printing-pads, a printing electro-magnet, a printing-lever, and a stop for the latter with a hinged tongue carried on said printing-lever and an electro-magnet capable of placing said tongue under either printing-pad, according as said magnet is energized, substantially as specified.

9. The combination, with two type-wheels, two printing-pads, a printing electro-magnet, and a printing-lever, of a hinged tongue carried on said printing-lever, an electro-magnet and devices controlled thereby, whereby said tongue is placed under either printing-pad, according as said magnet is energized, and of a stop for arresting the upward motion of the printing-lever before the paper comes in contact with the type-wheel, the printing being effected by the inertia of parts connected with the printing-lever, substantially as herein specified.

10. The combination, with two type-wheels, two printing-pads, a printing electro-magnet, a printing-lever, and a stop for the latter, of a hinged tongue carried on said printing-lever, devices whereby said tongue may be placed under either printing-pad, and of a hammer acting on the under side of said tongue, all constructed and arranged so that the printing is effected by the inertia of the hammer acquired in the upward movement of the printing lever, substantially as herein specified.

11. The combination, with a type-wheel, of a printing-pad carrying on one or both sides a guide for the paper strip.

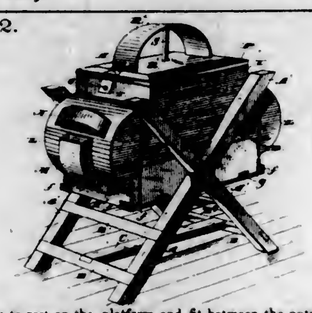
12. The combination, with two type-wheels, of two printing-pads and of guides for the paper strip carried one on the outer side of each pad, substantially as specified.

327,912. CHURN. George C. Witte, Covington, and René D. Murrell, Social Circle, Ga. Filed Apr. 9, 1884. (No model.)

Claim.—1. In combination with the horizontal platform provided at its ends and sides with upwardly-projecting lugs, the swinging supporting-bars supporting the platform as it swings, and the churn adapted at its bottom to fit between the lugs on the ends and sides of the platform, and provided with a socket to receive one of such lugs, substantially as and for the purpose described.

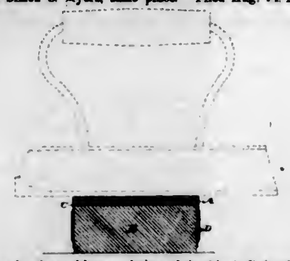
2. In combination with the swinging platform composed of longitudinal and transverse bars turned up at their ends, the churn adapted

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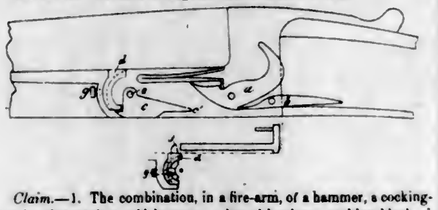
at its bottom to rest on the platform and fit between the upturned ends of the platform-bars, and provided with a socket adapted to receive the upturned end of one of the longitudinal side bars of the platform, substantially as and for the purpose described.

327,913. IRONING-TABLET. Charles Zimmerling, Philadelphia, Pa., assignor to Simon S. Myers, same place. Filed Aug. 14, 1884. (No model.)



Claim.—An ironing-tablet consisting of the block B, having a piece of wax, A, thereon, and a perforate metallic cap, C, secured by a band, D, to said block B, covering said piece, substantially as described.

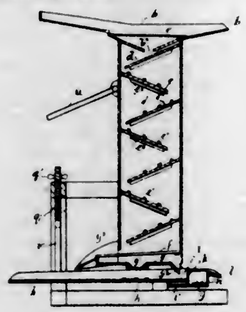
327,914. BREECH-LOADING FIRE-ARM. William Anson, Small Heath, Birmingham, County of Warwick, England. Filed Mar. 10, 1885. (No model.) Patented in England Mar. 3, 1884, No. 4,292.



Claim.—1. The combination, in a fire-arm, of a hammer, a cocking-lift, *c*, bearing against said hammer, a barrel having a cocking-block, *d*, connected therewith and actuating the cocking-lift when the barrel is dropped, an extractor, and an extractor-lift fitted in said cocking-block and held to its place by a screw, *g*, sliding in a slot in the block, substantially as described.

2. The combination, in a fire-arm, of the barrel, a block, *d*, connected with the barrel and having a slot, *h*, an extractor, and an extractor-lift, *f*, fitting in said block and held in place by a screw, *g*, sliding in slot *h* of said block, substantially as described.

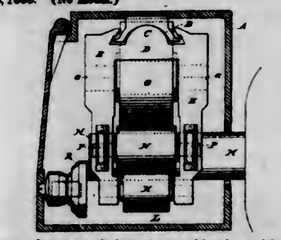
327,915. CONCENTRATOR. George S. Armstrong, Denver, Colo. Filed Mar. 30, 1885. (No model.)



Claim.—1. In a concentrator, the combination of a suitable frame provided with the boxes a^2, with the box A, journal *a*, boxes *a'*, and mechanism for operating said box A, consisting of gear-wheels *r* and *r'*, shaft r^3, crank-wheel *t*, and pitman-rod *u*, substantially as described.

2. In a concentrator, the plates *e*, provided with ribs *e'*, to which are attached the small straight bars e^3, as described, in combination with shelves e^4 and box A, substantially as described and shown, and for the purpose set forth.

327,916. CAR-AXLE BOX. Russell Brewer, Newark, N. J. Filed Apr. 15, 1885. (No model.)

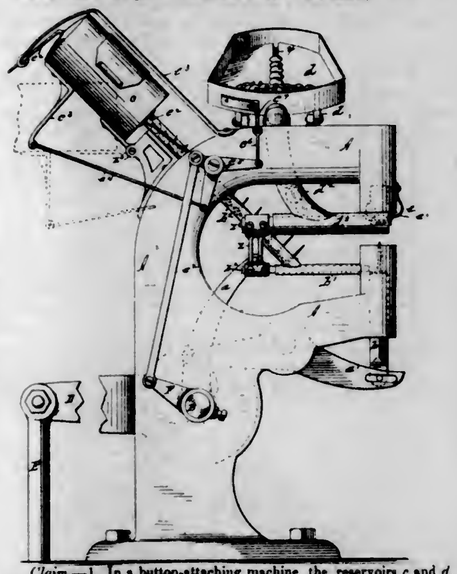


Claim.—1. In a car-axle box, the combination, with the anti-friction roller bearing upon the axle-journal, of an inner bearing-frame supported in place by the axle-journal, and having elongated bearings for the journals of said roller, substantially as specified.

2. In a car-axle box, the inner bearing-frame carrying the anti-friction rollers and having transversely-convex lugs or rockers engaging concave bearings of the box, whereby the bearings are automatically governed by the vibratory movements of the axle-journal, substantially as specified.

3. The combination, with an external box, of the internal roller-frame engaging concave bearings of the box, and having a shifting bearing-roller to engage the axle-journal, which automatically governs the roller-frame, substantially as specified.

327,917. MACHINE FOR ATTACHING BUTTONS. Cornelius J. Brosnan, Springfield, Mass., assignor of two-thirds to W. E. Wright and H. A. Gibbs, same place. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a button-attaching machine, the reservoirs *c* and *d*, each having an oscillating motion in the direction of their length, the agitator *c'*, having a rocking motion within the reservoir *c*, the conduits d^3 and *b'*, the chutes b^3 and d^3, connecting the said reservoirs with said conduits, the plungers $z'\ z^2$, united by the yoke *z*, the plunger *b*, the anvil *e'*, and means, substantially as described, for operating said reservoirs, agitator, and plungers, combined and operating as set forth.

2. In combination with the plunger *b*, anvil *e'*, having the recess *x* therein, the conduits $d^3\ b'$, the stop *e*, the plungers $z'\ z^2$, united by the yoke *z*, button-fastening reservoir, and button-reservoir, substantially as described, and chutes connecting the latter with said conduits, the agitator *c'*, having shaft c^3, and means, substantially as described, for operating said plungers, reservoirs, and agitator, all substantially as set forth.

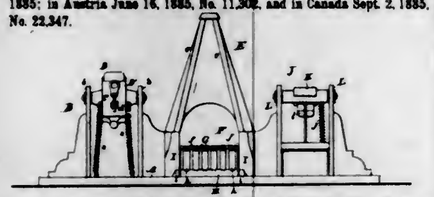
3. The reservoir *c*, the agitator *c'*, the shaft c^3, the chute b^2, and the conduit *b'*, combined and operating substantially as set forth.

4. The reservoir *d*, having the center groove, *x*, and its bottom inclining from the latter downward to the sides of the reservoir, the chute d^2, and conduit d^3, and a plunger working in said conduit, combined and operating substantially as set forth.

5. In combination, the anvil *e'*, having the recess *w* therein, the plunger *b*, lever *a'*, the arm D, and the rock-shaft B, substantially as set forth.

6. The reservoirs *c* and *d*, hinged to frame A, the agitator *c'*, shaft c^3, arm c^5, elbow-lever c^6, rods c^4, c^7, and c^8, arm F, and shaft B, combined and operating substantially as set forth.

327,918. **EXERCISING DEVICE FOR MUSICIANS.** James Brotherhood, Stratford, Ontario, Canada. Filed June 25, 1884. (No model.) Patented in England Mar. 19, 1885, No. 3,856; in Belgium Mar. 19, 1885, No. 68,229; in France Mar. 19, 1885, No. 167,735; in Germany Mar. 20, 1885; in Austria June 16, 1885, No. 11,302, and in Canada Sept. 2, 1885, No. 22,347.



Claim.—1. The part B, provided with the lever C, pivoted to the uprights *b b*, acted upon at one end by the adjustable springs, and having the pad D projecting upwardly from its opposite end, substantially as and for the purpose described.

2. The combination of the spring-actuated pivotally-supported lever C, and the finger-loop adjustably secured thereto, substantially as and for the purpose described.

3. The part E, provided with the converging ribs formed of or faced with leather or specified equivalent material, substantially as and for the purpose described.

4. The part F, provided with the series of spring-levers resting upon the adjustable posts, substantially as and for the purpose described.

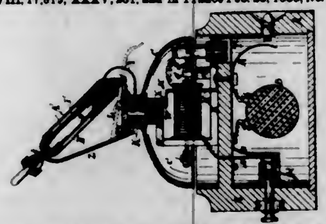
5. The combination of the spring-levers, the base G, with which they are connected at one end, the rest H, and the base A, with which the base G is adjustably connected, substantially as and for the purpose described.

6. The part J, provided with the pivotally-supported lever K, acted upon at one end by the spring or springs, or in the equivalent way described, (by the adjustable weight,) and having the downwardly-projecting pad at its opposite end, substantially as and for the purpose described.

7. The combination of the lever K, the posts to which it is pivoted, the spring or specified equivalent thereof, the pad *l* on the under side of the lever, and the arm-support beneath the lever, substantially as and for the purpose described.

8. The combination of the part B, consisting, primarily, of the uprights, the pivoted lever, and adjusting spring, the part E, consisting of the converging ribs, the part F, consisting of the pivoted finger-levers, and means, as set forth, for adjusting them, and the part J, consisting of the pivoted lever, the spring or weight, and the downwardly-projecting pad, all arranged upon a common base, A, as set forth.

327,919. **WATCH-STAND ALARM.** Jacob Burmann, Bienne, Switzerland. Filed May 14, 1885. (No model.) Patented in Italy Feb. 18, 1885, XVIII, 17,619, XXXV, 281, and in France Feb. 25, 1885, No. 165,089.



Claim.—1. A watch-stand having devices, substantially as described, for holding removably an ordinary pocket-watch, and containing an electric alarm electrically connected to the watch-holding devices, and an electric closing-circuit, substantially as and for the purpose set forth.

2. The combination, with a watch-stand, of an electric bell on the same, arms for holding the watch connected with the alarm mechanism, and of a spring connected with the alarm mechanism, and which can be brought in contact with the bezel of the watch, substantially as herein shown and described.

3. The combination, with a watch-stand for holding an ordinary pocket-watch, of an electric bell, arms for holding the said watch removably and connecting electrically with the bell mechanism, and with an electric circuit-closing device for sounding the bell when desired, substantially as herein shown and described.

4. The combination, with a watch-stand containing an electric bell, of arms for holding the watch, which arms are in electrical contact with the bell mechanism, a spring which can rest against the bezel of the watch, and of an adjustable contact-piece on the bezel, substantially as herein shown and described.

5. The combination, with a watch-stand for holding a pocket-watch removably, of an electric-bell mechanism connected with the watch-holding arms of said stand, and of a switch for breaking the circuit, substantially as herein shown and described, and for the purpose of putting the bell mechanism out of operation.

6. A watch having its bezel insulated from the case, and an adjustable hand on said bezel, substantially as herein shown and described.

327,920. **TOBACCO-PIPE.** William R. Chadsey, St. Louis, Mo. Filed Feb. 3, 1885. (No model.)

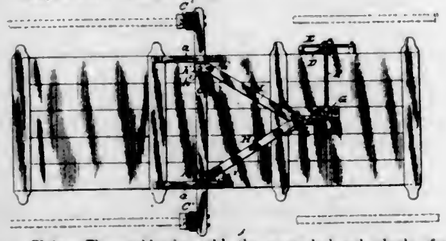


Claim.—1. In a tobacco-pipe, the outer bowl or shell, the inner bowl or lining, the drip-cup, and the socket D, secured to the outer shell by an encircling band, the socket being provided with a depending conductor, *a*, for carrying the drippings from the mouth to the drip-cup, the said depending portion being provided with an open top for the passage of smoke.

2. As a means of forming a rigid socket for retaining the stem in position, the socket D, placed within an indentation in the shell, and the band passing around the said bowl and binding the socket thereto.

3. In a tobacco-pipe, the bowl or shell A, provided with the socket D, having the inner depending open portion, and the band E, extending around the bowl and binding the socket in place, substantially as described.

327,921. **WAGON-BRAKE.** Martin Conrad, Chicago, Ill. Filed Aug. 13, 1885. (No model.)



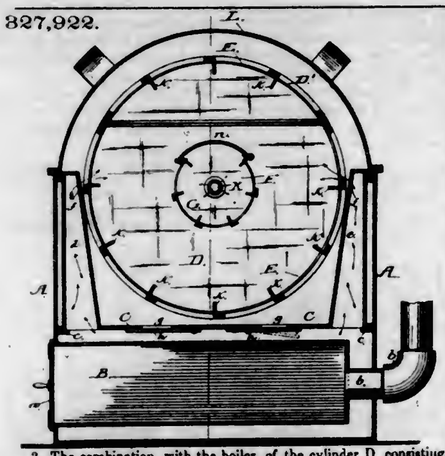
Claim.—The combination, with the wagon-bed and wheels, of a transverse shaft, F, provided with a crank, *f*, and supported from and beneath the bed, a brake-beam, C, also supported from and beneath the bed, two divergent or bracing bars, H, pivoted at their joined ends to the crank *f*, and flexibly connected at their rear ends with the brake-beam, a suitable hand-lever attached to the outer end of the crank-shaft F, and provided with a pawl, and a suitable rack attached to the side of the bed for engagement with the pawl of the hand-lever, all arranged and operating substantially as and for the purposes set forth.

327,922. **WASHING-MACHINE.** James C. Crum, Ladiesburg, Md. Filed Mar. 10, 1885. (No model.)

Claim.—1. The combination of a boiler provided with a fire-box extending nearly its entire length and a water-chamber entirely surrounding the fire-box, a false bottom having fountain-tubes on three of its sides and communicating with the water-chamber, a receptacle having an interior and exterior cylinder of different diameters, and a perforated pipe located within the inner cylinder, and through which steam is admitted to the clothes, substantially as herein described.

2. The combination of a boiler provided with a ledge, *c*, false bottom supported upon the ledge, fountain-tubes *d*, *d'*, and *e*, projecting from said bottom and in communication with a water-chamber, suitable valves attached to the bottom, a horizontally-revolving cylinder composed, essentially, of wire rings or bands and closed ends, a hollow sleeve, G, projecting from one of the end disks, and a bracket, H, secured to the tube *d'* and supporting one end of the cylinder, substantially as herein described.

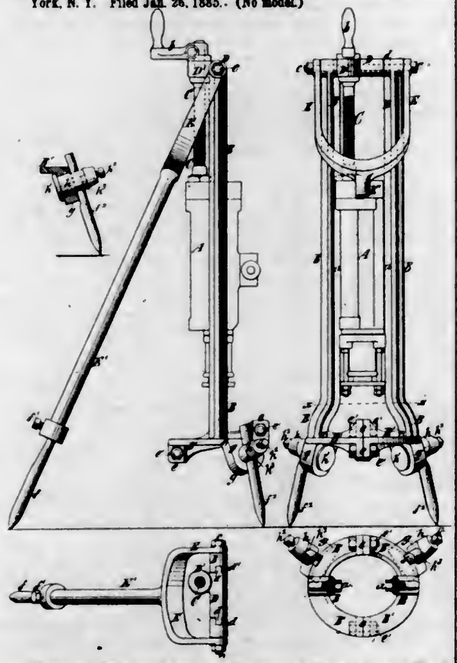
327,922.



3. The combination, with the boiler, of the cylinder D, consisting, essentially, of the end disks, *i i*, provided with bearings, the perforated ribs or projections K, the transverse wire bands E, an interior cylinder, F, having a diameter smaller than the outer cylinder and provided with ribs and bands, and a door, *n*, substantially as and for the purpose set forth.

4. A washing-machine comprising the combination of a boiler, a fire-box, a water-chamber entirely surrounding the fire-box, a fountain-tube, *d'*, provided with a short pipe, *m*, a bracket, H, supporting one end of the cylinder, a steam-pipe, K, within the cylinder, screwed into the pipe *m*, which discharges steam and water upon the clothes through the sides of the inner cylinder, and a false bottom provided with fountain-tubes *d* and *e*, discharging steam and water upon the clothes through the sides of the outer cylinder and at right angles to the discharge-pipe, all constructed and arranged to operate as herein set forth.

327,923. **ROCK-DRILL TRIPOD.** George R. Cullingworth, New York, N. Y. Filed Jan. 26, 1885. (No model.)



Claim.—1. The combination, with the cylinder of a rock-drill, of two parallel bars forming guides for the cylinder and connected at their lower ends by a brace composed of two sections cast one with each bar and bolted together, feet upon said brace, and a back leg and foot, substantially as herein described.

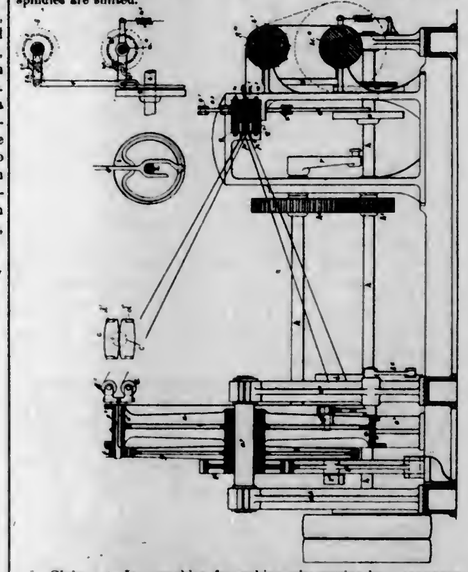
2. The combination, with the bars B B, and the annular sectional brace connecting their lower ends and formed of sections cast with the bars and bolted together, of feet f^2 on said brace, and a back leg and foot, substantially as herein described.

3. The combination, with the parallel bars B, and the sectional brace B', formed part with each bar and bolted together, of the cross-brace or sleeve D, interposed between the upper ends of the bars and comprising a bearing for a feed-screw, a back leg forked at the upper end to embrace said bars, and the bolt *c*, passing through the fork, the bars, and the interposed sleeve or brace, substantially as herein described.

4. The combination, with a rock-drill frame having a lug or ear, *g*, of a post, *h*, having at the back end a head, *h'*, bearing against the inner side of the lug or ear, and also having a transverse slot, h^2, through which a foot, f^2, is inserted in front of the lug or ear, and a set-screw, h^3, screwed into the outer end of the slotted post and bearing against the foot f^2, substantially as herein described, whereby the tightening of the screw h^3 will draw the head *h'* tightly against the back of the lug or ear and force the foot f^2 tightly against the front of said lug or ear.

327,924. **WIRE-NETTING MACHINE.** William F. Dehner, London, England. Filed Apr. 6, 1885. (No model.) Patented in England Oct. 15, 1884, No. 13,625.

Brief.—The wheel carrying the bobbins is oscillated so that the bobbins are shifted at the same time that the corresponding twisting-spindles are shifted.



Claim.—1. In a machine for making wire-netting by a continuous process from reel-carried wires, the combination, with mechanism for automatically changing or shifting the individual wires and twisting the several pairs of wires together, of automatically-acting mechanism for imparting corresponding movements to the reels carrying said wires, these being mounted in the outer periphery of a disk and the inner periphery of a circumscribing-ring, substantially as set forth.

2. In an automatic machine for making wire-netting in which two adjacent wires are alternately twisted with each other and with their laterally-contiguous wires, the combination, with the disk provided with half-round bearings in its periphery, carrying one set of semi-cylindrical or half spindles, of the ring closely circumscribing said disk, and provided on its inner face with half-round bearings carrying the other set of semi-cylindrical or half spindles, said spindles being provided with reels or bobbins, and mechanism for imparting to-and-fro lateral movements to one of the said sets of spindle-bearings, substantially as and for the purposes set forth.

3. In a machine for making wire-netting, the means, substantially as described, for effecting the intermittent rotation of the several pairs of bobbin-spindles or twisting-spindles in opposite direction from a continuously-rotating shaft, such means comprising a rotating shaft, a crank mounted thereon, a slotted connecting-rod engaging with the pin of the said crank, and toothed gears connecting the said rod with the spindles, all arranged to operate substantially as set forth.

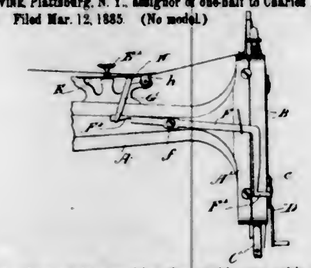
4. In a machine for making wire-netting from reel-carried wires, and wherein the part bearing one series of bobbin-spindles has imparted to it an intermittent movement, the mechanism, substantially as described, for imparting said movement, the same comprising the face-cam with a

double-loop groove, the crescent-shaped sliding piece working in said groove, the connecting-rod carrying said sliding piece and actuated thereby, and means for connecting said rod with the part which bears the series of bobbin-spindles, all arranged to operate substantially as set forth.

5. In a machine for making wire-netting from reel-carried wires, the mechanism, substantially as described, for imparting intermittent lateral movements in each direction alternately to the parts carrying the twisting-spindles, the same comprising the face-cam with a double-loop groove, the crescent-shaped sliding piece working in said groove, the bar carrying said sliding piece and actuated thereby, and means for connecting said bars with the parts carrying the twisting-spindles, all arranged to operate substantially as described.

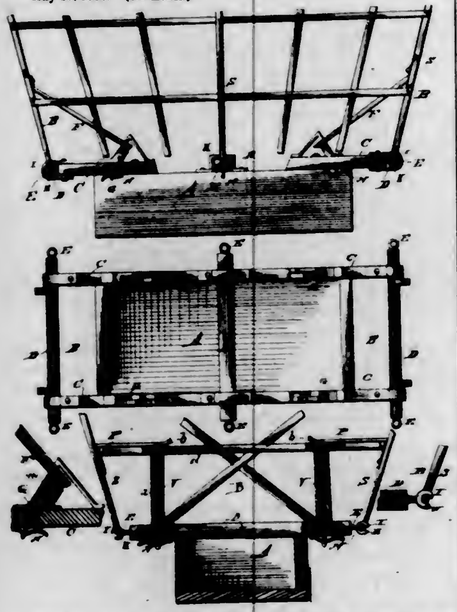
6. In a wire-netting machine, the means, substantially as described, for operating the feed-roller with a positive motion and the gathering-drum with a permissive motion, such means consisting of the cam *t* and reciprocating bar *t'*, the latter actuating the feed-roller *s* by means of a ratchet and pawl, t^3 t^4, and permitting a spring or weight, u^2, to actuate the gathering-drum *u* by means of a ratchet and pawl, u^3 u^4, the connection between the bar *t'* and the lever *u'* being slotted, substantially as set forth.

327,925. **THREAD-RELEASER FOR SEWING-MACHINES.** Charles E. Devine, Plattsburg, N. Y., assignor of one-half to Charles Paxton, same place. Filed Mar. 12, 1885. (No model.)



Claim.—In a sewing-machine, the combination, with the presser-bar lifter, of a pivoted bell-crank lever with turned-up end, connected with the lower plate of the tension device, and operated directly by the presser-bar lifter to loosen the tension simultaneously with the raising of the presser-bar, substantially as described.

327,926. **HAY-RACK.** Ellwood F. Dudley, Philadelphia, Pa. Filed May 20, 1885. (No model.)



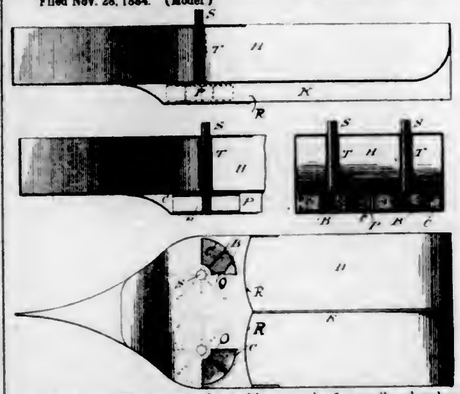
Claim.—1. In a hay-loading rack for wagons, the outwardly and downwardly swinging sides having the upper portions connected in front and rear by detachable fastenings having downwardly-extending connections for unfastening, substantially as specified.

2. A hay-loading rack for wagons, having outwardly and downwardly swinging detachable sides provided with fastenings for their upper portions, and having disengaging devices below and connected there, substantially as specified.

3. In a hay-loading rack, the combination, with the front and rear frames and the middle transverse bar, of the outwardly and downwardly swinging sides having bolt-connections, provided with operating-levers or pull devices below, substantially as specified.

4. A hay-rack consisting of hinged or pivoted frames connected at their upper portions by fastening devices, to serve in combination with a wagon-body, substantially as specified.

327,927. **PROPULSION OF VESSELS.** Thomas Dunlap, Toledo, Ohio. Filed Nov. 28, 1884. (Model.)

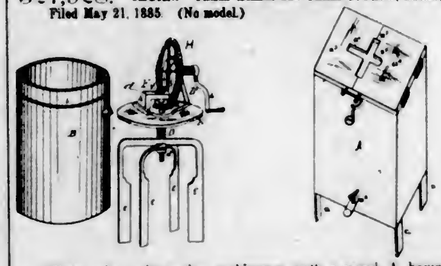


Claim.—1. The combination, with a vessel, of propeller-chambers C C, provided with propellers B B, said chambers being arranged under the bow of the vessel on either side of and of equal height with the keel, and having open ends R R, and openings O O in their bottoms, substantially as described.

2. The horizontal propellers B B, each having a solid disk for its face and radial blades secured thereto, in combination with the chambers C C, which are closed on all sides except at their rear ends, R R, and at the bottom openings, O O, substantially as described.

3. The arrangement and combination of the propeller-chambers C C, with their inclosed propellers B B, on opposite sides of the keel K under the bow of a vessel, substantially as described.

327,928. **CHURN.** James Eckles and James P. Frow, Butler, Mo. Filed May 21, 1885. (No model.)



Claim.—In a churn, the combination, with a vessel, A, having a cover, a^2 a^4, with notches a^5 a^6 a^7, of a vessel, B, having shoulders *b*, holes *b'*, catches I, cover E, support F, drive-wheel H, having a winch, *h'*, shaft D, pinion G, and paddles C, all arranged and constructed to operate substantially as and for the purpose set forth.

327,929. **FIRE-EXTINGUISHING COMPOUND.** George W. Eddison, New York, N. Y. Filed Jan. 6, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used for exterminating fires, consisting of vinegar, oil of vitriol, sulphate of copper, chloride of zinc, sulphate of ammonium, chloride of potassium, alum, and phosphorus, in the proportions specified.

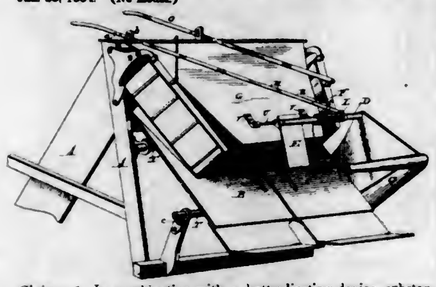
327,930. **VEHICLE-SHAFT SUPPORT.** Dewitt Ellsworth and Morris Rogers, Riverdale, Mich. Filed June 15, 1885. (No model.)



Claim.—1. A shaft-holder consisting of plates on the axle, which plates have rounded beads and spring-strips on the shafts, which strips have rounded beads, substantially as herein shown and described.

2. In a shaft-holder, the combination, with an axle, of the clips D, having the projections C, the clip-bars F, having the ends bent up and provided with rounded beads G, and the stripe H, secured on the shafts and having rounded beads J, substantially as herein shown and described.

327,931. **GRAIN-BINDING MACHINE.** George Esterly, Whitewater, Wis., assignor of one-fourth to George W. Esterly, same place. Filed Jan. 25, 1884. (No model.)



Claim.—1. In combination with a butt-adjusting device, substantially as described, to effect the longitudinal movement of the grain, a detaining-finger located below or beyond the adjuster and adjustable in the direction of the length of the grain, substantially as described and shown.

2. In combination with the grain-supporting surface, the endless butt-adjusting apron F and the elastic detaining-finger K, adjustable in the direction of the length of the grain, as described and shown.

3. In combination with the adjuster-apron, the grain-detaining finger K, located below or beyond said apron, and the manual-operating device extending thence to a point adjacent to the driver's seat, whereby the driver is enabled to determine the position of the finger at will.

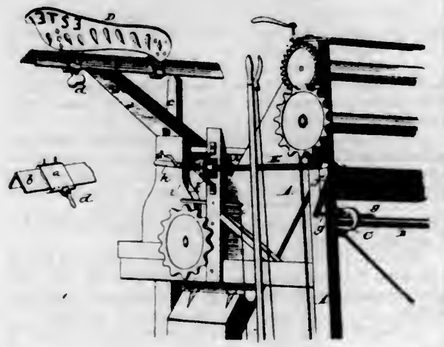
4. In combination with a movable butt-adjusting mechanism, substantially as described, a detaining-finger located below or beyond said mechanism, and a connection, substantially as described, whereby the adjusting device and the finger are caused to move forward and backward in unison.

5. In a grain-binding machine, the combination of the needle-arm and the two circulatory packers located on opposite sides of the needle, the packer which acts next to the butts of the grain being located at a greater distance from the needle than the other.

6. In a grain-binding machine, the combination of the two circulatory alternately-acting packers and an intermediate needle or binder arm arranged to vibrate in a plane nearer the packer which acts upon the heads than the packer which acts upon the butts, whereby the cord is laid in such a position with respect to the packers as to prevent the grain from being thrown out of position thereby.

7. In combination with the harvester-frame and the binder movable forward and backward thereon, the decking G, secured rigidly at its upper edge to the harvester-frame, the plates V, secured to the lower edge of the decking, and the rod U, seated in said plates and extended through a projection on the binder, as described and shown.

327,932. **ADJUSTABLE SEAT FOR GRAIN HARVESTING AND BINDING MACHINES.** George Esterly, Whitewater, Wis., assignor of one-fourth to George W. Esterly, same place. Filed Mar. 1, 1884. (No model.)

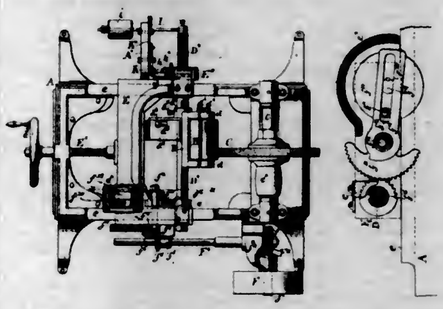


Claim.—The seat provided with the bearing-plate, in combination with the inverted-V-shaped bar, and the clamping device *d*, adapted to be operated by the rider while in his seat.

327,933. **LOTION.** Christian H. Eyermann, St. Louis, Mo., assignor of two-thirds to Hermann C. G. Layties and John H. Zwarts, both of same place. Filed July 27, 1885. (No specimens.)

Claim.—The medical compound of decoction of calendula, glycerine, and burnt alum with the addition of boracic acid and borax, substantially as and for the purpose set forth.

327,934. **GRINDING-MACHINE.** William Frech, Chicago, Ill., assignor to the A. French Spring Company, (Limited,) Pittsburg, Pa. Filed Dec. 17, 1884. (No model.)



Claim.—1. The combination, with a rotary grinding-tool supported in stationary bearings, of an oscillatory work-holder having a reciprocatory movement in the direction of its axis of oscillation, substantially as and for the purpose set forth.

2. The combination, with a suitable frame, of a grinding-tool, an oscillating work-holder having a reciprocatory movement in the direction of its axis of oscillation, and a sliding carriage supporting said work-holder and having adjustable connection with the frame, substantially as and for the purpose set forth.

3. The combination, with a suitable frame, of a grinding-tool, a work-holder, a longitudinally-movable rock-shaft supporting said work-holder, and having an oscillatory movement, and also a longitudinal reciprocating movement, substantially as for the purpose set forth.

4. The combination, with a machine-frame and a work-holder, of a horizontally-movable rock-shaft supporting said work-holder, provided with a screw-thread in a portion of its length, a nut engaged with the screw-threaded portion of the shaft, a stop constructed to hold the nut from movement longitudinally of the shaft, and a pawl and ratchet or equivalent device applied to hold the nut from rotation with the shaft when the shaft is turned in one direction, whereby the said shaft is moved longitudinally when oscillated, substantially as and for the purpose set forth.

5. The combination, with the machine-frame, of a horizontally-movable rock-shaft having a screw-threaded portion, a nut provided with right-hand and left-hand ratchets, stops for holding the nut from movement horizontally of the shaft, pawls to engage said ratchets, and a movable support for the said pawls, substantially as and for the purpose set forth.

6. The combination, with the machine-frame, of a longitudinally-movable rock-shaft having a screw-threaded portion, a nut provided with right-hand and left-hand ratchets, stops for holding said nut from end movement with the shaft, pawls engaging with said ratchets, and a movable support for said pawls, actuated by the longitudinal movement of the shaft, substantially as and for the purpose set forth.

7. The combination, with the longitudinally-movable rock-shaft having a screw-threaded portion, of a nut provided with right-hand and left-hand ratchets, stops constructed to hold said nut from end movement with the shaft, pawls engaged with the said ratchets, a movable support, *h*, for said pawls, and an arm upon the said rock-shaft constructed to engage and move the said support *h*, so as to change the direction of longitudinal motion of the shaft, substantially as and for the purpose set forth.

8. The combination, with the longitudinally-movable rock-shaft having a threaded portion, of a nut provided with right-hand and left-hand ratchets, stops to hold the nut from movement longitudinally of the shaft, pawls engaged with the ratchets, a movable pawl-support, *h*, a series of connected levers united with the pawl-support, and an arm upon the said shaft constructed to actuate the levers, so as to move the pawl-support at a desired point in the movement of the said arm in a direction away from the said support, substantially as and for the purpose set forth.

9. The combination, with the longitudinally-movable rock-shaft provided with a threaded portion and having an arm, I, of a nut pro-

vided with right-hand and left-hand ratchets, stops constructed to hold said nut from movement longitudinally of the shaft, pawls constructed to engage said ratchets, a movable pawl-support, A, provided with a stud, A^3, and levers K and K', one of which is connected with the pawl-support, substantially as and for the purpose set forth.

10. The rocking and longitudinally-movable shaft D', supporting the work-holder and screw-threaded at one end, in combination with the nut G, provided with right-hand and left-hand ratchets, pawls adapted for engagement with the ratchets, a pivoted pawl-holder, A, supporting the said pawls, and a spring-actuated stop engaged with the pawl-holder and constructed to hold the pawls in position for engagement with the ratchets, substantially as described.

11. The combination, with a grinding-tool, of a longitudinally-movable rock-shaft, D', and the work-holder D, mounted upon the shaft and adjustable longitudinally of the latter, substantially as described.

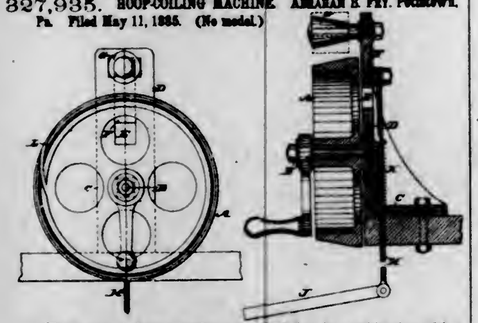
12. The combination, with a grinding-tool, of a longitudinally-movable rock-shaft, D', and a work-holder supported upon the rock-shaft and adjustable bodily toward and from the said shaft, substantially as and for the purpose set forth.

13. The combination, with a grinding-tool, of a longitudinally-movable rock-shaft, D', a work-holder, D, and a block, d^3, secured to the shaft and having sliding connection with the work-holder, substantially as and for the purpose set forth.

14. The combination, with the longitudinally-movable rock-shaft D' and the work-holder D, of the block d^3, constructed to slide longitudinally, but not to rotate upon the shaft, and having sliding connection with the work-holder, and set-screws or equivalent devices for adjustably securing the said block upon the shaft and the work-holder upon the block, substantially as described.

15. The combination, with the machine-frame, of the work-holder, the longitudinally-reciprocating rock-shaft D', supporting said holder, a gear-wheel, f^{12}, connected with the shaft by a spline engaged with a corresponding groove in the shaft, a lever provided upon one end with a segmental gear engaging said wheel f^{12} and with a slot, f^{13}, in its opposite end, and a revolving crank-disk, f^{10}, provided with a pin engaged with said slot, substantially as and for the purpose set forth.

327,935. HOOP-COILING MACHINE. Abraham B. Fry, Pottstown, Pa. Filed May 11, 1885. (No model.)



Claim.—1. A frame having a vertical slot, in combination with a rotary drum mounted on said frame, a rising and falling head fitted in said slot, a roller mounted on said head, and a treadle connected with said head substantially as and for the purpose set forth.

2. A frame having a vertical slot, a rotary drum mounted on said frame, a rising and falling head fitted in said slot, a roller connected with said head, and a rod, spring, and treadle for operating said head, combined and operating substantially as and for the purpose set forth.

3. A frame having a vertical slot, a rotary drum mounted on said frame, a rising and falling head fitted in said slot, and a roller mounted on said head, the drum being hollow and having a throat in its peripheral rim, substantially as and for the purpose set forth.

4. A frame having a vertical slot, in combination with a rotary drum mounted on said frame, a rising and falling head fitted in said slot, a roller mounted on said head, and an operating-treadle connected with said head, the drum being hollow and having a throat in its peripheral rim, substantially as and for the purpose set forth.

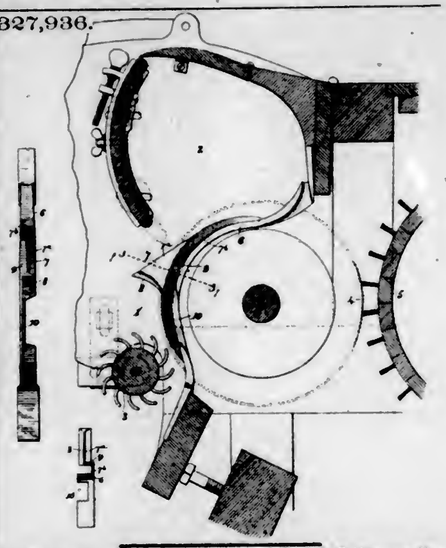
327,936. COTTON-GIN. Ferdinand C. Gammon, Bridgewater, Mass., assignor to the Eagle Cotton Gin Company, same place. Filed May 11, 1885. (No model.)

Claim.—1. In a cotton-gin, a rib having a flange formed in different pieces, joined by an offset or shoulder, substantially as set forth.

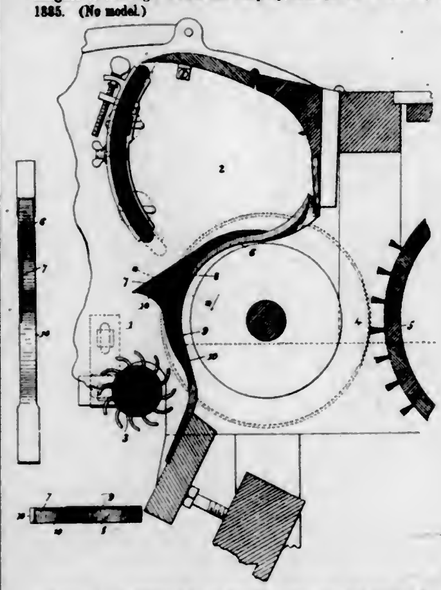
2. A rib for a saw-gin, having a flange or projection grooved, substantially as shown, and a cut-away portion below such flange, substantially as and for the purpose set forth.

3. In a cotton-gin, the rib 6, having cut-away portion 10 below the ginning-face, and the flange 7, having the lateral projection 8, substantially as set forth.

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327,937. COTTON-GIN. Ferdinand C. Gammon, Bridgewater, Mass., assignor to the Eagle Cotton Gin Company, same place. Filed May 26, 1885. (No model.)



Claim.—1. A cotton-gin rib having a cut-away portion, as shown, and a shield or guard overhanging said cut-away portion, substantially as and for the purpose set forth.

2. A rib for a huller-gin, having a flange projecting therefrom, a cut-away portion, as described, and a lateral projection from said flange overhanging said cut-away portion and extending below it, substantially as and for the purpose set forth.

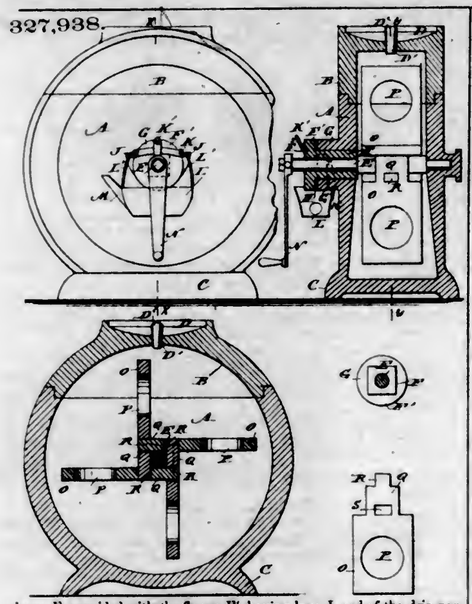
3. A rib for a huller-gin, having a cut-away portion, a flange projecting from said rib at the side of said cut-away portion, and a lateral projection from said flange overhanging said cut-away portion, and joined at its lower extremity to the rib, substantially as set forth.

327,938. CHURN. Abraham C. Gamber, Syracuse, Ohio. Filed Apr. 29, 1885. (No model.)

Claim.—1. The combination, with the box A, having the neck G, of the sleeve F, having the flange F', provided with the lugs J, the packing H, and the elastic band K, substantially as herein shown and described.

2. The combination, with the box A, having the neck G, of the

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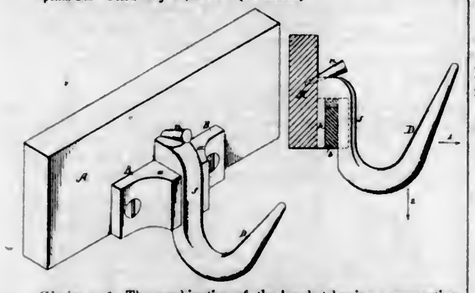


sleeve F, provided with the flange F', having lugs J, and of the drip-pan L, having bails L', substantially as herein shown and described.

3. The combination, with the box A, and the shaft E, having a squared end, of the wings, blades, or paddles O, having tongues Q, tenons R, and mortises or apertures S, the tenon R of one blade or wing being passed into the aperture or mortise S of another wing, substantially as herein shown and described.

4. The combination, with the cream-box having a neck, G, notched on its under side, of the sleeve F, within said neck and provided with a notched flange, F', and an elastic band engaging said notches to hold the sleeve in place, substantially as set forth.

327,939. DETACHABLE SUSPENSION-HOOK. Samuel R. Garrison, Camden, N. J., assignor of one-half to Randolph E. Bender, Philadelphia, Pa. Filed May 25, 1885. (No model.)



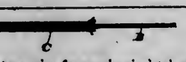
Claim.—1. The combination of the bracket having a connecting bridge-piece, and side wings forming shoulders *m* in front and rear of the same, with a hook the shank of which is recessed to fit said bridge-piece, so as to form front and rear fingers confined laterally by the shoulders of the bracket, as set forth.

2. The combination of a bracket having side wings and a connecting bridge-piece the top of which is below the top of the bracket, whereby said side wings form shoulders above as well as in front and rear of the bridge-piece, with a hook the shank of which is recessed to fit the bridge-piece, and is retained laterally by said shoulders, as set forth.

3. The combination of the bracket having opposite side wings and a connecting bridge-piece, with the hook the shank of which is recessed to fit said bridge-piece, the rear finger, A, of the shank extending to the bottom of the bracket, as specified.

4. The bracket B, having opposite wings *a* and a connecting bridge-piece, *b*, said wings forming lateral retaining-shoulders *m* in front and rear of the bridge-piece, as set forth.

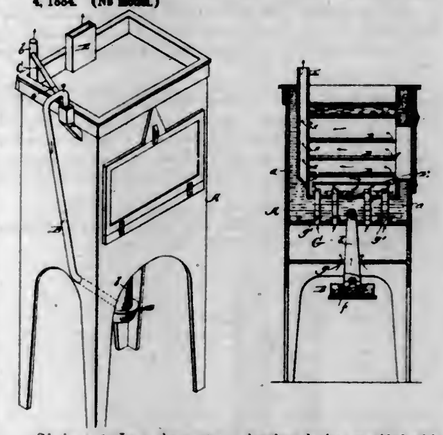
327,940. LINE-WIRE FOR MECHANICAL TELEPHONES. James F. Gilliland, Indianapolis, Ind., assignor to John B. Bennett, same place. Filed Nov. 4, 1882. (No model.)



Claim.—1. A line-wire for mechanical telephones, composed of the ordinary wire covered or wrapped with non-resonant material, whereby the effect of the vibration of said wire and of the wind or atmosphere is counteracted, substantially as set forth.

2. In combination with mechanical telephones, the ordinary line-wire, B, and the non-resonant or muffling covering C, substantially as shown and described, and for the purposes specified.

327,941. Thermostat. George L. Gray, Chicago, Ill. Filed Dec. 4, 1884. (No model.)

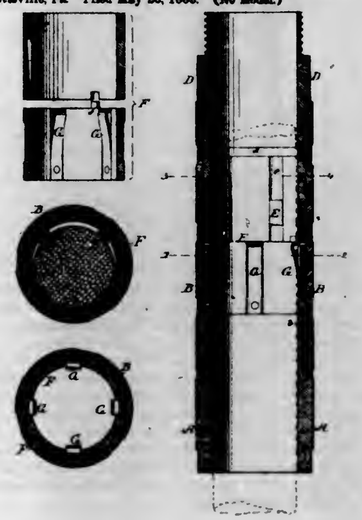


Claim.—1. In a thermostat, a heating device provided with a smoke-escape pipe, and an air-supply pipe, which is closed at a given temperature, in combination with a pipe connecting the escape with the supply, whereby the heated air is drawn into the flame again when the supply is wholly or partially closed, substantially as and for the purpose set forth.

2. In a thermostat, a heating device provided with a smoke-escape and an air-supply, the latter of which is closed at a given temperature; in combination with a connecting-pipe between the supply and escape, formed with a small opening, which, when the main supply is closed, supplies air enough to prevent the lamp from going out, substantially as and for the purpose set forth.

3. In a thermostat, a heating device provided with an escape-flue, and an air-supply pipe closed at a given temperature, in combination with a connecting-pipe between the two, joining the escape-flue at a higher point than its junction with the supply-pipe, substantially as and for the purpose set forth.

327,942. Diamond-Drill Core-Breaker. John P. Grigson, Pottsville, Pa. Filed May 20, 1885. (No model.)



Claim.—1. A tubular drill having a cylinder free to turn independently of the barrel, and a wedge piece or pieces carried by and adapted to a seat or seats in said free cylinder, substantially as set forth.

2. A tubular drill having a cylinder carrying grasping-fingers, and a wedging piece or pieces carried by and adapted to slide in said cylinder, the latter being free to turn independently of the barrel of the drill.

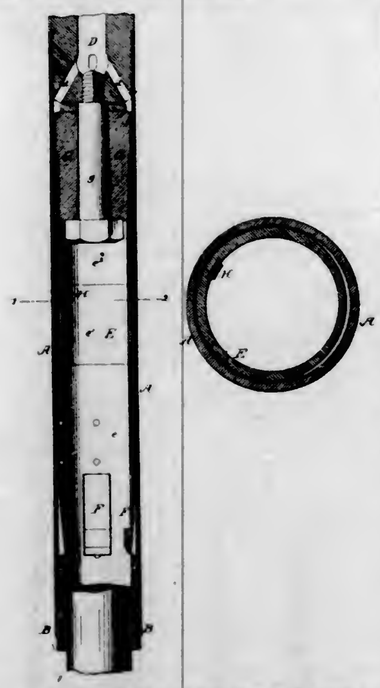
3. The combination of the barrel of a drill, having a shoulder, *b*, above the bit, and a coupling for the drill-rod, with a cylinder free to turn in the barrel between said shoulder and coupling, and a wedging-piece carried by and adapted to slide in the cylinder, all substantially as described.

4. The combination of the barrel of a drill with a cylinder free to turn therein, the said cylinder being in two parts, one carrying spring-fingers and the other a wedging piece or pieces, substantially as specified.

5. The combination of the barrel of a drill with a cylinder free to turn in the barrel, and having a groove or grooves with tapered seats, and a wedging piece or pieces adapted to slide in the groove or grooves.

6. A tubular drill having a cylinder and a wedging piece or pieces adapted to seat or seats on one side of said cylinder, the latter being free to turn independently of the barrel of the drill, substantially as set forth.

327,943. DIAMOND-DRILL CORE-BREAKER. John P. Gregory, Pottsville, Pa. Filed May 20, 1885. (No model.)



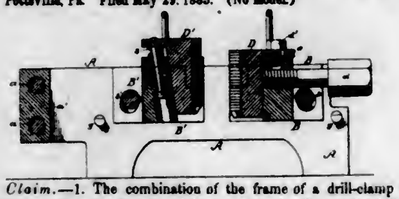
Claim.—1. The combination of the outer barrel of a diamond drill with an inner barrel free to turn independently of the outer one, and leaving an annular space between the two, and a wedging-piece carried by and adapted to a seat in said inner free barrel, substantially as set forth.

2. The combination of the outer barrel of a diamond drill with an inner barrel, leaving a space between the two, the said inner barrel carrying four grasping-fingers, and being free to turn independently of the outer barrel, and a wedging-piece carried by and adapted to slide in said inner barrel, substantially as set forth.

3. The combination of the outer barrel of a diamond drill with an inner barrel, leaving a space between the two, the said inner barrel having a groove with a tapering seat, and being free to turn independently of the outer barrel, and a wedging-piece adapted to slide in the said groove of the inner barrel, substantially as specified.

4. The combination of the outer barrel of a drill with an inner barrel carrying a wedge-piece, H, to act against the core, the said inner barrel being thickened on the side carrying the said wedge-piece, substantially as and for the purpose set forth.

327,944. GUIDE-CLAMP FOR DRILL-RODS. John P. Gregory, Pottsville, Pa. Filed May 29, 1885. (No model.)



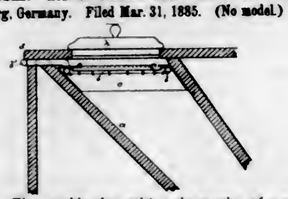
Claim.—1. The combination of the frame of a drill-clamp with blocks pivoted to the frame at right angles to the line of the drill-rod, and one carrying a sliding wedge-jaw and the other an adjustable jaw, substantially as and for the purpose set forth.

2. The combination of the frame of a drill-clamp having recesses *f* with hinged blocks carrying the clamping-jaws, and having lugs F, adapted to said recesses, substantially as described.

3. The combination of the frame of a drill-clamp having recesses *f* with hinged blocks having lugs F and clamping-jaws, and having slots through which the pivot-pins pass, substantially as and for the purpose specified.

4. The combination of the frame of a drill-clamp closed at one end and open at the other with a pair of hinged blocks carrying the clamping-jaws, and the pivot-pin *b*, for one of the jaws at the open end of the frame, forming at the same time a connection for the two side plates of the latter.

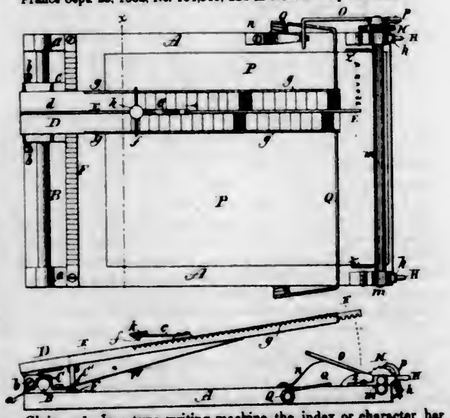
327,945. APPARATUS FOR WARMING AND DISINFECTING CLOSET-TUBES. Ludwig Göhring and Wilhelm Köhrer, Stuttgart, Würtemberg, Germany. Filed Mar. 31, 1885. (No model.)



Claim.—1. The combination, with a closet-tube, of a gas-pipe extending around its passage-way immediately below the seat and pierced for jets of flame, a supply-pipe connected therewith, and an annular shield guarding the jet-ring, substantially as herein specified.

2. The combination, with a closet-tube, of a gas-pipe extending around its passage-way and pierced for jets of flame, a supply-pipe connected therewith, and an annular shield inclosing and guarding the jet-ring, and constructed with an inner wall in the form of a short tube provided with escape-holes opposite the jet-holes, the inlet to the shield-chamber being formed around said inner wall, substantially as herein specified.

327,946. TYPE-WRITING MACHINE. Andrew P. Hansen, London, England, assignor to Arthur H. Boulton, same place. Filed Oct. 24, 1882. (No model.) Patented in England Aug. 5, 1882, No. 3,727; in Germany Aug. 18, 1882, No. 21,564; in Belgium Sept. 23, 1882, No. 59,094; in France Sept. 23, 1882, No. 151,315, and in Austria May 10, 1883.



Claim.—1. In a type-writing machine, the index or character bar or device, adapted to travel across the table to space apart the letters or words, in combination with the type-carrier rack, adapted to operate substantially as described with relation to the movement of the index or

character device and to produce the impression upon the paper or surface to be printed upon, substantially as and for the purpose set forth.

2. In a type-writing machine, the index or character bar or device, adapted to travel across the table to space apart the letters, in combination with and adapted to actuate the mechanism for moving the paper or surface being printed upon, substantially as and for the purpose set forth.

3. In a type-writing machine, the combination of the index or character bar or device adapted to travel across the table, the type-carrier rack arranged to operate substantially as described with relation to the movement of the index or character bar, and the mechanism adapted to move the paper or surface to be printed on, said mechanism being adapted to be actuated by the action of the character or index bar, substantially as and for the purpose specified.

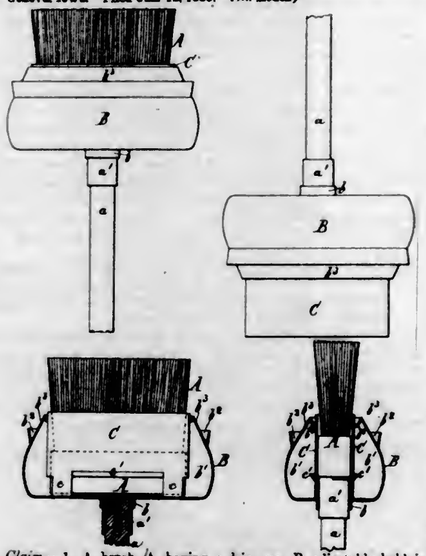
4. In a type-writing machine, the combination, with the longitudinally-slotted index bar or lever having the racks *g g*, of the type-carrier rack E, adapted to move in the slot of said bar or lever and having the indicator *f*, having a finger-piece and an elevating-spring, substantially as and for the purpose set forth.

5. In a type-writing machine, the combination, with the table A, having the transversely-arranged rack F, and bar B, disposed parallel with the said rack, of the lever D and its carrying-frame C, said lever being provided with the pawl C', spring W, acting upon the lever D, and the sliding type-carrier rack E, having a spring key or finger-piece, *k e*, provided with an indicator, *f*, adapted to engage racks *g* of the lever D, substantially as and for the purpose set forth.

6. In a type-writer, the combination, with the feed-rollers *m* and the oscillating lever D, provided with a type-carrier, of the ratchet-wheel N, the pawl *p*, and the pawl-lever O, substantially as herein shown and described, whereby the downward movement of the lever D to print the first character of a line will move the paper forward the space of one line, as set forth.

7. In a type-writer, the combination, with the table A, of the feed-rollers *m*, the pad Z, and the holding-spring Q, substantially as herein shown and described, whereby the paper is brought into and held in proper position to be printed upon, as set forth.

327,947. PAINT OR WHITEWASH BRUSH. Thomas Huntbatch, Geneva, Iowa. Filed Jan. 12, 1885. (No model.)



Claim.—1. A brush, A, having a drip-cup, B, adjustably held in position therewith by means of a handle, *a*, elastic ferrule *a'*, and socket *b*, substantially as described.

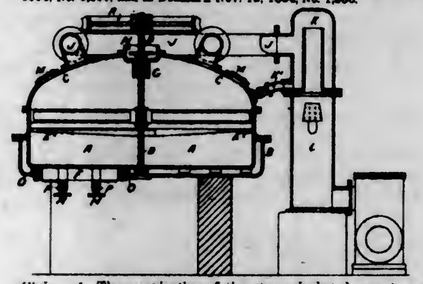
2. A brush, A, in combination with a self-adjusting brush-guard sleeve, C, substantially as and for the purpose described.

3. The drip-cup B, provided with a lip, b^1, in combination with a brush-guard sleeve, C, and means for connecting the said parts and preventing the guard-sleeve from dropping off, provided with a lip, *c'*, substantially as and for the purpose described.

4. The drip-cup B, provided with an exterior drip-groove, b^2, substantially as and for the purpose described.

5. An adjustable drip-cup, B, contracted at its receiving end around the guard-sleeve or brush, and formed with a lip, b^1, in combination with a brush, A, said cup being applied adjustably on a straight portion of the handle of the brush, substantially as described.

327,948. DRIER. John F. Johnstone, Bow Common Lane, County of Middlesex, assignor to Hugh J. Anderson, No. 101 Londenhall Street, London, England. Filed Mar. 5, 1885. (No model.) Patented in England May 7, 1884, No. 7,287; in Italy July 23, 1884, No. 17,170; in Victoria Aug. 23, 1884, No. 3,819; in South Australia Aug. 28, 1884, No. 483; in Sweden Sept. 28, 1884, No. 1,559; in Queensland Oct. 2, 1884, No. 33; in New South Wales Oct. 15, 1884, No. 1,517; in Spain Oct. 21, 1884, No. 6,399, and in Denmark Nov. 13, 1884, No. 1,290.



Claim.—1. The combination of the steam-jacketed pan A, cover C, fitted thereto with an air-tight joint, stuffing-box G, with axis D passing down through it and carrying scrapers E, outlet-door F, which can be closed air-tight, and outlet-pipe J, passing to apparatus by which a vacuum can be maintained in the pan A, substantially as described.

2. The combination of the steam-jacketed pan A, cover C, fitted thereto with an air-tight joint, stuffing-box G, with axis D passing down through it and carrying scrapers E, outlet-door F, which can be closed air-tight, outlet-pipe J, opening into a save-all, K, and condenser L, and apparatus for maintaining a vacuum in this condenser, substantially as described.

327,949. TUBULAR BEAM. James H. Jones, Rockford, Ill., assignor to Emerson, Talcott & Co., same place. Filed Jan. 27, 1885. (No model.)



Claim.—1. The combination, with a tubular re-enforced beam, substantially as described, of outer re-enforces embracing the beam and secured thereto, substantially as and for the purpose set forth.

2. A cultivator shovel or plow beam, consisting of a wrought metallic tube provided with a core re-enforce, of outer re-enforces consisting of tubular sleeves or segment-sleeves fixed to the re-enforced tubular beam, substantially as and for the purpose set forth.

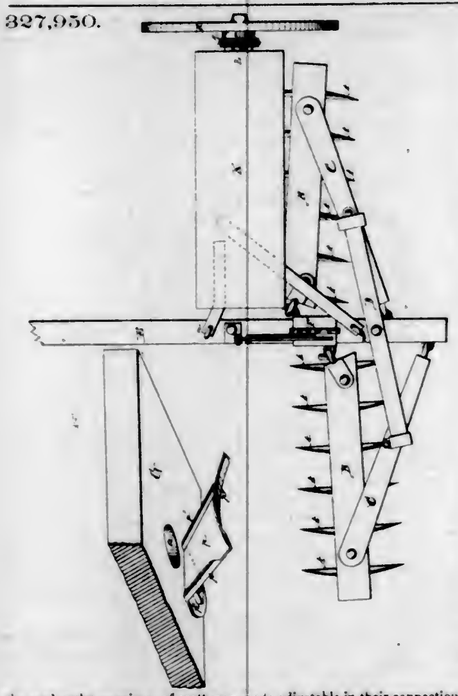
327,950. SEEDING-MACHINE. James H. Jones, Rockford, Ill., assignor to Emerson, Talcott & Co., same place. Filed May 13, 1885. (No model.)

Claim.—1. The combination, with a disk-harrow, of a seeding apparatus, substantially as herein described, said seeding apparatus hinge-jointed at its inner end to the harrow-frame and its outer end supported on a carrying-wheel, substantially as and for the purpose set forth.

2. The combination, with a seed-box provided with a seed-opening, of a seed-scatterer consisting of an inclined seed-receiving plate provided with a side edge flange, a curved horizontal end flange or plate at its lower end, a securing flange or plate at its upper end, and means, substantially as described, for connecting said scatterer with the under side of the seed-box to permit its adjustment in a horizontal plane, substantially as set forth.

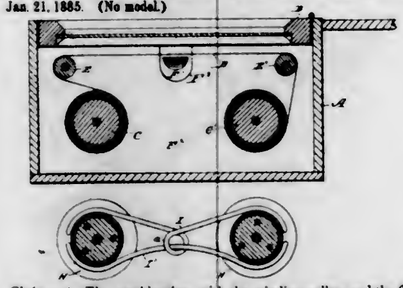
3. The combination, with the rotary disks of the harrow and with

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the seed-outlet openings, of scatterers made adjustable in their connection with the seeding mechanism, substantially as and for the purpose set forth.

327,951. STATION-INDICATOR. Wiley Jones, Norfolk, Va. Filed Jan. 21, 1885. (No model.)



Claim.—1. The combination, with the winding-rollers and the flexible strip carried by the same, of a friction-brake forming and containing its own fulcrum-point and arranged to bear equally upon opposite sides of the rollers, as and for the purpose described.

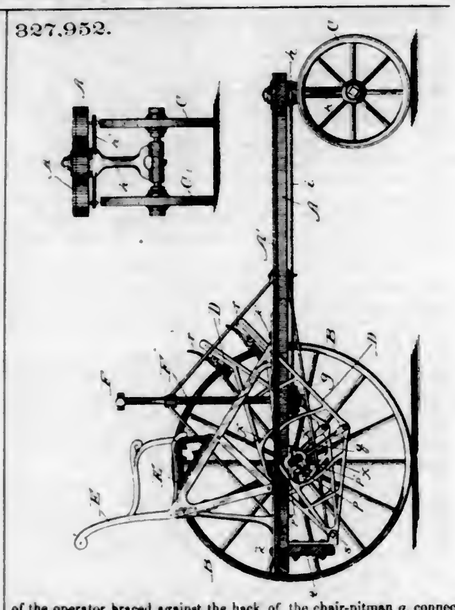
2. The combination, with the winding-rollers having grooved pulleys on their ends and the flexible strip carried by the same, of a friction-brake composed of section I, with an eye in its middle and having curved ends, and the section I', extended through the eye of section 1 and having curved ends, and arranged upon the opposite side of pulleys from the first section, as shown and described.

3. The combination, with the containing-case having a glazed door, B, the winding-rollers C C', the guide-rollers E E', and the flexible strip D, of the removable journal-slide F', fitting the cross-section of the case and carrying the journals of one end of the rollers, and held in place, substantially as shown and described.

327,952. VELOCIPEDE. Frederick Juner, Chicago, Ill. Filed July 18, 1885. (No model.)

Claim.—1. The combination, with a velocipede, of a chair, E, supported upon the platform of the vehicle, a divided driving-shaft, *p*, provided with cranks *p'*, foot levers D, comprising each a frame strengthened with suitable braces and pivotally connected with the vehicle to cause the foot-rest portions thereof to extend above the platform of the vehicle to a position accessible to the feet of the operator, whereby the levers may be actuated by forward and backward movement of the legs, and the back

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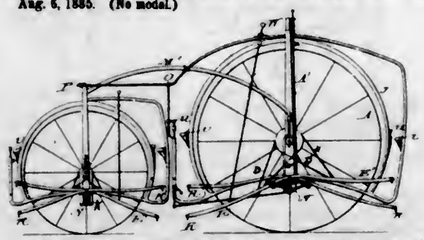
of the operator braced against the back of the chair-pitman *q*, connecting the levers with cranks upon the shaft, and starting mechanism, substantially as described, detachably adjustable upon a crank of the shaft, the whole being constructed and arranged to operate in the manner set forth.

2. The combination, with a velocipede, of a chair adjustably supported upon the platform of the vehicle, to be moved forward and backward thereon, a divided driving-shaft, *p*, provided with cranks *p'*, foot-levers D, comprising each a frame strengthened with suitable braces and pivotally connected with the vehicle to cause the foot-rest portions thereof, having shoes *r* pivotally secured upon them, to extend above the platform of the vehicle to a position accessible to the feet of the operator, whereby the levers may be actuated by forward and backward movement of the legs, and the back of the operator braced against the back of the chair-pitman *q*, connecting the levers with cranks upon the shaft, starting mechanism, substantially as described, detachably adjustable upon a crank of the shaft, and steering mechanism, substantially as described, operated from a position in proximity to the chair, the whole being constructed and arranged to operate in the manner set forth.

327,953. PRODUCTION OF BLUE DYE-STUFFS. Alfred Kern, Basle, Switzerland, and Carl L. Müller, Ludwigshafen-on-the-Rhine, Germany, assignor to the Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed June 9, 1885. (No specimens.)

Claim.—The improved process for manufacturing trimethyltriphenyl rosaniline by the reaction of oxychloride of carbon (phosgene) upon methyldiphenylamine, followed by digestion of the warm mass with chloride of zinc and oxychloride of carbon, separation of the base from the residual matters, and final purification by washing with acids to remove the mother liquid, substantially as described.

327,954. VELOCIPEDE. Homer A. King, Springfield, Mass. Filed Aug. 6, 1885. (No model.)



Claim.—1. A bicycle propelled by levers without the crank-motion, and with more than two seats for riders, a seat being in front of and a seat in the rear of a driving-wheel, in combination with treadles, levers, and connection to a driving mechanism to rotate a driving-wheel.

2. A bicycle propelled by levers without the crank-motion, and with seats for two riders, the seats being lower than the top of the largest

wheel, and all so constructed that either or both riders may propel or assist to propel the vehicle.

3. A vehicle with a backbone of any suitable material connecting a steering-wheel and a following attachment, and with a seat on which a person can sit erect under or below the backbone, in combination with a driving mechanism for transmitting power to propel a driving-wheel.

4. A single-track bicycle propelled by levers without the crank-motion, and with two seats and a frame constructed to support each seat, and also support a handle-bar in front of each seat, and yet leave between each seat and handle-bar an open space extending down near the foot-rests, to permit one limb of a rider to pass easily between the seat and the handle-bar, substantially as set forth.

5. A bicycle having under or below the backbone an adjustable seat which may be moved up or down and secured at the proper height above the treadles to suit the limbs of a rider of any stature, in combination with an adjustable hand-bar and connection with a driving mechanism to rotate a driving-wheel.

6. A steering-bar, P, for steering a vehicle, in combination with the fork of a steering-wheel and with connection to a following attachment, and to a steering-handle and a seat, both seat and steering-handle being under or below the backbone.

7. A frame partly inclosing a driving-wheel of a vehicle, in combination with springs N and seat V, treadles, levers, and connection to a driving mechanism, substantially as and for the purposes set forth.

8. A seat in the rear of and lower than the top of the driving-wheel of a bicycle, the seat being supported by an extension of the frame of the driving-wheel entirely surrounding the rider, extending down in front below the seat and up back of and above the head of the rider in the seat, in combination with treadles, levers, and connection to a driving mechanism to rotate a driving-wheel.

9. A seat in front of and lower than the top of a driving-wheel of a bicycle, the seat being supported by an extension of the frame of the driving-wheel entirely surrounding the rider, extending down in front below the seat and up back of and above the head of the rider in the seat, in combination with treadles, levers, and connection to a driving mechanism to rotate a driving-wheel.

327,955. NURSERY-CHAIR. Theodore N. M. Kreh, Chicago, Ill. Filed Aug. 14, 1884. (No model.)



Claim.—1. The combination, with a chair-seat provided with supporting pins or projections, of an elevating frame, the front and rear legs of which are hinged together and provided with a spring connection at one end, adapted to draw them together and clamp the pins or projections upon the chair-seat, substantially as and for the purpose set forth.

2. The combination, with a chair-seat, of a set of detachable legs having a spring connection and provided with means for securing the seat upon their lower ends when turned down, whereby the device may be used for either a chair or jumper, substantially as shown and described.

3. The combination, with a chair-seat, of a set of detachable legs hinged together and connected by a spring, means for securing the chair-seat upon their lower ends, and a series of detachable wheel-carrying arms secured upon the legs, substantially as herein shown and described.

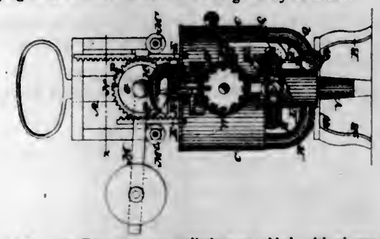
4. The seat A, provided with the pins or projections b^3 a^3, in combination with the legs C C', formed with slots *c'*, arms *c*, and the springs C^9, substantially as and for the purpose set forth.

5. The seat A, provided with the pins or projections b^3 a^3, in combination with the legs C C', having slots *c'*, arms *c*, and connecting-springs C^9, and provided with the notches or slots c^3 upon their rear sides, substantially as and for the purpose set forth.

6. The seat A, provided with the pins b^3 a^3, in combination with a set of detachable legs, C C', pivoted together and provided with the springs C^9, the notches c^3, and the detachable wheel-carrying arms D, and wheels D', substantially as and for the purpose set forth.

327,956. LIQUID-METER. Edward Krowberens and Charles Wolters, Philadelphia, Pa. Filed Apr. 20, 1885. (No model.)

Brief.—In the supply-pipe is a valve which, after a predetermined quantity of water has passed through the meter, is closed by means of a toe on the register tripping an arm which supports a weighted arm on the plug of said valve. Notice of this is given by an alarm.



Claim.—1. Two or more cylinders provided with pistons having stems with racks thereon, in combination with a pinion meshing with said stems, a loosely-mounted pinion, and a weighted arm, said pinions being mounted on the same shaft, and having pins or projections, substantially as described, whereby said weighted arm is thrown in opposite directions and caused to rotate or oscillate the said loosely-mounted pinion, and thereby operate the valve of the apparatus in opposite directions.

2. The cylinders C C, having pistons with stems E, in combination with a shaft-carrying pinion, F, and loosely-mounted pinion G, the said pinions F and G having pins N and P, respectively, weighted arm M, and buffers M', substantially as described.

3. The pinions F and G, having pins N and P, respectively; in combination with the weighted arm M, segmental rack H, and rotary valve K, having stem J, said parts being arranged and combined substantially as described.

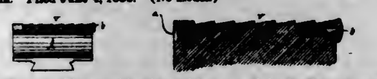
4. In a measuring apparatus, a register having a rotary dial, in combination with operating mechanism consisting of a ratchet, a pivoted plate, a pivoted arm actuating said plate, and a connection with the valve of the apparatus, substantially as described.

5. In a measuring apparatus, an automatic cut-off for the inlet or supply pipe, consisting of an arm for supporting the plug of a valve, said plug being self-closing, and a toe or projection on the register for tripping said arm and releasing the plug of the valve, whereby the latter closes, substantially as described.

6. In a measuring apparatus, a self-closing supply-valve and arm supporting the same, a bell and a projection on the rotary part of the register combined, substantially as described, whereby said gong will be sounded in advance of the completion of the measurement, and the valve closed at said completion, as stated.

7. The pinion F, having pins N, in combination with weighted arm M, the pinion G, having pins P, and loosely mounted on the shaft of the pinion F, segmental rack H, meshing with pinion G, and rotary valve K, having stem J, attached to said segmental rack, substantially as and for the purpose set forth.

327,957. SIGHT FOR FIRE-ARMS. William Lyman, Middlefield, Conn. Filed June 4, 1885. (No model.)

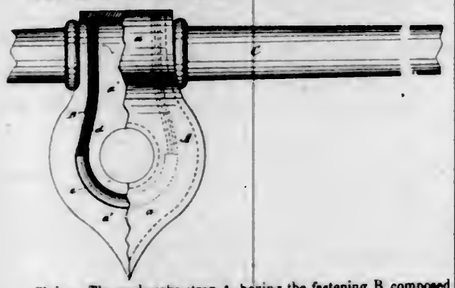


Claim.—1. The combination, with a gun-sight having an aperture in one end extending in the direction of the length of the sight, of the ivory or other head *b*, of a color contrasting with that of the sight, and having a shank inserted into the aforesaid orifice, said head projecting longitudinally from the extremity of the sight, and having its seat in said sight, substantially as and for the purpose described.

2. A gun-sight consisting of the strip A, having an aperture in one end extending in the direction of the length of the strip, and the head *b*, of a color contrasting with that of the strip, and provided with a shank secured in the aperture, the said head seated in the strip at one end of the

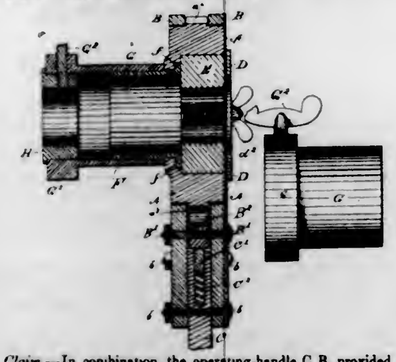
aperture, and projecting longitudinally from one extremity of the strip substantially as shown and described.

327,958. NECK-YOKE STRAP. George H. Lynds, Sterling, Kans. Filed Feb. 10, 1885. (No model.)



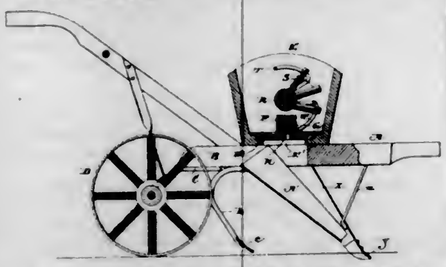
Claim.—The neck-yoke strap A, having the fastening B, composed of a layer of wire which is arranged as shown, and extends around the neck-yoke and pole-openings, as specified.

327,959. SCREW-CUTTING MECHANISM. William E. Melhorn, Erie, Pa. Filed July 13, 1885. (No model.)



Claim.—In combination, the operating-handle C B, provided with pawl mechanism B^2 C C^2, the sleeve A, recessed as shown, and provided with die E, the sleeve F, having flange f, the sleeve G, detachable sleeve H, and hinged plate D, all constructed and arranged to operate as set forth.

327,960. PLANTER. John E. Rogers, San Marcos, Tex. Filed July 30, 1885. (No model.)



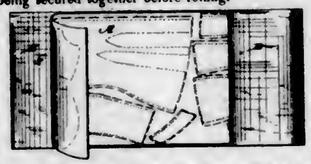
Claim.—1. The combination of the frame, the hopper having the slotted opening E' in its bottom, the rock-shaft journaled in the hopper, said rock-shaft being provided with the radial stirrers S and V-shaped bent extending arms T, substantially as described.

2. The combination of the frame, the hopper having the slotted opening E' in its bottom, the slide H, located below the bottom of the hopper, having the opening K, and the rock-shaft R, journaled in the hopper, said rock-shaft being provided with the radial stirrers S and V-shaped bent extending arms T, substantially as described.

3. The combination of the frame, the hopper provided with the slotted opening E' in its bottom, the bar F, having the brush G, which registers with the slotted opening, the slide H, located under the bottom of the hopper, and provided with the opening K, and the rock-shaft R, journaled in the hopper, said rock-shaft being provided with the radial stirrers S and the bent V-shaped extending arms T, substantially as described.

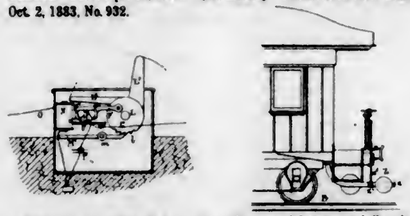
327,961. COMBINED PATTERN AND FABRIC. Schanu M. Moschcowitz, New York, N. Y. Filed Aug. 11, 1883. (No model.)

Brief.—Rolls up in a single web a paper having a pattern stamped thereon and the fabric from which a garment is to be cut, the pattern and fabric being secured together before rolling.



Claim.—As an article of manufacture, a web of fabric and a paper web having represented thereon patterns of articles of apparel to be made from said fabric, the two webs being attached at intervals and rolled up together, substantially as and for the purposes described.

327,962. RAILWAY-SIGNAL. William A. Murray, Piako, New Zealand. Filed Apr. 15, 1884. (No model.) Patented in New Zealand Oct. 2, 1883, No. 932.



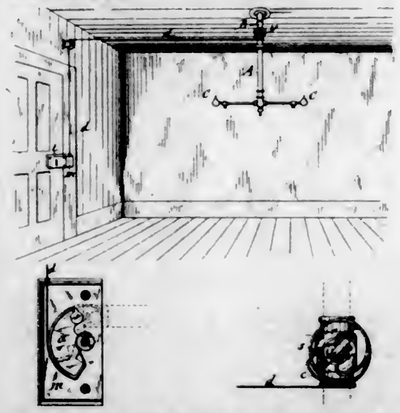
Claim.—1. A series of electric signals, comprising, essentially, shafts G, levers G^2 G^3, and partially-toothed wheels G', a magnet, I, a pawl, H, and suitable circuit-closers, combined with electrical connections J and battery E, and the whole adapted to be operated by a device, as Y, located upon a passing train, as and for the purposes set forth.

2. The combination of the wheel Y and its supporting and adjusting means y^3, with the series of magnets I, batteries E, toothed wheels G', levers G^2 G^3, pawls H, and circuit-closers, the whole arranged and operating to give advance signals, as and for the purposes set forth.

3. A system of electric signals arranged along the line of a railway-track, and comprising toothed wheels L', elbow-levers L^2 L^3, pawls M', batteries P, magnets N, and connecting-conductors, combined with a suitable circuit-closing apparatus, and with a contacting device, as Z, located upon the rear of a passing train, as and for the purposes specified.

4. The advance signal devices comprising the wheels G', levers G^2 G^3, pawl H, and magnets I, and the rear signal devices, L^2 L^3, wheels L' pawls M', and magnets N, arranged along the line of a railway-track, as described, combined with each other and with batteries E P, conductors J O, proper circuit-closers, and with devices, as Y Z, located upon a passing train, as set forth.

327,963. APPARATUS FOR AUTOMATICALLY CUTTING OFF GAS FROM BURNERS. Charles G. Nye, Syracuse, N. Y. Filed Nov. 26, 1884. (No model.)



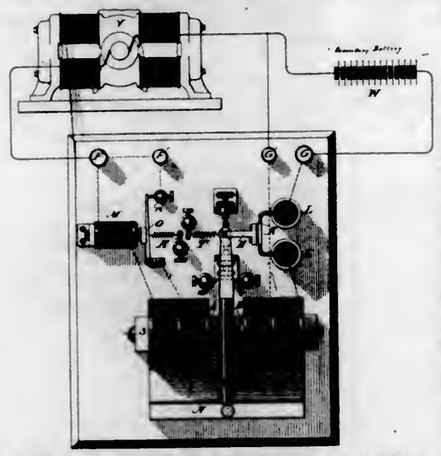
Claim.—1. In combination with the gas-burner and the door of the apartment containing said burner, a bolt on the door, a lever arranged to be actuated by said bolt, and mechanism for transmitting motion from said lever to the valve controlling the flow of gas to the burner, substantially as set forth.

2. In combination with a gas pipe and burner connected to said pipe and the door of the apartment containing said burner, a valve connected with the said gas-pipe and held normally in an open position, a lever connected with said valve for turning the same, a lock on the door, adapted to be operated from the outside of the door, a lever connected with the strike or catch plate of the lock, and adapted to be actuated by the bolt of the lock, and a wire or cord connecting the said lever with the lever of the valve, substantially as specified and shown.

3. In combination with the gas pipe and burner and the door of the apartment containing said burner, the valve *v*, provided with the key-head *k*, the lever *c*, attached to said key-head, the spring *s*, arranged to normally hold the valve in an open position, the lock *l*, arranged to be opened from the outside of the door, the lever *a*, pivoted in the strike *m* and arranged to be actuated by the bolt of the lock, and the wire or cord *d*, connecting the levers *a* and *c*, substantially as described and shown.

4. In combination with the gas pipe and burner and the door of the apartment containing said burner, the valve *v*, provided with the key-head *k*, the lever-shaped metallic band *c*, adjustably connected with the key-head *k* by screws *e e'*, the spring *s*, arranged to normally hold the valves in an open position, the lock *l*, arranged to be opened from the outside of the door, the lever *a*, pivoted to the strike *m*, and arranged to be actuated by the bolt of the lock, and the wire or cord *d*, connecting the levers *a* and *c*, all constructed and combined to operate substantially in the manner shown and set forth.

327,964. CUT-OUT FOR SECONDARY BATTERIES. George B. Prescott, Jr., Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Apr. 27, 1885. (No model.)



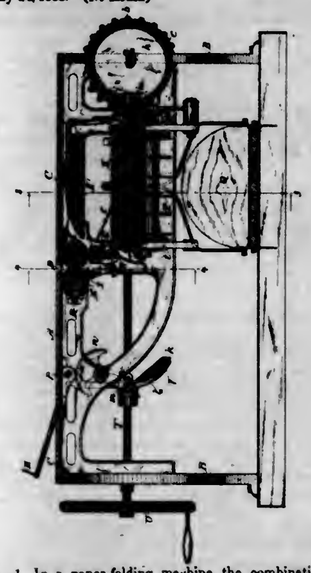
Claim.—1. The combination, with a dynamo-machine and a secondary battery or batteries, of a circuit-breaker in the main or charging circuit, a polarized electro-magnet with coils in the main circuit and in a circuit around the dynamo for operating the circuit-breaker, a circuit-breaker in the derived circuit, and an electro-magnet in the main for operating the same, substantially as set forth.

2. The combination, with a dynamo-machine and a secondary battery, of a circuit-breaker in the charging-circuit, an electro-magnet for operating the same, consisting of an armature of one polarity arranged to vibrate between poles of the opposite polarity wound with two sets of coils, one of which is in the main circuit, the other in a derived circuit around the dynamo, a circuit-breaker in the derived circuit, and a magnet in the main for operating or controlling the same, as set forth.

3. The combination, with a dynamo-machine and a secondary battery, of a circuit-breaker in the charging-circuit, a device for controlling the same consisting of a permanent magnet with an armature pivoted to one pole and arranged to vibrate between cores secured to the other pole, each of the said cores being wound with two coils, one in the main circuit, the other in a derived or shunt circuit around the dynamo, a circuit-breaker in the derived circuit, and a magnet in the charging-circuit for operating or controlling the same, as set forth.

4. The combination, with a dynamo-machine and a secondary battery, of a circuit-breaker in the charging-circuit, an electro-magnet for controlling the same, consisting of a pivoted and spring-controlled armature of one polarity arranged to vibrate between poles of the opposite polarity, each of said poles being wound with two coils of coarse and fine wire, respectively, the coarse-wire coils being included in the main circuit, and the fine-wire coils in a derived circuit around the dynamo, a circuit-breaker in the derived circuit, and a magnet in the charging-circuit for operating or controlling the same, as set forth.

327,965. PAPER-FOLDING MACHINE. Enoch Prouty, Beloit, Wis. Filed May 24, 1883. (No model.)



Claim.—1. In a paper-folding machine, the combination of a set of three folding-rolls constructed and arranged, as described, so as to form two pairs of folding-rolls, one pair of equal and the other of unequal diameters, and a vertically-acting and horizontally-acting folding-knife, the former forcing the paper into the bite of the first and second rolls, and the latter forcing the paper into the bite of the second and third rolls, and being operated by an adjustable cam, whereby the knife may be thrown out of effective action, substantially as set forth.

2. In a paper-folding machine, the combination of two sets of three folding-rolls, one set being arranged at right angles with the other set, each set constructed and arranged, as described, to form two pairs of folding-rolls, one pair of equal and the other of unequal diameters, each pair of rolls being provided with a folding-knife, substantially as set forth.

3. In a paper-folding machine, the combination of two sets of three folding-rolls, each set constructed and arranged, as described, so as to form two pairs of folding-rolls, one pair of equal and the other of unequal diameters, the folding-knives for each set of two rolls, the second set of rolls and its knives and their operating mechanism being adjustable, substantially as set forth.

327,966. ROLLER-SKATE. Jacob V. Rowlett, Richmond, Ind. Filed June 22, 1885. (No model.)



Claim.—1. In a roller or other skate having clamping devices at toe and heel, the combination, with the foot-plate, of heel-supports having spurs or fingers adapted to receive a heel-strap, substantially as specified.

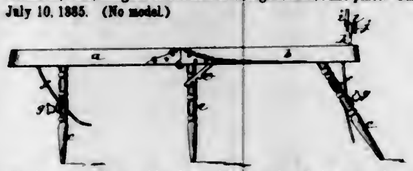
2. In a roller or other skate, the combination, with the foot-plate provided with toe and heel clamps, of a detachable heel-strap engaging with suitable spurs attached to the rear part of the heel portion of said plate, substantially as specified.

3. In a roller or other skate, the combination, with the foot-plate provided with clamps at heel and toe, of heel-supports attached to the

rear end of the plate and having an outwardly-curved divided rib, substantially as specified.

4. In a roller or other skate, the combination, with the foot-plate having clamps at heel and toe, of heel-supports D, each having an outwardly-curved rib, E, divided between its ends to form an opening, *e*, and a strap or straps detachably connected therewith, substantially as specified.

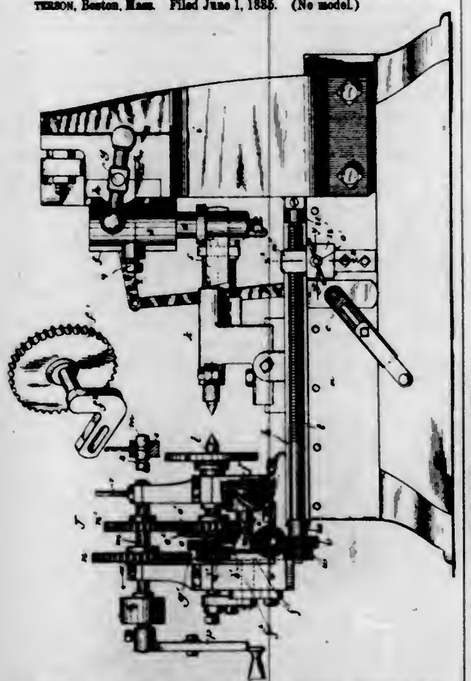
327,967. LAYING-OUT AND EMBALMING BOARD. Noah T. Shaw, Columbus, Ohio, assignor of one-half to George Riddle, same place. Filed July 10, 1885. (No model.)



Claim.—1. The combination, with the hinged frame-sections, of the hinged end legs, *c*, the brace-rods *f f*, hinged to the head and foot ends of the said frame-sections, and connected to the said leg cross-bars, and the clamp-screws *g* in the said cross-bars, whereby the legs are adjusted to set the table as may be desired, for the purpose described.

2. The combination, with the hinged frame-sections, of the hinged end and middle legs, the brace-rods e^3 and *f f*, the latter passing through the cross-bars of the end legs and retaining their connection therewith, and the clamp-screws *g* in said leg-bars, whereby the table can be turned and supported upon the middle legs in the operation of adjusting it to a horizontal or to an inclined position, for the purpose described.

327,968. MACHINE FOR INTERCHANGEABLY PLANING OR TURNING. Henry B. Stillman, New York, N. Y., and William F. Patterson, Boston, Mass. Filed June 1, 1885. (No model.)



Claim.—1. A frame, a bed, and a tool-carriage combined with a lathe supported by said bed, and mechanism, substantially as described, whereby motion is communicated from the lathe to the bed, as set forth.

2. The combination of the frame, the movable bed thereon, the adjustable tool-holder, the head and tail stocks detachably secured to the said bed, the screw journaled in bearings on the bed, a movable or sectional nut secured to the frame and adapted to be engaged with the screw, mechanism for rotating the center of the head-stock, and a connection, substantially as described, between the head-stock center and the bed-screw, whereby the latter is rotated and the bed moved at a rate proportioned to the rate of rotation of said center, as set forth.

3. The combination of the frame, the movable bed, the adjustable tool-holder, the head and tail stocks secured to the bed, the screw journaled in bearings on the bed, a nut secured to the frame and engaged with the screw, and interchangeable connections, substantially as described, between the head-stock center and the bed-screw, whereby the rate of movement of the bed relatively to the rate of rotation of the center may be regulated, as set forth.

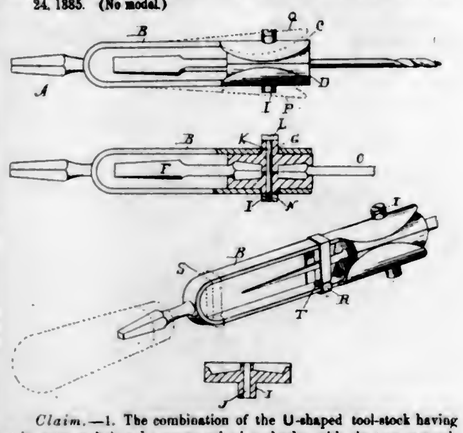
4. In a lathe, the combination of a frame, a bed movable thereon, head and tail stocks on the bed, a single screw supported by the bed and engaged with an attachment on the platen, and devices, substantially as described, whereby rotary motion is imparted to the screw from the head-stock center, the same screw being adapted to move the bed either for screw cutting or turning purposes, as set forth.

5. The combination of the head-stock, the center *l*, journaled therein and having the gears *o o'*, and the longitudinally-moving driving-arbor *m*, having the gears *n n'* placed farther apart than the gears *o o'*, so that by an endwise movement of said arbor its connection with the center may be changed from one pair of gears to the other, as set forth.

6. The combination of the head-stock having the center and suitable gears and means for rotating them, the bed and screw-rod *t*, supported thereon, and removable means, substantially as shown, connecting the rotating gears of the head-stock and the gears of the screw-rod *t* for imparting rotary motion to the screw, as and for the purpose set forth.

7. The combination of the bed, the head-stock and its center, the screw supported by the bed, the arbor *b'*, adapted to communicate motion from the head-stock center to the screw, the rod *i'*, having the bearing for said arbor, said rod being detachably connected to the head-stock and capable of being turned and moved endwise to move the arbor to and from its operative position, as set forth.

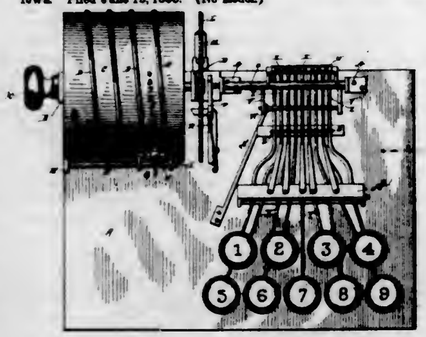
327,969. TOOL-HANDLE. Anson C. Stowe, Paola, Kans. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination of the U-shaped tool-stock having at its outer ends broad concave gripping-cheeks, with the two-part cylinder D, adapted to receive and hold tools, and provided with trunnions whereby it may be revolved between said cheeks, and the clamping-bolt and its nut, substantially as described.

2. The combination of the tool-stock, constructed as described, with the two-part cylinder D, provided with trunnions, so as to revolve between the cheeks on the ends of the stock, and a clamping-bolt passing through said trunnions and secured by a nut, and a sliding band, R, on the stock, having a lug, T, substantially as described.

327,970. ADDING-MACHINE. Lawrence W. Swem, West Liberty, Iowa. Filed June 15, 1885. (No model.)



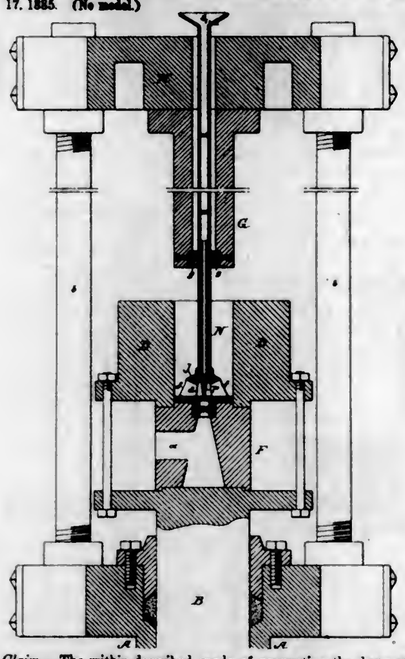
Claim.—1. Combined with a cylinder having a spiral track, an indicator consisting of a frame having means of engagement with said track and carrying an index-finger, and a supporting-track for said indicator, consisting of a spring-arm parallel to the face of said cylinder, substantially as and for the purpose specified.

2. Combined with a ratchet-wheel and cylinder, a rock-shaft, an arm on one end thereof, a pawl pivoted to said arm and carrying a stop, keys operating said rock-shaft, and a bed-plate with a recess receiving said stop, substantially as and for the purpose specified.

3. In an adding-machine, an actuating mechanism consisting of a series of keys, a series of pivoted arms with the free ends bifurcated, one portion of which form stops, and a rock-shaft having a projecting bail engaging with the stops, and an opposite projection engaging with the keys, which operate both the arms and the said rock-shaft, substantially as and for the purpose specified.

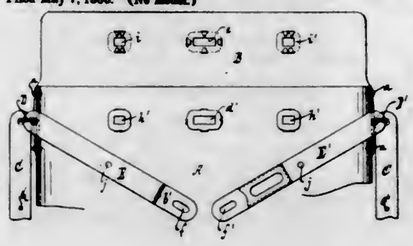
4. An adding-machine consisting of a base, a cylinder supported thereon and provided with a spiral track on it, an indicator engaging normally with said track, a ratchet-wheel on the cylinder-shaft, and pawl-retained, a rock-shaft carrying a pawl engaging with and actuating the ratchet-wheel, a series of bifurcated pivoted arms, and a series of keys operating the said arms and the rock-shaft, the whole operating substantially as and for the purpose specified.

327,971. MANUFACTURE OF SHEATHED AND INSULATED ELECTRICAL CONDUCTORS. James Tatham, Philadelphia, Pa. Filed June 17, 1885. (No model.)

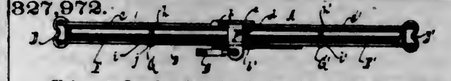


Claim.—The within-described mode of preventing the destruction or impairment of the insulating-covering of an electrical conductor while the latter is being coated or sheathed by forcing hot lead or other ductile metal around the same, said mode consisting in enveloping the insulated wire in oil or other liquid insulating material up to the point of application of the hot metal thereto, as set forth.

327,972. FASTENING FOR MAIL-BAGS, &c. William Timermann, New York, N. Y., assignor to himself and James H. Twaddell, same place. Filed May 7, 1885. (No model.)



327,972.



Claim.—1. In a bag-fastening device, the combination of the back hasps, pivoted as described, and adapted to swing away from the bag, one of which hasps overlaps the other when closed, and is provided with a staple or eyebar extending through a slot in the other, the pivoted overlapping front hasps also adapted to swing from the bag-frame and having the slots therein for the reception of the staple, substantially as shown and described.

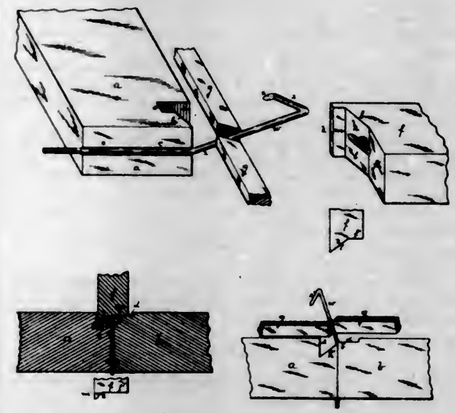
2. The combination, with a bag and its flap, of the back and front hasps pivoted on loops secured to the bag, the staple secured to one of the back hasps and extending through the remaining back hasp, the bag-flap and front hasps, the pins on the back hasps extending through the bag-flap and front hasps, and means for locking the hasps, substantially as shown and described.

327,973. BATH-TUB. Francis J. Torrance, Allegheny, Pa. Filed Dec. 27, 1884. (No model.)



Claim.—As a new article of manufacture, a cast-iron bath-tub enameled interiorly, and having the overflow-pipe cast integral therewith and of less thickness than the body of the tub.

327,974. DIE FOR MAKING STAPLES. William Thuran, Allegheny City, Pa., assignor to the Pittsburg Steel Nail Company, same place. Filed July 26, 1884. (No model.)



Claim.—1. In dies for forming wire staples, the combination of a pair of gripping-dies, one having an anvil-face, and a bending-die reciprocating in the line of feed and having a working-face conforming to the anvil-face and adapted to press the wire extending beyond the gripping-dies against the anvil-face.

2. In dies for forming wire staples, the combination of the gripping-dies, one having an anvil-face and a recess beyond the same, and the bending-die reciprocating in the line of feed and having a working-face conforming to the anvil-face, and a lug beyond the same, substantially as and for the purposes set forth.

3. In dies for forming wire staples, the combination of the gripping-dies, one having an anvil-face, and the bending-die reciprocating in the line of feed and provided with the swaging-face having the groove *n* therein, substantially as and for the purposes set forth.

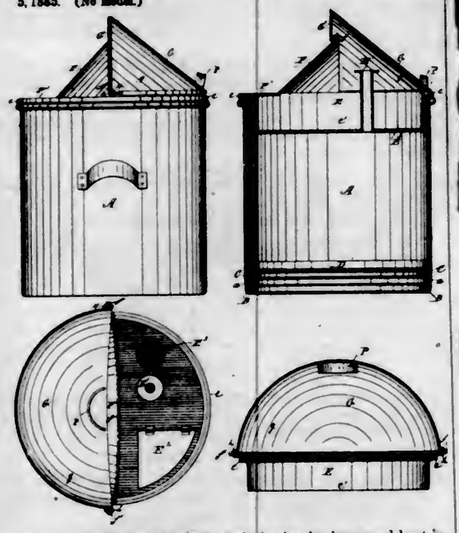
4. In dies for forming wire staples, the combination of the gripping-die having an anvil-face, the gripping-die having a stop-shoulder extending beyond said anvil-face, and the bending-die reciprocating in the line of feed and adapted to bend the wire against said anvil-face and to strike said stop-shoulder, substantially as set forth.

5. In dies for forming wire staples, the combination of the gripping-dies *a b*, one having the backwardly-extending anvil-face *h*, and the re-

ciprocating bending-die *f*, having the inclined portion *l*, corresponding to said anvil-face, substantially as and for the purposes set forth.

6. In apparatus for making wire staples, the combination of gripping-dies, one having an anvil-face, a reciprocating bending-die, and shears adapted to bend the wire toward said anvil-face and then sever it, thus imparting to the wire its initial bend, substantially as set forth.

327,975. OIL-CAN. Henry E. Wolcott, Syracuse, N. Y. Filed Aug. 5, 1885. (No model.)



Claim.—1. In an oil-can, the body having its lower end bent inwardly and upward within such body, and a wire inserted at the extremity of such inwardly-bent portion, and the bottom, substantially as set forth.

2. The combination in an oil-can, with the body having its lower end bent inwardly and upwardly, of wires inserted in such body at the point of bending and at the extremity of such inwardly-bent portion, and the bottom, substantially as set forth.

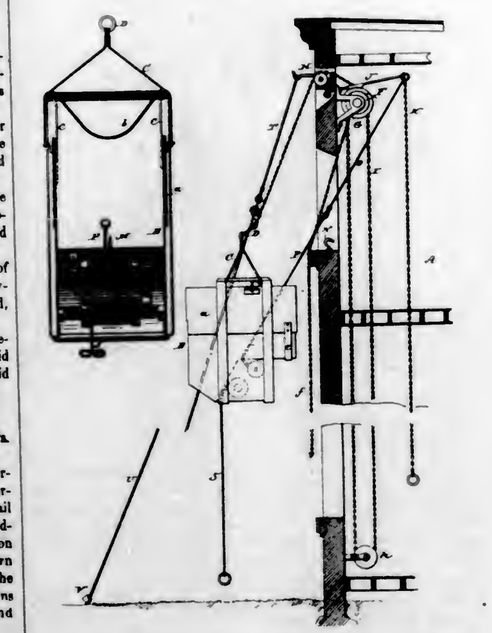
3. The top for oil-cans, substantially as described, consisting of the hood F, having a flat plate, F', at its rear edge, and the cover G, provided at its rear edge with an inwardly-extended flange, G', all arranged and adapted to operate substantially as set forth.

4. The combination, with the hood provided with lateral studs, of the cover and a wire extended from end to end of said cover, and having its opposite ends formed with loops fitted over the lugs of the hood, substantially as set forth.

5. The combination of the fixed hood, lateral studs projected therefrom, the cover, and a wire extended around the forward edge of said cover and having its ends formed with loops fitting over the aforesaid studs, substantially as set forth.

327,976. FIRE-ESCAPE. Theodore B. Woodward, Norway, Pa. Filed Mar. 20, 1885. (No model.)





Claim.—1. The combination, in a fire-escape, of a roller, F, journaled in brackets above a window within a house, the pulleys H, journaled above the window on its outside, the car B, provided with the bail C and ring D, the chains E, attached at one end to the ring D, extending over the pulleys H, and attached at the other end, to be wound upon the roller F, the chains I, mounted on the roller and extending down through the different stories of the house, the pulleys A therefor, the brake J, pivoted to the house, to lie upon the roller F, and the two chains K and O, extending therefrom, one passing down through the house and the other out at the window, substantially as shown and described.

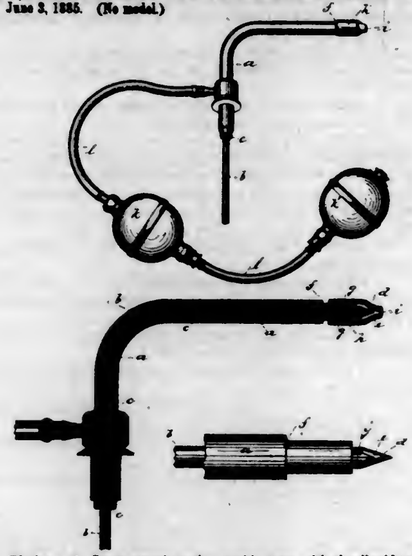
2. The combination of the roller F, journaled in a house, the chains I, mounted on the roller as belts, the chains E, secured to wind thereon, the chains *f*, secured to wind upon the roller F in a direction opposite to the chains I, a car, B, securable to the chains E, a wire, T, hung to the house above the window, the staple V, secured to the ground, and the wire U, adapted to be hooked to the staple at one end and to the wire T at the other end, and the ring D, attached to the car, the wire U passing through the car and the said ring as a rail therefor.

3. The combination of the car-body B, the guides *c c*, secured thereto, the shield *a*, fitted around two or more sides of the car to slide up and down behind the guides *c c*, and the cord *b*, adapted to raise the shield, as shown and described.

4. The combination of the car-body B, the guides *c c*, secured thereto, the shield *a*, fitted to slide within the guides, the cord *b*, adapted to raise the shield, another shield, *d*, fitted to slide in the back of the car, and a yoke, *e*, depending from the shield *a*, to engage the shield *d*, substantially as shown and described.

5. The combination of the car B, the roller F, journaled in a house, the chains E, connecting the car with the roller, the chain L, secured at one end to the car and having a loop at the other end, and the hook N, pivoted to revolve in the window-sill, substantially as described, whereby the chain L may be attached, and whereby the same will be set free when the hook is turned with its point outward from the window.

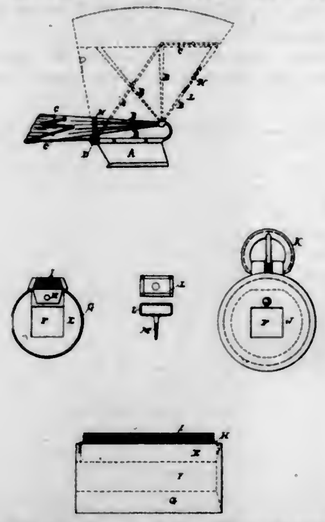
327,977. ATOMIZER. William H. Blunt, Watertown, N. Y. Filed June 3, 1885. (No model.)



Claim.—1. In an atomizer, the combination, with the liquid-tube having a closed tip and lateral openings near the end thereof, and the air-tube surrounding said liquid-tube down to said tip, of the cap inclosing the ends of both said air and liquid tubes, and being provided with a central opening, the point of said tip entering more or less into said opening, thereby regulating its size and enabling the device to be used with liquids of different consistence, or as a syringe, substantially as described.

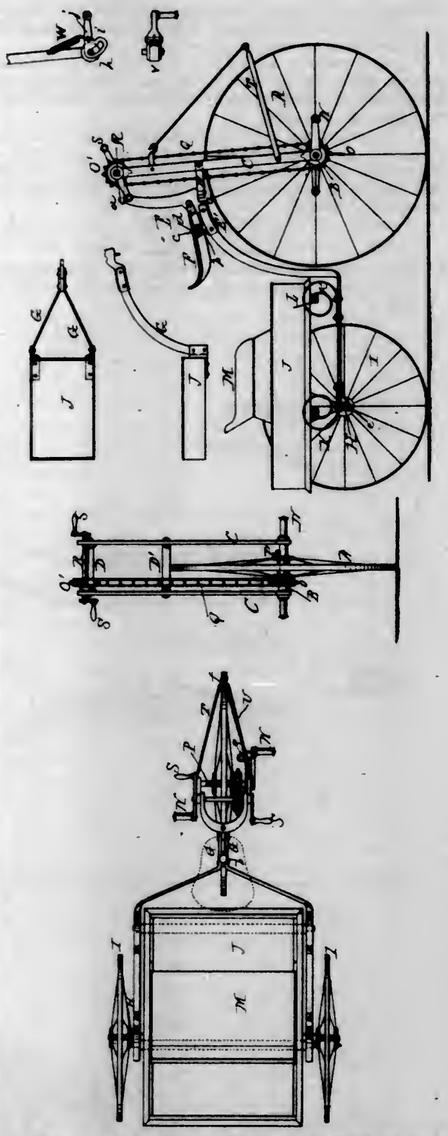
2. In an atomizer, the combination, with the air and liquid tubes, the latter being provided with a closed conical tip, and with discharge-openings in the slanting walls of said conical tip, of the conical cap, inclosing the ends of both said tubes, so that the air and liquid discharge into and mix within said cap, the point of said tip entering the opening in said cap, and the latter being adjustable to vary the size thereof, substantially as and for the purposes set forth.

327,978. CARRIAGE PROP-BLOCK. Henry Hammler, New York, N. Y. Filed Sept. 20, 1884. Renewed Aug. 14, 1885. (No model.)



Claim.—The carriage prop-block herein shown and described, consisting of the wooden body E, through which the bolt D snugly passes, the metal thimble or casing G, secured firmly around the body E, longitudinal metal strip H, whereon the elastic cushion I is fastened, said metal strip being secured to the body E at each end, the thimble or casing G being japanned or covered with leather, the whole combined and arranged substantially as set forth.

327,979. VELOCIPEDE. Henry La Casse, Auburn, N. Y. Filed Jan. 13, 1885. (No model.)



Claim.—1. The combination of the drive-wheel frame, the bars for connecting the same extending backwardly therefrom, the saddle-supporting bar pivotally supported by said bars, the rearwardly-diverging bars connected to each side of said saddle-bar, and a vehicle-body supported by said rearwardly-diverging bars, substantially as and for the purpose set forth.

2. The combination of the drive-wheel frame, the saddle-bar connected with said frame and having an upwardly-extending pin formed upon its rear end, the saddle hinged to said bar and having a socket formed therein to receive the pin, and an elastic cushion interposed between the pin and saddle, substantially as and for the purpose set forth.

3. The combination of the drive-wheel axle carrying the pedals, having a sprocket-wheel connected therewith by means of a tight and loose connection, a shaft carrying hand-cranks having a sprocket-wheel keyed thereto, and a drive-chain connecting the two sprocket-wheels, whereby the chains are held stationary when the sprocket-wheel is disconnected from the axle, substantially as described.

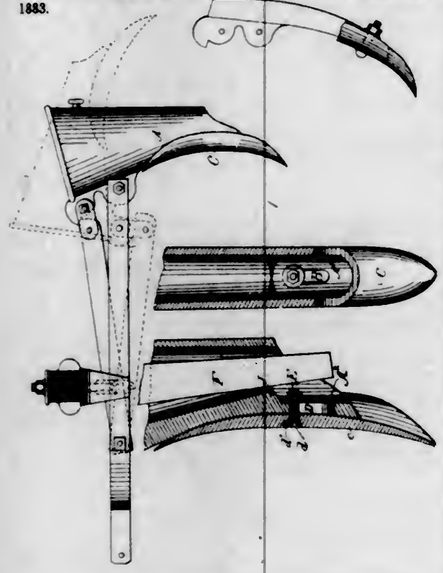
4. The combination, with the drive-wheel and its frame, of the sprocket-wheel supported on a crank-shaft at the upper part of the drive-wheel frame, the sprocket-wheel fitted loosely on the drive-wheel shaft, the spline to pass through the hub of the drive-wheel into the sprocket-wheel, the drive-chain connecting the sprocket-wheels and the pedals to the drive-wheel, substantially as described.

5. The combination, with the drive-wheel and its frame, of the rod having its opposite ends secured at opposite sides of the said frame and extended forward of the drive-wheel, and the draft-rod hinged to said rod, substantially as described.

6. The combination, with the drive-wheel and its frame, of the disks secured to the shaft of the drive-wheel, the bifurcated pedals secured to the same shaft and provided with an angular pawl to engage with said disks, and the spring to retract said pedals after they have been depressed, substantially as described.

REISSUES.

10,649. **BOOT FOR SEEDING-MACHINES.** John F. Keller, Shepherdstown, W. Va. Filed Aug. 30, 1884. Original No. 269,944, dated Jan. 2, 1883.



Claim.—1. In a drill-boot, a vertical slot in the front part thereof, in combination with the bolt D, nut E, and shoulder J, substantially as and for the purposes specified.

2. The described drill-boot A, having a vertical slot, B, in the front thereof, a flat bearing-surface, A′, for the nut E, and an inwardly-projecting shoulder, J.

3. In a drill-boot, a vertical slot in the front thereof, in combination with the bearing-surface A′ for the nut E.

4. A drill-boot in the inner curved lower front portion of which is a flat bearing-surface, in which is formed an elongated perforation or slot, the perforation being adapted to receive the holding-bolt which carries the drill-tooth, and the flat bearing-surface being adapted to receive the flat inner surface of the nut which secures the bolt and its tooth to the boot.

5. A drill-boot which is provided upon its front inner surface with a projecting tube-protecting shoulder.

6. A drill-boot which is provided with an inwardly-projecting tube-protecting shoulder, and with a vertically-adjustable tooth, the inner end of the securing-bolt of which is overhung by such shoulder.

7. A drill-boot which is provided with a vertical slot, B, and with a shoulder, J, which overhangs such slot.

8. A drill-boot which has in its inner front portion a flat surface, A′, in which is a vertical slot.

9. A drill-boot on the front inner portion of which is a flat surface, in which is an opening for the reception of a securing-bolt.

10. In a drill-boot, the combination of the tube-protecting shoulder J, the bolt D, and the discharge-tube F.

11. The combination, in a drill-boot, of the tube-protecting shoulder J, the vertically-adjustable tooth C, and the securing-bolt D.

12. The combination, in a drill-boot, of an inwardly-projecting tube-protecting shoulder, a depression or recess below such shoulder, an opening in such depression, a bolt in such opening, and a drill-tooth upon such bolt.

13. The combination, in a drill-boot, of a protecting-shoulder, a depression or recess below such shoulder, an opening in such depression, a bolt in such opening, and a reversible tooth upon such bolt.

14. In a drill-boot, a drill-tooth which is secured to the body of the boot by a bolt, in combination with a shoulder which overhangs the inner end of the bolt and its nut, and prevents the discharge-tube from being brought into contact with the same.

15. In a drill-boot, a projecting shoulder upon the front inner face thereof, such shoulder being adapted, as described, to protect the seed-tube against injury through contact with the securing-bolt of the drill-tooth.

10,650. **MANUFACTURE OF SOLUBLE NITRO-CELLULOSE.** Frank V. Pool, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed July 13, 1885. Original No. 306,519, dated Oct. 14, 1884.

Claim.—In the art of manufacturing soluble nitro-cellulose, the process herein described of restoring the spent acids, which consists in restoring their strength in bulk by the introduction of a suitable quantity of a nitrate and sulphuric acid, and employing the acidulous mixture thus restored continuously in the conversion of batches of material, substantially as described.

PHOTO LITH NORRIS PETERS WASH. D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

Robinson v. Seymour.

Decided September 29, 1885.

1. Where a party to an interference in the preparation of his preliminary statement has in good faith and without negligence or carelessness on his part incorrectly stated a material date, he should be permitted, upon a proper reasonable showing of what he alleges the truth to be, and upon a clear and satisfactory showing of the manner in which the mistake occurred, to file an amended statement to conform to the facts.
2. The fact of such amendment, however, that such party did so amend, that he once testified to a certain date and afterward changed it, will all be regarded upon the hearing upon the merits in determining what the truth really was.

Motion to amend preliminary statement.

MACHINES.

Application of Stillman W. Robinson No. 152,571, filed January 12, 1885. Application of Oliver E. Seymour, No. 142,670, filed September 10, 1884.

Messrs. Crosby & Gregory for Robinson.
Messrs L. M. & R. M. Hosea for Seymour.

Montgomery, *Commissioner:*

This is a motion made by Robinson for leave to amend his preliminary statement. In such preliminary statement he avers conception in February, 1884. In Seymour's preliminary statement conception is alleged in January, 1884. After such original statements were opened and approved, and when the parties met for the purpose of taking testimony, Robinson gave notice that he would at once move for leave to amend his preliminary statement. (See Robinson's printed record, page 82.) The motion was made, and is the one now under consideration. In support of this motion it is shown that Robinson was induced to name the date of the conception in his first preliminary statement (as he did) by the advice of his attorney, and upon their mutual misapprehension of what was intended by Rule 105. This misapprehension and the manner in which it came about are fully explained, and Robinson now desires to file an amended statement to conform with what he avers to be the facts.

The practice of requiring parties in interference cases to file preliminary statements is undoubtedly a very proper and a very useful one. In such statement such party puts himself upon the record upon his oath as to a very material fact. Should he thereafter seek to amend such statement, or to change his statement of facts in any particular, the original statement remains for all time to confront him, and to be considered in determining what the real truth was. I can see no good reason, however, why a party who has in good faith, and without negligence or carelessness on his part, mistaken a date, or mistaken what was expected of him, or who has without fault been misled into asserting a date which did not turn out to be the correct one, should be precluded afterward, upon a proper reasonable showing of what he alleges the truth to be and upon a clear and satisfactory showing of the reason why he was misled, or induced, or mistaken into averring an incorrect date of conception in his first preliminary statement; from filing an amended statement which shall conform to the facts.

If it be true that all testimony tending to establish dates which are at variance with those alleged in the preliminary statement is not to be considered at all, (a question which is not determined here,) then it must be an extreme case where a party who has innocently and without fault or negligence on his part made an honest error in his statement of the dates should be denied the privilege of making correction. Of course, as said above, the fact of such amendment, that the party *did* so amend, that he once testified to a certain date and afterward changed it, must all be regarded and considered when the case is heard upon the merits in determining what the main fact really was. Where, however, a party shows (to the satisfaction of the Commissioner) that he has, without fault on his part, made an error in good faith in his preliminary statement, it certainly tends to the promotion of justice to permit such statement, if necessary, to be corrected and amended so that testimony which he takes may at least be considered, and so that the question of who actually was the prior inventor may be determined as intelligently and accurately as possible.

In my view the showing in this case is sufficient to entitle the amendment to be made as proposed. Such leave to so amend is therefore hereby granted.

Ex parte Foster.

Decided July 28, 1885.

1. The purpose of Rule 35 is to secure the verification of each and every part of the invention claimed by applicant.
2. An applicant who files an amendment to his claims, which amendment is not fairly covered by the original oath, will be required to verify the same by supplemental oath, as provided in Rule 47.

Appeal from the Primary Examiner.

WELL-BUCKETS.

Application of Charles H. Foster filed April 27, 1885.

Messrs. L. Bagger & Co. for the applicant.

Montgomery, *Commissioner:*

Applicant proposed to file an amendment to his claims, whereupon the Examiner required a supplemen-

tal oath, under Rule 47, which provides, in substance, that in case applicant seeks to amend by introducing any claim not substantially embraced in the statement of invention or claims originally presented, and therefore not covered by the original oath, he will be required to file a supplemental oath. From this requirement of the Primary Examiner applicant appeals to the Commissioner.

My attention is called to Rule 35, the second subdivision of which requires applicant to make a "general statement" of the object and nature of his invention, and the fifth sub-division of which requires him to state his "claim or claims." In pursuance of this requirement applicant in his original oath deposed that—

> He verily believes himself to be the original, first, and sole inventor of the improvement in well-buckets described and claimed in the foregoing specification.

It is conceded by applicant that the amendment he now proposes was not included in his former claim or claims; and it is also true that such amendment was not described in his general statement of the object and nature of the invention. Applicant urges, however, that inasmuch as his specification and drawings exhibit this amendment it is sufficient.

Turning to his original specification, I find that in his general statement he declares that—

> The invention consists in the improved construction of the said bucket, which will be hereinafter fully described, and particularly pointed out in the claim.

But, as stated, no reference whatever is made to this matter, which is proposed as an amendment, in his claim or claims. The oath simply avers that applicant is the original, first, and sole inventor of the improvement described and claimed in the specification. Now, while the subject-matter of the amendment is described and exhibited in the specification and drawings, it is not included in applicant's claims, and I do not see, therefore, how it can be said to be covered by the old oath, which is the real question here. Of course the purpose of the rule is to secure the verification of every part of applicant's invention. The rule intends that applicant shall verify by his oath everything which he claims as a part of his invention or improvement.

It is very plain that this amendment is not covered by the original oath, and the Examiner is affirmed.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

ADAMS, APPELLANT, v. BURKS.

Decided October, 1873.

1. When a patentee has assigned his right to manufacture, sell, and use within a limited district an instrument, machine, or other manufactured product, a purchaser of such instrument or machine, when rightfully bought within the prescribed limits, acquires by such purchase the right to use it anywhere without reference to other assignments of territorial rights by the same patentee.
2. The right to the use of such machine or instrument stands on a different ground from the right to make and sell them, and inheres in the nature of a contract of purchase, which carries no implied limitation of the right of use within a given locality.

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

Mr. Justice MILLER delivered the opinion of the Court.

The appellant in this case, who was the plaintiff in the court below, is the assignee of a patent to Merrill & Horner for an improvement in coffin-lids. The defendant is an undertaker, who, in the pursuit of his business, used in the town of Natick coffins with lids of the kind patented by assignees of plaintiff. The bill in this case was brought for an injunction, for discovery of profits, and for other suitable relief against the defendant as an infringer. To the bill as amended the defendant filed his plea in bar, and the validity of this plea presents the only question in the case.

This plea, after alleging an assignment by Merrill & Horner to Lockhart and Seelye of all their right, title, and interest in the invention described in said letters patent for, to, and in a circle, whose radius is ten miles, having the city of Boston for its center, further proceeds as follows: That this defendant carries on the business of an undertaker, having his place of business in Natick, in said district; that, in the exercise of his said business, he is employed to bury the dead; that when so employed it is the custom of the defendant to procure hearses, coffins, and whatever else may be necessary or proper for burials, and to superintend the preparation of graves, and that his bills for his services in each case, and the coffin, hearse, and other articles procured by him are paid by the personal representatives of the deceased; that since the date of the alleged assignment to the plaintiff of an interest in the invention secured by said letters patent the defendant has sold no coffins, unless the use of coffins by him in his said business, as above described, shall be deemed a sale; has used no coffins, except in his said business as aforesaid, and has manufactured no coffins containing said invention; and that since said date the defendant has used in his business as aforesaid, in Natick or Sherborn, no coffin containing the invention secured by said letters patent, except such coffins containing said invention as have been manufactured by said Lockhart and Seelye, within a circle, whose radius is ten miles, having the city of Boston as its center, and sold within said circle by said Lockhart and Seelye, without condition or restriction.

The question presented by this plea is a very interesting one in patent law, and the precise point in it has never been decided by this Court, though cases involving some of the considerations which apply to it have been decided, and others of analogous character are frequently recurring. The vast pecuniary results involved in such cases, as well as the public interest, admonish us to proceed with care, and to decide in each case no more than what is directly in issue.

We have repeatedly held that where a person had purchased a patented machine of the patentee or his assignee, this purchase carried with it the right to the use of that machine so long as it was capable of use, and that the expiration and renewal of the patent, whether in favor of the original patentee or of his assignee did not affect this right. The true ground on which these decisions rest is that the sale by a person who has the full right to make, sell, and use such a machine carries with it the right to the use of that machine to the full extent to which it can be used in point of time.

The right to manufacture, the right to sell, and the right to use are each substantive rights, and may be granted or conferred separately by the patentee.

But, in the essential nature of things, when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article, in the language of the court, passes without the limit of the monopoly. (*Bloomer* v. *McQuewan*, 14 How., 549; *Mitchell* v. *Hawley*, 16 Wallace, 544.) That is to say, the patentee or his assignee having in the act of sale received all the royalty or consideration which he claims for the use of his invention in that particular machine or instrument, it is open to the use of the purchaser without further restriction on account of the monopoly of the patentees. If this principle be sound as to a machine or instrument whose use may be continued for a number of years, and may extend beyond the existence of the patent, as limited at the time of the sale, and into the period of a renewal or extension, it must be much more applicable to an instrument or product of patented manufacture which perishes in the first use of it, or which, by that first use, becomes incapable of further use, and of no further value. Such is the case with the coffin-lids of appellant's patent.

It seems to us that, although the right of Lockhart and Seelye to manufacture, to sell, and to use these coffin-lids was limited to the circle of ten miles around Boston, that a purchaser from them of a single coffin acquired the right to use that coffin for the purpose for which all coffins are used; that, so far as the use of it was concerned, the patentee had received his consideration, and it was no longer within the monopoly of the patent. It would be to engraft a limitation upon the right of use not contemplated by the statute nor within the reason of the contract to say that it could only be used within the ten-miles' circle. Whatever, therefore, may be the rule when patentees subdivide territorially their patents, as to the exclusive right to make or to sell within a limited territory, we hold that in the class of machines or implements we have described, when they are once lawfully made and sold, there is no restriction on their use to be implied for the benefit of the patentee or his assignees or licensees.

A careful examination of the plea satisfies us that the defendant, who, as an undertaker, purchased each of these coffins and used it in burying the body which he was employed to bury, acquired the right to this use of it freed from any claim of the patentee, though purchased within the ten-mile circle and used without it.

The decree of the circuit court dismissing the plaintiff's bill, is, therefore, affirmed.

Mr. Justice BRADLEY, dissenting:

The question raised in this case is whether an assignment of a patented invention for a limited district, such as a city, a county, or a state, confers upon the assignee the right to sell the patented article to be used outside of such limited district. The defendant justifies under such a claim. He uses a patented article outside of the territory within which the patent was assigned to the persons from whom he purchased it. The plaintiff, who claims under the original patentee, complains that this is a transgression of the limits of the assignment.

If it were a question of legislative policy, whether a patentee should be allowed to divide up his monopoly into territorial parcels, it might admit of grave doubt whether a vendee of the patented article purchasing it rightfully, ought to be restrained or limited as to the place of its use. But the patent act gives to the patentee a monopoly of use, as well as of manufacture, throughout the whole United States; and the 11th section of the act of 1836 expressly authorizes not only an assignment of the whole patent, or any undivided part thereof, but a "grant and conveyance of the exclusive right under any patent, to make and *use*, and to grant to others to make and use the thing patented within and throughout any specified part or portion of the United States." (3 Story's R., 131; 1 Wallace, Jr., 339.)

If an assignment under this clause does not confer the same rights within the limited district which the patentee himself previously had in the whole United States, and no more, it is difficult to know what meaning to attach to language however plain.

On the 26th day of May, 1863, letters patent were granted to Merrill and Horner, for a certain improvement in coffin-lids, giving to them the exclusive right of making, using, and vending to others to be used, the said improvement.

On the 13th day of March, 1865, Merrill and Horner, the patentees, by an assignment duly executed and recorded, did assign to Lockhart and Seelye, of Cambridge, in Middlesex county, Massachusetts, all the right, title, and interest which the said patentees had in the invention described in the said letters patent, for, to, and in a circle whose radius is ten miles, having the city of Boston as a center. By necessary consequence, as it seems to me, the right thus assigned consisted of the exclusive right to make, use, and vend the improved coffin-lid within the limited territory described; but did not include any right to make, use, or vend the same outside of those limits. As the assigned right to make the lids was a restricted right, limited to the territory; so the assigned right to use them was a restricted right limited in the same manner. Each right is conveyed by precisely the same language. A different construction would defeat the intent of the parties. For if the assignees, after making any number of lids within the limited district, could use them or authorize others to use them outside of the district, the balance of the monopoly remaining in the hands of the patentees might be rendered of little value.

If it be contended that the right of vending the lids to others enables them to confer upon their vendees the right to use the lids thus sold outside of the limited district, the question at once arises, How can they confer upon their vendees a right which they cannot exercise themselves? The only consistent construction to be given to such an assignment is, to limit all the privileges conferred by it to the district marked out. It is an assignment of the manufacture and use of the patented article within that district, and within that district only.

Difficulties may, undoubtedly, be suggested in special cases. If the patented thing be an article of wearing-apparel, sold by the assignee within his district, it is confidently asked, Cannot the purchaser wear the article outside of the district? The answer to acute suggestions of this sort would probably be found, in the absence of all bad faith in the parties, in the maxim *De minimus non curat lex.*

On the other hand, the difficulties and the injustice which would follow from a contrary construction to that which I contend for, are very obvious. Take the electric telegraph, for example. Suppose Professor Morse had assigned his patent within and for the New England States: would such an assignment authorize the vendees of his assignees to use the apparatus in the whole United States? Take the planing-machine: would an assignment from Woodworth of his patent within and for the State of Vermont, authorize the assignees to manufacture machines *ad libitum*, and sell them to parties to be used in other States? So of Hoe's printing-press, and a thousand other machines and inventions of like sort.

Such a doctrine would most seriously affect not only the assignor, as to his residuary right in his patent, but the assignee also. For if it be correct, there would be nothing to prevent the patentee himself, after assigning his patent within a valuable city or other locality, from selling the patent machine or article to be used within the assigned district. By this means the assignment could be, and in numberless instances would be, rendered worthless. Millions of dollars have been invested by manufacturers and mechanics in these limited assignments of patents in our manufacturing districts and towns, giving them, as they have supposed, the monopoly of the patented machine or article within the district purchased. The decision of the court in this case will, in my view, utterly destroy the value of a great portion of this property.

I do not regard the authorities cited as establishing a different doctrine from that now contended for. The remark of Chief Justice Taney, in *Bloomer* v. *McQuewan*, (14 How., 539,) that "when a machine passes to the hands of a purchaser it is no longer within the limits of the monopoly; it passes outside of it, and is no longer under the protection of the act of Congress," is perfectly true in the sense and application in which the Chief Justice made it. He was speaking of time, not territory; of the right to use a machine after the original patent had expired and a renewal had been granted, not of using it in a place outside of the grant. All the effects mentioned by the Chief Justice would undoubtedly follow so far forth as it was in the power of the vendor to produce them, but no further. And he would never have contended that those effects would follow any further than the vendor's power to produce them extended. That is the very question in this case. How far did the assignee's interest, and therefore his power, extend? In my judgment it was limited in locality, both as to manufacture and use, and that he could not convey to another what he did not have himself.

I hold, therefore, that the decree should be reversed.

I am authorized to say that Justices SWAYNE and STRONG concur in this opinion.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 33—No. 2. TUESDAY, OCTOBER 13, 1885. PRICE—$5 per year.

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	4	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	.....	1	New Hampshire	5	.....
California	8	2	New Jersey	16	1
Colorado	4	1	New Mexico Territ'y	.....	.....
Connecticut	24	.....	New York	106	3
Dakota Territory	.....	.....	North Carolina	2	.....
Delaware	.....	.....	Ohio	41	10
District of Columbia	4	.....	Oregon	.....	.....
Florida	.....	.....	Pennsylvania	46	5
Georgia	3	1	Rhode Island	4	1
Illinois	40	2	South Carolina	3	.....
Indian Territory	.....	.....	Tennessee	2	.....
Indiana	16	.....	Texas	7	1
Iowa	13	1	Utah Territory	.....	.....
Kansas	2	.....	Vermont	1	1
Kentucky	4	.....	Virginia	.....	3
Louisiana	3	1	Washington Territ'y	2	.....
Maine	5	.....	West Virginia	.....	.....
Maryland	4	2	Wisconsin	16	1
Massachusetts	40	1	Wyoming Territory	.....	.....
Michigan	10	1	United States Army	.....	.....

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I do not regard the authorities cited as establishing a different doctrine from that now contended for. The remark of Chief Justice Taney, in *Bloomer* v. *McQuewan*, (14 How., 539,) that "when a machine passes to the hands of a purchaser it is no longer within the limits of the monopoly; it passes outside of it, and is no longer under the protection of the act of Congress," is perfectly true in the sense and application in which the Chief Justice made it. He was speaking of time, not territory; of the right to use a machine after the original patent had expired and a renewal had been granted, not of using it in a place outside of the grant. All the effects mentioned by the Chief Justice would undoubtedly follow so far forth as it was in the power of the vendor to produce them, but no further. And he would never have contended that those effects would follow any further than the vendor's power to produce them extended. That is the very question in this case. How far did the assignee's interest, and therefore his power, extend? In my judgment it was limited in locality, both as to manufacture and use, and that he could not convey to another what he did not have himself.

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Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of October 13, 1885.

Patents	468	No. 327,980 to No. 328,447,	inclusive.
Designs	20	No. 16,319 to No. 16,338,	inclusive.
Trade-Marks	27	No. 12,635 to No. 12,661,	inclusive.
Labels	14	No. 4,595 to No. 4,608,	inclusive.
Reissues of patents	1	No. 10,651.	
Total issue	530		

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Massachusetts	40	1	Wyoming Territory	.....	.....
Michigan	10	1	United States Army	.....	.....
Minnesota	11	.....	United States Navy	.....	.....
Mississippi	2	.....			
Missouri	17	.....	Total to citizens of the United States	466	39
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	1	.....	Germany	2	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	.....	.....	Ireland	.....	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	1	.....	Russia	.....	.....
Canada	2	.....	Scotland	3	.....
Cape of Good Hope	.....	.....	Spain	.....	.....
Colombia, U. S. of	.....	.....	Sweden	.....	.....
Cuba	.....	.....	Switzerland	.....	.....
Denmark	.....	.....	Victoria	1	.....
Egypt	.....	.....			
England	11	2	Total to citizens of foreign countries	22	2
France	1	.....			

DESIGNS.

16,319—TABLE-WARE.—*John Edwards*, Fenton, county of Stafford, England. Application filed June 23, 1885. Serial No. 169,600. Term of patent 7 years.

16,320 to 16,322, inclusive.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed September 5, 1885. Serial Nos. 176,291 to 176,293, inclusive. Term of patents 3½ years.

16,323 to 16,328, inclusive.—CARPET.—*Charles W. Swapp*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed September 5, 1885. Serial Nos. 176,294 to 176,299, inclusive. Term of patents 3½ years.

16,329 and 16,330.—CARPET.—*Henry Horan*, East Orange, N. J., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed June 13, 1885. Serial Nos. 168,642 and 168,643. Term of patents 3½ years.

16,331.—BOTTLE.—*Michael L. Houts*, St. Louis, Mo. Application filed July 20, 1885. Serial No. 172,158. Term of patent 7 years.

16,332.—HOPPER FOR COFFEE-MILLS.—*Joseph W. Knott*, Beaver Falls, Pa. Application filed July 9, 1885. Serial No. 171,128. Term of patent 7 years.

16,333.—EASEL.—*George R. Osborn*, New York, N. Y. Application filed August 5, 1885. Serial No. 173,658. Term of patent 7 years.

16,334.—ALTO-RILIEVO.—*John Patenham*, Brooklyn, N. Y. Application filed July 13, 1885. Serial No. 171,542. Term of patent 7 years.

16,335.—PARLOR-STOVE.—*Clarence Rathbone*, Albany, N. Y. Application filed May 15, 1885. Serial No. 165,625. Term of patent 7 years.

16,336.—CARPET.—*Emil G. Sauer*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed June 13, 1885. Serial No. 168,647. Term of patent 3½ years.

16,337.—HANGINGS, &c.—*Candace Wheeler*, Jamaica, N. Y. Application filed June 10, 1885. Serial No. 168,282. Term of patent 3½ years.

16,338.—DIPPER OR SKIMMER.—*William W. Woolsey*, Aiken, S. C. Application filed August 1, 1885. Serial No. 173,286. Term of patent 7 years.

TRADE-MARKS.

(Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.)

12,635.—BLANKETS AND LAP-ROBES.—*Wm. Ayres & Sons*, Philadelphia, Pa. Application filed September 9, 1885.
"Contrasted representations of long and short fibers, or, as it is known in the trade, 'shoddy' and 'wool.'"

12,636.—FLY-PAPER.—*Badger State Fly Paper Company*, Milwaukee, Wis. Application filed September 7, 1885.
"The words 'CATCH ON.'"

12,637.—REFRIGERATORS.—*Frederick M. Hall*, Chicago, Ill. Application filed September 11, 1885.
"The arbitrary word 'POLAR.'"

12,638.—BRICK.—*Schuyler Hamilton, Jr.*, New York and Sing Sing, N. Y. Application filed September 14, 1885.
"The representation of an anchor."

12,639.—CANNED CORN.—*S. N. Hyde & Son*, Long Green, Md. Application filed September 9, 1885.
"The portrait of S. N. HYDE, the fac-simile signature 'S. N. HYDE,' and the words 'S. N. HYDE & SON'S EGYPTIAN.'"

12,640.—PLUG, CHEWING AND SMOKING TOBACCO.—*H. Levi & Co.*, San Francisco, Cal. Application filed September 2, 1885.
"A portrait representing the bust of General William T. Sherman."

12,641.—PLUG, CHEWING AND SMOKING TOBACCO.—*H. Levi & Co.*, San Francisco, Cal. Application filed September 2, 1885.
"A portrait representing the bust of General U. S. Grant."

12,642.—HARNESS SWEAT-COLLARS, SADDLE-TREES, &C.—*McClain & Anderson*, Greenfield, Ohio. Application filed September 12, 1885.
"The representation of a shield, an awl, a needle, and the word 'PROTECTION.'"

12,643.—STATIONERS' HARDWARE SUPPLIES, BUILDERS' HARDWARE, FURNITURE HARDWARE, AND MISCELLANEOUS HARDWARE NAMED.—*Reading Hardware Company*, Reading, Pa. Application filed August 4, 1885.
"The word 'GENEVA.'"

12,644.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'SPORTSMAN'S' and the number '202.'"

12,645.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'EX. ARMY AND NAVY' and the number '505.'"

12,646.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The number '606' and the words 'EXTRA CONGRESS.'"

12,647.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'ARMY AND NAVY' and the number '303.'"

12,648.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'TIGER,' the representation of a tiger's head, and the arbitrary number '101.'"

12,649.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'CABINET,' the number '707,' and seven devices representing the several Departments of the Government."

12,650.—CORDED-COTTON PILE FABRICS.—*Robert F. Shaen*, South Orange, N. J. Application filed September 14, 1885.
"The arbitrary words 'CORD-DE-LA-REINE.'"

12,651.—REMEDY FOR RINGWORM, TETTER, AND ALL ITCHING ERUPTIONS OF THE SKIN.—*James T. Shuptrine*, Savannah, Ga. Application filed August 29, 1885.
"The word 'TETTERINE'" and fac-simile signature 'J. T. SHUPTRINE.'"

12,652.—PAMPHLETS AND BOOKS.—*Frederick Turner*, Philadelphia, Pa. Application filed September 2, 1885.
"The words 'THE LABOR LIBRARY,' with a circle and globe in the center under 'THE,' and 'LABOR' and 'LIBRARY' on either side, the words, 'LABOR,' 'LEARN,' 'LOVE' in the circle and globe, and 'LIVE FOR OTHERS' under the circle and globe."

12,653.—HAIR-DRESSING.—*Pietro Amato*, Dallas, Tex. Application filed September 19, 1885.
"The words 'THE LATE ITALIAN' and the autograph of the registrant."

12,654.—MATERIALS FOR OUT-OF-DOOR GAMES.—*William Bartleet & Sons*, Redditch, county of Worcester, England. Application filed June 4, 1884.
"The representation of the bust of an archer, with plumed hat and gauntlets, in the act of discharging an arrow from a bow."

12,655.—DENTIFRICE.—*B. W. Carpenter & Co.*, Burlington, Vt. Application filed September 2, 1885.
"The word 'MYRRHLINE.'"

12,656.—MEDICINAL PREPARATIONS FOR THE CURE OF RESPIRATORY DISEASES.—*Dr. J. F. Churchill's Inhalants Company, (Limited,)* London, England. Application filed April 20, 1885.
"The arbitray word 'SPIRONE.'"

12,657.—GALVANIZED SHEET-IRON OF THE SECOND QUALITY.—*John Merry*, New York, N. Y. Application filed May 23, 1885.
"A pictured phenix and the word 'PHOENIX.'"

12,658.—ANÆSTHETIC.—*Nicholas Lentz*, Waukon, Iowa. Application filed August 17, 1885.
"A representation of a ring with the letters 'Dr. N. L.' inscribed between the words 'TRADE' and 'MARK.'

12,659.—REMEDY FOR DISORDERS OF THE DIGESTIVE ORGANS AND NERVOUS SYSTEM AND AN INGREDIENT FOR A BEVERAGE.—*Rumford Chemical Works*, East Providence, R. I. Application filed August 3, 1885.
"The words 'ACID PHOSPHATE.'"

12,660.—MEDICINE FOR THE CURE OF DISEASES OF THE STOMACH AND BOWELS.—*James J. Six Dykstra*, Chicago, Ill. Application filed September 7, 1885.
"The arbitrary sign-word 'SUMMER.'"

12,661.—TURBINE WATER-WHEELS.—*Stilwell & Bierce Manufacturing Company*, Dayton, Ohio. Application filed August 12, 1885.
"The arbitrary word 'VICTOR.'"

LABELS.

4,595.—Title: "LUCE'S CELEBRATED BLACK LINIMENT."—*Evans & Krimmel*, Circleville, Ohio. Application filed September 21, 1885.

4,596.—Title: "INFALLIBLE DIARRHŒA AND TEETHING MEDICINE." *A. G. Franklin* Richmond, Va. Application filed September 18, 1885.

4,597.—Title: "DELICIO"S SHAMPOO." (FOR A HAIR WASH.)—*Jacob F. Geiger*, New York, N. Y. Application filed September 16, 1885.

4,598.—Title: "LONDON BALM." (FOR A MEDICINE.)—*William S. Haswell*, Denver, Colo. Application filed August 22, 1885.

4,599.—Title: "THE ORIGINAL KIDNEY PILLS."—*Kidney Pill Co.*, Wheeling, W. Va. Application filed August 12, 1885.

4,600.—Title: "MARTINEZ' LUBRICATOR."—*Albert Allen Martinez*, New Orleans, La. Application filed September 19, 1885.

4,601.—Title, "FORREST'S JUNIPER TAR DROPS." (FOR A MEDICINE FOR COUGHS, COLDS, &c.)—*Philip Rogers*, Baltimore, Md. Application filed September 18, 1885.

4,602.—Title: "SCOTT & FIRTH'S TONIC AND KIDNEY CURE."—*Scott & Firth*, Coldwater, Mich. Application filed September 17, 1885.

4,603.—Title: "PHILADELPHIA LEMONADE."—*S. Twitchell & Bro.*, Philadelphia, Pa. Application filed September 19, 1885.

4,604.—Title: "PHILADELPHIA LEMONADE EXTRACT."—*S. Twitchell & Bro.*, Philadelphia, Pa. Application filed September 19, 1885.

4,605.—Title: "THE GREAT GERMAN RHEUMATISM REMEDY."—*Alden A. Woodward*, Lynn, Mass. Application filed September 21, 1885.

4,606.—Title: "DR. ABLE'S COMPOUND HONEY OF TAR AND LEMON." *J. L. Able*, Little Rock, Ark. Application filed September 22, 1885.

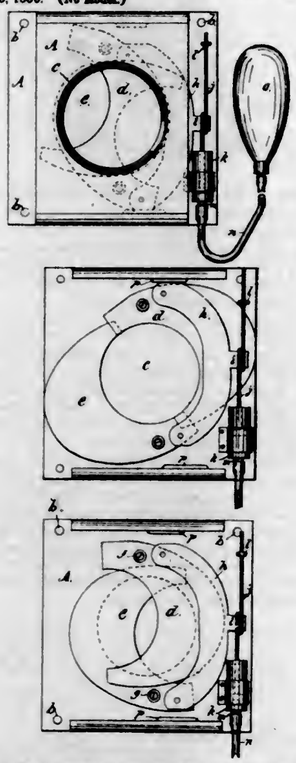
4,607.—Title: "OLD BURLEY CIGARETTES."—*S. Bunnitz & Co.*, Richmond, Va. Application filed August 25, 1885.

4,608.—Title: "SHAG CIGARETTES."—*S. Bunnitz & Co.*, Richmond, Va. Application filed August 25, 1885.

PATENTS

GRANTED OCT. 13, 1885.

327,980. **CAMERA-SHUTTER.** DAVID O. ADAMS, Columbus, Ind. Filed Jan. 5, 1885. (No model.)



Claim.—1. In a camera-shutter, the flat case having a central opening, the curved slides pivoted to said case on opposite sides of and arranged to cover said opening, and the curved bar pivoted to said slides, all combined and arranged to co-operate as and for the purpose specified.

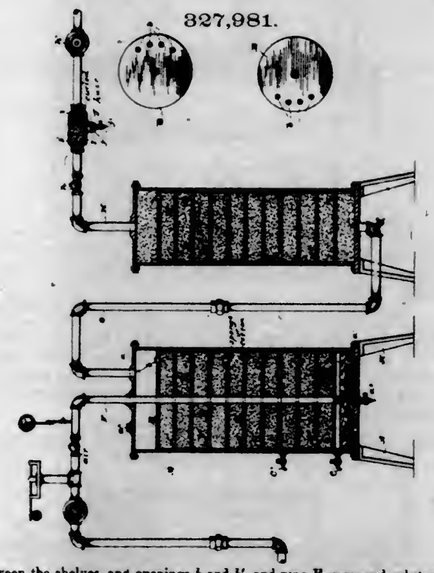
2. In a camera-shutter, the combination, with the case, the curved slides pivoted thereto, and the bar pivoted to said slides, in the manner shown and described, and having the arm i, of the pneumatic cylinder, the piston and piston-rod moving in said cylinder and connected with said bar, substantially as and for the purpose specified.

327,981. **CARBURETOR.** CARLOS F. ANDERS, Cleveland, Ohio, assignor of one-half to Charles M. Fulkerson, same place. Filed Apr. 16, 1885. (No model.)

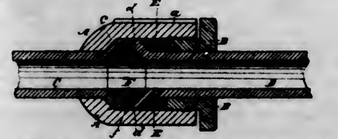
Claim.—1. In a gas-generating apparatus, the combination, with the container A, shelves B and B', openings *b* and *b'*, and pipe F, arranged substantially as indicated, of the container D, shelves E and E', with openings *e* and *e'*, pipes G and H, and percolator I, arranged in the latter pipe, the parts constructed and arranged substantially as set forth.

2. In a gas-generating apparatus, the combination, with the container A, shelves B and B', with fibrous or porous packing arranged between the shelves, and openings *b* and *b'*, and pipe F, arranged substantially as indicated, of the container D, shelves E and E', with fibrous or porous packing arranged between the shelves, and openings *e* and *e'*, and pipes G and H, substantially as and for the purposes described.

327,981.

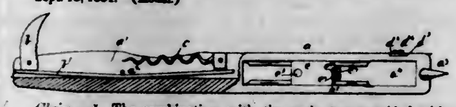


327,982. **PIPE-COUPLING.** BENJAMIN F. ANTHONY and JOSEPH CORON, Boston, Mass. Filed July 15, 1884. (No model.)



Claim.—The pipes C and D, flared at their adjacent ends, and the interposed doubly-beveled ring F, corresponding thereto, in combination with the coupling-sleeve A, internally threaded, the nut B, engaging therewith, and the interposed ring E, having one plane face and one beveled face, substantially as and for the purpose set forth.

327,983. **CAN-OPENER.** ISAAC N. ARENDT, Dayton, Wash. Filed Sept. 13, 1881. (Model.)

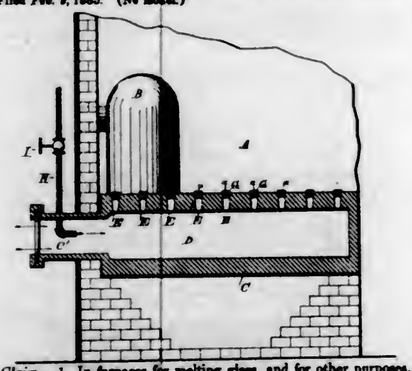


Claim.—1. The combination, with the main bar provided with a slot, a', spur a^3, and beveled guides a^4, and the adjustable knife-carrying head *e*, having guide-channels on its edges and fitting and sliding on the guides a^4, and having a recess, e', formed across its upper surface, of the plate e^2, resting in the cross-recess e', with its edges bearing against the upper bevel of the guides a^4, and the mechanism for clamp-

ing the plate c^2 against the upper bevel of guides a^3, substantially as set forth.

2. The improved can-opener, composed of the bar *a*, provided with the slot a^4 and with the spur a^5 and stud *d*, the knife d^4, fixed upon the head *c* and adjustable to and fro in the slot a^4, and the knife d', fixed to the side of the bar *a*, and arranged to cut in opposition to the stud *d*, substantially as set forth.

327,984. GLASS-FURNACE. John Ashcroft, New York, N. Y. Filed Feb. 9, 1885. (No model.)

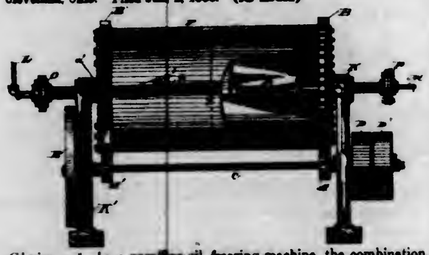


Claim.—1. In furnaces for melting glass, and for other purposes, a tile having an air and gas mixing chamber, the top of which is provided with numerous perforations to admit the mixed air and gas to the combustion-chamber.

2. In furnaces for melting glass and other materials, an air and gas mixing chamber, the top of which is provided with numerous perforations, in which are placed the removable ferrules or tips *a*, as set forth.

3. In furnaces for burning natural or other gas, the gas-mixing chamber D, having perforations, as described, for admitting numerous jets of gas and air into the combustion-chamber, in combination with the gas-pipe H and perforated slide F, as set forth.

327,985. PARAFFINE-OIL FREEZING-MACHINE. William Asher, Cleveland, Ohio. Filed Jan. 2, 1885. (No model.)



Claim.—1. In a paraffine-oil freezing-machine, the combination, with the hollow perforated shaft for supplying freezing mixture and supports for said shaft, of the drum having gearing, substantially as described, said drum being secured to said shaft by means of set-screws in such manner that if the movement of the shaft is obstructed the drum is turned without the shaft, and gears A A', engaging the gears B B', substantially as set forth.

2. The combination, with the geared drum, the pipe for supplying the freezing mixture, and its supports, of the shaft *c*, and gears A A' on said shaft for rotating the geared drum, and the fly-wheel E on said shaft *c*, substantially as set forth.

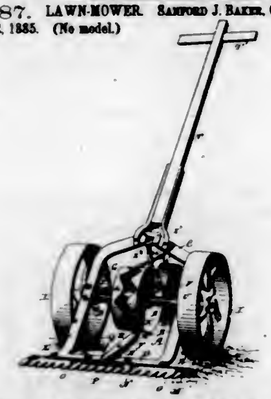
3. In a paraffine-oil freezing-machine, the combination, with the drum or cylinder and the tubular perforated shaft therefor, of the central partition or screen in said cylinder, substantially as set forth.

327,986. AUTOMATIC VALVE. Jared A. Ayres, Groton, assignor to the Pneumatic Engine Company, Hartford, Conn. Filed Feb. 9, 1884. (No model.)



Claim.—The combination of the wheel 13, turning on an axis and adapted to be worked by air passing upward through the water in which the wheel is submerged, with the valve 21, oscillating over the ports 24 and 26, and with the crank-arm 15, the pitman-rod 16, and the arm 17, operating to change the rotary motion of the wheel to the oscillating motion of the valve, all substantially as described.

327,987. LAWN-MOWER. Sanford J. Baker, Oakland, Me. Filed Jan. 2, 1885. (No model.)

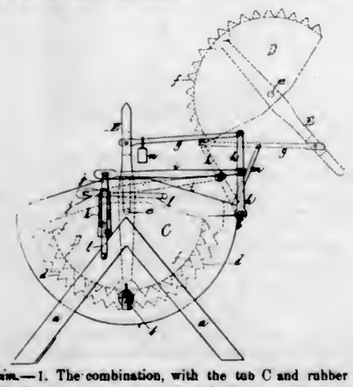


Claim.—1. The combination of the shaft having the driving and supporting wheels and the cam-wheel, the main frame to which the shaft is journaled, the cutter-bar secured at the front lower end of the main frame, the fulcrumed lever connecting the cam-wheel with the cutter-bar, the frame V, pivoted on the shaft and carrying the trail-wheel, and means, between the main frame and the frame V, to adjust the cutter-bar vertically, substantially as described.

2. The combination of the shaft having the driving and supporting wheels, the main frame to which the shaft is journaled, and having the cutter-bar at its front lower end and the pushing-pole at its rear end, the fulcrumed lever connecting the cam-wheel and the cutter-bar to operate the latter, the frame V, pivoted on the shaft and carrying the trail-wheel, the nut Z, pivoted to frame V, the nut z^2, pivoted to the main frame, and the right-and-left-hand screw working in the nuts, to adjust the cutter-bar vertically, substantially as described.

3. The combination, with the driving-shaft, the supporting-wheels, and the main frame journaled on the driving-shaft and carrying the cutter-bar, of the driving mechanism for the latter, the supplemental frame carrying the trail-wheel and pivoted or hinged on the driving-shaft, and means, substantially as described, located between the main and supplemental frames, to adjust the cutter-bar vertically, as set forth.

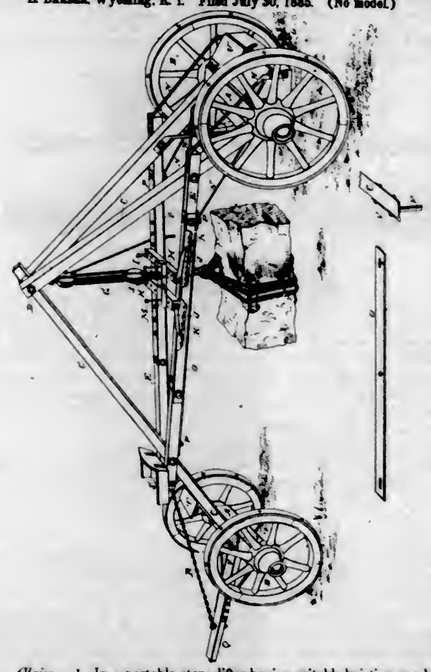
327,988. WASHING-MACHINE. Alfred Barbeau, Ware, Mass. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination, with the tub C and rubber D, provided with the supporting-rod *e* and projecting arm E, of connecting lever-arm *g*, hinged frame *h*, crank-arm *i*, crank *j*, crank-handle *l*, and support *k*, all combined, constructed, and operated substantially as set forth.

2. The combination, with the tub C, provided with a support, *m*, extending up from one end thereof for the purpose stated, and the rubber D, provided with rod *e* and projecting handle E, of the connecting lever-arm *g*, hinged frame *h*, crank-arm *i*, crank *j*, and crank-handle *l*, constructed and operated substantially as set forth.

327,989. STONE LIFTING AND CARRYING MACHINE. William E. Barber, Wyoming, R. I. Filed July 30, 1885. (No model.)



Claim.—1. In a portable stone-lifter having suitable hoisting mechanism, the reaches E and the beams H, pivoted at one end thereon, and provided at the other end with a pawl and ratchet or equivalent fastenings, substantially as set forth.

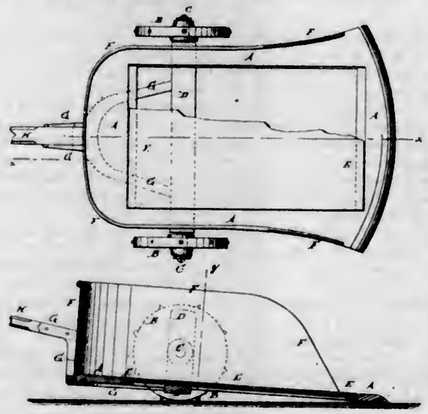
2. The pyramidal frame consisting of the struts C, joined at the apex, connected by the reaches E, and mounted on the wheels and axles B A, in combination with the adjustable beams H and cross-bar L, substantially as set forth.

3. The pyramidal frame mounted on trucks carrying suitable hoisting means and having the reaches E, in combination with pivoted beams H, suitably secured at their free ends, and with the cross-bar L and means for adjusting it laterally on said beams, substantially as set forth.

4. In a portable stone-lifter, the reaches E, provided with the slotted spring-bars O, and with bolts P serving as stops therefor, substantially as set forth.

5. The pyramidal frame having its forward strut mounted on the front axle, and provided with a shoe, V, and king-bolt F, in combination with the tongue Q and its supporting-chain R, whereby the tongue is supported and may, with the forward truck, be reversed beneath the reaches on the pivot F, substantially as set forth.

327,990. SIDEWALK-CLEARER. Charles E. Bartram, Fredonia, N. Y. Filed Oct. 14, 1884. (No model.)



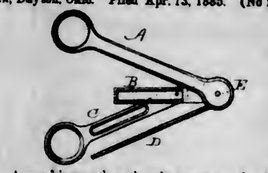
Claim.—1. A sidewalk-clearer constructed substantially as herein shown and described, and consisting of a base-frame widened toward its forward end, having the upper side of its forward edge rounded, and provided with a bottom, E, and flange F, wheels, axles, and a U-bar, B C D, for carrying the machine, and a handle-bracket, G, and handle H, for guiding and controlling the clearer, as set forth.

2. In a sidewalk-clearer, the frame A, made substantially as herein shown and described, with a widened forward end to clear a track for the wheels, and a forward edge rounded upon its upper side to separate the snow and ice from the sidewalk, as set forth.

3. In a sidewalk-clearer, the combination, with the open frame A, having a seat formed around its inner edge to receive a separate bottom, and flange F, of the wheels B, axles C, and U-shaped bar D, substantially as herein shown and described.

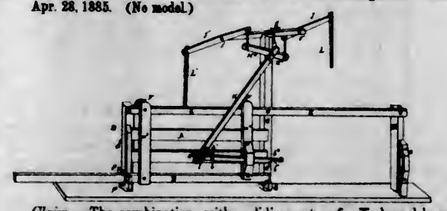
4. In a sidewalk-clearer, the combination, with the frame A, the U-shaped bar D, carrying the axles, and the flange F, of the handle-bracket G and the handle H, substantially as herein shown and described, whereby the clearer can be readily guided and controlled, as set forth.

327,991. WASH-BASIN HOLDER AND ATTACHMENT. Erhard Baumann, Dayton, Ohio. Filed Apr. 13, 1885. (No model.)



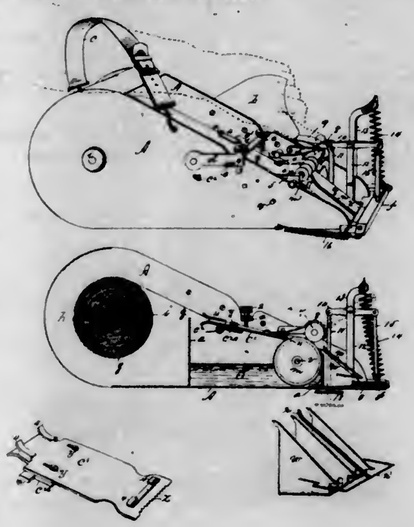
Claim.—A washing rack or bracket composed of wash-basin support A, comb-support B, and block G, to sustain the towel-rack D, supported on a common pivot, and the arm C, with soap-box pivoted to arm B, said parts united substantially as shown and described.

327,992. FARM-GATE. Jackson W. Bennett, Carthage, Mo. Filed Apr. 28, 1885. (No model.)



Claim.—The combination, with a sliding gate, of a T-shaped lever having a slot, A', a latch, B, having a pivot, *b*, and roller I, a long piece, R, posts D C E, connecting-piece G, cross-piece M, and pivoted levers J J', having handles L L', all substantially as and for the purpose set forth.

327,993. ADDRESSING-MACHINE. Henry N. Bowman, Springfield, Mass. Filed Dec. 1, 1884. (No model.)



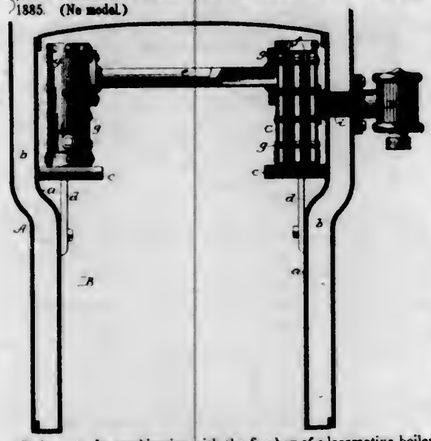
Claim.—1. The movable strip-guide *w*, consisting of three vertical plates suitably connected, the guide-rod *n'* in front of said plates, and the spring-arm *n* over the central plate, as set forth.

2. The pasting-roller *m*, the pressure-roller 7, hung in yielding supports, the aprons *c'*, having one end serrated and pivotally connected with the sides A, and the screws 2 2, combined and operating substantially as set forth.

3. As means for feeding and pasting the address-strip *g*, the paste-box, the pasting-roller hung to rotate in the latter, and having the pulley 9 thereon, the pressure-roller 17, having a geared connection with the pasting-roller, and the apron *c'*, combined and operating substantially as set forth.

4. The apron-support c^{20}, the apron *c'*, having the serrated end *z*, adjustably attached to said support, and having the guides 4 thereon, and the pasting-roller *m*, combined and operating substantially as set forth.

327,994. **FEED-WATER HEATER.** Daniel M. Bormarth, Shakopee, and Taylor W. Hentzelman, Minneapolis, Minn. Filed May 23, 1885. (No model.)



Claim.—1. In combination with the fire-box of a locomotive-boiler, the chambers C C, located in the fire-box above the fuel-space at a distance from the internal walls of the fire-box, whereby the flames and products of combustion are permitted to pass between the superheaters and the walls of the fire-box.

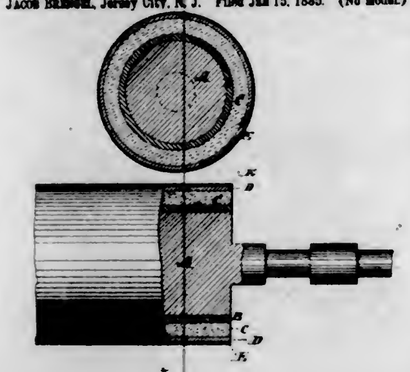
2. The combination of boiler A, fire-box B, provided with inwardly-projecting tubes *c*, in communication with the water-space of the boiler, and the chambers C, connected one with the other and with the boiler, and resting upon the tubes *c*, as shown.

3. The combination, with a boiler and its fire-box, of chambers C, extending longitudinally in the upper portion of the latter on opposite sides, and connected with each other and with the boiler, as set forth.

4. The chambers C, communicating with each other, as shown, in combination with the water-jacketed fire-box of a steam-boiler.

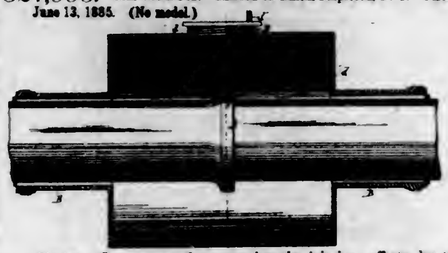
5. In combination with boiler A, fire-box B, and tubes *c*, communicating with the water-space of the boiler and projecting inward into the fire-box, feed-water heaters C C, resting upon said pipes and communicating with each other and with the boiler, substantially as shown and described.

327,995. **DAMPING-ROLLER FOR LITHOGRAPHIC PRESSES.** Jacob Berssel, Jersey City, N. J. Filed Jan 15, 1885. (No model.)



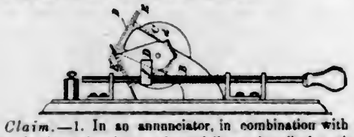
Claim.—The damping-roller constructed of the metal central body, rubber tube C, in contact with said metal, tube D, of flannel, in contact with said rubber, and outer tube, E, of mull, as specified.

327,996. **GAS-CONDUIT.** Samuel R. Brick, Stapleton, N. Y. Filed June 13, 1885. (No model.)



Claim.—In apparatus for preventing the injurious effects due to leakage of gas, the casing A, consisting of counterpart halves adapted to encircle an ordinary gas-pipe at its connections, having ends B B, of smaller diameter, in order to effect a close and inexpensive joint, the upper part of said casing having a threaded central man-hole, D, to accommodate the T-boss *d*, in which an atmospheric exhaust-pipe, *d'*, is eccentrically disposed, in combination with such gas-pipe, as and for the purpose shown and described.

327,997. **ELECTRIC ANNUNCIATOR.** Arthur E. Briggs, Bond Hill, Ohio. Filed Apr. 10, 1885. (No model.)

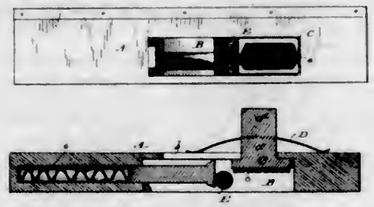


Claim.—1. In an annunciator, in combination with an electro-magnet having pole-pieces, substantially as described, a stirrup-shaped shield carrying an armature and pivoted below its center of gravity in rear of said pole-pieces, substantially as set forth.

2. In an annunciator, in combination with an electro-magnet having pole-pieces, substantially as described, a stirrup-shaped shield-swing, D, having armature E and stop-lug *d*, and pull-rod F, having projection *f* and retractile spring, substantially as set forth.

3. In an electric annunciator, an armature and shield swing journaled to the axis of the electro-magnet and adapted to be drawn by the action of the magnet on the armature into annunciating position, substantially as shown and described.

327,998. **COMBINED PAPER CUTTER AND STAMP.** Albert Brown, Mendocino, Cal. Filed Feb. 6, 1884. (No model.)



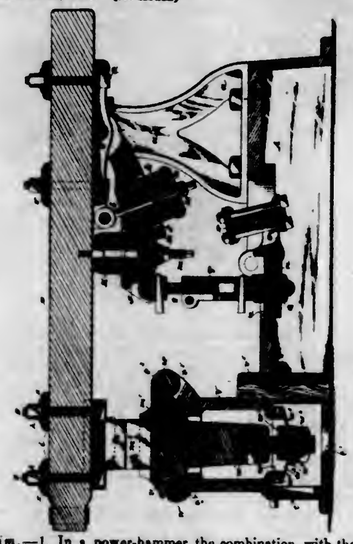
Claim.—1. The combination, with a cutter provided with a recess upon its under side and having a longitudinal slot, as shown, of a block carrying a stamp upon its under side, the handle of which projects through said slot, and an inking-roller, substantially as set forth.

2. The combination, with a cutter provided upon its under side with a recess and having a longitudinal slot, as shown, of a block having a stamp secured upon its under side, a handle secured to said block, the upper end of which is provided with a head, a spring mounted upon said handle, and bearing against the under side of the head of said handle, and an inking-roller mounted within the sides of the said recess, substantially as set forth.

3. The combination, with a cutter recessed upon its under side and provided upon its upper side with a longitudinal slot, of a block having a stamp secured upon its under side, a handle secured to said block, the upper end of which is provided with a head, a spring mounted upon said handle, and bearing against the under side of the head of said handle, an ink-roller bearing in the sides of the recess, and a spring-pressed rod or shaft, substantially as set forth.

4. The combination, with a sliding stamp located within a suitable block, of a spring-pressed block sliding in a recess formed in the end of said block, and an inking-roller, substantially as set forth.

327,999. **POWER-HAMMER.** Charles M. Brown, Rockford, Ill. Filed June 18, 1885. (No model.)



Claim.—1. In a power-hammer, the combination, with the main crank-shaft and the hammer-helve, of the rock-arm, a pitman connecting the rock-arm and crank-shaft, and a pitman connecting the rock-arm and hammer-helve at a point in front of the pivotal bearing of the hammer-helve, the above parts being constructed and combined substantially as described, whereby the crank on the main shaft travels more than one-half revolution in elevating the hammer, and less than one-half in lowering the hammer, substantially as set forth.

2. The combination, with the rock-arm, a main crank-shaft, and a pitman connecting one end of the rock-arm and crank-shaft, of an extensible pitman connected to the opposite end of said rock-arm, a hammer-helve, and devices located between and connecting the extensible pitman and the hammer-helve, substantially as set forth.

3. The combination, with the rock-arm, a main crank-shaft, and a pitman connecting one end of said rock-arm to the main crank-shaft, of an extensible pitman secured in sliding adjustment to the opposite end of said rock-arm, a hammer-helve, and intermediate devices connecting the hammer-helve and extensible pitman.

4. The combination, with a brake-lever and a brake-shoe adjustably secured thereto, of a belt-tightener arm pivotally secured to the machine-frame and adjustably secured to the brake-lever, substantially as set forth.

5. The combination, with the hammer-helve and the bolts for securing the helve to its seat and the hammer to the helve, of metallic washers having recessed faces adapted to receive and fit the draw-nuts, and elastic washers interposed between the metallic washers and the helve, substantially as set forth.

6. The combination, with the bed-plate, an anvil-block having corresponding vertical grooves or recesses on their adjacent faces, and a series of wooden blocks located within said grooves or recess and separating the bed and block, of bolts for removably securing the anvil-block to the bed, substantially as set forth.

7. The combination, with a hollow anvil-block and an anvil seated in its upper end, of a rotary slotted plate adapted to receive the shank of the anvil, and locking devices in engagement with the shank and rotary plate for locking the anvil in the desired tilted adjustment, substantially as set forth.

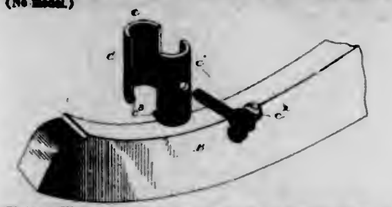
8. The combination, with a hollow anvil-block and an anvil seated in the upper end of the block, of a rotary plate located in the lower portion of the anvil-block, and provided with an oblong slot adapted to receive a prolongation of the anvil-shank, and devices for locking the said prolongation to the plate, whereby the anvil may be tilted in any plane passing through its vertical axis, substantially as set forth.

9. The combination, with an anvil-block and an anvil seated in the block in rotary adjustment, and provided with a lateral extension, of a pair of set-screws secured to the anvil-block and bearing against the lateral projection of the anvil.

10. The combination, with an anvil-block having a concave seat in its upper end and a pair of ears or lugs extending upwardly and laterally therefrom, of an anvil seated in the said concave seat, and provided with a projection extending between the said ears or lugs, and set-screws extending through the ears or lugs and impinging against the projection on the anvil for locking the anvil in the desired rotary adjustment, substantially as set forth.

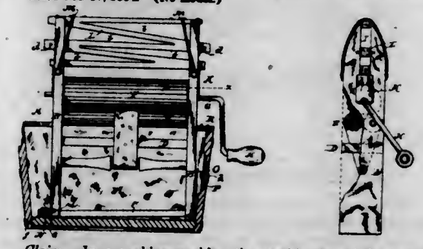
11. The combination, with the anvil-block, the anvil having a recess in its upper end for receiving the lower die, and the threaded bolt forming a prolongation of the anvil-shank, of the slotted rotary plate, the shouldered washer, and the clamp-nut, substantially as set forth.

328,000. **ROCKING-CHAIR.** Fred. H. Brown, Fort Worth, Tex., assignor of one-half to Walter E. Kaye, same place. Filed July 16, 1885. (No model.)



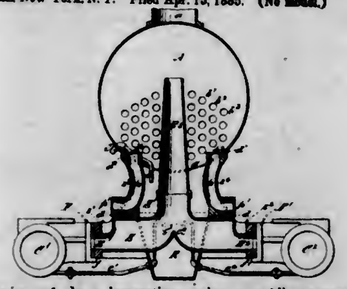
Claim.—The combination, in a chair, of the rockers and the clamps for securing the rockers to the legs of the chair, said clamps consisting of the semi-cylindrical sections c c', inwardly-projecting spurs c^2, adapted to enter the sides of the rocker, and the set-screw c^3, for clamping the sections together on the sides of the rocker and the lower end of the chair-leg, substantially as described.

328,001. **WASHING-MACHINE.** William J. Burns, Sterling, Ill. Filed Oct. 17, 1884. (No model.)



Claim.—In a washing-machine, the combination of the spring L, constructed with slots *b* therein, extending nearly through such spring, and beyond the center thereof, the frame A, the pivoted loops M M, the blocks K K, and rollers E and F, such spring being placed parallel with said rollers and held as shown, whereby compression at one end of such spring is communicated to and tends to open the opposite end thereof, for the purpose mentioned.

328,002. **SADDLE FOR LOCOMOTIVE-ENGINES.** John D. Campbell, New York, N. Y. Filed Apr. 15, 1885. (No model.)



Claim.—1. In a locomotive-engine, a saddle suppporting the smoke-box, composed of two horizontal hollow and movable sections superimposed upon each other and forming together a waste-water reservoir.

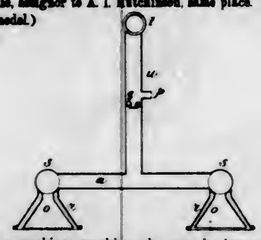
2. In a locomotive-engine, a saddle supporting the smoke-box, composed of two horizontal hollow and movable sections superimposed upon each other and forming together a waste-water reservoir, and means for discharging said reservoir, substantially as described.

3. In a locomotive-engine, the hereinbefore-described combination of the saddle supporting the smoke-box, composed of two horizontal hollow sections forming together a waste-water reservoir, the steam-ports in the side walls of said saddle for conducting the steam from the boiler to the steam-chests, and means for discharging said reservoir, substantially as described.

4. In a locomotive-engine, the hereinbefore-described combination of the smoke-box, the saddle supporting the same, composed of two horizontal sections, the waste-water reservoir in the interior of the saddle, the frame of the engine supporting the saddle, and the steam-cylinders attached thereto, the ports in the side walls of the saddle for conveying

steam from the boiler to the cylinders, the exhaust-steam pipes passing from the cylinders through the side walls of the saddle and through the waste-water reservoir into the smoke-box, and means, substantially as described, for conveying the waste water from the cylinders and feed apparatus to said reservoir and discharging the same.

328,003. WASHING-MACHINE POUNDER. David F. Casey, Harrisonville, Ohio, assignor to A. I. Hutchinson, same place. Filed Apr. 24, 1885. (No model.)



Claim.—In a washing-machine, the two horizontal and parallel tubes *s s*, provided with subjacent incased cups *r o*, and connected by tube *a*, in combination with a perpendicular tube, *u*, having air-vent *p*, valve *q*, and cross-bar handle *t*, as shown and described.

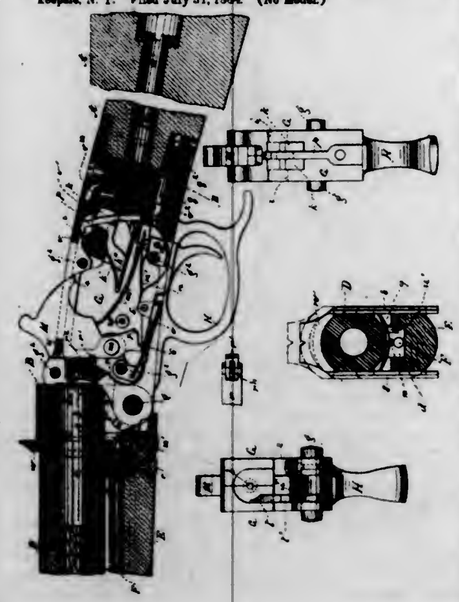
328,004. POLISHING OR EMERY CORD. Dwight M. Church, Baltimore, Md. Filed Aug. 8, 1884. (No specimens.)



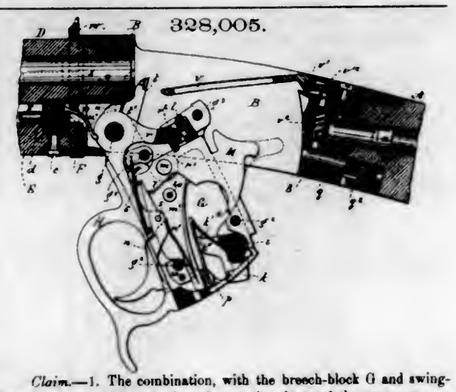
Claim.—1. An emery or polishing cord consisting of a single cord composed of twisted fibrous threads or elemental strands, each separate strand and the cord which they compose being coated with an abrading or polishing compound, substantially as and for the purposes set forth.

2. The described emery or polishing cord, consisting of a set or series of continuous cords or strands, each of which, as well as the smaller strands or strings of which they are composed, is coated with an abrading material, and which are then fabricated into a larger string or cord, which is also coated with an abrading material, all substantially as and for the purposes set forth.

328,005. BREECH-LOADING FIRE-ARM. Henry F. Clark, Poughkeepsie, N. Y. Filed July 31, 1884. (No model.)



328,005.



Claim.—1. The combination, with the breech-block G and swinging trigger-guard H, both pivoted upon the pin *g*, of the retractor *p* at the rear of the trigger-guard, the locking-dog *k*, over which the retractor *p* passes, the spring *k'* and a projection, k^3, upon the locking-dog, and the hammer M, with the projection 4, to press upon the locking-dog *k* and insure its action, substantially as set forth.

2. The combination, with the breech-block G and swinging trigger-guard H, both pivoted upon the pin *g*, of the retractor *p* at the rear of the trigger-guard, the locking-dog *k*, over which the retractor *p* passes, the spring *k'* and a projection, k^3, upon the locking-dog, the hammer N, with the projection 4, to press upon the locking-dog *k* and insure its action, the slide-bolt *q*, entering a recess in the trigger-guard, and spring v^3, substantially as set forth.

3. The combination, with the breech-block G and hammer M, pivoted within the breech-block, of the swinging trigger-guard H, the retractor *p* at the rear of the trigger-guard, locking-dog *k* within the breech-block, the swinging plate *v*, pivoted at *v'* to the stock, the arm *r* and forked pusher *r'* upon the trigger-guard, the finger r^3 upon the end of arm *r*, the firing-pin *l*, having a slot in which said finger acts, the extractor *t*, and its arm *t'*, swinging on the pin *g*, the finger *u* upon the trigger-guard, for operating the extractor, and the extractor-spring *u'*, the parts being constructed and operating substantially in the manner and for the purposes set forth.

4. The combination of the breech-block G, hammer M, pivoted within the breech-block, the swinging trigger-guard H, and the arm *r*, formed with the trigger-guard, a pivot, *g*, for the breech-block and trigger-guard, the forked pusher *r'*, pivoted to the arm *r*, for moving the hammer M to half-cock, the finger r^3 upon the arm *r*, and the firing-pin *l*, slotted for the reception of the finger, the cartridge-extractor *t*, the finger *u* upon the trigger-guard, for operating the extractor, and the spring *u'*, for imparting to it a final movement in throwing out the shell and the swinging plate *v*, pivoted at *v'* upon the stock, and over which the cartridge-shell is passed, substantially as set forth.

5. The combination, with the breech-block G, of the swinging trigger-guard H, pivoted upon the pin *g*, and having an arm, *r*, and pusher *r'*, the hammer M, pivoted within the breech-block and having the notches 6 and 7, the trigger *n*, pivoted upon the trigger-guard, and its spring *n'*, for holding the hammer, whereby the hammer is half-cocked as the breech-block is swung open by the trigger-guard, substantially as specified.

6. The combination, with the breech-block G, of the swinging trigger-guard H and its arm *r*, the pivot-pin *g*, pusher *r'*, and finger r^3 upon the arm *r*, the hammer M within the breech-block and acted upon by said pusher, the firing-pin *l* above the finger r^3, and sliding in the forward part of the breech-block, the trigger, trigger-spring, and the spring *o* to the trigger-guard, substantially as specified.

7. The combination, with the breech-block G, of the swinging trigger-guard H, the pivot-pin *g*, the finger *u* at the front part of the trigger-guard, the extractor *t*, pivoted upon the pin *g* and acted upon by the finger *u*, and the spring *u'*, pressing upon the notched eye of the extractor, substantially as and for the purposes set forth.

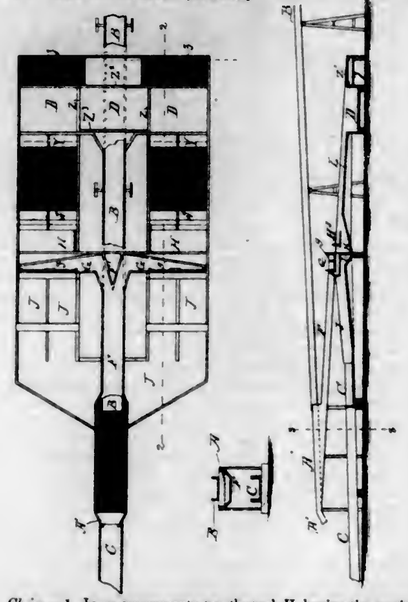
8. The combination, with the breech-block G, pivoted at *g*, and the hammer M within the breech-block, of the swinging plate *v*, pivoted at the rear end and slotted for the passage of the hammer and forming a cartridge-support, the tail-piece v^{12} at the rear end of the plate *v*, and the spring v^3 within the housing, substantially as specified.

9. The combination of the breech-block G and the swinging trigger-guard H, pivoted together on the pin *g*, the curved retractor *p* at the rear part of said trigger-guard, the slide-bolt *q* in the stock at the rear of the breech-block, the thumb-piece q^2, and the spring v^3, there being a hole in the lower part of the retractor, into which the bolt is passed to lock the trigger-guard, substantially as specified.

10. The combination of the breech-block G and trigger-guard H, pivoted upon the pin *g*, the spring *o* in the breech-block, acting upon

the trigger-guard, the retractor *p* at the rear part of the trigger-guard, the locking-dog *k*, and its spring *k'*, whereby the downward movement of the trigger-guard and retractor acts to disengage the locking-dog and release and swing the breech-block, substantially as specified.

328,006. ORE-CONCENTRATOR. Alexander D. Clarke, New York N. Y. Filed Nov. 10, 1884. (No model.)



Claim.—1. In an ore-concentrator, the tank H, having the partition for dividing the current, as described, the sluice G, and the inclined platform I^2, all combined and arranged as set forth, so that the platform receives the current from the sluice and breaks the force of its fall into the tank, substantially as specified.

2. The combination, with the divided tank H and its feeding-sluice the platform I^2 and H^2, substantially as specified.

3. The combination, with the divided tank H and its feeding-sluice, of the platform I^2 and the platform H^2, having a hinged end, *h*, substantially as specified.

4. In an ore-concentrator, the table L, in combination with the filter-frame W, having the wire-cloth W', and forming the channel W^2, the tank H, and the tank D, substantially as specified.

5. In an ore-concentrator, the combination, with table L, of the filter and filter-frame upon said table, having the channel W^2 formed between them, substantially as specified.

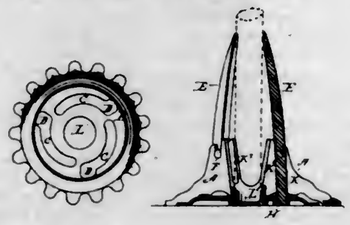
6. The filter and filter-frame and the table L, having channel W^2 formed between them, in combination with the removable strip W^3, substantially as and for the purpose set forth.

7. The combination, with the table L, the filter, and filter-frame, forming channel W^2, of the strip W^3 and apron W^4, substantially as specified.

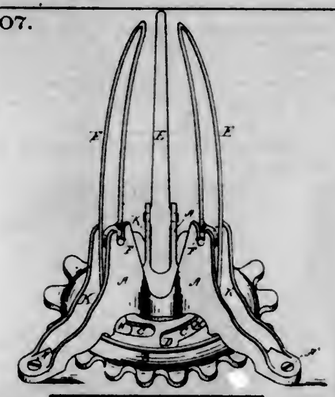
8. The table L, having the door Y^2, the filter, and its frame, in combination with the platform Y, having the door Y', substantially as specified.

328,007. CHRISTMAS-TREE HOLDER. Galen Coffin, Boston, Mass. Filed Oct. 27, 1884. (No model.)

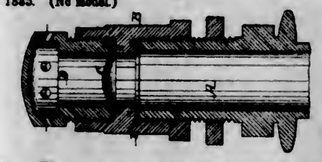
Claim.—The combination of the tripod A A A, and the clamps E E E, having trunnions F, with the cam-disk B, all operating together substantially as described, and for the purpose set forth.



328,007.



328,008. SAFETY-CAP FOR GAS-GENERATORS FOR SODA-WATER MACHINES. Joseph Comber and George Matthews, Jr., New York, N. Y., assignors to the firm of John Matthews, same place. Filed Mar. 30, 1885. (No model.)



Claim.—The combination of the perforated cap D, having contact-face *d*, with the disks C, coupling-piece B, said coupling-piece having contact-faces *a b*, and with the bung-piece A, to which said coupling-piece is adapted to be attached, as described.

328,009. CIGAR-HOLDER. George Corey, Brooklyn, N. Y. Filed July 21, 1885. (No model.)



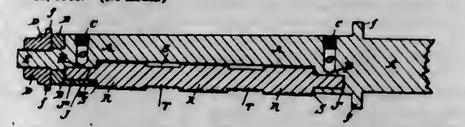
Claim.—1. A cigar-holder comprising a body portion, at one end thereof a weighted mouth-piece and at the other end a projecting flange, substantially as described.

2. A cigar-holder having a body portion, and at one end thereof a weighted mouth-piece, the said weight consisting of a lining of heavy metal in the bore of said mouth-piece, and a projecting flange at the other end thereof, substantially as described.

3. The combination of the tube A, having the chamber B, and the plug G, having the perforated and pointed tube I, metallic face H, and projecting points J, substantially as described.

4. The combination of the tube A, having the chambers B and C, the plug G, having the perforated and pointed tube I and projecting points J, the rim D, and the weighted mouth-piece F, substantially as described.

328,010. AXLE. Willard I. Corey, Cincinnati, Ohio. Filed Mar. 12, 1885. (No model.)



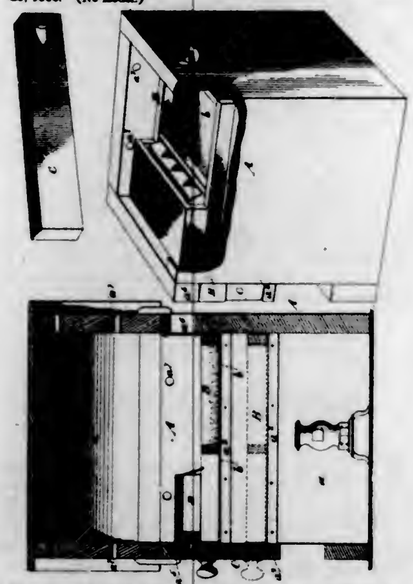
Claim.—1. The combination of the axle, roller R, journaled therein, the axle having bearing J', and flattened end having bearing J, and cap B, provided with tongue *m'*, having groove J^3, substantially as and for the purposes specified.

2. The combination of the axle and roller R, journaled therein, in bearing, as J', and bearing lying in the flattened end of the axle, and said flattened end having angular projection N, and cap B, having tongue *m'*, provided with groove J^3, and angular opening *n*, and screw-pin and nut, substantially as and for the purposes specified.

3. An axle provided with an anti-friction roller, the inner end of said anti-friction roller being so journaled in the solid axle that its journal end is completely surrounded by the solid axle, substantially as and for the purposes specified.

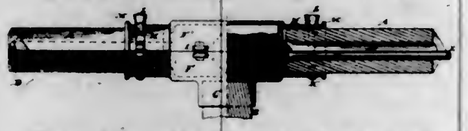
4. The axle provided with an anti-friction roller, the inner end of said anti-friction roller being so journaled in the solid axle that the journal-bearing of the said anti-friction roller is completely surrounded by the solid axle, the bearing being also situated in the journal portion of the axle external to the inner rim, substantially as and for the purposes specified.

328,011. BROODER. William Courtney, Richview, Ill. Filed Apr. 23, 1885. (No model.)



Claim.—A brooder provided with the heating-chamber *a*, the superposed metal drawer B, the guide-strips a^2 a^3, and the interchangeable filler C, substantially as described.

328,012. CONDUIT FOR WIRES. Henry F. Cox, Philadelphia, Pa. Filed May 25, 1885. (No model.)



Claim.—1. As a conduit for insulated telegraph and telephone wires, wooden pipes supported at each end on stakes, and secured to said stakes by a metallic band passing over and protecting the joints, substantially as described.

2. As a conduit for insulated telegraph and telephone wires, wooden pipes supported at each end on stakes, and secured to said stakes and to each other by a metallic band passing over and protecting the joints, substantially as described.

3. As a conduit for insulated telegraph and telephone wires, square wooden pipes set with one edge upward, supported at each end on stakes, and secured to said stakes by a metallic band passing over and protecting the joints, substantially as described.

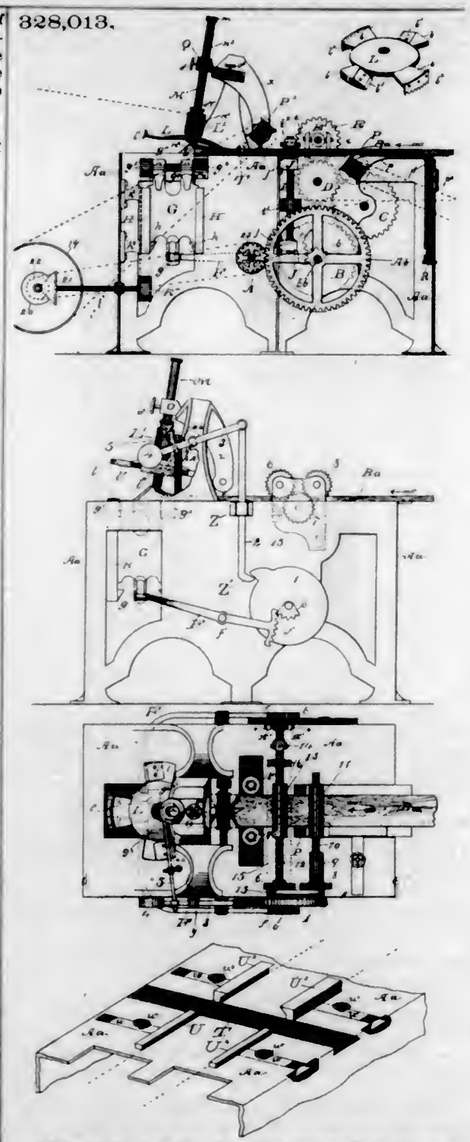
4. As a conduit for insulated telegraph and telephone wires, wooden pipes supported at each end on stakes, and secured to said stakes by a metallic band passing over and protecting the joints, in combination with metallic sectional boxes filled with loose insulating material, and situated in the conduit-line, substantially as described.

5. As a conduit for insulated telegraph and telephone wires, wooden pipes supported at each end on stakes, and secured to said stakes by a metallic band passing over and protecting the joints, in combination with metallic sectional boxes filled with loose insulating material, and supported on stakes situated in the conduit-line, substantially as described.

6. As a conduit for insulated telegraph and telephone wires, wooden pipes supported at each end on stakes, and secured to said stakes by a metallic band passing over and protecting the joints, in combination with metallic sectional boxes having as many sockets H as there are conduits leading from it, substantially as described.

328,013. MACHINE FOR MAKING CONVEYER-FLIGHTS. Sylvanus Cox, Indianapolis, Ind. Filed Mar. 3, 1884. (No model.)

328,013.



Claim.—1. In a machine for making conveyer-flights, the cutter-head L, having the pulley L′ attached thereto, and both revolving on a stationary shaft at an angle sufficiently oblique to the bed of the machine to make the required bevel on the end of the conveyer-flight, the cutter-head L provided with knives or bits, and with circumferential saws constructed to cut the bevel on the flight and to saw off the flight at required lengths, in combination with the foot n^2, projecting from the lower end of the hollow shaft M, and constructed to hold the material by pressing it firmly against the bed-plate immediately under the cutter-head L, intermittent feed-rolls 11 and 13, adapted to feed the material under the cutter-head, and the automatic lever 5, attached at one end to the pulley L′ on the cutter-head L, and at the other end connected by the lever 3 and draw-bar 2 with the lugged wheel 1 on the driving-shaft, in such a manner as to cause the lever 5 to raise and lower the pulley and attached cutter-head at proper intervals, substantially as described and specified.

2. In a machine for making conveyer-flights, the combination, with the cutter-head L and intermittent feed-rolls 11 and 13, of the wheel 1, keyed to the main driving-shaft, and having a lug on its rim adapted to engage the end of the draw-bar 2, draw-bar 2, having its upper end hinged to the lever, the lever 3, hinged at one end to the draw-bar 2, and having on its opposite end the weight 4, and adapted to operate the lever 5, to which it is connected, and the lever 5, connected at one end to the lever 3, and at the other end to the pulley L′ and its attached cutter-head L, all for the purpose of automatically raising and lowering the cutter-head L, substantially as described and set forth.

3. In an intermittent feed for conveyer-flight machines, the combination of the gear-wheel B on the end of the driving-shaft *bb*, said wheel B gearing into the gear-wheel C, and having teeth only around a portion of its circumference, so that the wheel C will be revolved during only a portion of the revolution of the wheel B, said gear-wheel C being geared into the gear-wheel D, and the gear-wheel D into the gear-wheel E, and the gear-wheel E being fixed to the end of the shaft which carries the front feed-roll, substantially as described and specified.

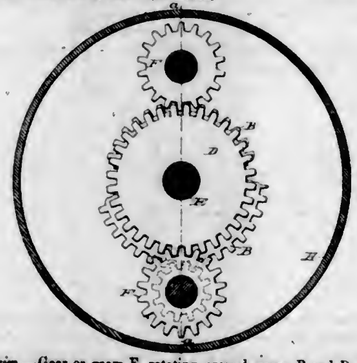
4. In a machine for making conveyer-flights, the combination of the feed-rolls 11 and 13, adapted to revolve in the same direction and feed the material Ba into the machine, the two rolls being connected by a suitable system of gear-wheels, and the front roll, 13, having the gear-wheel E keyed to the end of its shaft, the intermediate gears, D and C, the wheel B, keyed to the main driving-shaft *bb*, and having cogs around only a portion of its circumference, adapted to engage with the cogs on the gear-wheel C and revolve the wheel C during a portion only of each revolution of the wheel B, thereby imparting an intermittent motion to the feed-rolls 11 and 13, substantially as described and specified.

5. In a machine for making conveyer-flights, the combination of segments of wheels *b*, keyed to the driving-shaft, and having cogs adapted to engage during a part of each revolution with the levers F, the levers F, having on their short arms the cogged segments *f*, adapted to engage with the segments *b* and raise and lower the followers G, which operate on the ends of the long arms of the levers, the followers G, carrying the tenon-cutting heads g^2, and adapted to be raised and lowered by the lever F in order to cut the tenon on the end of the flight, the foot n^2, and guides U^2 and U^3, adapted to hold the material firmly while the tenon is being cut, the intermittent feed-rolls 11 and 13, to feed the material between the tenon-heads at proper intervals, and the cutter-head L, having the circumferential saws adapted to saw the flights off at proper lengths, all substantially as described and specified.

6. In a machine for making conveyer-flights, the parallel adjustable guides U^2 and U^3, having beveled inwardly-projecting upper edges, to fit and hold the beveled material down firmly while the tenon-heads are cutting the tenon on the end of the flight, substantially as described.

7. In a machine for making conveyer-flights, the combination of the cutter-head P and bracket *p*, the two cutter-heads i^2 i^3 on the laterally-adjustable shafts I I, the bevel cutter-head P′, to cut the side bevel on the flights, said cutter-head being supported by the arms *x*, the tenon-cutting heads g^2 g^3 on the followers G G, raised and lowered by the lever F, and intermittent gear-wheel *b*, the oblique cutter-head L, sliding up and down on the hollow shaft M, and having a forward adjustment by means of the sliding block O, the intermittent feed mechanism, and the table or frame A*a*, as described and specified.

328,014. MECHANICAL MOVEMENT. Abe L. Cushman, Concord, N. H. Filed Mar. 2, 1885. (No model.)



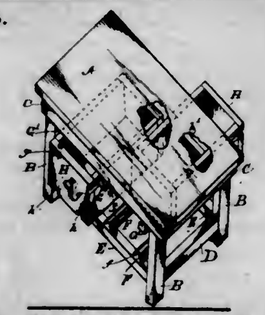
Claim.—Gear or gears F, rotating around gears B and D, for the purpose of giving motion to the latter, all substantially as set forth and described.

328,015. TABLE. James F. Davis, Marshall, Tex. Filed June 19, 1885. (No model.)

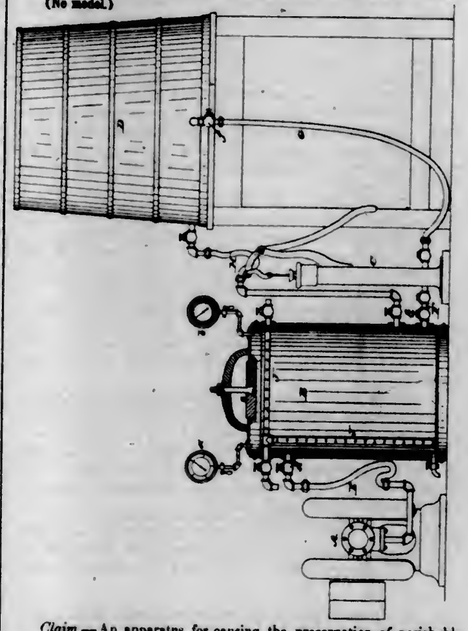
Claim.—1. The longitudinal bars E and rabbeted parts F *f* and G G′, in combination with a table and drawers, H, arranged to operate as set forth.

2. In a kitchen-table, the drawers H, having grooves *h* entirely in their bottom, in combination with the rabbeted supports F *f*, fitting into the grooves *h* of said drawers, as and for the purpose set forth.

328,015.

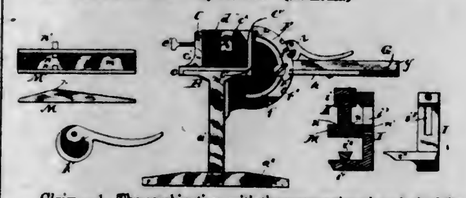


328,016. APPARATUS FOR PRESERVING BY VACUUM AND PRESSURE. Dudley H. Dickinson, Philadelphia, Pa. Filed Nov. 1, 1884. (No model.)



Claim.—An apparatus for causing the preservation of perishable substances, consisting of a vacuum-pump, A, preserving-cylinder B, having the perforated elbow J and having a vacuum and pressure gages; pipe E, connecting said vacuum-pump A and cylinder B, force or pressure pump C, tank D, pipe F, connecting said cylinder B and force-pump C, pipe G, connecting said force-pump C and tank D, and pipe H, connecting said cylinder B and tank D, all of said parts being arranged and combined substantially as and for the purpose set forth.

328,017. PRINTER'S RULE-MITERING MACHINE. Albert Filly, New York, N. Y. Filed July 13, 1885. (No model.)



Claim.—1. The combination, with the rectangular plane-bed of the plane-stock having a downwardly-projecting flange, c, oblique bosses c' c^2, and the plane-bit held in position by set-screws passing through said bosses.

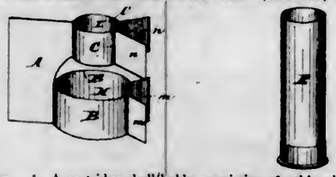
2. The combination, with the bed and sector-plate, of the guide-bar G, having a dovetailed groove in its lower face, the yoke I, having a tongue which enters said dovetail groove, the cam-lever K, pivoted to the upper end of the yoke, and the jaw M between the cam-lever and rest, substantially as described.

3. The combination, with the bed and sector-plate, of the guide-bar G, the yoke I, dovetailed thereto, the cam-lever K, pivoted on said yoke, and the jaw M, having projections *n n* entering grooves in the sides of the cam-lever, all substantially as described.

4. In combination with the plane-bed and sliding plane thereon, the sector-plate and the guide-bar G, attached thereto, the rest O, projecting from the plane-bed at the same side as the sector-plate but a little distance therefrom, substantially as described.

5. In combination with the plane-bed and adjustable guide-bar G, the plane-body having its lower edge cut away, substantially as described

328,018. **HOLDER FOR SUPPORTING CARTRIDGE-SHELLS.** W. H. Fesser, Cincinnati, Ohio. Filed Jan. 2, 1885. (No model.)



Claim.—1. A cartridge-shell holder consisting of a thin plate forming a rear projection, said plate having a pair of spring-arms projecting from the front edge thereof, substantially as described.

2. A cartridge-shell holder consisting of a rearwardly-projecting sheet of metal forming a support and handle, said plate having a pair of open-ended arms projecting from the upper front edge thereof, and having a spring-socket projecting from the lower front edge thereof, substantially as described.

3. The combination, with a thin metallic plate forming a rear projection and base, of curved spring-arms in pairs projecting from the front vertical edge of said plate, substantially as set forth.

4. A cartridge-shell holder consisting of a doubled metallic plate having two pairs of open-ended spring-arms projecting from the edge of the plate opposite the folded edge, substantially as described.

5. The combination, with a recessed seating-block, as D, of the cartridge-holder described, consisting of a metallic plate having a spring-socket at one edge thereof to embrace said block, and a pair of spring-arms above the same, having a recess between them of less diameter than the block, as set forth.

6. A cartridge-shell holder having the vertical support A, consisting of a doubled sheet of metal terminating in the arms C C, carrying lips, and having a basal support, substantially as and for the purposes specified.

7. A cartridge-shell holder having the vertical support A, consisting of a doubled sheet of metal terminating in the spring-arms C C, having lips *n n*, and in the lower larger arms, B B, having lips *m m*, substantially as and for the purposes specified.

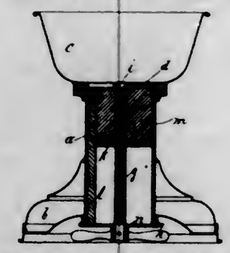
328,019. **SAW.** Thaddeus Fowler, Bridgeport, assignor to Henry G. Thompson, Milford, and H. Grant Thompson, New Haven, Conn., and Arthur G. Thompson, New York, N. Y. Filed Feb. 9, 1885. (No model.)



Claim.—1. As a new article of manufacture, a saw as described, made from tough pliable steel, and having the teeth thereof hardened to a high temper down to their base-line or line of juncture with the body of the blade, substantially as described.

2. A saw, as described, of a single piece of metal with a soft back and high-tempered hard teeth, as specified.

328,020. **SHAVING-CUP.** Johann Fuhr and Johannes Schweickert, Stuttgart, Wirtemberg, Germany. Filed June 2, 1885. (No model.)



Claim.—The combination of a shaving-pot composed of the metal tube *a*, to which a bead-piece in cup form, *c*, is screwed, the spindle *g*, the knife-plate *d*, and the plate *k*, between which latter two the soap-cylinder *m* is placed, all for the purpose set forth, and substantially as shown and described.

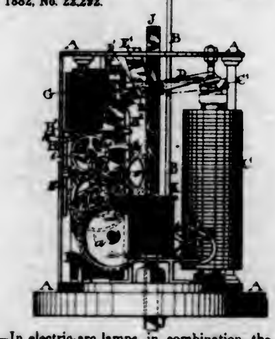
328,021. **BUTTON.** Theodore W. Foster, Providence, R. I. Filed May 19, 1885. (No model.)



Claim.—1. In a button, the combination of the head provided with a slot in the back plate, the hook members provided with spread or thickened ends and passing together through the slot, the bar arranged centrally over the slot and adapted to form a rest for the upper ends of the hook members, and the spring adapted to hold the hook members in their extreme opposite positions, substantially as described.

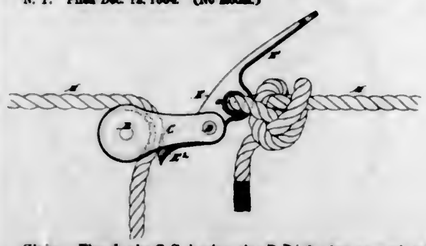
2. In a button, the combination of the head with the oppositely-arranged hook members of unequal length, placed side by side, passing through a slot in the back plate, and having movement independent of each other, and a bar arranged centrally over the slot and adapted to form a recess for the upper ends of the hook members, and the spring adapted to hold the hook-bars in their extreme opposite positions, substantially as described.

328,022. **ELECTRIC-ARC LAMP.** Alexander L. Fyfe and John Main, Brixton, County of Surrey, England. Filed Aug. 21, 1883. (No model.) Patented in England Sept. 2, 1881, No. 3,821, and in Germany Apr. 18, 1882, No. 22,292.



Claim.—In electric-arc lamps, in combination, the electro-magnet C, within the main circuit operating the armature-C' on end of the fulcrumed lever D D', said lever engaging, by means of truck D^2, the gearing-frame F, the train of wheels *a b d g i* mounted therein, with the fly-wheel *j* and ratchet-wheel *c*, with pawl *e* and spring *f*, the fly-wheel with centrifugal arms $j' j^2, j' j^2$ rubbing against inside of friction-cylinder *m*, said fly-wheel with frictional periphery, against which bears the brake H, which is operated by detent H' and core G' of solenoid G, said solenoid attached to gearing-frame and inserted, together with the resistance-coil K, within a shunt-circuit, all substantially as shown and described, and for the purpose to operate as set forth.

328,023. **CLOTHES-LINE FASTENER.** J. H. Glasman, New York N. Y. Filed Dec. 12, 1884. (No model.)



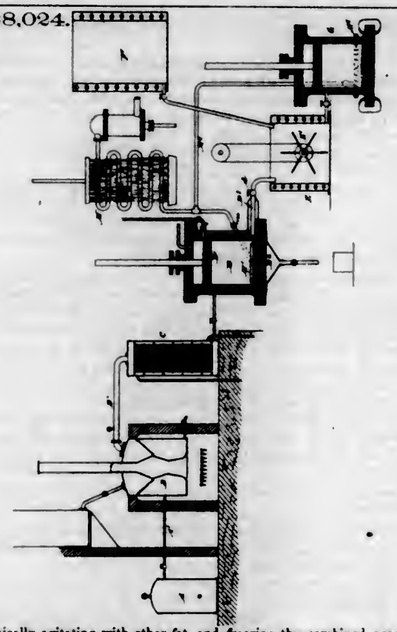
Claim.—The cheeks C C, having pins B D, the former serving for a pivot-bearing for a sheave, A, and the latter as a pivot for a lever, E, the said lever E formed with arm E', having eye *e*, and with an arm, E^2, at an angle and having a roughened bearing, as shown, all combined, arranged, and serving as herein set forth.

328,024. **METHOD OF TREATING COTTON-SEED OIL.** James B. Graff, New York, assignor to himself and Allan Mason, Brooklyn, N. Y. Filed Apr. 6, 1885. (No model.)

Claim.—1. The within-described process of treating cotton-seed oil or analogous quickly-decomposing oils by distillation in the presence of nitrogen, substantially as herein specified.

2. The process described of treating rapidly-oxidizing fat from cotton-seed and analogous sources by distilling, freezing, pressing, mechanically agitating with other fat, and freezing the combined product, all substantially as herein specified.

328,024.



3. In the treatment of fat from cotton-seed or other sources, the freezing by the direct application of carbonic-acid gas compressed and operated substantially as herein specified.

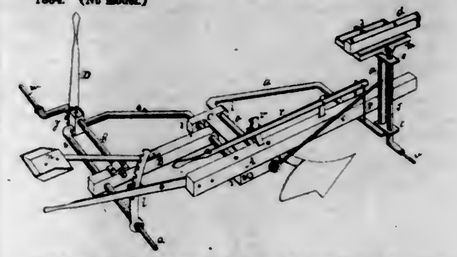
4. The product described, composed of fat from cotton-seed and analogous sources distilled, frozen, and pressed, as herein specified.

328,025. **OVERALLS.** Leopold A. Guttenman, St. Paul, Minn. Filed June 19, 1884. (No model.)



Claim.—As an article of manufacture, a pair of apron overalls having elastic or yielding shoulder-straps permanently secured to and forming a part thereof, substantially as and for the purpose set forth.

328,026. **RIDING-PLOW.** Fielding L. Hankins, Hamdinsville, Ill., assignor of one-half to Andrew J. Hankins, same place. Filed Sept. 27, 1884. (No model.)

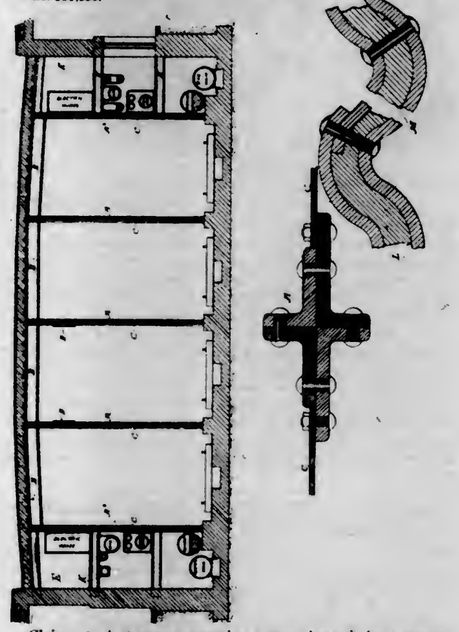


Claim.—1. In a riding-plow, the jointed or hinged plow-frame constructed as shown, consisting of the bent axle *s s*, center bearing-bar, C, frame *a a*, brace *c*, in combination with the lever *o* and rack *l*, substantially as shown and described, for the purpose set forth.

2. The arrangement and combination of the frame *a a*, brace *c*, beam A, stirrup P, lever *r*, rack *v*, bent axle J, pivoted frame *m*, and tongue *d*, substantially as shown and described.

3. The arrangement and combination of the bent axle *s s*, bent axle *g*, lever D, ratchet *y*, seat-bar B, lever *o*, and rack *l*, all operating substantially as shown and described, for the purpose set forth.

328,027. **STRUCTURE DESIGNED TO OCCUPY THE STREETS.** R. R. Hazard, New York, N. Y. Filed July 26, 1884. (No model.) Patented in England Aug. 6, 1884, No. 11,000, and in France Aug. 9, 1884, No. 151,159.



Claim.—1. A structure occupying a street beneath its pavement and embracing tunnels or ways formed by comparatively-thin internal walls, those centrally placed being calculated for railway traffic and those at the curb-line provided with supports for sewers, pipes, and conduits, substantially as described.

2. A structure occupying a street beneath its pavement and embracing tunnels or ways formed by comparatively-thin internal walls, those centrally placed being calculated for railway traffic and those at the curb-line subdivided into galleries or passages and adapted to other uses, substantially as described.

3. A structure divided horizontally into longitudinal galleries or passages located one over another, occupying part of a street beneath its surface, and calculated to contain and support the sewers, water, gas, and other pipes, and cables, conduits, and wires for electric service, substantially as described.

4. A structure divided longitudinally by rows or beams into galleries or passages and accessible throughout, occupying part of a street beneath its surface and calculated to contain and support the sewers, water,

gas, and other pipes, and cables, conduits, and wires for electric service, substantially as described.

5. A structure calculated for railway traffic, the walls whereof are constructed of iron or steel, in combination with a filling of asphalt, cement, or equivalent material forming a comparatively-thin non-resonant wall, substantially as described.

6. A structure calculated for railway traffic, the walls whereof are constructed of corrugated iron or steel, in combination with a filling of asphalt, cement, or equivalent material, forming a comparatively-thin non-resonant wall, substantially as described.

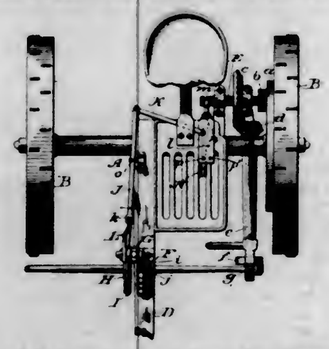
328,028. MOWING-MACHINE. Edward H. Heath and Frank W. Moore, Waupun, Wis. Filed July 11, 1884. (No model.)



Claim.—1. In a reaper, mower, or like machine, the combination of a cutter-bar, C, lifting-lever G, provided with quadrant H, shifting-pinion *c*, serving to transmit motion from the driving-wheel to the cutter-bar, shifting-lever *o*, and sliding bar J, connected with the shifting-lever *o* and extending to the quadrant H, said bar and quadrant being provided one with a cam-slot and the other with a stud or pin to enter said slot, substantially as described, and for the purpose set forth.

2. In combination with frame A, wheels B B, cutter and cutter-bar C, and gearing, substantially as shown, for transmitting motion from one of the wheels B to the cutter, shifting-gear included in said gearing, shifting-lever *o*, link *n*, elbow-lever *u*, sliding bar J, and lifting-lever G, provided with quadrant H, the sliding bar and quadrant being connected by a stud or pin on one of said parts projecting into a slot in the other concentric with the quadrant through a part of its length and eccentric thereto through another portion of its length, as and for the purpose set forth.

328,029. REAPING AND MOWING MACHINE. Edward H. Heath and Frank W. Moore, Waupun, Wis. Filed Oct. 9, 1884. (No model.)



Claim.—1. In a reaper, mower, or like machine, the combination of a cutter-bar, C, lifting-lever G, provided with cam-shaped quadrant L, shiftable pinion *c*, serving to transmit motion from the driving-wheel to the cutter-bar, shifting-lever *l*, connecting-rod K, and lever J, connecting the shifting-lever with the cam-shaped quadrant, as and for the purpose described.

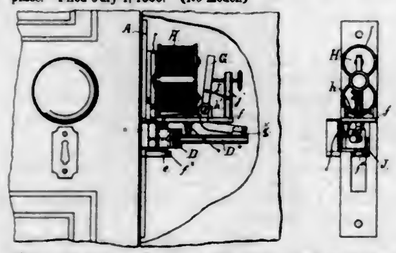
2. In a reaper or mower, the combination of a cutter-bar, a lifting-lever therefor, a pivoted plate or bar connected with and adapted to be moved by the lifting-lever, and a foot-lever adapted to be automatically locked to the pivoted plate or bar and to be disconnected therefrom and operated by the foot of the driver, said foot-lever being connected with and arranged to operate a movable clutch or pinion to throw the cutter-bar into or out of gear.

3. In a reaper or mower, the combination of a cutter-bar, a lifting-lever therefor, a movable clutch or pinion for connecting or disconnecting the cutter-bar and gearing, and a foot-lever connected with and serving to move said clutch or pinion and adapted to be connected with or disconnected from the lifting-lever at will.

4. The combination, in a reaper, mower, or like machine, of a driving-wheel, a cutter-bar, a lifting-lever for the cutter-bar, a movable clutch or pinion intermediate between the cutter-bar and driving-wheel, an oscillating plate connected with the lifting-lever and provided with recesses, a foot-lever connected with the movable clutch or pinion and provided with a stud to enter one or the other of the recesses of the oscillating plate, and a spring bearing against the foot-lever and serving to hold it normally in engagement with the oscillating plate.

5. The combination, substantially as herein described and shown, of driving-wheel B, cutter-bar C, lifting-lever G, provided with cam L, lever J, rod K, shifting-plate *l*, provided with recesses *p p'*, foot-lever N, provided with stud *s*, spring *r*, and sliding shaft E, provided with pinions *b c*, all combined and arranged to operate substantially as described and shown.

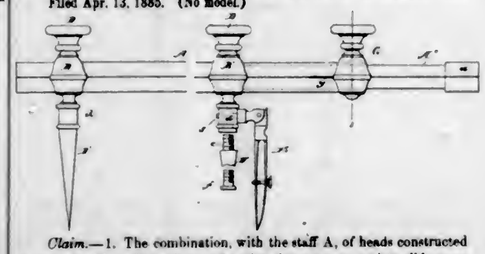
328,030. ELECTRIC BOLT-RELEASING DEVICE. George L. Henzel, San Francisco, Cal., assignor of one-half to Edward F. Henzel, same place. Filed July 1, 1885. (No model.)



Claim.—1. The combination of the keeper-plate A, having an open-sided slot or recess, *a*, the swinging keeper D, the arm D*, and locking-lever G, and means, as the electro-magnet and circuit-closing devices, adapted to act upon the locking-lever to trip it and release the arm by closing the circuit, and the spring I, to restore the lever to its position when the circuit is broken, substantially as described.

2. A keeper for locks and latches, consisting of the swinging piece D, having jaws *d d**, and adapted to move laterally in such manner as to discharge the bolt or latch at one side, as described, the arm D*, and the locking-lever G, which constitutes or is connected with the armature of an electro-magnet, H, the parts being mounted on a suitable plate, as A, for application as set forth.

328,031. BEAM-COMPASSES. Lester E. Hixon, Birmingham, Conn. Filed Apr. 13, 1885. (No model.)



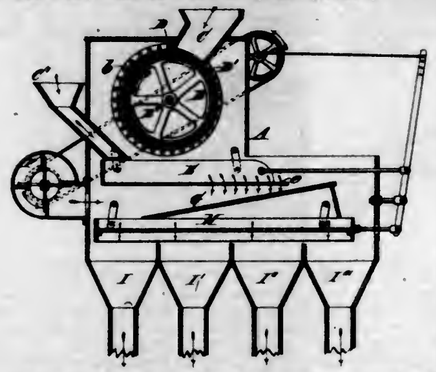
Claim.—1. The combination, with the staff A, of heads constructed to support either the points or drawing-instruments, and to slide upon the staff, and provided with split tapering and threaded projections, adapted to nuts having tapering threaded sockets, substantially as specified.

2. The head sliding upon the rod and provided with a threaded socket and with a transverse socket or opening, whereby either the point or pen may be secured thereto, substantially as and for the purpose set forth.

3. The combination of the staff provided with adjustable heads and slit, as set forth, the extension-bar, and a ring, G, constructed to be contracted upon the slit end of the staff, substantially as described.

4. The combination of the hollow slit staff, sliding bar and clamping-ring, provided with a block, *i*, and set-screw *k*, substantially as described.

328,032. MACHINE FOR SHELLING AND GRADING PEANUTS, &c. John J. Hill, Clifton, Ohio. Filed Jan. 16, 1885. (No model.)



Claim.—1. In a shelling and grading machine, the combination of a rotary brush-cylinder with a series of fixed bars arranged as an open grate, and so placed that the pods will be crowded against the bars with a stress gradually increasing from the feed onward.

2. In a shelling and grading machine, the combination of a rotary brush-cylinder and a series of fixed bars arranged as an open grate, each bar of the series from the feed onward being slightly nearer the cylinder than its predecessor, with a shaker and fan.

328,033. CAMERA-SHUTTER. David S. Hitchcock, Cleveland, Ohio, assignor to the Hitchcock Shutter Manufacturing Company, same place. Filed Sept. 11, 1884. (No model.)



Claim.—1. In a camera or other optical instrument, the combination of the shutter-valves *a a'*, the movable plate *l*, the lever *i*, the slots *k k'* and *h h'*, and the case *g*, with its cover, or their equivalents, all arranged as and for the purposes substantially as described.

2. The shutter-valves *a a'*, plate *l*, lever *i*, slots *k k'* and *h h'*, and case *g* with its cover, and the attachment-band *p p'*, the cap *c*, the arm *r*, the bar *s*, the spring *z*, the spring *o*, the screw *v*, the nuts *t t'*, or their equivalents, all combined with the tube of a camera or other optical instrument, and arranged substantially as and for the purposes described.

3. The movable circular plate *l*, of any size required, made of thin metal or other suitable material having a central opening of any required size, a lever or other device to move the plate, and slots *h h' k k'*, substantially as and for the purposes described.

4. The diaphragm-plates E E' F F' with collars, the pinions G G G G, the plate D with ratchet-teeth I I' H H', the lever A, the case C, and its cover, all arranged and combined substantially as and for the purposes described.

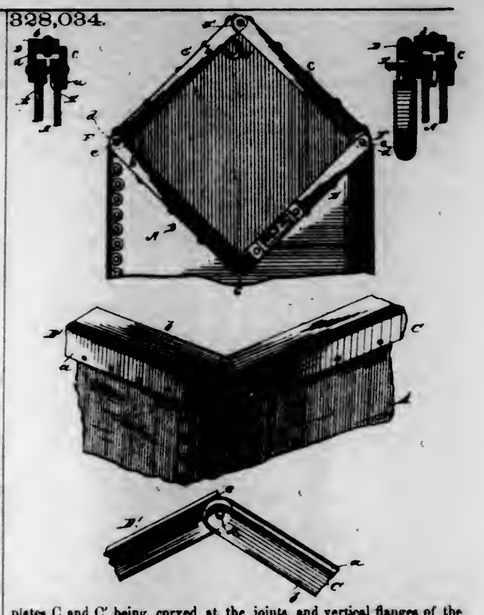
5. The diaphragm-plates E E' F F', of any required size, made of thin metal or other suitable material having a raised collar and pinion on the under or upper face of each, as may be required, to allow said plates to pass each other when revolved, arranged substantially as and for the purposes described.

6. Two or more diaphragm-plates, each having a raised collar and pinion, combined with a movable circular ratchet-plate of suitable size and material with circular opening, ratchet-teeth, and lever, arranged substantially as and for the purposes described.

7. The combination of one or more diaphragm-plates with pinions and a movable ratchet-plate, substantially as and for the purposes described.

8. In a camera or other optical instrument, the shutter-valves, the movable plate with its lever and slots, combined with the diaphragm-plates, the pinions, the movable ratchet-plate, the lever, and case, substantially as described.

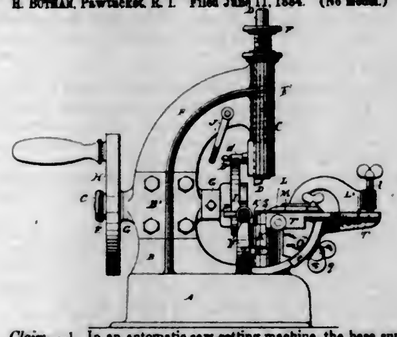
328,034. MAIL-BAG. Louis C. Huber, Huber, Ky. Filed Jan. 13, 1885. (No model.)



Claim.—1. In a mail-bag, of the mouth-plates C C' and D D', pivoted or hinged together, the vertical flanges of the plates C and C' being curved at the joints, and vertical flanges of the plates D and D' cut perpendicularly at such points for the passage of the same, substantially as specified.

2. The combination, with a mail-bag, of the mouth plates or bars, hinged as described, the horizontal flanges of the bars C' and D' being recessed on their upper sides at one end, substantially as and for the purposes set forth.

328,035. SAW-SETTING MACHINE. Henry F. Jenks and William H. Butman, Pawtucket, R. I. Filed June 11, 1884. (No model.)



Claim.—1. In an automatic saw-setting machine, the base supporting the table and anvil and the overhanging standard B and vertical arm C, depending therefrom, in combination with the hammer adapted to reciprocate in said arm and the spring and tension-screw to adjust and regulate the force of the blow, substantially as set forth.

2. In an automatic saw-setting machine, the hammer and anvil, in combination with a saw-table adjustable in the arc of a circle and provided with suitable clamping devices, for the purpose set forth.

3. In an automatic saw-setting machine, the doubly-beveled semi-rotary anvil and the table and clamps adapted to hold the saw thereon, in combination with hammer D, beveled on its face and provided with the stud D', and the cam and spring serving to actuate the hammer, substantially as set forth.

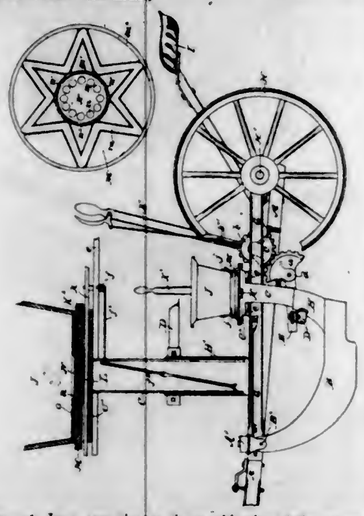
4. In an automatic saw-setting machine, the reciprocating yoke Y, carrying two feed-pawls adjustable with relation to the saw-blade, so that either pawl may engage therewith while the other is dormant, substantially as set forth.

5. In an automatic saw-setting machine, the semi-rotary anvil K and the reciprocating feed-pawls, in combination with the shaft E, adjustable within the driving-shaft, for the purpose set forth.

6. In an automatic saw-setting machine, the table T, in combination with the slotted guide-plate M, provided with adjusting-screws *m*, and the clamp-plate L with suitable tightening means, for the purposes set forth.

7. In an automatic saw-setting machine, the reciprocating feed-pawls, in combination with the lugs N, adapted to be adjusted with relation to the saw-teeth to provide for engagement of the pawl with the alternate teeth, substantially as set forth.

328,036. CORN-PLANTER. William H. Kadel, Rock Falls, Ill. Filed June 1, 1885. (No model.)



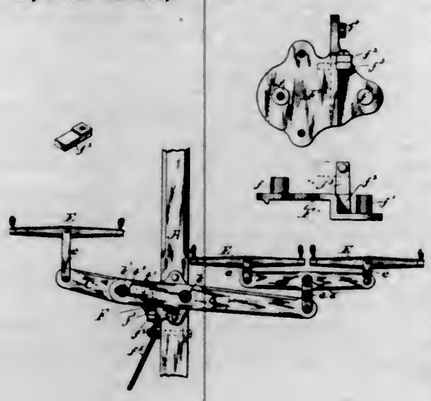
Claim.—1. In a corn-planter, the combination of the runner B, pivotally supported at its front end and provided with the boot B', the seed-tube C, the cross-beam D, lever E, and hand-lever F, substantially as shown, and for the purpose described.

2. In a corn-planter, the runner B, pivotally supported at the front end, the boot B', seed-tube C, adjustably inserted in such boot, the lever E, fulcrumed horizontally and provided with the gear *a*, and connected to the boot B', and hand-lever F, suitably fulcrumed on the frame of the machine and provided with the gear *c*, adapted to engage the gear *a*, and thereby shift the rear of the runner B in a vertical direction, substantially as shown, and for the purpose specified.

3. In a corn-planter, the combination of the runner B, pivotally supported at its front end, and having the vertically-hollow shank or boot B', the seed-tube C, adjustably inserted in such boot, the lever E, suitably connected at its front end to such boot, and provided with gear *a*, and the hand-lever F, provided with the gear *c*, and means for locking the lever F in any desired position, whereby the depth of planting may be adjusted as desired, substantially as shown, and for the purpose mentioned.

4. In a corn-planter, the combination of the following elements: the runner B, pivotally supported at its front end and provided with the boot B', the seed-tube C, cross-beam D, lever E, hand-lever F, the bar K, provided with the stud K^3, and the wheel M, provided with the channel *m*, substantially as shown, and for the purpose described.

328,037. DRAFT-EQUALIZER. Maurice Kane, Chicago, Ill. Filed May 8, 1885. (No model.)

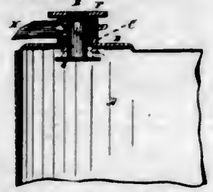


Claim.—1. The long arm B, with slotted hole, in combination with short arm C, with fulcrum, as shown and described.

2. The plate F, in combination with studs *f* and *f'*, and adjustable stop f^2 and stud f^3, as shown and described.

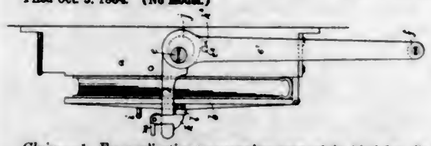
3. An adjustable stop, either in combination with or separate from plate F.

328,038. CAN-FAUCET. Edward Kelly, Cleveland, Ohio. Filed July 7, 1885. (No model.)



Claim.—For oil-cans and other vessels, a faucet consisting of a tubular neck provided with a spout and a flange by which the neck is secured to a can, hollow screw-stem E, adapted to screw into the said neck, valve G, terminating the lower end of the stem E and arranged to close the lower end of the neck forming the seat of the valve, thumb-piece F, for operating the stem, apertures *a* and *b*, whereby the bore of the stem is put in open relation with the interior of the can and with the said spout when the valve is open, substantially as described, and for the purpose specified.

328,039. COPYING-PRESS. Daniel E. Kempster, Boston, Mass. Filed Oct. 3, 1884. (No model.)

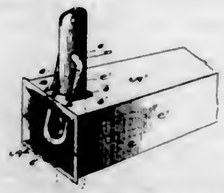


Claim.—1. For application to a copying-press of the kind described, the pivoted pressure-arm *k*, having adjustably attached thereon, by mechanism substantially as described, the slide or projection *k'*, as and for the purpose set forth.

2. In a copying-press, the platen *b*, with lugs *l l*, bed *a*, pressure-arms *k k*, pivotally attached to said bed and provided with projections k^2 k^2, combined with the operating-levers *e' e'*, pivotally attached to the bed *a* and having the studs e^2 e^2, said projections and studs being arranged for conjoint operation, whereby the pressure-arms *k k* are prevented from flying up or disengaging from the lugs *l l* when the operating-lever is in a pressure-applying position, substantially as set forth.

3. In a copying-press, the bed *a*, the pressure-arms *k k*, pivotally attached to said bed, and the jaws or projections *k' k'*, adjustably attached to said arms, in combination with the platen *b*, the lugs *l l* on said platen, and mechanism, substantially as described, for exerting a pressure between the platen and the bed, for the purpose set forth and described.

328,040. CAR-COUPLING. John P. Koontz, St. Louisville, Ohio. Filed Aug. 10, 1885. (No model.)

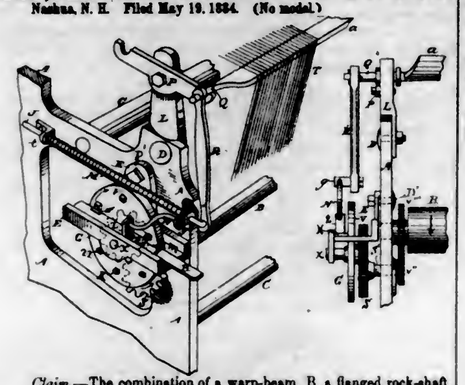


Claim.—1. The combination, with the recessed draw-heads, of a coupling-pin, and a link pivotally connected to the pin and adapted to support the pin in its elevated position, substantially as described.

2. The combination, in a car-coupling, of a draw-head having a series of recesses, a coupling-pin fitted in one of the recesses, and a coupling-link pivotally connected to the pin and adapted to hold the pin in an elevated position, the link fitting in recesses on either side of the pin and adapted to be housed within the draw-head chamber when acted on by the approaching car, substantially as described.

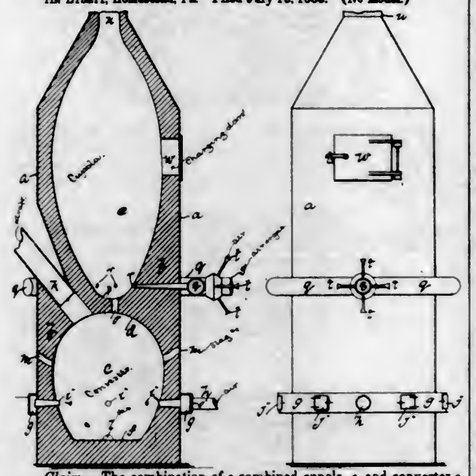
3. In a car-coupling, the combination of the draw-head having recesses B B' C and a cut-away portion, C', and a reversible pin and link pivotally connected together and adapted to fit in the recesses when in their elevated position, substantially as described.

328,041. LET-OFF MECHANISM FOR LOOMS. George A. Ladue, Nashua, N. H. Filed May 19, 1884. (No model.)



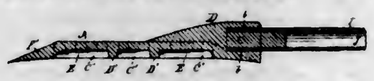
Claim.—The combination of a warp-beam, B, a flanged rock-shaft, Q, a crank-arm attached to said rock-shaft, a sliding rod, J, connected at one end to said crank-arm and provided with a lateral arm, *g*, a spring for pressing said rod in one direction, a sliding escapement-bar, H, provided with the lug Z and with notches *d f*, an arm connecting the lateral arm of said sliding rod with the lug of said escapement-bar, an escapement-disk, G, provided with studs K, adapted to alternately engage said escapement-bar, and intermediate gearing connecting the shaft of said disk with the shaft of the warp-beam, substantially as described.

328,042. COMBINED CUPOLA-FURNACE AND CONVERTER. Martin Lysett, Homestead, Pa. Filed July 15, 1885. (No model.)



Claim.—The combination of a combined cupola, *c*, and converter *c*, in direct communication with each other, and placed the one above the other, and each having a bustle-pipe, one *g* and the other *q*, placed above the hearths, and provided with a number of tuyeres, an opening, *l*, at the base of the converter *c* for tapping the same, and another, *k*, inclined toward the center at the top to allow the waste products means of escape, a door, *w*, in the cupola *c* for charging the same, and draft-stack *u*, substantially as and for the purpose described.

328,043. GRATE AND COAL CLEANER. Warren J. Lewis, Leominster, Mass. Filed Feb. 9, 1885. (No model.)



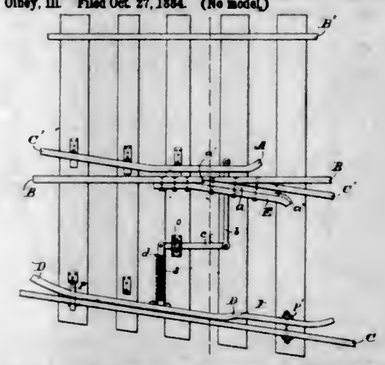
Claim.—1. A coal and grate cleaner having inclined or beveled ends F F', ash-openings B, space or spaces C', and projections D', substantially as and for the purposes set forth.

2. A coal and grate cleaner having solid and continuous front and rear edges, said edges provided with beveled or inclined surfaces F F' to facilitate the back and forth movement of the device without undue disturbance of the coal when it is run in upon the upper surface of the grate and under the coal, for removing the ashes from the coal and grate-bars, substantially as described.

3. A coal and grate cleaner provided with open ash space or spaces C', and projection or projections D', whereby when the cleaner is run in upon the upper surface of the grate-bars and under the coal the ashes will fall through space or spaces C' upon the grate-bars, from which they will be forced off by projection or projections D', substantially as described.

4. A coal or grate cleaner having curved or elevated under edges, G G, beveled or inclined edges F F', and openings B, substantially as and for the purposes set forth.

328,044. AUTOMATIC RAILWAY-FROG. Daniel H. Mahoney, Olney, Ill. Filed Oct. 27, 1884. (No model.)



Claim.—1. An automatic railway-frog, embodying an unbroken main-track rail with a fixed wing-rail at the outside thereof (forming a guard-rail for the siding) and at the other side a movable elevated siding-rail provided with connecting mechanism for its operation by the passage of wheels upon the opposite siding-rail, and adapted to be thereby drawn against and partially over the main-track rail, and an inclined filling-piece between said fixed wing-rail and the main-track rail, to insure the proper seating of the wheel-tread in passing from the siding upon the elevated siding-rail and across the main track, substantially as set forth.

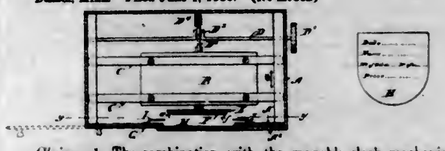
2. In an automatic railway-frog, the pivoted guard-rail D, constructed, as described, with bend *k*, and provided at one end with suitable cushioned pivot, *p'*, and at the other end with pin *p*, allowing lateral motion, but preventing upward spring, substantially as and for the purpose specified.

3. In an automatic railway-frog, the combination of the unbroken main rail B, fixed siding C', joined to the outside thereof, with fixed guard-rail E, and interposed filling-piece *a*, rising to the level of the main track, with the pivoted wing-rail A, and connections with the actuating-rail D, at the opposite side of the siding-track, substantially as set forth.

4. In an automatic railway-frog, the combination of the pivoted wing-rail A, the guard-rail E, with interposed filler *a*, the opposite movable rail, D, and the lever *c*, links *d b*, and a spring, as S, for taking up any excess of movement due to scant gage of wheel-flanges, substantially as set forth.

5. The actuating mechanism in an automatic railway-frog, consisting substantially of the following elements, to wit: the rod *b*, pivotally attached to the movable wing A, the lever *c*, with fulcrum *o* at one side of the center, and the rod *d*, rods *b* and *d* being pivoted to the ends of the lever, respectively, and said rod *d* consisting of a central core, and a spring arranged in connection therewith, the whole attached to the movable guard D in such manner that excessive opening of the latter compresses the spring and prevents injury to the operating mechanism, as and for the purpose described.

328,045. TIME-REGISTER FOR EMPLOYES. Stephen W. Maxson, Dassel, Minn. Filed June 1, 1885. (No model.)



Claim.—1. The combination, with the movable clock mechanism provided with the hour and minute plates, each having a projecting pin, of the slide having an opening therein and a check adapted to be carried by said slide, substantially as described.

2. The casing A, having an opening through the part A' thereof, and the movable clock mechanism therein having the hour-plate E and minute-plate F with pins *e* and *f*, in combination with slide G and check H, as and for the purpose set forth.

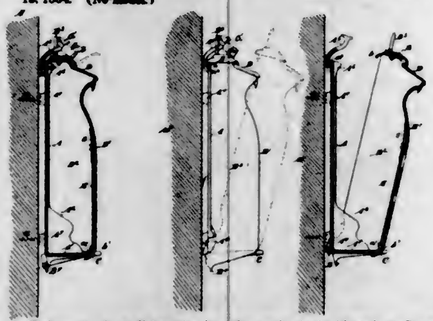
3. The casing A, clock mechanism B, hour-plate E, having pin *e*, minute-plate F, having pin *f*, means for moving the clock mechanism

within the casing, slide G, and check H, all combined and operating substantially as described.

4. The check H, having the twenty-four-hour dial upon one side thereof, and having blank spaces upon the opposite side adapted to receive records thereon, in combination with the clock mechanism having hour and minute plates provided with projecting pins, as and for the purpose set forth.

5. The slide G, having an opening therein, in combination with the check H, fitting said opening and having a dial upon one side and blank spaces upon the other, as and for the purpose set forth.

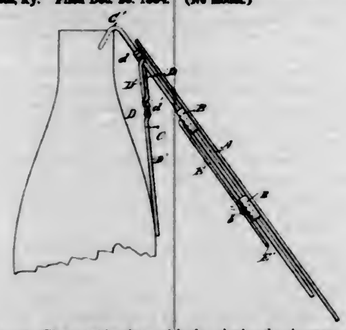
328,046. MAIL-BOX. Orrin E. Miles, Davenport, Iowa. Filed Oct. 13, 1884. (No model.)



Claim.—1. A mail-box having the main body hinged at C, and formed with a wing, B^3, at each side fitting tightly against a back piece, in combination with a back piece, A, having wings A^3, forming lateral walls co-operating with the wings to keep the bottom closed when the box is opened, as herein specified.

2. In a mail-box, the front movable portion, B', having wings B^3, and stop B^4, turning on a hinge, C, at or near the front edge of the bottom, in combination with a fixed part, A, having a bottom, A', and wings A^3, the wings co-operating to keep the bottom closed when the box is opened, as herein specified.

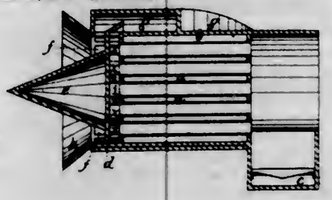
328,047. LAMP SHADE AND ORNAMENT. William J. Mingua, Augusta, Ky. Filed Dec. 26, 1884. (No model.)



Claim.—1. The combination, with the shade, the keepers B' B', and the main rod held and adjustable in said keepers, of the bar E, pivotally secured at its upper end to keeper B, having at its lower end the hook E', substantially as set forth.

2. The herein-described device for use as a lamp-shade or wall-ornament, consisting of the part or shade A, having the keepers B' B', the rods C C, inserted through keepers B' and bent to form a hook, C', to engage the chimney-top, the brace adjustably secured to rods C, and the rod E, secured to one keeper and held under the other by the hook *b*, and provided with the bent end E', as set forth.

328,048. LOCOMOTIVE-FURNACE. Henry Monk, Lewiston, Me. Filed June 24, 1885. (No model.)

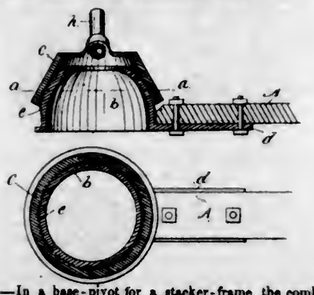


Claim.—1. In combination with the locomotive-boiler and fire-flues, as described, the disk *d*, passages *f*, and chambers *g*, leading back to the ash-pit, as set forth.

2. In combination with the locomotive boiler and flues, as set forth, the disk *d*, passages *f*, chambers *g*, space *i*, and openings in the boiler-cover immediately behind the disk *d*, as described.

328,049. BASE-PIVOT FOR STRAW-STACKERS. Jonathan J. Moore and James A. Ball, Thorntown, Ind., assignors of one-half to J. C. Taylor, same place. Filed Oct. 21, 1884. (No model.)

Brief.—Improvement upon the construction shown in Patent No. 284,317, to J. J. Moore, dated September 4, 1883.



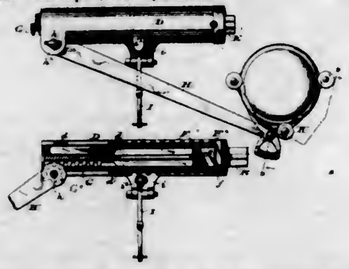
Claim.—In a base-pivot for a stacker-frame, the combination of the pivot-casting *b*, having curved sides provided with corrugations *e*, arranged as described and shown, and socket *c*, having straight sides wholly corrugated, substantially as and for the purpose specified.

328,050. DRIVE-CHAIN. Edward Y. Moore, Evanston, Ill. Filed Mar. 14, 1885. (Model.)



Claim.—A drive-chain link in which are combined the side bars, A A, the end bar B, the end bar C, the open curved extensions D D, both on the bar B and apart from each other, and the partly-circular laterally-extending keeper E on the bar C, substantially as and for the purposes specified.

328,051. TARGET-TRAP. George A. Mueller, Anderson's Ferry, Ohio. Filed Apr. 9, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a plunger, a head in which it is supported, a spring coiled about said plunger within the head and arranged in such manner as to serve both as a projecting and buffing spring, a throwing-arm pivoted in said head and connected with the plunger so as to be swung on its pivot by the motion of the latter, and a trip-latch, by which said throwing-arm may be held when in its retracted position, and whereby it may be released to be impelled by the force of the spring.

2. The combination, substantially as hereinbefore set forth, in a target-trap, of a plunger, a head in which it is supported, a spring coiled about said plunger within the head and arranged in such manner as to serve both as a projecting and buffing spring, a throwing arm pivoted in said head and having gear-teeth concentric with its pivot to engage with teeth on the plunger, and a trip-latch, by which said throwing-arm may be held when in its retracted position, and whereby it may be released to be impelled by the force of the spring.

3. The combination, substantially as hereinbefore set forth, in a target-trap, of the rack-plunger, the coiled spring encircling it, the head in which said plunger is supported, the throwing-arm, and its pinion engaging with the rack on the plunger, and the trip-latch pivoted in lugs offset from the head.

4. The combination, substantially as hereinbefore set forth, in a target-trap, of the rack-plunger, the coiled spring encircling it at one end, the washers mounted loosely on said plunger, and the stops or shoulders whereby said washers are alternately engaged, the throwing-arm, and its pinion engaging with the rack on the plunger, the supporting-head, and the trip-latch.

5. The combination, substantially as hereinbefore set forth, in a target-trap, of the rack-plunger, the washers loosely encircling it, the coiled spring extending between said washers, the shoulders on the plunger engaging with one of the washers, the slot through the plunger, and the cross-bar from the other washer passing therethrough, the throwing-arm having a pinion encircling its pivot and engaging with the rack on the plunger, and the trip-latch.

6. The combination, substantially as hereinbefore set forth, of the rack-plunger, the coiled spring encircling it, the pivoted throwing-arm having a pinion about its pivot engaging with the rack on said plunger, the holder hinged to the outer end of said throwing-arm, the trip-latch, and the head supporting said parts.

7. The combination, substantially as hereinbefore set forth, of the rack-plunger, the coiled spring encircling it, the pivoted throwing-arm having a pinion about its pivot engaging with the rack on said plunger, the stock in which said parts are seated, and the removable cap on the end of the stock, whereby said parts may be inserted.

8. The combination, substantially as hereinbefore set forth, of the rack-plunger, the coiled spring encircling it, the pivoted throwing-arm having a pinion about its pivot engaging with the rack on said plunger, and the laterally-slotted stock in which said parts are mounted.

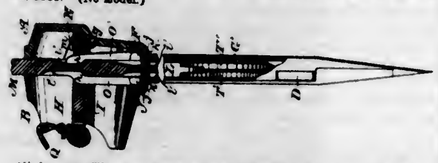
9. The combination, substantially as hereinbefore set forth, of the pivoted throwing-arm, the plunger, the coiled spring encircling the plunger, the slotted head or stock supporting said arm and inclosing the spring and plunger, the beads upon the end of the stock, the cap having incurved rim-segments to embrace said beads, and the set-screw.

328,052. PENDULUM-LEVEL. John Murray, Pittsburg, Pa. Filed June 30, 1884. (No model.)



Claim.—The herein-described level, consisting of the beam *a* and cup *c* set therein, having the scale or gradations described, a removable central plug or bearing-post, *f*, placed in the bottom of the cup, the center *g*, screwed into said plug, and the index *h i j*, swung upon said center, substantially as described, and for the purpose set forth.

328,053. HAY-FORK. Lewis Y. Myers, Canton, Ohio. Filed May 8, 1885. (No model.)



Claim.—1. The combination, with a shield or body provided at its upper end with a head and hooks pivoted to said head, of a movable tine located within the shield or body and head, and provided with barbs and devices located within the head for locking the tine against movement.

2. The combination, with a shield or body provided at its upper end with a head, a sliding tine located within said body and provided at its lower end with tines, hooks pivoted to said head, and cords or equivalent devices connecting the hooks and tine, of dogs located within the head and constructed to engage the tine, and a movable yoke for locking the dogs in contact with the tine.

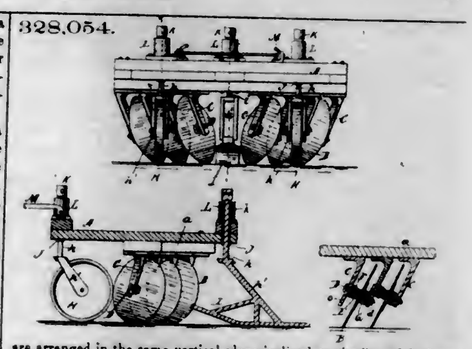
3. In a hay-fork, the combination, with body or shield composed of two castings provided with interlocking lugs and recesses, of a movable tine, devices for locking the tine against movement, and hooks.

4. The combination, with a body and head and a movable tine located therein and provided with barbs, of dogs constructed to engage the tine, a yoke, and lugs formed on said tine for moving the yoke in contact with the dogs.

5. The combination, with the hollow head and body, the latter provided with side openings, of a movable tine carrying movable barbs, which latter are adapted to be forced through said openings, movable dogs constructed to engage said tine, a device for locking the dogs against movement, hooks, and devices connecting the hooks and tines.

328,054. DISK-HARROW. Milton C. Nile, Oak Park, Ill. Filed Apr. 7, 1884. (No model.)

Claim.—1. The supporting-frame, in combination with two series of revolving disks mounted on permanent journals, which in each series



are arranged in the same vertical plane inclined to the line of draft, and which are independently inclined to the surface of the ground, the inclination of each series being opposed to that of the other, and adjustable frame-supports, whereby the frame may be raised and lowered bodily, substantially as and for the purposes set forth.

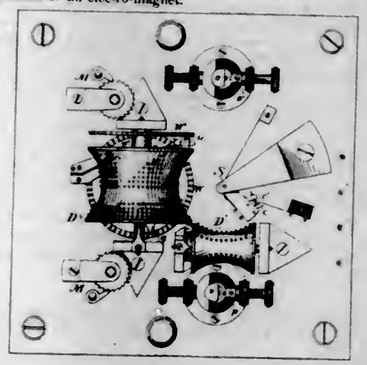
2. The disks B, provided with hubs *b b'*, in combination with the journal-pins D, the sleeves E, the cup-washers F, and the packing-washers G, substantially as and for the purposes set forth.

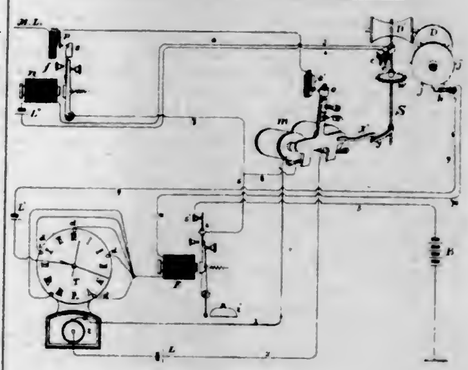
3. The supporting-frame, in combination with the disks attached thereto, the caster-wheels, threaded plug-bolts having sockets for the posts of the caster-wheels, and the threaded seats for the bolts, substantially as and for the purposes set forth.

4. In a disk-harrow, a supporting-frame, in combination with two series of disks, the said series diverging in opposite directions, the disks composing each series being inclined to the line of draft and to the surface of the soil, the two inclinations of each series of disks being opposed to those of the other, and each disk of each series being mounted upon an independent axis, the axes of each series being arranged in the line of the plane of said series, substantially as and for the purposes specified.

328,055. TIME-SIGNAL TRANSMITTING SYSTEM. John M. Oram, Boston, Mass. Filed June 10, 1885. (No model.)

Brief.—An improvement upon Letters Patent No. 287,710, dated October 30, 1883. The transmitter and its motor are connected positively by gearing which is started and stopped by the regulating-clock through the medium of an electro-magnet.





Claim.—1. The combination, in a time-signal, of a variable signal-transmitter permanently geared to a motor and an electro-magnet for controlling the motor operated by a clock or time-piece through the medium of an electric circuit.

2. In a time-signal, the combination of a variable signal-transmitter permanently geared to a suitable motor, a manually-operated locking device for changing the relative position of the design-lines and circuit-breaker, an electro-magnet for controlling the operation of the motor, and a clock or time-piece for governing the operation of the magnet.

3. A variable signal-transmitter, consisting of the combination of two or more drums having concave surfaces upon which are located one or more design-lines and a rotating circuit-closer located at the center of the circle of which the concave surfaces of the drums form arcs.

4. The combination, in a variable signal-transmitter, of two or more drums having concave surfaces upon which are located one or more design-lines, a rotating circuit-closer located at the center of the circle of which the concave drum-surfaces form arcs, and a motor geared to the said drum.

5. The combination, in a variable signal-transmitter, of two or more drums having concave surfaces upon which are located one or more design-lines, a rotating circuit-closer located at the center of the circle of which the concave drum-surfaces form arcs, and a motor geared to the said drums and to the rotating circuit-closer.

6. The combination, in a time-signal transmitter, of two or more drums having concave surfaces upon which are located one or more design-lines, a rotating circuit-closer located at the center of the circle of which the concave drum-surfaces form arcs, and a motor geared to the said drums and to the rotating circuit-closer held in check by the armature of an electro-magnet controlled by a clock or time-piece.

7. The combination, in a time-signal transmitter, of two or more drums having concave surfaces upon which are located one or more design-lines, a rotating circuit-closer located at the center of the circle of which the concave drum-surfaces form arcs, a motor geared to the said drums and to the rotating circuit-closer held in check by the armature of an electro-magnet controlled by a clock or time-piece, an electro-magnet in a local circuit operated by the said circuit-closer, and a main line operated by the last-named electro-magnet.

8. The unison-alarm for a time-signal transmitter, consisting of the combination of an electro-magnet operated by a local circuit having a circuit-closer controlled by the clock and a circuit-closer controlled by the signal-transmitter, the two being so arranged that a failure of unison will operate the circuit to sound an alarm.

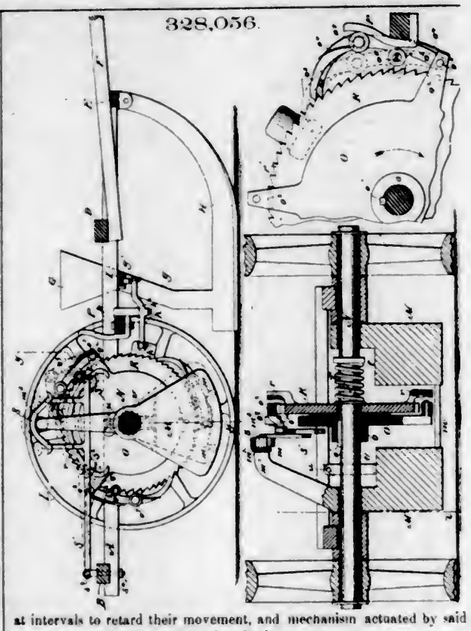
9. The hereinbefore-described means for preventing erroneous signals in a time-signal transmitter, which consists in the combination of a switch or circuit-closer in the main circuit controlled by an electro-magnet located in a local circuit containing a circuit-closing point operated by the clock and a circuit-breaking point operated by the transmitter.

10. In a time system, an electro-magnetic circuit-closer, consisting of the combination of an electro-magnet having upon its armature-bar a spring, at the free extremity of which is located a weighted contact-point operating upon a fixed contact-point, and a limiting-stop in the path of the armature-bar operating to bring the armature to rest before contact is made between the weighted contact and the fixed contact.

11. The combination, in a variable signal-transmitter, of the drums D D' with the circuit-closer c c'.

12. In a time-signal, the combination of a motor-driven variable transmitter controlled by an electro-magnet, the arm *y*, attached to the motor-train, the arm *x*, attached to the armature of the electro-magnet, and a clock or time-piece for operating the electro-magnet.

328,056.



328,056. CORN-PLANTER. Justin E. Page, Rosedale, Kans., assignor of one-half to Giles F. Wing, San José, Cal. Filed Aug. 29, 1884. (No model.)

Claim.—1. The combination, in a planting-machine, of a compensating gravity-balance and mechanism adjusted by said balance and self-retarding in a corresponding degree to the elevation or depression of the planter-frame and the inequalities of the surface of the ground, and operating at intervals automatically upon and independently of the seed-dropping devices, whereby the time of dropping the seed may be governed without checking the flow of the seed, as specified.

2. The combination in a planting-machine, of a compensating gravity-balance and the mechanism for registering the variation in movement of the planter-frame and retarding automatically and at intervals mechanism for operating the seed-dropping devices, for the purpose described.

3. The combination, with a weighted balance-lever suspended upon a planter, of mechanism adapted to be acted upon by said lever to elevate the guide-track and mechanism for registering automatically the variation produced in the movements of the planter-frame, and also acting to retard at intervals mechanism for actuating the seed-dropping devices, for the purpose described.

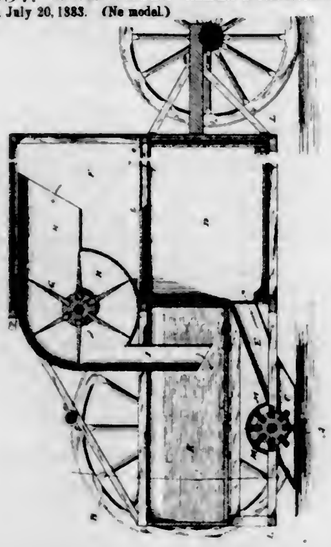
4. In a planting-machine, the combination, with a weighted balance-lever suspended upon the carriage, of mechanism for actuating the cams and mechanism for registering automatically the variation in movement of the planter-frame, and acting upon said cams automatically and at intervals to retard their movement, and mechanism actuated by said cams for dropping the seed, as described.

5. The combination, in a planter, of a disk rigidly fixed to a rotating shaft of an independently-rotating disk provided with suitable cams and held by tension in frictional contact with the fixed disk and rotated by friction, as and for the purpose specified.

6. The combination, in a planter, of a disk rigidly fixed to a shaft and provided with an engaging device and adapted to be rotated, and an independently-rotating disk adapted to be automatically retarded by said engaging device, means for operating automatically the said engaging device, and a stationary cam on the planter in the path of said engaging device, for the purpose described.

7. The combination, in a planter, of a weighted lever, a yoke adapted to be operated by said lever, and a guide-track on said yoke, a disk rigidly fixed to a rotating shaft on the planter provided with an elevating arm and pawl, and an independently-rotating ratchet-toothed disk held by tension and adapted to be rotated by friction, and having suitable cams, the oscillating lever attached to the seed-dropping devices, and a fixed cam on the machine in the path of the elevating-arm and pawls, for the purpose specified.

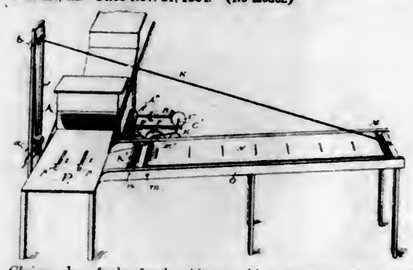
328,057. STREET-SWEEPER. Halbert E. Paine, Milwaukee, Wis. Filed July 20, 1883. (No model.)



Claim.—1. In a street-sweeper, the combination of the brush, conduit E, removable dirt-box, sieve, dust-chamber, blower-case, blower, conduit, and water-tank, so arranged as to force the heavier and coarser matter into the dirt-box and to carry the dust through the sieve, blower-case, and conduit into the water contained in the tank, substantially as described.

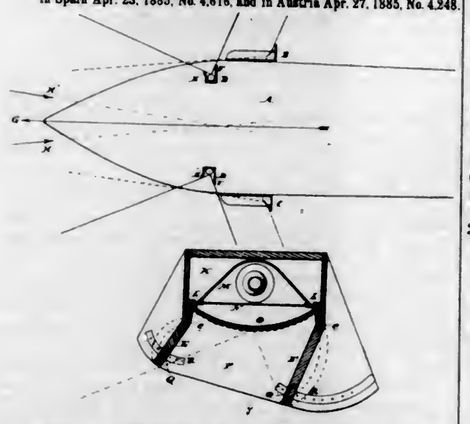
2. In a street-sweeper, the combination of a removable water-tank, a fan-blower mounted on a revolving axis, a blower-case pivoted to the said axis and provided with an inlet for the dust, and a conduit leading into the water-tank, so that the said conduit can be withdrawn from the water-tank by turning the case upon the axis, substantially as described.

328,058. FEEDER FOR THRASHING-MACHINES. Lewis Parham, Palermo, Ill. Filed Nov. 21, 1884. (No model.)



Claim.—In a feeder for thrashing-machines, the combination of the frame, a cylinder, a shaft projecting to one side of the cylinder, a shaft, C', an arm, D, supporting the shaft, a frame, O, apron N, a cutter, suitable gearing for operating the apron and cutter from the cylinder-shaft, a slotted feed-table, P, feeders I, working through the slots in the table, and gearing for operating the feeders, substantially as herein described.

328,059. MARINE SIGNAL-LIGHT FOR VESSELS. George T. Parry, Philadelphia, Pa., assignor of three-fourths to Frederic S. Groves, same place, Jonathan Cone, Bristol, and William H. Wingate, Camden, N. J. Filed May 14, 1884. (No model.) Patented in Italy Jan. 19, 1884, No. 16,268; in France Mar. 1, 1884, No. 159,401; in England Nov. 6, 1884, No. 14,677; in Belgium Nov. 19, 1884, No. 66,789; in Sweden Dec. 31, 1884; in Spain Apr. 23, 1885, No. 4,616, and in Austria Apr. 27, 1885, No. 4,248.



Claim.—1. In signal-lights for vessels, the combination, with the usual port and starboard signal-lights, of two auxiliary movable and independent signal-lights having screens, one of which is secured upon the vessel with respect to said port light and the other with respect to said starboard light, the said auxiliary lights being adapted to be secured and made fixed above, below, to the rear, or in front of the present fixed port and starboard lights, as circumstances require, whereby as the vessel swings off said auxiliary signal-lights shall be exposed to view or shut off from view at specified times, as described, to indicate the course of the vessel, substantially as and for the purpose specified.

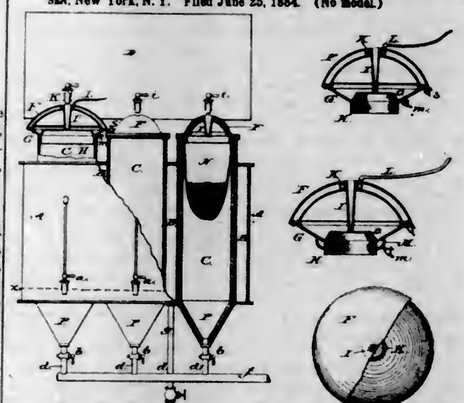
2. In signal-lights for vessels, the combination, with the usual port and starboard lights, of two auxiliary or secondary signal-lights, one of which is placed in front of said port light and the other in front of said starboard light, but out of a fore-and-aft line through said port or starboard light, so as not to obstruct their rays of light, the said auxiliary signal-lights having screens, whereby their lights are screened from certain points, as specified, but having outer side exposure, to the end that as the vessel turns in her course the auxiliary light on one side is automatically exposed or shut off from view, thereby indicating the vessel's course, substantially as and for the purpose specified.

3. In signal-lights for vessels, the combination, with the usual port and starboard lights, of two secondary or auxiliary signal-lights, one of which is fixed above said port and the other above said starboard light, said auxiliary signal-lights having screens, whereby their lights are screened from certain points, as specified, but having outer side exposure, to the end that as the vessel turns in her course the auxiliary light on one side is automatically exposed or shut off from view, thereby indicating the vessel's course, substantially as and for the purpose specified.

4. In combination with the regular starboard or port light, an auxiliary signal-light for vessels, having screens E F, arranged one on each side of the lantern-glass and one or both of which are horizontally adjustable in a manner to screen the light sooner or later as the vessel turns in her course, substantially as and for the purpose specified.

5. In combination with the regular starboard or port light, an auxiliary signal-light for vessels, having screens E F, arranged one on each side of the lantern-glass and one or both of which are horizontally adjustable in a manner to screen the light sooner or later as the vessel turns in her course, and devices to lock said screen or screens in fixed positions, substantially as and for the purpose specified.

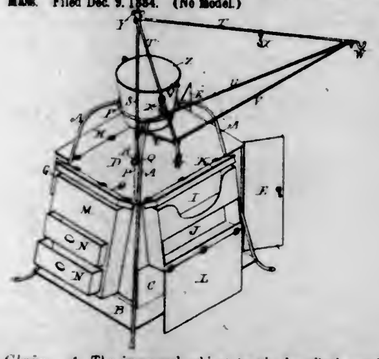
328,060. COFFEE-TANK. Homer P. K. Prix and François Thomassen, New York, N. Y. Filed June 25, 1884. (No model.)



Claim.—1. The double-dome cover F, provided with perforated pipe K, inclined annular bottom G, and trough O, substantially as and for the purpose specified.

2. The enlarged cover constructed, as described, with double dome F, inclined annular bottom G, collar H, trough O, perforated pipe K, tapering elongated tube or funnel I, with ingress and egress passages L M *m*, for the purpose specified.

328,061. COMBINATION-CABINET. Stephen R. Potter, Fall River, Mass. Filed Dec. 9, 1884. (No model.)

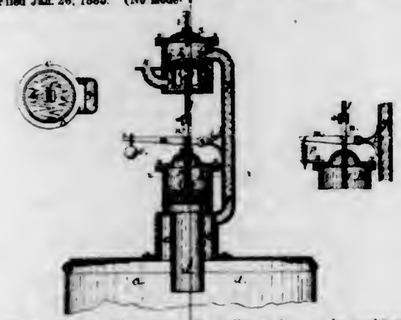


Claim.—1. The improved cabinet herein described, consisting of the supports A, frame F, the central compartment, B C D, having the doors E, the compartment G, having the top H, the compartment I J, having the top K and front L, and the compartment having the receptacle M and drawers N N, and also the top O, all constructed and arranged as set forth.

2. The combination, with the supports A and frame F, of the compartment B C D, and the compartments G, I, J, M, and N N, as set forth.

3. The combination, with the compartment B C D, having the tube F, with its collar Q and screw R, and the compartments G, I, J, M, and N, of the supports A, frame F, and the rod S, having the screw Y, the rods T, having the hooks W, the rods U, and the rods V, as specified.

328,062. **SAFETY-VALVE.** John W. Power, West Bay City, Mich. Filed Jan. 26, 1885. (No model.)



Claim.—1. In a safety-valve, the boiler or dome *a*, in combination with the chamber *c*, provided with a steamway, *g*, the cylinder *b* above the said chamber, and provided with a piston, *e*, and the steam-pipe *d*, having its upper end connected with the said cylinder, and its lower end extending into the boiler, substantially as shown and set forth.

2. In a safety-valve, the chamber *c*, having an opening to the boiler, the cylinder *b* above the chamber, and provided with the pipe *d*, the chamber *h* above and in alignment with the said cylinder *b*, and provided with the valve-seat *i*, and the steamway *g*, connecting the said chambers *c* and *h*, in combination with the valve *i* and piston *e*, the stem *f*, connecting the said valve and piston, and the adjusting-screw *t* above the said valve *i*, substantially as and for the purpose set forth.

3. In a safety-valve, a steam-chamber having an opening to the boiler, a vertical cylinder secured to the said chamber, and provided with a steam-pipe passing through the said chamber to the boiler, and a piston within the said cylinder, in combination with a valve-chamber placed above and in alignment with the said cylinder, and provided with a valve-seat and a valve of less area than the said piston, a stem connecting the said piston to the said valve, a lever for regulating the pressure within the boiler, a link connecting the said lever to the said stem, and a steamway with one end connected with the said steam-chamber, and with the opposite end connected with the valve-chamber above the valve therein, substantially as and for the purpose set forth.

4. In a safety-valve, the stem *f*, with one end connected with the piston *e*, and its opposite end connected with the valve *i*, and the lever *m*, provided with the weight *o*, and with one end pivoted to the bracket *l*, in combination with the link *n*, pivoted at one end to the lever *m*, and with its opposite end pivoted to the stem *f*, substantially as and for the purpose specified.

5. In a safety-valve, the cylinder *b*, provided with the pipe *d* and piston *e*, the chamber *h*, located above and in alignment with the said cylinder, and provided with the division *j* and valve *i*, and the stem *f*, in combination with the chamber *c*, located below the said cylinder, and the steamway *g*, having one end connected with the said chamber *c*, and its opposite end connected with the said chamber *h* above the valve *i*, substantially as set forth.

328,063. **BRISTLE-HOLDER.** Loftus E. Price, New Lots, assignor to Miles, Brothers & Co., New York, N. Y. Filed May 3, 1884. (No model.)

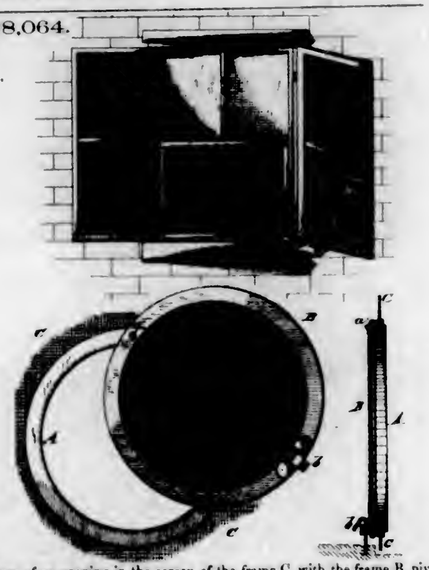


Claim.—1. The herein-described holder for bristles, the same being composed of a body and strips or straps thereon applied for maintaining the bristles in place, substantially as shown and described.

2. In a bristle-holder of the character herein set forth, the body having inclined sides and the strips or straps on each side, said strips being secured at one end, arranged to be released at the other, and adapted to hold the bristles, the parts being combined and arranged substantially as shown, and for the purposes set forth.

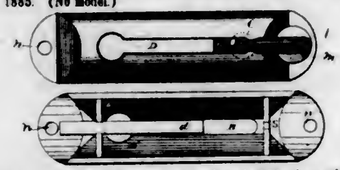
328,064. **WINDOW-SCREEN.** Paul Raeser, Montezuma, Iowa. Filed Aug. 26, 1884. (No model.)

Claim.—The combination of the frame A, composed of two rings forming between them an exterior circumferential groove holding the



edges of an opening in the screen of the frame C, with the frame B, pivoted or hinged to frame A, and composed of two rings forming between an interior circumferential groove holding the edges of the inclosed screen, substantially as shown and described, for the purpose specified.

328,065. **HOLDBACK.** Lafayette H. Reed, Troy, N. Y. Filed Jan 12, 1885. (No model.)



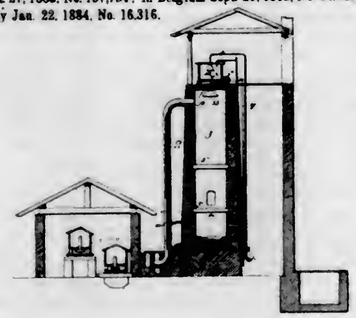
Claim.—1. The combination of a slotted thill-plate with a shank adapted to slide in said slot and provided at one end with a strap-loop and at the other with a spherical or semi-spherical head for the purpose of forming a universal-joint connection between said plate and shank, substantially as described.

2. The combination of a slotted thill-plate with a yielding or spring-controlled plate shaped to enter and nearly fill said slot for the purpose of shielding said slot from mud when in use, substantially as described.

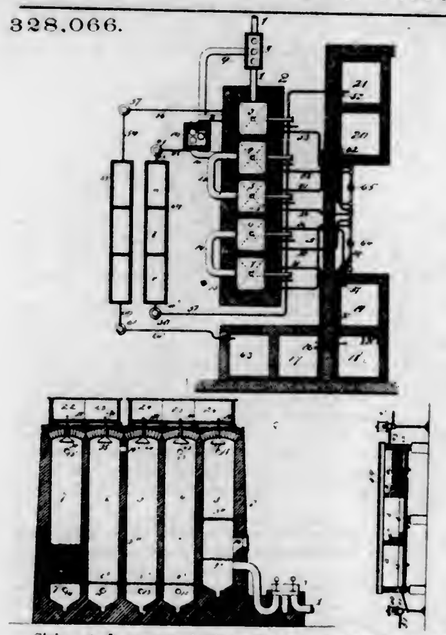
3. In a holdback, the combination of a slotted thill-plate, A, mud-shield D, and means for retaining said shield in said slot, as slots *x*, lugs *g*, and spring *d*, substantially as and for the purpose set forth.

4. The combination of a slotted thill-plate provided with an egress opening at one end and loop-shank adapted to slide therein with a guard, *m*, attached to the loop of said shank to prevent the loop from entering said slot, substantially as and for the purposes set forth.

328,066. **APPARATUS FOR MAKING SOLUTIONS OF BISULPHITES.** Eugen Baron Ritter and Charles Kellner, Podgora, near Goerz, Austria-Hungary. Filed Jan. 13, 1885. (No model.) Patented in Austria-Hungary Aug. 2, 1883, No. 20,024 and No. 31,730; in France Sept. 27, 1883, No. 157,754; in Belgium Sept. 29, 1883, No. 62,746, and in Italy Jan. 22, 1884, No. 16,316.



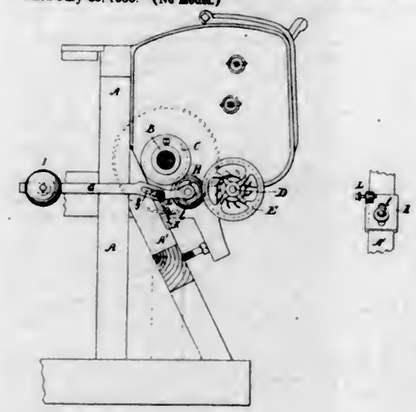
328,066.



Claim.—1. In apparatus for the continuous production of bisulphites by the combination of sulphurous acid with a suitable base, an absorption-chamber communicating with a gas-generator subdivided into a series of communicating compartments, through which the gases are caused to circulate in one direction, in combination with a liquid-supply constructed and adapted to effect a circulation of the liquid through said compartments in an opposite direction to the gases, and a box or boxes containing a base with which the liquid is to unite, for the purpose described.

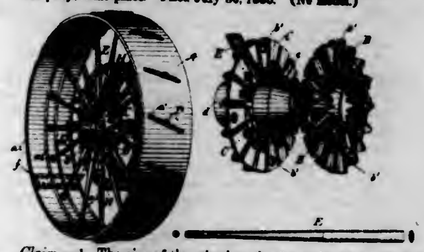
2. An apparatus for the production of bisulphite by the combination of sulphurous acid with a suitable base, comprising the following elements, viz: an absorption-chamber subdivided into communicating compartments provided with gratings to receive coke or limestone, and connected through suitable pipes and sluice-valves with the gas-supply, a series of liquid-reservoirs surmounting and communicating, respectively, with said compartments, a series of basins with pipes leading to said reservoirs by way of intermediate pumps or delivery devices and with said compartments by means of discharge pipes or conduits, whereby the gases and liquids are caused to circulate through said compartments in opposite directions, boxes adapted to contain carbonates of the base, meters arranged at the entrance and discharge ends of said boxes and communicating therewith, and pipes leading in series from one compartment of the tower to one box, thence to a reservoir-basin next to the last compartment through which the liquid circulates, thence to the second box, and, finally, to the reserve basin, all substantially as described and shown.

328,067. **COTTON-GIN.** George L. Rollins, Bridgewater, Mass. Filed July 23, 1885. (No model.)



Claim.—In a cotton-gin, the combination, with the sheaves of a saw-cylinder shaft and a huller-roller shaft, of a friction-wheel, H, a weighted and slotted lever, G, an adjustable plate, K, and the frame A', as and for the purpose set forth.

328,068. **VEHICLE-WHEEL.** John M. Rosebrook, Hoosick Falls, N. Y., assignor to the Walter A. Wood Mowing and Reaping Machine Company, same place. Filed July 30, 1885. (No model.)



Claim.—1. The rim of the wheel made of metal and provided with two projections running around its interior surface far enough apart to receive the spokes between them and the nuts or their equivalents which hold the spokes to the rim with inwardly-flanged edges, substantially as and for the purpose described.

2. The hub formed in two pieces, one with a flange cast thereon, with recesses formed therein to receive one half of each of the spokes, and the other a shell or disk with corresponding recesses to receive the other half of the spokes, in combination with the spokes and their straining-nuts on the interior surface of the rim, substantially as and for the purpose described.

3. The combination of the skein G and its arms *b* with the corrugated or recessed hub cast in two parts, with the spokes all resting upon said hub, fastened together by bolts between them, substantially as and for the purpose described.

4. The combination of the skein G with the corrugated or recessed hub cast in two parts, the spokes resting upon said hub and the gear-wheel H, fastened together, substantially as and for the purpose described.

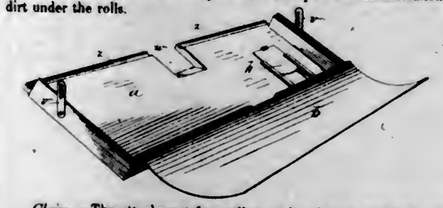
5. The spokes fastened to the rim by a straining-nut on the interior surface of the rim, and the lugs on the outside surface of the rim, substantially as and for the purpose described.

6. The spokes abutting at their lower ends against the exterior surface of the hub furnished with threads and straining-nuts at their upper ends to screw against the interior surface of the rim, and their extreme ends held to the exterior surface of the rim by lugs riveted thereon, substantially as and for the purpose described.

7. The spokes abutting at their lower ends against the exterior surface of the hub, and clamped between the two corrugated flanges C and B of the hub, their upper ends furnished with a thread and nut to screw against the interior surface of the rim, and their extreme ends held to the exterior surface of the rim either by lugs or riveted into a countersink thereon, substantially as and for the purpose described.

328,069. **DUST-COLLECTING ATTACHMENT FOR CARDING-ENGINES.** Moses Rousselle, Chicopee, Mass. Filed Mar. 9, 1885. (No model.)

Brief.—A rectangular box, open at one end and having a sliding trap for the removal of dust, is hung beneath the doffer comb and roll, and has an apron extending back under the doffer-roll beyond the point of contact of doffer and main cylinder, which prevents accumulation of dirt under the rolls.



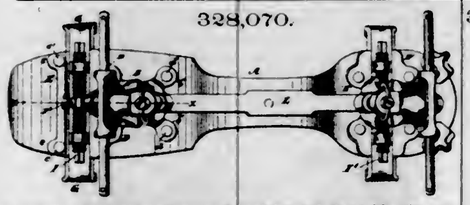
Claim.—The attachment for carding-engines herein described, consisting of the box *a*, of rectangular form, having the grooved edge *z*, the door *h*, and the apron-extension *b*, substantially as set forth.

328,070. **ROLLER-SKATE.** Jacob V. Rowlett, Richmond, Ind. Filed Sept. 1, 1885. (No model.)

Claim.—1. In a roller or other skate, a bracket having clamp-guides cast or otherwise formed thereupon, in combination with a parallel plate cast or formed separately, and having a projecting portion, which lies in a recess formed in the end of the bracket, substantially as specified.

2. In a roller or other skate, the combination, with a bracket hav-

328,070.

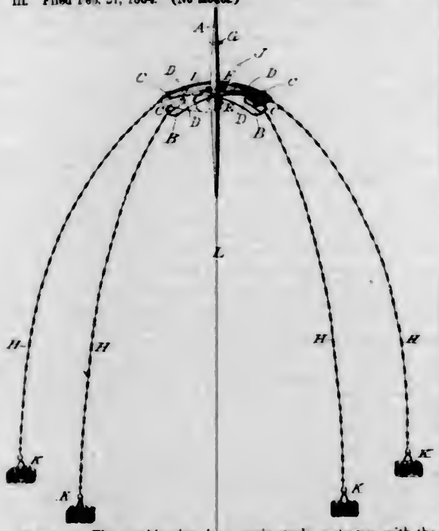


ing clamp-guides cast or otherwise formed integral therewith, of a parallel guide having a central projecting portion which underlies the end of the bracket and forms a seat for the clamp-actuating screw, substantially as specified.

3. In a roller or other skate, a bracket having clamp-guides cast with and projecting laterally therefrom, a separately-formed guide-plate having a central integral projection underlying the end of the bracket, and a clamp-actuating screw seated in said projecting portion, substantially as specified.

4. In a roller or other skate, the combination, with a bracket having a recess in its end and provided with clamp-guides cast or formed integrally therewith, of a separately-formed parallel plate having a central bridge-piece, and having its end lying in the recess in the bracket, a clamp-actuating screw seated in the bridge-piece, and a tension-screw tapped into a boss carried by the latter, substantially as specified.

328,071. GRAIN-STACK PROTECTOR. Florian Schauer, Chicago, Ill. Filed Feb. 27, 1884. (No model.)

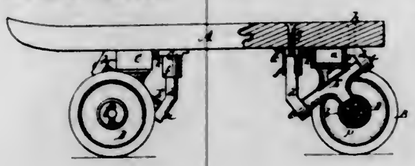


Claim.—1. The combination, in a grain-stack protector, with the bar A, of the cross-plates B, the hooks attached to said cross-plates, the cover held in place by the hooks, and the chains with weights attached hung to the hooks, substantially as set forth.

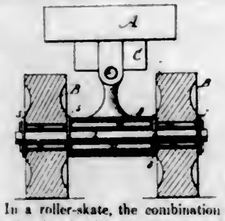
2. The combination, in a grain-stack protector, with the bar A, having a transverse perforation, of the cross-bars B, one of which is provided with the tubular extension E, having perforations in its sides aligned with the perforation in bar A, and the pin passing through said perforations, substantially as described.

3. The combination, in a grain-stack protector, of the bar A, with independent cross-bars B, each having a central perforation, whereby it can be slipped over bar A, and the cover I, having a like central perforation, and a fastening device applied to the lower bar, B, for securing it in position on bar A, substantially as described.

328,072. ROLLER-SKATE. Marion Sholes, Rochester, N. Y. Filed Nov. 29, 1884. (No model.)



328,072.



Claim.—1. In a roller-skate, the combination of the box C, open at its bottom, but closed at its sides, the rubber packing *a*, resting in the box, and the pipe-box D, provided with a cross-head, E, having a pad, *v*, convex in cross-section, resting against the bottom of the packing, as shown and described, and for the purpose specified.

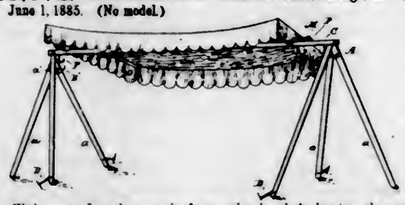
2. In a roller skate, the combination of the box C, open at its bottom, but closed at its sides, the rubber packing *a*, resting in the box, the pipe-box D, provided with a cross-head, E, having a convex pad, *v*, resting against the packing, and the cap G, provided with a tube, *f*, which receives the upper end of the bearing *d*, said bearing being secured by a screw, *g*, as shown and described, and for the purpose specified.

3. In a roller-skate, the combination, with the pipe-box D, and wheels B B, and the shaft *b*, of the three independent sets of friction-rolls *p r r*, one set being placed in the pipe-box and the other two sets in the hubs of the wheels surrounding the shaft, and the several sets being separated by washers, as shown and described, and for the purpose specified.

328,073. COMPOSITION FOR GRAINING WOOD. Albert Smith, Middleville, Mich., and Polly A. Zelie, Dundee, N. Y. Filed Apr. 9, 1884. (Specimens.)

Claim.—The herein-described composition of matter to be used for surface-graining, consisting of beer, alcohol, benzoin, acid, and turpentine, in the proportions specified.

328,074. HAMMOCK-FRAME. James H. Smith, Chicago, Ill. Filed June 1, 1885. (No model.)



Claim.—1. In a hammock-frame, the head A, having the projections B *b b*, pivots *a' a'*, and legs *a a*, substantially as described.

2. In a hammock-frame, the head A, having the projections B *b b*, and hook B', and legs *a a*, furnished with loops D-D, pivoted to the said head A, as described.

3. In a hammock-frame, the jointed pole C, hinge H, plate I, having flanges *i i*, slot K, threaded pin *k*, and nut L, substantially as herein set forth.

4. A hammock-frame formed of two supports, and a cross-pole, C, hinged thereto, having the longitudinal slots E E, the transverse pins *e e*, the hooks F F, and vertical holes *c c*, substantially as described.

5. In a hammock-frame, the locking device consisting of the post M, having a terminal screw, *m*, and a flattened head, M', bearing the notches N N, and the vertical recess *n*, the plate P, having slots *p p'*, and bar *q*, substantially as described.

328,075. MACHINE FOR GROOVING GRINDING-CYLINDERS. P. T. Smith, Milwaukee, Wis. Filed Dec. 21, 1882. (No model.)

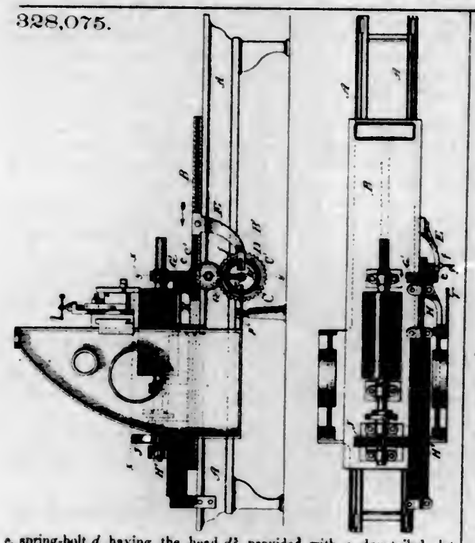
Claim.—1. In a machine for grooving mill-rollers, the combination of the gear-wheel C', running loose upon shaft C, and provided with the perforated flange D, the cup-wheel D', secured upon said shaft C and having the bell-crank pivoted to it, the spring-bolt *d*, provided with a pin engaging with holes in flange D, and the trip-bolt E, substantially as described and shown.

2. The combination, with the spring-bolt *d*, which connects the cup-wheel to the perforated flange on the gear-wheel, of the trip-bolt *e*, bell-crank lever *d'*, trigger *f*, bed B, bracket E, and stop F, substantially as shown and described.

3. The combination of the driving-shaft C, gear-wheel B', the bed B, having the rack *b* thereon, the gear-wheel C', having perforated flange D, the cup-wheel D', having the bell-crank lever pivoted to it, the spring-bolt *d*, connecting the cup-wheel to the perforated flange, the trip-bolt *e*, trigger *f*, bracket E, and stop F, substantially as described and shown.

4. The combination of the gear-wheel C', running loose on the driving-shaft, and provided with the perforated flange D, the cup-wheel D', secured upon the said driving-shaft, the bell-crank lever *d'*, trip-bolt

328,075.



e, spring-bolt *d*, having the head *d*³, provided with a dovetailed slot, and a set-screw, and the dovetailed block *d*⁴, to which the connecting-pin is attached, substantially as described and shown.

5. The combination of the gear-wheel C', deriving intermittent motion from the main driving-shaft, the pinion *c'*, the worm *c*, worm-wheel G', shaft H, and cylindrical gear H', substantially as described and shown.

6. The combination of the bed B, driven continuously in either direction, the gear-wheel J, traveling with the bed, the cylindrical gear H', journaled in brackets attached to the framing of the machine, and driven by a suitable train of gearing by the pinion *c'*, and the wheel C', gearing into pinion *c'*, and deriving intermittent rotary motion from the same shaft which drives the bed, substantially as shown and described.

328,076. BARREL-TRUCK. George H. Spencer, Chicago, Ill. Filed Dec. 15, 1884. (No model.)



Claim.—1. The combination, in a barrel-roller, of side pieces, cross-pieces, and rollers arranged directly below the face of each side piece and about midway between the ends thereof, said side pieces being provided with straps *b b*, secured to the sides thereof and extended to form ears *e*, each roller turning in bearings in said ears between the side straps and below the upper face of the side pieces, substantially as set forth.

2. The combination of the frame A, consisting of side and cross pieces, supporting rollers C C, and roller D, of uniform diameter throughout, extending entirely across the frame between the side pieces, substantially as set forth.

3. The combination of the frame A, supporting rollers, and retaining-strip *t*, of rubber or other similar elastic material, secured permanently to the upper face of the frame, substantially as set forth.

328,077. COMBINED DOOR SPRING AND CHECK. John S. Stevens and Charles G. Major, Battersea, County of Surrey, England. Filed June 29, 1885. (Model.)

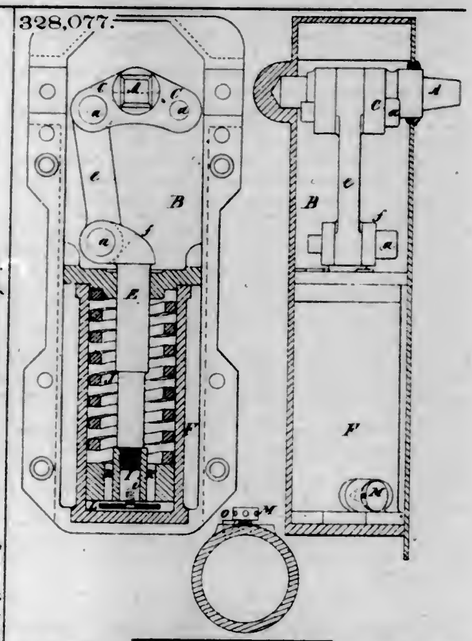
Claim.—1. The combination of a single-action spring-hinge and liquid or air check with door-pin A, arms C C, connecting-rod *e*, piston-rod E, and piston I, having ports K K and valve L, the spring J, cylinder F, conical outlet-valve O, and regulating-screw M, the check and apparatus being contained in box B, fixed beneath the floor, substantially as set forth.

2. The combination of a cylinder and piston moving therein with a spindle or door-pin actuated by the turning of the door an arm carried by said spindle, and a connecting-rod extending from said arm to the rod of said piston, substantially as set forth.

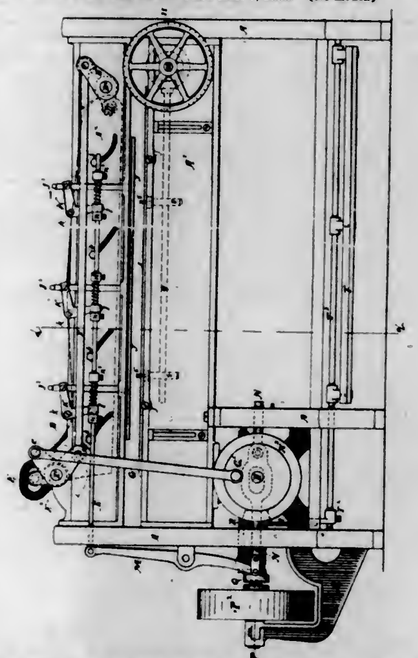
3. The combination of door-pin A, arms C C, connecting-rod *e*, piston-rod E, and piston I, having ports K K and valve L, with spring J, cylinder F, and an outlet-valve, all substantially as set forth.

4. In a liquid door-check, the taper plug or valve O, in combination with a regulating-screw, M, the head of said screw overlapping said valve and preventing it from being dislodged.

328,077.



328,078. RACING-MACHINE FOR CUTTING LEATHER. Aaron F. Stowe, Worcester, Mass. Filed Mar. 7, 1885. (No model.)



Claim.—1. The combination of the knife-bar for carrying the cutting blade or blades, of the supporting and actuating cranks D, disposed for operation, as set forth, whereby a peculiar shearing draw-cut is imparted to said blade, as hereinbefore described.

2. The combination of the knife-bar and its guiding-beam, of a crank, as D, having its wrist-pin fitting closely in said knife-bar, a crank, as E, having its wrist-pin fitted to a longitudinal slot in said knife-bar, shafts, as E' E', for said cranks, journaled in said beam, and having cranks at their opposite ends connected to each other by a rod, as F,

and a connecting-rod, as G, and crank G', or means for partially rotating said shafts for imparting motion to said knife-bar, substantially as set forth.

3. In a machine for racing or cutting stock or belting, the combination of the beams A' and A^2, the knife-bar B, supported on the beam A^2 and carrying the cutting blade or blades C, and the adjustable facing or shear plate I, supported on the beam A', substantially as and for the purposes set forth.

4. In a machine for racing stock or stripping leather belting, the combination of a racing-cutter, a presser bar or foot for holding the stock down upon the bed, and mechanism, substantially as described, for automatically depressing said holding-bar while the knife is making its cut and elevating it when the knife is elevated, substantially as set forth.

5. The combination of the presser bar or bars J, the rods J', the angle-levers K, connected to said rod and fulcrumed, as at *k*, and the pull-rod L, substantially as and for the purpose set forth.

6. The combination of the pressers J, guide-rods J', angle-levers K, pull-rod L, collars *l*, *n*, and *n'*, and springs *m*, substantially as and for the purpose set forth.

7. The combination, with the pull-rod L and the presser mechanism actuated thereby, of the lever M, the reciprocating bar N, having stud and roll, and the cam N', substantially as and for the purposes set forth.

8. The combination, with the knife-bar and its operating-cranks arranged for action, as set forth, of the shaft H, having crank G', the gear O, pinion P', driving-shaft P, pulley P^2, clutch Q, shipper-rod R, spring S, latch U, trip-lug *w*, treadle T, shaft T', and connections *t t'*, substantially as shown and described.

9. In a machine for racing stock or stripping leather, the combination, with the cutting-knife, of the gage-pins 5, mounted on adjustable slides working in guideways across the rear table, substantially as and for the purpose set forth.

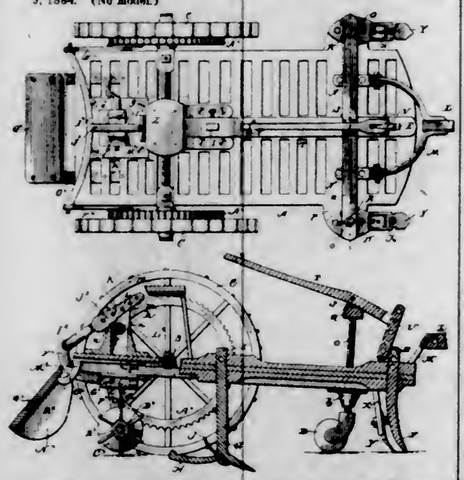
10. In a machine for racing or stripping leather, the combination, with the cutting-knife, of the gage-stops adjustable in guideways across the rear table, the bands 6, connected with said gage-slides, the sprocket-wheels 7 and 8, shafts 9 and 10, and hand-wheel 11, substantially as and for the purposes set forth.

11. In a machine for racing or cutting leather or belting, the combination, with the cutting-knife, of a yielding gage or pins movably connected to the gage-adjusting slide and sustained in working position by a spring or elevating device that permits said gage to give way or turn over with excess of pressure, substantially as hereinbefore described.

12. In a machine for racing stock, the combination of the supporting-bed having the face or shear plate, the racing-knife shearing across the angle of said plate, automatic holding mechanism, substantially as described, for retaining the stock upon the bed while it is cut, the adjustable yielding gage or gages at the rear of said knife, and mechanism for imparting motion to said parts, substantially as and for the purpose set forth.

13 The combination of the adjusting-slide having an interior opening, the gage-pin pivoted therein at its lower end to turn down within said opening, and the spring pressing against said pin for returning it to upright position, substantially as shown and described.

328,079. POTATO-DIGGER. HIRAM STRAIT, Troy, N. Y. Filed July 9, 1884. (No model.)



Claim.—1. In a potato-digger, the combination, with the frame formed with side projections, the driving-wheels and casters having their stems working through the side projections, the said casters and wheels running on a common track, means for raising and lowering the stems to effect the adjustment of the frame, plates secured to the projections and having downwardly-extending inclined arms, and adjustable shares secured to the arms to clear the track from all obstructions, as set forth.

2. In a potato-digger, the combination, with the frame, of the herein-described share having its front end curved from the center toward the sides, wings or extensions on the sides of the share, an opening in the rear thereof, and a T-shaped horn or extension having its ends bent forward, as and for the purpose set forth.

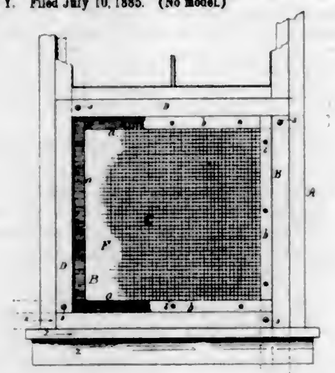
3. In a potato-digger, the combination, with the frame and its driving-wheels and casters, of the parting forward share, main share, T-shaped horn or extension, revolving cylinder, and apron or shield, as set forth.

4. In a potato-digger, the combination, with the frame and the revolving cylinder, of an apron or shield comprising the inclined padded back wall, Q^2, the sides R^2, and arms for suspending the shield away from the frame, as set forth.

5. The combination, with the revolving cylinder and its shaft, of arms connecting with the latter, a cross-bar journaled in the arms and carrying an extension or lever which is notched or serrated on its faces, and a vise, the said notches engaging with the jaws of the latter, as set forth.

6. The combination, with the revolving cylinder and its share, of arms connecting with the latter and a cross-bar turning in the arms either forward or backward and a vise or its equivalent for holding the cross-bar in its adjusted positions, as set forth.

328,080. WINDOW-SCREEN FRAME. JOHN E. STUART, Newark, N. Y. Filed July 10, 1885. (No model.)



Claim.—1. A frame made up of side pieces or bars, D, joined, as shown, each bar being formed with a longitudinal tongue, *a*, at one side thereof, and a slot, *c*, at one end of the bar in line with the tongue, the slots of each bar being of a size to receive and be filled by the tongue of the contiguous bar, substantially as described, and for the purpose set forth.

2. A screen-frame composed of side pieces or bars, D, joined, as shown, each bar being formed with longitudinal depressions or rabbets *d d'* and tongue *a* at one side thereof, and a slot, *c*, at the end of the bar in line with the tongue, the slots of each bar being of a size to receive and be filled by the tongue of the contiguous bar, the frame having an inner depression, *g*, in which to receive the wire cloth or screen, substantially as shown.

3. The combination, in window-screen frames, of the screen-holders *b*, the screen C, and frame B, the latter being composed of bars D, each provided with a longitudinal tongue, *a*, and slot *c*, substantially as shown and described.

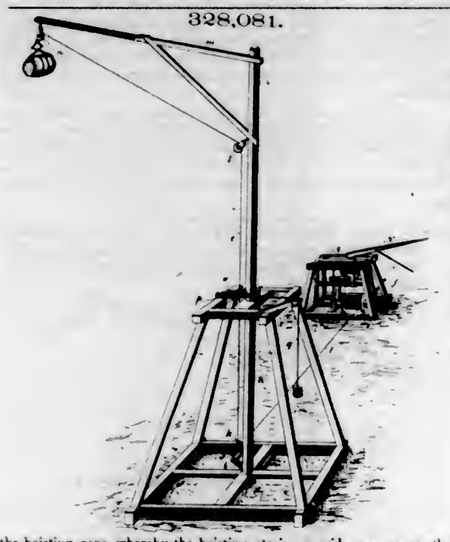
328,081. CRANE. JOHN SUTHERLAND, Attica, Ind., assignor of one-half to Jacob Hess, same place. Filed July 7, 1885. (No model.)

Claim.—1. The combination, with a movable crane provided near its lower end with an outwardly-projecting arm and a hoisting-rope passing through a pulley secured to said arm, of a second arm secured to the crane and a weighted rope passing over a pulley and connected to said latter arm, substantially as set forth.

2. The combination, with a swinging crane and hoisting mechanism, of a jointed lever secured to the crane near its base and adapted to form a guide for the hoisting-rope, whereby the hoisting-strain on said rope causes the crane to automatically swing when the load is elevated, and a weighted lever secured to the crane, whereby it is caused to automatically return when the load is released, substantially as set forth.

3. The combination, with a suitable support, a crane pivoted or journaled thereto, and a winding-drum for hoisting the load, of a jointed arm secured to the crane near its base and adapted to form a guide for

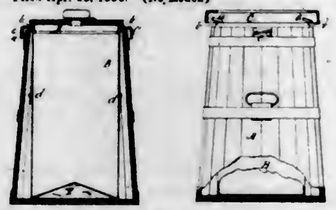
328,081.



the hoisting-rope, whereby the hoisting-strain on said rope causes the crane to automatically swing when the load is elevated, and means for causing the crane to automatically return when the load is released, substantially as set forth.

4. The combination, with a swinging crane having a laterally-projecting arm and the elevating-rope passing through a pulley secured to the outer end of said arm, of the hoisting-drum, and the devices, substantially as described, for regulating the speed of said drum, substantially as set forth.

328,082. TRANSPORTATION-CAN. JOSEPH F. SWAB, Cedar Rapids, Iowa. Filed Apr. 18, 1885. (No model.)

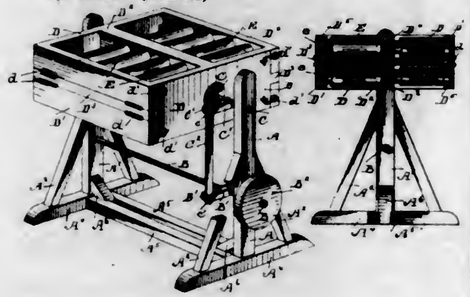


Claim.—1. In combination with a milk-can and means for securing it in position, a casing composed of hoops and staves and a bottom provided with ribs corresponding to the concave of the bottom of the can, substantially as specified.

2. In combination with the casing A and can B, having bead or flange *b*, the metallic ring C, adapted to rest upon said bead or flange and connect with the casing by means of hooks or catches, substantially as set forth.

3. In combination with the casing having lugs *c*, and the milk-can B, having bead or flange *b*, the metallic ring C, having an annular flange provided with lugs *a a*, whereby the can is fastened securely in the casing by a short turn of the ring, substantially as set forth.

328,083. CHURN. JOSEPH F. SWAB, Cedar Rapids, Iowa. Filed Apr. 24, 1885. (No model.)



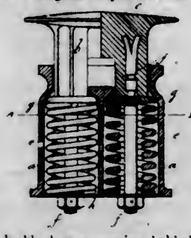
Claim.—1. The combination of the body of a cream-tester or churn and its supports, the shaft B, provided with crank-arms B', and the churn-shaft C, having crank-arms united by said shaft, with a connecting-bar, C^2, uniting the cranks of the shafts B and C, whereby said bar is arranged to strike and be arrested by the shaft C before completing each revolution, first in one direction and then in the opposite, substantially as and for the purpose described.

2. The combination of a frame, having compartments provided with fixed sides, hinged ends, and catches, with the shaft C, having a crank-arm, the shaft B, having a crank-arm, and the connecting-bar C^2, uniting the cranks of the shafts B and C and arrested by the latter shaft, whereby said bar is arranged to strike and be arrested by the shaft C before completing each revolution, first in one direction and then in the opposite, substantially as and for the purpose described.

328,084. MANUFACTURE OF OIL-CLOTH. PAUL TESSETS and DENMORE R. FAULKNER, Homer, N. Y. Filed May 14, 1885. (No specimens.)

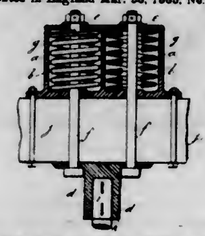
Claim.—As a new article of manufacture, an oil-cloth for vehicles, consisting of ground thatch or rope and leather formed into sheets, and painted on both sides, one of said sides having a suitable design printed over the paint and covered with varnish, as and for the purpose set forth

328,085. BUFFER. JOSEPH TRIPPETT, THOMAS SEARLE, and HENRY SEARLE, Sheffield, County of York, England. Filed July 14, 1885. (No model.) Patented in England July 2, 1884, No. 9,713.



Claim.—The double box *a*, opening behind, in combination with the cover *h*, fitted into the base-plate of said box, the springs *e*, arranged within the compartments of said box, and the plungers *b b*, connected by the head *c* and stay *d*, substantially as set forth.

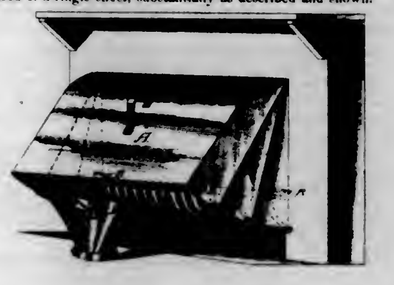
328,086. DRAW-BAR. JOSEPH TRIPPETT, THOMAS SEARLE, and HENRY SEARLE, Sheffield, County of York, England. Filed July 14, 1885. (No model.) Patented in England Mar. 28, 1885, No. 3,963.



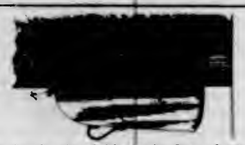
Claim.—The casing *a*, having independent compartments *b*, in combination with springs *g*, arranged, respectively, in the latter, washer-plates *e*, arranged against said springs at the open rear ends of said compartments, the draw-bar *h*, and the rods *f*, which extend from said washer-plates to said draw-bar, substantially as set forth.

328,087. PORTABLE DUST-HOOD AND BLOWER. MARY E. THOMPSON, New York, N. Y., assignor of one-half to Charles D. Thompson, same place. Filed Dec. 9, 1884. (No model.)

Claim.—1. A portable dust-hood and blower having sides formed in sections, pivoted together at one end, the front of the blower being composed of a single sheet, substantially as described and shown.



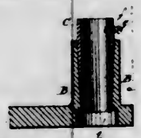
328,087.



2. A portable dust-hood and blower having a front composed of a single sheet, sides formed in sections, pivoted together at one end, and stops and catches upon the side sections, engaging with each other and operating to effect the extension of the sections, substantially as described and shown.

3. In a combined dust-hood and blower, the combination of a front piece, sides made in sections, said side sections being pivoted together at one end thereof, and an eye attached to the upper part of the front piece for supporting the blower over the grate, substantially as described and shown.

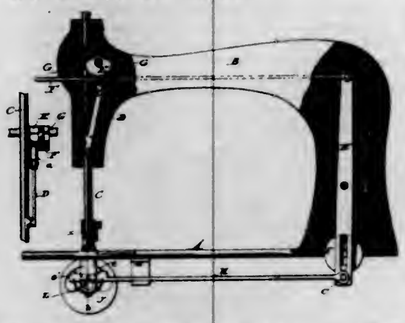
328,088. JOURNAL-BEARING. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed Mar. 12, 1885. (No model.)



Claim.—1. The bearing B, having a tapered interior, and the shaft A, in combination with the intermediate sleeve, C, having its exterior surface tapering in two directions, substantially as set forth.

2. A shaft, A, and a tapering sleeve, C, in combination with an open bearing, B, substantially as described.

328,089. SEWING-MACHINE. William P. Valentine, Painesville, Ohio, assignor of three-fourths to E. G. Wetherbee, M. J. Wilson, and W. C. Reed. Filed July 25, 1884. (No model.)



Claim.—1. The lever H and its actuating-crank, in combination with the reciprocating bar F, the needle-bar, the pitman, the oscillating segment, and the straps connecting the segment and reciprocating bar, as shown.

2. In combination with the needle-bar and the reciprocating bar F, connected thereto by intermediate devices, substantially as described, the lever H, the slotted reciprocating bar M, and the shuttle-driving shaft provided with a pin acted upon by said bar.

3. In combination with the curved shuttle-race, the double-ended shuttle, the rock shaft provided with the shuttle-driving arms and the stud, and the reciprocating bar slotted to engage the stud and permit a lost motion between the parts.

4. In combination with the centrally-pivoted driving lever H, the reciprocating bar F, and the needle-bar connected to said bar by intermediate devices, substantially as described, the bar M, provided with the inclines, the feed-bar actuated by said inclines, and the rotary shuttle-driving shaft, also actuated directly by the bar M, as shown.

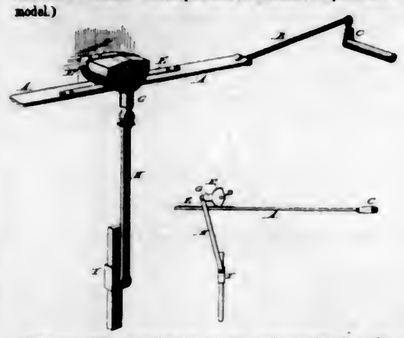
5. In combination with the oscillating shuttle having the concave inner edges, as described, the needle and the needle-operating mechanism, adapted, as described, to start the needle upward before the shuttle has completed its movement, whereby the drawing up of the thread is partly performed during the movement of the shuttle.

6. In combination with the feed-bar and the retracting-spring, the reciprocating slide M, provided with the two oppositely-inclined surfaces to lift the bar, and the two oppositely-inclined surfaces to advance the bar endwise, said parts being constructed and arranged as described and shown, whereby a forward and backward movement of the slide is caused to produce two advances of the feed-bar.

7. In combination with the needle-bar, the rotary head connected to the bar by a crank and pitman, the bar F, reciprocating at right angles to the needle-bar, the connecting-straps, lever H, bar M, provided with the four inclines, the feed-bar, the rock-shaft connected with the bar M, as shown, and provided with shuttle-driving arms, and the double-ended shuttle.

8. In combination with the rotary shuttle-driving shaft, and the feed-bar parallel therewith, the bar M, acting at right angles thereto, said bar being provided with the inclined surfaces to actuate the feed-bar, and being connected by a slot and pin with the shaft, as described and shown, whereby it is caused to impart motion directly to the shaft and the feed-bar.

328,090. MECHANICAL MOVEMENT. William P. Valentine, Painesville, Ohio, assignor of three-fourths to E. G. Wetherbee, M. J. Wilson, and W. C. Reed. Filed Apr. 23, 1884. Renewed Sept. 15, 1885. (No model.)

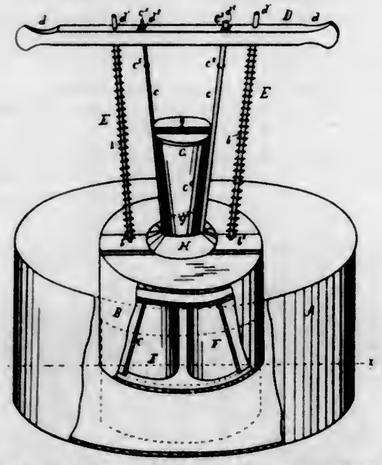


Claim.—1. The combination of the reciprocating bar, the rotary block provided with a crank-arm, the flexible connection between said bar and arm, the pitman H, and the reciprocating device I, whereby a single reciprocation of the bar A is caused to impart a double reciprocation to the part I.

2. In a mechanism for multiplying reciprocating motions, a reciprocating driving-bar, A, and a reciprocating driven bar, I, in combination with the intermediate rocking sector, D, its crank, the pitman connecting said crank to the driven bar, and means, substantially as shown, connecting the rocking sector with the driving-bar, whereby a single reciprocation of A produces two reciprocations of B.

3. The two bars A and I, arranged to reciprocate in right lines at right angles to each other, in combination with the intermediate crank and pitman, the rotary sector-block D, and the two straps passing around the sector in opposite directions past each other and attached at their ends to the driving-bar A, substantially as shown.

328,091. WASHING-MACHINE. James R. Vestal, Cave Spring, Ga. Filed May 29, 1884. (Model.)

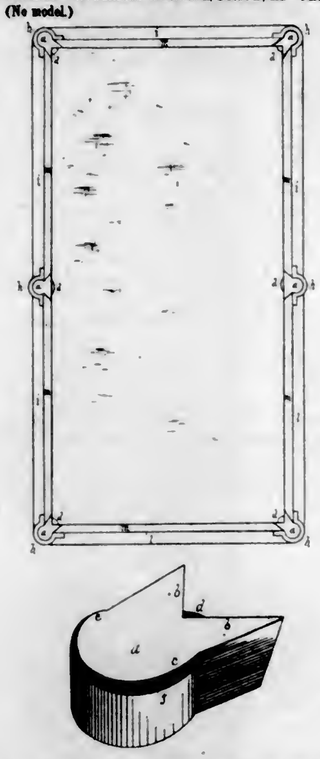


Claim.—1. An improved washing-machine, composed of a pounder, B, having uprights *b b*, springs E E, a handle, D, to which are attached rods *c c*, supporting a hollow piston-rod, *c*', in which is placed a valve, *g*', a shield, H, and piston C, having cups F F, provided with holes *f' f'*, substantially as shown and described.

2. A hollow pounder, B, having uprights *b b*, and a support, *b*², combined with a handle, D, having holes *d' d' d*² *d*², and a hollow piston having a hollow piston-rod, *c*', in which is a valve, *g*', and rods *c c*, having shoulders *c*² *c*² and nuts *c*³ *c*³, substantially as shown and described.

3. A funnel-shaped tube, G, having a valve, *g*', combined with a hollow piston-rod, *c*', and the piston C, substantially as shown and described.

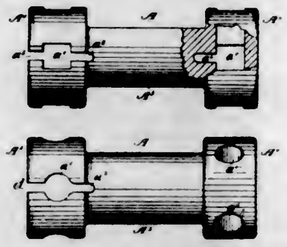
328,092. DEVICE FOR CONVERTING POOL-TABLES INTO BILLIARD-TABLES. W. Preston Waggoner, Decatur, Ill. Filed Nov. 17, 1884. (No model.)



Claim.—1. A device for converting pool-tables into pocketless billiard-tables, consisting in blocks or plates elastic throughout, provided with sections of cushion of suitable size and shape to co-operate with the table-cushion and form a continuous rail, and adapted by size, shape, and inherent elasticity to precisely fit in the pocket-openings and retain the cushion-sections in proper alignment, as set forth.

2. As a new article of manufacture, a device for converting pool-tables into pocketless billiard-tables, consisting in a block conforming in size and shape to the pocket-opening of a pool-table, and provided with sections of cushion integral therewith, the entire device being composed throughout of an elastic substance, substantially as set forth.

328,093. WIRE-STRAINER. Charles O. R. Walker, Coolart Balnaring, assignor to Joseph Elam Pounds, Lockings House, Kew, Victoria. Filed Apr. 10, 1885. (No model.) Patented in South Australia Aug. 2, 1884, No. 473; in England Sept. 8, 1884, No. 12,142; in New South Wales Oct. 22, 1884; in New Zealand Nov. 7, 1884, No. 1,284; in Victoria Dec. 16, 1884, No. 3,918, and in Western Australia Apr. 28, 1885.



328,093.

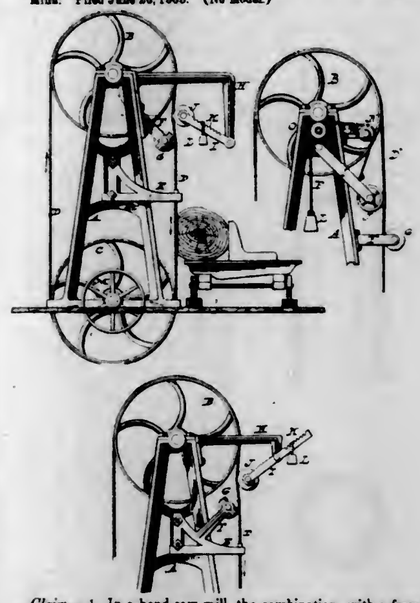


Claim.—1. A wire-strainer consisting of a roller having a central portion upon which the wire is wound of less diameter than its ends, which latter are provided with openings *a'* and recesses *a*², extending from said openings, substantially as and for the purpose specified.

2. A wire-strainer consisting of a roller having a central portion upon which the wire is wound of less diameter than its ends, in which latter are formed openings *a'*, a recess, *a*², extending from one of said openings, and a slot, *a*³, registering with said recess, substantially as and for the purposes specified.

3. A wire-strainer consisting of a roller having a central portion of less diameter than its ends and provided in said ends with radial opening, in combination with the retaining device described, constructed to bear on one side and embrace the edges of the post to which it is applied, as described.

328,094. BAND-SAW MILL. Thomas B. Walker, Minneapolis, Minn. Filed June 26, 1885. (No model.)



Claim.—1. In a band-saw mill, the combination, with a frame and pulleys, of an endless saw carried thereby, a pulley bearing against the inner face of the saw above the log and carried by a fixed support, and a pulley bearing against the outer face of the saw and carried by a yielding support.

2. In a band-saw mill, the combination, with a frame and pulleys, of an endless saw carried thereby, a pulley bearing against one side of the saw above the log and carried by a fixed support, and a pulley bearing against the opposite face of the saw and carried by a yielding support.

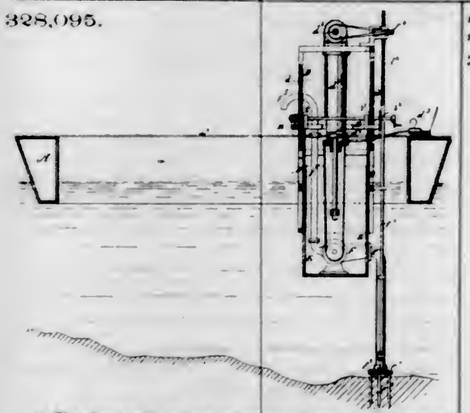
3. In combination with a frame and carrying-pulleys, a band-saw passing about said pulleys, a log-carriage movable past the saw, a saw-guide, a rigid arm attached to the frame, a pulley carried by said arm and bearing against the saw, a second arm secured to the frame, a lever attached to said arm, a pulley carried by said lever and bearing against the saw, and a counter-balance applied to the lever, all as shown.

4. In combination with frame A, pulleys B C therein, saw D, passing about the pulleys, saw-guide E, rigid arm F, pulley G, carried by said arm and bearing against the inner face of the saw, rigid arm H, above the arm F, lever I, pivoted to arm H, wheel J, carried by lever I and bearing against the outer face of the saw, counter-balance L, secured to the lever I, and mechanism for imparting motion to the saw.

328,095. SUBMARINE EXCAVATOR. John E. Walsh, New York, N. Y. Filed Aug. 11, 1885. (No model.)

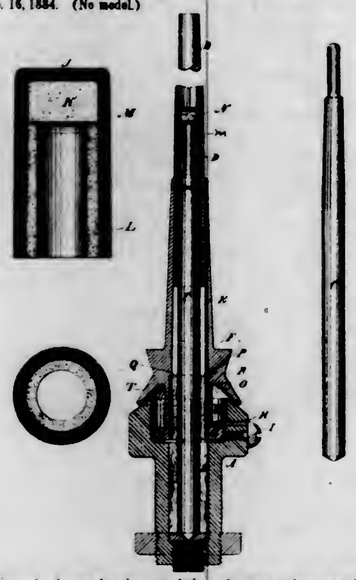
Claim.—1. The herein-described excavator, consisting of the vessel A, having a well, *a*, and guide-rails *a'*, the excavating apparatus comprising the carriages B and D and box E, the pump F, suction-pipe *f*, and discharge-pipe *f'*, constructed and operated substantially as and for the purposes herein shown and set forth.

328,095.



2. The chamber E, having an excavating-pump, and the elevating-carriage D, having the driving-shaft d^4, in combination with the hydraulic lifting-cylinder d', and force-pump d^3, constructed and operated substantially as and for the purposes herein shown and set forth.

328,096. SPINDLE. Samuel S. Webber, Lawrence, Mass. Filed Feb. 16, 1884. (No model.)



Claim.—1. A step-bearing consisting of a cup or box containing a solid anti-friction substance, in which substance is formed a cylindrical recess having the inner edge of its periphery flared or enlarged, substantially as described.

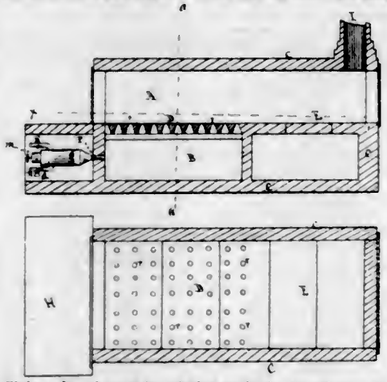
2. A step-bearing consisting of a cup or box containing a closely-fitting plug or cylinder of solid anti-friction material, and in contact with said plug a tubular lining or bushing of similar material, the said tubular bushing having the inner circumferential edge of its interior periphery rounded, flared, or beveled, substantially as described.

3. The combination of a hollow live-spindle, and a fixed or dead spindle, and a cup-shaped step-bearing arranged inside the hollow live-spindle to receive the upper end of the dead-spindle, the said step-bearing being lined with a solid anti-friction material with which the dead-spindle comes in contact at its periphery and at the apex of its extremity, the said anti-friction lining being removed to form an annular chamber around said apex, substantially as described.

4. The combination of a dead or fixed spindle, a hollow live-spindle, and a removable bearing or bushing consisting of a metal shell or case lined with a hard self-lubricating material, and contained within said live-spindle, and receiving the upper extremity of the fixed spindle, substantially as described.

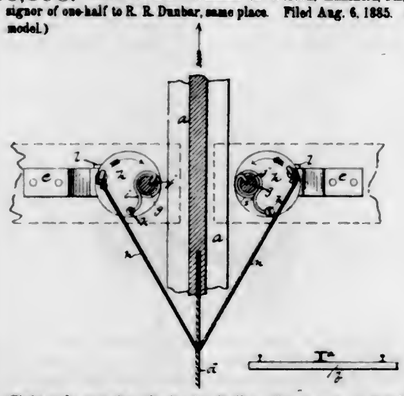
5. A step-bearing for spindles, formed of hard anti-friction material, and an inclosing box or case containing a recess to receive the end of the spindle, and an annular chamber to receive particles removed by abrasion, &c., both recess and chamber being formed in the body of said anti-friction substance, substantially as described.

328,097. FURNACE FOR THE MANUFACTURE OF ZINC-WHITE. Samuel C. West, Elizabeth, N. J. Filed June 28, 1884. (No model.)



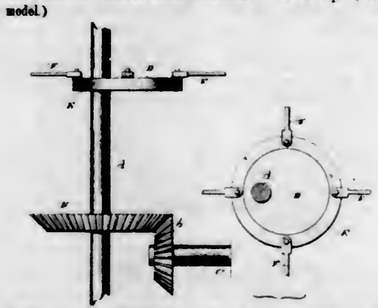
Claim.—In a furnace for reducing ore in the manufacture of oxide of zinc, the combination of the fire-chamber, the tiled bed or grate above, the solid or closed bed in the plane of the tiled bed, and the oppositely-placed openings for giving access to the ore-chamber, substantially as herein described.

328,098. CAR-BRAKE. William R. Wilcox, Mansfield, Pa., assignor of one-half to R. R. Dunbar, same place. Filed Aug. 6, 1885. (No model.)



Claim.—In a safety-brake for incline-railway cars, a T-rail, *a*, placed between the rails of the track *b*, the eccentrics *h*, revolving loosely about the vertical posts *g'*, and springs *i* for operating the same, branch ropes *n* from the main cable *d*, secured to the eccentrics *h*, and adjustable and detachable projections *l*, to keep the eccentrics in place, all operated substantially as and for the purpose described.

328,099. DEVICE FOR CONVERTING MOTION IN OIL-PUMPING APPARATUS. George Allen, Franklin, Pa. Filed Sept. 9, 1885. (No model.)



Claim.—1. The combination, with an upright shaft and means for rotating it, of an eccentric rigidly secured on the shaft, a strap or ring mounted on the eccentric, and pump-actuating rods attached to the strap or ring, substantially as set forth.

2. The combination, with an upright shaft and means for rotating it, of one or more eccentric disks or wheels secured on the shaft, straps or rings loosely mounted on the eccentrics, and pump-actuating rods secured to the straps or rings, substantially as set forth.

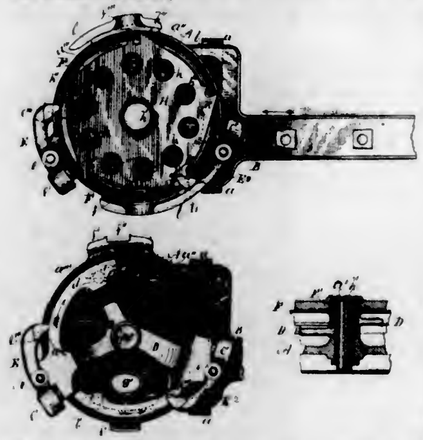
328,100. VEHICLE-SPRING. Seldon A. Bailey, New York, N. Y. Filed June 27, 1884. (No model.)



Claim.—1. The combination, substantially as set forth, of a follower, springs attached at their inner ends to the follower and curved or inclined downward therefrom, and cushions over said springs composed of bow-shaped steel-plates having both ends attached to the follower on the same horizontal plane.

2. The combination, substantially as set forth, of a follower, springs attached at their inner ends to the follower and curved or inclined downward therefrom, cushions over said springs composed of curved bow-shaped steel plates having both ends attached to the follower on the same horizontal plane, and bolts passing through the inner ends of said springs and cushions.

328,101. CORN-PLANTER. Joseph C. Barlow, Quincy, Ill. Filed Oct. 26, 1883. (No model.)



Claim.—1. In combination with a seed-wheel, a slide-bar adapted to oscillate radial bars simultaneously and in opposite directions, which radial bars carry each a pawl adapted to coact with and give a slight reverse movement and a forward full movement to the seed-wheel at each throw of the slide-bar in either direction, substantially as and for the purpose specified.

2. In a corn-planter, a seed-wheel having a slight reverse movement preceding each of its direct movements, substantially as and for the purpose specified.

3. The combination, with a seed-wheel, of radial arms D, provided with pawls adapted to give a slight reverse movement to the seed-wheel preceding each direct movement thereof, substantially as and for the purpose specified.

4. The combination, with a seed-wheel having teeth h'' h''', of radial arms having pawls adapted to engage with said teeth, to give a slight reverse movement to the seed-wheel preceding each direct movement, substantially as and for the purpose specified.

5. The combination, with a seed-wheel having teeth h'' h''' and radial arms having pawls E, of cams *l*, adapted to force said pawls into contact with the seed-plate, substantially as and for the purpose specified.

6. The combination, with a seed-wheel having teeth h'' h''' and oscillating radial arms provided with spring-pawls E, of cams *l*, adapted to force the pawls into contact with the seed-wheel, and flange a'', adapted to force said pawls outwardly, substantially as and for the purpose specified.

7. The combination, with a seed-wheel having teeth h'' h''' and oscillating radial arms provided with spring-pawls E, of cams *l*, flange a'', and a slide-bar adapted to swing the radial arms, substantially as and for the purpose specified.

8. In combination with the seed-wheel and arms D, having pawls E, the slide-bar having arms *b*, each with a horizontal groove which receives a stud projection from one of said arms D, substantially as and for the purpose specified.

9. In a corn-planter, in combination with the bottom plate having a journal-shaft, *a'*, the fixed plate F, having a boss, F', adapted to act as a dust-excluder, substantially as and for the purpose specified.

10. In combination with the slide-bar, oscillating arms, fixed plate F, and shaft *a'*, the seed-wheel having a socket in its lower side, which extends only partly through the seed-wheel, adapted to receive the shaft *a'*, substantially as and for the purpose specified.

11. In a corn-planter, the combination of a seed-wheel, a slide-bar adapted to oscillate arms, each with a pawl hinged thereto, which pawls act alternately on the seed-wheel to give it an intermittent rotary motion, and a cam adapted to force each pawl after it has acted on the seed-wheel into contact with said seed-wheel for the purpose of arresting its movement and locking or holding it in position until the next succeeding movement of the slide-bar, for the purpose specified.

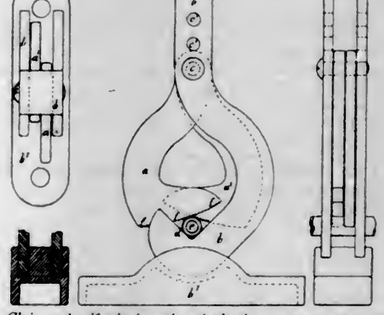
12. In a corn-planter, the combination of a seed-wheel, oscillating arms carrying pawls, and a cam adapted to force each pawl into contact with the seed-wheel at the termination of the movement given thereto by such pawl, substantially as and for the purpose specified.

13. In a corn-planter, the combination of a seed-wheel, oscillating arms, and pawls hinged to said oscillating arms, which pawls each act, first, to give a movement to the seed-wheel, and then to arrest its movement and hold it in position, substantially as and for the purpose specified.

14. In a seed-dropper, the combination of a seed-wheel and a pawl adapted to give the seed-wheel a slight backward movement preceding each of its forward movements, substantially as and for the purpose specified.

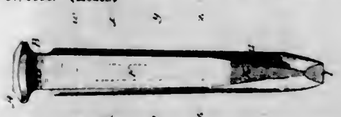
15. In a seed-dropper, the combination of a seed-wheel having two sets of projections or teeth and a pawl adapted to coact with one set of said teeth to move the seed-wheel, and with the other set to arrest its motion, substantially as and for the purpose specified.

328,102. PIPE-VISE. John C. Bauer, Brockley, County of Kent, England. Filed Mar. 31, 1885. (No model.) Patented in England Aug. 9, 1884, No. 11,096; in Belgium Oct. 7, 1884, No. 66,518; in France Feb. 2, 1885, No. 166,764; in Germany Feb. 5, 1885, No. 32,685, and in Austria-Hungary July 7, 1885, No. 9,901 and No. 34,658.



Claim.—A self-gripping pipe-vise having one or more movable jaws pivoted to the body of the vise, and shaped at the opposite side to the pivot in such a manner that the distance from the said pivot to such opposite side or parts thereof increases or diminishes as the said jaw is being moved on its pivot one way or the other.

328,103. RAILWAY-SPIKE. Robert M. Boyd, Racine, Wis. Filed Jan. 17, 1885. (Model.)



Claim.—1. A spike having front and rear flanges connected by a web, said flanges and web being made of decreasing width from their upper to their lower ends, substantially as shown and described.

2. A spike having flat front and rear flanges and longitudinal channels in its side faces open at their lower ends.

3. A spike-body consisting of a web and two flanges of unequal width, substantially as set forth.

4. An H-shaped spike-body with one of the flanges or sides considerably wider than the other, substantially as described, and for the purpose set forth.

5. A spike with back flange chisel-pointed from front to back, for the purpose described and shown, substantially as set forth.

6. An H-shaped spike having its web and front flange narrowed or tapered laterally at their lower ends.

7. A rail-spike having flat front and rear flanges and channeled sides, the channels being open at their lower ends, and a solid unchanneled portion above the channels and below the head of such depth as to enter the timber and cover the wood in the channels when the spike is driven its proper distance into the timber.

8. A spike having a broad rear flange, G, provided with nicks or depressions B in said flange just beneath the head to permit the entrance of an extracting implement.

9. The herein-described spike having head A, nicks B B, flat neck C, curved chin D, front flange, F, rear flange, G, wider than flange F, web H, and cutting-edges I and K, all substantially as shown and described.

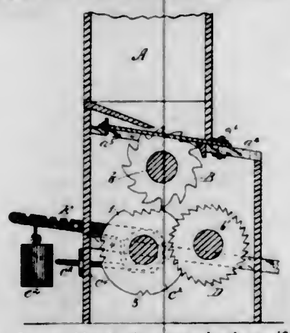
328,104. PORTABLE FENCE. Christian H. Brandt and Carl J. Werth, Lagarville, Wis. Filed May 14, 1884. (No model.)



Claim.—1. In portable fences, the section of fence A, provided with posts B B, brackets F F, and pins G G, and having pivoted thereon the swinging slotted arms L L, provided with one or more recesses, N N, on the inner side of said slot, in combination with the independent braces H H, provided with notches J J, substantially as and for the purpose set forth.

2. In portable fences, the sections of fence A A, provided with posts B B, brackets F F, pins G G, battens C C, forming with the posts and boards the recesses D D, adapted to receive the lugs E E, and the lugs E E, in combination with the braces H H, provided with notches J J and pins K K, and the swinging slotted arms L L, pivoted at one extremity to the posts B B, and provided on the side of said slots with one or more recesses, N N, adapted to receive the pins K K, substantially as and for the purpose set forth.

328,105. CLEANING, HULLING, AND GRINDING MILL. Joseph Breitenbeker, St. Louis, Mo., assignor of one-third to William H. Doolittle, Washington, D. C. Filed Oct. 31, 1882. (No model.)



Claim.—1. In a machine for the purpose herein specified, the hopper, in combination with a set of adjustable tapering fingers arranged across the bottom of this hopper, substantially as and for the purpose herein specified.

2. The combination, with the hopper, of the set of tapering fingers arranged across the bottom of the hopper, and adapted to be adjusted both longitudinally and laterally, substantially as and for the purpose herein specified.

3. The combination of the hopper, the set of tapering fingers, and the feed-roll having disks with saw-like teeth adapted to revolve between the fingers and project above the same, substantially as and for the purpose herein specified.

4. The combination of the hopper, the set of adjustable tapering fingers, and the feed-roll having disks with saw-like teeth adapted to revolve between the fingers and project above the same, substantially as and for the purpose herein specified.

5. The combination of the hopper, the set of tapering fingers adapted to be adjusted laterally, and the feed-roll composed of disks with saw-like teeth adapted to be adjusted to revolve between the fingers and project above the same, substantially as and for the purpose herein specified.

6. The combination of the stationary adjustable roll having different sets of teeth, and the revolving roll having teeth which work between the teeth of the stationary roll, substantially as and for the purpose herein specified.

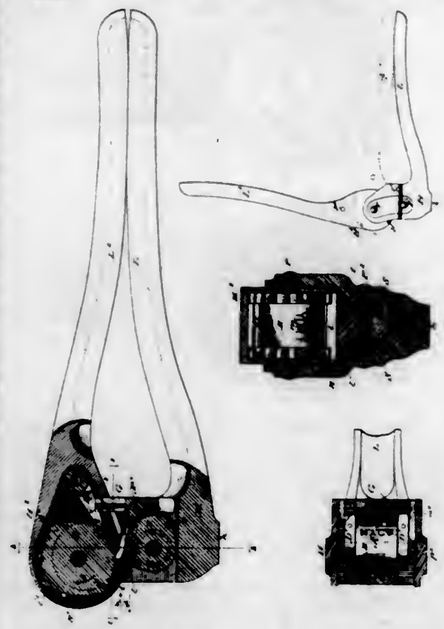
7. The combination, with the roll D, of the adjustable roll C, having sets of teeth differing in number arranged on its periphery, and so placed as to conform with the periphery of the roll D, substantially as and for the purpose herein specified.

8. The combination of the rolls C D, composed of removable and reversible disks, substantially as and for the purpose herein specified.

9. The stationary roll C, composed of a set of removable and reversible disks or plates, each disk or plate having several sets of teeth differing in number, in combination with the rotating roll D, composed of a set of removable and reversible toothed disks or plates, substantially as and for the purpose herein specified.

10. The combination of the stationary roll resting in adjustable bearings, and graduated arms and weights, substantially as and for the purpose herein specified.

328,106. SEAL-PRESS. Edward J. Blooer, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Mar. 14, 1885. (No model.)



Claim.—1. A seal-press having a rotary pressing-roll actuated through the medium of pawl-and-ratchet devices, which limit its motion to one direction, substantially as herein specified, for the purpose set forth.

2. In a seal-press, the combination, substantially as herein specified, of a rotary pressing-roll actuated through the medium of pawl-and-ratchet devices, which limit its motion to one direction, and having one or more peripheral die-surfaces, and a bed-roller parallel therewith, having peripheral indentations to support and move with the seal-disk in each pressing operation.

3. The combination, in a seal-press, of a rotary pressing-roll actuated through the medium of pawl-and-ratchet devices, which limit its motion to one direction, and having one or more peripheral die-surfaces, a vibrating lever-handle which carries the working-pawls, and a gage-stop which limits the movement of said lever-handle to a given number of degrees proportioned to the number of die-surfaces on the roll, substantially as herein specified.

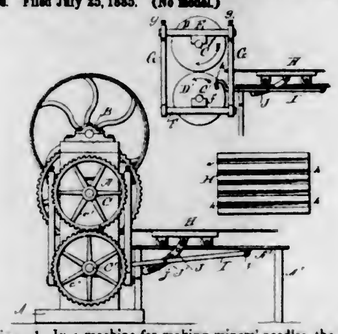
4. The combination, in a seal-press, of a vibrating lever-handle, a pair of working-pawls carried by said handle, a pair of ratchet-wheels united with the respective ends of a rotary pressing-roll, and a pair of detent-pawls pivoted within a head portion which is rigidly united with another lever-handle, substantially as herein specified.

5. In a seal-press, in combination with a pressing-roll, an oscillating bed-roller having springs for effecting its return movements, each in the form of a large coil inclosed within a recess in the end of the roller, substantially as herein specified.

6. In a seal-press, in combination with a pressing-roll, an oscillating bed-roller having a stop-pin engaging with the floor of the head-recess, within which the roller is pivoted, to properly limit the return movements of said roller, substantially as herein specified.

7. The combination, in a seal-press, of a pair of lever-handles rigidly united, respectively, with recessed head portions which are fitted one within the other and articulated by a main pivot passing through said head portions, a rotary pressing-roll, and ratchet-wheels at its ends mounted on said main pivot within the inner head-recess, working-pawls pivoted within the head portion of the vibrating lever-handle, and detent-pawls, and a bed-roller pivoted within the other head portion, substantially as herein specified, for the purposes set forth.

328,107. MACHINE FOR MAKING MINERS' NEEDLES. Hiram C. Burr, Cleveland, Ohio, assignor of one-half to James W. Chesnut, same place. Filed July 25, 1885. (No model.)



Claim.—1. In a machine for making miners' needles, the combination, with two continuously-revolving die-rolls, as D D', having tapering die-grooves b^2 to correspond, of a power-connection and gears for revolving both rolls at the same rate of speed, a table, as H, and connections with the power mechanism for automatically moving said table to agree with the motion of the dies, as set forth.

2. In a machine for making miners' needles, the combination, with die-faced rolls, as D D', journaled in half-boxes arranged reversely, of set-screws, as g, and connections arranged to adjust the rolls with relation to each other, as set forth.

3. In a machine as described, the die-faced rolls D D', in combination with a grooved feed-table and connections for moving said table automatically to deposit the blanks into the dies, as set forth.

4. In a machine as described, the combination, with the rolls D D', having tapering die-grooves b^2, of a feed-table, as H, having grooves h, to correspond with the grooves in the rolls, and connections actuated by a lug upon the roll D, as described, for automatically moving the feed-table, as and for the purposes set forth.

5. The combination, with the grooved rolls D D' and power-connections, of the bars F, half-boxes f, stirrups G, and set or adjusting screws g, as set forth.

6. The combination, with the grooved rolls D D', the latter having lug k, of the grooved feed-table H, lever I, and slotted link J, as set forth.

328,108. HARROW. William D. Caldwell and John C. Hendricks, Crawfordsville, assignors of one-half to Moses A. McCoid, Fairfield, Iowa. Filed Mar. 28, 1885. (No model.)



Claim.—1. In a harrow, the combination of the flat bars A B, one above the other, and the cross-bars H H', secured between said bars A B, with the revoluble teeth C, substantially as described.

2. A harrow-tooth having a collar between its head and point, substantially as described.

3. The combination, in a harrow, of the bars A B, the bar H, and the bars H', the latter having the lateral and oppositely-projecting extensions a, substantially as described.

4. The combination, in a harrow, of the bars A B and cross-bars H H', and means for securing them together, with the teeth C, having collars D, substantially as described.

5. A harrow comprising a rhomboidal frame, consisting of the double bars A B, the center bar, H, end bars, H', having the lateral extensions a, the teeth C, and collars D, substantially as described.

328,109. HERNIAL-TRUSS PAD. Edwin Chesterman, Philadelphia, Pa. Filed July 29, 1885. (No model.)



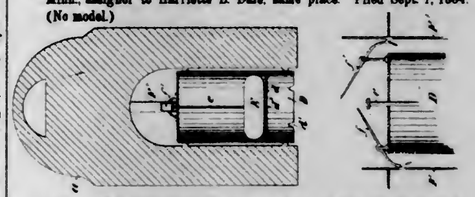
Claim.—1. A hernial pad consisting of a disk or base-plate, an annular ring or pad provided with a rabbet on its inner edge, and so formed as to guide and limit the movement of the piston or center pad, and attached to said base-plate, and adapted to rest upon the groin, a center pad or piston provided with a chamber to receive a spring and a fillet projecting from its lower edge to prevent its displacement from the annular ring, adapted to rest upon the inguinal canal independently of said ring, and a spring adapted to press the center pad against the body so that it will partake of the respiratory or other motions of the parts to which it is applied, substantially as described.

2. A hernial pad consisting of a disk or base-plate, an annular ring or pad provided with a rabbet on its inner edge and so formed as to guide and limit the movement of the piston or center pad, and attached to said base-plate, and adapted to rest upon the groin, a center pad or piston provided with a chamber to receive a spring and a fillet projecting from its lower outer edge to prevent its displacement from the annular ring, adapted to rest upon the inguinal canal independently of said ring, a spring adapted to press the center pad against the body so that it will partake of the respiratory or other motions of the parts to which it is applied, and mechanism adapted to increase or diminish the pressure of said spring, substantially as set forth.

3. The combination of disk A, center pad, A', provided with extensible joint a', and annular pad A^2, substantially as described.

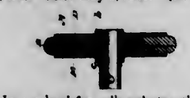
4. The combination of disk A, center pad, A', provided with extensible joint a', annular pad A^2, and spring A^3, with mechanism adapted to increase or diminish the pressure of said spring, substantially as described.

328,110. AUTOMATIC EGG-BOILER. George L. Dale, Minneapolis, Minn., assignor to Harriette B. Dale, same place. Filed Sept. 1, 1884. (No model.)



Claim.—The combination, with the frame A and spring-actuated frames B B', of the vessel D, provided with float E, bearing pin e, and the latches f f', constructed and arranged substantially as and for the purposes set forth.

328,111. SKATE-ROLLER. Charles Dalton and Edward J. Dalton, Oshkosh, Wis. Filed May 5, 1885. (No model.)

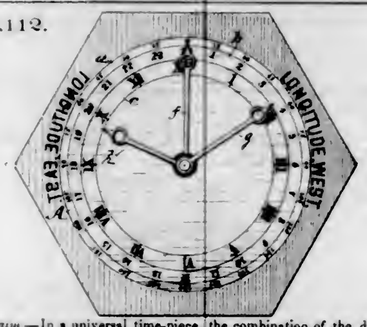


Claim.—1. In a wheel for roller-skates, the combination of a wear-disk, plates located on opposite sides of said disk, and an exteriorly-threaded bushing having an annular flange or ring at one end adapted to engage one of the plates, and having its threaded portion engaging the wear-disk and opposite plate, as set forth.

2. In a roller-skate, the combination of the wear-disk comprising two disks of leather cemented together and having a turned or rounded bearing-edge and a threaded bearing, a clamp-plate, D, fitted against one face of the disk, a metallic bushing, C, having a flange or rim at one end adapted to clamp the plate D, and an exteriorly-threaded portion engaging the disk-aperture, and a clamp-plate, E, having a threaded collar adapted to engage the threaded bushing, all arranged and adapted to serve as set forth.

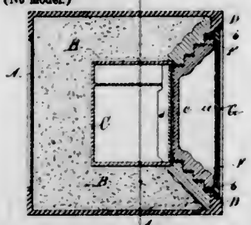
328,112. TIME-PIECE DIAL. Christoph F. Dietz, New Orleans, La. Filed Jan. 22, 1885. (Model.)

328,112.



Claim.—In a universal time-piece, the combinatioo of the dial A, marked with the longitude-circle *a*, the degrees of which run from 0 to 180 on each side, the circle *b*, having twenty-four equal divisions, and the circle *c*, having twelve equal divisions marked with the Roman numerals, the zero-points of which circles all correspond with the hand *f*, making one revolution in one day, the hand *h*, making two revolutions in one day, and the band *g*, making one revolution in each hour, substantially as specified.

328,113. FIRE-PROOF SAFE. John Farrel, New York, N. Y. Filed Apr. 9, 1885. (No model.)



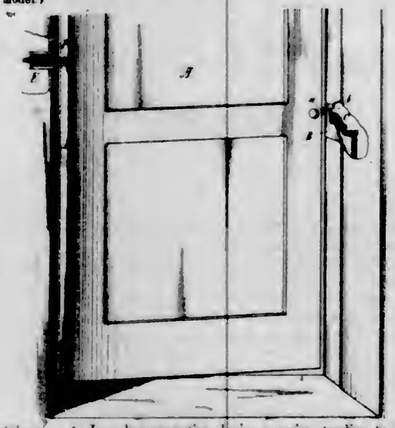
Claim.—1. In a fire-proof safe, the combination of an outer shell and frame of metal, an inner shell or book-case, a fire-repellent filling, as described, and door-frame jambs E, formed wholly of paper substance, as set forth.

2. In combination, the metal outer shell, a fire-repellent filling, the jambs E of paper substance, the inner shell or book-case of paper, and a book-case door also of paper.

3. In combination, the metal outer shell, the fire-repellent filling, the jambs E of paper, the inner shell or book-case of paper, and a metal safe-door containing a like filling and having its border F also of paper substance.

4. The combination, with a safe containing a fire-repellant filling, a paper inner shell or book-case, of a safe-door having a border, F, of paper substance and carrying a plate of paper for closing the book-case.

328,114. DOOR-OPERATING DEVICE. Julius Finck, San Francisco, Cal., assignor to Will & Finck, same place. Filed July 18, 1885. (No model.)



Claim.—1. In a door-operating device, a spring tending to open the door, in combination with a spring tending to close it, the former being of a strength to overcome the latter sufficiently to partially open the door, and the latter having a strength sufficient, assisted by the momentum of the closing door, to close said door, substantially as herein described.

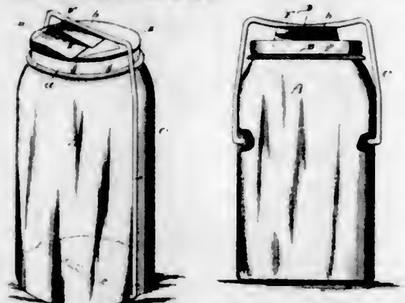
2. A door-operating device comprising the combination of a mechanism for releasing the door-latch, a spring for slightly opening the door when the latch is released, and a spring of greater strength for closing it, substantially as herein described.

3. In a door-operating device, a spindle located in the jamb and adapted to bear on the door, a slotted guide-frame for the spindle, and a spring actuating said spindle to open the door, substantially as herein described.

4. In a door-operating device, the door-opener consisting of the plate *e*, the slotted frame *e'* on its back, the sliding spindle e^2 in the frame and projecting through the frame *e*, and the spring e^3 on the spindle, the whole being let into the jamb, whereby the spindle bears on the edge of the door, substantially as herein described.

5. In a door-operating device, the door-opener in the jamb of the door, and consisting of the sliding spring-actuated spindle e^2, in combination with the adjustable screw F in the door, against the head of which the spindle bears, substantially as herein described.

328,115. FRUIT-JAR COVER. James Gilberds, Jamestown, N. Y. Filed June 23, 1885. (No model.)



Claim.—1. A fruit-jar cover having a beveled or inclined bearing-surface on its upper face, the said bearing-surface being provided with two or more steps, substantially as and for the purpose set forth.

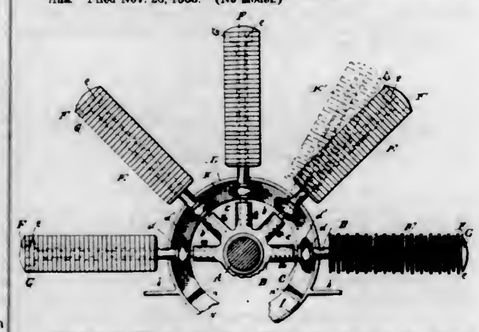
2. A fruit-jar cover having a beveled or inclined bearing-surface on its upper face, the said bearing-surface being provided at its upper end with an abutment and with two or more steps located between the abutment and the periphery of the cover, substantially as herein shown and described.

3. A fruit-jar cover having a beveled or inclined bearing-surface, the latter being provided at its upper end with an abutment and a step and at a point between said step and the lower end of said inclined bearing-surface with a second step, substantially as and for the purpose set forth.

4. A fruit-jar cover having an inclined bearing-surface on its upper face, the said bearing-surface being provided at a point over the center of the cover with a step and at a point between said step and the periphery of the cover with a second step, substantially as set forth.

5. The combination, with a jar and a cover having an inclined bearing-surface, the latter being provided with an abutment and with two or more steps located in different planes, of a spring stirrup or yoke adapted to engage the steps and hold the cover in position, substantially as set forth.

328,116. COTTON-HARVESTER. Daniel B. Hamilton, Charleston, S. C., assignor to the Southern Cotton Picking Company, of South Carolina. Filed Nov. 20, 1883. (No model.)



Claim.—1. The combination, with the rotating hubs B and stationary circular track K, of the shafts C, upon which are mounted the sleeves D, having friction-disks *d d'*, and picking-cylinders E, as and for the purpose set forth.

2. The combination, with the hubs B, having radial shafts C, provided with square heads *c'*, of the collars I and sleeves D, having caps F, provided with springs H, as and for the purpose set forth.

3. The hubs B, shafts C, sleeves D, springs H, and friction-wheels *d d'*, in combination with the circular track K, having recess N, as and for the purpose set forth.

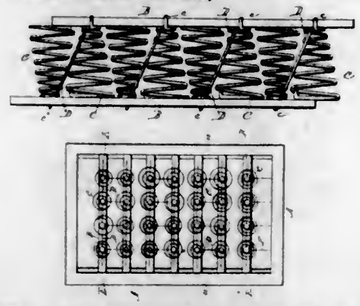
4. The combination, in a cotton-harvester, of the sleeves D, provided with friction driving-wheels, and the picker-cylinders mounted on said sleeves, as and for the purpose set forth.

5. The combination, with the rotating picker-cylinders E, having friction driving-wheels *d*, of the track K, provided with guard L, having recess *l*, as and for the purpose set forth.

6. The combination of the rotary shaft, the series of rotary picker-cylinders mounted thereon, and means, substantially as described, for rapidly rotating the cylinders in the reverse direction at a higher rate of speed than in their forward rotations, whereby the gathered cotton may be discharged by the said rapid rotation of the stems, as set forth.

7. In a cotton-harvester, the combination of a rotary shaft, a series of picker-cylinders radially mounted thereon, means, substantially as described, for rotating said cylinders on their own axes in one direction to gather the cotton, and means, substantially as described, for consecutively rotating them at an accelerated speed in the opposite direction to discharge the gathered cotton, as set forth.

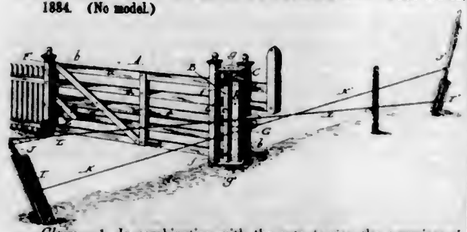
328,117. SPRING BED-BOTTOM. I. Albert Heller, Philadelphia, Pa. Filed Nov. 13, 1884. (No model.)



Claim.—1. A bed-bottom composed of sections, each section consisting of two slats having springs provided with brackets adapted to embrace the slat, said springs being connected at their lower ends by links D, constructed substantially as described, and adapted to be detached at one end only, the upper ends of the springs being free, substantially as herein shown and described.

2. In a bed-bottom, the combination of the bed-frame, the slats having springs secured thereto and connected together by links to form sections, springs C C, having their ends provided with a point, as c^2, links D, having one end pivotally connected to one of the springs of one set, and its hook-shaped end connected to one of the springs of the second set, and links E, having one end secured to a spring and its opposite end to the slat, all arranged and combined as hereinbefore set forth.

328,118. GATE. Terrijus A. Hill, Richland, Iowa. Filed Oct. 22, 1884. (No model.)

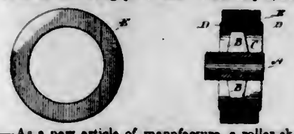


Claim.—1. In combination with the gate having the trunnions *d*, the posts C, located on opposite sides of the gate and connected by the cross-bars *g* to sustain the trunnions, the latch E, the angular lever G, mounted on the rearward extension of the gate and connected with the latch, and the two levers J and J', located at opposite sides of the gate and connected by the crossed wires K, K', and L with each other and with the lever G.

2. In combination with the swinging gate having trunnions *d* thereon; and the levers and crossed rods or wires for operating said gate, the posts C C, located in the relative positions shown on opposite sides of the gate, and the cross-bars *g g'*, connecting said posts and provided with a series of holes to admit of the positions of the trunnions being changed.

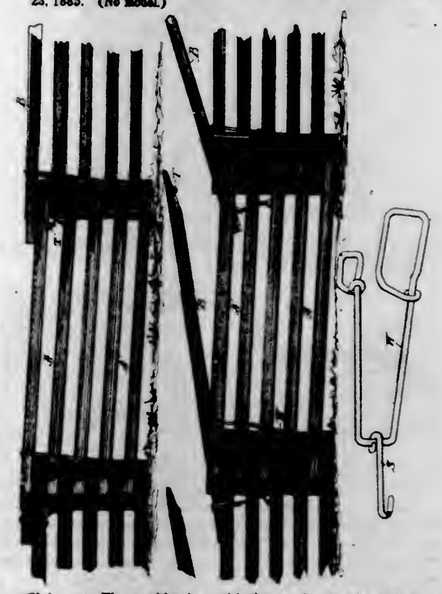
3. In combination with a gate provided with a series of holes, the pins *f*, the slotted swiveling post B, the stationary posts C, located on opposite sides of the gate, and the cross-bars *g g'*, connecting said posts and provided with a series of holes to receive the trunnions, whereby the gate may be adjusted to raise and lower its swinging end, and also adjusted to compensate for lateral inclination of the posts C.

328,119. WHEEL FOR ROLLER-SKATES. Henry A. House and Henry A. House Jr., Bridgeport, Conn. Filed May 1, 1885. (Model.)



Claim.—As a new article of manufacture, a roller-skate wheel the essential parts of which are the hub, spokes, and rim cast integral, and a solid tire of vulcanized fiber or other similar substance surrounding said rim and secured thereon by circumferential flanges at the sides of the latter and integral therewith, substantially as set forth.

328,120. FENCE. Jos. N. Hudson, Boonesborough, Mo. Filed May 23, 1885. (No model.)

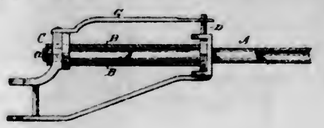


Claim.—1. The combination, with the panels of a zigzag fence, of a wire adapted to pass around the interlacing ends of the said panels, a lever for tightening the wire around the ends of the panels, one end of the said wire being attached to the said lever, and the latter being long enough to pass under the end of any one of the rails of the next preceding panel, and a hook adjustable on the wire of the adjoining panel for holding the lever in position under the end of any rail, substantially as and for the purpose set forth.

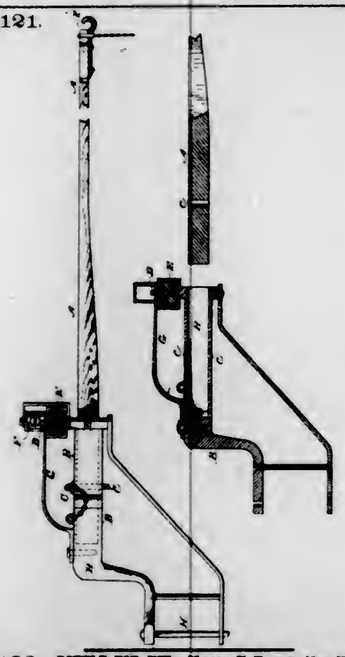
2. The combination of the rails A A, the wire W, and the lever B, having eye T, with the wire at the other end of the panel, and the adjustable hook S, substantially as and for the purpose set forth.

328,121. STREET-CAR POLE. William H. Kellener, Boston, Mass., assignor of one-half to Benjamin F. Anthony, same place. Filed July 17, 1884. (No model.)

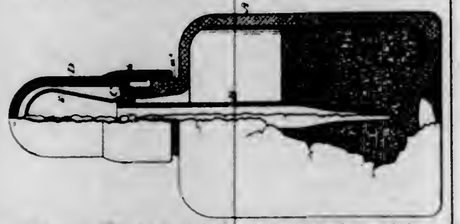
Claim.—The draw-head B, having the whiffletrees mounted upon it, and formed with a socket to receive the end of the pole, in combination with the shifting pole A, detachable from the draw-head, and with the pin C, or equivalent means of detachably uniting said pole and draw-head, and provided with the draft-hook K at its tip, substantially as and for the purpose set forth.



328,121.



328,122. BOTTLE FOR INK. Marion H. Kimber, New York, N. Y. Filed June 29, 1885. (No model.)



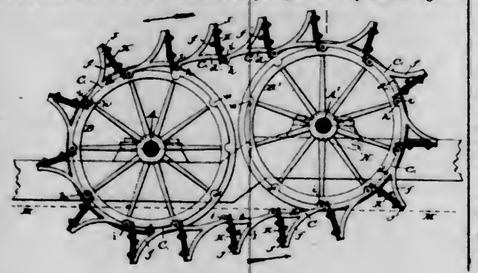
Claim.—1. The combination of a receptacle for ink, medicine, or other fluid, a pen-filler or medicine-dropper arranged therein and forming a cover therefor, and a cap engaging the neck of the bottle and the lower portion of the bulb of the filler, and thereby securing the filler in position and hermetically sealing the receptacle, as set forth.

2. The combination, with the receptacle A, having a neck provided with screw-threads *a'*, or their described equivalents, of the filler B, secured by collar C, and a cap, D, constructed to engage the neck of said bottle and the collar C, substantially as shown and described.

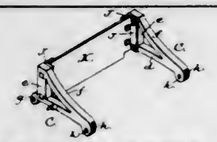
3. The combination, with the receptacle A, having a neck provided with screw-threads *a'*, or its described equivalents, of the filler B, secured by collar C, and a cap, D, constructed to engage the neck of said bottle and the collar C, substantially as shown and described.

328,123. ENDLESS-CHAIN PROPELLER. Andrew J. Kradenmann, Astoria, N. Y. Filed July 18, 1885. (No model.)

Claim.—1. In a propeller, parallel endless chains formed of rectangular links, each constructed with two arms fixed at a right angle to each other, one arm of each link being hinged directly to the angle of



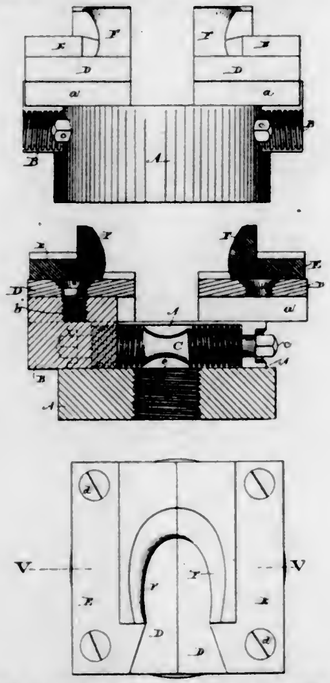
328,123.



the next, and the free arms of the corresponding parallel links in the two chains connected by transverse paddles, substantially in the manner and for the purpose herein set forth.

2. An endless-chain propeller constructed of two chains of rectangular links, each link constructed of two arms fixed at a right angle to each other, and each pivoted at its angle or elbow directly to the end of one arm of the next link by means of a projecting knuckle-joint adapted to engage a counterpart recess in the rims of the wheels over which the chain is carried, the projecting free arms of the corresponding links in the two chains being connected by transverse paddles, all substantially in the manner and for the purpose herein set forth.

328,124. MOLD FOR BOOT OR SHOE HEELS. Edward J. Le Gay, Boston, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—1. In combination with a longitudinally-divided heel-mold, the slides B, having the halves of the mold thereon respectively mounted and interlocked to slide in bed A, and the actuating-screw C, journaled in said bed and threaded in said slides, substantially as specified.

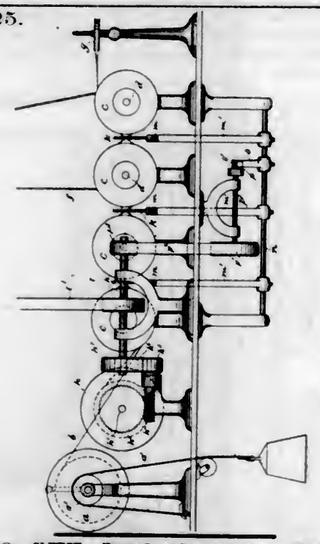
2. In combination with mold-bed D, mounted and arranged to be actuated as specified, and having its upper face obliqoe to that of bed A, the mold F, mounted on bed D, and formed with its upper face obliqoe to that of bed D and parallel to that of bed A, substantially as specified.

328,125. APPARATUS FOR POLISHING METAL RIBBON. John Logan, Waltham, Mass. Filed Oct. 13, 1884. (No model.)

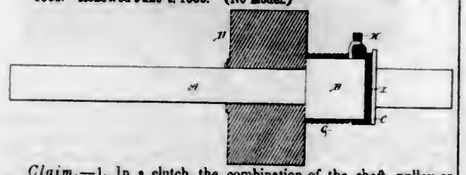
Claim.—1. In an apparatus for polishing metal band or ribbon, a series of polishing devices whose surfaces are provided with polishing material, combined with feeding and guiding mechanism for producing a longitudinal and a to-and-fro lateral movement of the surface to be polished with relation to the polishing-surfaces, substantially as and for the purpose described.

2. In an apparatus for polishing metal band or ribbon, a wheel and friction device, *a'*, combined with a series of polishing-wheels, mechanism, substantially as described, for moving the said band or ribbon longitudinally over the said wheels, and the guides to move the said band or ribbon laterally with relation to the said wheels, as set forth.

328,125.



328,126. CLUTCH. Edwin Long, Iowa City, Iowa. Filed Aug. 27, 1883. Renewed June 4, 1885. (No model.)

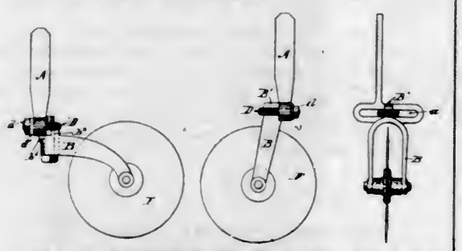


Claim.—1. In a clutch, the combination of the shaft, pulley or wheel, and two spiral springs which are connected indirectly together, substantially as set forth.

2. In a clutch, the combination of the shaft, the pulley or wheel, a spiral spring which is connected to the wheel or pulley at one end, a sleeve or collar to which the other end of the spring is attached, and a spiral spring which is attached to the opposite edge of the collar, substantially as specified.

3. In a clutch, the combination of the shaft provided with an enlargement and a flange with the wheel or pulley, a spiral spring connected to the pulley at one end, a sleeve or collar, and a second spiral spring, which is also connected to the sleeve or collar, substantially as shown and described.

328,127. REVOLVING COLTER. Jasper D. Looker, Minneapolis, Minn. Filed July 22, 1885. (No model.)



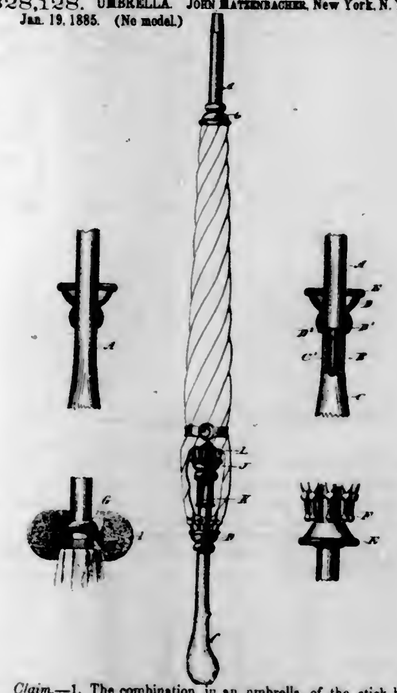
Claim.—1. The combination, with a colter-shank having a cross-arm at right angles to its main part, a horizontal slot extending lengthwise in said cross-arm, an eyebolt passing through said slot, a colter-yoke carried by said eyebolt, and a nut holding the eyebolt in position, substantially as described.

2. The combination, with the T-shaped shank A, having the horizontal slot *a*, of eyebolt D, the colter-yoke B, carried by said eyebolt, and means for holding said eyebolt within the slot *a*, all substantially as described.

3. The combination, with the T-shaped shank A, having the horizontal slot *a*, of the eyebolt D, secured within said slot, the yoke B, bolt *b*, having the flattened portions *b'*, the colter F, and means for holding said colter in the yoke B, all substantially as described.

4. The combination, with the T-shaped shank A, having the slot *a*, of the yoke B, having projection b^2, bolt *b*, eyebolt D, the reversible washer *d'*, having projection d^2, and the nut *d*, all substantially as described.

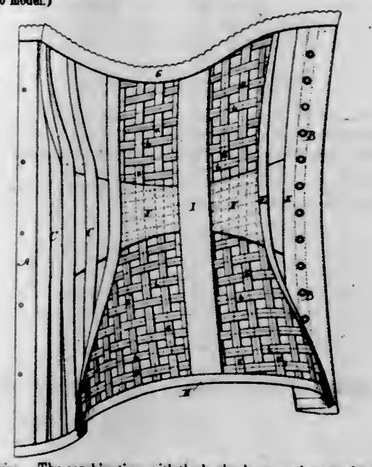
328,128. UMBRELLA. John Matzenbacher, New York, N. Y. Filed Jan. 19, 1885. (No model.)



Claim.—1. The combination, in an umbrella, of the stick having a tenon, the elastic cup provided with a flange on the sleeve of said cup, and the mortised handle, substantially as described.

2. In an umbrella, the combination of the stick, the crown-ring, fringe or trimming, and the cap of elastic material, substantially as described.

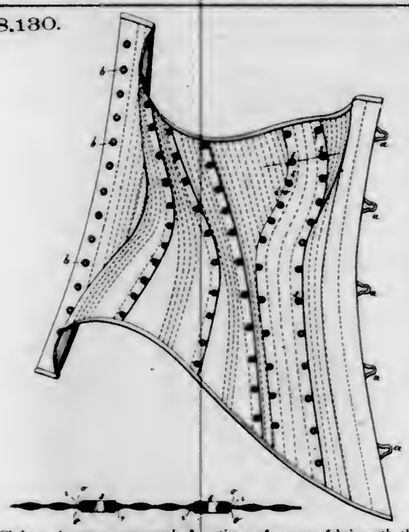
328,129. CORSET. Joseph Mayer, Yonkers, N. Y. Filed Dec. 1, 1884. (No model.)



Claim.—The combination, with the busks, bone-pockets, and woven-fabric sections in a corset, of crossing bands forming open-work sections, each band being of woven corset material in strips folded into three thicknesses and stitched longitudinally and united at the crossings of the bands, substantially as specified.

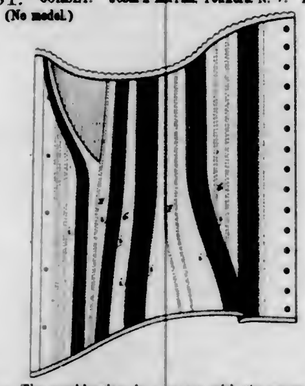
328,130. CORSET. Joseph Mayer, Yonkers, N. Y. Filed Dec. 1, 1884. (No model.)

328,130.



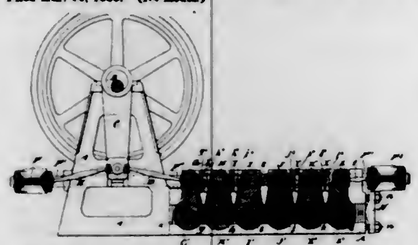
Claim.—A corset composed of sections of woven fabric with the usual stitching to form the bone-pockets, and the sections united by eyelets that pass through the edges of one section and the inwardly-turned edges of the next section for uniting and strengthening the seams and forming ventilating-openings, substantially as set forth.

328,131. **CORSET.** Joseph Mayer, Yonkers, N. Y. Filed May 26, 1885. (No model.)



Claim.—The combination, in a corset, with the woven sections, of a backing-strip, E, and a stiffening-strip, *a*, composed of a woven fabric with fine wires introduced therein at intervals, substantially as set forth.

328,132. **ORE-CRUSHER.** Frederick H. McDowell, Brooklyn, N. Y. Filed Mar. 16, 1885. (No model.)

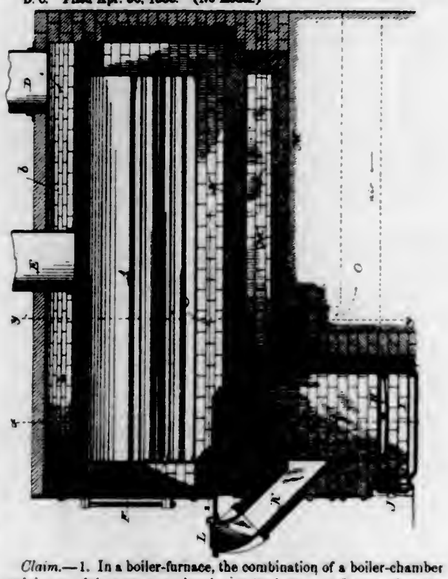


Claim.—1. In an ore-crusher, the combination of the several jaws G H I, &c., and the differential springs X Y Z, arranged between said jaws, substantially as described.

2. In an ore-crusher, the jaws G H I, &c., formed with recesses, as shown, in combination with springs, as X Y Z, partially inclosed in such recesses, reciprocating rods F' F^2, playing through holes in the jaws, connecting cross-heads F F^2, and means for operating said rods and heads, all arranged for joint operation substantially as herein specified.

3. The combination, in an ore-crusher, of the series of jaws G H I, &c., having bearing-surfaces g^* h^* i^*, &c., arranged as shown, and the differential springs X Y Z, all arranged and serving as and for the purposes set forth.

328,133. **BOILER-FURNACE.** George A. McIlhenny, Washington, D. C. Filed Apr. 30, 1885. (No model.)



Claim.—1. In a boiler-furnace, the combination of a boiler-chamber containing a mixing space or chamber at its bottom, a flue running beneath the mixing-chamber and provided with a series of passages opening into the mixing-chamber, a fire-pot communicating with said flue, and a hot-air flue formed with openings into the mixing-chamber, substantially as set forth.

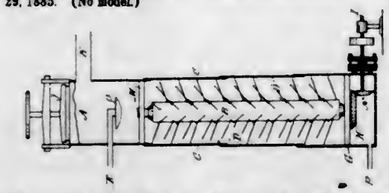
2. The herein-described boiler-furnace, consisting of boiler-chamber B, fire-pot G, flue M, communicating with fire-pot G, and having outlets *d*, and air-flue O, having outlets *e*, all substantially as described and shown.

3. In combination with a boiler-chamber and with a boiler therein, a fire-pot or chamber, an intermediate flue communicating with the fire-pot and having openings into the boiler-chamber, the outlets or passages between the fire-pot and boiler-chamber being of such size as to slightly check or retard the entrance of gases into the boiler-chamber.

4. In combination with boiler-chamber B, and with boiler A therein, fire-pot G, flues M, communicating with said fire-pot and passing beneath the floor N of the boiler-chamber, flue O, also passing beneath the floor N, and openings *d e*, passing through the floor N from the respective flues, and inclined toward each other, substantially as and for the purpose explained.

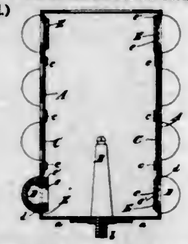
5. A boiler casing or chamber, in combination with a fire-pot or generator having its passages of communication with the boiler-chamber checked or reduced at the point of entrance to the combustion-chamber in the boiler-chamber, so as to cause the flow of gases to conform to the flow of air and to the heat required in said chamber.

328,134. **GAS-SCRUBBER.** John McKay, Titusville, Pa. Filed July 29, 1885. (No model.)



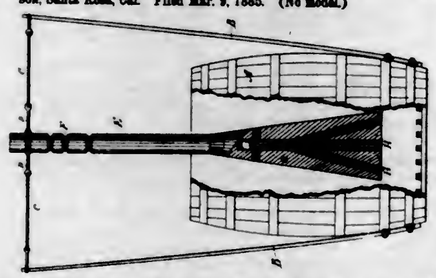
Claim.—A gas scrubber or purifier, consisting of a plain vertical cylinder with an upright shaft and attached brush revolving in said cylinder and filling it horizontally, but leaving a gas-chamber in the upper part, an induction water or liquid pipe entering the cylinder and terminating in a sprinkler over the upper end of the brush, and an eduction water or liquid pipe from the bottom, an induction gas-pipe near the bottom below the brush, and an eduction gas-pipe from the top above the sprinkler, the whole constructed and operated substantially as shown, and for the purposes herein set forth.

328,135. **SIGN.** Frederick McLewee, New York, N. Y. Filed June 18, 1884. (No model.)



Claim.—The combination, in a sign, of a hollow body-piece adapted to receive a burner within it, openings in the body-piece of the contour of letters or figures, opal glass or like material arranged at the said openings of the body-piece, and a series of protuberant colored glasses arranged opposite openings in the body-piece, substantially as specified.

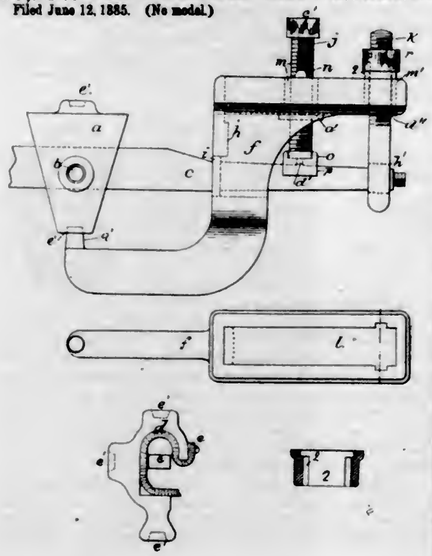
328,136. **POUNDING AND WASHING MACHINE.** William C. Nelson, Santa Rosa, Cal. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a washing or pounding machine, an open-top vessel having the divergent arms extending above its top at opposite sides, a flexible connection uniting the upper ends of these arms, and a clasp formed by the curved wires in the center, as shown, in combination with the handle E, having the channels or grooves F, whereby the pounder may be suspended and the height adjusted, substantially as herein described.

2. In a washing or pounding machine, the open-top vessel having the elastic diverging and reversible arms extending upward upon opposite sides, and the flexible connecting-link, with a central clasp formed by the curved wires D D, in combination with a pounder having a grooved or channeled handle, the inclined passages leading to a central passage, the transverse holes intersecting the central passage, and the valve in the base, substantially as herein described.

328,137. **AXLE-STRAIGHTENER.** Joseph Owen, Dunellen, N. J. Filed June 12, 1885. (No model.)

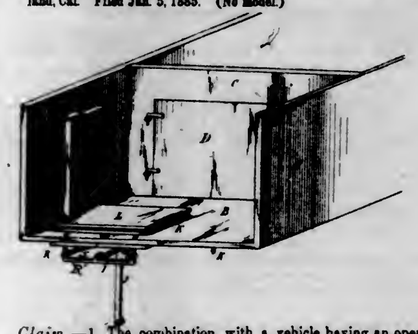


Claim.—1. In a device for straightening axles, the combination of a supporting-block, a bent arm detachably secured to said block provided with a longitudinal slotted portion, and adjustable movable screw-bolts arranged within said slot, as and for the purpose set forth.

2. The combination of a supporting-block provided with a tapering recess in three of its sides with a bent arm provided with a conical plug for attachment to said block, and having a shoulder portion adapted to bear against the shoulder of the axle, with laterally-sliding power-screws mounted in said arm, as and for the purpose set forth.

3. The combination, with the arm *f*, of the carrier-block *m*, arranged to work in a slot in said arm and provided with a screw-threaded aperture, with screw-bolt *j*, having pressure-head *o*, and carrier *m'*, with screw-bolt *k*, to receive the axle, and nut *r*, all arranged as set forth.

328,138. **WEIGHING DELIVERY-WAGON.** Shubael Park, Oakland, Cal. Filed Jan. 5, 1885. (No model.)

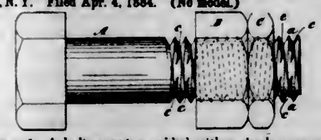


Claim.—1. The combination, with a vehicle having an opening made in its floor, of a scale supported within the opening and a lever, whereby the scale may be raised above the level of the floor or depressed beneath it, substantially as and for the purpose set forth.

2. The combination, with a vehicle having an opening made in its floor, of a scale supported within the opening, a lever by which the scale may be raised above the level of the floor or depressed beneath it, and a cover which fits the opening and protects the scale when the latter is depressed, substantially as herein described.

3. The combination, with a vehicle having an opening in its floor, of a scale supported in line with the opening, a lever by which the scale may be raised or lowered, and a spring by which the scale may be relieved from jars, substantially as herein described.

328,139. **SCREW-BOLT.** Jefferson Patten, Brooklyn, assignor, by mesne assignments, to the Tubal Cain Tap, Die, and Bolt Company, New York, N. Y. Filed Apr. 4, 1884. (No model.)



Claim.—1. A bolt or nut provided with a single screw-thread having a full projection at opposite portions and a gradually less projection toward intermediate portions of the bolt or nut, the operative portions of the thread being of such length circumferentially of the bolt or nut that either a nut or bolt having a right-hand or a left-hand screw-thread may be used in conjunction therewith, substantially as specified.

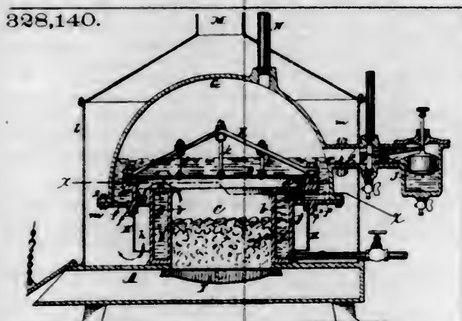
2. A bolt or nut provided with a single screw-thread having a full projection at opposite portions and a gradually less projection toward the intermediate portions of the bolt or nut, the operative portions of the thread being of such length circumferentially of the bolt or nut that a nut or bolt having a right-hand or a left-hand screw-thread may be used in conjunction therewith, and said operative portions being chamfered off at the ends to there enlarge the space between adjacent convolutions of the screw-thread, substantially as specified.

328,140. **STEAM-GENERATOR.** William A. Pentecost, Worcester, Mass., assignor to the Pentecost Steam Generating Company, same place and Nashua, N. H. Filed Aug. 7, 1885. (No model.)

Claim.—1. The lower or furnace section of the generator, formed, as described, with outer and inner walls, *b b'*, said inner wall having a horizontal flange, *d*, with rim *e*, and said outer wall having a horizontal flange, *f*, at lower level, with passages or flues *c*, leading through said flanges, and connecting the space above and below the same, in the manner set forth.

2. The combination of the lower part of the generator, formed with outer and inner walls, *b b'*, surrounding the furnace and inclosing the annular water-space B', and provided, respectively, with the horizontal flanges *d* and *f*, the downwardly-extending flues *c*, passing through said

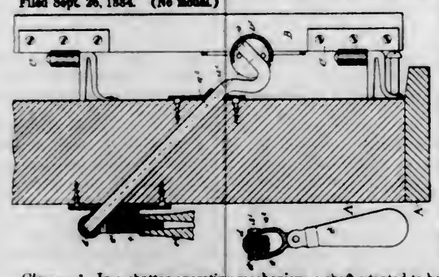
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flanges, the extended crown-sheet D, secured to the rim *e*, flange *d*, and the dome G, secured to the flange *f*, substantially as and for the purpose set forth.

3. The combination of the lower or furnace section, formed with upper and lower outwardly-extending flanges, *d* and *f*, disposed as shown, with passages or flues *c*, extending through the same, the crown-sheet plate secured to an annular border rim, *e*, on said upper flange, *d*, the dome G, secured to the flange *f*, the petticoat-sheet secured to and depending from an annular rib or lugs on the lower side of flange *f*, outside the flue-openings, the base A, and the inclosing-casing L, substantially as and for the purpose set forth.

328,141. SHUTTER-WORKER. Edwin Prescott, Arlington, Mass. Filed Sept. 26, 1884. (No model.)



Claim.—1. In a shutter-operating mechanism, a shaft adapted to be extended through a window-frame, fixed against longitudinal motion and having only a motion of rotation in the said frame, and a shutter-plate engaged thereby, combined with the pivoted drop-handle, the pivotal point of which on the said shaft is always beyond the window-frame, whereby the drop-handle in all positions of the blind and the shaft may be engaged and used as a lever by which to rotate the said shaft, as described.

2. In a shutter-operating mechanism, a shaft adapted to be extended through a window-frame, fixed against longitudinal motion and having only a motion of rotation in the said frame, and a shutter-plate engaged thereby, combined with the pivotal drop-handle, the pivotal point of which on the said shaft is always beyond the window-frame, whereby the drop-handle in all positions of the blind and the shaft may be engaged and used as a lever by which to rotate the said shaft, and with a locking device for holding the parts in a given position, as described.

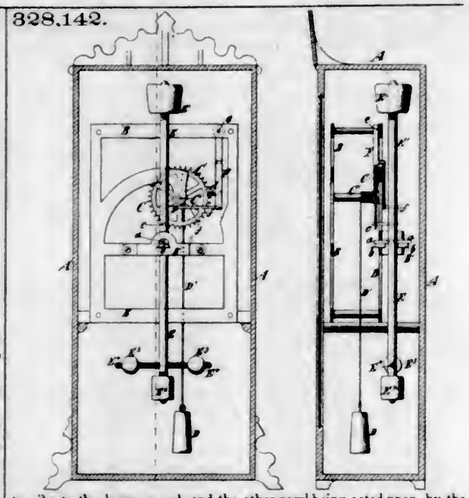
3. The shutter-plate provided with the projection, and slotted or recessed to form wings, combined with a shaft offset as described to form a right-angled projection to enter the said recessed portions and act against the said wings, the said right-angled projection being prolonged to pass beyond the center line of the said shaft and also across the axis of rotation of the blind on its hinges, as and for the purpose set forth.

4. In a shutter-operator, the shaft *a'*, and means, substantially as set forth, for connecting it with the shutter and with the window-casing, combined with the drop-handle having ears of unequal length pivoted to the head of said shaft to make an essentially universal joint therewith to permit the handle to be rotated to actuate the shaft, and always at the conclusion of the operation bring up at a single locking-point, substantially as and for the purpose set forth.

328,142. Clock-Escapement. Charles M. Reddis, Walden, N. Y. Filed Apr. 21, 1885. (No model.)

Claim.—1. The combination, with the escape-wheel C, of the vertical balance or beam or rod E, weighted at both ends, and fulcrumed near the center of weight and arranged to vibrate in a plane parallel with and behind the escape-wheel, and pawls or detents controlled by the swinging movement of the beam or rod, and engaging with the teeth of said wheel, one of said pawls being acted upon by the teeth of said wheel

328,142.



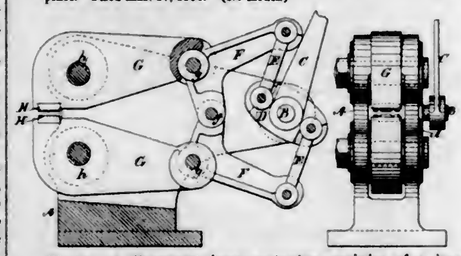
to vibrate the beam or rod, and the other pawl being acted upon by the beam or rod to withdraw it from engagement with the teeth of said wheel, substantially as herein described.

2. The combination, with the escape-wheel C, of the vertical balance beam or rod E, weighted at both ends and fulcrumed at *a* at or near the center of weight, the fulcrum *a* being parallel with the axis of the said wheel, the pawl *c*, projecting laterally from the beam or rod, near its fulcrum, and in a direction parallel with the axis of the escape-wheel, whereby the action of the teeth of the wheel upon the said pawl will vibrate the beam or rod in a plane parallel with and behind the escape-wheel, and a stop pawl or detent, *d*, actuated by the vibrating beam or rod, to control the rotation of the escape-wheel, substantially as herein described.

3. The combination, with an escape-wheel of a clock-movement, of a vertical balance beam or rod having weights at both ends, and having near its lower end laterally-projecting arms, to which are adjustably fitted supplemental weights, and pawls or detents controlled by the swinging movement of said beam or rod, and serving to regulate the rotation of the escape-wheel, substantially as and for the purpose herein described.

4. The combination, with the escape-wheel C of a clock-movement, of a balance beam or rod fulcrumed at about the center of weight, and having projecting from it near its fulcrum a pawl, *c*, which engages the teeth of the escape-wheel, and through which said wheel acts to swing said beam or rod, a swinging arm, F, carrying a pawl or detent, *d*, engaging with the escape-wheel, and which is acted upon by the swinging beam or rod to remove the pawl or detent *d* from the escape-wheel as the pawl *c* comes into engagement therewith, substantially as and for the purpose herein described.

328,143. Swaging-Machine. W. Billings Rice and Merrit H. Rice, New York, N. Y., assignors of one-half to William D. Cameron, same place. Filed Mar. 17, 1885. (No model.)



Claim.—1. Compound-lever mechanism consisting of a lever adapted to be fulcrumed upon a shaft and having two arms respectively adjustably connected with one of the arms of each of two elbow-levers, the other arms of the respective elbow-levers being united by a knee or toggle joint, and the respective elbows thereof being adapted to be connected with mechanism or working parts to be operated by such compound-lever mechanism, substantially as described.

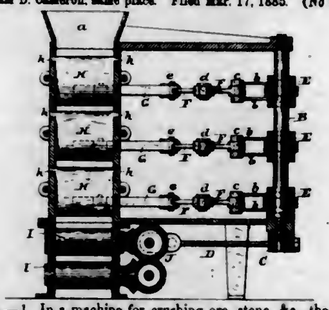
2. Compound-lever mechanism consisting of a lever adapted to be fulcrumed upon a shaft and having two arms respectively adjustably connected with one of the arms of each of two elbow-levers which have their elbows united by a knee or toggle joint, the other arms of such

elbow-lever being adapted to be respectively connected with mechanism or working parts to be operated by such compound-lever mechanism, substantially as described.

3. In a swaging-machine, two levers or parts, one end of each of which forms or presents a jaw, upon or connected with the face of each of which jaws is a form or die, said levers being set in such position as that the jaws will face each other, and being respectively connected with the compound-lever mechanism above herein claimed, whereby the forms or dies may be simultaneously operated and pressure exerted upon opposite sides of the material to be swaged or operated upon, substantially as described.

4. In a swaging-machine, the combination of the hand-lever C with the shaft B, having the lever D secured thereto, which lever is made to communicate by a series of lever-connections with the working parts or levers G G, made to actuate the dies or forms, whereby such dies may be operated by moving the lever C, substantially as described.

328,144. Machine for Crushing Ore, Stone, &c. W. Billings Rice and Merrit H. Rice, New York, N. Y., assignors of one-half to William D. Cameron, same place. Filed Mar. 17, 1885. (No model.)



Claim.—1. In a machine for crushing ore, stone, &c., the lever E, fulcrumed on a shaft, and elbow-levers F F, connected therewith, and also united together by a knee or toggle joint, in combination with working-levers G G and engaging jaws H H, such working-levers being adapted to move the engaging jaws toward each other, whereby they may be made to crush the material, substantially as described.

2. In a machine for crushing ore, stone, &c., a series of two or more pairs of engaging jaws and working-levers G G, adapted to work each jaw of the several pairs, in combination with elbow-levers F F, united by a knee or toggle joint, and rocking lever E, fulcrumed upon a shaft and connected with said elbow-levers, substantially as described.

3. A machine for crushing ore, stone, &c., provided with a series of two or more pairs of engaging jaws, compound-lever mechanism for operating the same, and means for giving to the levers which operate each pair of jaws succeeding the first more rapid action than is given to the levers which operate the preceding pair, whereby the several pairs of engaging jaws may be made to keep pace with each other in crushing the material to different degrees of comminution, substantially as described.

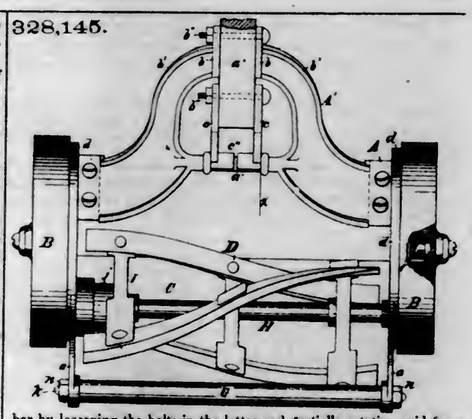
4. In a machine for crushing ore, stone, &c., shaft B, lever-arm C, secured thereto, rod D, connected with said arm, and crank or fly-wheel D', connected with said rod, in combination with rocking lever E, secured to the shaft B, elbow-levers F F, united together and connected with said rocking lever, working-levers G G, and engaging jaws H H, arranged and operating substantially as described.

328,145. LAWN-MOWER. Timothy Rogers, Springfield, Ohio, assignor, by mesne assignments, to the Rogers Fence Company, same place. Filed Aug. 6, 1884. (No model.)

Claim.—1. In a lawn-mower, the combination of the ground-wheels, the frame having disk-shaped ends and pivoted in the latter, arms extending forward from said disk-shaped ends, a guard-bar connecting the ends of said arms, the A-shaped hounds connecting the rear of said disk-shaped ends, having an opening between the ends of the same and connected near the middle by a cross-bar, the tongue-bar clamped by a bolt between the ends of said hounds and having its forward end pivotally connected by a clip-iron or link with said cross-bar, the end of said tongue-bar being clamped between the two sections of said clip-iron, whereby said frame may be adjusted upon said tongue-bar by loosening the clamp-bolts of the latter and partially rotating said frame forward to adapt the machine for a low cut, and in the opposite direction for a high cut, substantially as set forth.

2. In a lawn-mower, the combination, with the tongue-bar, of the frame having the hounds with an opening in the middle, the clamp-bolt securing said tongue-bar therein, the clip-iron or link connected by a bolt with the end of said tongue-bar, and having its opposite end swiveled to a cross-bar of said hounds, whereby the machine is adapted to be adjusted to both a high and a low cut without disturbing the position of the tongue-

328,145.



bar by loosening the bolts in the latter and partially rotating said frame either forward or backward, as the case may be, for the purpose set forth.

3. In a lawn-mower, the combination of the ground-wheels, the frame pivoted in the latter and having the A-shaped hounds with an opening between the rear ends of the same, the tongue-bar clamped in said opening and having its front end connected by a horizontal bolt with a clip-iron or link, the front end of which is pivoted to a cross-bar of said hounds, whereby the machine is adapted to be adjusted by loosening the clamp-bolts connecting said tongue-bar with the hounds and clip-iron and partially rotating said frame without disturbing the position of the tongue-bar, as set forth.

4. In a lawn-mower, the combination, with the frame having the A-shaped hounds, of the tongue-bar, the clip-irons swiveled to the cross-bar of said hounds and secured to said tongue-bar by a bolt, with means for adjustment, as specified, for the purpose set forth.

5. In a lawn-mower, the disk-shaped end pieces, each provided with a hole within the periphery of the same, a lateral lug below the latter for attaching the cutter-bar outside of said disks within the cavity of the wheels, whereby the ends of said cutter-bar are protected and prevented from entangling the grass, and the means described for the adjustment of said cutter-bar, as set forth.

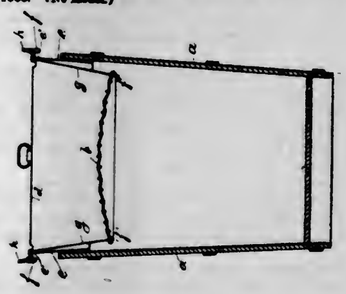
6. The combination, with the disk or end piece having the lateral lug on the outside of the same, of the radial rib connected therewith and cast integral with the same for the purpose of strengthening said lug, as set forth.

328,146. Pump. Abel L. Russell, Romulus, N. Y. Filed Dec. 27, 1884. (No model.)



Claim.—The combination, in a plunger, of two sections removably secured together, the rubber packing between the sections, the washers having the plain inner faces and convex outer faces and located on each side of the rubber packing, the lower section having the bell or cone shaped opening, and a valve supported on the lower section and adapted to close the opening between the sections, said upper section having the escape-openings *c*, substantially as set forth.

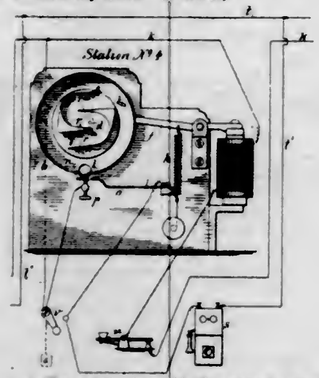
328,147. Ash-Sifter. Julius A. Seitz, Brooklyn, N. Y. Filed Feb. 16, 1885. (No model.)



Claim.—1. An ash-sifter comprising a flexible metallic band or hoop, *e*, having edge *e'*, and adapted to be inserted in a suitable ash-receptacle, a sieve having a flange, *f*, resting on said edge *e'*, and a cover, *d*, substantially as described.

2. An ash-sifter comprising a flexible metallic band or hoop, *e*, adapted to be inserted in a suitable ash-receptacle, a flanged sieve having secured at its lower edge a slightly-convexed wire screen, *b*, and a cover, *d*, substantially as described.

328,148. **ELECTRIC SIGNAL AND CALL APPARATUS.** CARLOS A. SMITH, Brooklyn, assignor of one-eighth to M. S. Frost & Son, New York, N. Y. Filed May 1, 1885. (No model.)



Claim.—1. The combination, with the magnet, armature-lever, pawls, and escapement-wheel, of a dial and box, a weight within the box, and a circuit-closing spring acted upon by the weight, substantially as set forth.

2. The combination, in an electric signaling-apparatus, of an electro-magnet in the circuit, an armature-lever, a dial rotated or controlled by the armature-lever, a weight connected with the dial, and a spring acted upon by the weight to close the circuit, substantially as set forth.

3. The dial-box and means for rotating the same, in combination with a globular weight within the box, and a circuit-closing spring, the weight projecting through an opening in the box to act upon the spring, substantially as specified.

4. The combination, in an electric circuit, of two or more dial-boxes, one at each station, an electro-magnet and armature to rotate the same, a weight within each dial-box, a circuit-closing spring acted upon by the weight, and a second electric circuit passing through the circuit-closing spring, and containing a telephonic or other electrical instrument, substantially as set forth.

5. The combination, in an electric circuit, of a dial-box, a magnet and armature to rotate the same, a circuit-closing weight within the box, a detainer to act upon the weight, and a circuit-closing spring outside of the box, against which the weight acts, substantially as set forth.

6. The dial-box having a tubular shaft and an opening in the rim of the box, in combination with the fixed axis upon which the box is revolved, a globular weight within the box, the lifter *i*, and the stationary zigzag inclines connected to the axis, substantially as set forth.

328,149. **APPARATUS FOR MANUFACTURING GAS.** LEVI STEVENS, Washington, D. C. Filed June 6, 1884. (No model.)

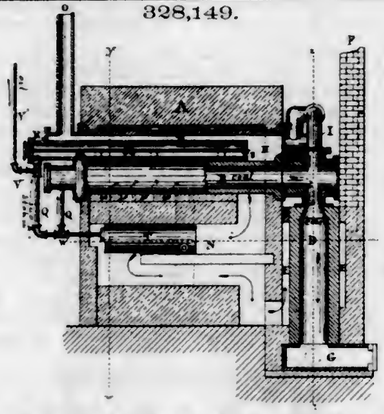
Brief.—Illuminating-gas is made by first distilling coal or carbonaceous material in connection with highly-heated steam passed through the coal-retorts, and the resulting gases are passed through a vertical retort containing highly-heated coke, and from thence through a more highly-heated finishing-retort, into which is also admitted the fixed gas obtained by the admixture of superheated steam with a volatile hydrocarbon within a highly-heated retort under great pressure, whereby the gas is enriched to the desired candle-power. The hydrocarbon-retort is placed within the mixing-retort, and has a valve and opening at its rear end.

Claim.—1. The combination, with a furnace, C, and with a horizontal distilling-retort, B, discharging into a vertical fixing-retort, D, of a finishing-retort, H, communicating with the lower end of the retort D and heated by the furnace, and through which the products of distillation in the retort B are led after passing through the retort D, substantially in the manner and for the purpose herein set forth.

2. The combination, with a furnace, C, distilling-retort B, fixing-retort D, and finishing-retort H, of one or more steam-superheaters, T, arranged to be heated by the furnace C and to deliver steam to the distilling-retort B, substantially in the manner and for the purpose herein set forth.

3. The combination, with one or more steam-superheaters, T, and with a coal-distilling retort, B, connected therewith, a fixing-retort, D,

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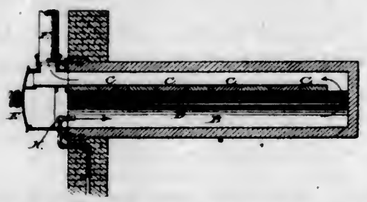


into which the commingled steam and products of distillation are led from the retort B, and a retort, H, into which the resultant gases pass from the retort D, of a hydrocarbon-retort, R, communicating with said retort H, and into which steam is injected from the superheater under pressure in connection with a volatile hydrocarbon oil, substantially in the manner and for the purpose herein set forth.

4. The combination, with the hydrocarbon-retort R, communicating with the fixing and enriching retort H, in an apparatus for the manufacture of illuminating-gas from carbonaceous material, and with a steam-injector, V, and an oil-supply pipe, V', for delivering superheated steam commingled with oil into said retort, of a valve, S, fitted to control the delivery-port between the retorts R and H, for the purpose of maintaining a high pressure within the retort R, substantially in the manner and for the purpose herein set forth.

328,150. **APPARATUS FOR MANUFACTURING ILLUMINATING-GAS.** LEVI STEVENS, Washington, D. C. Filed June 12, 1885. (No model.)

Brief.—Superheated steam at a temperature of 1,000° to 1,500° Fahrenheit is passed into the distilling coal in the lower chamber of the retort, and the resulting gases and vapors are fixed in the upper chamber of the retort. A horizontal partition of loose tile resting on side ledges forms the two chambers communicating at the rear end of the retort. The mouth-piece of the retort has a partition matching the tile partition, and the lid closes both chambers. Steam-superheaters are placed in the furnace-flues.

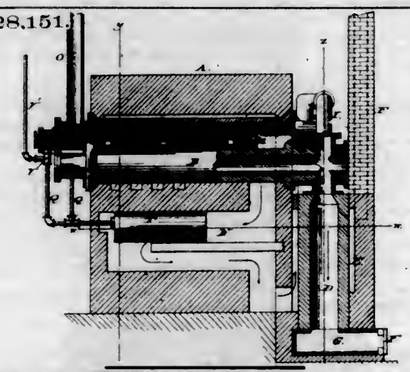


Claim.—The compound gas-retort constructed, substantially as described, of a lower distilling-compartment, an upper fixing-compartment separated from the lower by a horizontal partition of loose tiles and communicating therewith at its inner end, a mouth-piece covering the open front ends of both compartments and having a partition corresponding with that between the same, an outlet-pipe communicating with the front end of the upper compartment, and a cover closing the mouth-piece and open front ends of the two compartments.

328,151. **PROCESS OF MANUFACTURING ILLUMINATING-GAS.** LEVI STEVENS, Washington, D. C. Filed Aug. 10, 1885. (No model.)

Claim.—The process, substantially as herein described, of manufacturing illuminating-gas, which consists in causing the gases obtained by distilling coal or carbonaceous material in connection with highly-heated steam, and which have been partially fixed by passing them through a retort containing highly-heated coke, to pass from thence through a more highly-heated finishing-retort into which is admitted the fixed gas obtained by the admixture of superheated steam with a volatile hydrocarbon within a highly-heated retort under great pressure, whereby the gas is enriched to any desired candle-power.

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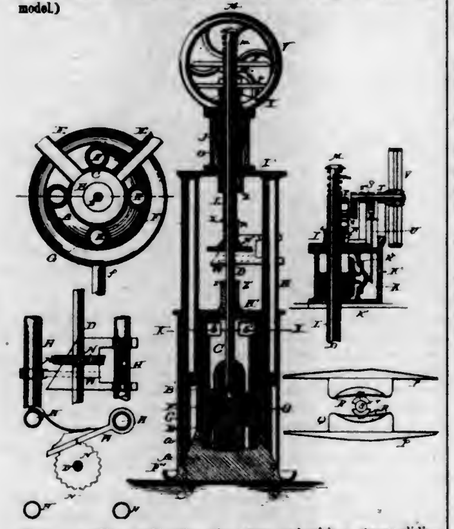
328,152. **CHIMNEY.** JOHN STOUR, Marshalltown, assignor of one-half to John A. Sieg, Marshall County, Iowa. Filed July 6, 1885. (No model.)



Claim.—1. A chimney having a central smoke-flue, two or more outside ventilating-flues having free connection with each other and with the room at the base, and having free connection with each other and with the smoke-flue at the top, as set forth and described.

2. The hood G, consisting of an outer and an inner wall joined by a slanting shelf, the inner wall being continuous with the flue and perforated by ventilating-holes *a*, as and for the purposes shown and described.

328,153. **ORE-STAMPING MACHINE.** GEORGE OSTLOOT, Montreal, Quebec, Canada. Filed July 25, 1884. Renewed Sept. 14, 1885. (No model.)



Claim.—1. The combination of a stamp-rod with a sleeve sliding freely thereon for a limited distance and communicating longitudinal motion to said rod, a piston carried by said sleeve, a steam-cylinder in which said piston works, and a slide-valve which admits the steam alternately to each end of said cylinder, substantially as shown.

2. The combination of a stamp-rod with a sleeve sliding freely thereon for a limited distance, and springs interposed between, which receive the thrust of said sleeve in either direction and communicate the same motion to said rod, a piston carried by said sleeve, a steam-cylinder in which said piston works, and a slide-valve which admits the steam alternately to each end of said cylinder, substantially as shown.

3. The combination of a stamp-rod with a sleeve sliding thereon for a limited distance, springs which receive the thrust of said sleeve in either direction and communicate the same motion to said rods, a piston carried by said sleeve, a steam-cylinder in which said piston works, a slide-valve which admits the steam alternately to each end of said cylinder, and mechanism through which said sleeve operates said slide-valve, substantially as set forth.

4. The combination of the sleeve, stamp-rod, piston, cylinder, and slide-valve with horizontal guideways attached to said sleeve, a block movable in said guideways, a crank-pin having its bearings in said block, a shaft to which said crank-pin is attached, and intermediate mechanism whereby the rotation of said shaft operates said slide-valve, substantially as set forth.

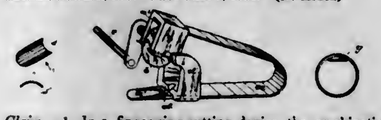
5. The laterally-movable block and the springs within the same, in combination with the crank-pin turning in bearings attached to said springs, the shaft to which said crank-pin is attached, the pitman operated by said shaft, and the slide-valve, cylinder, piston, sleeve, and stamp-rod, all arranged, constructed, and operating substantially as set forth.

6. The ratchet-wheel N, which serves the double purpose of engaging the pawl for rotating the stamp-rod and receiving the longitudinal thrust of sleeve L and spring *n*, in combination with said sleeve, spring, and rod, and the operating mechanism, substantially as set forth.

7. In an ore-stamping machine, a set of tubes attached to the base thereof and adapted to receive a supply of water, in combination with the supports of the steam-cylinder and the upper part of the machine, said supports being arranged telescopically within said tubes from above, so that when water is introduced under pressure into said tubes the upper part of the machine will be raised, as set forth.

8. A casing for the stamp head and die, in combination with a set of surrounding-tubes, a plate which is supported by said tubes and forms a head for said casing, and the adjustable upper part of the machine, substantially as set forth.

328,154. **DEVICE FOR SEVERING FINGER-RINGS.** JOSEPH H THOMAS, Newark, N. J. Filed June 9, 1885. (No model.)



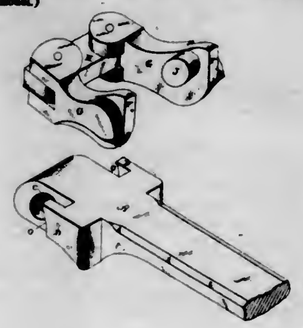
Claim.—1. In a finger-ring-cutting device, the combination, with a circular saw journaled in a frame, of a plate, to one end of which the said frame is secured, the other end being adapted to be inserted between the ring and the finger, for the purpose set forth.

2. In a finger-ring-cutting device, the combination, with a circular saw journaled in a frame, and means for revolving said saw, of a spring-plate, to one end of which the said frame is secured, the other end being adapted to be inserted between the ring and the finger, for the purposes set forth.

3. In a finger-ring-cutting device, in combination, a spring-plate bent substantially as herein shown, a frame secured to one end of said plate, a circular saw journaled in said frame, means for revolving said saw, and guiding-arms secured to the spring-plate near the other end thereof, for the purpose set forth.

4. In a finger-ring-cutting device, in combination, a frame secured to one end of a spring-plate, a circular saw journaled in said frame, provided with a handle, guiding-arms secured to the spring-plate near the other end thereof, and a spring-plate so bent that when the end to which the saw-frame is secured is depressed the saw engages with the other end of said plate outside of the guiding-arms, substantially as and for the purposes set forth.

328,155. **THILL-COUPLING.** WILLIAM R. R. TILLSON, Brooklyn, N. Y., assignor of one-half to A. C. Hallam, same place. Filed Aug. 13, 1885. (No model.)

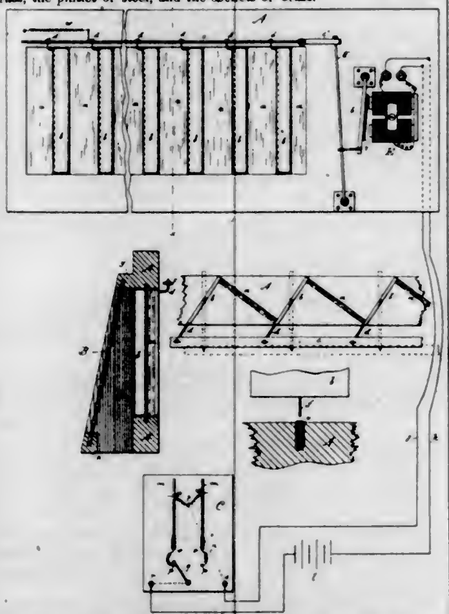


Claim.—1. The combination of the connecting-piece H and the thill-irons connected thereto and provided with studs or projections with the shaft-iron provided with sockets and flanges for catching over the ends of the thill-iron, substantially as shown.

2. The combination of the piece H, the thill-irons G, having one of its parts hinged to the part H, and provided with studs J, and the shaft-iron A, provided with sockets and flanges D, to catch over the ends of the thill-iron, substantially as described.

328,156. **ELECTRIC TEMPERATURE-REGULATOR.** Charles A. Tucker, Islip, N. Y. Filed June 4, 1885. (No model.)

Brief.—Preferably the fixed slats are glass, the pivoted ones of brass, the pintles of steel, and the sockets of brass.

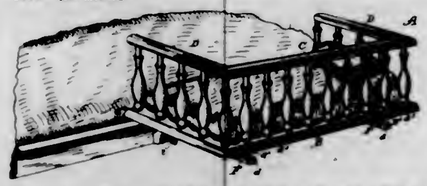


Claim.—1. A temperature-regulator consisting of an outer chamber, D, frame A, slats *a a* and *b b*, and the rod *c* and its connections, in combination with a suitable electric device for operating the same, arranged substantially as described and shown.

2. A temperature-regulator consisting of a frame, A, chamber D, fixed slats *a a*, movable slats *b b*, and rod *c* and its connections, in combination with a magnet, E, and battery *l*, electrically connected with a suitable thermometer, substantially as described and shown.

3. A temperature-regulator consisting of a chamber, D, frame A, having fixed slats *a a*, movable slats *b b*, and rod *c* and its connections, in combination with two or more thermometers connected from their tubes electrically, through the magnet E and battery *l*, with the switch *q*, the bulb of each thermometer connected independently with a button, as *p*, substantially as described and shown.

328,157. **CRIB.** Frederick A. Tyler, Rome, N. Y. Filed July 1, 1885. (No model.)



Claim.—1. The combination, with a bed, of rockers detachably secured thereto and a crib mounted on said rockers, as set forth.

2. The combination, with the crib and rockers, of the slotted plates having downturned ends, and the sliding clamping-brackets having T-shaped lugs, said clamping-brackets having elongated slots and set-screws working therein, as set forth.

3. The combination, with a bed, of rockers detachably connected to said bed, a cradle-body mounted on said rockers, and flexible limiting bands or straps connecting opposite sides of the rockers with opposite sides of the crib-bottom, as set forth.

4. The combination, with a bed, of rockers detachably connected thereto, adjustable clamping-plates secured to said rockers and engaging the bed-rail, and a cradle-body mounted on said rockers and having limited straps, as set forth.

5. The combination, with a bed, of supporting-rockers having adjustable clamping-plates to detachably connect the same to the bed-rail, a cradle-body mounted on said rockers and having an open side, angular plates depending from said cradle-body, and pivot-pins connecting said body and rockers together, as set forth.

6. The combination, with a bed, of rockers detachably connected thereto, an angle-plate secured to each of said rockers, an adjustable clamping-bracket having a slotted arm, a set-screw passing through said arm of the bracket, a cradle-body mounted on said rockers and pivotally connected thereto, and flexible limiting bands or straps secured at opposite ends to opposite sides of the rockers and cradle-bottom, as set forth.

328,158. **PULLEY OR WHEEL.** Clarion S. Wardwell, Stamford, Conn. Filed Aug. 1, 1885. (No model.)



Claim.—1. The combination of a wheel or pulley, A, and an elastic covering, C, made in the form of a ring and of less diameter, and wider than the periphery of the pulley, whereby the covering may be held on the face of the pulley by its own elasticity and by its overlapping edges, substantially as and for the purposes set forth.

2. The combination of a grooved wheel or pulley and an elastic covering attached to the face of the wheel and bridging over the groove therein, whereby the tension of the belt or belt-cord is automatically maintained, substantially as and for the purposes set forth.

3. The described improvement in the manufacture of covered pulleys, consisting in stretching on the face of the pulley an elastic covering made in the form of a ring and of less diameter than the periphery of the wheel upon which it is stretched.

328,159. **FEEDER FOR COTTON-GINS.** Oscar Washburne, Sing Sing, N. Y., assignor to Mary E. Washburne, same place. Filed May 8, 1885. (No model.)



Claim.—1. In a feeder for cotton-gins, the combination, with carrying-rollers, of a feeding-cylinder of large diameter, a space below the feeding-cylinder adjacent to the carrying-rollers, and a vertically-adjustable endless apron movable in a direction contrary to that of the rotation of the cylinder, arranged slightly to the rearward of said cylinder and having its lower portion extending into a plane below that of the top of said cylinder, substantially as described, whereby cotton will be fed directly upward from the carrying-rollers by the cylinder between the latter and the endless apron, and whereby the endless apron will force the cotton backward from the cylinder, and rubbish from the cotton will be caused to fall by gravity into the space below said cylinder.

2. In a feeder for cotton-gins, the combination, with the endless apron E, of rollers E^4 E^5, adjustable journal-boxes E^6, screws E^9, frames E^8 E', a rock-shaft, G, pinions G', ratchet-wheel G^2, pawl G^3, and standards F, substantially as specified.

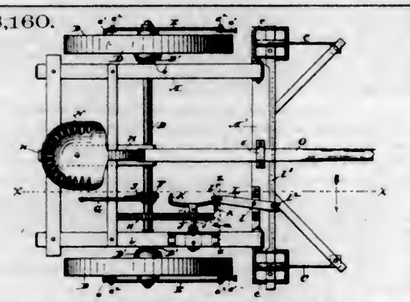
3. In a feeder for cotton-gins, the combination, with the endless apron E, the rollers E^4 E^5, frames E^8 E', standards F, ratchet-wheel H, pawl H', swinging arm H^2, pitman H^3, and crank-disk *g*, substantially as specified.

328,160. **COMBINED CHECK-ROWER AND SELF-DROPPING CORN-PLANTER.** Lyman Watkeman, Jr., Creston, Iowa, assignor, by mesne assignments, of one-half to William H. Doty and Charles W. Doty, Galesburg, Ill. Filed Apr. 30, 1885. (No model.)

Claim.—1. The combination of the axle B, arms E, wheels D, hub-ratchets B', ratchet F, lever G, gears H J, arms K K with lever L and drop-bar *l*, all arranged and constructed substantially as described.

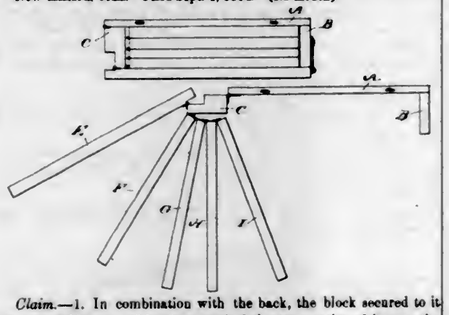
2. The combination, with the axle and wheels of a corn-planter, of the ratchets B' B' and F, lever G, gear-wheels H J, shaft *j*, arms K

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with lever L, drop-lever *l*, and means, as the lever M, for throwing said mechanism in and out of gear, substantially as set forth.

328,161. **CASE FOR CARDS, SAMPLES, &c.** Theodore F. Watson, New Milford, Conn. Filed Sept. 1, 1884. (No model.)

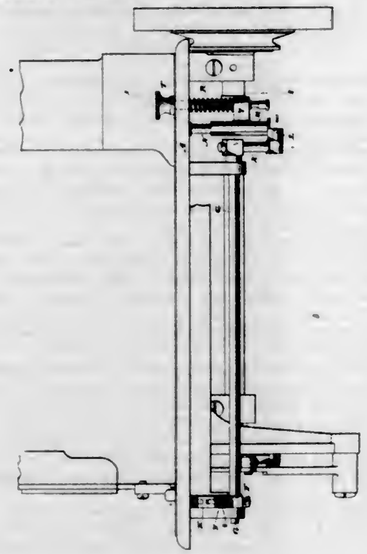


Claim.—1. In combination with the back, the block secured to it by means of hinges, and having attached thereto a series of leaves, the first hinged to said block and each successive to the preceding leaf, the whole adapted to close up and be secured to the back, substantially as described.

2. The combination, with a block hinged to the back, as described, of a cover hinged to the block, and of several leaves, the first hinged to said block and each successive to the preceding leaf, the whole adapted to be closed and secured by the fastening of the cover to the side strip, substantially as set forth.

3. The combination of back A, strip B, block C, cover E, and leaves F, G, H, and I, all arranged as described, and for the purpose set forth.

328,162. **FEED DEVICE FOR SEWING-MACHINES.** John J. Wheat, Indianapolis, Ind. Filed Sept. 20, 1884. (No model.)

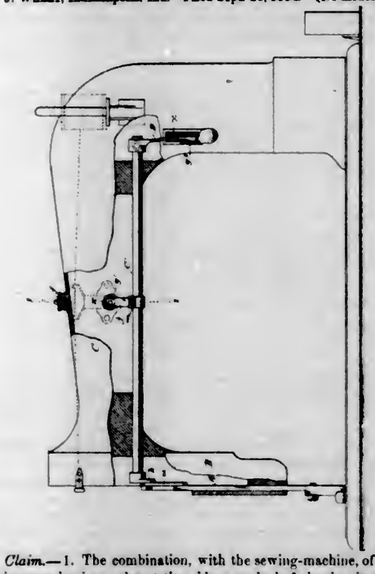


Claim.—1. The combination, with the rock-shaft, arm F, pivoted link E, and feed-bar, of an arm, K, passing through and adjustably supported in said shaft, driving-shaft provided with an eccentric, and a connecting-rod between the eccentric and the arm, substantially as and for the purpose set forth.

2. The combination of a rock-shaft carrying an arm connected by a link to the feed-bar, shaft J, carrying an eccentric, connecting-rod H, connecting-pin *w*, and slotted block L, and means, substantially as described, for varying the vertical position of the latter, for the purpose set forth.

3. The combination of the rock-shaft G, arm K, pin *w*, connecting rod H, slide M, carrying a slotted block receiving the end of the pin, and an adjusting screw-pin, T, substantially as set forth.

328,163. **PRESSER-FOOT DEVICE FOR SEWING-MACHINES.** John J. Wheat, Indianapolis, Ind. Filed Sept. 20, 1884. (No model.)



Claim.—1. The combination, with the sewing-machine, of an overhanging arm having a slot at the side, a rock-shaft having its bearings in the overhanging arm, provided at the inner end with an operating arm or handle extending through the said slot and the presser-foot bar, and a connection between the latter and the shaft, substantially as set forth.

2. The combination, with the sewing-machine, of an overhanging arm having a slot at the side, a rock-shaft inclosed by and having its bearings in the overhanging arm, provided at the inner end with an operating arm or handle extending through the said slot, and means, substantially as described, for securing the said arm after adjustment, and the presser-foot bar, and a connection between the latter and the shaft, as set forth.

3. The combination of the presser-foot bar, operating rock-shaft provided with a handle and connected to the said bar, and spring arranged to bear upon a projection of the shaft to turn the same to depress the presser-foot, and means for varying the tension of the spring, substantially as described.

4. The combination of the shaft connected to operate the presser-foot, tension-jaws, screw-pin, and spring for depressing the latter, and finger projecting from the shaft beneath the screw-pin, substantially as set forth.

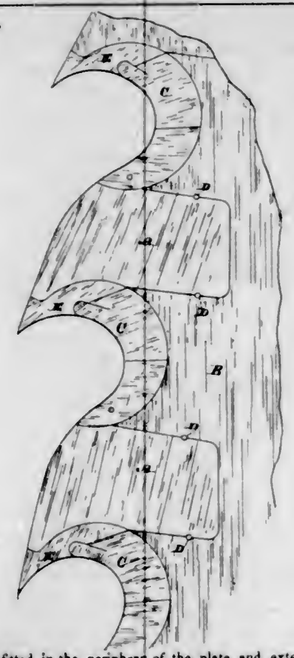
5. The combination of the fixed jaw G, jaw G', secured to a spring-plate, *f*, screw-pin extending through the spring-plate, nut upon the screw-pin provided with a feather extending into a slot, a spring, *h*, bearing upon the nut, and shaft C', connected to the presser-foot bar, and provided with an arm extending beneath the end of the screw-pin, substantially as specified.

328,164. **SAW.** Henry W. Wheeler, San Francisco, Cal., assignor to Tatum & Bowen, same place. Filed July 1, 1885. (No model.)

Claim.—1. The combination, with the saw-plate provided with sockets, of the extension-plates fitting the sockets and projecting outwardly beyond the periphery of the saw-plate and filling the space between the shank of one cutting-bit and that of the adjoining cutting-bit, substantially as herein described.

2. In a saw, the extension-plates projecting outward from the periphery of the saw-plate, in combination with the cutting-bits, and the

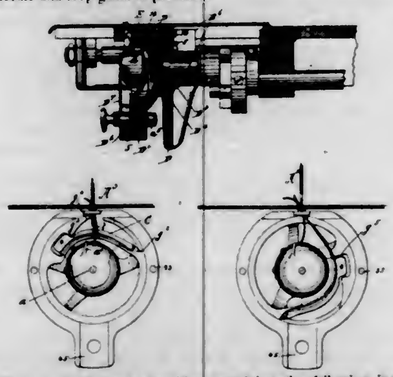
328,164.



holding-shanks fitted in the periphery of the plate and extending the entire distance between the extension-plates, substantially as herein described.

328,165. SEWING-MACHINE. Nathaniel Wheeler and Wilbur F. Dial, Bridgeport, Conn. Filed June 22, 1885. (No model.)

Brief.—The loop-taker guide is placed in a slightly-eccentric position with relation to the shaft carrying the "saddle," that engages with and drives the loop-taker. The make and break of contact between the continuously-rotating loop-taker and the prong and the lug of the saddle is effected by the eccentricity stated, such differences in center resulting in such a relative change of position of parts during each cycle of the movement as to cause the seeming oscillation of the saddle. An adjustable needle and loop guide is provided.



Claim.—1. A sewing-machine containing the following instrumentalities, viz: a needle-bar, an eye-pointed needle, means to operate it, a variably-rotating shaft, and the saddle attached thereto, and having at one end the prong 3 and at its other end the lug 4, a rotating loop-taker composed, essentially, of a hook having a point, shoulders g^2 and g^3, and a heel, a loop-taker guide adjusted to place the center of rotation of the loop-taker out of line or eccentric with relation to the center of rotation of the shaft carrying the saddle, and a bobbin and bobbin-case, the saddle acting alternately to push and to pull the loop-taker in its continuous circular movement, substantially as described.

2. A sewing-machine containing the following instrumentalities, viz: a needle-bar, an eye-pointed needle, means to operate it, a variably-rotating shaft, and a saddle attached thereto, a rotating loop-taker composed, essentially, of a hook having a point, shoulders g^2 and g^3, a heel and a bridge, a loop-taker guide adjusted to place the center of rotation of the loop-taker out of line or eccentric with relation to the center of rotation of the shaft carrying the saddle, and a bobbin and bobbin-case, the saddle acting alternately to push and to pull the loop-taker in its continuous circular movement, substantially as described.

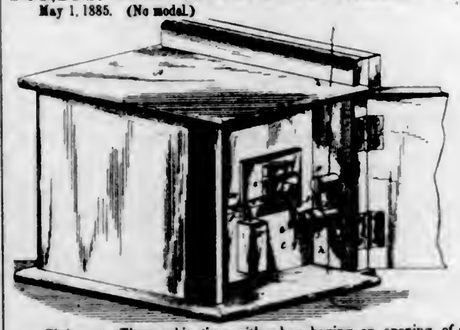
3. A sewing-machine containing the following instrumentalities, viz: a needle-bar, an eye-pointed needle, means to operate it, a rotating shaft, and the saddle attached thereto and provided with the prong 3 and lug 4, a rotating loop-taker composed of the hoop-like piece of metal having a heel, and a point recessed at g^4, and provided with shoulders g^2 g^3, a bridge connecting the hoop at two points, a back plate provided with a stud, and a bobbin-case having a closed outer end or head, a tension-regulating spring, a bobbin, and the loop-taker guide adjusted to place the center of rotation of the loop-taker eccentric with relation to the center of rotation of the shaft carrying the saddle, to operate substantially as described.

4. A sewing-machine containing the following instrumentalities, viz: a needle-bar, an eye-pointed needle, means to operate it, a variably-rotating shaft, and a saddle attached thereto, a rotating loop-taker composed, essentially, of a hook having a point, shoulders g^2 and g^3, a heel and a bridge, a loop-taker guide adjusted to place the center of rotation of the loop-taker out of line or eccentric with relation to the center of rotation of the shaft carrying the saddle, and a bobbin and bobbin-case, and a take-up, and means to operate it, the saddle acting alternately to push and to pull the loop-taker in its continuous circular movement, substantially as described.

5. The bed-plate, the lug D, and its attached hub D^3, combined with the loop-taker guide-board eccentrically and mounted on the said hub, substantially as described.

6. The bed-plate, the lug D, the loop-taker guide connected therewith, and the adjustable needle and loop guide E, attached thereto, substantially as described.

328,166. ALARM. Gwilym M. Williams, Wilkes-Barré, Pa. Filed May 1, 1885. (No model.)



Claim.—1. The combination, with a box having an opening, of a valve to close said opening and mounted on a journaled shaft, an electric circuit which includes alarming mechanism, and a circuit-closer connected with the journaled shaft, substantially as set forth.

2. In an alarming mechanism of the character described, the combination, with a box or casing having an opening in one of its sides, of a journaled shaft carrying a valve to close said opening, a lever connected with said shaft and having a circuit-closer, an electric circuit which includes alarming mechanism, and an adjustable weight for said lever, substantially as set forth.

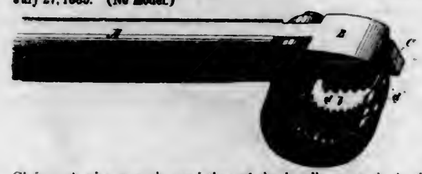
3. The combination, with a box or casing having an aperture and a series of perforations, of a shaft carrying a valve adapted to close said aperture, an arm or lever on said shaft, intermediate devices to complete an electric circuit, and an alarm mechanism included in the circuit, substantially as set forth.

4. The combination, with an apertured box or casing, substantially as described, of a shaft carrying a valve arranged to close said aperture, an arm or lever connected with said shaft, a short arm adapted to turn with the shaft, a movable weight on the arm, binding-posts, a contact-lever pivoted to one of said binding-posts and connected with said short arm, and an electric circuit which includes an alarm mechanism, substantially as set forth.

5. The combination, with an apertured box or casing, substantially as described, of a journaled shaft carrying a valve arranged to close said aperture, an arm connected with said shaft, a movable weight on said arm, a short arm adapted to turn with the shaft and provided with a slot, binding-posts, a lever pivoted to one of the latter, plates extending from the contact-lever and connected with the slot of the short arm, and an electric circuit which includes an alarm mechanism, substantially as set forth.

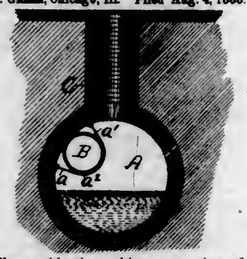
6. The combination, with a box or casing having an aperture and perforations or openings, of a journaled shaft carrying a valve to close said aperture, an arm mounted on said shaft, a movable weight on said arm, a short arm adapted to turn with the shaft, said short arm having a slot, binding-posts, a contact-lever pivoted to one of the latter, plates extending from the contact-lever and insulated, said plates being pivotally connected with said short arm, and an electric circuit which includes an alarm mechanism operated by said short arm, substantially as set forth.

328,167. PIPE-WRENCH. Richard E. Williams, Modesto, Cal. Filed July 27, 1885. (No model.)



Claim.—A pipe-wrench consisting of the handle or stock A, the fixed jaw B on its forward end, and the lug C on the forward end of the jaw, the curved hook or jaw D, slotted and pivoted on the handle at its rear end and having its forward end slotted or grooved, adapting it to fit and engage the lug C, substantially as herein described.

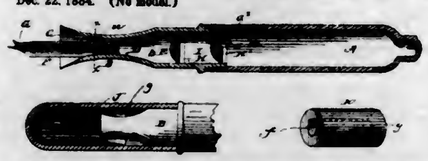
328,168. MEANS FOR VENTILATING SEWERS. John S. Wilson and William W. Green, Chicago, Ill. Filed Aug. 4, 1885. (No model.)



Claim.—1. The combination, with a sewer-pipe, of an auxiliary perforated air-pipe suspended therein and running continuous therewith, substantially as and for the purpose set forth.

2. The combination, with a sewer-pipe, of an air-circulating and ventilating pipe located therein and provided with the apertures a' in the upper side, the perforations a^2 in the under side, and the branch pipes D, all substantially as and for the purpose described.

328,169. FOUNTAIN-PEN. Paul E. Wirt, Bloomsburg, Pa. Filed Dec. 22, 1884. (No model.)



Claim.—1. In a fountain-pen, the combination, with the handle or ink-reservoir and the nozzle or pen-section, of the rubber ink-conducting shaft passing through the nozzle and having one end lying over the back or upper face of the pen, and the other end projecting into the ink-reservoir, said shaft being pivoted or hinged at an intermediate point and working loosely within the nozzle, each end of the shaft having a slight movement, for the purpose set forth.

2. In a fountain-pen, the handle or ink-reservoir and the nozzle or pen-section, in combination with the ink-conducting shaft passing through the nozzle and having one end projecting into the ink-reservoir and the other end lying over the back of the pen, said shaft being hinged, pivoted, or held at an intermediate point of its length, and arranged within the nozzle below the top wall thereof, so as to play loosely upward along its entire length, as set forth.

3. In a fountain-pen, the handle or ink-reservoir and the nozzle or pen-section, in combination with the ink-conducting shaft passing through the nozzle and arranged loosely below the inner wall thereof, so as to be capable of a free upward movement, one end of the shaft projecting into the reservoir and the other end lying over the pen, the rear end of the shaft being hinged or pivoted, as set forth.

4. In a fountain-pen, the handle or ink-reservoir and the nozzle or pen-section, the latter being formed with a chamber or compartment at its inner or rear end, in combination with the ink-conducting shaft passing through the nozzle, and hinged, pivoted, or held to one of the partitions of the chamber or compartment, so that the front end of the shaft works upward in writing, and the rear end within the reservoir works slightly downward, as set forth.

5. In a fountain-pen, the handle or ink-reservoir, and the nozzle or pen-section, the latter being formed with a chamber or compartment for the accumulation of ink, in combination with the ink-conducting shaft, arranged loosely within the nozzle, and having one end lying over the pen and the other end projecting into the ink-reservoir, said shaft being hinged, pivoted, or held to the rear partition of the compartment or chamber, for the purpose set forth.

6. In a fountain-pen, the handle or ink-reservoir, and the nozzle or pen-section, the latter having a chamber or compartment at its inner or rear end for the accumulation of ink drawn down from the reservoir, and an enlarged mouth at its front end, in combination with the ink-conducting shaft passing through the nozzle and its chamber or compartment, and having one end projecting into the ink-reservoir and the other end lying over the back of the pen, arranged and operating, whereby the ink brought down from the reservoir accumulates within the chamber or compartment, from whence it is drawn along the shaft upon the back of the pen, the enlarged mouth of the nozzle serving to retain a superfluous supply of ink, which may be brought down by the shaft, for the purposes set forth.

7. In a fountain-pen, the handle, case, or reservoir, and the nozzle or pen-section fitted thereto, said nozzle having its inner end subdivided to form a chamber or compartment in which the ink accumulates from the reservoir, and the ink-conducting shaft passing through the nozzle and its chamber or compartment, arranged and operating, whereby the ink within the latter is caused to travel along the shaft upon the pen, and is held from escaping into the space of the nozzle forward of the chamber or compartment, as set forth.

8. In a fountain-pen, the handle, case, or reservoir, and the nozzle fitted thereto and carrying the pen, said nozzle having its inner end in rear of and beyond the pen subdivided to form a chamber or compartment in which the ink accumulates from the reservoir, and is held from escaping into the space within the nozzle forward of the chamber or compartment, in combination with the ink-conducting shaft passing through the nozzle and its chamber, the ink within the latter traveling along the length of the shaft down upon the back of the pen, as set forth.

9. In a fountain-pen, the handle, case, or reservoir, and the nozzle fitted thereto and carrying the pen, the inner end of the nozzle forming a recess or chamber, in combination with disks, buttons, or partitions subdividing this recess into a separate compartment for the accumulation of ink from the reservoir, and the ink-conducting shaft passing through the nozzle and chamber, for the purpose set forth.

10. In a fountain-pen, the handle, case, or reservoir, and the nozzle fitted thereto and carrying the pen, said nozzle having its inner end in rear of and beyond the pen subdivided by a series of perforated or notched buttons, disks, or partitions to form a chamber or compartment in which the ink accumulates from the reservoir, and the ink-conducting shaft passing through the nozzle and the perforations of the partitions, the space within the nozzle forward of the chamber supplying air to the reservoir through the perforations of the partitions, for the purpose set forth.

11. In a fountain-pen, the handle, case, or reservoir, in combination with the nozzle fitted thereto and carrying the pen, and the ink-conducting shaft passing through the nozzle and lying over the back of the pen, the front end of the nozzle flaring outwardly to provide a funnel-shaped mouth to retain a superfluous supply of ink which may be brought down by the shaft, as set forth.

12. The handle, case, or reservoir, in combination with the nozzle, enlarged at its inner end to provide a recess or chamber, curved down to form the main passage in which the pen is seated, and then flaring outward at its forward end to provide an enlarged mouth, which serves to retain a superfluous supply of ink brought down by the shaft, and thus prevent it from dropping precipitately upon the paper in blots, as set forth.

13. In a fountain-pen, the handle, case, or reservoir, and the nozzle fitted thereto and carrying the pen, in combination with the ink-conducting shaft, formed at an intermediate point of its length with a downward bend, *b*, and having one end projecting into the ink-reservoir and the other end lying over the pen, as set forth.

14. In a fountain-pen, the handle, case, or reservoir, and the nozzle fitted thereto and carrying the pen, in combination with the ink-conducting shaft having its rear portion hinged or pivoted to a disk at the rear or inner end of the nozzle, the main portion of the shaft working or playing loosely within a groove in the inner face of the nozzle over the pen, as set forth.

15. The combination, with the nozzle or pen-section of a fountain-pen, of the herein-described cap or cover having a soft-rubber tube or bushing arranged within the same, the outer end of the bushing having an enlarged opening to receive and accommodate the front end of the nozzle, which entirely closes the opening, so as to retain a partial vacuum within the cap or cover, for the purpose set forth.

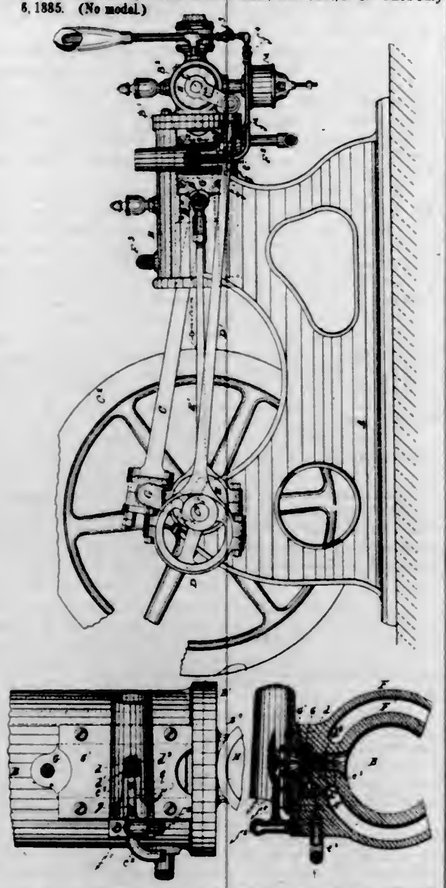
16. The combination, with a nozzle or pen-section of a fountain-pen, of the herein-described cap or cover having a soft-rubber tube or bushing located within the same, the outer end of the bushing being open to allow the insertion of the front end of the nozzle into the same, said nozzle fitting the tube snugly and serving to close the entrance

thereto to prevent the admission or circulation of air around the pen, for the purpose set forth.

17. In a fountain-pen, the combination, with the handle or ink-reservoir, and the nozzle fitted thereto and carrying the pen, of the partitions or disks at the inner end of the nozzle, forming the chamber or compartment for the accumulation of ink from the reservoir, and the ink-conducting shaft pivoted or hinged to one of the partitions or disks, as and for the purpose set forth.

18. In a fountain-pen, the combination, with the handle or ink-reservoir, and the nozzle fitted thereto and carrying the pen, of the partitions or disks at the inner end of the nozzle, forming the chamber or compartment, a notch in one of the partitions, and the ink-conducting shaft having its rear end notched to catch over the bottom wall of the notch in the partition, as set forth.

328,170. **GAS-ENGINE.** Joseph S. Wood, Brooklyn, assignor, by direct and mesne assignments, to R. B. Dietz, New York, N. Y. Filed July 5, 1885. (No model.)



Claim.—1. In a gas-engine, the combination of a cylinder, B, with a cylindrical valve, H, having an inlet-passage, *a*, and an exhaust-passage, *b*, separate and apart and arranged on the same plane with each other, with corresponding ports, *a'* and *b'*, in the head B', and ports *a²* and *b²* in the valve-casing B², together with the gas-regulating nipple or tube *a³*, substantially as set forth.

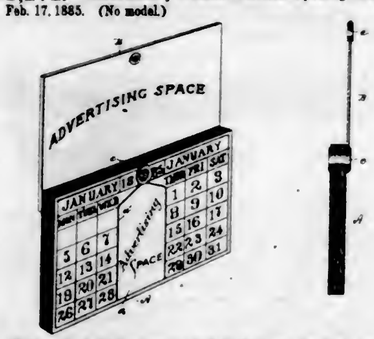
2. In a gas-engine, in combination, a cylinder, B, a cylindrical valve-casing, B², and cylindrical valve H, together with a check-valve, K, opening outward and connected to the exhaust-passage *b*, and the check-valve M, opening inward, arranged and connected with the air-passage *a²*, for the purposes set forth.

3. In a gas-engine, in combination, a cylinder, B, cylinder-head B' with a check-valve, I, and bent lever I', for the purposes described.

4. In a gas-engine, in combination, a cylinder, B, with an igniter-slide, G, arranged on one side and near the back end, this slide having a cover, G', a conical recess, *d*, an ignition-orifice, *d'*, an auxiliary gas-chamber, *e*, a supply-orifice, *e'*, and a discharge-orifice, *e²*, substantially as described.

5. In a gas-engine, in combination, a cylinder, B, cylindrical valve H, ignition-slide G, and gas-jet burner *f*, bracket *f'* in connection with the supply-pipe *f²*, reducing-orifice *f³*, and air-supply holes *g*, all as substantially described and herein set forth.

328,171. **CALENDAR.** William P. Allen, Wyoming, Ohio. Filed Feb. 17, 1885. (No model.)



Claim.—1. A tablet composed of leaflets, one for each month, and a suspending-piece attached thereto, said suspending-piece being adapted to turn or fold, so as to form a back for said tablet and occupy the same surface-space therewith, substantially as specified.

2. The combination, with a calender-tablet, of a folding suspending-strip having the same surface-space as said tablet, said suspending-strip being attached to said tablet by an eyelet, on which it is adapted to turn, the said tablet being provided on its face with advertising-space inclosed by a line which marks the point where the eyelet is inserted, substantially as set forth.

3. The combination, with the tablet A, having advertising-space *a*, of the suspending-piece B, adapted for advertising or illumination, said suspending-piece being attached to the tablet by an eyelet, *c*, and adapted to turn thereon and form a back for said tablet, substantially as specified.

328,172. **FUSE FOR EXPLODING GUNPOWDER AND OTHER EXPLOSIVES.** Albert F. Andrews, Avon, Conn., assignor to the Climax Fuse Company. Filed May 25, 1885. (No model.)

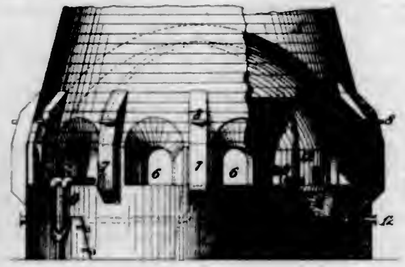


Claim.—1. A fuse having around a core-thread a layer of powder incased in two or more spirally-wound strands of tissue-paper, combined with strands of rope-yarn or other fibrous material coincidently intertwisted therewith, all substantially as shown and described.

2. A fuse having a powder-incasing layer of spirally-wound twisted paper strands, combined with coincidently intertwisted strands of rope-yarn or other similar fibrous material, substantially as shown and described.

3. A fuse having a powder-incasing layer of two or more spirally-wound strands of tissue-paper, combined with strands of rope-yarn or other fibrous material coincidently intertwisted therewith, and with an outer layer of spirally-wound threads to act as a protective covering, all substantially as shown and described.

328,173. **GLASS-FURNACE.** William T. Armstrong and Robert H. Thomas, Chartiers, Pa. Filed June 4, 1885. (No model.)

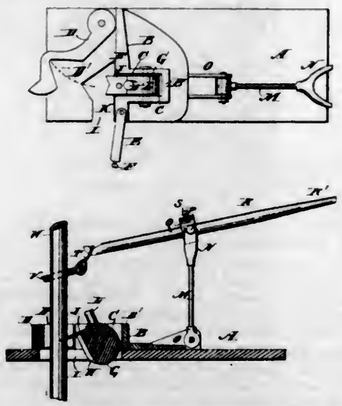


Claim.—1. The combination, in a glass-furnace, of a series of partition-walls dividing the interior of the furnace into two or more tanks or compartments, said walls having longitudinal openings forming spaces, each interposed between two adjacent compartments, a breast-wall and crown surrounding and covering a chamber above said compartments, and a series of discharge-flues, each leading from said chamber above one of the compartments to a stack, substantially as set forth.

2. The combination, in a glass-furnace, of a series of independent lower tanks or compartments, a chamber formed by a breast-wall and crown above said compartments, a series of gas-supply pipes discharging into said chamber at or near the level of the top of the compartments, a series of air heating and supply pipes leading through or upon the walls of the furnace from its exterior to points adjacent to the discharges of the gas-supply pipes, and a series of discharge-flues leading from the chamber above the compartments to a stack, substantially as set forth.

3. The combination, in a glass-furnace, of a series of independent lower tanks or compartments, a chamber above said compartments provided with working-holes giving access to their contents, a series of air and gas pipes discharging into said chamber, and a series of discharge-flues governed by dampers, each of said flues leading from said chamber above one of the compartments to a stack, substantially as set forth.

328,174. **PIPE HOLDER AND LIFTER.** E. Stillman Babcock, Milton, Wis., assignor to himself and Henry F. Clark, same place. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a pipe-holder, the combination, with a fixed jaw-block, of a pivoted clamping-lever, and an eccentric pivoted in the fixed jaw-block, substantially as herein shown and described.

2. In a pipe-holder, the combination, with a fixed jaw-block, of a pivoted clamping-lever, and an eccentric pivoted in the jaw-block, and having a projecting tongue provided with a notched end, substantially as herein shown and described.

3. In a pipe-holder, the combination, with a fixed jaw-block, of a pivoted clamping-lever, an eccentric pivoted in the jaw-block and having a grooved edge, and a tongue provided with a notched end, substantially as herein shown and described.

4. In a pipe-holder, the combination, with the jaw-block B, of the pivoted clamping-lever D, having a recess, D', the shackle E, pivoted in the block B, and provided with a set-screw, F, and the eccentric G, pivoted in the jaw-block, substantially as herein shown and described.

5. In a pipe holder and lifter, the combination, with the platform A, of the rod M, pivoted on the same, and having a fork, N, on its free end, the lever R, the collar Q, having trunnions or pivots P, the screw S, the ring V, and devices for holding the pipe, substantially as herein shown and described.

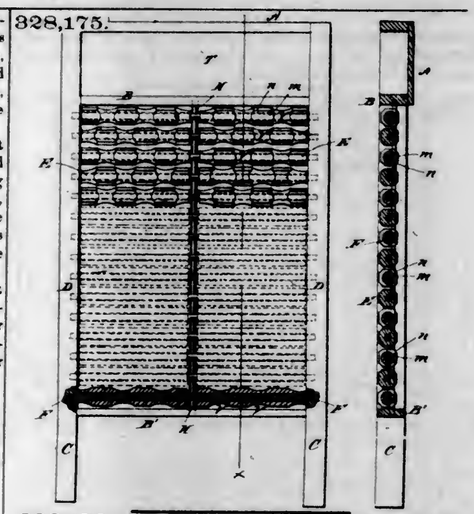
328,175. **WASH-BOARD.** Ephraim Bailey, West Newbury, assignor to himself and Thomas S. Bailey, Haverhill, Mass. Filed July 10, 1885. (Model.)

Claim.—1. A wash-board constructed and arranged substantially as described, consisting of the frame A, sectional rollers E, and central supporting-rod, H, as set forth.

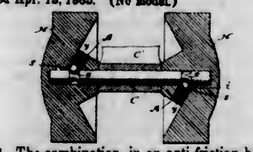
2. A wash-board constructed substantially as described, consisting of the frame A, sectional rollers E, having alternate flat surfaces *m n* and annular depressions V, and central supporting-rod, H, as and for the purposes set forth.

3. A wash-board constructed substantially as described, consisting of the frame A, central supporting-rod, H, and sectional rollers E, having flat surfaces *m n* and depressions V, arranged so that the flat surfaces in one roller are opposite to the depressions in the next following roller, as set forth.

328,175.



328,176. **ANTI-FRICTION BEARING.** Howard S. Bailey, Denver, Colo. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination, in an anti-friction bearing, of a shaft turning in a support and provided with an annular recess, a wheel adapted for the reception of the end of the shaft, and perforated for the passage of a roller fitting the groove in the shaft, and a retaining device, substantially as described, for holding the roller in its position, substantially as set forth.

2. The combination of a support, a shaft extending through the support and provided with an annular groove, and a wheel turning upon the end of the shaft and carrying a roller fitting said annular groove, the said roller being detachable from the wheel, substantially as set forth.

3. The combination, with the support, of an axle grooved near each end, and wheels, each having a socket inclosing the end of the shaft and carrying a roller confined in the groove of the shaft, substantially as set forth.

4. The combination, with the grooved shaft and its support, of wheels having inclined threaded sockets for screw-plugs A, recessed at their inner ends, and spheres confined between the ends of the screw-plugs and the faces of the grooves in the shaft, substantially as described.

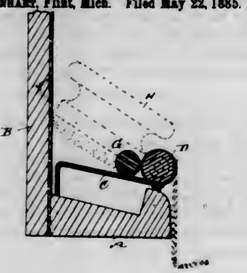
5. The combination of the support, the axle turning therein and grooved near the ends, the wheels fitting the ends of the axle and having inclined sockets and spheres within said sockets, and detachable plugs for holding the spheres in place, substantially as set forth.

6. The combination, with the support, grooved axle, wheel, and sphere, of a detachable perforated plug, for the purpose set forth.

7. The combination, with the grooved axle, of a socketed wheel having an inclined opening, a sphere or roller, and a retaining-plug fitting said opening, substantially as set forth.

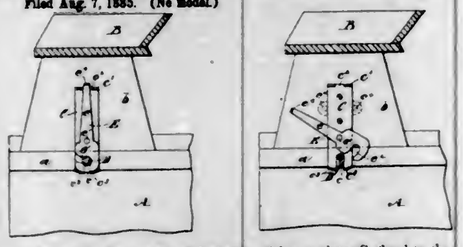
8. The combination of the grooved axle and roller and a wheel having an inclined opening receiving said roller, and a detachable threaded retaining-plug fitting said opening, substantially set forth.

328,177. **CRAYON AND ERASER HOLDER FOR BLACKBOARDS.** Irving W. Barnhart, Flint, Mich. Filed May 22, 1885. (Model.)



Claim.—The combination, with a blackboard-trough, of a piece of wire-netting or perforated material hinged to the front of the trough, and having its inner end bent down to form a support for said netting, substantially as herein shown and described.

328,178. **WAGON-SEAT LOCK.** Jared Blakesley, Story City, Iowa. Filed Aug. 7, 1885. (No model.)



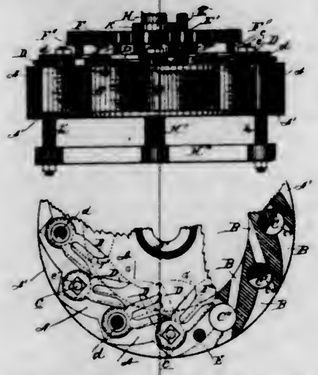
Claim.—1. A wagon-seat lock comprising a plate, C, fixed to the seat-riser and having a slot, c, a plate, E, provided with a slot, c^2, and pivoted so its slot c^2 crosses slot c of plate C, and a pin or stud, D, fixed to the wagon-body and adapted to the notches c c^2 of plates C E, substantially as shown and described.

2. A wagon-seat lock comprising a plate, C, fixed to the seat-riser and having a slot, c, a plate, E, provided with a slot, c^2, and pivoted so its slot c^2 crosses slot c of plate C, and a pin or stud, D, having a head, d, and fixed to the wagon-body, and adapted to the notches c c^2 of plates C E, substantially as herein set forth.

3. A wagon-seat lock comprising a plate, C, fixed to the seat-riser, and having a slot, c, and an upper flange, c', provided with a notch, c^3, a plate, E, provided with a slot, c^2, and pivoted so its slot c^2 crosses slot c of plate C, and having an end portion, e, adapted to spring into the notch c^3 of plate C, and a pin or stud, D, fixed to the wagon-body and adapted to the notches c c^2 of plates C E, substantially as herein set forth.

4. As improved articles of manufacture, the plates C E of a wagon-seat lock pivoted together at e', and plate C, having a slot, c, lugs c^3, and a notch, c^3, and plate E, having a slot, c^2, crossing slot c of plate C when in locking position, and an end portion, e, adapted to spring into the notch c^3 of plate C, substantially as set forth.

328,179. **TURBINE WATER-WHEEL.** Charles P. Bradway, Stafford, Conn. Filed Apr. 29, 1884. (No model.)

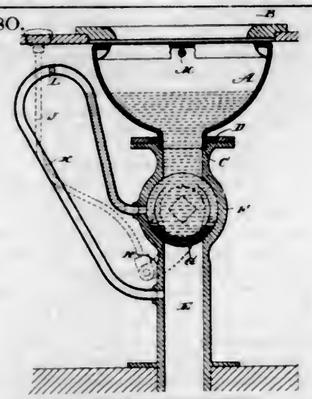


Claim.—In a turbine water-wheel, the combination of an annular casing provided with water-ways at stated intervals around its periphery, valves regulating said water-ways and provided on their outer ends with slotted levers, with a disk, pins depending therefrom, and arranged to successively actuate the valves, and a cam attached to the disk and located within the plane of the slotted levers and provided with inwardly-curved recesses, substantially as shown and for the purposes described.

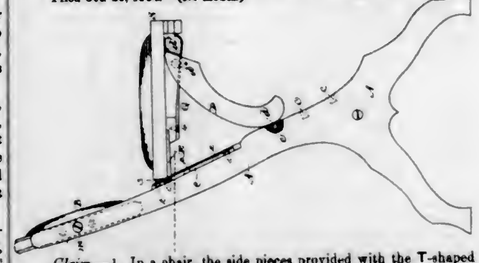
328,180. **WATER-CLOSET.** Philip Brady, New York, N. Y. Filed Aug. 25, 1885. (No model.)

Claim.—The combination, with the bowl A of the soil-pipe E, having the valve-chamber F, of the pipe K, connected with the valve-chamber, and extending upward to a point below the top of the bowl and then down, and connected with the pipe E below the valve-chamber F, the valve G, and the ventilating-pipe L, connected with the pipe K, substantially as herein shown and described.

328,180.



328,181. **FOLDING CHAIR.** Joshua Briggs, Peterborough, N. H. Filed Oct. 20, 1884. (No model.)



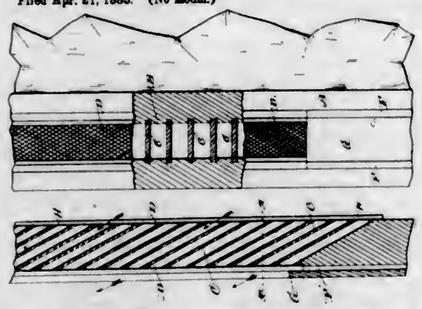
Claim.—1. In a chair, the side pieces provided with the T-shaped guide-rail, combined with a seat supported by brackets, and provided with a finger-piece to engage the guide-rail, substantially as described.

2. The side pieces provided with the T-shaped guide-rail having holes 2, and the seat and its attached finger-pieces and prongs 3, the former to engage the rail and the latter to enter the holes 2, combined with brackets to support the front part of the seat in adjusted position, substantially as described.

3. The side rails having holes h^2, and the pivoted back combined with the yoke-piece h, secured to said back, and with pins h', co-operating with the holes h^2, all substantially as described.

4. The side rails, back, and ring A', provided with a nut, a^3, combined with the screws m a, and the detachable seat, substantially as described.

328,182. **WINDOW-VENTILATOR.** John G. Bronson, Chicago, Ill. Filed Apr. 21, 1885. (No model.)



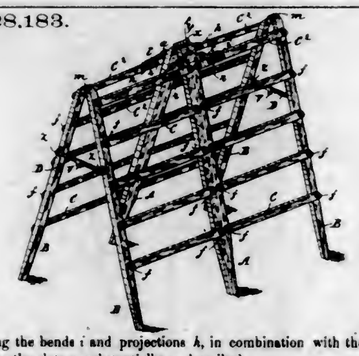
Claim.—In a window-ventilator, the combination, with the sash side or middle rail, having a slot partitioned off by a series of inclined slats, of the frame let into a recess at each side edge of said slot, the screen or netting interposed between said slats and said frame, and the slide held movably in said frame, substantially as and for the purpose set forth.

328,183. **CLOTHES-HORSE.** Andrew W. Burnham, Boston, Mass. Filed May 14, 1885. (No model.)

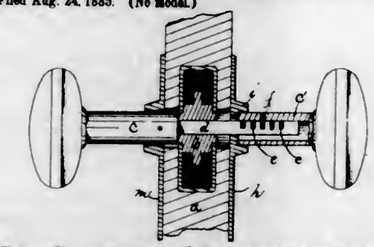
Claim.—1. In a clothes-horse substantially such as described, the brace E, attached to the upper end of the leg A, said brace being provided with the arms t, connected to its body l by the rule-joints a, and having the bends i and projections h, in combination with the rails C^2, having the slots r, substantially as described.

2. In a clothes-horse substantially such as described, the brace E, having arms t connected with its body l by the rule-joints a, said arms being connected or engaged with the top rails of the horse in such a manner as to slide thereon when the horse is opened or closed, and to open and close automatically in conjunction with said rails, substantially as described.

328,183.

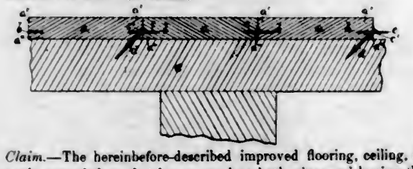


328,184. **KNOB ATTACHMENT.** Philip Burns, Norwich, Conn. Filed Aug. 24, 1885. (No model.)



Claim.—The combination, with the knob-neck c, having a rectangular spindle secured fixedly therein, the free portion of the latter provided with a series of perforations, as described, of a knob-neck having both the oblong spindle-hole and pin f, as described, and an escutcheon having a counterbored boss adapted to receive the end of the knob-neck, and a spindle-hole eccentric with said counterbored portion, so that when the several parts are assembled and the escutcheon dropped to its normal position the perforated spindle and pin f are held in engagement, all being substantially as herein described.

328,185. **FLOOR AND CEILING.** Charles Butcher, Boston, Mass. Filed Jan. 3, 1885. (No model.)



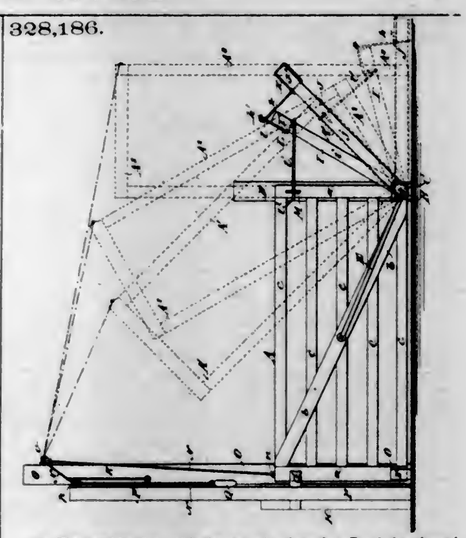
Claim.—The hereinbefore-described improved flooring, ceiling, or wainscoting, consisting of strips grooved on both edges and having the lips above the grooves of a greater thickness than the lips below the grooves, and metal tongues, the joint-line of the strips or edges of the lips being in one plane at right angles to the faces of the strips, and metal tongues taking in the grooves and having oval or transversely-elongated perforations, whereby fastening devices may be diagonally passed therethrough, substantially as described.

328,186. **GATE.** James H. Carpenter, Hyndman, Pa.; Clara J. Carpenter administratrix of said James H. Carpenter, deceased. Filed Nov. 17, 1884. (No model.)

Claim.—1. The combination, with a gate pivoted at one lower corner and having an eye, M, above the said lower corner, of the pivoted weighted arm I and the rod I', secured to the arm I and provided with a hook, I^2, said rod passing through the eye M, substantially as set forth.

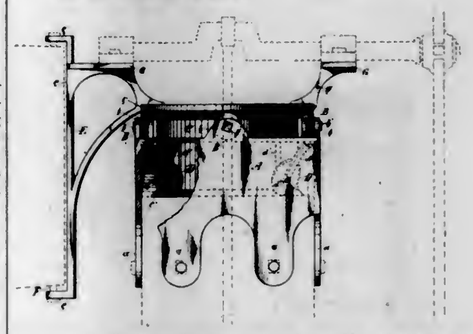
2. The combination, with a gate pivoted at one lower corner, of a series of pivoted weighted arms, I J, connected with each other by a sliding and stop connection, the arm I, next to the gate, being also connected with said gate by a sliding and stop connection, whereby the gate may be swung to and held at different angles, substantially as set forth

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3. The combination, with the gate A, pivoted at B, of the pivoted balancing-arms I J, connected at their outer ends by a bar, K, having an arm, k, provided with a stop hook or head, k', said arm I being connected to the gate by a bar, L, having an eye, l, inclosing the arm k, and an arm, l', passing through a keeper on the gate, and having a stop shoulder or end, l^2, substantially as herein set forth.

328,187. **WINDMILL-HEAD.** James T. Chinnick, Elk Grove, Cal. Filed Mar. 28, 1885. (No model.)



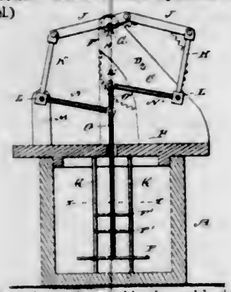
Claim.—1. The combination, with the perforated main head A, secured to the frame of the mill, of the beveled face anti-friction rollers B and the rotating tubular head C, fitted in the main head, and having a beveled top flange, c, resting on the rollers, and the slotted standards b, in which the rollers are mounted, substantially as herein described.

2. The perforated main head A, secured to the frame of the mill and having beveled-face anti-friction rollers B on its top, in combination with the rotating tubular head C, fitted in the main head and having a top flange, c, resting on rollers B, and one or more steadying-rollers set at an angle under the top of the main head and bearing against the lower portion of the rotating head, and the arms or hangers d d', whereby said head is guided and trued, substantially as herein described.

3. The hollow perforated main head A, having beveled-face lugs d' and inclined arms d secured under its top, and the inclined rollers D, mounted between the lugs and arms by bolts d^2, in combination with the rotating tubular head C, mounted within the head A and resting on rollers above, said head having a bottom flange, c', bearing against rollers D, substantially as herein described.

4. A windmill-head comprising the hollow perforated main head A, having legs a, by which it is bolted to the frame of the mill, the beveled anti-friction rollers B on its top, and the inclined beveled rollers D below, the rotating tubular head C, fitted in the main head and having beveled top and bottom flanges, c c', resting on and bearing against the rollers B D, respectively, the vane-bracket E, secured to the top of head C, and the bars or plates G for the boxes of the crank-shaft, one bar being secured on the bracket and the other to the head C, substantially as herein described.

328,188. CHURN. George J. Clark, Ayersville, Ohio. Filed Sept. 1, 1884. (Model.)

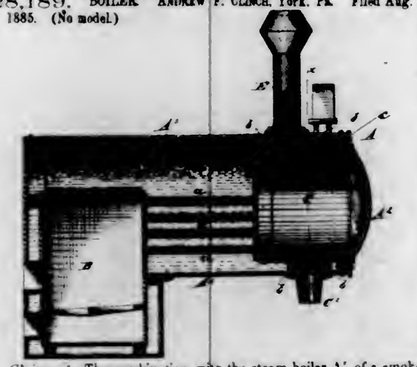


Claim.—1. In a churn, the combination, with the guide-rods Q, extending from the lower face of the churn-cover to the bottom of the churn, of the horizontal dasher-plate P, having a central opening, the inner walls of which rest against said guide-rods, one or more dasher-plates, P', adapted to pass through the openings in the plate P and guided at opposite sides between the said rods, and means for alternately reciprocating said dasher-plates, substantially as set forth.

2. In a churn, the combination, with the rocking shafts L, of the arms N N', the dasher-rods O O', dashers on the same, the shaft G, having a crank, H, the arms K on the rocking shafts, and the rods J, connecting the arms K with the crank H, substantially as herein shown and described.

3. In a churn, the combination, with the dasher-rods O O' and dashers on the same, of the rocking shafts L, having arms N, N', and K, the shaft G, having a crank, H, the connecting-rods J, the pinion F, the cog-wheel E, and the shaft D, having a crank-handle, D', substantially as herein shown and described.

328,189. BOILER. Andrew F. Clinch, York, Pa. Filed Aug. 4, 1885. (No model.)



Claim.—1. The combination, with the steam-boiler A', of a smoke-box surrounded by water within the extension of the boiler-shell, the eye-bearers *b*, the stack E, the outlet C', and a reticulated diaphragm between said stack and its bearer, and said outlet and its bearer, as shown and described.

2. The combination, with a horizontal boiler-shell and its fire-box and flues, of a smoke-box having a reticulated diaphragm above said flues, and isolated within the boiler by means of eye-bearers *b b*, the annular bearer *c*, the outlet C' through the lower bearer, and the outlet E through the upper bearer, as shown and described.

3. The combination, with a flue steam-boiler, of the isolated smoke-box therein, the eye-bearers *b b*, the bearers *c*, the outlets E' C' through the bearers *b b*, the reticulated diaphragm between said outlets and above flues *a*, and the head A^1, all constructed and adapted to operate as described.

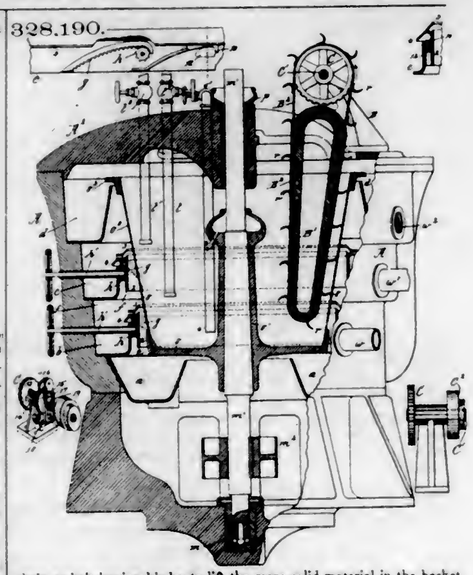
328,190. CENTRIFUGAL MACHINE. Francis A. Cloudman, Cumberland Mills, Me. Filed July 27, 1885. (No model.)

Claim.—1. In a centrifugal machine, a rotating spindle and perforated basket and a movable chain or belt having blades acting to elevate the more solid contents of the basket vertically along the sides of the basket toward its top where the said material is discharged, substantially as described.

2. The rotating spindle and perforated centrifugal basket, combined with an annular trough having an adjustable curb, to operate substantially as described.

3. The rotating spindle and perforated centrifugal basket and one or more surrounding liquid-receiving troughs, combined with a traveling

328,190.

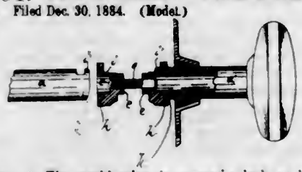


chain or belt having blades to lift the more solid material in the basket, and with the trough or pan *d* to receive the said material discharged over the top of the basket, substantially as described.

4. In a centrifugal machine, the rotating spindle, the perforated basket, the pipe to feed the basket with material to be dried and washed, and the troughs *a b*, combined with the water-supply pipe to discharge water upon the partially or nearly dry material to wash the same, substantially as described.

5. In a centrifugal machine, the spindle and perforated basket and the annular trough *b* and the curb, combined with adjusting mechanism, substantially as described, to raise or lower the curb, for the purposes set forth.

328,191. KNOB ATTACHMENT. William H. Comstock, Norwich, Conn. Filed Dec. 30, 1884. (Model.)



Claim.—1. The combination, in a mortise lock or latch having a hub with an angular opening, of disks *c c'*, having projecting ends adapted to enter and fill the hub-opening, and slots to engage locking-lips on the knob-necks, a screw passing through said disks and hub to secure the disks to the hub, knob-necks provided with lips, substantially as described, adapted to interlock with the slotted disks, and roses which when secured fixedly to the door will hold the knob-neck in longitudinal alignment with the lock-hub, all substantially as and for the purpose specified.

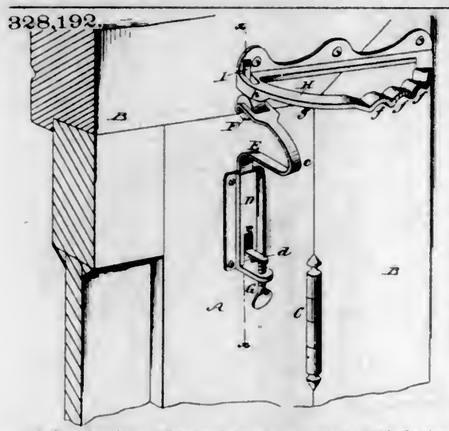
2. The combination of the hub C, having a rectangular central opening, the disks *c c'*, each having a projection, *e*, lug *h*, and locking-slot *i*, means for securing disks *c c'* to the hub, knob-necks having locking-lips *i'*, adapted to engage disk-slots *i*, and recess *k*, adapted to engage disk-lug *h*, and a rose which when secured fixedly to the door will hold the knob-necks in longitudinal alignment with the lock-hub, all substantially as and for the purpose specified.

328,192. DOOR-CHECK. Joseph A. Coultaus, Brooklyn, assignor to himself, Daniel M. Rollins, Brooklyn, and Philemon R. Day, New York, N. Y. Filed Feb. 20, 1885. (No model.)

Claim.—1. The roller track or frame H of the door-holder, having any number of corrugations or pockets, *f*, in the rear portion of its working-surface, and advance plain or flat portion *g*, and a forward projection, *h*, on or from the working-surface of the track, in combination with a roller device and a carrier therefor, with spring for forcing out the roller, essentially as and for the purposes herein set forth.

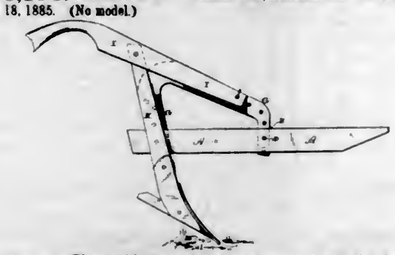
2. The bent spring roller-carrier E and its attached roller F, in combination with the guard D, within which said carrier is adjustable up or down, the adjusting-screw G, and the recessed fixed track with which the roller is arranged to engage, substantially as specified.

328,192.



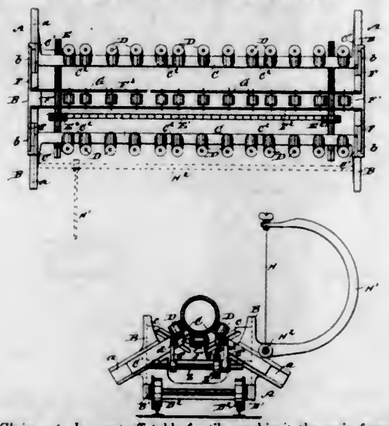
3. In a door-holder, the combination of the spring I with the door frame or casing B, door A, the corrugated fixed track H, and the spring roller-carrier with its attached roller F, substantially as and for the purpose specified.

328,193. CULTIVATOR. William Cox, Talioksa, Ga. Filed Aug. 18, 1885. (No model.)



Claim.—The combination of the beam provided with the slots B C, the standard, which is made to extend above the top of the beam, the handle-braces, and the handles, the front ends of the handles being fastened to the sides of the standards, substantially as set forth.

328,194. CUT-OFF TABLE FOR TILE-MACHINES. Charles W. Crawford, Brazil, Ind. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a cut-off table for tile-machines, the main frame A, and the longitudinal bars C, carrying the rollers D, in combination with the end pieces, F, and the longitudinal bars F^2, carrying the rollers G, substantially as shown and described.

2. In a cut-off table for tile-machines, the main frame A, provided with the end pieces, B, having the inclined grooves *a*, and the vertical grooves *b*, substantially as shown and described.

3. In a cut-off table for tile-machines, the longitudinal bars C, carrying a series of rollers, D, the L-shaped ends C', and the lugs C^3, in combination with the screws E, the chain E', and the sprocket-wheels E^2, substantially as shown and described.

4. In a cut-off table for tile-machines, the bars C, the rollers D, the L-shaped ends C', the lugs C^3, the screws E E, the chain E', and the sprocket-wheels E^2, in combination with the main frame A and the end pieces, B, having the inclined grooves *a*, substantially as shown and described.

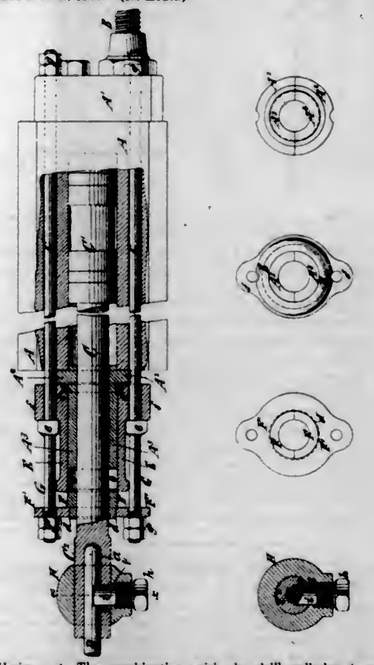
5. In a cut-off table for tile-machines, the plates F, having the diagonal slots *c*, the longitudinal bars F^2, carrying the rollers G, and the lugs F', in combination with the bolts *d*, the lugs C^4, and the longitudinal bar C, substantially as shown and described.

6. In a cut-off table for tile-machines, the plates F, having the diagonal slots *c*, the bars F^2, the rollers G, the lugs F', the bolts *d*, the lugs C^4, the bars C, and the rollers D, in combination with the main frame A and the end pieces, B, having the vertical grooves *b*, substantially as shown and described.

7. In a cut-off table for tile-machines, the main frame A, and the end pieces, B, having the grooves *a* and *b*, in combination with the bars C, the rollers D, the L-shaped ends C', the plates F, having the diagonal grooves *c*, the bars F^2, the rollers G, the lugs F', the bolts *d*, and the lugs C^4, substantially as shown and described.

8. In a cut-off table for tile-machines, the main frame A, the end pieces, B, having the grooves *a* and *b*, the bars C, the rollers D, the L-shaped ends C', the lugs C^3, the plates F, having the diagonal grooves *c*, the bars F^2, the rollers G, the lugs F', the bolts *d*, and the lugs C^4, in combination with the screws E, the chain E', and the sprocket-wheels E^2, substantially as shown and described.

328,195. ROCK-DRILL. George R. Cullingworth, New York, N. Y. Filed Jan. 26, 1885. (No model.)



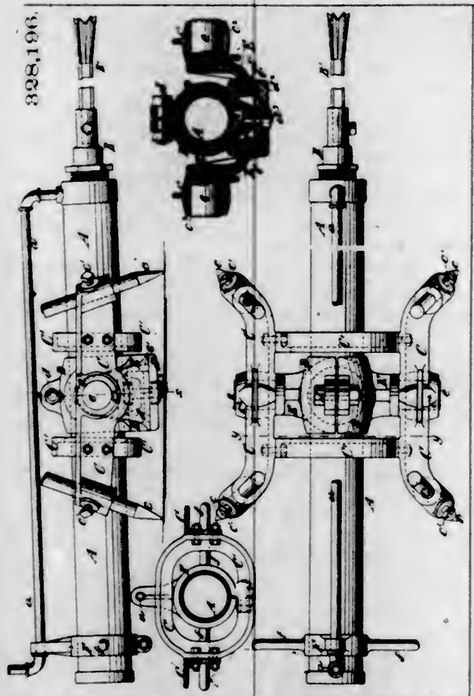
Claim.—1. The combination, with the drill-cylinder A and its axially-divided head and neck A^2 A^3, of an undivided sleeve, E, fitting the exterior of the neck and projecting beyond the same to form a stuffing-box, a divided gland, F, having a smooth exterior fitting the stuffing-box, and having a shoulder, *d*, near the outer end, and an undivided collar, F', bearing against the shoulder on the gland, and bolts passing through the collar and serving to secure the gland in place, substantially as herein described.

2. The combination, with the cylinder A and its divided head, neck, and gland A^2 A^3 F, of the undivided sleeve E, and the undivided gland-collar F', bearing against a shoulder on the gland, and the bolts G, having fixed collars or shoulders *e*, bearing against the sleeve E and serving to secure it and the gland in place, and prolonged to pass through the collar F' and form gland-bolts, substantially as herein described.

328,196. ROCK-DRILLING MACHINE. George R. Cullingworth, New York, N. Y. Filed Feb. 19, 1885. (No model.)

Claim.—1. The combination, with a cylinder, A, of a carriage or support therefor consisting of side pieces, C C, on opposite sides of the cylinder, and each having adjustable feet at its opposite ends, cross

328,196.



pieces rigidly connecting the side pieces, and a saddle or yoke, E, extending between the side pieces and having trunnions *e*, fitting bearings *c'* in said side pieces, and a trunnion or pivot, *d'*, extending transverse to the cylinder and fitting a bearing in said yoke or saddle E, substantially as herein described.

2. The combination, with the cylinder A and the split collar D applied thereto and having a transverse pivot or trunnion, *d'*, of the carriage or support consisting of side pieces, C C, on opposite sides of the cylinder, each provided at its opposite ends with feet *c*, and cross-pieces rigidly connecting said side pieces, and a yoke or saddle, E, having trunnions *e*, fitting bearings *c'* in said side pieces, and also having a bearing, *e'*, for the cylinder trunnion or pivot *d'*, substantially as herein described.

3. The combination, with a cylinder, A, provided with a transverse trunnion or pivot, *d'*, of a carriage or support consisting of side pieces, C, provided with feet *c* and annular cross-pieces C', receiving the cylinder through them, and a yoke or saddle, E, provided with trunnions *e*, fitting bearings in said side pieces, and also provided with a bearing, *e'*, for the cylinder trunnion or pivot *d'*, all substantially as herein described.

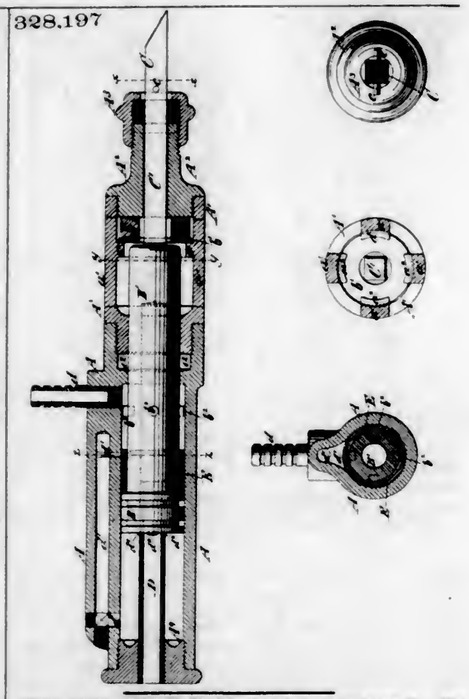
328,197. **MACHINE FOR CUTTING, CHIPPING, &c.** George R. Cullesworth, New York, N. Y. Filed Apr. 3, 1885. (No model.)

Claim.—1. In a machine for use as herein described, the combination, with a cylinder and piston, and piston-rod movable therein, of a socketed head applied to the end of the cylinder, a cushion or buffer supported by said head, and a tool the shank of which is fitted to the socket in said head, and which is adjustable lengthwise therein to bring its inner end more or less within range of the hammer-like blows of the piston-rod, substantially as and for the purpose herein described.

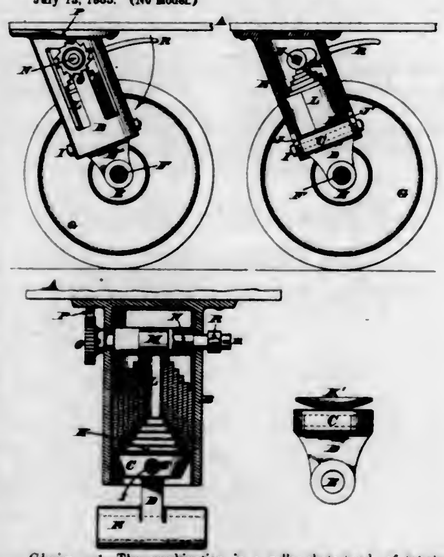
2. The combination, with a cylinder and piston, and piston-rod movable therein, of a socketed head applied to the lower end of the cylinder, a buffer or elastic cushion at the lower end of the cylinder, a shouldered tool or implement the shank of which is fitted to a socket in said head, and an adjustable cap applied to the head and serving to hold the tool in position lengthwise by acting against the shoulder thereof, whereby the tool may be adjusted to bring its inner end more or less within range of the hammer-like blows of the piston-rod, substantially as and for the purpose herein described.

3. The combination, with the cylinder A and its piston and piston-rod B B', of the portion A', screwed into the lower end of the cylinder and forming a stuffing-box gland therein, the head A^2, secured in the portion A', a buffer or elastic cushion, *b b'*, confined in place between a shoulder in the portion A' and the head A^2, the adjustable cap A^3, and a tool or implement, C, provided with a shoulder bearing against said cap, substantially as and for the purpose herein described.

328,197



328,198. **ROLLER-SKATE.** John H. Davis, Covington, Ky. Filed July 13, 1885. (No model.)

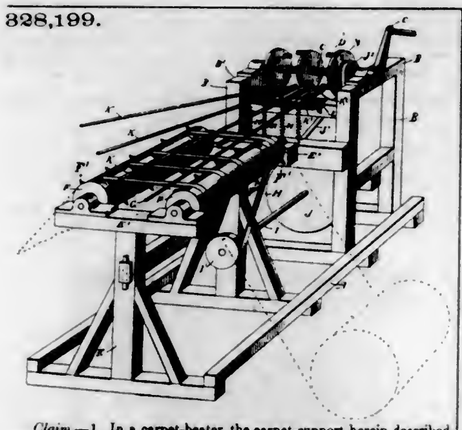


Claim.—1. The combination, in a roller-skate truck, of tubular housing B, pivot I, swivel-head C D H, and coiled spring L, the latter being dished on its under side and bearing wholly on the margin of said head C, and the apex of said spring being in contact with an adjusting device fitted within the upper end of said housing, for the purpose described.

2. The combination, in a roller-skate truck, of tubular housing B, vertical slots J J', pivot I, swivel-head C D H, and coiled spring L, the latter being arranged to operate as herein described.

328,199. **CARPET-CLEANER.** Zenone N. De Ledochowski, La Salle, Ill., assignor of one-half to Emily L. Zimmermann, same place. Filed Oct. 25, 1884. (No model.)

328,199.

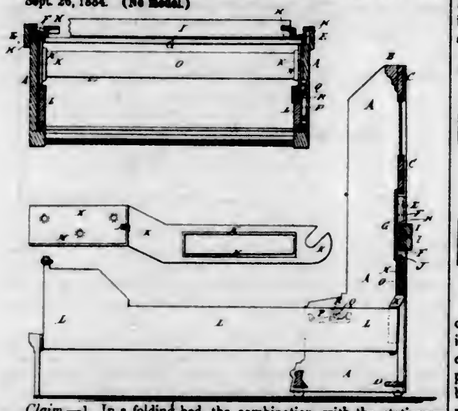


Claim.—1. In a carpet-beater, the carpet-support herein described, consisting of two parallel rollers journaled in suitable supports and coincidently grooved and provided with radial spikes or pins between the grooves, and a series of belts connecting said rollers, and seated in the grooves, as and for the purposes specified.

2. In a carpet-beater, the combination of the rollers F F, provided with spikes F', belts G, running around and joining said rollers, the beaters, means, substantially as described, for operating said beaters, and suitable gearing connecting one of said rollers F and the beater-operating devices, whereby the carpet may be fed forward as the beaters are operated, substantially as set forth.

3. The carpet-beater herein described, consisting of the rollers F, provided with spikes F' and circumferential grooves, the belts G, connecting said rollers and seated in the circumferential grooves thereof, the beaters K, pivoted at K' and provided with extensions in rear of their pivots, the retractors M, the shaft C, provided with a crank projection, D', arranged to engage and depress the rear end of the beaters K, the pulley J, secured on shaft C, the shaft I, having pulleys I' J, the band J', connecting pulleys J J', and the band H, connecting pulley I' and one of the rollers F, substantially as set forth.

328,200. **FOLDING BED.** Ernst N. Doring, New York, N. Y. Filed Sept. 26, 1884. (No model.)



Claim.—1. In a folding bed, the combination, with the stationary sides A and the movable sides L, of the tracks P, curved as described, and the pivot-wheels Q, substantially as herein shown and described, whereby the pivoting-points of the movable sides will adjust themselves as the bed is being opened and folded, as set forth.

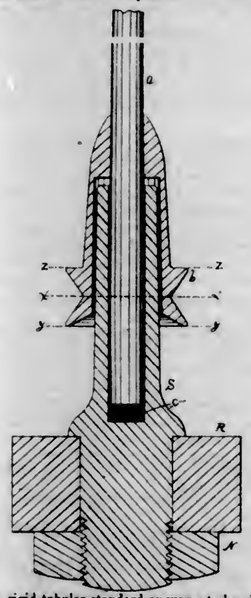
2. In a folding bed, the combination, with the stationary sides A, having grooves E, and the movable sides L, of the tracks and pivot-wheels P Q, the hook-arms K, the sliding weight-carrying brackets F, having weight-receiving flanges H, flanges H', fitting in grooves E, and the pins J, for the hook-arms to engage, and the connecting-board G, substantially as herein shown and described, whereby the weight-carrying brackets can move up and down vertically as the bed is being opened and folded, as set forth.

3. In a folding bed, the combination, with the hook-arms K, having flanges N, of the connecting-board O, substantially as herein shown and described, whereby the opening formed by raising the sliding brackets and their connecting-board will be partially closed, as set forth.

4. In a folding bed, the sliding weight-carrying brackets F, made substantially as herein shown and described, with flanges and end shoulders to receive the weight-bars, and flanges having rounded ends to slide in grooves in the stationary sides, as set forth.

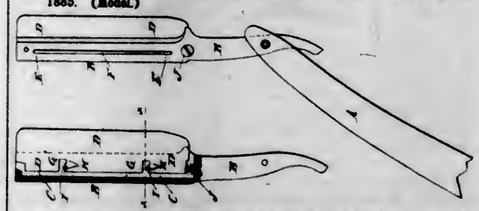
328,201. **SPINDLE AND BEARING.** William F. Draper, Hopedale, Mass. Filed Feb. 16, 1885. (No model.)

Brief.—The loose bolster is done away with and the pintle of the spindle is given a double conical shape, the greatest diameter of the pintle being in the line of the band-pull.



Claim.—A rigid tubular standard or support closed at its bottom to contain oil, combined with a sleeve-whirl spindle having a pintle, the largest diameter of which is in the line of the band-pull, the pintle being of smaller diameter above and below the line of the band-pull, substantially as described.

328,202. **RAZOR.** Samuel J. Dyer, Brooklyn, N. Y. Filed Apr. 4, 1885. (Model.)



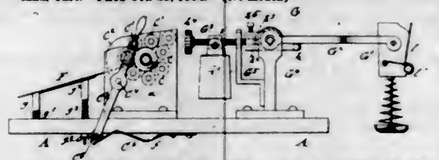
Claim.—1. A razor, constructed substantially as herein shown and described, and consisting of a handle, a blade-holder having a groove in its forward edge and provided with stationary rivets to engage with recessed slots in the razor-blade, a rotating cam-rivet to lock the blade in place, and steel guard-wires upon its sides to prevent the holder from being worn by the hone, and the blade having slots in its rear edge and recesses at the inner sides of the said slots to receive the stationary rivets of the holder, as set forth.

2. In a razor, the blade-holder B, made, substantially as herein shown and described, with a slot, C, in its forward edge to receive the rear edge of a razor-blade, and having stationary rivets I, crossing the said slot to engage with recessed slots in the said razor-blade, and a rotary cam-rivet, J, to lock the razor-blade in place upon the said stationary rivets, whereby a blade can be adjustably secured in the said holder, as set forth.

3. In a razor, the combination, with the blade-holder B, having inclined holes E, of the straight steel wires F, having inclined ends, substantially as herein shown and described, whereby the said holder will be kept from being worn by the hone, as set forth.

4. In a razor, the blade D, made, substantially as herein shown and described, with slots G in its rear edge, having recesses H at their inner sides, whereby the said blade can be adjusted wider or narrower to adapt it to be honed with a double-beveled edge, as set forth.

328,203. CIGAR-BUNCHING MACHINE. Charles H. Evers, Cleveland, Ohio. Filed Oct. 25, 1884. (No model.)



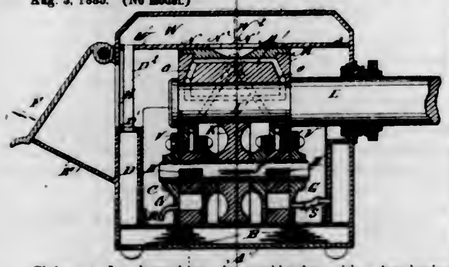
Claim.—1. The combination, with a series of rotating forming-rollers, of two top rollers, angular arms supporting said top rollers, a shaft to which the angular arms are secured, a crank-lever for operating the shafts, and a spring-plate having bends or indentations for retaining the crank-lever in forward or backward position, substantially as set forth.

2. The combination of a series of rotating forming-rollers inclosing a circular space or chamber, a hinged apron extending between two of said rollers into the interior space, a spring which affords a yielding support for said apron, and an adjusting-screw for regulating the tension of said spring, substantially as described.

3. The combination of a series of rotating forming-rollers, two top rollers, angular arms supporting said top rollers, a guard-plate attached to one of said arms, a second guard-plate pivoted to the frame, and a pivoted link connecting the guard-plates, one of said guard-plates being raised as the other is lowered during the oscillation of said arm, substantially as described.

4. The combination, in a cigar-bunching machine, of a series of forming-rollers, mechanism for rotating the same, two top rollers, angular arms supporting said top rollers, a guard casing or hood extending over the driving mechanism, a guard-plate attached to one of the angular arms, a second guard-plate pivoted to the hood, and a pivot link connected to the guard-plates, one of the guard-plates being raised while the other is lowered, substantially as set forth.

328,204. CAR-AXLE BOX. Joseph Fischer, Elizabeth, N. J. Filed Aug. 3, 1885. (No model.)



Claim.—1. In a journal-box, the combination, with a box having an oil-chamber formed at its top, of a pulley operated from the axle-journal, oil-pumps operated from said pulley, a block resting on the journal and having oil-channels and an aperture, which block is in contact with the under side of the top oil-chamber, an oil-chamber formed on the sides of the box, and a tube connecting the top oil-chamber with the side oil-chamber, substantially as herein shown and described.

2. In a journal-box, the combination, with a pulley operated from the axle-journal, of a shaft on which the pulley is mounted and rotary pumps on the ends of the shaft, substantially as herein shown and described.

3. In a journal-box, the combination, with a shaft, of two rotary pumps and a pulley mounted on the same, an axle running on the said pulley, a block on the journal of the axle, and tubes extending from the pump to said block, substantially as herein shown and described.

4. In a journal-box, the combination, with the axle L, of the shaft J, two rotary pumps on the ends of the same, a pulley on the shaft between the pumps, a recessed and channeled block on the journal, and tubes extending from the pumps to the said block, substantially as herein shown and described.

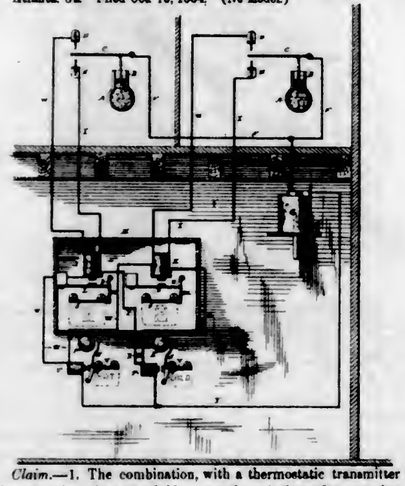
5. A journal-box having an oil-chamber formed on its inner side combined with a box fitting within the space surrounded by the said chamber, substantially as herein shown and described.

6. The combination, with a journal-box having an oil-chamber formed in its inside, of a box fitting within the space surrounded by the oil-chamber and oil-pumps in the said box, which oil-pumps are operated from the axle, substantially as herein shown and described.

7. The combination, with a journal-box having an oil-chamber formed on its inside, of a box fitting in the space surrounded by the oil-chamber, oil-pumps in the said box operated from the axle, and a tube connecting one of the pumps with the oil-chamber, substantially as herein shown and described.

8. The combination, with a journal-box having an oil-chamber formed on its inside, of a box fitting in the space surrounded by the oil-chamber, springs interposed between the bottom of the journal-box and the bottom of the box within the journal-box, and oil-pumping devices in the said inner box, substantially as herein shown and described.

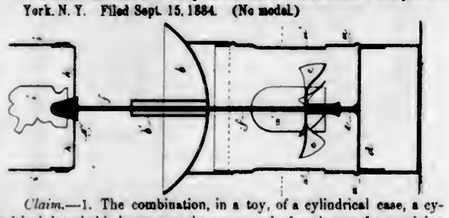
328,205. ELECTRIC TELETHERMOSCOPE. Frederick W. Flint, Atlanta, Ga. Filed Oct. 15, 1884. (No model.)



Claim.—1. The combination, with a thermostatic transmitter consisting of a pivoted arm, a fluid-receptacle and piston for operating said arm, and two adjustable stops, of a room-indicator consisting of a coil, an armature, and drop, and a temperature-alarm consisting of a bell and drop, the parts being electrically connected and combined to operate substantially as set forth.

2. An annunciator for electric telethermoscopes, consisting of a coil, an armature with its arm extended beyond the said coil, a hooked arm provided with a rounded shoulder, against which the free end of the armature engages, and an indicator normally retained by the hooked arm, the whole combined to operate substantially as and for the purpose specified

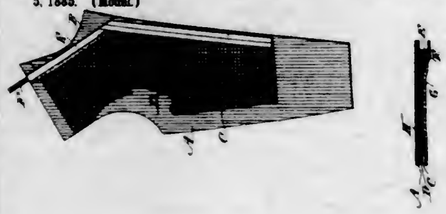
328,206. TOY. Augustus M. Freeman, Ocean Grove, N. J., assignor to himself, Alexander C. Kelly, Metuchen, N. J., and John I. Holly, New York, N. Y. Filed Sept. 15, 1884. (No model.)



Claim.—1. The combination, in a toy, of a cylindrical case, a cylindrical detachable hopper at the upper end of such case for receiving sand, a vertical shaft passing through the hopper, a horizontal propeller-wheel upon the shaft and within the case, and a bridge and pivot below the wheel and supporting the shaft and propeller, substantially as specified.

2. The combination, in a toy, of a cylindrical case, a cylindrical detachable hopper at the upper end of such case for receiving sand, a vertical shaft passing through the hopper, a horizontal propeller-wheel upon the shaft and within the case, and a bridge and pivot below the wheel and supporting the shaft and propeller, and figures upon radial arms from the upper end of said rod above the body of the toy, as and for the purposes set forth.

328,207. COAT. Wilson A. Fulmer, Harleysville, Pa. Filed June 5, 1885. (Model.)

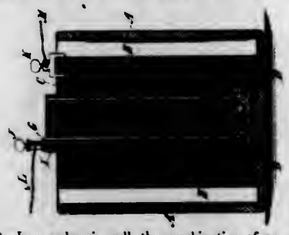


Claim.—1. A coat provided with a stiffening layer of canvas, a stiffening layer of hair-cloth, an additional layer of hair-cloth between the first-mentioned hair-cloth and the canvas, and a stay at the lapel, substantially as herein shown and described.

2. A coat provided with the canvas stiffener A, the hair-cloth stiffener C, the stay E at the lapel, and the elastic band F in the stay, substantially as herein shown and described.

3. A coat provided with the canvas stiffener A, the hair-cloth stiffener C, the stay E at the lapel of the coat, and the elastic band F in said stay at the lapel, said elastic band extending in the direction of the inner edge of the lapel, substantially as herein shown and described.

328,208. GALVANIC CELL. Ernest M. Gardner, Boston, Mass., assignor to James L. Little, Jr., same place. Filed Oct. 18, 1884. (No model.)



Claim.—1. In a galvanic cell, the combination of an electrode, a cup of porous carbon, a shallow vessel of non-conducting material placed in the bottom of said porous cup, and an electrode with its lower end resting upon the bottom of said vessel and in the mercury and separated from contact with said porous cup by the intervening side or sides of said vessel, substantially as described.

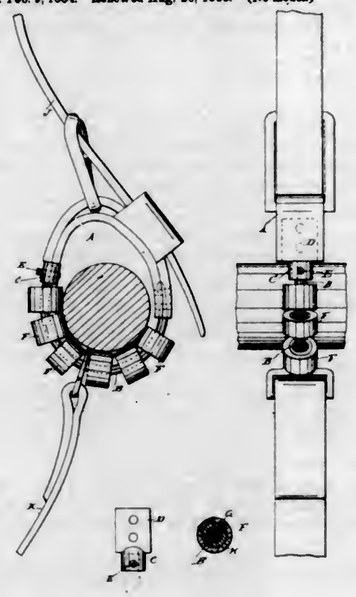
2. In a galvanic cell, the combination of an electrode, a porous cup, a vessel containing mercury within said cup, an electrode within said cup and having its lower end immersed in said mercury, and a conductor separate from said conductor communicating at one end with said mercury and at the other end with one terminal of the cell, substantially as described.

3. In a galvanic cell, the combination of the electrode E, cup F, containing mercury, and conducting-rod G, having an iron tip, H, substantially as described.

4. In a galvanic cell, the combination of the electrode E, porous-carbon cup C, inner vessel, F, of non-conducting material, containing mercury, and conducting-rod G H, provided with a non-conducting coating, I, and a negative electrode, B, substantially as described.

5. In a galvanic cell, the combination of the hollow cylindrical electrode B, porous-carbon cup C, vessel F of non-conducting material containing mercury, electrode, and insulated conductor G H I, substantially as described.

328,209. SHAFT-HOLDER. Amandus Gerbermann, Omaha, Nebr. Filed Feb. 9, 1884. Renewed Aug. 26, 1885. (No model.)



Claim.—1. A shaft-holder formed of an upper leather part, A, and a lower metallic part, B, consisting of a curved rod, on which rod anti-friction thimbles or rollers are mounted, the said rod being secured at its ends to the ends of the leather part and forming the lower section of the loop, substantially as herein shown and described.

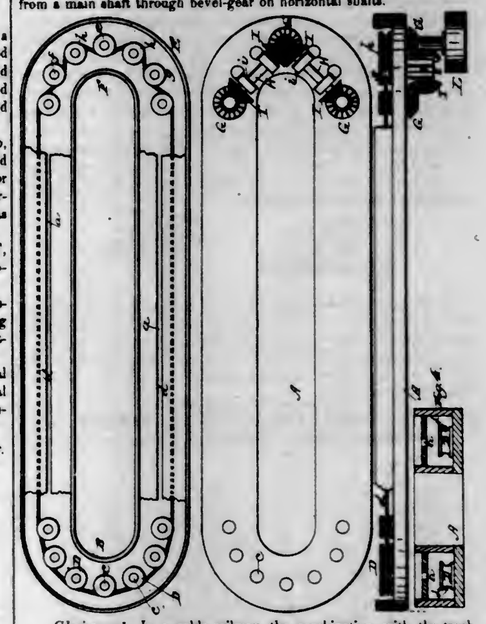
2. In a shaft-holder, the combination, with the leather top part, A, of the curved metallic rod B, having one end riveted to the leather part and the other end held in a socket on the leather part, and of anti-friction rollers or thimbles on the curved rod, the said rod forming the lower section of the loop, substantially as herein shown and described.

3. In a shaft-holder, the combination, with the upper leather part, A, of the curved rod B, riveted to one end of the same, the socket-plate C D, held on the other end, the binding-screw E, for holding the end of the rod B in the socket, and of anti-friction rollers or thimbles on the rod B, substantially as herein shown and described.

4. In a shaft-holder, the combination, with a curved rod, of thimbles F, formed of metal rings G, surrounded by rubber rings H, substantially as herein shown and described.

328,210. ENDLESS-CHAIN-RAILWAY CURVE. Robert Gidley, Washington, N. Y. Filed Jan. 30, 1884. Renewed June 27, 1885. (No model.)

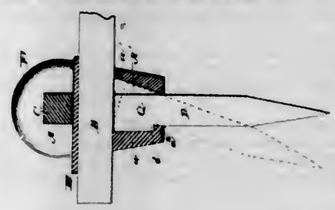
Brief.—At one end of an endless cable-way is a series of idle-pulleys, and at the opposite end are alternately-arranged drive and idle pulleys, the cable passing between the same, the drive-pulleys being driven from a main shaft through bevel-gear on horizontal shafts.



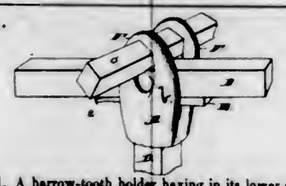
Claim.—1. In a cable railway, the combination, with the track having at its curve B the circular series of idle-pulleys, and at its curve F a circular series of alternate drive and idle pulleys, the cable, and means, substantially as described, for supporting the track and operating the drive-pulleys.

2. In a cable railway, the combination, with the circular series of drive and idle pulleys arranged as shown, of the drive-pulley shafts having the bevel-gears G, the horizontal shafts H, having the miter-gears I, bearings for supporting the shafts, the band-wheel L, and the cable, all adapted to operate substantially as specified.

328,211. HARROW-TOOTH HOLDER. Alfred J. Gillespie, Atlantic, Iowa. Filed Apr. 18, 1884. (No model.)



328,211.



Claim.—1. A harrow-tooth holder having in its lower end a tooth-holding socket, and provided with ears projected upward from two of its opposite sides, and having openings formed laterally through said ears, substantially as set forth.

2. A harrow-tooth holder having in its lower end a tooth-holding socket provided with straight and inclined walls, and provided with ears projected upward from two of its opposite sides, and having openings formed laterally through said ears, substantially as set forth.

3. The combination of a harrow-tooth holder having in its lower end a tooth-holding socket, and provided with ears projected upward from two of its opposite sides, and having openings formed laterally through said ears, an under beam seated between the ears, and a transverse beam passed through the opening in said ears above the under beam, substantially as set forth.

4. In a harrow, the combination, with the frame-beam of the holder having in its lower end a tooth-holding socket having closed sides and open at top and bottom, and provided with ears projected upon opposite sides of and above the said beam and secured, substantially as set forth.

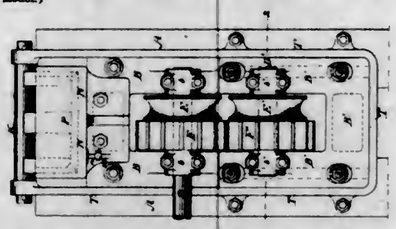
5. A harrow-tooth holder provided with a socket formed with a straight and an inclined wall, and having one of its walls provided with a shoulder or ledge, the said socket being reduced in dimension at its lower end approximately to the size of the tooth and gradually widening toward its upper end, substantially as set forth.

328,212. BELT-FASTENER. Henry Greene, Upper Thames Street, London, England. Filed July 17, 1885. (No model.) Patented in England July 26, 1883, No. 3,862; in France May 10, 1884, No. 162,036, and in Belgium May 10, 1884, No. 65,125.



Claim.—A belt-fastening composed of a plate, A, of sheet metal with bent-down edges and with holes near each side edge, and metallic teeth B, which are inserted through the holes and pass across the plate, forming strengthening-ribs thereto, and bent at about right angles to the plate A, so as to be able to be passed through the belt and clinched, substantially as specified.

328,213. APPARATUS FOR MANIPULATING DRILL-RODS. Lewis Gregory and John P. Gregory, Pottsville, Pa. Filed June 19, 1885. (No model.)



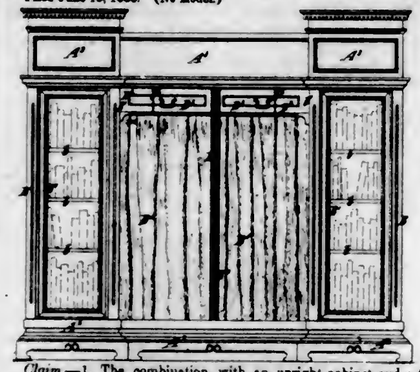
Claim.—1. The herein-described apparatus for inserting drill-rods into and withdrawing them from their holes, said apparatus consisting of a frame carrying a rotating grooved pulley and a corresponding grooved pulley adapted to be adjusted toward and from the other, but rotated therewith, substantially as set forth.

2. The herein-described apparatus for inserting drill-rods into and withdrawing them from their holes, said apparatus consisting of a fixed frame carrying a grooved pulley, a movable frame carrying a corresponding grooved pulley geared with the first, said movable frame being adjustable from and toward the first grooved pulley, all substantially as described.

3. The combination of the frame carrying a rotary grooved pulley, and a cylinder with the movable plate carrying a corresponding grooved pulley, and a piston adapted to said cylinder and supporting said movable plate.

4. The combination of the bed-plate, and rotary grooved pulley adapted to bearings therein, and cylinder N, with the piston adapted thereto, and movable plate carrying a grooved pulley, and a strap carried by the piston and supporting said movable plate, all substantially as specified.

328,214. CABINET-BEDSTEAD. Edward S. Hall, New York, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. The combination, with an upright cabinet and a folding bedstead arranged therein, of upright book-case wings B, hinged at their outer sides, at *a*, to opposite sides of the cabinet, at the front thereof, so as to swing horizontally in opposite directions, and overlapping the bedstead when swung inward to partly close the front of the cabinet, each wing having a closed back and opening at the front to afford access to its contents, substantially as herein described.

2. The combination, with an upright cabinet and upright book-case wings hinged at *a* to opposite sides of the cabinet, at the front thereof, so as to swing horizontally outward in opposite directions, of a folding bedstead arranged within the cabinet, and in front of which the book-case wings lap when closed, the bedstead having spring-supporting slats c^3, which stand vertical when the bedstead is folded into the cabinet, and are arranged at such distance from the ends of the bedstead that the book-case wings in closing may swing inward past the slats, substantially as herein described.

3. The combination, with an upright cabinet and a folding bedstead arranged therein, of book-case wings hinged at their outer sides, at *a*, to opposite sides of the cabinet, at the front thereof, so as to overlap the bedstead when swung inward, a transom extending between the book-case wings when closed and composed of sections B^2 B^2, hinged together and to the book-case wings, and curtains or panels connected with the hinged transom-sections and closing the space between the book-case wings, substantially as herein described.

4. The combination, with an upright cabinet and tracks pivoted to the sides thereof and capable of being extended from and folded into the cabinet, of a bedstead balanced upon the tracks and adapted to turn on and to travel along the tracks in extending it for use, substantially as herein described.

5. The combination, with an upright cabinet and movable tracks capable of extension horizontally therefrom, of a bedstead balanced upon the tracks and free to turn on and travel along the tracks, and pairs of folding legs at the head and foot of the bedstead, whereby it is, when in use, supported independently of the tracks, substantially as herein described.

6. The combination, with an upright cabinet and the tracks G, hinged to opposite sides thereof, and having the hinged legs G′ and the parallel rods g^4, of the bedstead balanced on the tracks and arranged to turn on and travel along the tracks, substantially as herein described.

7. The combination, with an upright cabinet, of tracks G, hinged to the sides thereof, and provided adjacent to their hinges with arms g^3, and a bedstead balanced on the tracks and arranged to turn on and travel along the tracks, whereby the tracks will be swung upward automatically by the action of the bedstead on the arms g^3, substantially as herein described.

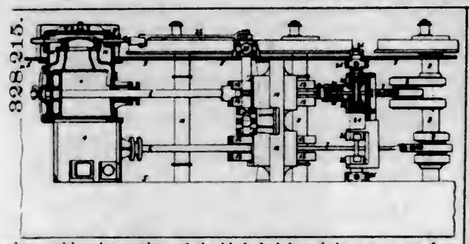
8. The combination, with a bedstead having a folding head-board and foot-board and folding pairs of legs at opposite ends, of direct connections whereby the pairs of legs are connected, respectively, with the head-board and foot-board, a hand-lever, F, and rods f', extending from the said lever to the head-board and foot-board, substantially as herein described.

9. The combination, with a bedstead-frame and a folding board and pair of legs connected by hinge-plates d' e' with the end thereof, of the link d^3, arranged as described, whereby the pair of legs are locked against turning by power applied to them, but are caused to turn with said board, substantially as herein described.

328,215. LOCOMOTIVE STEAM-ENGINE. Walter J. Hammond, Jundiahy, San Paulo, Brazil. Filed Mar. 6, 1885. (No model.) Patented in England Nov. 10, 1884, No. 14,786, and in France Nov. 13, 1884, No. 152,750.

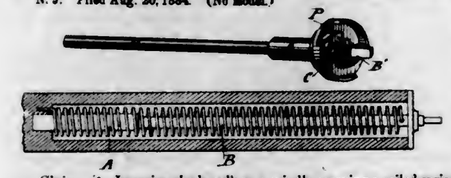
Claim.—The combination, in a locomotive steam-engine, of inside cylinders having their valve-casings projecting through the side frame-

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plates, with valve motions of the kind deriving their movements from the swinging and longitudinal movements of the connecting-rods, and with rocking shafts for transferring the valve-motion movements to the outside of the frame, substantially as hereinbefore described.

328,216. SPRING SHADE-ROLLER. Stewart Hartshorn, Millburn, N. J. Filed Aug. 20, 1884. (No model.)

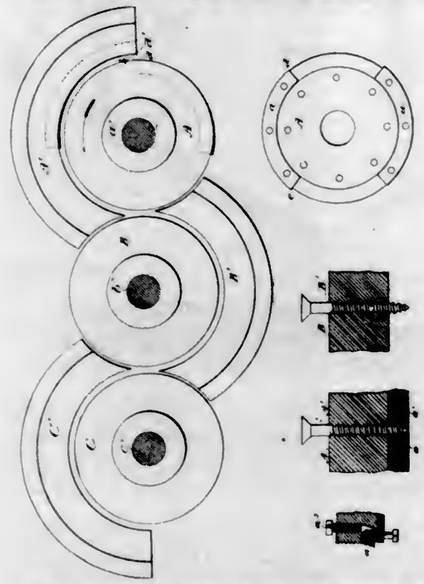


Claim.—1. In spring shade-rollers, a spindle carrying a coiled spring attached thereto, having at its end adjacent to that part of the roller at which the spring is connected thereto, and around which the first contractions take place, and inclosing metallic ferrule or shell of enlarged metallic diameter, extending only a part of the length of the spring, but sufficient to receive the first or principal contractions thereof, substantially as and for the purposes set forth.

2. In spring shade-rollers, the combination, with the spindle having an outer end adapted to engage with the bracket, so as not to revolve, of the disk or end plate carrying the pawl, and a nut or collar forming the pawl-ratchet, surrounding the spindle for securing the disk or end plate thereto, as and for the purposes set forth.

3. In spring shade-rollers, the combination, with the spindle B B′ having at one end a ferrule or enlargement of greater diameter, substantially as described, and the outer end provided with the screw-thread, of the disk or end plate, P, and screw ratchet-nut C, all constructed substantially as described, and for the purposes set forth.

328,217. MACHINE FOR ROLLING SCREW-THREADS. Hayward A. Harvey, Orange, N. J., assignor to the Harvey Screw and Bolt Company, of Connecticut. Filed Apr. 2, 1883. (No model.)



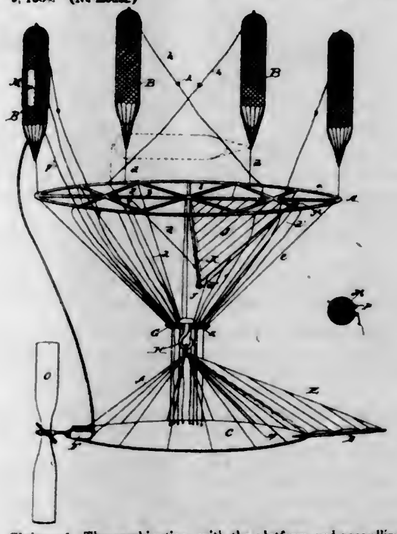
Claim.—1. A rotating cylindrical die and a stationary curved die for forming the threads of screws, in which the working-faces for impressing the thread upon the body of the blank present parallel ridges at the proper angle of inclination with the plane of motion of the rotating die, the lower portion of said faces inclined toward or gradually approaching each other, the said inclined portion of the faces provided with properly-inclined ridges, whereby the rib formed on the blank will be continued from the body of the blank down onto the pointed or contracted portion of the blank, substantially as described.

2. A rotating cylindrical die and a stationary curved die for forming the threads of screws, in which the working-faces present parallel ridges at the proper angle of inclination with the plane of motion of the rotating die, a segment arranged in the lower portion of both the rotating and stationary dies, said segment presenting a face eccentric to the working-face of said dies, and inclined to the vertical plane of the said face of the dies, said segments gradually approaching each other, the said inclined portion of the faces provided with properly-inclined ridges, whereby the rib formed on the blank will be continued from the body of the blank down onto the pointed or contracted portion of the blank, substantially as described.

3. A rotating cylindrical die and a stationary curved die for forming the threads of screws, in which the working-faces present parallel ridges at the proper angle of inclination with the plane of motion of the rotating die, a segment arranged in a recess in the lower part of each of said dies, the said recess of greater depth than the thickness of the segment, the face of said segments gradually approaching each other, and having upon their faces properly-inclined ridges, whereby the rib formed on the body of the blank will be continued from the body of the blank down onto the pointed or contracted portion of the blank, said segments made adjustable radially in said recesses, substantially as described.

4. In a machine for rolling screw-threads, two or more pairs of dies, each pair consisting of a rotating die and a stationary curved die, the respective pairs of dies having the ridges on their working-faces at the proper angle of inclination with the plane of motion of the rolling die, one of said rotating dies made adjustable with relation to the next, substantially as described.

328,218. AIR-SHIP. Nicolas Helmer, New York, N. Y. Filed Oct. 9, 1884. (No model.)



Claim.—1. The combination, with the platform and propelling apparatus, of elongated gas-bags connected at the ends to support the platform, and appliances, substantially as described, whereby the bags may be moved from a vertical to a horizontal position, and vice versa, substantially as set forth.

2. The combination of the supporting-frame, elongated gas-bags connected each at one end to said frame, cords *h*, stops *k*, spring-bolts *i*, and appliances for withdrawing said bolts, substantially as set forth.

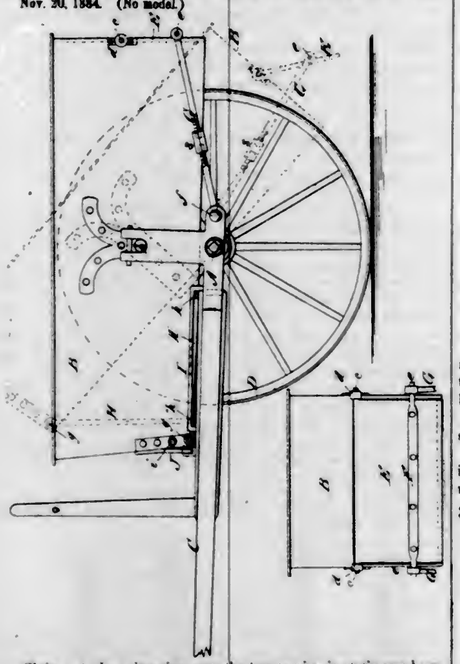
3. The combination, with the trussed frame A, supported by a series of independent separable gas-bags, each connected to and supporting said frame independently of the others, of the platform C, carrying the driving-wheel O, and gas-motor, and a connection between the motor and one of said supporting gas-bags, and appliances, substantially as described, for compressing the said bag, for the purpose set forth.

4. The combination, with the frame A, supported by the gas-bags, and platform C, having a swiveled connection with said frame, of a sail, J, carried by the frame, for the purpose set forth.

5. The combination of the trussed frame A, supported by a series

of independent separable gas-bags, each connected to and independently supporting said frame at a point different from the others, platform C, cords for operating upon the gas-bags, and the intermediate perforated block, G, connecting the trussed frame and platform C, substantially as and for the purpose set forth.

328,219. DUMPING-CART. Thomas Hill, Jersey City, N. J. Filed Nov. 20, 1884. (No model.)



Claim.—1. In a dumping-cart, the box turning in stationary bearings *b*, the rods H, pivoted at one end to the front of the box, the ways I, secured to the shaft C, and the opposite ends of the rods pivoted so as to slide back and forth in these ways I, to limit the movement of the box in dumping, substantially as described.

2. In a dumping-cart, the combination, with a tail-board, E, hinged to the box B, the adjustable rods G, pivoted to the frame A at a point below the opposite ends, which are pivoted to the tail-board at *e*, constructed and operating so as to swing the tail-board upward as the box turns upon its stationary bearings *b* in dumping, substantially as described.

3. The combination, with the tail-board and the pivots *e*, of the rods G, when made in two parts and rendered adjustable by couplings *s*, as shown and described, for the purposes set forth.

328,220. TUBE-CLEANER FOR FUEL-ECONOMIZERS OR FEED-WATER HEATERS. Charles H. Holt, Philadelphia, Pa. Filed Nov. 24, 1884. (No model.)

Claim.—1. The combination of a series of heating-tubes, scrapers adapted thereto, transverse bars carrying said scrapers, longitudinal bars supporting the scraper-bars, suspending-chains connected to the supporting-bars near each end, and winding-drums for said chains, as set forth.

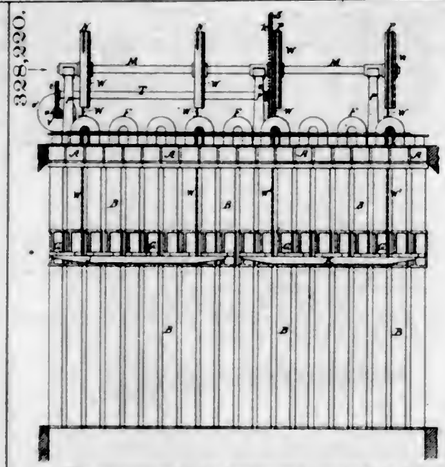
2. The combination of the scraper-bars, the supporting-bars and their chains, the shaft M and its drums, the mangle-wheel S, and the shaft T, having a pinion, *s*, whereby movement of partial rotation in opposite directions is imparted to the said shaft M, as set forth.

3. The combination of the heating-tubes, the scraper-bars, the supporting-bars, the shaft M and its drums, and chains W, connected to the opposite supporting-bars, the chains of one bar passing over the drums, and the chains of the other bar passing under said drums, as set forth.

4. The combination of the heating-tubes, the scraper-bars, the shaft M and its drums, two pairs of supporting-bars, J K, and suspending-chains W, those of one pair of bars having a drum-connection the reverse of that of the chains of the other pair, whereby as one pair of bars descends the other pair rises, as set forth.

5. The combination of the heating-tubes, arranged in transverse rows and staggered, as described, with the bars G extending transversely between adjoining rows and carrying scrapers adapted to the tubes of each row, as set forth.

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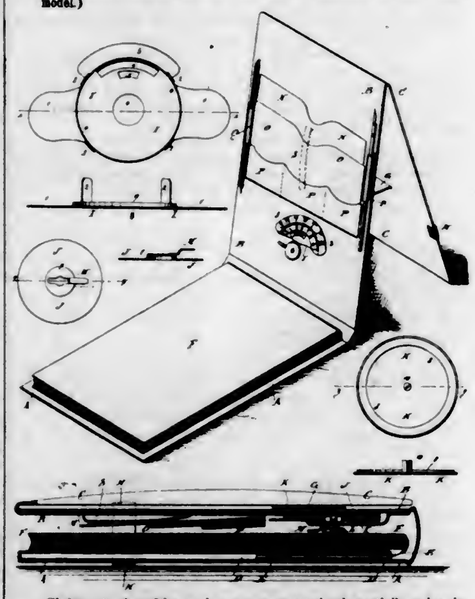


6. The combination of the heating-tubes, arranged in transverse rows, the transverse bars G, having in their opposite edges recesses for the reception of the adjoining rows of tubes, and scrapers carried by said bars, as set forth.

7. The combination of the rows of tubes, the recessed bar G, the segmental plates H, and the scrapers carried by said plates, as set forth.

8. The combination of the rows of tubes, the recessed bar G, having pins *n*, the segmental plates H, having lugs *m*, and the scrapers carried by said plates, as set forth.

328,221. WRITING-PAD COVER. Gustave Hood, Newark, N. J., assignor to Daniel M. Read, New York, N. Y. Filed Apr. 16, 1885. (No model.)



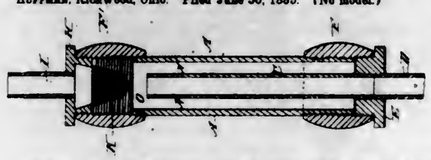
Claim.—1. A writing-pad cover constructed substantially as herein shown and described, and consisting of the three leaves A B C, the leaf A being formed with the pocket D, the connecting-ribbon G, attached to the leaves B C, the elastic strap H, attached to the leaf C, to be sprung over the ends of the cover when closed, the calendar I J K L M, and the pockets N O P, and keepers Q, R, attached to the leaf B, as set forth.

2. As an improved article of manufacture, a writing-pad cover consisting of three leaves, A B C, hinged together, the leaf A being provided with a pocket for securing the pad, the leaf B with a calendar, and the leaves B C connected together by a flexible strip, as set forth.

3. A writing-pad cover consisting of the hinged leaves A B C, the leaves B C being connected by the flexible strip G, and the leaf B provided with a calendar, pockets, and pen and pencil holders, substantially as herein shown and described.

4. In a writing-pad cover, the combination, with the intermediate leaf, B, provided with the pockets N O, of the curved spring S, secured to the inner sides of said leaf, beneath the middle parts of the pockets, substantially as herein shown and described.

328,222. SAND-ARRESTER FOR DRIVEN WELLS. Charles W. Huffman, Richwood, Ohio. Filed June 30, 1885. (No model.)



Claim.—1. The combination, with the water-pipes D and I, of the pipes A and C, united at their lower ends and forming the chambers N and O, substantially as described, and for the purpose specified.

2. The combination, with the pipe C, of the pipe A, of a larger diameter than the pipe C, and united to the same to form the chambers N and O, and of the couplings F' and H, substantially as described.

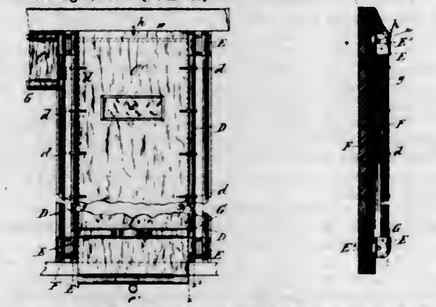
3. The combination, with the screen K, of the tube A and pipe C, forming the chamber N, substantially as and for the purpose specified.

4. The combination, with the tube A, pipe C, and connections, as E and F, of a screen, as K, detachably connected to the tube A, substantially as set forth.

328,223. PROCESS OF PRESERVING. William Ibne, Medford, Wis. Filed Aug. 14, 1885. (No specimens.)

Claim.—The within-described process of preserving brewers' grains—the residue of malt—which consists in first draining said grains to deprive them of surplus water, and then treating them successively with a solution of common salt, a solution of dextrine, and a solution of permanganate of potassa, and afterward placing the mass in filtering-receptacles and subjecting it to pressure to form cakes or compact masses of convenient size and shape, essentially as herein set forth.

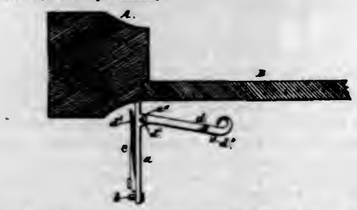
328,224. CURTAIN FOR CARS. John C. Jacobson, Boston, Mass. Filed Aug. 7, 1885. (No model.)



Claim.—1. The combination, in a car, of the uprights C, tubes D, secured to such uprights and provided with supports E, wheels E' E', endless bands upon said wheels traveling through said tubes, and a curtain, C', connected to said bands and having rings *d* encircling said tubes, substantially as described.

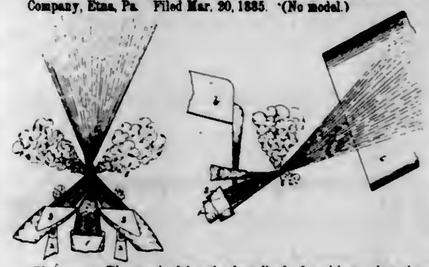
2 The combination, with the curtain C', of the slotted tubes D, endless bands F, and supporting-wheels therefor, cross-piece G, and rings *d*, traveling on the said tubes and connected with the said curtain, substantially as described.

328,225. BURGLAR-ALARM. Thomas James, Jr., Carlyle, Ill. Filed June 18, 1885. (No model.)



Claim.—The herein shown and described burglar-alarm, consisting of the following elements in combination: a main bar terminating in a shank at one end and perforated at its other end to receive a cartridge, longitudinally slotted near the shank and provided with lugs on either side of the slot, the hammer pivoted between the lugs, its rear end extending within and beyond the slot and having straight bearing-edges having a nose, the face of which is adapted to rest partially on the main bar and is extended partially over the cartridge-receiving aperture, and a spring fastened to the under side of the main bar and arranged to engage and bear upon one of the straight edges of the end extension of the hammer, as and for the purposes set forth.

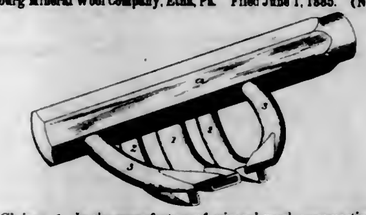
328,226. MANUFACTURE OF MINERAL WOOL. Hugh Kennedy and John W. Hogg, Sharpsburg, assignors to the Pittsburg Mineral Wool Company, Etna, Pa. Filed Mar. 20, 1885. (No model.)



Claim.—1. The method herein described of making mineral wool, which consists in treating a stream of molten slag to an encircling jet or jets of steam or air, substantially as and for the purposes described.

2. The method herein described of making mineral wool, which consists in treating a stream of molten slag to encircling jets of steam or air, whereby the projected stream is given a twisting or swirling motion, substantially as and for the purposes described.

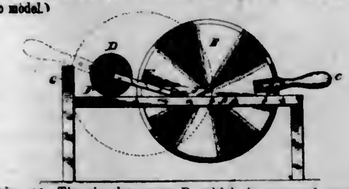
328,227. APPARATUS FOR MANUFACTURING MINERAL WOOL. Hugh Kennedy and John W. Hogg, Sharpsburg, assignors to the Pittsburg Mineral Wool Company, Etna, Pa. Filed June 1, 1885. (No model.)



Claim.—1. In the manufacture of mineral wool, a converting device having a central jet-pipe for spraying the slag and side jet-pipes for preventing the lateral spread of the sprayed stream, substantially as and for the purposes described.

2. In the manufacture of mineral wool, a converting device having a central jet-pipe for spraying the slag, side jet-pipes for preventing the lateral spread of the sprayed stream, and other jet-pipes for giving a twisting motion to the same, substantially as and for the purposes described.

328,228. BREAD-CUTTER. James L. Kerstetter, Bradford, Pa., assignor of one-half to S. H. Altice, Bolivar, N. Y. Filed Dec. 4, 1884. (No model.)



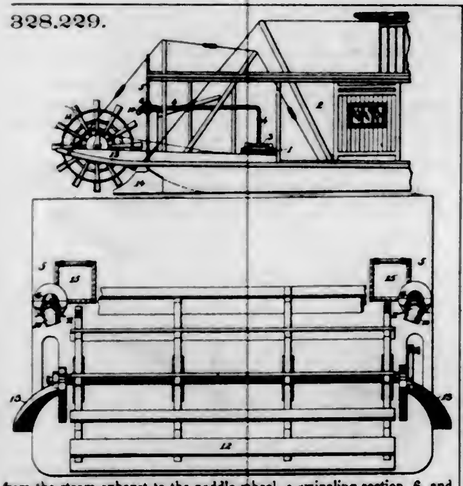
Claim.—1. The circular cutter B, which is mounted eccentrically on its shaft E, in combination with a handle, C, attached to said cutter, and a gage plate or disk, D, attached to a bent arm of said shaft, said handle being on the opposite side of the cutter from said shaft, substantially as set forth.

2. The bent shaft E, flattened and perforated at its outer end, in combination with the cutter B, mounted on one part thereof, the screw H, working through another part thereof, the nut F, applied to said screw, and the gage disk or plate D, attached to said screw, and arranged opposite that part of the feeding-table which holds the material to be cut, substantially as set forth.

328,229. DEVICE FOR KEEPING ICE OFF THE STERNS OF VESSELS. George S. King, Pittsburg, Pa. Filed Apr. 16, 1885. (No model.)

Claim.—1. In a steamboat, the combination of the pipe 4, leading

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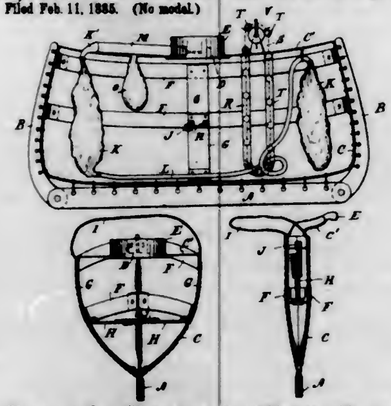


from the steam-exhaust to the paddle-wheel, a swiveling section, 6, and a swiveling discharge-nozzle, 10, situate at the end of the pipe 4, substantially as and for the purposes specified.

2. In a steamboat, the combination of the pipe 4, leading from the exhaust to the paddle-wheel, with the swiveling section 6, provided with handles, and the swiveling nozzle 10, also provided with handles, substantially as and for the purposes described.

3. In a steamboat, the combination of the cylinder-exhaust with the pipe 4, leading to the stern of the boat, bulk-head 5, swiveling section 6, and swiveling nozzle 10, substantially as and for the purposes described.

328,230. LIFE-PRESERVER. Paul Kingston, Hastings, Minn. Filed Feb. 11, 1885. (No model.)



Claim.—1. In a life-preserver, the combination, with a sack or bag made of water-proof material, of a bottom bar and two end bars hinged to the same, to which bars the sack or bag is fastened, inflatable bags held within the water-proof bag or sack, and means for inflating the said inflatable bags, substantially as herein shown and described.

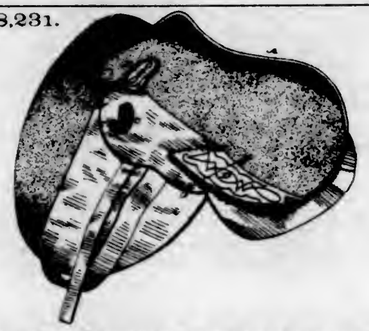
2. In a life-preserver, the combination, with the bar A and the bars B, hinged to the ends of the same, of a water-proof sack or vessel, C, secured to the bars A B, inflatable sacks or bags K, held within the sacks or vessels C, and connected by a pipe, and of the air-pump connected with one of the bags K, substantially as herein shown and described.

3. In a life-preserver, the combination, with the bars A and the bars B, hinged to the ends of the same, of the air-tight sack or vessel C, secured to the bars A B and provided with a top, C', a food-pouch, O, in the top C', the bags K K in the vessel C, the pipe L, connecting them, and the air-pump M, connected with one of the bags K, substantially as herein shown and described.

328,231. SADDLE-TREE. Alexander C. Lambeth, Denver, Colo., assignor to Samuel W. Lambeth, Philadelphia, Pa. Filed Mar. 17, 1884. (No model.)

Claim.—1. A side-saddle provided with a scroll-shaped upper horn, which is turned obliquely backward to fit the shape of the rider's leg above the knee, substantially as shown.

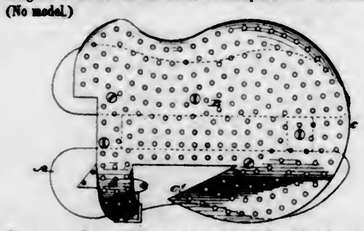
328,231.



2. A side-saddle having a scroll-shaped upper horn turned obliquely backward and provided with an attachment or extension fitted to the side of the cantle, substantially as and for the purpose set forth.

3. A saddle having a support secured to the side of the cantle, a leap-horn, and a scroll-horn, the said horns having detachable metal facing-plates, substantially as and for the purpose set forth.

328,232. RIDING-SADDLE. Alexander C. Lambeth, Denver, Colo., assignor to Samuel W. Lambeth, Philadelphia, Pa. Filed June 8, 1885. (No model.)



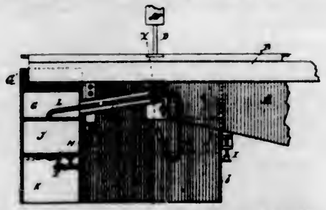
Claim.—1. In a saddle, a perforated deck having a horn and a cantle provided with a lateral extension, said parts being integral, substantially as described.

2. In a saddle, a perforated deck having a horn and a cantle provided with a lateral extension, said parts being integral, and the said lateral extension having its front end bent down and secured to the tree of the saddle, substantially as described.

3. In a saddle, a tree, in combination with a perforated deck having a horn, a cantle, and a lateral extension of the said cantle, said deck, horn, cantle, and extension being integral, and said extension having its front end bent down and secured to the said tree, substantially as described.

328,233. WAX-HEATER FOR SEWING-MACHINES. Benjamin F. Landis, St. Joseph, Mo. Filed Apr. 17, 1884. (No model.)

Brief.—A steam-pipe passes through the large wax-reservoir and through a portion of the pipe leading therefrom and ends within the flue of the combustion-chamber, the products of combustion and the steam thus commingling and passing beneath the shuttle-race, and also beneath and around the projecting end of the cup that supplies wax to the needle-thread as it is dipped therein by the reciprocating needle.



Claim.—1. The combination, with a sewing-machine having a shuttle-race and a needle adapted to reciprocate past the shuttle-race above and below it, of a wax-reservoir hung bodily lower than the bottom of the shuttle-race, means for adjusting it higher or lower, a cup below the shuttle-race in the path of the needle, and a pipe connecting the said cup with the reservoir, as and for the purpose specified.

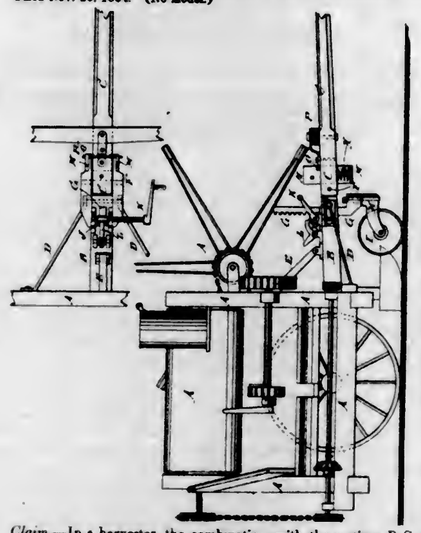
2. The combination, with a sewing-machine having a shuttle-race and a needle, of a wax-reservoir, a wax-cup in the path of the needle, a pipe connecting the cup with the reservoir, a water-boiler beneath the reservoir, a combustion-chamber beneath the boiler, and adjusting-screws attaching the whole of the said device to the sewing-machine, substantially as described.

3. The combination of a sewing-machine shuttle-race, a needle, and a wax-cup therefor, a combustion-chamber beneath the shuttle-race, and a broad flue therefor, the opening of which is along and against the under side of the shuttle-race at both sides of the needle.

4. The combination of a sewing-machine shuttle-race, a needle, a wax-cup therefor, a combustion-chamber beneath the shuttle-race, having a broad flue terminating against the under side of the shuttle-race, a boiler, and a steam-discharge pipe therefor terminating in the said flue beneath the shuttle race, substantially as shown and described.

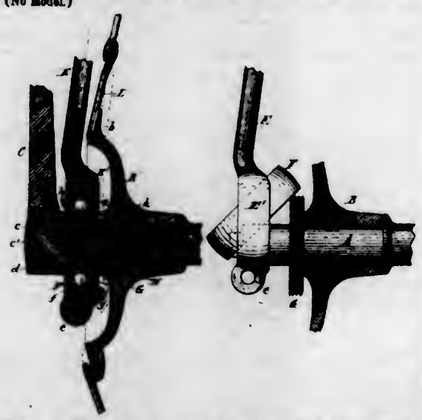
5. The combination, with a sewing-machine having a shuttle-race and needle and a wax-supplying device, of means, substantially as described, for supplying mingled hot air and steam to the shuttle-race for the purpose specified.

328,234. HARVESTER. Frederick Laqua, Thielmanton, Minn. Filed Nov. 26, 1884. (No model.)



Claim.—In a harvester, the combination, with the sections B C of the jointed tongue, of the U-plate M, the spring N, and the bolt or pin O, substantially as herein shown and described, whereby the forward end of the harvester will be kept from rising too high and from dropping too low, as set forth.

328,235. VELOCIPEDE. Ernst G. Latta, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed Dec. 10, 1884. (No model.)



Claim.—1. The combination, with the axle provided with a threaded shank, *c'*, of a crank having an internally-threaded opening, *d*, and a screw-nut, *c*, made smaller than the opening *d*, to pass freely through the same, substantially as set forth.

2. The combination, with the axle and the crank having an internally-threaded opening, *d*, of the screw D, engaging in the opening *d*, and a screw, *d'*, working in a threaded opening in the screw D and bearing against the axle, substantially as set forth.

3. A ball-bearing for velocipedes, consisting of a solid annular box F, having a spherical outer face and provided with an internal annular cone or bearing surface formed integral with the box, an annular screw or cone, G, held against turning and engaging in an internal screw-thread formed in the box, a collar, H, and balls interposed between the cone of the box F, the cone G, and the collar H, substantially as set forth.

4. The combination, with the laced spokes, of a hub having its flange provided with openings through which the spokes are drawn and seats formed on the inner and outer sides of the flanges in which the spokes are held against displacement, substantially as set forth.

5. The combination, with a laced or bent spoke, of a hub having its flange *b* provided with an oblique opening through which the spoke is drawn, and ribs *m m'*, whereby the spoke is confined against both sides of the hub-flange, substantially as set forth.

6. The combination, with a bent spoke, of a hub having its flange provided with an oblique opening through which the spoke is drawn, substantially as set forth.

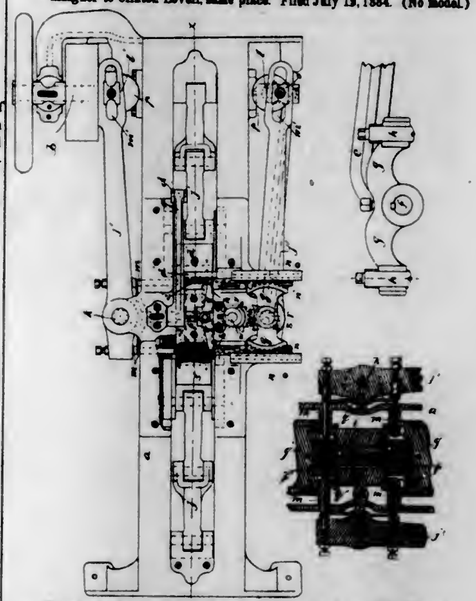
7. The combination, with the hub, of laced spokes composed of a bent heavy portion, L, inserted through an opening in the flange of the hub, and outer light portions, N, secured to both ends of the portion L, substantially as set forth.

8. The combination, with the hub, of laced spokes composed of a bent heavy portion, L, inserted through an opening in the flange of the hub, outer light portions, N, and couplings O, whereby the outer portions, N, are secured to both ends of the inner portion, L, substantially as set forth.

9. The combination, with the hub, of laced spokes composed of an inner portion, L, inserted through an opening in the flange of the hub and provided with threaded outer ends, outer portions, N, provided with headed inner ends, and coupling-sleeves O, secured to the threaded ends of the portion L and receiving the headed ends of the portions N, substantially as set forth.

10. The combination, with the hub, of two spokes crossing each other and bent near their points of crossing to interlock with each other, whereby the straight portions of the spokes are arranged in the same plane, substantially as set forth.

328,236. WIRE-NAIL MACHINE. Nathan C. Lewis, Boston, Mass., assignor to Clinton Lovell, same place. Filed July 19, 1884. (No model.)



Claim.—1. In a machine for making wire nails or other like articles, the combination of two duplicate nail-forming organizations, each including a feeding device, a cutter for severing a section of wire, dividing-dies located below the plane of said feeding device and cutter, and duplicate headers or hammers, and operating mechanism, substantially as described, whereby each element of one organization is caused to act alternately with the corresponding element of the other organization, as set forth.

2. The combination, with duplicate cutting-off, dividing, and heading-forming mechanism, of the feeding-slides having wire-grasping devices, and racks, the segment-gears *g g*, engaged with said racks, and mech-

anism, substantially as described, for oscillating said segment-gears, and thereby reciprocating the slides simultaneously in opposite directions, as set forth.

3. The combination of the feeding-slides, the gear-segments engaging with racks thereon, the rock-shaft *w*, adapted to oscillate said gear-segments, the connecting-rod connected to a crank on the rock-shaft, and the driving-shaft *l*, having a cross-head and an adjustable wrist-pin to which the connecting-rod is connected, said wrist-pin enabling the throw of the connecting-rod and the length of the feed movement of the feeding-slides to be adjusted, as set forth.

4. The combination, with duplicate feeding, dividing, and head-forming mechanism, of the cutters *h h*, affixed to arms *g g*, the rock-shaft *f*, supporting said arms, and mechanism for oscillating said rock-shaft, whereby the cutters are caused to act alternately, as set forth.

5. The combination, with duplicate feeding, cutting-off, and head-forming mechanism, of the fixed half-dies 2 2, the half-dies 3 3, secured to slides *g' g'*, the toggle-joints *j j*, connected to said slides and to fixed supports, the pivoted oscillating lever *e*, connected, as described, to the toggle-joints at opposite sides of its pivot, whereby the dies 3 3 are moved in unison and caused to act alternately, as set forth.

6. The combination, with duplicate feeding, cutting-off, and dividing mechanism, of the four spring-retracted hammers arranged to bear against the ends of two sections of wire held by the dividing mechanism and the oscillating levers, whereby said hammers are operated two at a time, as set forth.

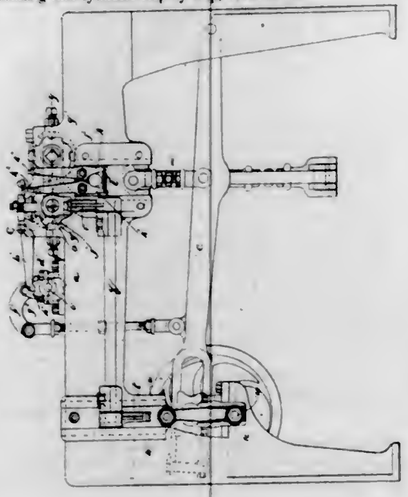
7. The combination of the feeding devices having feed movements of twice the length of a nail, the cutters adapted to sever the wire after each feed movement, two plates, *d' e'*, one fixed and the other movable, below the plane of each feeding device and cutter, said plates having their proximate ends formed to present a trough to receive the section of wire, two dividing half-dies, 2 3, one fixed and the other movable, located below each said trough, sliding rods *i' i'*, adapted to be moved by the half-dies 3 3 and arranged to arrest the wire sections falling from the troughs, mechanism for moving said movable plates *d'* and dies 3 toward and from the fixed plate *e'* and dies 2, the headers or hammers, and operating mechanism therefor, all arranged and operated substantially as set forth.

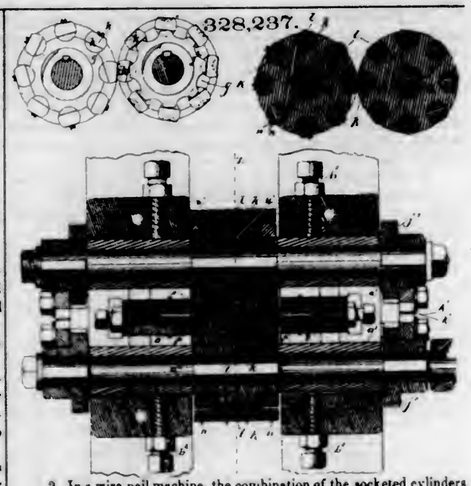
8. The headers or hammers arranged with their centers at one side of the line of wire and adapted to be rotated to present different heading-surfaces to the wire, as set forth.

9. In a wire-nail machine, the combination of two blocks or holders having cavities in their proximate faces, the two cavities fitting the wire from which the nails are to be produced, dies or cutters between said cavities, arranged to sever a blank of wire into two parts by a combined cutting and swaging action, and thereby form two points, two hammers arranged in line with the cavities in the blocks or holders, and adapted to move toward and from said dies in the direction of the length of the wire held thereby, and mechanism, substantially as described, to operate said blocks or holders, dies, and hammers, as set forth.

328,237. **WIRE-NAIL MACHINE.** Nathan C. Lewis, Boston, Mass., assignor to Clinton Lovell, same place. Filed Aug. 25, 1884. (No model.)

Claim.—1. In a wire-nail machine, the socketed cylinders *g g'*, the blocks *k k*, swiveled in the sockets of the cylinders, said blocks being flat on their outer surfaces and provided with dies, combined with mechanism for rotating said cylinders step by step, as set forth.





2. In a wire-nail machine, the combination of the socketed cylinders *g g'*, having the swiveled blocks, formed as described, and provided with dies, mechanism for rotating said cylinders step by step, and mechanism for supplying lengths of wire to the cylinders, as set forth.

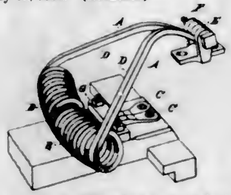
3. In a wire-nail machine, the combination of the socketed cylinders *g g'*, having the swiveled blocks *k k*, formed as described, and provided with dies, mechanism for rotating said cylinders step by step, mechanism for supplying lengths of wire to the cylinders, and two headers and operating mechanism therefor, substantially as described, whereby said headers are caused to upset the ends of the wire held by two of the blocks *k k*, as set forth.

4. The combination of the cylinders *g*, having swiveled die-blocks provided with pins or holders *n n*, and the cylinder *g'*, having corresponding die blocks, with recesses *u'* to receive the pins *n*, as set forth.

5. In a wire-nail machine, a rotary die-holder provided with a series of dies on its perimeter, each formed to partially sever and point a blank of wire centrally, and holders accompanying each die, whereby nail-blanks may be held in operative relation to said dies, combined with mechanism, substantially as described, for rotating said holder step by step and thereby bringing each die and the accompanying blank successively to a given point, and a die co-operating with each die in the rotary holder at said given point, whereby the blanks are successively severed and pointed, as set forth.

6. In a wire-nail machine, a rotary die-holder provided with a series of dies on its perimeter and holders accompanying each die, combined with mechanism, substantially as described, for rotating said holder step by step and thereby bringing each die and the accompanying blank successively to a given point, a die co-operating with each die in the rotary holder at said given point, whereby the blanks are successively severed and pointed, and two headers and operating mechanism therefor, substantially as described, whereby the headers are caused to upset the ends of the wire when they reach the point where they are acted on by the dies, as set forth.

328,238. **VEHICLE-SPRING.** Thomas J. Magner, Wellsville, N. Y. Filed July 12, 1884. (No model.)



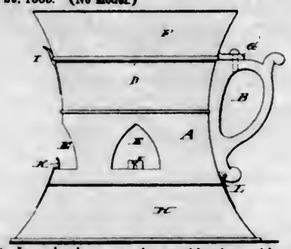
Claim.—1. A vehicle-spring composed of the spiral portions extending horizontally in arc shape, the attachment arms extending from the inner ends of the spiral portions, and the oblique arms extending from the outer ends of said spiral portions, substantially as specified.

2. The vehicle-spring consisting of the spiral portions B, having their inner ends terminating in short engaging parallel arms and their outer ends obliquely directed toward each other and clipped together, substantially as specified.

328,239. **ALLOY FOR COATING METALS.** Charles F. Manby, McKeesport, assignor to Edmund C. Converse, Pittsburg, Pa. Filed Dec. 20, 1884. (Specimens.)

Claim.—The alloy for coating metals herein described, containing tin, antimony, lead, and bismuth in substantially the following proportions: tin, from twenty-three to thirty-six per cent.; antimony, from one-half of one per cent. to eight per cent.; lead, from fifty to seventy per cent., and bismuth from one-fourth of one per cent. to five per cent.

328,240. **SHAVING-MUG.** Thomas Maylor, Oak Harbor, Wash. Filed Jan. 29, 1885. (No model.)



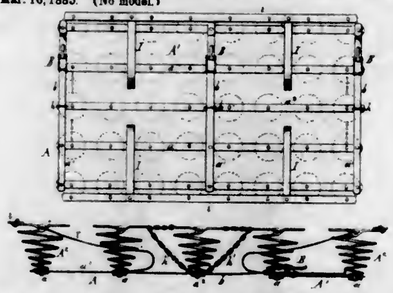
Claim.—1. In a shaving-mug, the combination, with a lamp, of a water-cup adapted to be held on the same, and a lather-cup pivoted on the water-cup, substantially as herein shown and described.

2. In a shaving-mug, the combination, with the cylinder A, having a horizontal partition, C, forming a cup, D, of the lamp H, and the lather-cup F, pivoted on the top of the cylinder A, substantially as herein shown and described.

3. In a shaving-mug, the combination, with the cylinder A, having a horizontal partition, C, and apertures E below it, of the lamp H, and the lather-cup F, pivoted on the cylinder A, substantially as herein shown and described.

4. In a shaving-mug, the combination, with the cylinder A, of the lather-cup F, pivoted on the same, and of the lamp H, provided with the spring-catches K and L, substantially as herein shown and described.

328,241. **BED-BOTTOM.** Benjamin R. Mitchell, Buffalo, N. Y. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination, with two frames, A A', each composed of slats *a* and cross-bars *a'*, rigidly secured together and provided with springs A^2, of flexible connecting-bars *b*, secured to one frame and attached to the other frame by sliding connections, whereby the connecting-bars can be lengthened for folding the frames with the ends of the springs resting against each other, substantially as set forth.

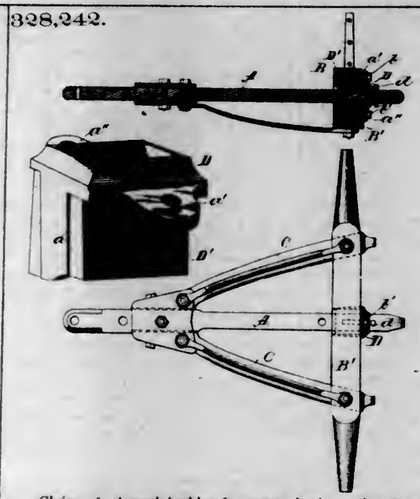
2. The combination, with two frames, A A', each composed of slats *a* and cross-bars *a'*, rigidly secured together and provided with springs A^2, of flexible connecting-bars *b*, secured to one frame and sliding in attachments on the other frame, and clamps whereby the sliding ends of the connecting-bars are secured when adjusted, substantially as set forth.

3. The combination, with two frames, A A', each composed of slats *a* and cross-bars *a'*, rigidly secured together and provided with springs A^2, of flexible connecting-bars *b*, provided with stops *e* and *f*, and having fixed connections with one frame and sliding connections with the other frame, and the clamps B, whereby the sliding ends of the connecting-bars are secured, substantially as set forth.

4. The combination, with the spring-supporting frames A A', of the flexible bars *b* and the clamps B, composed of frames *c*, cams *d*, levers D, and rollers *g*, substantially as set forth.

5. The combination, with the frames A A', each composed of slats *a* and cross-bars *a'*, rigidly secured together and provided with springs A^2, of the flexible connecting-bars *b*, secured to one frame and attached to the other frame by sliding connections, a longitudinal bar, a^2, connecting the flexible bars *b* between the frames A A', and springs secured to the bars *b*, which springs assume a horizontal position when the frames A A' are folded upon each other, substantially as set forth.

328,242. **WAGON-REACH COUPLING.** Henry Mitchell, Racine, Wis. Filed Apr. 12, 1884. (No model.)



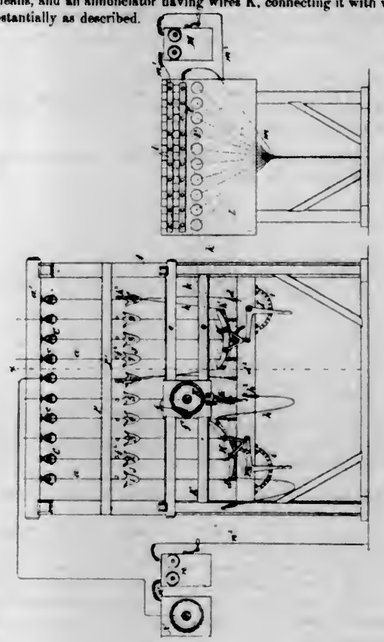
Claim.—1. A reach-bushing for wagons, having wedge-shaped ribs upon its outer ends and vertically-projecting flanges upon its rear, substantially as and for the purpose set forth.

2. A reach-bushing for wagons, having formed integral therewith upon its outer ends wedge-shaped ribs and upon its rear vertically-projecting flanges, the latter each provided with a bolt-opening, and the lower one of said flanges offset or out of line with the upper, substantially as and for the purpose specified.

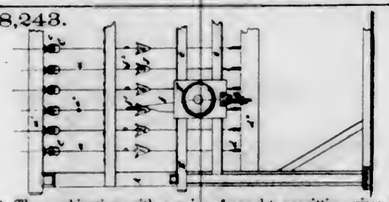
3. A reach-bushing having wedge-shaped ribs upon its outer ends and vertically-projecting flanges upon its rear provided with bolt-openings, in combination with the reach, bolster, and axle of a vehicle, and suitable bolts adapted to pass through the openings in the vertically-projected flanges and enter said bolster and axle, substantially as and for the purpose set forth.

328,243. **ACOUSTIC-TELEPHONE EXCHANGE.** George W. Moore, North East, Pa., and John N. Culbertson, Buffalo, N. Y., assignors to the Consolidated Telephone Company, of New Jersey. Filed Nov. 7, 1882. Renewed Sept. 18, 1885. (No model.)

Claim.—1. In a mechanical telephone-exchange, the combination of a frame having wires *a*, attached to said frame by springs *d* or equivalent means, and an annunciator having wires K, connecting it with wires *a*, substantially as described.



328,243.



2. The combination, with a series of sound-transmitting wires, *a*, of a traveling telephone, F, provided with a connecting-wire, *f*, a branch wire, *g*, and a tension-lever, G, substantially as set forth.

3. The combination, with a series of sound-transmitting wires, *a*, of a yoke, H, a switch-wire, *h*, attached thereto and adapted to be attached with its ends to two of the wires *a*, and a bell-crank lever, I, whereby the yoke H is adjusted, substantially as set forth.

4. In a mechanical telephone-exchange, a rigidly-supported frame having a spring-supported insulating-sleeve, *c'*, substantially as described.

5. The combination, with a series of sound-transmitting wires, *a*, having loops f^3, of a traveling telephone, F, provided with a connecting-wire, *f*, having a hook, f^4, substantially as set forth.

6. The combination, with the frame A and sound-transmitting wires *a*, of the strips of fabric P or equivalent means whereby the wires are retained in their proper relative positions against the lateral strain of the switch-wires, substantially as set forth.

328,244. NUT-LOCK. Andrew Morningstar, Springfield, Ohio, assignor to John Alfred Dredge, same place. Filed Apr. 13, 1885. (No model.)

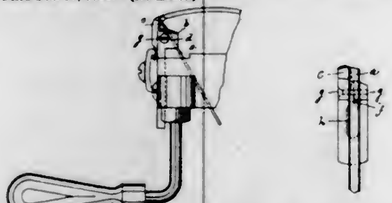


Claim.—1. In a nut-lock, the combination, with the washer having ratchet-teeth on its periphery and an angular boss extending from one side thereof, of a nut having an enlarged inner end provided with a flange, whereby a recess is constituted in the end of the nut, said portion having a recess constructed with dovetail shoulders, and a spring fitted in said recess against said shoulders, upset against the shoulders, having a lug near the other end, and terminating slightly beyond the periphery of the flange.

2. A nut constructed with an enlarged inner end having a flange formed thereon, whereby a recess is constituted in the end of the nut, and provided with a spring attached thereto at one end and having a lug near the other and terminating slightly beyond the periphery of the flange.

3. A nut having an enlarged inner end provided with a flange, the enlarged portion and the flange having a recess constructed with dovetail shoulders and a spring fitted in said recess against said shoulders and adapted to be upset against the shoulders.

328,245. RAND-TRIMMING MACHINE. Jas. Nagle, Boston, Mass. Filed Feb. 17, 1885. (No model.)

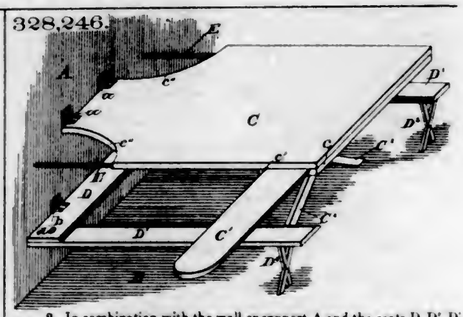


Claim.—A rand-trimming tool consisting of the clamping-block *b* and guard *c*, in combination with the adjustable knife *a*, having beveled sides throughout its length, whereby it may be set forward as it is ground down, for the purposes and substantially as described.

328,246. FOLDING TABLE AND SEAT. Allen Neutaecher, Meodota, Ill. Filed Oct. 10, 1884. (No model.)

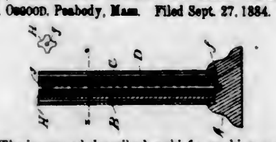
Claim.—1. A table secured by hinges to a vertical support and having crossed legs hinged to its free end, in combination with adjustable seats hinged similarly to said support, but at a lower vertical plane, the said seats being made in three sections, and the outer sections having crossed legs hinged to their free ends, and being pivoted at their rear ends to the central section, which is hinged to the said support, substantially as set forth.

328,246.



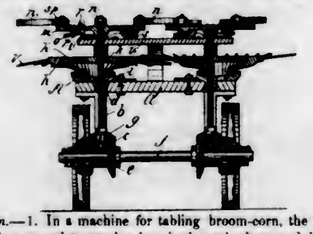
2. In combination with the wall or support A and the seats D D' D', made in sections, the central section being hinged to the support, as shown, and the end sections having crossed legs D^2 D^2 hinged to them, the table C, hinged to the support at *a a* and cut away on its inner end at c^4 c^4, and having the crossed legs C^2 C^2 hinged to its free end and the staples *c' c'* and hooks *f f'* secured to its under side, and the rods E E, having bent ends *e e*, all arranged and adapted to operate substantially as set forth.

328,247. MOLD FOR MAKING PRINTERS' INKING-ROLLERS. Joseph H. Osgood, Peabody, Mass. Filed Sept. 27, 1884. (No model.)



Claim.—The improved described mold for making printers' rollers, consisting in the two concentric tubes, one within the other, and supported on a common base, the inner one serving for forming the roller, and the space between the inner and outer one constituting an air or non-conducting space for equalizing the temperature and insuring a gradual cooling of the composition, all as set forth.

328,248. MACHINE FOR TABLING BROOM-CORN. Francis M. Parker, Charleston, Ill. Filed May 17, 1884. (No model.)

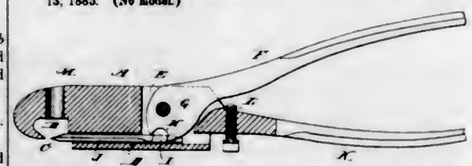


Claim.—1. In a machine for tabling broom-corn, the combination of a wheel arranged to revolve in a horizontal plane and having rigid radially-projecting arms, and a second wheel arranged to revolve in a horizontal plane above the first-mentioned wheel at a greater speed and having yielding radial arms, all substantially as and for the purpose specified.

2. In a machine for tabling broom-corn, wheel *m*, a series of arms, *n*, pivoted thereto, trip-lever *o*, having lug *r*, spring *sp*, and guides *s* and *t*, all combined and arranged to co-operate, substantially as specified.

3. In a machine for tabling broom-corn, the combination, substantially as specified, of frame *a*, vertical shaft *b*, spur-gear wheel *k*, wheel *h*, having internal cog-teeth, *h'*, and annular bearing *i*.

328,249. ROD AND BOLT CLIPPER. Harry W. Parker, Omaha, Nebr., assignor to himself and Luther B. Wood, same place. Filed June 13, 1885. (No model.)



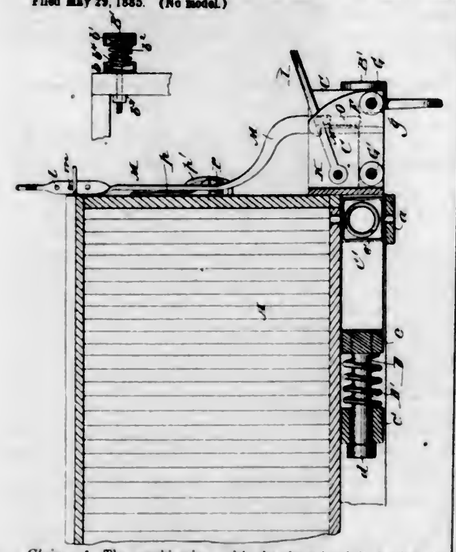
Claim.—1. The stock A, provided with a fixed lever, K, vertical end aperture, M, an inward-bent hook forming a fixed cutting-edge, a longitudinal cavity, D, in alignment with the said cutting-edge and open at both ends, and a vertical slot, E, at the rear end communicating with the rear end of the cavity D, in combination with the blade J, passed into the cavity D, through its rear open end, and having a projection, I, and the lever F, having an eccentric head, G, pivoted within the slotted end of the stock, and having a notch, H, to receive the projection I for operating said blade, the said blade and pivoted lever being readily disconnected by simply throwing the lever forward, as set forth.

2. The bolt and rivet cutter herein shown and described, the same consisting of the stock A, formed with a hook, C, an aperture, M, and eccentrically-pivoted lever F G, having a notch, H, a fixed lever, K, a longitudinal cavity, D, open at both ends, the sliding blade J, passed into the aperture, through its rear open end, and provided with a projection, I, engaging the notch H, and a set-screw, L, passing through the lever K, beneath the pivoted lever, substantially as set forth.

328,250. FIRE-EXTINGUISHING COMPOUND. William H. Polleys, Melrose, Wis. Filed Mar. 17, 1885. (No specimens.)

Claim.—The herein-described composition of matter, to be used for drying, preserving from decay, and rendering fire-proof all kinds of wood material, consisting of borax, potash, alum, mica cut in muriatic acid, glue, salt, and water, in the proportions substantially as specified.

328,251. CAR-COUPLING. Perry F. Raudenbaugh, Florence, Kans. Filed May 29, 1885. (No model.)

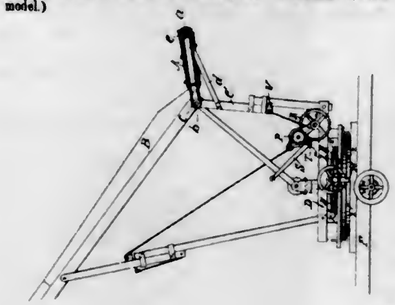


Claim.—1. The combination, with the draw-head C, having the hook F, and the bolts G G', for securing said hook, of the depending link H, pivoted to the pin on which the hook is journaled, and the upper link, I, pivoted in the rear end of the draw-head, and the lever M, for operating the same, substantially as set forth.

2. The combination, with the draw-head C, having slot O, of the hook F, the link I, and the lever M, having arm N, substantially as herein shown and described.

3. The combination, with the draw-head C, having the slot O, of the hook F, the link I, the bolts G, G', and K, the guide L, the lever M, having the projecting arm N, and the lever P, pivoted to lever M and fulcrumed on bar *p*, substantially as herein shown and described.

328,252. STRAW-STACKER. Alfred B. Reeves, Marshal T. Reeves, and James N. D. Reeves, Columbus, Ind., assignors to Reeves & Co. and Joseph I. Irwin, all of same place. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination, substantially as specified, of the principal straw-conveyer, the secondary conveyer hinged thereto, the extensible supports, and the braces connecting said supports and said secondary conveyer, whereby the relative positions of said primary and secondary conveyers are changed automatically during the raising and lowering of the principal conveyer, for the purpose specified.

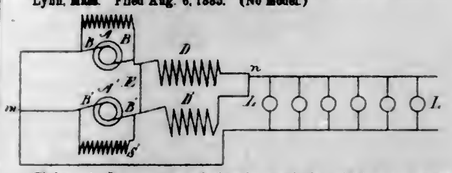
2. In a straw-stacker, the combination, with the circular cogged rack on the bed-frame, the turn-table, the pair of vertical shafts mounted in said table, and having pinions engaging said circular rack, of a pair of gear-wheels mounted so as to turn on said vertical shafts, a pair of arms rigidly secured to said shafts, studs on said gear-wheels adapted to engage said arms, and means, substantially as described, for revolving said gear-wheels, all combined, substantially as and for the purpose specified.

3. The combination, with vertical shaft L, horizontal swinging shaft H, and bevel gear-wheels *m* and *n*, of collar *o*, having bearing *p*, and slotted bearing *q*, all substantially as and for the purpose specified.

4. In a straw-stacker, the combination, with the sliding bearing-block I and catches N N, of the movable blocks *t t*, having pins *s s*, and screws *v v*, all substantially as and for the purpose specified.

5. In a straw-stacker, pawl V, combined with windlass P, and its driving gear-wheel and extension-support *c'*, in the manner and for the purpose specified.

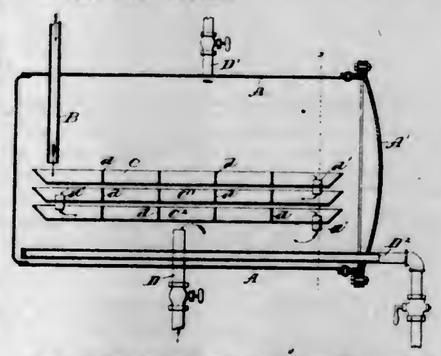
328,253. DYNAMO-ELECTRIC MACHINE. Edwin W. Rice, Jr., Lynn, Mass. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a system of electric supply in which two or more compound-wound dynamos are connected in parallel to the feeding-mains, an electrical connection between those parts of the machine-circuits which constitute the junction between the armature coils or circuits and the direct field-magnet coils or circuits

2. Two or more compound-wound dynamos connected in parallel at their terminals to a set of mains supplying incandescent lights or other translating devices, in combination with an equalizing connection, E, between them, said equalizing connection being attached to each machine-circuit at a point between the armature and direct field-circuits, substantially as described.

328,254. WATER-PURIFIER FOR BOILERS. John J. Richards, Milwaukee, Wis., assignor of one-half to Louis W. Marbes, same place. Filed June 11, 1885. (No model.)



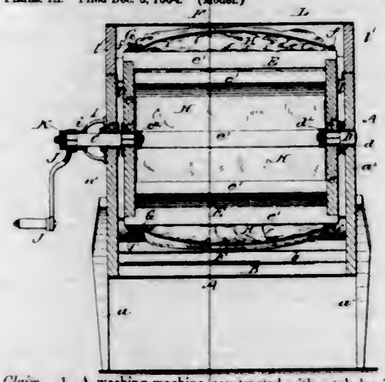
Claim.—1. In a feed-water purifier, the combination, with a shell having inlet and outlet ports, of a series of horizontal trays, each tray having an overflow-pipe extending through its bottom some distance above and below the same, and the overflow-pipe in one tray being at the opposite end to that in the tray above or below it, and solid imperforate partitions extending alternately from one side toward the opposite side and breaking joints with each other, substantially as set forth.

2. In a feed-water purifier, the combination, with a shell having inlet and outlet ports, of a series of horizontal trays, each tray having an overflow-outlet, that in one tray being at the opposite end to the outlet in the tray above or below it, and partitions extending alternately from one side toward the opposite side and breaking joints with each other, substantially as set forth.

3. In a feed-water purifier, the combination of the shell A, having inlet-tube B, outlet-tube D, exhaust-pipe D', and blow-off pipe D^2, with

the series of trays C C', &c., having partitions *d d*, breaking joints with each other, and overflow-pipes *d'*, extending through the bottom of each tray some distance above and below the same, substantially as set forth.

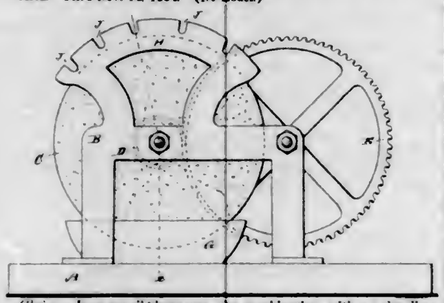
328,255. WASHING-MACHINE. John B. Richardson, Pleasant Plains, Ill. Filed Dec. 8, 1884. (Model.)



Claim.—1. A washing-machine constructed with a tub having interior projecting ribs and a cover, and a clothes-wheel journaled in the tub, and made of end plates or supports carrying peripheral bars or slats provided with cords upon their outer faces, substantially as herein set forth.

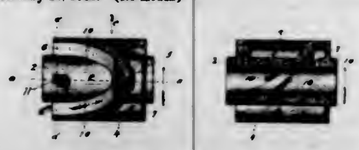
2. In a washing-machine, the clothes-wheel E, journaled in the tub A, and consisting of end plates *e e*, connected by bars *e'*, which project beyond the peripheries of the end plates, and said bars *e'* having cords F held to them by staples *f* at one end, and elastic connections, as G, at the other end, substantially as herein set forth.

328,256. SLATE-PENCIL SHARPENER. Hattie Scott, Detroit, Mich. Filed Nov. 14, 1884. (No model.)



Claim.—In a pencil-sharpener, the combination, with an abrading-disk mounted on a frame, of gearing for revolving the said disk, and a support formed on the frame adjacent to the disk, which support has at its top a curved line and provided with a number of notches for receiving the pencils, substantially as herein shown and described.

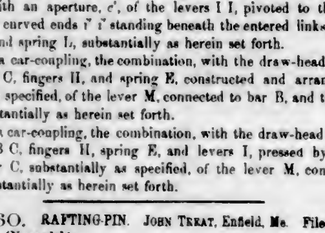
328,257. CAR-AXLE LUBRICATOR. Frank L. Shallenberger, Braddock, assignor to Wilson, Walker & Co., (Limited,) Pittsburg, Pa. Filed July 24, 1885. (No model.)



Claim.—1. A hub for vehicle-wheels having an oil-chamber in its body for circulation of a lubricating medium, a reservoir for containing the latter, and an oil-passage communicating with the oil-chamber and the journal-bearing, said chamber opening freely into the reservoir as distinguished from a recurrent groove or channel made through the body of the hub and provided with a guide wall or rib which extends in a direction inclined to the axis of rotation of the hub from the front part of the chamber toward the rear and then in a recurrent direction toward the front thereof, substantially as and for the purposes described.

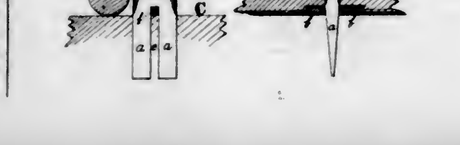
2. A hub for vehicle-wheels having an annularly-hollowed space for circulation of a lubricating medium, a reservoir for containing the latter, and a passage or passages communicating with the oil-circulating space and with the journal-bearing, said space being divided into chambers *e* and *f* by a U-shaped rib, 6 6*, the legs of which extend longitudinally with the bore of the hub and are arranged so as to be capable of catching oil from the reservoir during rotation of the wheel and of distributing the same, substantially as and for the purposes described.

328,258. MECHANICAL TELEPHONE. Francis R. Shaw, Chatham Centre, Ohio. Filed May 26, 1885. (No model.)



Claim.—In a telephone, the combination, with the diaphragm A of fibrous material, having the loops F secured thereto, of the line-wire connecting-strips D, crossing each other and having their ends secured to the said loops, substantially as herein shown and described.

328,259. CAR-COUPLING. Lewis H. Shular, Crawfordsville, Ind. Filed Mar. 24, 1885. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head A, having an opening, *a*, of the coupling-bars B C and spring E, said bar B being pivoted at *b* to the draw-head and having a hook-head, B', and the bar C being pivoted to the draw-head at *c*, and the links G, connecting bars B C, substantially as herein set forth.

2. In a car-coupling, the combination, with the draw-head A, of the coupling-bars B C, pivoted thereto and connected by links G, substantially as specified, and said bar C having an aperture, *c'*, into which the hook B' enters, substantially as herein set forth.

3. In a car-coupling, the combination, with the draw-head A, of the coupling-bars B C, pivoted thereto, substantially as specified, said bar B having a hook-head, B', and bar C having fingers H H, substantially as herein set forth.

4. In a car-coupling, the combination, with the draw-head A and coupling-bars B C, pivoted thereto and connected by links G, and said bar B having a hook, B', of the link-supporting levers I I, pivoted to bar B and having forward ends, i' i', and a spring forcing the ends i' i' against the link confined by the hook B', substantially as herein set forth.

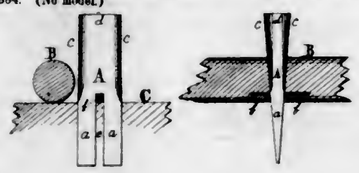
5. In a car-coupling, the combination, with the draw-head A and coupling-bars B C, pivoted thereto and connected by links G, and said bar B having a hook, B', and the levers I I, pivoted to bar B and having forward ends, i' i', standing beneath the entered link, substantially as specified, of the links J J and spring L, substantially as herein set forth.

6. In a car-coupling, the combination, with the draw-head A and coupling-bars B C, pivoted thereto and connected by links G, said bar B having a hook, B', and bar C having an upwardly-curved end, C', provided with an aperture, *c'*, of the levers I I, pivoted to the bar B and having curved ends i' i' standing beneath the entered links, and the links J J and spring L, substantially as herein set forth.

7. In a car-coupling, the combination, with the draw-head A, coupling-bars B C, fingers H, and spring E, constructed and arranged substantially as specified, of the lever M, connected to bar B, and the catch-bar O, substantially as herein set forth.

8. In a car-coupling, the combination, with the draw-head A, coupling-bars B C, fingers H, spring E, and levers I, pressed by a spring toward bar C, substantially as specified, of the lever M, connected to bar B, substantially as herein set forth.

328,260. RAFTING-PIN. John Treat, Enfield, Me. Filed May 10, 1884. (No model.)



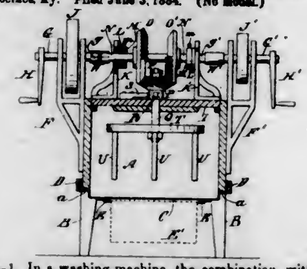
Claim.—A rafting-pin made in wedge form having a slot extending up from its thin flat end for receiving and grasping the connecting-line *b* and having the lateral corners or edges *c c* of the part of the pin projecting above the log when the pin has been driven into place rounded, whereby the stay-lines or warps connecting or staying the raft are preserved from wear, substantially as herein set forth.

328,261. GLOVE. Louis E. Vallier, Grenoble, France. Filed Dec. 15, 1884. (Model.) Patented in France Oct. 10, 1884, No. 164,676; in Belgium Nov. 6, 1884, No. 66,792, and in England Nov. 8, 1884, No. 14,759.



Claim.—As a new article of manufacture, a glove provided with embroidery consisting of embroidery-threads on the surface of the glove and separate fine securing-threads passing into but not through the glove material, substantially as set forth.

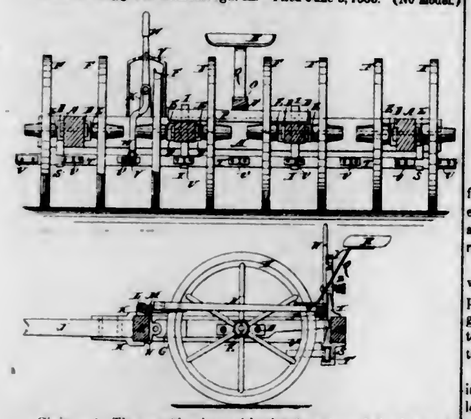
328,262. WASHING-MACHINE. William T. Venable, Christiansburg Precinct, Ky. Filed June 3, 1884. (No model.)



Claim.—1. In a washing-machine, the combination, with the circularly-reciprocating disk T, of the shaft Q, the bevel-pinion P on the same, the stud R on the neck of the pinion, the springs S S, and two bevel half-cogged wheels engaging with the bevel-pinion P, substantially as herein shown and described.

2. In a washing-machine, the combination, with the tub A, of the forks F F', the shafts G G', journaled in the same, the pulley J', and the fly-wheel J, the shaft N, journaled in standards K K', the coupling-sleeves W W', the bevel half-cogged wheels O O' on the same, the disk T, mounted on the shaft Q, and the bevel-pinion P, substantially as herein shown and described.

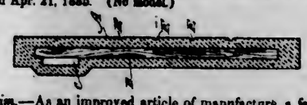
328,263. MACHINE FOR PACKING SOIL BENEATH THE SURFACE. Benjamin F. Waggoner, Litchfield, assignor to himself, and Edward L. Waggoner, Hillsborough, Ill. Filed June 5, 1885. (No model.)



Claim.—1. The combination, with the front bar of the frame A, the hinged bars C, the guide-bars I, and the seat-standard and seat Q R, of the bar N, hinged to the said front bar and carrying the said seat-standard and seat, and the cross-bar P, pivoted to the rear end of the said hinged bar N and resting upon the rear ends of the said hinged bars C, substantially as herein shown and described, whereby the driver's weight is made to bear equally upon the said hinged bars whatever position the said bars may have, as set forth.

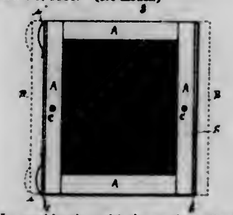
2. In a machine for packing the soil beneath its surface, the combination, with the rear bar of the frame A and the wheels F, of the sliding bar T, the scrapers U, attached to the said bar, and the lever W, said sliding bar T being supported movably in bearings at the lower ends of pendent bars of the machine-frame, substantially as herein shown and described, whereby adhering soil can be removed from either side of the wheel-rims, as set forth.

328,264. FENCE-POST. Benjamin Wheeler, Jr., Zanesville, Ohio. Filed Apr. 21, 1885. (No model.)



Claim.—As an improved article of manufacture, a fence-post made of artificial stone in a continuous piece, having a wooden core, transverse grooves for the fence-wires, and a mortise for the abutting ends of fence-rails, one wall of the mortise communicating with the wooden core, substantially as set forth.

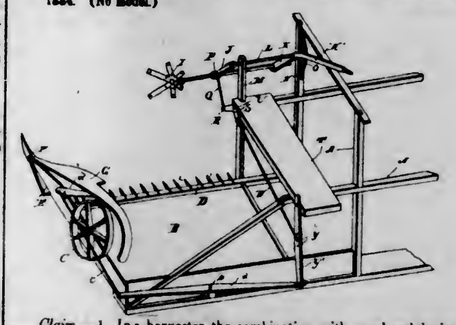
328,265. WINDOW-SCREEN. Marcellus L. Whitcomb, Coldwater, Mich. Filed Mar. 9, 1885. (No model.)



Claim.—1. In combination with the vertical stiles of a screen-frame, the overlapping sliding wings attached to said stiles by means of the metal plates having the ears, the webs, and springs formed integral with said plates, the whole operating in the manner substantially as specified.

2. In combination with the vertical stiles of a window-screen, the sliding wings adjustably secured to said stiles by the screws C C, as specified, said wings having longitudinal flanges, the metal plates attached to said wings and having ears and springs formed integral therewith, substantially as specified.

328,266. HARVESTER. Jasper White, Penn, Mich. Filed June 21, 1884. (No model.)



Claim.—1. In a harvester, the combination, with a reel and devices for elevating and lowering the same, of a grain-guide having its forward end pivoted to the divider and intermediate rods and levers, substantially as described, connecting the reel and grain-guide, whereby the guide is raised and lowered simultaneously with the reel, substantially as set forth.

2. In a harvester, the combination, with a reel and devices for elevating and lowering the same, of a grain-guide having its forward end pivoted to the divider, a lever provided with a roller engaging said grain-guide, and intermediate rods and levers connecting the first-named lever to the reel, whereby the guide is raised and lowered simultaneously with the reel, substantially as set forth.

3. In a harvester, the combination, with a reel and devices for raising and lowering the same, of a grain-guide pivoted to the divider, a lever pivoted to the outside of the platform and engaging the grain-guide, and intermediate devices whereby the lever is caused to elevate and lower the guide simultaneously with the reel, substantially as set forth.

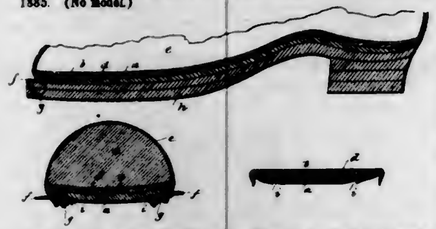
4. In a harvester, the combination of the standards, the rock-shaft mounted in said standards and provided with arms, the reel-shaft journaled in said arms, a lever for elevating and lowering the reel, a grain-guide having its forward end pivoted to a divider, and intermediate rods and levers connecting said grain-guide to the reel, whereby the guide is raised and lowered simultaneously with the reel, substantially as set forth.

5. In a harvester, the combination, with a reel and devices for elevating and lowering the same, of a grain-guide pivoted at its forward end to the divider, an oblique lever pivoted to the outside of the plat-

form and engaging said guide, a longitudinal lever centrally pivoted to the rear of the platform, and intermediate devices connecting the reel and levers, whereby the guide is raised and lowered simultaneously with the reel, substantially as set forth.

6. In a harvester, the combination, with a reel and devices for elevating and lowering the same, of a grain-guide pivoted to the divider an oblique lever pivoted to the frame and engaging said guide, a longitudinal lever and a vertical lever pivoted to the harvester-frame, and intermediate devices connecting the reel and levers, whereby the guide is raised and lowered simultaneously with the reel, substantially as set forth.

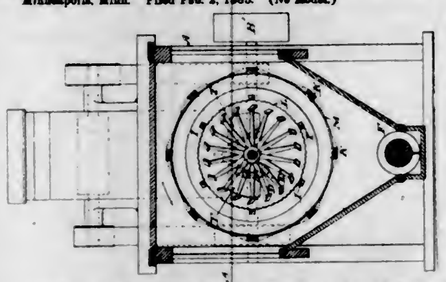
328,267. **BOOT OR SHOE.** Samuel F. Whittlesey, New Haven, assignor of one-half to Baldwin & Lamkin, Milford, Conn. Filed Aug. 4, 1885. (No model.)



Claim.—1. A shoe having an insole, a superposed entire sole of cork or like water-proof material, and an inner lining of greater length and width than the insole and water-proof sole and superposed upon the water-proof sole and secured by its overlapping edge around it to the insole, substantially as shown and described.

2. A shoe having the insole *a*, inner water-proof sole, *d*, above it, inner lining, *b*, longer and wider than the insole and turned down over it and the water-proof sole, and the upper and welt united by a single seam with the said lining to the insole, and the outer sole attached to said welt, substantially as described.

328,268. **CENTRIFUGAL DOUBLE SCALPER.** Joseph L. Willford, Minneapolis, Minn. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination, with the cylinder L and bolt M, of the beater-shaft D and spiders E, each of said spiders consisting of a central hub, a series of independent arms radiating therefrom, and independent angularly-placed beater-heads on the ends of said arms, said spiders being arranged with the beater-heads in spiral rows around the shaft D, all substantially as described.

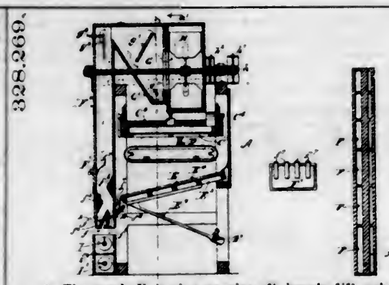
2. The combination, with a revolving separating-cylinder, of the beater-shaft D and the beater-spiders E, each of said spiders consisting of a central hub, a series of arms radiating therefrom, and independent angularly-placed beater-heads on the ends of said arms, said spiders being arranged with the beater-heads in spiral rows around the shaft D, all substantially as described.

3. The combination, with a revolving separating-cylinder, of the beater-shaft D and beater-spiders E, each of said spiders consisting of a central hub, a series of arms radiating therefrom, and independent angularly-placed beater-heads on the ends of said arms, all substantially as described.

4. The combination, in a machine of the class described, with the ends G and H, of the cylinder L, ring N, bars K, ring O, and silk M, all arranged substantially as described, and for the purpose set forth.

5. The combination, with the separator M, having the interior bars, K, of the separator L, having the exterior bars, I, provided with inclined or beveled faces, as described, and for the purpose set forth.

328,269. **MIDDLINGS-PURIFIER.** Joseph L. Willford, Minneapolis, Minn. Filed May 1, 1885. (No model.)



Claim.—1. The combination, with the longitudinally-reciprocating graded sieve C, of the transversely-traveling brush D, transversely-reciprocating chute E, trunks F F, and means for producing an upward air-current in said trunks, all substantially as described.

2. The trunk F, having opening f^4, boards $f f'$, valve f^2, blocks f^5 f^6, and deflecting-fingers f^7, in combination with means for producing an upward air-current through said trunk, as and for the purpose described.

3. The combination, with the sieve C and chute E, of the series of trunks F, each having the upwardly-tapering air-passage f^3, valve f^2, the triangular blocks f^5 f^6, arranged within and upon opposite sides of said trunks, spiral conveyers located below said trunks, the chamber G, and fan H, all substantially as described.

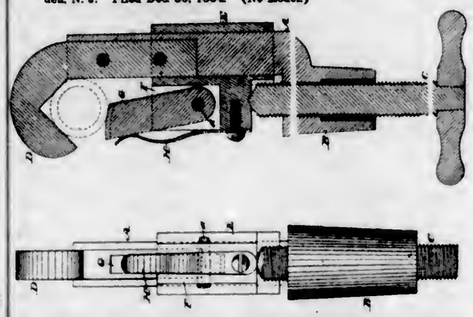
4. The combination, with the trunks F and fan H, of the chamber G, having partition K and valve *k*, as and for the purpose set forth.

5. The combination of the chamber G, having conveyer *g*, tube g^3, pocket g^4, and valve g^5, with the series of trunks F, opening into said chamber, and the fan H, all arranged as described, and for the purpose set forth.

6. The combination, with the trunk F, having opening f^3 and valve f^2, of the conveyers I I' and the hinged plate i', all arranged substantially as described.

7. The combination of the conveyers I, I', and I^2 with the hinged plate i' and the slide i^3, all substantially as described.

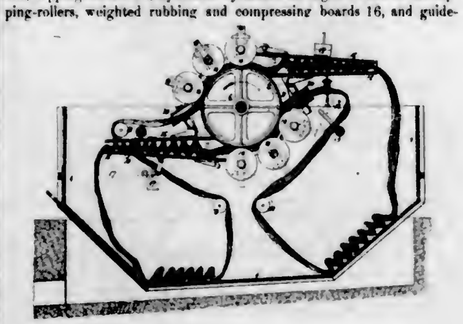
328,270. **PIPE WRENCH AND CUTTER.** John Williamson, Camden, N. J. Filed Dec. 30, 1884. (No model.)



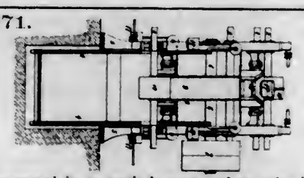
Claim.—The arm A, having a recessed portion, in combination with the jaw D, fitting in said recessed portion and detachably attached to said arm A, sliding sleeve E, provided with recessed piece F, having pivoted jaw G, substantially as and for the purpose set forth.

328,271. **APPARATUS FOR SCOURING AND WASHING FABRICS, &c.** Alexander C. Adam and Duncan Stewart, Glasgow, County of Lanark, Scotland. Filed Jan. 26, 1885. (No model.) Patented in England Feb. 21, 1882, No. 826.

Claim.—1. In combination, a cylinder, 8, having a channel-shaped rim, nipping-rollers 10, hydraulic cylinders arranged to act on the nipping-rollers, weighted rubbing and compressing boards 16, and guide-



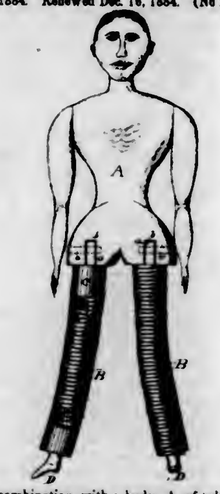
328,271.



rollers, all arranged in or partly in a vat, and operating in the manner and for the purposes substantially as hereinbefore described.

2. The combination of two diametrically-opposite sets of nipping-rollers, 10, with one cylinder, 8, and with guide-rollers which lead the fabric down into the vat between its passages under the two sets of nipping-rollers, substantially as hereinbefore described.

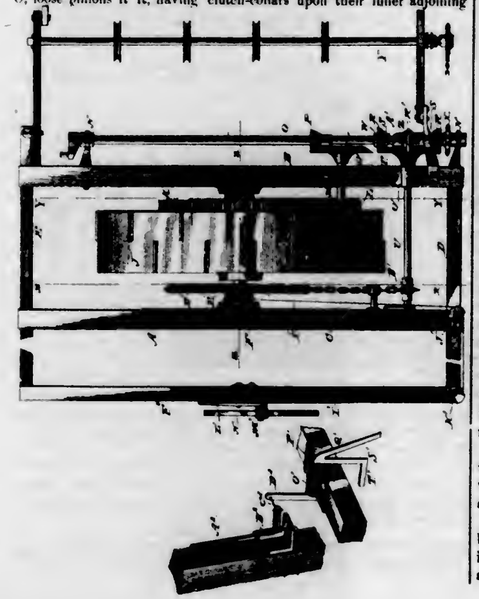
328,272. **TOY FIGURE.** William H. Anderson, Brooklyn, N. Y. Filed Apr. 23, 1884. Renewed Dec. 16, 1884. (No model.)



Claim.—The combination, with a body, A, of tubular limbs formed of coiled wire, substantially as and for the purpose herein set forth.

328,273. **ADJUSTING DEVICE FOR HARVESTERS.** John T. Baker, Lee's Summit, Mo. Filed Dec. 22, 1884. (No model.)

Claim.—1. In a device for adjusting harvester-frames, the combination, with suitable actuating mechanism, of the longitudinal shaft O, loose pinions R R, having clutch-collars upon their inner adjoining



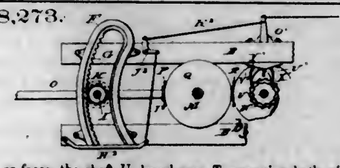
ends or faces, the shaft U, bevel-gear T, engaging both pinions R, sliding double clutch-sleeve Z, having groove R', rock-shaft P', having arm Q', the shifting-rod A^3, and mechanism connecting the latter with the rock-shaft P', substantially as and for the purpose herein shown and specified.

2. The combination of the shaft U, ratchet-wheels W' X', having teeth facing in opposite directions, pawls U" V', rock-shaft P', having arm S' T', and mechanism connecting the said rock-shaft with the shifting-rod A^3, substantially as and for the purpose herein shown and specified.

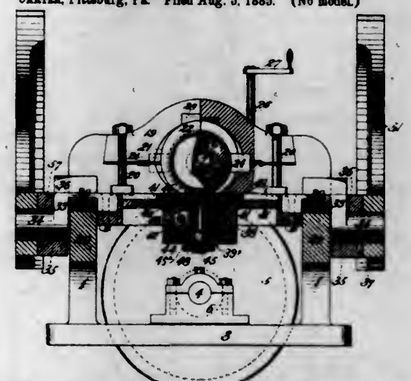
3. The combination of the shaft O, having loose pinions R R, provided with clutch-collars S S, the sliding double clutch Z, shaft U, having bevel-gear T and ratchet-wheels W' X', the pawls U' V', rock-shaft P', having arms Q', S', T', and D^2, mechanism connecting arm D^2 with a crank upon the lower end of the shifting-rod A^3, the lever H^2, bell-crank J^2, connecting-rods J^3 and K^2, the segmental slotted rack-plates F F, axle I, having fixed pinions H H, the loose drive-wheel J, driving-gear connecting the latter with the shaft O, and a chain connecting the shaft U with the axle I, all arranged and operating substantially as and for the purpose herein set forth.

4. The combination of the axle having pinions arranged to travel in segmentally-slotted rack-plates, the chain-wheel D' upon the said axle, shaft U, arranged eccentrically to the said segmental guide-plates, having chain-wheel B', drive-chain C', and the chain-tightening device secured to a frame-beam, C, and consisting of a plate having arms or pintles, on which are journaled friction-wheels arranged to bear against the upper and lower sides of the drive-chain, substantially as and for the purpose herein shown and specified.

328,273.



328,274. **FLANGING-MACHINE.** James M. Bailey and Robert A. Carter, Pittsburg, Pa. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a flanging-machine, a pair of flanging-rolls, in combination with an eccentric adjusting-sleeve surrounding one of said rolls, said sleeve being mounted in a suitable bearing or journal, said parts being so constructed and arranged that the rotation of the sleeve will effect a movement of the roll in a vertical plane, substantially as set forth.

2. In a flanging-machine, a pair of flanging-rolls, in combination with standards for supporting said rolls, and an eccentric adjusting-sleeve surrounding one of said rolls and located within one of the standards, such sleeve bearing on the standard at two points only, substantially as set forth.

3. In a flanging-machine, a pair of flanging-rolls, in combination with an eccentric adjusting-sleeve surrounding one of said rolls and provided with a groove concentric with the roll, and bearing-blocks located within said groove and arranged to prevent any lateral motion of the roll, substantially as set forth.

4. In a flanging-machine, a pair of flanging-rolls, in combination with an eccentric adjusting-sleeve surrounding one of said rolls, and a worm and gear for rotating said sleeve around the roll and holding the same in its adjusted position, substantially as set forth.

5. In a flanging-machine, a pair of flanging-rolls, one of said rolls being bored out, as described, in combination with a driving-shaft having its forward end located within the roll and connected thereto by a spline and groove, substantially as set forth.

6. In a flanging-machine, a pair of flanging-rolls, one of said rolls having an axial opening therein, in combination with a driving-shaft having its forward end located within said roll, the shaft and roll being locked together as against independent rotation, a hand-wheel mounted on the shaft and having an internally-threaded hub adapted to engage a threaded portion of the shaft, and a coupling for uniting the hand-wheel and the roll, substantially as set forth.

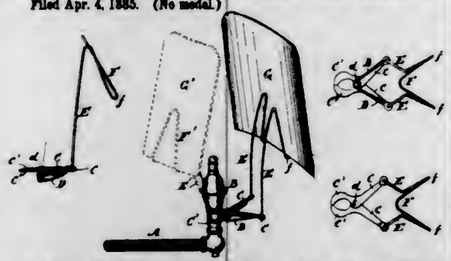
7. In a flanging-machine, a roll having an axial opening therein, in combination with a driving-shaft having its forward end located within said roll and locked thereto as against independent rotation, a hand-wheel mounted on the driving-shaft and arranged to move longitudinally thereof, a split coupling-ring arranged to connect the roll and the hand-wheel, the parts of said ring being adjustably attached to the hand-wheel, substantially as set forth.

8. In a flanging-machine, a swinging table, in combination with pintle-pins for supporting said table, the outer ends of said pins being provided with crank-arms having lugs, the outside arms of said table being suitably constructed to receive said crank-arms and lugs, substantially as set forth.

9. In a flanging-machine, a swinging table, slotted as described, in combination with a movable block located within said slot and having an axial opening therethrough for the reception of the boss of the pivot-plate, a threaded adjusting-rod adapted to engage a nut located in one side of the block, substantially as set forth.

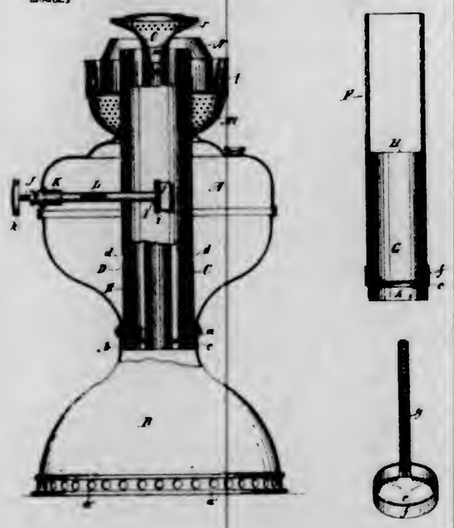
10. In a flanging-machine, the block 39, having an opening therethrough lined with brass or other anti-frictional metal, in combination with the pivot-plate provided with a boss located within the opening in the block 39, and a loose bushing of anti-friction metal arranged around said boss, substantially as set forth.

328,275. SHADE-HOLDER. Frederick Barrows, Haverhill, Mass. Filed Apr. 4, 1885. (No model.)



Claim.—A reflector and shade-holder consisting of arms C C, pivoted together and provided with jaws C C to grasp the burner, jaw-closing spring D, having its ends secured to the pivoted arms, and wire-frame E, having one end secured to each arm, and having the central portion bent, as described, to support the shade, all substantially as shown and set forth.

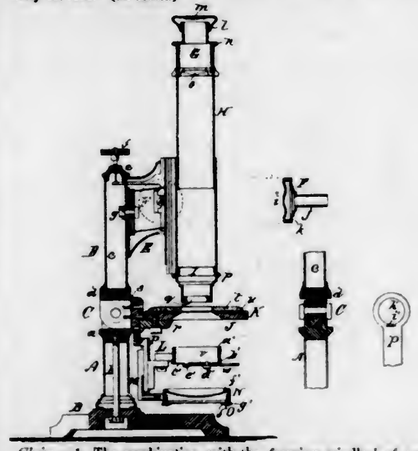
328,276. LAMP. John Radschek and Gustav Hunkel, Brooklyn, N. Y.; said Hunkel assignor to said Radschek. Filed Feb. 11, 1885. (No model.)



Claim.—1. In a lamp, the combination, with a wick-tube, of a tube provided with a circumferential groove, a ring having inwardly-turned prongs or teeth adapted to pass through and grip a wick, and a rack-bar upon said ring, substantially as specified.

2. In a lamp, the combination, with the wick-tube C, of the wick F, the ring *f*, having serrations or teeth *e*, the rack-bar *g*, and the tube H, provided with the groove *h*, substantially as specified.

328,277. MICROSCOPE. Edward Bausch, Rochester, N. Y. Filed May 12, 1885. (No model.)



Claim.—1. The combination, with the focusing-spindle *h* of a microscope, of a hand-wheel, F, formed of two parts, *i j*, spun or stamped from sheet metal and fitted to each other, the part *j* having formed integrally therewith a sleeve adapted to receive the focusing-spindle *h*, substantially as shown and described.

2. An eye-piece body, G, composed of sheet-metal spun or stamped into shape and provided with a flange or shoulder, *n*, formed by folding the material of the eye-piece body upon itself and in the combination therewith of a cap, *l*, fitted to the end of the body and arranged to hold the eye-lens, substantially as herein shown and described.

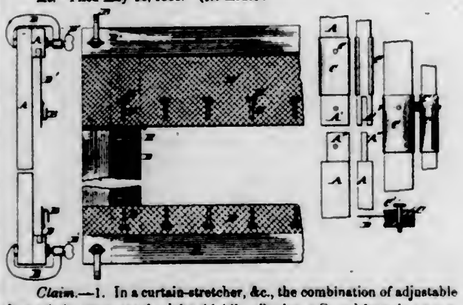
3. A nose-piece formed of sheet metal and provided with a flange, *p*, and the internal collar, *q*, substantially as herein shown and described.

4. In a microscope partly formed of sheet metal, a sheet-metal glass-stage holder, K, adapted to the microscope-stage J, and provided with a rim, *n*, for receiving the glass stage *l*, as herein specified.

5. The sub-stage adapter *v*, stamped or spun from sheet metal and provided with a stop, *e'*, in combination with the diaphragm *w*, having indentations adapted to receive the stop *e'*, as herein specified.

6. A mirror-bar, P, having formed thereon a spring, *i'*, bent laterally, as shown, in combination with the boss *s*, for supporting the same, as herein specified.

328,278. CURTAIN-STRETCHER. Alfred P. Boehlinger, St. Louis, Mo. Filed May 16, 1885. (No model.)

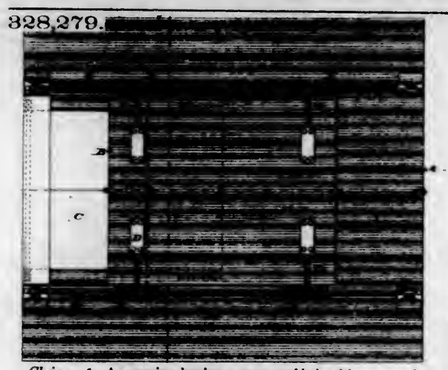


Claim.—1. In a curtain-stretcher, &c., the combination of adjustable frame A A, tenon-mortise joint A' A'', split sleeve C, and fastening-screw C', inserted through the sleeve-tenon and mortise-jaws, all substantially as shown and described, for the purpose set forth.

2. In a curtain-stretcher, &c., the combination of adjustable frame, attachment flaps D and D', tenter-hooks E, and cord E', looped through the fabric and eyes of the hooks and returned on itself, all substantially as shown, and for the purpose set forth.

328,279. AWNING. Andrew J. Bonner, Jr., Philadelphia, Pa. Filed July 8, 1885. (No model.)

328,279.

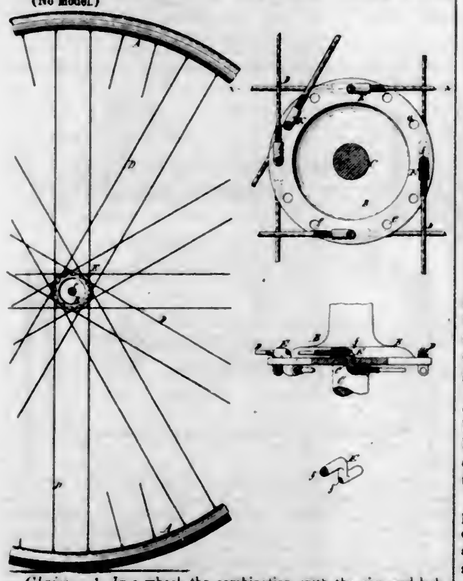


Claim.—1. An awning having a top provided with an opening, a slide for covering and uncovering said opening, rollers mounted on said slide, and ways attached to the top, the rollers resting on said ways, substantially as described.

2. An awning having a top provided with an opening, a slide for covering and uncovering said opening, ways attached to the top at the sides of the opening, laterally-projecting arms connected with the slide and extending beyond the sides of said slide, and rollers mounted on said arms resting on said ways, substantially as and for the purpose set forth.

3. An awning having a top provided with an opening, a slide for covering and uncovering the said opening, ways attached to the top, rollers connected with the slide, and guards G, attached to the top and overhanging the slide for preventing lifting of the latter, substantially as described.

328,280. BICYCLE-WHEEL. Ephraim N. Bowen, Buffalo, N. Y., assignor of one-half to William S. Bull, same place. Filed Aug. 13, 1885. (No model.)



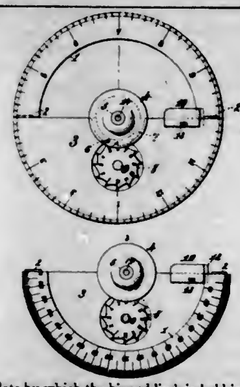
Claim.—1. In a wheel, the combination, with the rim and hub, of two tangential spokes attached with their outer ends to the rim and having their inner ends connected by a nipple, which is attached to the hub, substantially as set forth.

2. In a wheel, the combination, with the rim and hub provided with an opening, of two tangential spokes attached with their outer ends to the rim and having their inner ends screw-threaded, and a bent nipple seated in the opening of the hub, and provided on opposite sides of the hub with screw-threaded sockets which receive the inner screw threaded ends of the spokes, substantially as set forth.

328,281. PROTRACTOR. Cephas W. Brackett, Jordan, N. Y. Filed Aug. 3, 1885. (No model.)

Claim.—1. A circular measuring-instrument consisting of a protractor-limb hinged upon a semicircular plate of equal radius and having a locking-plate by which the hinged limb is held in extended position, substantially as described.

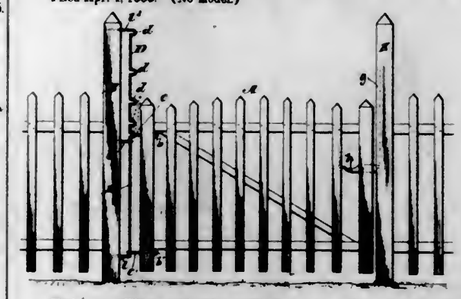
328,281.



2. In a circular measuring-instrument, the combination, with a protractor and a semicircular plate to which it is hinged, of a ratchet-disk having numbers upon its face, and a disk centrally pivoted on the plate and having a pin which at each revolution of the instrument engages with a tooth of the ratchet and moves it, substantially as described.

3. In a circular measuring-instrument, the combination, with a semicircular plate and a protractor hinged thereon, of a pair of holding-plates riding upon the edge of the semicircular plate and adapted to receive the edge of the protractor between their ends, the holder at the back of the protractor being of greater length than at the front, substantially as described.

328,282. HINGE FOR GATES. Thomas F. Briles, Brownsville, Mo. Filed Apr. 4, 1885. (No model.)

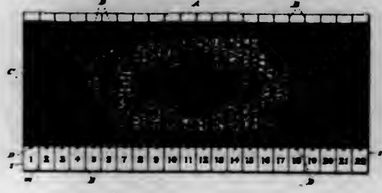


Claim.—1. The combination, with the post and gate, of a hinge made in one piece and having its ends bent at right angles thereto to form drive-points, its body portion evenly divided to form notches and straight portions, and a bolt arranged centrally on said hinge and secured to the post, whereby said central bolt prevents the weight of the gate from bending the hinge, as shown and described.

2. The combination, with the post and gate, of a hinge made in one piece, one half of which is provided with notches, its other half having a straight portion, said hinge also provided at its ends with arms having drive-points, and its middle portion provided with an eyebolt secured to said post, whereby the hinge is prevented from being bent by the weight of the gate, as shown and described.

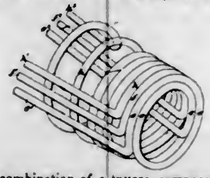
3. An adjustable gate-hinge having at each end of its body drive-points, its central portion provided with an eyebolt, said hinge above the eyebolt provided with notches and below said eyebolt a straight portion, and the eyebolts *c c'*, the former of which has an eye of oblong shape and the latter one of annular form, as shown and described.

328,283. MANUFACTURE OF RUGS. Milford H. Brinkerhoff, Upper Sandusky, Ohio. Filed May 20, 1885. (No specimens.)



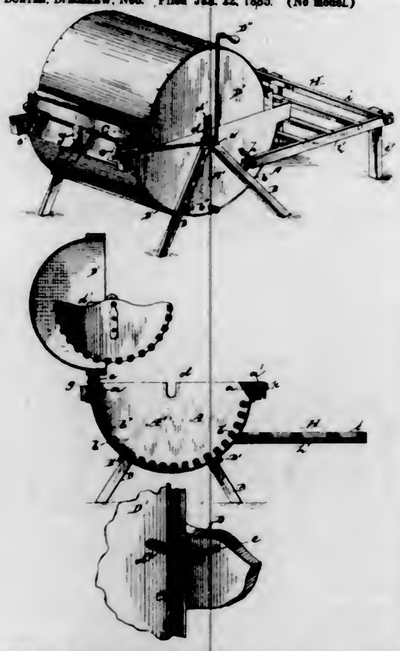
Claim.—A pattern consisting of a sheet or sheets of card-board, A, provided with printed lines B, perforations D, colors showing patterns C, serial numbers *s*, and a marginal space for printing the directions for cutting and dividing the patterns into strips for winding with yarn or other material to form rugs, substantially as specified.

328,284. **FURNACE-TUYERE.** Alfred Brown, Hellertown, and William R. Clark, Bethlehem Pa. Filed Sept. 25, 1884. (No model.)



Claim.—The combination of a tuyere composed of two or more independent convolutions of pipe, one in advance of the other, with an outlet and an inlet pipe communicating with each independent coil, and cut-off valves therefor, substantially as set forth.

328,285. **WASHING-MACHINE.** Henry Calkins and Samuel H. Bowen, Bradshaw, Neb. Filed Jan. 22, 1885. (No model.)



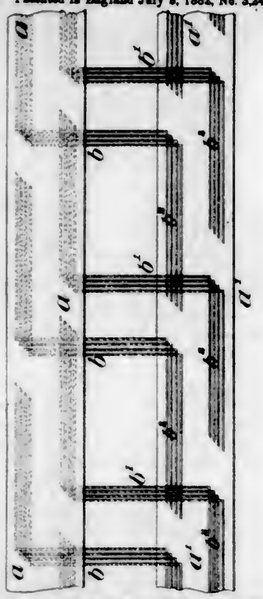
Claim.—1. In a reciprocating washing-machine, a cover and rubber secured to each other and detachably connected to the body portion of the machine, said body portion and cover having vertical recesses in the edges of its side pieces, and staples secured within the recesses of the cover, said staples depending therefrom, so as to enter the recess in the side pieces of the body portion, the parts being organized substantially as shown, and for the purpose set forth.

2. In a washing-machine, the body portion having side pieces provided with vertical recesses which are grooved in their inner edges, in combination with the hinged cover having similarly-grooved recesses and staples secured within said recesses, and the reciprocating rubber having journals which pass through the staples, the parts being organized substantially as shown.

3. In a washing-machine, the body portion A, provided with loops *c c*, in combination with the hinged cover and reciprocating rubber, the bail C, engaging with the loops, and a pivoted button, *g*, substantially as shown and for the purpose set forth.

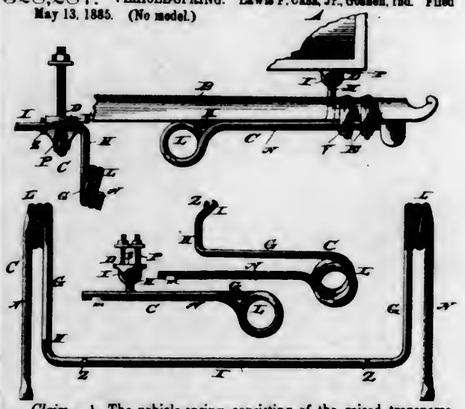
4. In a washing-machine, the body portion A, with vertical recesses *d*, and loops *c c*, which project above the upper edge of the same, in combination with a detachable cover provided with recesses *d'*, and a reciprocating rubber, a bail, C, pivoted to the cover and embracing the journals of the rubber, depending staples D, secured to the cover, and button *g*, engaging with the bail, the parts being organized substantially as shown and described.

328,286. **WOVEN-TAPE LADDER FOR VENETIAN BLINDS.** James Carr, Manchester, County of Lancaster, England. Filed Feb. 16, 1883. (No model.) Patented in England July 8, 1882, No. 3,242.



Claim.—The herein-described tape ladder for Venetian blinds, consisting of the longitudinal tapes *a a'*, with cross-strips *b b'*, formed separately, but having their ends woven into the weft of the longitudinal tapes during the weaving of the tapes, all substantially as set forth.

328,287. **VEHICLE-SPRING.** Lewis F. Case, Jr., Goshen, Ind. Filed May 13, 1885. (No model.)



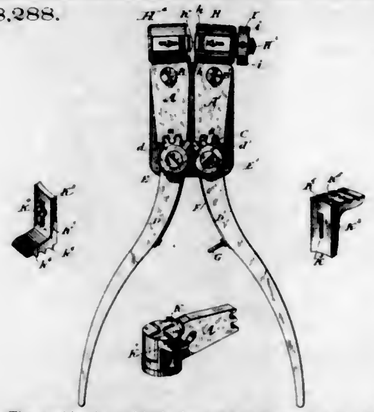
Claim.—1. The vehicle-spring consisting of the raised transverse portion and the longitudinal side portions, G and N, having spiral coils, and the portions G connected to said transverse portion by upright bends extending from the inner branches thereof, substantially as specified.

2. The combination, with the body and side bars, of the spring having a raised portion under the body and connected thereto by boxes, longitudinal side portions, G and N, having spiral coils, and the portions N fastened to the side bars, and the upright bends connecting the side portions to the raised portion and serving to obviate side motion of the body, substantially as specified.

328,288. **SEAL-PRESS.** William M. Chase, New Haven, Conn. Filed Apr. 10, 1885. (No model.)

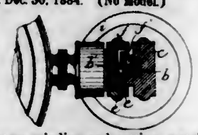
Claim.—1. In a seal-press, the combination of a pair of vibrating jaws provided with handles to impart vibratory movement to said jaws, the one toward the other, and the said jaws carrying dies in their adjacent faces, the one die constructed with a segment-shaped flange, K, the die of the other jaw concentric with said flange, substantially as and for the purpose described.

328,288.



2. The combination, with the jaws of a seal-press carrying dies for compressing the seal, of the side plates secured thereto and adapted to crimp the wire adjacent to the periphery of the seal, substantially as and for the purpose described.

328,289. **PENDANT FOR WATCH-CASES.** Duane H. Church, Waltham, Mass. Filed Dec. 30, 1884. (No model.)

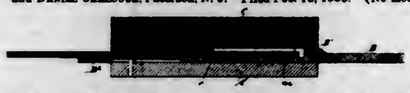


Claim.—1. In a stem winding and setting watch-case, the combination of the threaded pendant, the stem having the crown *c* and the disk or collar *e*, and the flanged nut screwed upon the pendant and bearing on the disk or collar on the stem, as set forth.

2. In a stem winding and setting watch-case, the combination of the externally-threaded pendant, the shouldered stem having a disk or collar bearing on the shoulder thereof, and the flanged nut screwed upon the pendant and bearing upon the disk on the stem, as set forth.

3. The combination of the threaded pendant, the stem having the crown *c* and disk or collar *e*, the flanged nut screwed upon the pendant and bearing on the disk or collar on the stem, and the pendant-bow secured to the nut, as set forth.

328,290. **MACHINE FOR UPSETTING EYE-BARS.** Watts Cooke and Daniel Carlough, Paterson, N. J. Filed Feb. 18, 1885. (No model.)



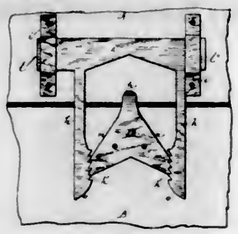
Claim.—1. An upsetting-machine having a portion of the confining-surfaces moving with the ram, and another portion of such surfaces stationary with the bed, substantially as herein specified.

2. In an upsetting-machine, the bottom plate, B^2, and side pieces, B^3 B^4, attached to the ram B' and moving therewith, as herein specified.

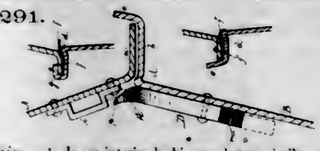
3. In an upsetting-machine, the edge pieces, B^3 b^3 B^4 b^4, engaged loosely with the ram B', so as to move therewith, while free for lateral expansion and contraction to a limited extent, as herein specified.

4. In an upsetting-machine, the bed or anvil A, having fixed sides A^3 and removable top piece, C C', in combination with each other and with the ram B', bottom plate, B^2, and loose side pieces, B^3 b^3 B^4 b^4, arranged for joint operation relatively to each other and to an inclosed bar, M, of heated metal, as herein specified.

328,291. **BURIAL CASKET, VAULT, &c.** John Cooper, Mount Vernon, Ohio. Filed June 27, 1885. (No model.)



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Claim.—1. In an interior-locking casket or similar structure, the bifurcated spring-holding device *h h* provided with teeth or serrations and secured to one of the casket-sections, in combination with a stud or projection provided with serrated faces and secured to the other casket-section, substantially as described.

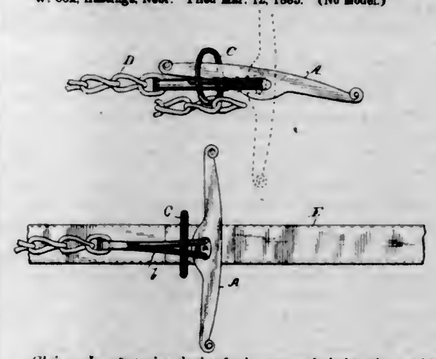
2. In an interior automatic fastening for caskets and similar devices, the combination of the sockets *i i'*, bar *i'*, projecting legs *h h*, provided with teeth *h' h'*, and stud D, having diagonal faces *n n*, and provided with teeth *m m* to interlock with the teeth on the legs *h*, all constructed, arranged, and operated substantially as set forth.

3. In an automatic-locking casket, the locking-stud D, provided with the curved extension-piece *p* to guide the edges of the sections to place, substantially as described.

4. In a sectional metallic casket, the edge of one section provided with the flange *a*, in combination with the edge of the other section, having a return-bend, *d*, plane flange *b*, and upwardly-turned supplemental flange *e*, all constructed, arranged, and operated as set forth.

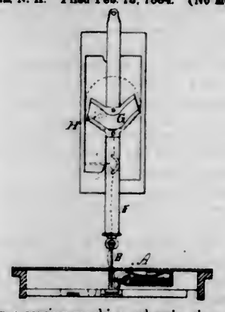
5. A sectional metallic casket or similar structure, in combination with a gasket interposed between the sections, permanently secured to one and projecting inward to provide means for securing the trimmings to the interior, substantially as described.

328,292. **ATTACHMENT FOR HARNESS OR CHAINS.** Albert W. Cox, Hastings, Nebr. Filed Mar. 12, 1885. (No model.)



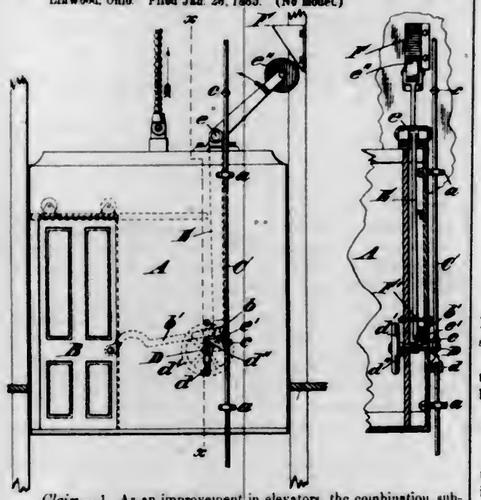
Claim.—In a fastening device for harness and chains, the combination, with the holding-bar having the central oblong slot, of a link having two spring-arms inserted in and normally spread apart in the slot in the bar and adapted to be compressed in said slot, substantially as and for the purpose set forth.

328,293. **SEWING-MACHINE.** Elisha S. Cram and Edgar C. Covell, Laconia, N. H. Filed Feb. 18, 1884. (No model.)



Claim.—In a sewing-machine wherein the needle-bar and needle are raised more quickly in the reverse than in the forward motion of the machine, the combination, with the shuttle-carrier, needle, needle-bar, and means, as the cam G and cam-pin H, for raising the needle-bar and needle, of a shuttle, A, formed with its front end forward of the shuttle-carrier shortened, and its point located below its longitudinal central line or axis, substantially as described and shown, whereby the shuttle is adapted to pass outside of the needle-thread loops in the reverse motion of the machine, for the purposes herein set forth.

328,294. **ELEVATOR.** Henry M. Darling and Robert F. Darling, Linwood, Ohio. Filed Jan. 26, 1885. (No model.)



Claim.—1. As an improvement in elevators, the combination, substantially as described, of one or more cams with a lever connected with the door of an elevator, and at its free end adapted to engage with and be actuated by a cam as the car reaches a landing, thereby opening the door.

2. As an improvement in elevators, the combination of one or more cams and a lever connected at one end with the door of an elevator, adapted at its free end to engage with and be actuated by a cam, thereby opening the door, and automatically restored to its normal position as the car leaves the landing, thereby closing the door.

3. As an improvement in elevators, the combination of one or more cams with a lever connected at one end with the door of an elevator, and carrying at its free end a weighted roller adapted to engage with a cam as the car reaches a landing, thereby opening the door, and to return to its normal position as the car leaves the landing and the roller passes the cam, thereby closing the door.

4. The combination of one or more cams and a lever link-connected to the door of the elevator, and adapted at its free end to engage with a cam as the car reaches a landing, thereby opening the door, with a shipper adapted to throw the mechanism which opens the door out of engagement when a door is to be passed without stopping.

5. The combination, with a series of cams upon the wall of an elevator-well, of a bent lever, one end of which is link-connected to the door of the elevator-car, carrying at its free end a weighted roller adapted to engage with a cam as the car reaches a landing, thereby opening the door, and to return to its normal position as the car leaves the landing and the roller passes the cam, thereby closing the door.

6. The combination, with a series of buttons upon the actuating rod or cable of an elevator, of a shipping-wheel mounted upon a shaft, which also carries a forked crank-arm adapted, when said shipping-wheel is rotated in one direction, to embrace the actuating rod or cable to engage with the buttons thereon, thereby stopping the car, and when rotated in the opposite direction to engage with the opposite face of the button, thereby starting the car.

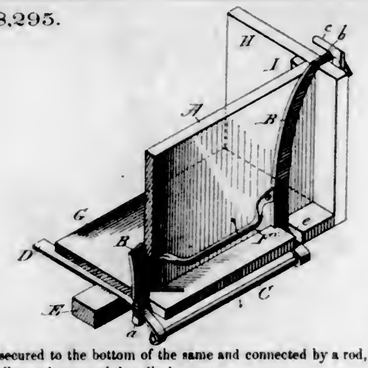
7. The combination of a series of cams upon the wall of an elevator-well, and a lever adapted at one end to engage with an arm pivotally attached to the door of the elevator-car, with a shipping-wheel adapted when at rest to hold the pivoted arm out of engagement with the lever, substantially as and for the purpose specified.

8. In combination with a series of buttons upon the actuating rod or cable of an elevator, a series of cams upon the wall of an elevator-well, a lever adapted at one end to engage with said cams, and at the other end adapted to engage with an arm pivotally attached to the door of an elevator-car, a shipping-wheel mounted upon a shaft carrying a forked crank-arm adapted to embrace the actuating rod or cable, and when in position to engage with the buttons thereon, and carrying also a lug adapted, when in its position of rest, to hold the pivoted arm out of engagement with the lever, substantially as and for the purpose specified.

328,295. **END-GATE FOR WAGONS.** Emory Q. Darr, Shelbyville, Ind. Filed July 17, 1885. (No model.)

Claim.—1. The end-gate for wagons, carriages, &c., consisting of the gate A, provided with bars B B, having hooks *b* and projections *a*, the hooked bars F, secured to the sides H H, and the slotted spring-bars

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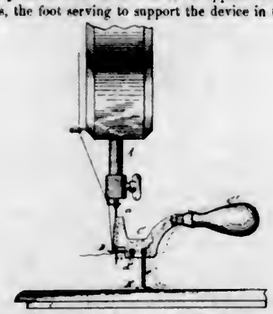


D D, secured to the bottom of the same and connected by a rod, C, substantially as shown and described.

2. In an end-gate for wagons, the combination, with a wagon-bottom, of the slotted spring-bars D D, connecting-rod C, and slotted cross-beam E, substantially as and for the purpose shown and described.

328,296. **NEEDLE-THREADER.** William Day, Buffalo, N. Y. Filed Sept. 23, 1884. (No model.)

Brief.—The hook is adjustable in a socket. The body of the threader is adjustable on its foot, so as to be applicable to different sewing-machines, the foot serving to support the device in the desired position for use.

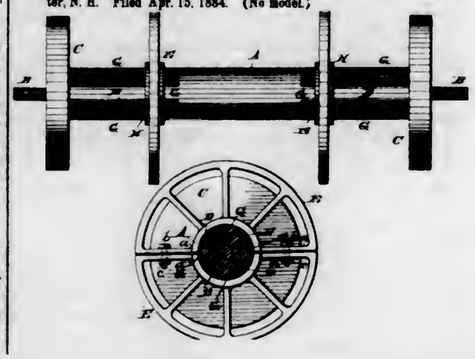


Claim.—1. The combination, in a needle-threader, of a body provided with a vertical groove to rest against the side of the needle, a threading-hook rigidly secured to the body in the line of the vertical groove and adapted to pass through the eye of the needle, and a foot secured to the body to rest on the bed-plate of a sewing-machine and support the threading-hook in line with the eye of the needle, substantially as set forth.

2. The combination, in a needle-threader, of a body provided with a groove to rest against the side of the needle, a threading-hook adapted to pass through the eye of the needle, and a foot secured to the body of the threader and provided with means for vertical adjustment, whereby the threader can be supported at different heights on the work-plate of a sewing-machine, substantially as set forth.

3. The combination, in a needle-threader, of the body C, having its front end provided with a groove, *c*, composed of a lower vertical portion and an upper backwardly-curved portion, a threading-hook, D, and a foot, E, which supports the threader on the table of the machine, substantially as set forth.

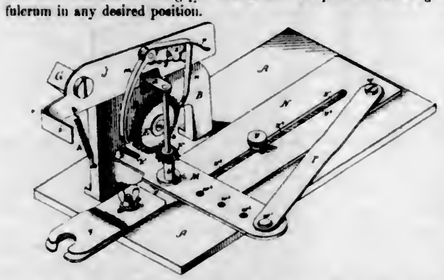
328,297. **WARP-BEAM FOR LOOMS.** Charles A. Dayton, Rochester, N. H. Filed Apr. 15, 1884. (No model.)



Claim.—The improved warp-beam body herein described, having its opposite ends provided with longitudinal recesses F, arranged at intervals circumferentially thereof, combined with the obliquely-threaded stripe secured in the respective recesses, so as to sit slightly above the surface of the beam, the sectional flanges E, having their hubs provided with internal threads to engage the said threaded stripe, and formed with radial arms *a*, having perforations, the bolts and nuts for connecting the sections of the flanges, and the pulleys secured to the opposite ends of the said beam, substantially as specified.

328,298. **SEWING-MACHINE ATTACHMENT FOR STITCHING BUTTONS TO FABRICS.** Alexandre de Beaumont, Philadelphia, Pa. Filed Jan. 12, 1885. (No model.)

Brief.—This attachment is for sewing on shank-buttons or buttons having two or more eyes. It is readily adjustable to suit buttons having eyes a greater or less distance apart. A shaft having an eccentric or cam operates the pivoted lever carrying a button-clamp. A ratchet-wheel gears with the wheel on said vertical shaft; or the shaft itself may be provided with a ratchet-wheel, to be operated by pawls on a bell-crank lever. The fulcrum of the button-clamp lever is adjustable in a slot thereof, holes being provided in the base-plate for securing the fulcrum in any desired position.



Claim.—1. The combination of a lever having a button-clamp, an adjustable fulcrum for said lever, a shaft having an eccentric or cam for acting on the lever, and means for rotating said shaft, as specified.

2. The combination of a pair of levers crossing each other and connected together, a button-clamp on one of said levers, a shaft having a cam or eccentric acting on both levers, and means for rotating said shaft, as set forth.

3. The combination of a pair of levers crossing each other and connected together, a button-clamp carried by one of said levers, adjusting devices for regulating the throw of each lever, a shaft having a cam or eccentric for acting on both levers, and means for rotating said shaft, as set forth.

4. The combination of a lever having a button-clamp, a shaft above the bed-plate having a cam or eccentric acting on said lever, a ratchet-wheel on or geared to said shaft, and a lever, J, under control of the needle bar or arm of the machine, and having a pawl adapted to said ratchet-wheel, as set forth.

5. The combination of the lever having a button-clamp, the shaft having a cam or eccentric for operating said lever, the ratchet-wheel, and the lever J, with its pawls, one of which is adjustable, so as to be thrown out of action, as set forth.

6. The combination of the lever or levers forming the button-carrier, the shaft *b*, having a cam or eccentric and bevel-wheel F, the wheel E, and ratchet-wheel D, and the lever J, with its two pawls, *m* and *n*, as set forth.

7. The combination of the lever or levers forming the button-carrier, the shaft *b*, with cam or eccentric for operating said carrier, the lever J, means whereby the movement of said lever is transmitted to the shaft *b*, and an adjustable fulcrum for said lever, as specified.

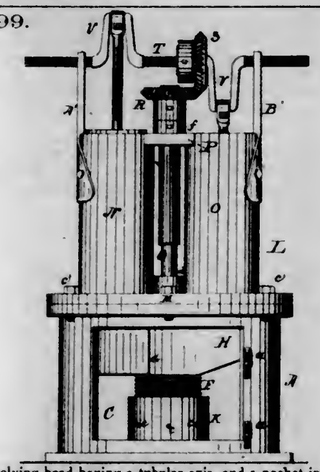
328,299. **HYDRAULIC ENGINE OR MOTOR.** Louis O. Dennel, Sandusky, Ohio. Filed July 28, 1885. (No model.)

Claim.—1. In the construction of a hydraulic engine or motor, the combination, with the case A, of the cylinders N and O, arranged in relation to each other, as described, and in communication with the interior of the case, and the said cylinders provided with pistons respectively connected by suitable connecting-rods to the cranks of the shaft T, journaled in the standards A′ and B′, and having on said shaft a bevel-pinion adapted to engage a corresponding pinion on the driving-shaft Q, substantially as described, and for the purpose set forth.

2. In a hydraulic motor, the revolving head, driving-shaft Q, connected to said head, and pinion R, arranged relatively between the cylinders N and O, and the upper end of the shaft journaled in the bar P, collar *f*, secured to the shaft Q, and by which it is suspended from the said bar for relieving the tubular axis of the revolving head from the weight thereof, in combination with the pinion S and crank-shaft, substantially as set forth.

3. In a hydraulic motor or engine, the case A, provided with an

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outlet, revolving head having a tubular axis, and a pocket in open relation with the tubular axis, and in the top or plane of the head an induction-port, I, related to said pocket, and an exhaust-port, J, related to the interior of the case A, driving-shaft, and pinion R, connected to the revolving head and journaled in and supported on the bar P by the collar *f*, constructed as described, in combination with the cylinders N O, with their respective pistons and connecting rods, crank-shaft, and pinion S, substantially as set forth, and for the purpose specified

328,300. **PROCESS AND MANUFACTURE OF CIGARETTE-WRAPPERS, &c.** Joseph De Susini, New York, N. Y. Filed Sept. 10, 1884. (No model.)

Claim.—1. The process herein described of preparing tobacco pulp in a tightly-closed vessel for the manufacture of wrappers for cigarettes, cigars, and like articles, or for other similar purposes, the same consisting in digesting the leaves, stems, stalks, powder, dust, or other portions of the tobacco-plant, separately or together, with lime-milk, draining off said liquid, and subjecting the tobacco matter thus treated to the action of a beating or pulping engine and to a constant washing with juice of tobacco matter obtained by decoction or hot infusion, or by percolation, substantially as set forth.

2. The process herein described of producing wrappers for cigarettes, cigars, and like articles, or for other similar purposes, consisting of the following steps, to wit: first, slaking a desired quantity of quicklime in a quantity of water sufficient to effect the slaking and form a dense and smooth milky mixture without clods or lumps; second, adding to said milk sufficient pure water to dissolve the whole of the lime; third, digesting the tobacco matter with the above liquid at a boiling-point in a tight closed vessel; fourth, drawing off said liquid; fifth, subjecting the tobacco matter to the action of a beating or pulping engine, with an admixture of suitable neutral and harmless vegetable matter or fiber, such as those herein above described, and, finally, sixth, forming the same into lamelliform or rolled, and lamellated, and calendered or glazed, or compressed scales or sheets, substantially as set forth.

3. The process herein described of forming wrappers for cigarettes, cigars, and like articles, or for other similar purposes, by coating or covering the web of tobacco pulp alone or admixed to the suitable vegetable matters or fibers herein-above mentioned while being formed into scales or sheets, with powdered tobacco, and incorporating the same by the action of the rollers of the webbing-machine, substantially as set forth.

4. The process herein described of producing wrappers for cigarettes, cigars, and like articles, and for other similar purposes, consisting in forming scales or sheets of the suitable vegetable matters or fibers herein-above described, and coating or covering them on one or both faces with a web of pure tobacco pulp, or with a web of tobacco pulp mixed to the suitable vegetable matters or fibers above mentioned, or with tobacco powder or dust, substantially as set forth.

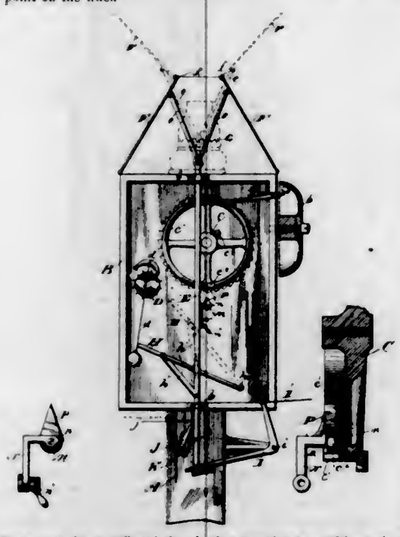
5. A wrapper for cigarettes, cigars, and like articles, or for other similar purposes, formed of lamelliform, or rolled and lamellated, and glazed or calendered, or compressed pulp of tobacco matter, either alone or combined with any of the suitable vegetable matters or fibers above mentioned, and either flavored or artificially colored or not, substantially as set forth.

6. A wrapper for cigarettes, cigars, and like articles, or for other similar purposes, formed of lamelliform, or rolled and lamellated, and glazed or calendered, or compressed pulp of tobacco matter, either alone or combined with any of the suitable vegetable matters or fibers herein-above described, and coated or covered with tobacco powder or dust on one or both faces, substantially as described and set forth.

7. A wrapper for cigarettes, cigars, and like articles, or for other similar purposes, of lamelliform, or rolled or lamellated, and glazed or calendered, or compressed pulp of any of the vegetable matters or fibers herein-above described, coated or covered on one or both faces with a web of pure tobacco pulp, or with a web of tobacco pulp mixed to any of the above suitable vegetable matters or fibers, or with tobacco powder or dust, substantially as set forth.

328,301. COMBINED RAILROAD SIGNAL AND ALARM. JEROME B. EASTMAN, Cleveland, Ohio. Filed July 5, 1884. (No model.)

Brief.—Wire I' leads to a point on the track and wire *j* to another such point on the track



Claim.—1. In a railroad-signal, the combination, with a signal-lantern, movable covers for concealing the lantern, a bell, a clock-work, and a hammer operated by said clock-work, of a movable bar for simultaneously elevating the movable covers and starting the clock-work, substantially as set forth.

2. In a railroad-signal, the combination, with an alarm or day-signal, a clock-work for sounding the alarm, a lantern or night-signal, and movable covers surrounding the lantern, of the vertically-movable bar, and the arm H, connected to said vertically-movable bar and adapted when the vertically-movable bar is in its depressed position to hold the pendulum against movement, substantially as set forth.

3. The combination, with sliding bar E and the rods e, of the covers F, connected by the rods e to the bar in such manner that by the vertical movement of the bar the covers are tilted to the position shown in solid or dotted lines, substantially as set forth.

4. In a railroad-signal, the combination, with an alarm, a clock-work for sounding the alarm, and a wheel having an opening in the rim thereof, of a vertically-movable bar having a roller thereon, which latter registers with the opening in the rim, and the arm H, pivoted to said vertically-movable bar and adapted to hold the pendulum against movement when the vertically-movable bar is in a depressed position.

5. In a railroad-signal, the combination, with a signal-lantern and movable covers around said lantern, of a rotating wheel having an opening in its rim and a movable bar connected to the lantern-covers and operated in one direction by a train and in the opposite direction by gravity and provided with a roller, which latter is adapted to enter the opening in the rim of the wheel and rest on the perimeter of said rim while the wheel makes a single revolution, substantially as set forth.

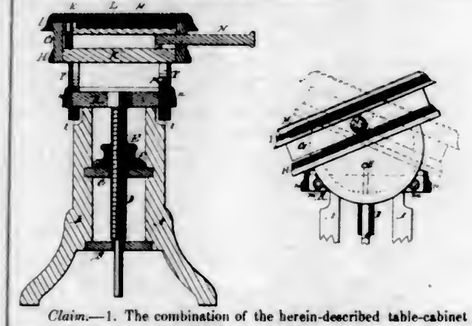
6. In a railroad-signal, the combination, with an alarm, a clock-train for sounding said alarm, a signal-lantern, and movable covers around said lantern, of a wheel having an opening through its rim, a vertically-movable bar connected to said covers and having a roller thereon, which latter is adapted to pass through the opening in the rim of the wheel and rest on the perimeter of said rim, and the arm H, connected to said vertically-movable arm for holding the pendulum against movement when the vertically-movable bar is in a depressed position, substantially as set forth.

7. In a railroad-signal, the combination, with a signal and the wheel C, forming a portion of the clock-train and provided with a rim having an opening therein, of the vertically-movable bar for controlling the signal and the roller secured to said bar and adapted to rest on the perimeter of said rim and hold the bar in an elevated position, substantially as set forth.

8. In a railroad-signal, the combination, with a signal, a wheel having an opening in its rim, and devices for rotating said wheel, of the vertically-movable bar for controlling the signals, and arm N, movably secured to said rod, substantially as set forth.

9. In a railroad-signal, the combination, with a signal and a wheel having an opening in its rim, of the vertically-movable bar for regulating or controlling the signal, and the arm N, secured thereto and provided with a roller and guide, substantially as set forth.

328,302. COMBINED TABLE AND DESK. CHARLES E. FAGERBERG, Rockford, Ill. Filed Mar. 11, 1885. (No model.)



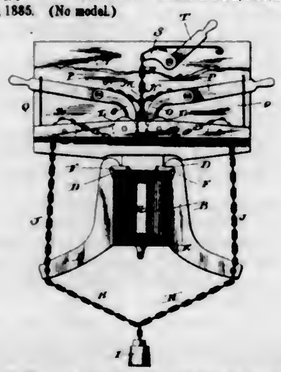
Claim.—1. The combination of the herein-described table-cabinet provided at its under side with flat semicircular supports, a standard or base provided with a horizontal base-tablet having its upper surface flat, and made with openings corresponding to the flat supports, to receive the same, the said supports being adjustable in the openings, and means for fixing them in adjusted position, as set forth.

2. The combination of the herein-described table-cabinet provided at its under side with semicircular supports, and standard or base support provided with a vertically-adjustable horizontal base-tablet, to receive the said semicircular supports, and in which they are adjustable, and means for fixing said supports in adjusted position, substantially as shown and set forth.

3. The combination of the herein-described table-cabinet provided at its under side with semicircular supports, with a base-tablet provided with anti-friction rollers upon which said supports rest and are adjustable, and means, substantially as described, for fixing said supports in any adjusted position, as set forth.

4. In a table, substantially as described, the combination, with the hinged outer leaf or lid provided with a lock or catch, and a bead surrounding it when closed, of a spring-actuated stud to lift the free end of said leaf or lid, as set forth.

328,303. CAR-COUPLING. HENRY I. FINK, Nebraska, Ind. Filed Aug. 18, 1885. (No model.)



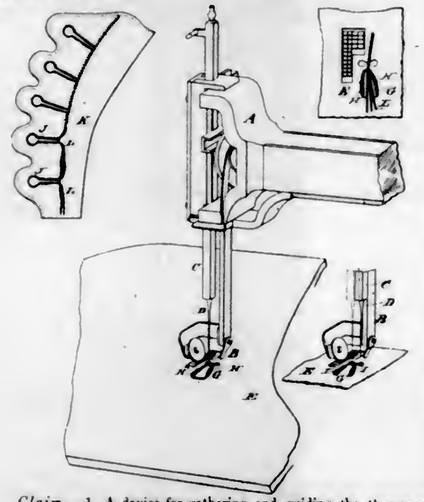
Claim.—1. In a car-coupling, the combination of a draw-head having vertical slots in its sides near its mouth, curved arms pivoted at their upper ends upon the sides of the draw-head and having lips projecting into the slots in the draw-head having the front sides of their edges beveled, and a weight connected to the lower ends of the curved arms by means of chains drawing the said arms together, as and for the purpose shown and set forth.

2. In a car-coupling, the combination of a draw-head having two slots, one at each side of its mouth, and having perforated lips at the upper ends of the slots, two divergingly-curved arms pivoted with their upper ends between the perforated lips, and having inwardly-projecting lips beveled upon the front sides of their edges projecting into the slots, chains secured to the ends of the arms and connected by a weight, chains

secured to the ends of the arms and passing over pulleys to the center of the front of the car, a link connecting the chains and having two chains passing laterally and one chain passing upward, two levers pivoted upon the front of the car and having the laterally-passing chains attached to their cam-shaped inner ends and having their outer arms projecting at the sides of the car, and an elbow-lever having the upwardly-passing chain attached to its bent cam-shaped end and having its upper end projecting to the top of the car, as and for the purpose shown and set forth.

328,304. BUTTON-HOLE FINISHING, CORDING, AND STAYING DEVICE. CHARLES E. FINELE, Rochester, N. Y. Filed Feb 25, 1885. (No model.)

Brief.—The loose threads, (the thrums,) along with the cord, when the latter is used, passing from one button-hole to another, are guided so that the same are overstitched upon the fabric in which the button-holes are being worked.



Claim.—1. A device for gathering and guiding the thrums and button-hole cord, the same consisting of a plate having struck-up concavo-convex and converging flanges, in combination with a reciprocating and vibrating needle, and button-hole stitch-forming mechanism, substantially as and for the purpose set forth.

2. The combination, with the stitch-forming mechanism of a button-hole sewing-machine, of a device for gathering and guiding the thrums and button-hole cord, the same consisting of a plate secured directly in front of the needle-hole upon the base-plate, and having upturned concavo-convex flanges converging toward the center of the front edge of the needle-hole, substantially as and for the purpose set forth.

328,305. TELEPHONE-EXCHANGE SYSTEM AND APPARATUS. LEROY B. FIRMAN, Chicago, Ill., assignor to the Western Electric Manufacturing Company, same place. Filed Jan. 16, 1880.

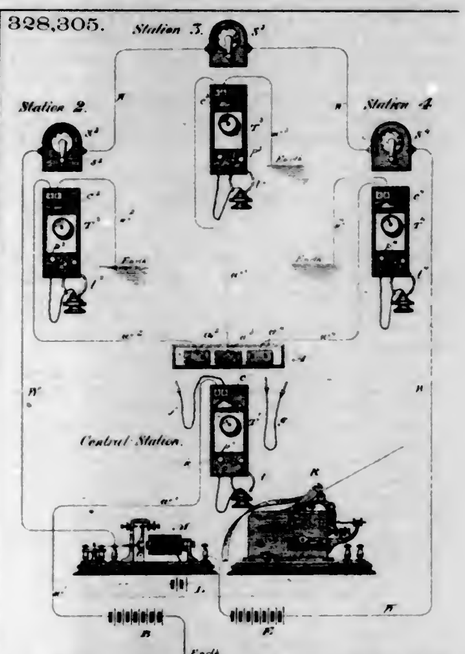
Claim.—1. The combination, substantially as hereinbefore set forth, of signal-transmitting instruments at different stations and a common signal-receiving instrument at a central station upon one circuit with a signal-transmitting instrument at the central station and signal-receiving instruments at different sub-stations upon independent circuits radiating from the central station.

2. The combination, substantially as hereinbefore set forth, of signal-transmitting instruments at different stations and a common signal-receiving instrument at a central station upon a telegraphic circuit with a telephone at each sub-station upon an independent wire extending thence to the central station.

3. The combination, substantially as hereinbefore set forth, of signal-transmitting instruments at different sub-stations and a common receiving-instrument at a central station upon one circuit with a telephone at each sub-station upon an independent circuit extending thence to the central station, a telephone at the central station, and connecting wires or switches by which said telephones may be connected at will with any one of said independent sub-station circuits.

4. The combination, substantially as hereinbefore set forth, of signal-receiving instruments at different sub-stations (each in an independent circuit extending from the central station to said sub-station, which circuit is grounded at the sub-station and open at the central station) with a signal-transmitting instrument at the central station in a normally-open earth-circuit and connecting wires or switches by which said earth-wire may be connected at will with either of the said independent open circuits, so as to form a closed circuit.

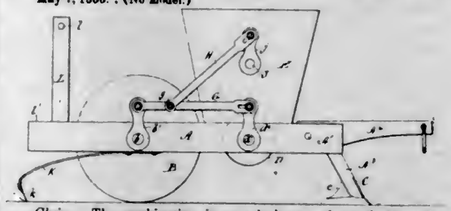
328,305. Station 3. Station 2. Station 4. Central Station.



5. The combination, substantially as hereinbefore set forth, of telephones at different sub-stations (each in an independent circuit extending from the central station to the said sub-stations, which circuit is grounded at the sub-station and open at the central station) with a telephone at the central station in a normally-open earth-circuit, and connecting wires or switches by which said open earth-wire may be connected at will with either or both of the said independent wires, so as to form a closed circuit.

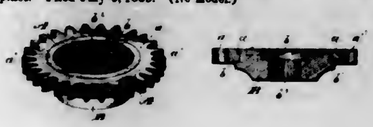
6. The combination, substantially as hereinbefore set forth, of automatic signaling-instruments upon one circuit (at different sub-stations) capable of transmitting determinate and different signals and a sounding or recording instrument at the central station with a telephone at each sub-station upon an independent wire extending thence to the central station.

328,306. PLANTER. ROBERT J. GARDNER, Lovelady, Tex. Filed May 7, 1885. (No model.)



Claim.—The combination, in a seed-planter, of a main frame having side beams, A A, the standard secured midway between said beams at their forward ends, and provided at its lower end with a shovel, C, and a presser, *c*, located immediately in rear of said shovel, the hopper supported on said side beams, and having its planting mechanism arranged to drop the seed directly in the furrow formed by the shovel and presser, the wheel B, journaled in the side beams in rear of the planting mechanism, and the independent shovels *k*, arranged in rear of the wheel B and having their supports K secured one to each side beam, all arranged and adapted to operate substantially as set forth.

328,307. STEM ARBOR WHEEL AND RATCHET. GEO. E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 8, 1885. (No model.)



Claim.—The pinion-section A, consisting of a flat peripherally-toothed ring, in combination with the ratchet-section B, having within one end a ring of ratchet-teeth, *b*, within its periphery the rabbet *b'*, and at its axis the opening *b²*, substantially as and for the purpose shown.

328,308. METHOD OF MAKING A COMBINED SPRING ARBOR AND COLLET. GEO. E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 30, 1885. (No model.)

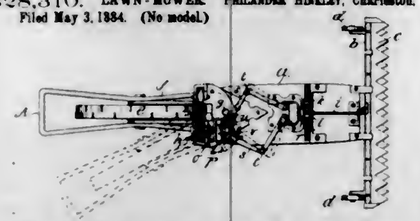


Claim.—The hereinbefore-described method of producing a main-spring arbor and collet, consisting in the forming of the arbor from wire, the punching of the collet from a sheet of metal, the uniting of said parts by pressing the collet upon the arbor, and, lastly, the inserting of a spring pin or hook through said collet, into said arbor, substantially as for the purpose shown.

328,309. PROCESS OF PURIFYING COAL-GAS. JOHN G. HAWKINS, Wigan, County of Lancaster, England. Filed Aug. 3, 1885. (No specimens.) Patented in England June 20, 1881, No. 2,849.

Claim.—In the purification of coal-gas, the process herein described of revivifying the oxide of iron in the purifying-boxes, said process consisting in passing carbureted atmospheric air mingled with the coal-gas through the oxide of iron in said boxes, the air being either at the normal temperature or heated to a degree below that at which the heavy hydrocarbons of the tar are volatilized, substantially as described.

328,310. LAWN-MOWER. PHILANDER HINKLEY, Charleston, Ill. Filed May 3, 1884. (No model.)



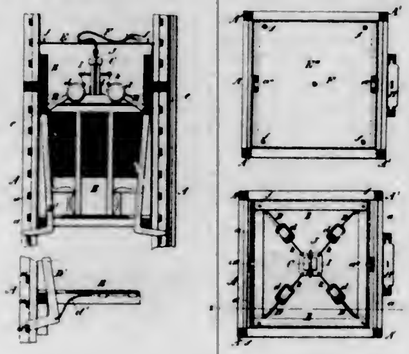
Claim.—1. Two frames pivoted together, two shafts arranged to revolve on separate bearings on said frames, two gimbal-joints, one secured to each of said shafts, and a pair of jointed coupling-rods forked at each end and pivoted to said gimbal-joints, all combined substantially as and for the purpose specified.

2. In a lawn-mowing machine, frames *a* and *f*, sickle-bar *b*, wheel *c*, pinion *h*, shaft *o*, gimbal-joints *p* and *r*, coupling-rods *s s*, gear-wheel *k*, shaft *l*, pinion *j*, crank-shaft *i*, and sickle *c*, all combined substantially as specified.

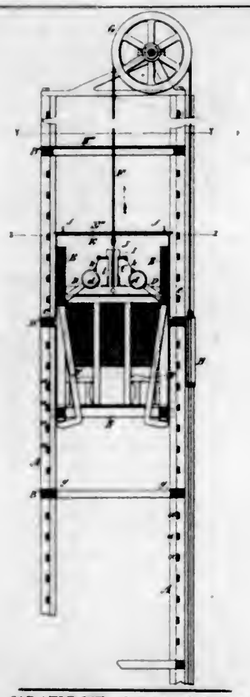
328,311. ELEVATOR. EDWARD M. INGOLDBY, New York, N. Y. Filed July 30, 1885. (No model.)

Claim.—1. The combination, with an elevator-shaft provided with horizontal bars *a a* on the opposite sides thereof, of the car *b*, provided with weighted levers D, held normally out of contact with the bars *a* by the elevator-rope, but arranged to engage the bars *a* in case of a breakage of the elevator-rope, substantially as herein specified.

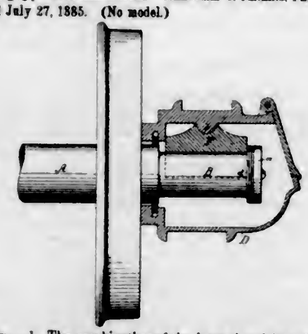
2. The combination, with the car B, provided with a central slotted standard, C, of the apertures, plate I, fitted to slide upon the standard, weighted levers D, links *k*, connecting the said levers with the plate I, and an elevator-shaft provided on opposite sides with horizontal bars *a*, as herein specified.



328,311.



328,312. CAR-AXLE BOX. CALDWELL C. JENKINS, Philadelphia, Pa. Filed July 27, 1885. (No model.)



Claim.—1. The combination of the journal and its collar, the bearing-block, the washer or washers interposed between the said bearing-block and the collar, and the shield or cover *g*, as specified.

2. The combination of the journal and its collar, the bearing-block, and a series of washers, *d*, each composed of segments reduced in thickness at the ends for adaptation to each other, and having the overlapping portions secured by transverse rivets or pins, as set forth.

328,313. LUBRICATOR. OMAR H. JEWELL, Chicago, Ill., assignor to James B. Clow, same place. Filed Dec. 26, 1883. Renewed May 8, 1885. (No model.)

Claim.—1. In the lubricator described, the combination, with a spring-depressed rod and means for operating it, of a hollow plunger connected to said rod, a valve situated within the plunger, and ports or openings formed in said plunger and communicating through other ports with the parts to be lubricated, as described.

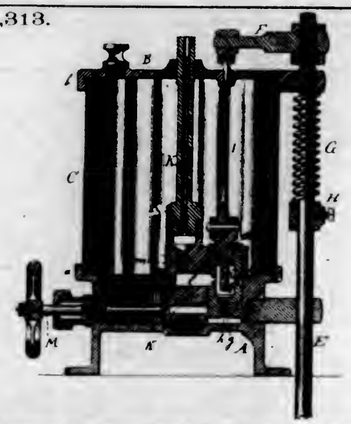
2. In the lubricator described, the hollow plunger J, provided with groove *i*, openings *j*, and valve *h*, in combination with spring-depressed rod E, and means for operating it, as described.

3. In the lubricator described, the hollow plunger J, provided with groove *i*, openings *j*, and valve *h*, and communicating with ports *l m* for guiding the lubricant, in combination with spring-depressed rod E, and means for operating it, as described.

4. In the lubricator described, the cross-bead D and bell-crank lever *c*, in combination with spring-depressed rod E, and hollow plunger J, the parts constructed, arranged, and operating as described and shown.

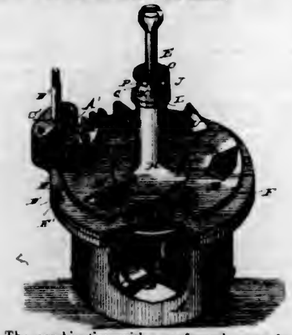
5. In the lubricator described, the cross-head D and bell-crank lever

328,313.



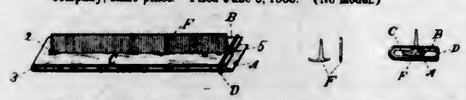
c, in combination with spring-depressed rod E, and hollow plunger J, said plunger provided with valve *h*, openings *j*, and groove *i*, and communicating with ports *l m* to guide the lubricant, as described.

328,314. TURBINE WATER-WHEEL. JOHN T. KELLY, Sr., Jonesborough, N. C. Filed Dec. 15, 1883. (No model.)



Claim.—The combination, with a perforated cover for downflow turbine water-wheels, of an annular gate sliding upon said cover, and having inclined perforations registering with the perforations in the cover, and having open-mouthed hoods rigidly secured thereto and forming a part of said gate, the tops of said hoods being inclined rearwardly and inwardly, as described, and means for securing said gate in place and for operating the same, substantially as and for the purpose set forth.

328,315. BUTTON-FASTENER PACKING-CASE. ELEAZER KEMPSHALL, New Britain, Conn., assignor to the American Button Fastener Company, same place. Filed June 3, 1885. (No model.)



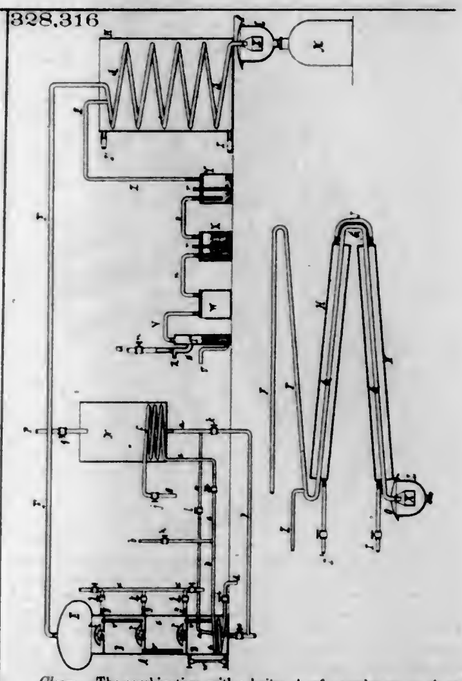
Claim.—1. In a button-fastener packing-case, the combination of a wide strip and two narrower strips having between them a fastener-receiving channel, said wide and narrow strips being connected together, substantially as described, to close one end and to leave open the other end of said channel, said wide strip being folded under the narrower ones, substantially as set forth.

2. The improved button-fastener packing-case herein described, it comprising a wide strip, two narrower strips having between them a fastener-receiving channel, said strips being connected together, substantially as described, to close one end and to leave open the other end of said channel, and means, substantially as described, for holding closed the case and closing the open end of the channel, all substantially as set forth.

3. The improved button-fastener packing-case herein described, it comprising parts B and C, joined together at one end, part A, joined together to the side of part C, and means, substantially as described, for holding the unjoined end of B, substantially as set forth.

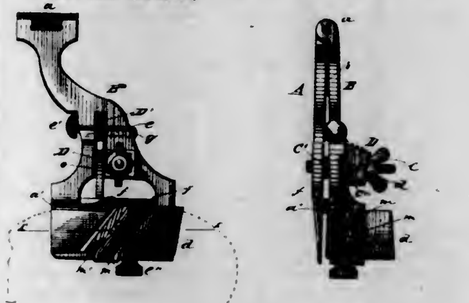
328,316. APPARATUS FOR DISTILLING. FRANK T. KING, Brooklyn, N. Y. Filed Apr. 30, 1885. (No model.)

328,316



Claim.—The combination, with a boiler, A, of a condenser, an air or gas injector, and an apparatus, substantially as described, for purifying the air or gas, as set forth.

328,317. SOLE-SKIVER. JOHN KIRWAN, New York, N. Y. Filed July 29, 1885. (No model.)



Claim.—1. The tool herein described for skiving leather, comprising the hinged handle-plates, a cutter or plane stock hinged to one of said plates, means, substantially as described, for holding the said handle-plates in given position relative to each other, and means, substantially as described, for holding the hinged plane or cutter stock at a given inclination with relation to its plate, substantially as described.

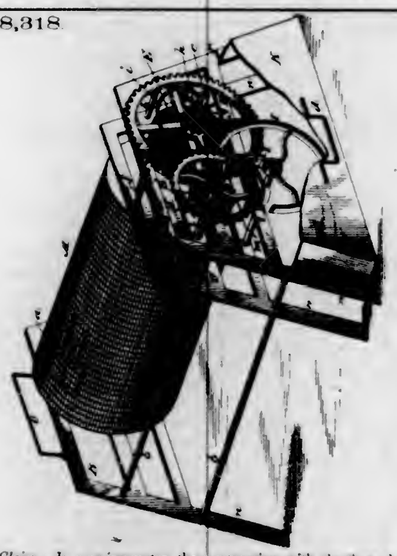
2. The combination of the two hinged handle-plates, a cutter or plane stock hinged to one of said plates, provided with a toothed sector engaged by a pinion in the handle-plate, whereby it is adjusted, and a set-screw for fixing said sector in adjusted position, substantially as described.

3. In a tool comprising the hinged handle-plates, and a cutter-stock hinged to one of said plates, a spring interposed between said plates normally tending to separate the same, and means, substantially as shown and described, for limiting the distance to which said plates shall be separated, as set forth.

4. In a tool for skiving leather, comprising the hinged handle-plates, and the hinged adjustable cutter or knife stock, the combination, with one of said plates, of a roller or guide to determine the width of the skived leather, as set forth.

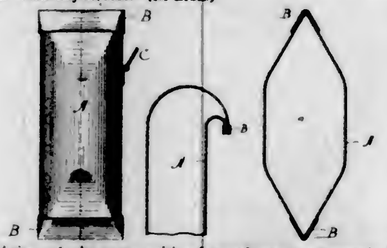
328,318. MOTOR. CHARLES KLEIN, Cape Girardeau, Mo. Filed Apr. 30, 1885. (No model.)

328,318.



Claim.—In a spring-motor, the combination, with the three skeleton-frame sections B C D, connected together by horizontal stay-rods *b*, and supporting a suitable cylinder, of the spring E, located between the sections C D, and connected to the bolt *f* and shaft of the cylinder, the gear-wheel F and ratchet *g*, keyed to the shaft of the cylinder, and the escape-wheel H, pinion G, fly-wheel I, and pallets *l*, mounted upon short shafts having their bearings in the frame-sections C D, substantially as and for the purpose set forth.

328,319. FIRE-EXTINGUISHER. William M. Le Moyne, Chicago, Ill. Filed May 25, 1885. (No model.)



Claim.—1. As a new article of manufacture, an automatic fire-extinguisher comprising a closed frangible vessel or receptacle containing an expansible extinguishing-gas or material for producing such a gas or fumes, such vessel or receptacle depending for its fracture and the liberation of its contents upon the expansion of the latter when affected by extraneous heat, substantially as described.

2. As a new article of manufacture, an automatic fire-extinguisher comprising a closed frangible vessel or receptacle containing an expansible extinguishing-gas or material for producing such a gas or fumes, such vessel or receptacle depending for its fracture and the liberation of its contents upon the expansion of the latter when affected by extraneous heat of a certain specified point or degree, substantially as described.

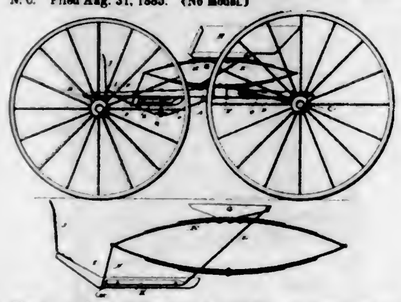
3. As a new article of manufacture, an automatic fire-extinguisher comprising a frangible vessel or receptacle formed from the section of a tube hermetically sealed at both ends, containing an expansible extinguishing-gas or material for producing such a gas or fumes, such vessel or receptacle depending for its fracture and the liberation of its contents upon the expansion of the latter when affected by heat, substantially as described

328,320. COUNTERSINK. Frederick Leu, Brooklyn, N. Y. Filed July 11, 1885. (No model.)



Claim.—The combination, with the cone of a countersink having a tapered notch in the side extending from the top of the cone to the point and curved in the back wall, substantially as described, of the correspondingly tapered and curved cutter adjustably secured to said curved wall of the notch, as herein set forth.

328,321. BUGGY. Anderson Lewis and Elias Huff, Kernersville, N. C. Filed Aug. 31, 1885. (No model.)



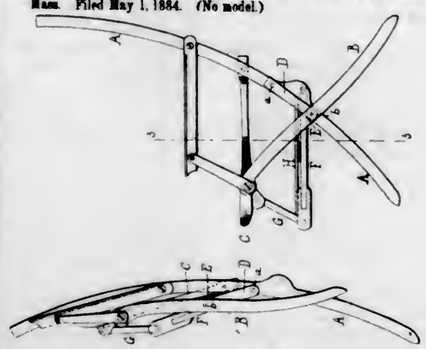
Claim.—1. In a running-gear for vehicles, the combination of the side bars, the springs mounted on the same and supporting the spring-bars, the seat secured on the said spring-bars, the foot-board arranged between the side bars, the strengthening-plates secured to the ends of the foot-board and having upwardly and rearwardly extending braces connected pivotally to the rear ends of the spring-bars, and the cranks or pivoted arms connecting the foot-board with the front ends of the springs, all arranged and operating substantially as and for the purpose herein shown and specified.

2. In a running-gear for vehicles, the combination, with the side bars, of the bridge braces or trusses attatched to the under sides of and near the front ends of the same, the transverse step-bar supported upon the said trusses, and the vertical truss-rods or braces connecting the trusses with the under sides of the side bars, substantially as and for the purpose herein shown and specified.

3. In a running-gear for vehicles, the combination of the side bars connected by the rear axle and by the front bolster, the trusses upon the under sides of said side bars, the step-bar supported upon the said trusses, and the bifurcated safety-hook, the rear end of which is attached to the said step-bar, and the front end of which is attached to the front axle, substantially as and for the purpose set forth.

4. The herein-described running-gear for vehicles, comprising the side bars, the springs mounted on the same and supporting the spring-bars, the seat mounted on the latter, braces connected pivotally with the rear ends of the seat-bars and connecting the latter with the foot-board, pivoted arms or cranks connecting the latter with the front ends of the springs, trusses upon the under sides of the side bars, the step-bar supported upon the said trusses, and the safety-hook connecting the said step-bar with the front axle, all arranged and operating substantially as and for the purpose herein shown and specified.

328,322. FOLDING CHAIR. William Lindsay, South Ashburnham, Mass. Filed May 1, 1884. (No model.)



Claim.—1. In a folding chair, a folding seat in combination with a folding or collapsible box located beneath the seat and adapted to fold with the chair, substantially as set forth.

2. In a folding invalid-chair, two sets of legs and a seat provided with a suitable aperture and pivoted at its front and rear edges to said sets of legs respectively, in combination with a folding shelf located beneath said seat and pivotally supported at its front and rear edges, substantially as set forth.

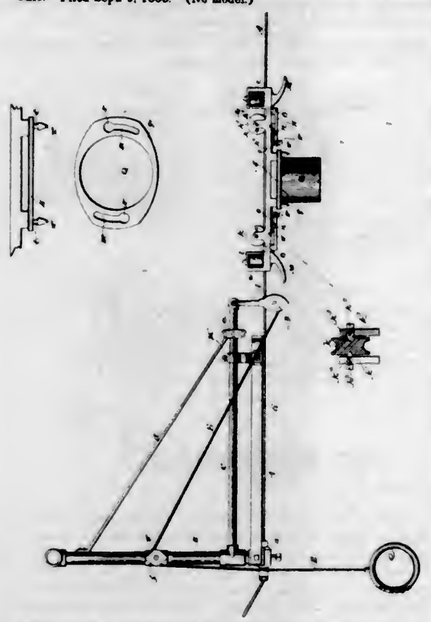
3. In a folding invalid-chair, two sets of legs, a seat pivoted at its front and rear edges to said sets of legs respectively, and a shelf pivotally supported at its front and rear edges beneath said seat, whereby a space is formed beneath said seat and shelf, in combination with folding wings or plates which inclose said space on all sides, substantially as set forth.

4. In a folding invalid-chair, front legs, a seat pivoted at its rear edge to said front legs, back legs pivoted at their upper ends to said seat, and which cross said front legs, and pivotal connections between said front and back legs, in combination with a folding shelf beneath said seat, pivoted at its rear edge to said front legs, and pivotal connections between the front edge of said shelf and the front edge of said seat, substantially as set forth.

5. In a cross-legged invalid-chair, front legs, a seat pivoted at its rear edge to said front legs, a folding shelf beneath said seat pivoted at its rear edge to said front legs, and pivotal connections between said shelf and seat at the front, in combination with back legs pivoted at their upper ends to said seat, and which cross said front legs, links pivoted at their upper ends to said front legs and at their lower ends to said back legs, and inwardly-projecting stops formed on said links, which engage with said front legs when the chair is in position for use, substantially as set forth.

6. In a folding invalid-chair, front legs, a seat pivoted at its rear edge to said front legs, back legs pivoted at their upper ends to said seat, and which cross said front legs, and pivotal connections between said front and back legs, in combination with a folding shelf beneath the seat pivoted at its rear edge to said front legs, a front plate pivoted at its upper edge to said seat and at its lower edge to said shelf, hinged side wings, and a hinged back plate, which said plates and wings inclose the space between said seat and shelf on all sides when the chair is in position for use, substantially as set forth.

328,323. CASH-CARRIER. David Lippy and Peter Ott, Mansfield, Ohio. Filed Sept. 9, 1885. (No model.)



Claim.—1. In a cash-carrier, the combination, with a car, means for actuating the car, and the car-track, of a pair of yielding jaws or bars adapted to receive the car between them and bring it to a gradual stop, substantially as set forth.

2. In a cash-carrier, the combination, with the car-track, the car, and means for actuating the car, of a pair of flaring bars or jaws adapted to engage the opposite sides of the car and bring it to a gradual stop, substantially as set forth.

3. In a cash-carrier, the combination, with the car-track, the car and means for actuating the car, of a pair of adjustable bars or jaws adapted to engage the opposite sides of the car and bring it to a gradual stop, substantially as set forth.

4. In a cash-carrier, the combination, with the car-track, a car provided with an upright roller, and means for actuating the car, of a pair of yielding jaws adapted to engage the opposite sides of the roller, and thereby bring the car to a gradual stop, substantially as set forth.

5. In a cash-carrier, the combination, with the car-track, the car provided with a pair of upright rollers, and means for actuating the car, of a pair of adjustable yielding jaws adapted to engage the opposite sides of the rollers and bring the car to a gradual stop, substantially as set forth.

6. In a cash-carrier, the combination, with the track and a car adapted to be actuated by the hand of the operator, of a pair of brake-jaws adapted to engage the sides of the car with a gradually-increasing pressure, for the purpose substantially as set forth.

7. In a cash-carrier, the combination, with the track and its supports and an arm for supporting the operating-cord pulleys, of a pair of brake-jaws supported at their outer ends by a saddle-bracket secured on said arm, yielding cushions interposed between the saddle and jaws, and clamp-screws or their equivalent for regulating the expansion and contraction of the cushions, substantially as set forth.

8. In a cash-carrier, the combination, with the track and the car suspended thereon, of a guide-pulley journaled in a lever secured to the body of the car, the said guide-pulley being adapted to rest in contact with or in close proximity to the under side of the track, substantially as set forth.

9. In a cash-carrier, the combination, with the track and the car suspended thereon, of guide-pulleys journaled in the ends of levers fulcrumed on the body of the car and means for adjusting the levers, substantially as set forth.

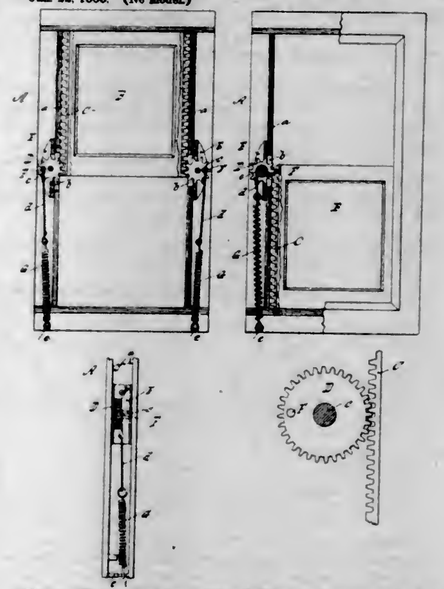
10. In a cash-carrier, the combination, with the track and the car suspended thereon, of a pair of levers fulcrumed on the under side of the car-body, guide-pulleys journaled in one end of each lever, adjusting-screws in engagment with the other ends of the levers, and spring-cushions interposed between the levers and car-body, substantially as set forth.

11. In a cash-carrier, the combination, with the car, the cash-box cover secured thereto, and fastening-studs depending therefrom, of the cash-box provided with a slotted flange adapted to receive the fastening-studs and be locked thereto by a rotary movement, substantially as set forth.

12. In a cash-carrier, the combination, with the car, the cash-box cover secured to the car and provided with a yielding lining, and fastening-studs depending from the cover, of the cash-box provided with a slotted flange adapted to receive the fastening-studs and be locked in snug contact with the yielding lining by a rotary movement, substantially as set forth.

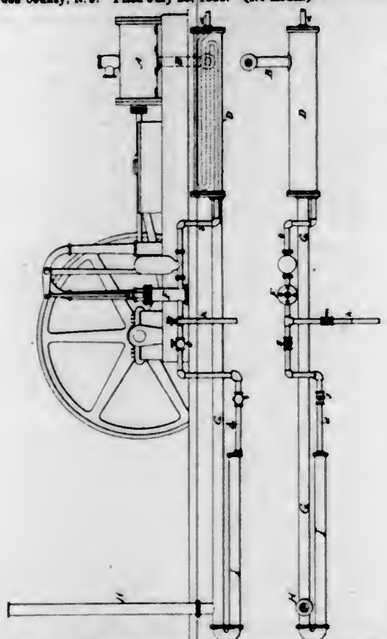
13. In a cash-carrier, the combination, with the car-supporting wheels adapted to rotate in opposite directions on the wire, of pivotal adjustable bearings for the axles, and set-screws adapted to lock the bearings in the desired adjustment, substantially as set forth.

328,324. SASH-BALANCE. Joseph Loch, New York, N. Y. Filed Jan. 22, 1885. (No model.)



Claim.—The combination, substantially as hereinbefore described, with a window-frame and the sash fitted therein, of two racks, C, secured in the sides of the sash, two cog-wheels, D, mounted in the frame and engaging with the racks, pins F, eccentrically mounted on said wheels, two springs, G, hitched at their lower ends to the frame, and ropes or chains *d*, connecting the eccentric pins with the upper ends of the springs.

328,325. **FEED-WATER APPARATUS.** John L. Loughreth, Philadelphia, Pa., assignor of three-fourths to Howard B. French, same place, and Samuel H. French and William A. French, Haddon Township, Camden County, N. J. Filed July 23, 1885. (No model.)



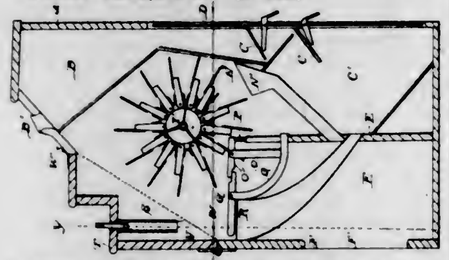
Claim.—1. The combination of the exhaust-pipe of the engine, the discharge-branch, and the feed-pump with the pipe G, communicating with said discharge-branch and having a return-bend communicating with the feed-pump, as specified.

2. The combination of the feed-water heater and the exhaust-pipe communicating therewith with the discharge-branch, the feed-pump, and the outlet-pipe G, communicating with the heater and discharge-branch and having a return-bend communicating with the feed-pump, as set forth.

3. The combination of the exhaust-pipe, discharge-branch, and feed-pump with the outlet-pipe communicating with the discharge-branch and having a return-bend communicating with the feed-pump and the cold-water supply-pipe *h*, as specified.

4. The combination of the exhaust-pipe, discharge-branch, and feed-pump with the outlet-pipe communicating with the discharge-branch and having a return-bend, I, and a pipe, *d*, communicating with the feed-pump and having a check-valve, *f*, as specified.

328,326. **FARE-BOX.** Thomas Mangan and John T. Wilson, New Orleans, La. Filed Apr. 13, 1885. (No model.)



Claim.—1. A change-box having within it one or more rotatable change-receivers for holding change equivalent to the denomination required, rotated by means of a spring and held in position by a train of levers, said levers being operated and the cylinder released by means of the weight of the coin striking said levers, substantially as herein set forth.

2. The rotatable cylinder I on the permanent rod or bar H, having a coiled spring, T, within, provided with the radiating blades K, and the hinged receiving-pans L with the springs M and the projecting arms M', in combination with the cross-bar N, above the mouth of the hopper N', so located as to cause the ends of said arms M' to strike said bar and open the receiving-pans as the cylinder rotates, substantially as herein set forth.

3. The rotatable cylinder I on the permanent bar H, having the coiled spring J, provided with the radiating blades K, and the hinged receiving-pans L with the springs M and arms M', in combination with the train of lever Q' O', against which the blades K rest, and with the spring P under the lever O', whereby the impulse on the lever Q' is regulated, substantially as herein set forth.

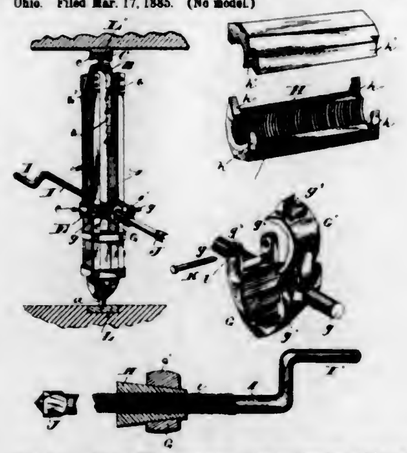
4. The coin-receiver composed of two disks, U, placed side by side a distance apart corresponding with the thickness of the coin required and having its entire periphery closed except one side, of sufficient size to receive the coin, centrally journaled so that its upper half projects out of the box, with its lower half within the upper end of the tube S, which leads down into the box, substantially as herein set forth.

5. The combination of the cylinder I, having the fixed radiating blades K, rotatable on a fixed shaft by means of a coiled spring, and the hinged change-receiving pans L, provided with springs M and arms M', with the cross-bar N, and the train of levers O' Q', substantially as herein set forth.

6. The combination of the cylinder I, rotatable on a fixed shaft by means of a coiled spring, having the radiating blades K, and the hinged change-receiving pans L, provided with springs M and arms M', with the cross-bar N, the train of levers O' Q', regulating-spring P, and the coin-conducting tube S, substantially as herein set forth.

7. The combination of the cylinder I, rotatable on a fixed shaft by means of a coiled spring, having the radiating blades K, and the hinged change-receiving pans L, provided with springs M and arms M', with the rod N, train of levers O' Q', the coin-conducting tube S, and the tube R, for conveying the coin to the compartment C", and this tube N' for conveying the change to compartment E', as and for the purpose substantially as herein set forth and described.

328,327. **MINING-DRILL.** Joseph F. Mathey, Struther's Station, Ohio. Filed Mar. 17, 1885. (No model.)



Claim.—1. In a drilling apparatus, the combination, with a screw-threaded spindle for revolving and feeding the drill, of a feed-nut divided longitudinally into two or more parts and made tapering on the outside, a nut-holder with a tapering socket to receive the nut, with a hinged part to open and release the nut, and the nut-holder mounted on trunnions that admit of the drill being adjusted at the desired angle in a vertical plane, substantially as set forth.

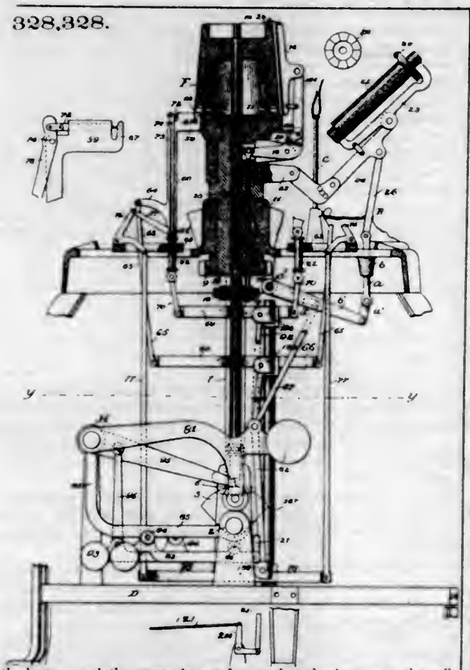
2. In a drilling apparatus, in combination with an upright extension-frame arranged to revolve in a horizontal plane, a nut-holder arranged to revolve in a vertical plane, and suitable means for adjusting the height of the nut-holder and supporting it from the upright frame, a tapering feed-nut, and a corresponding tapering socket in the nut-holder, and the nut and holder arranged to open and release the spindle, substantially as set forth.

328,328. **MACHINE FOR MAKING PAPER PAILS, &c.** Walter S. McKinney, Binghamton, N. Y. Filed Mar. 3, 1884. (No model.)

Claim.—1. In a machine for making pails, a revolving block or former holding a fixed longitudinal relation to the table of the machine, a clamp for holding the body edge of the blank, and a roller for pressing the blank to the block as the latter revolves, the said roller being arranged, substantially as described, so as to be movable to and from the former, substantially as described.

2. In a machine for making pails, a revolving block, a clamp for holding the edge of the body-blank, a roller for pressing the body of the blank, mechanism, substantially as described, for delivering and placing

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the bottom, and the press-plonger for pressing the bottom on the pail-body, all substantially as described.

3. In a machine for making pails, a revolving block, and devices, substantially as described, for holding and pressing the body-blank upon the block, combined with the mechanism, substantially as described, for placing the bottom, and the strip mechanism, substantially as described, for binding the strip down upon the sides of the pails, and hammers 59, to bend the ends of said strip around the edge of the pail, and mechanism, substantially as described, for operating said hammers, all substantially as described.

4. In combination with the revolving block, the hammers 59, and the described mechanism for operating these devices, the press-plunger, and mechanism for imparting to it the proper and timely movement, the shaft 33, having an arm, 31, and arms 36, set upon a shaft, 57, sliding vertically in the arm 31, devices attached to the arm 36 for supporting the strip and the bottom, means, substantially as described, whereby the press-plunger bears upon the arms 36 after they have been swung into place over the block, and devices on the arms 36 for bending down the strip, substantially as described.

5. In combination with the arm 31 of the shaft 33, the rod 57, sliding in the end of the arm 31, and having arm 54 fitted into notch 55 of the plunger, the arms 36, fixed to said rod, having the described levers for supporting a strip and bottom and a counter-weight for returning the arms 36, substantially as described.

6 In combination with the mechanism for forming body-blanks upon a block, F, and for bending and punching the strip, the cams upon the shaft 2, and the mechanism between said cams, and the devices for forming body-blanks upon the block and bending and punching the strip, fast and loose pulleys 3 and 4 on the shaft 2, and the described mechanism for automatically shifting the belt, all substantially as described.

7. The block F, mechanism for driving it, and for holding and placing the blank upon it, the hammers 59, and the described mechanism driven from the shaft 2 for operating the clamp, rollers, and hammers, fast and loose pulleys 3 and 4, belts 108 and 109, and the clutch mechanism adapted to hold and release its driving-pulley mechanism, operated by the cam on the shaft 2 for working such clutch, and mechanism, driven by belt 109, for operating the plunger, all these parts being constructed and combined substantially as described.

8. In combination with the revolving block and its shaft fixed against longitudinal movement, the vertically-operating discharge-plunger 18, having the swivel-connection 191 to its operating mechanism, arranged substantially as described, and for the purpose set forth.

9. In combination with the revolving former and its shaft, the clamp 12, revolving therewith, and its operating mechanism consisting of bell-crank lever 13, grooved collar 17, and connecting-rods 16, the forked lever 20, embracing the collar, the rod 21, cam-lever 83, and cam on shaft 2, all substantially as described.

10. In the described machine, and in combination with the clamp, the bell-crank lever 13, having arm 140, pivoted as shown, and pin 161, fitted to suitable holes, as described, whereby the clamp may be adjusted, for the purpose set forth.

11. In a pail-machine, a roller adapted to press the blank upon the former, and having a flange upon its end, said flange being provided with a serrated face for the purpose specified.

12. In combination with the revolving former F and its shaft, the roller 22, journaled in a frame connected to a bent arm, 24, which is pivoted on a loose collar on the shaft 10, as described.

13. In the described machine, and in combination with the intermittently-revolving former, the roller and its supporting-frame, the operating mechanism consisting of links 26 *a a'*, arm *b'* on the rock-shaft *d*, arm *d'*, connecting-rod 27, cam-lever 81, and cam, all arranged substantially as described, and for the purpose set forth.

14. In the described machine, the combination of the arm 31, adapted, substantially as described, to be swung into position over the forming-block, the rod 57, having arm 54 at one end, the press-plunger, having notch 55, the arms 36, carrying the pail-bottom, and strip-supporting levers, marked, respectively, 46 and 37, which are pivoted thereto, the bell-crank 151, suitable rod and bell-crank connections, 47, 40, and 39, and the retaining-catch 150, all substantially as described, and for the purpose set forth.

15. In the described apparatus, the swinging arm 31, carrying the pail-bottom and strip-supporting devices, said arm being adjustably secured to the shaft 33, for the purpose set forth.

16. In combination with the arm 31 and shaft 33, the means for operating the same, consisting of arm 34 on the shaft 33, rod 35, pivoted arm 97, provided with roller 98, cam 99, all arranged for swinging the arm 31 into position over the forming-block, all as described, and for the purpose set forth.

17. In combination with the hammers upon the pivoted arms 60, having branch arms 64, the rods 65, sliding cross-head 66, rod 89, connected to the cam-lever, and the cam, substantially as described, and for the purpose set forth.

18. In combination with the hammers 59, having notches 67, the hollow forming-block F, having edges 68, yielding anvils 71, pivoted within the block, and mechanism, substantially as described, for giving upward movement to the hammers, for the purpose set forth.

19. In combination with the notched hammers 59, and means, substantially as described, for giving upward movement to the same, the punches 72, and suitable operating mechanism, all substantially as described, and for the purpose specified.

20. The means for operating the punching mechanism, consisting of levers 73, pivoted as shown, links 75, bell-crank levers 76, connecting rods 77, cross-head 78, rod 82, cam-lever and cam, all substantially as described.

21. The means for giving the hammers an upward movement for the purpose described, consisting of arm 60, sliding bolt 62, link 70, cross-head 69, connecting-rod 92, cam-lever 87, operated by cam, substantially as described.

22. In a pail-machine, and in combination, a forming-block, segmental beveled gear, and intermediate driving mechanism, substantially as described, a press plunger, with clutch and brake device, for the purpose described, a bending and punching mechanism operated from main driving-shaft, fast and loose pulleys, and a belt-shifting device, all substantially as described, and for the purpose set forth.

23. In combination with the forming-block F and intermediate driving mechanism, the main driving-shaft 2, fast and loose pulleys 3 4, the punching and bending devices, the belt-shifting device, consisting of bell-crank lever 101, operated from cam on shaft 2, the link 104, and rod 105, all substantially as described.

24. In combination with the former F and its operating mechanism, the press-plunger and mechanism for operating the same, consisting of cam-lever 100, connecting-rod 201, bell-crank 200, rod 121, bent arm 120, lever 119, connected to clutch device of pulley 113, substantially as described.

328,329. **APPARATUS FOR PRESSING INGOTS.** Edward B. Meatyard, Lake Geneva, Wis. Filed Oct. 15, 1884. (No model.)

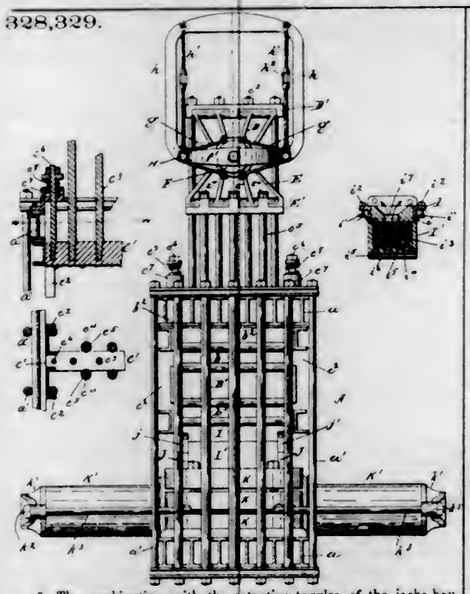
Claim.—1. The combination, with the press-toggles and guide-toggles, of the actuating-toggles and their operating mechanism arranged above the latter, substantially as and for the purposes specified.

2. The combination, with the press-toggles and guide-toggles having cross-heads arranged to move in opposite directions, of the upper and lower actuating-toggles rigidly connected with the upper and lower cross-heads, respectively, and means for operating the said actuating-toggles, substantially as and for the purposes set forth.

3. The combination, with the press-toggles, guide-toggles, and actuating-toggles, of jacks arranged to operate the actuating-toggles, substantially as and for the purposes specified.

4. The combination, with the press-toggles, guide-toggles, and actuating-toggles, of a large piston short-stroke jack connected with one end of the latter and a small piston long-stroke jack connected with the other end of the same, substantially as and for the purposes specified.

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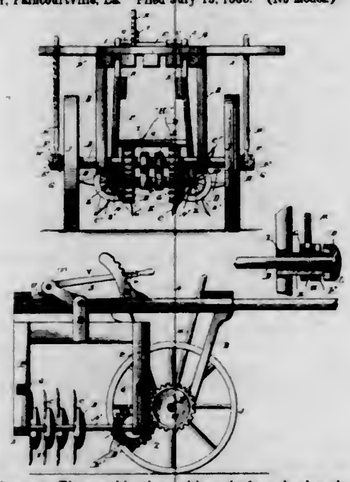


5. The combination, with the actuating-toggles, of the jacks having their cylinders connected to the said toggles and their pistons secured to a frame otherwise unsupported, substantially as and for the purposes set forth.

6. The combination, with the actuating-toggles and the cylinders connected thereto and having cross-heads *g*, of the pistons having arms *f'*, tension-rods H, connecting the same, sleeves H' thereon, on which the cross-heads *g* slide, standard *h*, and tension-rods *h'*, substantially as and for the purposes specified.

7. The combination, with the cross-head C', which supports the actuating-toggles and their operating mechanism, of the rods c^4 and cushion-springs c^5, substantially as and for the purposes specified.

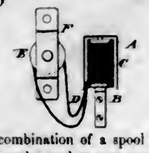
328,330. STUBBLE-DIGGER. Egbippe D. Melançon and Leo L. Savoy, Paincourtville, La. Filed July 13, 1885. (No model.)



Claim.—1. The combination, with a platform having the downwardly-projecting brackets, of the wheel bearing drive-axle journaled in the ends of the brackets, the rectangular digger-frame having the upwardly-projecting arms at the upper ends of its side pieces, the rock-shaft having the hand-lever and the arms pivoted to the upwardly-projecting arms of the frame and journaled upon the upper side of the platform, and the links pivoted to the lower forward side of the digger-frame and to the middle of the drive-axle, as and for the purpose shown and set forth.

2. The combination of the drive-axle having the pinions at its middle, the vertically-adjustable digger-frame having longitudinal bearings in the lower ends of its side pieces, and having transverse bearings in the lower ends of the forward end pieces of the frame, longitudinal shafts journaled in the bearings of the frame, and having the digger-disks secured upon them, and having bevel-pinions secured to their forward ends, a transverse shaft journaled in the transverse bearings in the forward end pieces of the frame, and having the bevel-pinions provided with cogged rims meshing with the pinions upon the drive-shaft, and links fitting with their eyed ends upon the drive-axle and upon the transverse shaft at the lower forward end of the digger-frame, as and for the purpose shown and set forth.

328,331. FIRE-ESCAPE. Patrick H. Montague, St. Louis, Mo., assignor of one-fourth to Thomas F. McDermott, same place. Filed Sept. 3, 1885. (No model.)



Claim.—1. The combination of a spool suitably supported, a pulley suitably supported, and a cord or rope passing around the pulley and wound upon the spool, substantially as and for the purpose set forth.

2. The combination of the spool, cord wound around the spool, and pulley or support over which the rope passes, substantially as and for the purpose set forth.

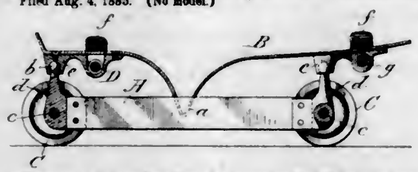
3. The combination of the spool suitably supported, shield covering the spool, wire or rope wound around the spool, and pulley or other support over which the rope passes, substantially as and for the purpose set forth.

4. The combination of the spool, bracket supporting the spool, shield covering the spool and supported by the bracket, pulley-block supporting the pulley, and cord or rope passing around the pulley and wound upon the spool, substantially as and for the purpose set forth.

5. The combination of the spool suitably supported, cord or rope wound upon the spool, pulley or other support around which the rope passes, and means, substantially as described, for removing the spool from its support, as and for the purpose set forth.

6. The combination of the spool suitably supported, pulley, cord or rope passing around the pulley and wound upon the spool, and hose-nozzle provided with ropes or cords wrapped upon supports, and operating substantially as shown and described, for the purpose set forth.

328,332. ROLLER-SKATE. James Naylor, Jr., Poughkeepsie, N. Y. Filed Aug. 4, 1885. (No model.)



Claim.—1. In a roller-skate, the combination of the sole-plate B, formed with a loop or V-shaped bend near its middle position, which loop is itself provided with a V-shaped slot, and the flexible bar A, passing through the latter slot, substantially as shown and described.

2. In a roller-skate, the combination of the bar A, axle-carriers *d*, provided with balls *b*, V-shaped sole-plate B, having a V-shaped slot which incloses the bar A, and having also secured to its under side bars *e*, which afford sockets for the balls *b* and bearings for the clamps *f f*, substantially as shown and described.

3. In a roller-skate, the V-shaped sole-plate B, substantially as shown and described.

4. In a roller-skate, the sole-plate B, formed with a loop or V-shaped bend, which loop itself is provided with a V-shaped slot, substantially as shown and described.

5. In a roller-skate, the combination of the sole-plate B, looped at the middle, the bars *e e*, having sockets for the ball-bearings, and provided with clamps *f f*, the flexible plate A, and axle-carriers *d d*, provided with balls *b*, substantially as shown and described.

328,333. FILTER. Emil Noppel, Philadelphia, Pa. Filed June 11, 1885. (No model.)

Claim.—1. The filter D, having a perforated diaphragm, E, and the tube F, in combination with the pipe G, having vertical part *a*, open-



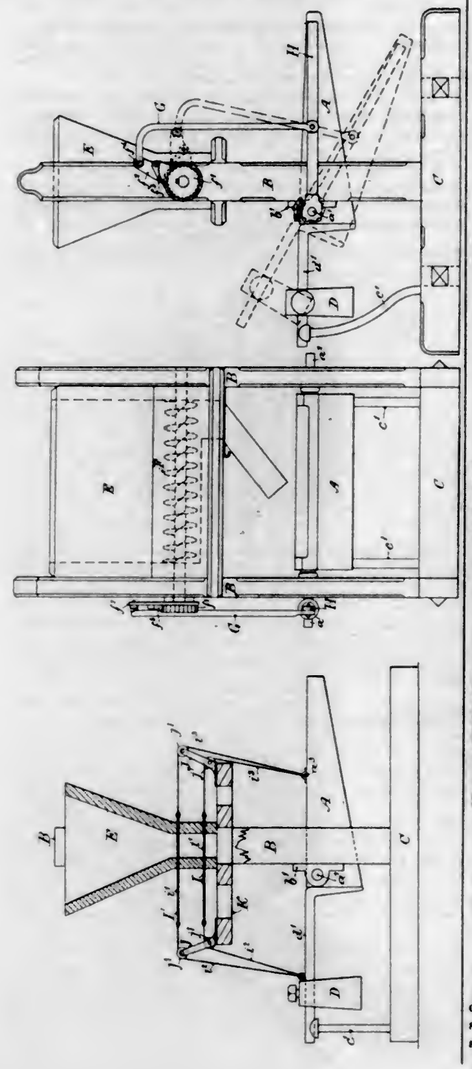
ing into said tube at the upper part thereof and above the diaphragm E, horizontal part *b*, below said diaphragm E, and bent part *c*, and a cooler, substantially as and for the purpose set forth.

2. A combined filter and cooler, consisting of a double-chambered vessel, one of the said chambers having an inclined floor and an automatic inlet-valve operated by a float, a filter open at the bottom and connected at the top by a pipe to a second filter located in the second chamber, the said second filter having a perforated diaphragm and a tube closed at top rising therefrom, an outlet-pipe having an opening in said tube above the diaphragm, and a cooler, said parts being arranged and combined substantially as described.

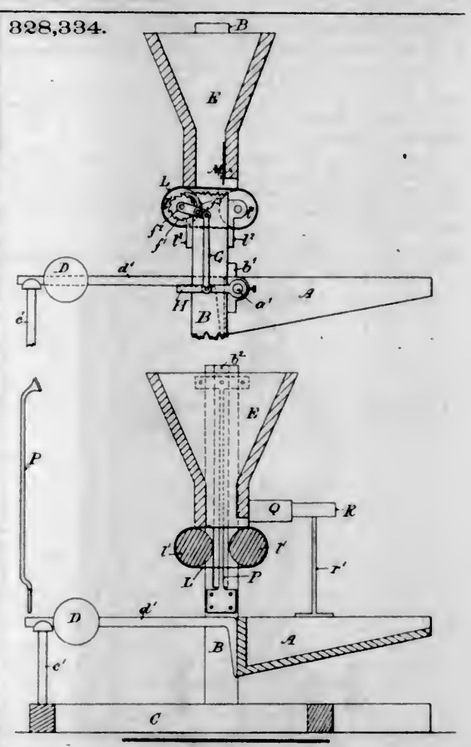
328,334. APPARATUS FOR THE TREATMENT OF SEWAGE. Samuel K. Page, Aylesbury, County of Buckingham, Charles E. Robinson, Scarborough, County of York, and William Stevens, New Bridge Street, County of Middlesex, England. Filed Nov. 6, 1884. (No model.) Patented in England May 3, 1884, No. 7,198.

Claim.—1. The combination of the tilting vessel or receptacle, and the hopper having a discharging-screw, with the ratchet-and-pawl mechanism, and the connecting arm and lever for actuating said discharging-screw by the movement of the tilting vessel, substantially as described.

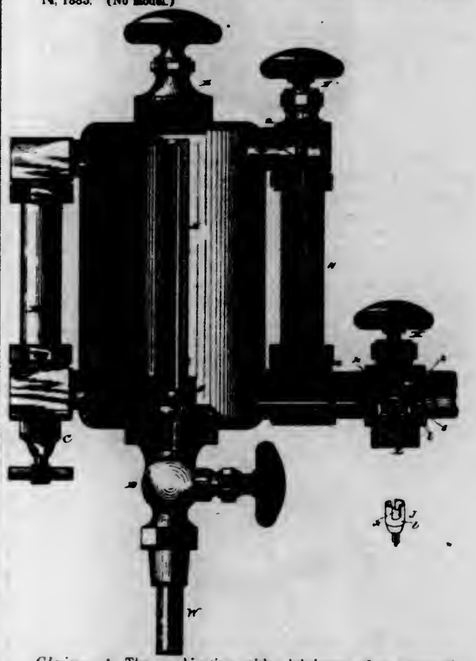
2. The combination of a feed-hopper, an automatically-operating tilting receiving-vessel having a connection therewith to automatically feed material to the receiver, an automatic agitator to the hopper, and a counter-balance to the receiver, substantially as described.



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328,335. LUBRICATOR. Charles H. Parshall, Jr., Detroit, Mich., assignor to the Michigan Lubricator Company, same place. Filed Mar. 14, 1885. (No model.)



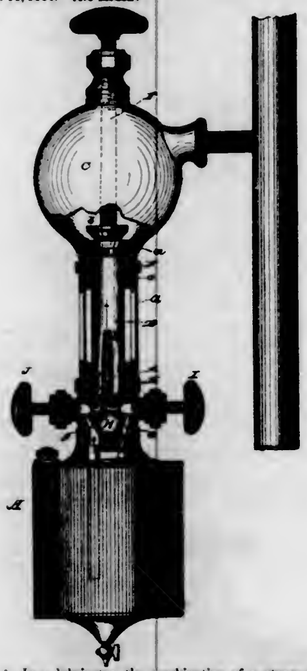
Claim.—1. The combination, with a lubricator, of an automatic double-seat valve closing in its highest and lowest portions and having a passage between the upper and lower ground seat-surfaces, substantially as specified.

2. The combination, with the oil-passage of a lubricator, of the double-seat automatic oil-check valve J, having the lateral openings *k* in its cylindrical portion, substantially as specified.

3. In a lubricator, the combination, with the oil-reservoir and the check-valve at its base in the water-supply, of the rim-wall projecting above the check-valve and forming a water-trap to prevent the backflow, substantially as specified.

4. In a lubricator, the combination, with the oil-reservoir having its water-supply at its upper end and its oil-outlet above, the water-trap below, of the lateral glass chambers D and H, the regulator drop-valve F, and the discharge-passage S, having the double-seat automatic oil-trap valve, substantially as specified.

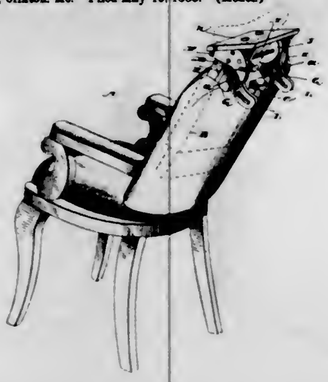
328,336. **LUBRICATOR.** Charles H. Parshall, Jr., Detroit, Mich. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a lubricator, the combination of a steam-condenser having the threaded part c, the double-passage valve-seat H below said chamber and above the oil-reservoir, the metallic frame G, having its lower end engaging the threaded portion *d*, the sight-feed chamber, and the locking-nuts K K, substantially as specified.

2. In a lubricator, the combination, with the steam-condenser, and the sight-feed chamber located below the same, of the double-passage valve-seat H below said chamber and above the oil-reservoir, and the lock-nuts above and below the sight-feed chamber, substantially as specified.

328,337. **HEAD-REST FOR BARBERS' CHAIRS.** Thomas W. Patterson, Clinton, Mo. Filed May 18, 1885. (Model.)



Claim.—1. In a head-rest for barbers' chairs, the standard D, in combination with the plate E and a bar, F, formed with rearwardly-projecting arms H, lugs J, provided on the rear face of the plate E, shoulders G, projecting from the rear face of the plate outside of the lugs, a shaft or rod, I, connecting the lugs J and arms H, the inclined plate K, fitting over the bar F, and slotted arms L, depending from the plate K, the slots of said arms being received by the rod I, as and for the purpose set forth.

2. In a head-rest for barbers' chairs, the plate E, provided with a bar, E, and the standard D, secured to the plate and received within the bar, lugs J, projecting from the rear face of the plate E, arms H, provided on each side of the lugs, a shaft, I, fitted in the plate and arms, and the plate K, carrying the head-rest proper and provided with the slotted arms, the slots of said arms being received by the shaft I, as set forth.

3. In a head-rest for barbers' chairs, a sleeve adapted to be fitted to the adjustable standard of the chair and carrying a rod or shaft, I, in combination with the plate K, carrying the head-rest proper and provided with curved slotted arms which are received by the rod or shaft, as set forth.

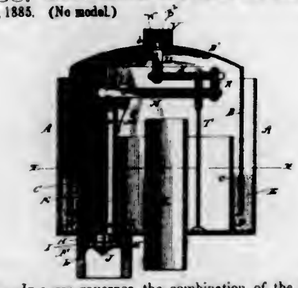
4. The combination, with a barber's chair, of a plate, E, provided with a bar, F, a standard, D, connected to the chair and attached to the plate E in rear of the bar F, and a rod or shaft connected to and located in the rear of the plate E, a plate, K, resting at its front end over bar F, and slotted arms depending from the plate K and working over the rod I, as set forth.

5. The combination, with the barber's chair, of a plate, E, lugs or ears provided on the plate, a shaft or rod, I, fitted in the lugs, a plate, K, carrying the head-rest proper, and slotted arms provided on the plate K to work over the rod or shaft, as set forth.

6. The herein-described head-rest, comprising the plate K and longitudinally-slotted arms depending from the same, in combination with the rod or shaft I, passing through the slots of the arms, for the purpose set forth.

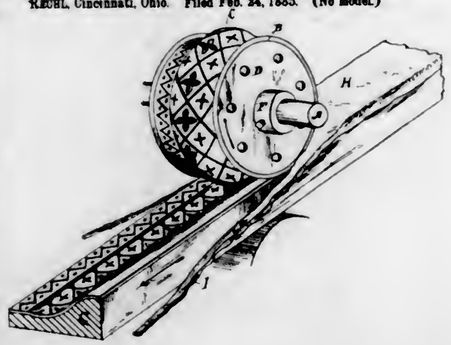
7. The herein-described head-rest, comprising the plate K, carrying the head-rest proper and provided with depending longitudinally-slotted arms which are pivotally connected to the chair, the slots in the arms allowing the plate to be swung down out of the way, as set forth.

328,338. **GAS-GOVERNOR.** John P. Reinecke, Pittsburg, Pa. Filed Jan. 8, 1885. (No model.)



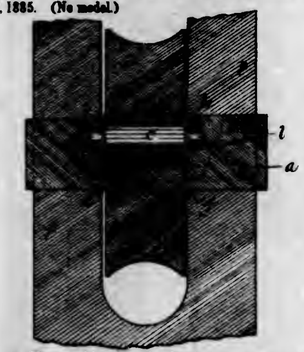
Claim.—In a gas-governor, the combination of the outside vessel having a fluid seal, the inverted tank or vessel dipping into said seal, the inlet and outlet arranged substantially as shown, the compound-lever mechanism connected at one end to the movable inverted vessel and at the other end to the stem which actuates the inlet-valve, the valve-stem, the valve constructed with the annular flange K, having a sharp ridge, *k*, the annular packing, and the packing-ring for holding the same in place, substantially as and for the purpose herein shown and specified.

328,339. **ORNAMENTAL ROLLER-DIE FOR MOLDINGS.** Peter Reuhl, Cincinnati, Ohio. Filed Feb. 24, 1885. (No model.)



Claim.—The die B, rotating on shaft A and having on each side or end a cutter-disk, D, combined with a molding, G, whereby the plastic material can be trimmed off by a shear cut, substantially as described.

328,340. **PULLEY-BLOCK.** Elisha F. Robbins, Cotuit, Mass. Filed Aug. 12, 1885. (No model.)



Claim.—1. The combination of a fixed pin or support having a recess in its periphery, a roller journaled in said recess and having a portion of its periphery projecting outside of the pin, and a wheel or pulley having a central opening larger than the pin, the margin of said opening resting on the roller, as set forth.

2. A pulley-block having a fixed recessed pin and a roller journaled in the recess of said pin as a rolling support for the pulley, as set forth.

3. The combination, with the recessed pin or support of a block or pulley sheave, of the roller adapted to be placed in the recess of the pin or support, and formed to rotate with the sheave, as set forth.

4. The combination of the pin or support having the recess *d*, and the oil-passage communicating with said recess, the roller placed in said recess so as to come in contact with the oil supplied thereto, and the pulley supported by the projecting portion of said roller, as set forth.

328,341. **FISHING-LINE REEL.** Clarence V. Roberts, Philadelphia, Pa. Filed Nov. 25, 1884. (No model.)



Claim.—The combination, with the base-plate which is attached to the rod, of the reel-frame constructed in two parts and hinged to the said base-plate, the detachable spool having a square opening extending through it, the crank-shaft extending through the spool, and the collar thereon for locking the spool on the shaft, and the clasp by means of which the parts of the spool-frame are locked together, substantially as specified.

328,342. **FIRE-SCREEN HINGE.** James M. B. Robbins, New York, N. Y. Filed Feb. 6, 1885. (No model.)

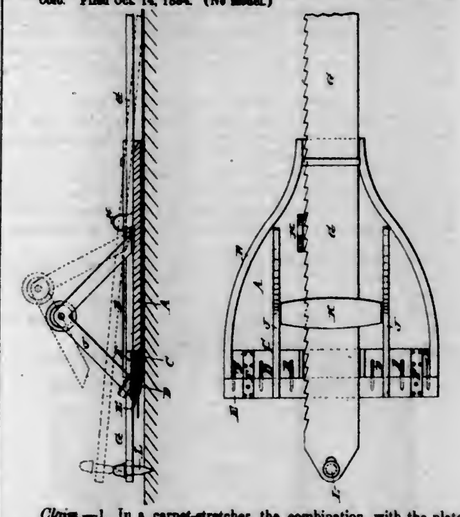


Claim.—1. A screen-hinge constructed substantially as herein shown and described, and consisting of the plate C, having horizontal slots F, and vertical recesses H, and rounded outer edges, and provided with bolts and nuts D E, and the connecting-plate G, having pins I, whereby the edges of the said plates will be kept in contact with each other as the hinges are worked, as set forth.

2. The combination, with the side bars of the frames A of the screen-wings having rounded adjacent edges, of the plates C, having horizontal slots F, vertical recesses H, and rounded outer edges, and provided with bolts and nuts D E, and the connecting-plate G, provided with pins I, substantially as herein shown and described, whereby the edges of the wing-frames will be kept in contact with each other however the said wings may be adjusted, as set forth.

3. The combination, with the hinge-plates C, having horizontal slots F, and also vertical recesses H, having their outer margins parallel with the faces of said hinge-plates, of the connecting-plate G, provided with pins I, substantially as shown and described, whereby the faces of the said hinge-plates will be in contact however the hinge may be adjusted.

328,343. **CARPET-STRETCHER.** George M. Robson, Leadville, Colo. Filed Oct. 14, 1884. (No model.)

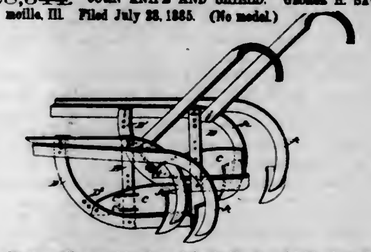


Claim.—1. In a carpet-stretcher, the combination, with the plate A, having teeth D, of the swinging strip E above the teeth, the V-shaped pieces J, pivoted on the plate A and resting on the strip E, and the handle K, uniting the pieces J, substantially as herein shown and described.

2. In a carpet-stretcher, the combination, with the plate A, having teeth D, of the swinging strip E, the spring-hinges F, the V-shaped pieces J, pivoted on the plate A and resting on the strip E, and the handle K, uniting the pieces J, substantially as herein shown and described.

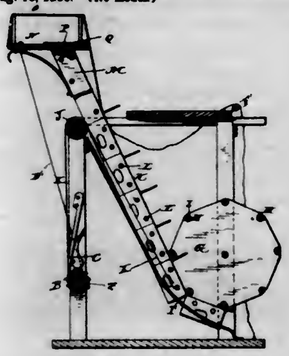
3. In a carpet-stretcher, the combination, with a plate having teeth on its front edge, of a swinging piece above the teeth, a rack-bar resting on the plate and provided with a pin on one end, a pawl-spring on the plate, and a handle-piece for moving the plate and pressing the swinging piece upon the teeth, substantially as herein shown and described.

328,344. **CORN KNIFE AND SHIELD.** George H. Sawyer, Lamoille, Ill. Filed July 28, 1885. (No model.)



Claim.—The combination of the knife, the shield pivoted thereto, and the standard provided with a series of bolt-holes, whereby the shield may be adjusted to any desired angle, as and for the purposes specified.

328,345. **FIRE-ESCAPE.** Louis Sass, Port Elgin, Ontario, Canada. Filed Aug. 18, 1885. (No model.)



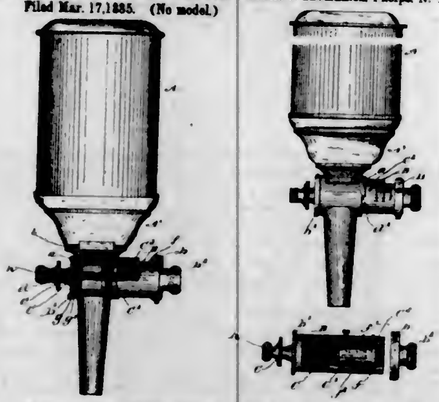
Claim.—1. In a fire-escape, the combination of a reel having a polygonal periphery and having notches or recesses in the peripheries of its heads and cross-pieces secured within said recesses, with a flexible ladder consisting of links of the same length as the sides of the polygonal heads connected by means of rule-joints and having upwardly-projecting pins or lugs upon the upper edges of the links, as and for the purpose shown and set forth.

2. The combination of the links forming the side pieces of the ladder and having the longitudinal grooves in their upper edges with the rods secured in the groove and formed into interlocking links at their ends, as and for the purpose shown and set forth.

3. In a fire-escape, the combination of an extensible flexible ladder, a platform at the top of the same, and hooks secured to the rear edges of the side pieces of the ladder at its upper end and to the under side of the platform projecting out and down from the same, as and for the purpose shown and set forth.

4. In a fire-escape, the combination of a reel, a roller journaled parallel to the reel and above it, a ladder winding upon the reel and decreasing in width toward its top, and a guide-strip extending from near the roller to underneath the reel, as and for the purpose shown and set forth.

328,346. **POWDER-CHARGER.** Henry C. Severance, Phelps, N. Y. Filed Mar. 17, 1885. (No model.)



Claim.—1. The funnel with its tubular portion provided with a semi-revolving or turning cylinder having an opening in one side, and a disk or gage adjustable upon a screw with its shank projecting through one head or end of the cylinder and having an operating-knob, substantially as and for the purpose set forth.

2. The funnel with its tubular portion provided with an open-sided cylinder, the open side of said cylinder having graduations arranged upon opposite sides of the opening, in combination with the disk or gage having a segmental flange or index fitted in said opening and the gage or disk adjusting-screw having a manipulating knob or projection, substantially as and for the purpose set forth.

3. The funnel with its tubular portion provided with a semi-revolving or turning cylinder, whose axis of revolution extends across such tubular portion, and having an opening in one side, a disk or gage adjustable upon a screw within the cylinder, and a brush or cleaner located at the opening in said tubular portion into the measuring-cylinder, substantially as shown, and for the purpose specified.

4. The funnel with its tubular portion provided with a brush or cleaner located at the opening of said tubular portion into the cylinder, in combination with the open-sided cylinder, whose axis of revolution extends across such tubular portion, and the adjustable disk or gage secured therein, substantially as shown, and for the purpose specified.

328,347. **SASH-BALANCE.** Newton J. Skaggs, Montgomery, Ala. Filed July 11, 1885. (No model.)

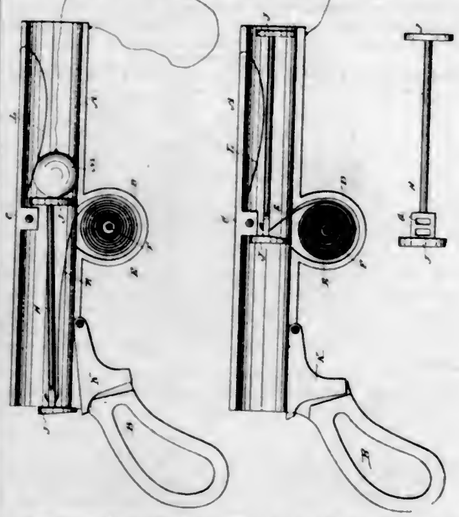
Claim.—The combination, with the casing having the upper horizontal pulley, M, and the upper and lower sashes, of the cord O, having a plurality of knots and secured at its upper end to the upper sash, the plate N, having the shoulder N', secured to the top rail of the lower sash and arranged to receive the said cord, all arranged for joint operation, substantially as shown and described.



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328,348. **PISTOL FOR SHOOTING MARBLES.** James W. Smith, Jersey City, N. J. Filed Feb. 19, 1885. (No model.)



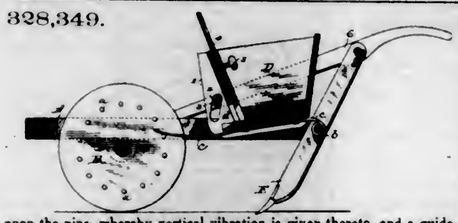
Claim.—1. The combination, with a toy pistol or gun having its barrel open at both ends, of a rod in the barrel having a head on each end, a coil-spring held in a pocket on the under side of the barrel and connected with the rear end of the rod in the barrel, and of the trigger K, the rear end of which projects beyond the rear open end of the barrel, substantially as herein shown and described.

2. The combination, with a toy pistol or gun having its barrel open at both ends and having the internal stop, C, of a rod in the barrel having a head on each end and on opposite sides of said stop, a coiled spring held in a pocket on the under side of the barrel and connected with the rear end of the rod in the barrel, and of a trigger, K, the rear end of which projects beyond the rear open end of the barrel, substantially as set forth.

328,349. **FERTILIZER AND SEED DISTRIBUTER.** Presley S. Smith, Knoxville, Ga., assignor of one-half to J. W. Jones, same place. Filed Nov. 10, 1884. (No model.)

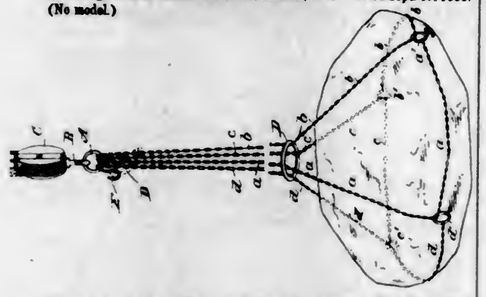
Claim.—The combination, in a fertilizer or seed distributer, of a frame, a hopper pivoted at its rear, a wheel or disk having projecting pins on its faces, bars supporting the front of the hopper and resting

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upon the pins, whereby vertical vibration is given thereto, and a guide-rod secured to the sides of the frame and passing through guide-slots in the sides of the hopper, all substantially as described.

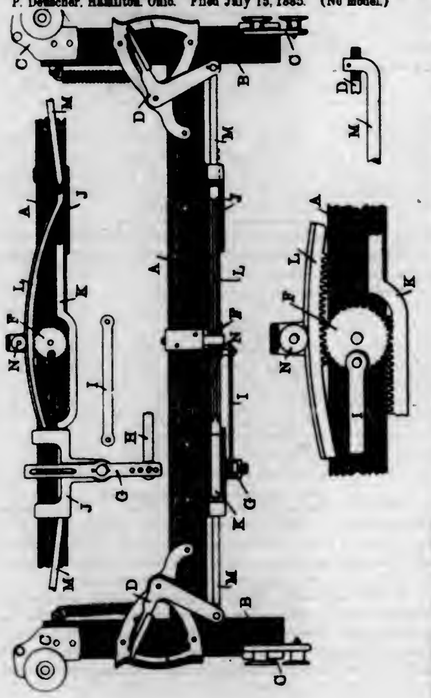
328,350. **SELF-ADJUSTING CHAIN SLING.** William Smith, Brooklyn, assignor to Frederick Maskell, Astoria, N. Y. Filed Sept. 11, 1885. (No model.)



Claim.—1. A chain sling consisting of a number of chains united to an upper link or ring, each chain carrying a link or ring at its lower end, and each chain passing through the link carried by the adjacent chain upon one side, substantially as described.

2. In a chain sling, the combination, with a number of chains united to an upper link or ring, each chain carrying a link or ring at its lower end, and each chain being passed through the lower link of the chain to the right or left, all chains, however, passing through links in the same direction, of a ring, D, substantially as described.

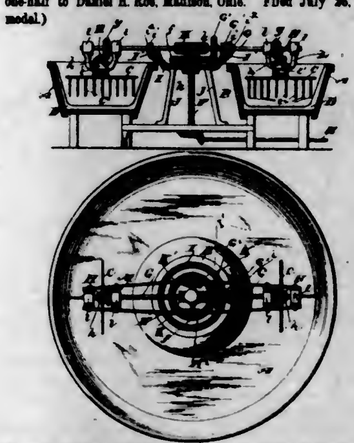
328,351. **CHECK-ROWING ATTACHMENT FOR CORN-PLANTERS.** Worthington J. Snider, Madison City, (Hemo P. O.,) assignor to Henry P. Deuscher, Hamilton, Ohio. Filed July 15, 1885. (No model.)



Claim.—1. In a check-rower, the combination of a pinion, a guide at each side of the pinion, a rack engaging below the pinion and having its ends supported in the guides, an abutment-bearing provided with a convex under surface above the pinion, an oscillating rack engaging above the pinion below said abutment-bearing and having its ends disposed within the guides, and reciprocating pawl-rods having their ends disposed within the guides and adapted to engage and actuate the racks alternately, substantially as and for the purpose set forth.

2. In a check-rower, the combination of cross-piece A, pinion F, mounted thereon, guides J, supported by the frame, reciprocating pawl-rods M, having their ends disposed within the guides, rack K, engaging below the pinion and having its ends supported in the guides, the roller N, supported by the cross-piece and disposed above the pinion, and the oscillating rack L, engaging the pinion and roller and having its ends disposed within the guides, substantially as and for the purpose set forth.

328,352. **CHEESE-VAT.** Lorenzo H. Sparks, Triumph, assignor of one-half to Daniel H. Roe, Madison, Ohio. Filed July 26, 1884. (No model.)



Claim.—1. The combination, with a cheese-vat consisting, essentially, of a circular trough having an open center, of a vertical shaft located within said open center, a horizontal shaft located above the vertical shaft, gearing connecting the horizontal shaft and vertical shaft, yokes loosely supported on said horizontal shaft, agitators journaled in said yokes, and gearing connecting the agitators and horizontal shaft, substantially as set forth.

2. The combination, with a cheese-vat consisting, essentially, of a circular trough having an open center, of a supporting-frame located within the said open center, a stationary bevel-gear secured to the frame, a vertical shaft, a horizontal shaft located above the vertical shaft, a pinion secured to the vertical shaft and meshing with a pinion on the horizontal shaft, and a pinion on the horizontal shaft meshing with stationary bevel-gear on the supporting-frame, and horizontally-rotating agitators secured to the ends of the horizontal shaft, substantially as set forth.

3. The combination, with a cheese-vat and a supporting-frame, of a vertical shaft, a horizontal shaft connected with said vertical shaft, carrying-yokes mounted on the horizontal shaft, wooden strips or braces secured to the bearings supporting the horizontal shaft and to the yokes, and horizontally-rotating agitators journaled in said yokes, substantially as set forth.

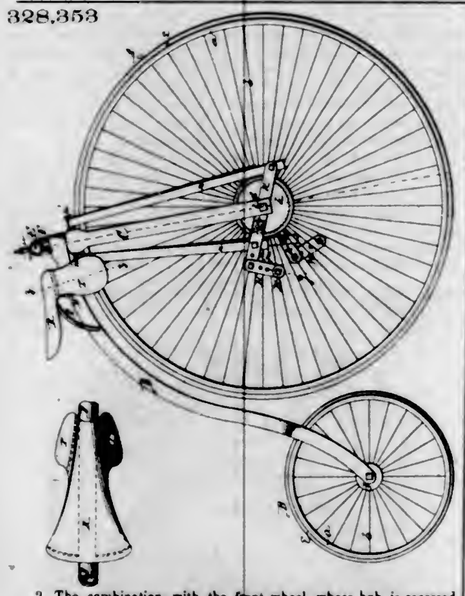
4. The combination, with a cheese-vat provided with a circular trough and an open center, of a supporting-frame located in said open center, a vertical shaft, a cap adapted to embrace and revolve on the shaft, a horizontal shaft journaled in said cap, gearing connecting said horizontal and vertical shafts, yokes mounted on the horizontal shafts, and agitators journaled in the yokes, and each provided with a pinion meshing with a similar pinion on said horizontal shaft, substantially as set forth.

5. The combination, with the agitators secured to the disks C', and provided with the hooks *c*, of the disks H, provided with the notch *h'* and mounted on the shafts H, the ends of which protrude and form steady-pins for the lower disks, substantially as set forth.

328,353. **BICYCLE.** Henry N. Starr, Rockford, Ill., assignor to Robert P. Scott, Baltimore, Md. Filed July 25, 1884. (No model.)

Claim.—1. The combination, with the front wheel supported to revolve within the yoke, of pedal-levers having a fulcrum-support to oscillate on the axial center of the wheel and provided with clutch mechanism to engage the wheel, and belts secured at their ends to said levers, substantially as set forth.

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2. The combination, with the front wheel, whose hub is recessed and toothed, as described, of pedal-levers fulcrumed to oscillate on the axial center of the wheel and provided with spring-pawls to engage the teeth of the wheel-hub, substantially as set forth.

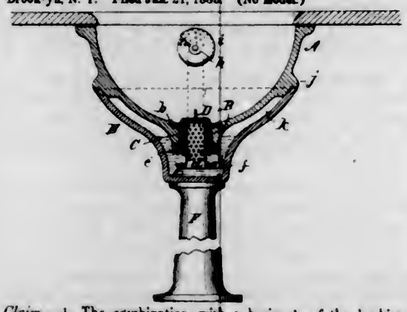
3. The combination, with the pedal-levers, of a belt connecting their forward arms and a belt connecting their rear arms on opposite sides of the vehicle, said belts supported upon rollers at or near the junction of the yoke-arms, substantially as and for the purpose set forth.

4. The combination, with the pendants having an adjustable connection with the pedal-levers, of pedals having an adjustable connection with the pendants, substantially as and for the purpose set forth.

5. The herein-described spring saddle-tree, consisting of an upper curved spring-bar with forward end portion curving under rearward and a curving transverse bar at its rear end, a supplementary spring having an adjustable connection with the upper bar, and its free end forked to embrace the coupling-bar of the vehicle, substantially as and for the purpose set forth.

6. The combination, with the depending saddle-flaps, of an anti-friction roller, substantially as and for the purpose set forth.

328,354. WASH-BASIN OR SIMILAR VESSEL. Emily A. Sears, Brooklyn, N. Y. Filed Jan. 21, 1885. (No model.)

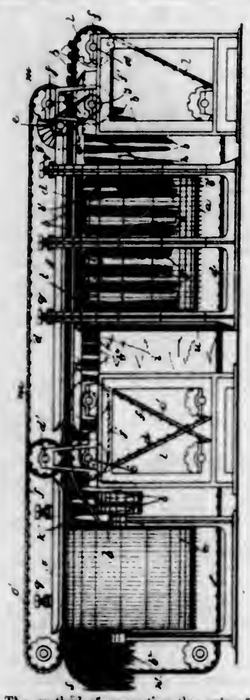


Claim.—1. The combination, with a basin, A, of the bushing C, collar *e*, provided with a pin, *g*, the valve D, perforated sleeve *d*, and collar *e*, provided with a hook, *f*, substantially as described.

2. As an improved article of manufacture, a basin-valve consisting of the bushing C, provided with the collar or flange *b*, and the threaded collar *e*, carrying the pin *g*, the valve D, perforated sleeve *d*, attached thereto and fitted to the bushing C, and the collar *e*, provided with a hook, *f*, all combined and arranged as herein described.

328,355. METHOD OF CLEANING AND SEPARATING THE PULPY MATTERS FROM THE FIBERS AND LEAVES OF PLANTS. John G. Stephens, Brooklyn, assignor, by mesne assignments, to Dolphin E. Theband, New York, N. Y. Filed Jan. 14, 1885. (No specimens.)

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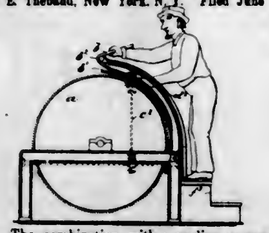


Claim.—1. The method of separating the pulp of fibrous leaves, stalks, and other parts of vegetable substances from the fibers thereof by carding or combing the same from the said substances suspended in front of, that is to say, the descending side of a carding cylinder or belt having combing or carding teeth, pins, or bristles, substantially as described.

2. The method of separating the pulp of fibrous leaves, stalks, and other parts of vegetable substances from the fibers thereof by carding or combing the same from the said substances suspended in front of the descending side of a carding cylinder or belt having combing or carding teeth, pins, or bristles and caused to move along the same, substantially in the manner described.

3. The method of separating the pulp of fibrous leaves, stalks, and other parts of vegetable substances from the fibers thereof by carding or combing the same from the said substance suspended in front of the descending side of a carding cylinder or belt having combing or carding teeth, pins, or bristles and caused to move along the same, and also caused to touch or have contact with the card or comb at one end first and to gradually increase the range of the contact therefrom along the leaves and the cylinder, substantially as described.

328,356. APPARATUS FOR CLEANSING PULPY MATTERS FROM FIBERS. John G. Stephens, Brooklyn, assignor, by mesne assignments, to Dolphin E. Theband, New York, N. Y. Filed June 10, 1885. (No model.)



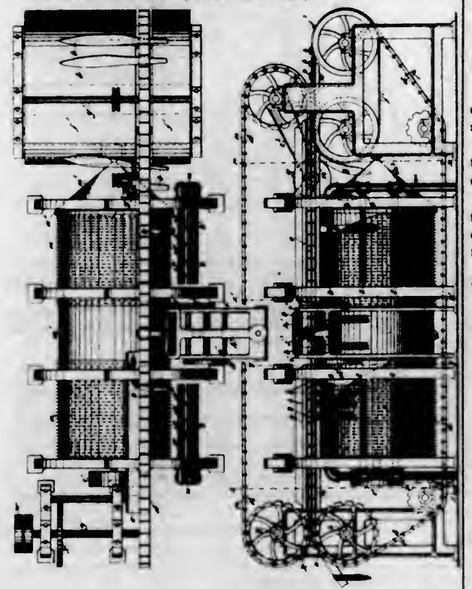
Claim.—1. The combination, with a carding or combing cylinder having combing or carding teeth or pins and being adapted for the feeding of leaves or plants sidewise along the same, of a feeding bar or rail adapted for suspending the leaves or plants in the described relation with and feeding them along said cylinder, as herein set forth.

2. The combination, with a carding or combing cylinder having combing or carding teeth or pins, and being adapted for the freedom of leaves or plants sidewise along the same, of a feeding bar or rail and suspending-clutches thereon, adapted for suspending the leaves or plants in the described relation with and feeding them along said cylinder, as herein set forth.

3. The combination, with a carding or combing cylinder having combing or carding teeth or pins, and being adapted for the feeding of the leaves or plants sidewise along the same, of a feeding bar or rail and suspending-clutches thereon, adapted for suspending the leaves or plants in the described relation with and feeding them along said cylinder; also a trough adapted for enabling the dressed fibers to be moved along over and without contact with the cylinder, substantially as described.

4. The combination, with a carding or combing cylinder or belt having combing or carding teeth or pins, and being adapted for feeding the leaves or plants sidewise along the same, of a fending guard or shield adapted to cause the leaves or plants to touch the card first at their points and to gradually increase the range of the contact along said leaves or plants and the cylinder or belt, substantially as described.

328,357. MACHINERY FOR CLEANING AND SEPARATING THE PULPY MATTERS FROM FIBERS OF LEAVES, &c. John G. Stephens, Brooklyn, assignor, by mesne assignments, to Dolphin E. Theband, New York, N. Y. Filed June 10, 1885. (No model.)



Claim.—1. The combination, with a carding or combing cylinder or belt having combing or carding teeth or pins, of mechanism, substantially as herein described, to hold and suspend the leaves, stalks, and other parts of vegetable fiber-bearing substances in front of and so as to hang in contact with the descending side of the cylinder or belt, to be carded or combed thereby, as specified.

2. The combination, with a carding or combing cylinder or belt having combing or carding teeth or pins, of mechanism to hold and suspend the leaves, stalks, or other parts of vegetable fiber-bearing substances in front of the descending side of the cylinder or belt, also to feed the leaves or other vegetable substances along the cylinder or belt in said suspended condition, substantially as described.

3. The combination, with a carding or combing cylinder or belt having combing or carding teeth or pins, of mechanism to hold and suspend the leaves, stalks, or other parts of vegetable fiber-bearing substances in front of the descending side of the cylinder or belt, also to feed the same along the cylinder, and also the guard contrived to cause the leaves or other parts to touch the card first at their points, and to gradually increase the range of the contact from the points of the leaves along said leaves or other parts and the cylinder or belt, substantially as described.

4. The combination of feeding-chains *d*, having clutches *l m*, and grooved guides *n o*, with the card-cylinder *a* or belt a^3, having combing or carding teeth or pins, substantially as described.

5. The combination of feeding-chains *d*, having clutches *l m*, and grooved guides *n o*, with carding or combing cylinder *a* or belt a^3, having the shield *b'*, substantially as described.

6. The combination of the feeding-chains *d*, having clutches *l m*, and grooved guides *n o*, with the cylinder *a* or belt a^3, having the cone or a curved guide, *h*, to guide the leaves onto the shield *b'*, substantially as described.

7. The combination of the feeding-apron *f'*, feeding-chains *d*, and depressing-roller *g* with the card-cylinder *a* or belt a^3, having combing or carding teeth or pins, substantially as described.

8. The combination, with the carding-cylinder *a* or belt a^3, having combing or carding teeth or pins, of the feeding-chains *d*, adapted to suspend and carry the leaves or plants along the same, and the shifting-rolls *f*, adapted to grip and shift the leaves or plants in the carrying-chains and with relation to the cylinder or belt, substantially as described.

9. The combination of chains *d*, having clutches *l m*, and grooved guides *n o*, one of which is adjustable with the carding-cylinder *a* or belt a^3, substantially as described.

10. The combination of a card cylinder or belt, leaf or stalk carrying and suspending chains adapted to carry the leaves laterally along the cylinder or belt, and water-sprinklers or jet apparatus adapted to lubricate and wash the cards or combs and the fibers while the carding or combing is in progress, substantially as described.

328,358. MINER'S SQUIB-CARRIER. Hugh Sykes, Mahanoy City, Pa. Filed Aug. 18, 1885. (No model.)

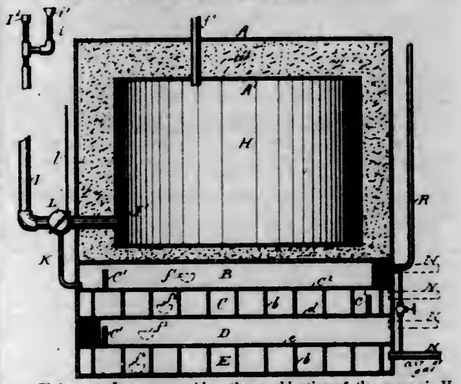


Claim.—1. The within-described miner's squib-carrier, the same consisting of a strip of paper secured in the form of a roll, and having a central chamber closed at the opposite ends, as set forth.

2. A miner's squib-carrier consisting of a strip of paper secured in the form of a roll, and having a central chamber with closing-plug *a* and disk *d* connected thereto, as specified.

3. The combination of a strip of paper secured in the form of a roll with central chamber, the opposite closing-plugs *a a'* and the disk *d*, connected to the plug *a*, and occupying a position some distance from the plug *a'*, as specified.

328,359. AUTOMATIC GAS-MACHINE. Joseph Stubbers, Cincinnati, Ohio. Filed Aug. 25, 1884. (No model.)



Claim.—1. In a gas-machine, the combination of the reservoir H, conduit F, communicating with said reservoir, pipe F', chamber B, chamber C, pipe C', pipe F^2, and valve G, substantially as and for the purposes specified.

2. In a gas-machine, the combination of the reservoir H, conduit f^6 F, communicating with said reservoir, pipe F, chamber B, chamber C, pipe C', pipe F^2, valve G, chamber D, pipe F^3, and valve G', substantially as and for the purposes specified.

3. In a gas-machine, the combination of the reservoir H, conduit f^6 F, pipe F', chamber B, chamber C, pipe C', pipe F^2, valve G, chamber D, pipe F^3, valve G', chamber E, pipe F^4, and valve G^2, substantially as and for the purposes specified.

4. In combination with a reservoir, H, and a chamber, B, the pipe F and pipe F', the latter provided with the enlarged segmental opening *f* and exit or gas-delivery pipe, substantially as and for the purposes specified.

5. In combination with a reservoir, H, and the series of two or more chambers, as B C, &c., the air-pipes F' F^2, &c., provided at their junction with their respective chambers with the enlarged segmental openings *f f'* and pipes C', the upper edges of the openings *f f'*, &c., being, respectively, below the top of the pipe C' in the same chamber, and inlet-pipe, as N, and gas-discharge pipe, substantially as and for the purposes specified.

6. The combination of the reservoir H, and chamber B, and pipe $F f^6$, pipe F', and pipe I, arm I', pipe K, and three-way valve L, inlet-pipe N, and delivery-pipe R, substantially as and for the purposes specified.

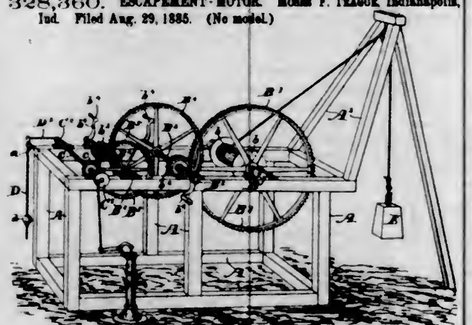
7. The combination of the reservoir H, chamber B, pipe F f^3, pipe F', pipe I, arm I', pipe K, three-way valve L, and one or more additional chambers, as C D E, each provided with a pipe, C', and pipe F^2, or F^3, or F^4, and inlet-pipe N, and delivery-pipe, substantially as and for the purposes specified.

8. The combination of the reservoir H, chamber B, pipe F f^3, pipe F', pipe I, arm I', pipe K, three-way valve L, and one or more chambers, as C D, &c., each provided with pipe C' and with a pipe, as F^2 F^3 F^4, the opening from the down pipe, as F^2 F^3 F^4, being enlarged and of a segmental shape, the upper straight edge of the opening being below the surface of the pipe C' of its chamber, inlet-pipe, as N, and gas-delivery pipe, substantially as and for the purposes specified.

9. In a gas-machine, the combination of the reservoir H, air-conduit F, communicating with said reservoir-pipe F', chamber B, pipes I and K, arm I', and cock L, substantially as and for the purposes set forth.

10. In combination with the reservoir H and two or more carbureting-chambers located below the level of the bottom of the said reservoir, the air-pipe F, communicating with the upper or air portion of the reservoir, and an air-pipe connected to the pipe F and to the lower of the carbureting-chambers, and a pipe connecting the lower or fluid portion of the said reservoir with the upper carbureting-chamber, said last-named pipe entering the last-named chamber at or near the bottom of the latter, substantially as and for the purposes specified.

328,360. **ESCAPEMENT-MOTOR.** MOSES F. TRAGUE, Indianapolis, Ind. Filed Aug. 29, 1885. (No model.)



Claim.—1. The combination, with the train of driving-gear and operating-shaft of an escapement-motor, of a governor consisting of a crank-wheel on one end of said operating-shaft, a pendulum pivoted on the frame, and a connecting-rod connecting said pendulum to said crank-wheel, substantially as set forth.

2. The combination, with the train of driving-gear and operating-shaft of an escapement-motor, of a governor consisting of a crank-wheel on one end of said driving-shaft, a pendulum pivoted near its top on the frame-work, and a connecting-rod connecting said pendulum at a point above said pivot to the crank-pin on said crank-wheel, whereby the speed of said shaft is automatically controlled, substantially as set forth.

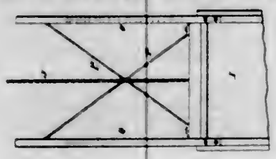
3. The combination of the chain of gear consisting of the shafts B B' B^2, gear-wheels B^2 B^4 B^5, b' and b^2, the operating-shaft C, having a gear-wheel, e, which meshes with said wheel B^5, the crank-wheel C', crank-wheel C^2, pendulum D, pivoted to the frame-work, connecting-rod D', connecting the top of said pendulum to said crank-wheel C^2, and the weight E, for driving the same, all substantially as described, and for the purposes specified.

328,361. **SELF-CLOSING HATCHWAY.** RICHARD D. THACKSTON, St. Louis, Mo., assignor of one-half to Henry I. Coe, same place. Filed Mar. 17, 1885. (No model.)

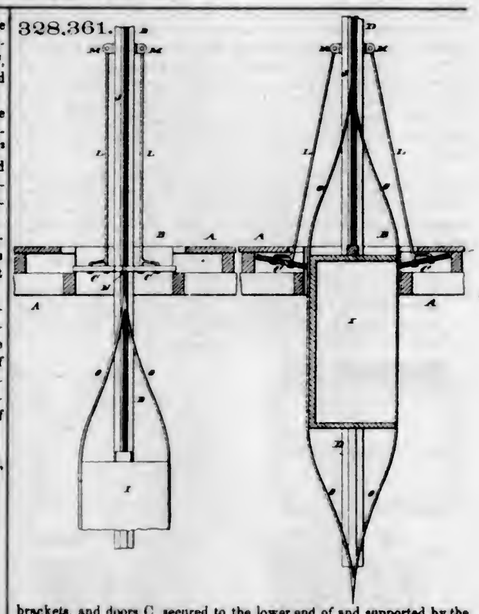
Claim.—1. In a self-closing hatchway, the combination of the door and hinged arms, the door being supported by the arms in such a manner as to swing shut of its own weight, substantially as shown and described.

2. In a self-closing hatchway, the combination of the door and arms, the door being supported by the arms, and the arms extended inward and upward from the door and hinged at their upper ends to a support, the whole being constructed and arranged substantially as shown and described, whereby the door closes by its own weight, as specified.

3. In a self-closing hatchway, in combination with the uprights, the brackets M, secured to the uprights, inclined arms L, hinged to the



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brackets, and doors C, secured to the lower end of and supported by the arms and adapted to close by their own weight, substantially as set forth.

328,362. **SELF-CLOSING HATCHWAY.** RICHARD D. THACKSTON, St. Louis, Mo., assignor of one-half to Henry I. Coe, same place. Filed July 9, 1885. (No model.)



Claim.—1. In a self-closing hatchway, two or more doors connected together in pairs, in combination with a cage located between the doors, substantially as set forth.

2. In a self closing hatchway, two doors connected together, in combination with a cage located between the doors, substantially as set forth, whereby the doors are raised and lowered simultaneously as the cage ascends and descends, as specified.

3. In a self-closing hatchway, in combination with a cage, a number of doors above and beneath the cage connected together in pairs, substantially as described and shown, those above the cage raising those beneath as the cage ascends and holding them in suspension, as specified.

4. In a self-closing hatchway, in combination with a cage, doors above and beneath the cage connected together in pairs, as described those above the cage being perforated at R to receive pins carried by the cage, substantially as and for the purpose set forth.

5. In a self-closing hatchway, in combination with a cage and floors notched at E, doors above and below the cage connected together in pairs, as described, those above the cage being provided with plates G, substantially as and for the purpose set forth.

328,363. **SCYTHE-SNATH FASTENING.** DANIEL THOMPSON, Ovid, Mich., assignor to Derby & Ball, Bellows Falls, Vt. Filed June 26, 1884. (No model.)



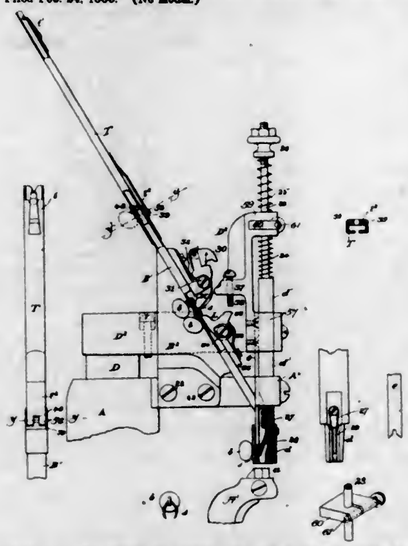
Claim.—In combination with the snath A, provided with the usual ferrule-like device, B, and clamping-eyebolt *b c*, the vibratory plate *f*, having its inner or under surface provided with an annular set of teeth or serrations, an annular toothed device, *e*, secured to the snath, and adapted to engage with the annular serrations of the plate *f*, and a bolt, I, which operates both as the pivot on which the plate *f* turns and also to clamp said plate in engagement with the device *e*, all substantially in the manner and for the purpose hereinbefore set forth.

328,364. **LACTATE BAKING-POWDER.** HAROLD G. UNDERWOOD, Milwaukee, Wis., assignor to the Avery Lactate Company, Portsmouth, N. H. Filed Apr. 27, 1885. (No specimens.)

Claim.—1. The improved baking-powder or cream-of-tartar substitute herein described, consisting of an acid lactate combined with the carbonates or bicarbonates of the alkaline earths, as set forth.

2. A baking-powder consisting of the acid lactate of calcium, the carbonates of lime or magnesia, and a suitable dividing agent, as set forth.

328,365. **BUTTON-SETTING MACHINE.** JOHN H. VINTON, Boston, Mass., assignor to the Peninsular Novelty Company, Grand Rapids, Mich. Filed Feb. 24, 1885. (No model.)



Claim.—1. The chute, the detent, and the let-off, combined with the movable arm, and its ear and screw or projection to act upon and turn the detent and the let-off, substantially as described.

2. In a button-setting apparatus, the staple-chute, the bar *d'*, and its attached slotted guide *d*, provided with the saddle astride of which the staple passes as it leaves the chute, combined with the spring to act upon the eye of the button, substantially as described.

3. In a button-setting apparatus, the staple-chute, the bar *d'*, and its attached slotted guide, combined with the spring attached to said guide, to act upon the eye of the button, substantially as described.

4. The independent tube T, slotted at its under side, and provided at its ends with catches, combined with the chute, to operate substantially as described.

5. The tube T, slotted at its under side, and provided with the stop or catch t^2, combined with the chute B', and a cam or projection to lift the stop or catch and permit the passage of fastenings and buttons from the tube into the chute, substantially as described.

6. In a button-setting machine, the arm D^2, the driver, and the carrier, combined with the springs 24 and 25, to operate substantially as described.

7. The arm D^2, the driver, and the carrier, combined with the friction device to act against the rod of the carrier, substantially as described.

8. The chute and the detent provided with a hinged or pivoted block, 30, combined with the projection to operate the said detent, substantially as described.

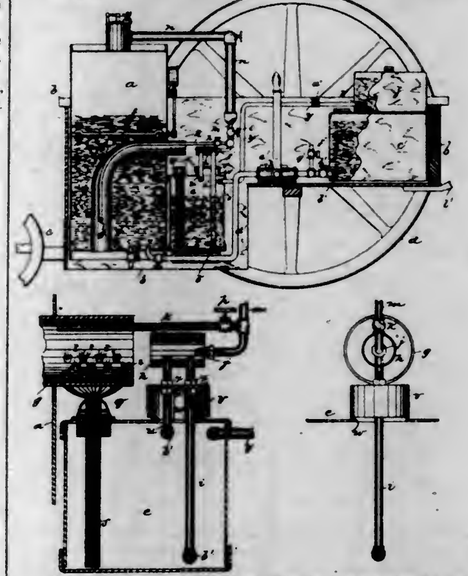
328,366. **COMPOSITION FOR PENCIL-LEADS AND CRAYONS.** C. WALPURSI, New York, assignor to the Eagle Pencil Company of New York, N. Y. Filed Mar. 19, 1885. (No specimens.)

Claim.—1. A pencil-lead or crayon in which the coloring-matter is composed of two distinct and different colors, substantially as hereinbefore described, one of which colors appears when a mark is made, and the other of which appears when the mark is dampened.

2. A composition for pencil-leads and crayons, consisting of a base—such as potter's clay—a binding medium, and two distinct colors—a writing-color and a copying-color—these ingredients being prepared and combined substantially as hereinbefore set forth.

3. A composition for writing or marking purposes, consisting of indigo prepared substantially as described, and eosene or other red color, in combination with a base and a binding medium, substantially as hereinbefore set forth.

328,367. **SNOW-MELTING AND GROUND-HEATING MACHINE.** CHARLES G. WATERBURY, New York, N. Y.; Caroline R. Waterbury executrix of said Charles G. Waterbury, deceased. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a ground-heating machine having vapor-burners and steam-jet apparatus for generating the heat, the conductors for delivering the heat on the ground incorporated with the steam-generator, substantially as described, for protection of said conductors from the heat and for utilizing the waste heat for generating the steam, substantially as described.

2. In a ground-heating machine, the combination, with the boiler, of burners located at one side of the boiler and conducting-tubes extending from said burners into and down through the boiler, substantially as described.

3. The combination of the horizontal burner tube *h*, oil-supply tube *i*, and steam-nozzle *j*, with the conducting-pipe *g*, extending out through the side of the boiler, and with said boiler, substantially as described.

4. The combination of the lamp *q*, perforated projecting conducting-pipe *g*, burners *h i j*, and the steam-boiler, said conducting-pipe extending down through the bottom of the boiler, substantially as described.

5. The combination of the boiler *a*, conducting-pipes *g*, jet-pipes *k*, burners *h i j*, and the oil-supply tank e, substantially as described.

6. The combination, with the boiler and vapor-burners *h i j*, of an air-injecting feed-pump adapted to provide air-jets for operating the burners in lack of the steam, substantially as described.

7. The combination, with the oil-tank *e* and vapor-burners *h i j*, of the safety vapor-tube *u*, adapted to exhaust the vapor from the space above the oil and discharge it into the burner, substantially as described.

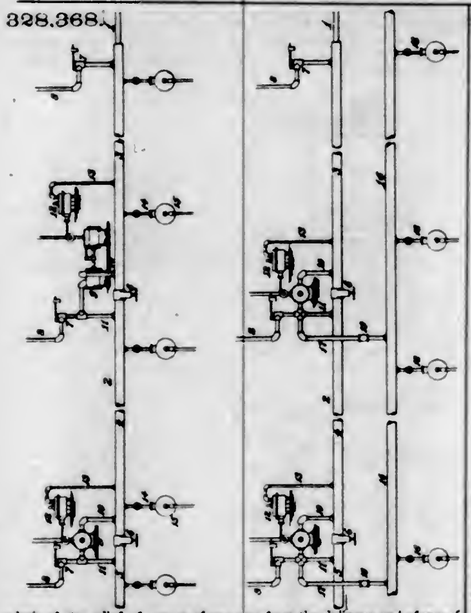
328,368. **MEANS FOR CONVEYING AND SUPPLYING GAS.** GEO. WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Feb. 3, 1885. (No model.)

Claim.—1. In an apparatus for conducting and supplying gas, the combination of a main divided into longitudinally-adjoining sections or compartments, a gas-supply pipe leading into the outer end of one of said compartments, a pump or exhauster having its suction-pipe connected to the delivery end of one compartment and its delivery-pipe to the receiving end of the adjacent compartment, and safety-valves located at the receiving ends of the compartments, whereby the average pressure is limited so as not to exceed a predetermined amount, substantially as set forth.

2. In an apparatus for conducting and supplying gas, the combination of a main divided into longitudinally-adjoining sections or compartments, a gas-supply pipe leading into the outer end of one of said compartments, a pump or exhauster having its suction pipe connected to the delivery end of one compartment and its delivery-pipe to the receiving end of the adjoining compartment, and a pressure-regulator actuated by the pressure of gas in a compartment of the main and governing the supply of motive fluid to said exhauster, substantially as set forth.

3. In an apparatus for conducting and supplying gas, the combination of a conducting-main divided into a series of longitudinally-adjoining compartments, a gas-supply pipe leading into the outer end of one of said compartments, a series of escape-valves, each adapted to

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admit of the relief of excess of pressure from the delivery end of one of the compartments, a series of exhausting mechanisms, each having a suction-pipe connected to the delivery end of one compartment and a delivery-pipe connected to the receiving end of the adjoining compartment, pressure-regulators governing the motive fluid-supply valves of the exhausting mechanisms and actuated by the pressure of gas in the compartments of the main, and valves adapted to admit of the passage of gas from one to another compartment during the cessation of operation of the exhausting mechanisms, substantially as set forth.

4. In an apparatus for conducting and supplying gas, the combination of a conducting-main divided into a series of longitudinally-adjoining compartments, a gas-supply pipe leading into the outer end of one of said compartments, a series of exhausting mechanisms, each having a suction-pipe connected to the delivery end of one compartment and a delivery-pipe connected to the receiving end of the adjoining compartment, a supplemental supply-main communicating with the delivery-pipes of the exhausting mechanisms, and service-pipes leading from said supplemental main to points of consumption or utilization, substantially as set forth.

328,369. CLASP FOR SPECTACLE-HOLDERS. Warren Wilcox, Lake Crystal, Minn. Filed May 14, 1885. (No model.)



Claim.—1. The clasp for the purpose set forth, consisting of a main or body portion, C, provided at its upper end with projecting wings *d d* and pins *c c*, in combination with the pivoted section E' and spring E, attached to the body portion, so as to bear upon the under side of the pivoted section, substantially as shown, and for the purpose set forth.

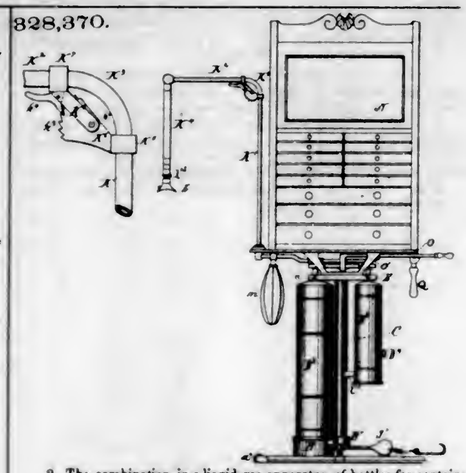
2. In combination with a case or clamp for the purpose specified, a spring-clasp attached thereto, said clasp consisting of a body portion, C, having its sides and lower end bent, as shown, and provided with wings *d d*, pins *c c*, the spring E, secured to said body portion, as shown, the upper end of said spring being bent, so as to bear upon the under side of a pivoted section, E', the pivots of said sections being secured to the side wings, substantially as set forth.

328,370. LIQUID-GAS APPARATUS. Basil M. Wilkerson, Baltimore, Md. Filed Sept. 5, 1883. Renewed Sept. 23, 1885. (No model.)

Brief.—Gas is dispensed for producing anæsthesia from bottles with automatically-closing valves, which valves are opened by foot-pedals.

Claim.—1. A liquid-gas apparatus having bottles for containing the gas and automatically-closing valves for closing the same, in combination with valve-operating devices provided with foot-pedals or treadles, whereby they may be manipulated by the foot of the operator, substantially as set forth.

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2. The combination, in a liquid-gas apparatus, of bottles for containing the gas, each having a valve and valve-controlling mechanism, constructed substantially as described, whereby the gas may be discharged from either bottle at the will of the operator, as set forth.

3. The combination, in a liquid-gas apparatus, of two or more bottles, each having a valve, pipes leading from said valves to a reservoir, gas-bag, or gasometer, and a double valve arrangement, whereby gas can be admitted from only one bottle at a time, as set forth.

4. The combination, in a liquid-gas apparatus, of bottles for containing the gas, valves for dispensing the same, one to each bottle, each having a pinion on its stem, and valve mechanism adapted to be connected with either pinion at will, whereby either may be turned to operate its valve, as set forth.

5. The combination of the bottle B^2, for containing the gas, the central tube, C, the cup B, having sleeve B', encircling the tube C, and the base A, secured to said cup, as and for the purpose set forth.

6. The combination of the central support, C, the cups and sleeves B B' D D', the bottles B^2 D^2, the plate E, and means, substantially as described, for removably securing the bottles to said plate, as set forth.

7. The combination of the plate E, means for attaching the bottle thereto, the tube C, secured to said plate, the cup B, having sleeve B', the shaft G, passing through said tube and carrying valve-operating mechanism, and the foot-lever *g'*, secured to said shaft, for the purpose set forth.

8. The combination, with the bottle B, its valve, and its supporting mechanism, of the lever for operating the valve and the spring connected to the shaft G, whereby the lever is automatically returned, thereby closing the valve, as set forth.

9. The combination of the base A, the cup B, secured thereto, the central tubular support, C, upheld by the sleeve B', the shaft G, stepped in the base, and means for securing the tubular support at the top, as set forth.

10. The combination of the base A, having wheels a^2 on one side, the table or cabinet-support O, having drop-handle on the opposite side from the wheels, and the devices connecting the table and base, substantially as set forth.

11. The combination, with the plate E, surmounting the bottles, of the arms O' and table O, adapted to support the cabinet and inhaler, as set forth.

12. The combination of the base A, tubular support C, carrying bottle-holding cups, the bottles B^2 D^2, plate E, central shaft stepped in base carrying a gear-wheel at the top and an adjusting and automatic returning device at the bottom, as set forth.

13. The combination of the cup B, the bottle B^2, and the spring *b'* in the cup to partially support the bottle, and means for securing the bottle at the top, as set forth.

14. The combination of the plate E, having notches E', the bottles having necks b^4, provided with openings b^5, and set-screws *e*, and the pipe J with ends *j*, as set forth.

15. The combination, with the plate E and reservoir J^3, of the branch pipes J' J^2, opening into said reservoir and closed by automatic valves *k k'*, as set forth.

16. The combination of the reservoir J^3, branch pipes J' J^2, valves *k k'*, having stems, and a single spring encircling said stems and holding the valves normally closed, as set forth.

17. In combination, the valve-stem F, having soft-metal end b^3, and the bottle having conical mouth, as set forth.

18. The combination, with valve-seat, neck b^4, and gland b^5, of the threaded valve-stem F and removable pinion *f*, as set forth.

19. In combination, the valve-stem F, having conical soft-metal point swiveled thereon, the valve-seat b^3, neck b^4, and pinion *f*, as set forth.

20. The combination, with the bottles B^2 D^2, having valves with screw-stems F, of the pinions *f* and the intervening adjustable gear-wheel G, as set forth.

21. The swinging support for the bottle, consisting of plate E with notch E', the bottle-neck b^4 with opening b^5, the pipe J with end *j*, projecting through the plate E into opening b^5, and the set-screw *e*, threaded through said plate and engaging the opposite side of the neck of the bottle, as set forth.

22. In combination with the pipe K^2, the sleeve R, fork r^2, and set-screw *r'*, for the purpose set forth.

23. The combination of the pipes K' K^2, flexible tube K^3, and ratchet-adjusting mechanism, constructed and located substantially as described.

24. The combination of the pipes K' K^2, the flexible tube K^3, the swiveled sleeve and ratchet attached to one of them, and the sleeve rigidly secured to the other and carrying a pawl, the pawl-support being pivoted to the ratchet, as set forth.

25. In a liquid-gas apparatus, the combination of an automatically-closing mouth-piece or inhaler, pipes leading from it to the gas-bottles having automatically-closing valves, and a gas bag or reservoir located on and connected with said pipes, as set forth.

26. The combination, with the valves of a liquid-gas apparatus, of a foot-lever for operating said valves and an extension to said foot-lever extending to a distant point, whereby the lever may be operated from the said point, as and for the purpose set forth.

27. In a liquid gas apparatus, a pipe connected with and supported upon the apparatus and carrying the inhaler and an adjustable joint, substantially as described, whereby its outer portion may be adjusted to any desired position and secured in said adjustment, as set forth.

28. A liquid-gas apparatus provided with a supported pipe carrying the inhaler and a joint, substantially as described, capable of vertical and lateral adjustment, as set forth.

29. A liquid-gas apparatus provided with a bottle and locking and supporting devices, substantially as described, whereby said bottle is supported and held from turning, as set forth.

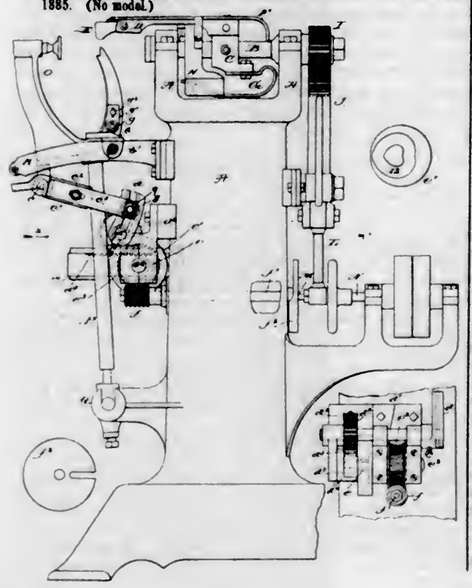
30. A liquid-gas apparatus provided with a bottle and devices engaging with the neck of the bottle to support and hold it from turning, as set forth.

31. In a liquid-gas apparatus, a bottle supported wholly at the neck thereof, in combination with the supporting device, serving also to hold it from turning, as set forth.

32. In a liquid-gas apparatus, a sheath having a perforated head for the neck of the bottle to pass through, in combination with a locking device to secure the bottle in the sheath.

33. In a liquid-gas apparatus, a bottle having its ordinary yoke for making the exit-pipe connection to serve to support and lock the bottle from rotation, the parts being combined substantially as described.

328,371. HEEL-BURNISHING MACHINE. Charles J. Addy, Malden, assignor to Tapley Machine Company, Boston, Mass. Filed Jan. 23, 1885. (No model.)



Claim.—1. In a heel-burnishing machine, the rock-shaft, its connected vibrating arm carrying a burnishing-tool and a shoe-carrying frame to move a shoe horizontally in the direction of the length of the heel under a burnishing-tool, combined with a pattern plate or surface to effect change of position of the central part of the heel vertically with relation to the center or axis of rotation of the shaft carrying the said vibrating arm and tool, whereby the burnishing-tool is enabled to travel at each stroke to the breast of the heel, substantially as described.

2. In a heel-burnishing machine, the rock-shaft, its connected vibrating arm carrying a burnishing-tool and a shoe-carrying frame to move a shoe horizontally in the direction of the length of the heel under a burnishing-tool, and means, substantially as described, to move the said frame toward and from and under the burnishing-tool, to thus enable the tool to follow along the heel from heel-seat to top lift, and vice versa, combined with a pattern plate or surface to effect change of position of the central part of the heel vertically with relation to the center or axis of rotation of the shaft carrying the said vibrating arm and tool, whereby the burnishing-tool is enabled to travel at each stroke to the breast of the heel, substantially as described.

3. In a heel-burnishing machine, the shoe-carrying jack and the rotating shaft *f'*, combined with the worm, worm-gear, pinions, rack, arm *d*, and connections between the said parts, to operate substantially as described.

4. In a heel-burnishing machine, the pivoted jack provided with the roll and the yoke, combined with the pattern plate or surface, substantially as described.

328,372. AUTOMATIC CAR-BRAKE. Franklin H. Agnew and Richard R. Rick, Beaver, Pa. Filed May 6, 1885. (No model.)



Claim.—1. In an automatic car-brake mechanism, the combination, with the sliding draw-bar provided with the stop or projection, of the brake or power lever adapted to be operated by said draw-bar, the brake rod or chain, and the intermediate floating lever connected to said draw-bar, power-lever, and brake-rod, substantially as and for the purpose described.

2. In an automatic car-brake mechanism, the floating lever interposed between the power or brake lever and the brake rod or chain and connected therewith, in combination with a movable stop or fulcrum, the governor on the axle, and interposed mechanism, substantially as described, for automatically moving said stop and locking or setting and releasing said floating lever, for the purpose and substantially as described.

3. The floating lever C, interposed between the power or brake lever and brakes, and operating in connection therewith, substantially as described, in combination with a movable stop or fulcrum adapted to be moved into and out of the path of said floating lever for setting the same to act, or relieving it from acting on the brakes, substantially as described.

4. The governor-arms on the axle for controlling the brake-actuating mechanism, composed of two interlocking levers pivoted to different

centers in arms on the axle, and adapted one to lock the other in position to act on the brake-actuating mechanism, substantially as described.

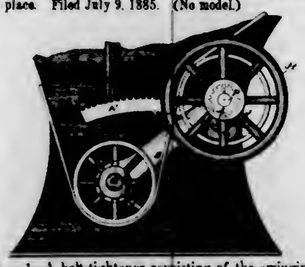
5. Slotted annular flanges on the axle, in combination with governor arms or levers pivoted in pairs therein upon different centers, adapting one lever of the pair to lock the other in position for acting on the brake-setting mechanism, substantially as described.

6. The combination, with the governor-arms on the axle, of the elbow-levers having the straight pendent arms, and the stop or set lever connected with said elbow-levers and operating to set and release the floating lever of the brake-actuating mechanism, substantially as described.

7. In a mechanism for automatically controlling a brake-actuating mechanism, a stop or set lever, in combination with governor-arms on the axle, and an interposed connecting-lever provided with a straight arm or portion where it is acted upon by the governor-arms, substantially as and for the purpose described.

8. The combination, in an automatic brake mechanism, of the sliding draw-bar, with its stop or projection, the brake or power lever acted upon by said draw-bar, the brake rod or chain, the intermediate floating lever, the stop or set lever for setting and releasing the floating lever, the levers connected with the set-lever, and the governor-arms on the axle for operating the last-named levers, all substantially as described.

328,373. **BELT-TIGHTENER.** James B. Allfree, Cumberland, Md., assignor of one-half to Robert Shriver and Harrison Swartzwelder, both of same place. Filed July 9, 1885. (No model.)



Claim.—1. A belt-tightener consisting of the swinging arm, the idle-pulley mounted thereon, the rod mounted in the said arm and provided with a pinion, and a rack mounted upon the frame of the mill with which the said pinion engages, and means, substantially as described, for securing the pinion in place.

2. The belt-tightener consisting of the swinging arm having the bearing consisting of the integral collar and the independent collar secured to the said arm by set-screws, the shaft mounted in the upper end of the arm and carrying the pinion, and the segment secured to the side of the mill.

3. A belt-tightener consisting of the swinging arm carrying the idle-pulley, the shaft provided with the pinion at one end and with the hand-wheel at the other, the rack on the mill, and means, substantially as described, for holding the pulley in any desired position relative to the belt.

4. A belt-tightener consisting of the swinging arm, the idle-pulley mounted thereon, the rod provided with the pinion at one end and the hand-wheel at the other, the plate provided with perforations, and the pin inserted through the spokes in the hand-wheel and taking into the plate.

5. A belt-tightener consisting of the swinging arm provided with the right-angular hollow bearing *d*, the idle-pulley mounted thereon, the rod passing through the said hollow bearing and provided at one end with the pinion and at the other with a hand-wheel, the perforated plate, and a pin passing through the wheel and taking into the said plate, and a rack on the mill, substantially as described.

328,374. **LAWN-MOWER.** Daniel Arndt, Cleveland, Ohio, assignor to Auguste Romeau, same place. Filed Feb. 7, 1884. (No model.)



Claim.—1. In a lawn-mower, the combination, with a frame and a roller journaled therein and provided with cam-grooves, of two cutter-knives having rearwardly-projecting arms, which latter rest within their respective cam-grooves in the roller, and a single pivot-bolt for both cutters, substantially as set forth.

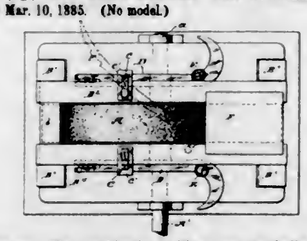
2. In a lawn-mower, the combination, with a frame and a roller journaled therein and provided with cam-grooves, of two cutters having rearwardly-projecting arms, which latter rest within their respective cam-grooves in the roller, a single pivot for both cutters, and friction-plate supporting the upper cutter at a point behind the pivotal point of said cutters, substantially as set forth.

3. In a lawn-mower, the combination, with a frame and the roller having the cam-grooves thereon, of the cutter-knives pivoted to said frame and provided with the rearwardly-extending arms, a washer located between the cutters, and a friction-plate supporting the movable cutter at a point behind the pivotal point of the cutters, substantially as set forth.

4. In a lawn-mower, the combination, with the frame, the roller having cam-grooves therein, and the pivoted cutters having rearwardly-projecting-arms, having their ends resting within the cam-grooves, of the shield removably secured to the frame, substantially as set forth.

5. In a lawn-mower, the combination, with the frame, the roller journaled therein, and the pivoted cutters, of the rake secured to the rearwardly-projecting portions of the frame, and the hooks for locking the rake in an operative position, substantially as set forth.

328,375. **HAY-KNIFE GRINDER.** John W. Averill, Wilton, Me. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination, with a rotary grinding-disk and a supporting-frame, of a vertically-movable knife-holder, C, supported upon said frame in position to engage one end of the implement to be ground, and means for moving the holder, substantially as and for the purpose set forth.

2. The combination, with a rotary grinding-disk and a supporting-frame, of a holder, C, provided with a supporting-rod, C', a suitable guide for said rod, and a lever, D, pivoted to the frame and connected with the rod C', substantially as and for the purpose set forth.

3. The combination, with a rotary grinding-disk and a supporting-frame, of a holder, C, provided with a supporting-rod, C', a suitable guide for said rod, and a lever, D, pivoted to the frame and connected with said rod, and a lifting-spring interposed between a part of the frame and the lever, substantially as and for the purpose set forth.

4. The combination, with a rotary grinding-disk and a supporting-frame, of two holders, C, located one at either side of the grinding-disk and having supporting-rods C', guides for said rods, levers D, pivoted to the frame and connected with the rods, springs applied to hold the free ends of the levers in a raised position, and a seat, F, supported upon the frame adjacent to and above the free ends of the levers, substantially as and for the purpose set forth.

328,376. **TRACK-LIFTER.** Lewis D. Badger, Lake Village, assignor to the American Rock and Track Lifter Company, Gilford, N. H. Filed Sept. 7, 1885. (No model.)



Claim.—1. The combination of the grappling-hooks A A, constructed substantially as described, and the connecting-chain B, constituting a grappling device for a railroad-track, as herein set forth.

2. The combination of the grappling-hooks A A and connecting-chain B with a lifting apparatus, substantially as and for the purpose herein specified.

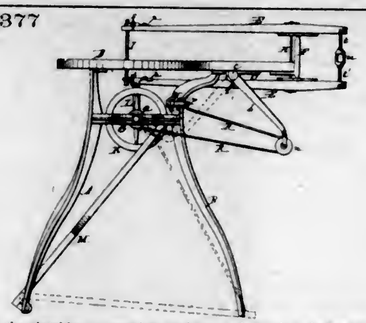
3. The combination of the grappling-hooks A A, connecting-chain B, ratchet-bar C, lever D, latch E, and U-shaped frame F, substantially as and for the purpose herein specified.

328,377. **SCROLL-SAWING MACHINE.** William F. Barnes, Rockford, Ill., assignor to the W. F. & John Barnes Company, same place. Filed June 17, 1885. (No model.)

Claim.—1. The combination of a spring-supporting shaft made adjustable in its bearing-support, a tension-arm supported to oscillate on the spring-supporting shaft, and a spring surrounding the shaft and having one end thereof connected with the shaft and its other end connected with the tension-arm, substantially as and for the purpose set forth.

2. The combination, with a saw-supporting frame and with a treadle, of a spring-actuated tension-arm made adjustable in its connection with the frame, and a belt having a sheave-connection with the tension-arm

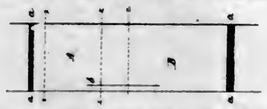
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and with the clutching mechanism, and one end of said belt fixed to the free end of the treadle and its other end to the frame, substantially as and for the purpose set forth.

3. The combination, with the frame and with the belt, of a belt-buckle having a pivotal connection with the frame, and the belt adjustable in its connection with the buckle, substantially as and for the purpose set forth.

328,378. **POCKET FOR GARMENTS.** Morris P. Bray, Ansonia, Conn., assignor, by mesne assignments, to the Godfrey Seamless Pocket Company, Boston, Mass. Filed Nov. 10, 1884. (No model.)



Claim.—1. As an article of manufacture, a series of pockets woven in a continuous strip of double thickness, the two thicknesses united transversely at intervals to form the bottom of the pocket, one thickness woven with a longitudinal slit, *b*, near one edge, but distant therefrom, to form the flap *f* and the vertical opening in the pocket, substantially as described.

2. A woven pocket for garments, having the bottom and edges closed in the process of weaving, one of the thicknesses woven with an open longitudinal slit, *b*, near one edge, but distant therefrom, to form the flap *f*, substantially as described.

328,379. **POCKET FOR GARMENTS.** Morris P. Bray, Ansonia, Conn., assignor, by mesne assignments, to the Godfrey Seamless Pocket Company, Boston, Mass. Filed Nov. 10, 1884. (No model.)



Claim.—1. As an article of manufacture, a series of pockets woven in a continuous strip of double thickness, the two thicknesses united transversely at intervals to form the bottoms of the pockets, and also united at intermediate intervals to form an extension from the top of the pocket, said portion for extension being adapted to be cut diagonally across the strip, the double portion forming each pocket woven to form a selvage-edge longitudinal slit, *d*, substantially as described.

2. A woven pocket for garments, having the bottom edge closed in the process of weaving and an extension from the upper end of the pocket also woven solid, the pocket proper having a longitudinal selvage-edge opening, *d*, left therein in the process of weaving, substantially as described.

328,380. **MACHINE FOR MAKING COILED WIRE SPRINGS.** F. L. Bryant, Chicago, Ill., assignor to Ames & Frost, same place. Filed Feb 12, 1885. (No model.)

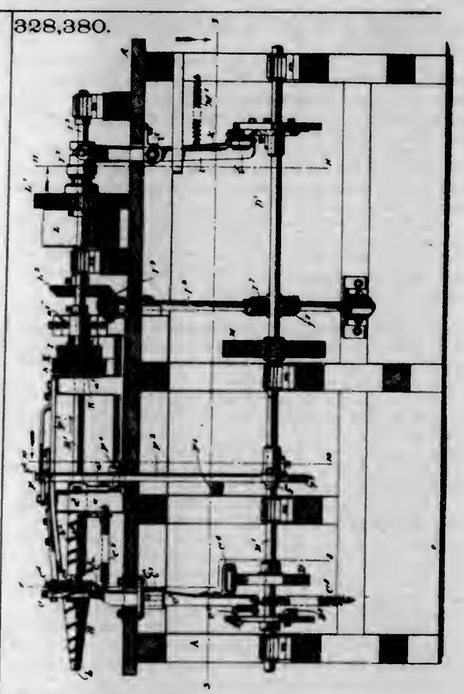
Claim.—1. A machine for making conical wire springs, comprising a rotating and longitudinally-reciprocating conical mandrel, and a wire-guide constructed to sustain the wire as it approaches the mandrel, whereby, when the mandrel is actuated, the wire will be wound upon the surface thereof, substantially as described.

2. A machine for making conical wire springs, comprising a wire-guide, and a rotary and longitudinally-reciprocatory conical mandrel provided with devices for engaging and holding the end of the wire to be wound upon said mandrel, substantially as described.

3. A machine for making wire springs, comprising a rotating and longitudinally-reciprocating conical mandrel provided with a spiral groove, substantially as described.

4. The combination, with a rotating and longitudinally-reciprocating conical mandrel, of a movable wire-guide constructed to engage the part of the wire approaching the mandrel, and to sustain the said wire

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in a line tangent to the surface of the mandrel, substantially as and for the purpose set forth.

5. The combination, with the rotating and longitudinally-reciprocating conical mandrel provided at one end with a notch to engage the end of the wire, of a wire-guide having a reciprocatory movement, whereby the end of the wire held in said guide may be brought into engagement with the notch in the mandrel, substantially as described.

6. The combination, with the rotary and longitudinally-reciprocatory conical mandrel, and means for actuating said mandrel, of a wire-guide movable in a direction transverse to the axis of the mandrel, and automatic actuating mechanism for the said wire-guide, substantially as and for the purpose set forth.

7. The combination, with a rotating and longitudinally-reciprocating conical mandrel, provided with a notch at one end to engage the end of the wire, of a wire-guide having a movement in a direction transverse to the axis of the mandrel, and also a longitudinally-reciprocating movement with reference to the said axis, whereby the wire may be held in a position tangent to the surface of the mandrel as the latter is advanced, and the end of the wire brought into engagement with the notch of the mandrel, substantially as described.

8. The combination, with a wire-guide, of a longitudinally-reciprocating conical mandrel having a rotating motion alternately in opposite directions, whereby a wire coiled thereon in the rotation of the mandrel in one direction may be loosened by the rotation of the mandrel in a reverse direction, substantially as described.

9. In a machine for making wire springs, the combination, with a rotating and longitudinally-reciprocating conical mandrel, of a movable cutter located in position to sever the finished springs from the main wire, and automatic means for actuating said cutter upon the completion of each spring, substantially as described.

10. The combination, with a rotary and longitudinally-reciprocatory conical mandrel for forming a conical coiled wire spring, of a movable cutter to sever the finished spring from the main wire, and a movable wire-guide constructed to carry the wire into position for the operation of the cutter, substantially as described.

11. The combination, with a rotary and longitudinally-reciprocatory conical mandrel having a rotary motion alternately in opposite directions, of a cutter to sever the finished spring from the main wire, and an arm or projection located in position to uphold the spring after it has been loosened from the conical mandrel by the backward rotation of the latter, substantially as described.

12. The combination, with a rotary and longitudinally-reciprocatory conical mandrel provided at its smaller end with a notch adapted to receive the end of the wire to be coiled, of a stop device constructed to positively check the movement of the mandrel when the said notch is

in position to engage the end of the said wire, substantially as and for the purpose set forth.

13. The combination of the rotary and longitudinally-reciprocatory conical mandrel C, having a stem, B', provided with a spirally-grooved portion, b^3, driving mechanism connected with the stem, a fixed stud engaging the spiral groove thereof, and means for reversing said driving mechanism, substantially as described.

14. The combination, with the rotary and longitudinally-reciprocatory conical mandrel, of a movable cutter, E, and an opposing stationary cutting-edge constructed and operating to sever the finished spring from the main wire, substantially as and for the purpose set forth.

15. In a machine for making coiled wire springs, a cutting device for severing the finished springs from the main wire, comprising a plate, E', provided with a notch, e', and a passage or way, e, intersecting said notch, and a reciprocatory cutter, E, fitted to slide in said way e, substantially as and for the purpose set forth.

16. In a machine for making coiled wire springs, a cutting device for severing the finished springs from the main wire, comprising a plate, E', provided with a notch, e', and a way, e, intersecting said notch, and a reciprocating cutter, E, provided with a notch, f, in its end, substantially as and for the purpose set forth.

17. In a machine for making coiled wire springs, a device for severing the finished springs from the main wire, comprising a plate, E', provided with a notch, e', and a groove or way, e, intersecting said notch, a movable cutter, E, fitted to slide in said way, and a toggle connected with the said cutter for actuating the latter, and means for actuating said toggle, substantially as described.

18. In a machine for making coiled wire springs, a device for severing the finished springs from the main wire, comprising a plate, E', provided with a notch, e', and a groove or way, e, intersecting said notch, a cutter, E, fitted to slide in said way, a toggle connected with said cutter for actuating the latter, a lever pivoted to the machine-frame and connected with the said toggle, and a cam or equivalent means for actuating said lever, substantially as and for the purpose set forth.

19. The combination, with a rotary and longitudinally-reciprocating mandrel, of a wire-guide, C, a vertically-movable and oscillatory arm, C', supporting said guide, and cams or equivalent means for actuating said arm C', substantially as and for the purpose set forth.

20. The combination, with a rotary and longitudinally-reciprocating mandrel, of a wire-guide, C, a vertically-movable and oscillatory arm, C' supporting said guide, provided with pins C^4, guides C^3 for said pins, and cams or equivalent means for actuating said arm C', substantially as described.

21. The combination, with the guide C, and the vertically-movable and oscillatory arm C' supporting said guide, of a cam, D, acting upon said arm for moving the latter vertically, and a cam projection, D^2, for giving an oscillatory movement to said arm, substantially as described.

22. The combination, with a rotary and longitudinally-movable mandrel and a vertically-movable wire-guide, C, of an arm, C^{10}, connected and moving with said guide, substantially as and for the purpose set forth.

23. In a machine for making coiled wire springs, a longitudinally-movable mandrel provided with a pin, b^2, substantially as and for the purpose set forth.

24. The combination, with a rotary and longitudinally-movable mandrel provided with a notch for engaging a wire, a shaft supporting said mandrel, and means applied to the shaft for rotating and longitudinally moving said shaft, of stops a^2 and b^2 upon the machine-frame and mandrel, substantially as and for the purpose set forth.

25. The combination, with a rotary and longitudinally-movable mandrel, and a shaft supporting said mandrel mounted to slide longitudinally in suitable bearings and provided with a longitudinal groove, of a gear-wheel mounted concentrically with the shaft and having a spline engaged with the groove of the latter, means for holding the said gear-wheel from end movement with the shaft, suitable driving-connections for actuating said gear-wheel, and a rotary and spirally-grooved cylinder or equivalent means applied to move the mandrel longitudinally, substantially as described.

26. The combination, with a rotary and longitudinally-movable mandrel, and a shaft supporting said mandrel mounted to slide longitudinally in bearings and provided with a longitudinal groove, of a gear-wheel mounted concentrically with the shaft and provided with an inner part or sleeve, as G, having frictional engagement with the gear-wheel, and provided with a spline engaged with the groove of the shaft, and a spirally-grooved drum or equivalent means applied to move the mandrel longitudinally, substantially as and for the purpose set forth.

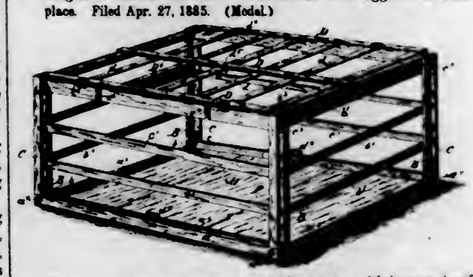
27. The combination, with the machine-frame, of the mandrel B, the shaft B', attached to and supporting said mandrel and provided with a spirally-grooved drum, b^3, a part or support, a, upon the frame affording bearings for the said drum b^3, provided with a stud, a^3, engaged with the groove of the cylinder, supports, as a' a^2, upon the machine-frame affording bearings for the shaft B', and suitable driving-connections for rotating the said shaft, substantially as described.

28. The combination, with the machine-frame, the rotary and longitudinally-movable mandrel B, and a spirally-grooved drum or equivalent means applied to move the mandrel longitudinally, of a shaft, B', supporting said mandrel, provided with a longitudinal groove, supports, as a' and a^2, for said shaft, a sleeve, G, surrounding the shaft, having bearings in said supports a' a^2, and provided with a spline engaged with the groove of the shaft and with a collar, G', a gear-wheel, H, mounted upon the said sleeve in contact with the collar G', and a nut, g^2, or equivalent means, for causing frictional engagement between the gear and sleeve, substantially as and for the purpose set forth.

29. The combination, with the rotary and longitudinally-movable mandrel, and a shaft supporting said mandrel, of the double gear H upon said shaft, shafts I^2 and K^2, provided with gear-wheels I and K, engaged with the said gear H, a gear, L^2, mounted concentrically with the shaft K^2, a driving-pulley, L, connected with said gear L^2, a gear, L', intermeshing with the gear L^2 and mounted concentrically with the shaft I^2, and suitable clutch devices for alternately connecting the said wheels L^2 and L' with the shafts K^2 and I^2, substantially as described.

30. The combination, with the rotary and longitudinally-movable mandrel, and a cutter, E, for severing the finished spring from the main wire, of driving-connections for rotating the mandrel, comprising two oppositely-rotating shafts, driving-wheels mounted concentrically with said shafts, clutches for connecting the driving-wheels with the shafts, and cams K^3 and I^4 for actuating said clutches, the cam I^4 being provided with a depressed portion, i^3, whereby the mandrel is momentarily stopped in its backward rotation, substantially as and for the purpose set forth.

328,381. **FOLDING CRATE.** William H. Cadwell, Chicago, Ill., assignor to himself, Warren W. Cadwell, and L. C. Riggs, all of same place. Filed Apr. 27, 1885. (Model.)



Claim.—1. The combination, in a folding crate, with bottom A, of hinged end posts, B, having slats b' secured on the inside of said posts, and hinged side posts, C, having slats c' secured on the inside of said posts, the first or lower side slat, c', falling inside the end posts, B, when the crate is folded, substantially as specified.

2. The combination of bottom A with hinged end and side posts, B C, having slats b' c' secured on the inside thereof, and a top, D d, said side slat, c', falling inside said end posts, B, and said top D d falling inside said side posts, C, when the crate is folded, substantially as specified.

3. The folding crate consisting of bottom A, provided with side rails, a, and end rails, a', tie-rods a^3 and a^3, and brace-plates A', folding ends B b', and sides C c, hinged to said tie-rods, said sides being provided with hinge bolts or rods c^3, and top D d, provided with slots d', engaging said rods c^3, substantially as specified.

4. The combination of bottom A, with side and end rails, a a', tie-rods a^2 a^3, brace-plates A', and folding sides and ends hinged to said tie-rods, substantially as specified.

5. The combination of a bottom provided with side and end rails and tie-rods with folding sides and ends hinged to said tie-rods and a top having sliding hinge-joints connecting the same with said sides, substantially as specified.

6. The combination of a bottom provided with side and end rails with folding sides and ends hinged at the upper inside edge of said side and end rails, said sides and ends having their slats secured upon the inside of their posts, substantially as specified.

7. The combination of a bottom provided with side and end rails and tie-rods with folding sides and ends hinged to said tie-rods, said sides and ends having their slats secured on the inside of their posts, and said sides being provided with blocks or stops against which said ends open or abut, substantially as specified.

8. The combination of bottom A, provided with side and end rails, a a', and tie-rods a^2 a^3, with brace-plates A', posts B C, hinged to said tie-rods, slats b' c', secured on the inside of said posts, said slats b' (one or more) projecting beyond said posts B, and said slats c' having stops or blocks c^3, substantially as specified.

9. The combination of a bottom provided with side and end rails with hinged sides and ends and a top having sliding hinge-joints connecting the same with said sides, substantially as specified

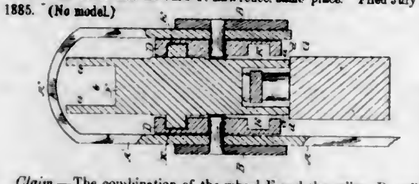
10. The combination of a bottom provided with side and end rails, hinged sides and ends, said sides being provided with hinge rods or bolts c^3, and a top, D d, having strips or rods d^2, secured on the under side of one or more of said slats d to form guides for said rods or bolts c^3, substantially as specified.

11. The combination of a bottom provided with side and end rails with hinged sides and ends and a top having sliding hinge-joints connecting the same with said sides, said top being provided with a cross-piece, D', for said ends to abut against, substantially as specified.

12. The combination of a bottom having side and end rails with hinged sides and ends, said side rails being provided with staples d^3, and a top having sliding hinge-joints connecting the same with said sides, and said top being provided with a movable slat, d, to engage said staples d^3 to lock the crate when closed, substantially as specified.

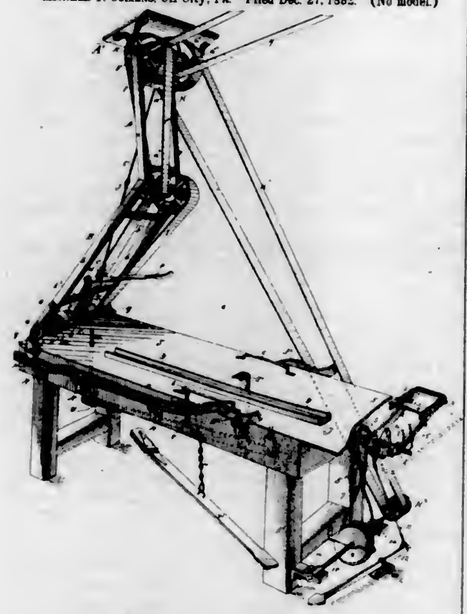
13. The combination of a bottom having side and end rails with hinged sides and ends and a top having sliding hinge-joints connecting said top with said sides, said hinge-joints being detachably connected to one of said sides, so that said top may be opened on its opposite hinge, substantially as specified.

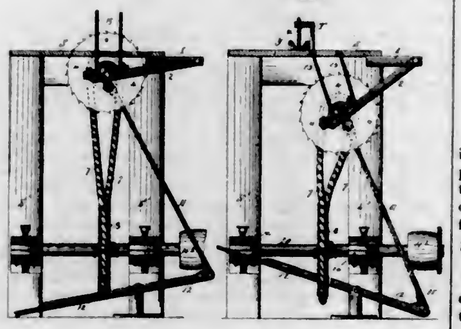
328,382. **DOOR-HANGER.** Norman Clark, Sterling, Ill., assignor to John H. Lawrence and Edward F. Lawrence, same place. Filed July 28, 1885. (No model.)

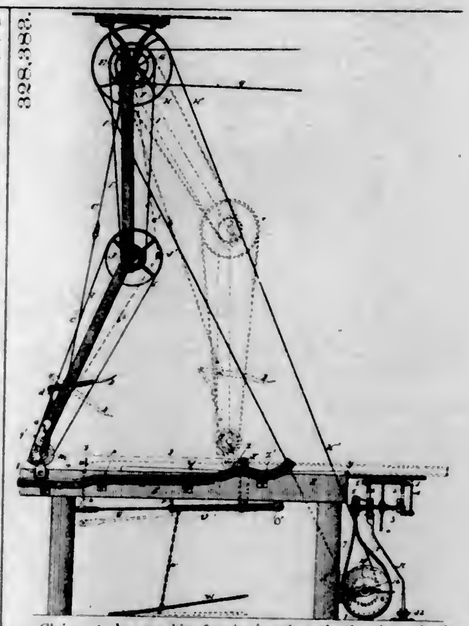


Claim.—The combination of the wheel F and the rollers D, unilaterally journaled, and provided with the annular grooves E, such wheel having journals adapted to traverse such grooves and support such rollers, substantially as shown, and for the purpose described.

328,383. **MACHINE FOR SHAPING THE ENDS OF SUCKER-RODS.** Michael T. Collins, Oil City, Pa. Filed Dec. 27, 1882. (No model.)







Claim.—1. In a machine for shaping the ends of sucker-rods, the combination of a swinging frame carrying revolving cutters, a table provided with a grooved bed, two curved tracks on the sides of said table, the lever U, pivoted at one end to the under side of the table, its clamp T, passing therethrough, and a treadle connected with the lever U, substantially as and for the purpose described.

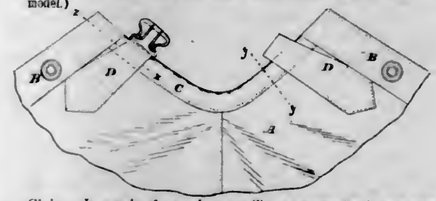
2. The combination of a table, two curved tracks on the sides thereof, and a hanger having revolving cutters and the sheaves adapted to follow said tracks with the bed y and horizontal lever U, carrying a vertical stop-pin, u, and treadle W, substantially as and for the purposes set forth.

3. The combination of a table provided with grooved bed y and adjustable side tracks with hanger B, carrying revolving cutters and the sheaves q, and hinged at J to hanger A, substantially as and for the purpose described.

4. The combination, with table S and side guides P, of hangers A and B, elbow-jointed at J, and tie-rods C, uniting said hangers and handlever D with revolving cutters upon the lower hanger, substantially as and for the purpose described.

5. The combination of a table, its grooved bed y, vertical stop-rod u, clamp T, lever U, carrying said clamp and stop-rod, and the treadle W, controlling said lever, with a saw capable of rotation across the axis of said grooved bed, a saw-support hinged to the table, and a treadle and pitman connected with said support, whereby the sawing mechanism is adapted to be retained alternately under and above the surface of said table, substantially as and for the purpose described.

328,384. **PANTALOONS.** Charles R. Cones, Indianapolis, Ind., assignor to C. B. Cones' Son & Co., same place. Filed Aug. 21, 1882. (No model.)

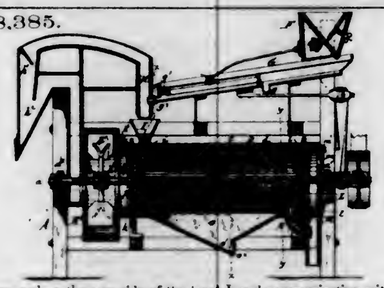


Claim.—In a pair of pantaloons or like garments having an opening ending in the back seam, the stay-binding C, formed of a single piece of fabric doubled to embrace the edge of the material and face the same upon both sides, the edges doubled in to form a double hem or hem upon each side, and secured by stitching, substantially as set forth.

328,385. **GRAIN SCOURER AND SEPARATOR.** Giles S. Cranson, Silver Creek, N. Y. Filed Apr. 8, 1885. (No model.)

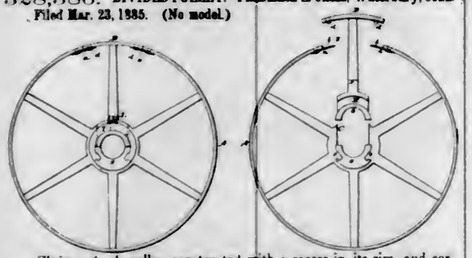
Claim.—The combination, with the perforated horizontal scouring-cylinder C and inclosing-case D, separated by an annular space, d, and the fan E, of the heads K L, provided with openings k l, the wind-trunk

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M, arranged on the rear side of the head L and communicating with the openings *l*, and the spout N, which delivers the scoured grain into the wind-trunk M, substantially as set forth.

328,386. DIVIDED PULLEY. Frederick E. Cross, Waterbury, Conn. Filed Mar. 23, 1885. (No model.)



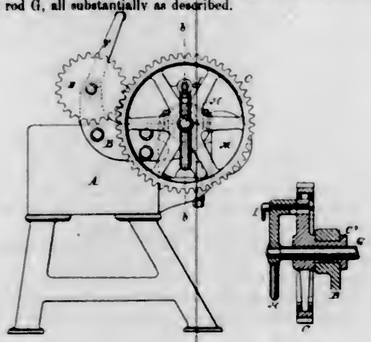
Claim.—1. A pulley constructed with a recess in its rim, and corresponding recess in the hub, and parallel with the axis of the pulley, the width of said recesses greater than the diameter of the shaft to which the pulley is to be applied, combined with a segment corresponding to the recess in the rim and a segment corresponding to the recess in the hub, the said two segments connected by an arm of the pulley, the said two parts adapted to be secured together, substantially as described.

2. A pulley constructed with a recess in its rim, and corresponding recess in the hub, and parallel with the axis of the pulley, the width of said recesses greater than the diameter of the shaft to which the pulley is to be applied, combined with a segment corresponding to the recess in the rim and a segment corresponding to the recess in the hub, the said two segments connected by an arm of the pulley, the rim of the pulley constructed with an underlying flange, *a*, at the ends of the opening, and upon which the segment of the rim will rest, the said parts adapted to be secured together, substantially as described.

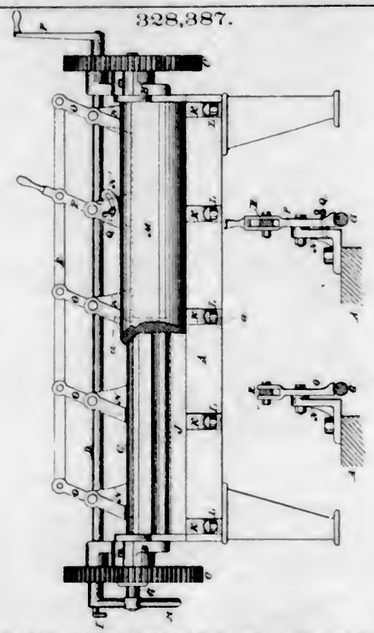
3. A pulley constructed with a recess in its rim, and corresponding recess in the hub, and parallel with the axis of the pulley, the width of said recesses greater than the diameter of the shaft to which the pulley is to be applied, combined with a segment corresponding to the recess in the rim and a segment corresponding to the recess in the hub, the said two segments connected by an arm of the pulley, the rim of the pulley constructed with an underlying flange, *a*, at the ends of the opening, and upon which the segment of the rim will rest, the said segment constructed with studs *d*, and the flanges *a* with corresponding holes to interlock with said studs, the said parts adapted to be secured together, substantially as described.

328,387. SHEET-METAL-BENDING MACHINE. Michael Cullen, Hartford, Conn. Filed Mar. 9, 1885. (No model.)

Claim.—1. The combination of a series of levers connected by the rod R and adapted to be operated by the movement of either of them, and to be fastened in position by the set-screw Q, and to press downward upon the rod G, all substantially as described.



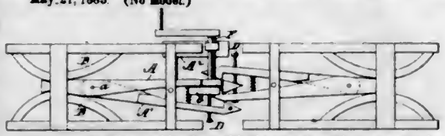
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2. The combination of the rod G, having a groove for the reception of one edge of a sheet of metal, with the block J, having a longitudinal concavity of somewhat larger radius than that of the rod G, and with the block M, having a dowel system for attachment to the block J, all operating together to bend the edge of a sheet of metal into a tubular form, and to bend the body of the same sheet into the form of a reverse curve, all substantially as described.

3. The block J, provided with longitudinal concavities of variant sizes, and adapted to be rigidly held in different positions, substantially as described.

328,388. CAR-COUPLING. John Cundo, Vicksburg, Miss. Filed May 21, 1885. (No model.)



Claim.—1. The combination, with the arm A, of the cam or wedge-block arranged and operating close to the shoulder of the jaw end of such arm, substantially as set forth.

2. The combination, with the twin arms or jaws arranged in approximately the same plane, of a cross-rod extended between such arms in rear of their engaging portions, said rod being unenclosed between the arms, whereby it may be engaged by the slotted head of a meeting coupling, substantially as set forth.

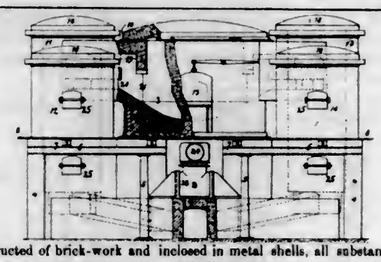
3. In a car-coupling, the combination of the twin jaws having their inner faces shouldered and their outer faces unshouldered, the cam or wedge-block arranged and operating close to the shoulder of one of said jaws, and a cross-bar connecting the jaws in rear of the shoulders thereof, substantially as set forth.

4. The improved coupling consisting of the arms A A', the bearing-support A^2, the shaft F, journaled in bearing A^2 and arm A, and having a wedge-block arranged and operating close to the shoulder of arm A, and the cross-bar D, extended between the jaws in rear of the shoulders thereof, substantially as set forth.

328,389. REGENERATIVE FURNACE FOR STEEL-MAKING. Frank W. Dick and James Riley, near Glasgow, County of Lanark, Scotland. Filed July 2, 1884. (No model.) Patented in England Mar. 5, 1883, No. 1,157; in France June 27, 1884, No. 162,973; in Belgium June 28, 1884, No. 65,610, and in Germany July 5, 1884, No. 30,899.

Claim.—1. In a regenerative steel-making furnace, a working-chamber having a fixed hearth and a circular or oval form in section, separate air and gas inlets and outlets at diametrically-opposite parts and communicating by short horizontal flues with the regenerative chambers, in combination with separate or distinct regenerative chambers for air and gas detached from the working-chamber and from each other, and

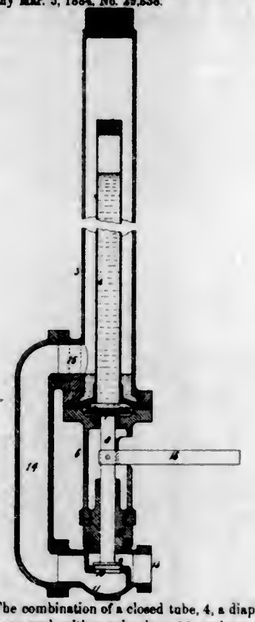
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constructed of brick-work and inclosed in metal shells, all substantially as set forth.

2. The combination of the working-chamber of a steel-making furnace with both air and gas regenerators separate from each other and from the working-chamber, the said regenerators being constructed of brick-work inclosed in metal shells of cylindrical or similar form and having separable or removable covers, substantially as set forth.

328,390. VALVE. Frank W. Dick and James Fleming, Glasgow, County of Lanark, Scotland. Filed June 3, 1885. (No model.) Patented in France Feb. 26, 1884, No. 160,574; in England Feb. 28, 1884, No. 4,049, and in Germany Mar. 5, 1884, No. 29,838.



Claim.—1. The combination of a closed tube, 4, a diaphragm therefor, and an inclosing-vessel, with a valve-box, 11, and a valve, 9, therefor, on the stem of which valve the said diaphragm acts, substantially as set forth.

2. The combination of a closed tube, a diaphragm therefor, and an inclosing-vessel, 3, with a valve-box, 11, a valve, 9, acted on by said diaphragm, and a pipe, 14, connecting the valve-box with the inclosing-vessel, substantially as set forth.

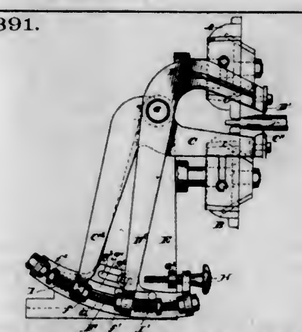
3. The combination of a closed tube, a diaphragm therefor, and an inclosing-vessel, with a valve-box, 11, a valve, 9, therein having a stem acted on by said diaphragm, and a handle, 16, connected to the valve-stem, as and for the purpose described.

328,391. CENTERING DEVICE FOR TENONING AND OTHER MACHINES. William H. Doane, Cincinnati, Ohio. Filed Aug. 6, 1885. (No model.)

Claim.—1. In a wood-working machine, a centering contrivance composed of a pair of jaws pivoted on the machine on an axis parallel to the line of feed, and a pair of elongated bars or knife-edges attached to the jaws parallel to the axis thereof, so that in use the jaws open and shut in a plane at right angles to the line of feed, while the knife-edges are parallel to the line of feed.

2. In a wood-working machine, the combination, substantially as before set forth, of the cutter-heads and the yielding centering-jaws, which are pivoted on the machine on an axis parallel to the line of feed, and which are provided with a pair of elongated bars or knife-edges extending alongside the cutter-heads.

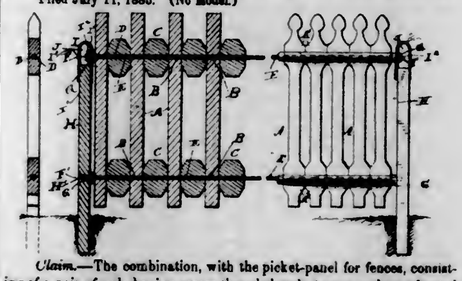
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3. The combination, substantially as before set forth, of the pivoted centering-jaws, the screw passing through openings in the tails of said jaws, a spring on one side of each of said tails, and an adjusting-nut on the said screw on the opposite side of each of said tails.

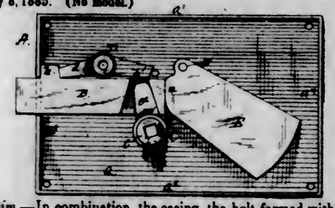
4. The combination, substantially as before set forth, of the pivoted centering-jaws, the adjustable hanger, the screw secured to the hanger, and passing through openings in the tails of said jaws, a spring on one side of each of said tails, and an adjusting-nut on the said screw on the opposite side of each of said tails.

328,392. PANEL PICKET FENCE. Martin Dudley, Marion, Ohio. Filed July 11, 1885. (No model.)



Claim.—The combination, with the picket-panel for fences, consisting of a pair of rods having screw-threaded ends, transversely perforated pickets strung upon the said rods alternately with transversely-perforated spacing-blocks, and tightening-nuts at the ends of said rods, of the wooden post having the transverse perforation at a point near its lower end and provided with the metallic cap-piece or band having the side perforations, for the purpose set forth.

328,393. COMBINED LATCH AND LOCK. Samuel Ehrman, Connellsville, Pa., assignor of one-half to Henry C. Huston, same place. Filed July 8, 1885. (No model.)



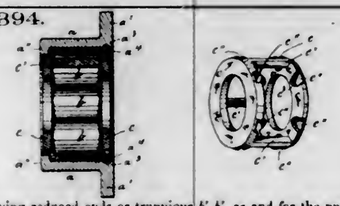
Claim.—In combination, the casing, the bolt formed with a vertical lug on its upper edge and a slot in its side face, and held in horizontal position by the hub of the tumbler and the hub of the knob-spindle, the knob and spindle provided with a hub, C, formed with an arm, c^3, arranged in the slot of the bolt, the weighted lever E, pivoted within the casing, with its front end to bear against the end face of the bolt, and the tumbler D, pivoted in the casing, with its hub on the upper edge of the bolt, and provided with the arm adapted to set against the inner face of the lug on the bolt, substantially as described, and for the purpose set forth.

328,394. ANTI-FRICTION BEARING. Thomas R. Pierrall, Boston, Mass., assignor to the Reynall & Loud Manufacturing Company, same place. Filed June 27, 1885. (No model.)

Claim.—1. In an anti-frictional bearing, a regulator consisting of a pair of rings, *c c*, having recesses *c'' c''* on their insides, for the reception of the roller-trunnions, and united by stays or braces *c' c'*, as and for the purpose set forth.

2. In an anti-frictional bearing, the regulator composed of rings *c c*, having interior recesses, *c'' c''*, and braces *c' c' c'*, combined with rollers

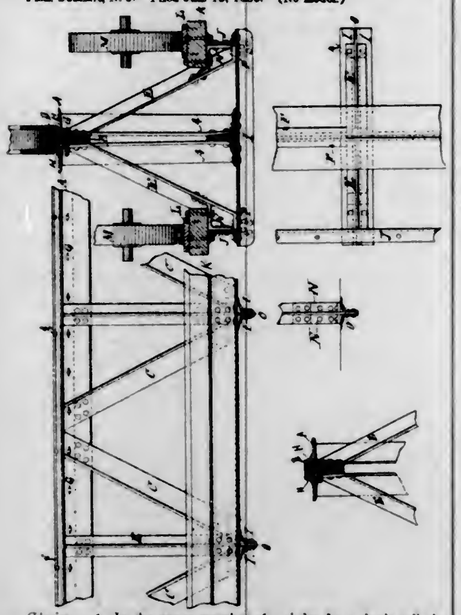
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b b b, having reduced ends or trunnions *b' b'*, as and for the purpose set forth.

3. The shell *a*, having annular flange *a''* and detachable wire or flange *a'*, in combination with the regulator composed of rings *c c*, having recesses *c'' c''*, for the reception of the end trunnions, *b' b'*, of rollers *b b*, and braces *c' c'*, as and for the purpose set forth.

328,395. SINGLE-RAIL ELEVATED-RAILROAD GIRDER. John Fish, Summit, N. J. Filed Jan. 15, 1885. (No model.)



Claim.—1. In the upper member of a girder for a single-rail elevated railroad, the combination of the angle-irons A A, with a recessed channel for holding wooden or other packing in place, and plate B, with the track-rail D, substantially as constructed and arranged, and for the purpose as herein set forth.

2. The indented track-rail D, in combination with the packing-strips H H, substantially as arranged and specified.

3. In a single-rail elevated-railroad girder, the combination of the strut angle-bars I I with the suspension-bars E E, substantially as constructed and arranged, and for the purpose as herein set forth.

328,396. BEER-COOLER. Charles J. Follett, Galveston, Tex. Filed June 29, 1885. (No model.)

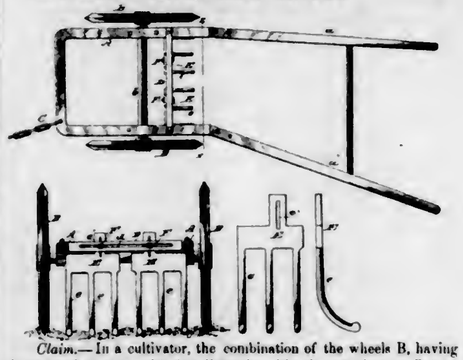


Claim.—1. In a beer-cooler, the combination of the cup-shaped rubber cap having the opening *d*, with the faucet C, said cap being adapted to form an air-tight joint between the faucet and the beer-cooler.

2. The combination of the cup-shaped cap having the opening *d* near its center, with the rod E, provided at one end with the cross-piece *e*, and screw-threaded at its other end, the washer G, and nut F, substantially as and for the purpose described.

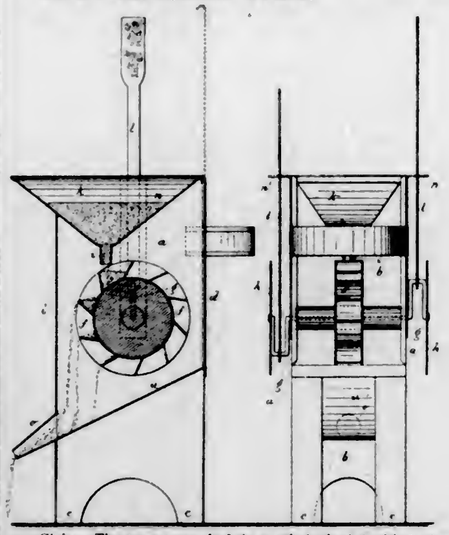
3. As a new article of manufacture, a cup-shaped rubber cap having an opening at or near its center, and having its surface immediately surrounding said opening and its peripheral surface thicker than the circumjacent surface, as set forth.

328,397. COTTON-CULTIVATOR. James H. Fowler, Orangeburg Court-House, S. C. Filed Apr. 18, 1885. (No model.)



Claim.—In a cultivator, the combination of the wheels B, having sharp beveled edges, with the adjustable cultivating attachments E, having teeth bent backward and attached to cross-bar D, between the wheels B, by bolts F, passing through slots *d* and *e'*, substantially as described and shown, and for the purpose set forth.

328,398. TOY. Augustus M. Freeman, Ocean Grove, N. J., assignor to himself, Alexander C. Kelly, Metuchen, N. J., and John I. Holly, New York, N. Y. Filed May 31, 1884. (No model.)



Claim.—The toy composed of the vertical wheel *f*, with buckets, the horizontal shaft for the same, the fly-wheels *h* upon the outer ends of the shaft, the case *a a b*, and legs *c*, and movable side *d*, the inclined partition *n*, and the spout *o*, outside the case, and the hopper *k*, having a central discharge-pipe, *i*, above the buckets of the wheel, substantially as set forth.

328,399. NAIL-PLATE-FEEDING MACHINE. William J. Gladish, Chattanooga, Tenn., assignor of one-half to J. W. Love, Fort Valley, Ga., and J. W. Authoine, Eufaula, Ala. Filed Sept. 19, 1884. (No model.)

Claim.—1. A nail-plate-feeding machine comprising an intermittingly-revolving cylinder, having a series of barrels adapted to hold and feed the nail-plates to the anvil, in combination with mechanism whereby the said plate-holding barrels shall receive each a one-half revolution to each complete revolution of the cylinder, substantially as set forth.

2. In a nail-plate-feeding machine, the combination, with an intermittingly-revolving cylinder, of a series of plate-holding barrels arranged within the said cylinder and having a limited longitudinal motion therein, the said plate-holding barrels being arranged at an angle to the supporting-shaft of the cylinder, substantially as set forth.

3. In a nail-plate-feeding machine, the combination, with a support-

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ing-shaft, of an intermittingly-revolving cylinder having a series of plate-holding barrels arranged at an angle to the said shaft or axis, and provided at their rear ends with pinions, and a gear-wheel mounted upon the said shaft engaging the said pinions and being only partially toothed, so that a one-half revolution shall be imparted to each of the plate-holding barrels with each complete revolution of the cylinder, the said barrels being stationary at the point at which the nail-plates are exposed upon the anvil, substantially as set forth.

4. The combination, with a nail-cutting machine having a forwardly-extending arm terminating in a disk or turn-table at its upper end, of a shaft or axle mounted pivotally upon the said turn-table and carrying an intermittingly-revolving cylinder provided with a series of plate-holding barrels, and mechanism for feeding the plates contained in the said barrels to the nail-cutting mechanism, substantially as set forth.

5. In a nail-cutting and plate-feeding machine, the combination, with the frame having an arm or bracket upon which is pivotally mounted a shaft carrying a cylinder provided with a series of plate-holding barrels, of a bracket extending laterally from one of the sides of the frame and adapted to sustain the front end of the pivoted shaft, said bracket being also provided with an upwardly-extending lateral guide, serving as a gage to regulate the distance to which the nail-plates shall be allowed to project, substantially as set forth.

6. In a nail-plate-feeding machine, the combination of a stationary shaft or axle, a cylinder arranged to revolve intermittingly upon the said shaft, a series of nail-plate-holding barrels arranged in the said cylinder at an angle to the said shaft or axis, plate-feeding sleeves arranged to slide upon the said barrels, and a pair of cams or eccentric disks mounted adjustably upon the said shaft, substantially as set forth.

7. In a nail-plate-feeding machine, the combination, with the plate-holding barrels consisting of tubular castings having longitudinal slots, of the annularly-flanged sleeves mounted to slide upon the said barrels and provided with spring-pawls adapted to engage the plates contained in said barrels and feed them toward the cutting mechanism, substantially as set forth.

8. The combination, with the plate-holding barrels having longitudinal slots and provided with the beveled ends, as described, of the longitudinally-sliding annularly-flanged sleeves having spring-pawls adapted to hold and feed the nail-plates contained in the said barrels and provided with forwardly-extending pivoted jaws, and springs secured to the beveled front ends of the barrels and acting against the said pivoted jaws, which are thereby compressed upon the nail-plate, substantially as set forth.

9. The herein-described cylinder, composed of the end pieces having bearings or openings for the plate-holding barrels, and a cylindrical body provided with grooves which are alternately parallel to and at an angle to the shaft or axis of the cylinder, the front ends of the straight or parallel grooves being cut away so as to afford access for the operating-pin, and the diagonal grooves being provided with recesses or indentations to afford a rest for the said operating-pin until its return-stroke, substantially as set forth.

10. In a nail-plate-feeding machine, the combination, with a revolving cylinder carrying a series of plate-holding barrels, of mechanism for automatically supplying nail-plates to the said barrels when the plate contained in either barrel shall have been exhausted, substantially as set forth.

11. In a nail-plate-feeding machine, the combination, with a series of plate-holding barrels arranged within a revolving cylinder, of a box or receptacle adapted to hold a large number of nail-plates, a follower arranged within the said box and adapted to force the plates continuously in an upward direction, a slide adapted to remove the plates successively from the said box and feed them into the plate-holding barrels when the plates contained in the latter shall have been exhausted, and mechanism for automatically actuating the feeding mechanism at the proper time, substantially as set forth.

12. The combination of the plate-holding box or receptacle, a follower moving vertically in the same and serving to force the plates continuously in an upward direction, brackets extending rearwardly from the upper edges of the said box or receptacle, a plate or floor arranged between the said brackets, a slide or cover moving longitudinally and provided with pawls or dogs adapted, respectively, to force a plate from the box onto the floor in rear of the same and from the said floor into one of the plate-holding barrels, and suitable operating mechanism, substantially as set forth.

13. The combination of the plate-holding receptacle, the sliding cover of the latter provided with dogs or pawls, a rock-shaft arranged transversely to the said slide and provided with an arm connected with the said slide by means of a pitman, a crank at the opposite end of the said rock-shaft provided with a pitman resting upon a flat spring and provided with a laterally-extending stud accommodated in a recess in the side of the frame of the machine, a longitudinally-reciprocating arm, having a notch adapted to receive the said stud, and a suitably-operated trigger adapted to release the said spring, so as to permit the said stud to drop into the notch of the longitudinally-reciprocating arm, whereby the cover or slide of the plate-holding box may be operated, substantially as and for the purpose set forth.

14. The combination of the plate-holding receptacle, the slide or cover of the same having dogs or pawls, operating mechanism for the said slide, substantially as described, a flat spring arranged to hold the said operating mechanism out of gear, a longitudinal rock-shaft having at its rear end an arm connected with the said flat spring, and having at its opposite end a laterally-extending arm or trigger, and the cylinder having a series of plate-holding barrels provided with longitudinally-sliding rods forced in a forward direction by means of suitably-arranged springs, and connected at their inner ends to pivoted pawls, which normally rest upon the nail-plate contained in the barrel, whereby when such nail-plate shall have been exhausted the pawls will come together and the rods be forced in a forward direction, so as to engage the trigger and set the feed-slide in motion, substantially as set forth.

15. In a nail-plate-feeding machine, the combination, with a revolving cylinder having a series of plate-holding barrels arranged at an angle to the shaft of the said cylinder and adapted to receive each a one-half revolution to each complete revolution of the cylinder, of the plate-

feeding mechanism comprising a box arranged at the front end of said cylinder and in a line with the barrel which at the time is uppermost in the said cylinder, and mechanism actuated automatically by the mechanism which operates the said cylinder for the purpose of supplying a fresh nail-plate to each cylinder when the plate contained therein shall have been exhausted, substantially as set forth.

16. The combination, with a nail-plate-feeding machine having mechanism whereby the plates are fed automatically to the plate-holding barrels, of mechanism for automatically extracting the stubs from the said barrels, substantially as set forth.

17. The combination, with an intermittingly-revolving cylinder, of a series of plate-holding barrels having beveled front ends provided with notched jaws adapted to register or correspond with notches formed at the rear ends of the nail-plates, substantially as set forth.

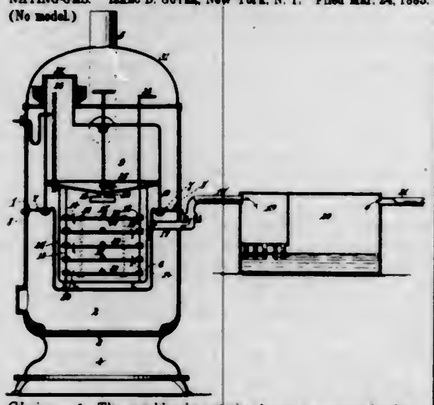
18. A stub-extractor for nail-plate-feeding machines, consisting, essentially, of a pair of nippers or pliers adapted to be closed automatically by a suitably-arranged spring, the jaws of the said nippers being provided at their front ends, respectively, with a recess or indentation, and a tooth fitting in the said recess, substantially as set forth.

19. The combination, with a nail-plate-feeding machine comprising an intermittingly-revolving cylinder having a series of plate-holding barrels adapted to receive each a one-half revolution to every full revolution of the cylinder, of an automatic stub-extractor comprising a pair of nippers adapted to be closed automatically by the action of a suitably-arranged spring, the said nippers having a longitudinally-sliding movement, substantially as and for the purpose set forth.

20. The combination of the cylinder carrying the plate-holding barrels, with an automatic stub-extractor comprising a longitudinally-reciprocating slide having a downwardly-extending arm and carrying at its front end one of the jaws of the extracting-nippers, an auxiliary jaw connected pivotally to the main jaw and adapted to be automatically closed by the action of a suitably-arranged spring, and having at its rear end an outwardly-extending beveled projection, a bolt movable longitudinally in a horizontal slot in the shank of the main jaw, a spring or guide secured to the outer side of the said bolt and adapted to bear against the beveled projection upon the shank of the auxiliary jaw, and a jointed lever connected pivotally to the inner end of the said sliding bolt and having its lower curved arm connected pivotally to the bracket extending downwardly from the shank of the main jaw and bearing against an eccentric cam formed upon a disk which is secured upon the main shaft of the machine, substantially as set forth.

21. In a nail-cutting and plate-feeding machine, the combination of a plate-holding receptacle, an intermittingly-revolving cylinder carrying a series of plate-holding barrels adapted to receive each a one-half revolution to each complete revolution of the cylinder, mechanism for feeding the nail-plates from their receptacle into the plate-holding barrels when the plates contained in the latter shall have been exhausted, mechanism for automatically actuating the said plate-supplying mechanism, mechanism for feeding the plates contained in the barrels toward the anvil of the cutting mechanism, a gage or guide arranged to regulate the distance to which the nail-plates shall be allowed to project, the stub-extracting nippers arranged to be operated automatically for the purpose of extracting the stubs from the plate-holding barrels, mechanism for operating the said stub-extractor or for throwing it into operation automatically when the plates shall have been exhausted to such an extent as to render the removal of the stubs necessary, and the nail-cutting mechanism, all constructed, arranged, and operating substantially as and for the purpose herein shown and specified.

328,400. APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS. Isaac D. Guyer, New York, N. Y. Filed Mar. 24, 1885. (No model.)



Claim.—1. The combination of the furnace or stove having a grate, a retort suspended therein above the grate, a series of horizontal plates arranged within the retort and surrounded thereby and sealed around their edges from communication with the retort at such point, a layer of fire-clay or its described equivalent upon each metallic plate, said plates, and also the layers of fire-clay, being provided with openings therethrough for the passage of the gas, and a reservoir for delivering oil upon the fire-clay layer of the upper plate, whereby the gas commences to generate at a low temperature and advances gradually through the plates and their fire-clay layers, substantially as described.

2. The combination of the furnace or stove having a grate, a retort suspended therein above the grate, a series of plates arranged horizontally in the retort and surrounded thereby, a layer of fire-clay or its described equivalent on each plate, said plates, and also the fire-clay layers, having communicating openings therethrough, and a reservoir for delivering the oil upon the upper layer of fire-clay, substantially as described.

3. The combination of the furnace or stove, the suspended retort therein, the series of plates arranged horizontally in the retort and sealed around the edges thereof, and the layer of fire-clay or its described equivalent on each plate, said plates and fire-clay layers having openings therethrough, substantially as described.

4. The combination of a furnace or stove, an interior retort, a series of plates forming chambers in the retort, a metallic cylinder or diaphragm surrounding the plates, between the latter and the wall of the retort, and means for delivering oil or other material upon the uppermost plate, substantially as described.

5. The combination of a furnace or stove, an interior suspended retort, a series of communicating chambers formed in the retort, a metallic cylinder or diaphragm surrounding the chambers, between the walls thereof and the wall of the retort, and means for delivering oil or other material into the uppermost chamber, substantially as described.

328,401. WATCH-PLATE. George E. Hart, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed June 2, 1884. (Model.)



Claim.—1. A watch-plate composed of two separately-formed disks superimposed one upon the other, and united by means of steady-pins and screws, substantially as and for the purpose specified.

2. A watch-plate composed of two superimposed disks, which are united by means of the projecting ends of the pillars and by screws that pass axially into the same, substantially as and for the purpose shown.

3. A watch-plate composed of two superimposed disks, which are united by suitable means, and are provided within their contiguous faces with recesses for the reception of any part of the operative mechanism, substantially as and for the purpose set forth.

328,402. METHOD OF MAKING A COMBINED WHEEL AND PINION. George E. Hart, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 30, 1885. (No model.)



Claim.—The method of forming a combined gear-wheel and pinion, consisting, first, in pressing the metal from the center of one side of a double-thickness blank outward, so as to form at the opposite front side a protuberance having the shape and dimensions of the desired pinion, next removing the surplus metal from the rear side of said blank, and, finally, forming around the periphery of said blank gear-teeth, and at its center an axial opening, substantially as and for the purpose specified.

328,403. DEVICE FOR REMOVING WAGON-BODIES. George W. Hodge and Lares J. A. Roswall, Clarence, Mo. Filed Aug. 6, 1885. (No model.)

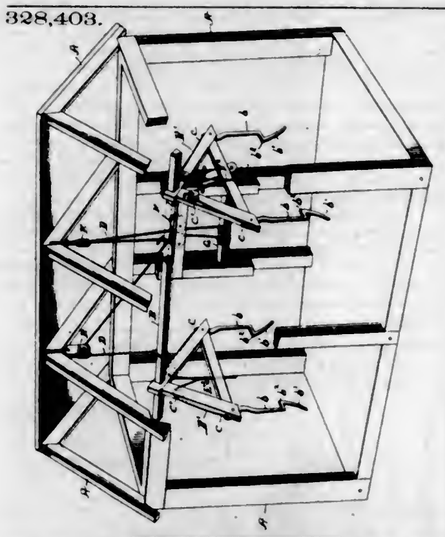
Claim.—1. In a device for elevating wagon-bodies, the combination, with the hoisting device, of the grapnels or hooks described, having the lower curved ends for being guided over the sides of the wagon-body and the knees or shelves described for engaging the under edges of the body, as set forth.

2. The combination, with the frames B', of the grapnels *b*, having the knees or shelves b^2, and the cord or rope c c^3, and pulley, constructed and arranged to spread the grapnels and release them from the bed, as set forth.

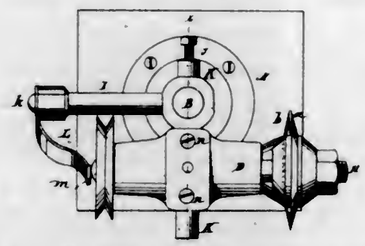
3. The combination of the bar B, the triangular frames B', having the self-adjusting grapnels *b*, the pulleys E, chains or ropes D, and windlass G, as and for the purpose set forth.

4. The combination of the bar B and triangular frames B', secured thereon, and the self-adjusting grapnels *b*, pivoted to said frames, as and for the purpose set forth.

328,403.



328,404. MACHINE FOR REMOVING PLUMAGE FROM FEATHERS. George R. Holden, Michigan City, Ind., assignor to the Warren Featherbone Company, Chicago, Ill. Filed Mar. 7, 1885. (No model.)



Claim.—1. The overlapping and bevel disk-cutters *a b*, arranged to revolve in opposite directions, substantially as described.

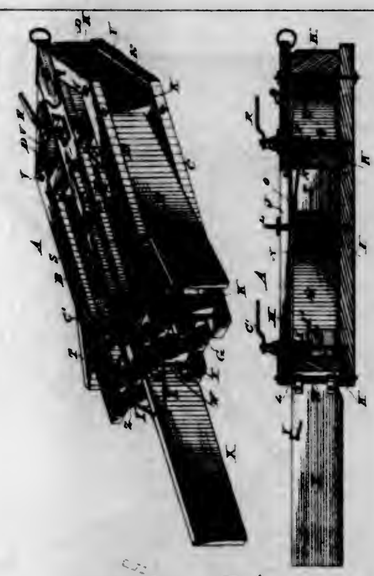
2. The combination of the spring L with the shaft J, for holding the cutting-edges of the disks *a b*, substantially as specified.

3. The combination of the brackets D' with the cylindrical arms J K, and set-screws *g h*, for adjusting the overlapping of the cutters *a b*, substantially as specified.

4. The combination of the adjustable supporting-arms J K and set-screws *i j*, with the shaft B and boxes C D supported thereon, for adjusting the cutters *a b* in the plane of contact, substantially as set forth.

5. The combination and arrangement of the bearing-boxes C D, having the brackets D', with the adjustable supporting-arms J K, adjustable arm I, and their respective set-screws, spring L, and post B, whereby the several adjustments may be obtained, substantially as described.

328,405.



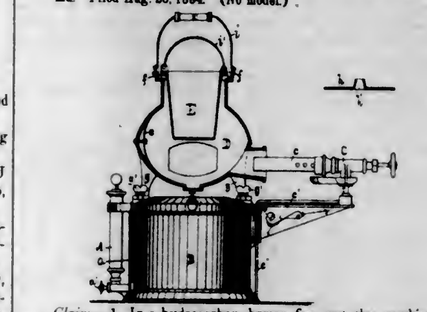
328,405. PORTABLE BOAT-BOOM. John B. Hoyt, Chippewa Falls, Wis. Filed May 9, 1885. (No model.)

Claim.—1. A portable right or left hand boom or float consisting of a suitably-constructed frame having a series of central vertical pivoted wings or deflectors, and suitable means for the adjustment of the same and for their retention in any position to which they may be adjusted, a shear-vane at one side of the said frame, and a lee-vane at the other, substantially as and for the purpose herein set forth.

2. In a portable right or left hand boom or float, the combination of a suitably-constructed frame having a tapering front end formed by converging front pieces, wings, or deflectors pivoted between the upper and lower sides of the said frame and adapted to fold toward the tapering front end, a central pivoted deflecting-board, and suitable adjusting mechanism, substantially as and for the purpose set forth.

3. In a portable boom or float, the combination of a suitable frame having a shear-vane at one side and a lee-vane at the other, a central vertical pivoted wing or deflector, a vertical pivoted vane or rudder, and suitable adjusting mechanism for the said deflector and vanes, substantially as and for the purpose set forth.

328,406. SOLDERING-IRON HEATER. John S. Hull, Baltimore, Md. Filed Aug. 20, 1884. (No model.)



Claim.—1. In a hydrocarbon-burner fire-pot, the combination of the oil-tank B, the burner C, the metal-receptacle E, and the fire-pot D, arranged to convey the flame from the burner to and about the soldering-irons placed therein and from thence to and around the metal-receptacle, for the purpose as herein set forth.

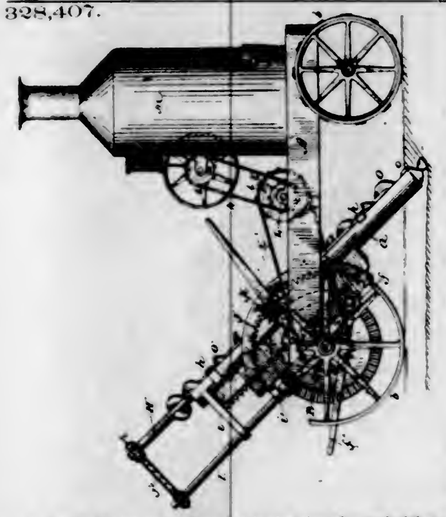
2. In a tinner's fire-pot, the combination of oil-tank B, the burner C, the combustion-tube c, the fire-pot D, the legs *g*, provided with slots, and the thumb-screws *g'*, whereby the fire-pot may be removed from the oil-tank, as herein shown, and for the purpose as set forth.

328,407. DITCHING-MACHINE. James W. Humphreys, Iroquois, Ill. Filed Nov. 13, 1884. (No model.)

Claim.—1. In a ditching-machine, an adjustable frame pivotally attached to the rear supporting-axle and carrying a trough within which operates a shaft having at its lower end spiral diggers and spiral conveyers, and means for rotating said shaft, substantially as described, and for the purpose set forth.

2. In a ditching-machine, the spiral rotary diggers and conveyers mounted upon the same shaft, substantially as shown, and attached to a sliding block, E, having a central rack-bar, and a base-piece, D, pivotally attached to a support, and provided with curved braces J, said curved braces having on their inner sides rack-teeth and pinions for adjusting the base-piece D and sliding block E, substantially as shown, and for the purpose set forth.

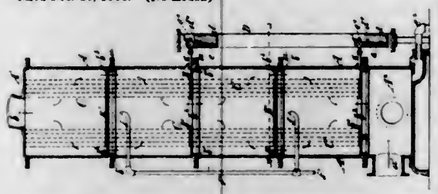
328,407.



3. In a ditching-machine, the axle *a*, having pivotally attached thereto a base-piece, D, sliding block E, supporting a trough, and shaft provided with a series of disconnected spiral diggers and conveyers, and adjusting means for said block, the shaft I, carrying near its upper end a sliding sprocket-pinion, journals for said shaft, and beveled pinion B', meshing with the gear-wheel B, and means for rotating the axle *a*, the parts being combined and organized substantially as shown, and for the purpose set forth.

4. In a ditching-machine, the frame A, supported upon wheels, and carrying a motive power, in combination with the axle *a*, having the wheels *b b* rigidly attached thereto, a sprocket-wheel, C, for rotating said axle, and the gear-wheel B, adapted to slide upon the axle so as to be thrown in and out of gear, the base-piece D, pivotally attached to the axle A, and sliding block E, carrying a trough and a shaft with spiral diggers and conveyers, said shaft being capable of adjustment both angularly and vertically with respect to the frame A, and provided at its upper end with a pinion having a belt which passes over a sliding pinion mounted on the shaft I, which is rotated by the gear-wheel B, the parts being organized substantially as described.

328,408. GAS-SCRUBBER. Charles W. Isbell, New York, N. Y. Filed Feb. 20, 1885. (No model.)



Claim.—1. In a gas-scrubber, the combination, with a tower or casing having a gas-inlet at one end and a gas-outlet at the other end, of series of transverse partitions in the tower or casing, a series of screens extending between the partitions, alternate partitions being provided with central openings within the series of screens, and intermediate partitions being provided with openings outside of or beyond the series of screens, whereby the gas in its passage through the tower or casing is caused to take a circuitous course and pass repeatedly through the screens, substantially as herein described.

2. In a scrubber, the combination, with a tower or casing having a gas-inlet at one end and a gas-outlet at the other end, of transverse partitions and series of screens extending between them, the partitions being provided with openings alternately within and outside of the screens, and pipes for spraying water within the series of screens, substantially as herein described.

3. The combination, with a tower or casing, A, and partitions B B', respectively having openings b^2 b^3, of a series of screens, C, and pipes *f*, for injecting water against the imperforate central portion of the partitions B', substantially as herein described.

4. In a gas-scrubber, the combination, with a tower or casing provided with transverse partitions, and a series of screens extending between them, said partitions being provided alternately with openings within and outside of the screens, whereby gas is caused to pass repeatedly through the screens, as described, of tar-drip pipes extending from above these partitions, which have openings within the series of screens, and pockets or wells into which said drip-pipes depend, and which are sealed to the escape of gas, substantially as herein described.

5. In a gas-scrubber, the combination, with a tower or casing having transverse partitions and series of screens, the partitions being provided alternately with openings within and beyond the series of screens, of the stand-pipe D, constructed with wells or pockets D', external to it and communicating with it, and the drip-pipes *e*, extending from the tower or casing above partitions therein into the wells or pockets *d*, substantially as herein described.

6. In a gas-scrubber, the combination, with a tower or casing, A, having partitions and series of screens arranged one above another, as described, of the drip-pipes *e*, comprising T-fittings *e'*, the outer branches of which are closed by plugs e^2, and the stand-pipe D, constructed upon its side with tar-wells *d*, which communicate with its interior by openings d^2, and into which the drip-pipes depend, substantially as herein described.

328,409. TOILET-PAPER HOLDER. Charles C. Johnson, Springfield, assignor to Moore, Arms & Thompson, Bellows Falls, Vt. Filed July 18, 1885. (No model.)

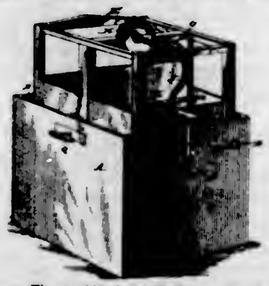


Claim.—1. The combination, with a suitable supporting stand or frame, of means for supporting a roll of paper so that it may be turned round, and a knife or cutter arranged and operating to turn always with the paper roll, substantially as and for the purpose set forth.

2. The combination, with a suitable supporting stand or frame and a cutter-bar, of plates arranged at either end of the roll of paper and having the cutter-bar rigidly connected therewith and a shaft, F, which operates to clamp the said plates fast against the end of the roll, all substantially as and for the purposes set forth.

3. In combination with an ordinary stand or frame and the hollow roll or wound web of paper to be supported thereon, a suitable device for supporting the hollow roll of paper, arranged concentrically therewith, but pivoted eccentrically in the stand or frame of the machine and having rigidly connected therewith a cutter-bar, I, in such relationship to the points of pivotal connection between the stand or frame and the device for sustaining the hollow roll of paper as to cause the said cutter-bar to be counterbalanced by the eccentrically-pivoted roll always at a locality about in rear of the roll of paper, as and for the purpose hereinbefore set forth.

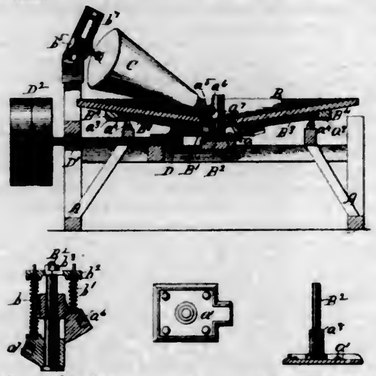
328,410. SUPPORTING-CASE FOR VEGETABLE-SLICING MACHINES. Anthony J. Kliebo, Nanticoke, Pa., assignor of one-third to M. E. Sanders, same place. Filed May 23, 1885. (No model.)



Claim.—1. The combination, with the case, the front and rear sides of which are provided with perforations near their upper edges, of detachable cross-pieces which support the machine-frame inserted through said perforations, and a clamping-screw passing through one wall of the case and serving to secure the machine-frame in position, substantially as and for the purpose set forth.

2. The combination, with the case having perforations in the front and rear sides and a slot in one of said sides to receive the operating-shaft of the machine when the latter is within the case, of a pair of cross-pieces passed through said perforations and serving to support the machine in an elevated position, and a clamp-screw for securing the machine in such position, substantially as set forth.

328,411. BUTTER-WORKER. John F. Kohr, Chicago, Ill., assignor to Daniel J. Davis and Thomas Rankin, same place. Filed Apr. 8, 1885. (No model.)

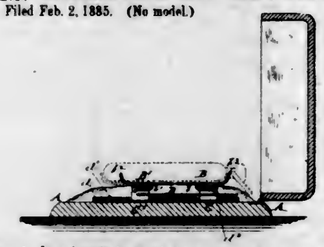


Claim.—1. In a butter-worker, the combination, with a revolving table, of a gear-wheel rigidly secured to the under side of said table, radial arms, the inner ends of which are secured to said gear-wheel, and a rim secured to the under side of said table and inclosing the outer ends of said arms, substantially as set forth.

2. In a butter-worker, the combination of a frame, a dish having a central opening, a vertical shaft projecting through said opening, the box a^3, having a socket, the box a^4, having a downward projection provided with a socket, and the rollers journaled in said frame and socket, substantially as described.

3. In a butter-worker, the combination of a frame, a dish, the vertical shaft, the angular bearing-boxes, the spiral springs *b* and *b'*, the cross-bar b^2, and the rollers journaled in the frame and boxes, substantially as described.

328,412. JEWELER'S WATCH-TRAY. Chas. A. Kron, New York, N. Y. Filed Feb. 2, 1885. (No model.)

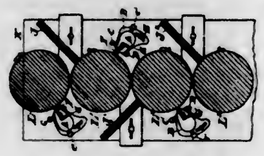


Claim.—1. In a jeweler's watch box or tray, the combination of a base having a fixed support and a sliding support, a watch-rest made of two sections applied detachably to the fixed and sliding support, and a spiral spring attached to the sliding support and the base, substantially as set forth.

2. In a jeweler's watch box or tray, the combination of a fixed support and a sliding support, a watch-rest made of two sections attached by spring-hooks to said supports, the fixed section having a recess for the key-pipe of the watch, and a spiral spring attached to the sliding support and the base, substantially as set forth.

3. The combination of a base having a fixed support and a sliding support, a watch-rest made of two sections, said sections being attached by spring-hooks to said supports, a spiral spring attached to the sliding support and the base, and a stop for confining the motion of the sliding support, substantially as set forth.

328,413. ROLLER-MILL. Wm. Kreutzer, Dayton, Ohio, assignor to the Buckeye Iron and Brass Works, same place. Filed July 1, 1885. (No model.)



Claim.—1. The combination of the scraper-stocks, the adjustable scraper-blade F, supported by said stocks, and the cushion-strips H H' in said stocks, on opposite sides of said blade, substantially as described.

2. The combination of stocks A B, supported at opposite sides of the frame of a mill, an adjustable scraper, F, supported by said stocks, cushion-strips on opposite faces of the scraper, and the set-screws *e'*, tapping through the scraper-stocks to adjust the scraper forwardly, substantially as described.

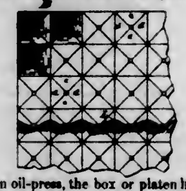
3. The combination of the scraper-stocks A B, the scraper-blade F, supported thereby, the cushion-strips H H', fitting on opposite sides of the scraper, the follower-strip I, and the set-screws C, for securing the said blade between the cushion-strips, substantially as described.

4. The combination of the scraper-stocks A B, the cushion-strips H H', the follower-strip I, and the adjusting-screws C and *e'*, substantially as described.

5. The combination of the scraper-stocks A B, adjustable scraper-blade F, supported by said stocks, cushion-strips H H' on opposite sides of said blade, and the strengthening-rib G, rigidly connected to said blade, substantially as described.

6. The combination, with stocks A B, the latter having bolt-holes D and slots E, concentric with said bolt-holes, of bolts passing through said slots and holes into the standards, an adjustable scraper-blade, F, suported by said stocks, cushion-strips H H on opposite sides said blade, set-screws C, for securing said blade in the stocks, and screws *e'* for adjusting the blade, substantially as described.

328,414. OIL-PRESS MAT. Wm. Kreutzer, Dayton, Ohio, assignor to the Buckeye Iron and Brass Works, same place. Filed July 1, 1885. (No model.)

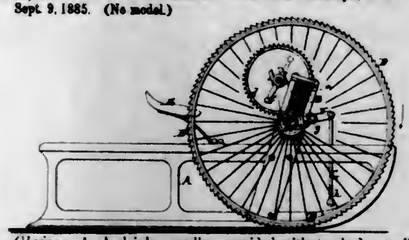


Claim.—1. In an oil-press, the box or platen having its face formed of a series of convex projections intersecting each other at right angles and surrounded on each side by a concave furrow or groove, substantially as described.

2. In an oil-press, the platen or box having its face formed of a series of convex projections intersecting each other at right angles and surrounded on each side by concave furrows or grooves, and the intersections of the furrows provided with small holes *b*, leading to the furrows *c* of the box A, to which the platen is attached, substantially as described.

3. In an oil-press, the combination, with the box A, an upper platen formed of a series of convex projections intersecting each other at right angles and surrounded on each side by concave furrows or grooves pierced with holes *b*, leading into the channels *c*, and the bottom face formed of corresponding projections and grooves or furrows, substantially as described.

328,415. SLED-PROPELLER. John Loose, Brooklyn, N. Y. Filed Sept. 9, 1885. (No model.)



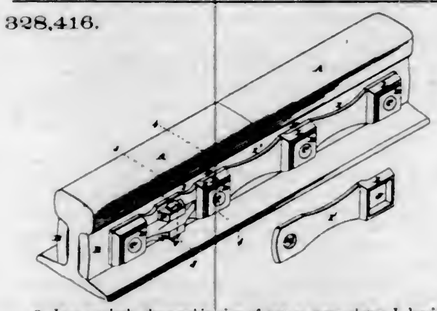
Claim.—1. A sleigh-propeller provided with toothed propelling-wheels D D, the teeth of which face forward where they bear on the snow, as specified.

2. The combination of the sleigh A with the shaft C, wheels D, springs *a a*, toothed wheels *b d*, crank-arbor *e*, levers F F, rods G G, and stirrups *h*, substantially as described.

328,416. NUT-LOCK. Samuel S. Lowe and George R. Johnson, Upper Alton, Ill. Filed Mar. 5, 1885. (No model.)

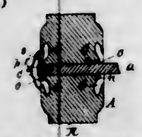
Claim.—1. In a nut-lock, the combination of one or more plates, I, with a socket or sockets to fit over the nut or nuts and perforated to receive the adjoining bolt or bolts, perforated lugs formed upon or secured to one of the plates, key fitting in said perforations, and the plate T, having a socket to fit over one of the nuts, and being perforated to receive the key, substantially as shown and described, for the purpose set forth.

328,416.



2. In a nut-lock, the combination of one or more plates, I, having sockets formed in raised portions, and perforated ends, perforated lugs formed upon or secured to one of the plates, spring-key fitting in the perforations in the lugs, and the plate T, having a socket and a perforation, all arranged and operating substantially as shown and described, for the purpose set forth.

328,417. ROLLER-SKATE. James Lockey, Troy, N. Y. Filed Mar. 13, 1885. (No model.)

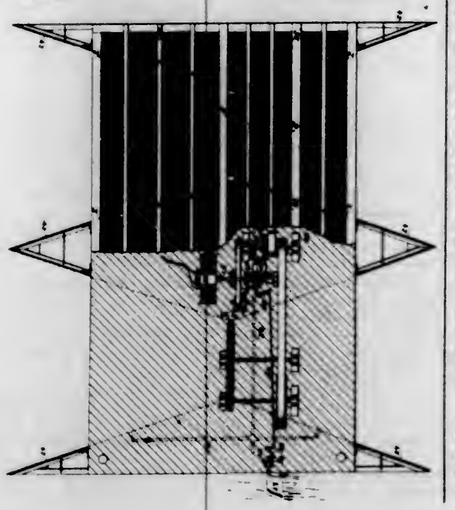


Claim.—1. In a skate-roller, the combination of the cheek A, formed in the roller side face, and the gutter or groove G, formed in revolution on said cheek about the axle-bearing with the inner rim of said gutter extending outwardly beyond the face of the hub part of the roller, substantially as and for the purposes set forth.

2. In a skate-roller, the combination of the cheek A, made in the roller side face, the annular gutter or groove G, formed on said cheek in revolution about the axle-bearing of the roller with the outer face of the hub part of the roller vertically inside of the inner rim of the gutter, and the radial grooves N, made in the hub-face, said grooves connecting the axle-bearing with the gutter, as and for the purposes set forth.

3. In a skate-roller, the combination of the cheek A, formed in the side face of the roller, the annular gutter or groove G, having the rim-slots S, and formed on said cheek in revolution about the axle-bearing with the rim of said gutter laterally subtending the face of the hub of the roller, and the cap C, made with the ears *e*, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

328,418. CURRENT-MOTOR FOR DYNAMO-ELECTRIC MACHINES. William Main, Brooklyn, N. Y., assignor to the River and Rail Electric Light Company, of Ohio County, W. Va. Filed July 21, 1885. (No model.)



Claim.—1. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, a flexible cable for conveying the current of said dynamo to shore, and means for regulating the draft of said floating support, whereby the immersion of the water-power mechanism in the current may be governed at will.

2. The combination of a water-power mechanism, a floating support for the same provided with one or more water-tight compartments in its hold, means for permitting the flow of water into said compartments and for exhausting the same, a dynamo-electric machine driven by said water-power mechanism, and electric conductors for conveying the current generated by the dynamo to shore, substantially as described, and for the purpose set forth.

3. The combination of a water-power mechanism, a floating support therefor provided with one or more water-tight compartments, valves for regulating the admission of water into said compartments, a pump communicating with the said compartments for exhausting the same, a dynamo-electric machine mounted on said floating support and driven by said water-power mechanism, and electrical conductors for conveying the current generated by the dynamo to shore, substantially as described, and for the purpose set forth.

4. The combination of a floating current-motor, a dynamo-electric machine driven thereby, a flexible cable for conveying the electricity generated by the dynamo to shore, and a guide for the cable connected with the float for insuring a vertical drop of the cable to the bottom of the stream.

5. The combination of a floating current-motor, a dynamo-electric machine driven thereby, a flexible cable for conveying the electricity generated by the dynamo to shore, and a weight flexibly attached to the float and connected with the cable, so as to carry it to the bottom of the stream near the float.

6. The combination of a floating current-motor, a dynamo-electric machine driven thereby, a flexible cable for conveying the electricity generated by the dynamo to shore, and a weight attached by a cord or chain to the float, said weight being provided with an opening through which the cable passes, substantially as described, and for the purpose set forth.

7. The combination of a floating power mechanism capable of being propelled by a current flowing in either direction, a dynamo-electric machine driven thereby, and a motion-reversing mechanism between said power mechanism and the shaft of said dynamo, whereby motion of the dynamo in one direction may be maintained notwithstanding reversals in the direction of the water-current.

8. The combination of a floating power mechanism capable of being propelled by a current flowing in either direction, a dynamo-electric machine driven thereby, and automatic motion-reversing mechanism between said power mechanism and the shaft of said dynamo, whereby motion of the dynamo in one direction may be maintained notwithstanding reversals in the direction of the water-current.

9. The combination of a water-power mechanism, a floating support therefor, a dynamo-electric machine driven by said power mechanism, a motion-reversing clutch between said power mechanism and the shaft of said dynamo, and a lever, one end of which is immersed in the stream and the other connected through intermediate mechanism with said reversing-clutch, whereby the current is effective, when it turns, to throw said clutch, substantially as described and shown.

10. The combination of a water-power mechanism, a floating support therefor, similar converging water-ways of approach on each side of said power mechanism, a dynamo-electric machine driven by said power mechanism, a motion-reversing clutch for said dynamo, and a flexible electrical conductor resting upon the bottom of the stream, substantially as described, and for the purpose set forth.

11. The combination of a screw-wheel, a floating support therefor, means for regulating the draft of said floating support, a dynamo-electric machine driven by said wheel, and a flexible conducting-cable connecting said dynamo to shore.

12. The combination of a screw-wheel, a floating support therefor, one or more water-tight compartments in said floating support, and means for introducing water into and exhausting water from said compartments, a dynamo-electric machine driven by said wheel, and a flexible conducting-cable connecting said dynamo to shore.

13. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dynamo-electric machine mounted upon said support and driven by said water-power mechanism, a working-circuit for said dynamo, and means for regulating the draft of said floating support, whereby the immersion of the water-power mechanism in the current may be governed at will.

14. The combination of a screw water-power mechanism, a floating support therefor anchored or otherwise fixed in the stream, a dynamo-electric machine located upon said support and driven by said water-power mechanism, and a flexible electrical conductor lying along the bottom of the stream for conveying the electricity generated by the dynamo to shore.

15. The combination of a water-power mechanism, a floating support therefor provided with a water-way of approach converging throughout its length, in the narrowest part of which water-way the water-power mechanism is placed, means for regulating the draft of the said floating support, a dynamo-electric machine also mounted upon the floating support and driven by the power mechanism, and a flexible electrical conductor resting upon the bottom of the stream for conveying the current generated by the dynamo to shore.

16. A current-power float provided with one or more diverging water-ways of discharge or exit adapted to prevent the escape of water in any direction except that of the current, in combination with a water-power mechanism placed at the commencement of each diverging water-way and completely filling the narrowest portion of the same, means for regulating the draft of the said float, a dynamo-electric machine mounted upon the float and driven by the power mechanism, and a flexible electrical conductor resting upon the bottom of the stream for conveying the current generated by the dynamo to shore.

17. A current-power float provided with one or more converging water-ways of approach, each connected with a diverging water-way of discharge or exit, in combination with a water-power mechanism placed at the narrowest part and junction of said water-ways and completely filling the channel of communication, means for regulating the draft of said float a dynamo-electric machine mounted upon the float and driven by the water-power mechanism, and a flexible electrical conductor resting upon the bottom of the stream for conveying the current generated by the dynamo to shore.

18. A current-power float provided with converging water-ways of approach and diverging water-ways of discharge connected with each other at their narrowest parts, the said ways of approach and discharge being of similar construction, so that the ways of approach might be used as ways of discharge and the ways of discharge as ways of approach, in combination with a water-power mechanism placed at the junction of said water-ways and completely filling the same, means for regulating the draft of said float, a dynamo-electric machine mounted upon the float and driven by the water-power mechanism, and a flexible electrical conductor resting upon the bottom of the stream for conveying the current generated by the dynamo to shore, substantially as described and shown.

19. A current-power float provided with a converging water-way of approach and a diverging water-way of discharge communicating therewith, in combination with a water-power mechanism placed between the said water-ways, means for regulating the draft of said float, a dynamo-electric machine mounted upon the float and driven by said water-power mechanism, and a flexible electrical conductor for conveying the current generated by the dynamo to shore, said electrical conductor resting upon the bottom of the stream, substantially as described and shown.

20. A current-power float provided with one or more converging water-ways of approach, in combination with a water-power mechanism placed in the narrowest part of each of said water-ways, water-tight compartments provided with means for filling and emptying the same for regulating the draft of the float in the water, a dynamo-electric machine mounted upon the float and driven by the water-power mechanism, and an electrical circuit for the dynamo, substantially as described and shown.

21. A current-power float provided with converging water-ways of approach, in combination with screw water-power mechanisms placed in the throats of the same, a dynamo-electric machine mounted upon the float, and a flexible electrical conductor resting upon the bottom of the stream for conveying the current generated by the dynamo to shore.

22. A current-power float provided with converging water-ways of approach and diverging water-ways of discharge joined to each other at their narrowest parts, in combination with a screw water-power mechanism placed at the junction of said water-ways, a dynamo-electric machine mounted upon the float, and a flexible electrical conductor resting upon the bottom of the stream for conveying the current generated by the dynamo to shore.

23. The combination of a floating current-motor, a dynamo-electric machine mounted thereon and driven thereby, a flexible cable for conveying the electricity generated by the dynamo to shore, and a guide for said cable, whereby the path taken by it through the water is controlled, substantially as described, and for the purpose set forth.

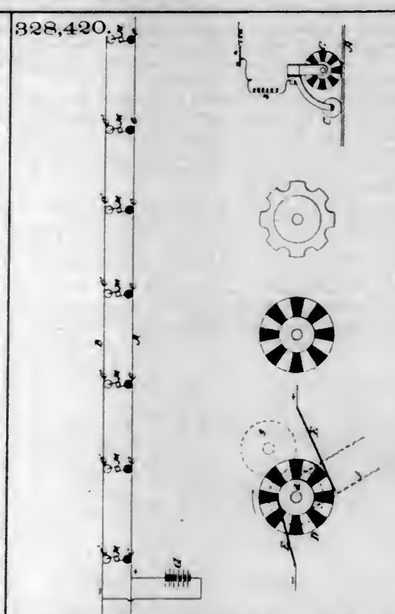
328,419. BAKING-POWDER. George A. Marsh, Littleton, Mass. Filed Mar. 16, 1885. (No specimens.)

Claim.—1. An acid lactate baking-powder in which the separate salts are protected from reaction during storage by the presence of an oleaginous or fatty material, as set forth.

2. A baking-powder composed of acid calcium lactate and an alkaline carbonate or bicarbonate, one or both previously treated with an oleaginous material, and starch or starchy matter, as set forth.

328,420. ELECTRIC RAILWAY. James F. McLaughlin, Philadelphia, Pa., assignor, by mesne assignments, to the National Electric Railway System, (Limited,) same place. Filed Aug. 25, 1885. (No model.)

328,420.



Claim.—1. The combination of a generator, line-conductors, and cars having motors in derived circuits of an electrical-railway system, with devices for intermitting the current in the derived circuits, substantially as set forth.

2. The combination of a generator, line-conductors, and cars carrying electric motors, with interrupting contact-wheels in connection with said conductors, substantially as described.

3. The combination of a generator, line-conductors, and cars carrying electric motors, with wheels to make connection with said conductors, one of said wheels being an interrupting-contact wheel and having a supplementary contact in a branch circuit to the motor, as specified.

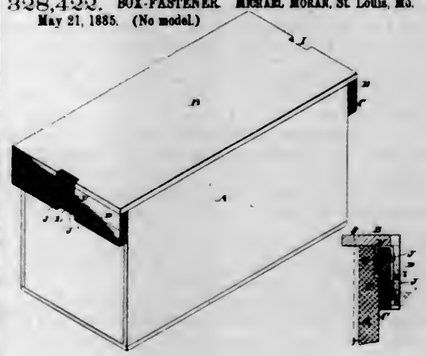
4. The combination of the conduit carrying electrical conductors with a car having a suspended bar carrying contacts for said conductors and brackets provided with anti-friction rollers, as and for the purpose set forth.

328,421. SOLE FOR BOOTS OR SHOES. Lee E. Moore, Boston, Mass. Filed Mar. 14, 1885. (No model.)



Claim.—A boot or shoe sole cut or channeled at its edge, the lower flap formed by said channel being pressed and set in a position substantially at right angles to the body of the sole, said sole having a channel on the lower surface thereof directly inside said flap, substantially as shown and described.

328,422. BOX-FASTENER. Michael Moran, St. Louis, Mo. Filed May 21, 1885. (No model.)

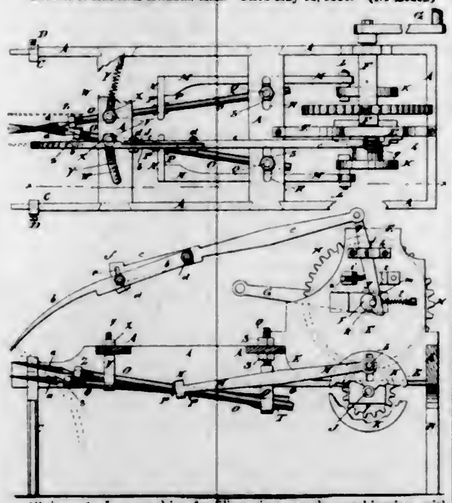


Claim.—1. The combination, with the box and lid having cleats, of the fastening J, having a hook, N, to engage over one of the cleats, a spring-hook, J′, and a stud projecting from the other cleat adapted to engage said spring-hook, substantially as set forth.

2. The combination, with a box and lid having cleats, of the fastening J, having a hook, N, to engage over the lid-cleat, a spring-hook, J′, and a stud projecting from the box-cleat adapted to engage said spring-hook, the hook N being held in place by a staple, and the spring-hook J′ adapted to be disengaged from the stud by pressure on its upturned end, substantially as set forth.

3. The combination, with a box and lid having grooved cleats, of the fastening J, fitting against one of the walls of the grooves, and having a hook, N, to engage over one of the cleats, a spring-hook, J′, and a stud projecting from the other cleat adapted to engage said spring-hook, substantially as set forth.

328,423. MACHINE FOR FILING GIN-SAWS. James S. Mosley and Thomas J. Mangum, Atlanta, Miss. Filed May 12, 1885. (No model.)



Claim.—1. In a machine for filing gin-saws, the combination, with the frame A B C and the vertical plate E, of the crank-shaft F, the gear-wheels H I, the shaft J, the crank-wheels K, carried by the said shaft, the pitmen M, connected with the crank-wheels, the file-holders O, connected with the said pitmen, and the hangers Q V, supporting the said file-holders, substantially as herein shown and described, whereby the file-holders will be vibrated by the revolution of the said crank-shaft, as set forth.

2. In a machine for filing gin-saws, the combination, with the shaft J, connected with the crank-shaft F by gear-wheels H I, and the pitmen M, connected with the file-holders O, of the wheels K, having radial slots, and the crank-pins L, substantially as herein shown and described, whereby the said pitmen can be adjusted to have a longer or a shorter stroke, as set forth.

3. In a machine for filing gin-saws, the combination, with the crank-shaft F, having eccentric pin *k* attached to its end, and the vertical plate E, of the lever *g*, engaging with the said eccentric pin, the pitman *c*, pivoted to the said lever, and the finger *b*, carried by the said pitman, substantially as herein shown and described, whereby the gin-saw will be turned forward at regular intervals, as set forth.

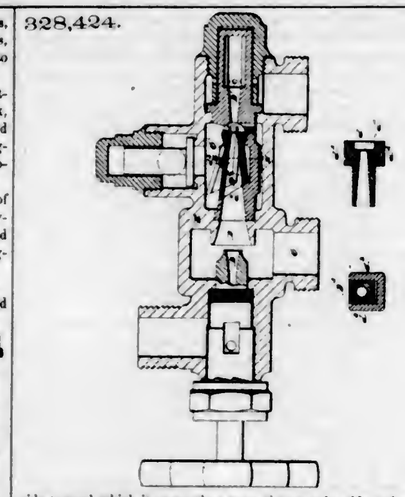
4. In a machine for filing gin-saws, the combination, with the vertical plate E and the lever *g*, operated by the eccentric pin *k*, attached to the end of the crank-shaft, and operating the pitman *c* and finger *b*, of the spring *l* and set-screw *n*, substantially as herein shown and described, whereby the movements of the said lever can be regulated and controlled, as set forth.

328,424. INJECTOR. Horace B. Murdock, Detroit, Mich., assignor of one-half to John Trix, same place. Filed Mar. 24, 1885. (Model.)

Claim.—1. In an injector, a combining-tube provided with a complete annular section pivoted to swing laterally, substantially as and for the purpose described.

2. In an injector, a combining-tube having a complete annular section made automatically adjustable laterally from the remainder of the tube, substantially as and for the purpose described.

3. In an injector, a combining-tube having a complete annular section made adjustable laterally from the remainder of the tube, said annular section so formed as to expose more surface to the steam upon the



side toward which it opens than upon the opposite side, substantially as and for the purpose described.

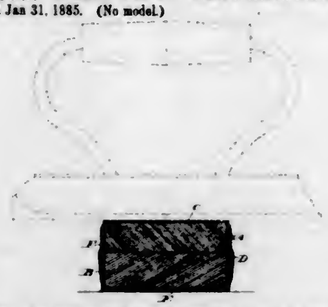
4. In an injector, a complete annular section adapted to swing laterally out of line with the remainder of the tube, substantially as described.

5. In an injector, a complete annular section adapted to swing out from line with the remainder of the tube about a hinge or pivot, substantially as described.

6. In an injector, a combining-tube provided with a complete annular section adapted to swing out of line with the remainder of the tube without disturbing the location of its discharge end with relation to the delivery end of the combining-tube, substantially as described.

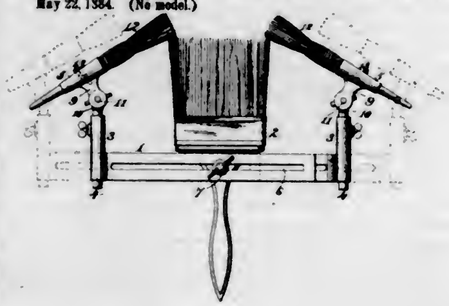
7. In an injector, a combining-tube having a stationary mouth, D, separated from the plug D′, which has the continuation of the tube, the said plug seated into but not through the partition E, substantially as and for the purposes described.

328,425. IRONING-TABLET. Simon S. Myers, Philadelphia, Pa. Filed Jan. 31, 1885. (No model.)



Claim.—An ironing-tablet consisting of the block B, having a piece of wax thereon, a perforated metallic cap, C, on top of said wax, and a box, E, said box receiving the block B, and said cap being secured by the band D to said box, substantially as described.

328,426. PAINT-BRUSH. William A. Nowlin, Mexia, Tex. Filed May 22, 1884. (No model.)



Claim.—1. The herein-described brush-holder, consisting of the extensible and contractible frame or body having means, substantially as described, for retaining a brush, end sockets or tubes, and vertically and obliquely adjustable brush-holders fitted in said end sockets or tubes, substantially as described.

2. The combination of the longitudinally-adjustable frame, the brush fitted in said frame, the clamping-screw passing through the slot in the latter, and the vertically and obliquely adjustable brush-holders fitted into end sockets of the frame, substantially as described.

3. The combination of the vertically-adjustable stems and the brush-holders pivoted thereto with the slotted brush-holding frame, substantially as described.

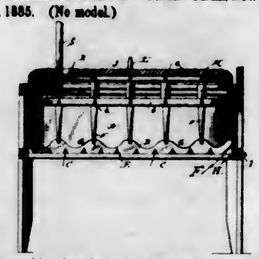
328,427. HOSE-COUPLING. John Norbeck, Rome, N. Y., assignor to Burt Olney, same place. Filed Aug. 20, 1885. (No model.)



Claim.—1. The combination of the gland A, formed internally with the screw-threaded circular recess *a*, and circumferentially-enlarged secondary recess *b* at the outer end of the recess *a*, the female section B, screwed into the recess *a* and provided with the cam-slots *c c*, terminating with the longitudinal entering slots *c′ c′*, the locking-ring C, arranged movably endwise on the exterior of the female section and restrained from turning thereon, and provided with the ratchet *r*, the spring *s*, seated in the recess *b*, the male section D, entering the interior of the section B, and the lugs *d d*, projecting from the male section through the slots *c c* and engaging the ratchet *r*, substantially as described and shown.

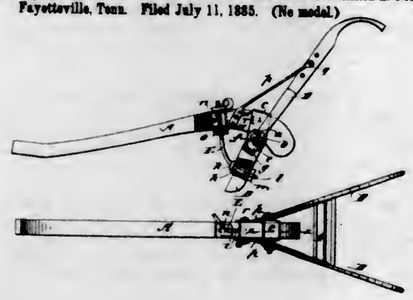
2. In combination with the male section D, provided with the lugs *d d*, and the female section B, provided with cam-slots *c c*, and with external screw-threads on its end, the gland A, formed with the screw-threaded annular recess *a*, having the shoulder *a′* projecting across the ends of the sections D and B, the packing *e* on said shoulder, the secondary recess *b* at the outer end of the recess *a*, the locking-ring C on the exterior of the section B, and provided with the ratchet *r*, and the spring *s*, seated in the recess *b*, substantially as described and shown.

328,428. WASHING-MACHINE. Gustav Piper, New Holstein, Wis. Filed June 11, 1885. (No model.)



Claim.—The combination, in a washing-machine, of the suds-box having the transverse strips in its bottom and the waved longitudinal securing-strips, the cover having the raised portion forming a recess upon the inner side of the same, and having a longitudinal slot in it, the downwardly-projecting arms pivoted opposite to each other in the sides of the longitudinal recess of the cover, the connecting-strips pivoted to the outer sides of the arms at their middles, and the board pivoted between the inner sides of the arms at their middles, one of the arms extending upward to form a handle projecting through the slot in the cover, as and for the purpose shown and set forth.

328,429. PLOW. George W. D. Porter and Lawrence L. Porter, Fayetteville, Tenn. Filed July 11, 1885. (No model.)



Claim.—1. The combination, with the beam A, provided with the concave recess *a*, of the standard B, formed with the convex head *b*, the stirrup *c*, and bolt *e*, substantially as described.

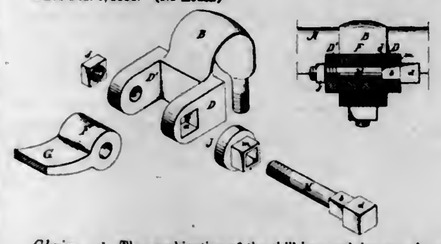
2. The combination, with the beam A, provided with the concave recess *a*, of the standard B, formed with the convex head *b*, the stirrup *c*, bolt *e*, and the brace-rod E, secured to the standard, and adjustably connected to the beam by means of nuts, as *n* and *o*, substantially as described.

3. The combination, with the beam A, of the sockets *g g*, pivotally connected thereto by means of the stirrup *c* and bolt *e*, said stirrup and bolt, and the handles D D, substantially as described.

4. The combination, with the beam A, stirrup *c*, and bolt *e*, of the sockets *g g*, formed with the lugs *v v*, and the handles D I., substantially as described.

5. The combination, with the beam A, stirrup *c*, and bolt *e*, of the sockets *g g*, formed with the lugs *v v*, the handles D D, and the brace-rods *p p*, formed with the holes *w w*, and connected to the beam by a bolt, as *r*, substantially as described.

328,430. THILL-COUPLING. Charles H. Post, Philadelphia, Pa. Filed Feb. 9, 1885. (No model.)

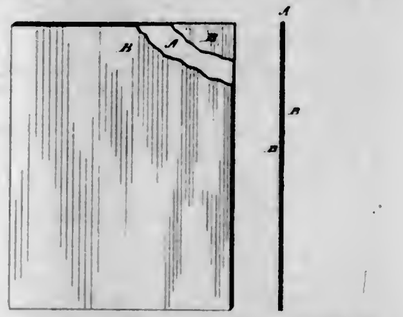


Claim.—1. The combination of the thill-iron and its eye, the attachment or clip having opposite ears, D D′, the bolt H, forming the pivot-pin for the thill-eye, and the laterally-adjustable washer J, bearing on one end of the thill-eye, the opposite end of which has a fixed bearing, as set forth.

2. The combination of the thill-iron and its eye, the attachment or clip having opposite ears, D D′, the bolt H, forming the pivot-pin for the thill-eye, and the laterally-adjustable washer J, incapable of turning but having a bearing on one end of the thill-eye, the opposite end of which has a fixed bearing, as set forth.

3. The combination of the thill-iron and its eye, the attachment or clip having ears D D′, the bolt H, serving as a pivot for the thill-eye, and the laterally-adjustable washer J, bearing on the end of the thill-eye and having a portion projecting through one of the ears D D′, so as to form a bearing for the head or nut of the bolt H, as set forth.

328,431. PHOTOGRAPHIC SENSITIVE PAPER. Thomas C. Roche, Brooklyn, assignor to E. & H. T. Anthony & Co., New York, N. Y. Filed Dec. 24, 1884. (No model.)



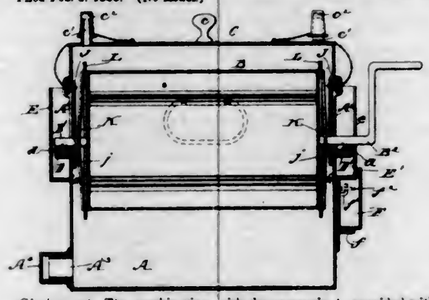
Claim.—1. As an improved article of manufacture, a prepared sensitive photographic paper or other flexible support, made as herein described, with two separate sensitive faces of gelatine-silver emulsion, as set forth.

2. In photographic papers, the combination, with the body of the paper A, of the two separate films B of gelatine-silver emulsion, substantially as and for the purpose herein set forth.

3. A photographic sensitive paper constructed with the body of the paper A inclosed between two sensitive films, B, of gelatine-silver emulsion, substantially as described.

4. In a photographic paper, two separate sensitive films of gelatine-silver emulsion supported and carried upon a single sheet of paper, as herein shown and described.

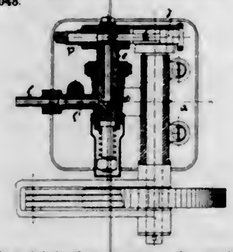
328,432. WASHING-MACHINE. Henry B. Rogers, Marshall, Mo. Filed Feb. 3, 1885. (No model.)



Claim.—1. The combination, with the reservoir A, provided with box E', of the separate box F, adapted to be held below the box E' to catch any water or suds that may issue from the box E', substantially as described.

2. The reservoir A, provided with the ledge *f* and hooks *f'*, in combination with the box F, provided with rings *f²*, substantially as and for the purposes set forth.

328,433. LUBRICATOR. Ernst Rost, Dresden, Saxony, Germany. Filed June 5, 1885. (No model.) Patented in Germany Mar. 11, 1884, No. 30,425; in France June 26, 1884, No. 162,992, and in Belgium Mar. 2, 1885, No. 68,048.



Claim.—1. In a lubricating apparatus, the combination, with a reservoir, *n*, of a pump consisting of an oscillating cylinder, a piston operated by a suitable mechanism, and means for enabling the pump to draw from the said reservoir and to discharge into a channel leading to the surfaces to be lubricated, substantially as hereinbefore described.

2. In a lubricating apparatus, the combination, with a reservoir, *n*, of a pump consisting of a cylinder, *p*, with trunnion *o*, oscillating in a shell or housing, *e*, and a piston, *k*, operated by suitable mechanism, the said trunnion having a channel communicating with the cylinder *p*, and ports adapted to communicate alternately with channels leading, respectively, to the reservoir *n* and to the surfaces to be lubricated, substantially as and for the purpose specified.

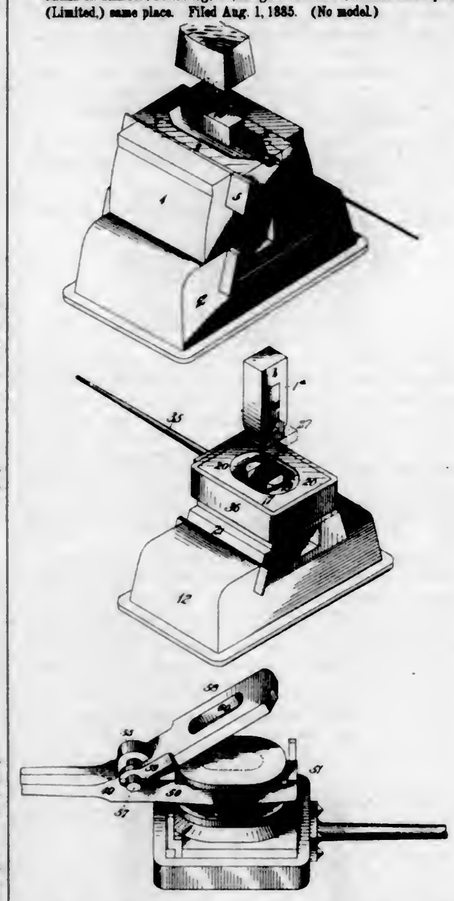
328,434. CLOTHES-POUNDER. Patrick Selby, Lee, Ohio, assignor of one-half to John H. Winn, same place. Filed June 25, 1885. (No model.)



Claim.—1. As an improvement in clothes-pounders, the combination of the outer bell or casing having the operating-handle, and provided with the aperture in its upper side, the valve-chamber arranged above said aperture and having the ball-valve to regulate the admission of air through the said aperture, and the inner bell or chamber having the aperture in its upper side registering with the aperture in the top of the outer bell or casing, and arranged within the said outer casing as described, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

2. The combination of the outer bell or casing having the operating-handle, and provided with the aperture in its upper side, the valve-chamber arranged above said aperture and having the ball-valve to regulate the admission of air through the said aperture, the inner bell or casing having the aperture in its upper side registering with the aperture in the top of the outer bell or casing, and arranged within the said outer casing as described, and the partitions arranged as described, all constructed, combined, and arranged to operate in the manner and for the purpose shown and described.

328,435. APPARATUS FOR MANUFACTURING DRAW-BARS. James H. Simpson, Pittsburg, Pa., assignor to Wilson, Walker & Company, (Limited,) same place. Filed Aug. 1, 1885. (No model.)



Claim.—1. In a plant or apparatus for forming draw-bars, a block having a recess in its upper surface and provided with longitudinal and vertical passages, the vertical passage connecting the recess to the longitudinal passage, in combination with a separable blank-holder adapted to be secured in the recess in the block, substantially as set forth.

2. In a plant or apparatus for forming draw-bars, a separable blank holder or box, in combination with a punch and a supporting-block constructed to hold the blank-box and provided with suitable passages for the reception and removal of the metal punched out of the blank, substantially as set forth.

3. In a plant or apparatus for forming draw-bars, a separable blank holder or box consisting of similarly-constructed L-shaped blocks provided with suitable means for interlocking as against longitudinal movement in relation to each other, in combination with a supporting-block constructed to hold or support such box, substantially as set forth.

4. In an apparatus or plant for forming draw-bars, a block, 21, provided with a horizontal passage, in combination with a die resting on said block and provided with a vertical opening for the reception of the blank, and an internal supporting block or mandrel, 26, substantially as set forth.

5. In an apparatus or plant for forming draw-bars, a block, 21, in combination with a die resting on said block and provided with a vertical opening therethrough, the face of said die contiguous to the opening being suitably shaped for the formation of the rear side of the face-plate of the draw-bar, and an internal supporting block or mandrel, 26, substantially as set forth.

6. An apparatus or plant for forming draw-bars, a die having a vertical opening therethrough, the face of said die contiguous to said opening being suitably shaped for the formation of the rear side of the face-plate of the draw-bar, in combination with a block, 21, provided with a horizontal passage therethrough and a vertical opening in line with the opening in the die, filling-blocks 29, arranged in said opening, and an expansible key adapted to fit in holes in the side walls of the horizontal passage, substantially as set forth.

7. In a plant or apparatus for forming draw-bars, a die having a vertical opening therethrough, the face of said die contiguous to said opening being suitably shaped for the formation of the rear side of the face-plate of the draw-bar, and provided with abutments 20, in combination with an internal supporting block or mandrel, substantially as set forth.

8. In a plant or apparatus for forming draw-bars, a die or cutter having a vertical opening therethrough, and having its face contiguous to said opening suitably shaped for evenly supporting or adapted to fit the rear side of the face-plate of the draw-bar, the outer portions of the face of said die being cut away so as to form a cutting edge or rim, 39, in combination with a movable die or cutter provided with an opening therethrough of the size and contour of the perimeter of the completed draw-bar, substantially as set forth.

9. In a plant or apparatus for forming draw-bars, a die-punch having in combination a stem, recessed as described, near its end, a punch located in said recess, and a movable plate having an opening therethrough, substantially as set forth.

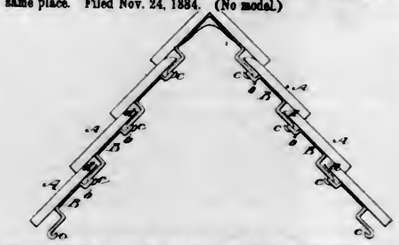
10. In a plant or apparatus for forming draw-bars, a die-punch having in combination a stem, recessed as described, near its end, a punch located in said recess, and a movable perforated plate or punch hinged to the stem, said hinge being so constructed as to permit the movable punch to move toward the stem in a straight line, substantially as set forth.

11. In a plant or apparatus for forming draw-bars, the combination of a die or holder and punch for punching out the middle portion of the blank, a die and hammer for forming the face-plate, the die being suitably constructed for forming the rear side of the face-plate of the blank, male and female cutters for trimming the edges of the face-plate, a stationary and a movable punch for forming the link-opening in the face-plate, and a mandrel for supporting the blank during the operation of drawing the side bars or straps, substantially as set forth.

328,436. METHOD OF MANUFACTURING DRAW-BARS. James H. Simpson, Pittsburg, Pa., assignor to Wilson, Walker & Company, (Limited,) same place. Filed Aug. 1, 1885. (No model.)

Claim.—The herein-described method of forming solid forged steel draw-bars, which consists in punching out or removing a portion of the metal from the body of a properly-shaped blank, hammering or swaging down the head of said blank for the purpose of forming the face-plate, trimming or cutting said face-plate to shape, punching a link-opening in said face-plate, and then drawing down the side bars, substantially as set forth.

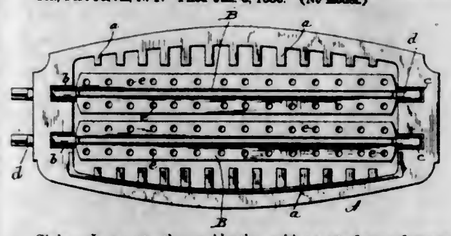
328,437. PORTABLE HAY AND GRAIN COVER. John M. Sweeney, Monmouth, Ill., assignor to himself and Mortimer Shannon Baldwin, same place. Filed Nov. 24, 1884. (No model.)



Claim.—1. A portable shed or cover for stacked hay, grain, and the like, consisting of a series of boards having their upper edges beveled or rounded off, and provided with metal fastenings on their inner faces having an eye at one end and a hook at the other, substantially as described

2. A portable shed or cover for hay, grain, and the like, consisting of the boards A, provided with the fastenings B on their inner faces, the said fastenings having an eye, *b*, at one end and a hook, *c*, at the other, and extending transversely across the said boards, substantially as described.

328,438. GRATE FOR STOVES AND FURNACES. David L. Swinton, Port Jervis, N. Y. Filed Jan. 8, 1885. (No model.)



Claim.—In a grate, the combination, with a grate-frame of greater width in the middle, and having its outer side edges curved from the center toward each end, each side being provided with a row of stationary teeth projecting inward, such teeth being of greater length in the central portion of the grate-frame, and having their inner faces in line, of journaled grate bars having straight-edged perforated flanges or ribs, all substantially as described.

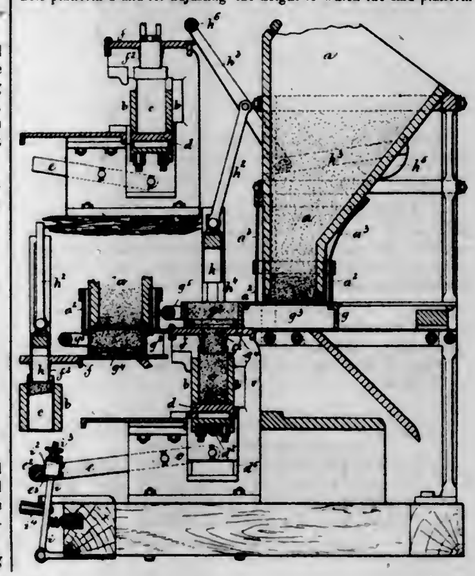
328,439. FILLING AND COMPRESSING MACHINERY. John Tickle, West Bromwich, and Frederick Leonardt, Handsworth, County of Stafford, assignors to Edward Caddick, West Bromwich, William Creed, Stroud, and Arnold Thomas, Newnham, England. Filed Feb. 17, 1885. (No model.) Patented in England May 15, 1884, No. 7,743; in France Jan. 22, 1885, No. 164,593, and in Belgium Jan. 26, 1885, No. 67,655.

Claim.—1. The combination of the rising and falling platform *d*, the divided mold *b*, supported thereby, the fixed platform *f*, having pendent spouts f^3, the shaft d^2, carrying cams d^3, for imparting motion to platform *d*, the levers *e*, connected together by handle e^2, to raise and lower said platform, and the spring-actuated lever-catch *i*, carrying blocks i^3, substantially as described.

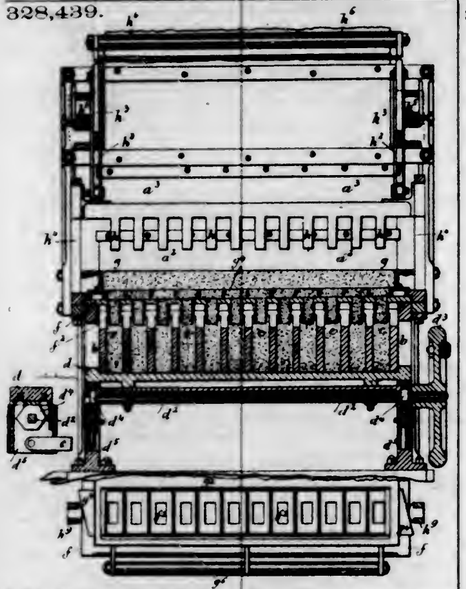
2. The combination, with the rising and falling and vibratory platform $d\ d^2\ d^3\ d^4$ and fixed filling-spout platform $f\ f^3$, of the horizontal sliding drawer $g\ g^2\ g^3$, and laterally-moving grid or grating g^4 of the said drawer, for receiving the powdered material or commodity from the fixed hopper *a* and conveying it over the filling-spouts of the fixed platform, the several parts being constructed, arranged and working substantially as described and illustrated.

3. The combination of the mold *b*, the fixed platform *f*, having pendent spout f^3, the sliding drawer g^3, having grating g^4, the hopper *a*, the guides h^4, the plungers *h*, moving therein, the weighted levers h^5, and the jointed rods h^2, connecting levers h^5 and plungers *h*, substantially as and for the purposes described.

4. The combination of the parts e^3 i i^2 i^3, for supporting the movable platform *d* and for adjusting the height to which the said platform

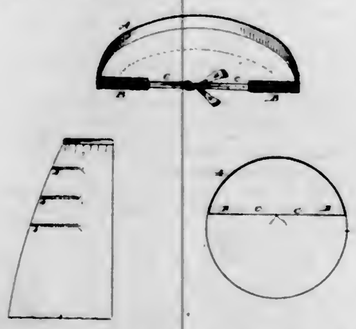


328,439.



shall be lifted for insuring a uniform weight of material being fed to the bags or cases.

328,440. BUSTLE. Alford Trelease, Waterbury, Conn. Filed Oct. 13, 1884. (No model.)



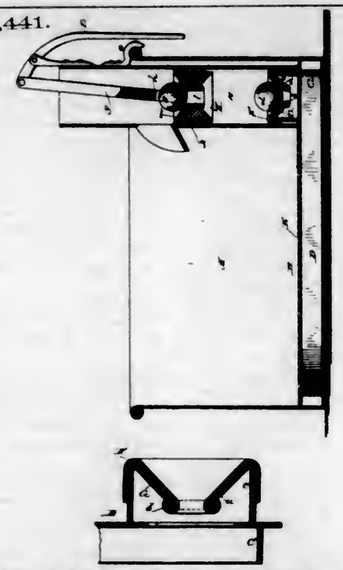
Claim.—1. As an article of manufacture, the bustle spring A, having an elastic strip, B, attached to its respective ends, the said elastic strips terminating in inelastic connecting devices C C, substantially as described.

2. A skirt having one or more springs, A A, in circumferential pockets in the rear portion of the skirt, the said springs having an elastic strip, B, attached to each of their ends, the said elastic strips terminating in inelastic connections C C across the skirt in rear of the wearer, substantially as described.

328,441. WASHING-MACHINE. William Tyson, Manson, Iowa, assignor of one-half to H. B. Stafford, same place. Filed Feb. 7, 1885. (No model.)



328,441.

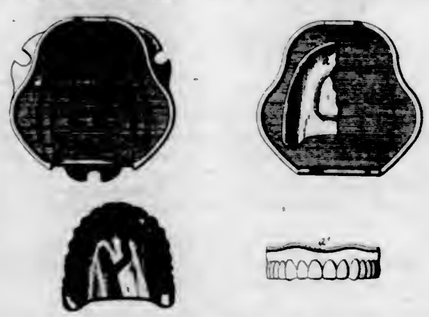


Claim.—1. The grate-platform having at one end the valve-seat, and the pump-cylinder connected to said valve-seat and provided with arms adapted to engage the margin of the wash-boiler, substantially as specified.

2. The combination, with the wash-boiler and pump-cylinder, of the grate-platform having a neck adapted to engage the pump-cylinder and surrounding the valve-seat, and an under circumferential flange inclosing a chamber below the grate-platform, which communicates through the valve-seat with the pump-cylinder, substantially as specified.

3. The combination, with the inverted cone-shaped or depressed valve-seat having a central opening, of the felting covering said valve-seat extending through said opening and secured in position with relation thereto by a holding-ring of larger diameter than said opening, substantially as specified.

328,442. DENTISTRY. James L. Whinery, Union, Iowa. Filed Aug. 6, 1885. (No model.)

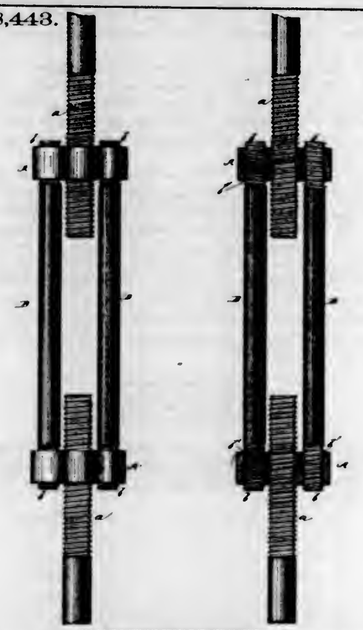


Claim.—The process for replacing, duplicating, or repairing rubber dental plates, which consists in first depositing in the plate to be renewed or replaced a thin impression-cast of suitable plastic material, then filling in the plate on the thin impression-cast with a plastic mold, then cutting a groove in the exterior rim of the rubber plate and filling said groove with wax, then flasking the teeth in a plaster mold, then subjecting the closed flask and contents to dry heat to devulcanize the rubber, then removing the devulcanized plate and replacing its mold with packed rubber, and then vulcanizing the same, all substantially as set forth.

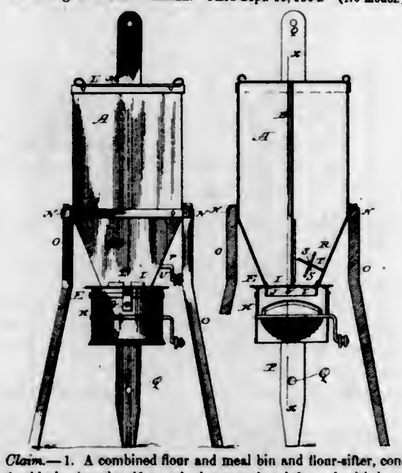
328,443. TURN-BUCKLE. Lewis Wilkinson, Chicago, Ill.; Frederick M. Steele administrator of said Lewis Wilkinson, deceased. Filed Oct. 25, 1884. (No model.)

Claim.—A turn-buckle having its side bars secured in the ends or heads by right and left screw-threads, substantially as and for the purpose set forth.

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328,444. COMBINED FLOUR AND MEAL BIN AND FLOUR-SIFTER. Robert E. Williams and William A. Trammell, Dallas, Tex.; said Trammell assignor to said Williams. Filed Sept. 19, 1884. (No model.)



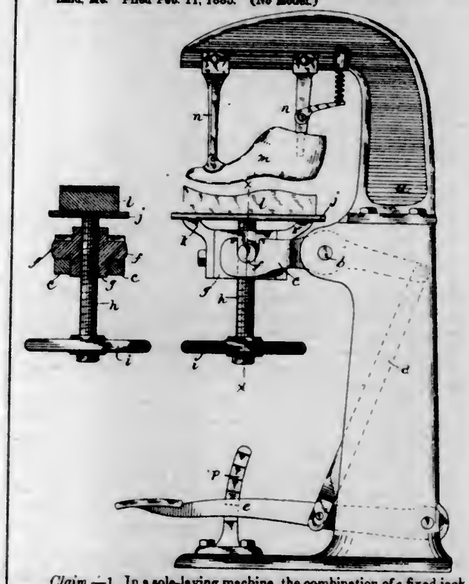
Claim.—1. A combined flour and meal bin and flour-sifter, consisting of a bin having the sifter at its lower end and formed with loops or sockets at the lower ends of its straight sides, two legs fitting with their upper ends in the said loops or sockets, and a leg permanently secured to the rear side of the bin, extending above the upper end of the bin, and having a perforation at its upper end and in its lower portion, as and for the purpose shown and set forth.

2. A bin having a vertical partition and having its sides contracting at its lower end, forming a neck, and having a laterally-projecting flange at the upper edge of its forward and rear side and a laterally-projecting flange around the base of the neck, the sliding cover having the downwardly and inwardly bent side edges fitting over the top flanges of the bin, and the cut-off slides sliding in ways at the lower end of the bin above the laterally-projecting flange, as and for the purpose shown and set forth.

328,445. VERMIN POISON. John D. Womack, Cameron, Tex. Filed May 16, 1885. (No specimens.)

Claim.—The insecticide mixture herein described, consisting of bisulphide of carbon, brimstone, powdered cyanide of potassium, carbolic acid, and phosphorus in the proportions described.

328,446. SOLE-LAYING MACHINE. Charles D. Wood, Lincoln, R. I., assignor to the Boot and Shoe Sole Laying Machine Company, Portland, Me. Filed Feb. 11, 1885. (No model.)

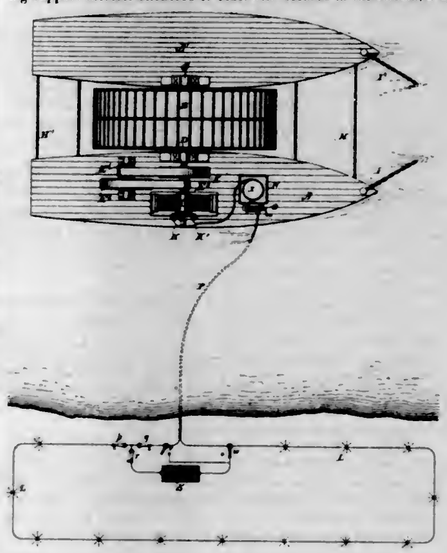


Claim.—1. In a sole-laying machine, the combination of a fixed jack, a solid bed or block of elastic material, a plate of rigid material bearing against the entire rear or bottom surface of said block, foot-power mechanism, substantially as described, for pressing said plate and block toward the jack, a holding device, as *p*, whereby said pressure may be maintained, and a screw working in a suitably-supported nut or socket and bearing directly against said plate, whereby the block may be additionally pressed against the sole, as set forth.

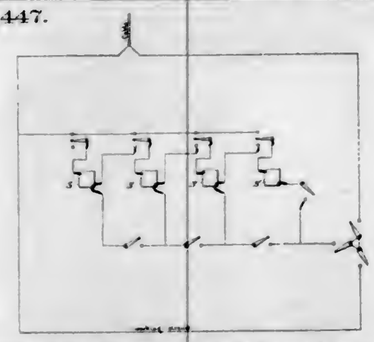
2. The combination of the lever *c*, the nut *g*, supported by said lever, means, substantially as described, for operating the lever, the screw *h*, working in said nut, the rigid plate *j*, supported by the screw, and the elastic block *l* on said plate, as set forth.

328,447. APPARATUS FOR UTILIZING THE CURRENT FORCE OF WATER. Edwin L. Brady, Stamford, Conn., assignor to the River and Rail Electric Light Company, of Ohio county, W. Va. Filed July 17, 1885. (No model.)

Claim.—1. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dy-



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namo-electric machine mounted on said floating support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, a working-circuit containing electrical translating devices, and a storage-battery in circuit with the dynamo, whereby regularity of the working-current is maintained, substantially as described and shown.

2. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current of the dynamo to shore, a working-circuit containing electrical translating devices, and a storage-battery with electrical connections, whereby it may be thrown into or out of circuit, as required, to maintain the continuity and regularity of the working-current, substantially as described and shown.

3. The combination of a water-power mechanism, a floating support therefor anchored or otherwise fixed in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore for the performance of work, and a storage-battery in circuit between the dynamo and the working-circuit and located upon the floating support, substantially as described, and for the purposes set forth.

4. The combination of a water-power mechanism, a floating support therefor anchored or otherwise fixed in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, and a storage-battery and electrical connections therefor, whereby it may be thrown into and taken out of the circuit of the dynamo at will.

5. The combination of a water-power mechanism, a floating support therefor anchored or otherwise fixed in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, and a storage-battery and electrical connections therefor, whereby it may be thrown into or out of circuit with the dynamo at will, said storage-battery and connections being also located upon the floating support.

6. The combination of a dynamo-electric machine mounted upon and driven by a floating current-motor, and provided with a flexible electric conductor for conveying its current to distant fixed points for utilization with storage-batteries arranged in sections in the circuit of the dynamo, and provided with working-circuits and electrical connections, whereby current of varying degrees of tension, as desired, may be taken from the said batteries for the performance of work, substantially as described, and for the purpose set forth.

7. The combination of a water-power mechanism, a floating support therefore anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to the shore, a working-circuit connected with said conductors, and a storage-battery in multiple arc with said working-circuit, substantially as described, and for the purpose set forth.

8. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, a working-circuit connected with said conductors, a storage-battery in multiple arc with said working-circuit, and a circuit-breaker in the branch circuit passing through the storage-battery, substantially as described, and for the purpose set forth.

9. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, a working-circuit connected with said conductors, a storage-battery in multiple arc with said working-circuit, and three circuit-breakers, one in the storage-battery branch and one on each side thereof in the main circuit, substantially as described, and for the purpose set forth.

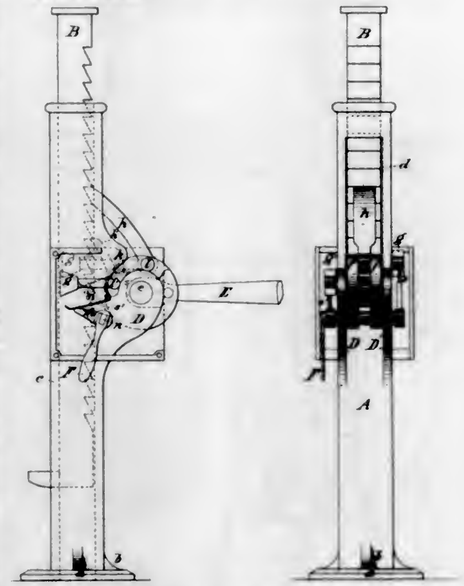
10. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, conducting-cables for conveying the electricity generated by said dynamo to shore, and a tank on said float for receiving a reserve coil of said cable.

11. The combination of a water-power mechanism, a floating support therefor anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, conducting-cables for conveying the electricity generated by said dynamo to shore, a tank on said float for receiving a reserve coil of said cable, and a reel for readily running the cable on and off the float.

12. The combination of a water-power mechanism, a floating support therefor, a dynamo-electric machine mounted on said support and driven by said power mechanism, a cable for carrying the current of said generator to shore, and a reel for carrying a part of said cable and running it on and off the float.

REISSUES.

10,651. LIFTING-JACK. Josiah Barrett, Allegheny, Pa., assignor to the Duff Manufacturing Company, (Limited,) same place. Filed Sept. 21, 1885. Original No. 293,400, dated Feb. 12, 1884; Reissue No. 10,574, dated Mar. 24, 1885.



Claim.—1. In a lifting-jack, a lifting-bar provided with ratchet-teeth on one side only, in combination with an operating-lever and two pawls arranged to engage the lifting-bar on the same side, one above the other, and pivoted to said lever in such relation to its fulcrum-point that one of said pawls will engage the lifting-bar during the upward movement of the operating-lever, and the other pawl will engage said lifting-bar during the downward movement of the operating-lever, substantially as set forth.

2. In a lifting jack, a lifting-bar provided with ratchet-teeth, in combination with an operating-lever, pawls pivoted to said lever, one on each side of its fulcrum-point, and springs adapted to engage said pawls and hold them alternately from engagement with the lifting-bar while they are being raised by the operating-lever, and to permit the pawls to engage said lifting-bar while they are being lowered, such alternate engagement and disengagement being effected automatically, substantially as set forth.

3. In a lifting-jack, the lifting-bar provided with ratchet-teeth, in combination with an operating-lever, pawls *h h'*, provided with weighted levers *g g'*, and pivoted to the operating-lever, one on each side of its fulcrum-point, substantially as set forth.

4. In a lifting-jack, a lifting-bar provided with ratchet-teeth, in combination with an operating-lever, pawls *h h'*, weighted levers *g g'*, springs *s s'*, crank *m*, and lever F, substantially as set forth.

A. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

Ex parte Ernst.

Decided October 3, 1885.

1. In the examination of applications for reissue the Primary Examiner should first examine and determine the sufficiency of such reissue application itself.
2. If such reissue application fails to exhibit and state all the facts which, if true, would entitle applicant to reissue, the Examiner need proceed no further, but may decline so to do, whereupon a review by the Commissioner can be had by applicant.
3. If, on the other hand, such reissue application and all parts thereof be in proper form and exhibit all the facts which would, if true, entitle applicant to reissue, the examination will proceed upon the merits.
4. If upon such examination upon the merits it should be determined that the original patent is not "inoperative or invalid," or that even if it be so inoperative or invalid the error which renders it so did not "arise from inadvertence, accident, or mistake, and without any fraudulent or deceptive intention" on the part of applicant, or should references be found which preclude such reissue, the Examiner will reject, assigning all his reasons therefor; whereupon an appeal will lie to the Examiners-in-Chief.

Appeal from Primary Examiner.

DISINFECTING WATER-CLOSETS.

Reissue application of William M. Ernst, filed June 18, 1885.

Mr. J. N. McIntire for the applicant.

Montgomery, *Commissioner:*

Applicant's reissue application was rejected by the Primary Examiner upon the ground that it was insufficient. After a repetition of such rejection applicant attempts this appeal. Upon examining this case, however, the application appears to have been so declared insufficient for the reason that, after an examination of the records and files of the original case, the Examiner concluded that the facts averred in the reissue application were not true, and that the error in the original case, which was made the basis of the reissue application, had not arisen from actual "inadvertence."

After a careful consideration of this question of reissue I have determined, in accordance with the circular of June 15th last, that the better practice in these cases is the following: *First*, the Primary Examiner should take up and examine the reissue application (including the statement and oath) standing by itself and alone. If he finds it sufficient on its face and in accordance with the statute, section 4916, and the rule, 86, (see *Ex parte* Timkin, 24 O. G., 1089, Commissioner's circular of June 15, 1885,) to entitle applicant to his reissue patent, he will then proceed to examine the merits. No matter what the records and files of the original case may exhibit, if the reissue application itself and all parts thereof are in proper form and allege all the facts which would, assuming them to be true, entitle applicant to such reissue, the examination upon the merits will be proceeded with. If, on the other hand, the reissue application, or any part thereof, be fatally defective—in other words, if the application itself fails to exhibit and state all the facts which, if true, would entitle applicant to the reissue—the Examiner need proceed no further, but may decline so to do. Of course in case of such declination a review by the Commissioner can be had by the applicant. That I may be *fully* understood I repeat that in all reissue applications the Examiner will proceed to examine and determine whether or not the reissue application and all parts thereof are complete and exhibit a perfect *prima facie* showing sufficient to entitle applicant to such reissue. If it do not, the Examiner may stop there, leaving applicant to his interlocutory remedy. If, on the other hand, such application and all parts thereof do exhibit *prima facie* a case entitling applicant to reissue, the Examiner will then proceed upon the merits, and determine, *first*, whether or not the original patent is "inoperative or invalid;" *second*, if so, for what reason; *third*, if so, did the error which renders such original patent "inoperative or invalid" arise from "inadvertence, accident, or mistake," and "without any fraudulent or deceptive intention" on the part of applicant; *fourth*, whether there are any references to be cited against such reissue, and, if so, cite them. If upon such examination upon the merits it should be determined that the original patent is not "inoperative or invalid," or that even if it be so inoperative or invalid the error which renders it so did not "arise from inadvertence, accident, or mistake, and without any fraudulent or deceptive intention" on the part of applicant, or should references be found which preclude such reissue, the Examiner will reject, assigning all his reasons therefor; whereupon an appeal will lie to the Examiners-in-Chief.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of New Jersey.

Celluloid Manufacturing Company v. Crofut *et al.*

Decided August 26, 1885.

1. Anticipation—Patent No. 65,267.

Patent No. 65,267, dated May 28, 1867, and granted to William Hugh Pierson, for an improved plastic material made from vegetable fibers, was not anticipated by the English letters patent, granted to Alexander Parkes, upon a specification enrolled in the British office, on April 17, 1856.

2. Same—Abandonment—Poverty—Sickness—Insanity.

Continued poverty, sickness, and mental alienation are suffi-

cient excuses for delay in procuring a patent. Abandonment to public *held* not shown.

Messrs. Dickerson & Dickerson for the complainant.

Mr. John P. Adams for the defendants.

NIXON, *J.*:

This action is brought against the defendants to recover damages for the infringement of Letters Patent No. 65,267, dated May 28, 1867, and granted to William Hugh Pierson for an improved plastic compound made from vegetable fibers. The patent relates to what is called by the patentee the "plastic art," and especially to the production of celluloid. He takes some form of fibrous material known as "cellulose," as, for instance, the ordinary cotton fiber, and converts it into nitro-cellulose by treating it with nitric or a mixture of nitric and sulphuric acids. By the action of these acids the cellulose is turned into a material usually called "pyroxyline." This pyroxyline is then submitted to the action of solvents, which may be a mixture of alcohol and ether or wood-spirits sufficient in quantity to put it into a half-dissolved or pulpy but not into a liquid state. The action of the solvents makes a plastic mass which is capable of being molded into desired forms. To produce different effects different foreign substances are added; and to render the result suitable for manufacture it is laid upon a proper surface and submitted to continued pressure, by which it is compacted into a solid mass, now known as "celluloid."

The complainant insists that the defendants have infringed the first and second claims of the patent, which are as follows:

1. The formation of articles of manufacture resembling stone, wood, whalebone, shell, horn, and other rigid or elastic articles out of celluloid, or semi-soluble pyroxyline, prepared substantially in the manner and for the purposes herein set forth.
2. The combination of plastic, as above described, with vegetable or any other foreign matter, substantially in the manner and for the purpose set forth.

Numerous defenses are set up in the answer, but two only were urged at the hearing: (1) That Pierson was not the original and first inventor, the patent having been anticipated by the English letters patent granted to Alexander Parkes upon a specification enrolled in the British office on April 17, 1856. (2) Abandonment of the invention to the public.

1. The invention claimed by Pierson is undoubtedly fully set forth by Parkes in the second part of his specification relating to the use of solutions of gun-cotton or other similar compounds. But this is a foreign patent, and the complainant meets the alleged anticipation by evidence tending to show that the actual invention of Pierson was made by him some years previous to the sealing of the Parkes patent. Has he been successful in the attempt? The testimony is explicit, and mainly uncontradicted, that as early as the year 1850 the patentee, Pierson, began to direct his thoughts and devote much of his time to the production of solid bodies from pyroxyline and solvents, and combinations therewith of other materials. He was then a young physician, practicing his profession in Cincinnati. He made such experiments as his limited means allowed from 1850 to the month of July, 1855, when he was compelled by his pecuniary necessities to leave Cincinnati and take refuge for support in his father's house at Orange, in the State of New Jersey. He endeavored to enlist the interest and sympathy of the father in his invention, but he seems to have been of a practical turn of mind, and instead of encouraging, tried to check the son from indulging in such profitless hallucinations. The patentee was a witness in the case, and his modest story of his perplexities and struggles with poverty is quite pathetic.

> My practice as a physician [he says] was very small in amount, and was among the poor, and I think I could not have collected as much as fifty cents a day. I did not collect enough to meet my mere living expenses. I had to receive aid from my father to meet those expenses. When Mr. Price, with whom I boarded, left Cincinnati, I was in his debt in about the sum of one hundred and fifty dollars. My recollection is that I had agreed to pay him at the rate of about ten dollars per week for my board. This sum of one hundred and fifty dollars, so due, my father afterward paid for me, and I was unable for years thereafter to collect sufficient money from my earnings to liquidate that account. After Mr. Price left Cincinnati in the year 1853, I was reduced to very great straits at times, and lived the best way I could, from hand to month, in my own room, a large part of the time on bread and water. During all this period, however, I constantly devoted all the money that I could in any way spare, and really more than I could properly spare, from my actual necessities, to the purchase of materials for carrying on my experiments and completing my invention. I was necessarily greatly hampered in my work from lack of means, but I persistently employed all the means in my power, and constantly devoted all the time and attention I could spare from limited practice, to the perfection of what I at that time and ever since have believed would prove to be an invention of the greatest value to mankind and possibly to myself. * * * I was finally compelled to leave Cincinnati, and returned to my father's house in Orange, in the State of New Jersey, where, at least, I was assured of having enough to eat. I went right to work, continuing my experiments to improve and perfect the invention. I conducted them at first in a corn-crib on my father's premises, and afterward in Willow Hall, which my father had just built. I moved into Willow Hall in September, 1855. After I arrived in Orange, and prior to my moving to Willow Hall, I had made other solid pieces of the material, which I called "plastic," and had also coated cloths. After moving into Willow Hall, I worked to perfect my invention; to adapt it to different uses, and to get it into a state in which I could obtain the assistance necessary to patent and introduce it to the public. A large part of the experiments were directed to reducing the cost of manufacture. I also desired, by actual experiment, to prove its adaptability to certain uses in the art; in short, to ascertain, as far as practicable with my limited means, the whole capacity of the invention. Although my invention, as an invention, was fully defined and completely demonstrated to my own mind, while in Cincinnati, at least as early as the year 1852, yet there were many things remaining to be done to make it commercially valuable and to make it useful for many different purposes for which I had designed and considered it adapted. It was necessary to carry on a series of experiments for very many of these independent uses, in order to obtain the proper consistency, the proper color, and other qualities suiting the material to such uses. While in Orange, I made a great many solid pieces of my plastic material, varying in size, shape, and color. * * * These results I gradually perfected after my return to Orange, and while there devoted myself constantly, excepting so far as my time was employed in a practice somewhat extensive among the poor, but very unremunerative, to perfect this invention. The cost of gun-cotton itself, as furnished in the market at that time, was too great to make the thing commercially practicable, and I spent a great deal of time in learning to make this necessary basic article more cheaply, so as to make the compound I wanted more practicable. This double work of my invention and practice was altogether beyond my strength, and my health gradually declined in consequence. A great deal of time was occupied in preparing specimens for the Patent Office. I prepared more than one hundred separate specimens for this purpose alone. These specimens were completed somewhere in the year 1860, but their preparation had occupied me much of my time for several years before. I filed a caveat referring to this invention in April, 1860, and made an application for letters patent in November, 1860. I made this application just as soon as I was pecuniarily able after I had commercially perfected my invention. The money for making the application I was compelled to borrow, having been in very straitened circumstances during the period when I was living in Orange, after my return from Cincinnati. During this period, and until I made application for letters patent, I find by examining my accounts that I collected on an average less than one dollar a day from my practice, and of course I was able to spare but little from this very limited income. During all that period I had but very little money, and such as I had was constantly devoted toward the perfecting and carrying out of my invention; and that was my main object and aim during all that period, as it had been from the time when I first conceived the invention. Such practice of medicine as I did I was compelled to do in order to obtain the necessary means of living and for carrying on my experiments. After making this application for letters patent my application was, as I believed, unjustly refused by the Patent Office; and after having devoted so many years of my life to this one idea, the disappointment was too great for me to bear, enfeebled as I was by overwork; and, as I am informed by my friends, my mind became unbalanced in connection with a severe fit of sickness, which occurred at this time, and this condition continued for about seven months. I was sent to an asylum early in February, 1861, and remained there until some time in September, 1861. This sickness came upon me almost immediately after the rejection of my application by the Patent Office.

He further states that after his release from the lunatic asylum he was compelled to desist from all mental labor, being advised by his physician that it would be very dangerous. He was also advised by him that the best chance of recovering his health would be to enter the navy and go to sea; that he obtained the position of assistant surgeon of the navy in August, 1862; that all the pay he received, beyond his living, was from time to time appropriated in the payment of the debts which he had contracted in prosecuting his invention; that as soon as his health permitted he went home on leave of absence, and entered into a written contract with his former patent attorney, Mr. Greenough, to renew the application for the patent, agreeing to give him for his services one-half interest in any patent afterward obtained; that Greenough, having again failed in his efforts, a contract of a similar nature was made with Mr. Williams, through whose exertions the patent was finally granted.

No question has been raised by the defendants in reference to the truth of the patentee's testimony, and it clearly reveals the fact that his invention was practically complete some years before the date of sealing the English patent of Parkes.

2. I am further of the opinion that the defendants have not succeeded in showing any acts or conduct on the part of the patentee which would justify the court in holding that the invention was abandoned. Continued poverty, sickness, and mental alienation are always regarded as sufficient excuses for delay, and not a fact or circumstance has been brought into the case showing any intention of abandonment.

A decree must be entered for the complainant, with costs.

U. S. Circuit Court—District of Indiana.

LEACH *v.* CHANDLER *et al.*

Decided July 30, 1885.

INFRINGEMENT—TABLES FOR TILE-MACHINES.

The fourth, fifth, and seventh claims of Patent No. 279,259, granted to William F. Leach on June 12, 1883, for improvement in tables for tile-machines, construed, and *held* not infringed by machines made under Patent No. 243,867, issued July 5, 1881, to Elihu Dodds.

Mr. David A. Leach for the complainant.

Messrs. West & Bond and *Messrs. Stanton & Scott* for the defendants.

WOODS, *J.*:

The complainant, as owner of Letters Patent No 279,259, granted him on June 12, 1883, for improvement in tables for tile-machines, sues the respondents for infringement of claims 4, 5, and 7 of his patent, and for a cancellation of Letters Patent No. 243,867, issued July 5, 1881, to Elihu Dodds, who assigned to the defendants, the alleged infringing machines having been made by defendants under and in conformity to the Dodds patent. The bill charges, among other things, that the complainant was in truth the first inventor, and that in a proceeding of interference, to which the respondents appeared, it was so decided in turn by the Examiner, by the Examiners-in-Chief, and by the Commissioner of Patents. The fourth, fifth, and seventh claims of complainant's patent are of the tenor following:

4. In a tile-table, suspended flexible carriers H, substantially as herein shown and described, whereby tiles of different forms and sizes will be firmly supported and safely carried, as set forth.
5. In a tile-table, the combination, with the bases E and the flexible carriers H, of the suspending-springs G, substantially as herein shown and described, whereby the flexible carriers can adjust themselves more freely to the supported tiles, as set forth.
7. In a tile-table, the endless chain of flat bases E, substantially as herein shown and described.

The claim in the Dodds patent reads as follows:

> The combination, in a tile-machine, of the carrier-bars and a flexible bridging-strap arranged to receive the tile as it comes from the forming-dies.

The specifications of complainant's patent contain the following among other statements:

> The object of this invention is to provide suitable means for receiving tiles as they come from the tile-mill, and delivering them uninjured to the off-bearers, and also to provide suitable means for cutting the tiles accurately into proper lengths without stopping the machines.
>
> The invention consists in a tile-table constructed with a frame provided with a series of rollers, around which passes an endless chain of receivers, having downwardly-projecting flanges, and connected at their forward ends, leaving their rear ends free.
>
> With the receivers are connected spring-supported flexible carriers, to adjust themselves to the form of the tile.
>
> To each receiver or base E are attached one or more springs, G, as the size of the said receiver may require. To the upper ends of the springs G are attached the side edges of the carriers H, which are made of thin sheet-brass or other suitable material that has sufficient flexibility to allow it to adjust itself to the slope of the tile to be carried, so that tiles of different shapes and sizes can be firmly supported and safely carried by the same carriers.
>
> If desired, the carriers H can be supported by rigid standards; but I prefer to use the springs G, as they allow the flexible carriers to come in contact with more of the surface of the tiles, and thus carry them more safely. The carriers H can be made of such a length as the length of the tile may require.

It is not found necessary to determine whether the complainant or Dodds was first inventor, because, in view of the prior art, the invention of each, if properly called invention, must, in the judgment of the court, be construed strictly, and when so construed there is no infringement. The flexible standard, as it seems to the court, constitutes an indispensable part of the complainant's combination. There is, to be sure, a suggestion in the specification that a rigid standard may be used instead; but if that be done, unless it be constructed with a hinge, as shown in the red model put in evidence, the chief value of the improvement will be sacrificed, because upon absolutely rigid standards the carriers, made of tin or brass or other material, would have little or no capability of conforming to the shape of tiles of different sizes. Constructed after the red model or with flexible supports, the complainant's invention would seem to be ingenious, novel, and useful; but with rigid standards it would, in view of the Penfield patent, No. 98,519, and the Brown patent, No. 112,538, (to go no further,) involve no patentable advance over the prior art. It is claimed with some emphasis that the invention of the plaintiff consists in, or at least embodies the idea of, a series of carriers; but this, if conceded, does not help the case. A no less complete series is shown in the Penfield patent, and without the flexible standard it is impossible, as it seems to the court, to find support for any of the plaintiff's claims.

In respect to the seventh claim, it was conceded upon the argument that the action cannot be sustained

Bill dismissed for want of merits.

U. S. Circuit Court—District of Connecticut.

PARMELEE *et al. v.* A. BURRITT HARDWARE COMPANY.

Decided August 13, 1885.

1. INVENTION—PARMELEE FIRE-EXTINGUISHER.

Letters Patent No. 218,564, granted August 12, 1879, to Henry S. Parmelee, for an improved automatic fire-extinguisher, wherein the inventor made a sensitive extinguisher by placing the seal at the extreme outer end of the water-pipe, and so near the distributer that, when the joint of the seal was melted, the seal

itself was forced into the distributer, and the water was left unobstructed, describe a patentable invention, and are valid.

2. SAME—INFRINGEMENT.

The defendant's extinguisher is an infringement, it not being imperative that the seal should be so constructed that the water should be below the joint.

Mr. Charles E. Mitchell and *Mr. Benj. F. Thurston* for the plaintiffs.

Mr. John K. Beach and *Mr. John S. Beach* for the defendants.

SHIPMAN *J.:*

This is a bill in equity to restrain the alleged infringement of Letters Patent No. 218,564, granted August 12, 1879, to Henry S. Parmelee, for an improved automatic fire-extinguisher. The disclaimer, which is a part of the specification, and the two claims of the patent, clearly point out the character and extent of the invention. The specification says:

I am aware that fire-extinguishers have been provided with seals within the body of the casing of the distributer, and in connection with a valve arranged therein, and hence I make no claim to such construction. In my improvement the seal is located on the outer end of the water-conduit, connected with the perforated distributer, whereby the seal is not only protected against accidental displacement, and also from dust and dirt from the ceiling overhead, but is exposed most prominently to the action of the heat, which has direct entrance to the seal through the perforations in the distributer.

The claims are as follows:

1. In an automatic fire-extinguisher, the combination, with a perforated distributer, of a seal attached to the extreme outer end of the water-conduit, connected with the perforated distributer, said seal being retained in place by metal fusible at a low temperature, substantially as set forth.

2. In an automatic fire-extinguisher, the combination, with a perforated distributer, of a seal secured by fusible solder to the extreme outer end of the water-conduit, connected with the distributer, and at a point within the body of the said perforated distributer, substantially as set forth.

The seal shown in figure 1 of the drawings and in the wooden model, which is an exhibit in the case, is a flat disk or cap, the flange of which incloses the end of the water-pipe. The bottom of the cap is upon the end of the pipe, and the cap is secured by solder between the outer surface of the pipe and the inner surface of the flange. The patented device differs from the devices shown in the English patent to Lewis Roughton, of July 5, 1861, and in the United States patent to Brown and Foskett, of August 10, 1875, in the location of the seal, whereby the extinguisher is rendered more sensitive to the influence of heat and more prompt in its beneficial action. The Roughton device is complex and expensive, and has a quantity of metal near the seal, which prevents prompt action of heat upon it. The Brown and Foskett seal is placed in the pipe leading to the T-shaped outlet to which the distributer is secured. The Parmelee seal, when the joint is melted, is forced into the distributer. The Brown and Foskett seal is delivered, when released, into a pipe attached to the opposite end of the T-piece. The distinction between the Parmelee device and its predecessors is manifest and is patentable. The inventor made a sensitive extinguisher by placing the seal at the extreme outer end of the water-pipe, and so near to the distributer that, when the joint of the seal was melted, the seal itself was forced into the distributer, and the water was left unobstructed.

The defendant's extinguisher has, instead of a flat cap, a semispherical cap at the extreme end of the water-pipe, but the flanges of the cap pass into the end of the pipe instead of passing upon the outside of the end. Quoting from the testimony of Mr. Quimby, one of the defendant's experts, his description of the seal:

The Burritt seal is a short hollow cylinder having one closed hemispherical end. The exterior surface of this cylinder is secured by fusible solder to the interior of a nipple provided upon its exterior at both ends, respectively, with male screw-threads, the thread at one end being for engagement with the female thread-funnel within the neck of the perforated distributer, and the thread at the other end of the nipple being for effecting the connection of the nipple with the water-pipe. I understand that the special object in making the closed end of the seal in the Burritt extinguisher hemispherical is to increase the tendency of the seal to roll around the interior of the distributer after the seal has been released and been projected into the distributer. As a consequence of this hemispherical shape of the closed end of the seal, the water contained within the conduit extends both above and below the soldered joint which is to be fused.

The defendant contends that the fact that in the Burritt device the water extends above the soldered joint of the seal, whereas the water in the Parmelee device does not surround the joint, takes the Burritt device out of the Parmelee patent; and reliance is placed upon a clause in the specification, which says:

As the seal is secured within the distributer, which is usually made of metal, the rise of the temperature in a room or compartment will raise the temperature of the metal of which the distributer is made, and thus melt or fuse the joint between the seal and the distributer more readily than if water surrounded or was above the seal.

The patentee was here referring to the advantage which his invention possessed over a previous invention which he had patented in 1874, in which the seal inclosed the distributer, and consequently the water filled the distributer and the space between it and the cap, and thus "surrounded the joint and seriously retarded the melting of the solder;" but the patent now in suit, though a narrow one, is not to receive the extremely narrow construction which the defendant gives. According to the construction of one of its experts a flat Burritt seal would be within the patent, while a dome-shaped one would not be; and in the opinion of another expert a Parmelee flat cap would be without the patent, if the flanges were inside instead of outside the extreme outer end of the water-pipe. The gist of the invention was the location of the seal upon the extreme outer end of the water-conduit and connected with the distributer; but it is not imperative that the seal should be so constructed that the water should be below the fusible joint.

Let there be a decree for the plaintiffs for an injunction and an accounting.

cover damages for the infringement of Letters Patent No. 65,267, dated May 28, 1867, and granted to William Hugh Pierson for an improved plastic compound made from vegetable fibers. The patent relates to what is called by the patentee the "plastic art," and especially to the production of celluloid. He takes some form of fibrous material known as "cellulose," as, for instance, the ordinary cotton fiber, and converts it into nitro-cellulose by treating it with nitric or a mixture of nitric and sulphuric acids. By the action of these acids the cellulose is turned into a material usually called "pyroxyline." This pyroxyline is then submitted to the action of solvents, which may be a mixture of alcohol and ether or wood-spirits sufficient in quantity to put it into a half-dissolved or pulpy but not into a liquid state. The action of the solvents makes a plastic mass which is capable of being molded into desired forms. To produce different effects different foreign substances are added; and to render the result suitable for manufacture it is laid upon a proper surface and submitted to continued pressure, by which it is compacted into a solid mass, now known as "celluloid."

The complainant insists that the defendants have infringed the first and second claims of the patent, which are as follows:

1. The formation of articles of manufacture resembling stone, wood, whalebone, shell, horn, and other rigid or elastic articles out of celluloid, or semi-soluble pyroxyline, prepared substantially in the manner and for the purposes herein set forth.

2. The combination of plastic, as above described, with vegetable or any other foreign matter, substantially in the manner and for the purpose set forth.

Numerous defenses are set up in the answer, but two only were urged at the hearing: (1) That Pierson was not the original and first inventor, the patent having been anticipated by the English letters patent granted to Alexander Parkes upon a specification enrolled in the British office on April 17, 1856. (2) Abandonment of the invention to the public.

1. The invention claimed by Pierson is undoubtedly fully set forth by Parkes in the second part of his specification relating to the use of solutions of gun-cotton or other similar compounds. But this is a foreign patent, and the complainant meets the alleged anticipation by evidence tending to show that the actual invention of Pierson was made by him some years previous to the sealing of the Parkes patent. Has he been successful in the attempt? The testimony is explicit, and mainly uncontradicted, that as early as the year 1850 the patentee, Pierson, began to direct his thoughts and devote much of his time to the production of solid bodies from pyroxyline and solvents, and combinations therewith of other materials. He was then a young physician, practicing his profession in Cincinnati. He made such experiments as his limited means allowed from 1850 to the month of July, 1855, when he was compelled by his pecuniary necessities to leave Cincinnati and take refuge for support in his father's house at Orange, in the State of New Jersey. He endeavored to enlist the interest and sympathy of the father in his invention, but he seems to have been of a practical turn of

as much as fifty cents a day. I did not collect enough to meet my mere living expenses. I had to receive aid from my father to meet those expenses. When Mr. Price, with whom I boarded, left Cincinnati, I was in his debt in about the sum of one hundred and fifty dollars. My recollection is that I had agreed to pay him at the rate of about ten dollars per week for my board. This sum of one hundred and fifty dollars, so due, my father afterward paid for me, and I was unable for years thereafter to collect sufficient money from my earnings to liquidate that account. After Mr. Price left Cincinnati in the year 1853, I was reduced to very great straits at times, and lived the best way I could, from hand to mouth, in my own room, a large part of the time on bread and water. During all this period, however, I constantly devoted all the money that I could in any way spare, and really more than I could properly spare, from my actual necessities, to the purchase of materials for carrying on my experiments and completing my invention. I was necessarily greatly hampered in my work from lack of means, but I persistently employed all the means in my power, and constantly devoted all the time and attention I could spare from limited practice, to the perfection of what I at that time and ever since have believed would prove to be an invention of the greatest value to mankind and possibly to myself. * * * I was finally compelled to leave Cincinnati, and returned to my father's house in Orange, in the State of New Jersey, where, at least, I was assured of having enough to eat. I went right to work, continuing my experiments to improve and perfect the invention. I conducted them at first in a corn-crib on my father's premises, and afterward in Willow Hall, which my father had just built. I moved into Willow Hall in September, 1855. After I arrived in Orange, and prior to my moving to Willow Hall, I had made other solid pieces of the material, which I called "plastic," and had also coated cloths. After moving into Willow Hall, I worked to perfect my invention; to adapt it to different uses, and to get it into a state in which I could obtain the assistance necessary to patent and introduce it to the public. A large part of the experiments were directed to reducing the cost of manufacture. I also desired, by actual experiment, to prove its adaptability to certain uses in the art; in short, to ascertain, as far as practicable with my limited means, the whole capacity of the invention. Although my invention, as an invention, was fully defined and completely demonstrated to my own mind, while in Cincinnati, at least as early as the year 1852, yet there were many things remaining to be done to make it commercially valuable and to make it useful for many different purposes for which I had designed and considered it adapted. It was necessary to carry on a series of experiments for very many of these independent uses, in order to obtain the proper consistency, the proper color, and other qualities suiting the material to such uses. While in Orange, I made a great many solid pieces of my plastic material, varying in size, shape, and color. * * * These results I gradually perfected after my return to Orange, and while there devoted myself constantly, excepting so far as my time was employed in a practice somewhat extensive among the poor, but very unremunerative, to perfect this invention. The cost of gun-cotton itself, as furnished in the market at that time, was too great to make the thing commercially practicable, and I spent a great deal of time in learning to make this necessary basic article more cheaply, so as to make the compound I wanted more practicable. This double work of my invention and practice was altogether beyond my strength, and my health gradually declined in consequence. A great deal of time was occupied in preparing specimens for the Patent Office. I prepared more than one hundred separate specimens for this purpose alone. These specimens were completed somewhere in the year 1860, but their preparation had occupied me much of my time for several years before. I filed a caveat referring to this invention in April, 1860, and made an application for letters patent in November, 1860. I made this application just as soon as I was pecuniarily able after I had commercially perfected my invention. The money for making the application I was compelled to borrow, having been in very straitened circumstances during the period when I was living in Orange, after my return from Cincinnati. During this period, and until I made application for letters patent, I find by examining my accounts that I collected on an average less than one dollar a day from my practice, and of course I was able to spare but little from this very limited income. During all that period I had but very little money, and such as I had was constantly devoted toward the perfecting and carrying out of my invention; and that was my main object and aim during all that period, as it had been from the time when I first conceived the invention. Such practice of medicine as I did I was compelled to do in order to obtain the necessary means of living and for carrying on my experiments. After making this application for letters patent my application was, as I believed, unjustly refused by the Patent Office; and after having devoted so many years of my life to this one idea, the disappointment was too great for me to bear, enfeebled as I was by overwork; and, as I am informed by my friends, my mind became unbalanced in connection with a severe fit of sickness, which occurred at this time, and this condition continued for about seven months. I was sent to an asylum early in February, 1861, and remained there until some time in September, 1861. This sickness came upon me almost immediately after the rejection of my application by the Patent Office.

He further states that after his release from the lunatic asylum he was compelled to desist from all mental from time to time appropriate to the preparation of his patent, during the following among other statements:

The object of this invention is to provide suitable means for receiving tiles as they come from the tile-mill, and delivering them uninjured to the off-bearers, and also to provide suitable means for cutting the tiles accurately into proper lengths without stopping the machines.

The invention consists in a tile-table constructed with a frame provided with a series of rollers, around which passes an endless chain of receivers, having downwardly-projecting flanges, and connected at their forward ends, leaving their rear ends free.

With the receivers are connected spring-supported flexible carriers, to adjust themselves to the form of the tile.

To each receiver or base E are attached one or more springs, G, as the size of the said receiver may require. To the upper ends of the springs G are attached the side edges of the carriers H, which are made of thin sheet-brass or other suitable material that has sufficient flexibility to allow it to adjust itself to the slope of the tile to be carried, so that tiles of different shapes and sizes can be firmly supported and safely carried by the same carriers.

If desired, the carriers H can be supported by rigid standards; but I prefer to use the springs G, as they allow the flexible carriers to come in contact with more of the surface of the tiles, and thus carry them more safely. The carriers H can be made of such a length as the length of the tile may require.

It is not found necessary to determine whether the complainant or Dodds was first inventor, because, in view of the prior art, the invention of each, if properly called invention, must, in the judgment of the court, be construed strictly, and when so construed there is no infringement. The flexible standard, as it seems to the court, constitutes an indispensable part of the complainant's combination. There is, to be sure, a suggestion in the specification that a rigid standard may be used instead; but if that be done, unless it be constructed with a hinge, as shown in the red model put in evidence, the chief value of the improvement will be sacrificed, because upon absolutely rigid standards the carriers, made of tin or brass or other material, would have little or no capability of conforming to the shape of tiles of different sizes. Constructed after the red model or with flexible supports, the complainant's invention would seem to be ingenious, novel, and useful; but with rigid standards it would, in view of the Penfield patent, No. 98,519, and the Brown patent, No. 112,538, (to go no further,) involve no patentable advance over the prior art. It is claimed with some emphasis that the invention of the plaintiff consists in, or at least embodies the idea of, a series of carriers; but this, if conceded, does not help the case. A no less complete series is shown in the Penfield patent, and without the flexible standard it is impossible, as it seems to the court, to find support for any of the plaintiff's claims.

In respect to the seventh claim, it was conceded upon the argument that the action cannot be sustained

Bill dismissed for want of merits.

the debts which he had contracted in prosecuting his invention; that as soon as his health permitted he went home on leave of absence, and entered into a written contract with his former patent attorney, Mr. Greenough, to renew the application for the patent, agreeing to give him for his services one-half interest in any patent afterward obtained; that Greenough, having again failed in his efforts, a contract of a similar nature was made with Mr. Williams, through whose exertions the patent was finally granted.

No question has been raised by the defendants in reference to the truth of the patentee's testimony, and it clearly reveals the fact that his invention was practically complete some years before the date of sealing the English patent of Parkes.

2. I am further of the opinion that the defendants have not succeeded in showing any acts or conduct on the part of the patentee which would justify the court in holding that the invention was abandoned. Continued poverty, sickness, and mental alienation are always regarded as sufficient excuses for delay, and not a fact or circumstance has been brought into the case showing any intention of abandonment.

A decree must be entered for the complainant, with costs.

U. S. Circuit Court—District of Indiana.

LEACH *v.* CHANDLER *et al.*

Decided July 30, 1885.

INFRINGEMENT—TABLES FOR TILE-MACHINES.

The fourth, fifth, and seventh claims of Patent No. 279,259, granted to William F. Leach on June 12, 1883, for improvement in tables for tile-machines, construed, and *held* not infringed by machines made under Patent No. 243,867, issued July 5, 1881, to Elihu Dodds.

Mr. David A. Leach for the complainant.

Messrs. West & Bond and *Messrs. Stanton & Scott* for the defendants.

WOODS, *J.:*

The complainant, as owner of Letters Patent No 279,259, granted him on June 12, 1883, for improvement in tables for tile-machines, sues the respondents for infringement of claims 4, 5, and 7 of his patent, and for a cancellation of Letters Patent No. 243,867, issued July 5, 1881, to Elihu Dodds, who assigned to the defendants, the alleged infringing machines having been made by defendants under and in conformity to the Dodds patent. The bill charges, among other things, that the complainant was in truth the first inventor, and that in a proceeding of interference, to which the respondents appeared, it was so decided in turn by the Examiner, by the Examiners-in-Chief, and by the Commissioner of Patents. The fourth, fifth, and seventh claims of complainant's patent are of the tenor following:

4. In a tile-table, suspended flexible carriers H, substantially as herein shown and described, whereby tiles of different forms and sizes will be firmly supported and safely carried, as set forth.

5. In a tile-table, the combination, with the bases E and the flexible carriers H, of the suspending-springs G, substantially as

U. S. Circuit Court—District of Connecticut.

PARMELEE *et al. v.* A. BURRITT HARDWARE COMPANY.

Decided August 13, 1885.

1. INVENTION—PARMELEE FIRE-EXTINGUISHER.

Letters Patent No. 218,564, granted August 12, 1879, to Henry S. Parmelee, for an improved automatic fire-extinguisher, wherein the inventor made a sensitive extinguisher by placing the seal at the extreme outer end of the water-pipe, and so near the distributer that, when the joint of the seal was melted, the seal

itself was forced into the distributer, and the water was left unobstructed, describe a patentable invention, and are valid.

2. SAME—INFRINGEMENT.

The defendant's extinguisher is an infringement, it not being imperative that the seal should be so constructed that the water should be below the joint.

Mr. Charles E. Mitchell and *Mr. Benj. F. Thurston* for the plaintiffs.

Mr. John K. Beach and *Mr. John S. Beach* for the defendants.

SHIPMAN *J.:*

This is a bill in equity to restrain the alleged infringement of Letters Patent No. 218,564, granted August 12, 1879, to Henry S. Parmelee, for an improved automatic fire-extinguisher. The disclaimer, which is a part of the specification, and the two claims of the patent, clearly point out the character and extent of the invention. The specification says:

I am aware that fire-extinguishers have been provided with seals within the body of the casing of the distributer, and in connection with a valve arranged therein, and hence I make no claim to such construction. In my improvement the seal is located on the outer end of the water-conduit, connected with the perforated distributer, whereby the seal is not only protected against accidental displacement, and also from dust and dirt from the ceiling overhead, but is exposed most prominently to the action of the heat, which has direct entrance to the seal through the perforations in the distributer.

The claims are as follows:

1. In an automatic fire-extinguisher, the combination, with a perforated distributer, of a seal attached to the extreme outer end of the water-conduit, connected with the perforated distributer, said seal being retained in place by metal fusible at a low temperature, substantially as set forth.

2. In an automatic fire-extinguisher, the combination, with a perforated distributer, of a seal secured by fusible solder to the extreme outer end of the water-conduit, connected with the distributer, and at a point within the body of the said perforated distributer, substantially as set forth.

The seal shown in figure 1 of the drawings and in the wooden model, which is an exhibit in the case, is a flat disk or cap, the flange of which incloses the end of the water-pipe. The bottom of the cap is upon the end of the pipe, and the cap is secured by solder between the outer surface of the pipe and the inner surface of the flange. The patented device differs from the devices shown in the English patent to Lewis Roughton, of July 5, 1861, and in the United States patent to Brown and Foskett, of August 10, 1875, in the location of the seal, whereby the extinguisher is rendered more sensitive to the influence of heat and more prompt in its beneficial action. The Roughton device is complex and expensive, and has a quantity of metal near the seal, which prevents prompt action of heat upon it. The Brown and Foskett seal is placed in the pipe leading to the T-shaped outlet to which the distributer is secured. The Parmelee seal, when the joint is melted, is forced into the distributer. The Brown and Foskett seal is delivered, when released, into a pipe attached to the opposite end of the T-piece. The distinction between the Parmelee device and its predecessors is manifest and is patentable. The inventor made a sensitive extinguish r by placing the seal at the extreme outer end of the water-pipe, and so near to the distributer that, when the joint of the seal was melted, the seal itself was forced into the distributer, and the water was left unobstructed.

The defendant's extinguisher has, instead of a flat cap, a semispherical cap at the extreme end of the water-pipe, but the flanges of the cap pass into the end of the pipe instead of passing upon the outside of the end. Quoting from the testimony of Mr. Quimby, one of the defendant's experts, his description of the seal:

The Burritt seal is a short hollow cylinder having one closed hemispherical end. The exterior surface of this cylinder is secured by fusible solder to the interior of a nipple provided upon its exterior at both ends, respectively, with male screw-threads, the thread at one end being for engagement with the female thread-funnel within the neck of the perforated distributer, and the thread at the other end of the nipple being for effecting the connection of the nipple with the water-pipe. I understand that the special object in making the closed end of the seal in the Burritt extinguisher hemispherical is to increase the tendency of the seal to roll around the interior of the distributer after the seal has been released and been projected into the distributer. As a consequence of this hemispherical shape of the closed end of the seal, the water contained within the conduit extends both above and below the soldered joint which is to be fused.

The defendant contends that the fact that in the Burritt device the water extends above the soldered joint of the seal, whereas the water in the Parmelee device does not surround the joint, takes the Burritt device out of the Parmelee patent; and reliance is placed upon a clause in the specification, which says:

As the seal is secured within the distributer, which is usually made of metal, the rise of the temperature in a room or compartment will raise the temperature of the metal of which the distributer is made, and thus melt or fuse the joint between the seal and the distributer more readily than if water surrounded or was above the seal.

The patentee was here referring to the advantage which his invention possessed over a previous invention which he had patented in 1874, in which the seal inclosed the distributer, and consequently the water filled the distributer and the space between it and the cap, and thus "surrounded the joint and seriously retarded the melting of the solder;" but the patent now in suit, though a narrow one, is not to receive the extremely narrow construction which the defendant gives. According to the construction of one of its experts a flat Burritt seal would be within the patent, while a dome-shaped one would not be; and in the opinion of another expert a Parmelee flat cap would be without the patent, if the flanges were inside instead of outside the extreme outer end of the water-pipe. The gist of the invention was the location of the seal upon the extreme outer end of the water-conduit and connected with the distributer; but it is not imperative that the seal should be so constructed that the water should be below the fusible joint.

Let there be a decree for the plaintiffs for an injunction and an accounting.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., October 10, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that Junius B. Kaufman, of Lancaster, Pennsylvania, be not recognized from and after this date as agent or attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of October 20, 1885.

Patents	465	No. 328,448 to No. 328,912, inclusive.
Designs	9	No. 16,339 to No. 16,347, inclusive.
Trade-Marks	36	No. 12,662 to No. 12,697, inclusive.
Labels	4	No. 4,609 to No. 4,612, inclusive.
Reissues	3	No. 10,652 to No. 10,654, inclusive.
Total issue	517	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	3	
Arizona Territory			Nevada		
Arkansas	4		New Hampshire	3	
California	6	2	New Jersey	21	
Colorado			New Mexico Territ'y	1	
Connecticut	15		New York	86	11
Dakota Territory	1		North Carolina	2	
Delaware	2		Ohio	41	4
District of Columbia	1		Oregon	3	
Florida		1	Pennsylvania	58	2
Georgia	4		Rhode Island	4	
Idaho Territory	1		South Carolina	2	
Illinois	42	3	Tennessee	1	2
Indiana	18	1	Texas	1	
Indian Territory			Utah Territory	1	
Iowa	17		Vermont	1	
Kansas	4		Virginia	1	2
Kentucky	10	1	Washington Territ'y	1	
Louisiana	2		West Virginia	3	
Maine	3		Wisconsin	10	
Maryland	3	2	Wyoming Territory		
Massachusetts	35	3	United States Army		
Michigan	16		United States Navy		
Minnesota	6	3			
Mississippi			Total to citizens of the United States	444	38
Missouri	11	1			
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic			Germany	7	
Austria-Hungary	1		Holland		
Barbadoes			Italy		
Belgium			Malta		
Bermuda			New Foundland	1	
British Columbia			Russia	1	
Canada	6		Spain		
Chili			Sweden		
China	1		Switzerland	1	
Colombia, U. S. of			West Indies		
Denmark	2				
Ecuador			Total to citizens of foreign countries	30	2
England	9	2			
France	1				

DESIGNS.

16,339.—CLOTHES-LINE BLOCK.—*Frederic T. Dana*, Wiscasset, Me. Application filed August 26, 1885. Serial No. 175,399. Term of patent 7 years.

16,340.—PENCIL-TIP.—*Anton C. Eggers*, Astoria, N. Y. Application filed July 23, 1885. Serial No. 172,472. Term of patent 7 years.

16,341.—TYPE.—*George F. Giesecke*, Leipsic, Germany, assignor to *James Conner's Sons*, New York, N. Y. Application filed September 1, 1885. Serial No. 175,949. Term of patent 7 years.

16,342.—FRAME FOR ANIMAL-TRAPS.—*John C. Gould*, Chicago, Ill. Application filed August 7, 1885. Serial No. 173,871. Term of patent 14 years.

16,343.—FONT OF TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *The MacKellar, Smiths & Jordan Company*, same place. Application filed August 11, 1885. Serial No. 174,161. Term of patent 14 years.

16,344.—SHELL-BAND FOR HUBS.—*Jared Maris*, Columbus, Ohio. Application filed July 22, 1885. Serial No. 172,342. Term of patent 3½ years.

16,345.—PLOW-HOE.—*Marcus Lafayette Saunders*, Thomas County, Ga. Application filed August 18, 1885. Serial No. 174,752. Term of patent 14 years.

16,346.—HEATING-STOVE.—*Rodney F. Schermerhorn* and *Ferdnand S. Weller*, Quincy, Ill., assignors to *William V. Channon* and *Joseph W. Emery*, same place. Application filed July 14, 1885. Serial No. 171,626. Term of patent 7 years.

16,347.—BUCKLE.—*Henry C. Johnson* and *Jesse B. Moore*, El Dorado, Ark. Application filed August 5, 1885. Serial No. 173,656. Term of patent 14 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,662.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed September 5, 1885. "The arbitrarily-selected word 'SHOE' and a figure representing that ordinary covering for the human foot."

12,663.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed September 5, 1885. "The arbitrarily-selected word "KNIFE" and a figure representing an ordinary pocket or clasp knife."

12,664.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed September 25, 1885.
"The arbitrarily-selected words 'MYRTLE NAVY.'"

12,665.—TOILET-SOAP.—*Bernard & Co.*, Beverly, Mass. Application filed September 16, 1885.
"The arbitrary word 'KURICA.'"

12,666.—SECTIONAL METALLIC PROTECTORS FOR THE SOLES AND HEELS OF BOOTS AND SHOES.—*John Blakey*, Leeds, county of York, England. Application filed August 5, 1885.
"The word-symbol 'BLAKEY.'"

12,667.—LAGER-BEER.—*John Brenner*, Covington, Ky. Application filed September 24, 1885.
"The letters 'I. X. L.'"

12,668.—BOOTS, SHOES, AND SLIPPERS OF ALL KINDS.—*Alfred J. Cammeyer*, New York, N. Y. Application filed September 22, 1885.
"The words 'THE SOOLMA.'"

12,669.—RAISINS.—*William T. Coleman & Co.*, San Francisco, Cal. Application filed August 28, 1885.
"A diagonal band having both edges scalloped, representing a marshal's sash."

12,670.—SMOKING-TOBACCO AND CIGARETTES.—*George W. Conover*, Philadelphia, Pa. Application filed September 11, 1885.
"The arbitrary words 'TWIXT & TWEEN.'"

12,671.—HIGH-TEST CARBON OIL.—*Isaac Davis*, Dayton, Ohio. Application filed September 23, 1885.
"The word 'PROTECTION.'"

12,672.—PRUNES.—*George A. Fleming* and *Charles F. Fleming*, San José, Cal. Application filed August 4, 1885.
"The words 'RAISIN CURED.'"

12,673.—LEAF-TOBACCO.—*F. Gogorza's Sons*, New York, N. Y. Application filed September 16, 1885.
"A picture of a negro boy."

12,674.—ORANGES, LEMONS, AND OTHER CITRIC FRUIT.—*James A. Harris*, Citra, Fla. Application filed September 22, 1885.
"A representation of an alligator."

12,675.—SAFETY-PINS.—*Joel Jenkins*, New York, N. Y. Application filed May 11 1885.
"The words 'STEWART'S CRIB,' associated with the picture of a child's bed."

12,676.—SAFETY-PINS.—*Joel Jenkins*, New York, N. Y. Application filed September 21, 1885.
"The words 'STEWART'S DRESS,' associated with the representation of a saf-ty-pin inserted in a strip of cloth."

12,677.—WHEAT-FLOUR.—*Cha les A. Pillsbury & Co.*, Minneapolis, Minn. Application filed September 5, 1884.
"The word 'BEST.'"

12,678.—CANNED FRUITS, VEGETABLES, AND OYSTERS.—*Edward W. K iete*, Dunnsville, Va. Application filed August 7, 1885.
"The letters and words 'OLD DOMINION.'"

12,679.—TOILET-POWDER.—*Charles A. Lewis*, New York, N. Y. Application filed September 3, 1885.
"The arbitrary word 'TOILETENA.'"

12,680.—BITTERS.—*R. H. McDonald Drug Company*, New York, N. Y., and San Francisco, Cal. Application filed August 21, 1885.
"The words 'DR. WALKER'S CALIFORNIA VINEGAR BITTERS,' represented upon a sign in the form of a triangle, from the apex of which floats a streamer, also containing words, and within which triangle a mortar is represented as largely covering the surface of the sun, whose rays fill the rest of the space within the triangle."

12,681.—WHEAT-FLOUR.—*Charles A. Pillsbury & Co.*, Minneapolis, Minn. Application filed September 24, 1885.
"The monogram of 'C. A. P. & Co.' and the pictorial representation of two crossed bunches of wheat-stalks surrounding and inclosing a space within which a fac-simile of a flour-brand is arranged."

12,682.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'BICYCLE' and the arbitrary number '808.'"

12,683.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The word-symbol 'TOURISTS,' pictorial representations in two parallelograms, and the arbitrary number '135.'"

12,684.—ALBUMENIZED PAPER FOR PHOTOGRAPHIC PURPOSES.—*Scovill Manufacturing Company*, New York, N. Y. Application filed September 24, 1885.
"The letters 'P. A. A.'"

12,685.—CERTAIN MANUFACTURES OF IRON AND STEEL.—*Seebohm & Dieckstahl*, Dannemora Steel Works, Sheffield, county of York, England. Application filed September 22, 1885.
"The representation of an eagle standing upon a globe."

12,686.—PREPARATION FOR THE SKIN.—*Herman Teats*, Indianapolis, Ind. Application filed September 11, 1885.
"The arbitrary word 'DULCEDO.'"

12,687.—BOOTS AND SHOES.—*J. H. & F. H. Torrey*, North Weymouth, Mass. Application filed September 17, 1885.
"The representation of a kangaroo and her young."

12,688.—FLOUR.—*Urban & Co.*, Buffalo, N. Y. Application filed September 1, 1885.
"The word 'GENOAK.'"

12,689.—FLOUR.—*Urban & Co.*, Buffalo, N. Y. Application filed September 1, 1885.
"The word 'BUFFLUTH.'"

12,690.—PERFUMES.—*C. B. Woodworth & Sons*, Rochester, N. Y. Application filed May 11, 1885.
"The words 'PEARL OF SAVOY.'"

12,691.—BRONZE, COPPER, BRASS, BABBITT METAL, AND OTHER METALS.—*James R. White*, Philadelphia, Pa. Application filed September 24, 1885.
"'ATLAS,' whether expressed in word or pictorially."

12,692.—CHEWING-TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed September 17, 1885.
"The arbitrary words 'OLD FASHION.'"

12,693.—WATCH-CASES.—*Joseph Fahys & Co.*, New York, N. Y. Application filed September 25, 1885.
"The word-symbol 'ORESILVER.'"

12,694.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, CHEROOTS, AND SNUFF.—*F. W. Felgner & Son*, Baltimore, Md. Application filed September 4, 1885.
"The word-symbol 'PORT,' a pictorial representation of a port or side light of a vessel, and an original and novel arrangement of circular and diagonal dotted lines."

12,695.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*S. Bunnitz & Co.*, Richmond, Va. Application filed September 21, 1885.
"The arbitrary word 'VIM.'"

12,696.—LAMP OR OIL STOVES.—*John McConnell*, Cleveland, Ohio. Application filed January 26, 1885.
"The words 'IRON CLAD LAMP STOVE.'"

12,697.—WHEAT FLOUR.—*Charles A. Pillsbury & Co.*, Minneapolis, Minn. Application filed September 16, 1885.
"The words 'PILLSBURY'S BEST.'"

LABELS.

4,609.—Title: "BENZOATED LOTION," (FOR CHAPPED HANDS.)—*Lydia O. Burbank*, Worcester, Mass. Application filed September 24, 1885.

4,610.—Title: "SOL. COLEMAN'S ORIGINAL AND ONLY GENUINE KO-KO TULU"—*Sol Coleman*, Memphis, Tenn. Application filed August 25, 1885. (Trade-Mark Registered.)

4,611.—Title: "SOL. COLEMAN'S ORIGINAL AND ONLY GENUINE KO-KO TULU."—*Sol Coleman*, Memphis, Tenn. Application filed August 25, 1885. (Trade-Mark Registered.)

4,612.—Title: "DR. ROBT. WATSON'S CELEBRATED EYE WATER."—*Robert Watson*, Kansas City, Mo. Application filed September 28, 1885.

DISCLAIMER.

7,342. (Reissue.)—*Asmus J. Ehrrichson*, Akron, Ohio, assignor to *Ferdinand Schumacher*. Reissue patent dated November 30, 1875. IMPROVEMENT IN OATMEAL-MACHINES. Disclaimer filed October 12, 1885, by patentee and assignee.

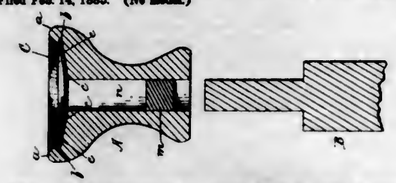
Enter their disclaimer to "the following words and language in the first claim of said reissued patent, to wit: the words 'one, two, or more bars or' in the third line of said first claim, and the words 'bars or' in the third line of said first claim, and the words 'crush, fracture, or' in the seventh line of said first claim, so that the said claim shall read:

"1. An oatmeal-machine consisting of a perforated feeder and cutting-blades, said blades and perforated feeder placed in such relation and juxtaposition that the movement of either (the other being stationary) or opposite movements of both will cut kernels of grain extending through the perforations of said feeder, substantially as shown, and for the purpose specified.'"

PATENTS

GRANTED OCT. 20, 1885.

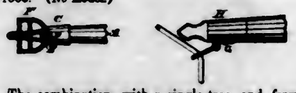
328,448. STOP-KNOB FOR ORGANS. RINALDO ALDEN, Chicago, Ill. Filed Feb. 14, 1885. (No model.)



Claim.—1. The combination of the elastic plate C and the knob A, provided with the bezel *a*, the groove *b*, and the depression *c c c c*, substantially as shown, and for the purposes described.

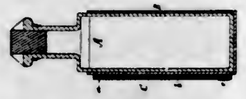
2. The combination of the elastic plate C, the block *m*, and the knob A, provided with the bezel *a*, the groove *b*, and the depression *c c c c*, substantially as shown, and for the purposes described.

328,449. TUG-FASTENER. IGNATIUS BALOUN, Canton, Ohio. Filed Mar. 16, 1885. (No model.)



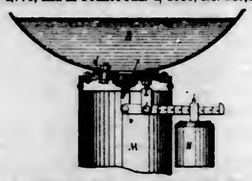
Claim.—The combination, with a single-tree and ferrules secured to the ends thereof, each ferrule provided with a forwardly-extending bearing, of a loop secured to each bearing and adapted to operate substantially as set forth.

328,450. BOTTLE-SHEATH. CHARLES H. BANGS, Boston, Mass. Filed Feb. 9, 1885. (No model.)



Claim.—As a new article of manufacture, a bottle-sheath, as represented, and a book, combined and arranged substantially as set forth.

328,451. SAFETY-VALVE. JOSEPH BARR, Saint-Amand, Nord, France. Filed June 19, 1885. (No model.) Patented in England Nov. 19, 1880, No. 4,770, and in France Jan. 4, 1881, No. 140,477.



Claim.—1. In combination with a steam-boiler, a relief-valve placed under the same, and constructed, substantially as described, so as to remain open, and thus empty the boiler when it is actuated by excessive pressure within the boiler, as set forth.

2. The combination, with the valve and valve-seat, of the weighted lever, and the link or bar interposed between the lever and valve for holding the latter to its seat, substantially as described.

3. The combination, with the steam-boiler, having a discharge-opening in the bottom thereof, of the valve, valve seat, lever, and interposed link or bar, substantially as described.

328,452. WIRE FOR CHECK-ROW CORN-PLANTERS. JOSEPH C. BARLOW, Quincy, Ill. Filed Aug. 10, 1885. (No model.)

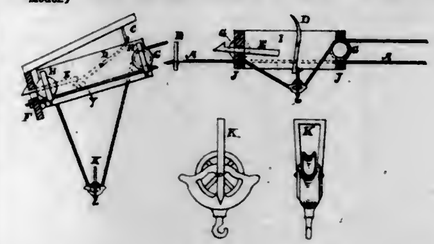


Claim.—1. An improved knot for check-row wires, formed by coiling the wire composing the knot back upon itself, substantially as described.

2. The improved knot for check-row wires, composed of a primary coil and a reversely-wound external coil, substantially as described.

3. The herein-described improved knot and coupling for check-row wires, composed of the eye or loop, and the primary and reversed coils, the latter being formed by first wrapping the end of the wire around the body, and then back upon the coil so formed, substantially as described.

328,453. HAY ELEVATOR AND CONVEYER. NICHOLAS V. RIGGLOW and ANDREW WEITBRIK, Wolcott, N. Y. Filed Oct. 28, 1884. (No model.)



Claim.—1. In a hay-elevator, the combination, with the track or way having the incline at its end, of the carrier having at one end the latch for engaging a projection at the end of the way for locking the carrier, a pulley at the other end of the carrier, an independent gravitating latch or catch pivoted between the pulley and first-mentioned latch for supporting the load, adapted to engage with a projection at the end of the way to release the load, a rope attached to the carrier at one end and extending over the pulley, and a pulley, to which the load is secured, mounted upon the rope between the pulley and the end secured to the carrier, whereby when the pulley supporting the load is raised it will trip the latch and release the carrier, and will also trip the second latch and transfer the load from the rope directly to the carrier, and whereby, also, when the carrier is returned to the starting-point the latch carrying the load will come in contact with the projection at the end of the way and release the load, substantially as described.

2. In a hay elevator, the combination, with the track or way, of the carrier having at one end the latch for engaging a projection at the end of the way, a pulley at the other end of the carrier, an independent gravitating latch or catch pivoted between the pulley and first-mentioned latch, and a rope attached to the carrier at one end and extending over the pulley, and a pulley, to which the load to be carried is secured, mounted upon the rope between the pulley and end secured to the carrier, whereby when the pulley supporting the load is raised it will trip the latch and release the carrier and also trip the second latch and transfer the pulley to which the load is connected directly to the car, substantially as described.

3. The combination, with the carrier, of the pulley K, weighted as described, and having the upwardly-projecting bail widened at its upper end, substantially as described.

4. The combination, with the way having the incline, of the carrier provided with the pulley at one end, the latches D and E, and the projections at the end of the way with which the latches D and E engage, the former to release the load and the latter to permit the carrier to be moved along the way, substantially as described.

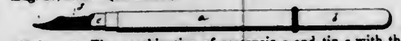
5. The combination, with the way, of the carrier bearing the latches D and E, the rope attached to the carrier at one end and passing over the pulley at the other end, and the pulley K, mounted upon the rope between said end and pulley, substantially as described.

6. The carrier consisting of the two side and end pieces connected at their ends by the bolts, which also form the axles for the rollers or wheels of the carrier, substantially as described.

7. In a carrier, the combination, with the two side and end pieces connected at their ends by the bolts, of the wheels mounted on said bolts, and the latch, also having its pivot on one of the bolts, substantially as described.

8. The carrier composed of the two end and two side pieces united by two bolts, one of said bolts connecting the front end, and having the latch and the wheels mounted thereon, and the other connecting the rear ends, and having the corresponding wheels and the pulley mounted thereon, substantially as described.

328,454. **FOUNTAIN-PEN.** John Blair, New York, N. Y. Filed Aug. 27, 1885. (No model.)



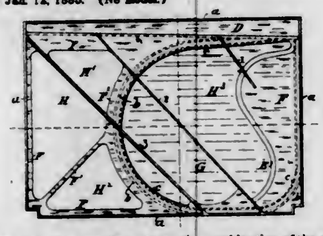
Claim.—1. The combination of reservoir *a* and tip *c* with the upwardly-curved tube *f*, provided with the air-opening *g* and the ink-opening *h*, the air-opening being located outside of reservoir *a*, substantially as and for the purpose specified.

2. The combination of reservoir *a* with the tip *c*, containing rearwardly-projecting soft-rubber tube *e*, and with the ink-tube *f*, fitted into the rubber tube, substantially as specified.

3. The combination of reservoir *a* and tip *c* with the tube *f*, having openings *g h*, and containing the absorbent strip *i*, substantially as and for the purpose specified.

4. The combination of reservoir *a* with tip *c*, having soft-rubber tube *e*, and with the curved ink-tube *f*, having openings *g h*, and strip *i*, substantially as specified.

328,455. **PIANO-STRING PLATE.** John W. Brackett, Boston, Mass. Filed Jan. 12, 1885. (No model.)



Claim.—1. In piano-forte plates, the combination of the plate proper with a cast-metal rim therefor cast in one piece with the said plate, and projecting equidistantly from each surface thereof, together with a second rim or flange intersecting the first on one surface, being also of uniform width therewith, and following the entire outline of the sounding-board, substantially as and for the purposes specified.

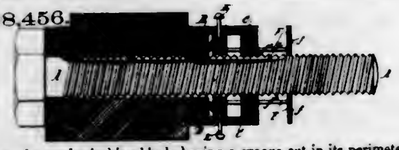
2. In piano-forte plates, the plate proper or web, combined with a continuous rim therefor, the edge of the plate being at the center of the rim, which thus extends equidistantly from both surfaces of said plate, a second rim or flange intersecting the first on one side only of the web, and following the entire outline of the sounding-board, of uniform width with the first rim, and an auxiliary or supplementary rim or flange inside the second to support the sounding-board, the whole being cast in one piece of iron or other suitable metal, substantially as described.

3. The combination, in piano-forte plates, of the web or plate proper, a continuous rim therefor surrounding the said plate and extending equidistantly from each surface thereof, a second rim or flange intersecting the first on one surface and following the entire outline of the sounding-board, in width being uniform with the first rim, a supplementary continuous rim or flange inside the second, of suitable width to support the sounding-board, and a recess or pocket between the outside rim and bridge-line of sufficient depth to receive the wrest-pin block, as and for the purpose set forth.

328,456. **NUT-LOCK.** Henry G. Buch, Oregon, Pa. Filed May 16, 1885. (No model.)

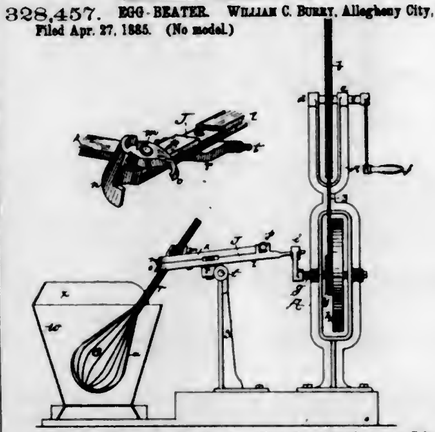
Claim.—1. As a nut-lock, the combination of a grooved bolt, a washer having an angular recess in its outer face, springs seated in the bottom of the recess, a projecting lip in the bolt-hole for the purpose of engaging the bolt-groove, and openings in the sides for receiving fastening-pins, and a locking-block having a groove cut in its perimeter, of such size and shape as to fit the recess in the washer, with fastening-pins for holding the locking-block down in said recess, and a nut having a recess in its inner face adapted to receive the locking-block, substantially as and for the purpose specified.

328,456.



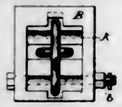
2. In a nut-lock, the combination of a grooved bolt, a washer having an angular recess in its outer face, springs seated in the bottom of the recess, a projecting lip in the bolt-hole for the purpose of engaging the bolt-groove, and a locking-block of such size and shape as to fit the recess in the washer, with a nut having a recess in its inner face adapted to engage the locking-block, and openings through the head to permit the passage of the prongs of an opening-key, and the said opening-key, substantially as and for the purpose specified.

328,457. **EGG-BEATER.** William C. Burry, Allegheny City, Pa. Filed Apr. 27, 1885. (No model.)



Claim.—In an egg-beating machine, the vibrating arm J in two sections, *k l*, provided at one end with clamping-jaws *n o* for holding the beater O, said arm J pivoted horizontally and vertically to the cross-piece *r*, supported by a stand, *s*, and a crank, *i*, for imparting motion to the same, and suitable driving-wheels, *b y*, for operating the crank *i*, as and for the purpose herein specified.

328,458. **CAR-COUPLING.** Charles C. Burton, Samaria, Mich., assignor of one-half to Arthur L. Holden, Utica, N. Y. Filed Apr. 21, 1884. (No model.)



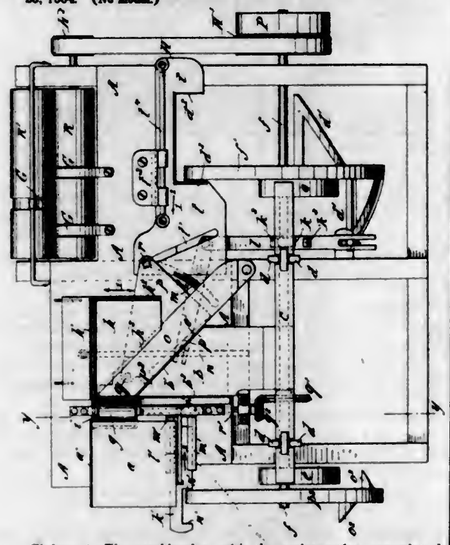
Claim.—1. In a car-coupling, the combination, with the draw-head having a V-shaped mouth and a longitudinal slot in its upper side and a corresponding groove or recess in the lower side, in which is, at the front of the draw-head, a double-prong coupling-pin resembling the letters V or L, and being pivoted at its angle, the long arm of the letter forming the coupling-pin and extending beyond and below the face of the draw-head, forming an inclined plane or apron upon which the drag-link is raised to enter the mouth of the draw-head, substantially as described and for the purpose set forth.

2. In a car-coupling, the combination, with a draw-head having a longitudinal slot in its upper side and a groove or recess in the lower side having a double coupling-pin pivoted in the front of the draw-head and forming an inclined plane or apron, as described, of a clutch-link pivoted on the top and back of a draw-head with its engaging end turned forward and falling over the point of the coupling-pin K^3 when the same is engaged with the drag-link, the point of the pin and the end of the catch-link being formed on a bevel, forming a latch, substantially as described.

3. In a car-coupling, the combination, with a clutch or catch link pivoted on the top of a draw-head and having the operating-rod and weighted hand-levers with a small eye for lifting-chain, all wrought in one for the purpose of maintaining the clutch-link in its seat, provided with suitable means for rotating the catch or clutch, substantially as described.

4. In a car-coupling, the double-prong movable coupling-pin pivoted at its lower end and forming an inclined plane, in combination with a draw-head and bumper, the double-prong coupling-pin pivoted at its lower end and engaging a drag-link between its prongs and at the same time engaging itself with a clutch-link, substantially as described.

328,459. **FOLDING AND PASTING MACHINE FOR FORMING CORNUCOPIA PAPER BAGS.** John N. Chadsey, Valatie, N. Y. Filed Apr. 23, 1884. (No model.)



Claim.—1. The combination, with the reciprocating core-plate *b*, of the feeding and pasting device, the shifting-table *h*, the folding-plate *p*, and folding-bar *j''*, all arranged to operate substantially as and for the purposes set forth.

2. The diagonally-arranged plate *o*, combined with the core-plate *b*, and oscillating folding-plate *p*, and shifting-table *h*, substantially as and for the purposes set forth.

3. The folding-plate *p*, pivoted at *q* and provided with the stud *r*, in combination with the sliding plate *t*, provided with the slot *t'*, substantially as and for the purposes set forth.

4. The shifting-table *h*, having an inclined edge, h^3, in combination with the reciprocating core-plate *b*, having inclined edge *b'*, and the folding-plate *p*, having inclined edge *p'*, substantially as and for the purposes set forth.

5. The combination, with the triangular core-plate *b*, of a pivoted folding-plate, *p*, having a projection, p^3, for passing across the upper face of the apex of the triangular core-plate, whereby the point of the cornucopia will be folded from its pointed to its open end to insure a perfect point, substantially as set forth.

6. The combination, with the triangular vertically-reciprocating core-plate *b* and the folder, of the folding and pressing bar *j''*, hinged at j^3 to the frame adjacent to the core-plate, the plate k', mounted on the frame in rear of the said bar and having shoulders *n' n'*, the rod *l'*, connecting said plate k' with the upper surface of bar *j''*, and the cam-wheel p^3, having cams o^3, for acting on the shoulders *n' n'*, substantially as set forth.

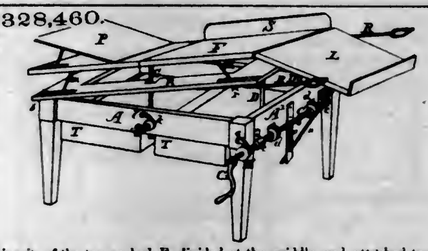
7. The combination, with the main driving-shaft *f*, having the cam-wheel *f''*, provided with cams *d'*, the cams *e*, the cam *k*, and the cam-wheel p^3, having cams o^3 o^3, of the vertically-reciprocating core-plate *b*, operated by the cams *e*, the horizontal reciprocating table *h*, operated from the cam *k* through intermediate mechanism, the folding-plate *p*, and the folding and pressing plate *j''* on opposite sides of the core-plate and operated through intermediate connections by the cams *d'* and o^3, respectively.

8. The combination, with the vertically-reciprocating core-plate *b* and the horizontally-rocking folding-plate *p*, of the horizontally transversely-reciprocating table *h*, the rod *n*, the pivoted lever *m*, and the rod *l*, guided in bearings on the main frame and having the vertical arms h^2, adapted to be operated upon by a cam for reciprocating the said table, as set forth.

328,460. **TABLE FOR GYNECOLOGICAL AND SURGICAL PURPOSES.** Franklin H. Clark, Cleveland, Ohio. Filed Feb. 2, 1885. (No model.)

Claim.—1. The combination, with the frame-work of a table provided with adjustable frame B, and mechanism for elevating and holding it, of the top or bed F, divided at the middle and attached to said frame by sliding hinges *f f*, said top arranged to be elevated or tilted at opposite side by means of mechanism consisting of short crank-shaft *g*, set in side rail, A, and supported by frame *h*, and provided with pinion *i*, operating rack-bar G, suspended to said top, said shaft *g* having ratchet *k*, engaging with pawl *l*, for holding the top F up, said top also having pivoted sliding corner-supports *m m*, substantially as described, and for the purposes specified.

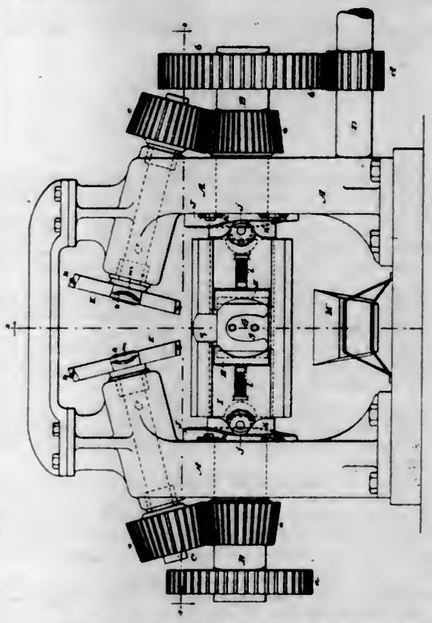
328,460.



2. The combination, with the adjustable table-top F, of the adjustable head-rest P and the adjustable leaf L, having rack-bar *n*, for holding it in position, as and for the purposes specified.

3. The combination, with the adjustable frame B, of the adjustable foot-rests R R, substantially as and for the purposes specified.

328,461. **HORSESHOE-MACHINE.** Louis G. Claude, New York, N. Y., assignor, by mesne assignments, to the Russell Horseshoe Company, same place. Filed Dec. 26, 1884. (No model.)



Claim.—1. A machine for creasing bent horseshoes, consisting, essentially, of a table for carrying the shoe, combined with creasers arranged at an angle to the plane of the shoe, substantially as set forth, whereby they are adapted to form undercut creases in the shoe.

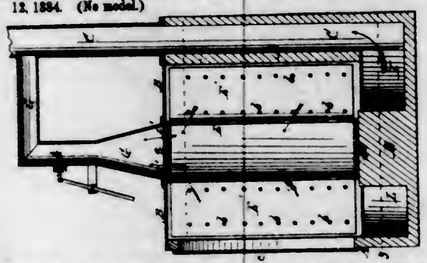
2. A machine for creasing bent horseshoes, consisting of the combination of a table for carrying the shoe, two creasing-rolls arranged at opposite angles, as described, the inclined shafts bearing said rolls, and the gearing for driving the rolls and table synchronously, substantially as set forth.

3. The combination of shaft B, table F, for carrying the shoe, inclined shafts C C, creasing-rolls K K on said shafts, and miter-gears c c on shafts C and B, respectively, substantially as set forth.

4. The combination of table F, creasing-rolls K K, shaft E, and clipping-roll L thereon, substantially as set forth, whereby at one operation the shoe is creased and its toe-clip is struck up.

5. The combination of shaft B, table F thereon, clamping-jaws for holding the shoe on said table, creasing-rolls K K, rotary shaft E, geared to rotate at thrice the speed of the shaft B, and clipping-roll L, borne by said shaft E, substantially as set forth.

328,462. FRUIT-DRIER. John H. Collins, Parma, N. Y. Filed Dec. 12, 1884. (No model.)



Claim.—1. In a fruit-evaporator, the combination of the inclosing wall or case, the chimney on one side, the reel consisting of a central hollow cylinder and radial partitions with draft-holes through the sides of the cylinder, and the exit-pipe over the top of the case, resting above the cylinder and communicating therewith through openings in the top of the cylinder and case, as shown and described, and for the purpose specified.

2. In a fruit-evaporator, the combination of the inclosing-case, the chimney on one side, the reel consisting of a central perforated cylinder and radial partitions, the exit-pipe opening from the top of the case over the cylinder, the furnace or grate next to the chimney but separated therefrom by a partition, and the circular flue extending from the furnace around to the chimney, as shown and described, and for the purpose specified.

328,463. BOX-FASTENER. Theodore F. Conklin, Fond du Lac, Wis. Filed Jan. 31, 1885. (No model.)



Claim.—In a box-fastener, the combination, with the case K, the eccentrically-pivoted and oscillating latch-plate A, provided with latch B, the yielding and frictional packing D, interposed between said case and plate, and the rivet *a*, fastening the case and plate together and supporting the packing, of the tang C, having notched catch *c*, and beveled lower edge, *e f*, substantially as and for the purpose set forth.

328,464. MORDANT. Max Conrad, Aschaffenburg, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Filed May 29, 1885. (No specimens.)

Claim.—The compound herein described, which consists of levulinic acid, oil emulsion, thickening—such as starch and acetic acid—and a solution of tannic acid, substantially as set forth.

328,465. PROCESS OF PRINTING TEXTILE FABRICS. Max Conrad, Aschaffenburg, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Filed Aug. 19, 1885. (No specimens.)

Claim.—The herein-described process for fixing coloring-matters upon knit or woven fibers, which consists in first printing upon the fabric with a color prepared with levulinic acid, oil emulsion, acetic acid and starch, and a solution of dry tannic acid in tragacanth water, and thereafter submitting said fabric to the action of steam, substantially as set forth.

328,466. WHIP AND LINE HOLDER. Isaac W. Cooper, Apollo, Pa. Filed July 30, 1885. (No model.)

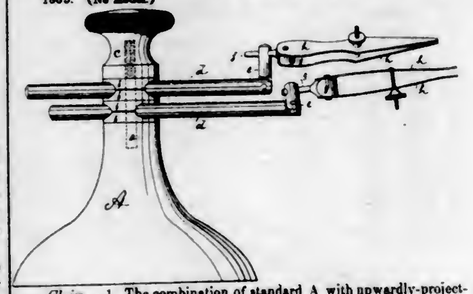


Claim.—1. The combination, with the cylinder A, having the elongated slot and extension E, of the lever D, pivoted to the cylinder, and bearing against the extension E with its upper end, and a spring secured to the cylinder and bearing against the inner lower end of the lever, substantially as described.

2. The combination, with the cylinder A, having the elongated slot and extension E, of a lever, D, pivoted between lugs projecting outwardly from the cylinder, said lever having the bent or curved upper end, and a spring, C, mounted on a pin, *d*, at the lower end of the cylinder A, and having one of its ends bearing against the lower end of the lever D, and its other end bearing against the upper end of the cylinder, substantially as set forth.

3. In combination with the cylinder A, having a slot commencing near the top, extending downwardly and terminating in the base at or near its center, and a projection or extension, E, a spring one end of which is placed in a notch, *c*, immediately above the slot B, curving inwardly thence with a reverse curve and wound spirally about a pin, *d*, and projecting upwardly, as and for the purpose set forth.

328,467. SOLDERING-FORCEPS. Edward Q. Crane, New York, assignor of one-half to Richard Hampton, Brewster, N. Y. Filed July 31, 1885. (No model.)



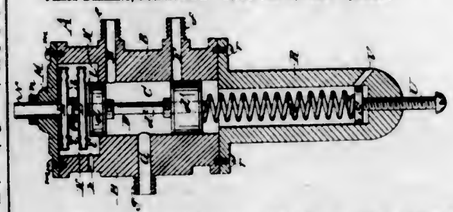
Claim.—1. The combination of standard A with upwardly-projecting pin *a*, split rings *b*, and nut *c*, the rings *b* being perforated for the reception of the forceps-carrying arms *d*, substantially as specified.

2. The combination of standard A with arms *d*, clamped to said standard, and with studs *e* and pins *f*, having heads *g*, and with spring-jaws *h h*, swiveled to head *g*, substantially as specified.

3. The combination of a single standard, A, connected to two arms, *d d*, in such a manner that the same may be revolved around the standard, and with spring-jaws *h*, attached to arms *d* by intermediate pieces, *e f*, substantially as specified.

4. The combination of standard A with pin *a*, rings *b*, nut *c*, arms *d*, studs *e*, pins *f*, head *g*, and jaws *h*, substantially as specified.

328,468. GOVERNOR FOR SUPPLYING GASEOUS FUEL. Alpheus Darling, Petrolia, Pa. Filed Jan. 3, 1885. (Model.)



Claim.—1. A governor for controlling the supply of gaseous fuel, constructed with a double piston-valve working in a case which has an inlet-port opening between the valve-pistons and an outlet-port adapted to be closed more or less by one of the pistons, an expansible diaphragm open to pressure and touching one end of the valve, and a spring pressing on the other end of the valve, substantially as herein set forth.

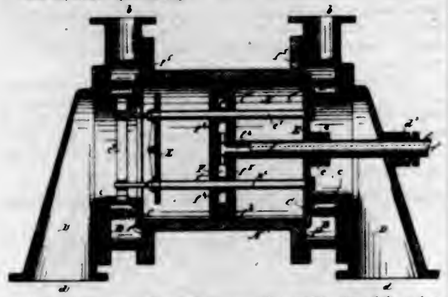
2. A governor for controlling the supply of gaseous fuel, constructed with a double piston-valve working in a case which has an inlet-port opening between the valve-pistons, an outlet-port adapted to be closed more or less by one of the pistons, and a waste-port adapted to be opened by the other piston, an expansible diaphragm open to pressure and touching one end of the valve, and a spring pressing on the other end of the valve, substantially as herein set forth.

3. The governor A, comprising a case, B, chambered at C, a valve, D, having pistons *d d'*, and working in chamber C, an inlet-port, G, opening into said chamber between the valve-pistons, an outlet-port, E, adapted to be closed by one of the valve-pistons, an expansible diaphragm consisting of one or more drums, L, having flexible side walls and adapted to be connected with a pipe to receive an expanding fluid, and resting on one end of the valve, and a spring acting to force the valve against the expansible diaphragm, substantially as herein set forth.

4. The governor A, comprising a case, B, chambered at C, and having ports G E F, a double piston-valve, D, one or more close expanding-drum diaphragms, L, the spring T, and tension-regulating screw U, substantially as herein set forth.

5. The combination, in an apparatus for regulating the supply of gaseous fuel to steam-boilers, of the governor A, made with a case, B, chambered at C, and having a port, G, the pipe H, conducting the gas to the governor, which has an outlet-port, E, connected by a pipe, I, to the boiler-furnace, an expansible diaphragm consisting of one or more drums, L, and connected by a pipe, P, with the boiler, and a spring forcing the valve D against the drum-diaphragm, substantially as herein set forth.

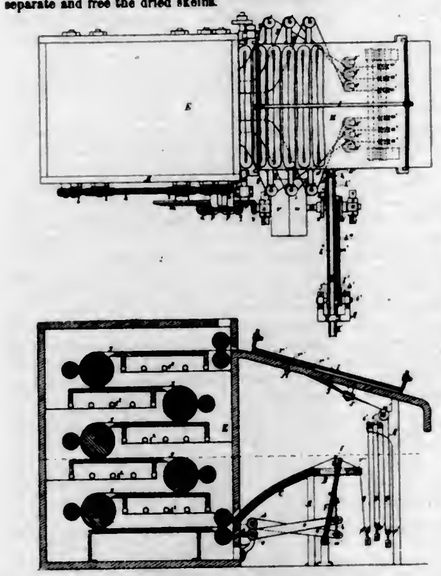
328,469. VACUUM-PUMP. John T. Davis, New York, N. Y. Filed Jan. 10, 1885. (No model.)



Claim.—In a pump for elastic vapors, the combination of the valves E, guide-rods *e'*, packing *e*, piston F, rod *f*, packing *f'*, guide *c'*, and valve C, when the motion of the piston is utilized to actuate the valves, as and for the purposes herein shown and described.

328,470. MACHINERY FOR DRYING SKEINS OF YARN. John R. Dearden, Saxonville, Mass. Filed Sept. 6, 1884. (No model.)

Brief.—The skeins of yarn are, like the weft-threads of cloth, connected by a series of warps, which are operated by warp-carriers passing through slots in an inclined table. The skeins of yarn are drawn through the shed of the warps by a skein-introducer operated by a cam, pulley, and endless belt from the driving-shaft. An endless band is thus formed, consisting of the skeins to be dried, bound by the endless warps, and is then passed through the drier and onto an inclined table, where the endless warps are passed around pulleys at the side, which causes them to separate and free the dried skeins.

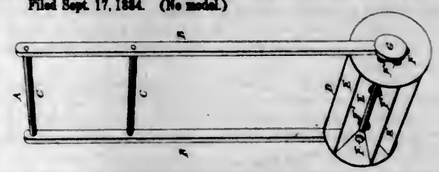


Claim.—1. The combination, substantially as described, for interweaving a series of skeins and a series of binding-warps, such combination consisting of the slotted table B, and the warp-carrying rods *b*, the skein-introducer *h*, and the beater F, and their operative mechanisms, essentially as described and represented.

2. The combination of the series of endless warps provided with mechanism, substantially as described, for supporting them and maintaining them at proper tension with the table B, and the warp-carrying rods *b*, the skein-introducer *h*, and the beater F, provided with mechanisms for operating them, essentially as set forth.

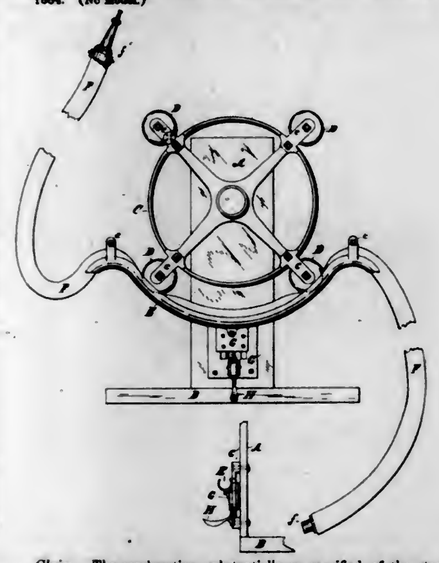
3. The combination of the series of endless warps provided with mechanism, substantially as described, for supporting them and maintaining them at proper tension with the table B, and the warp-carrying rods *b*, the skein-introducer *h*, and the beater F, having mechanisms for operating them, as explained, and also with the drying box or chamber, and the inclined plane H, and presser-bar I, and rollers *r'*, substantially as described, for extracting the warps, all being essentially and for the purpose or purposes as specified.

328,471. WASHING-MACHINE. James K. Dosdale, Richmond, Ind. Filed Sept. 17, 1884. (No model.)



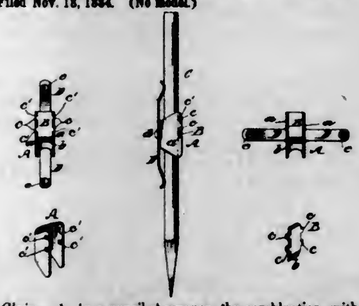
Claim.—The combination, in a washing-machine or clothes-washer, of a revolving wheel composed of cells provided with vent-holes with a frame to support the journals of the wheel.

328,472. PUMP. Jacob Fallis, Covington, Ky. Filed Aug. 18, 1884. (No model.)



Claim.—The combination, substantially as specified, of the standard A, having the wheel C, carrying the rollers D, journaled upon it, with the vertically-sliding bracket G, carrying the trough E with its hose F, and the jointed lever H, for elevating or lowering said bracket for the purpose of bringing the hose under the action of said rollers or releasing it from pressure when desired.

328,473. PENCIL-SHARPENER. Eugene Fitch, Des Moines, Iowa. Filed Nov. 18, 1884. (No model.)



Claim.—1. In a pencil-sharpener, the combination, with the shell or hollow head A, having a knife, B, secured within its sides *a a*, of the clamping-spring and handle D, pivoted to said head for securing it to a pencil, substantially as specified.

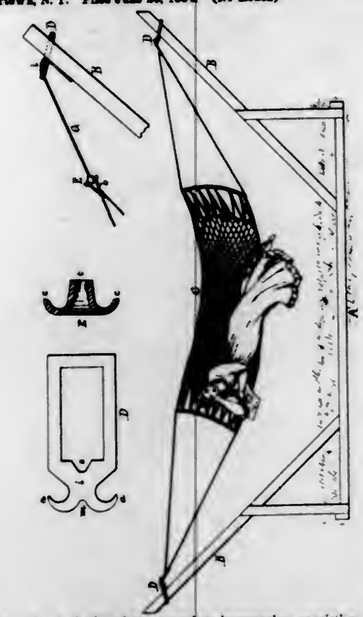
2. The pivoted clamping-spring and handle D of the pencil-sharpener, having its ends constructed with depressions *c* on their inner faces, whereby the spring is made to more securely hold the sharpener to its place on the pencil, substantially as described.

3. The shell or head A, having elastic perforated sides *a a*, adapted to receive the knife between and within its sides and to carry the pivoted clamping-spring D on its back for securing the sharpener to a pencil, substantially as specified.

4. The hollow head or shell A of the sharpener, constructed with elastic sides *a a*, having apertures *c'* in them, in combination with the knife or cutter B, having lugs *c* on its side edges arranged to engage with the apertures *c'* of the head A, substantially as and for the purposes specified.

5. As a new article of manufacture, the pencil-sharpener, substantially as shown and described, consisting of a hollow head, sleeve, or shell, A, having perforated elastic sides, a knife, B, provided with lugs arranged to engage with said sides, and a pivoted clamping-spring and handle, D, as herein set forth.

328,474. **DEVICE FOR SUPPORTING HAMMOCKS.** F. A. FLETCHER, Watertown, N. Y. Filed June 20, 1884. (No model.)



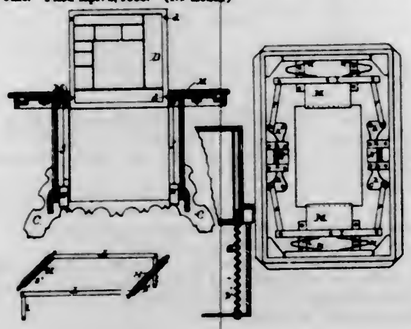
Claim.—1. A device for supporting hammocks, consisting of a clevis formed with a central opening, whereby it may embrace a supporting-frame, and with a notch or recess, *m*, on the outer edge of its inner side or bar, in which notch the hammock-rope is held, substantially as set forth.

2. A device for supporting hammocks, consisting of a clevis formed with a central opening, and with a notch or recess, *s*, on the inner edge of its inner side or bar, in which notch the hammock-rope is held, substantially as set forth.

3. A device for supporting hammocks, consisting of a clevis formed with a central opening, and with notches or recesses *m* and *s* on opposite edges of its inner side, in which notches the hammock-rope is held, substantially as set forth.

4. A hammock-supporting clevis having a central opening, notches or recesses *m* and *s* on opposite edges of its inner side, and hooks *a a*, extending outwardly in opposite directions from the inner bar on opposite sides of the notch *m*, substantially as set forth.

328,475. **COMBINED TABLE AND DESK.** THOMAS J. FORD, Geneva, Ohio. Filed Apr. 2, 1885. (No model.)



Claim.—1. The combination of the following elements: a table having an opening in the top and an open space below the top, the cabinet provided with a counterbalancing and supporting mechanism and having the grooves *d* in its sides, the locking-pieces M, sliding ways *m*, blocks N, ways *n*, angle-bars *k*, links *r*, and springs *u*, substantially as described.

2. The combination, with the table A, having central opening and chamber and cabinet B working therein, of the latching mechanism consisting of the sliding pieces M M, riding in the ways *m m*, blocks N N, sliding in ways *n n*, angle-levers *k k*, connected to pieces M M by links *r r*, and the springs *u u*, whereby the said cabinet is secured in either the elevated or lowered positions, as specified.

328,476. **ROLLER-SKATE WHEEL.** JOSEPH R. FRANCE, Newark, N. J. Filed Nov. 6, 1884. (No model.)



Claim.—1. A rolling support for skates, consisting of a body or core, 2, and a separate tire of plastic material, having a pyroxiline base and molded on the body or core, substantially as described.

2. A rolling support for skates, consisting of a body or core having an annularly-grooved periphery and a bearing-surface of plastic material, having a pyroxiline base, forming an unyielding or inelastic tire to the body or core, substantially as described.

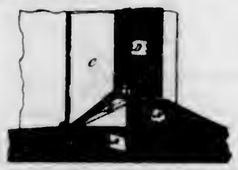
328,477. **MANUFACTURE OF CRYSTAL ALUM.** HENRY C. FREMY, Philadelphia, Pa., assignor to Harrison Brothers & Co., same place. Filed July 16, 1885. (No specimens.)

Claim.—The method of making crystal alum free or nearly free from iron, which consists in treating a solution of sulphate of alumina containing iron with chlorate of potash or other equivalent oxidizing agent to convert ferrous oxide into ferric oxide, and in adding to said solution, either before or after the impurities have been settled out or otherwise removed therefrom, sulphate of potash, or sulphate of ammonia, or sulphate of soda, and crystallizing the alum from said solution, as specified.

328,478. **MANUFACTURE OF HYDRATE OF ALUMINA.** HENRY C. FREMY, Philadelphia, Pa., assignor to Harrison Brothers & Co., same place. Filed July 16, 1885. (No specimens.)

Claim.—The method of making artificial hydrate of alumina from bauxite or other aluminous material, which consists, first, in treating such aluminous material in a ground or pulverized condition and mixed with sulphate of soda, carbonate of lime, coal-dust, and fluor-spar or its equivalent, to heat; second, in leaching the mass; third, in treating the resulting solution, either before or after the insoluble impurities have been removed therefrom, with a metallic peroxide, sesquioxide, or hyperoxide to precipitate the iron in said solution in an insoluble form; fourth, in removing the insoluble impurities from said solution and subjecting the resulting clear liquor to the action of carbonic-acid gas to form carbonate of soda and to precipitate the alumina in said solution as hydrate of alumina, and, finally, in removing said hydrate of alumina from said solution by subsidence or other convenient means, as specified.

328,479. **WEATHER-STRIP.** SOLOMON FUNK, Spirit Lake, Iowa. Filed Mar. 9, 1885. (No model.)



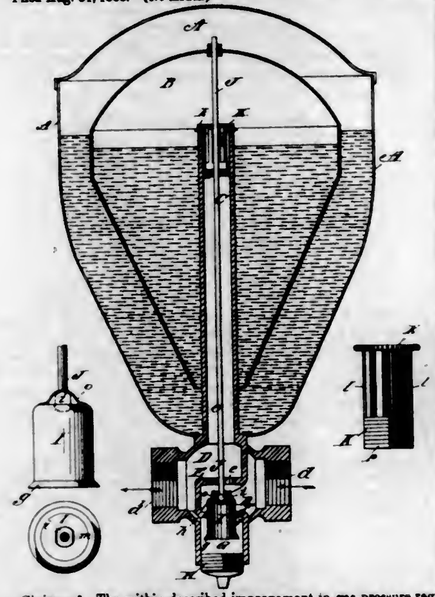
Claim.—1. The combination of door-sill A, carpet-strip A', weather-strip B, its upper edge beveled to match the angle of the carpet-strip when in contact therewith and having a thin pivotal lower edge resting on the sill, stops C, beveled at their lower ends to form a keeper for the ends of the weather-strip, and a door adapted to bring the upper edge of the strip in contact with the bottom of the door when closed, substantially as shown and described.

2. The combination of plane door-sill A, carpet-strip A', as described, thin-edged weather-strip B, stops C, having their lower ends beveled to admit the ends of the strip and with the sill retain it in position, and the door D, having a bevel-headed screw in the bottom to lift the upper side of the strip as the door closes, substantially as shown and described.

3. The combination of door D, having a bevel-headed screw in the bottom, carpet-strip A', stops C, beveled at their lower ends, weather-strip B, having a thin pivotal lower edge, and door-sill A, having nail

a near each end of the weather-strip, adapted to prevent wear of the stops and displacement of the strip, substantially as set forth.

328,480. **GAS-REGULATOR.** ELIJAH M. GODDARD, Holyoke, Mass. Filed Aug. 31, 1885. (No model.)

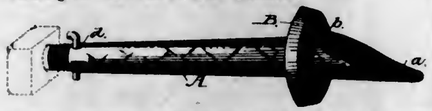


Claim.—1. The within-described improvement in gas-pressure regulators, consisting of a case, A, a partially-submerged float, B, a valve-stem operatively connected to said float, and a guide, K, within the float for said valve-stem, substantially as shown, in combination with a vertical tube C, open at its lower end, a globe, D, two diaphragms, E F, provided with openings *e f*, and relatively arranged, as shown, a chamber, G, with stop H, a port, *h*, connecting said chamber with the globe D, and a closed top cylindrical valve, I, flexibly connected with a valve-stem, J, and adapted, as shown and described, to reciprocate to close both diaphragms E F.

2. In a gas-pressure regulator, the combination, with a case, A, a float, B, a valve-stem, J, and a valve actuated by said float in connection with a diaphragm and globe beneath said float, of a joint consisting of a ball, *i*, upon the end of stem J, truncated upon each side, a corresponding socket, *m*, axially arranged in the valve, having flat sides corresponding to those of ball *i* and slightly removed therefrom, as shown and described, and band *o*, arranged, as shown, to hold the ball to the valve.

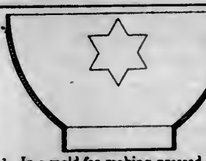
3. In a gas-pressure regulator, the combination of a closed top partially-submerged float, B, and valve connected therewith, a vertical tube, C, terminating within said float and provided with side orifices for the passage of gas, and a flange-top, *k*, closing the top of said tube immediately above the gas-orifices therein, perforated to make a guide to the valve-rod, and projecting beyond the side of tube C for the purpose, as described, of receiving the momentum of a jet of gas upon a fixed surface and of distributing said gas simultaneously upon all sides of the float.

328,481. **PROCESS OF MAKING AXLE-SKEINS.** ROBERT GRACEY, Pittsburg, Pa. Filed Mar 19, 1885. (No model.)



Claim.—The process herein described for forming axle-skeins, the same consisting, essentially, in placing a blank of tubular material whose inside diameter is about equal to the outside diameter of the axle between suitable dies, then swaging this blank, thereby elongating and reducing its diameter, then hammering its enlarged end to form a lip for securing it to the axle, and finally in shrinking a washer and forming a perforation for the linchpin upon its reduced end, substantially as and for the purpose set forth.

328,482. **MOLD FOR PRESSING GLASSWARE.** JONATHAN HALEY, Ravenna, Ohio, assignor to the Eureka Patent Glass Mold Company, same place. Filed July 23, 1884. (No model.)



Claim.—1. In a mold for making pressed glassware, a sliding ring-valve attached to and forming a part of the body of the mold and closing the bottom of the mold-cavity, in combination with and surrounding a sliding plug extending up into the mold-cavity, and a plunger which impinges on the plug before and while pressing the glass, substantially as described.

2. In a mold for making pressed glassware, the body *s*, formed with recess *i*, in combination with sliding ring-valve *e*, attached to body *s*, bolts *c'*, sliding plug *b*, and plunger *a*, substantially as described.

328,483. **REFRIGERATOR-BUILDING.** JOSEPH F. HANRAHAN, Ottawa, Ontario, Canada. Filed Aug. 28, 1885. (No model.)



Claim.—1. In combination with an ice-chamber, a cooling or storing room, a cold-air inlet from the ice-chamber into the storage-room at or near the floor, an outlet-opening at or near the ceiling of the storage-room, at the side next the ice-chamber, and a flue or passage just beneath the ceiling opening into the outlet, and having an inlet at the side of the storage-room opposite to that at which the cold air enters.

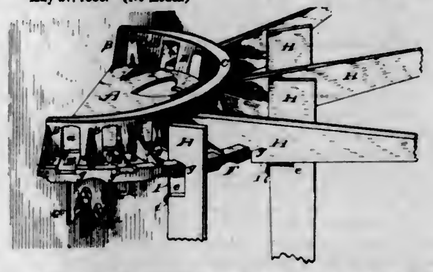
2. The combination of ice-chamber A and storage-room B, communicating at or near the floor-line, an air-inlet for chamber A, outlet *o* from chamber B, and flue or passage *p*, having mouth or inlet *q* and communicating with outlet *o*, substantially as shown and described.

3. The combination of ice-chamber A, provided with inlet E, and with flues *g* and *d*, and storage-chamber B, having outlet *o*, in communication with the outer atmosphere, and flue *p*, having mouth or inlet *q* and communicating with outlet *o*.

4. In combination with ice-chamber A, storage-room B, communicating therewith at or near the floor, and outlet *o*, extending entirely across the room B, whereby the accumulation of foul air in the corners is prevented.

5. In combination with chamber A, having inlet-pipe E and flues *g* and *d*, storage-room B, having outlet *o*, and flue *p*, communicating with said outlet, flue C, and pipe or outlet F, and valves *r s t*, located in the flues E, C, and F, respectively.

328,484. **CLOTHES-DRIER.** LOUIS K. HASTINGS, Chicago, Ill. Filed May 27, 1885. (No model.)



Claim.—1. The combination, with the bracket or frame A, the vertical posts B, radial arms D, extending from the posts and having the slots E, the outer rim, F, connecting the arms D, and having notches

communicating with the radial slots E, of the drier-arms having the notch *e* to fit the rim F, the inner ends of the said drier-arms fitting between the posts B, and the upper wall of the notch *e* engaging the notch *g*, substantially as described.

2. In a clothes-drier, the herein-described bracket or frame comprising the plate, the upwardly-projecting posts B, separated from each other by intervening openings *a*, and having the notches *d*, the rim C, connecting the upper ends of the posts B, radial arms D, projecting from the posts at their lower ends and separated by intervening radial slots E, communicating with the openings *a*, and an outer rim, F, having notches *g* in communication with the slots E, all of said parts being formed or cast in one piece, in combination with the drier-arms having the notch *e*, which engages the notch *g* of the rim when the rear end of the arm is fitted between the posts B and is in its horizontal extended position, substantially as described.

3. The combination, with the bracket comprising the plate A, the radial arms D, and the outer rim, F, the latter being provided with notches *g*, of the drier-arms provided with notches *e*, one wall of which is inclined, and a hook-catch or equivalent device for closing the open portion of the notch *e*, as set forth.

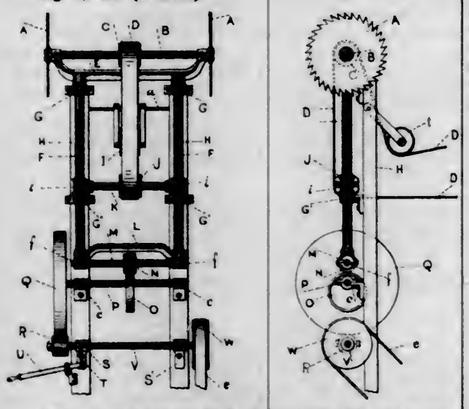
328,485. **PAPER BOX.** Charles F. Hatch, Lowell, Mass. Filed Jan. 7, 1885. (No model.)



Claim.—1. The combination of the box provided with a tuck having a catch or hook punched and set outward from the surface of said tuck, and a keeper rigidly secured to said box and adapted, when said tuck is pushed under said keeper until said catch passes said keeper, to spring up of its own elasticity and to engage said keeper, and to prevent said tuck from being drawn out from under said keeper, as and for the purpose specified.

2. The combination of a box formed of paper and provided with a tuck having a catch or hook punched and set outward from the surface of said tuck, and a keeper of wire having its ends driven through a thickness of said paper and clinched, as and for the purpose specified.

328,486. **TRIP-SAW.** Edwin P. Hayes, Deer Lake, Mich. Filed Aug. 11, 1885. (No model.)

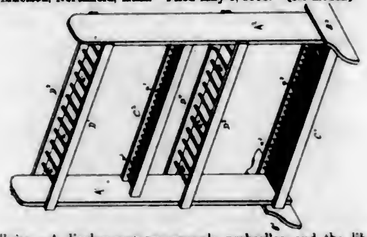


Claim.—1. The combination of the saw-frame, held and having a perpendicular motion in the blocks G and G, with the shaft P, journaled in the blocks c c, and carrying the cam O and the wheel Q, and operated by contact with the friction-wheel R on the shaft V, adapted to be raised or lowered by means of the lever U, attached to the journal-block S, having the slot T, as described, and for the purpose specified.

2. In a trip-saw machine, the combination of the wheel Q on the shaft P, suitably journaled, the cam-wheel O, the friction-wheel R on the shaft V, journaled in the blocks S and S, having the slot T, with the lever U, as shown and described.

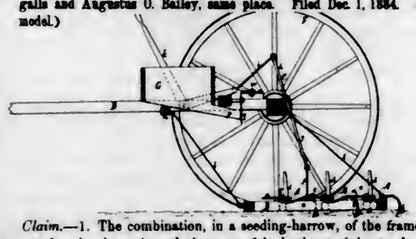
3. The combination of the saw-frame bearing the saws *a a*, held and capable of perpendicular motion in the blocks G G, and provided at the bottom with the shaft M, journaled in the blocks *f f* and carrying the pulley N, the shaft P, suitably journaled, carrying the wheel Q, and the cam O, bearing on said pulley N, with the friction-wheel R on the shaft V, the journals S and S, having the slot T and the lever U, all substantially as shown, and for the purpose specified.

328,487. **DISPLAY-RACK FOR UMBRELLAS.** Samuel Van Rensalaer Hendryx, Farmington, Miss., assignor of one-half to Andrew Finkelson, Northfield, Mass. Filed May 6, 1885. (No model.)



Claim.—A display-rack for parasols, umbrellas, and the like, consisting of ends A' A^2, top connecting-bars, D' D^2, having cross-wires *a'* between them, trough-shaped bottom section, C', intermediate trough-shaped section, C^2, and intermediate bars, D^3 D^4, connecting said ends between said trough-shaped sections C' C^2, and having cross-wires a^2, said intermediate trough-shaped section being narrower than said trough-shaped section C', whereby the goods supported by said bars D^3 D^4 and wires a^2 will occupy less space, substantially as set forth.

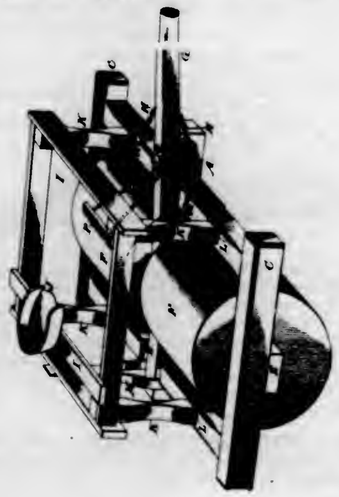
328,488. **MACHINE FOR SOWING AND HARROWING SEED.** W. Ingalls, Mattawamkeag, Me., assignor, by mesne assignments, to said Ingalls and Augustus O. Bailey, same place. Filed Dec. 1, 1884. (No model.)



Claim.—1. The combination, in a seeding-harrow, of the frame B, the set of rocker-bars A, and the sets of inelastic straight teeth and elastic curved teeth extending from each of said bars, substantially as described.

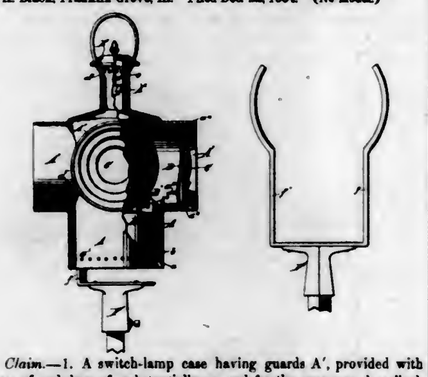
2. The combination of the harrow, provided with the sets of inelastic straight teeth and curved elastic ones, adjustable in the harrow-frame, and with mechanism for elevating and depressing it, as described, with the axle and wheels, and the hopper and seed-spreader, and mechanism for operating the latter, as specified, by means of one of the wheels, all being essentially as set forth.

328,489. **LAND-ROLLER.** Joseph W. Jones, Somerset, Ind. Filed Mar. 7, 1885. (No model.)



Claim.—The combination of the central beam, the frame-sections hinged thereto, rollers journaled between the central beam and the frame-sections, the seat-frame pivoted on the frame-sections, and the vertical standard having its lower end pivoted to the rear end of the central beam and its upper end passed through a keeper or mortise formed in the rear of the seat-frame, substantially as described.

328,490. **SWITCH-LAMP.** Oswald F. Jordan, St. Thomas, Ontario, Canada, and Lewis M. Curry, Chicago, Ill.; said Curry assignor to Henry A. Black, Franklin Grove, Ill. Filed Dec. 22, 1884. (No model.)



Claim.—1. A switch-lamp case having guards A', provided with flanges a^2 and lugs a^3, substantially as and for the purposes described.

2. The combination, with a switch-lamp case having guards A', of lenses seated in said guards, and springs to hold the lenses firmly to their seats, said guards being provided with lugs to engage the springs, substantially as described.

3. The combination, with a switch-lamp case having guards A', of lenses seated in said guards, and springs of greater circumference than the inner periphery of the guards to hold the lenses firmly to their seats, said guards being provided with lugs to engage the springs, and said lenses being slotted so as to be securely seated in said guards, substantially as described.

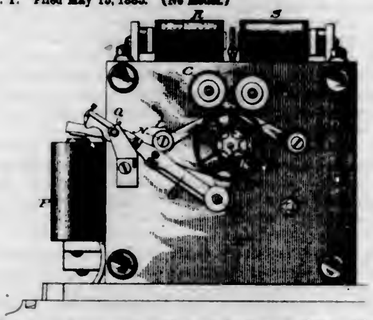
4. The combination, with a switch-lamp case and its chimney, of a chimney-cap removably connected therewith, said cap being provided with arms by which the soot may be removed from the interior of the chimney, substantially as described.

5. The combination, with a switch-lamp case and its chimney, of a chimney-cap removably connected therewith and provided with arms by which the soot may be removed, and also with a ventilation-shield, substantially as described.

6. A switch-lamp case provided with flanges a^2, substantially as and for the purpose described.

7. The combination, with a hanger, of a switch-lamp case removably connected therewith, said case being provided with flanges a^2, to prevent the wrong seating of the case in the hanger, substantially as described.

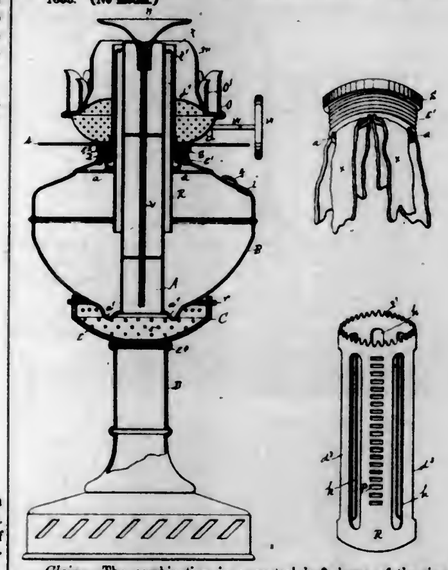
328,491. **PRINTING-TELEGRAPH.** Charles N. Judson, Brooklyn, N. Y. Filed May 15, 1885. (No model.)



Claim.—1. In a printing-telegraph instrument, the combination, with one type-wheel, of two inking-rollers having different-colored inks and means for applying said rollers, respectively, to designated characters upon said wheel, substantially as set forth.

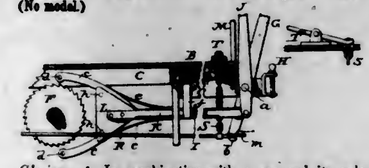
2. In a printing-telegraph instrument, the combination, with one type-wheel and an impression-pad, of two inking-rollers having different-colored inks and means for applying said inks to designated characters upon said wheel, so that the impression from such characters shall appear in different colors, substantially as set forth.

328,492. **LAMP.** Lewis R. Klush, Detroit, Mich. Filed Mar. 5, 1885. (No model.)



Claim.—The combination, in a central-draft lamp, of the ring S, provided with supports for sustaining the feed-wicks, the central-draft tube, the slotted wick-conveying tube, and spur-wheel for operating the same, substantially as described.

328,493. **CAR STARTER AND BRAKE.** Johan Kubler, Hot Springs, Ark., assignor to Frank Gross, same place. Filed Aug. 4, 1885. (No model.)



Claim.—1. In combination with a car and its axle, a ratchet-wheel thereon, a lever journaled on the car, a bar or rod attached to the lower end of the lever, reversed pawls carried by said bar or rod engaging with the ratchet-wheel and adapted to turn the wheel when said bar is moved in either direction, and a second lever also journaled upon the car and adapted to throw said pawls out of engagement with the ratchet-wheel.

2. In combination with the car A, axle D, and ratchet-wheel F, lever G, provided with pawls *c*, and lever J, provided with block L, all arranged and operating substantially as described and shown.

3. In combination with a car-starter, a brake mechanism adapted and arranged to be connected to the former by means of a foot-lever, as described.

4. In a car-starter, the combination, with the ratchet-wheel, of a reciprocating bar or rod, pivoted pawls attached to the latter, springs bearing upon said pawls to urge them together, and a hand-lever connected to the bar or rod and pivoted to the car.

5. In combination with car A, axle D, and ratchet-wheel F, reciprocating rod I, pawls *c*, springs *e*, lever G, rod K, hand-lever J, and block L, all arranged as shown.

6. The combination, with car A and a starting mechanism applied thereto, of brake-rod R, extending forward beneath the car and adapted to be connected with or disconnected from the operating-lever of the starting mechanism.

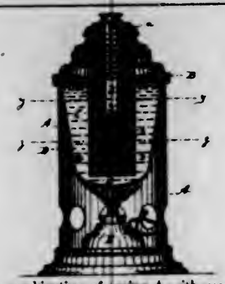
7. The combination, with car A and a starting mechanism applied thereto, of a hand-lever for operating said mechanism, provided with a hooked end, and a brake-rod adapted to be connected with or disconnected from said lever at will.

8. In combination with car A, levers P Q, pivoted to the car, link *k*, shoe O, rod R, provided with hook *m* and lever G.

9. In combination with car A, levers P Q, pivoted to the car, link *k*, shoe O, and rod R, provided with hook *m*.

328,494. **APPARATUS FOR TESTING FLOUR.** Karl W. Kuhn, Roudnitz, Leipsic, Germany. Filed Feb. 10, 1885. (No model.)

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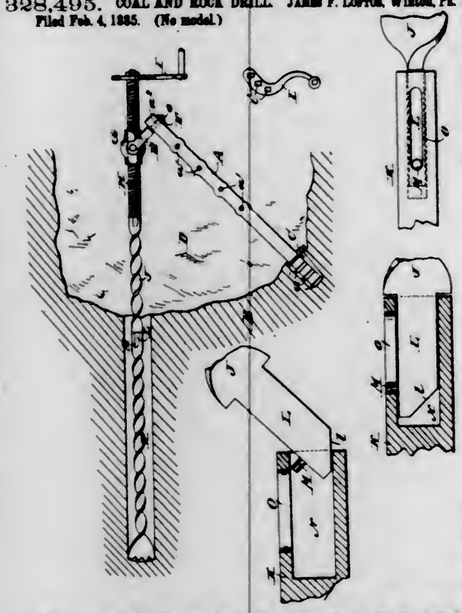


Claim.—1. The combination of casing A with vessel B, cylinders C D, and plunger *d*, substantially as and for the purpose specified.

2. The combination of vessel B with cylinder C, sectional cylinder D, and plunger *d*, substantially as herein shown and described.

3. The combination of vessel B with cylinder C, cylinder D, composed of open section *a*, hinged section *b*, and cap-piece *c*, and with graduated plunger *d*, substantially as specified.

328,495. COAL AND ROCK DRILL. James F. Lofton, Winton, Pa. Filed Feb. 4, 1885. (No model.)



Claim.—1. In drilling-machines, the combination, with the drill K, having a socket, N, and slot O, of the extension-bar J, having a tenon, L, adapted to the socket, and provided with the end bevel *l*, and a pin, M, adapted to enter slot O, substantially as herein set forth.

2. In drilling-machines, the drill K and extension-bar J, made in twisted form, and said drill having the end socket, N, and slot O, and the extension-bar having the tenon L, provided with the end bevel *l* and pin M, substantially as herein set forth.

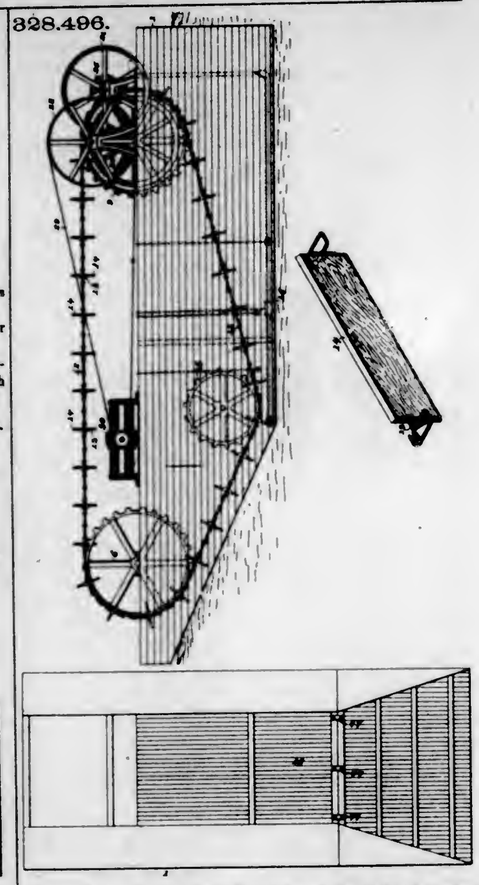
328,496. FLOATING CURRENT-MOTOR. William Main, Brooklyn, N. Y., assignor to the River and Rail Electric Light Company, of Ohio County, W. Va. Filed July 25, 1885. (No model.)

Claim.—1. The combination, in a water-power mechanism, of endless chains carrying floats with three sets of sprocket-wheels for said chains, the middle set being placed out of alignment with and on the opposite side of the operating current from the other two, whereby the floats are made to take oblique paths through the water, substantially as described and shown.

2. The combination, in a water-power mechanism, of endless chains carrying floats, two main sets of sprocket-wheels receiving motion from the chains, and guide-wheels placed out of alignment with and on the opposite side of the operating current from the sprocket-wheels for giving the chains an oblique path or motion through the water.

3. The combination, with a floating support provided with a water-way, of two sets of wheels arbored near the top of the water-way, a third set arbored near its bottom, and endless chains carrying floats supported by said wheels, substantially as described and shown.

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4. The combination, with a floating support provided with a water-way, of endless chains carrying floats, and three sets of wheels arbored in the water-way for supporting the chains, one of said sets of wheels being placed out of alignment with the other two and near the bottom of the water-way, whereby an oblique path of motion is given the floats through the water, substantially as described and shown.

5. The combination, with a chain water-power mechanism, in which the floats move through the water on lines oblique to the surface thereof, of a floating support therefor, water-tight compartments in said support, and valves and a pump for controlling the amount of water in said compartments, substantially as described, and for the purposes set forth.

6. The combination, with a floating water-power mechanism provided with a water-way, of an independent float provided with an approach capable of being adjusted to said water-way, said approach having two converging surfaces rigidly connected to each other, substantially as described and shown.

7. The combination, with a water-power mechanism mounted in a water-way, of a floating support, an independent float provided with water-tight holds, and a funnel-shaped passage-way through it from end to end planked over on three sides, the smaller end of said passage-way being adapted to fit the end of the water-way, substantially as described and shown.

8. The combination of a floating water-power mechanism, an independent float carrying an approach therefor having converging surfaces rigidly connected to each other, and means whereby the second float may be readily coupled to and uncoupled from the float carrying the power mechanism for securing proper attachment between the two while in their working position, substantially as described and shown.

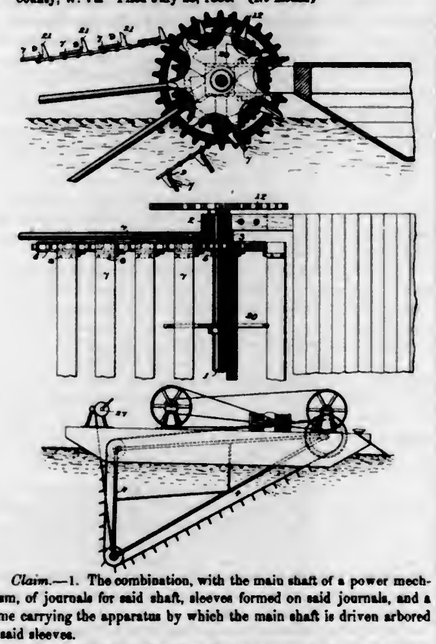
9. The combination of a floating water-power mechanism, an independent float carrying the converging approach therefor, said approach having converging surfaces rigidly connected to each other, and coupling-bars, with bolts and nuts for the same, attached to the two structures for holding the floats together in their working position, substantially as described and shown.

10. The combination, with a floating water-power mechanism, of a floating approach therefor provided with water-tight compartments and means for admitting water into and exhausting water from said compartments, whereby the position of said approach may be adjusted to said water-power mechanism.

11. The combination of a floating water-power mechanism, a floating approach therefor provided with water-tight compartments, a system of inlet-valves and exhaust-pipes for said compartments, a pump operated by said water-power mechanism, and a flexible hose for connecting said pump with the system of pipes on said approach, substantially as shown and described.

12. An independent float carrying a converging water-way of approach for concentrating the flow of water upon a water-motor provided with fore and aft water-tight compartments and means for filling and emptying the same.

328,497. FLOATING CURRENT-MOTOR. William Main, Brooklyn, N. Y., assignor to the River and Rail Electric Light Company, of Ohio County, W. Va. Filed July 25, 1885. (No model.)



Claim.—1. The combination, with the main shaft of a power mechanism, of journals for said shaft, sleeves formed on said journals, and a frame carrying the apparatus by which the main shaft is driven arbored on said sleeves.

2. The combination of endless chains carrying floats, shafts carrying sprocket-wheels for said chains, fixed journals for one of said shafts, a frame carrying the other shafts and arbored on projections from said journals, means for suspending, raising, and lowering the free end of said frame, and connecting mechanism through which the power of the shaft moving in fixed journals is applied to the driven mechanism.

3. In a water-power mechanism, the combination of a floating support, a shaft journaled thereon, frames journaled concentrically with but independently of said shaft, sprocket-wheels mounted on said frames, endless chains carrying floats supported by said sprocket-wheels, and means for raising and lowering the free ends of said frames, substantially as described and shown.

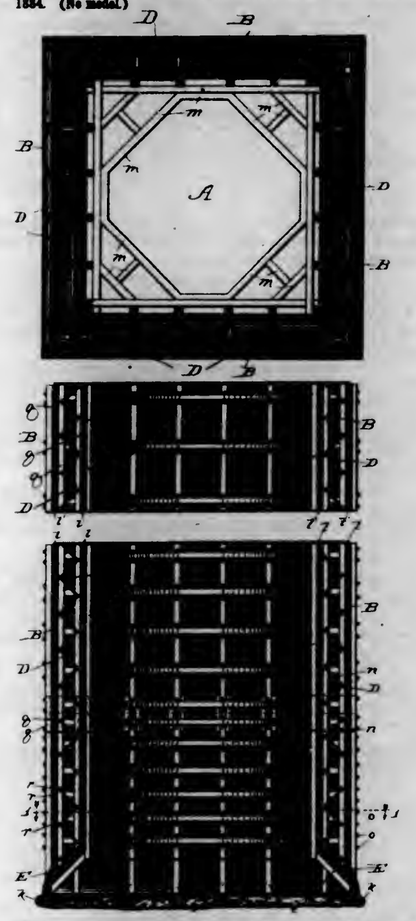
4. The combination, with a scow or flat-boat of which the main top timbers project beyond one end, of metal caps for said timbers, a shaft journaled in said caps, and a water-power mechanism pivoted concentrically with said shaft and geared thereto, substantially as described and shown.

5. The combination, with a boat or scow of which the main upper longitudinal timbers extend beyond one end, of metal caps for said timbers, a shaft journaled in said caps, frames arbored on sleeves projecting from said caps, sprocket-wheels mounted in said frames, and chains carrying floats supported by the sprocket-wheels, substantially as described and shown.

6. The combination of frames of the shape of right-angled triangles carrying sprocket-wheels arbored at the angles thereof, said frames being placed with their shorter sides in and perpendicular to the surface of the water, with endless chains carrying floats supported by the wheels, substantially as described and shown.

7. The combination, with a scow or other float of frames of the shape of a right-angled triangle and pivoted at their smallest angles to the scow, of sprocket-wheels arbored in said frames and endless chains carrying floats supported by the wheels, substantially as described and shown.

328,498. CAISSON. Max Malsouham, Chicago, Ill. Filed Oct. 9, 1884. (No model.)



Claim.—1. A caisson formed with an outer wall, B, and an inner wall, C, separated from each other by a chamber, D, the inner wall having its lower extremity supported to lie above that of the outer wall, an oblique bottom, E, for the chamber, and a cushion secured upon the vertex of the angle formed by the junction of the oblique bottom and outer wall, substantially as described.

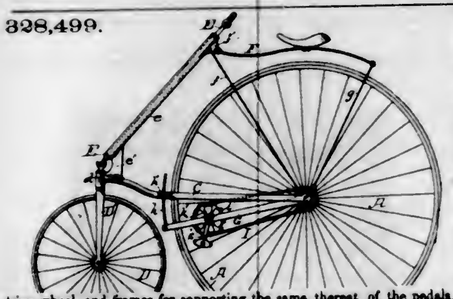
2. A caisson formed with an outer wall, B, and an inner wall, C, separated from each other by a chamber, D, the inner wall having its lower extremity supported to lie above that of the outer wall, an oblique bottom, E, for the said chamber, and braces arranged polygonally on the inner side of the inner wall to provide an unobstructed vertical central opening through the device, substantially as and for the purpose set forth.

3. A wooden caisson, comprising outer walls, B, and inner walls, C, supported upon an oblique base and having a chamber, D, between them, and provided with a bottom, E, said walls being formed of series of boards *t*, secured together flatwise in a manner to cause the cracks between any two series to be closed, and strengthened on both sides by heavy timbers *q*, bolted to lie transversely across the said boards, and by truss-work *x* within the said chamber, braces *m*, arranged polygonally on the inner sides of the said inner walls to strengthen the device and provide an unobstructed vertical central opening through it, and a cushion, *k*, secured upon the lower edges of the said outer walls, the whole being constructed and arranged to operate substantially as described.

328,499. BICYCLE. George W. Marble, Chicago, Ill. Filed Oct. 22, 1884. (No model.)

Claim.—1. In a bicycle, the combination, with the drive-wheel, guide-wheel placed in front thereof, and saddle supported above said

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drive-wheel, and frames for supporting the same thereat, of the pedals, adjustable frame in which said pedals are journaled, and means for imparting their motion to the drive-wheel.

2. In a bicycle, the combination, with the drive-wheel, guide-wheel placed in front thereof, and the bifurcated reach connecting said wheels, of the adjustable yoke fulcrumed on the bearings of said drive-wheel, pedals journaled and radially adjustable therein, and means for imparting the motion of said pedals to the drive-wheel.

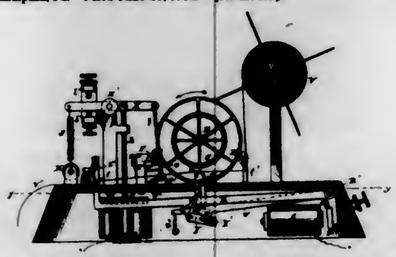
3. In a bicycle, the combination, with the drive-wheel, guide-wheel placed in front thereof, and bifurcated reach connecting said wheels, of the circular segmental rod A, the adjustable yoke G, having an aperture in its end, through which said rod passes, and screw by means of which said yoke is adjusted and maintained in any position on said rod, pedals journaled in said yoke, and means for imparting the motion of said pedals to the drive-wheel.

4. The combination, in a bicycle, with the drive-wheel, the axis of which has spherical journals, of the bearing B, having a spherical bearing-chamber and a circular exterior, the oscillating yoke G, and bifurcated reach C, fulcrumed and secured thereto, respectively.

5. The combination, in a bicycle, with the drive-wheel, the axis of which has spherical journals, of the bearings B, made in two parts and having a circular circumference, the oscillating adjustable yoke, and the bifurcated reach, both of which have circular apertures in their ends, and are journaled on said bearings, and means, substantially as shown, for securing them thereon.

6. The combination, with the drive-wheel of a bicycle, of yoke G, fulcrumed on the bearings thereof, lugs *o o*, extending downward therefrom, cap-screws *n n*, bearings *m*, pedal-shafts *i*, journaled therein, and means for imparting their motion to the drive-wheel.

328,500. PRINTING-TELEGRAPH. William J. McCausland, Philadelphia, Pa. Filed June 26, 1884. (No model.)



Claim.—1. In a printing-telegraph, the combination of a type-wheel, gearing to rotate said type-wheel, a crank to rotate said gearing, and independent mechanism to cause said crank to pass each of its dead-centers, consisting of pallets secured upon the crank-shaft, but not in the same plane, and spring-pressure levers or surfaces adapted to force said pallets over the dead-centers, substantially as and for the purpose specified.

2. In a printing-telegraph, the combination of a type-wheel, gearing to rotate said type-wheel, a crank to rotate said gearing, and independent mechanism to cause said crank to pass each of its dead-centers, consisting of pallets secured upon the crank-shaft, but not in the same plane, and spring-pressure levers or surfaces adapted to force said pallets over the dead-centers, and an electro-magnet and connecting devices to rotate said crank, substantially as and for the purpose specified.

3. In a printing-telegraph, the combination of a type-wheel, gearing to rotate said type-wheel, a crank to rotate said gearing, and independent mechanism to cause said crank to pass each of its dead-centers, and a stop or catch to prevent the said crank rotating in the wrong direction, substantially as and for the purpose specified.

4. In a printing-telegraph, the combination of a type-wheel, gearing to rotate said type-wheel, a crank to rotate said gearing, and independent mechanism to cause said crank to pass each of its dead-centers, a ratchet-wheel having four teeth arranged in pairs, and a pawl to engage with said teeth, to prevent the said crank rotating in the wrong direction, substantially as and for the purpose specified.

5. In a printing-telegraph, a type-wheel in which the letters and figures are arranged side by side, gearing to rotate said type-wheel, a crank to rotate said gearing, an electro-magnet and connecting mechanism, substantially as set forth, whereby the crank can assume only two positions, one produced by the electro-magnet when magnetised and the other when it is demagnetized, each of said movements bringing into printing position one letter and one figure, whereby a simple make and break of the type-wheel-magnet circuit causes a full revolution of the crank and moves two letters and two figures into printing position, substantially as and for the purpose specified.

6. The combination of type-wheel C, shaft F, having crank G and pallets F′ F², levers O, rod or link *h*, mechanism controlled by the electrical pulsations in the line-circuit to vibrate said rod, and gearing or its equivalent connecting the said shaft F with the type-wheel, substantially as and for the purpose specified.

7. The combination of type-wheel C, shaft F, having crank G and pallets F′ F², levers O, pivoted at O′, and having legs O², springs O³, rod or link *h*, mechanism controlled by the electrical pulsations in the line-circuit to vibrate said rod, and gearing or its equivalent connecting the said shaft F with type-wheel, substantially as and for the purpose specified.

8. The combination of type-wheel C, shaft F, having crank G and pallets F′ F², ratchet-wheel Q, spring-pawl P, levers O, rod or link *h*, mechanism controlled by the electrical pulsations in the line-circuit to vibrate said rod, and gearing or its equivalent connecting the said shaft F with the type-wheel, substantially as and for the purpose specified.

9. The combination of type-wheel C, spur-wheel D, pinion E, shaft F, having crank G, and pallets F′ F², spring-levers O, link *h*, lever H, spring J, rod L, having armature L′, and electro-magnet M, substantially as and for the purpose specified.

10. The combination of type-wheel C, spur-wheel D, pinion E, shaft F, having crank G, mechanism, substantially as set forth, to prevent the shaft F rotating in the wrong direction, and pallets F′ F², spring-levers O, link *h*, lever H, spring J, rod L′, having armature L, and electro-magnet M, substantially as and for the purpose specified.

11. The combination of type-wheel C with levers R and U and connecting mechanism, substantially as set forth, consisting, essentially, of a bell-crank pivoted to one lever, and a pin actuating said bell-crank on the other lever, and a stop in the path of the free arm of said bell-crank, whereby lever R may move independently of lever U, but lever U cannot move without raising lever R also, substantially as and for the purpose specified.

12. The combination of type-wheel C with levers R and U and connecting mechanism, substantially as set forth, consisting, essentially, of a bell-crank pivoted to one lever, and a pin actuating said bell-crank on the other lever, and a stop in the path of the free arm of said bell-crank, whereby lever R may move independently of lever U, but lever U cannot move without raising lever R also, and a stop actuated by lever U, to limit the movement of lever R when raised by lever U, substantially as and for the purpose specified.

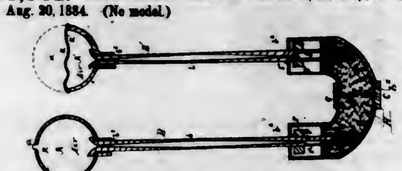
13. The combination of type-wheel C with levers R and U and connecting mechanism, substantially as set forth, consisting, essentially, of a bell-crank pivoted to one lever, and a pin actuating said bell-crank, on the other lever, and a stop in the path of the free arm of said bell-crank whereby lever R may move independently of lever U, but lever U cannot move without raising lever R also, and separate electro-magnets to operate each of said printing-levers, substantially as and for the purpose specified.

14. The combination of type-wheel C with levers R and U and connecting mechanism, substantially as set forth, consisting, essentially, of a bell-crank pivoted to one lever, and a pin actuating said bell-crank on the other lever, and a stop in the path of the free arm of said bell-crank, whereby lever R may move independently of lever U, but lever U cannot move without raising lever R also, and feeding mechanism for the tape actuated by lever R, substantially as and for the purpose specified.

15. The combination of type-wheel C with levers R and U and connecting mechanism, substantially as set forth, consisting, essentially, of a bell-crank pivoted to one lever, and a pin actuating said bell-crank on the other lever, and a stop in the path of the free arm of said bell-crank, whereby lever R may move independently of lever U, but lever U cannot move without raising lever R also, and pivoted bar Y, pivoted to lever R, and having arm Y², and a sliding connection with lever U, substantially as and for the purpose specified.

16. The combination of type-wheel C with levers R and U and connecting mechanism, substantially as set forth, consisting, essentially, of a bell-crank pivoted to one lever, and a pin actuating said bell-crank on the other lever, and a stop in the path of the free arm of said bell-crank, whereby lever R may move independently of lever U, but lever U cannot move without raising lever R also, and separate electro-magnets to operate each of said printing-levers, a line-circuit, and means to reverse the polarity in said line, substantially as and for the purpose specified.

328,501. BAROMETER. James Y. McCleary, Necabe, Mo. Filed Aug. 30, 1884. (No model.)



Claim.—1. A barometer comprising tubes B B′, having valves E, vessels A A′, containing rarefied air, one of which vessels is non-elastic, the other having an elastic diaphragm, G, vessel H, having an elastic diaphragm, D, and containing a fluid, I, frame K, having a scale, L, and a slot, O, in which is an index, P, and protectors M M′ M², all substantially as shown and described.

2. A barometer comprising tubes B B′, having a varying bore and containing columns of fluid, I, between and operated upon by two portions of confined rarefied air, R R′, and an elastic surface, through which one of said portions of confined air is affected by the varying weight of the atmosphere, all substantially as and for the purpose set forth.

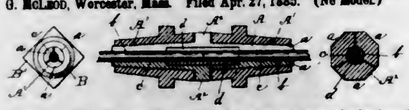
3. A barometer comprising a non-elastic ball or vessel, tubes having a tapering bore from the center toward the ends, a second vessel having an elastic diaphragm, a fluid between two portions of confined rarefied air, and a diaphragm dividing said fluid, all substantially as shown and described, for the purpose set forth.

4. A device comprising a hollow non-elastic vessel, A, and a vessel, A′, having an elastic diaphragm and both containing rarefied air, R R′, tubes B B′, having a varying bore and containing rarefied air and fluid columns, I, and a connecting tube or vessel, H, having a band, C, and diaphragm D, and containing a fluid, I, all substantially as and for the purpose set forth.

5. In a barometer, tubes B B′, having a varying bore made largest in the middle and tapering toward the ends, said tubes having rings *b*⁴, hole *b*⁵, and a valve, E, said tubes being suitably connected, substantially as and for the purpose set forth.

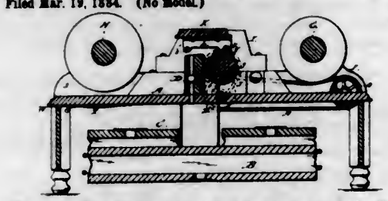
6. The combination, with a movable index, P, of tubes B B′, having a connecting-vessel, H, a liquid, I, and hermetically-confined rarefied air, R R′, all substantially as and for the purpose set forth.

328,502. JOINT FOR WIRE, WIRE RODS, CABLES, &c. Charles G. McLeod, Worcester, Mass. Filed Apr. 27, 1885. (No model.)



Claim.—The improved coupling for telegraphic and similar electric and sound conducting wires, consisting of the tapered screw part A, made hollow and in sections, and the tapered nuts B B, in combination with the copper lining *a*, also made in sections, substantially as and for the purpose set forth.

328,503. AUTOMATIC MUSICAL INSTRUMENT. John McTammany, Worcester, Mass., assignor to Alexander McTammany, same place. Filed Mar. 19, 1884. (No model.)



Claim.—1. In an automatic musical instrument, a feed-roll, F, in combination with a driving-shaft geared to said feed-roll, and idle roll, *k*, which may at will be used to hold the music-sheet against said feed-roll or turned back out of engagement therewith, and a winding-roll and rewinding-roll arranged on opposite sides of said feed-roll, in order that the latter may serve as a tension device when the roll *k* is removed from contact therewith, substantially as set forth.

2. In an automatic musical instrument, the combination of a winding-roll having a pulley with a driving-shaft, a belt driven by said shaft, and in contact with said pulley, and a feed-roll, F, over which the music-sheet passes, said feed-roll in the absence of the upper roll, *k*, acting as a tension-roll to regulate the winding of the music-sheet on said winding-roll, substantially as set forth.

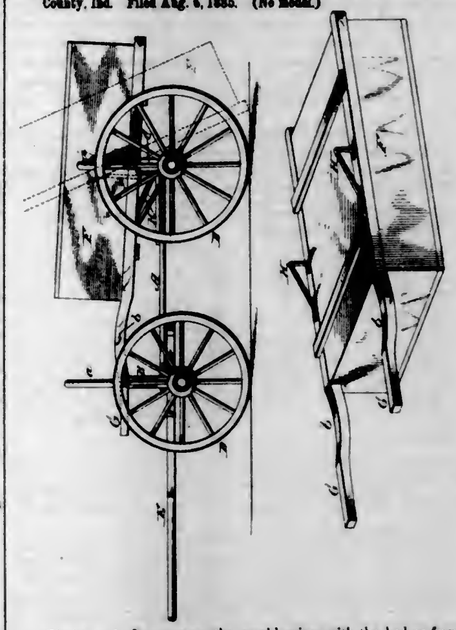
3. The tester-holding spring Z, in combination with the top of the instrument-case, substantially as set forth

4. The ring or packing *s* and the winding roll pulley to which it is applied, in combination with a chain from the driving-shaft of an automatic musical instrument, said chain being in contact with said ring, substantially as set forth.

5. The combination, with the driving-shaft E and feed-roll F, of the winding-roll G and the endless chain or belt which passes around pulley O and touches (without passing around) the pulley G′ on roll G, the feed-roll F being arranged to be always in contact with the music-sheet and to operate as a permanent tension-regulating device after the roll *k* has been removed from contact therewith, substantially as set forth.

6. The rack K, provided on its under side with the fixed angular plates L, in combination with the rolls *k k′*, which are journaled in said plates, substantially as set forth.

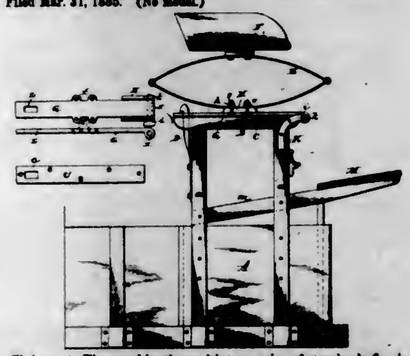
328,504. DUMPING-WAGON. Alfred S. Miller, Richland, Miami County, Ind. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a wagon, the combination, with the bed or frame thereof, of a removable body or box having lever-handles at its forward end, and stops upon its under side to serve as fulcrums to dump the load, substantially as and for the purpose set forth.

2. In a wagon, the combination, with the bed or frame thereof, of a sliding, tilting, and removable body or box provided upon its under side with stops, and having curved lever-handles at its forward end, substantially as and for the purpose specified.

328,505. WAGON-SEAT. Oliver S. Miner, North Adams, Mass. Filed Mar. 31, 1885. (No model.)



Claim.—1. The combination, with two pairs of standards firmly secured to the sides of a wagon-body—one pair to each side—and caps or cross-bars connecting the standards, of a spring-seat hinged to the front portions of the standards or cross-bar, and adapted to be tilted forwardly beyond the front of the body, substantially as set forth.

2. The combination, with a pair of horizontal bars forming the heads of two end supporting-frames, and bars hinged to the forward ends of the

said horizontal bars, of a spring-seat secured to the hinged bars, substantially as set forth.

3. The combination, with a pair of horizontal bars forming the heads of two end supporting-frames, of bars hinged to the forward ends of the said horizontal bars by removable pintles, and seat-springs rigidly secured to the hinged bars, substantially as set forth.

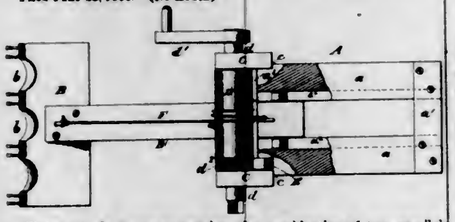
4. The combination, with the end supporting-frames and the seat secured to a bar provided with a socket adapted to form a half-hinge, of a pair of bent straps secured to the opposite sides of the supporting-frames, and adapted to form bearings for the pintles of the hinges, and at the same time strengthen the frame-joints, substantially as set forth.

5. In a forwardly-tilting wagon-seat, the combination, with the hinged tilting bar and horizontal stationary rests for the same, of a spring-catch secured to the supporting-frame and extending upwardly through horizontal rests, and hinged tilting bar, substantially as set forth.

6. The combination, with a pair of tilting bars having the seat secured thereto, and hinged to the supporting-frame, of horizontal rests for the tilting bars having metal plates on their upper sides, and spring-catches for locking the tilting bars to their rests, substantially as set forth.

7. The combination, with a seat-supporting frame and a forwardly-tilting spring-seat hinged thereon, of a cushioned rest secured to the front of the supporting-frame, adapted to receive the end of the spring and support the seat in its tilted adjustment, substantially as set forth.

328,506. CARPET-STRETCHER. Ruth Moffitt, Wheatland, Ill. Filed June 23, 1885. (No model.)



Claim.—1. In a carpet-stretcher, the combination of two parallel bars, *a a*, capped at *a'*, and rabbeted at a^2, with a claw-bar, B', having two opposite side rolls, b^2, working on said rabbets a^2, as shown and described.

2. In carpet-stretchers, the combination, with a claw-bar, B, having an end staple on top of each end and a superposed windlass journaled in uprights C C, of a flexible connection, F, wrapped about the windlass to the length of the stroke of said slide-bar, and fastened at its ends to the staples *b' b'*, whereby the claw-bar may be operated in both directions by the windlass, as described.

328,507. REMEDY FOR RHEUMATISM. Samuel Nash, Winnipeg, Manitoba, Canada. Filed Dec. 8, 1884. (No specimens.)

Claim.—The herein-described composition of matter to be used for treating rheumatism of the human body, and being a compound consisting of balsam of sulphur, Barbadoes tar, crude oil of amber, oil of turpentine, linseed-oil, oil of juniper, and oil of rosemary in the proportions specified.

328,508. MEANS FOR SECURING THE TEETH OF HORSE HAY-RAKES, &c. Aaron J. Neller, Pittsburg, Pa. Filed Apr. 28, 1884. (No model.)



Claim.—1. A spool for securing the tooth of a horse hay-rake, said spool having a tooth-socket at one end and a keeper at the opposite end and in line with the socket, substantially as and for the purpose specified.

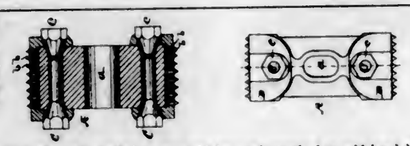
2. A spool for securing the tooth of a horse hay-rake having a tooth-socket parallel with its axis, said socket slotted to permit the tooth to project at right angles to the spool, substantially as and for the purposes specified.

3. The combination of a spool having a parallel tooth-socket, a tooth having a pintle which projects at right angles, and a keeper arranged in line with the socket for preventing the escape of the pintle from the socket of the spool, substantially as and for the purposes specified.

328,509. BUSH-HAMMER. August Nelson, Kent, Ohio. Filed July 6, 1885. (No model.)

Claim.—1. A bush-hammer consisting of a head with a smooth face,

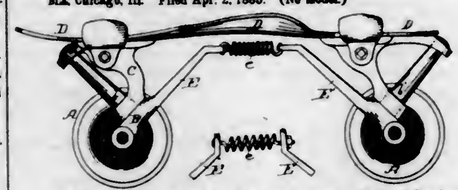
328,509.



and a perforated cap fitting over said face and attached to said head, having pins in said perforations which rest against said face and project beyond said cap, substantially as and for the purpose hereinbefore set forth.

2. In a bush-hammer, the combination of a head with a plane face, a perforated cap fitting over said face, a series of pins which rest in said perforations with one end against said face and the other projecting beyond said cap, and a draw nut passing through said cap and head, substantially as and for the purpose hereinbefore set forth.

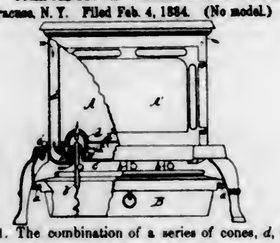
328,510. ROLLER-SKATE. Heaton Owsley and George W. Marble, Chicago, Ill. Filed Apr. 2, 1885. (No model.)



Claim.—1. In a roller-skate, the combination, with the roller-head B, pivotal stud *b*, extending at about forty-five degrees therefrom, and stiff foot-plate in bearings secured to which the pivotal studs are journaled, of the arm E and spring *e*, substantially as set forth.

2. In a roller-skate, the combination, with the bead B, pivotal studs projecting therefrom, and stiff foot-plate in bearings secured to which the pivotal studs are journaled, of the arm E, projecting from said head B in a direction opposite to the pivotal studs and spring *e*.

328,511. COAL-OIL STOVE. Charles F. Parker and Louis E. Marquiser, Syracuse, N. Y. Filed Feb. 4, 1884. (No model.)



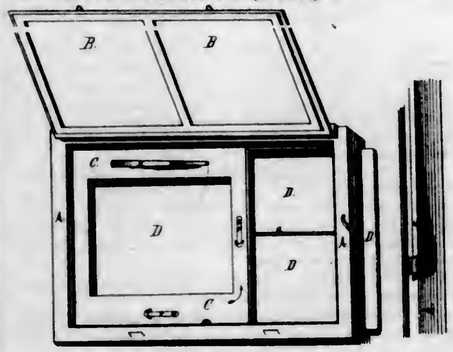
Claim.—1. The combination of a series of cones, *d*, with a plate, d^2, hinged on a shaft, *e*, and having an arm, *e'*, thereon outside the combustion-chamber to raise and lower the cones, for the purposes specified.

2. The combination of the removable sliding plate *c*, forming the bottom of the air-passage, with the tubes and oil-tank with which it slides into and out of place below the combustion-chamber, as described.

3. The combination, with a burner, of the following parts: the cones *d* and perforated plates *d'*, attached to the hinged plate d^2, and the plate *c*, constructed and arranged substantially as and for the purposes specified.

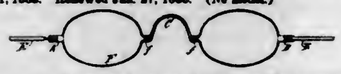
4. The combination of the door of the combustion-chamber, having an inward projection near its lower edge, with plate *d'* to hold said plate from being raised when the door is closed, as specified.

328,512. PHOTOGRAPHIC-PLATE HOLDER. Oscar M. Pausch, Newark, Ohio. Filed Feb. 26, 1885. (No model.)



Claim.—The herein-described photographic-plate holder, consisting of the outer frame, A, lid B, reversible plate-slide C, provided with spring E, rod G, arranged to engage with one of the springs F upon plate-slide C, and the securing-spring H, the whole combined, arranged, and adapted to permit the shifting of the plate for double exposures, substantially as shown and described.

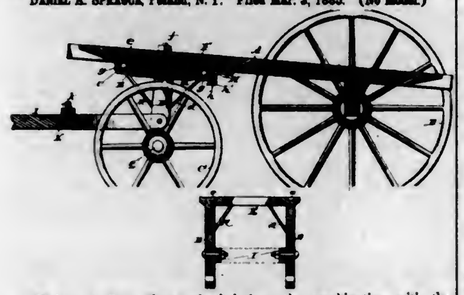
328,513. SPECTACLES. Wm. H. Prenham, New York, N. Y. Filed Oct. 1, 1883. Renewed Jan. 27, 1885. (No model.)



Claim.—1. In spectacle or eyeglass frames, the combination of eye-wires having spring-loops with a nose-piece formed with sockets connected to the end or side of the respective eye-wire loops, so as to hold the same without impairing the elasticity of the eye-wire and its loop.

2. In an eyeglass or spectacle frame, the combination of eye-wires having spring-loops, a socketed nose-piece connected thereto without impairing the elasticity of the eye-wires, and a solid end piece or pieces for the reception of the handle or temple-bars, as herein set forth.

328,514. THREE-WHEELED DRAY. Stuart Perry, Newport, and Daniel A. Sprague, Poland, N. Y. Filed Mar. 3, 1885. (No model.)



Claim.—1. In a three-wheeled dray, the combination, with the body, the fourth-wheel, and the seat for the fourth-wheel, of brackets secured to the body and lipping over the edges of the fourth-wheel, and anti-friction rollers interposed between the lips and fourth-wheel, substantially as set forth.

2. In a three-wheel dray, the combination, with the body provided on its lower face with a circular seat, of a fourth-wheel secured to the circular seat, depending standards rigidly secured to the fourth-wheel, a ground-wheel journaled in said standards, a pole connected to the standards, and brackets secured to the body of the dray and bearing against the lower face of the fourth-wheel, substantially as set forth.

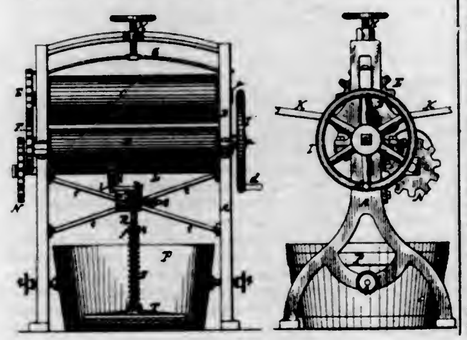
328,515. NAIL. William H. Perry, Sharon, Pa. Filed Feb. 4, 1885. (No model.)



Claim.—1. As a new article of manufacture, a flat wire nail chisel-pointed, and having two of its sides parallel and the other two sides convex, the parallel or flat sides being indented or barbed, as set forth.

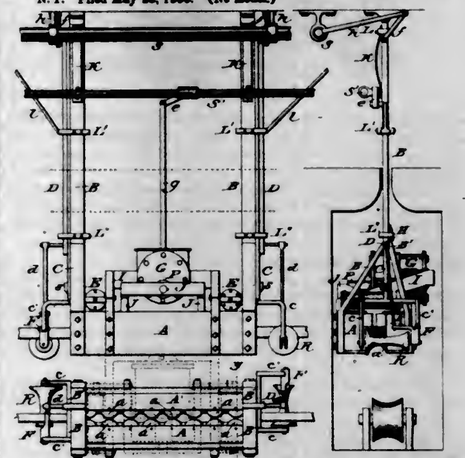
2. As a new article of manufacture, a flat wire nail having a chisel-point, and two of its sides barbed or indented, substantially as described.

328,516. COMBINED WRINGER, WASHER, AND MANGLE. Clarence Peller, Pittsburg, assignor of one-half to Thomas Saw, Allegheny County, Pa. Filed Feb. 9, 1885. (No model.)



Claim.—A combined washing-machine, wringer, and mangle, consisting of the frame A, having the tables K and set-screws *q q* for the tab, the rolls C D and gears E F therefor, the horizontal shaft L, having a movable gear upon it for making and severing connection with gears E F, the eccentric *g*, fixed to the shaft L, and provided with a projection, *i*, the rubbing-disk T, rod R, and spring S, having the adjusting means *f*, the cross-rod *t*, box *m* thereon, having the open side closed by section *e*, and the crank *n*, secured to rod R above box *m*, and connected to extension *i*, substantially as and for the purpose set forth.

328,517. ROLLER CABLE-GRIP. Garret A. Polhemus, Nyack, N. Y. Filed May 23, 1885. (No model.)



Claim.—1. The grip-plates provided with sockets containing grooved rollers, one stationary, the other moving laterally upon a hinge, combined with a hydraulic or pneumatic cylinder, said plates being connected to said cylinder by steel bars, substantially as described.

2. In combination with a cable-grip, the sliding bars C and D, curved arms *c c'*, roller-arm F, roller R, and rod *d*, all connected to the shaft S by the link *f*, and arm *h* for lifting and introducing the cable within the grip-rollers, substantially as set forth.

3. In combination with the sliding bar C, the spring K, tending to hold the said bar in position and to assist in lifting the same when lowered, substantially as specified.

328,518. SULKY-PLOW. John E. Porter, Weir City, Kans., assignor of one-half to Charles Wilson, same place. Filed July 6, 1885. (No model.)



Claim.—1. The combination, in a wheel-plow, of the main frame constructed and supported on furrow and landside wheels, as described, a plow-beam supported freely in front upon a stirrup secured to the beam A, a bell-crank support near its rear part, a hand-lever and latch, and a draft-rod, J, connected to one of the limbs of said bell-crank, substantially as described.

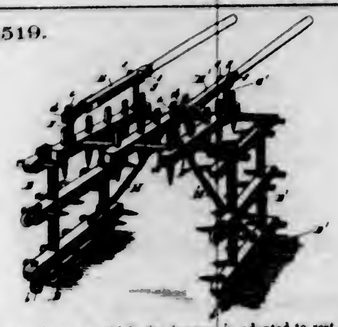
2. The combination, with a draft-frame constructed and mounted on wheels, as described, of a plow which is hung by a bell-crank, a draft-rod connected to one of the limbs of said crank, and a brake applied to act on the rear furrow-wheel to produce a back drag, substantially as described.

3. In a wheel-plow, the combination, with the main frame, of the rear furrow-wheel, its swivel-standard and cranked axle, the angular brake, the eye-links *o o'*, the angular lever, the treadle, the connecting-rod therefor, and a plow provided with the means described for lifting it out of the ground by the draft of the team, substantially as described.

328,519. HARROW. Albert H. Price and Walter D. Price, Newark, Ohio. Filed Apr. 27, 1885. (No model.)

Claim.—1. The combination, in a folding harrow, of a middle section having side or wing sections hinged thereto, said side or wing sections being rectangular in shape and provided on their outer edges with

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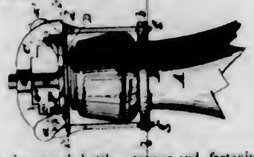
supporting-runners on which the harrow is adapted to rest by folding said side sections inwardly at right angles to the middle section, and thus raise said middle section equally at both ends for transportation, substantially as specified.

2. The combination, with the lifting-lever provided with the slotted connecting piece or loop and with a projecting pin or pins, of the standard having an elongated head and the bifurcated support having hooked projections, and means for connecting said levers to the movable or hinged section, substantially as set forth.

3. The combination, with the middle and side sections, of the lifting-lever adapted to be connected at one end by a slotted connecting piece or loop to a standard provided with an elongated head on said middle section, a support for the rear end of said lever, and means for connecting the said levers to the side sections, substantially as described and shown.

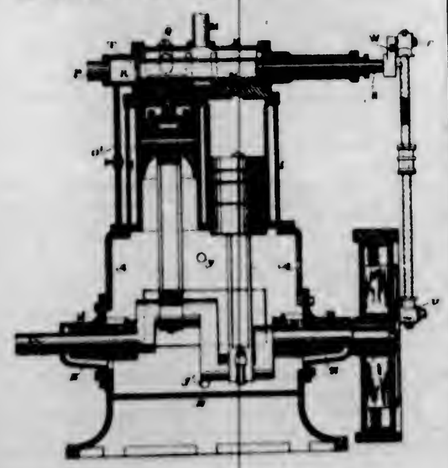
4. The combination, with the stationary middle section having the lifting-levers thereon, of hinged movable sections having chains connected to the outer edges thereof, said chains being adapted to be connected to the said levers when the harrow is unfolded and to the middle section when the harrow is folded, substantially as and for the purpose set forth

328,520. BOTTLE-STOPPER. John Reichenwalt, Buffalo, N. Y. Filed July 27, 1885. (Model.)

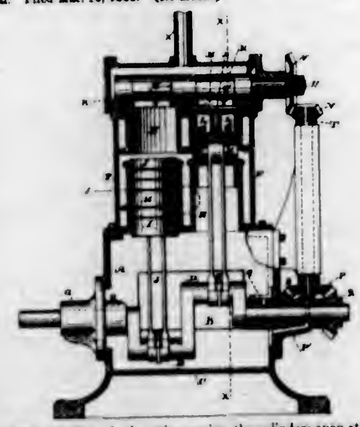


Claim.—The improved bottle-stopper and fastening hereinbefore described, consisting, essentially, of a suitable neck-band having pivots *b*, the bail C, provided with the projections *c c* and depressions *c' c'*, and the socket *e*, the disk D, with its notched projections *i*, and the spindle G, and the double inclined cam-plate F, revolving around said spindle G, and engaging the projections *c c* in the bail, substantially as and for the object specified.

328,521. SINGLE-ACTING ENGINE. John Richards, San Francisco, Cal. Filed Mar. 16, 1885. (No model.)



328,522. SINGLE-ACTING ENGINE. John Richards, San Francisco, Cal. Filed Mar. 16, 1885. (No model.)



Claim.—1. In a single-acting engine, the cylinders open at the lower end, having pistons moving within them, and guides so arranged that the pistons will pass out of the lower ends of the cylinders at each stroke, a space between the cylinders and guides to allow the escape of the steam, and the surrounding case, into which the escaping steam is received, and which forms a jacket for the cylinders, substantially as herein described.

2. In a single-acting engine, an exterior rectangular casing, within which the cranks, pistons, and connections are inclosed, in combination with cylinders and piston-guides arranged with each other and within the casing which forms a jacket for the cylinders, a space being left between the lower ends of the cylinders and the upper ends of the guides, through which the steam exhausts into the jacket or casing upon each downward stroke of the piston, substantially as herein described.

3. In a single-acting engine, the vertically-arranged cylinders and piston-guides having an opening between them and forming an exterior surrounding jacket or space, into which steam is exhausted through this space, in combination with pistons connected with the cranks by links, and made of such a length that they pass entirely out of the cylinders upon each downward stroke and entirely fill the cylinders, and extend into the guides at the completion of the upward stroke, said cylinders having annular grooves or channels for liquid packing, substantially as herein described.

Claim.—1. The combination, with the casing and the vertically-arranged cylinders having their lower ends open, of a valve-case, a plate, J, cast integral with the valve-case and closing the upper ends of the cylinders, a steam-space between the valve and upper part of casing, an oscillating valve having passages in its side for the admission of steam to the cylinders, two ports opening into the center of the valve, and an exhaust-passage through and in line with its axis, substantially as described.

2. In a single-acting engine, the combination of the vertically-arranged cylinders having their lower ends open and their upper ends closed, a valve-case extending transversely across the cylinders, and having a plate which forms the upper closed end of the cylinder, said plate being formed integral with the casing, and having ports for the admission and escape of steam, a semi-cylindrical valve having an axial exhaust and oscillating in the casing, a space between the upper part of valve and casing, and a steam-pipe and an exhaust-pipe placed in line with the axis of the valve, all substantially as herein described.

3. In a single-acting engine, the rectangular continuous frame extending from the base of the engine to the top of the cylinders, the lower portion containing an oil-reservoir and the top surrounding the cylinders forming a heat-retaining jacket, in combination with a valve-case having a plate cast integral with said casing and adapted to close the upper ends of the cylinders, substantially as herein described.

4. In a single-acting engine, the casing, the vertical cylinders, pistons, and an oscillating valve, in combination with a hollow rocker-arm, tubular connecting-rod, and an overhung eccentric crank, substantially as herein described.

5. In a single-acting engine, the vertically-arranged cylinders, the pistons moving therein and connected with the crank-shaft journaled in line below them, in combination with the valve chamber extending transversely across the upper ends of the cylinders, ports connecting it with said cylinders, a hollow semi-cylindrical valve having passages by which steam is admitted to the cylinders at each oscillation, ports extending through its sides to allow the exhaust-steam to escape into the interior and thence through one end, and a valve-ring, T, placed between the end of the valve and the interior end of the valve-chamber, substantially as herein described.

4. In a single-acting engine, two or more open-ended cylinders having pistons moving within them and connected with cranks, so that they pass out of the cylinders into guides at each downward stroke, exhaust-passages between the lower ends of the cylinders and said guides, through which steam exhausts, in combination with the horizontal cylindrical casing extending across the upper ends of the cylinders and connecting therewith by ports through the upper cylinder ends, and a valve rotating within said case and having slots passing diametrically through it in line with the cylinder-ports, whereby steam is only admitted to the cylinders at each semi-revolution of the valve, substantially as herein described.

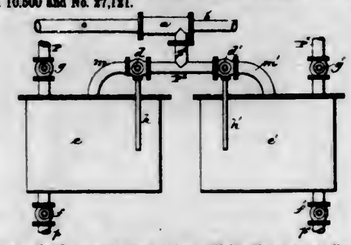
5. In a single-acting engine, the rectangular containing-case with cylinders and piston-guides arranged coincidently in the upper part, with a space between the lower ends of the cylinders, and the guides for the escape of exhaust-steam, pistons moving within these cylinders, and guides connected with the cranks in the lower part of the case, so that they pass entirely out of the cylinders at each downward stroke, in combination with the horizontal rotating valve fitted within a cylindrical case and slotted diametrically in line with ports opening into the ends of the cylinders, whereby steam is admitted through the valve into the cylinders and exhausted through the spaces at the lower end of the cylinders only, substantially as herein described.

6. In a single-acting engine having the cylinders and piston-guides arranged in line with a space between them for the escape of exhaust-steam, pistons moving within said cylinders and guides and connected with cranks, so as to pass out of the cylinders at each downward stroke, in combination with the horizontal rotating valve, slotted diametrically, and in line with ports opening into the heads of the cylinders for the admission only of steam to said cylinders, the vertical shaft T, the beveled gear-wheels S and V, crank-shaft, and valve-spindle, substantially as herein described.

7. In a single-acting engine, vertically-placed cylinders receiving steam at the upper end, open at the lower end, and having guides in line therewith, into which the pistons pass out of the cylinders at each downward stroke, pitmen by which said pistons are connected with the cranks on the crank-shaft, and pins K, by which the upper ends of the pitmen are connected with the pistons, said pins having the upper surfaces inclined, in combination with set-screws K, by which said pins are held in place, substantially as herein described.

8. In a single-acting engine, the vertical cylinders having corresponding cylindrical guides placed in line below them, the pistons fitting said cylinders and guides and connected with cranks, so as to pass entirely out of the cylinders to allow steam to exhaust through spaces between the cylinders and guides at each downward stroke of the pistons, in combination with a cylindrical rotating valve, through which steam is admitted only to the cylinders and exhausted only through the lower ends, whereby sufficient steam is retained in the cylinders to act as a cushion for the pistons upon their return-stroke, substantially as herein described.

328,523. MANUFACTURE OF ICE AND APPARATUS THEREFOR. Albert Schmitt, Essen-on-the-Ruhr, assignor to Wilhelm Raydt, Hanover, Prussia, Germany. Filed May 29, 1885. (No model.) Patented in England Mar. 14, 1885, No. 3,347; in Belgium Mar. 14, 1885, No. 68,193; in Italy May 4, 1885, XXXVI, 86, and in Austria-Hungary May 29, 1885, No. 10,500 and No. 27,121.

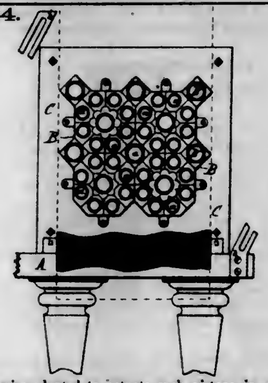


Claim.—In the manufacture of ice, utilizing the spent cooling-water for the production of cold by the combination, with the freezing cell or chamber, or the tank from which said chamber is fed, of an injector fed and operated by the spent cooling-water to lower the temperature of the water to be frozen by rarefaction of the air in the vessel in which the water to be frozen is contained, substantially as described.

328,524. MACHINE FOR MAKING FLOOR-CLOTHS, &c., IN VARIOUS COLORS. Gustav Schwarzwald, New York, N. Y., assignor of two-fifths to Henry Newman, same place. Filed Mar. 5, 1885. (No model.)

Claim.—1. A machine for making floor-cloth and kindred articles of plastic materials in patterns of various colors, provided with a pattern-mold, as B, feeding-tubes *a*, pistons *b* operating in such tubes, and

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a suitable device adapted to actuate such pistons, in combination with means, substantially as described, to present a base fabric to the pattern-mold, the platen L, adapted to support the same in position, and a knife, K, operating across the face of the pattern-mold, the whole operating substantially as described and shown.

2. In a machine adapted to form plastic materials into pattern-layers containing various colors, a pattern-mold having independent feeding-tubes adapted to supply material for each figure of the pattern, a suitable device to forward such material through the tubes, and a foundation adapted to receive the material as the same is discharged through the pattern-mold, substantially as described.

3. In a machine adapted to form plastic materials into pattern-layers containing various colors, a series of feeding-tubes, *a*, terminating in pattern forms arranged contiguously to each other, substantially as described.

4. In a machine adapted to form plastic materials into pattern-layers containing various colors, a series of feeding-tubes, *a*, in combination with a surrounding jacket, D, adapted to receive a temperer, substantially as described.

5. In a machine adapted to form plastic materials into pattern-layers containing various colors, the feeding-tubes *a*, pistons adapted to operate therein, in combination with the follower-plate G' and shield G^2, having an open space between them, substantially as described.

6. In a machine adapted to form plastic materials into pattern-layers of various colors, the feeding-tubes *a*, provided with pistons adapted to operate therein, such pistons having a facing of moisture-retaining material, substantially as described and shown.

7. A system of pistons adapted to forward material through the feeding-tubes *a*, a suitable device to actuate the same, in combination with the movable guide-plate F, substantially as described.

8. The pistons *b*, the follower-plate G' and shield G^2, in combination with the locking-bars *g*, substantially as described.

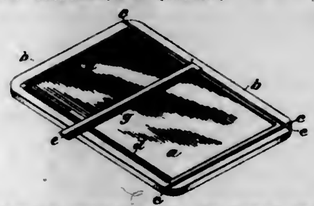
9. The pistons *b*, ratchet *d*, pawl *h*, and spring *e*, in combination with the thimble *f*, adapted to operate the stem b^2, substantially as described.

10. The pattern-mold B, knife K, and knife-guides *k k*, in combination with a suitable device adapted to operate such knife across the face of the pattern-mold, substantially as described.

11. The movable platen L, forwarding-plate M, and regulating-springs *m*, in combination with a suitable device adapted to actuate such platen, substantially as described.

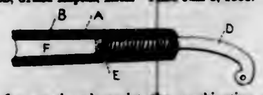
12. The paying-out drum R, cementing-trough S and its distributer, and the forwarding-roller W, in combination with the platen L, pattern-mold B, and knife K, substantially as described.

328,525. RULING DEVICE FOR SLATES. Joseph Shaver, Milwaukee, Wis. Filed Mar. 7, 1885. (No model.)



Claim.—The combination of the slate-frame *b*, provided with a scale, *d*, the straight grooves *c c* in frame *b*, the straight-edge rule *e*, provided with scale *g*, and the flange *f*, rigid to rule *e* and at right angles to its straight edge, which flange is adapted to slide in the grooves *c c*, substantially as described.

328,526. CARRIAGE-BOW SLAT. Joseph W. Sherwood and John W. Sherwood, Grand Rapids, Mich. Filed Jan. 3, 1885. (No model.)



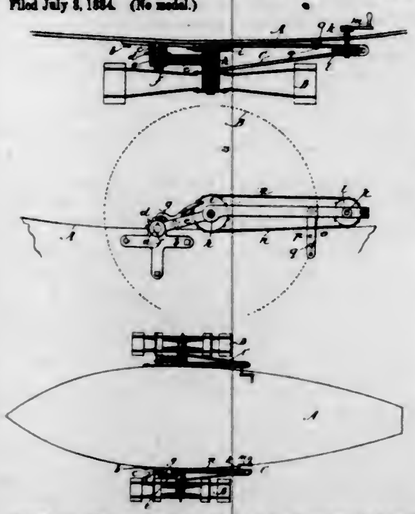
Claim.—1. In a carriage-bow slat, the combination, with the slat-iron, of two or more separate and independent pieces of veneer, one of which is arranged with its grain running circumferentially of the slat, so that the latter is encircled by continuous fibers, and the splitting of the slat by the slat-iron prevented, substantially as set forth.

2. In a carriage-bow slat, the combination, with the slat-iron, of two or more separate and independent pieces of veneer arranged with their grain running spirally in opposite directions, substantially as set forth.

3. In a carriage-bow slat, the combination, with the slat-iron, of the core C and a covering-veneer having its grain running around said core, so that the latter is encircled by continuous fibers, substantially as set forth.

4. In a carriage-bow slat, the combination of a tapering tube, a slat-iron having a circumferentially-ribbed extension inserted in the smaller end of said tube, and a cement filling of conical form situated in the tapering tube and surrounding said ribbed extension, substantially as set forth

328,527. BOAT-PROPELLER. Adolph Shoemmer, Lake View, Ill. Filed July 3, 1884. (No model.)

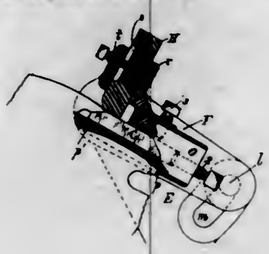


Claim.—1. The combination, with boat A, of V-shaped frame C, shafts *k*, provided with crank-arms *m*, and mounted in said frame C, sprocket-wheels *l*, mounted upon shafts *k*, and situated within the apex of the frames, sprocket-chains *n*, connecting wheel *l* with the wheel *i*, mounted upon a paddle-wheel shaft, *h*, and a suitable supporting-frame for shafts *k*, as set forth.

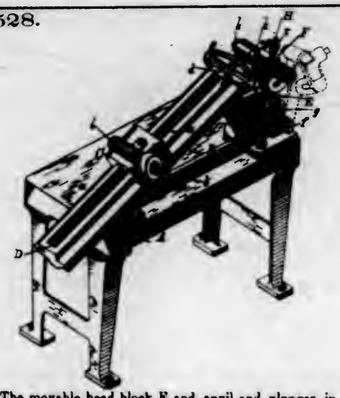
2. The combination, with boat A, and stripe *o*, secured to said boat and provided with a series of perforations, *p*, of pin *q*, and V-shaped frames C, supported upon said stripe, as set forth.

328,528. SAW-SWAGING MACHINE. George F. Simonds and Luther Blake, Fitchburg, Mass. Filed June 17, 1885. (No model.)

Claim.—1. In a saw-swaging machine, a stationary anvil and a movable plunger, H, in combination with a movable head-block, E, substantially as and for the purpose described.



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2. The movable head-block E and anvil and plunger, in combination with adjusting devices, substantially as described, to adjust said anvil and plunger to the pitch of the saw-teeth, substantially as set forth.

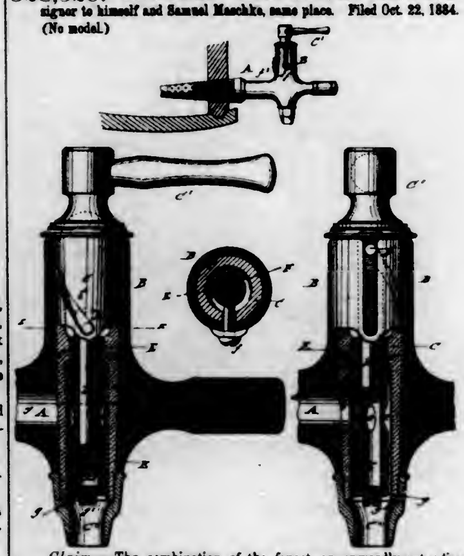
3. In a saw-swaging machine, the saw-supporting arbor *b*, saddle C, diagonal ways *a a*, and endless screw D, in combination with a pivoted head-block, E, carrying an adjustable swaging device, for the purpose specified.

4. In a swaging-machine, an anvil provided with a face having a convex curvature transverse the length of the applied tooth, in combination with a plunger or similar movable device to deliver a percussive blow on the top of the tooth, substantially as described.

5. The anvil G, provided with a curved face, 5, in combination with a plunger provided with a curved working-face, 7, substantially as described.

6. The movable plunger H, provided at its lower end with flat face 6 and recess or groove 8, substantially as set forth.

328,529. BEER-FAUCET. Markus Singer, New York, N. Y., assignor to himself and Samuel Maschke, same place. Filed Oct. 22, 1884. (No model.)

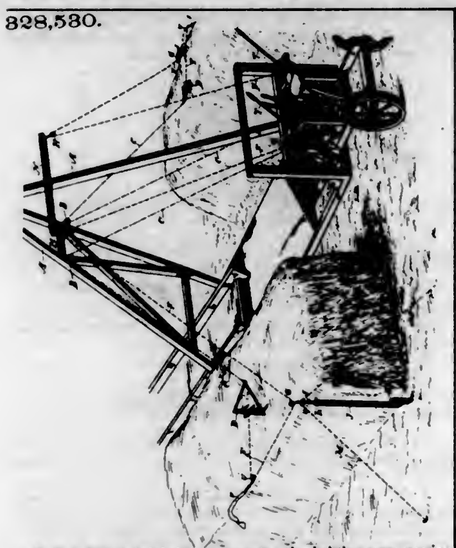


Claim.—The combination of the faucet, an upwardly-extending guide-bushing having a vertical guide-slot, a conically-tapering plug having a spiral guide-slot in said bushing, a fixed interior cylinder having side openings and a bottom ejection-orifice, an interior plunger, and a detachable screw-pin inserted through the guide-slots of the bushing and plug and connected to the upper end of said plunger, substantially as set forth.

328,530. APPARATUS FOR WORKING DERRICK-FORKS. Carrus Stone, Walnut Creek, Cal. Filed Apr. 1, 1885. (No model.)

Claim.—1. A derrick-fork-hoisting apparatus having the rope, drums, pulleys, and fork, in combination with a secondary rope attached to the rear of the fork, direction-pulleys, and a drum or operating mechanism by which these ropes may be caused to return the fork after its load is discharged, substantially as herein described.

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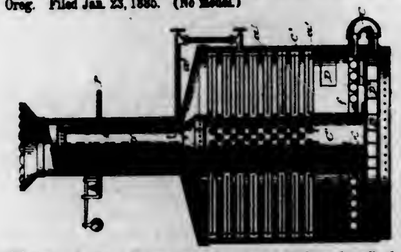


2. In a derrick-fork-hoisting apparatus, the hoisting-ropes passing over pulleys and attached to the forks, and the drums around which the ropes are coiled, and an operating mechanism therefor, in combination with the supplemental drums, with the clutch mechanism and levers, and the ropes passing around said drums over direction-pulleys and attached to the rear of the fork, substantially as herein described.

3. In a derrick-fork-hoisting apparatus, the combination, with the derrick-frame provided with the pulleys H, the ropes F, and the forks D, of the pulleys G, vertical posts I, to which the pulleys G are attached, the hollow posts J, within which the posts I slide, and set-screws or holding devices whereby they may be adjusted, substantially as and for the purpose set forth.

4. The hoisting forks and ropes, in combination with the return-ropes and direction-pulleys, and the handle V with its pulley U, substantially as herein described.

328,531. STEAM-GENERATOR. Henry Stuhlman, East Portland, Oreg. Filed Jan. 23, 1885. (No model.)



Claim.—1. In a steam-generator constructed as described, the water-base B, in combination with the vertical column *c'*, the fire-grate coil *c*, as described and set forth.

2. In a steam-generator constructed as described, the plate *a'*, with the lugs *a a*, in combination with the tube a^2, as and for the purpose set forth.

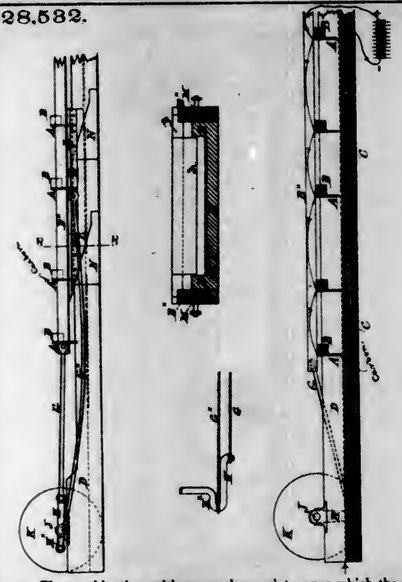
328,532. ELECTRICAL APPARATUS FOR SEPARATING GOLD FROM ORES. William J. Taylor, London, County of Middlesex, England. Filed Sept. 24, 1884. (No model.)

Claim.—1. The combination, with an amalgam plate over which the materials pass, of one or more bars or anodes of carbon, arranged above or near and out of contact with the plate, said plate and bars being electrically connected and in electrical contact with the water and ore, substantially as described.

2. The combination, with an amalgam plate over which the materials pass, of one or more bars or anodes of carbon, arranged and electrically connected, substantially as described and shown, and means for reciprocating said bars, for the purpose set forth.

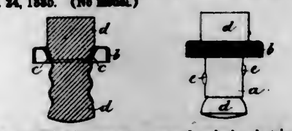
3. The combination, with an amalgam plate over which the materials pass, of a reciprocating bar or anode of carbon, arranged and electrically connected, substantially as described, and means whereby said bar is raised out of contact with the water during such time as the anode is moving in a direction opposite to the current of ore and water.

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4. The combination, with an amalgam plate over which the materials pass, of a sliding frame carrying a series of carbon bars or anodes, a crank connected to the frame, inclined planes or wings, wedge-shaped block between the inclined planes and the frame, and connected to a crank, the arrangement being substantially as described

328,533. BOTTLE-STOPPER. Charles M. Taylor, London, England, assignor of one-half to Anthony Percival Turner, same place. Filed Aug. 24, 1885. (No model.)



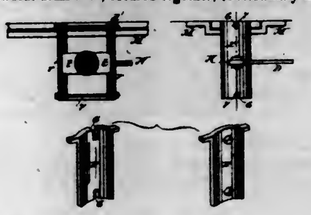
Claim.—1. An improved stopper for closing bottles having screw-necks, consisting of a hollow cylinder having projections on its periphery adapted to fit into the screw of the bottle-neck, and having an annular flange, *b*, on the end of said cylinder adapted to fit over the mouth of the bottle, and a plug of cork or other suitable elastic material tightly inclosed within said cylinder, all substantially as shown and described.

2. An improved stopper for closing bottles having screw-necks, consisting of a hollow cylinder having projections on its periphery adapted to fit into the screw of the bottle-neck, a washer, *c*, interposed between said cylinder and bottle-neck, and having an annular flange, *b*, on the end of said cylinder adapted to fit over the mouth of the bottle, and a plug of cork or other suitable elastic material tightly inclosed within said cylinder, all substantially as shown and described.

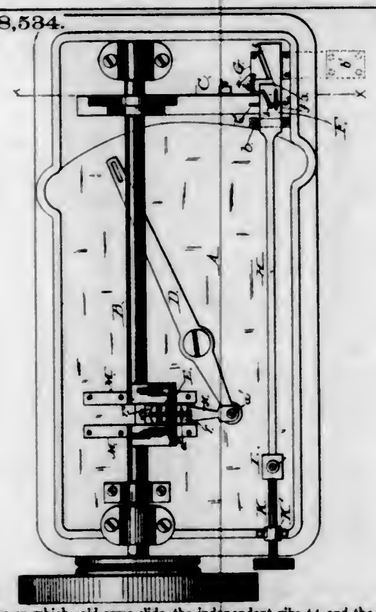
3. An improved stopper for closing bottles having screw-necks, consisting of a hollow cylinder having male and female screw-threads, an annular flange, *b*, on the end of said cylinder, and a plug of cork or other suitable elastic material tightly inclosed within and filling up the female screw-threads of the cylinder, all substantially as shown, and for the purposes described.

328,534. SEWING-MACHINE. Charles E. Tibbles, Burlington, Iowa, assignor, by mesne assignments, to the Tibbles Manufacturing Company, Chicago, Ill. Filed Aug. 31, 1882. (No model.)

Claim.—The shuttle-lever D and pitman N, in combination with the independent arms *r r'*, secured together, substantially as described.

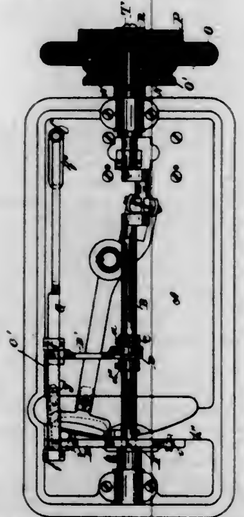


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guides on which said arms slide, the independent gibs *t t*, and the crank-wrist E, all constructed, arranged, and operated substantially as described

328,535. SEWING-MACHINE. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed Mar. 11, 1884. (No model.)

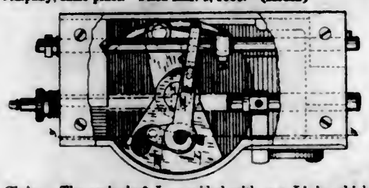


Claim.—1. In a four-way feed for sewing-machines, the feed-bar E, in combination with ways for supporting it, a driving-shaft, B, connecting devices, as bars D and C', and a cam to move said feed-bar positively in direct lines to and from the operator, and feed-points actuated in a line crossing the line of travel of the feed-bar, substantially as set forth.

2. The cam C, yoke D, having opening *a'*, gibs *d'*, shaft B, and collar *d''*, in combination with arm D', pivoted to slotted arm C', square-headed pin *a'*, and bar E, all constructed, arranged, and operated as set forth.

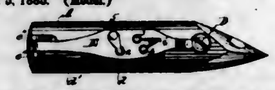
3. The bar E, provided with shouldered slots *h'*, in combination with the gibs *i i*, having a tapering central recess, tapering-headed screws *h''''*, and the bed-plate rib *h''*, all constructed and arranged to operate as and for the purpose set forth.

328,536. TAKE-UP MECHANISM FOR SEWING-MACHINES. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed Mar. 5, 1885. (Model.)



Claim.—The rock-shaft I, provided with arm L', in which is cut a cam-slot, *m*, in combination with the take-up lever H, and an arm, H', to connect the take-up lever with arm L, substantially as specified.

328,537. SEWING-MACHINE SHUTTLE. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed Mar. 5, 1885. (Model.)

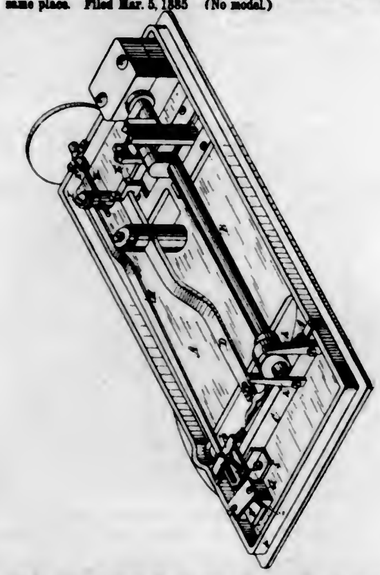


Claim.—1. Spring E, provided with a hole or holes having the edges doubled back, in combination with the shuttle-shell A, substantially as described.

2. Spring E, having the extension E' doubled back on the body, and provided with headed pin *f*, in combination with the shuttle-body A, provided with the slot *a''*, substantially as described.

3. The heel-latch F, yieldingly secured and provided with stop-lug A and beveled fastening-lug *g*, in combination with the heel of the shuttle-case, having slot A' and hole *g'*, substantially as described.

328,538. FEED-MOTION FOR SEWING-MACHINES. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed Mar. 5, 1885. (No model.)



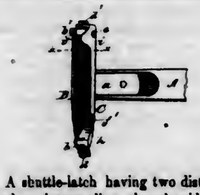
Claim.—1. The block F, having slot *e* and wedge-shaped portion 2 3, and means, substantially as described, for operating the same, in combination with projecting piece G, provided with a wedge-shaped recess, 4, and the feed-bar C, substantially as and for the purpose described.

2. The cam and the feed-bar C, provided with the movable depending arm A and interior bar, *i*, in combination with block F, provided with the diagonal slot *d*, and means, substantially as described, for operating block F, as set forth.

3. A hollow feed-bar, C, in combination with the movable arm A, interior bar, *i*, and means, substantially as described, for moving said bar, substantially as set forth.

328,539. SHUTTLE-CARRIER FOR SEWING-MACHINES. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed Mar. 6, 1885. (Model.)

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Claim.—1. A shuttle-latch having two distinct contacts for the shuttle to strike and an intermediate thread-guide bar, in combination with the carrier B, substantially as and for the purpose described.

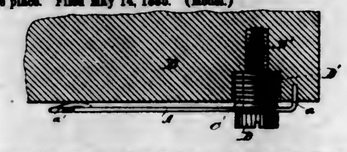
2. The carrier B, having its heel end turned up to form abutment *b'*, in combination with latch C, screw *s*, and spring S, to regulate the relation between the carrier and the latch, substantially as specified.

3. In combination with the shuttle-carrier, the latch C, pivoted to the ends of the carrier at *d d'*, and having the broadened peaked portion or contact *i* bent slightly at *i'*, the narrow torsional bar *f* to *f''*, and the broadened downwardly-curved portion or contact *h*, all constructed as set forth.

4. The carrier B, in combination with a pivoted guide-bar to conduct the thread around the point of the shuttle when the movement is reversed while the shuttle is in the loop.

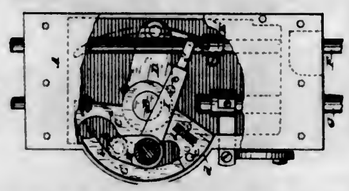
5. A shuttle-carrier provided with a pivoted latch, C, in combination with a stop, T, in the path of the travel of the carrier-latch to automatically close said latch, substantially as set forth.

328,540. TENSION-SPRING FOR SEWING-MACHINES. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed May 14, 1885. (Model.)



Claim.—The tension-spring having the interior coil, C', and oppositely-wound exterior coil, C, in combination with a sustaining-plate provided with recess D, and the holding-screw B B', substantially as set forth.

328,541. TAKE-UP MECHANISM FOR SEWING-MACHINES. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed May 14, 1885. (Model.)



Claim.—The piece C on the end of the needle-bar rock-shaft, and provided with a cam-slot, C'', in combination with the pivoted piece C', means for securing a constant spring-pressure on piece C', and the take-up lever I, substantially as described.

328,542. FEED-MOTION FOR SEWING-MACHINES. Charles E. Tibbles, Chicago, Ill., assignor to the Tibbles Manufacturing Company, same place. Filed May 14, 1885. (Model.)

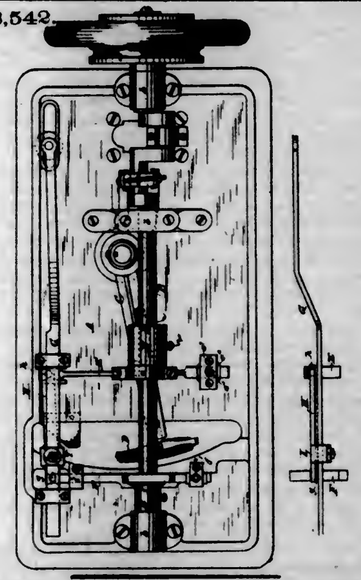
Claim.—1. In a feed mechanism for sewing-machines, the feed-bar F and cam *e*, for reciprocating the feed-bar, having holes *b''* and semicircular depression *e'''*, in combination with the stationary sleeve B', provided with movable pin *b'''*, and the driving-shaft B, substantially as described.

2. The stitch-regulating bar G and vibrating lever H, in combination with box I, flat gib *i''*, screw *i*, and screw *i'*, passing through screw *i* and abutting against gib *i''*, all constructed, arranged, and operated as described.

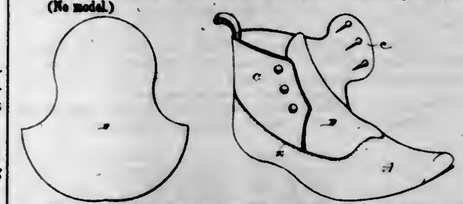
3. The driving-shaft B, sleeve B', provided with notches *n n²*, spring-pin *b'''*, cam *e*, provided with hole *b''* and depression *d'''*, pitman-rod E, having adjustable contact-arms *c c*, vibrating lever H, provided with a movable fulcrum feed-bar, F, and stitch-regulating bar G, all constructed, arranged, and operated as set forth.

4. In a sewing-machine feed mechanism, the pitman-bar E and devices to support it entirely free of the driving-shaft, in combination with two laterally-adjustable contact-arms, *c c*, cam *e*, to reciprocate the feed-bar, feed-bar F, and operating mechanism connecting the feed-bar and pitman-bar E, substantially as set forth.

328,542.



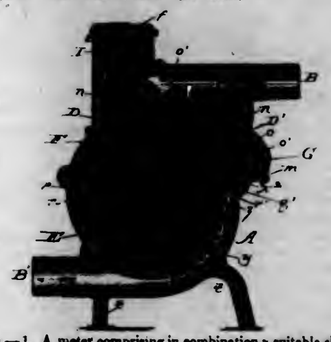
328,543. SHOE. John J. Tompkins, Louisville, Ky., assignor to himself, William Besler, and Nick Besler, same place. Filed July 24, 1885 (No model.)



Claim.—1. A shoe-upper consisting, essentially, of a vamp and quarter-sections, formed integral and having a central opening, a top section secured to the quarter-sections and vamp, and consisting of a flat hour-glass-shaped piece provided with a rounded projection at one corner to form a button-fly, and cut off at the corresponding corner on the opposite end, and an instep-section, shaped as shown and secured to the vamp, substantially as and for the purpose set forth.

2. A pattern for a shoe-upper in three sections: first, a vamp and quarter-section, consisting of a flat oval-shaped piece provided with a central opening; second, a top section consisting of a flat hour-glass-shaped piece, provided with a rounded projection at one corner to form a button-fly and cut off at the corresponding corner on the opposite end, and, third, an instep-section of the shape substantially as shown.

328,544. ROTARY WATER-METER. Frederick W. Tuerk, Jr., Chicago, Ill. Filed Dec. 18, 1884. (No model.)



Claim.—1. A meter comprising in combination a suitable shell having an inlet and an outlet, a cylindrical piston within the said shell having two wedge-shaped lateral flanges, *r* and *r'*, opposite each other and arranged to be rotated by the pressure of liquid introduced through the

said inlet, and suitable registering mechanism connected with the said piston to indicate the number of its revolutions, substantially as described.

2. A meter comprising in combination a suitable shell having an inlet and an outlet, a piston within the said shell to be rotated by the pressure of water introduced through the said inlet, hinged partitions within the said shell engaging with the said piston, and forming with the latter in its rotation closed and intercommunicating chambers, and suitable registering mechanism connected with the said piston to register the number of its revolutions, substantially as described.

3. A meter comprising in combination the following elements—viz., a shell, A, having an inlet, B, and an outlet, B', a recessed piston, C, supported to rotate within journal-bearings at opposite ends of the said shell, hinged partitions D and D', within the said shell, and having a tendency to be in continual contact at their free edges with the surface of the said piston, and registering mechanism connected with the said piston to register the number of its revolutions, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

4. In a meter, the rotary piston C, provided on opposite sides with recessed flanges, substantially as and for the purpose set forth.

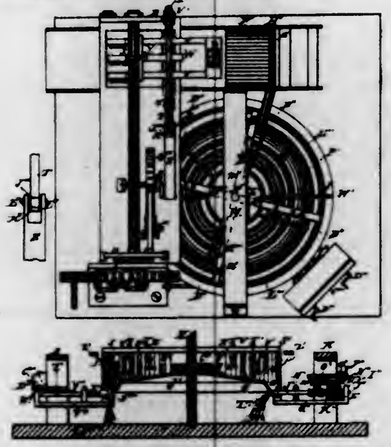
5. A water-meter comprising in combination the following elements—viz., a shell, A, having an inlet, B, and an outlet, B', and provided with a pocket, G, to receive sand and other sediment, and capable of being opened and closed, a recessed piston, C, supported to rotate within journal-bearings at opposite ends of the said shell, hinged partitions D and D', within the said shell, and having a tendency to be in continual contact at their free edges with the surface of the said piston, and registering mechanism connected with the said piston to register the number of its revolutions, the whole being constructed and arranged to operate substantially as described.

328,545. **NECKTIE-FASTENER.** Clayton A. Turner, Milwaukee, Wis., assignor, by mesne assignments, of one-fourth to Ernest H. Freshlick, same place. Filed Mar. 7, 1885. (No model.)



Claim.—A necktie-fastener consisting of the spiral coil E, upturned hook D, and angular bend F, formed of a single piece of wire, substantially as and for the purpose set forth.

328,546. **AMALGAMATOR AND CONCENTRATOR.** Bryan Tyson, Washington, D. C. Filed July 13, 1882. (No model.)



Claim.—1. The combination of the sluice-box and grooved riffles L L, provided with triangular lugs B', and a plate, C', having a sharp projecting edge, and the plungers K K, operated by the axle F, cam I, connecting-rod N, sliding board O, pawl P, pawl-wheel Q''', crank R, connecting-rod S, sliding axle T, bars V V W, and cam J, substantially as and for the purpose described.

2. The combination of the concentrating-pan J', provided with triangular lugs and an annular chamber, O', and annular agitators P' Q' R', the former secured to the side of the pan, the two latter suspended from the cross-bars S' by the rods T', and rings U' U' V', secured to boards W', which are supported by the annular plate Z', operated by the wheel E, provided with a crank-pin, and connecting-rod Q, substantially as and for the purpose set forth.

3. The combination of the concentrating-pan J', provided with an annular chamber, O', annular agitators P' Q' R', rings U' U' V', which are properly secured to the boards W', said boards resting on and being supported by the annular plate Z', and the two devices for discharging concentrations, operated by the wheel E, provided with a crank-pin and rod Q, substantially as and for the purposes described.

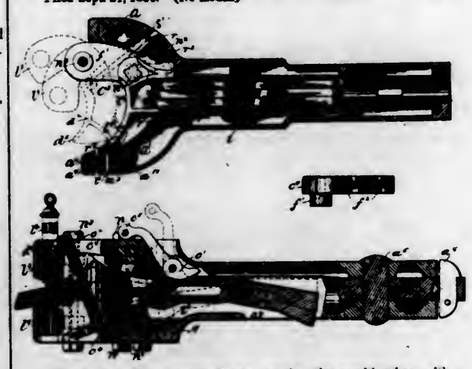
4. The automatic device for discharging concentrations provided with a bracket, G'', secured to the bottom of a niche in the bottom of the annular chamber O' of the pan J', bearings H'' and I'', shaft J'', provided with a pinion, L'', and spiral groove K'', lug M'', sliding boards N'' and O'', bar U'', and crank-pins P'' P'', substantially as and for the purposes described.

5. The combination of the pan J', provided with an annular chamber, O', having an aperture, T'', the annular agitators P' Q' R', rings U' U' U' V', wheel E, provided with a crank-pin, connecting-rod Q, and the automatic device for discharging concentrations provided with a bracket, G'', secured to the bottom of a niche in the bottom of the annular chamber O', bearings H'' and I'', shaft J'', provided with a pinion, L'', and spiral groove K'', lug M'', sliding boards N'' and O'', bar U'', and crank-pins P'' P'', substantially as and for the purposes described.

6. The device for the occasional discharge of concentrations provided with a bracket, V'', secured to the bottom of a niche in the annular chamber O', an aperture, F''', in the bottom of the niche, pieces W' and X'', secured to the bracket, sliding bar Y'', die E''', lug Z'', sliding board A''', and crank-pins D''' D''', substantially as and for the purposes described.

7. The combination of the pan J', provided with an annular chamber, O', and a niche in the bottom of said chamber having an aperture, F''', in the bottom of the niche, and annular agitators P' Q' R', rings U' U' U' and V', wheel E, provided with a crank-pin and connecting-rod Q for oscillating same, and the device for the occasional discharge of concentrations provided with a die, E''', secured to the bottom of the niche, bracket V'', secured to the bottom of the niche, an aperture, F''', in the bottom of the niche, pieces W'' and X'', secured to the bracket, sliding bar Y'', and crank-pins D''' D''', substantially as and for the purposes described.

328,547. **CAR-COUPLING.** Alvin W. Van Dorston, Portland, Oreg. Filed Sept. 21, 1885. (No model.)



Claim.—1. In an automatic car-coupler, the combination, with a pivoted jaw and arm, of a series of locking-levers, whereby said jaw and arm will be locked in a closed position by said levers, as and for the purpose set forth.

2. In an automatic car-coupler, the combination, with a pivoted jaw and arm, of a series of independently-pivoted locking-levers, whereby said pivoted arm and jaw will engage with one or more of said independently-pivoted locking-levers to retain the jaw in a closed position, as and for the purpose set forth.

3. The combination, with the pivoted jaw and arm and locking-levers, of means, substantially as described, for simultaneously operating said levers to release the jaw and said arm, as and for the purpose set forth.

4. The combination, with the pivoted arm and jaw and locking-levers, of the spring S and pivoted rod S', whereby said jaw will be thrown open by said spring when the arm is released by the locking-levers, as set forth.

5. The combination, with the pivoted arm and jaw and the locking-levers, of the plate r^3 and rubber block r', and the rubber blocks r^3 and r^4, as and for the purpose set forth.

6. The combination, with the draw-head A, of the pivoted arm f^2, removably pivoted therein by means of the upper and lower plates, c^4, detachably secured to said draw-head, as and for the purpose set forth.

7. The combination, with the jaw f^2, of the swinging face-plate c^3, pivoted in the upper end of said jaw, as and for the purpose set forth.

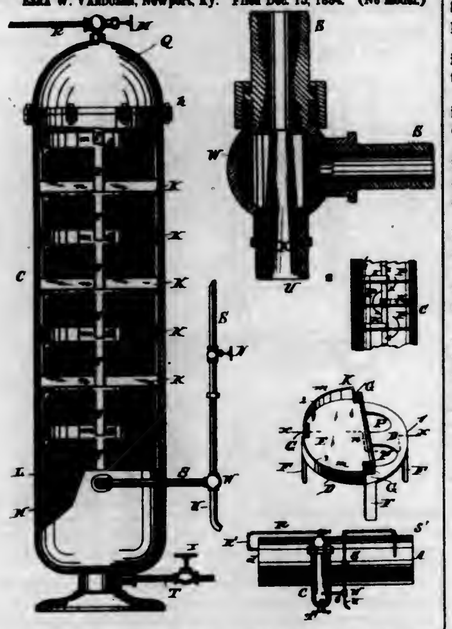
8. The combination, with the jaw f^2 and coupling-pin f^3, of the swinging face-plate c^3, provided with the hinged pawl f, as and for the purpose set forth.

9. The combination, with the draw-head, of the arm a', provided with upper and lower plates, f', and the plate f^2, provided with lateral teats, and the buffer a^2, having T-shaped slot f^3, rubber cushions a^3, and the rubber block a^{11}, as and for the purpose set forth.

10. The combination, with the draw-bar having draw-bolt l^1 and spring B, of the draw-plates r^2, rubber blocks e, and plates e', said blocks and plates being secured in the bracket a^9 by means of the rod r^4, as and for the purpose set forth.

11. The combination, with the draw-bar having draw-bolt l^1 and spring B, of the draw-plates r^2, provided with annular flange a^{12}, and the cup-shaped washers e^3, provided with rubber blocks e^4, as and for the purpose set forth.

328,548. **DEVICE FOR PURIFYING THE WATER OF BOILERS.** Ezra W. Vanduzee, Newport, Ky. Filed Dec. 15, 1884. (No model.)



Claim.—1. The combination of a boiler, a purifying-vessel, a conduit connecting the receiving end of the purifying-vessel with the boiler, a conduit connecting the delivering end of the purifying-vessel with the boiler, and a feed-water-supply pipe connected to that one of the aforesaid conduits which delivers to the boiler the water purified by the said purifying-vessel, substantially as and for the purposes specified.

2. The combination of a boiler, a purifying-vessel, a conduit connecting the boiler with the receiving end of the purifying-vessel, a conduit connecting the delivery end of the purifying-vessel with the boiler, a feed-water-supply pipe connected to said last-named conduit, and a jet-pump located at the junction of the feed-water-supply pipe with said last-named conduit, substantially as and for the purposes specified.

3. The combination of boiler, conduit R, a purifying-vessel, conduit S, feed-pipe U, joined to conduit S, and jet-pump W, the exit-orifice of conduit S being at a lower level in the boiler than inlet-orifice of conduit R, substantially as and for the purposes specified.

4. In a purifying-vessel, a collector consisting of plate D, having pan E, and perforations P, substantially as and for the purposes specified.

5. In a purifying-vessel, a collector consisting of plate D, having pan E and perforations, and legs F, substantially as and for the purposes specified.

6. In a purifying-vessel, collectors each having plate D, perforated, and pan E, having flange m and flange n crossing the collector, and provided with recesses G and legs F, the pans of adjacent collectors being oppositely located in the vessel to compel the water passing through the vessel to take a zigzag course, substantially as and for the purposes specified.

7. In a purifying-vessel, the collectors each having frame-work or plate perforated at one side, and having pan E at the other side, and recesses G at each corner of the pan, and recess G at the mid-length of flange or wall m, and legs F, the pan of each collector being at the opposite side of the purifying-vessel to what its adjacent collector is, substantially as and for the purposes specified.

8. The combination of the purifying-vessel, collectors having pans E, perforated plate or frame-work D, legs F, ledge L, and chamber H, substantially as and for the purposes specified.

9. The combination of boiler, conduit R, the purifying-vessel, collectors having pans E, perforated plate or frame-work D, legs F, and conduit S, substantially as and for the purposes specified.

10. The skimmer consisting of the deflectors e and back f, and exit-orifice, substantially as and for the purposes specified.

11. The skimmer consisting of the deflectors e, bent inwardly toward the exit-orifice, substantially as and for the purposes specified.

12. The skimmer consisting of the deflectors e, bent inwardly toward the exit-orifice, and back f, having the exit-orifice, substantially as and for the purposes specified.

13. The combination of boiler, conduit R, the purifying-vessel, collectors having pans E, perforated plate or frame-work D, legs F, conduit S, and supply-pipe U, and jet-pump W, substantially as and for the purposes specified.

14. The skimmer consisting of the deflectors e, bent inwardly and inclined downwardly toward the exit-orifice, substantially as and for the purposes specified.

15. The skimmer consisting of the deflectors e, bent inwardly and inclined downwardly toward the exit-orifice, and back f, having the exit-orifice, substantially as and for the purposes specified.

16. The combination of the back f and front a and ends b b, having deflectors, and the boiler, the back f being secured against the shell of the boiler and shaped to conform to the shape of the said shell, substantially as and for the purposes specified.

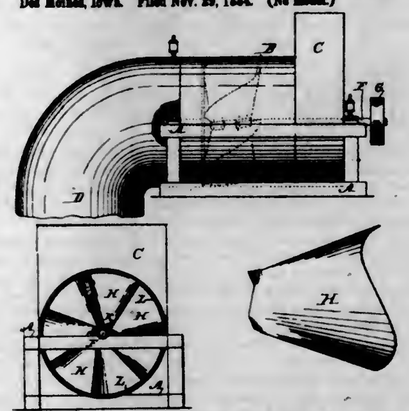
17. The combination of the skimmer provided with deflectors e, boiler, exit-orifice g, conduit R, a purifying-vessel, and conduit S, substantially as and for the purposes specified.

18. The combination of the boiler, skimmer provided with deflectors e, a purifying-vessel, and conduit S, supply-pipe U, and jet-pump W, substantially as and for the purposes specified.

19. The combination of the boiler, skimmer provided with deflectors e, exit-orifice, conduit R, purifying-vessel having collectors K, provided with pans E, and perforations P, arranged as described, and conduit S, substantially as and for the purposes specified.

20. The combination of the boiler, skimmer provided with deflectors e, exit-orifice, conduit R, purifying-vessel having collectors K, provided with pans E, and perforations P, arranged as described, and supply-pipe U, and jet-pump, substantially as and for the purposes specified.

328,549. **FAN FOR VENTILATING MINES, &c.** William Vrooms, Des Moines, Iowa. Filed Nov. 29, 1884. (No model.)



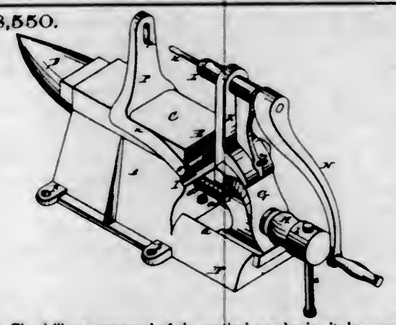
Claim.—1. A triangular-shaped wing for rotary fans, having a double curve extending parallel with its longitudinal diameter, and its longitudinal straight edges projecting in reverse ways relative to a line drawn parallel with one of the straight edges and through the central portion of the wing, for the purposes specified.

2. In a rotary fan, the combination of a series of wings having double curvatures extending parallel with their longitudinal diameters and their straight edges projected in reverse ways relative to a line drawn parallel with one of the edges and through the central portion of each wing, and a rotating shaft, substantially as shown and described, to operate in the manner set forth, for the purposes stated.

328,550. **COMBINED ANVIL, VISE, AND DRILL.** Reuben Voorhees, Oregon, Ill. Filed May 1, 1883. (No model.)

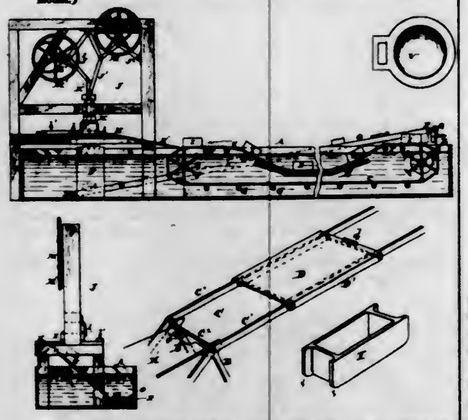
Claim.—1. The moving jaw provided with the flattened face and the concaved curved face, in combination with the drill-standard slotted to fit the jaw and held in place thereby, and the set-screw for securing the standard at the proper point on the jaw, substantially as and for the purpose set forth.

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2. The drill-rest composed of the vertical arm having its lower end fitted to engage the face of the anvil, the side arms, and the end bar to engage the curved face of the vise-jaw, whereby the same is held firmly in place and may be removed at will, substantially as and for the purpose set forth.

328,551. MACHINE FOR MAKING PAVING OR BUILDING BLOCKS. Aaron Ward, Camden, N. J. Filed May 19, 1885. (No model.)



Claim.—1. The combination of a cold-liquid tank with a conveyer, suitable guides therefor, and molds carried thereby, whereby the plastic material contained in the mold may be conveyed under the water and have its outer surface cooled and solidified and rendered in a condition for being compressed, substantially as and for the purpose specified.

2. The combination of a cold-liquid tank with a conveyer, suitable guides therefor, molds carried thereby, whereby the plastic material contained in the mold may be conveyed under the water and have its outer surface cooled and solidified and rendered in a condition for being compressed, and a compressing-machine having a compressing-die to correspond to the shape of the mold, by which the material may be compressed within the mold, substantially as and for the purpose specified.

3. The combination of a cold-liquid tank with a conveyer, suitable guides therefor, molds carried thereby, whereby the plastic material contained in the mold may be conveyed under the water and have its outer surface cooled and solidified and rendered in a condition for being compressed, a compressing-machine having a compressing-die to correspond to the shape of the mold, by which the material may be compressed within the mold, a discharging die or plunger to eject the compressed block from the mold, and a conveyer to receive the compressed block and convey it under the water, and then above the same for removal, substantially as and for the purpose specified.

4. The combination of the tank A, endless-chain conveyer C, chain-wheels B, and guide E, located below the liquid level of the water in the tank, substantially as and for the purpose specified.

5. The combination of the tank A, endless-chain conveyer C, chain-wheels B, rollers F G, and guide E, located below the liquid level of the water in the tank, substantially as and for the purpose specified.

6. The combination of the tank A, endless-chain conveyer C, having plates D, chain-wheels B, molds I, and guide E, located below the liquid level of the water in the tank, substantially as and for the purpose specified.

7. The combination of the tank A, endless-chain conveyer C, having plates D, having lugs *d* to catch the molds, chain-wheels B, mold I, and guide E, located below the liquid level of the water in the tank, substantially as and for the purpose specified.

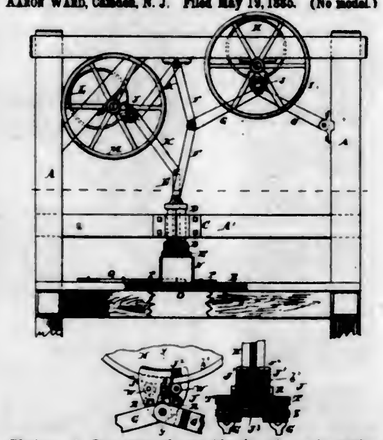
8. The combination of tank A with endless chain C, having plates D, chain-wheels B, suitable guides for said chain, by which it is allowed to pass below the water-level, molds I, press J, and conveyer O, substantially as and for the purpose specified.

9. The combination of tank A with endless chain C, having plates D, chain-wheels B, suitable guides for said chain, by which it is allowed to pass below the water-level, molds I, press J, inclined guide N, and conveyer O, substantially as and for the purpose specified.

10. The inclined conveyer O, in combination with rollers P and Q, springs R, and tank A, substantially as and for the purpose specified.

11. The combination of tank A with chain-wheels B, chain-conveyer C, consisting of links C', rods C², and plates D, having flanges D' and lugs *d*, substantially as and for the purpose specified.

328,552. MACHINE OR PRESS FOR PRESSING BRICKS, &c. Aaron Ward, Camden, N. J. Filed May 19, 1885. (No model.)



Claim.—1. In a press, the combination of a reciprocating die or plunger, a toggle held rigidly at one end and hinged to the die or plunger at the other, an eccentric or cam acting upon said toggle, and a loose shoe hinged to the joint of the toggle and adapted to clasp the flange of the eccentric, substantially as and for the purpose specified.

2. In a press, the combination of a reciprocating die or plunger, two toggles, one of which acts upon the die or plunger, and the other of which acts upon the first-mentioned toggle, and an eccentric or cam acting upon said last-mentioned toggle directly upon its middle joint, by which a small amount of force exerted on the eccentric will produce a large amount of power at the die, substantially as and for the purpose specified.

3. In a press, a compressing die or plunger and a discharging die or plunger, in combination with two sets of toggles and eccentrics or cams, each set acting independently of the other to put said dies or plungers into action, substantially as and for the purpose specified.

4. In a press, a compressing die or plunger and a discharging die or plunger, in combination with two sets of toggles and eccentrics or cams, each set acting independently of the other to put either of said dies or plungers into action, a mold, a table, and a trap or slide under said mold, and dies to allow the compressed article to be ejected, substantially as and for the purpose specified.

5. In a press, a compressing die or plunger and a discharging die or plunger, in combination with two sets of toggles and eccentrics or cams, each set acting independently of the other to put either of said dies or plungers into action, a mold, a table, a trap or slide under said mold, and dies to allow the compressed article to be ejected and a lever to operate said trap or slide, substantially as and for the purpose specified.

6. The combination of the eccentric or cam H, having flanges *h'*, with a shoe having retaining lugs or flanges J³, and rollers W, substantially as and for the purpose specified.

7. The combination of the eccentric or cam H, having flanges *h'*, with a shoe having retaining lugs or flanges J³, rollers W, lugs T, and toggles G, substantially as and for the purpose specified.

8. The eccentric or cam H, having flanges *h'*, in combination with shoe J, formed of plates J', having flanges J³, bolts R, and rollers W, substantially as and for the purpose specified.

9. The eccentric or cam H, having flanges *h'*, in combination with shoe J, formed of plates J', having flanges J³, lugs T, bolts R, rollers W, pin S, and toggle G, substantially as and for the purpose specified.

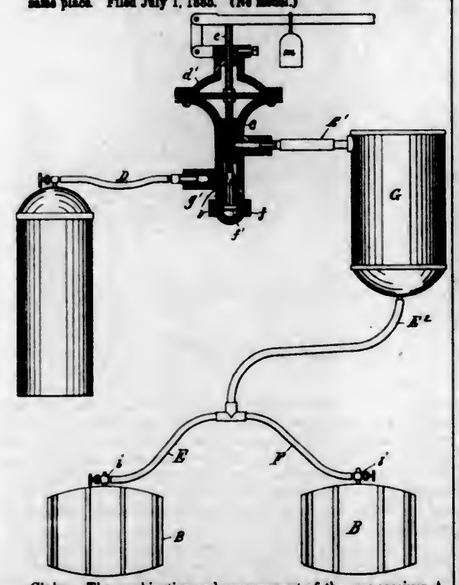
328,553. PESSARY. Madison M. Warmoth, Brandenburg, Ky. Filed Mar. 3, 1885. (No model.)

328,553.



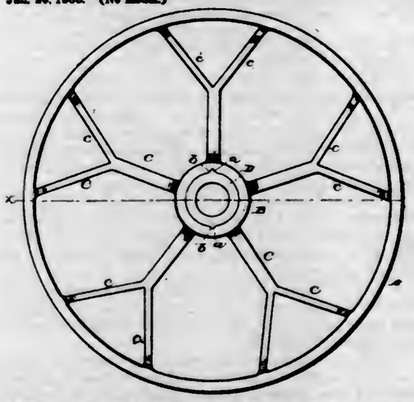
Claim.—A cone-shaped pessary consisting of a spring-metal body inclosed in a rubber tubing, and formed into coils contracting or tapered toward the upper end, for supporting the uterus or womb, and its lower ends adapted to rest upon the soft parts within the vagina, substantially as shown and described.

328,554. APPARATUS FOR PRESERVING AND PRESSING BEER. Frank Widmer, Newark, N. J., assignor of one-half to Andrew Albright, same place. Filed July 1, 1885. (No model.)



Claim.—The combination and arrangement of the gas-receiver A, the beer-keg B, and the regulator C, connected thereto and provided with the valve *v* and the diaphragm *d'*, actuated by the pressure in the beer-kegs, the regulator being connected to the beer-keg by pipes having an expansion-vessel, G, inserted therein, and the connection E', from the regulator to the vessel G, being inserted at the top of the vessel, and the connection E², from the vessel to the keg, being inserted in the bottom of the vessel, to avoid the retention of beer in the said vessel, substantially as herein shown and described.

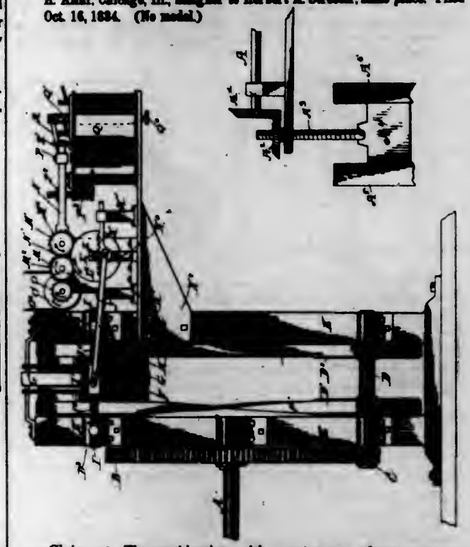
328,555. VEHICLE-WHEEL. Daniel S. Wiss, Syracuse, N. Y. Filed Jan. 26, 1885. (No model.)



Claim.—1. A truck or vehicle wheel formed of malleable material, and constructed with an outer rim and hub, united integrally by spokes having divergent or bifurcated arms or brackets connecting with the wide rim, substantially as described.

2. A truck or vehicle wheel formed of malleable material, and constructed with an outer rim and hub, united integrally by the spokes, having divergent arms *c c*, whose general width is less than said rim and hub, and whose extremities are of a width equal to said rim and hub, substantially as described.

328,556. ELECTRIC GOVERNOR FOR WATER-WHEELS. Edwd. H. Amet, Chicago, Ill., assignor to Herbert A. Streeter, same place. Filed Oct. 16, 1884. (No model.)



Claim.—1. The combination, with a water-gate, of power-conveying devices for opening and closing the same, comprising belts and a belt-shifter, a lever carrying an armature, an electro-magnet operating with said armature and gearing intermediate the belt-shifter and armatured lever for operating said shifter, and a solenoid, the core of which is connected with a secondary lever arranged with the said armatured lever, substantially as and for the purpose specified.

2. In a water-wheel governor, a belt-shifter, a rack-bar, and a rod connecting the two, in combination with a pinion and pulley, and with a positively-driven pair of friction-wheels mounted upon a pivoted bar carrying an armature, substantially as specified.

3. The combination of belt-shifting devices, a lever carrying an armature, and friction or gear arranged at each side of the pivot of said lever, an electro-magnet, and a solenoid having a pivoted lever projecting above the armature-lever, substantially as specified.

4. The combination of the shaft A, having a gear, B, the pinion C, the shafts D and D², cross-belt F', straight belt H', and the pulleys F G H, a positively-driven belt, a belt-shifter, and friction-wheels mounted upon an armatured lever for operating the shifter, substantially as specified.

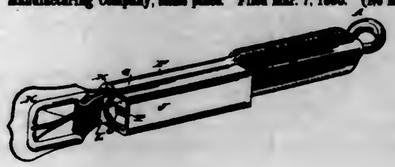
5. The combination, with a shaft, A, having a gear, B, pinion C, shafts D and D², the belts F', H', and pulleys F G H, of the belts G O², the shifter I', connecting-rod J, rack K, the positively-geared pulleys L M M' O', the gears O M², and the pivoted lever N, armature P, and magnet P', substantially as shown and specified.

6. The combination of the magnet P', armatured lever N, the solenoid Q, having a core, Q', screw Q⁴, and the lever R, substantially as shown and described.

7. The combination of the magnet P', the lever N, the armature P, mounted thereon, the geared rolls M and M', the pulley L², the pinion L, the rack K, the rod J, the shifter I, and the springs I², substantially as shown and described.

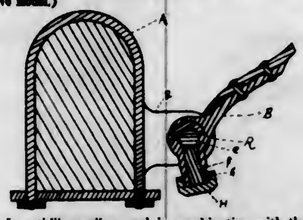
8. The combination of solenoid Q, having the double core Q' and Q², the spring Q³, and the screw Q⁴, with the pivoted levers R N, substantially as shown and described.

328,557. HAME-TUG. Hellard F. Anderson and William H. Wilcox, Columbia City, Ind.; said Anderson assignor to the Columbia City Manufacturing Company, same place. Filed Mar. 7, 1885. (No model.)



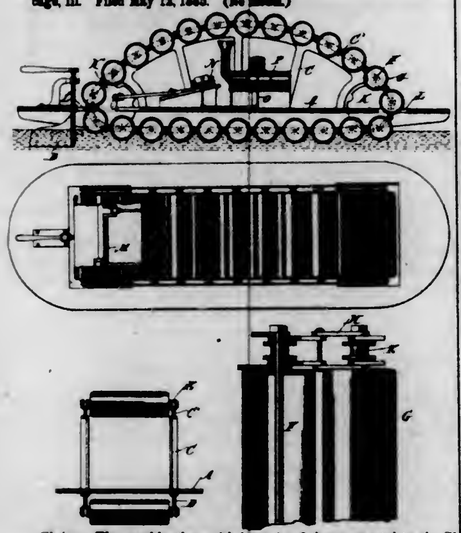
Claim.—The combination, in a horse-tug, of the tug-eye having its shanks perforated and having a suitable covering, the trace-buckle secured in a loop having perforated ends, the box-loop having the ends of its inner side perforated, the flanged plate having its ends perforated and having its flanges shouldered, the plate having the screw-threaded perforations at its ends, and the securing-screws, as and for the purpose shown and set forth.

328,558. THILL-COUPLING. Sullivan H. Aspen, Lynn, Mass., assignor to the Globe Thill Coupling Company, Saco, Me. Filed Jan. 27, 1885. (No model.)



Claim.—In a thill-coupling, and in combination with the axle-clip A and coupling-bolt *a*, the thill-iron provided with the boss, said boss being externally screw-threaded and having a smooth interior bore, the flexible pad or plunger located in the boss and bearing at one end against the bolt and projecting at its other end slightly beyond the end of the boss, and the screw-cap H, adapted to bear upon the end of the pad, all substantially as described, and for the purpose set forth.

328,559. PROPELLER FOR VESSELS. Christian R. Baker, Chicago, Ill. Filed May 12, 1885. (No model.)



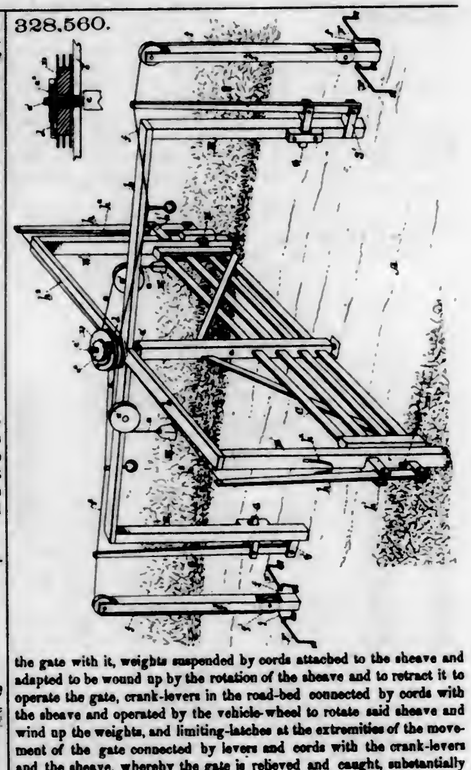
Claim.—The combination, with boat A, of the segmental tracks C' and straight tracks D, the series of cylinders G, supported by rollers E, traveling upon said tracks, the endless chains H, the sprocket-wheels K K', located at the front and rear ends of the boat, respectively, and mechanism for operating the parts, substantially as described.

328,560. GATE. James Barden, Jr., Salinas, Cal. Filed June 15, 1885. (No model.)

Claim.—1. A centrally-pivoted gate adapted to rotate in a horizontal plane to open and close the road, in combination with a sheave loosely mounted on the pivotal axis of the gate, a pawl-and-ratchet mechanism connecting them, whereby the sheave in rotating in one direction does not affect the gate, but in retracting carries the gate with it, weights suspended by cords attached to the sheave and adapted to be wound up by the rotation of the sheave and to retract it to operate the gate, and crank-levers in the road-bed connected by cords with the sheave and operated by the vehicle-wheel to rotate said sheave and wind up the weights, substantially as herein described.

2. A centrally-pivoted gate adapted to rotate in a horizontal plane through an arc of ninety degrees to open and close the road, in combination with a sheave loosely mounted on the pivotal axis of the gate, a pawl-and-ratchet mechanism connecting them, whereby the sheave in rotating in one direction does not affect the gate, but in retracting carries

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the gate with it, weights suspended by cords attached to the sheave and adapted to be wound up by the rotation of the sheave and to retract it to operate the gate, crank-levers in the road-bed connected by cords with the sheave and operated by the vehicle-wheel to rotate said sheave and wind up the weights, and limiting-latches at the extremities of the movement of the gate connected by levers and cords with the crank-levers and the sheave, whereby the gate is relieved and caught, substantially as herein described.

3. The centrally-pivoted gate C, having a spindle, *c'*, with ratchet-wheel c^3, in combination with the sheave D, loosely mounted on the spindle and having a pawl, *d*, engaging the ratchet-wheel, the weights E, having cords *e* attached to the sheave, and the crank-levers F in the road-bed, having cords *f* attached to the sheave, all arranged and adapted to operate substantially as herein described.

4. The centrally-pivoted gate C, having a spindle, *c'*, with ratchet-wheel c^3, and the posts B B B' B', as described, in combination with the sheave D, loosely mounted on the spindle and having pawl *d* engaging the ratchet-wheel, the weights E, having cords *e* attached to the sheave, crank-levers F in the road-bed, having cords *f* attached to the sheave, the sliding limiting-latches G in posts B B, having pivoted levers *g* attached to cords *f*, and the sliding limiting-latches H in posts B' B', having pivoted spring-levers *h* attached by cords h^3 to the sheave, all arranged and adapted to operate substantially as herein described.

328,561. LAND-HARKER. Thomas W. Beal, Venice, Ill. Filed Apr. 10, 1885. (No model.)

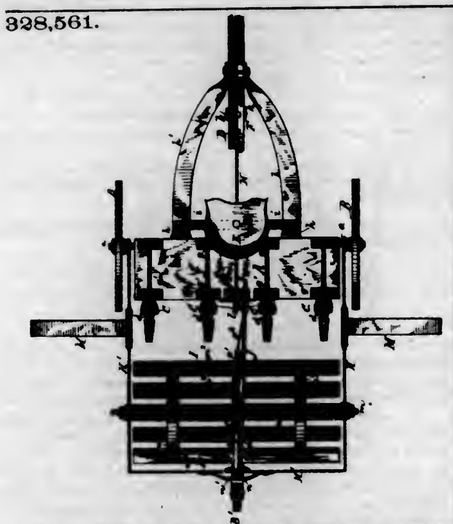
Claim.—1. The combination, with the supporting-platform A, mounted on the carriage-wheels B, and carrying suitable teeth or markers, C, and provided with axle-arms or an axle-bar having arms which receive the wheels B, of a tongue having a driver's seat mounted upon its connections, which is loosely connected to the supporting-platform by hinges parallel with and on about the same horizontal plane as the axle-arms, substantially as and for the purpose described.

2. The combination, with the supporting-platform A, mounted on carriage-wheels B, and carrying front teeth or markers, C, and with the tongue carrying the driver's seat, of the adjusting-lever and locking-bar applied on the tongue, connecting rod and standard, substantially as and for the purpose described.

3. The combination of oblong guide-loops *g'*, supporting-platform, carriage-wheels, independently self-adjusting front teeth or markers, hinged tongue, driver's seat, and suitable hand adjusting and locking devices, substantially as described.

4. The combination, with the front teeth or markers, C, applied on an oscillating support or platform carried on the wheels B, and having a hinged tongue on which the driver's seat is mounted, and suitable adjusting and locking devices, of a revolving cross-row rear marker applied in a frame hinged to the axle-arms *a* of the platform A, and which is provided with a supporting-wheel, B', and adjusting and locking devices, substantially as described.

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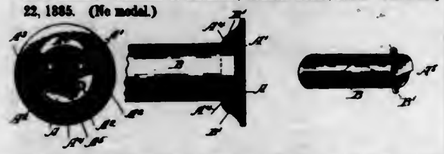
5. The combination of the rear marker consisting of transverse spaced bars, disks, and an axle, the hinged frame, the caster-wheel having a notched goose-neck, adjusting standard, the hand-lever, locking-bolt, front platform carrying suitable teeth or markers, C, and a hinged tongue carrying the seat for the driver, substantially as described.

6. The skeleton rear marker formed of an axle, transverse U-iron bars having bolting-flanges, and applied in a suitable adjustable frame of a land-marker, substantially as described.

7. The combination of the hand adjusting and locking lever, hinged frame carrying a revolving cross-row marker, and attached to the axle-arms of the front marker-platform, A, and the adjustable goose-neck standard carrying a caster-wheel, substantially as described.

8. The auxiliary vacant loop g^3, in combination with platform A, occupied loops *g'*, and markers C, substantially as described.

328,562. LOCKING-BRACKET FOR CURTAIN AND OTHER RODS AND RAILS. Charles J. Beckman, Council-Bluffs, Iowa. Filed July 22, 1885. (No model.)



Claim.—1. A bracket for curtain and other rods and rails, consisting of two separable parts adapted to join each other upon a curved line passing substantially diametrically therethrough, and each having projecting flanges perforated for the reception of dowels, and each provided with holes for securing the parts in relative position with each other, substantially as specified.

2. A bracket for curtain and other rods and rails, consisting of two separable diametrically-opposite parts, each having a flange provided with openings arranged diametrically opposite each other, in combination with a rail provided with dowel-pins adapted to enter said openings, substantially as specified.

3. A bracket for curtain and other rods and rails, consisting of substantially diametrically-separable parts, each having a flange for embracing and supporting the rail, and each flange provided with holes for the reception of dowels, and the one part constructed to guide the other when brought into a closed position, substantially as specified.

4. The combination of a rod or rail, as B, provided with dowels, as B', with a bracket consisting of two substantially diametrically-separable parts, A A', each having a flange, A^4, perforated to receive said dowels, and one of said parts having a shape or configuration, as shown at A^5, adapted to guide the other of said parts when the two are brought into position upon the rail, substantially as specified.

5. In a bracket for curtain and other rods and rails, the combination of the fixed part A, having an opening, as A^7, and a diametrically-opposite movable part, as A', with a rail, B, having a shoulder, as A^6, substantially as specified.

328,563. SASH-BALANCE. Daniel F. Beyerstein, Middlebury, Ind. Filed June 9, 1885. (No model.)

Claim.—1. The window-frame A, having sheaves or pulleys *c'* at its top and sheaves or pulleys *l* at its sides, in combination with the upper

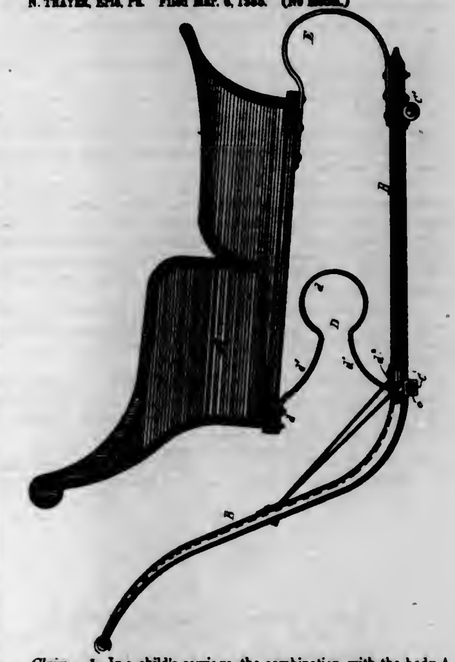
328,563.



and lower sashes, sheaves G, fitted in the upper sash, and cords connected to the lower sash, then passing up over the sheaves C', thence down and around the sheaves G, and finally up and over the sheaves *l*, weights being secured to the ends of the cords, for the purpose set forth.

2. The frame, in combination with the pin, the sheave or pulley mounted thereon, and a pair of disks located on the pin and forming an inclosing shell or case for the sheave or pulley, one of the disks being movable and held normally against the pulley by means substantially described, as set forth.

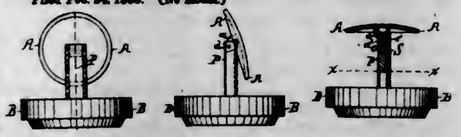
328,564. CHILD'S CARRIAGE. Charles F. Bostwick and Horace N. Thayer, Erie, Pa. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a child's carriage, the combination, with the body A and forward C-springs, E, of a rear spring consisting of a C-formed part, *d*, and extended ends *d' d'*, curved out beyond the C-formed part and placed with its bow in the same direction as those of the forward springs.

2. In a child's carriage, the combination, with the body A and forward C-springs, E, of the rear C-spring, D, with its bow in the same direction as those of the forward springs and one of its ends connected pivotally, substantially as described.

328,565. BUTTON OR STUD. George H. Bowerman, Newark, N.J. Filed Feb. 24, 1885. (No model.)

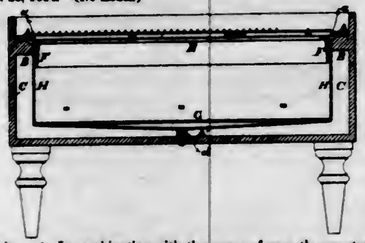


Claim.—1. In a button or stud, the combination, with the shoe A and front B, of the post P, formed with slot *b*, and the spring S, secured to the post and projected over the side of the slot, and the center knuckle C, pivoted in the slot and provided with the faces *c c* and *c'* and secured to the shoe by the arm *a* upon its fourth side, the whole arranged and operated substantially as and for the purpose set forth.

2. The combination, with the post P, constructed as described, with groove *g* and rib *f*, of the spring S, secured to the post by bending the

ribs *f* and formed with the end narrowed to play between the bent ribs, as and for the purpose set forth.

328,566. PIANO. Benjamin B. Bradbury, New York, N. Y. Filed Feb. 20, 1884. (No model.)



Claim.—1. In combination with the case or frame, the wrest-plank, and the strings of a piano, the suspended and isolated sounding-board E, circumferentially downwardly-depending rim F, and means for suspending said sounding-board below the strings, substantially as and for the purpose herein set forth.

2. In combination with the strings, the sounding-board, and inclosing case or frame of a piano, the independent secondary sounding-board G, circumferentially isolated from the upper sounding-board, substantially as and for the purpose herein set forth.

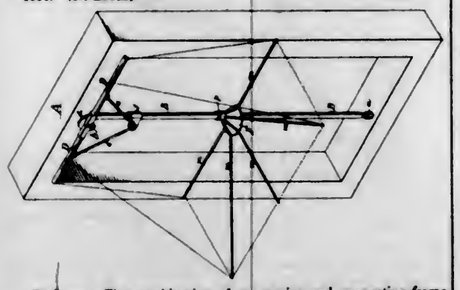
3. In combination with the strings, the sounding-board, and inclosing case or frame of a piano, the shell H, and secondary sounding-board G, said shell and secondary sounding-board being circumferentially isolated from the upper sounding-board, substantially as and for the purpose herein set forth.

4. The combination, with the strings, the sounding-board, and inclosing case or frame of a piano, of the suspended and isolated sounding-board E having the circumferential depending rim F, the secondary sounding-board G, and the shell H, said secondary sounding-board and the shell being circumferentially isolated from the upper sounding-board, and the whole constructed and arranged for joint use and operation, substantially as and for the purpose herein set forth.

5. The combination, with the strings and sounding-board of a piano, of the secondary sounding-board G, the shell H, and metallic resonator placed below the secondary sounding-board, substantially as and for the purpose herein set forth.

6. The combination, with the strings and frame of a piano, of the tubular straining-pins I, and tightening-screws for preventing the turning of said straining-pins from the tension of the strings, substantially as and for the purpose herein set forth.

328,567. WINDOW-AWNING. John N. Colby, New London, Conn., assignor of one-half to Samuel E. Sullivan, same place. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination of an awning and supporting-frame therefor with a bar, B, carrying said frame, and constructed for attachment at its opposite ends to a window-frame, substantially as specified.

2. The combination of an awning, a bar, B, constructed for attachment to a window-frame, and a series of awning-supporting arms or rods, substantially as described, carried by said bar but capable of being folded thereupon, as set forth.

3. The combination of an awning, a bar, B, constructed for attachment to a window-frame, a series of arms connected to the awning, a bracket to which the arms are pivoted, and a frame serving as a support for the arms and as a means of folding the same, substantially as described, said bracket or frame being movable on the bar, as set forth.

4. The combination of the awning, the bar B, the bracket G, the arms *m*, hung thereto, and the frame F, slotted for the reception of the arms, said frame or bracket being movable on the bar, as set forth.

5. The combination of the awning, the bar B, the bracket G, the arms *m*, hung thereto, and the frame F, having a supplementary lifter or lifters, *w*, as set forth.

6. The combination of the awning, the bar B, the arms *m*, pivoted to an attachment of the bar and connected to the lower edge of the awning, and the rods D, also pivoted to an attachment of the bar and connected to the upper edge of the awning, as set forth.

7. The combination of the awning, the bar B, the pivoted arms *m*, connected to the lower portion of the awning, and the laterally-adjustable plate *d*, carrying the rod or rods D, connected to the upper edge of the awning, as set forth.

8. The combination of the bar B, the supporting rods or arms hung thereto, and the awning secured to the outer ends of said rods or arms by longitudinal screws or pins, as set forth.

328,568. HINGE. Thomas H. Costello, Englewood, Ill. Filed June 16, 1885. (No model.)



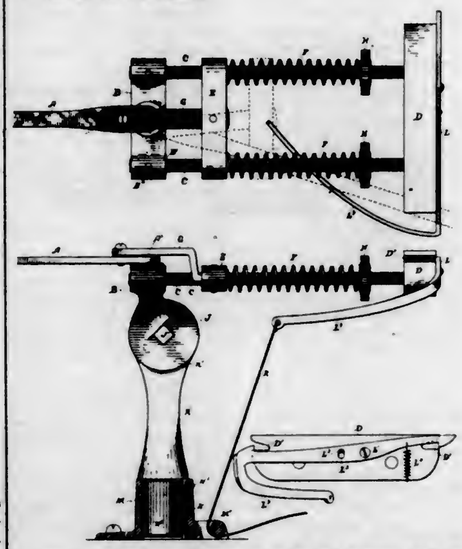
Claim.—1. A hinge consisting of the leaves C and D, having circular adjacent edges and rigid bars *a* and *b*, pivotally connected at their ends to the leaves, respectively, and arranged diagonally to each other at opposite sides of the leaves, substantially as shown and described.

2. A hinge consisting of two leaves or parts, C D, each having a chamber, *g*, in combination with two rods or bars, *a b*, pivoted to the parts C D, substantially as and for the purposes specified.

3. A hinge consisting of two leaves or parts, C D, each having a chamber, *g*, in combination with two rods or bars, *a b*, pivoted to the parts C D, and pieces *e*, secured in the chamber *g* and between the rods or bars *a b*, substantially as and for the purposes specified.

4. The combination, in a hinge, of the parts or leaves C D, rounded or circular at their meeting edges, as shown, and connected together by bars *a b*, pivoted at their opposite ends to opposite sides of the two leaves, the rounded or circular portion of part D being provided with recess *h* and the rounded portion of part C provided with the projection or flange *i*, which fits and has its bearing in the recess *h*, substantially as described.

328,569. TARGET-TRAP. Frederick C. Dahm, Peoria, Ill. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination, in a trap, of the cross-head, the throwing-arm pivoted to said cross-head, one or more rods projecting rigidly from said cross-head, a collar loosely mounted upon said rod or rods, a link connecting said collar and throwing-arm, and one or more coiled springs upon said rod or rods, adapted to press against said collar, substantially as and for the purpose set forth.

2. The combination, in a trap, of the cross-head, the throwing-arm pivoted to said cross-head, one or more rods projecting rigidly from said cross-head, the collar mounted loosely upon said rod or rods, the link for connecting said collar to said throwing-arm, the weight-bar fixed to the ends of said rod or rods opposite to said cross-head, and the coiled springs mounted on said rod or rods, and adapted to press against said collar by means of a suitable stop on said rod or rods, substantially as and for the purpose specified.

3. The cross-head, the throwing-arm pivoted thereto, and the rods rigidly projecting from said cross-head, in combination with the union-collar loosely mounted upon said rods, the link joining said collar and arm, the coiled springs mounted upon said rods and abutting against said collar, and the nuts adapted to increase the resilience of said springs by turning upon screw-threads made on said rods, as and for the purposes specified.

4. The cross-head, the throwing-arm pivoted thereto, and the rods projecting rigidly from said cross-head, in combination with the union-collar loosely mounted upon said rods, the link joining said collar and arm, the coiled springs mounted upon said rods and abutting against said collar, the nuts adapted to turn upon said rods, the weight-bar fixed to the ends of said rods, and the latch for holding the throwing-arm, substantially as and for the purpose specified.

5. In a trap, the combination, with a throwing-arm and means for actuating the same, of a supporting frame-work for said arm, having a horizontal notch therein adapted to receive said arm and keep it from transverse play, and a latch for holding said arm in said notch, substantially as described, for the purpose set forth.

6. In a trap, the combination, with the throwing-arm and means for actuating the same, of a supporting frame-work for said arm having the notches D′ therein, one at each side thereof, and the double latch L, pivoted at an intermediate point to said frame-work and provided with the catch-prongs at its ends, whereby said arm can be set to either side, substantially as set forth.

7. In a trap, the combination, with the throwing-arm and means for actuating the same, of the frame-work carrying said arm, and the double latch L, pivoted at an intermediate point to said frame-work, and having a catch-prong at each side of said pivotal point and in opposite vertical sides, and provided with the tripping-arm L^3, whereby the same movement of said latch can release said arm from either catch-prong.

8. The combination, with the throwing-arm, mechanism, substantially as set forth, for operating the same, and the weight-bar D, having the notch D′ in each end, of the latch L, having a catch-prong at each end and pivoted to said weight-bar, the spring L^4, for engaging said latch with the throwing-arm, and means for tripping said latch, substantially as and for the purpose specified.

9. In combination with the trap-standard K and socket M thereof, the bent plate-spring N, secured within said socket and adapted to impress against said standard, substantially as and for the purpose set forth.

10. In a trap, the socket M, the standard K, adapted to be turned in said socket and having disk-head K′, the cross-head B, having disk-lug J projecting from the under side thereof, and a screw or bolt, J′, for rigidly binding said disk-head and disk-lug together, in combination with the throwing-arm A, pivoted to said cross-head, the rods C, rigidly projecting from said cross-bead, the union-collar E, loosely mounted upon said rods, the link G, joining said collar and arm, the coiled springs F, mounted upon said rods, the nuts H, adapted to be turned on screw-threads upon said rods C, the weight-bar D, fast to the ends of said rods, and the latch L, for holding said arm when set, substantially as and for the purpose specified.

11. In a trap, the socket M, having eye M′ and spring N, the standard K, fitting into said socket and having disk-head K′, the cross-head B, having disk-lug J projecting from the under side thereof, and the bolt J′, for uniting said disks, in combination with the throwing-arm A, pivoted at one end to said cross-head, the rods C, rigidly projecting from said cross-head, the union-collar E, loosely mounted upon said rods, the link G, pivoted to both the said collar and to the said arm, the coiled springs F, mounted upon said rods, the nuts H, adapted to be turned on screw-threads upon said rods, the weight-bar D, having terminal notches D′, the double latch L, pivoted to said weight-bar and having slot L^2 and prolongation L^3, the pin L^3, and spring L^4, and a cord, R, substantially as and for the purpose specified.

328,570. APPARATUS FOR MANUFACTURING FLYING TARGETS. Frederick C. Dahm, Peoria, Ill. Filed May 12, 1885. (No model.)

Claim.—1. The caldron or reservoir, in combination with a cylinder projected therein and communicating therewith, a piston working in said cylinder, and a discharge-passage for said cylinder, substantially as described.

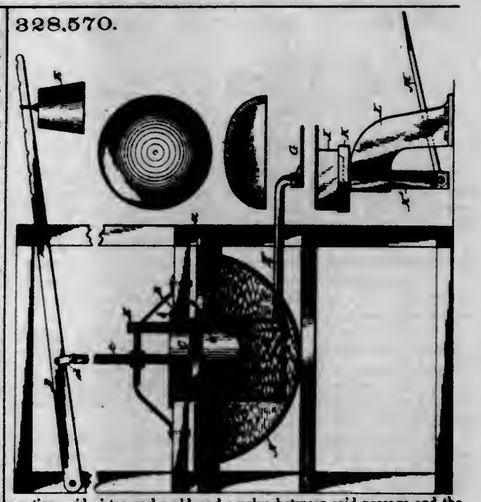
2. The caldron and the cylinder projected therein and communicating therewith, in combination with a piston and a valve actuated by said piston to close the opening between the caldron and cylinder, substantially as described.

3. The caldron, the cylinder projected therein, an opening connecting said caldron and cylinder, and a valve for closing said opening, in combination with a piston and an upright plate thereon engaging the valve, substantially as described.

4. The caldron, the cylinder, the piston, and an opening between said piston and caldron, in combination with a mold and a passage connecting the cylinder with said mold, whereby the contents of the cylinder may be forced and compressed in the mold, substantially as described.

5. The cylinder, the piston, and a supply orifice or passage for said cylinder, in combination with the mold, a supply-passage or pipe connecting said piston and mold, and a valve between said passage and the mold, substantially as described.

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6. The caldron, the cylinder, the piston, and an outlet-passage for said cylinder, in combination with a vertically-adjustable mold, and one or more valves between said mold and the outer end of said passage, substantially as described.

7. The two-part mold provided with a central opening, in combination with a pivoted valve for closing said opening and cutting off any excess of material projecting above the mold, substantially as described.

328,571. SKID. Joseph M. Dawes, Owego, N. Y. Filed Aug. 29, 1885. (No model.)

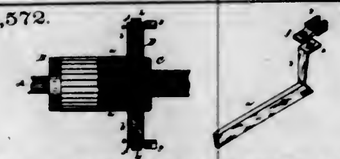
Claim.—1. In a skid, the combination, with the grooved tracks, of a carriage engaging with the grooves therein, a cord or rope for operating the carriage, levers provided with handles, and braces pivoted thereto and to the carriage, said braces having removable stakes, substantially as and for the purpose set forth.

2. In a skid, the combination, with the carriage thereof, of pivoted braces and pivoted levers having at their lower ends rollers, substantially as and for the purpose specified.

3. A skid consisting of grooved tracks, a carriage having grooved side bars, pivoted braces provided with removable stakes, and pivoted levers having rollers at their ends, substantially as and for the purpose specified.

328,572. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. Thomas A. Edison, Menlo Park, N. J. Filed June 29, 1883. (No model.)

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Claim.—1. The combination, with the conducting-strips rising from the commutator-bars and turned at right angles, of the connecting-pieces removably secured thereto and permanently secured to the armature-coils, substantially as set forth.

2. The intermediate connecting-pieces, provided with boxes or cups, in which the armature-conductors are secured, substantially as set forth.

3. The combination, with the commutator-bars placed in grooves in a cylinder, of the conducting-strips secured between said bars and the ends of said grooves, substantially as set forth.

4. The combination, with the commutator-bars having beveled ends, and the beveled ends of the grooves, of the oblique ends of the conducting-strips secured between them, substantially as set forth.

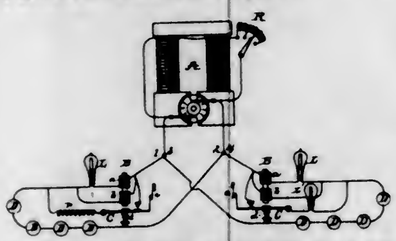
5. The combination, with the strips rising from the commutator-bars, of the insulating-disk having grooves in its face, in which said strips are held, substantially as set forth.

6. The combination, with the devices connecting the armature-coils with the strips rising from the commutator-bars, of the insulating-disk having grooves in its periphery, in which such devices are held, substantially as set forth.

7. The combination, with devices, substantially such as described, connecting the armature-coils with the commutator-bars, of the insulating-disk having face grooves and edge grooves, in which such devices are held, substantially as set forth.

8. The combination, with the conducting-strips rising from the commutator-bars and turned at right angles, of the intermediate connecting-pieces attached to said rising strips, said intermediate pieces being provided with boxes or cups, in which the armature-coils are secured, substantially as set forth.

328,573. SYSTEM OF ELECTRIC LIGHTING. Thomas A. Edison, Menlo Park, N. J. Filed Oct. 2, 1884. (No model.)



Claim.—1. The combination, with incandescing electric lamps arranged in series, of automatic cut-out mechanisms for the several separate lamps, (including a localizing constantly-closed shunt around each lamp,) maintaining the continuity of the circuit as the incandescing conductors of the lamps break, substantially as set forth.

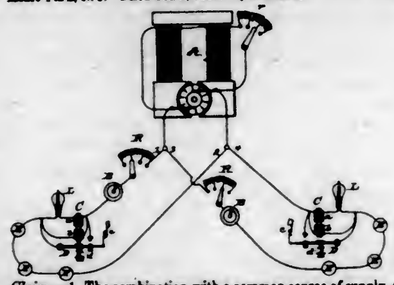
2. The combination, with incandescing electric lamps arranged in series, of differentially-wound magnets or solenoids closing shunt-circuits around the lamps as they are broken, one set of coils of each differential magnet or solenoid being in the main circuit and the other set of coils being in a constantly-closed shunt around the lamp, and mechanical or electrical locks for holding the shunts closed, substantially as set forth.

3. The combination, with an incandescing electric lamp, of a magnet in series therewith controlling a cut-out shunt, and constructed and adjusted, substantially as described, to permit the same to be closed only after a total cessation of current in the coils of said magnet, and not being affected by changes in resistance of the incandescing conductor, and a constantly-closed shunt-circuit around said lamp, and magnet for localizing the cut-out, substantially as set forth.

4. The combination, with an incandescing electric lamp, of a differentially-wound magnet or solenoid having one set of coils in series therewith and the other set in a constantly-closed shunt around said lamp and the first set, an armature or core and retractor acting to close a shunt around the lamp, said parts being constructed and adjusted to act only upon a complete cessation of current in the set of coils in series with the lamp, and not to be affected by changes in resistance of the incandescing conductor, substantially as set forth.

5. The combination, with an incandescing electric lamp, of a differentially-wound magnet or solenoid having one set of coils in series therewith and the other set in a constantly-closed shunt around said lamp and the first set, an armature or core and retractor acting to close a shunt around the lamp, and a mechanical or electric lock for keeping said shunt closed, the parts being constructed and adjusted to act only upon a complete cessation of current in the set of coils in series with the lamp, and not to be affected by changes in resistance of the incandescing conductor, substantially as set forth.

328,574. SYSTEM OF ELECTRIC LIGHTING. Thomas A. Edison, Menlo Park, N. J. Filed Oct. 2, 1884. (No model.)



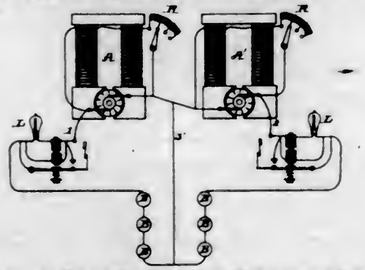
Claim.—1. The combination, with a common source of supply, of two or more circuits therefrom, incandescing electric lamps in series in each circuit, automatic cut-out mechanisms closing shunt-circuits of low or practically no resistance around the lamps as they break, and an adjustable resistance in each circuit at or near the source of supply for maintaining constant the relative resistances of the two or more lamp-circuits, substantially as set forth.

2. The combination, with a common source of supply, of two or more circuits therefrom, incandescing electric lamps in series in each circuit, automatic cut-out mechanisms closing shunt-circuits of low or practically no resistance around the lamps as they break, and an adjustable resistance in each circuit at or near the source of supply, and an ampère indicator in each circuit at that point, substantially as set forth.

3. The combination, with one or more dynamo-electric machines forming a common source of supply, of adjustable resistances for regulating the generative capacity of the machines or machines, two or more circuits from such source of supply, incandescing electric lamps in series in each circuit, automatic cut-out mechanisms closing shunt-circuits of low or practically no resistance around the lamps as they break, and an adjustable resistance in each circuit at or near the source of supply, substantially as set forth.

4. The combination, with one or more dynamo-electric machines forming a common source of supply, of the field-magnet coils of the machine (or of each machine) located in a circuit derived from its armature, adjustable resistances for regulating the generative capacity of the machine or machines, two or more circuits from such source of supply, incandescing electric lamps in series in each circuit, automatic cut-out mechanisms closing shunt-circuits of low or practically no resistance around the lamps as they break, and an adjustable resistance in each circuit at or near the source of supply, substantially as set forth.

328,575. SYSTEM OF ELECTRIC LIGHTING. Thomas A. Edison, Menlo Park, N. J. Filed Oct. 2, 1884. (No model.)

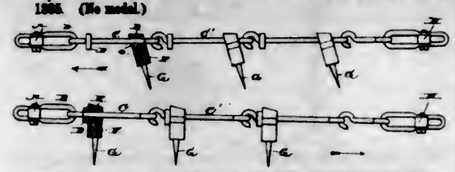


Claim.—1. The combination, with a divided source of electrical energy, of a compound or three-wire circuit extending therefrom, incandescing electric lamps located in series in each side of the circuit, and cut-out mechanisms for the separate lamps, substantially as set forth.

2. The combination, with a divided source of electrical energy, the parts of which are independently regulatable, of a compound or three-wire circuit extending therefrom, incandescing electric lamps located in series in each side of the circuit, and cut-out mechanisms for the separate lamps, substantially as set forth.

3. The combination, with a divided source of electrical energy, of two or more compound or three-wire circuits taken therefrom, incandescing electric lamps located in series in each side of said compound circuits, and cut-out mechanisms for the separate lamps, substantially as set forth.

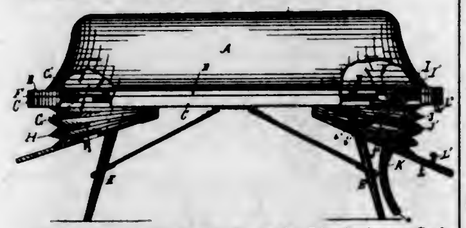
328,576. HARROW. James Elliott, Newton, Iowa. Filed June 20, 1885. (No model.)



Claim.—1. A harrow composed of the jointed rods having the collars near one end, the sliding blocks on said rods having the openings e, which are larger on the side next the collars than on the opposite sides, and the toothed beams secured to the blocks, for the purpose set forth, substantially as described.

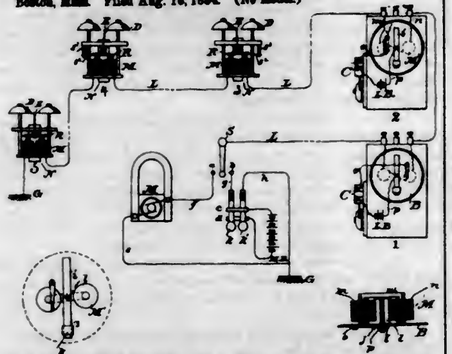
2. The combination of the jointed rods having the collars at one end, the sliding blocks on the rods having the openings e, largest at the end nearest the collars, the toothed beams secured to the blocks, and the draft-bars secured to the rods at the ends of the harrow, substantially as described.

328,577. EMBALMING APPARATUS. Porter S. Ensworth, Waterford, Pa. Filed May 12, 1884. (No model.)



Claim.—In combination with the opening I in the bottom C of a case for treating dead bodies, the valve I', the compound bellows J, provided with the cushion J^3 on the upper side of the division J' of said bellows, the hooks L' and L^2, and the escape-pipe K, all operating together substantially as and for the purpose set forth.

328,578. ELECTRIC SIGNALING APPARATUS. Isaiah H. Farnham, Dearing, Me., assignor to the American Bell Telephone Company, Boston, Mass. Filed Aug. 16, 1884. (No model.)



Claim.—The combination, with a subscriber's line of a telephone-exchange system, said line comprising five signaling-instruments, each located at a different sub-station, and each adapted to give an individual signal, of a spring-jack forming a part of said line, and a looping-wedge adapted for insertion in said spring-jack, together with a single key affixed to said wedge, a button-switch connected with the contact-anvil of said key, a series of contact-buttons for said switch, separate batteries with opposite poles to ground connected with two of the said buttons, and a generator or current-reverser connected with the other button, substantially as set forth.

328,579. EXPANSION JOINT OR COUPLING FOR PIPES. Daniel Fisher, Oil City, Pa. Filed Apr. 14, 1885. (No model.)

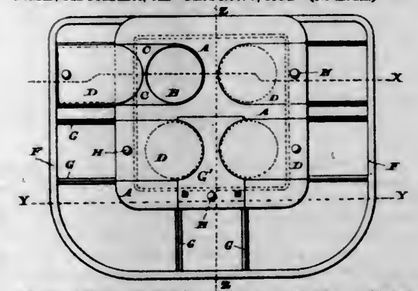
Claim.—1. The combination of the pipe-sections 1 2, coupling-sleeve 3, and the cup-packings 8, as and for the purposes herein shown and described.

2. The combination of the pipe-sections 1 2, coupling-sleeve 3, hollow packing-ring 6, packing-cups 8, and interposed expansion-plugs 9, as and for the purposes set forth.

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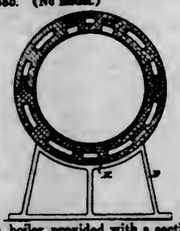


328,580. TOP PLATE FOR COOKING STOVES AND RANGES. J. Forbes, San Francisco, Cal. Filed Nov. 7, 1884. (No model.)



Claim.—The combination, with the top plate of a cooking-stove, of the sliding lids or pot-hole covers D, brackets or guideways G, and surrounding rail F, substantially as shown, for the purpose set forth.

328,581. BOILER-COVERING. Charles C. Gilman, Eldora, Iowa. Filed Apr. 14, 1885. (No model.)



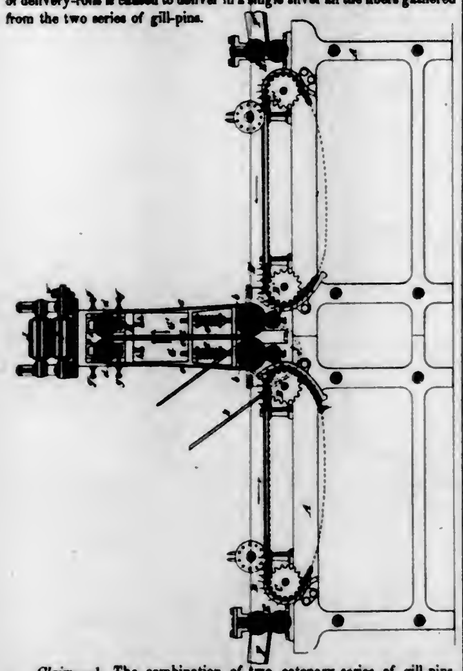
Claim.—1. A boiler provided with a sectional covering of terra-cotta lumber, the sections of which are constructed and arranged to overlap for a distance sufficient to enable nails driven through the overlapping portions to hold the sections together, substantially as described.

2. A boiler provided with a sectional covering of terra-cotta lumber, the sections of which are formed with an offset at each end on opposite sides, and are arranged to overlap for a distance sufficient to enable nails driven through the overlapping portions to hold the sections together, substantially as described.

3. A boiler provided with a sectional covering of terra-cotta lumber, the sections of which are formed with tongues and with grooves of greater depth than the length of the tongues, so that when the sections are fitted together a dead-air space is provided, substantially as described.

328,582. **MACHINE FOR SPREADING AND DRAWING HEMP, &c.** JOHN GOOD, Brooklyn, N. Y. Filed Jan. 10, 1885. (No model.)

Brief.—In order to increase the capacity of the machines and to save space, two such machines as are described in United States Letters Patent No. 315,766 are placed end to end, the series of gill-pins of each caused to move toward the other, and two drawing heads, one set of delivery-rolls common to both heads, and a condenser, also common to both, are interposed between the two series of gill-pins, whereby one set of delivery-rolls is caused to deliver in a single sliver all the fibers gathered from the two series of gill-pins.



Claim.—1. The combination of two catenary series of gill-pins, two interposed drawing-heads, one set of delivery-rolls common to both series of gill-pins and both drawing-heads, and gearing and driving mechanism, substantially as herein described, whereby said series of gill-pins and drawing-heads are caused to run in opposite directions and toward each other, and the delivery-rolls are caused to deliver in a single sliver all the fibers received by the two drawing-heads from the two series of chains, substantially as herein described.

2. The combination of two catenary series of gill-pins, two drawing-heads interposed between said series, one set of delivery-rolls common to both of said drawing-heads, a condenser common to both drawing-heads interposed between said heads and delivery-rolls, and gearing and driving mechanism, substantially as herein described, for driving the said series of gill-pins and drawing-heads in opposite directions and driving said delivery-rolls, substantially as and for the purpose herein set forth.

3. The combination of two catenary series of gill-pins, two interposed drawing-heads, each comprising two drawing-rolls, an extension-roll, and an endless belt running on one of said drawing-rolls and on the extension-roll, the two endless belts being parallel and near together, and mechanism, substantially as herein described, for driving said series of pins in opposite directions and for driving the said rolls to cause the contiguous parts of said belts to run in the same direction, as and for the purpose herein set forth.

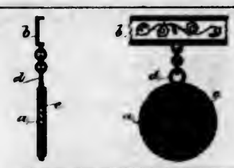
4. The combination, with the two catenary series of gill-pins and two interposed drawing-heads, each comprising two drawing-rolls, an extension-roll, and an endless belt running on one of said drawing-rolls, and on the extension-roll driving mechanism for driving the said pins and rolls, and means, substantially as herein described, of adjusting said belts as near together as may be desirable, as herein set forth.

328,583. **BANGLE FOR JEWELRY.** CHARLES GOSLING, Brooklyn, N. Y. Filed June 13, 1884. (No model.)

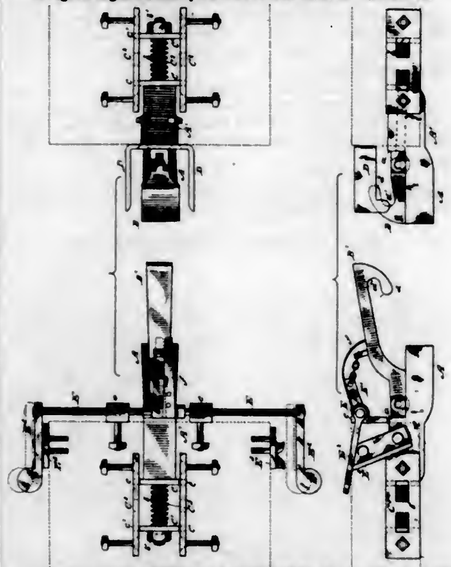
Claim.—1. The thin stone bangle inlaid with ornaments in gold or precious metal and having a suspending device, as a new article of manufacture.

2. The thin stone bangle inlaid with ornaments in precious metal and surrounded with a metal band having a suspending eye, as a new article of manufacture.

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328,584. **CAR-COUPLING.** ENOS T. HALL, Scranton, Pa., assignor to George A. Highfield, same place. Filed June 11, 1885. (No model.)



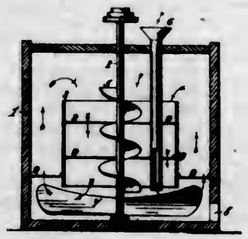
Claim.—1. In combination with the buffers A, and the draw-bars provided with shoulders *a* upon their upper faces, the coupling-hooks or draw-heads B B', with curved interlocking and engaging points and throats *d d'*, located above the buffers, the rods *d*, to which the said coupling-hooks are pivoted, passing through perforations in the shoulders *a* and extending in rear of the buffers, the plates C C', engaging slots in the frame applied to the car-body, and the spring C^2, interposed between said plates, substantially as described.

2. In a car-coupling such as described, the combination of the draw-bars provided with buffers and vertical shoulders in rear thereof, the rods passing through the draw-bars and extended beyond the shoulders thereon and above the buffers, springs applied to said rods to hold the latter retracted, and the vertically-movable interlocking coupling-hooks or draw-heads sustained on pivots attached to the rods and above the buffers, one of said coupling-hooks being arched and held above or at a higher level than the opposite hook, substantially as described.

3. In combination with the vertically-movable coupling-hooks or draw-head B', engaging the opposite coupling-hook, B, the shaft E, provided with spring *f*, arm E', and connecting-chain, substantially as and for the purpose set forth.

4. In combination with the pivoted coupling-hook B', the longitudinally-movable shaft E, for elevating said coupling-hook, said shaft carrying the handle E^2, and the retaining-plate E^3, for engaging said handle, as and for the purpose set forth.

328,585. **MIXING, DIFFUSING, LEACHING, AND CONCENTRATING APPARATUS.** CHARLES HORNBOSTEL, Brooklyn, N. Y. Filed Dec. 29, 1884. (No model.)



Claim.—1. In a mixing apparatus, the combination of a case or vessel, a cylinder supported therein by one or more perforated partitions extending from the walls of the case to the cylinder, and a screw-mixer attached to a shaft and located within the cylinder, substantially as described.

2. In a mixing apparatus, the combination of a case or vessel, a cylinder supported therein by one or more perforated or reticulated partitions and having one or more perforated partitions transversely within it, and a screw-mixer located within the cylinder and working in apertures in such transverse partitions, substantially as described.

3. In a mixing apparatus, the combination of a case or vessel, a cylinder supported above the bottom thereof, and a propeller or mixing wheel extending beyond the limits of the bottom of the cylinder, substantially as described.

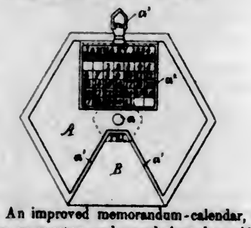
4. In a mixing apparatus, the combination of a case or vessel, a cylinder supported above the bottom thereof, a propeller or mixing wheel extending beyond the limits of the bottom of the cylinder, and an inlet-pipe terminating just above the blades of such wheel, substantially as described.

5. In a mixing apparatus, the combination of a vessel or case, a cylinder secured therein, as described, and of much larger diameter than the mixing-screw, one or more perforated partitions extending transversely across the cylinder and cut out at their centers to permit the operation of the mixing-wheel, and a mixing-wheel arranged to operate therein, substantially as described.

6. In a mixing apparatus, the combination of a vessel or case, a cylinder secured therein, as described, and having one or more perforated transverse partitions, a mixing-screw arranged within the cylinder, and a propeller-wheel whose blades extend beyond the limits of the bottom of the cylinder, substantially as described.

7. In a mixing apparatus, the combination of a case or vessel, a cylinder secured therein, as described, and having one or more perforated transverse partitions, a screw-mixer arranged to operate within the cylinder, a propeller-wheel upon the bottom of the screw-mixer shaft, and having its blades extended beyond the limits of the cylinders, and an inlet-pipe having its delivery-mouth situated just above the line of the propeller-blades, substantially as described.

328,586. **MEMORANDUM-CALENDAR.** SETH L. HORTON, Providence, R. I. Filed Dec. 9, 1884. (No model.)



Claim.—1. An improved memorandum-calendar, consisting of a front piece having an aperture and a card pivoted to said front piece and provided with an erasable memorandum-surface exposed through said aperture, as described.

2. The improved memorandum-calendar herein described, consisting of the front piece, A, having the aperture *a'*, the card B, pivoted to said front by a fastener, *a*, and provided with a memorandum-surface exposed through said aperture, as set forth.

328,587. **FEED-WATER HEATER.** SAMUEL R. HOSMER, Benton Harbor, Mich. Filed Dec. 18, 1884. (No model.)

Claim.—1. A single cylindrical water-chamber, in combination with an external steam-jacket and an internal cylinder having closed ends and forming an annular chamber between the side walls of the water-chamber and the said internal cylinder, substantially as described.

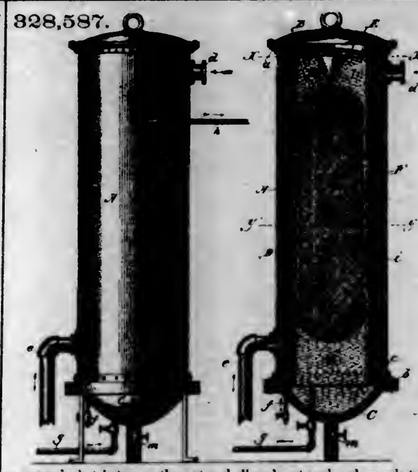
2. The water-chamber, in combination with the hollow closed end cylinder arranged to form an annular space in said chamber and means for heating said cylinder, substantially as described.

3. The water-chamber and the steam-jacket around said chamber, in combination with a cylinder provided with convexed ends and arranged in said water-chamber, substantially as described.

4. The outer shell provided with a removable cover, B, and combined bottom and sediment-collector C, in combination with a water-chamber having an open communication with the sediment-collector and



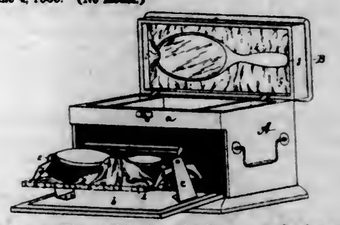
328,587.



a steam-jacket between the outer shell and water-chamber, substantially as described.

5. The outer cylinder, the removable heads B C thereof, and the diaphragm *c*, in combination with a cylindrical water-chamber supported by said diaphragm and a steam-jacket between the water-chamber and outer shell, substantially as described.

328,588. **TOILET-CASE.** LOUIS JORDAN, New York, N. Y. Filed June 4, 1885. (No model.)



Claim.—1. The combination of toilet-case A, having open side *a*, with lid *b*, uprights *c*, pivoted downwardly-extending brackets *d*, and plate *e*, supported by said brackets, substantially as specified.

2. The combination of toilet-case A, having cover B, with false bottom *f*, hooks *i g*, band *h*, and with the strips *j*, all being so constructed that a space is left between false bottom and cover for receiving the body of hook *g*, substantially as specified.

328,589. **PAINT-SOLVENT.** JOSEPH KOTERA, St. Louis, Mo. Filed Aug. 13, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used for removing paints, oils, or varnishes, and preparing wood-work for being repainted, oiled, or varnished, consisting of pure rain-water, carbonate of soda, good vinegar, and slaked lime, in the proportions specified.

328,590. **METHOD OF PREPARING STEEL-NAIL PLATES.** BERNARD LAUTH, Howard, Pa. Filed June 4, 1885. (No specimens.)

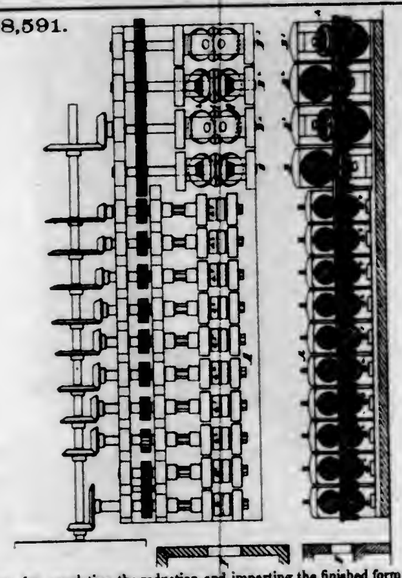
Claim.—The improvement in the art of preparing steel-nail plates for cutting the same into nails—to wit, inclosing the nails in a close box to protect them from the action of the atmosphere, inserting said box of plates in a furnace, and subjecting the plates to substantially a white heat, and then allowing said plates to cool down gradually in the same or in another heated furnace or oven, or in a pit, substantially as described.

328,591. **CONTINUOUS ROLLING-MILL.** EDWIN S. LEBOY, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Apr. 12, 1885. (No model.)

Claim.—1. In an apparatus for rolling wire rods, the combination of a train of rolls operating in pairs, and one or more sets of rolls, each set consisting of three or more rolls, the respective faces of which together form the reducing pass of said set, said trains of rolls being disposed for operating in a continuous and supplemental manner, as set forth.

2. A rolling-mill for making wire rods, having a leading train of rolls, A, arranged in pairs for breaking down and partially reducing the rod, supplemented by a set or sets of rolls, B, arranged to operate as

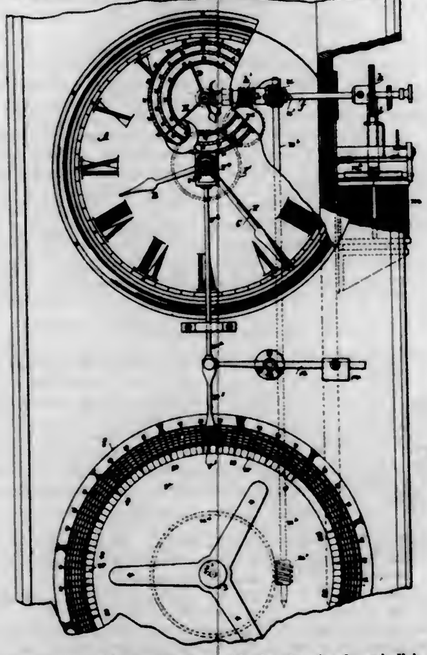
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triplets for completing the reduction and imparting the finished form and size to the rod, substantially as set forth.

3. In a rolling-mill for making wire rods, the combination of a leading continuous train of rolls arranged in pairs for breaking down and partially reducing the rod, and a supplemental set or sets of rolls, B, each set consisting of three or more rolls, for completing the reduction, disposed for finishing the rod in a consecutive manner and at a single heat, as set forth.

328,592. SPEED-CLOCK FOR MACHINERY. William H. Lord, New York, N. Y. Filed Jan. 17, 1885. (No model.)



Claim.—1. The combination, with the time hands and dial, of speed-indicating hands, mechanism for rotating such hands, an electro-magnet, armature, pawl-and-ratchet wheel, and circuit-connections to the distant circuit-closer and revolving shaft, substantially as set forth.

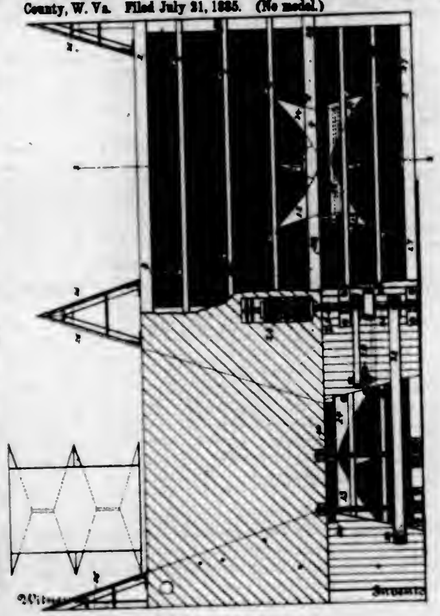
2. In a speed-indicator for machinery, the combination, with the revolving shaft, of an electric circuit, a circuit-closer, an electro-magnet, a ratchet-wheel, pawls, and armature, and a shaft and gearing, and a speed-hand and a time-hand both revolving over the same dial, substantially as set forth.

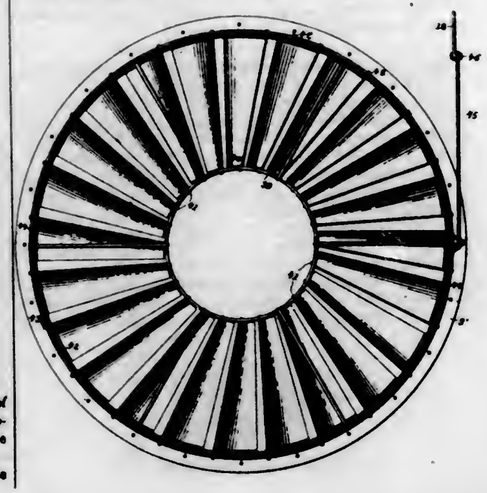
3. The combination, with the time hands and dials, of speed-hands and mechanism for revolving the speed-hands over the time-dials, and a disk adapted to receive and hold a movable record-card, mechanism for revolving the same in unison with the speed-hand, and a pencil or marker actuated by the time mechanism for indicating the relative speed and time movements, substantially as set forth.

4. The combination, with the time-hands, of an interrupted pinion, v^4, upon the arbor of the minute-hand, the slide-rod v^3, and internal rack-frame, the pencil, the disk, and speed-recording card having divisions thereon, as specified, and mechanism for revolving the disk from the engine or shaft, substantially as set forth.

5. The combination, with the speed and time hands, of a dial having divisions for the seconds, divisions indicating the percentage of speed, and divisions indicating the standard number of revolutions per minute, substantially as set forth.

328,593. FLOATING CURRENT-MOTOR. William Main, Brooklyn, N. Y., assignor to the River and Rail Electric Light Company, of Ohio County, W. Va. Filed July 21, 1885. (No model.)





Claim.—1. The combination, with a water-power mechanism, of a floating support therefor composed of two boat-like divisions, water-tight compartments formed by transverse partitions in said divisions, valves in said compartments, and a pump communicating with said compartments, substantially as described, and for the purposes set forth.

2. The combination of a water-power mechanism, a floating support therefor, water-tight compartments in said support, a supply and an exhaust valve in each of said compartments, and a pump communicating with the exhaust-valves, substantially as described and shown.

3. A current-power float provided with one or more converging water-ways of approach, water-tight compartments, valves, and a pump for filling and emptying the same, whereby its draft of water may be regulated, substantially as shown and described.

4. In a power-float, the combination of water-tight compartments, valves, and a pump for filling and exhausting the same, a water-power mechanism mounted upon said float, a water-way of approach therefor, and hinged deflecting-surfaces for directing the water into said water-way, substantially as shown, and for the purposes set forth.

5. The combination, in a current-power float, of hinged deflecting-surfaces, fore and aft water-tight compartments, and means for filling and exhausting the same, whereby the float may be tilted to facilitate adjustment of the deflecting-surfaces, substantially as shown and described.

6. A current-power float provided with one or more diverging water-ways of exit or discharge, water-tight compartments and valves, and a pump for filling and exhausting the same, substantially as described and shown.

7. In a current-power float, the combination of one or more converging water-ways of approach connected with diverging ways of discharge, water-power mechanism placed between the water-ways of approach and those of discharge, water-tight compartments and valves, and a pump for filling and exhausting the same, substantially as described and shown.

8. The combination, with a water-power mechanism, of a floating support provided with a water-way floored over at the bottom for said mechanism, fore and aft water-tight compartments in said support, and means for filling and exhausting said compartments, substantially as described, and for the purpose set forth.

9. The combination of a converging water-way of approach, a screw-wheel mounted therein, and a water-gate fixed behind the wheel and consisting of a system of radial water-guides with adjustable inclination arranged in proximity to the discharge-openings of the wheel.

10. A float for a screw water-wheel, constructed of sheet metal fastened to end bars, said bars being provided with lugs for attachment to the hub and rim of the wheel, respectively.

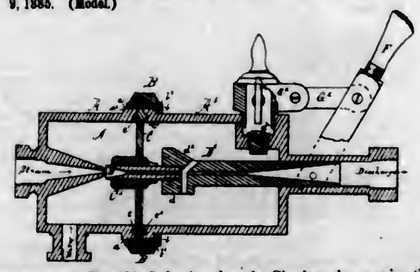
11. A system of radial guide-blades, in combination with a screw-wheel, and arranged in proximity to the discharge-openings of the same, substantially as shown, and for the purpose set forth.

12. A system of radial guide-blades with adjustable inclination, in combination with a screw water-wheel, and arranged in proximity to the discharge-openings of the same, substantially as shown, and for the purpose set forth.

13. The combination, with a screw-wheel, of a water-gate consisting of an inner and an outer fixed rim, radial blades, equal in number to the buckets of the wheel, extending from the inner to the outer rim, and pivotally mounted therein, and a movable ring mounted upon a second set of pivots formed upon the circumferential ends of the blades, substantially as described and shown.

14. The combination, with a screw-wheel, of a water-gate having the circumferential ring 37, the hub-ring 39, attached thereto by radial arms, the blades 40, pivoted at their ends to rings 39 and 37, respectively, and equal in number to the buckets of the wheel, the ring 44, pivoted upon the outer ends of the blades, and the rod 45, for controlling the position of ring 44 with reference to the fixed ring 37, substantially as described and shown.

328,594. INJECTOR. John M. Marty, Cleveland, Ohio. Filed Mar. 9, 1885. (Model.)



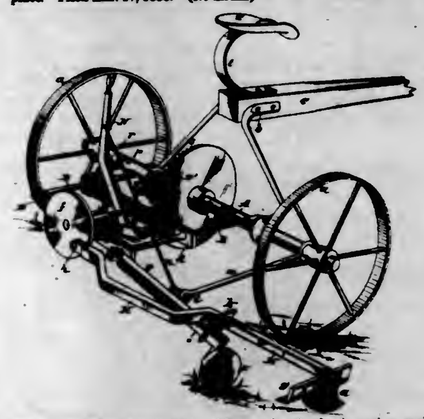
Claim.—1. The disk C, having the tube C', adapted to receive the tube D, the shoulders c and c', fitting into the corresponding sockets in the parts A and A', substantially as shown and described.

2. The combination of the disk C, having the tube C' and shoulders c and c', with parts A and A', and nut B, binding the whole together, substantially as shown and described.

3. The combination of the lever F, pivoted on the oscillating fulcrum G^3, with rods E E, working through the stuffing-boxes G G, their front ends screwed into shoulders d d of the tube D', tube D' having shoulders d d, and the incline shoulder d', adapted to raise the valve d^2 of the overflow, and tube D, screwed into the forward end of the tube D', its front end adapted to enter tube C', all substantially as shown and described, and for the purposes set forth.

4. The combination of the arm G' of the overflow with oscillating fulcrum G^3, pivoted to said arm, lever F, pivoted on the free end of said fulcrum, its short end pivoted to the rear ends of rods E E, all substantially as shown and described, and for the purposes set forth.

328,595. COTTON-CHOPPER. Montague M. McGregor, Rowley, Tex., assignor of two-thirds to Austin Morris and John Anderson, same place. Filed Mar. 17, 1885. (No model.)



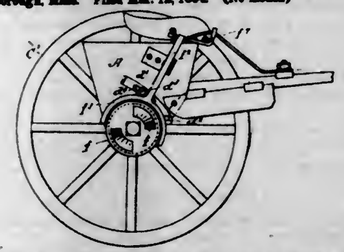
Claim.—1. The combination, with a pair of wheels and a main frame mounted loosely thereon, of a shaft journaled therein carrying a pinion and crank-wheel, a hoe adapted to be reciprocated by the crank-wheel, and an operating-lever connected with the shaft and hoe-handle, whereby the shaft is moved laterally and the hoe elevated simultaneously therewith, for the purpose substantially as set forth.

2. In a cotton-chopper, the combination, with a suitable frame, driving-gear, and a hoe adapted to be actuated thereby, of a lever connected with the hoe and driving-shaft adapted to simultaneously throw the shaft out of gear and elevate the hoe, substantially as set forth.

3. In a cotton-chopper, a lever adapted to simultaneously throw the hoe-actuating mechanism out of gear and elevate the hoe, substantially as set forth.

4. In a cotton-chopper, the combination, with a pair of truck-wheels, of a main supporting-frame loosely mounted thereon, consisting, essentially, of a pair of side bars which extend rearwardly from the axle, form a loop about the axle, and extend upwardly and forwardly therefrom, forming the bounds, and two cross-girders connecting the rear extension of the sides, substantially as set forth.

328,596. FERTILIZER-DISTRIBUTER. Alessio Mekeboby, Middleborough, Mass. Filed Mar. 12, 1884. (No model.)

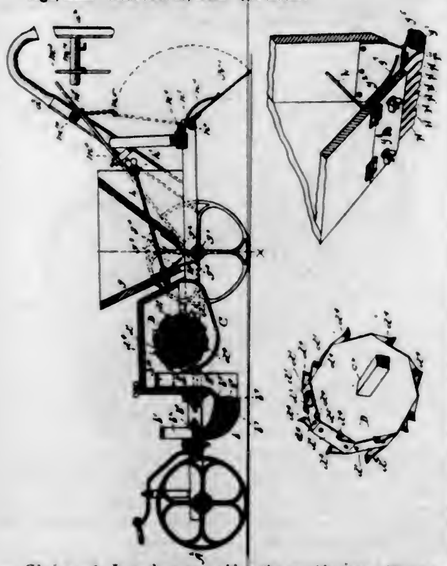


Claim.—1. In a fertilizer-distributer, a box or receptacle, A, having opening a^2, and provided with a hinged valve, D, at its bottom on one side, said valve having attached thereto spring-arms d^3, in combination with feed-roll B, having teeth or projections b, the valve and spring-arms being made adjustable with relation to the feed-roll by means of slotted arms d', secured to the sides of the box, substantially as described.

2. In a fertilizer-distributer, the combination, with box or receptacle A and feed-roll B, having teeth *b*, of agitator E, secured to the inner side of the box, said agitator comprising a downwardly-projecting plate for contacting with the teeth of the feed-roll and an upwardly and forwardly extending curved plate for agitating the material in the upper portion of the box, substantially as described.

3. In a fertilizer-distributer, the combination, with box or receptacle A, provided with an adjustable hinged valve, D, to which are attached spring-arms d^3, and agitator E, secured to the inner side of the box, of feed-roll B, having teeth *b*, said agitator comprising a downwardly-projecting plate for contacting with the teeth of the feed-roll and an upwardly and forwardly extending curved plate for agitating the material in the upper portion of the box, substantially as described.

328,597. PLANTING-MACHINE. Alebdo Mekbenet, Middleborough, Mass. Filed Nov. 13, 1884. (No model.)



Claim.—1. In a planting-machine, the combination, with a revoluble block having one or more plane faces, of one or more scoops secured to such face or faces, and side guides, also secured to such face or faces, for directing the course of the seeds after they leave the scoop or scoops, substantially as described.

2. The combination, with a hopper provided with an agitator whose lower end is rearwardly bent to form a scraper, and with an adjustable spring-plate opposite to and inclining toward the agitator, of a feed-roll having lines of teeth upon it, said teeth being so arranged that one tooth of one line shall be in front of the space between two teeth of the next line, a series of spring-plates, of a width corresponding to the width of the teeth, secured to a hinged plate of the hopper, and suitable means for adjusting the hinged plate and spring-plates in relation to the roll, substantially as described.

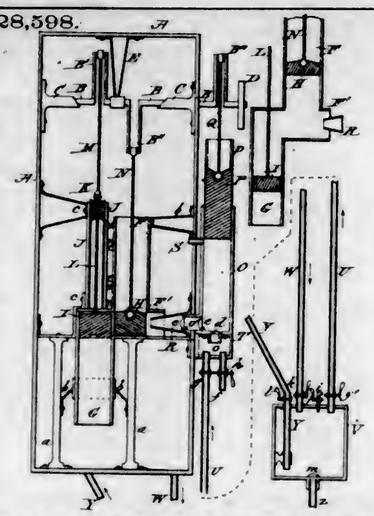
3. The combination, with driving-wheels A^2 A^4 of the machine, of a clutch mechanism mounted on the shaft of said wheels, consisting of a collar, M, having a groove, *m*, for the reception of the actuating mechanism, and an inclined shoulder, m^2, said mechanism so arranged that the inclined shoulder will engage with a spoke of the wheel when the machine moves in a forward direction, and will be moved back out of operative position by the spoke when the machine moves in a backward direction.

4. The combination, with the fertilizer-dropper, of the vertically-adjustable spreading-blade N, hinged leveling and compacting plate N', and swinging spring n^3, substantially as described, and for the purposes set forth.

328,598. AIR-COMPRESSOR. Charles Monson, New Haven, Conn. Filed Oct. 16, 1882. (No model.)

Claim.—1. In an air-compressor, the combination of a chamber or receiver for compressed air, a chamber for compressing air with means for compressing, a tube or opening from the compressor-chamber to the receiver or chamber for storing the compressed air and through which the air is forced from the former to the latter, and a tube or opening from the receiver to the compressing-chamber through which compressed air is admitted from the receiver to the compressing-chamber, with suitable valves or means for closing and opening said tubes, by which combination and arrangement, when the machine is operated, the contents of both chambers are brought to equal density, substantially as set forth and described.

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2. In an air-compressor, the combination, with the chamber A and cylinder O, of the connecting pipe or tube S, adapted to be periodically opened to admit into the cylinder O a current of compressed air from the chamber A, for the purpose of automatically bringing the contents of said cylinder and chamber to the same degree of compression, substantially as described.

3. The combination of the chamber A, cylinder O, having suitable valve-posts, the tube S, connecting said chamber and cylinder, the piston P, pitman Q, and cranked shaft B, substantially as described.

4. The combination of the chamber A, tube S, piston P, and cylinder O, having ports *o o'*, and valves *d s e*, substantially as and for the purpose specified.

5. The combination of the chamber A, communicating cylinders G F O, two of which are inclosed in the said chamber while the other cylinder is exterior thereto and communicates directly with the external arm, the pistons I H P, pitmen M N Q, shaft B, having cranks B' B'' B''', and means for connecting the external cylinder, O, to the chamber A, and cylinder F, substantially as and for the purpose described.

6. The combination of the chamber A, cylinder G, having piston I, cylinder F, having port F' and piston H, the cylinder O, having piston P, ports *o o'*, and valves *d s e*, the tube S, connecting the cylinder O and chamber A, and the funnel R, connecting the ports F' and *o'*, substantially as and for the purpose set forth.

7. The combination of the cylinders F O and pistons H P, operated by pitmen N Q and cranks B'' B''' on the shaft B, for the purpose of forcing the air contents of the cylinder O into chamber A by the combined pressure of the piston P and suction of the piston H, substantially as described.

8. An air-compressor consisting of the chamber A, shaft B, cranks B' B'' B''', pitmen M N Q, sliding block K, rod L, ways J J, pistons I H P, cylinders G F O, having suitable ports and valves, the funnel R, and tube S, all substantially as and for the purpose specified.

328,599. BLACKING-BRUSH. George W. Mowry, Geneva, assignor of one-half to Francis M. Smith, New York, N. Y. Filed Jan. 20, 1885. (No model.)



Claim.—1. The combination, with the brush, of the support C, having the arms adapted to receive between them the dip and journaled thereto, the side slots, *m*, in its lower end, the box E, and fulcrum-lever D, as and for the purpose set forth.

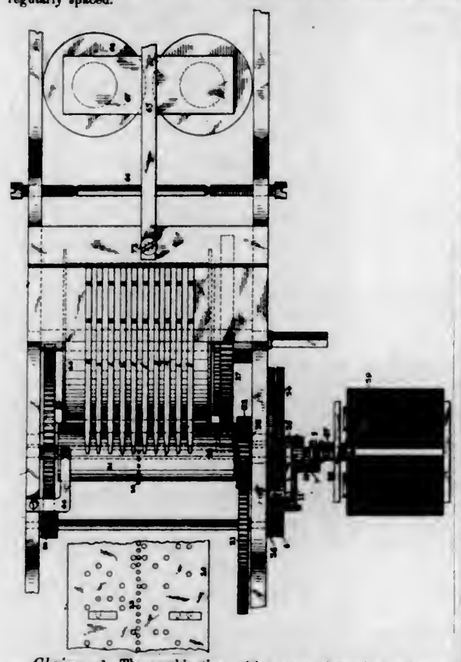
2. The combination, with the brush, of the support, cut away as shown, leaving the spaces in front and in rear, and provided with the vertical slots in its side walls, the curved spring-arms having the journal-bearings in their upper ends to receive the journals of the reversible dip, whereby the same is supported and locked in position, and the box pivoted to the fulcrum-lever, the whole operating as set forth.

3. The combination, with the support, constructed as described, the brush, and reversible dip, of the lever and box, the latter pivoted to the former by the hook ends of the lever, and constructed of a single wire fulcrumed to the handle, and having a spring engaging the lever, whereby said lever is held in its normal position, as and for the purpose set forth.

4. The combination, with the brush, the lever, box, and support, constructed as described, of the dip provided with the journals, substantially as shown, whereby the dip may be reversed and locked in position, as set forth.

328,600. ELECTRICAL PERFORATOR. James E. Munson, New York, N. Y. Filed Jan 18, 1883. Renewed Mar. 18, 1885. (No model.)

Brief.—A pattern-strip perforated with the message controls and operates punches that reproduce the message at the distant receiving-station. The distance between the perforations may vary on the pattern-strip, but said perforations are reproduced at the receiving-station regularly spaced.



Claim.—1. The combination, with a gang of punches and means for supporting a recording-ribbon of paper or similar material within their range of action and for advancing said ribbon with a step-by-step movement the steps of which are equal, of means for advancing a pattern-ribbon with a step-by-step movement the steps of which vary according to the distance between the pattern-signs upon the ribbon and connections by which the said signs effect the proper selections of punches, all substantially as described.

2. The combination, with a gang of punches and means for supporting a recording-ribbon of paper or similar material within their range of action and for advancing said ribbon with a step-by-step movement the steps of which are equal, of means for advancing a pattern-ribbon with a step-by-step movement the steps of which vary according to the distance between the pattern-signs upon said ribbon, connections by which the said signs effect the proper selections of punches, and means for operating the selected punches, all substantially as described.

3. The combination, with a gang of punches and means for supporting a recording-ribbon of paper or similar material within their range of action and for advancing said ribbon with a step-by-step movement the steps of which are equal, of means for advancing a pattern-ribbon and for arresting the same at each pattern-sign, connections by which the signs upon the pattern-ribbon effect the proper selection of punches, means for operating the selected punches, and connections by which said means is put in operation only after a selection has been made, and means by which the operation of the punches sets in motion the pattern-ribbon, all substantially as described.

4. The combination, with the pattern-ribbon, of the feelers *a b c*, &c., feeding-roll 21, and magnet 39, located in the same electrical circuit, and means whereby said roll is arrested as each sign upon said ribbon passes beneath said feelers, all substantially as described.

5. The combination, with the feelers *a b c*, &c., of the pattern-ribbon 20, feeding-roll 21, ratchet 34, pawl 8, magnet 39, located in circuit with said roll and feelers, and connections, all substantially as described.

6. The combination, with the magnets *a' b' c'*, and punches *a'' b'' c''*, &c., and the hinged arms and contact-points of the latter, of the plate 18, magnet 68, bar 64, and connections, all substantially as described.

7. The combination, with the hinged arms 54, having points 19, of the plate 18, magnet 68, arms 65 87, springs 85 86, and connections, all substantially as described.

8. The combination, with the hinged arms 54, of the points 19, plate 18, hooks 78 79, magnet 68, arm 65, bar 64, and connections, all substantially as described.

9. The combination, with the feelers *a b c*, magnets *a' b' c'*, and punches *a'' b'' c''*, &c., of the roll 21, ratchet 34, pawl 8, magnet 39, arms 54, points 19, plate 18, magnet 68, arm 65, springs 85 86, and connections, all substantially as described.

10. The combination, with the pattern-ribbon and the feelers, magnets, and punches *a'' b'' c''*, &c., of means for advancing said ribbon and electrical connections whereby the signs upon said ribbon arrest its advancement, select and operate said punches, and cause said ribbon to again advance, all substantially as described.

328,601. PIPE-WRENCH. George F. Newell, Boston, assignor of one-half to Stiles Frost, Newton, Mass. Filed Sept. 13, 1884. (No model.)



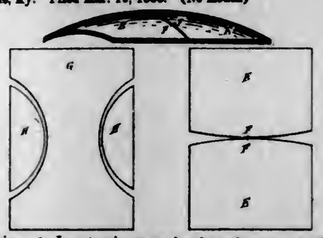
Claim.—1. In a wrench, the combination of the bar A, the jaw B, hinged to the said bar, and the jaw D, hinged to the jaw B, and provided with a lip, D', adapted to bear against the side of the bar A at a point between the pivot *c* of the jaw B and the handle A', substantially as and for the purpose described.

2. The combination of the bar A, provided with a notch or shoulder, a^2, on the side thereof, the jaw B, hinged to said bar, and the jaw D, hinged to the jaw B, and provided with a lip, D', having its extremity adapted to engage with said notch or shoulder between the pivot *c* of the jaw B and the outer end of the bar A, substantially as and for the purposes described.

3. The combination of the bar A, the jaw B, hinged to said bar, and the jaw D, hinged to the jaw B, provided with a set-screw having its point adapted to bear against the side of the bar A opposite the pivot *c* of the jaw B, substantially as and for the purpose described.

4. The combination of the bar A, a serrated jaw pivoted to the end thereof, and a jaw pivoted to said serrated jaw, and provided with a lip, D', adapted to bear against the side of the handle between its fulcrum and its free end, substantially as and for the purpose described.

328,602. TRUNK-TOP. James F. Osborn, Jeffersonville, Ind., assignor of one-half to J. L. Chilton, D. A. Guthrie, and J. G. Guthrie, Louisville, Ky. Filed Mar. 19, 1885. (No model.)



Claim.—1. In a trunk-top made of wood veneers in three or more thicknesses, the central sheet, G, having circular pieces H H cut from the sides, the circles of which are afterward slightly reduced to form a perfect joint when pressed into form by the dies C, substantially as described, and for the purpose set forth.

2. In combination with the central sheet, G, having circular pieces H H cut from its sides, as above described, the sheets E E, constituting the first and last courses that form the tops, having the inner edges slightly curved to form a perfect joint when pressed into form by the dies C, substantially as described, and for the purpose set forth.

328,603. VENEER TRUNK-TOP. James F. Osborn, Jeffersonville, Ind., assignor of one-half to J. L. Chilton, D. A. Guthrie, and J. G. Guthrie, Louisville, Ky. Filed June 2, 1885. (No model.)

328,603.



Claim.—1. A veneer trunk-top composed of a series of layers, having one or more of such layers formed of sections, and each section of a layer overlapping the abutting section of the same layer, substantially as described.

2. A veneer trunk-top composed of a series of layers, having one or more of such layers formed of sections, each section having a feather-edge, which overlaps a feather-edge on the abutting section of the same layer, substantially as described.

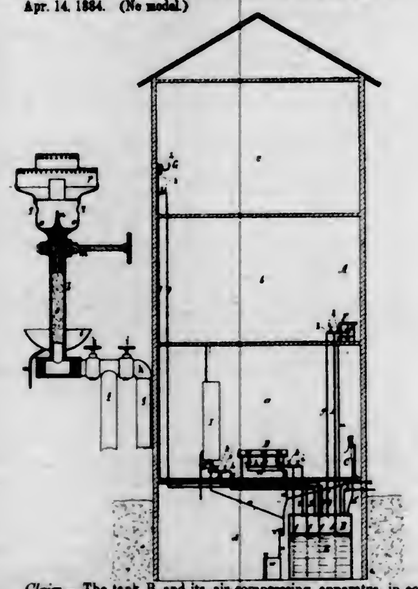
3. A trunk-top formed of sectional layers of veneer B and C, the layer B being formed of two overlapping sections, and the layer C of three overlapping sections, substantially as described.

328,604. VENEER TRUNK-TOP. James F. Osborn, Jeffersonville, Ind., assignor of one-half to J. L. Chilton, D. A. Guthrie, and J. G. Guthrie, Louisville, Ky. Filed June 2, 1885. (No model.)



Claim.—A veneer trunk-top having one or more of its layers made of sections of veneer, each section having feather-edged portions which overlap and a straight-edged portion which abuts against the adjoining section of the same layer, substantially as described.

328,605. VAPOR-STOVE. Jas. H. Palmer, Cambridge, Mass. Filed Apr. 14, 1884. (No model.)

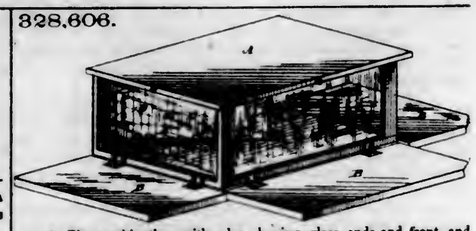


Claim.—The tank B and its air-compressing apparatus, in combination with the gasoline-supply pipe *f*, leading from the bottom of the tank, the return-pipe *g*, leading from the top of the tank, a burner for the gasoline, and the pipe *h*, having the cocks *i* and *k*, the pipe *f* leading into pipe *h* between the said cocks, and the pipe *g* into pipe *h* beyond both cocks on the side away from the burner, as and for the purpose set forth.

328,606. TRAIN-SIGHTER. Jas. R. Park, Lavergne, Tenn. Filed Apr. 17, 1884. (No model.)

Claim.—1. In a train-sighter, the combination, with a back or rest and two blocks adjustably secured thereto, of a mirror hinged to each block, substantially as set forth.

328,606.



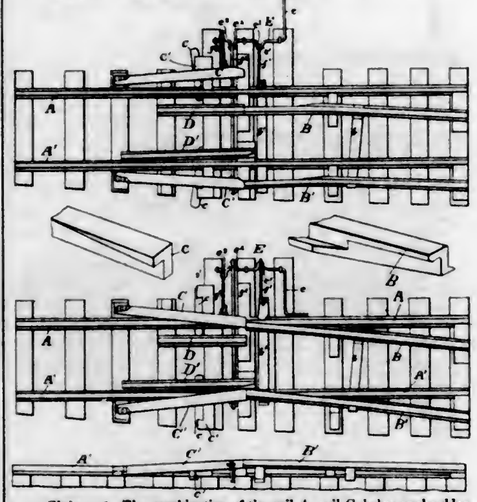
2. The combination, with a box having glass ends and front, and two blocks adjustably secured to the back of said box, of a mirror hinged to each block, substantially as set forth.

3. In a train-sighting apparatus, the combination, with a box provided with glass ends and front, and shields hinged to the bottom of the box, of two bolts secured to the box, blocks pivotally or loosely secured on said bolts, and a mirror hinged to each block, substantially as set forth.

328,607. LIQUID FOR VOLTAIC BATTERIES. August F. W. Partz, Philadelphia, Pa. Filed Oct. 6, 1884. (No specimens.)

Claim.—The combination, in a voltaic element, of a compound solution of chloride of ammonium and bichromate of potash with an anode of zinc and a cathode of carbon.

328,608. RAILROAD-SWITCH. John F. Penrod, Blairsville Intersection, Pa. Filed Sept. 23, 1884. (No model.)



Claim.—1. The combination of the rail A, rail C, ledge or shoulder *c'*, and the brace secured to the rail C, and having one end projected under the rail A, and its other end projected under shoulder *c'*, substantially as set forth.

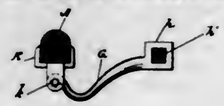
2. The combination, in a railroad-switch, of the main track, the rails B B', the pivoted rails C C', inclined upward from their pivots and movable at their upper ends over the rails of the main track, and brace-bars *c*, secured midway their ends to the under side of rails C C', and extended inward under the main rail and outward under a suitable ledge or shoulder, substantially as and for the purpose set forth.

3. The railroad-switch composed, in connection with the main track, of the pivoted rails B B', the pivoted rails C C', the brace-bars *c*, the crank-shaft E, having cranks *e e' e² e³*, and the pitman-links *f f' f²*, all substantially as and for the purposes specified.

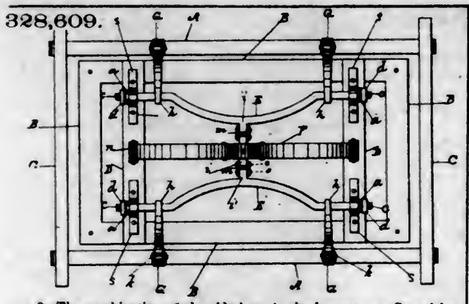
328,609. VEHICLE-SPRING. Oliver S. Plummer and John M. Wood, Richmond, Ind. Filed Mar. 23, 1885. (No model.)

Claim.—1. The spring F, provided with arms *i i* and hinged brackets *n n*, constructed and operating substantially as herein described.

2. The curved arms E E, provided with journal-bearings *a a*, screw-nut *d*, and screw-thread *c*, when combined with the spring F by hinged couplings *m m* and arms *i' i'*, as herein described.

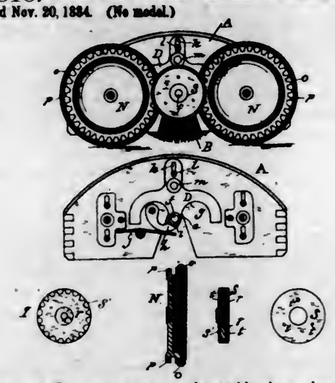


328,609.



3. The combination of the side bar, A, the hanger-arm G, and bar E, with the spring F, in the manner and for the purposes herein set forth.

328,610. CARPET-SWEEPER. Edward T. Prindle, Aurora, Ill. Filed Nov. 20, 1884. (No model.)



Claim.—1. In a carpet-sweeper, in combination, a brush adapted to be removed from its bearings by a downward pull, and journal-bearings for the same divided horizontally and about equally, the lower half being in a lever upheld by a spring and the upper half being in the under side of plates D, as set forth.

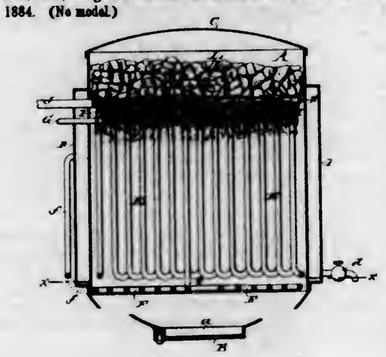
2. In combination with the brush removable in the manner set forth, the vertically-adjustable plates D, one at each end of the box or case, and provided with a half journal-box, the pivoted lower bearings, and springs serving to uphold such bearings, all substantially as set forth.

3. In a carpet-sweeper, wheels serving both as carriage and as driving wheels, each having a semicircular peripheral groove, a rubber tire in such groove cylindrical in cross-section, and a toothed gear made integral with the body of the wheel, as and for the purposes set forth.

4. In a carpet-sweeper, a gear-wheel composed of metal side plates or disks, *s s'*, combined with and firmly holding between them a gear or toothed wheel made of leather or its described non-metallic equivalent, these disks having a diameter substantially equal to that of the toothed part, all as set forth.

5. In combination with the case, the wheels N, constructed as described, the compound toothed wheels *s s'*, constructed as described, and the divided journal-boxes at both ends of the case.

328,611. PROCESS OF REMELTING SOAP. John C. Ralston, Toledo, Ohio, assignor to Robert Freeland, Boston, Mass. Filed Oct. 29, 1884. (No model.)



Claim.—1. The method herein described of melting soap-scrap, consisting in subjecting the scrap to the action of heat and open steam simultaneously to soften and melt the same and then subjecting the melted soap to the action of heat to remove the surplus moisture, as set forth.

2. The method herein described of melting soap-scrap, consisting in subjecting the scrap to the action of heat and steam simultaneously, then subjecting the melted scrap to the action of jets of open steam, and finally subjecting the same to the action of heat, as set forth.

3. The method herein described of keeping the heating-pipes clear of crust, which consists in subjecting the melted soap and the exterior surfaces of the heating-pipes to the action of downward jets of steam during the descent of the soap, as set forth.

4. The method herein described of producing a continuous rapid delivery of the finished soap from the melting-vessel, which consists in subjecting the surface of the finished soap to the pressure of downward jets of steam while the exit-valve is open, as set forth.

328,612. STEAM ROCK-DRILL. Addison C. Rand, New York, N. Y. Filed Feb. 11, 1885. (No model.)



Claim.—1. In a steam rock-drill in which the valve controlling the steam-passages to the main cylinder is moved by steam under continuous and uninterrupted pressure on the valve, and in which the valve is shifted while this continuous pressure is maintained by alternately exhausting the steam from opposite ends of the valve-chest, the combination, with the described main cylinder and elongated piston provided with the annular chamber C, and the described induction and eduction passages to the main cylinder, and the described valve-chest E and valve F, provided with the flanges *a* and *a'*, annular chamber *f*, and cavity *b*, the steam-passages establishing constant communication between the said chamber *f* and the steam-supply source, of steam-exhaust passages leading from the opposite ends of the valve-chest to the annular chamber C, the exhaust-passage leading from the upper end of the said valve-chest being constricted in size relatively to the other of said exhaust-passages, as and for the purpose described.

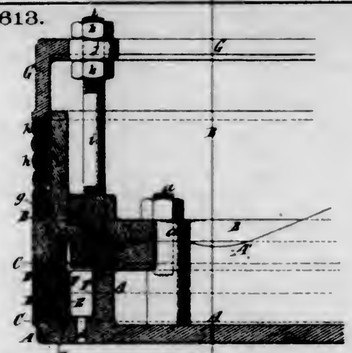
2. In a steam rock-drill in which the valve controlling the steam-passages to the main cylinder is moved by steam under continuous and uninterrupted pressure on the valve, and in which the valve is shifted while this continuous pressure is maintained by alternately exhausting the steam from opposite ends of the valve-chest, the combination, with the described main cylinder and elongated piston provided with the annular chamber C, and the described induction and eduction passages to the main cylinder, and the described valve-chest E and valve F, provided with the flanges *a* and *a'*, annular chamber *f*, and cavity *b*, the steam-passages establishing constant communication between the said chamber *f* and the steam-supply source, of the exhaust-passages *e* and *e'*, leading, respectively, from opposite ends of the valve-chest to the annular chamber C, the opening between the flange upon the lower end of said valve F and the wall of the valve-chest being less than the corresponding opening at the opposite end of the valve, as and for the purpose described.

3. In a steam rock-drill in which the valve controlling the steam-passages to the main cylinder is moved by steam under continuous and uninterrupted pressure on the valve, and in which the valve is shifted while this continuous pressure is maintained by alternately exhausting the steam from opposite ends of the valve-chest, the combination, with the described main cylinder and elongated piston provided with the annular chamber C, and the described induction and eduction passages to the main cylinder, and the described valve-chest E and valve F, provided with the flanges *a* and *a'*, annular chamber *f*, and cavity *b*, the steam-passages establishing constant communication between the chamber *f* and the steam-supply source, of the exhaust-passages *e* and *e'*, leading, respectively, from opposite ends of the valve-chest, to the annular chamber C, and the holes in the flanges *a* and *a'*, that in the flange *a* being smaller than that in the flange *a'*, as and for the purpose described.

328,613. HYDRAULIC PISTON. George H. Reynolds, New York, N. Y., assignor of one-half to Crane Brothers Manufacturing Company, Chicago, Ill. Filed Sept. 20, 1884. (No model.)

Claim.—1. The combination, with the body and follower A B, the former having holes *d* for the admission of water, and having outwardly-projecting integral ears *f* at different points in its circumference, of the circular band or belt E, of flexible material—such as leather—surrounding the body A, packing-rings D, of flexible material, surrounding the

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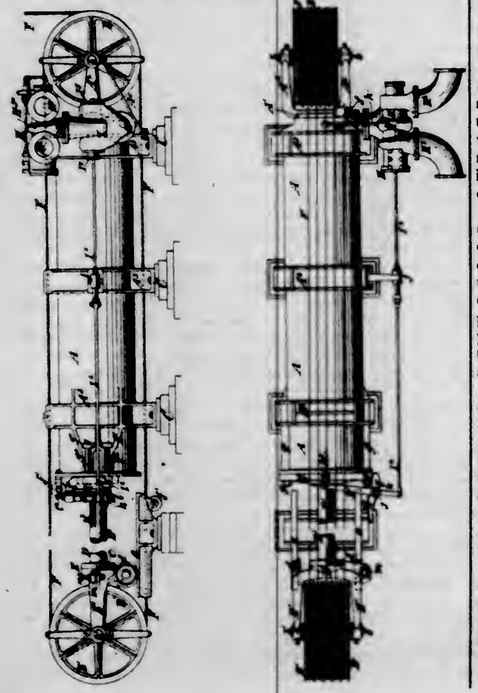
band or belt E, and bent springs F, arranged in the spaces between the ears *f*, and thereby held against shifting in a circumferential direction, the said springs being interposed between the body A and the band or belt E, and exerting a direct outward pressure on the said band or belt E, substantially as herein described.

2. The combination, with the body and follower of a hydraulic piston, the follower having a circular rim, *e*, of the circular band or belt E, of flexible material—such as leather—and the rings D, of flexible packing, encircling said band or belt and forming the wearing-surface of the piston, the band or belt E being made wider than the packing D and bearing on the inner side of the rim *e*, and the body having holes for admitting water to exert an outward pressure on the band or belt, whereby the band or belt is pressed outward to form a water-tight joint on the rim *e*, and its surrounding rings are pressed outward against the cylinder, substantially as herein described.

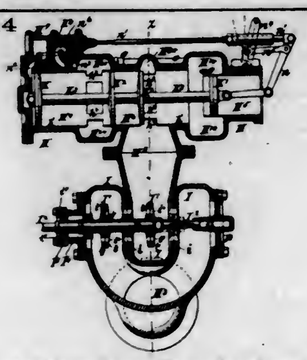
328,614. HYDRAULIC ELEVATOR. George H. Reynolds, New York, N. Y., assignor of one-half to Crane Brothers Manufacturing Company, Chicago, Ill. Filed Dec. 10, 1884. (No model.)

Claim.—1. The combination, with the cylinder A, constructed with circumferential re-enforcing ribs or flanges A^2, which also constitute feet or standards for supporting the cylinder, of the piston, piston-rod, and cross-head, a set of sheaves, B', connected with the cross-head, and a second set of sheaves, B, supported at the rear end of the cylinder, substantially as herein described.

2. The combination, with a hydraulic cylinder and piston and a



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change or reversing valve for controlling the flow of water to and from the cylinder, of an air-escape pipe leading from the top of the cylinder to the valve-casing and controlled by said change or reversing valve, substantially as and for the purpose herein described.

3. The combination, with the horizontal cylinder A and its piston, of the change or reversing valve arranged as high as the top of the cylinder, and the air-escape pipe *h*, leading at an upward inclination from the top of the cylinder to the valve-casing and controlled by the valve, substantially as and for the purpose herein described.

4. The combination, with the horizontal cylinder, A, its piston, piston-rod, and cross-head, of two sets of sheaves, B B', the change or reversing valve whereby the flow of water to and from the cylinder is controlled, and the water-passage H^3, leading from said valve to the bottom of the cylinder at the rear end thereof, whereby the discharge of any foreign matter from the cylinder will be facilitated, substantially as and for the purpose herein described.

5. The combination, with the cylinder and piston of a hydraulic elevator and the change or reversing valve for controlling the direction of movement of the piston, of a safety or shut-off valve arranged between the change or reversing valve, and the cylinder and appliances through which said safety or shut-off valve is closed automatically as the piston approaches the end of its movement, substantially as herein described.

6. The combination, with the cylinder and piston of a hydraulic elevator and a passage for liquid to and from the cylinder, of a shut-off or safety valve arranged in said liquid-passage, an unbalanced piston for holding said valve normally open, and appliances through which said valve is moved automatically against the pressure of water on said piston to close the valve as the main piston approaches the end of its movement, substantially as herein described.

7. The combination, with the cylinder and piston of a hydraulic elevator and a change or reversing valve for controlling the direction of movement of the piston, of a safety or shut-off valve arranged between the change or reversing valve and the cylinder, and through which water flows to and from the cylinder, and which is constructed to permit a regulated leakage when closed, and appliances whereby the closing of said valve is automatically effected as the piston approaches the end of its movement, substantially as herein described.

8. The combination, with the piston and cylinder of a hydraulic elevator and a change or reversing valve for controlling the direction of movement of the piston, of a valve-casing, I, arranged between the change or reversing valve and the cylinder, and through which the water flows to and from the cylinder, balanced valve disks or heads I', for controlling the flow through the casing, each valve disk or head being provided with leakage-openings and means for regulating them, and appliances whereby said valve disks or heads will be moved automatically to close as the piston approaches the end of its movement, substantially as herein described.

9. The combination, with the cylinder, and piston of a hydraulic elevator and the change or reversing valve for controlling the direction of movement of the piston, of the passage H^3, leading from the change or reversing valve to the cylinder, the valve-casing I in said passage, the valve disks or heads I', each composed of plates having corresponding series of openings, I^5, and adjustable circumferentially to more or less close said openings, the valve-rod I^3, and single nut I^7, for securing the several plates of the two heads I' when regulated, and appliances for automatically moving the rod to close the valve as the piston approaches the end of its movement, substantially as herein described.

10. The combination, with the cylinder and piston of a hydraulic elevator, of a change or reversing valve, a safety or shut-off valve between the change-valve and the cylinder, an unbalanced piston for holding said safety or shut-off valve normally open, and appliances whereby said unbalanced piston and attached valve will be moved automatically to close the valve as the main piston approaches the end of its movement, substantially as herein described.

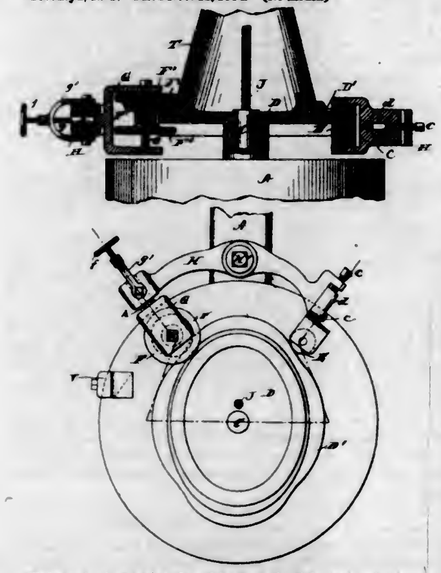
11. The combination, with the cylinder and piston of a hydraulic elevator, of a change or reversing valve, a safety or shut-off valve between the change-valve and cylinder and constructed to permit a regulated leakage when closed, an unbalanced piston for holding said safety or shut-off valve normally open, and appliances whereby said safety-valve will be closed automatically as the main piston approaches the end of its movement, substantially as herein described.

12. The combination, with the cylinder and piston of a hydraulic elevator and the change or reversing valve for controlling the direction of movement of the piston, of the valve-casing I, the disks or heads I', having regulated openings i^5, for leakage, the stem I^3, the cylinder I^4, having the shoulder i^3, for limiting the opening movement of the valve, and appliance whereby the valve will be closed automatically as the main piston approaches the end of its movement, substantially as herein described.

13. The combination, with the cylinder, piston, piston-rod, and cross-head of a hydraulic elevator, of a safety or shut-off valve, through which water flows to and from the cylinder, a rock-shaft, J, having an arm, *k*, with which the stem of said valve is connected, and also having arms k' k^2, and the push-rods k^3, connected with the arm k', all substantially as herein described.

14. The combination, with the cylinder and its re-enforcing ribs and seats g^6 g', of the buffer-bar G and bolts *g*, whereby it is secured to the cylinder, the piston D, and cross-head E, and buffer-cushion *c'*, interposed between the piston and cross-head and the buffer-bar, substantially as herein described.

328,615. MACHINE FOR WIRING VESSELS. Henry S. Reynolds, Brooklyn, N. Y. Filed Nov. 12, 1884. (No model.)



Claim.—1. A machine for wiring vessels of irregular shape, comprising a holder shaped to receive the body of the vessel, a cam shaped conformably with the holder and connected therewith, and means to rotate them, a pivoted arm carrying at one end a roller, in contact with the cam to move said arm, and having swiveled in its other end a wiring-roller engaging said cam, and by it moved to follow its shape, substantially as and for the purpose set forth.

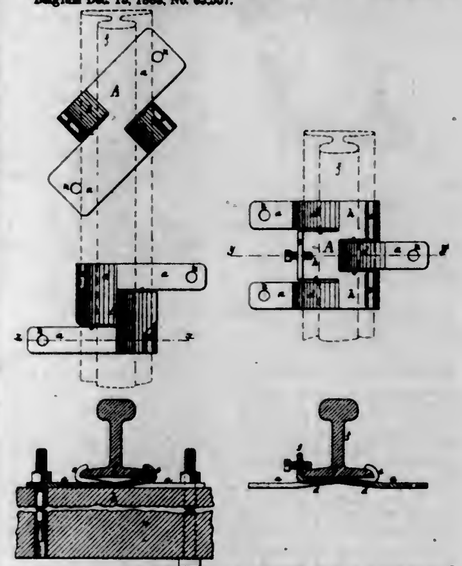
2. The combination of a driving-shaft, a holder shaped to receive the mouth of a vessel of irregular contour which is to be wired, a rotary cam, a swinging arm, a roller in one end of said arm in contact with said cam to transmit the motion of said cam to said arm, and a wiring-roller having longitudinal play in the other end of said arm, and confined to the cam to follow the variations in height of the vessel, and movable by the action of the cam on the other roller to follow variations in width of the mouth of the vessel, substantially as set forth.

3. The combination of a rotary holder shaped in vertical and transverse section to receive a vessel to be wired, a cam, a main driving-shaft, an arm swinging on a fixed pivot, a roller on one end of said arm in contact with said cam, whereby the motion of said cam is imparted to the other end of said arm, a wiring-roller in the last-named end of said arm pivotally connected therewith and having a longitudinal movement thereon and in operative connection with the holder, substantially as set forth.

4. A machine for wiring vessels while open at both ends, comprising a holder to receive one end of the vessel, and a clamping device rising from said holder, and having movable plates and means to project them over the other end of the vessel, and to force them down upon it, substantially as set forth.

5. The combination, with a holder, of a clamping device rising therefrom, and consisting of fixed members K K', and a movable member suitably connected to the fixed members, and provided with plates M M, and means, substantially as described, to move them, as and for the purpose set forth.

328,616. ELASTIC RAIL-SUPPORT. Friedolf Schaidhan, Copenhagen, Denmark. Filed Dec. 8, 1884. (No model.) Patented in England Dec. 15, 1883, No. 5,755; in France Dec. 15, 1883, No. 159,190, and in Belgium Dec. 15, 1883, No. 63,557.



Claim.—1. A metallic plate, A, adapted to be secured upon a railway-sleeper, and provided with rail-supporting flaps *d*, having reverted edges to receive the rail-flanges, for the purpose set forth.

2. A metallic plate, A, having flaps or flanges *a*, adapted to be secured upon a railway-sleeper, and inclined spring-flaps *d*, the said spring-flaps being provided with horizontal extensions *b*, having reverted edges *c*, to support and embrace the foot of the rail, substantially as and for the purpose specified.

3. A metallic plate, A, having flaps or flanges *a*, adapted to be secured upon a railway-sleeper, and inclined spring-flaps *d*, provided with reverted edges obliquely opposite to each other to embrace opposite edges of the rail-foot, substantially as and for the purpose specified.

4. A metallic plate, A, having obliquely-opposite lugs or flanges *a*, adapted to be secured upon a railway-sleeper, and adjacent to the said flanges rail-supporting spring-flaps *d*, which have reverted edges and are separated from the flaps by a side slit, *c*, said spring-flaps being arranged obliquely opposite to each other and directly opposite to the flanges *a*, substantially as specified.

328,617. CIGAR-BOX. Frederik C. Shalette, Allegheny, assignor of one-half to David Nichols, Bradford, Pa. Filed June 26, 1885. (No model.)

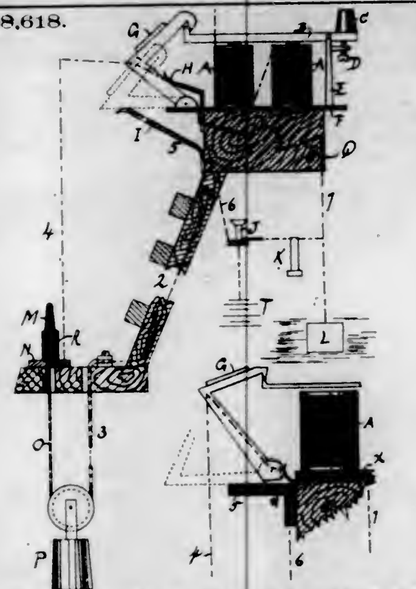


Claim.—1. In a cigar-box, the combination of the bottom and sides C, made of a single piece of material which is provided with the grooves B, the top I, the inner perforated end pieces, D, which are secured in position by the strips E, the outer perforated end pieces, H, and the strips L, which cover over the perforations J, substantially as shown.

2. In a cigar-box, the combination of the blank, which is provided with the grooves B, forming the sides C, the cover I, the inner end pieces, D, strips for securing them in position, and the outer end pieces, H, substantially as described.

328,618. TELEPHONE SWITCH-BOARD. Carl C. Sonne, Shanghai, China. Filed Dec. 22, 1884. (No model.)

328,618.



Claim.—1. In a telephone switch-board, the combination of the annunciator-drop G, adapted to be held by the armature-lever B so as to make electrical contact with the spring H, the spring I, located in a position to make electrical contact with the said drop G when the latter is allowed to fall by the lever B being at any time attached by the electro-magnets A, and the push-button J, which directs, according to its adjusted position, the current either to the battery F or to the telephone K, substantially as described.

2. In a telephone switch-board, the combination of the adjustable plug M, fitting in or removable from the socket R and electrically connected to the conductor O, leading to the subscriber's line 1, and the plate N, connected electrically with the conductor 4, which connects with the earth or with the telephone or battery, according to the position of the annunciator-lever G and push-button J, substantially as and for the purposes set forth.

3. In a telephone switch-board, the combination of the groups of springs I, each located under an annunciator-lever, G, as shown, switches S, located between said groups for the purpose specified, and a second switch provided with contact-points *a*, connected each by a wire to one of said groups and arranged side by side, substantially as and for the purpose specified.

328,619. RECTAL SPECULUM. Lyman B. Sperry, Bellevue, Ohio, assignor to James P. Lytle, Tiskilwa, Ill. Filed May 11, 1885. (No model.)



Claim.—1. In an expansible rectal speculum, the combination, with a tube open at both ends and provided with a slot throughout its entire length, of a slide having double flanges, whereby it may automatically adjust itself to the varying diameter of said tube when expanded or contracted, substantially as described.

2. An expansible rectal speculum having a tube constructed from a single piece of spring sheet metal, a slot throughout its entire length, and open at both ends, provided with a self-adjusting slide, B, and a removable plug, substantially as and for the purposes specified

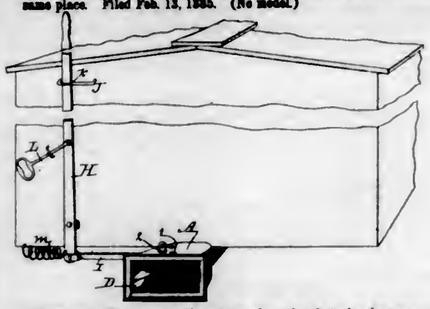
3. In an expansible speculum having a tube formed from a single piece of tempered sheet metal, a removable plug provided with an enlarged protruding paraboloidal-shaped end, the base of which is made somewhat smaller than the protruding portion, whereby the end of the tube may exert a yielding pressure against the tapered base of said plug, substantially as set forth.

4. In a speculum open at both ends, the removable protruding plug C, having a receding or tapering base, and a neck, *c'*, provided with the concave conoidal portion *c²*, the edges of which are rounded, substantially as and for the purposes specified.

5. In a speculum, the removable plug C, provided with the concave conoidal portion *c²*, stem *c³*, and flange *c⁴*, substantially as described.

6. In an expansible speculum, the tube A, constructed from spring metal and provided with handles *a a*, in combination with the self-adjusting slide B and plug C, substantially as and for the purposes set forth.

328,620. CAR-COUPLING. Stephen H. Spencer, Des Moines, Iowa, assignor of one-half to Jerome Hollingsworth and Joseph P. Bushnell, same place. Filed Feb. 13, 1885. (No model.)



Cloim.—1. The combination of the draw-head A, having an opening, B, at the rear and side of its link-cavity, and pin-holes Nos. 1 and 2, pins adapted to be placed in said pin-holes, the pivoted hook C, having a beveled head, D, and the spring F, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

2. The improved car-coupler composed of a draw-head, A, having an opening, B, at the rear end of its link-chamber, and pin-holes Nos. 1 and 2, the pivoted hook C, having a beveled head, D, the spring F, the lever H, link I, fixed loop J, having a shoulder, K, and the lever-handle L, in the manner set forth, for the purposes specified.

328,621. MACHINE FOR APPLYING BARBS TO FENCE-WIRE. Jno. Stubbs, Pittsburg, Pa., assignor to the Pittsburg Steel Fencing Company, same place. Filed Apr. 21, 1884. (No model.)

Brief.—The strand-wires are fed by intermittingly-operated feed-wheels, and pass from the feed-wheels along the oscillating guide-fingers and between the clamping devices to the spooler and twister. The guide-fingers are opened so as to spread the wires, and a barb previously cut and shaped is placed between the clamping devices, which at once center and hold it. The guide-fingers then close, bringing the wires together onto the barb, the clamping devices open, and the barb is secured in place by the twisting of the wires. The power is applied to the spooler and twister, and is transmitted by belting to the other parts of the machine.

Claim.—1. In a machine for applying plates or barbs to fence-wires, the combination of a clamp for supporting and holding the plate or barb in position and fingers for closing the strand-wires against the edges of an interposed plate or barb, substantially as and for the purposes specified.

2. In a machine for applying plates or barbs to fence-wires, the combination of a clamp for holding a plate or barb in position and oscillating guide-fingers for securing and adjusting the strand-wires about the interposed tablet or barb, said guide-fingers being capable of moving simultaneously with or immediately before the separation of the clamp, substantially as and for the purposes specified.

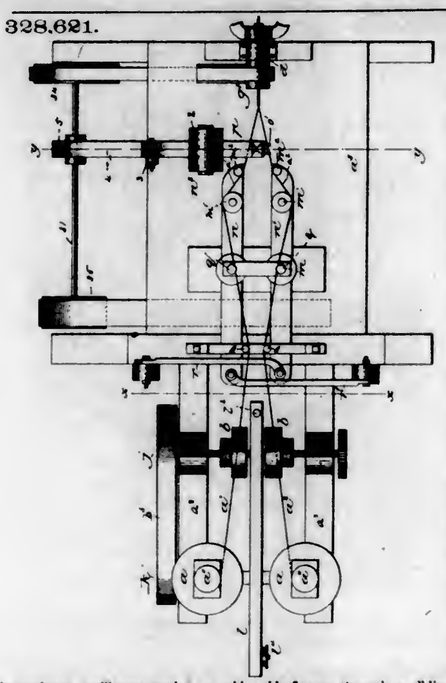
3. In a machine for applying plates or barbs to fence-wires, the combination of clamping devices for holding and adjusting the plate or barb in the path of the wires, oscillating guide-fingers for first spreading the wires for the insertion of the barb or plate and then closing them in upon it, and a revoluble spinner for twisting the wires together closely around the barb or plate, substantially as and for the purposes described.

4. In a machine for applying plates or barbs to fence-wires, the combination of clamping devices for holding and adjusting the plate or barb in the path of the wires, oscillating guide-fingers for spreading the wires for the insertion of the plate or barb and then closing them in upon it, devices for twisting the wires together, and intermittently-moving feed-rollers capable of coacting with the said clamping devices and oscillating guide-fingers, substantially as and for the purposes described.

5. In a machine for applying plates or barbs to fence-wires, the combination of clamping devices for holding and adjusting the plate or barb in the path of the wires, oscillating guide-fingers, intermittently-moving feed-rollers, and a rotary spinner for twisting and securing the strand-wires together about the barb or plate, substantially as and for the purposes specified.

6. In a machine for applying plates or barbs to fence-wires, the combination, with the pivoted oscillating guide-fingers *n n'*, having lateral arms *r r'*, of the eccentrically-pivoted cam *v*, capable of transmitting an intermittent oscillatory motion to said guide-fingers through a sliding shaft, *u*, and lateral connecting-arms *t t*, substantially as and for the purposes described.

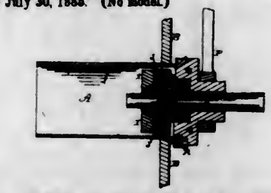
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7. The combination, in a machine for applying plates or barbs to fence-wires, of the centering-bar *p* with the reciprocating table *o* and cam 8, capable of transmitting an intermittent reciprocating motion to said table, substantially as and for the purposes described.

8. The combination, in a wire-barbing machine, of the intermittently-moving feed-rollers *b b* with a movable table, *o*, and centering-bar *p*, actuated by a cam, 8, capable of transmitting an intermittent reciprocating motion thereto, said cam being driven by the power-shaft which actuates the said feed-rollers, so as to secure synchronous intermittent action of the said table and centering-bar with said feed-rollers, substantially as and for the purposes described.

328,622. TUBE-EXPANDER. Frederick Sulter, Cincinnati, Ohio. Filed July 30, 1885. (No model.)



Claim.—1. The combination of the perforated body A, the segments which are applied thereto, and provided with projections H and friction-rollers N, with the plug, which is forced through the body and in between the projections H, substantially as shown.

2. The combination of the body A, the segments G, applied thereto, the guiding-pins which pass through the segments, the nut which holds the segments in position, and the plug F, each section being provided with slots for the pins to pass through, with projections which pass through the body A, and with friction-rollers to catch against the inner side of the tube, substantially as described.

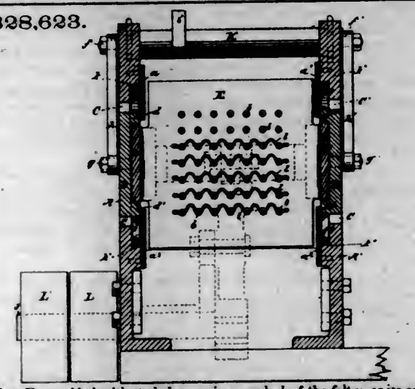
3. The combination of the body A, the segments G, applied thereto, the nut I, and the expanding device O, provided with rollers, the segments being provided with projections H and friction-rollers, substantially as set forth.

328,623. CAPSULE-MACHINE. William A. Tucker, New York, N. Y. Filed Apr. 10, 1884. (No model.)

Claim.—1. The combination, with the plate E, provided with the studs *b*, carrying the webs *l*, of a mold-plate provided with the mold-pins *m*, constructed and arranged as and for the purpose described.

2. The combination, with the described mold-pins, and with the plate E, provided with studs *b*, carrying a web, *l*, of the felt *u*, or its equivalent, as and for the purpose described.

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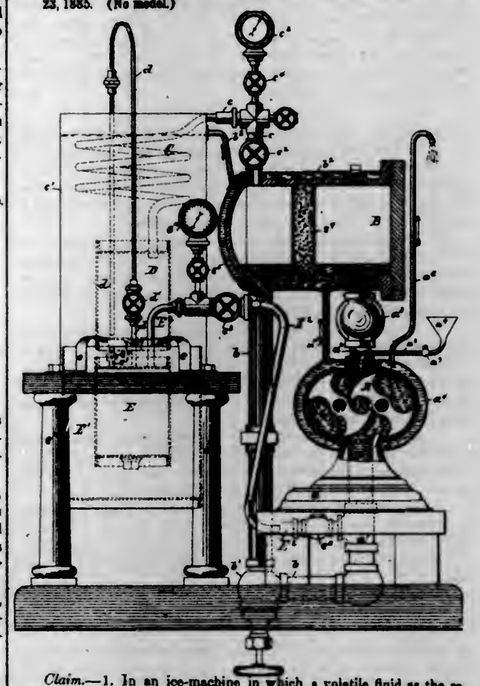


3. The combination of the plate E, carrying the lubricating-webs, the plates D D, working in elongated openings in the side frames of the machine, said plates provided with bearings for the ends of the plate E, springs, arranged as shown, to hold the plates D D' in a central position, a rock-shaft carrying the crank-pins arranged above or below the plates D D', and connections between said plates and crank-pins, as and for the purpose described.

4. The combination of the side plates, A A', of the frame, provided with the described wide openings, the plates D D', fitted into said openings to slide vertically therein, and provided with the ribs *d d' d² d³*, and the plate E, provided with the guide-plates *c c'*, fitted to slide in the said ribs, as and for the purpose described.

5. The combination, with the reciprocating cross-head N, the plate-holder O, and the mold-plate M, of the spring *t* on a stationary part of the machine, to bear upon the top of the mold-plate when the latter is in its advanced position, as and for the purpose described.

328,624. ICE-MACHINE. Oscar Vehn, Elizabeth, N. J. Filed June 23, 1885. (No model.)



Claim.—1. In an ice-machine in which a volatile fluid as the refrigerant agent is compressed, condensed, and then vaporized, a rotary pump and its induction and eduction pipes all filled with a liquid as a seal, as described, in combination with a chamber into which the gas mingled with the liquid of the seal is discharged by the pump and therein separates from said liquid, as and for the purpose specified.

2. In an ice-machine in which a volatile fluid as the refrigerant agent is compressed, condensed, and then vaporized, a rotary pump and its induction and eduction pipes, in combination with a separator-chamber, as described, and a pipe leading from said chamber to said induction-pipe, together with a liquid as a seal, as described, filling said pump and said pipes, whereby the gas is discharged into said chamber mingled with the liquid and therein separates from said liquid, and the liquid of the seal is continuously circulated through said pump and said pipes, as set forth.

3. In an ice-machine, the combination, with the chamber to which the refrigerant agent is supplied and in which it is volatilized, of a rotary pump and its induction and eduction pipes, and a liquid as a seal, as described, filling said pump and pipes, together with a pipe leading from said chamber to said induction-pipe, as and for the purpose set forth.

4. In an ice-machine, the combination, with the condenser-coil, into which the compressed gas employed as the refrigerant agent passes and liquefies, of a chamber into which the condensed gas flows and accumulates, together with a chamber suspended in a tank adapted to contain water to be frozen, and a pipe intermediate said chambers, provided with a regulating-valve, whereby the condensed gas which is volatilized in the second chamber and accumulates in the first chamber may be passed into the second chamber again, as and for the purpose set forth.

5. In an ice-machine, the combination of a rotary pump, and its induction and eduction pipes, and a liquid as a seal, as described, filling the same, a chamber into which the gas employed as the refrigerant agent is discharged mingled with said liquid and therein separates from said liquid, a condenser-coil having communication with said chamber, a vaporizing-chamber having communication with said condenser, controlled by a regulating-valve, and a pipe leading from said vaporizing-chamber to the induction-pipe of said pump and provided with a check-valve, all as specified.

6. In an ice-machine, the combination, with a rotary pump, and its induction and eduction pipes, filled with a liquid as a seal, as described, and a chamber into which the gas employed as the refrigerant agent mingled with said liquid is discharged and therein separates from said liquid, of a perforated diaphragm in said chamber located intermediate its gas inlet and outlet, as described.

7. In an ice-machine, the combination, with a rotary pump, and its induction and eduction pipes, filled with a liquid as a seal, as described, and a chamber into which the gas employed as the refrigerant agent is discharged mingled with said liquid and therein separates from said liquid, of a water-jacket surrounding said pump, and a water-jacket surrounding said chamber, together with pipes leading from a water-supply to said jackets and giving a water circulation through said jackets, as and for the purpose specified.

328,625. PULVERIZING-MACHINE. John B. Waring, New York, N. Y. Filed July 24, 1884. Renewed June 15, 1885. (No model.)

Claim.—1. In a pulverizing-machine, the combination of a chamber into which the material to be pulverized is introduced, loose pulverizing-rollers, a carrier, and rollers journaled in the carrier and serving to propel the pulverizing-rollers, substantially as specified.

2. In a pulverizing-machine, the combination of a chamber into which the material to be pulverized is introduced, loose pulverizing-rollers, a carrier, rollers journaled in the carrier, and guards comprised in the carrier for preventing the loose rollers from dropping from the top to the bottom, substantially as specified.

3. In a pulverizing-machine, the combination of a chamber having a concave interior surface for receiving the material to be pulverized, loose pulverizing-rollers having convex peripheries corresponding to the concave interior surface of the chamber, a carrier, and rollers having a concave periphery corresponding to the convex surface of the pulverizing-rollers, substantially as specified.

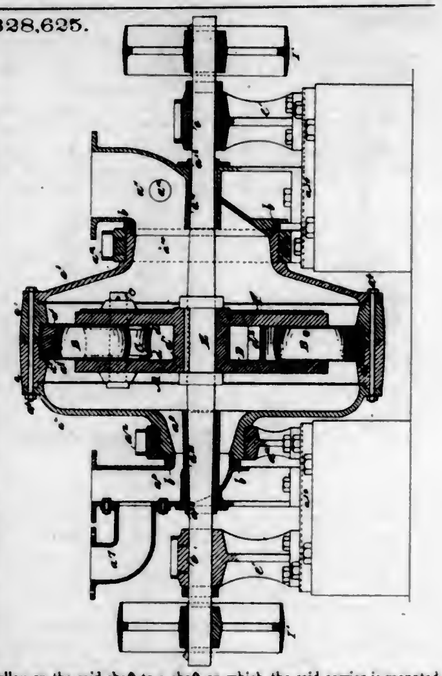
4. In a pulverizing-machine, the combination of a chamber into which the material to be pulverized is introduced, loose pulverizing-rollers, a carrier, rollers journaled in the carrier and guards, and a disk attached to the carrier, substantially as specified.

5. In a pulverizing-machine, the combination of a rotary chamber, into which the material to be pulverized is to be introduced, pulverizing-rollers arranged within the chamber, and a carrier for revolving the pulverizing-rollers in the same direction as that in which the chamber rotates.

6. In a pulverizing-machine, the combination of a rotary chamber, into which the material to be pulverized is introduced, pulverizing-rollers arranged within the chamber, a carrier, and rollers journaled to the carrier and serving to propel the loose rollers, all the said rollers being adapted to revolve in the same direction in which the chamber rotates, substantially as specified.

7. In a pulverizing-machine, the combination of a rotary chamber, into which the material to be pulverized is introduced, pulverizing-rollers arranged within the chamber, a carrier for the pulverizing-rollers, a belt from the chamber to a pulley on a shaft, and a belt from another

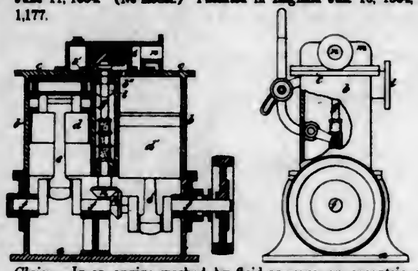
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pulley on the said shaft to a shaft on which the said carrier is mounted, substantially as specified.

8. In a pulverizing-machine, the combination, with a horizontally-rotating chamber having hollow trunnions upon which said chamber rotates, and through which material to be pulverized may be received and discharged, of pulverizing-rollers arranged within the chamber and a carrier for revolving the pulverizing-rollers in the same direction as that in which the chamber rotates.

328,626. DIRECT-ACTING ENGINE. Robert Welford, Hunter's Hall, Durham Road, Sunderland, County of Durham, England. Filed June 11, 1884. (No model.) Patented in England Jan. 10, 1884, No. 1,177.



Claim.—In an engine worked by fluid-pressure, an eccentric and eccentric-block, in combination with a slide or distributing valve provided with lining-strips and set-screws, whereby the wear of the moving parts can be taken up, substantially as shown and described.

328,627. CONCENTRATING-MACHINE. James E. Whitlaker, Albuquerque, N. Mex. Filed Mar. 14, 1885. (No model.)

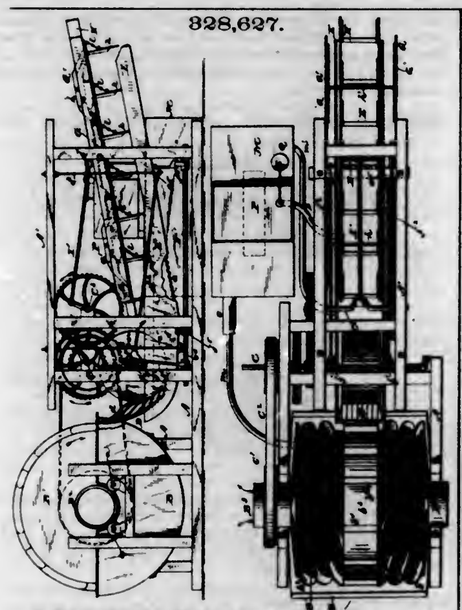
Claim.—1. In a machine for separating gold, the screen-cylinder provided with the hollow trunnions, the outer right and left spiral flanges or threads, and central discharging-buckets, substantially as described.

2. The combination, with the screen-cylinder tank or casing and the screen-cylinder provided with its discharging-buckets, of the concave receiving-apron provided with its springs, and the grinding wheel or cylinder operating in connection therewith, substantially as described.

3. The swinging links and sluice-pan suspended thereon, in combination with the cranks and connecting-rods for giving to said pan both a longitudinal and a lateral reciprocating movement, substantially as described.

4. The herein-described gold-separating machine, comprising the inclined vibrating sluice-pan, the grinding concave receiving-apron, the grinding-cylinder, and the intermittingly-acting scrapers, arranged and operating substantially as described.

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5. The combination, with the sluice-pan, of the reciprocating scraper bars or beams, and the scraper having a spring-connection therewith, substantially as described.

6. The combination, with the scraper-bars, of the scrapers adapted to yield relatively to said bars, and means, substantially as described, for adjusting the scrapers.

7. The combination, with the sluice-pan, of the reciprocating scraper-bars, the side rails for said bars, and the tramways for lifting the scraper-bars in their backward or return movement, substantially as described.

8. The combination of the screen-cylinder tank, the sluice-pan, and the settling-tank, and pipes connecting said tanks and pan, substantially as described.

9. The combination of the vibrating sluice-pan, the settling-tank, and the flexible pipe or tube interposed between said pan and tank, substantially as described.

10. A gold-separating machine comprising the screen-cylinder tank, the vibrating sluice-pan, the connecting concave or apron connecting said tank or pan, and the scrapers operating in the vibrating sluice-pan, substantially as described.

11. The combination, in an apparatus for separating gold, of the screen-cylinder tank and sluice-pan, the settling-tank connected therewith, a tubular water-way connected with said tank, and a spiral amalgamating-plate arranged within said way, substantially as described.

12. The combination, in an apparatus for separating gold, of the screen-cylinder tank, the sluice-pan, and the settling-tank connected therewith and provided with a central partition, a tubular water-way penetrating said partition, and a spiral amalgamating-plate arranged in said water-way, substantially as described.

13. The combination, in a machine for separating gold, of the settling-tank, a supply tank or reservoir, and means, substantially as described, for automatically controlling the water-supply and replenishing the settling-tank, substantially as described.

14. The combination, in a machine for separating gold, of the screen-cylinder tank, the sluice-pan, the settling-tank, the supply-tank, and means, substantially as described, for connecting said supply-tank, settling-tank, screen-cylinder tank, and sluice-pan, and maintaining a substantially uniform level of the water therein, substantially as described.

328,628. BATHING-CABINET. Lee Yancey, Cincinnati, Ohio. Filed Sept. 2, 1884. (No model.)

Claim.—1. In a portable bathing-cabinet, a main chamber whose bottom is adapted to be used as a plunge-bath, in combination with a chamber in which the chemicals are burned, the two chambers being separated by an imperforate partition to a point above the water-line, the upper portion of which partition has a lid capable of being opened or closed.

2. In a bathing-cabinet, the combination of a water or plunge-bath chamber, a chemical chamber, and an intermediate partition of imperforate material, provided with a valve or door by which communication may be opened or closed between said chambers.

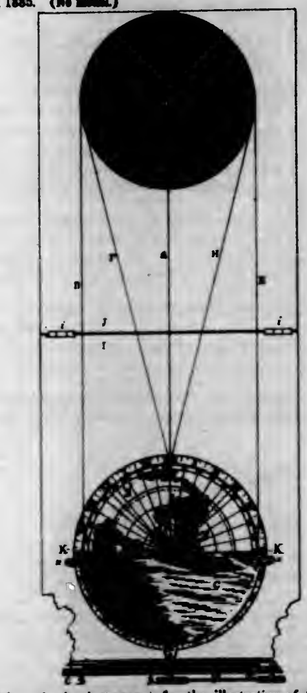
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3. The herein-described bathing-cabinet, consisting of chamber B, having plunge-bath tub C at its bottom, chemical chamber U at the end of the chamber B, partition H, separating chambers B and U, and door *m*, applied to said partition, whereby communication may be opened or closed between the chambers, said door being provided with hole *g* to receive the nozzle *n* of the chemical conductor M, all constructed and arranged to operate substantially as described and shown.

4. The combination of chambers B U, partition H, located between said chambers, door *m*, having opening *g*, and forming part of the partition, a lamp located in chamber U, and chemical-conductor M, provided with collar *w*, and with nipple *n* to enter the opening *g*, all substantially as described and shown.

328,629. EDUCATIONAL DEVICE FOR THE ILLUSTRATION OF LONGITUDE AND TIME. Daniel C. Young, Hanover, Kans. Filed May 29, 1885. (No model.)

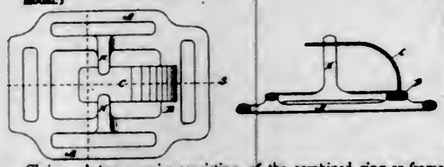


Claim.—1. An instrument for the illustration of the longitude of places on the earth's surface, and the comparative time-tables for all parts thereof, consisting of a rotatable disk representing a hemisphere, either northern or southern, having around it the representation in numerals of the hours and minutes of the day, and a diagram of the sun with the lines of sunrise, meridian, and sunset rays delineated thereon, substantially as and for the purpose described.

2. An instrument for the illustration of longitude and comparative time of places on the earth's surface, consisting of a reversible rotatable disk having the opposite hemispheres delineated on opposite sides and having an hour-dial and a diagram of the sun, said devices relatively arranged and coacting, substantially as and for the purposes specified.

3. An educational device composed of folding leaves, one leaf provided with a diagram to represent the sun and the other with a rotatable disk to represent the earth, substantially as and for the purposes specified.

328,630. TRACE-CARRIER. James B. Young, Lincoln, Nebr., assignor of one-half to Charles L. Aldrich, same place. Filed Mar. 5, 1885. (No model.)

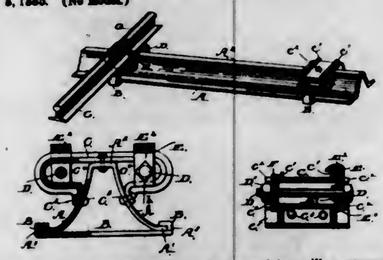


Claim.—A trace-carrier consisting of the combined ring or frame A, horns H H, and spring C, when constructed and operated substantially as set forth.

328,631. OINTMENT. Daniel M. Allen, Fort Wayne, Ind. Filed July 27, 1885. (No specimens.)

Claim.—The herein-described medical compound, consisting of Peru balsam, benzoic acid, oil of cloves, alcohol, creosote, iodine, iodide of potassium, water, vaseline, and calcined magnesia, about in the proportions given.

328,632. RAILWAY-TIE. Jas. S. Ammon, Reading, Pa. Filed Apr 8, 1885. (No model.)

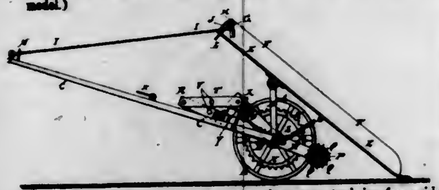


Claim.—1. A metallic railway-tie formed by rolling, stamping, or equivalent means, of a reversed V form in section, the sides or legs of which are made concave on their outer and convex upon their inner faces, and having the feet notched for clamps, substantially as and for the purpose set forth.

2. In combination with a metallic tie, as described, a seat, bearing, or saddle, constructed in the form shown, connected at the top and sides with the tie, provided with loops C^4, for the passage of the transverse clip-bolts D, and notches C^3, for the reception of the clips, substantially as and for the purpose declared.

3. In combination with a metallic tie and its saddle or seat, as described, and the rail seated upon the same, the angular headed gripping-clips E at opposite sides of the rail-flange, with washer-clips F and the transverse bolt D, substantially as shown, and for the purpose set forth.

328,633. MACHINE FOR REMOVING SNOW AND ICE FROM SIDEWALKS. Edmund R. Angell, Derry, N. H. Filed Oct. 25, 1884. (No model.)



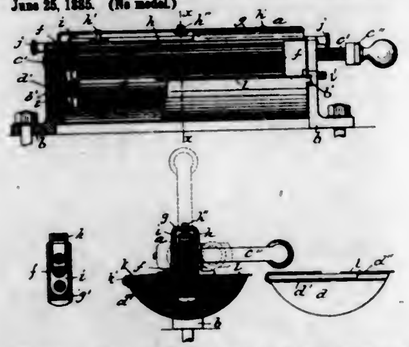
Claim.—1. In a machine for removing snow and ice from sidewalks, the combination, with a carriage, of a shovel hinged to suitable supports projecting upward from the axle of the carriage, a cylindrical cutter beneath the shovel, a frame in which the said cutter is mounted adjustably held on the axle, and mechanism for operating the cutter by the forward movement of the carriage, substantially as herein shown and described.

2. In a machine for removing snow and ice from sidewalks, the combination, with the wheels, axle, and handle A B C, of the rigid bail D, the hinged shovel E, and the spring S, substantially as herein shown and described, whereby loose snow and ice can be readily removed, as set forth.

3. In a machine for removing snow and ice from sidewalks, the combination, with the wheels, axle, and handle A B C, of the gear-wheels N O, the cylinder P, having cutters Q, the slotted bars R, the hinged bars U, and the connecting-bar T, substantially as herein shown and described, whereby ice and crust can be readily loosened, as set forth.

4. In a machine for removing snow and ice from sidewalks, the combination, with the handle C, the bars U, the cylinder P, and connecting mechanism, of the keeper X and the spring Y, substantially as herein shown and described, whereby the upward movement of the said bars is limited and the cutter-cylinder is allowed to rise should it strike an obstruction, as set forth.

328,634. BLOTTER-BATH. Leonard Bailey, Hartford, Conn. Filed June 25, 1885. (No model.)



Claim.—1. In combination, the standards, the swinging roller-frame pivoted in said standards on the shaft of the main roller, the removable pan supported below the roller-frame, and the cover supported at one edge on the pan, and with its other edge resting on the lower roller, all substantially as described.

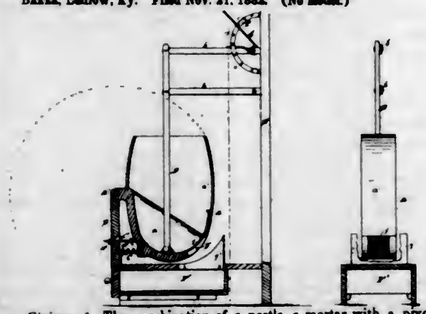
2. In combination, the standards, the rollers supported by the standards, the pan into which the lower roller dips, and the cover with its outer edge supported near its center and its inner edge resting on the lower roller, all substantially as described.

3. In combination, the standards, the swinging roller-frame pivoted in said standards on the shaft of the main roller, the removable pan supported below the frame, the rollers, and the locking-pintles movable in sockets in the standards and projecting into sockets in the frame, all substantially as described.

4. In combination, the standards, the removable pan, the rollers, and the roller-frame with its top bar, the bar-spring attached to the top bar, the housings on the main roller-shaft, the links connecting the outer ends of the spring and the shaft of the lower roller, and the tension-screw arranged to operate against the center of the bar-spring, all substantially as described.

5. In combination with supporting-standards, the rollers *c* and *e*, the housings *f*, the top bar, *g*, the bar-spring *h*, secured to the top bar by screws or pins *h'* at points equidistant from the ends of the spring, the tension-screw *h''*, and the links *i*, whereby the lower roller is supported from the ends of the spring, all substantially as described.

328,635. MACHINE FOR THE REDUCTION OF SOLIDS. Delos R. Baker, Ladlow, Ky. Filed Nov. 21, 1882. (No model.)



Claim.—1. The combination of a pestle, a mortar with a pivotal connection, and an elastic support for enabling the mortar to oscillate during the operation of the pestle, substantially as and for the purposes specified.

2. The combination of a mortar and pestle, D, a pivotal support, as B, and a suitable spring, the mortar being free to vibrate in the arc of a circle about said pivot, substantially as and for the purposes specified.

3. The mortar A, consisting of a heavy bottom portion, *a*, and a lighter upper portion or hood, *a'*, the bottom being provided with a lug, A', in combination with a support, B, to which the lug A' is pivoted, and a spring, C, compressed between the mortar and the support, substantially as and for the purposes specified.

4. In combination with a mortar and means for causing it to reciprocate curvilinearly during the operation of the pestle, the pestle D, arms *b*, and the spring for exerting a downward pressure on the arms, substantially as and for the purposes specified.

5. In combination with a mortar and means for causing it to reciprocate curvilinearly, the pestle D, arms *b*, a spring for exerting a downward pressure on the arms, and means for regulating the pressure of said spring upon said arms, substantially as and for the purposes specified.

6. In combination with a curvilinearly-reciprocating mortar, a hopper, substantially as and for the purposes specified.

7. In combination with a curvilinearly-reciprocating mortar, a reciprocating feeding device and connecting and operating mechanism, substantially as and for the purposes specified.

8. In combination with a pestle and a curvilinearly-reciprocating mortar, a reciprocating feeding device operated by the same mechanism as that which operates the pestle, substantially as and for the purposes specified.

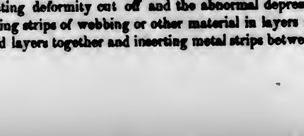
9. In combination with a pestle, a mortar arranged to reciprocate curvilinearly by the blow of the pestle, and a stationary guard for directing the delivery of the contents of the mortar as discharged from the latter, substantially as and for the purposes specified.

10. In combination with a curvilinearly-reciprocating mortar, the pestle and arms *b*, substantially as and for the purposes specified.

11. The combination of a pestle, a curvilinearly-reciprocating mortar operated by the pestle, and a stop, C', for limiting the oscillation of the mortar, substantially as and for the purposes specified.

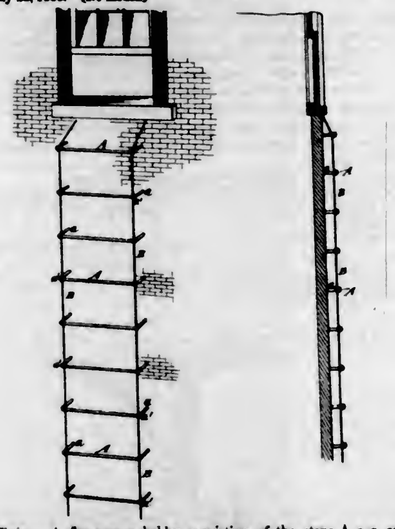
12. The combination of a curvilinearly-reciprocating mortar, an operating-pestle, the stop C', and spring C, substantially as and for the purposes specified.

328,636. FIRE-ESCAPE STEP-ROD ATTACHMENT. William H. Barr, Conway, Mo. Filed July 30, 1884. (No model.)



Claim.—The rods A, the projecting ends B of which are provided with slots *a*, in combination with the key *b*, adapted to engage with said slots, substantially as and for the purpose specified.

328,637. FIRE-ESCAPE. William H. Barr, Grove Spring, Mo. Filed May 23, 1885. (No model.)

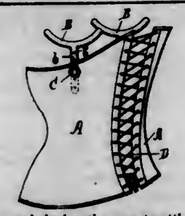


Claim.—A fire-escape ladder consisting of the steps A *a a*, connected at the angles *a'* by the wires B B, wound around them, substantially as shown and described.

328,638. MANUFACTURE OF SURGICAL CORSETS. Joseph W. Battershall, Attleborough, Mass. Filed Mar. 27, 1885. (No model.)

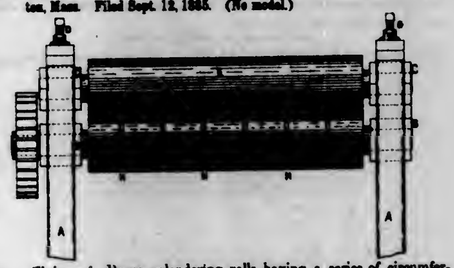
Claim.—The method herein described of making surgical corsets, the same consisting in forming a cast of the deformed body, but with the projecting deformity cut off and the abnormal depressions filled in, then winding strips of webbing or other material in layers upon the cast, gluing said layers together and inserting metal strips between said layers,

328,638.



and after varnishing and drying the corset cutting it down the front or back to remove it from the cast, as set forth.

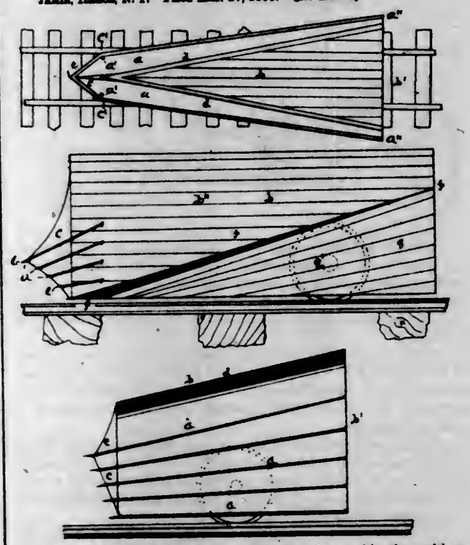
328,639. PAPER-CALENDERING ROLLS. Joseph H. Beale, Boston, Mass. Filed Sept. 12, 1885. (No model.)



Claim.—1. Paper-calendering rolls having a series of circumferential grooves, substantially as described, as and for the purposes set forth.

2. A paper-calendering roll provided with a circumferential groove or grooves, substantially as described, as and for the purposes set forth.

328,640. SNOW-PLOW WITH SNOW-CUTTERS. George V. Benjamin, Ithaca, N. Y. Filed Mar. 27, 1885. (No model.)



Claim.—1. A series of horizontal blades, in combination with a knife or support, *c*, to which their central points or parts are attached, and constituting an independent snow-severing structure in front of a snow-plow.

2. A series of horizontal cutting-blades placed one over the other in front of a snow-plow, each blade being in advance of the one below it, attached to the central perpendicular knife or bar *c* and to the side posts, *a' a'*.

3. A perpendicular knife, *c*, in front of the perpendicular wedge-surfaces of a snow-plow, in combination with a series of cutting-blades or cutters, and supporting their front points.

4. The cutting-blades which plane off the layers of snow or cut in pieces the snow obstruction, provided with or made with saw-toothed edges, as shown and described.

5. A series of horizontal blades one above the other, in front of a snow-plow and extending along the sides of the perpendicular wedge of

the plow to the rear of the wedge, and attached to the perpendicular sides of the wedge.

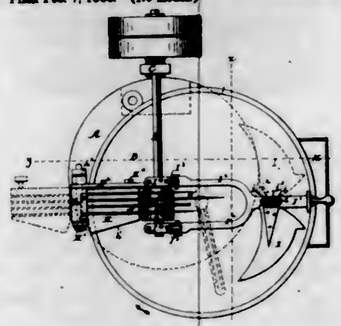
6. The horizontal blades placed in an advancing series, one above the other, in front of the plow-point, and extending rearwardly along the sides of the wedge of the plow, and having their rearward ends elevated higher than their front edges, thus providing lifting-planes on which the snow is elevated.

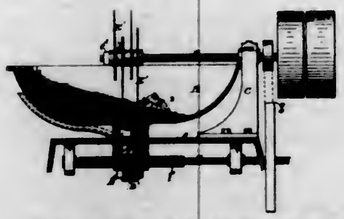
7. A series of horizontal blades whose central portions are attached to the perpendicular knife or bar in advance of their rear angles, thus making a series of spear-pointed blades.

8. A series of saw-blades or horizontal cutting devices fixed to a perpendicular shaft concealed in the plow structure, and at the will of the operator of the plow thrust out and beyond the sides of the plow and cutting the snow wider than the plow.

9. A shaft provided with a series of knives, which at the will of the operator are either concealed in the plow or are thrust out into the snow beyond the sides of the plow.

328,641. MEAT-MINCING MACHINE. Philip Billingham, Trenton, N. J. Filed Feb. 7, 1885. (No model.)





Claim.—1. The combination of the base-plate, the rotating bowl, the knife-shaft E, the outer bearing, C, the bracket D, and the slotted knife-plate H, secured to the bracket to partly cover the bowl, and provided with an upturned edge to deflect and press the meat down into the bowl beneath the plate in its passage to the knives, substantially as described.

2. The combination of the base-plate A with the revolving bowl B, the knife-shaft E, the standards C and D, secured to the base-plate, the hand-lever I', located above the bowl and hinged to sleeves upon the knife-shaft, and the plow-plate I, secured to the lever, substantially as shown and described.

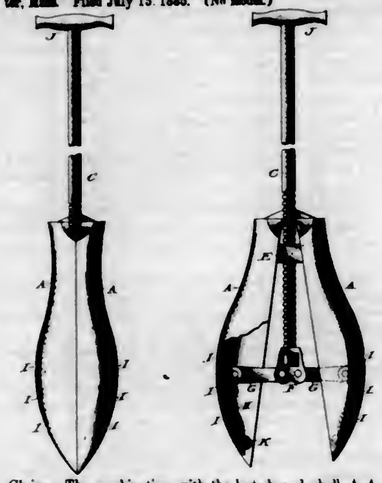
3. The combination of the base-plate A, the revolving bowl B, the shaft E, supported upon bearings or standards secured to the base-plate, a hand-lever, I', hinged to sleeves on the shaft, and a plow-plate secured to the lever and adapted to be lifted thereby from or supported in the bowl, substantially as shown and described.

4. The combination of the base-plate, the revolving bowl, the shaft supported upon bearings or standards secured to the base-plate, a hand-lever hinged to sleeves upon the shaft, and the plow-plate pivotally and reversibly connected to the hand-lever, substantially as shown and described.

5. The combination, with the base-plate provided with a bearing, of the revolving knives, the revolving bowl provided with a stud-spindle projecting therefrom and supported in the bearing, and an oil-tube secured to and arranged beneath and revolving with the bowl to extend to the stud-spindle and deliver the oil around the bearing by the revolution of the bowl, substantially as described.

6. The combination, with the base-plate provided with the bearing, of the revolving knives, the bowl provided with a stud-spindle supported in the bearing, the worm-wheel keyed to slide or be adjusted upon the spindle to revolve the bowl, and a screw-nut adjustable upon the spindle to hold the worm-wheel thereon and take up lost motion between the spindle and bearing, substantially as described.

328,642. BOOT OR SHOE STRETCHER. John K. Brown, Worcester, Mass. Filed July 15, 1885. (No model.)



Claim.—The combination, with the last-shaped shell A A, hinged together and provided with screw-rod C, nut E, cross-head F, and stretching-arms G G, of the springs H H, substantially as shown, and for the purposes specified.

328,643. MIXED PAINT. Louis Brown, Rye, N. Y. Filed Sept. 8, 1884. (Specimens.)

Claim.—A paint composition made of powdered sand iron ore of the character herein specified, combined with whiting or other coloring or filling matter, as set forth, and a vehicle, substantially as described.

328,644. POWDER FOR ROOFING AND OTHER PURPOSES. Louis Brown, Rye, N. Y. Filed Feb. 20, 1885. (Specimens.)

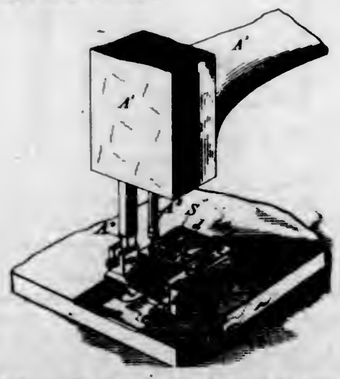
Claim.—As a new article of manufacture, the powdered product obtained by reducing sand iron ore to pulverulent form, all substantially as and for the purposes described.

328,645. CALCIMINE COMPOUND. Samuel U. Brunck and George A. Marsh, Jr., Sandusky, Ohio, assignors, by mesne assignments, to Henry W. Wagnest, John H. Wagnest, and Emil Pusch, all of same place. Filed Oct. 27, 1884. (No specimens.)

Claim.—The within-described compound for mixture with dry powdered calcimine or other like wall-finish materials, the same consisting of calcined plaster, cotton-seed oil, and water, formed into a paste and afterward dried and ground, essentially as and in or about the proportions specified.

328,646. DOUBLE FLAT BINDER. John Bumagner, Utica, N. Y., assignor to Tucker, Calder & Co., same place. Filed Feb. 23, 1884. (Model.)

Brief.—The self-adjustable guard prevents the material being operated upon from passing back to the hinge-connection. Each guide admits of separate adjustment. The opening in the guide for the strip of binding is closed at its sides.



Claim.—1. The herein-described double-binding guide attachment for sewing-machines, having a presser-foot plate, an upper binding-guide with elongated slot for guiding a flat binding to the upper surface of the cloth carried by the presser-foot plate, a cloth-guide for guiding the cloth, a lower binding-guide with an elongated slot attached thereto for guiding a flat binding to the under surface of the cloth, the presser-foot plate and cloth-guide so adjusted as to allow the cloth to pass between the guides, a guard for preventing the cloth and binding from getting between the cloth-guide and the presser-foot plate, combined and arranged substantially as described for applying separate flat bindings to the opposite surfaces of cloth, substantially as described.

2. The herein-described double-binding guide attachment for sewing-machines, having a presser-foot plate, an upper binding-guide with an elongated slot for guiding a flat binding to the upper surface of the cloth carried by the presser-foot plate, an adjustable and movable cloth-guide for guiding the cloth attached to the presser-foot plate to allow the cloth to pass between the guides, a lower binding-guide with an elongated slot attached to the cloth-guide for guiding a single flat binding to the under surface of the cloth, a movable guard for preventing the cloth and binding from getting between the cloth-guide and the presser-foot plate, combined and arranged substantially as described for applying double flat bindings to the opposite surfaces of cloth, as described.

3. In a double-binding guide attachment for sewing-machines, the independent upper and lower binding-guides, each of which has the closed slot, as above described, which accommodates and supports in the same horizontal plane both edges of a separate binding, in combination with a presser-foot having a slotted extension-plate and adapted to be secured to the presser-bar of a sewing-machine, and the lower slotted plate hinged to said presser-foot.

4. In a double-binding guide attachment for sewing-machines of the character described, a cloth-guide, a presser-plate and presser-foot, two independent longitudinally-slotted binding-guides, e and e^2, having closed slots, as described, each of which accommodates and entirely surrounds an independent binding, in combination with an automatically-self-adjusting guard which prevents the cloth and binding from getting in between the cloth-guide and presser-foot of a sewing-machine while in operation.

5. In a double-binding guide attachment for sewing-machines of the character described, two independent binding-guides, each of which is independently adjustable laterally and accommodates and supports a separate binding in a continuous unbroken elongated hole in each of their free ends, whereby a narrow binding may be attached to one side of an article and a wide binding to the other side of said article.

6. In a binding-guide attachment for sewing-machines, a presser-foot having presser-plate extension and binding-guide, in combination with a cloth-guide provided with an automatically-self-adjusting vertically-reciprocating guard.

7. In a binding-guide attachment for sewing-machines, the presser-foot having presser-plate extension provided with an independent upper binding-guide and provided with slots for the reception of projections on the upper face of a cloth-guide, in combination with a cloth-guide provided with upwardly-projecting perforated projections, and a pin for pivotally securing the presser-foot and cloth-guide together.

8. In a double-binding guide attachment for sewing-machines, a cloth-guide provided with an independent lower binding-guide and upwardly-projecting projections, the combination of a presser-foot provided with an independent upper binding-guide, slots a' a' for the reception of projections on the cloth-guide, and also provided with a slot, a^2, for the reception of an adjusting device whereby a stop, S, is secured at any desired adjustment, and a stop whereby the distance between the needle and the cloth-guide is determined.

328,647. REED-ORGAN STOP-ACTION. Edwin P. Carpenter, Brattleborough, Vt. Filed Dec. 17, 1884. (No model.)

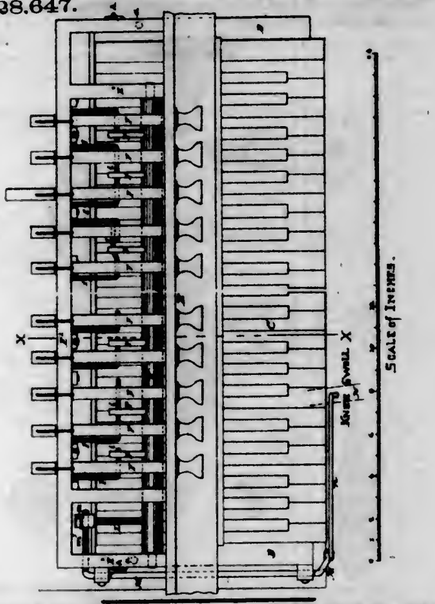
Claim.—1. In an organ-action, the back piece, E', of the brace, provided with the groove e, in combination with the mute-operating levers I, fulcrumed and supported directly on said grooved back piece, substantially as hereinbefore set forth.

2. The combination, as described, of the brace E, having the grooved back piece, E' e, detachably secured to the key-frame B, the wire levers I, fulcrumed on said brace, the stop-pulls F, having mechanism for operating said levers, the mute D, and connecting-link J, detachably connected to said levers at I', substantially as shown and described.

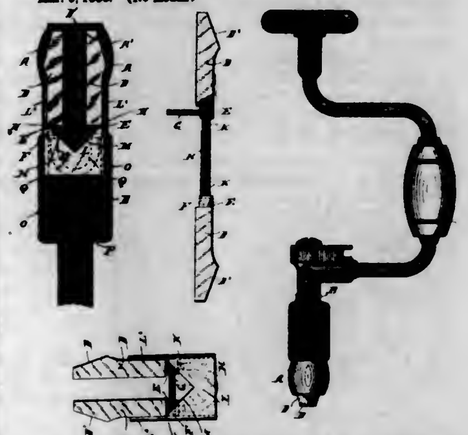
3. The combination, substantially as hereinbefore described, of the brace E, provided with the grooved back piece, E', the mute-operating levers I, fulcrumed thereon and provided with transversely offset top ends, i, the stop-pulls F, having a tumbler, f, for engaging and depressing said levers, the expression-roll K, mounted within the brace and having projections or pins P, for engaging the ends i of said levers, and the arm L, connected with actuating devices, as m M, for the purposes set forth.



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328,648. BRACE-CHUCK. John Chantrell, Bridgeport, Conn. Filed Mar. 9, 1885. (No model.)



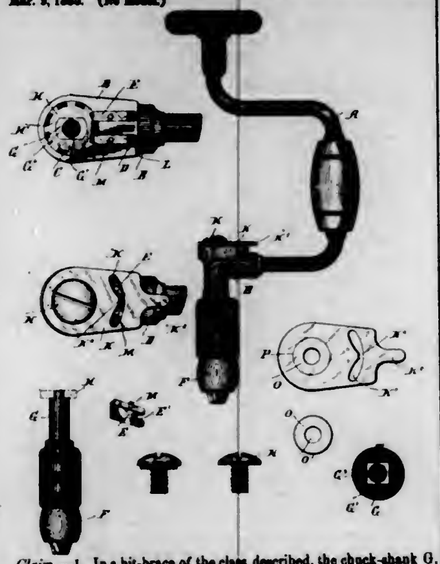
Claim.—1. The jaws having shoulders at their lower ends and connected by a bowed coil-spring, which acts to hold their bases apart, in combination with a follower having inclines upon which the shoulders ride, the head having inclines engaged by the outer ends of the jaws, and a sleeve adapted to lift the follower, said inclines and jaws being so arranged relatively to each other that the jaws are held parallel with each other as they are opened and closed.

2. The head having inclines A', the follower having inclines M, and a rotating sleeve adapted to lift the follower, in combination with the jaws whose opposite ends engage the said inclines, and a coiled spring whose ends are connected to the jaws, respectively, whereby the bases of said jaws are held apart as they move up or down the inclines.

3. The follower having an opening, L', through its center, supports L^2 for the jaws in their opened position, and inclines M, and the head having inclines A', in combination with the jaws having inclines D', reduced portions E, and angular shoulders N, a bowed coil-spring lying in said opening and connecting the bases of said jaws, and a sleeve having an internal shoulder upon which the follower rests.

4. In a brace-chuck, the jaws, one of which is provided at its base with a pin, G, the other having a hole to receive said pin, whereby the jaws are held against vertical displacement, and a lug, K, upon each jaw, in combination with a bowed coil-spring whose ends respectively are held by being turned upon said lugs.

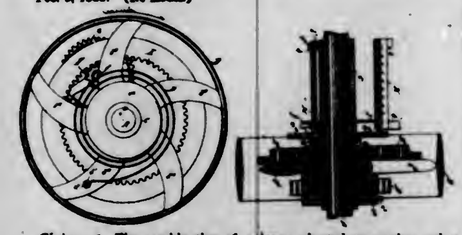
328,649. BIT-BRACE. John Chatfield, Bridgeport, Conn. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a bit-brace of the class described, the chuck-shank G, cast with flat sides G' at its end, in combination with a ratchet-wheel cast with a central opening, H', with flat sides corresponding to those upon the chuck-shank, whereby said ratchet-wheel is held from turning upon said shank, and the stock having a recess to accommodate the ratchet-wheel.

2. The shifting-cap having a hole, P, and slot K', the shank, and the ratchet-wheel, in combination with the dogs having pins which engage said slot, washer O, which is struck out from the shifting-cap to form hole P, and is itself provided with a central hole, O', and a screw, which passes freely through the washer and engages the end of the shank.

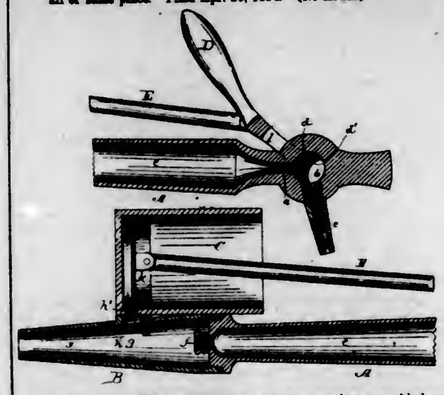
328,650. DYNAMOMETER. John L. Chesney, Lowell, Mass. Filed Feb. 5, 1885. (No model.)



Claim.—1. The combination of a sleeve adapted to receive and to be secured to a shaft, a pulley turning loosely on said sleeve, a collar secured to said sleeve, a coiled spring one end of which is secured to said sleeve and the other end of which is secured to said pulley, a gear secured to said pulley, a screw supported on said sleeve and revolving with said sleeve above the axis of the same, and provided with a pinion, an indicator surrounding said sleeve and provided with a nut which engages with said screw and intermediate gears connecting the gear on said pulley with the pinion on said screw and a graduated scale, as and for the purpose specified.

2. The combination of the sleeve provided with an annular shoulder and with a flange, and adapted to receive and to be secured to a shaft, a collar surrounding said sleeve and provided with a set-screw which thrusts against said sleeve, the pulley turning loosely on said sleeve between said shoulder and collar, a spring attached at one end to said collar and at the other to said pulley and loosely coiled about said collar, a screw turning in said flange of said sleeve and in a stud projecting from said sleeve, an internally-toothed gear secured to said pulley, a pinion secured to said screw, an intermediate gear and an intermediate pinion secured to a common shaft and supported by said flange, said intermediate pinion engaging with said internally-toothed gear, and said intermediate gear engaging with the pinion on said screw, an annular indicator surrounding said sleeve and provided with a nut which engages with said screw, and a scale, as and for the purpose specified.

328,651. FAUCET. William F. Class and Albert J. Weatherhead, Cleveland, Ohio, assignors of one-third to George Collins, and said Class assignor, by mesne assignments, of his remaining right to Jacob J. Mayer, all of same place. Filed Apr. 21, 1884. (No model.)

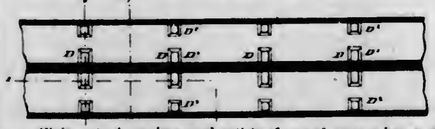


Claim.—1. The combination of a faucet-spigot provided with a transverse valve-chamber, a longitudinal duct opening into said chamber, and a lateral duct approximately at right angles to said longitudinal duct and also opening into said chamber, a valve extending through said chamber beyond said faucet-spigot on opposite sides thereof, said valve being provided with a port for connecting said ducts, occupying about one-third of its circumference, a bifurcated lever the forked ends of which are connected to the extended stems of said valve, the body of said lever being diametrically opposite the port of said valve, an air-pump the cylinder of which is fixed to said faucet-spigot parallel therewith, a valved duct connecting said pump-cylinder with said spigot, and a hinged piston-rod connected at one end to the piston of said pump and at the other end to said bifurcated lever, substantially as described.

2. The combination of a faucet the tube of which is provided with an enlarged aerating-chamber, a detachable extension-tube connected with said faucet-tube, and also provided with an enlarged aerating-chamber, and an air-pump attached to said extension-tube and in direct communication with the aerating-chamber thereof, substantially as described.

3. The combination of a faucet the tube of which is provided with an enlarged aerating-chamber, and with a projecting nipple at the rear end of said chamber, an extension-tube detachably connected to said faucet-tube and surrounding said nipple, and an air-pump attached to said extension-tube and communicating therewith, substantially as described.

328,652. COMBINED IRON AND STEEL BAR. Louis G. Claudr, New York, N. Y., assignor, by mesne assignments, to the Russell Horseshoe Company, same place. Filed Dec. 19, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a bar or plate of combined iron and steel having a middle stripe of iron, parallel side portions of steel on opposite sides thereof, and marginal stripes or flanks of iron, substantially as set forth.

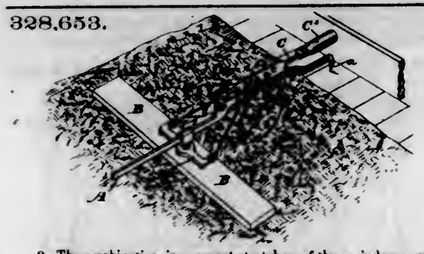
2. As an improved article of manufacture, a bar or plate of combined iron and steel having a middle stripe of iron, parallel side portions of steel on opposite sides thereof, and marginal stripes or flanks of iron, and formed with ribs or projections D D on its surface, crossing it transversely, substantially as set forth.

3. As an improved article of manufacture, a horseshoe bar or plate of combined iron and steel, having a middle stripe of iron, parallel side portions of steel on opposite sides thereof, and marginal stripes or flanks of iron, and formed with a plane surface having calk projections located in the steel portions thereof, substantially as set forth.

328,653. CARPET-STRETCHER. Albert H. Coble, Frankfort, Ind. Filed June 20, 1885. (No model.)

Claim.—1. The combination, in a carpet-stretcher, of a main bar having a floor-hook, a carpet-hook slidably mounted thereon, a lever pivoted at its lower end to said bar and provided with notches in its edge, and a bail or catch attached to said carpet-hook at one end and adapted to engage with said notches in said lever at its other end, whereby the parts may be secured in the desired position, substantially as set forth.

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2. The combination, in a carpet-stretcher, of the main bar, a carpet-hook, a sliding pivot upon which said carpet-hook is mounted, and a lock secured to said pivot and adapted to engage with said carpet-hook or be disengaged therefrom, substantially as shown and described, and for the purposes specified.

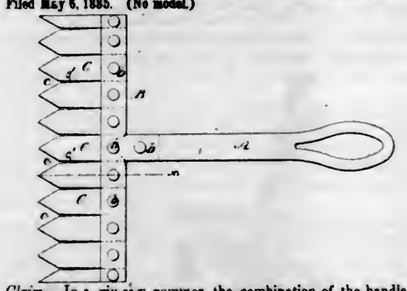
3. The combination, in a carpet-stretcher, of the main bar, the carpet-hook, a lever for operating the carpet-hook, and a connection from the carpet-hook to the lever, said lever being provided with a freely-sliding extensible handle, substantially as set forth.

4. The combination, in a carpet-stretcher, of a main bar, a slide on said bar, a carpet-hook pivoted on said slide, a lever pivoted to said bar, a bail or catch, and a bar having locking-pins pivoted upon said slide to which said bail or catch is secured, substantially as set forth.

5. The combination, in a carpet-stretcher, of a main bar provided with a floor-hook at one end and a slide at the other and having serrations in one side of the portion over which said slide moves, a carpet hook pivoted on said slide, a lever pivoted to said bar between said carpet-hook and said floor-hook, and a connection between said carpet-hook and said lever, substantially as set forth.

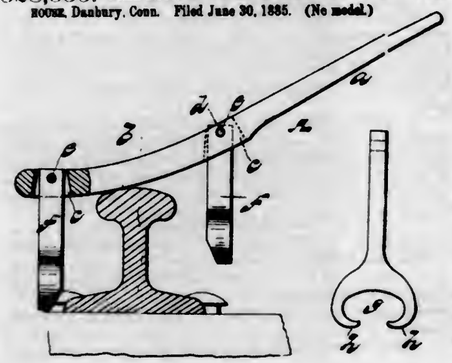
6. The combination, in a carpet-stretcher, of a main bar, a lever pivoted thereto, a combined slide and pivot thereon, the pivot portion of said slide being notched on its rear side, a carpet-hook on said pivot portion, a connection between said carpet-hook and said lever, the base whereof is also pivoted on the pivot portion of said slide, and adapted also to serve as a lock to hold the carpet-hook in position, being itself held into engagement with said carpet-hook by the notch in the pivot portion of the slide, substantially as set forth.

328,654. GIN-SAW GUMMER. Wesley F. Collie, Barren Fork, Ark. Filed May 6, 1885. (No model.)



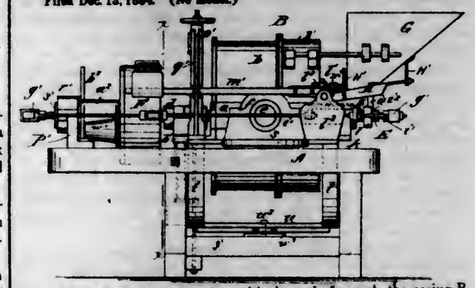
Claim.—In a gin-saw gummer, the combination of the handle A, the cross-bar B, integral with the handle, and the flat teeth C, riveted to the under side of said bar B and beveled or pointed at their outer ends, essentially as shown and described.

328,655. NAIL-EXTRACTOR. David Cornine and Russell J. Stackhouse, Danbury, Conn. Filed June 30, 1885. (No model.)



Claim.—The combination, in a spike-extractor, of a lever, A, having a hand portion, *a*, and a curved bearing-arc, *b*, for the rail-head, slotted as described, and the two gripping-bars *f*, pivoted in the slots *c c* and located equidistant from and on opposite sides of the center of said curved portion, as shown and described.

328,656. GRINDING-MILL. Henry Cutler, North Wilbraham, Mass. Filed Dec. 13, 1884. (No model.)



Claim.—1. The combination, with the main frame A, the casing B, comprising the cast-metal section B', provided with trunnions *e* and lateral arms *a*, and sheet-metal sections *b*, and the fixed and running stones within said casing, of the swiveled frame comprising the plates *s*, the journal-boxes *f* thereon, the curved bars *t*, connecting the ends of said plates, and the bar or plate *u*, connecting the plates *t* at the center of their curves, and bearing on the casing B, substantially as set forth.

2. The casing B, comprising the cast-metal section B', having lateral arms *a* and sheet-metal portions *b*, secured to said arms, substantially as set forth.

3. The casing B, comprising the cast-metal section B', having lateral arms *a*, and trunnions *e* integral therewith, the sheet-metal sections *b*, and the cross-plate *c*, the swiveled plate *c'*, and box *d*, in combination with the stones D C, and the disk *h*, secured to the stone C and provided with the shelf *k* and box *l*, substantially as set forth.

4. In a grinding-mill, the disk *m*, adjustable plate *o*, half-boxes *n n'*, and key-bolt *q*, combined with the running-stone and shaft, substantially as and for the purpose set forth.

5. The combination, with the frame A, having semicircular grooves in the upper surfaces of its side bars, of a swiveled frame provided with side plates, *s*, semicircular tongues *s'* on the under side thereof entering said grooves, boxes *f* on said plates, and the casing B, having trunnions *e*, journaled in said boxes, substantially as set forth.

6. The combination, with the main frame, the horizontal swiveled U-shaped frame therein, and the casing B, journaled to swing vertically in said swiveled frame, of the shaft E, bearings therefor connected with the casing B, the runner-stone on said shaft, the fixed stone secured to the back plate of the casing, and mechanism connected with the main frame and the swiveled frame, for adjusting the said swiveled frame in any desired position, whereby a horizontal and vertical adjustment is afforded the casing, substantially as set forth.

7. In a grinding-mill, the casing, a fixed and a runner stone, shaft, boxes, and trunnions, in combination with a swiveled frame having boxes for the trunnions and rods for horizontally adjusting the position of the casing, substantially as set forth.

8. The combination of the casing having trunnions, fixed and runner stones, inner and outer shaft-boxes, a swiveled frame in which the casing is journaled, and a vertically-adjustable post below the inner box, and means for clamping the casing on the said post, substantially as set forth.

9. The combination of the casing, the runner and fixed stones therein, the boxes *d l*, the swiveled plate *c'*, cross-plate *c*, provided with the flange *b'*, the swiveled frame in which said casing is journaled, the tubular post c^2, the pivot-bolt d', the vertically-adjustable bracket d^2, T-headed bolt f^2, lever g^2, and screw h^2, substantially as set forth.

10. The combination of the casing, the fixed and runner stones therein, the runner-stone shaft, the shelf *k*, a box, *l*, the cross-plate *c*, flange *b'*, swiveling plate *c'*, box *d*, bolts *e'*, and the set-screws *f* for holding the box in place, substantially as set forth.

11. The combination, in a grinding-mill, with the stones, the runner-shaft, and the frame, of the arch *p'*, having a box, *k'*, sleeve *s'*, fixed within said box, removable box *n'* on the end of the shaft, and the removable step *t'*, and adjustable bearings or centers for the said step and the outer end of the shaft, substantially as set forth.

12. The combination, with the frame and the runner-shaft of a grinding-mill, of the arch *p'*, box *r'*, the fixed sleeve *s'*, the removable pivot-box *n'* on the end of the shaft within sleeve *s'*, a spring interposed between the box and the interior of the sleeve, and the removable step *t'*, and the connected adjusting-levers *g'*, substantially as set forth.

13. The combination, with the runner-shaft and the frame of a grinding-mill, of the arch *p'*, box *r'*, fixed sleeve *s'*, the removable pivot-

box u', having a recess in its side, the spring therein, the separate pin s^{2}, interposed between the spring and the inner surface of the sleeve, and the removable step t', and the connected adjusting-levers g', substantially as set forth.

14. The combination, with the casing, the fixed and runner stones therein, the swiveled frame in which said casing is journaled, the runner-stone shaft, the horizontal levers g', having bearings for the opposite ends of the shaft, the guy-rods h' h', connecting the levers g' at one end with the swiveled frame, the rods i', connecting the opposite ends of said levers, the rack k', the pinion l', and the weighted lever m', substantially as set forth.

15. The combination, with the casing, the fixed and runner stones therein, the runner-shaft, the swiveled frame in which the casing is journaled, the horizontal levers g', having bearings for the ends of the shaft, the guy-rods h', connecting one end of the levers g' to the swiveled frame, the rods i', the rack k', pinion l', weighted lever m', and the vertical adjustable screw-hook q', substantially as set forth.

16. In a mill, the combination, with the back plate having apertures, of the disk h, having a shaft-eye, the studs g, tubular washers i^{3}, the nuts i, and the shelf k, having a box, l, thereon in line with the shaft-eye, substantially as set forth.

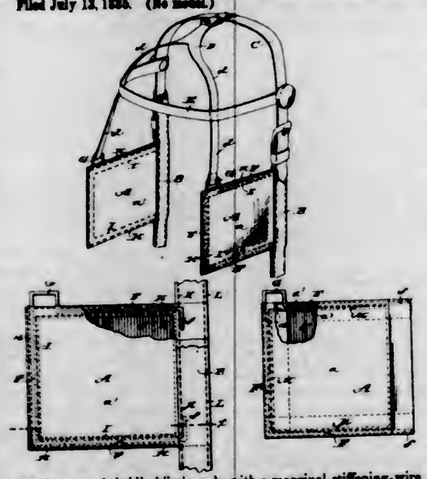
17. The combination, with the runner-shaft of a grinding-mill, having the drive-pulley F, of the frame provided with the arch p', and box r', the sleeve s' extending through the box r', adjacent to the pulley F, and a belt-shifting device mounted on the exterior of said sleeve s', substantially as set forth.

18. The combination, with the runner-shaft of a mill, having the drive-pulley F, of the frame provided with the fixed sleeve s, the collar a^{3} journaled on the fixed sleeve, the conical pulleys w', journaled in a semicircle on segmental arms of the collar with the bases of the cones adjacent to the drive-pulley, and a lever for operating the collar a^{3} and its pulleys.

19. In a mill, the combination, with the shaft E, having a beater, i^{2}, the levers g', rods h' i', rack k', and operating-lever m', of the vibratory feed-shoe H, suspended centrally below the hopper, and having the arm i^{3}, and the centrally-pivoted lever l^{3}, having one end resting on the upper side of the lever m', and its opposite end resting on the adjacent edge of the shoe, whereby when the lever m' is raised the opposite end of lever l^{3} will be depressed to stop the feed, as described.

20. In a mill, the vibratory feed-shoe H, suspended centrally below the hopper, in combination with the casing B, centrally-pivoted lever l^{3} on the back plate thereof, and the weighted lever m', substantially as set forth.

328,657. BRIDLE-BLIND. Ebony Quimlent Darr, Shelbyville, Ind. Filed July 13, 1885. (No model.)

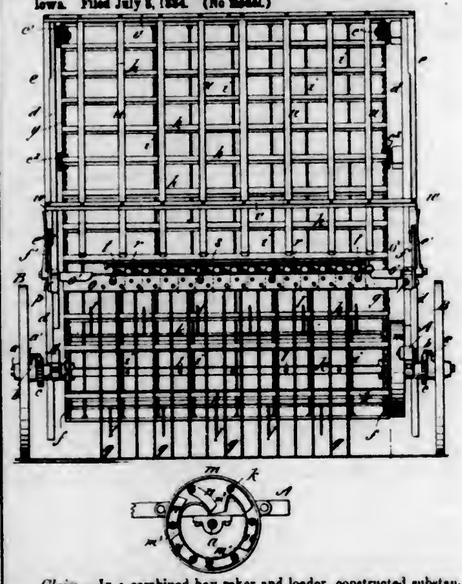


Claim.—1. A bridle-blind made with a marginal stiffening-wire, F, provided with a projecting loop, G, to receive the winker-stay, and with a stiffening-plate, J, pocketed between the facings of the blind and separated from the wire F by a row of stitches, substantially as herein set forth.

2. The combination, in a bridle-blind, of the facings a a', the marginal wire F, placed between the facings and provided with a projecting loop, G, to receive the winker-stay, and said wire F having ends bent at f f behind the row of stitches K, by which it is attached to the cheek-strap B, substantially as herein set forth.

3. A bridle-blind comprising an outer facing, a, a marginal stiffening-wire, F, having a projecting loop, G, to receive the winker-stay, and said facing a doubled around wire F, as at a^{2}, an inner facing, a', a stiffening-plate, J, pocketed between the facings a a', and a row of stitches, M, between wire F and plate J, substantially as herein set forth.

328,658. HAY RAKER AND LOADER. Joseph I. Davis, Mt. Hamill, Iowa. Filed July 8, 1884. (No model.)



Claim.—In a combined hay raker and loader, constructed substantially as shown and described, the combination, with the flanged disk m, fixed to the main frame and provided with the internal flange, m', having its ends turned inward to form the recess m^{2} at the upper part of the groove m^{2}, of the rake-bars k, journaled in the chain-wheels f, having their ends extended through said wheels f, and carrying on said ends the tappets n, working in the groove m^{2}, as set forth.

328,659. ATTACHMENT FOR DENTAL CHAIRS. George A. Dille, Athens, Ohio. Filed July 13, 1885. (No model.)



Claim.—1. The attachment for dental and other chairs herein described, comprising the bar to span the base, and having the guide-pin b of the frame, the disk having the central projection or hub, and a lever having a slitted cam end embracing and secured to said guide-pin between the said bar and the central hub of the disk, substantially as described.

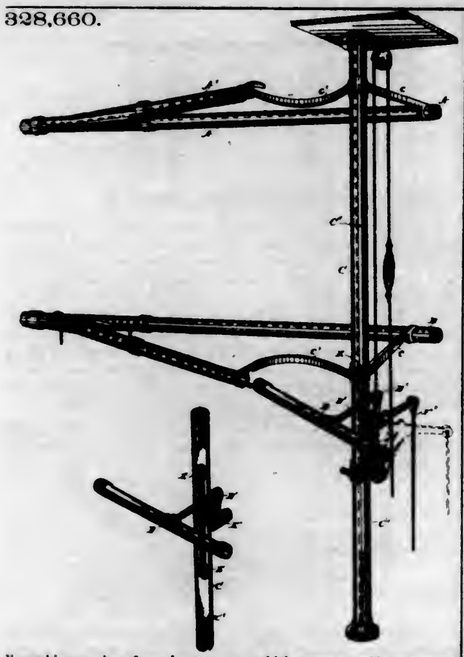
2. The combination, with a dental or similar chair, of the hereindescribed attachment, comprising the bar having guide-pin b, and spanning the base of the chair-frame, the disk having the central projection or hub, and a lever having a slitted cam end embracing and secured to said guide-pin between the said bar and the central hub of the disk, substantially as described, and for the purpose set forth.

328,660. CARRIER APPARATUS. Jerome F. Downing, Erie, Pa. Filed Sept. 12, 1885. (No model.)

Claim.—1. In a conveyer system, the combination, with the receiving and dispatching tracks, of an elevator-way which consists of a vertically-slotted tube arranged with relation to said tracks, substantially as set forth.

2. In a conveyer system, the combination, with the receiving and

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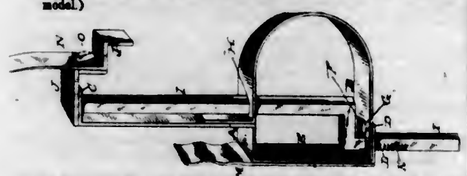
dispatching tracks, of an elevator-way, which supports said tracks, and is tubular and vertically slotted, and receives within its slot and bore the elevator-frame, substantially as set forth.

3. In a conveyer system, the combination, substantially as herein set forth, of the tracks A A' and B B', the vertically-slotted hollow post C, the arms c c' and c c', secured to said post and supporting said tracks, and the elevator-frame E E', sliding within said post.

4. In a conveyer apparatus, the combination, substantially as set forth, of the vertically-slotted hollow post C, the switch-tracks A' B', the arms c' and c', secured to said post and supporting said switch-tracks, and the elevator-frame E E', sliding in the bore and slot of said post and supporting the track-section D.

5. In a conveyer apparatus, the combination, substantially as set forth, of the switch-tracks A' and B', the vertically-slotted hollow post C, the arms c' c', secured to said post and supporting said switch-tracks, an elevator sliding within the bore and slot of said post, and a catch device supported on said post and adapted, as shown, to support the elevator opposite the receiving-switch B'.

328,661. WEATHER-BOARDING GAGE. Camillus Dunbar, Glenwood, and James A. Renton, Lancaster, Mo. Filed July 10, 1885. (No model.)



Claim.—1. In a weather-boarding gage, a two-part metallic frame having a bow-shaped portion to form a hand-grasp, and slots at each end and intermediate thereof to receive and guide a gage-bar jointly with a gage-bar having at or near its lower end notches or serrations to engage one of the slots in the frame, and at its upper end a board-holding arm, substantially as set forth.

2. A weather-boarding gage having a corrugated metallic spring rigidly attached at its lower end to the inner face of the frame, and extending upwardly therefrom, for the purpose of holding the gage to its work, substantially as set forth.

3. A weather boarding gage having pivotally connected thereto a reversible metallic spring for holding the boards in place, said spring having at one end a right-angled and downwardly-extending offset, as and for the purpose set forth.

4. A weather-boarding gage having a corrugated metallic spring rigidly attached at its lower end to the frame, and extending upwardly therefrom, for the purpose of holding the gage to its work, and a reversible metallic spring for holding the boards in place, the latter spring having at one end a right-angled and downwardly-extending offset, as and for the purpose set forth.

5. In a weather-boarding gage, a gage-bar-guiding frame having at its upper end and at or near its center right-angled portions provided with slots to form guides for the gage-bar, and at its lower portion an elongated slot extending partly out of alignment with the slots in the upper part of the frame, jointly with a gage-bar having notches or serrations adapted to engage with the lower slotted portion of the frame, substantially as set forth.

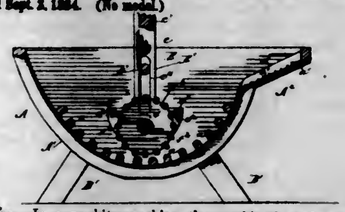
6. In a weather-boarding gage, a gage-bar-guiding frame having at its upper end and at or near its center right-angled portions provided with slots to form guides for the gage-bar, and at its lower portion an elongated slot extending partly out of alignment with the slots in the upper part of the frame, jointly with a gage-bar having at or near its lower end an offset notched portion adapted to engage the slotted elongated slot in the lower portion of the frame, substantially as set forth.

7. The combination, with a gage-bar-guiding frame having angularly-extending slotted portions, of a gage-bar having at its upper end a transversely and downwardly extending head, and a board-gripping spring pivoted thereto, and having at one end a right-angled and downwardly-extending offset, substantially as set forth.

328,662. BUTTON. Wallace Durand, Newark, N. J. Filed Aug. 1, 1885. (No model.)

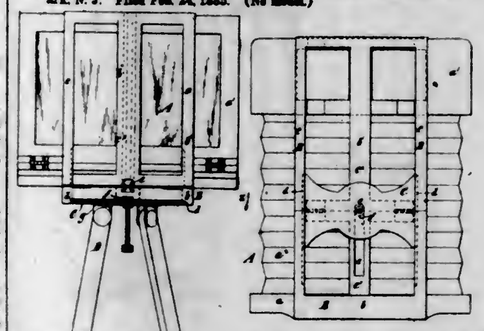
Claim.—In a sleeve-button, the combination, with a post having plates k k', rigidly secured to the opposite ends thereof, one of which, k, is semicircular in shape, the other, k', being attached to the face-plate, and provided with a stop, m, thereon, of a rotating sleeve pivotally arranged around said post between the plates k k', and provided with plates f g, attached to each end thereof, the plate f being secured to the lower end of the sleeve, and cut so as to engage with the stop m, on the plate k', and permit the plate, sleeve, and semicircular plate to rotate one-half of its revolution, and the plate g secured to the opposite end of said sleeve and passing under the plate k when the said sleeve is rotated, for the purposes set forth.

328,663. WASHING-MACHINE. Marshall N. Eshley, Drain, Oreg. Filed Sept. 3, 1884. (No model.)



Claim.—In a washing-machine, the combination of a receptacle having supporting legs and key-blocks with a rubber having roller-supporting frame and a roller journaled therein, a shaft passing through the slotted parallel bars, thence through the sides of the receptacle, and journaled in key-blocks secured to the outside of the receptacle, substantially as described.

328,664. PHOTOGRAPHIC CAMERA. Mathias Flammang, Newark, N. J. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with a camera and a frame arranged beneath the same, having a fixed section and a swinging section, of a securing-piece unconnected with the rear portion of the camera, and grooves or slideways in the frame in which said securing-piece may slide,

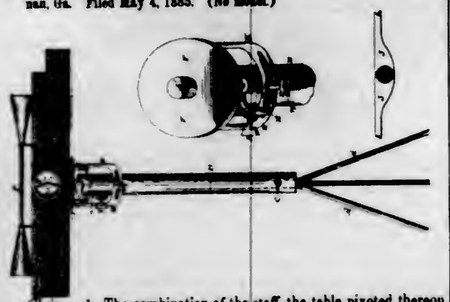
substantially as described, whereby by a relative rectilinear movement between the securing-piece and the frame the swinging section may be locked in line with the fixed section or unlocked therefrom without affecting the position of the camera relatively to the frame.

2. The combination, with a camera, of a frame arranged beneath the camera, having a fixed section and a swinging section, a securing-piece for locking the swinging section and fixed section together, and a tripod fastened to the securing-piece.

3. The combination, with a camera, of a frame arranged beneath the camera, having a fixed section and a swinging section, a securing-piece unconnected to the rear portion of the camera, fitted into the frame and capable of a retilinear movement for locking the swinging section and fixed section together, and a stop or stops for limiting the movement of the camera and frame upon the sliding piece or the sliding piece upon the frame, substantially as specified.

4. The combination, with a camera, of the frame B, having the sections *b b'*, provided with the grooves *d*, the tripod D, and the securing-piece C, secured to the tripod, substantially as specified.

328,665. LEVELING-INSTRUMENT. Abraham G. W. Foster, Newnan, Ga. Filed May 4, 1885. (No model.)



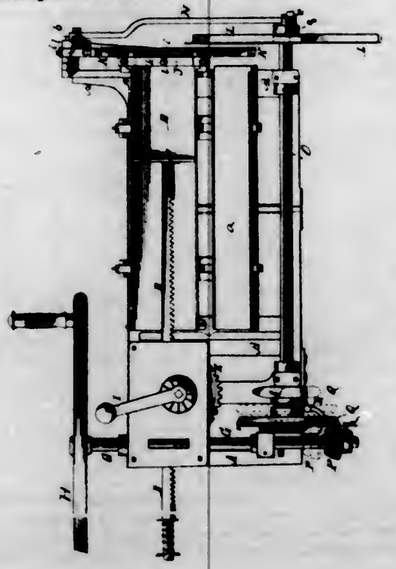
Claim.—1. The combination of the staff, the table pivoted thereon, the curved slotted arms placed at right angles to each other, and the set-screws which pass through the arms into the staff for the purpose of holding the table in any desired position, substantially as shown.

2. The combination of the tripod, the staff, the adjustable table placed thereon, the curved slotted arms, and set-screws, and having a pivotal point formed upon its top, with the plate provided with a level and a sighting-tube, substantially as described

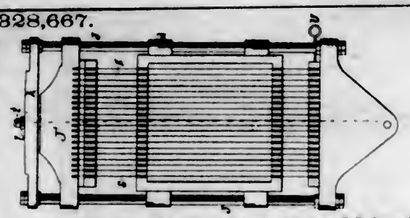
328,666. PAINT-REMOVER. Frank P. Foster, Milwaukee, Wis., assignor to L. Myers & Son, same place. Filed Sept. 12, 1885. (No specimens.)

Claim.—A paint-remover consisting of a mixture of potash, alum, burnt umber, wheat-flour, carbolic acid, and water, mixed cold, substantially as set forth.

328,667. PORK-FAT-CUTTING MACHINE. Bernard Gloekler, Pittsburg, Pa. Filed Apr. 9, 1885. (No model.)



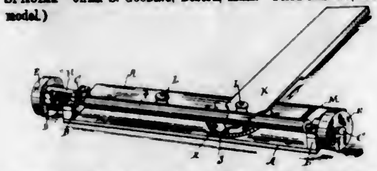
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Claim.—1. The knife-heads J K, having knives S S, formed with pins or rivets at one end adapted to fit and hold in cross notches or slots in the heads, and with holes in the other ends thereof, in combination with cross-bar T, adjustable cross-bar J', and rod U, substantially as and for the purpose set forth.

2. The combination of a driving-shaft, G, having a bevel-wheel, P, adjustable on the shaft lengthwise thereof, a knife-shaft, O, provided with a bevel-wheel, Q, movable upon the shaft lengthwise thereof, and having two sets of gear-teeth for gearing into the teeth of the bevel-wheel P, and two knives, L L, on the knife-shaft, one being readily removable therefrom, substantially as and for the purpose herein specified.

328,668. PARALLEL AND RADIAL RULER AND LINEAR SPACER. Chas. S. Goodno, Boston, Mass. Filed Jan. 28, 1885. (No model.)



Claim.—1. The ruler-plate A, provided with journal-bearings B, rotating-shaft C, provided with a removable friction-wheel, E', ratchet D, and spring-pawl H, as and for the purposes set forth.

2. The ruler-plate A, provided with a pivoted arm, K, journal-bearings B, rotating shaft C, having friction-wheels E, ratchet D, and spring-pawl H, as described.

3. The ruler-plate A, provided with journal-bearings B, rotating shaft C, having friction-wheels E, and ratchet D, spring-pawl H, and adjustable slide N, provided with the point P, as and for the purposes set forth.

4. The ruler A, provided with journal-bearings B, rotating shaft C, provided with an elastic rubber sleeve, T, elastic rubber wheels E, ratchet D, and spring-pawl H, for the purposes set forth.

5. The ruler-plate A, provided with a pivoted arm, K, journal-bearings B, rotating shaft C, having elastic rubber wheels E, and provided with an elastic rubber sleeve, T, ratchet D, and spring-pawl H, substantially as described.

6. The parallel ruler A, provided with a pivoted ruling-arm, K, having the point S, segmental scale R, friction-wheels E, ratchet D, spring-pawl H, and shaft C, as and for the purposes set forth.

7. The ruler-plate A, provided with the holding devices L, whereby irregular curves or irregular guides may be secured thereon, ratchet D spring-pawl H, and rotating friction device adapted to move the ruler, substantially as described.

8. The ruler-plate A, provided with journal-bearings B, rotating shaft C, having an elastic rubber sleeve, T, and one end provided with an elastic rubber wheel, E', and the opposite end with a ratchet, D, spring-pawl H, and elastic rubber wheel E, constructed and arranged to operate substantially as described.

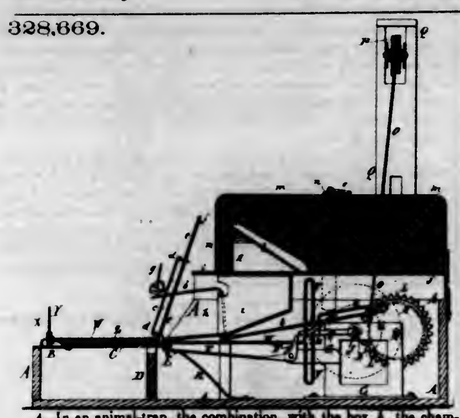
328,669. ANIMAL-TRAP. Sylvester S. Greene, Lead City, Dak. Filed May 7, 1885. (No model.)

Claim.—1. An animal-trap constructed substantially as herein shown and described, and consisting of the box A, having platform B, trap-door C, spring-held trip-lever F, the connected cranks I *a*, and the driving cord and weight O R, the rod W, having slotted cross-head V at its inner end and toothed bar X Y at its outer end, the elbow-lever *b*, having longitudinally-slotted inner end, the sliding rack *c*, the chamber *h*, having passage *i*, the cover *j*, having drop-door *l*, and the cage *m*, as set forth.

2. In an animal-trap, the combination, with the box A, the cover *j*, having drop-door *l*, and the cage *m*, of the chamber *h* and passage *i*, substantially as herein shown and described, whereby the animal is received and guided to the cage, as set forth.

3. In an animal-trap, the combination, with the box A, platform B, trap-door C, and chamber *h*, of the crank I and cord and weight O R, the rod W, having slotted cross-head V at its inner end and a toothed bar, X Y, at its outer end, substantially as herein shown and described, whereby the animal that springs the trap will be projected into the receiving-chamber, as set forth.

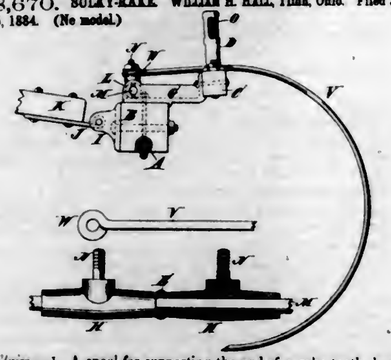
328,669.



4. In an animal-trap, the combination, with the box A, the chamber *h*, and the crank I, and its driving cord and weight O R, of the second crank, *a*, the elbow-lever *b*, having longitudinally-slotted inner arm, and the sliding rack *d*, substantially as herein shown and described, whereby the said rack will be raised and lowered automatically as the trap is sprung and set, as set forth.

5. In an animal-trap, the combination, with the box A and the cord and weight O R, of the adjustable standard Q, and a fastening, T U, substantially as herein shown and described, whereby a longer or shorter fall can be given to the weight, as set forth.

328,670. SULKY-RAKE. William H. Hall, Tiffin, Ohio. Filed June 5, 1884. (No model.)



Claim.—1. A spool for supporting the end of a rake-tooth, having an upright threaded bolt projecting therefrom, substantially as and for the purposes set forth.

2. In combination with the spool having an upright bolt projecting therefrom, a rake-tooth provided with an eye in its forward end adapted to receive said upright bolt, substantially as and for the purpose set forth.

3. In combination with the vertically-slotted spring-holding socket, the rake-tooth having an eye at its forward end adapted to slide through said socket, and the spool provided with an upright bolt adapted to receive and confine the said tooth, substantially as set forth.

328,671. PENCIL-SHARPENER. Axel Hatch, Lexington, Ky. Filed Dec. 3, 1884. (Model.)

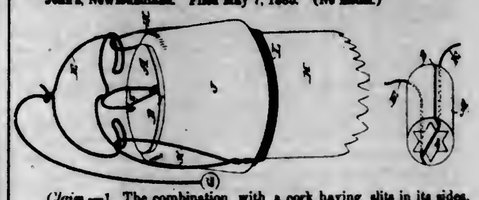


Claim.—1. A file pencil-sharpener having a coarse-cut broad flat surface and a beveled finer-cut side marginal portion on either or both of its faces, essentially as described.

2. A file pencil-sharpener having handles at its opposite ends and coarse-cut broad flat surfaces and beveled finer-cut side marginal portions on its opposite faces, substantially as specified.

3. A file pencil-sharpener having handles at its opposite ends and coarse-cut broad flat surfaces and beveled finer-cut side marginal portions on its opposite faces with the file cuts or teeth arranged to run oblique to the handles in reverse directions on the opposite faces of the sharpener, essentially as and for the purposes herein described.

328,672. BOTTLE-CORK ATTACHMENT. John W. Hayward, St. John's, Newfoundland. Filed May 7, 1885. (No model.)



Claim.—1. The combination, with a cork having slits in its sides, of a cord, band, or wire passed through the slits, and of a slitted plate or wire on the top of the cork for holding the cords, substantially as herein shown and described.

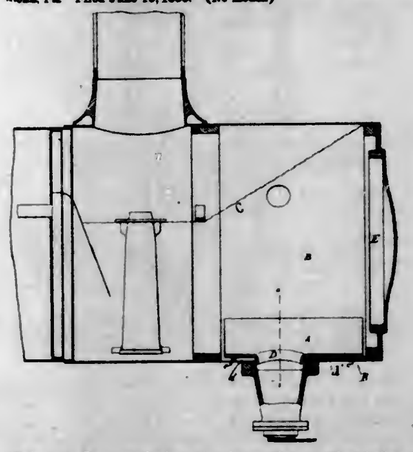
2. The combination, with a bottle, of the wire L and loops K, the cork A, and the cord E on the same, substantially as herein shown and described.

328,673. FUR-CASE. Frederick W. Heide, Milwaukee, Wis. Filed Mar. 11, 1885. (No model.)



Claim.—The combination of the air-tight receptacle A, having shelves for the reception of furs, &c., with the cover B, having tube C, provided with valve-seat *e* and valve C', said tube projecting above the cover and being adapted for connection with an air-pump, and the inlet-cock E and washer *f*, substantially as set forth.

328,674. LOCOMOTIVE SMOKE-BOX. George R. Henderson, Altoona, Pa. Filed June 15, 1885. (No model.)



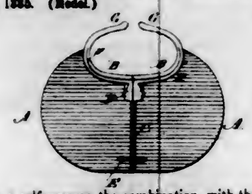
Claim.—1. In a smoke-box of a locomotive or other boiler, the combination of the sheet B, composing the wall or shell of the smoke-

box, with a protecting-plate, A, so supported on the wall of the smoke-box as to leave a space, *d*, between it and the sheet B, substantially as and for the purpose specified.

2. In the smoke-box of a locomotive or other boiler, the combination of the sheet B, composing the wall or shell of the smoke-box, with a protecting-plate, A, conforming in general shape to the wall of the smoke-box and separated from it by a layer of non-conducting material, all substantially as and for the purpose specified.

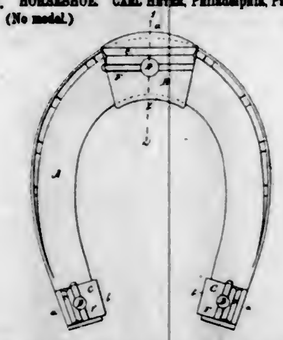
3. In the smoke-box of a locomotive or other boiler, the combination of the plate B, composing the wall or shell of the smoke-box, with a protecting-plate, A, having ribs or projection *c*, whereby it is kept at a distance from the sheet B, substantially as shown and described.

328,675. CALF-WEANER. Edward P. Henry, Eagle Rock, Idaho. Filed Jan. 9, 1885. (Model.)



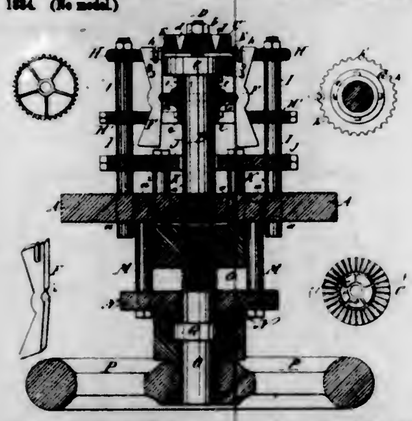
Claim.—In a calf-weaner, the combination, with the pivoted plates A, having flanges C and curved prongs G, of the spring-key E, substantially as herein shown and described.

328,676. HORSESHOE. Carl Hayer, Philadelphia, Pa. Filed July 21, 1885. (No model.)



Claim.—The herein-described device for securing the calks B or C to the shoe A, consisting of the screw D, secured to the shoe, and having a hole, E, in its head, and the wedge or key F, passing through this slot and bearing on the calk, substantially as set forth.

328,677. APPARATUS FOR MAKING TYPE-WHEELS. Emil R. Hoffmann and Alfred W. Hoffmann, New York, N. Y. Filed Aug. 16, 1884. (No model.)

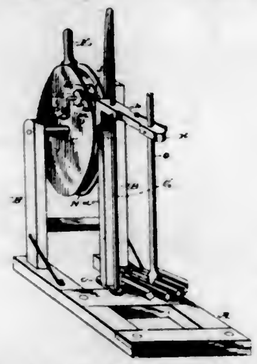


Claim.—1. The combination of a type-wheel mold, radially-guided type-bars having raised or countersunk types at their inner ends, vertically-oscillating levers that engage the outer ends of the type-bars, and means, substantially as described, whereby the oscillating levers and type-bars are moved in outward or inward direction, substantially as described.

2. The combination of the type-wheel mold having radial grooves in its adjoining faces, radially-guided type-bars, oscillating levers engaging the type-bars at their outer ends, said levers being double-wedge shaped, vertically-reciprocating rings engaging said wedge-shaped levers, and means, substantially as described, for raising or lowering said rings, so as to move the type-bars in inward or outward direction, substantially as specified.

3. The combination of an upright post having a fixed ring, a type-wheel mold supported by said post and provided with radial grooves, radial type-bars arranged in grooves of said molds, oscillating wedge-shaped levers pivoted to the said fixed ring on the supporting-post and adapted to engage the outer ends of the type-bars, rings engaging the outer tapering faces of the oscillating levers, a vertically-movable frame to which said rings are fixed, and an axially-turning spindle for raising and lowering said frame, substantially as described.

328,678. MOTOR. Thomas W. Hogsett, Edray, W. Va. Filed Mar. 30, 1885. (No model.)



Claim.—1. In a motor, the combination, with the sliding frame, of the grooved band-wheel, means for operating the latter, and straps, ropes, or bands connecting the drive-wheel to the sliding frame and wound in opposite directions on said wheel, for the purpose set forth.

2. In a motor, the combination, with the sliding frame, of the grooved band or drive wheel, straps or ropes connecting the latter with the frame and wound on the wheel in opposite directions, and a spring connected to the wheel and arranged to be wound up by the movement of the same in one direction, for the purpose set forth.

3. In a motor, the combination, with the stationary guide-post, a sliding frame moving on the post and carrying the dasher-shaft of the band-wheel, straps or bands connecting the upper and lower ends of said sliding frame to the wheel and wound thereon in opposite directions, and means, substantially as described, for operating said drive-wheel, as and for the purpose set forth.

4. In a motor, the combination, with the stationary guide-post, and a sliding frame moving on the post and carrying the dasher-shaft, of the band or drive wheel, straps, ropes, or bands connecting the upper and lower ends of the frame to the band or drive wheel and wound thereon in opposite directions, one of said straps, ropes, or bands being adjustable in length, a spring connecting with the band or drive wheel, and operating means for the latter, for the purpose set forth.

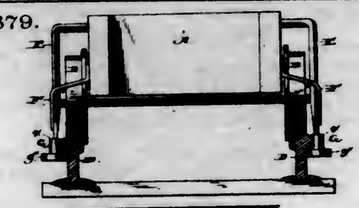
5. In a motor, the combination, with the base or frame having uprights or standards at one end, a shaft journaled in the standards or uprights, a drive or band wheel mounted on the shaft, and a spring coiled on the shaft and connecting at one end with one of the standards and at the opposite end with the drive or band wheel, of the guide-post, a frame sliding on said post, ropes or straps connecting the upper and lower ends of the frame to the band or drive wheel and wound thereon in opposite directions, for the purpose set forth.

6. In a motor, the combination, with the sliding frame carrying the shaft, of the drive or band wheel, ropes or straps connecting with the upper ends of the frame and attached to the band or drive wheel, one of the ropes or straps being attached to a short shaft or windlass, so as to be wound thereon to decrease its length, for the purpose set forth.

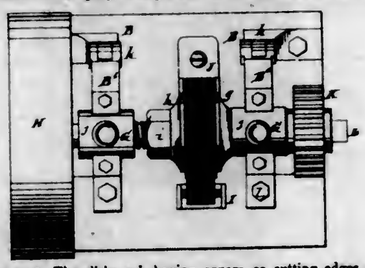
328,679. CAR-TRUCK. Thomas W. Hogsett, Edray, W. Va. Filed Mar. 31, 1885. (No model.)

Claim.—The car-truck, in combination with the vertical rods E, having their upper ends secured to the sides of the truck, inclined brace-rods F on each side of the vertical rods, and vertical rollers G, journaled in the lower ends of the rods E, said rollers having the reduced cylindrical portion *g* working against the outer sides of the heads of the rails, and the lower annular flanged portion, *g'*, for bearing against the shanks of the rails directly under the heads thereof, as set forth.

328,679.



328,680. MACHINE FOR REDUCING QUILLS, FEATHERS, &c., TO FIBER. Gideon R. Holden, Michigan City, Ind., assignor to the Warren Featherbone Company, Chicago, Ill. Filed Mar. 7, 1885. (No model.)



Claim.—1. The disks *a b*, having square or cutting edges, and passing and interlocking each other, for reducing the material fed between them to fiber, substantially as specified.

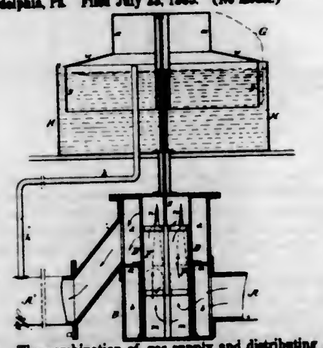
2. The combination of the disks *a b* with the guides *c d*, substantially as and for the purpose described.

3. The combination of the cutting-disks *a b* with the scrapers *e*, substantially as set forth.

4. The combination and arrangement of the cutting-disks *a b* and of the guides *c d*, and scrapers *e*, substantially as specified.

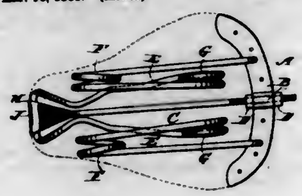
5. The combination and arrangement of the shaft D, hinged supports B', and cutting-disks *a*, locked thereon, with the shaft C, fixed supports B, cutting-disks *b*, locked thereon, guides *c d*, and scrapers *e*, substantially as and for the purpose described.

328,681. AUTOMATIC PRESSURE-REGULATOR. Thomas C. Hopper, Philadelphia, Pa. Filed July 23, 1885. (No model.)



Claim.—The combination of gas supply and distributing pipes, a valve controlling the flow from one to the other, a bell connected to said valve and having an internal chamber presenting differential areas, and a communication between said chamber and the distributing-pipe, the differential areas of the bell-chamber being such that as said bell changes its position the normal pressure of gas in the distributing-pipe will also change, as set forth.

328,682. BICYCLE-SADDLE. Robert E. Humphreys, Irwin, Pa. Filed Mar. 10, 1885. (Model.)



Claim.—1. In a velocipede-saddle, the combination, with a curved bar or piece, of a spring-rod having its ends secured on the curved piece and bent to form coil springs and a horn, and a rod connecting the horn with the curved piece, substantially as herein shown and described.

2. In a velocipede-saddle, the combination, with a curved bar or piece, A, having a pocket, B, of the spring-rod E, forming springs and a horn, H, the rod C, passed through the pocket B and secured to the horn, and the nuts D D, substantially as herein shown and described.

3. In a bicycle-saddle, a spring-rod forming the spring-support for the saddle, and also the horn of the saddle, substantially as herein shown and described.

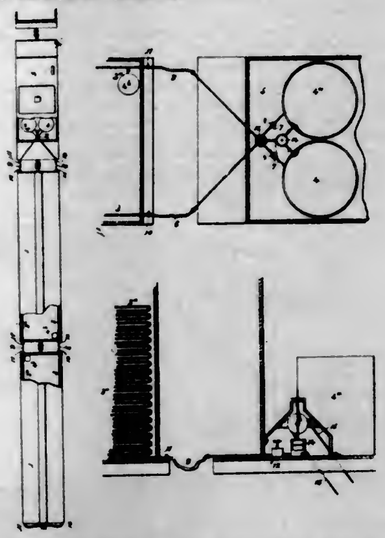
328,683. AXLE-BOX. Henry M. Johnson, Racine, Wis. Filed Aug. 17, 1885. (No model.)



Claim.—1. In a bushing for wheels, the combination, with the axle, of a hollow bushing in two parts secured thereto by means of two half-collars within the bushing fitting into a circumferential groove in the end of the axle, and a series of loose anti-friction rollers confined in the space about the said axle by the said half-collars, and of less length than said space, whereby they are adapted to have lateral play in said space, substantially as set forth.

2. The combination, with the axle A, having circumferential grooves at each end, of the hollow bushings B B', anti-friction rollers C C C, and half-collars D D, substantially as set forth.

328,684. REFRIGERATOR-CAR. Henry C. Johnson, Meadville, Pa. Filed Jan. 29, 1885. (No model.)



Claim.—1. A refrigerating apparatus consisting of cooling-coneans 3 3°, couplings 6 9, and gas-holders 4 4°, adapted to produce a continuous circulation throughout a train of cars, as and for the purpose herein described.

2. The combination of the gas-holders 4 4°, cooling-conduits 3 3°, couplings 6 9, and air-pump 14, for producing a cooling circulation throughout a train, as shown and described.

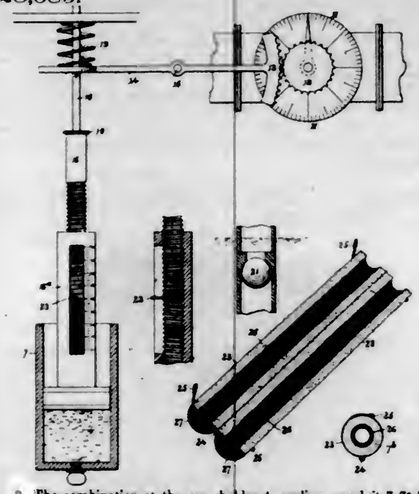
3. The combination of the cooling-conduits 3 3°, gas-holders 4 4°, regulating-valves 7, five-way cock 12, and air-pump 14, for producing an exhaust in either conduit and reconducting the gas.

328,685. PROCESS OF AND APPARATUS FOR DEHYDRATING AND REFRIGERATING AIR FOR THE PRESERVATION OF MEAT, &c. H. C. Johnson, Meadville, Pa. Filed July 27, 1885. (No model.)

Brief.—Improvement on the invention of Patent No. 316,975, dated May 5, 1885.

Claim.—1. The cooling and dehydrating apparatus herein described, consisting of a cooling-conduit, 7, connecting at one end with a holder for ammoniacal gas and at the other with a water-tank and one or more removable jackets, 23, for holding dehydrating material, as explained.

328,685.



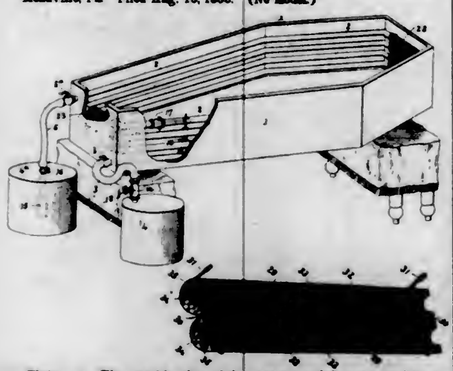
2. The combination of the gas-holder 4, cooling-conduit 7 7ª 7ᵇ, water-tank 20, and dehydrating-jackets 23, as and for the purposes set forth.

3. The combination of the gas-holder 4, cooling-conduit 7 7ª 7ᵇ, stop-cocks 9 10, and removable dehydrating-jackets 23 26, as and for the purposes described.

4. The dehydrating-jacket consisting, as herein described, of two semi-cylindrical shells, 23 26, with hinges 24 and clasps 25, substantially as and for the purposes set forth.

5. The combination, with a cooling-conduit for refrigerating air, of a removable dehydrating-jacket for containing deliquescent material, divided longitudinally and hinged, as described, to permit its ready application to and removal from the cooling-conduit.

328,686. CORPSE COOLER AND PRESERVER. H. C. Johnson, Meadville, Pa. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination of the corpse-receiving case or box 1, cooling-conduit 2, placed directly within the corpse-receiving chamber, the gas-holder 4, the dial-cock 13 14, and the stop-cocks 5 5ª, as and for the purposes described.

2. The combination of the corpse-receiving case or box 1, the cooling-conduit 2, placed directly within the corpse-receiving chamber, the gas-holder 4, the condensing water-tank, and the detachable hose or connecting-pipes 3 6, as and for the purposes described.

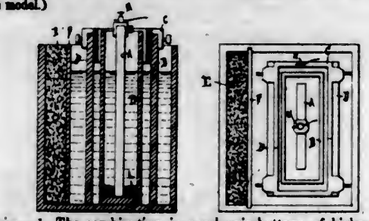
3. The combination of the corpse-receiving case or box 1, the cooling-conduit 2, the gas-holder 4, and the thermal regulator consisting of a valve, 17, and a thermostat controlling the same by the temperature within the corpse-receiving chamber, as herein explained.

4. The combination of the corpse-receiving case or box 1, the cooling-conduit 2, the gas-holder 4, detachable hose or connecting-pipes 3 6, and check-valve 15, as and for the purposes set forth.

5. A corpse cooler and preserver consisting of a receiving case or box, 1, a cooling-conduit, 2, placed directly within the corpse-receiving chamber, the detachable gas-holder 4, and the detachable dehydrating-jackets 29 32, clasped around the cooling-pipes within the corpse-receiving chamber, as explained.

6. A dehydrating-jacket for refrigerating pipes, constructed, as herein described, of concentric semi-cylindrical shells of gauze or perforated material to permit the passage of air, connected by longitudinal plates, so as to form two semi-annular chambers adapted to be clasped around the refrigerating-pipe, and provided with stoppered apertures for the introduction and removal of deliquescent material.

328,687. ELECTRIC BATTERY. Theodore L. Kauffer, Boston, assignor to W. B. R. Dewse, trustee, Newton, Mass. Filed July 11, 1885. (No model.)



Claim.—1. The combination, in a galvanic battery, of bichromate of soda with an acid, preferably sulphuric acid.

2. In a galvanic battery, a fluid one element of which is bichromate of soda.

3. The combination, in a galvanic battery, of electrodes, a mixture of bichromate of soda, sulphuric acid, and water, as set forth.

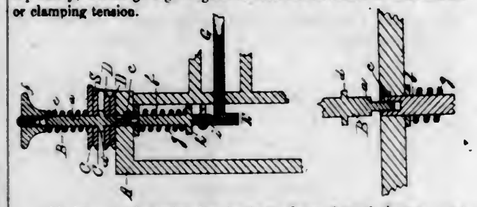
4. A galvanic battery having a reservoir with a slotted partition, a mixture of bichromate of soda, sulphuric acid, and water, the elements A in a cell, B, and the elements D D, connected by a ring, C, as set forth.

5. In a galvanic battery, the ring C, provided with arms and clamping-screws, in combination with the plates D D, substantially as described.

6. A galvanic battery consisting of an outer cell, an inner porous cup, a positive and negative electrode, bichromate of soda, and an acid, preferably sulphuric acid, in aqueous solution.

328,688. TENSION DEVICE FOR SEWING-MACHINES. David L. Keeler, Grand Rapids, Mich. Filed Sept. 19, 1884. (No model.)

Brief.—Two sets of tension-disks are provided, and may be used separately, one set giving a regular tension and the other an intermittent or clamping tension.



Claim.—1. A tension-bar having a flange formed thereon, a set of tension-disks above said flange, and means for giving tension thereto, in combination with a set of tension-disks below said flange, mechanism which normally holds said flange pressed against said lower disks, thus giving tension thereto, and mechanism which automatically raises and lowers said tension-bar, whereby the tension on said lower disks is released and applied without the tension on the upper disks being affected, substantially as set forth.

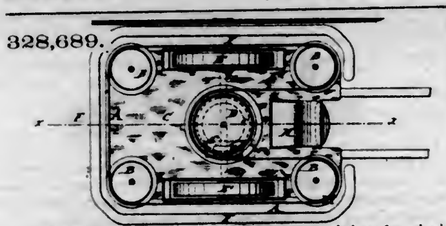
2. The sewing-machine head A, the tension-bar B, having flanges *d* and *h*, and mechanism which automatically raises and lowers said bar, in combination with the tension-disks C C above the flange *d*, the tension-disks D D below said flange, and the springs *e* and *g*, substantially as set forth.

3. The sewing-machine head A, the rotating shaft G, the cam E on said shaft and within said head, and the tension-bar B, resting on said cam E, and having flange *d* outside of the head A and flange *h* within said head, in combination with tension-disks C C, surrounding said bar B and resting on flange *d*, spring *e*, encircling bar B above disks C C, adjusting-nut *f* on the end of bar B, against which bears spring *e*, tension-disks D D, surrounding bar B between head A and flange *d*, and spring *g*, encircling bar B between head A and flange *h*, substantially as set forth.

4. Tension-bar B, provided with flange *d*, and composed of two parts, *a* and *b*, and mechanism which automatically raises and lowers said bar, in combination with disks D D, spring *g*, and set-screw *c*, substantially as set forth.

328,689. ADVERTISING-WAGON. August Köhn, Brooklyn, N. Y., assignor to himself and George Louis Berghaus, same place. Filed Feb. 24, 1885. (No model.)

328,689.

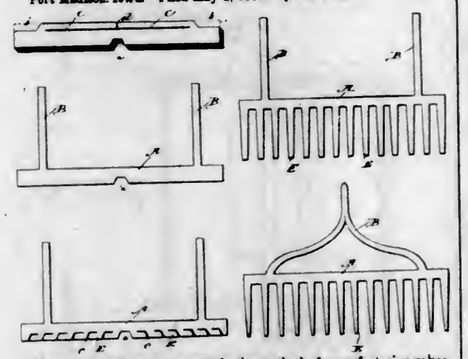


Claim.—1. An advertising wagon or cart consisting of a wheeled platform, vertical guide-rollers in bearings of the said platform and top frame, a rotary drum or drums, transmitting mechanism for turning the drum or drums from the axle, and an endless band that is stretched over the guide-rollers and drums, substantially as set forth.

2. In an advertising wagon or cart, the combination of a wheeled platform, vertical guide-rollers supported in bearings of the platform and top frame, a drum or drums, transmitting mechanism for imparting rotary motion to the drum or drums from the axle, an endless advertising-band passing around the guide-rollers and drums, a protecting guard-rail extending around the lower part of the platform, and a cover for protecting the upper edge of the band, substantially as set forth.

3. In an advertising wagon or cart, the combination of a wheeled platform having housings for the wheels, vertical guide-rollers supported in bearings of the platform and top frame, a rotating drum or drums, transmitting mechanism for imparting rotary motion from the axle to the drum or drums, an advertising-band stretched over the guide-rollers and drum or drums, a guard-rail extending around the lower part of the platform, a cover extending around the upper part of the band, and a seat located between the front guide-rollers, substantially as and for the purpose set forth.

328,690. METHOD OF MAKING RAKES. William H. Kretsinger, Fort Madison, Iowa. Filed May 2, 1885. (No model.)

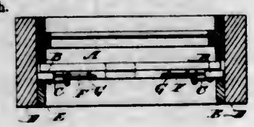


Claim.—1. The improvement in the method of manufacturing rakes, which consists in first cutting, bending, and drawing or forming the braces and teeth in substantially the plane of the blank and afterward shaping the braces and teeth into the proper finished form, substantially as described.

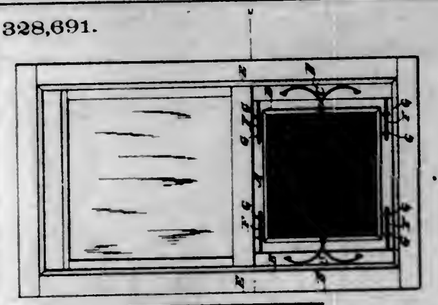
2. The improvement in the method of manufacturing rakes, which consists in cutting a blank of practically uniform thickness upon the lines *c* and *d* and bending the portions outward in plane of the blank to form the shanks, cutting the blank upon the lines *e* and bending the cut portions E outward in plane of the blank to form the teeth, drawing and shaping the teeth and shanks or braces while in the plane of the blank, and, finally, bending the braces and teeth into proper finished form, substantially as described.

328,691. ADJUSTABLE WINDOW-SCREEN. Forest M. Lampson and George W. Hoesen, Ripon, Wis. Filed May 18, 1885. (No model.)

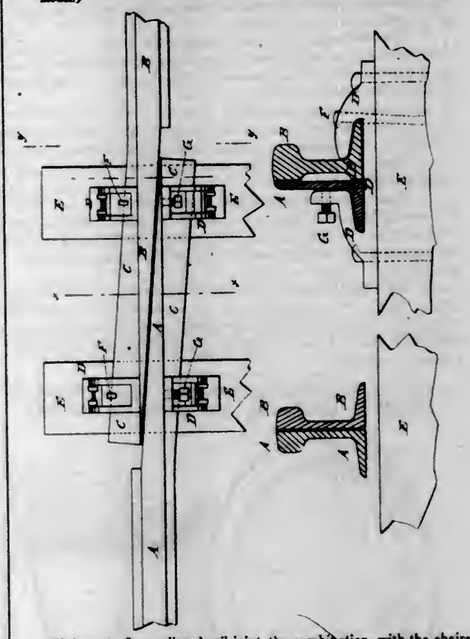
Claim.—As an improved article of manufacture, an adjustable window-screen consisting of the screen-frame A, provided with the staples G, the strips B, arranged at the side of the end portions of the said frame and projecting beyond the same, headed pins secured to the strips and working in the staples of the frame, and the y-shaped springs C, having their ends secured to the strips and their apices to the screen-frame, as set forth.



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328,692. RAILROAD-RAIL JOINT. John C. Larkin, Whitefield, N. H., assignor to himself, Alson L. Brown, Warren G. Brown, Edward Ray, and George Bernard, all of same place. Filed Aug. 13, 1885. (No model.)



Claim.—1. In a railroad-rail joint, the combination, with the chairs D, of the rails A B, having the adjacent sides of their ends beveled and overlapped, and the edges of their base-flanges parallel with the said beveled surfaces, substantially as herein shown and described, whereby the said beveled sides will be kept in contact, however the said rails may slide upon each other, as set forth.

2. In a railroad-rail joint, the combination, with the overlapped beveled ends of the rails A B, and the chairs D, having upwardly-projecting arms, of the set-screws G, substantially as herein shown and described, whereby the wear of the rails can be readily taken up, as set forth.

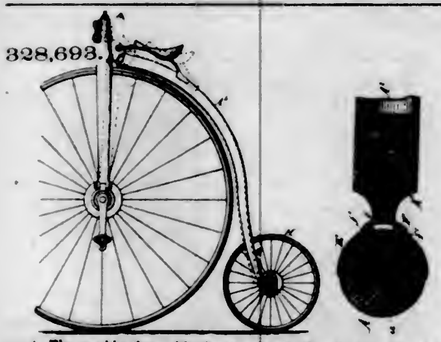
328,693. VELOCIPEDE. Ernst G. Latta, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed Mar. 3, 1885. (No model.)

Claim.—1. The combination, with the steering-head and spindle, or an adjusting-screw embracing the upper end of the spindle, and a tubular check-nut arranged between the adjusting-screw and steering-head, substantially as set forth.

2. The combination, with the steering-head and spindle, of an adjusting-screw embracing the upper end of the spindle, and a tubular check-nut provided with a tapering portion and arranged between the adjusting-screw and steering-head, whereby the nut is wedged between said parts in tightening it, substantially as set forth.

3. The combination, with the steering-head and spindle, of an adjusting-screw embracing the upper end of the spindle, and a tapering tubular check-nut split lengthwise, and arranged between the adjusting-screw and steering-head, substantially as set forth.

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4. The combination, with the steering-head and neck A', of the dust-cap E, and a spring-clamp, F, seated in the neck and interposed between the neck and the dust-cap to press the latter against the steering-head, substantially as set forth.

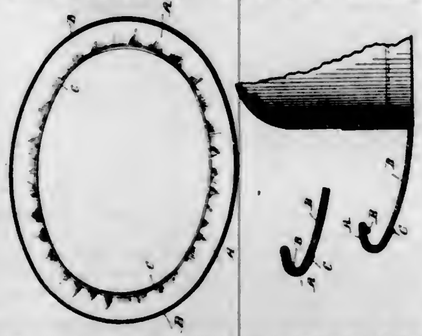
5. The combination, with the steering-head and neck A', of the dust-cap E, and the spring-clamp F, seated against a shoulder in the neck A', and provided with projections f^1, which enter openings in the dust-cap, substantially as set forth.

6. The combination, with the perch and the rear fork rigidly secured thereto, of the rear wheel, a support for the latter made vertically adjustable in the rear fork, and means, substantially as described, whereby the wheel-support is rigidly secured in the fork after adjustment, substantially as set forth.

7. The combination, with the rear fork having legs J, provided with vertical slots j, of the rear wheel, H, the supporting-bolt I, provided with nut i', washer K, and interlocking depressions and projections formed on the contiguous faces of the washer and lug, substantially as set forth.

8. The combination, with the rear fork having lug J, provided with vertical slots j, of the rear wheel, H, the supporting-bolt I, provided with nut i', cone A', and the washer K, and cone k^2, having projections interlocking with depressions in the contiguous sides of the lugs J, substantially as set forth.

328,694. DETACHABLE HAT-BINDING. William Lawrence and Horace V. Dibble, Bethel, Conn. Filed Aug. 13, 1884. (No model.)



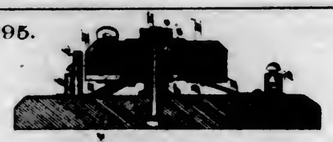
Claim.—1. As a new manufacture, a detachable binding for hat-brims having at its opposite edges supports—as, for example, cords or wires—one or both of which are made elastic, and which are adapted to lie one upon the upper, the other upon the under, side of the brim, whereby the binding is drawn smooth over the edge thereof, substantially as described.

2. As a new manufacture, a binding for hats having at one edge a wire adapted to lie upon the upper side of the brim and at its other edge one or more elastic strands adapted to lie on the under side of the brim, whereby both binding and wire are held in place without other fastening and the binding is drawn smooth over the edge of the brim.

3. The combination, with the brim of a hat, of a wire adapted to lie on the upper side of the brim, a binding at one edge of which the wire is stitched, and one or more elastic strands at the opposite edge of the binding, which are adapted to lie on the under side of the brim, whereby both wire and binding are held in place without other fastening and the binding is drawn smooth over the edge of the brim.

328,695. ELECTRIC SWITCH. Samuel S. Leonard, Minneapolis, Minn., assignor of one-half to the Minnesota Brush Electric Company, same place. Filed Aug. 4, 1885. (No model.)

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Claim.—1. An electric switch having plates secured to a revolving head, whereby the electric current may be conveyed through said plates to and from the lamp or lamps, said revolving head being seated upon pivoted heads or plates located between it and the base-plate.

2. In an electric switch having a revolving head, plates curved upward from the base-plate or main body of the switch, in combination with a pivoted head placed on the tops or ends of said curved plates and located between the said revolving head and base-plate, whereby a perfect contact may always be maintained with said revolving head.

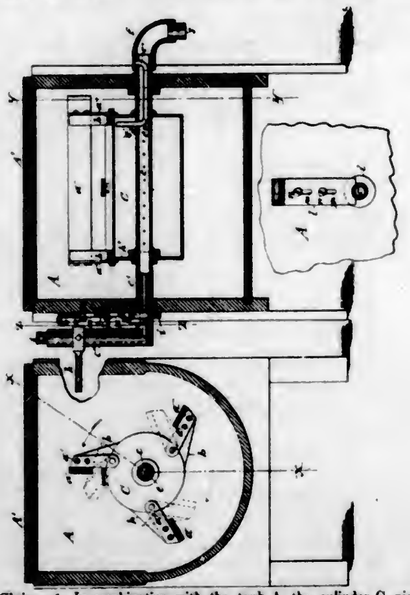
3. In an electric switch, a revolving switch-head placed upon elastic conducting bearing-plates located between it and the base-plate and arranged to revolve and catch the current of one plate before it is released from the other.

4. The combination of a revolving head for an electric switch seated upon elastic plates and the spool or stop placed between the main frame and the revolving head to limit the space between said frame and head.

5. The revolving electric switch-head secured to its base by means of a post, in combination with an elastic washer or cushion adapted to permit the free movement of the head and yet always maintain a perfect contact of said head with the elastic conducting-plates.

6. The combination of the revolving electric switch-head, the stops arranged to stop said head with the conducting plate or plates thereon parallel with the line of the electric current, and the pivoted and yielding conductors upholding said head, substantially as described.

328,696. CHURN. Thomas Machan, Belle Isle, N. Y. Filed July 9, 1885. (No model.)



Claim.—1. In combination with the tank A, the cylinder C, pivoted horizontally in said tank and provided with a water inlet and outlet, the dashers a a, extending lengthwise the said cylinder and hinged thereon, and knuckles or shoulders on the joints of the dashers to limit their movement, substantially as set forth and shown.

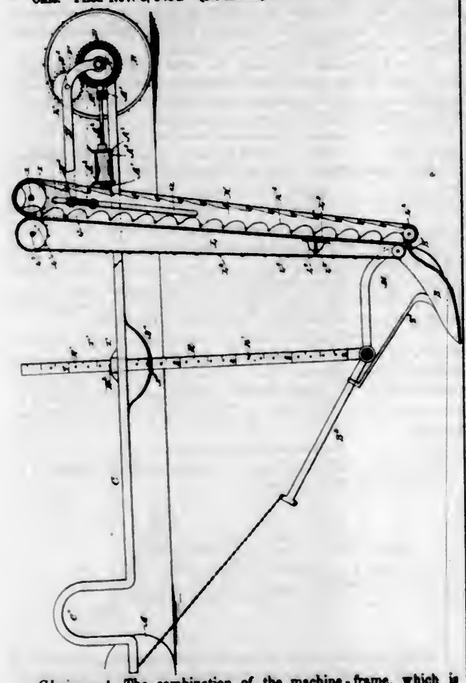
2. In combination with the tank A, the cylinder C, pivoted horizontally in said tank and provided with a water-inlet and water-outlet, respectively, at opposite ends, the dashers a a, extending lengthwise the cylinder and hinged thereon eccentrically in relation to the axis of said cylinder to limit the motion of said dashers in one direction, and knuckles or shoulders on the joints of the dashers to limit their movement in the opposite direction, substantially as described and shown.

3. The combination of the tank A, the horizontal cylinder C, having the hollow shaft c, projecting from one end of the cylinder through the side of the tank and terminating on the head A' of the opposite end of the cylinder and perforated inside thereof, and the hollow shaft c', detachably connected to the cylinder-head A' and extending through the side of the tank and provided with the hollow crank-extension c'', and stoppers for closing the said hollow shafts, substantially as described and shown.

4. In combination with the tank A, the horizontal cylinder C, the hollow shaft c, projecting through the side of the tank, the ventiduct e, arranged inside of the shaft c and terminating with lateral branches extending through the side of the shaft, respectively, at the inside of the cylinder and at the outside of the tank, substantially as described and shown.

5. In combination with the tank A, the horizontal cylinder C, the hollow shaft c, projecting through the side of the tank, the ventiduct e, arranged inside of the shaft c and terminating with lateral branches extending through the side of the shaft, respectively, at the inside of the cylinder and at the outside of the tank, and the pipe f, screwed onto the outer end of the shaft c, covering the outer end of the ventiduct e, substantially as described and shown.

328,697. DITCHING-MACHINE. Francis M. Harbur, Zanesfield, Ohio. Filed Nov. 6, 1884. (No model.)



Claim.—1. The combination of the machine-frame, which is mounted upon wheels, a frame which is pivoted to the driving-shaft and which has an elevator-frame pivoted to its opposite end, an auxiliary apron which is secured to the front side of the elevator, a rod which is pivoted to said plow or excavator and which passes up through the machine-frame, and means for securing said rod at any desired adjustment and the springs for permitting the rod a slight vertical movement for the purpose set forth, and means for actuating the elevator, substantially as described.

2. The combination, with the elevator having flexible buckets, of the roller Z', which is located at the upper end of the elevator, and which is adapted to discharge the buckets of their contents as they pass over it, substantially as described.

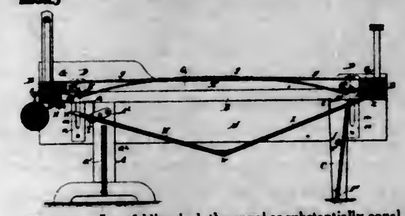
3. The combination of the elevator-frame, which is pivoted to the machine-frame and which is provided with means for adjusting it vertically, the auxiliary apron, which is secured to the front side of the elevator-frame, a plow or excavator which is secured to the lower end of the elevator, means for raising and lowering said plow and elevator, and a bearing plate or shoe for keeping the rear side of the auxiliary apron pressed against the front side of the elevator, substantially as described.

4. The combination, in an excavating-machine, of the auxiliary frame and apron with the shoe, which is secured in slots in the frame, and a spring for keeping the shoe pressed against the apron, substantially as described.

5. The combination, with the elevating-frame and its flexible buckets, of the lever Z and the roller Z', which is pivoted in the arms of the lever, substantially as described.

6. The combination of the shaft A^3, drum A^4, frame A^5, the said drum and frame being adapted to slide longitudinally on the shaft, and a discharge-apron that is located in the frame, substantially as described.

328,698. FOLDING BED. Thomas P. Harrison, New York, N. Y., assignor to William T. Salter, same place. Filed Sept. 19, 1884. (No model.)



Claim.—1. In a folding bed, the equal or substantially equal panels W X, hinged together and to the movable framing at s and connected at the lower or head end to the stationary standards by pivots Y, whereby the said panels are drawn taut when the bed is up and slackened when the bed is lowered for use, all substantially as herein specified.

2. In a folding bed, the side boards, M M, arranged to serve as side screens, in combination with the main framing B and with the hinged panels W X, folding between said side boards, as herein specified.

3. In a folding bed, the sides M, grooved as shown, in combination with the framing B, having pins D D', and with projections a^3 c^3 on the legs, arranged for joint operation, as herein specified.

4. In a folding bed, the frame B and springs E' E^2 E^3, arranged to rock on the cross-bars B', in combination with each other and with the frame G and web g, stretched thereon, the latter arranged to press on the outer arms, E^3, and to induce a corresponding upward pressure of the inner arms, E', against the web, as herein specified.

5. In a folding bed, the frame G, sustaining an elastic web, g, in combination with the frame B, cross-bars B', springs E' E^2 E^3, and with means, as H H', for adjusting the tension of the springs, as herein specified

328,699. HUB-BORING GAGE. William J. Mayhew, Bloomington, Ill. Filed Aug. 4, 1885. (No model.)

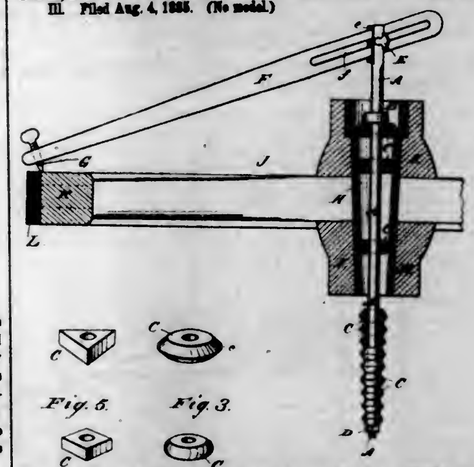


Fig. 5. Fig. 3.

Claim.—1. In a hub-boring gage, the combination, with the rod A and gage-arm F, of a series of successively smaller rings or collars placed loosely on the rod and adapted to center it in the axle-box, substantially as herein set forth.

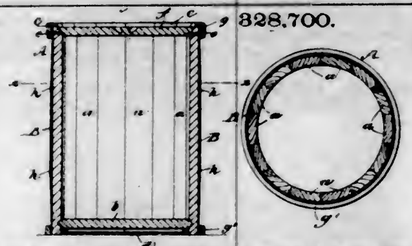
2. A wheel-gage comprising a rod, A, having a collar, B, a series of successively smaller rings or collars, C, retained on the rod below the collar B, and a gage-arm, F, attached to the upper end of the rod A, substantially as herein set forth.

3. The combination, in a wheel-gage, of the rod A, having a collar, B, a series of successively smaller rings or collars, C, retained on the rod below the collar B, and a gage-arm, F, held adjustably to the rod A and provided with an indicator, substantially as herein set forth.

328,700. PACKAGE. James McCrodden, New York, N. Y. Filed Sept. 2, 1885. (No model.)

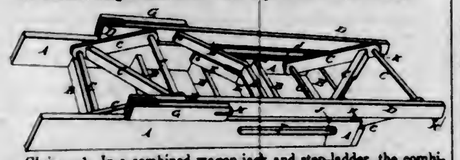
Claim.—As a new and improved article of manufacture, the package herein shown and described, consisting of the cylindrical body composed of straight staves a, bound in the center by thin hoops A, and provided

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with heads *b* and cover *f*, and surrounded by the shell B of equal length with the staves, and held at its ends by the outer end hoops, *g g'*, placed upon the staves and shell, substantially as and for the purposes set forth.

328,701. WAGON-JACK AND STEP-LADDER COMBINED. FRANK N. McKEAN, Long Branch, N. J. Filed Sept. 2, 1885. (No model.)

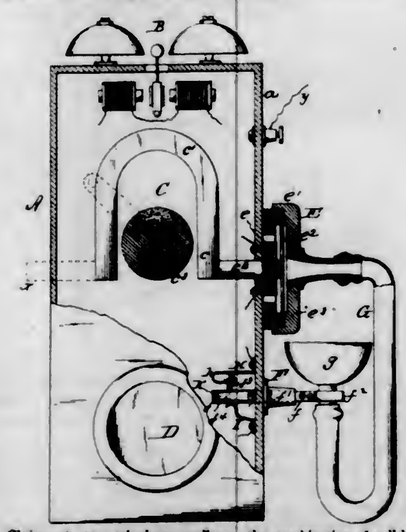


Claim.—1. In a combined wagon-jack and step-ladder, the combination of the two bars A, having inclined connecting-bars B and longitudinal slots I, the two bars D, the frames C, having unequal lengths and pivoted to said bars A D, and the frames E E, hinged to each other and pivoted to the said bars A D, substantially as herein shown and described, whereby the mechanism can be used as a wagon-jack or a step-ladder, as set forth.

2. In a combined wagon-jack and step-ladder, the combination, with the ends of the bars A D, of the eyes K and the detachable pins J, substantially as herein shown and described, whereby the ends of the said bars can be readily connected, as set forth.

3. In a combined wagon-jack and step-ladder, the combination, with the bars D, of the extensible handles G, substantially as herein shown and described, whereby the said handles can be projected when the mechanism is to be used as a wagon-jack, as set forth.

328,702. TELEPHONIC APPLIANCE. JAMES F. McLAUGHLIN, Philadelphia, Pa. Filed Sept. 4, 1884. (No model.)



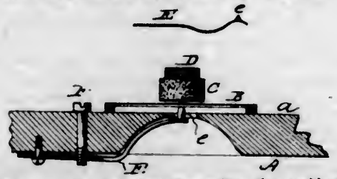
Claim.—1. In a telephone appliance, the combination of call-bell, generator field-magnet C, having pole-piece extension c^2, provided with a helix, *c*, a diaphragm, c^3, mouth-piece E, having flexible tube G, and sliding switch F, arranged for operation substantially as shown and described.

2. The combination, with call-bell H and telephone E, of a switch, F, comprising a sliding bar, *f*, studs f^2, f^3, and f^4, and fingers H, K, K', and I, substantially as shown and described.

3. The combination, with a call-bell, B, telephone E, having aural tube G, and transmitter D, of a switch, F, comprising a sliding bar, *f*, with hook or spring arms f^5, and contact studs and fingers, substantially as shown and described.

4. The switch F, comprising a sliding bar, *f*, having studs f^2 f^3 f^4, and fingers H, K, K', and I, constructed and arranged to operate substantially as shown and described.

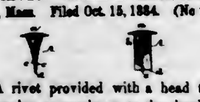
328,703. TELEPHONIC TRANSMITTER. JAMES F. McLAUGHLIN, Philadelphia, Pa. Filed Sept. 10, 1884. (No model.)



Claim.—1. In a telephonic transmitter, the combination, with its diaphragm, block C, and bar D, of an outside spring-arm, E, having stud *e*, arranged to impinge against the center of the exterior surface of the diaphragm, substantially as shown and described.

2. In a telephonic transmitter, the combination of diaphragm B, block C, bar D, and spring-arm E, having set-screw F, and a stud, *e*, adapted to bear against the center of the outside or front surface of said diaphragm, substantially as shown and described.

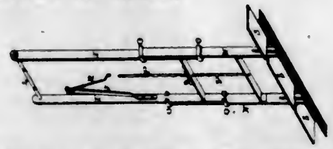
328,704. RIVET. GEORGE H. MEADE, Quincy, assignor to Mellen Bray, Newton, Mass. Filed Oct. 15, 1884. (No model.)



Claim.—1. A rivet provided with a head the under shoulder of which is at right angles, or nearly so, to the shank, and having a shank circular in cross-section at its junction with the head, and its two opposite sides composed of two converging flat surfaces which meet and form a cutting-edge at the end thereof, substantially as described.

2. A rivet the shank of which is provided at one end with a head the under side of which forms a shoulder at right angles, or nearly so, to the said shank, and at the other end with a knife or cutting-edge extending from opposite sides of said shank toward its center, and having midway of said cutting-edge a slight notch, all substantially as and for the purposes described.

328,705. AUTOMATIC FAN. WILLIAM H. MERCER, Mercer, S. C. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination of a suitable support, a motor placed thereon and provided with a crank, with the swinging frame provided with a spring, and the connecting-rod which connects the spring and the crank together, substantially as shown.

2. The combination of a suitable support, the motor F, attached thereto and provided with a crank having a series of perforations, the connecting-rod, and the swinging frame provided with a fan or brush, and having a spring to which one end of the connecting-rod is attached, substantially as described.

3. The combination of the swinging frame provided with a perforated cross-bar near its lower end, and the frame N, loosely connected to and sliding upon the swinging frame, and also provided with a cross-bar with the ratchet-rod P, which is connected to the frame N, and the spring-actuated catch on the swinging frame for engaging with the rod, substantially as set forth.

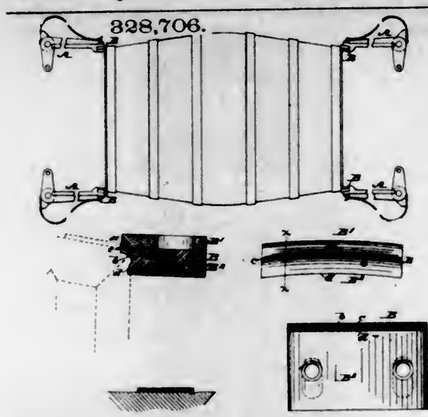
4. The combination of the frame N, provided with the slots T and enlargement *a*, with the fan provided with the notches U V, whereby the fan can be supported in a horizontal position when not in use, substantially as specified.

328,706. HOOP-DRIVER. MICHAEL NAUGHTON, Philadelphia, Pa. Filed July 17, 1885. (No model.)

Claim.—1. In a hoop-driving machine, a jaw or driver having the head *a*, recess *b*, and cutting-edge *c* all on the same face, the said cutting-edge being between the said head and the said recess, substantially as described.

2. A hoop-driver composed of two parts secured together, one of the said parts having a cutting-edge on one of its faces, and the other

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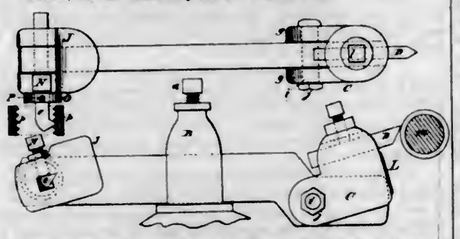


part having a recess on the same face, substantially as described.

3. A hoop-driver composed of two parts adjustably connected, each of said parts having a cutting-edge on one of its faces, and one of them having a recess on the same face as the cutting-edge, substantially as described.

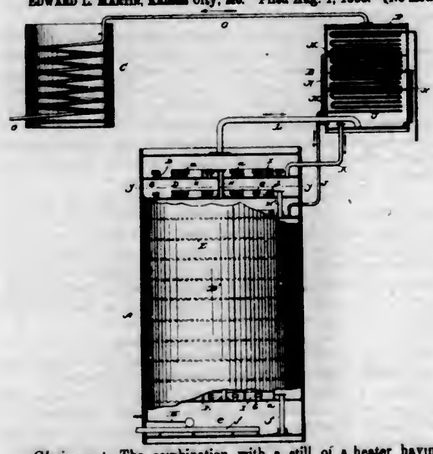
4. A hoop-driver composed of two parts, B' and B^2, the said part B' having a driving-head, *a*, and a cutting-edge, *c*, on the same face, and the part B^2 having the recess *b* and the cutting-edge *d* on one of its faces, the said parts being adjustably secured so that the said cutting-edges, head, and recess are on the same face of the said driver, substantially as described.

328,707. COMPOUND TOOL-HOLDER. EDWARD F. NOYES, Hamilton, Ontario, Canada. Filed July 30, 1885. (No model.)



Claim.—The compound tool-holder comprising a shank having at one end a hinged box adapted to hold the tool parallel with the shank, and at the opposite end a hinged box adapted to hold a tool transversely to the length of the shank, substantially as described.

328,708. BEER-STILL. WILLIAM J. O'CONNOR, PATRICK WALSH, and EDWARD L. MARTIN, Kansas City, Mo. Filed Aug. 1, 1885. (No model.)



Claim.—1. The combination, with a still, of a heater having a coiled pipe therein, said pipe communicating with the still, the division-plates M, the pipes N, arranged as described, the plate P, the pipes K L, the final condenser, and the pipe connecting the final condenser and the heater, substantially as set forth.

2. The combination, with the still divided into a series of compartments or chambers, of the vapor-pipes, the pipes connecting the compartments, the spirally-arranged partition-walls, the heater having the coiled pipe J, communicating with the still, the pipes K L, the plate M, pipes N, and final condenser, substantially as set forth.

3. In a beer-still, a heater having a coiled pipe therein, plates M, the pipes N, extending from the plates M and communicating with the heater below the coiled pipe, and the plate P, substantially as set forth.

328,709. VEHICLE. THEOPHILUS H. PARSELER, Malvern, Ohio. Filed July 17, 1885. (No model.)



Claim.—1. In a device for utilizing the jar in wheeled vehicles, the combination, with a vertical movable frame carrying a barrel or drum and an idle-wheel located one above the other and connected together by a drive-chain, of an axle carrying a wheel passing through the barrel or drum and having its bearing in the movable frame and a coiled spring located in said drum having one end connected therewith and the other end connected with the axle, substantially as and for the purpose described.

2. The combination, with the yoke H, carrying the vertically-movable frame B, and the toothed drum or barrel C and toothed idle-wheel F', mounted at opposite ends of the movable frame and connected together by the drive-chain F, of the axle A, having its bearings in frame B, and coiled spring D, secured to said axle and to the drum through which it passes, substantially as and for the purpose described.

3. The combination, with the yoke H, movable frame B, carrying barrel or drum C and idle-wheel F' at opposite ends thereof, connected together by drive-chain F, the axle A, and coiled spring D, connected to the axle and to the drum C, of the detents *d d* and d^2 d^2, secured to the bars *c c* of the arms *b b* and adapted to engage with the notches J J of the drive-chain F, substantially as and for the purpose described.

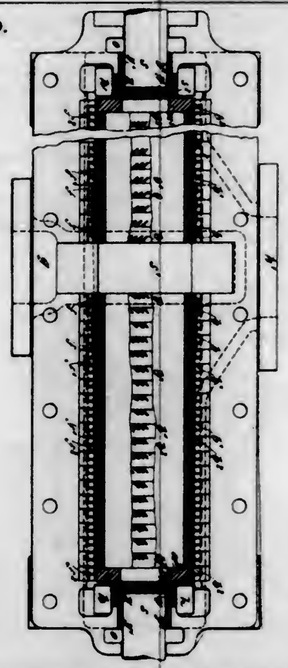
4. The combination, with yoke H and frame B, vertically movable therein, carrying drum C and wheel F', connected together by drive-chains F, the axle A, passing through frame B, and coiled spring D, connected to drum C and to axle A, of the spring G, connected with yoke H and frame B, substantially as and for the purpose described.

328,710. ROTARY MOTOR. CHAS. A. PARSONS, Gateshead-on-Tyne, County of Durham, England. Filed Nov. 14, 1884. (No model.) Patented in England Apr. 23, 1884, No. 6,735; in France Nov. 6, 1884, No. 165,199; in Belgium Nov. 6, 1884, No. 66,794; in Germany Nov. 7, 1884, No. 33,066 and No. 33,263; in Italy Dec. 31, 1884, XXXIV, 484, and in Canada July 21, 1885, No. 22,122.

Claim.—1. An inner cylinder having parallel rows of projecting blades on the periphery thereof, each row being in a plane perpendicular to the axis of the cylinder, and each blade being inclined to the axis of the cylinder, and an outer hollow cylinder inclosing said inner cylinder and concentric therewith, one of said cylinders being a rotary one, said outer cylinder being provided on its inner surface with parallel rows of inwardly-projecting blades, each row being in a plane perpendicular to the axis of the cylinder, and each blade being inclined to the axis of the cylinder, and in a direction opposite to the inclination of the blades on the inner cylinder, the rows of blades on the two cylinders being so related that they intermesh, in combination with fluid inlet and discharge passages located at opposite ends of said cylinder, substantially as set forth, whereby the current of the fluid is between the two cylinders and in a direction parallel or substantially parallel with the common axis of the cylinders.

2. A single inner shaft or cylinder having two distinct sets of parallel rows of projecting blades on the periphery thereof, each row being in a plane perpendicular to the axis of the cylinder, and a hollow outer cylinder inclosing said inner cylinder, and concentric therewith, one of said cylinders being a rotary one, said outer cylinder having on its inner surface two distinct sets of parallel rows of inwardly-projecting blades, each row being in a plane perpendicular to the axis of the cylinder and each blade being inclined to the axis of the cylinder in a direction opposite to the inclination of the blades on the inner cylinder, and the rows of blades

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on the two cylinders being so related that they intermesh, in combination with a fluid-inlet passage located centrally in relation to the length of the cylinders and between the two distinct sets of blades on the cylinders, and fluid-discharge passages at the opposite ends of said cylinders, substantially as set forth, whereby the current of the fluid is from the center in opposite directions to the two ends of the cylinders, thereby balancing the end-pressure of the cylinders.

3. In a compound motor, the rotating cylinders provided with the sets of fixed blades increasing in depth by sets from the entrance of the actuating-fluid and set at a greater angle at said entrance than at the exhaust, in combination with the casing provided with the blades inclined in opposite direction to the blades on the rotating cylinders, substantially as and for the purpose described.

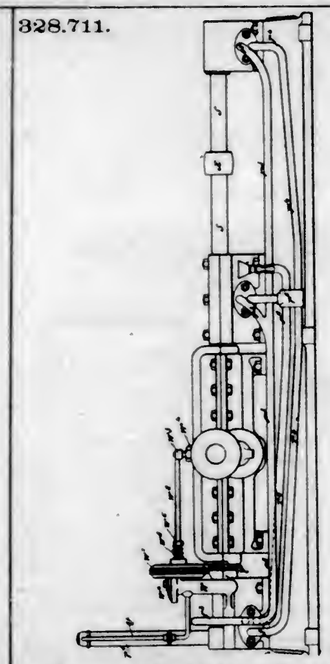
4. In a motor, the combination of a hollow cylinder or cylinders furnished with blades on its or their interior, a moving cylinder or cylinders having external blades, and mounted on a shaft to rotate within said hollow cylinder or cylinders, and bearings for said shaft having slight lateral play or elasticity combined with frictional resistance to such play in such a manner as to enable the moving cylinder or cylinders to rotate about its or their center of gravity or principal axis instead of its or their geometrical center or axis, (if the center of gravity and geometrical center be nearly coincident,) and to cause the vibration to which the cylinder or cylinders may be subjected to be damped or modified, substantially as described.

5. In a motor, the combination of a hollow cylinder or cylinders furnished with blades on its or their interior, a moving cylinder or cylinders having external blades, a shaft on which said moving cylinder or cylinders is or are mounted, and elastic bearings, each comprising a bush and friction-rings or washers pressed tightly together by a spring or springs in such a manner that the bush is capable of slight lateral movement, resisted and controlled by the friction-rings or washers, as described and illustrated, for the purpose specified.

6. A motor (or pump) comprising two composed or built-up cylinders, with blades b b' b^2, a casing, c, blades f f' f^2, fixed within said casing, central inlet, g, exhaust-passages h h, shaft s, bushes i, metal rings or washers k k', spiral springs l, nuts m, drain-passages o o, ejector or steam-nozzle p, exhaust-pipe q, chamber r, pump r^3, pipes r^3 r^4, junction-piece r^4, fan t, with boxes t' t^2, cavity u, a diaphragm-rod, w^3, arm w^3, spindle w^4, collar or nut w^5, spring w^6, and graduated tap w^7, all substantially as described and illustrated.

328,711. APPARATUS FOR LUBRICATING ROTARY MOTORS. Chas. A. Parsons, Gateshead-on-Tyne, County of Durham, England. Filed June 25, 1885. (No model.) Patented in England Apr. 23, 1884, No. 6,735; in France Nov. 6, 1884, No. 165,199; in Belgium Nov. 6, 1884, No. 66,734; in Italy Dec. 31, 1884, XXXIV, 484, and in Canada July 21, 1885 No. 22,122.

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Claim.—1. Apparatus for lubricating the bearings of a rotary motor, (or pump,) comprising a centrifugal or rotary pump, a suction passage or pipe, and passages or pipes to convey lubricant to the parts to be lubricated, substantially as described.

2. Apparatus for lubricating the bearings of a rotary motor, (or pump,) comprising a centrifugal pump, a suction passage or pipe, a stand-pipe, a suction-fan, chamber for lubricant, a delivery passage or pipe from said pump with branches or leads to the bearings or parts to be lubricated, return-pipes with junction-piece r^4, and pipe r^4, substantially as described.

3. Apparatus for lubricating the bearings of a rotary motor, (or pump,) comprising a centrifugal pump, r^3, a suction pipe or passage, v, a stand-pipe, r', and a suction-fan, t, said suction-fan being connected with the throttle-valve that regulates the speed of the motor, as and for the purpose specified.

4. The combination, with a motor (or pump) comprising a hollow cylinder or cylinders furnished internally with blades, a moving cylinder or cylinders carrying blades on its or their exterior, and a shaft whereon said moving cylinder or cylinders is or are mounted to rotate within said hollow cylinder or cylinders, of a centrifugal or screw pump mounted directly upon the motor-shaft for forcing lubricant or cooling-fluid to the parts to be lubricated or cooled, substantially as described.

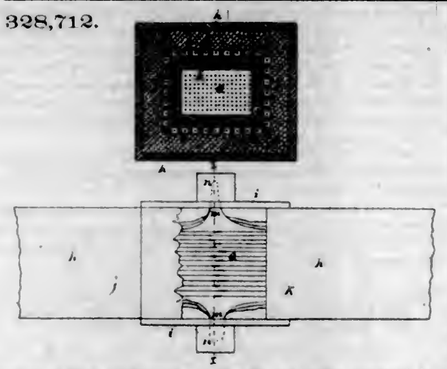
5. The combination, with a motor (or pump) comprising a hollow cylinder or cylinders furnished internally with blades, a moving cylinder or cylinders carrying blades on its or their exterior, and a shaft whereon said moving cylinder or cylinders is or are mounted to rotate within said hollow cylinder or cylinders, of a centrifugal or screw pump to circulate lubricant or cooling-fluid, and a suction-fan to raise the level of such lubricant or cooling-fluid in the stand or suction pipe or chamber and enable the centrifugal or screw pump to start and to keep in action, substantially as described.

6. The combination, with a motor (or pump) comprising cylinders a a, with blades b b' b^2, a casing, c, with blades f f' f^2 fixed within said casing, and a shaft, s, whereon said cylinders a a are formed or mounted, of a centrifugal pump, r^3, mounted on said shaft s, a suction-fan, t, a suction passage or pipe, v, a stand-pipe, r', and chamber r, a delivery-pipe, r^3, with branches or leads to the bearings to be lubricated, return-pipes r^4, junction-piece r^4, and pipe r^4, substantially as described and illustrated.

328,712. UNDERGROUND CONDUIT FOR ELECTRIC WIRES. Geo. B. Prescott, Philadelphia, Pa. Filed Oct. 22, 1884. (No model.)

Claim.—1. For telephone and telegraph wires, an underground conduit constructed in sections, each consisting of a solid, impermeable, insulated mass in which the telephone-wires are grouped in the middle and surrounded by a jacket of rock-wool or other equivalent sound-deadening substance, exterior to which are arranged the telegraph-wires which are

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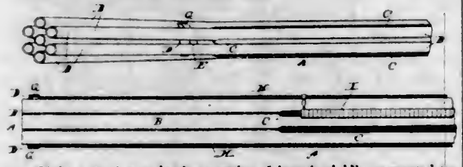


inclosed in water-proof insulating materials, the whole contained in a board case, substantially as set forth.

2. In a moisture-proof underground conduit for electric wires, the combination of any section, j, and its neighboring section, k, with a wooden sleeve, i, which is provided with side apertures, m, covered with the removable double-walled rock-wool-lined wooden boxes n, into which some or all the wires of the main conduit are looped, substantially as set forth, for the purpose of facilitating the attachment of lateral wires and conduits without disturbing the solidity of the main conduit.

3. For combined telephone and telegraph circuits, an underground conduit constructed in sections, each consisting of a solid, impermeable, insulated mass in which the telephone-wires are grouped in the middle, some or all of them being coiled around a central conducting-wire, (which is doubled on itself,) others caused to describe a zigzag course, or to return on themselves, the said telephone-wires being surrounded with a jacket of rock-wool or other equivalent sound-deadening and insulating substance, exterior to which are arranged the telegraph-wires which are inclosed in water-proof insulating materials, all contained in a casing, substantially as set forth, for the purpose of diverting and neutralizing any magnetic currents induced in the telephone-wires by the telegraph-wires.

328,713. BARREL FOR MACHINE-GUNS. John W. Petty, Omaha, Nebr. Filed Mar. 13, 1885. (No model.)



Claim.—1. A gun having a series of barrels rigidly connected together at their breech ends and separated at their muzzle ends, and a gage or wedge which reciprocates longitudinally between said barrels and spreads them apart, substantially as and for the purpose set forth.

2. A gun having one or more barrels, each composed of a plurality of chambers or barrels connected together at their rear portions and disconnected at their muzzle ends, a gage or wedge adapted to partly embrace and slide along and between the disconnected muzzle ends to spread them apart, and firing mechanism adapted to fire each barrel simultaneously.

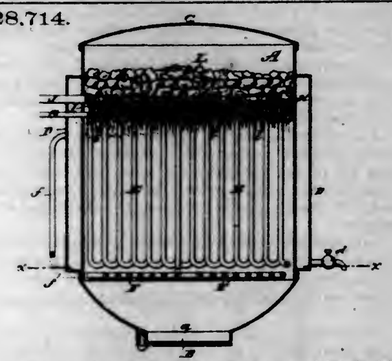
3. A gun having one or more barrels, each composed of a plurality of barrels connected together at their breech ends and disconnected at their muzzle ends, a gage or wedge adapted to fit and slide between said disconnected ends and spread the same apart, and a rod or rods connected with said gage for the purpose of actuating the same.

4. A gun having one or more barrels, each composed of a plurality of barrels connected together at their breech ends and disconnected at their muzzle ends, a gage or wedge adapted to fit and slide between said disconnected ends and spread the same apart, and an indicator or index attached to the face of the gun for indicating the position of the muzzle ends of the barrels, substantially as set forth.

5. A gun having one or more barrels, each composed of a plurality of barrels gradually tapering from their breech to their muzzle ends, said barrels being connected together at their rear portions and disconnected at their muzzle ends, and a gage or wedge adapted to fit between said disconnected ends and spread the same apart, substantially as and for the purpose set forth.

328,714. APPARATUS FOR REMELTING SOAP. John C. Ralston, Toledo, Ohio, assignor to Robert Freeland, Boston, Mass. Filed Apr. 3, 1885. (No model.)

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Claim.—1. A soap-remelting apparatus containing the following elements, namely: a suitable vessel containing in its upper part a suitable support or holder for the soap-scrap, a system of steam-jet pipes under the support or holder, and a steam-heating coil below the jet-pipes, said parts being constructed to operate substantially as described.

2. In a soap-remelting apparatus, a support or holder for the soap-scrap, consisting of horizontal tubular coils crossing each other to form a grating, as set forth.

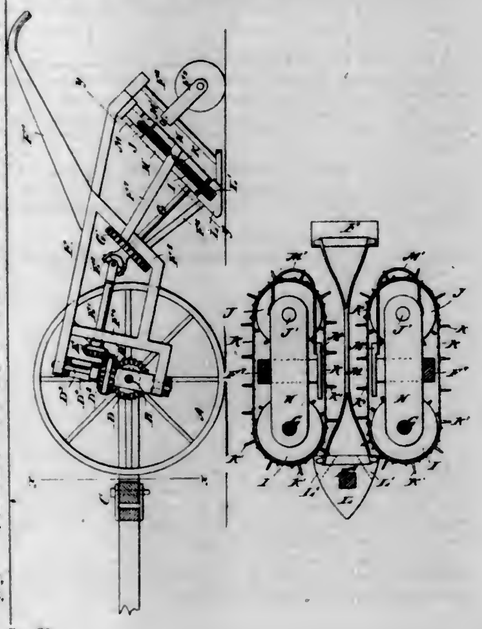
3. In a soap-remelting apparatus, a soap support or holder and a series of steam-jet pipes constructed and combined substantially as described, consisting of a continuous double or compound grating made of tubes with suitable interstices and orifices, as set forth.

4. In a soap-remelting apparatus, a soap-scrap support or holder consisting of the horizontal tubular coils H I, crossing each other to form a grating, and the lower coil, I, being perforated, as at i, substantially as shown and described.

5. In a soap-remelting vessel, the combination, with a heating-coil the lower part of the vessel, of steam-jet pipes above the heating-coil, substantially as described, whereby the soap will be melted by contact with open steam and then delivered to the heating-coil for further treatment, and at the same time jets of steam will impinge upon the heating-coil to clear the same, as set forth.

6. In a soap-remelting vessel, the combination, with a heating-coil in the lower part of the vessel, of a soap-holder and steam-jet pipes above the heating-coil, substantially as and for the purposes shown and described.

328,715. WEED-PULLING MACHINE. Edward L. Ramsomer, Duluth, Minn. Filed June 23, 1885. (No model.)



Claim.—1. In a weed-pulling machine, the wheels I and J, the chain K, and the projections K', in combination with the clamping-piece L, having the recess L', substantially as shown and described.

2. In a weed-pulling machine, the wheels I and J, the chains K, and the projections K', in combination with the pointed clamping-piece L, having the recesses L', and the guides M and M', substantially as shown and described.

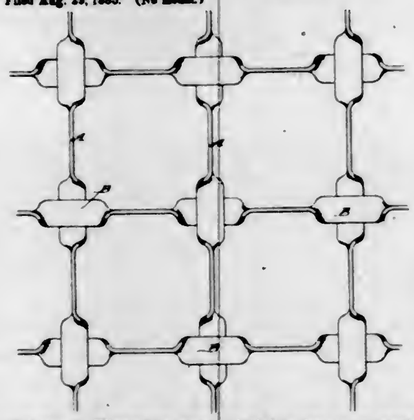
3. In a weed-pulling machine, the wheels I and J, receiving a rotary motion by suitable connections from the axle B, the chains K, the projecting pins K', the clamping-piece L, having the recesses L', and the guides M and M', in combination with the adjustable dragging wheel F^3, and shaft F^3, pivotally attached to the frame F, substantially as shown and described.

4. In a weed-pulling machine, the wheels I and J, the frame H H, supported from the main frame F, the chains K, the projecting pins K', the clamping-piece L, having recesses L', and the guides M and M', in combination with the adjustable frame F, substantially as shown and described.

5. In a weed-pulling machine, the axle B, the beveled gear-wheels D, D', and D^4, the shaft D^4, the frame D^4, the beveled gear-wheel E, the shaft E', the universal joint E^2, the shaft G, the wheel I, and chain K, in combination with the frame F, carrying the clamping-piece L, substantially as shown and described.

6. In a weed-pulling machine, the wheels I and J, the chain K, the projecting pins K', and the clamping-piece L, having recesses L', in combination with a mechanism for imparting a rotary motion to the wheel I, substantially as shown and described.

328,716. FLAT-WIRE NETTING. Emil Rattet, New York, N. Y. Filed Aug. 29, 1885. (No model.)



Claim.—1. Wire-netting composed of flat wires woven together and having the parts thereof at their intersections twisted with reference to their other parts, substantially as herein shown and described.

2. Wire-netting having the planes or flat sides of the wires at right angles to the plane of the netting, substantially as herein shown and described.

3. Wire-netting formed of crossed flat wires or rods having parts B at right angles to the remaining portions at the intersections, the flat sides of the parts B resting on each other, substantially as herein shown and described.

328,717. BUSTLE. Beverly S. Reed, Boston, Mass. Filed May 20, 1885. (No model.)



Claim.—1. In a bustle, a waistband, a series of vertical supporting-tapes, and stays in front of the side tapes, in combination with a series of horizontal ribs, a number of which are connected at their ends to the side tapes, while the upper ribs extend past said tapes and are connected at their ends to said stays, being inclined downward from said tapes to said stays, substantially as described.

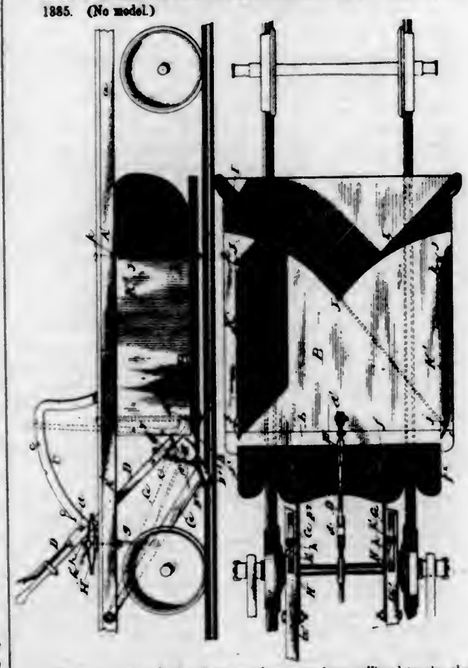
2. In a bustle, the waistband A, tapes m m^2, stays z, ribs d, having the inclined ends f, and stay N, provided with the coil v, combined and arranged to operate substantially as described.

3. In a bustle, a waistband, a series of vertical supporting-tapes, and a series of horizontal ribs attached to said tapes, in combination with a vertically-arranged curved metallic spring-stay connected to said ribs at the back of the bustle, the upper end of said stay extending above the uppermost of the ribs to which it is attached and being curved inwardly toward the waistband from which it is disconnected, whereby the bustle readily yields to pressure and resumes its normal shape when relieved therefrom, substantially as described.

4. The skirt C, in combination with a bustle having the stay N, provided with the coil v, and ribs d with the inclined ends f, and stay z, substantially as described.

5. In a bustle, the diaphragm B, projecting below the bustle proper, in combination with the skirt C, having certain of its upper ribs or hoops l cut shorter than the lower ribs and secured to the projecting end of said diaphragm, substantially as and for the purpose set forth.

328,718. RAILROAD-TRACK FLANGER AND SNOW-PLOW. Horatio G. H. Reed and Jerry Donohue, Milwaukee, Wis. Filed Aug. 17, 1885. (No model.)



Claim.—1. In a device for removing snow from railroad-tracks, the combination of a base-board with beveled or inclined front edge, a cutting-blade, the rear edge of which rests on the beveled edge of the base-board, and a lever for changing the elevation of the cutting-blade, substantially as set forth.

2. In a device for removing snow from railroad tracks, the combination of a base-board, a cutting-blade, the rear edge of which rests on the base-board, a lever for changing the elevation of the cutting-blade, a link for connecting the lever and cutting-blade, and a spring on the link between the lever and blade, substantially as set forth.

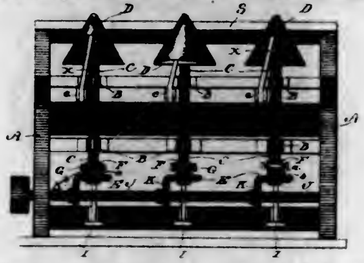
3. In a device for removing snow from railroad-tracks, the combination of a base-board, a cutting-blade, the rear edge of which rests on the base-board, a lever for changing the elevation of the cutting-blade, a link connecting the lever and cutting-blade and carrying a spring intermediate between said parts, and pivoted braces on either side of the lever connecting the cutting-blade with the platform or truck-frame above it, substantially as set forth.

4. In a device for removing snow from railroad-tracks, the combination, with a truck-frame or platform, of a base-board suspended therefrom, a cutting-blade, the rear edge of which rests on the base-board, a lever for changing the elevation of the cutting-blade, a link connecting the lever and cutting-blade and carrying a spring intermediate between said parts, pivoted braces connecting the cutting-blade with the frame or platform above it, rods passing through the said frame or platform having tension-springs secured to their upper ends, and links pivoted to said braces secured to their lower ends, substantially as set forth.

5. In a device for removing snow from railroad-tracks, the combination, with a base-board having an inclined front edge, of a cutting-blade whose rear edge rests on the inclined front edge of the base-board and stationary wings secured to the base-board to deflect the snow therefrom, substantially as set forth.

6. In a device for removing snow from railroad tracks, the combination, with a base-board and stationary wings secured thereto, of movable side wings adapted to be swung from either side to the center and there secured, whereby the snow may be thrown off on either side of the track, substantially as set forth.

328,719. MACHINE FOR PINNING OUT HATS. Theodore Sanders, Danbury, Conn., assignor of two-thirds to J. B. Nichols and E. A. Hine, both of same place. Filed June 22, 1885. (No model.)



Claim.—1. In a machine as described, the vertical support D, mounted upon the shaft C, the latter being provided at its lower extremity with clutch mechanism for controlling its rotation, in combination with the roll U, the spring-actuated box M, and adjustable box N, substantially as shown and described.

2. In a machine as described, the vertical support D, shaft C, clutch F, beveled gears E K, and shaft J, in combination with the roll U, box M, pin P, and means for operating said pin against the action of the spring T, as shown and specified.

3. In a machine as described, the support D, mounted upon the upper end of the shaft C, the lower end of which is provided with a clutch, F, adapted to engage with the projection on the beveled gear, in combination with means for disengaging said clutch and gear and means for rotating the latter, as shown and specified.

4. The combination of the support D, shaft C, clutch F, and means for operating the latter, gears E K, and counter-shaft J, with the pressure-roll U, oblique shaft L, adjustable box N, spring-actuated box M, having formed therewith the pin P, lever V, connecting-rod W, and treadle I, all arranged to operate as described.

5. Support D, mounted upon the shaft C, the latter being provided with the clutch F and beveled gear E, in combination with the lever G, shoed to said clutch, and the connecting-rod H, attached at its lower end to the treadle I and at its upper end to the rod X, substantially as shown and described.

6. In a machine for pinning out hats, the vertical shaft C, having mounted upon its upper end the support D and loosely journaled on its lower extremity the beveled gear E, clutch F, splined to said shaft and adapted to be operated by the treadle through the rod H and lever G, substantially as shown, and for the purpose set forth.

7. In a machine for pinning out hats, a support for the hat-bodies capable of rotation, in combination with an adjustable roll adapted to act against the hat throughout its entire circuit, substantially as shown and described.

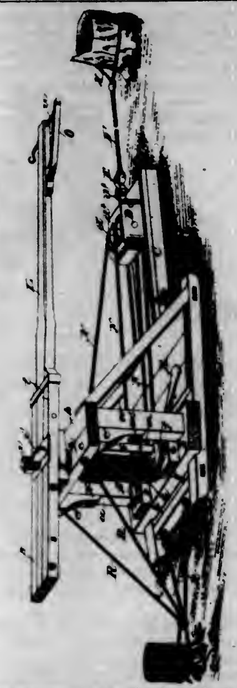
8. In a machine for pinning out hats, the combination, with a support for the hat capable of rotation and an adjustable roll adapted to act against the hat, of a spring-rod extending upward between said support and hat, whereby any slack is taken up and the occurrence of crozing-marks prevented, substantially as set forth.

328,720. STUMP-PULLER. Wilhelm Schuster, Medford, Wis. Filed Aug. 29, 1885. (No model.)

Claim.—1. In a stump-extractor, the drive-tongue having a bearing in its rear portion and an under block provided with a mortise, in combination with a shaft or drum journaled in a supporting-frame, and a short shaft and tenon formed integral therewith at its upper end, and a loose ring interposed between the under block of the tongue and said frame, and a lever fulcrumed to the latter and operating against a shoulder at the lower portion of the main shaft or drum, substantially as and for the purpose set forth.

2. In a stump-extractor, a supporting-frame having vertical standards and horizontal upper and lower cross-pieces, a shaft or drum journaled in said cross-pieces and provided with notches cut therein near its lower end, in combination with a guideway, a loose pulley-block having a tongue at its forward end, a drawing-rope secured at one end to a cross-piece of the frame and passed under and over pulleys in the loose block, and a pulley journaled in an upright of the supporting-frame and secured to said shaft or drum, a drive-tongue detachably united to the latter, and spring-pawls pivotally connected to blocks upon the lower horizontal cross-piece, substantially as and for the purpose set forth.

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3. In a stump-extractor, a supporting-frame having vertical standards, one of which standards is provided with a slot and a stirruped pulley journaled in said slot, in combination with a drawing-rope secured at one end to a shaft or drum and at the other to a cross-piece of the frame, a loose block operating in a guideway at the forward end of the frame and having journaled therein pulleys, around which the drawing-rope passes, a guide mechanism for the rope, consisting of a traveler-frame having journaled therein suitable pulleys, and a weighted cord secured at one end to a hanger upon one of the vertical standards, and a drive-tongue keyed to said shaft or drum, substantially as and for the purpose set forth.

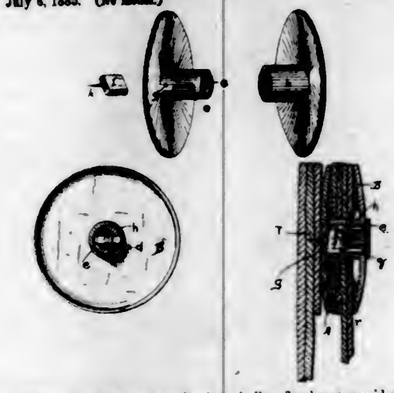
4. In a stump-extractor, a frame having vertical standards and horizontal cross-pieces, the upper one of the latter formed of two sections having their central portions cut away to form a bearing, and the lower one also formed with a central bearing, a removable shaft or drum journaled in said horizontal cross-pieces and provided with notches near its lower end and a tenon and slotted short shaft at its upper extremity, in combination with spring-pawls pivotally connected to blocks upon the lower horizontal cross-piece, and a driving-tongue having a bearing for the short shaft and an under block formed with a mortise to engage the tenon of said drum or shaft, and a key adapted to enter the short slotted shaft, substantially as and for the purpose specified.

5. In a stump-extractor, the driving-tongue composed of a main piece and rear brace-pieces suitably united, and provided with a spring-equalizer at its forward end, in combination with a shaft or drum journaled in a supporting-frame and formed with notches to engage spring-pawls, a drawing-rope secured at one end to said drum or shaft and passed over a system of pulleys, a loose pulley-block traveling in a guideway at the forward end of the supporting-frame, bent stay-rods secured to the rear end of said frame, a connecting-rod secured to a tongue at the forward end of the pulley-block, and chains for uniting said stay and connecting rods to the point of resistance and stump to be extracted, substantially as specified.

6. A stump-extractor consisting of a supporting-frame, a detachably-connected guideway at the forward end thereof, a shaft or drum journaled in said frame and provided with notches near its lower end, and a correspondingly-notched binding-ring, said shaft or drum also formed with a tenon and slotted short shaft at its upper extremity, a drive-tongue having a mortised under block, a bearing in its rear portion, a key adapted to fit the slot in the short shaft, an interposed collar between the mortised under block and the supporting-frame, in combination with the pivotally-secured spring-pawls, a shifting-lever fulcrumed to the supporting-frame, a loose pulley-block operating in the guideway and provided with a tongue at its forward end, a drawing-rope secured to the shaft or drum, and passing around a system of pulleys and made fast to said supporting-frame, the rope-guide mechanism composed of a trav-

sler-frame having journaled therein suitable pulleys and suspended by a weighted cord attached to a hanger, the boot stay-rods secured to the rear of the supporting-frame, the connecting rod or rods, and a shackle having a central web and U-shaped ends, all arranged to operate substantially as described, and for the purpose set forth.

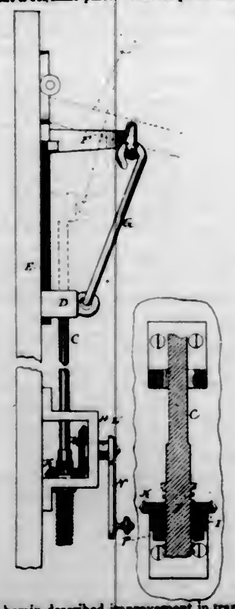
328,721. COLLAR-BUTTON. Herbert R. Scott, Hartford, Conn. Filed July 6, 1885. (No model.)



Claim.—1. A collar-button having a hollow fixed post provided with an interior screw-thread, combined with a sharp-pointed stud or pin mounted on a runner in engagement with said screw-thread, and moved forward or backward when rotated, to be concealed or thrust out, as set forth.

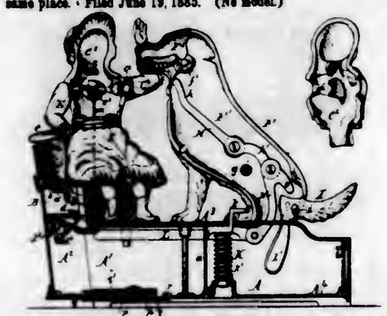
2. In a collar-button, the top A, with its slitted post *d*, fitted to enter and revolve within the tubular post *h*, which is secured to the shoe B, and is provided with an internal screw-thread, combined with the runner I, fitted to rest and move in the slitted post *d*, and provided with a screw-thread adapted to engage the screw-thread in the post *h*, and the sharp-pointed stud or pin *k*, mounted on said runner, whereby a relative revolution of said top and shoe will cause said pin to be withdrawn or thrust out, as set forth.

328,722. TRANSOM-LIFTER. John H. Shaw, New Haven, Conn., assignor to Sargent & Co., same place. Filed Sept. 14, 1885. (No model.)



Claim.—The herein-described improvement in transom-lifters, consisting in the combination of the lifting-rod C, arranged to work upon a vertical guide, and with connections, substantially such as described, from the rod to the transom, a bracket, H, through which said rod passes, the lower portion of said rod screw-threaded, a correspondingly screw-threaded nut, I, arranged in the bracket, and through which the said screw-threaded portion of the rod passes, the said nut free for rotation, but supported against movement in an axial direction, and constructed with a bevel-pinion, through which rotation may be imparted to the nut, a shaft arranged in said bracket at right angles to said rod, carrying a pinion at one end, corresponding to the pinion on the bracket, and a handle at the outer end, by which the said pinion may be rotated, substantially as described.

328,723. TOY SAVINGS-BANK. Charles G. Shepard and Peter Adams, Jr., Buffalo, N. Y.; said Adams assignor to Walter J. Shepard, same place. Filed June 19, 1885. (No model.)



Claim.—1. The combination, with the coin-receptacle and the movable plate *b*, arranged in the coin-passage, of the figure C, having a movable arm, E, which receives the coin, a figure, F, provided with a movable jaw, *f*, and a push-rod, K, connected with the plate *b*, arm E, and jaw *f*, whereby all of these parts are moved simultaneously, substantially as set forth.

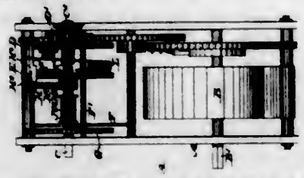
2. The combination, with the base A, provided with a coin-receptacle, and the movable plate *b*, arranged in the coin-passage, of the figure F, having a movable jaw, *f*, a lever, H, pivoted in the figure F, push-rod K, and a rod, N, connecting the rod K with the lever H, substantially as set forth.

3. The combination, with the figure F of a dog, of a counterbalanced tail, I, and a push-rod, K, and an actuating-rod, N, whereby the tail is set in motion, substantially as set forth.

4. The combination, with the figure F, provided with a movable jaw, *f*, and a counterbalanced tail, I, of the push-rod K, lever H, and rod N, substantially as set forth.

5. The combination, with the base A, provided with a coin-receptacle, A', and a movable plate, *b*, arranged in the coin-passage, of the figure C, provided with a movable arm, E, a figure, F, provided with a movable jaw, *f*, and counterbalanced tail I, and a push-rod, K, connected with the plate *b*, arm E, jaw *f*, and tail I, to move these parts simultaneously, substantially as set forth.

328,724. SPRING-MOTOR. David Shive, Philadelphia, Pa. Filed Sept. 15, 1885. (No model.)



Claim.—1. In a spring-motor, a train of gearing divided into sections, the full power of the spring being exerted upon the first section, substantially as described.

2. A spring-motor having a gearing divided into sections and formed of parts, substantially as described, whereby the tension of the spring is rendered uniform upon the movements, as stated.

3. In a spring-motor, a wheel having an elbow-lever journaled to it, an adjacent wheel having an opening through which one of the arms of said lever projects, and a spring attached to the first-named wheel and bearing against said arm, substantially as set forth.

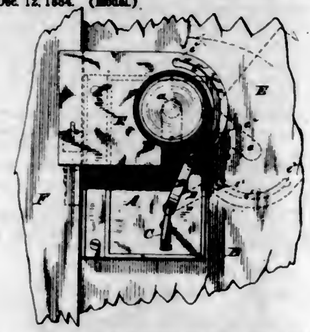
4. A divided shaft, one section thereof being fixed and the other rotary, in combination with wheels mounted on the two sections, the axial line of the wheels being the same while the wheels have limited motions independent of each other, substantially as described.

5. In a spring-motor, a friction disk or wheel, in combination with an arbor having a sliding sleeve which is provided with a flange for engagement with the said disk, substantially as described.

6. In a spring-motor, gear-wheels mounted on a divided shaft, an elbow-lever connected with one of the wheels, a spring attached to said wheel and bearing against the lever, a sliding sleeve mounted on one of

the sections of said shaft, and a friction-disk, said sleeve carrying at one end an arm which engages with the elbow-lever and at the other end a flange which is adapted to engage with said disk, substantially as described.

328,725. KEY-FASTENER. Ambrose W. Sherron, Burlington, Iowa. Filed Dec. 12, 1884. (Model.)

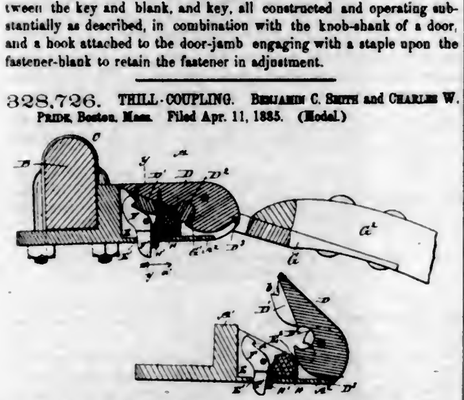


Claim.—1. A key-fastener consisting of a blank having a knob-spindle recess or slot, a semicircular slit with enlargement or back slot at one or both ends, and a sliding piece working in the semicircular slit and connected by a link swiveled to the sliding piece with the key of a door or other lock and adapted to engage with the knob-shank of such lock, substantially as described, for the purpose set forth.

2. A key-fastener consisting of a blank having a recess for the knob-spindle and a semicircular slot, a sliding piece working in said semicircular slot and connected with the key.

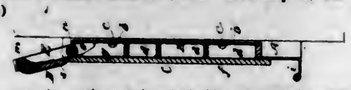
3. The fastener-blank, sliding piece, link or flexible connection between the key and blank, and key, all constructed and operating substantially as described, in combination with the knob-shank of a door, and a hook attached to the door-jamb engaging with a staple upon the fastener-blank to retain the fastener in adjustment.

328,726. THILL-COUPLING. Benjamin C. Smith and Charles W. Pride, Boston, Mass. Filed Apr. 11, 1885. (Model.)



Claim.—In a thill-coupling, the frame A', having a recess, E, the bottom plate, A^2, having an opening, E', the pivoted latch F, having a shoulder, *a*, the arm F', and the rubber H, provided with the lip H', in combination with the hinged cover D, having the recess D^2, and the shoulder D^3, the catch D', having a shoulder, *b*, substantially as shown and described.

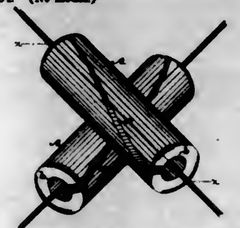
328,727. COMBINED BLACKBOARD AND DESK. James G. Smith and Hiram E. Butler, Jamestown, N. Y. Filed May 22, 1885. (No model.)



Claim.—1. A combined desk and blackboard, consisting of the vertical desk-body, the blackboard and desk-lid C, hinged at its lower end to the sides of the body to close the desk and form a blackboard and writing-table, and a copy-holder pivoted between the upper ends of the sides of the desk-body, and adapted to be inclined forwardly over the blackboard or held in the vertical plane of the desk-body, substantially as set forth.

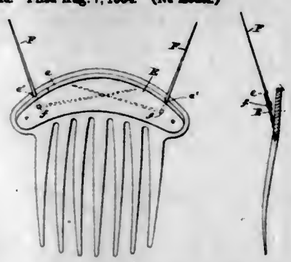
2. The combination, with the desk-body having compartments *d* within it, of the combined blackboard, writing-table, and desk-lid C, pivoted below to the desk-body, and the rocking copy-sheet-carrying frame E, having sheet-carrying rollers *m n*, and capable of adjustment to occupy a straight or inclined position in relation with the blackboard when closed, essentially as described.

328,728. INSULATOR. Leonard O. Smith, Philadelphia, Pa. Filed July 26, 1884. (No model.)



Claim.—An insulator for cross-wires, consisting of tubular blocks with slots in their sides, said blocks crossing and having their ends free, substantially as and for the purpose set forth.

328,729. HAT OR BONNET SUPPORTER. Mahlon Smith, Baltimore, Md. Filed Aug. 7, 1884. (No model.)



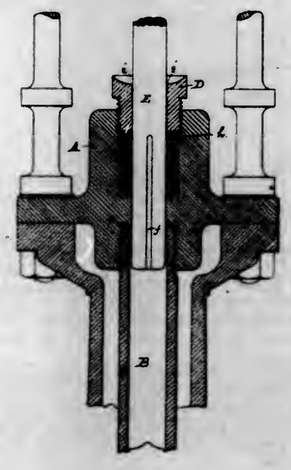
Claim.—1. A combined comb and hat or bonnet supporter, consisting of a tuck-comb provided on its back with hinged pins F, said pins being adapted to swing upward above the back and to be folded down behind the back, substantially as set forth.

2. In a combined tuck-comb and hat or bonnet supporter, the combination, with the comb-back, of the plate E, secured to the back of the comb, and hinged pins F, constructed to fold within said plate E, substantially as set forth.

3. In a combined tuck-comb and hat or bonnet supporter, the combination, with the back of a tuck-comb, of the plate E, provided with the notched bent edge *e*, and the hinged pins F, substantially as set forth.

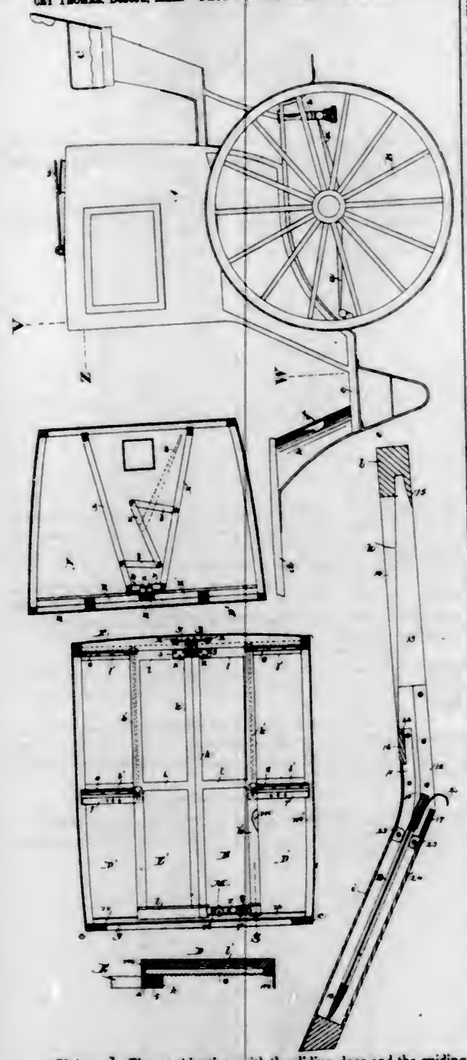
4. As a new article of manufacture, a hat or bonnet supporting attachment for bandeaus or combs, consisting of the plate E, provided with an inward-projecting notched upper edge, and the pins F, hinged to said plate, substantially as set forth.

328,730. HYDRAULIC-PRESSURE REGULATOR AND RAM. B. Thomas, New Orleans, La., assignor to John S. McDonald, same place. Filed May 12, 1885. (No model.)



Claim.—The combination of a piston or ram having a groove formed in the lower part thereof, as described, with an accumulator or hydraulic cylinder provided with a grooved stuffing-box and packing, within which the said piston or ram is adapted to operate, substantially as and for the purpose set forth.

328,731. **DEVICE FOR OPERATING CARRIAGE-DOORS.** Chauncey Thomas, Boston, Mass. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with the sliding door and the guiding-bar *s*, of plate *r*, formed with studs *q*, having rolls *p* secured thereon, and the perforated studs *s*, arranged above and on the opposite side of said plate from studs *q*, substantially as specified.

2. The combination, with the sliding doors having an upper and lower portion at an angle relatively to each other, of the arbors duly mounted in one of said portions and carrying pinions at each end, arranged, respectively, near the end and middle of the door, the racks arranged to be engaged by said pinions, and operative mechanism attached to the top of the doors, by which to open and close the same, substantially as specified.

3. The combination, with the doors E E', constructed and arranged to slide by a parallel movement, as specified, and the lever *u*, arranged above the top and secured to stud *t*, entering within the body, of a system of levers connected with said stud and the doors, and adapted and arranged, when actuated by said lever, to open or close the same, substantially as specified.

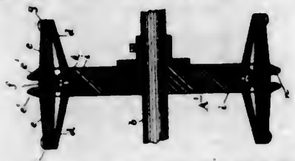
4. The combination, with doors E E', arranged to slide, as described, of levers *x*, links *w* and *y*, and levers *u v*, united by stud *t*, all substantially as specified.

5. The combination, with the sliding doors, of curved spring 7 and the engaging hook 9, substantially as specified.

6. The combination, with a door formed with its upper and lower portions at an angle relatively to each other or with a vertically-curved plane, of a sash interlocked at its lower end with and arranged to slide in the side frame or stiles of the door and to be swung out of contact with the door at its upper end, whereby said sash may be moved by sliding from the top to the bottom of the door, and vice versa, substantially as specified.

7. The combination, with the angular door-stile, formed with groove 10 in the lower portion, and with the front lip, 14, and rear short lip, 15, of the sash provided at its lower end, with interlocking plates arranged to move in the grooves of the stiles and to allow the top of the sash to swing out of plane with the stiles, substantially as specified.

328,732. **PULLEY.** Mark Vandercook, Ward P. Smith, and Henry M. Baker, Manton, Mich. Filed May 20, 1885. (No model.)



Claim.—1. A pulley having, in combination, arm *d*, rigidly attached to the rim and projecting from opposite sides, and two grip-jaws jointed together over the face of the pulley and each having its outermost end, *g* jointed to one of the said arms, as set forth.

2. A pulley having, in combination, grip-jaws, each pivoted at its outer end, *g*, at one side of the pulley, and having a band-seat, *h*, over the face of the pulley, and a set-screw, *i*, in the face of the pulley, for limiting the depression of the band-seat end of the grip-jaws, as set forth.

3. A pulley having, in combination, pivoted jaws to grip the band, a set-screw, *i*, in the face of the pulley to regulate the grip, and a spring, *k*, recessed in the face of the pulley to release the grip, as set forth.

328,733. **SPINDLE FOR CAP SPINNING AND TWISTING MACHINES.** William Wardman, Bristol, Pa. Filed Nov. 18, 1884. (No model.)

Brief.—The whirl is attached to a long tube placed upon a dead-spindle and having a long slot. A socket is connected with the lifter-plate, and is provided with spring-pins to engage with the slotted tube and the bobbin.

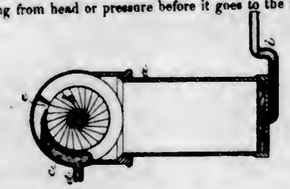


Claim.—1. The combination, with the dead-spindle B, the whirl D, and the lifter-plate F, of the long tube E, having longitudinal slot L, and the bobbin-socket G, having spring-pins J K and O P to engage with the slotted tube E and the base of the bobbin, substantially as herein shown and described, whereby the whirl and long tube can revolve in the same place while the socket and bobbin are moved up and down by the lifter-plate, as set forth.

2. The combination, with the lifter-plate F and the bobbin-socket G, of the case Q, substantially as herein shown and described, whereby the said bobbin-socket is covered and protected, as set forth.

328,734. **ROTARY WATER-METER.** Charles T. Warren, Boston, assignor of one-half to E. B. Welch, Cambridge, Mass. Filed Apr. 12, 1884. Renewed Mar. 5, 1885. (No model.)

Brief.—Water entering the meter through a narrow pipe or port is received in a chamber, by expanding into which it loses the force resulting from head or pressure before it goes to the measuring-wheel.

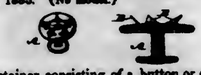


Claim.—1. The combination, in a liquid-meter, of a receiving-chamber into which the liquid enters near the bottom and is deprived of the force or pressure derived from its source, a wide exit at the top of the receiving-chamber, from which the liquid flows by gravity alone, and a measuring-wheel arranged to receive and be rotated by the gravitating water, substantially as described.

2. The combination, in a liquid-meter, of an inlet-pipe, a receiving-chamber into which the liquid flows and is deprived of its force or pressure, an apron-shaped exit from the top of said chamber, from which the liquid falls by gravity, a measuring-wheel in close proximity to said exit, into which the gravitating liquid falls, and a space to confine a body of air between the reservoir and outlet-passage, whereby an outflowing column of water may be supported, as set forth.

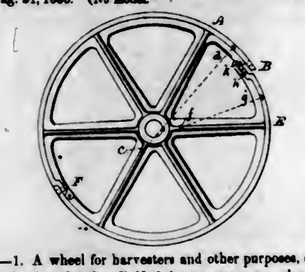
3. In a liquid meter, a casing having inlet and outlet passages, but otherwise imperforate, an air-space containing compressed air, and a measuring bucket-wheel adapted to be rotated in said compressed air by the water from the inlet-passage, and the compressed air being adapted to support a column of water in the outlet-pipe, substantially as described.

328,735. **CUFF-RETAINER.** William L. Weatherly, Philadelphia, Pa. Filed June 11, 1885. (No model.)



Claim.—A cuff-retainer consisting of a button or stud having spurs on the outer face thereof, the said spurs being struck up from a portion of said face and arranged with relation to each other, substantially as described.

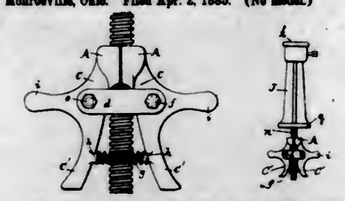
328,736. **CAST WHEEL.** William N. Whitney, Springfield, Ohio. Filed Aug. 31, 1885. (No model.)



Claim.—1. A wheel for harvesters and other purposes, constructed of cast metal, having the rim divided in one or more places with the ends diverging from the circle of the wheel and under permanent stress by being forcibly bent and held in position coincident with said circle, substantially as described, and for the purposes specified.

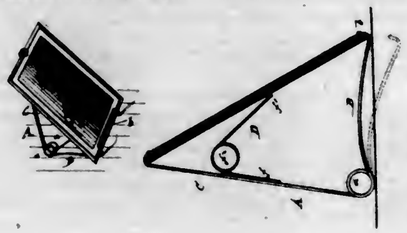
2. A pulley or other wheel having a plain face and constructed of cast metal having the rim divided in one or more places with one end of greater and the other end of less radius than the circle of the wheel and under permanent stress by being forcibly brought together and secured, substantially as described, and for the purposes set forth.

328,737. **TOOL-STANDARD FASTENING.** Edward M. Whyler, Moorersville, Ohio. Filed Apr. 2, 1885. (No model.)



Claim.—The combination of a tool-standard, J, provided in its base with a threaded bolt, *k*, and a sectional nut having two parts, each provided with a screw-threaded groove, the groove in one part confronting that in the other, two connected arms, to each of which one of the nut parts is attached, and a spring to cause the two nut parts to press together and clamp the threaded bolt, as set forth.

328,738. **PICTURE-SUPPORT.** Peter Wiederer, New York, N. Y. Filed Oct. 23, 1884. (No model.)



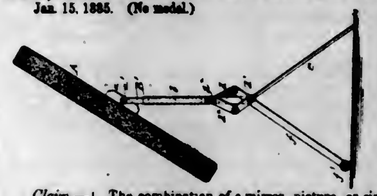
Claim.—1. The combination, with a glass plate, of a supporting wire stand made of angular shape, with springs at the apex of the stand, a base having diverging sides with an upwardly-bent and transversely-connected front portion applied to the lower edge of the glass, and an upwardly-extending stay having a hook at the upper edge, substantially as set forth.

2. The combination of a glass plate, a supporting wire stand made of angular shape and having a widening base having a hook at the front end of the same, springs at the apex of the stand, an upwardly-extending stay having a hook at the upper end, and a spring-actuated presser-piece having a shank applied to the stay of the stand, substantially as set forth.

3. A picture-stand bent of wire into angular shape with a base having diverging sides and an upwardly-bent and transversely connected front portion, spiral springs at the apex of the stand, and an upwardly-extending stay having a hook at the upper end, substantially as set forth.

4. A picture-stand bent of wire into angular shape with a widening base having an upwardly-bent front hook, springs at the apex of the stand, an upwardly-extending stay having a hook at the upper end, and a spring-actuated presser-piece attached to the said stay, substantially as set forth.

328,739. **HAND-MIRROR.** Peter Wiederer, New York, N. Y. Filed Jan. 15, 1885. (No model.)



Claim.—1. The combination of a mirror, picture, or similar article, a supporting-rod provided with a vertical slot, a folding main section hinged below its upper end to said rod, a folding finger also hinged below its upper end to said rod, a sliding pivot-pin within said slot, and pivot-links connecting the upper ends of said section and finger with said pivot-pin, substantially as set forth.

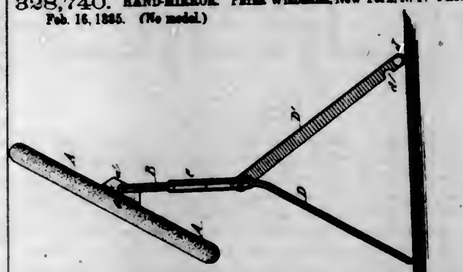
2. The combination of a mirror, picture, or similar article, a handle-rod to which said mirror is pivoted, a detachable supporting-socket for said rod provided with a vertical slot below the socket proper, a folding main section hinged below its upper end to said socket below said slot, a folding finger also hinged below its upper end to said socket below said slot, a sliding pivot-pin within said slot, and pivot-links connecting the upper ends of said section and said finger with said sliding pivot-pin, substantially as set forth.

3. A convertible handle and standard for hand-mirrors, consisting of a supporting rod or socket provided with a vertical slot, folding sections hinged below their upper ends to said supporting-rod, a sliding pin within said slot, and pivot-links connecting the upper ends of said folding sections with said pin, substantially as set forth.

4. A handle for mirrors and other articles, consisting of an open main section and folding spring-fingers pivoted within the main section, said fingers being provided with grooved balls for engaging the main section to lock the parts in line when folded, substantially as set forth.

5. A handle for mirrors and other articles, consisting of a main section and folding spring-fingers pivoted to the main section and provided with grooved terminals, so as to lock the fingers to the handle, substantially as set forth.

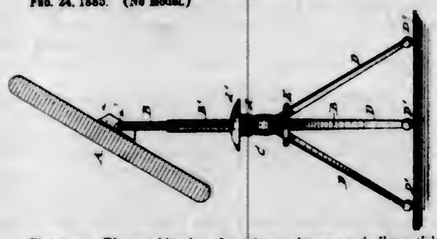
328,740. **HAND-MIRROR.** Peter Wiederer, New York, N. Y. Filed Feb. 16, 1885. (No model.)



Claim.—1. The combination of a mirror or other article, a handle-rod, a friction-hinge connecting the mirror and handle-rod, a detachable handle having a socket at the upper end, a main section made integral with the socket, and hinged spring-fingers having recesses at their lower ends, so as to lock with the main section when folded thereto, substantially as set forth.

2. A handle for hand-mirrors and the like, consisting of a friction-hinge, a handle-rod, and a supporting-handle having a socket at the upper part, a main section at the lower part made integral with the socket, and hinged spring-fingers having recesses near their lower ends, substantially as specified.

328,741. HAND-MIRROR. Peter Wiedmer, New York, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination of a mirror, picture, or similar article, a supporting-rod therefor, and an expansible handle for supporting said rod, comprising a head or socket and spring-fingers composed of elastic metal and rigidly fixed at their upper ends to said socket, said fingers being normally sprung outward at their lower ends, substantially as described.

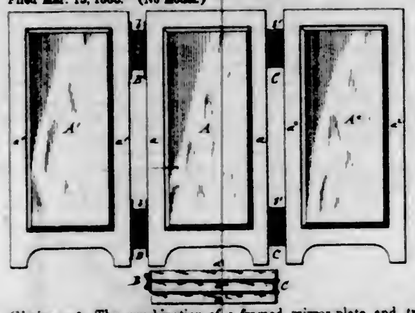
2. The combination of a mirror, picture, or similar article, a supporting-rod therefor, an expansible handle for supporting said rod, comprising a head or socket and spring-fingers composed of elastic metal and rigidly fixed at their upper ends to said socket, said fingers being normally sprung outward at their lower ends, and a sliding ring on said fingers for closing them together at their lower ends, substantially as described.

3. The combination of a mirror, picture, or similar article, a supporting-rod therefor, an expansible handle for supporting said rod, comprising a head or socket and spring-fingers composed of elastic material and rigidly fixed at their upper ends to said socket, said fingers being normally sprung outward and provided with enlargements at their lower ends, and a sliding ring on said fingers for closing them together at their lower ends, substantially as described.

4. A convertible handle and stand for hand-mirrors, pictures, and other similar articles, consisting of a head and spring-fingers composed of elastic metal and rigidly fixed at their upper ends to said head, said fingers being normally expanded and collapsible at their lower ends, substantially as described.

5. A convertible handle and stand for hand-mirrors, pictures, and other articles, consisting of a head provided with a stop-collar and spring-fingers composed of elastic metal and rigidly fixed at their upper ends to said head, said fingers being normally expanded and collapsible at their lower ends, substantially as described.

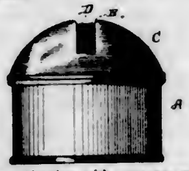
328,742. FOLDING MIRROR. Peter Wiedmer, New York, N. Y. Filed Mar. 13, 1885. (No model.)



Claim.—1. The combination of a framed mirror-plate and two framed side plates with double hinges having intermediate folding straps or leaves by which the side plates are hinged to the frame of the main plate, the pintles of the double hinges of one side plate being arranged midway to the edges of the main and side frames, while the pintles of the double hinges of the opposite side plate are arranged at the adjoining edges of the frames of the main plate and opposite side plate, whereby the side plates may be set to any angle of inclination to the main plate and snugly folded over the same, substantially as set forth.

2. The combination of a main mirror-plate, A, having a frame, *a*, a side mirror-plate A′, having a frame, *a′*, double hinges B B, connecting the frames *a a′*, the pintles of said hinges being arranged midway between the edges of the frames *a a′* and connected by straps or leaves *b b*, a second side plate, A^2, having a frame, a^2, and double hinges C C, connecting the frame a^2 to the opposite side of the frame *a*, the pintles of said hinges being arranged at the edges of the frames *a* a^2 and connected by straps or leaves *b′ b′*, equal in width to the thickness of the frame *a′*, whereby the side plate A^2 is adapted to fold over the side plate A′, after the same has been folded over the main plate A, substantially as and for the purpose specified.

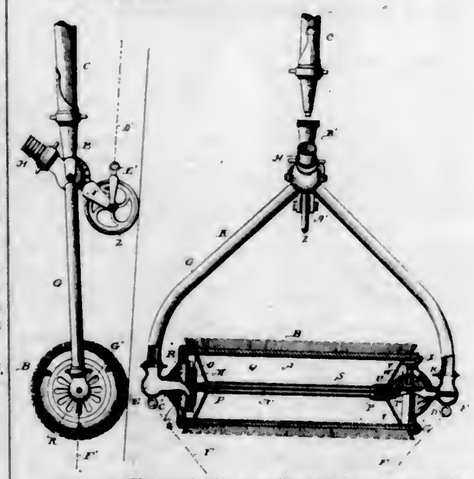
328,743. SPONGE-CUP. Samuel Allin, New York, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. The combination, with a spooge-cup, of a turning cover provided with an elongated opening, which, by the turning of the cover, will expose different parts of the upper surface of the sponge, substantially as set forth.

2. The combination, with a sponge-cup, of a cover, a locking device holding the cover upon the cup, but permitting such cover to be turned, and an elongated opening in said cover exposing different parts of the upper surface of the sponge as the cover is turned, substantially as set forth.

328,744. APPARATUS FOR CLEANING THE SIDES AND BOTTOMS OF SHIPS. Hjalmar Arents, Copenhagen, Denmark. Filed July 21, 1885. (No model.)



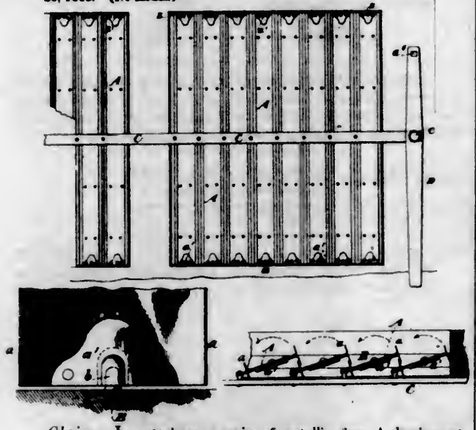
Claim.—1. The combination of a bifurcated frame having hollow stub-axles projecting inward from its ends, and having one arm tubular and connected with a water-supply, with a cylinder having brushes upon its surface and journaled with hollow trunnions upon the hollow stub-axles, and having a water-motor for revolving it inclosed in one end and supplied from the tubular arm of the bifurcated frame, as and for the purpose shown and set forth.

2. In an apparatus for cleaning the sides and bottoms of vessels, the combination of a bifurcated frame having hollow stub-axles upon their ends and having one branch tubular, a hollow brush-cylinder journaled with hollow trunnions at its ends upon the stub-axles, a turbine at one end of the cylinder and receiving its supply from one of the hollow stub-axles and having its shaft journaled axially in the cylinder, a bevel-pinion upon the end of this shaft, a shaft journaled in a bearing projecting from the other stub-axle and having a bevel cog-wheel at its lower end and a bevel-pinion at its upper end, and a bevel cog-rim secured upon the inside of the brush-cylinder, as and for the purpose shown and set forth.

3. In an apparatus for cleaning the sides and bottoms of vessels, the combination of a bifurcated frame having one tubular branch connected with a water-supply, a brush-cylinder journaled between the ends of the frame and having a water-motor for revolving it, a guide-wheel journaled below the united ends of the branches of the frame, ropes attached to the forward ends of the frame, a rope attached to the guide-wheel frame, and a pole or handle swiveled in a socket at the end of the bifurcated frame, as and for the purpose shown and set forth.

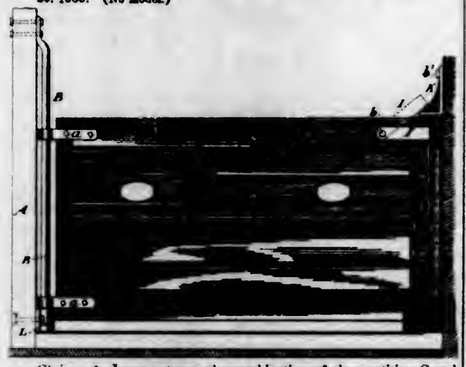
4. In an apparatus for cleaning the sides and bottoms of vessels, the combination of a bifurcated frame having tubular stub-axles projecting inward from their ends and having one branch tubular and provided with a pipe for the attachment of a hose for supplying water under pressure, a hollow brush-cylinder having tubular trunnions in their perforated ends, and having closed end walls inside of the perforated walls, provided at their centers with an axial tube, a shaft journaled in this tube and having a water-wheel at one end receiving water from the tubular stub-axle and having a bevel-pinion at its other end, a vertical bearing projecting from the stub-axle at that end, a shaft journaled in the bearing and having a bevel cog-wheel meshing with the pinion and a bevel-pinion at its upper end, and a cog-rim meshing with the said pinion and secured upon the inner side of the brush-cylinder, as and for the purpose shown and set forth.

328,745. STOCK-CAR. Harrison Arms, Toledo, Ohio. Filed July 20, 1885. (No model.)



Claim.—In a stock-car, a series of metallic slats, A, having outwardly-turned flanges *a* and sockets *a′*, in combination with the connecting-bar C, lever D, and the bars B, having pins *b*, substantially as set forth.

328,746. STOCK-CAR. Harrison Arms, Toledo, Ohio. Filed July 20, 1885. (No model.)



Claim.—1. In a stock-car, the combination of the partition C and castings H and J, substantially as and for the purpose described.

2. In a stock-car, the combination of the partition C, castings H and J, and latch I, substantially as and for the purpose specified.

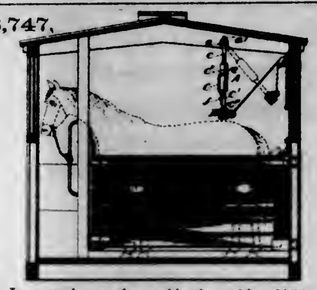
3. In a stock-car, the partition C, hinged to the bolt or pin B, combined with castings H and J, latch I, and pivoted casting K, all substantially as and for the purpose specified.

328,747. STOCK-CAR. Harrison Arms, Toledo, Ohio. Filed July 20, 1885. (No model.)

Claim.—1. In a stock-car, the combination, with a kicking-beam, of a hanger composed of two screw-sections, one section having a right thread and the other section a left thread, and an interiorly-threaded tubular connection, substantially as and for the purpose described.

2. In combination with the hanger A, the handle C, adapted to be depressed and prevent the turning of the tubular section c, substantially as described.

328,747.



3. In a stock-car, the combination, with a kicking-beam, of the hanger A and the safety-chains E, substantially as and for the purpose specified.

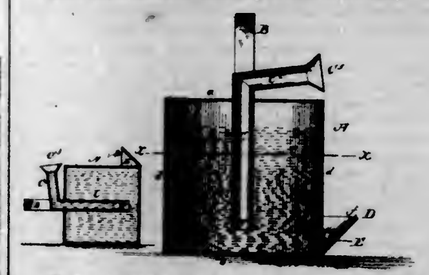
328,748. GATE. Philip S. Bassett, Bunnettsville, W. Va. Filed May 5, 1885. (No model.)



Claim.—1. In a sliding gate, a guide-rod or guide-bar for supporting the gate made in two parts or sections hooked together at their inner ends, and means for supporting said ends at any desired height, so arranged that one of said sections may be lifted or removed when the gate is open, so as to be out of the way of a load passing through the gate, the outer ends of said rods being screw-threaded, and a nut fitting on each of said screw-threaded ends, substantially as and for the purpose shown and set forth.

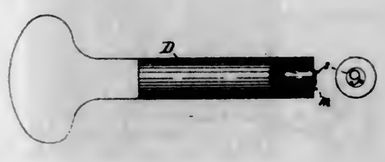
2. In a sliding gate, a guide-rod for supporting the gate, consisting of two pieces provided with hooks at their inner ends and with tightening nuts at their outer ends, and a slotted bracket secured to the middle post, the arm of which is perforated, and a bolt and nut for securing the same to said post, substantially as and for the purpose set forth.

328,749. DRINKING-FOUNTAIN FOR POULTRY. Alexander K Bates, Weymouth, Mass. Filed May 16, 1885. (No model.)

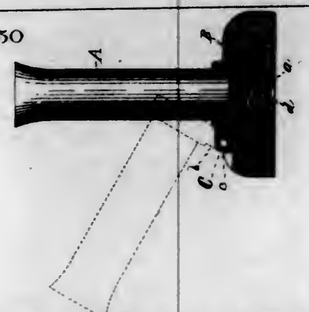


Claim.—A closed tank or fountain, A, having an outside drinking-trough, D, at the base thereof and communicating with said trough by an opening, E, and a filling-tube, C, entering the tank at its top and having a funnel at its outer end which is bent at an angle to the main body of said tube, the lower end of the tube being in substantially the same plane as the opening E, substantially as described.

328,750. CARTRIDGE-LOADING IMPLEMENT. Hamilton Baxter, Syracuse, N. Y., assignor of two-thirds to George W. Baxter, Jr., and Cornelius W. Smith, both of same place. Filed Jan. 15, 1884. (No model.)

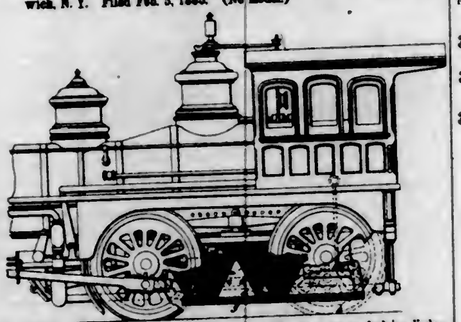


328,750



Claim.—A base-piece, B, provided with an adjustable screw, *b*, and a loading-tube, A, hinged together, in combination with a loading-stick, D, constructed and operating together substantially as described, for the purposes set forth.

328,751. ASH-PAN FOR LOCOMOTIVES. Ebenezer Beals, Norwich, N. Y. Filed Feb. 5, 1885. (No model.)



Claim.—1. An ash-pit having its pan or bottom suspended by links from a point to one side of its center, in combination with mechanism for holding said pan to its closed position beneath the pit, as set forth.

2. The hopper or pit *a*, in combination with the pan or bottom *b*, having trunnions *c*, the links *d*, suspended from a point to one side of the center of said pit *a*, and the longitudinally-reciprocating bar *h*, pivotally connected to said pan, as and for the purpose set forth.

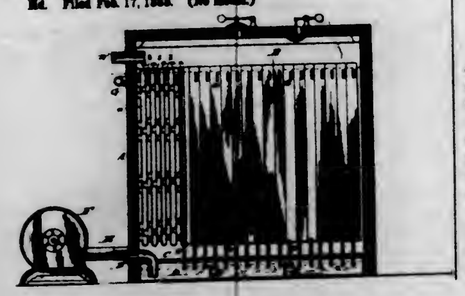
3. An ash-pit terminating in two or more spouts or boxes, *a*, in combination with the pans *b*, having the trunnions *c*, the links *d*, connected to said trunnions and suspended from a point to one side of the center of said spout *a*, and the longitudinally-reciprocating bars *h*, pivotally connected to all the pans, as and for the purpose set forth.

4. In combination, the pit *a*, the pans *b*, having trunnions *c*, the links *d*, for suspending said pan from a point to one side of the center of said pit, the elongated gudgeons *f*, and the rods or bars *g*, embracing said gudgeons, as and for the purposes set forth.

5. In combination with the pit *a*, the pan *b*, having trunnions *c*, located to one side of its center, the links *d*, suspending said pan from a point to one side of the center of the pit, and an operating-bar, substantially as described, for holding said pan in place beneath the bottom of the pit when desired.

6. The combination, with an ash-pit, of a pan or bottom plate, links by which said pan is suspended beneath said pit, and a rod for holding said bottom plate in place, substantially as set forth.

328,752. SURFACE-CONDENSER. Benjamin S. Benson, Baltimore, Md. Filed Feb. 17, 1885. (No model.)

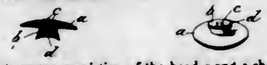


Claim.—1. The blower, cold-air chamber, air-cells, warm-air pipes, and their connections, in combination with steam-chamber, steam cells or condensers, and hot-water reservoir, and drip-pipes, substantially as described.

2. The combination of steam-cells *a* and air-cells *b*, the case A, having steam-chest at the top communicating with the steam-cells, and hot-air pipes communicating with the air-pipes *b*, and gathering-pipes on the outside of the case, and a hot-water receptacle in the bottom of the case connected by pipes with the steam-cells, and an air-space between the water-receptacle and the air-cells, communicating with the lower ends of the latter, substantially as shown and described.

3. The combination, with the steam-cells of an air-condenser constructed and operating substantially as shown, of a vacuum and safety valve, substantially as and for the purpose described.

328,753. BUTTON. William E. Bethell, Portsmouth, Ohio. Filed Mar. 27, 1885. (No model.)

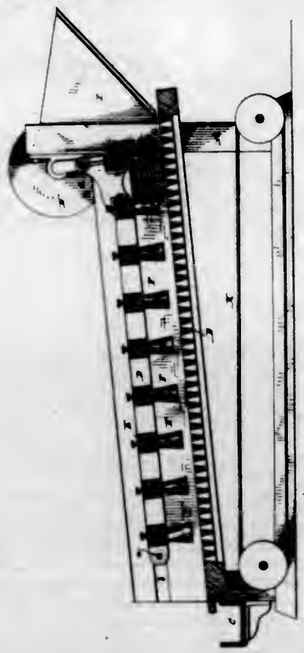


Claim.—A button consisting of the head *a* and a shank, *b*, tapering toward the button-head, and having a concavity, *d*, in its end, and provided with perforations *c c*, that also extend through the button-head for the passage of attaching thread, substantially as described.

328,754. WITHDRAWN.

328,755. WITHDRAWN.

328,756. DEVICE FOR DISINTEGRATING CLAY AND SEPARATING THE STONES THEREFROM. James A. Boyd, Minneapolis, Minn. Filed Mar. 24, 1885. (No model.)



Claim.—1. A machine for separating clay from stones, consisting of a casing provided with a perforated floor, and a reciprocating frame having brushes secured thereto, and adapted to travel to and fro over the perforated floor, as set forth.

2. In a machine for disintegrating clay and separating the stones therefrom, a casing having an inclined perforated floor, a reciprocating frame provided with brushes adapted to slide in ways in the frame or casing of the machine, and a crank-shaft attached to one end of said frame, whereby a sweeping and pounding action is imparted to the clay, as set forth.

3. In a machine for disintegrating clay and separating the stones therefrom, a reciprocating frame provided with adjustable metallic brushes, in combination with a perforated floor, as set forth.

4. In a machine for disintegrating clay and separating stones therefrom, a casing provided with a suitable feed-hopper and having an inclined perforated floor, in combination with a reciprocating frame carrying metallic brushes and an endless belt or conveyer located beneath the perforated floor, as set forth.

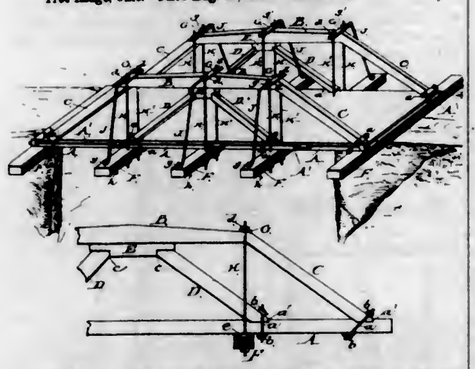
328,757. METHOD OF MAKING TUBULAR RIVETS. Mellen Bray, Newton, Mass. Filed Apr. 29, 1885. (No model.)



Claim.—1. The method of producing scored-ended tubular rivets, which consists in first forming on the end of the shank of a solid rivet a knife-edged annulus divided into segments by radial grooves and a central conical recess extending into said shank beyond the bottoms of said grooves, and then drilling out the center of said shank to form a tube, substantially as described.

2. The method of producing scored-ended tubular rivets, which consists in first forming on the end of the shank of a solid rivet a series of segments of a knife-edged annulus separated by radial grooves, a central conical recess extending into said shank beyond the bottoms of said grooves, and an annular flat surface between said recess and said segments, and then drilling out the center of said shank to form a tube, substantially as described.

328,758. TRUSS-BRIDGE. Charles Carr and George Carr, Sugar Tree Ridge, Ohio. Filed Aug. 27, 1885. (No model.)



Claim.—1. The combination, with the main beams or sills, the struts C, and the transverse beams F, of the upper truss-beam, B, enlarged at its center, the struts or braces D D, and suitable rods, H H′, passing outside of and connecting the upper truss-beams with the transverse beams, substantially as herein described.

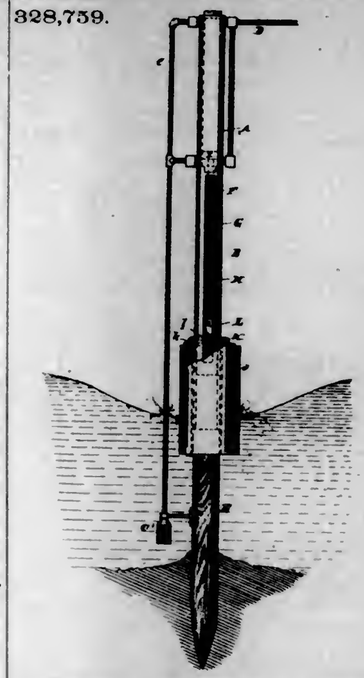
2. The combination, with the upper truss-beam enlarged at its center, the main sills, the beams F, placed under the sills, the end struts, C, and the braces D D, fitted in sockets in the sills, of the rods H H′, passing outside of and connecting the beams B and F and the supporting-beams E, the plates G, through which the rods pass, the bolts and nuts for securing the parts, and the brace-rods J, connected to the beams F and plates G, substantially as herein described.

328,759. UTILIZING WAVE-POWER. Theophilus P. Chandler, Jr., Philadelphia, Pa. Filed July 25, 1884. (No model.)

Claim.—1. In hydraulic apparatus for utilizing wave-power, a vertical pile combined with a pump secured thereto, an annular float encircling said pile and adapted to rise and fall vertically, being guided thereon, and a connection between the said float and piston of said pump and by which the vertical movements of said float actuate the pump, substantially as and for the purpose specified.

2. A pump-pile, consisting of a wooden lower portion and a metallic upper portion, the two parts being secured in line end to end, in combination with an annular metallic float adapted to encircle the said pile and which is guided vertically thereon, said float being balanced upon the said pile as a guide, and connecting mechanism between the said float and the piston of the pump by which the piston is reciprocated vertically and the said float is allowed to rotate upon its vertical guide or pile, substantially as and for the purpose specified.

328,759.



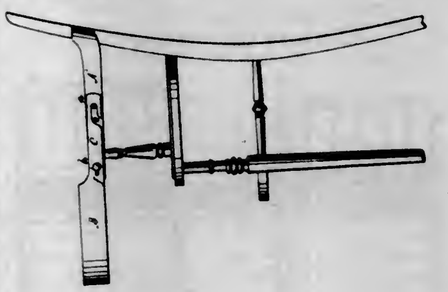
3. A pump-pile, which consists of the lower wooden section, E, and the upper metallic tubular section, B, in combination with a pump, A, formed or contained in the said tubular section B, a piston-rod, G, working within the tubular section and being guided therein, and a float, J, encircling the said pile and connected with the said piston-rod, substantially as and for the purpose specified.

4. A pile combined with a pump formed integral with or secured thereto and in the same line therewith, guides for the piston-rod, and a float encircling and guided by said pile and connected to said piston-rod by a swivel-joint by which said float may revolve upon said pile, substantially as and for the purpose specified.

5. In hydraulic apparatus for utilizing wave-power, the pump, combined with a pile to which it is attached, and a float encircling said pile and guided thereby and adapted to actuate the piston of said pump, substantially as and for the purpose specified.

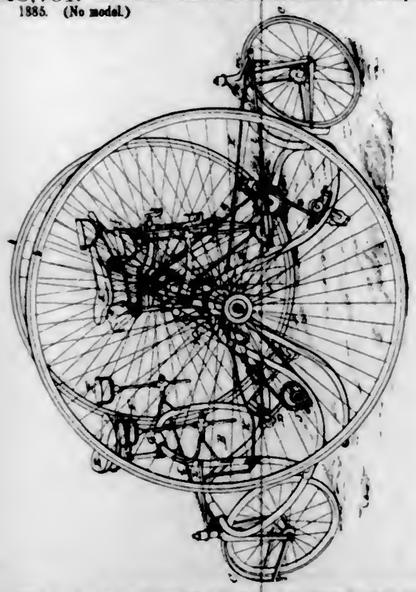
6. A lower section of a pile driven down into the sand and combined with an upper section detachably secured thereto, the upper section containing a pump, and a float guided by said compound pile and adapted to actuate the piston of the pump, the two sections of the pipe being detachably fitted end to end to form one long pile, and which upper section and float may be removed in the winter or during the time it is not required in use, substantially as and for the purpose specified.

328,760. CHAIR. Lemuel A. Chichester, Phœnicia, N. Y., assignor to the Chichester Chair Company, same place. Filed June 27, 1885. (No model.)



Claim.—In combination, a chair with its arms provided with pins *a* and slots *b* formed in, and shoulders *d* and projections *c* formed on, the ends of the arms, a table, B, with projections C, scroll slots *e*, formed in said projections, and springs *g*, passing through slots in said projections and secured to the inner edge of said table B, as and for the purpose described.

328,761. **TRICYCLE.** John H. Gillet, Lebanon, Pa. Filed Sept. 10, 1885. (No model.)



Claim.—1. An attachment for tricycles, consisting of a frame provided with continuous side bars having their ends formed into clips for attaching them to the main axle, substantially as set forth.

2. An attachment for tricycles, consisting of an auxiliary frame provided with side bars having clips formed on their ends, in combination with the ball-bearing cases on the main axle, substantially as described.

3. An attachment for tricycles, consisting of an auxiliary frame provided with side bars having their ends reduced and formed into spring-clips, substantially as described.

4. An attachment for tricycles, consisting of an auxiliary frame having side bars and an arched seat-support connecting said bars, substantially as described.

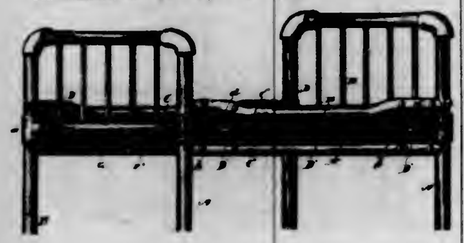
5. An attachment for tricycles, consisting of an auxiliary frame having side bars, an arched seat-support connecting said bars, and a foot-rest, substantially as described.

6. A velocipede having a fixed and a swinging frame, two driving-wheels, a front and rear steering-wheel, and a suitable steering device connecting said steering-wheels, substantially as described.

7. A velocipede having a front frame fixed to the axle and a rear frame detachably secured thereto provided with steering-wheels, in combination with a rod attached to both steering-wheels and connected to a slide in a guideway attached to the frame, substantially as described.

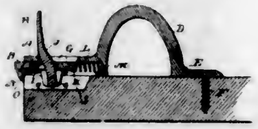
8. A velocipede having a swinging frame attached to the main axle, two driving-wheels, front and rear steering wheels, in combination with a rod connecting said wheels provided with a joint to admit of vertical movement of the rod and swinging frame, substantially as and for the purpose set forth.

328,762. **BEDSTEAD FOR WIRE MATTRESSES.** Truman S. Clark, San Francisco, Cal. Filed July 6, 1881. (No model.)



Claim.—The combination, with the side rails of a bed, of plates having elongated slots and secured to the inner sides of said rails, bars having their ends projecting through, adapted to slide in said slots, pins passing through the openings in the outer ends of the bars, clamping-plates having downwardly-projecting flanges, the mattress having its ends fitting and clamped between the plates and bars, brackets secured to the inner sides of the plates D, said brackets having outturned ends formed with nibs, adjusting-bolts engaging openings in the outturned ends of the brackets and bearing against the flanges G, and nuts on said bolts, said nuts being located between the nibs and plates D, as set forth.

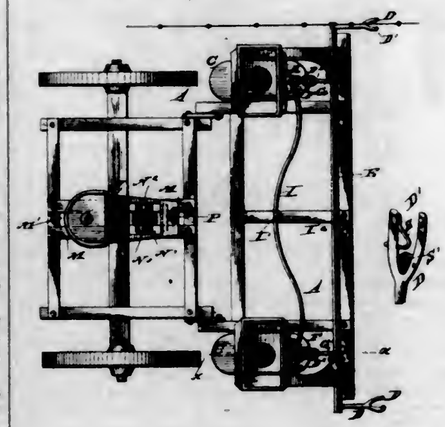
328,763. **LATCH.** Knud Clemmensen, Chicago, Ill. Filed Aug. 24, 1885. (No model.)



Claim.—1. In a latch, the combination, with a slotted casing having a pair of inwardly-projecting slotted lugs, of a slotted bolt sliding longitudinally in said casing, and a thumb-lever having a cross-head at its inner end and passing through the bolt and casing, the ends of the slotted lugs being bent around the ends of the cross-head and forming bearings for the same, substantially as and for the purpose set forth.

2. The combination of a casing having an aperture in its upper side and formed with two laterally-projecting perforated lips and with a rearwardly-projecting curved loop-shaped handle and a pair of inwardly-projecting lugs at the edges of its recess, a bolt having a longitudinal slot and a reduced inner end and sliding in the casing, a spring wrapped around the reduced end of the bolt and bearing against the inner end of the casing, and a thumb-lever having a cross-head at its inner end rocking in bearings formed by the ends of the said lugs, curved over the same, and projecting through the slot in the bolt and the aperture in the casing, as and for the purpose shown and set forth.

328,764. **CORN-PLANTER.** Michael Danaher, Buffalo, Ill. Filed May 11, 1885. (No model.)



Claim.—1. The combination, with the frame having the middle parallel bars, M M, with space M' between them, of the inclined slotted arm having the seat, the bolt with bearings, and the friction-rolls N^2 in said slot, and the T-head bolt and wring-nut connecting the parallel bars and the inclined slotted arm, substantially as specified.

2. The combination, with the seed-receptacles and opening-shoes, of the check-bar having arms connected with the feed-slides, forks at their upper ends, and the spring I, extending transversely of the frame and engaging the stud I', of the bar I^2, and the studs H of the feed-slides, substantially as specified.

3. The combination, with the check-bar, of the forked arm D, having the roller S', and the clasp S, arranged in the said fork, the whole adapted to operate in a seed-planter, substantially as set forth.

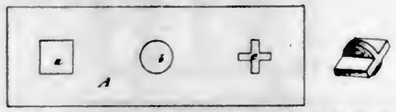
328,765. **SURCINGLE-BUCKLE.** Ernest Dering, Middletown, Conn. Filed July 6, 1885. (No model.)

328,765.



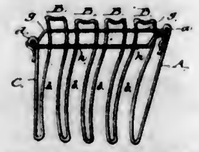
Claim.—The herein-described buckle for surcingles, composed of the bars A B, forming two sides of the frame, in length corresponding to the width of the band, and connected at their ends, the bar C, longitudinally across the frame between the said bars A B, the said bar C constructed with shoulders e e, tongues *a a a*, hinged to said bar C between said shoulders, the bar B constructed with a loop, D, in length corresponding to the width of the securing-strap, the tongue *b* hung upon the bar B, and which, with the loop D, forms a buckle for the securing-strap, and the bar A constructed with the loop E to form a tuck for the said securing-strap, substantially as described.

328,766. **PUZZLE.** Charles M. Dewey, Jersey City, N. J. Filed Jan. 13, 1885. (No model.)



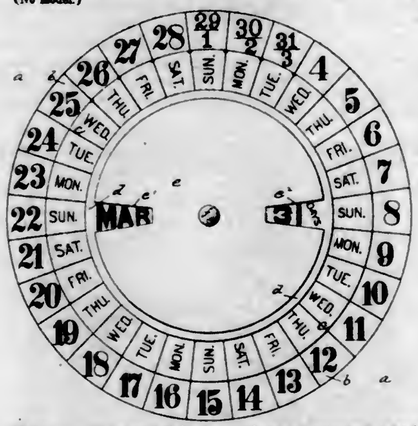
Claim.—The combination of a plate, card, or like device provided with a square hole, a round hole, and a cross-shaped hole, and a piece of material so shaped as to fit each of said holes, substantially as specified.

328,767. **PENCIL-HOLDER.** Benjamin F. Eshelman, Harlan, Iowa. Filed Aug. 21, 1885. (No model.)



Claim.—As an improved article of manufacture, a pencil-holder composed of a continuous piece of wire provided with a series of return bends, which form the clasps B, and the bars *g* and *h*, arranged at the side of the clasps, the pencil or other article being held between the clasps and the bars, substantially as herein described.

328,768. **CALENDAR.** Wallace T. Fenn, Wethersfield, assignor to the Kellogg & Bulkley Company, Hartford, Conn. Filed Mar. 6, 1885. (No model.)



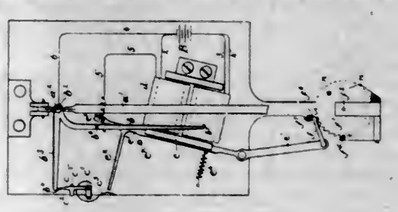
Claim.—1. As a new article of manufacture, a perpetual calendar consisting of a base-card bearing the series of numbers from 1 to 31, arranged in a circle, with the last three overlapping the first three in combination with superimposed rotary disks bearing the names of the days of the week and months, respectively, and pivoted to the base-card, all substantially as described.

2. In combination, in a perpetual calendar, a base-card, *a*, having the series of figures *b*, arranged in a circle with the ends overlapping, the disk *c*, having the names of the days of the week radially arranged near its edge, the disk *d*, bearing the names of the months and the number of days in each, arranged diametrically opposite each other on the disk, the cover-disk *e*, with slots *e' e''*, and the pivot *f*, all substantially as described.

3. In a perpetual calendar, the numbers from 1 to 31 arranged about a center, with the last three numbers overlapping the first three, in combination with the names of the days of the week four times repeated, the numbers and names being borne on separate cards or slips moving on each other, all substantially as described.

328,769. **ELECTRIC CLOCK.** Frank R. Field, Greenfield, Mass. Filed June 1, 1885. (No model.)

Brief.—The pendulum controls the circuit of an electro-magnet, which in turn actuates a device by which impulses are given to the pendulum.



Claim.—1. The combination of the pendulum with an impelling device, and an electro-magnet and its armature, by which the impelling device is raised or restored to its normal position after an impulse has been imparted to the pendulum, and a positive mechanically-operating prop or support for the impelling device independent of the said armature, which prop retains the impelling device in its normal position ready to impart a new impulse independently of the movement of the armature after the impelling device has been raised, substantially as described.

2. The pendulum and impelling device, consisting of two rigidly connected pivoted arms combined with a movable prop, which normally engages one of the said arms, the other arm being engaged by the pendulum-rod near the end of its vibration in one direction, and the prop disengaged from the impelling device by the movement of the latter produced by the pendulum, substantially as described.

3. The pendulum-impelling device and its prop, combined with an electro-magnet and its armature, and armature-lever, provided with an electric contact-piece, the impelling device having a co-operating contact-piece which, when it comes in contact with the armature-lever, changes the condition of the magnet, causing a movement of the armature-lever by which the impelling device is restored to its normal position, the prop placed beneath it, and the contact-pieces separated, substantially as described.

4. A pendulum-impelling device and its pivoted prop provided with a yielding finger, combined with an electro-magnet and its armature and armature-lever, the said impelling device and armature-lever having co-operating contact-pieces controlling the circuit of the magnet, and the armature-lever co-operating with the impelling device and yielding finger of the prop in the movement which takes place when the contact-pieces come together, the armature-lever operating to raise the impelling device and by the yielding finger to place the prop beneath it, substantially as described.

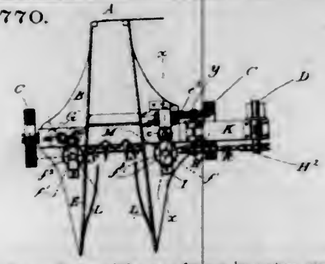
5. The pendulum-impelling device having a shouldered supporting-arm and an arm which is engaged by the pendulum-rod, combined with a pivoted prop which engages the shouldered arm, and is weighted to fall out from engagement therewith when the said arm is raised by the action of the pendulum-rod, substantially as described.

6. In an electric clock, the pendulum and its impelling device, and electro-magnet by which the latter is restored to its normal position after an impulse has been imparted to the pendulum, combined with a pawl having an inclined projection and a co-operating locking projection, and a ratchet-wheel actuated by the said pawl and imparting movement to the hands of the clock, substantially as described.

328,770. **CORN-CUTTING ATTACHMENT FOR MOWING-MACHINES.** John A. Forbes, Dover, Del., assignor of one-half to Edwin S. Anderson, same place. Filed Dec. 6, 1883. (No model.)

Claim.—1. A cutter consisting of a series of toothed matched sections, and links connecting said sections, so that a space is left between the adjacent ends of said links, combined with sprocket-wheels provided with toothed flanges between which the cutter-sections travel, the said teeth engaging in the space between the said ends of the links, substantially as and for the purpose specified.

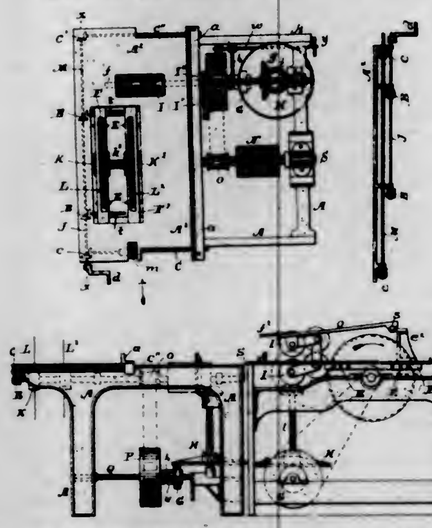
328,770.



2. An improved transmitting-gear for corn-harvesters, consisting of an upright shaft carrying a sprocket-wheel imparting motion to the cutter, and also carrying a pinion and bevel-gear, an upright shaft carrying a reel and pinion, an intermediate combined bevel-gear and pinion, and a shaft with a gear-wheel meshing with said pinion and receiving its movement from the source of power, substantially as and for the purpose specified.

3. An attachment for harvesters, consisting of a frame mounted upon wheels, converging guides on said frame, upright reel-shafts, a cutter consisting of a series of toothed matched sections connected by links, with spaces between their adjacent ends, wheels for the cutter, having toothed flanges, and a train of gearing imparting simultaneous movement to the cutters and reels, substantially as and for the purpose specified.

328,771. CIRCULAR SAWING MACHINE. Michael Garland and Abel D. Catlin, Bay City, Mich., assignors to the Standard Machinery Company, same place. Filed July 9, 1885. (No model.)



Claim.—1. In combination with the saw or saws and a pair of drawing feed-rolls arranged in rear of the saw or saws, an edge-guide, *a*, and a toothed disk or saw-like feeder, *m*, arranged obliquely to the edge-guide in front of the saw or saws, and operating, as specified, to crowd the lumber being drawn through the machine toward and against the said edge-guide, all substantially as hereinbefore set forth.

2. In combination with the feed-table and the saw or saws, an edge-guide, *a*, and a mechanism, substantially such as shown and described, operating to move said edge-guide transversely to the direction in which the lumber is to be fed through the machine and by positive movement at each end of the guide by the application to the said mechanism at one point only, of a motive power for actuating it, substantially as hereinbefore set forth.

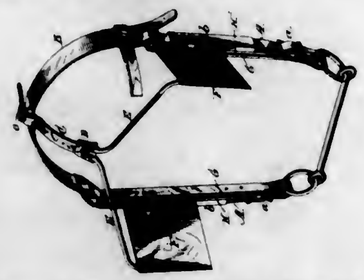
3. In combination with the feed-table, an adjustable edge-guide for the board, and a stationary rip-saw, one or more adjustable saw-guides provided with one or more saws the collar or collars of which is or are mounted to move endwise of the saw-shaft, and a mechanism, substantially such as described, operating to move the said saw-guide or saw-guides simultaneously and positively at each end by the application of a power for actuating said mechanism at one point only, substantially as hereinbefore set forth.

328,772. GATE. Joseph F. Gliddon, De Kalb, Ill. Filed July 11, 1885. (No model.)



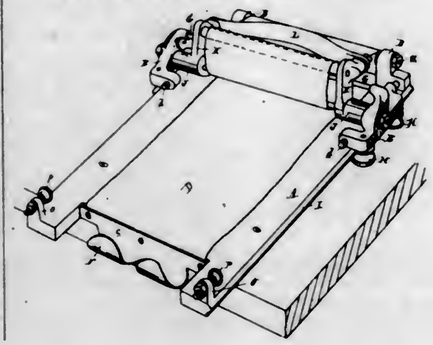
Claim.—The combination, with the hinge-post provided with the eyebolts, and the latch-post provided with the notched keeper, of the swinging gate-frame, the angular brace I, united at its converging ends to form the latch-bolt K, and the nut L, substantially as specified.

328,773. HARNESS-BRIDLE. Martin R. Good, New Holland, Pa. Filed Aug. 5, 1885. (No model.)



Claim.—A bridle constructed substantially as described, the blinders thereof having braces, packing-strips interposed between the blinders and braces and the keepers, and tubular braces pivoted to the blinders and to clamping-plates upon the end of an adjusting-strap, substantially as and for the purpose set forth.

328,774. CIGAR-BUNCHING MACHINE. Alexander Gordon, Detroit, Mich. Filed Apr. 8, 1885. (No model.)



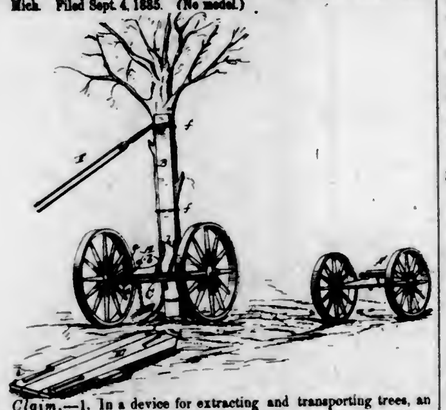
328,774.



Claim.—1. In a cigar-bunching machine, the combination, with the bed A, provided with studs O O, and adjustable bumpers P P, and the bracket N, of the carriages E E, having bumper-springs *d d*, and the cigar-forming devices, substantially as specified.

2. In a cigar-bunching machine, the cigar-forming devices and the table A, recessed at its rear end, as shown, combined with the plate R, removably secured in said recess, with its upper face flush with the top of the table, as and for the purposes specified.

328,775. STUMP-EXTRACTOR. William H. Hall, Battle Creek, Mich. Filed Sept. 4, 1885. (No model.)

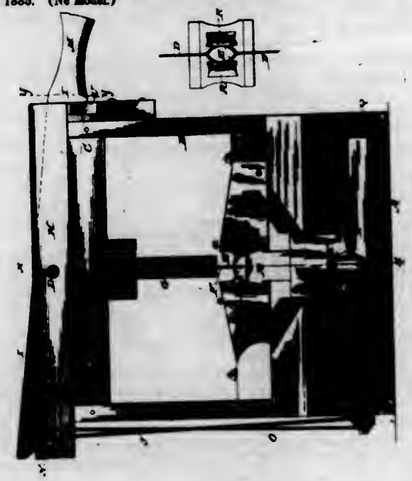


Claim.—1. In a device for extracting and transporting trees, an axle having rigidly attached thereto a board, B, in combination with a platform, E, and forward axle, A', substantially as shown, and for the purpose set forth.

2. The axle A, having a board, B, rigidly attached thereto, a rotary bar secured to the axle and provided with a pawl and ratchet and connecting-chains, a platform provided with hooks for engagement with said chain and a forward axle, substantially as shown, and for the purpose set forth.

3. In a device for extracting and transporting trees, an axle having a board rigidly attached, with central portion thereof, and means for attaching said board to the trunk of the tree, a block and tackle, F, attached to the upper end of the bar, substantially as shown, and for the purpose set forth.

328,776. PEACH-STONER. Cager Hardgrave, Clarksville, Ark.; assignor of two-thirds to Charles F. Cox, Bunker Hill, Ill. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination of the two blades D, secured in the same vertical plane, having straight upper edges ending in corners *a*, and having outwardly-curved portions E, opposite each other and lower than the straight edges thereof, substantially as shown and described.

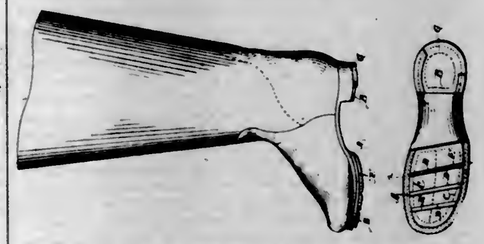
2. The combination, with the blades D, fixed in a vertical plane in a frame, and having the low curved portions E of the forked piece F secured to the plunger G, which is fitted to slide vertically in the said frame, substantially as shown and described.

3. The combination, with the blades D, curved and secured to a frame, as described, of the spoon-shaped blades R, secured to a follower by spring-shanks, and fitted to slide up over the curved portions of the blades D, substantially as shown and described.

4. The combination, with the curved blades D, fixed to a frame, the spoon-shaped blades R, and the fork F, secured to the plunger G, of the lever H, the links J, securing it to the frame, the link K, connecting the plunger G and lever H, the lever I, pivoted in lever H, the lever P, hinged to the frame, the follower S, supported on lever P, and carrying the blades R, and the link O, connecting lever I with lever P, substantially as shown and described.

5. The combination, with the lever H, hung to a frame and connected with the plunger G, of the lever I, pivoted midway to the lever H, lapping thereon at one end, and provided with a handle, M, projecting at the other end beyond lever H, and indirectly connected with the blades R, the spring-hooks U, secured to lever H to engage lever I, and the slanting lugs V, fixed in the path of the said hooks, substantially as shown and described.

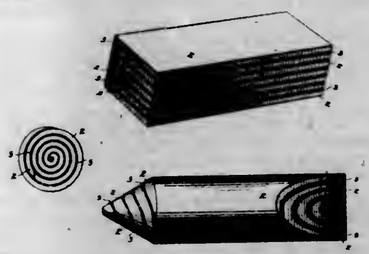
328,777. RUBBER SOLE FOR BOOTS OR SHOES. Layton Haylock and John W. Haylock, Grimsby, England. Filed July 14, 1885. (No model.)



Claim.—1. A boot or shoe provided with a rubber sole having a series of transverse grooves at intervals across its surface, and the sole secured to the boot or shoe by rows of stitches in said grooves, for the purpose set forth.

2. A boot or shoe provided with a rubber sole and heel-tap, both provided with a series of transverse grooves across their surface, and attached to the boot or shoe by rows of stitches in said grooves, and the heel-tap having the projection which extends partly around the periphery of said heel, as hereinbefore set forth.

328,778. ERASIVE RUBBER. Francis H. Holton, Brooklyn, N. Y., assignor to Francis H. Holton, Jr., same place. Filed Jan. 6, 1885. (No model.)



Claim.—1. An erasive block, tablet, or point consisting of superimposed layers, alternate ones of which are composed of rubber of differing qualities, substantially as described.

2. An erasive block, tablet, or point consisting of alternate layers or strata of hard and soft rubber, substantially as described.

3. An erasive block, tablet, or point consisting of alternate layers or strata of hard and soft rubber with an exterior layer or layers of hard rubber, substantially as described.

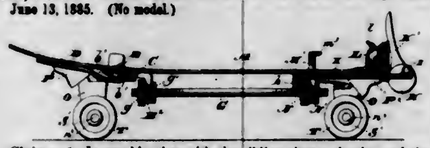
328,779. ERASIVE RUBBER. Francis H. Holton, Brooklyn, N. Y. Filed Sept. 22, 1885. (No model.)

328,779.



Claim.—A block, tablet, or mass of rubber, composed of alternate layers or strata of solid and cellular rubber, substantially as described.

328,780. ROLLER-SKATE. CAREL B. HOPKINS, Louisville, Ky. Filed June 13, 1885. (No model.)



Claim.—1. In combination with the sliding clamp, shanks, and the sliding block, the toggle-links pivoted at their outer ends to such shanks and at their inner ends to the blocks, the screw passing through a portion or arm of the block, the nuts screwed on the screw engaging the front and rear sides of the block-arm, and means, substantially as described, adapted to move the screw longitudinally, substantially as and for the purpose described.

2. In combination with the clamp-operating toggle, the sliding block pivotally connected with the inner ends of the toggle-links, the rod at or near its forward end connected with or attached to the block, the slide attached to the rod, and the cam pivoted on this slide and adapted to engage a fixed portion of the skate, substantially as and for the purpose described.

3. In combination with the slide and the cam-lever pivoted thereon and engaging a fixed portion of the skate-body, a screw attached to and extending rearward from a leg on the slide, the sliding clamp-arm for engaging the front of the heel having an opening in its lower portion through which passes the screw, and nuts screwed on the screw in front and rear of such portion, substantially as and for the purpose described.

4. In combination with the rod connected with the sole and heel clamps of a skate and operating them through suitable connecting mechanism, the means for drawing the rod rearward and fastening it, consisting of the slide connected with the rod, the cam pivoted thereon and adapted to engage the rear end of the body of the skate or a fixed projection thereon, and the lever-arm attached to the cam, substantially as and for the purpose described.

5. In combination with the slide connected with the clamp-operating rod, the cam pivoted on the rear end of the slide adapted to engage the end of the foot plate or support and the lever-arm extending out from the cam in such direction that when swung up it rests against a rigid projection on the skate just after the part of the cam of greatest radius has passed down below the portion of the skate-plate which the cam engages, substantially as and for the purpose described.

6. In a roller-skate, in combination with the block attached to the foot-plate having a portion beveled at right angles to the central longitudinal plane of the skate and a rounded stud on its under side, the roller-truck having a portion beveled in a plane parallel to the truck-axle adapted to engage the bevel on the block and a recess to engage the stud on the block and a spring adapted to hold the truck up against the block, substantially as and for the purpose described.

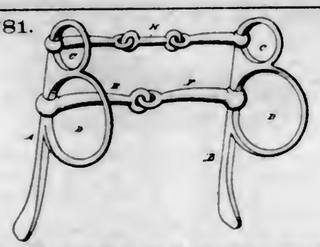
7. In combination with the attaching-block provided on its under side with a portion beveled in a plane at right angles to the central longitudinal line of the block, a rounded stud and a rounded projecting portion on the opposite side of the stud from the bevel, the truck having a portion beveled in a plane parallel to the truck-axle adapted to engage the bevel on the block and a recess to receive the stud on the block and means, substantially as described, adapted to keep the truck normally pressed up against the block, substantially as and for the purpose set forth.

8. In combination with the block provided on its under side with the beveled portion, the rounded stud and the rounded projecting portion on the opposite side of the stud from the bevel, the truck provided with the bevel engaging the one on the block, a recess engaging the rounded stud, the bolt passing down through the block and stud and loosely through an opening in the truck at the bottom of the recess, the nut on the stud, and a spring around the bolt between the nut and the top of the truck, substantially as and for the purpose set forth.

9. The roller or wheel provided in its side with a concentric groove having its outer side or wall undercut or convaved and its inner wall sloping toward the axle-opening, so as to form a conical hub, and such outer wall pierced with one or more openings leading inward to the axle-opening, substantially as and for the purpose described.

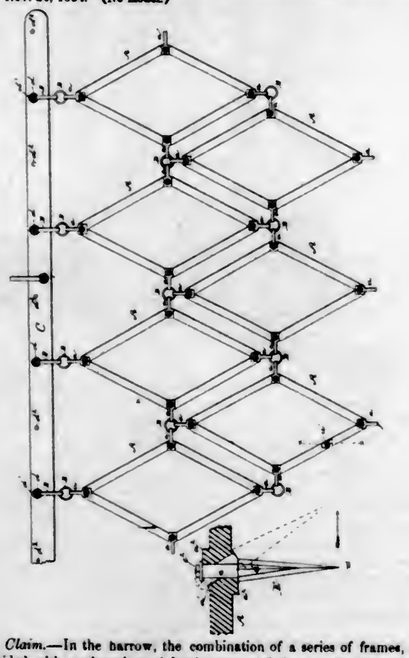
328,781. BRIDLE-BIT. EDWARD W. JACKSON, Mount Kisco, N. Y. Filed Aug. 17, 1885. (No model.)

328,781.



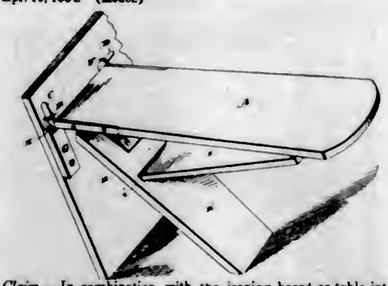
Claim.—The combination, with the check-pieces having the upper and lower integral rings, of the two-part snaffle and the three-part snaffle, independent of each other, substantially as specified.

328,782. HARROW. FRANKLIN MCCOY JAMISON, Sheldon, Iowa. Filed Nov. 26, 1884. (No model.)



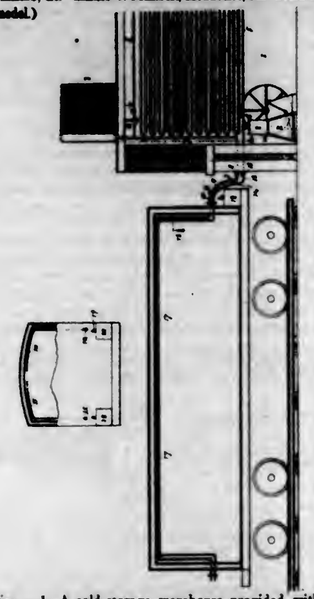
Claim.—In the harrow, the combination of a series of frames, A, provided with tooth-sockets a', having two of their opposite sides partly straight and partly sloping, and bosses a^2, with teeth E, having shoulders e, blades e', and nuts e^2, substantially as described and shown, and for the purpose set forth.

328,783. IRONING-TABLE. MOSES J. JEROME, Newburg, N. Y. Filed Apr. 19, 1884. (Model.)



Claim.—In combination with the ironing board or table intended to be attached to a fixed support, the hooks fixed to the end of the board and extending therefrom, the one upward and the other outward horizontally, the staples on the fixed support adapted to receive such hooks, and a movable locking-piece on the fixed support adapted to be moved under the upwardly-extending hook to hold it up in its staple, substantially as and for the purpose described.

328,784. REFRIGERATING AND DEHYDRATING APPARATUS FOR MEAT, &c. HENRY C. JOHNSON, Monticello, Pa. Filed Aug. 22, 1885. (No model.)



Claim.—1. A cold-storage warehouse provided with power appliances for compressing gas, and detachable connections for conveying the cooling medium to cars, boats, or other conveyances by which perishable articles are to be transported.

2. The combination of power apparatus for condensing or packing gas for cooling purposes, and a car, boat, or other vehicle for transporting perishable articles, provided with cooling-pipes and means of connection with the aforesaid power cooling apparatus.

3. A cold-storage warehouse provided with gas-compressing apparatus, a holder for the compressed gas, and a conduit leading therefrom, in combination with a car or boat for transporting perishable merchandise, provided with a cooling-coil and dehydrating appliances and a coupling for connecting and disconnecting the said cooling-coil with the compressed gas-holder in the storage-warehouse, as explained.

4. A cold-storage warehouse provided with means for compressing gas for refrigerating purposes, cooling-conduits for the utilization of such compressed gas, and detachable couplings for connecting and disconnecting such conduits with cooling-conduits on cars or boats for the transportation of perishable articles.

5. The combination of a gas-compressing apparatus, a holder for compressed gas, a conduit leading therefrom, a cooling-conduit in a car or boat for the transportation of meat or other perishable merchandise, and detachable couplings for connecting or disconnecting the said gas-holder and the cooling-conduit in the car or boat, substantially as and for the purposes set forth.

6. The apparatus for the cooling and transportation of perishable substances, consisting of a cold-storage house, gas-compressing appliances, cars or boats having non-conducting walls and circulating-pipes and couplings for connecting said pipes with the stationary gas-condensing appliances, and receivers for the compressed and spent gas on said cars or boats also having couplings for connecting with said gas-compressing apparatus.

7. The mode or process herein described of refrigerating meat and other perishable merchandise for and during transportation, the same consisting in the production or storage of compressed refrigerated gas in a suitable receiver or coil by power appliances in a cold-storage house, connecting such receiver or coil with refrigerating-coils in the freight-compartments of the car or boat, and subsequently applying a portable gas-holder to maintain the refrigerated condition during transit, as explained.

328,785. CAR-COUPLING. JOHN W. JOHNSON, Pendleton, Mo. Filed July 31, 1885. (No model.)



Claim.—In a car-coupling, substantially as shown and described, the combination, with the coupling-hooks, of a buffer placed between the hooks, and guide-pins secured in the draw-head and projected through slots in the coupling-hooks, substantially as set forth.

328,786. FRICTION-CLUTCH. CHAS. KARSTENS, Chicago, Ill. Filed Aug. 3, 1885. (No model.)

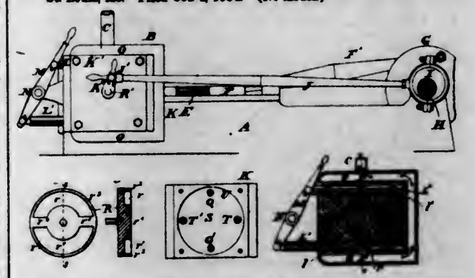


Claim.—1. In a friction-clutch, the combination, with an annular clutch-flange and a series of shoes sliding radially to and from the inner face of said flange, of a series of rock-levers connected at one end to the shoes and at the other connected by toggle-links to radial arms sliding on the shaft to and from the clutch, substantially as and for the purpose set forth.

2. In a clutch, the combination, with the laterally-sliding and rotating clutch member, of a flanged wearing-ring removably attached thereto, and a shipping-collar sliding laterally on the shaft and formed with an interior groove to receive and hold the flange on said ring, substantially as and for the purpose set forth.

3. The combination, with a shaft and a laterally-sliding loose shifting-collar thereon, formed with an anterior annular groove, of a sliding and rotating clutch member provided with a flange for engagement with the grooved collar, said flange being cut away slightly at its periphery and one side to leave a space within the groove to form an oil-chamber, substantially as shown and described.

328,787. REVERSING DEVICE FOR ENGINES. DANIEL P. KANE, St. Louis, Mo. Filed Oct. 4, 1884. (No model.)



Claim.—1. An oscillating valve provided with two unconnected chambers and working on a seat having two cylinder-ports and two other steam-ports, in combination with a valve interposed between the said steam-ports and the live-steam and exhaust ports, for the purpose set forth.

2. The combination of steam and exhaust ports, two reversing-valves coupled together to cause synchronous reverse movements, a steam-chest in communication, respectively, with the ports of the two reversing-valves, and ports in the steam-chest leading to the ends of the cylinder, substantially as and for the purpose set forth.

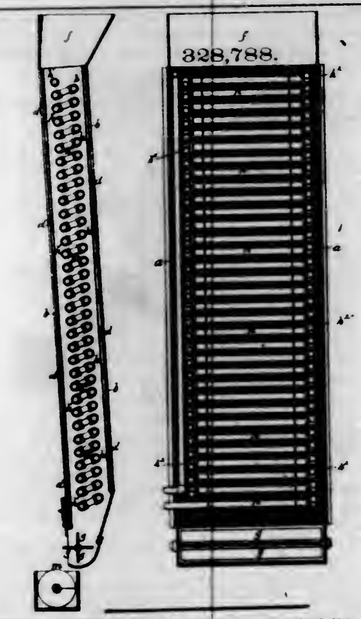
3. The combination of the two valves L L', connected to the opposite ends of a lever, live-steam port C, and exhaust D, a valve-seat having ports Q Q' and T T', and a valve or valves, R, constructed and arranged to operate substantially as and for the purpose set forth.

4. The combination of the two valves L L', coupled together by lever M, the valve R, having two disconnected chambers, $r\,r'$, the valve-seat and valve-chest, and the valve ports and passages, substantially as and for the purpose set forth.

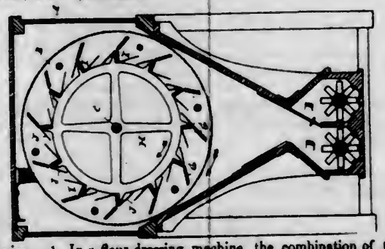
328,788. GRAIN-DRIER. JOHN C. KLAUDER, Philadelphia, Pa. Filed Apr. 2, 1883. (No model.)

Claim.—The combination, in a kiln for drying corn, of the inclined casing having opposite perforated sides, the central steam-heated pipes, the feed-hopper at the top, and the discharging device at the bottom, as set forth.

328,788.



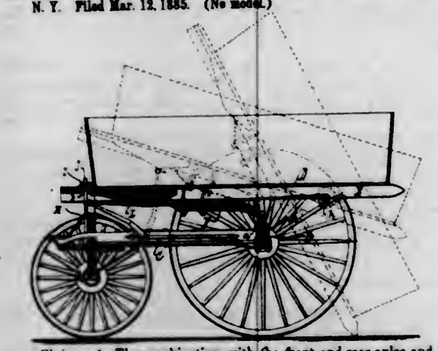
328,789. FLOUR-BOLT. Bruno Kniffler, Cleveland, Ohio. Filed June 25, 1885. (No model.)



Claim.—1. In a flour-dressing machine, the combination of the outside bolting-cylinder having deflectors G with the inside bucket-reel, H, having buckets I and deflectors J, all arranged and operating substantially as described.

2. In a flour-dressing machine, the combination, with the outside bolting-cylinder, B, having inclined deflectors G, secured to the inside thereof, of the inside bucket-reel, H, provided with V-shaped buckets I, and deflectors J, formed integral with said buckets, substantially as herein shown, and for the purpose specified.

328,790. DUMPING-WAGON. Athanasius Koehrsser, Brooklyn, N. Y. Filed Mar. 12, 1885. (No model.)



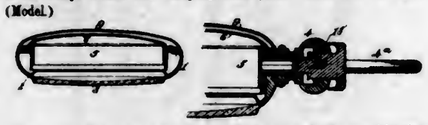
Claim.—1. The combination, with the front and rear axles and the connecting-reach, of the platform D, the side arms, F, pivoted at their rear ends to the rear axle, and connected at their front ends with the platform, the lever K, pivoted to the reach, the cable L, connected with the lever, and the windlass for swinging the lever to tilt the platform, substantially as described.

2. The combination, with the front and rear axles, A B, the connecting-reach C, and the support H on the front axle, of the platform D, loosely resting at its front end on said support, the side arms, F, pivoted at their rear ends to the rear axle, and rigidly connected at their front ends with the platform, the lever K, pivoted to the reach, the cable L, connected with the lever, and the windlass, substantially as described.

3. The combination, with the front and rear axles and the connecting-reach, of the platform D, having the inclined plane N secured to its under side, the side arms, F, pivoted at their rear ends to the rear axle and connected at their front ends with the platform, and the swinging lever K, pivoted to the reach, for acting on the inclined plane to tilt the platform, substantially as described.

4. The combination, with the front and rear axles and the connecting-reach, of the platform D, having the inclined plane N secured to its under side, the side arms, F, pivoted to the axle and connected with the platform, the swinging lever K, pivoted to the reach, the cable L, connected with the lever, and the windlass for swinging the lever, and causing it to act on the inclined plane, substantially as described.

328,791. WATCH-CASE. James Lamont, Sag Harbor, N. Y., assignor to the Fahys Watch Case Company, same place. Filed Dec. 12, 1884. (Model.)



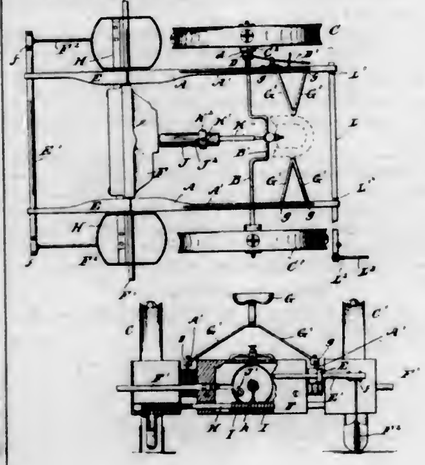
Claim.—1. In an open-faced key-winding watch, the combination, with a case-center having a bezel formed in one piece therewith or immovably secured thereto for receiving and holding a crystal, of a movement-holding ring pivoted to the margin of said case-center on the side opposite to that having the crystal-bezel, and adapted to be swung out of and into said ring with the dial-face toward the crystal, substantially as described.

2. In an open-faced key-winding watch, the combination of a case-center having a crystal-holding bezel on one side, a crystal seated in said bezel, a movement-holding ring pivoted to the margin of the case-center on the side opposite to the crystal-bezel and with the dial-face toward the crystal, and a cap-plate hinged to the case-center on the same side with the movement-ring and at a right angle therewith, substantially as described.

3. In an open-face key-winding watch, the combination of a center ring having a hollow pendant, a movement-ring hinged to the center ring and adapted to swing therefrom, and a combined key and locking-pin detachably arranged in the pendant for winding the time-movement, and also engaging the pivoted movement-ring to lock it in position, substantially as described.

4. In an open-face key-winding watch, the combined key and locking-pin having a hollow end, a screw-threaded portion, and an end head, in combination with the watch-case having a hollow screw-threaded pendant and the movement-holding ring having a depression for receiving the end of the pin, substantially as described.

328,792. CORN-PLANTER. James L. Lanum, De Graff, Ohio. Filed Dec. 31, 1884. (No model.)



Claim.—1. In a seed-planter, the combination, with the dropping-slide and the driving mechanism, of a rod or bar having a spiral bearing and a second rod or bar suitably constructed to engage the said spiral bearing, substantially as set forth.

2. In a seed-planter, the combination of the hollow bar provided with a spiral groove and a rod sliding at one end in the hollow bar, and provided with a pin sliding in the said groove, substantially as set forth.

3. The combination, with a dropping-slide and an operating-shaft having a crank, of a rod or bar having a spiral bearing and a second rod or bar provided with a projection entering the groove of the former, one of said parts being connected with the crank of the operating-shaft, and the other suitably adapted to operate the dropping-slide, substantially as set forth.

4. The combination, with the slide and the axle or shaft having a crank arranged midway the sides of the machine, of a rod or bar provided with a spiral bearing and a second bar movable along the former and suitably formed to engage said bearing, one of said parts being connected with the crank of the shaft, substantially as set forth.

5. The combination, with the seed-slide having a central lug or projection and the springs arranged and bearing on opposite sides of such central projection, of the rod or bar having a crank arranged to engage the projection on the slide, and a second bar, one of said bars being provided with a spiral groove, and the other with a pin or projection entering such groove, all substantially as and for the purposes specified.

6. In a seeding-machine, the combination, with the framing, of a seed-slide and a supporting-case therefor journaled at its opposite ends in the framing, substantially as set forth.

7. In a seeding-machine, the combination of the framing, the seed-slide, the case for said seed-slide, provided at its opposite ends with trunnions journaled in and extended laterally beyond the framing, and the flukes detachably connected at their forward end to the framing, and having their rear ends supported on and movable laterally off the extensions of the trunnions aforesaid, substantially as set forth.

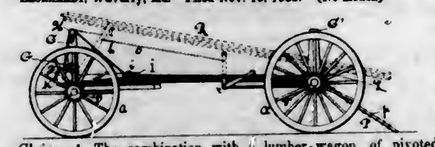
8. The combination of the main frame having at its forward end hinge-knuckles, the fluke-frame, also provided with hinge-knuckles, the seed-slide, the slide-support provided with lateral rods passed through the knuckles of the two frames forming the pintle of the hinge, and extended laterally beyond the same, and the seed-boxes having their rear ends supported on such lateral arms and their flukes detachably connected at their forward ends to the framing, substantially as and for the purposes set forth.

9. The combination of the seed-slide, the support F, pivotally supported, the bars J and K, and the operating mechanism, substantially as set forth.

10. In a seed-planter, the combination of the axle having a crank, *j*, and the spring-actuated clutch-sleeve keyed to said axle, the drive-wheel having its hub suitably formed for engagement with the clutch-sleeve, the pitman-bar J, having sleeve K^2 and pin K', the hollow bar having groove J^2, and the dropping slide, substantially as set forth.

11. The combination, with the main and fluke frames provided at their adjacent ends with interlapping hinge-knuckles, of a case or support, as F, extended from side to side of the machine, and provided at its ends with trunnions projected through the knuckles of the main and fluke frames, and forming the pintles of the hinges, substantially as set forth.

328,793. LUMBER-WAGON. William Leonhardt and John H. Leonhardt, Waverly, Md. Filed Nov. 15, 1883. (No model.)



Claim.—1. The combination, with a lumber-wagon, of pivoted bars I, roller *i*, cords *h*, standard C, having pulleys H, shaft *f*, and means for rotating said shaft to wind up the cord *h*, for the purposes set forth.

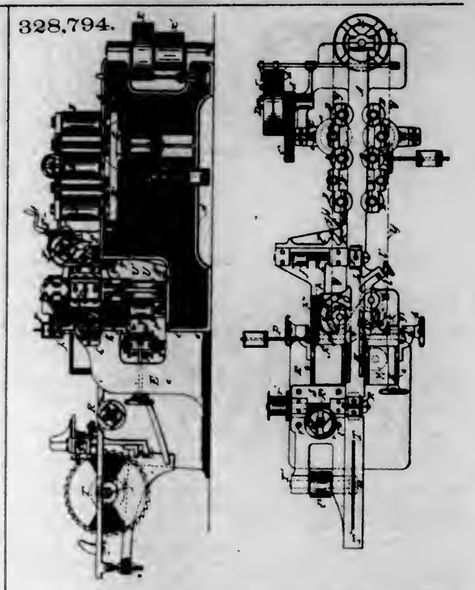
2. The combination, with a lumber-wagon, of the roller *i*, pivoted bars I, roller N', pivoted bars N, the cord O, connecting the bars I and N, and mechanism for raising the bars I, for the purposes set forth.

328,794. PLANING AND RESAWING MACHINE. George Lhote, New Orleans, La. Filed May 27, 1885. (No model.)

Claim.—1. In a planing or weather-board machine, the combination of a central supporting-frame with feed-rolls on vertical axes supported in bearings on either side of and attached to said central frame, substantially as shown and described.

2. In a planing or weather-board machine, the combination, with a supporting-frame, of two side cutter-heads on vertical axes and provided with platens, said heads and platens being supported in adjustable slides movable transversely to the line of feed, substantially as shown and described.

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3. The combination, in a planing or weather-board machine, of feed-rolls on vertical axes, a top head and an under head on horizontal shafts, and two side heads on vertical axes, the said parts being supported by the frame of the machine and back of the feed-rolls, with the side heads located on either side of the line of feed and between the top and bottom heads, whereby a board may be planed while standing on its edges on two sides and both its edges at one operation, substantially as shown and described.

4. The combination, in a weather-board machine, of feed-rolls on vertical axes, a top head and an under head, two side heads on vertical axes, and a saw on a horizontal shaft, said heads and saw being supported by the frame of the machine back of the feed-rolls, whereby a board may be planed on two sides and both edges and split or divided into two parts at one operation, substantially as shown and described.

5. In a weather-board or planing machine, the combination, with side cutter-heads on vertical axes, of a saw on a horizontal shaft located at or near the end of the machine behind the feed-rolls and cutter-heads, said saw being driven separate from and independent of the shaft which drives the cutters, substantially as shown and described.

6. In a planing or weather-board machine, the combination, with a frame on which the side cutter-heads are supported on vertical axes, of a saw-table detachably fastened thereto and having bearings for a saw on a horizontal shaft, said table and saw being located in the rear of said frame and back of the cutter-heads, substantially as shown and described.

7. In a planing or weather-board machine, the combination, with a single middle frame, A, supporting the feed-rolls, having an offset, A', of a double frame, E, supporting the side heads and fastened to the feed-roll frame, substantially as shown and described.

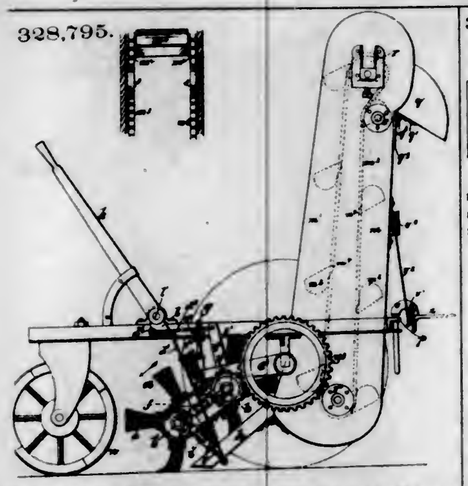
8. In a planing or weather-board machine, the combination, with a single middle frame, A, supporting the feed-rolls, having an offset, A', of a double frame, E, supporting the side heads and fastened to the feed-roll frame, substantially as shown and described.

328,795. MACHINERY FOR SWEEPING AND CONVEYING AWAY REFUSE FROM STREETS. William Marsh, London, England. Filed Oct. 16, 1884. (No model.) Patented in England Jan. 1, 1884, No. 91.

Claim.—1. The combination of the wheeled support, the spur-ring y^3, connected with one of the drive-wheels of said support, the chain of brushes, the lever-supports *e e'*, the lever b^3, pivoted to support *e'*, the upper shaft of the chain of brushes journaled at one end in support *e* and at the other end in said lever b^3 and provided with a pinion meshing with the spur-ring on said drive-wheel, the lever fulcrumed on the wheeled support, and the rod connecting said lever with the lever b^3, to throw said pinion in and out of mesh, substantially as described.

2. The combination of the wheeled support, the elevator-case *m'*, the pan *h*, hinged thereto the hinged levers *e e'*, the chain of brushes *a*, connected with pan *h*, the lever b^3, pivoted to lever *e'*, the shaft *b*, provided with pinion *c*, meshing with spur-ring y^3, connected to one of the wheels of the wheeled support and journaled at one end in the lever b^3

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and at the other end in lever *e*, and the lever *k*, connected with pan *h* and lever b^2, whereby both pan and brushes may be raised and the pinion *c* thrown out of mesh by the same lever *k*, substantially as described.

3. The combination, with a wheeled support and an elevator connected therewith, of the pan *h*, the hinged levers *e e'*, the lever b^2, the chain of brushes connected with levers *e* and b^2, the frame *c'*, bolts *g*, connected with said levers *e e'*, and nuts d^2 c^2 on said bolts above and below said frame, whereby said brushes may be adjusted to and from said pan, substantially as described.

4. The combination of a wheeled support having a spur-ring, *y*, operated from one of its drive-wheels, an elevator-case provided with an endless chain of buckets, a pivoted lever, *t*, provided with a pinion, y', meshing with the spur-ring *y* and a pinion, y^2, on one shaft of the bucket-chain, a slotted lever, *u*, connected with lever *t*, and a hinged chute *q*, connected with lever *u*, substantially as described.

5. The combination of the elevator-case, the endless chain of buckets, wheels *r* and *r'* for supporting the same at top and bottom, the delivery-chute at the upper end of the case, and the gathering-wheels *s* below the wheels *r* and between the bucket-chain and inner end of chute *q*, as shown, to permit the inner edge of the chute to be brought directly under the spot where the buckets begin to empty, substantially as described.

6. The combination, with a wheeled support and an elevator-case, *m'*, of the hook *o*, the catch *v'*, attached thereto, and the rope v^2, secured to said catch and the case, substantially as described.

7. The combination of a wheeled support, an elevator carrying an endless chain of buckets, an endless chain of brushes for sweeping into said elevator-buckets, a delivery-chute, *q*, at the upper end of the elevator, and a receiving-receptacle to receive sweepings from said chute, substantially as described.

328,796. SIGN. William A. McCool, Perryville, assignor of one-half to Paul Oliver, Ashland County, Ohio. Filed May 7, 1884. (No model.)



Claim.—1. A frame for sign-letters, said frame consisting of a grooved metal rod formed from a single piece and joined at its ends, substantially as described.

2. The combination, with metallic letters, of a frame consisting of a single rod having a continuous groove, said rod being bent and secured at its ends, substantially as described.

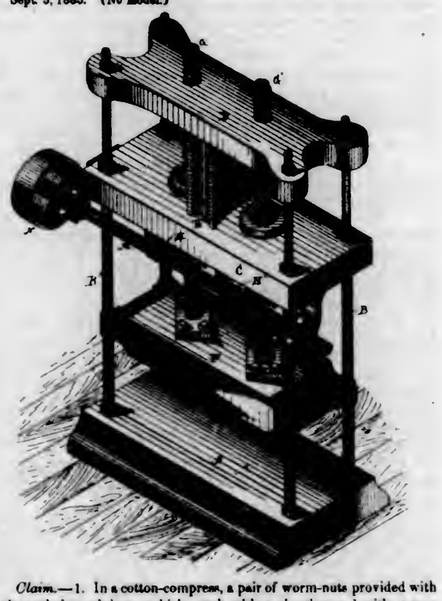
3. The combination, with two frames having letters secured therein, as shown, of a support formed with arms to embrace said frames, and with perforated extensions and braces G G, substantially as described.

328,797. Method of Forming Grooved Metal Rods. William A. McCool, Perryville, assignor of one-half to Paul Oliver, Ashland County, Ohio. Filed Feb. 10, 1885. (No model.)



Claim.—The method herein described of forming a drawn grooved rod, consisting in drawing a blank semi-elliptical in cross-section through a former to bend up the edges of said blank to form the groove, substantially as set forth.

328,798. Cotton-Press. George McGovern, Richmond, Va. Filed Sept. 5, 1885. (No model.)

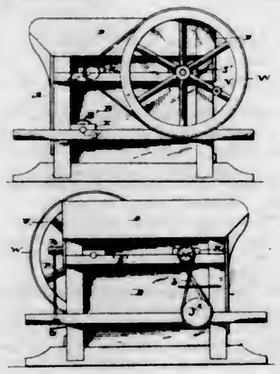


Claim.—1. In a cotton-compress, a pair of worm-nuts provided with teeth on their periphery, which mesh with each other and with worms on a common shaft, in combination with a pair of compression-screws operated by said shaft and worm-nuts, as set forth.

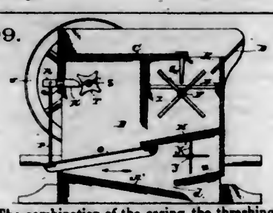
2. The combination, with a right and a left hand screw, of a pair of correspondingly-threaded worm-nuts, the teeth on the periphery of one meshing with the teeth on the periphery of the other, and means for simultaneously operating said screws and nuts, as set forth.

3. The combination of the right and left hand screws and their worm-nuts having intermeshing teeth, with means for simultaneously operating said worm-nuts in opposite directions, as set forth.

328,799. Machine for Thrashing Peas. Joseph A. McMullen and Augustus R. Bloodworth, Stephens' Pottery, Ga. Filed Aug. 14, 1885. (No model.)



328,799.



Claim.—The combination of the casing, the thrashing-chamber, the depending vertical teeth, the horizontal bars, and the toothed shaft arranged in the thrashing-chamber below the horizontal bars and depending teeth, substantially as described.

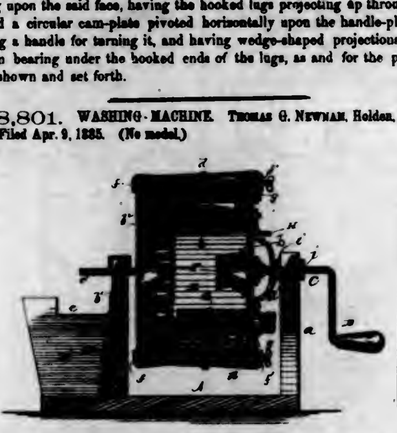
328,800. Sad-Iron. George W. Mendoza, Wellsville, Ohio. Filed Mar. 29, 1884. (No model.)



Claim.—1. The combination, with the body of a sad-iron having recesses in its upper face and provided with upwardly-projecting hooked studs, of a handle-plate fitting upon the body of the iron, and having the lugs into which the ends of the handle are secured projecting into the recesses in the body of the iron, and having a cam-plate for engaging the hooked lugs, as and for the purpose shown and set forth.

2. The combination, with the body of the sad-iron having two upwardly-projecting hook-shaped lugs upon its upper face, of a handle-plate fitting upon the said face, having the hooked lugs projecting up through it, and a circular cam-plate pivoted horizontally upon the handle-plate having a handle for turning it, and having wedge-shaped projections at its rim bearing under the hooked ends of the lugs, as and for the purpose shown and set forth.

328,801. Washing-Machine. Thomas G. Newman, Holden, Mo. Filed Apr. 9, 1885. (No model.)



Claim.—1. In a washing-machine, a rotary cylinder having its inner vertical walls provided with central oppositely-directed cones, each having an opening at its apex and an opening at its base, whereby a circulation of water through the said cones may be obtained, substantially as specified.

2. In a washing-machine, a rotary horizontal cylinder having its vertical walls provided with axial cones and radially-arranged brushes, each of said cones having an opening at its apex and an opening at its base, substantially as specified.

328,802. Hay-Carrier. Reuben C. Norton, Rockford, Ill., assignor to the Union Foundry and Machine Company, same place. Filed Feb. 26, 1885. (No model.)

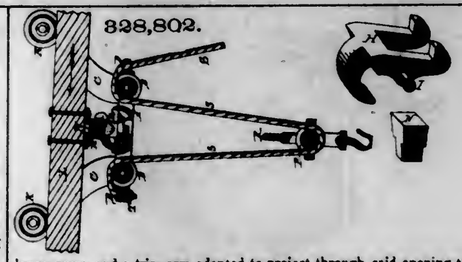
Claim.—1. The combination, with the bracket-stop supporting a drop-detent, of the carriage and its pivoted pawl, substantially as set forth.

2. The combination, with the bracket-stop supporting a drop-detent, of the carriage and its pivoted lever-pawl, and a trip-arm adapted to raise said detent within the stop, substantially as set forth.

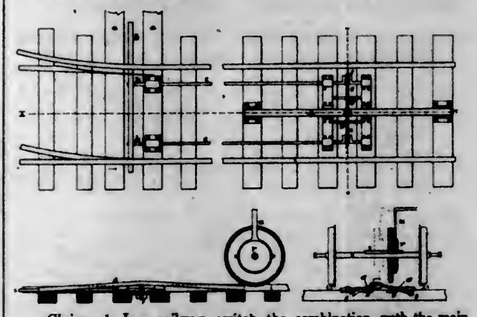
3. The combination, with the stop and its drop-detent arranged therein, of the carriage formed with an opening, as described, a pivoted lever-pawl, and a trip-arm adapted to project through said opening to raise the detent, substantially as set forth.

4. The combination, with the stop, within which is supported a drop-detent, of a carriage formed with a conic opening and supporting a lever-pawl adapted to receive the drop-detent, and a trip-arm, substantially as set forth.

328,802.



328,803. Railway-Switch. Arthur O'Hara, Hawley, Pa. Filed Feb. 3, 1885. (No model.)



Claim.—1. In a railway-switch, the combination, with the main and switch rails, of a double-inclined way placed between the rails, pivoted levers *e e*, having their free ends directly below such incline and connected to longitudinal rods *c*, which are in turn connected to the switch-bar.

2. The combination of the rails *i k*, the inclines *d d* between the rails *i*, the pivoted levers *e*, having their free ends below the inclines, and bearing on fulcrum pins *g*, and cranked rods *c*, connected to such levers and to the switch-rod, the whole mechanism being placed between the rails and above the surface of the road-bed, substantially as described.

328,804. Scale-Beam. John W. Palmer, Syracuse, Mo., assignor of one-half to Marcus R. Taylor. Filed Jan. 20, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, of the longitudinally-grooved cylinder of the scale-beam, the sliding weight, and the retaining-screw.

2. The combination, substantially as before set forth, of the longitudinally-grooved cylinder of the scale-beam, the sliding weight, and the retaining-screw carrying a spring-actuated piston.

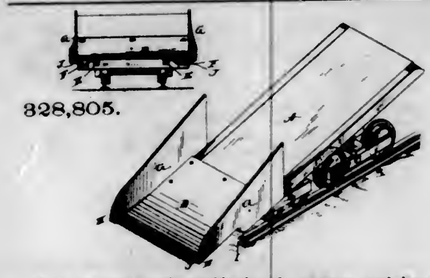
3. The combination, substantially as before set forth, with the cylindrical scale-beam, of the sliding weight lined with leather and fitting closely thereto.

4. The combination, substantially as before set forth, of the longitudinally-grooved cylinder of the scale-beam, the hollow sliding weight, and the retaining-screw.

328,805. Snow-Plow. Joseph Palmer, Kingsley, Iowa. Filed July 6, 1885. (No model.)

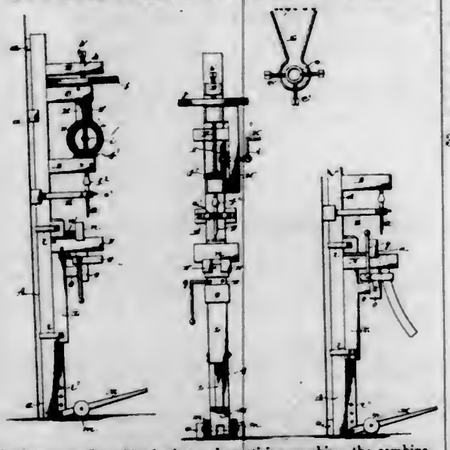
Claim.—1. In a snow-plow, the combination of a platform consisting of an inclined plane mounted upon suitable trucks, the shoe or scraper-plate secured upon and extending forwardly from the same, the brackets or runners secured to the front end of the platform and extending under and supporting the projecting end of the shoe or scraper, and provided with outwardly-extending lateral flanges, and the side guard-plates secured to the sides of the front end of the platform, and having inturned flanges at their lower front ends, resting upon the flanges of the brackets or runners, and serving to support the front edges of the shoe or scraper, substantially as and for the purpose herein set forth.

328,805.



2. In a snow-plow, the combination of a platform consisting of an inclined plane mounted upon suitable trucks, a metallic shoe or scraper at the front end of the same, and the side guard-plates, having free or unattached front ends, provided with flanges extending inwardly under the projecting front end of the shoe or scraper, the front ends of said side guards being capable of being slightly expanded by the pressure of snow and ice as it ascends the inclined plane forming the platform, substantially as and for the purpose herein shown and specified.

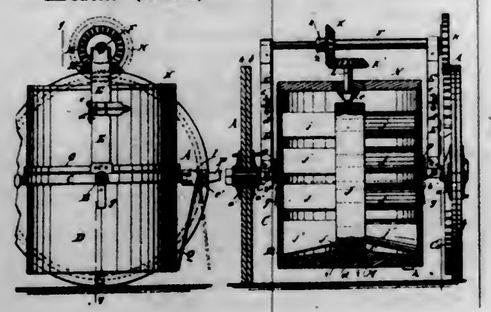
328,806. FELLY BORING AND MORTISING MACHINE COMBINED. Peter Peterson, Fremont, Nebr. Filed July 3, 1885. (No model.)



Claim.—1. In a felly boring and mortising machine, the combination, with an upright standard, forwardly-projecting arms, a bit or chisel holder journaled in said arms, and gearing for rotating said holder, of a vertically-movable bar connected with the standard, a clamping device secured to said bar, and the foot-lever fulcrumed on the axle of a pair of rollers and secured to the movable bar in vertical adjustment.

2. In a felly boring and mortising machine, the combination, with an upright standard, forwardly-projecting arms, a bit or chisel holder, gearing for rotating said holder, and a guide embracing the bit or chisel and adjustably secured in the end of a guide-arm by set-screws, of a vertically-sliding bar mounted on the standard, a clamping device secured to said bar, and a foot-lever for operating said sliding bar, substantially as set forth.

328,807. CHURN. Ezra O. Phillips, Coopersville, Mich. Filed Mar 24, 1883. (No model.)



Claim.—1. The combination, with a frame having short axles projecting therefrom and wheels on the same, of a churn-body supported in said frame between the wheels, and a dasher projecting through the top of the body and geared with one of the drive-wheels, substantially as herein shown and described.

2. The combination, with a circular frame having short axles projecting therefrom and wheels on the same, of a churn-body removably supported in said frame between the wheels, a dasher stepped in the bottom of the body and projecting through its top, and intermediate mechanism for rotating the dasher from one of the said wheels, substantially as herein shown and described.

3. In a churn, the combination, with the ring C, the axles B, attached to said ring, and wheels A on the axles, of the churn-body D, supported in the ring, the dasher-shaft J L, the shaft F, the rack G, and the gear-wheels H K K', substantially as herein shown and described.

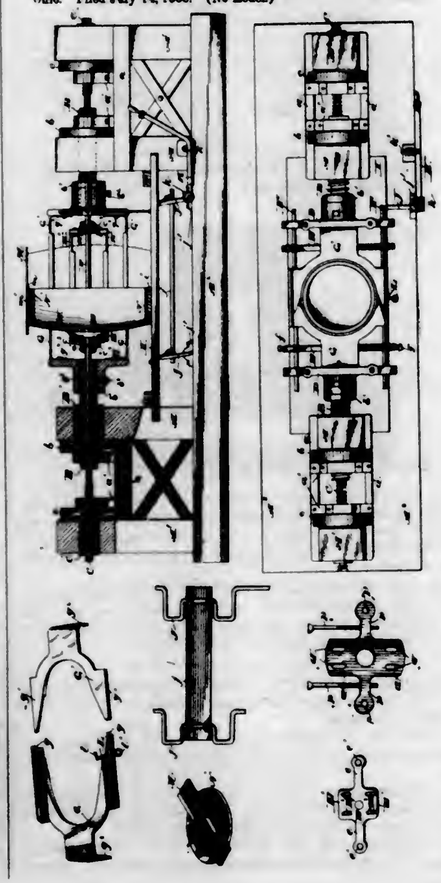
4. In a churn, the combination, with the ring C, the axles B, wheels A, and the tongue P, attached to the ring C, of the churn-body D, provided with the ring O, the dasher-shaft J L, the shaft F, the rack G, and the gear-wheels H K K', substantially as herein shown and described.

5. In a churn, the combination, with the churn-body D, suspended in a ring, C, supported on wheels A A', of the jointed uprights E E', the shaft F, journaled in the uprights above the churn-body, the gear-wheels H K K', and the rack G, substantially as herein shown and described.

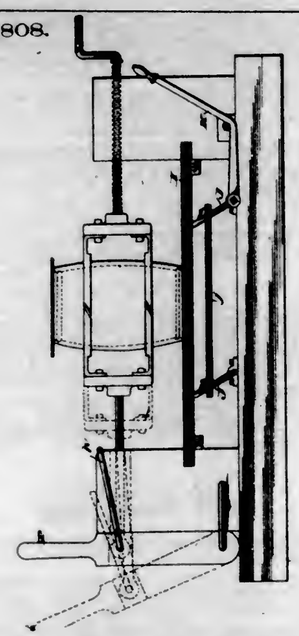
6. The ring C, having the cut-away places A' A', in combination with the body D, having the plates *g g*, substantially as and for the purposes set forth.

7. In a churn, the combination, with the churn-body D, having the annular groove i in its bottom, of the dasher J, stepped on the bottom of the body and provided with the bearing-plate *f*, having the flange i', fitting in the groove in the bottom of the body, substantially as herein shown and described.

328,808. BARREL-MAKING MACHINE. Lemon M. Reed, Cleveland, Ohio. Filed July 14, 1885. (No model.)



328,808.



Claim.—1. In a barrel-making machine, the combination, with a reversible clamping device for bending and compressing the staves to form a barrel, of an adjustable table for receiving the staves as the latter are set in the clamp, a blocking connected with the table to support the barrel-head in position to enter the crozing, substantially as set forth.

2. In a barrel-making machine, a clamping device consisting of clamps for engaging the barrel-staves near the chine, and clamps for engaging the barrel-staves near the bilge, and suitable means for operating the clamping device, the said clamps being arranged with a common axial line and made reversible to bring either end of the barrel uppermost, substantially as set forth.

3. In a barrel-making machine, the combination, with clamps for engaging the barrel-staves near the chines, said clamps being mounted on screw-tubes, a clamping device for engaging the barrel-staves near the bilge, and mounted on screw-rods that pass through the said screw-tube, the said screw-tube and screw-rods having a common axial line, and the clamping devices being made reversible to bring either end of the barrel uppermost, substantially as set forth.

4. In a barrel-making machine, the combination of shafts or rods, clamping-jaws secured to said shafts or rods and adapted to grasp the barrel on opposite sides and be rotated in their bearings, and devices for moving said rods and the clamping-jaws, substantially as set forth.

5. In a barrel-making machine, the combination, with a clamping device made reversible on its axis, of a vertically-movable table and suitable mechanism for operating the same, and adjustable abutments or stops for limiting the elevation of the table to the required height to hold the same in position in the clamps, substantially as set forth.

6. In a barrel-making machine, the combination, with the semi-cylindrical clamping-jaws and devices for moving the clamping-jaws toward and away from each other, of segmental rings adapted to fit against the curved bearing-faces of the jaws for the purpose of reducing the jaws to the desired internal dimensions, substantially as set forth.

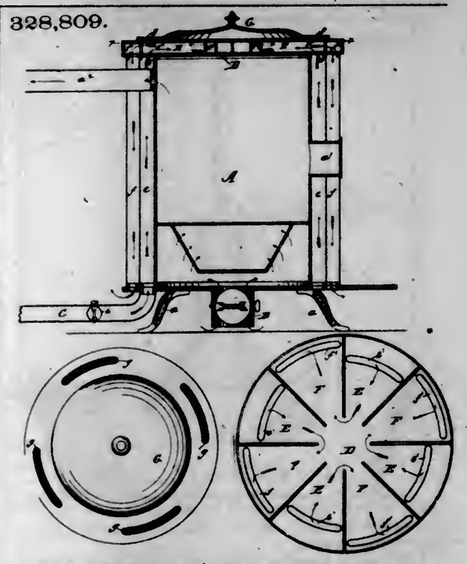
7. In a barrel-making machine, the combination, with clamping-jaws adapted to grasp the barrel on opposite sides, and devices for moving said jaws toward and away from each other, of a board provided with projecting points and adapted to engage the head, said board being adapted to rest on one end of the barrel or staves and hold the head in position for engaging the crozing, substantially as set forth.

328,809. HOT-AIR STOVE. Reed A. Rew, Pomeroy, Wash. Filed Dec. 29, 1884. (No model.)

Claim.—1. The combination of the cold-air-supply pipe C, distributing-chamber D, divided into communicating sections by radial partitions, and the stove A, provided with inner and outer casings forming the spaces *e* and *f*, substantially as and for the purpose herein described.

2. The combination of the cold-air-supply pipe C, distributing-chamber D, having communicating sections or compartments E F, provided with openings *e' f'*, and the cover-plate G, provided with the openings

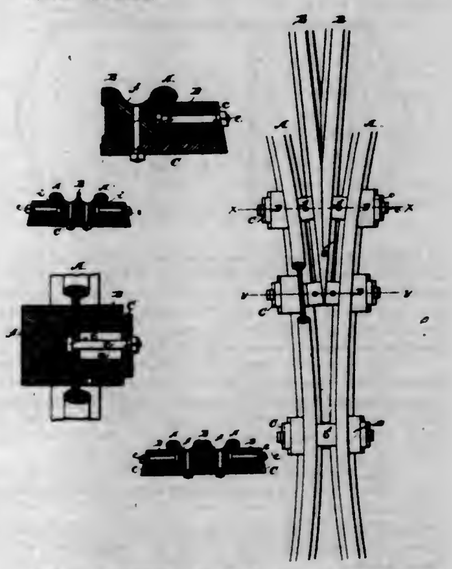
328,809.



g, registering with the openings *e'*, together with the inner and outer casings, substantially as described and shown, and for the purpose set forth.

3. The combination of the cold-air-supply pipe C, distributing-chamber D, cover-plate G, the pipe B, for removing foul air, and the stove A, provided with inner and outer casings forming the spaces *e* and *f*, substantially as described and shown, and for the purpose set forth.

328,810. RAILWAY-FROG. John T. Richardson, Harrisburg, assignor of one-half to Alexander H. Rea, Mechanicsburg, Pa. Filed Aug. 21, 1885. (No model.)

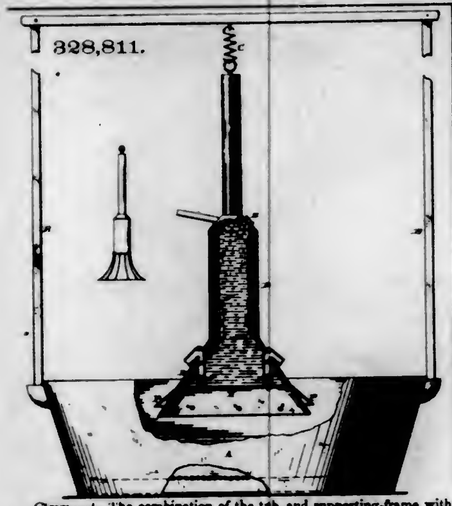


Claim.—1. The combination, with the rails and distance-pieces of a frog, of the clamping-plates C, and wedges D, and the laterally-piercing binding-bolts *e*, substantially as described.

2. The combination of the laterally-pierced flanges of the clamping-plates C, plano-convex and longitudinally-slotted wedges D, the perforated wing-rails A, and the laterally-rabbeted block-fillings or distance-pieces *f*, as and for the purpose set forth.

328,811. FOUNDER WASHING-MACHINE. Clark F. Rhodt, Bradford, Pa. Filed Oct. 16, 1884. (No model.)

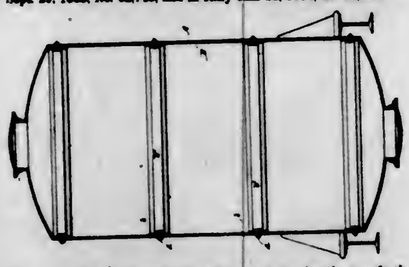
328,811.



Claim.—1. The combination of the tub and supporting-frame with the spring and the pounder, provided with a receptacle for water or a counter-weight, as shown.

2. In a pounder washing-machine, the combination of the tub, the supporting-frame, the spring, and the pounder, provided with a water-space and the valved air-tubes, substantially as set forth.

328,812. APPARATUS FOR THE MANUFACTURE OF CELLULOSE OR PAPER-PULP FROM WOOD FIBER. Egbert Baron Ritter and Carl Kellner, Podgora, near Goerz, Austria-Hungary, assignors to William A. Russell, trustee, Lawrence, Mass. Filed Feb. 4, 1885. (No model.) Patented in Austria-Hungary Aug. 2, 1883, No. 20,034 and No. 31,730; in France Sept. 27, 1883, No. 157,754; in Belgium Sept. 29, 1883, No. 62,746, and in Italy Jan. 22, 1884, No. 16,316.



Claim.—1. The combination, substantially as herein set forth, of the hard-metal outer shell of the digester, with its inner soft-metal lining, united by means of an interposed soft-metal alloy fusible at a temperature lower than that of either the shell or lining, thus securing their perfect union while permitting the lining to move freely on the shell when the digester is heated to its normal working temperature.

2. The combination, substantially as herein set forth, of the hard-metal outer shell of the digester, its inner soft-metal lining, the parallel annular hard-metal clamping-bands between which and the outer shell the lining is interposed, the fastening-bolts passing through the shell, the lining, and the clamping-bands, and the continuous soft-metal lining-strip covering each clamping-band and its fastening-bolts.

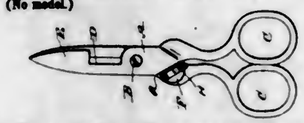
3. The combination, substantially as herein set forth, of the outer shell, its inner lining, the parallel annular hard-metal clamping-bands, the fastening-bolts having conical heads countersunk into the bands and passing through the shell, the lining, and the clamping-bands, and the continuous soft-metal lining-strip covering each clamping-band and its fastening-bolts.

4. The combination, substantially as herein set forth, of the hard-metal outer shell of the digester, its inner soft-metal lining, the clamping-bands, the fastening-bolts, and the channel through the bolts communicating with the space between the shell and its lining, to permit the escape of confined air or gas, and to indicate leaks in the lining of the digester.

5. The improved paper-pulp digester herein described, consisting of the combination, substantially as herein set forth, of an outer hard-metal shell, a soft-metal lining, a soft-metal alloy fusible at a temperature lower than that of the shell or lining, uniting the shell and lining, internal annular clamping-bands, and fastening-bolts passing through the bands, the lining, and the shell, to unite the parts securely while permitting the lining to expand freely under the normal working temperature of the digester without injurious effects.

6. The valve-cone and its seat, both constructed, as set forth, of silver, or coated with silver, to resist corrosion.

328,813. BUTTON-HOLE CUTTER. Carl A. Röder, Solingen, Germany, assignor to Herman Baker & Co., New York, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—The combination, with two crossed and pivoted button-hole scissor-blades having diagonal edges *a*, of the polygonal button F, provided with the handle-wing H, and pivoted eccentrically on one scissor-blade adjacent to the diagonal edge *a* of the other blade, substantially as and for the purpose set forth.

328,814. DOOR-SILL. Allison M. Roscoe, Du Bois, Pa. Filed Aug. 13, 1885. (No model.)



Claim.—1. A door-sill made in sections, substantially as and for the purposes set forth.

2. A door-sill made in sections, two of which are rigidly secured to the floor or main sill of the door-frame, substantially as specified.

3. A sectional door-sill composed of two end sections rigidly secured to the floor or main sill, and a third section placed between and removably held by the rigid sections, substantially as and for the purposes specified.

4. In a sectional door-sill, the combination of the two rigid sections suitably secured, a third section removably held between the rigid sections, and a spring-latch, button, or other similar device secured in one of the rigid sections and engaging the removable sections, substantially as set forth.

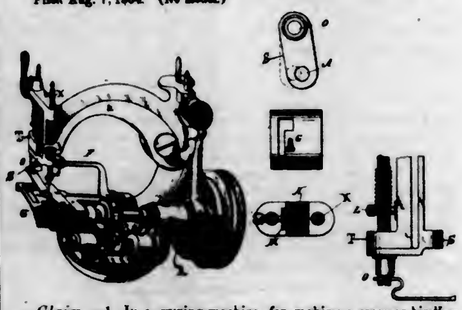
328,815. RAILROAD-FROG. John N. Sargent, Aurora, Ind. Filed Apr. 24, 1884. (No model.)



Claim.—1. In a railroad-frog, the combination, with the elevated rail located as described, of the double wedge-shaped support therefor, the whole being arranged on a suitable bed-plate, substantially as described.

2. In a railroad-frog, the combination, with the main track, of the elevated rail *b*, double wedge-shaped supports therefor, and a lifting-bar, *c*, constructed with an angle in its length, substantially as described.

328,816. SEWING-MACHINE. Otto L. Schastey, New York, N. Y. Filed Aug. 7, 1884. (No model.)



Claim.—1. In a sewing-machine for making a cross or binding stitch, the needle-bar X and mechanism for vertically reciprocating the same, needle-bar guide-plate S, with mechanism for laterally reciprocating the same simultaneously with the vertical movements of the said needle-bar, hollow shaft H, looper B, looper-shaft J, and the sliding collar D, with mechanism for simultaneously revolving and laterally reciprocating the same, whereby similar motions are imparted to said looper, the said parts being constructed, arranged, and operating substantially as set forth.

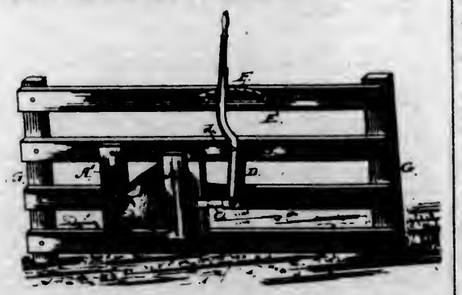
2. The combination of the sliding collar D, operated by a cam-motion, with the angular rod F, and needle-bar A, whereby a laterally-reciprocating motion is given to the latter simultaneously with its vertical movements, as and for the purpose set forth.

3. In combination with the looper-shank J and looper B, the hollow shaft H, and sliding collar D, arranged thereon and connected with said looper-shank, with mechanism to operate said collar in the manner described, whereby a laterally-reciprocating motion and a revolving motion are simultaneously given to said looper, substantially as set forth.

4. The combination of the looper-shank J, hollow and slotted shaft H, and sliding collar D, said parts being connected together by means of the stud K, with cam mechanism C, whereby the said collar is revolved by said shaft and simultaneously reciprocated laterally within the slot of said shaft, imparting like motion to said looper-shank, substantially as described.

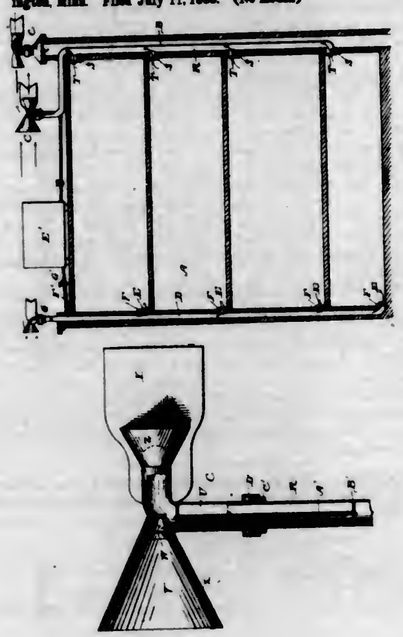
5. The combination, in a sewing-machine for making a cross or binding stitch, of a laterally-reciprocating needle-bar, a looper and looper-shaft having a revolving motion simultaneously with its laterally-reciprocating motion, and the throat-plate G, slotted as described, in order to permit the descent of the needle to the looper at different points in the said plate successively, as and for the purpose set forth.

328,817. DEVICE FOR CATCHING HOGS. Frank M. Scrafford, Seneca, Kans. Filed July 21, 1885. (No model.)

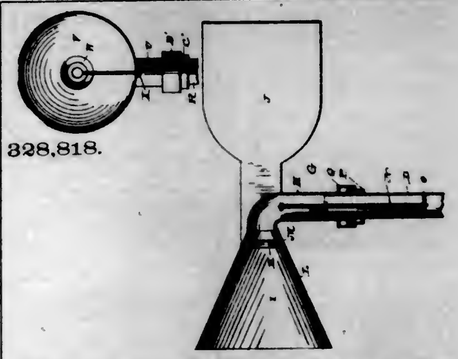


Claim.—The improved hog-catcher herein described, consisting, essentially, of the vertical sliding bar A, horizontal bars B B', pitman C, and bifurcated lever-arm D, in combination with the horizontal bar E, rack-bar F, vertical bar A', and posts G, all constructed to operate substantially as and for the purpose set forth.

328,818. SYSTEM OF VENTILATION. Thomas J. Simpson, Worthington, Minn. Filed July 11, 1885. (No model.)



328,818.



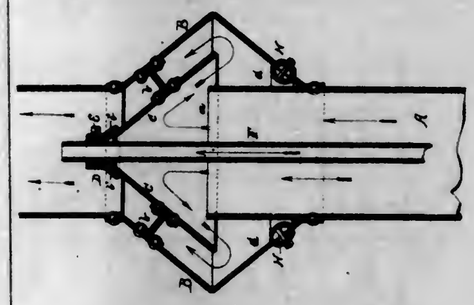
Claim.—1. The combination, with the main entrance-pipe, of the herein-described air receiving and forcing device, consisting, essentially, of an elbow-pipe swiveled or pivoted at the upper end of the said entrance-pipe and provided with a funnel-shaped mouth, the bottom of which has a longitudinal groove or gutter, said funnel being provided at or near its inner end with one or more interiorly-located annular flanges and a vane for keeping the said funnel-shaped mouth to the wind, substantially as herein described, for the purpose shown and specified.

2. In a system of ventilation, the combination, with the vital-air pipe connected with the apartments of the structure to which it is applied by a system of branch pipes having cocks or valves opening into the said apartments, of a flushing-tank located in an upper story or upon the roof of the structure to which the invention is applied and a pipe having a stop-cock or valve connecting the said flushing-tank with the main entrance-pipe, substantially as and for the purpose herein shown and specified.

3. In a system of ventilation, the combination, with the main foul-air-exit-pipe, of the herein-described ventilator, the same consisting of an elbow-pipe pivoted or fitted to revolve upon the upper end of said foul-air pipe and having a mouth or funnel, the bottom of which is provided with a longitudinal groove or gutter, and the inner end of which is provided with one or more interior annular flanges, a vane attached to the horizontal arm of the elbow-pipe, and a flaring or funnel-shaped flange at the exit end of the said elbow-pipe, all arranged and operating substantially as and for the purpose herein set forth.

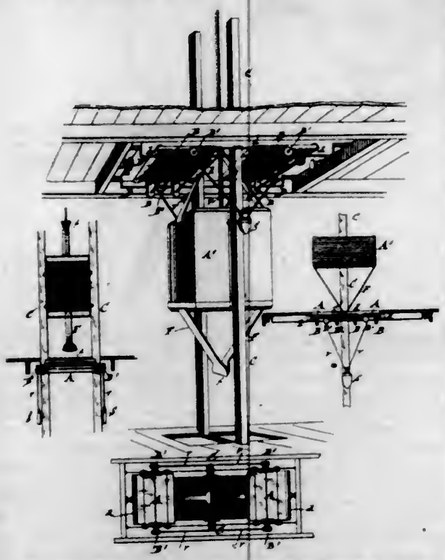
4. In a system of ventilation, the combination, with a dwelling-house or other suitable structure having a chimney or smoke-flue, of the foul-air-exit pipe located for the greater portion of its length within the said chimney or smoke-flue, but leaving it near the upper end and terminating in a vertical extension, a ventilator or exhausting device attached to the upper end of the said foul-air pipe, a ventilator attached to the upper end of the chimney, and a system of branch pipes connecting the said foul-air pipe with the apartments to be ventilated and provided with cocks or valves opening into the said apartments, substantially as and for the purpose herein set forth.

328,819. SPARK-ARRESTER. Peter E. Smith, Scotland Neck, N. C., assignor of one-half to Israel F. Brown, New London, Conn. Filed Aug. 6, 1885. (No model.)



Claim.—The combination, with the stack A A', having chamber B and internal inverted funnel-shaped hood C, of the exhaust-pipe F, extending through said hood and secured in place by the collar D, as and for the purpose set forth.

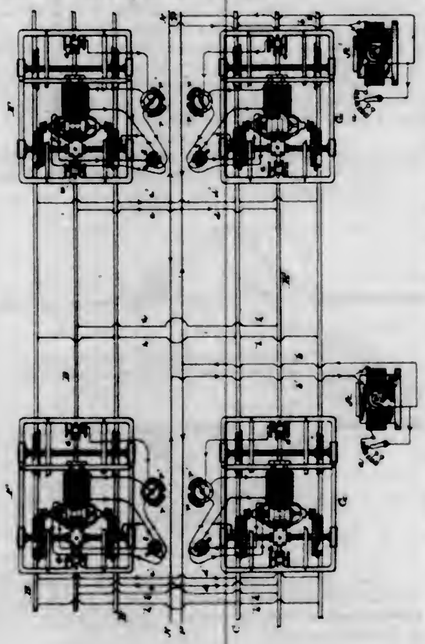
328,820. SAFETY-GATE FOR ELEVATORS. Charles Sorber, St. Louis, Mo. Filed Aug. 19, 1885. (No model.)



Claim.—1. The combination of a vertically-reciprocating elevator-car having inclined top and bottom braces with sharp meeting-edges, laterally reciprocating and guided hatches having transverse rubber-covered end rollers and side guide-rollers, horizontal rails for guiding said hatches, and balance-weights and chains applied to the hatches, substantially as set forth.

2. The combination of a vertically-reciprocating elevator-car having inclined top and bottom braces with sharp meeting-edges, laterally reciprocating and guided hatches having transverse end rollers and side guide-rollers, weighted chains applied to the hatches, and spring-buffers for cushioning the hatches, substantially as set forth.

328,821. ELECTRIC-RAILWAY SYSTEM. Frank J. Sprague, New York, N. Y. Filed Aug. 27, 1885. (No model.)



Claim.—1. In an electric-railway system having two tracks, the combination of two sets of working-conductors, one set for each track, a common source of supply for said sets, and two or more motors connected with each set in parallel circuit with each other, substantially as set forth.

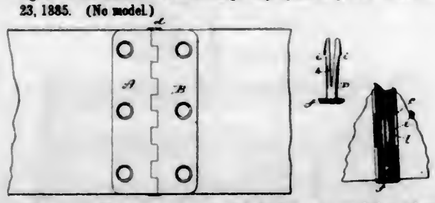
2. In an electric-railway system having two tracks, the combination of a source of supply with two sets of working-conductors, one set for each track, connected with said source and having motors connected with them, the motors of one set being in parallel circuit with those of the other set, substantially as set forth.

3. In an electric-railway system, the combination of a source of supply, two sets of working-conductors, and cross-connections at intervals between the sets joining conductors of like polarity, substantially as set forth.

4. In an electric-railway system, the combination of two sets of working-conductors, and a main circuit extending along the line and connected at intervals with both said sets of working-conductors, substantially as set forth.

5. In an electric-railway system, the combination of two sets of working-conductors, a main circuit extending along the line, and branch conductors connecting the main conductors at intervals with both sets of working-conductors, substantially as set forth.

328,822. BELT-FASTENER. James Sprague, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Mar. 23, 1885. (No model.)



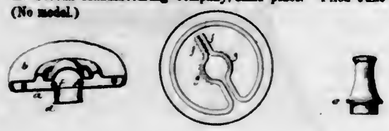
Claim.—1. The herein-described belt-fastener, consisting of two parts, each adapted to be attached to the respective ends of a belt to be joined, their adjacent edges constructed with corresponding projections and recesses, said projections having an opening transversely through them, combined with a pintle having a head at one end, and extending through the projections on the two parts, the unheaded end of said pintle made tubular, and a headed pin, D, the body split and the parts spread to form springs, and adapted to enter the tubular end of the pintle, and the spring parts to engage the interior of the pintle, substantially as described.

2. The herein-described belt-fastener, consisting of two parts, each adapted to be attached to the respective ends of a belt to be joined, their adjacent edges constructed with corresponding projections and recesses, said projections having an opening transversely through them, combined with a pintle having a head at one end, and extending through the projections on the two parts, the unheaded end of said pintle made tubular, and a headed spring-pin, D, adapted to enter the tubular end of the pintle, the pin and recess in the pintle constructed with corresponding shoulders, substantially as described.

3. A belt-fastener consisting of two parts, A B, each constructed from sheet metal bent into U shape, the two legs of the U of each part adapted to embrace the respective ends of the belt, the bend of the two parts constructed with recesses *a*, to form intermediate projections, *b*, and so that the projections on one part will set into the recesses of the opposite part, combined with a headed pintle, C, extending through the projections of the two parts, the said pintle constructed tubular at its unheaded end, and a headed pin, D, the body of which is split and the parts spread to form springs adapted to enter the tubular end of the pintle, and the spring parts to engage the interior of the pintle, substantially as described.

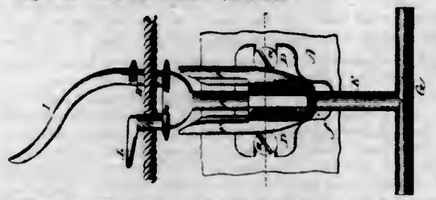
4. A belt-fastener consisting of two parts, A B, each constructed from sheet metal bent into U shape, the two legs of the U of each part adapted to embrace the respective ends of the belt, the bend of the two parts constructed with recesses *a*, to form intermediate projections, *b*, and so that the projections on one part will set into the recesses of the opposite part, combined with a headed pintle, C, extending through the projections of the two parts, the said pintle constructed tubular at its unheaded end, and the headed spring-pin D, the body of the pin and the interior of the pintle constructed with corresponding shoulders, substantially as described.

328,823. BUTTON. James Spruce, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed June 3, 1885. (No model.)



Claim.—In a button composed of a front and back closed together, the back having a central opening to permit its being set upon the fastening-stud, combined with a spring made from wire bent into ring-shape, its two ends turned diametrically across the plane of the ring to form grasping-fingers, the said fingers bent outwardly from each other at the center of the button, and concentric with the hole in the back of the button, the fingers extending beyond the bend and brought together in the central line of the button within the circle of the spring, but the ends of the fingers left free within the ring, and the said outward bends in the fingers adapted to grasp the stud beneath its head by the elasticity of the spring, the said spring arranged within the button, substantially as described.

328,824. CLOTHES-LINE FASTENER. Arthur H. Squires, Union City, Conn. Filed Feb. 16, 1885. (No model.)



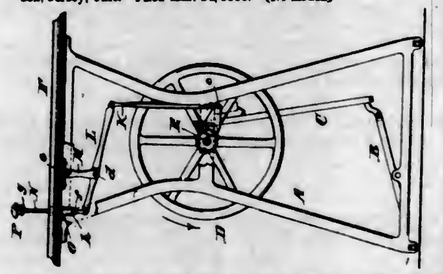
Claim.—1. The combination of the bracket constructed with two fingers, F F, the spindle E, supported in the bracket between said fingers, the said spindle provided at one end with a handle, and constructed at the other end to form prongs H H, the said spindle free for longitudinal movement to take said prongs from or bring them between said fingers, substantially as described.

2. The combination of the bracket constructed in two parts, B C, and to interlock the one with the other, each part constructed with a finger, F, the said two fingers parallel to each other, the spindle E, supported in the bracket between said fingers, said spindle provided at one end with a handle and constructed at the other end to form prongs H H, the said spindle free for longitudinal movement to take said prongs from or bring them between said fingers, substantially as described.

3. The combination of the bracket constructed with two fingers, F F, the spindle E, supported in the bracket between said fingers, the said spindle provided at one end with a handle, and constructed at the other end to form prongs H H, the said spindle free for longitudinal movement to take said prongs from or bring them between said fingers, one of said prongs constructed with a horn, I, turned to overhang the other prong, substantially as described.

4. The combination of the bracket constructed with two fingers, F F, the spindle E, supported in the bracket between said fingers, the said spindle provided at one end with a handle and constructed at the other end to form prongs H H, the said spindle free for longitudinal movement to take said prongs from or bring them between said fingers, one of the prongs constructed with a horn, L, extending in a direction away from the opposite prong, substantially as described.

328,825. DEVICE FOR TREADLE MECHANISMS. Orrin B. Thompson, Jersey, Ohio. Filed Mar. 24, 1885. (No model.)



Claim.—1. In a treadle-machine, a pressure device within reach of the forearm or elbow of the operator, a clutch adapted to engage with the revolving parts of the machine, and connecting mechanism between said pressure device and clutch, whereby the machine can be started in the proper direction by the pressure of the forearm or elbow.

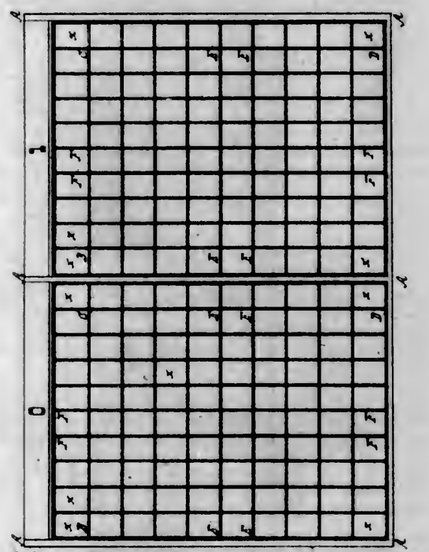
2. In a treadle-machine, a pressure device within reach of the forearm or elbow of the operator, a combined clutch and brake adapted to engage with the revolving parts of the machine, and connecting mechanism whereby the machine is started in the right direction by the operation of said pressure device, and whereby should it be attempted to start it in the wrong direction the brake is brought automatically into action.

3. In a treadle-machine, combined clutch and brake mechanism consisting of a revolving hub, G, the carrier H, and a clamping-piece, I, pivoted thereto, in combination with a pressure device within reach of the forearm or elbow of the operator, and connecting mechanism whereby said clutch can be operated positively by the pressure device to start the machine in the right direction, and whereby should it be attempted to start the machine in the wrong direction the clutch will act automatically as a brake to stop the machine.

4. In a treadle-machine, the combination and arrangement of the rod N, projecting up through the table within reach of the forearm or elbow of the operator, the lever L, swinging bracket-arm M, connecting-rod K, and clutch mechanism adapted to engage with the fly-wheel of the machine, substantially as described.

5. The combination and arrangement of the disk G, carrier H, clamping-piece I, recessed therein, arms J, rigidly secured to said clamping-piece, pin *i*, secured to the carrier and confined in segmental slots in the arms J, and actuating-rod K, substantially as and for the purpose described.

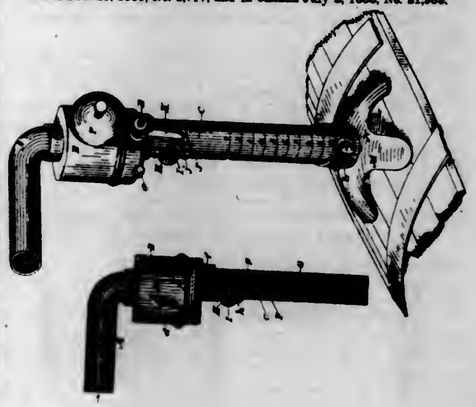
328,826. DISTRIBUTION AND DELIVERY BOX FOR POST-OFFICES. Berkman Van Gaasbeek, Mount Vernon, N. Y. Filed Jan. 2, 1883. (No model.)



Claim.—1. The combination, with a frame or ward, such as that designated by the characters 0, 1, 2, &c., containing ten rows of boxes, *x*, having ten boxes, *x*, in each row, of separating moldings or lines B C, C D, E E, and F F, or equivalent devices, for mapping out or dividing the boxes *x*, substantially as and for the purposes above described.

2. The combination, with a frame or ward, 0, 1, 2, &c., of the moldings or lines B C and C D, substantially as above described.

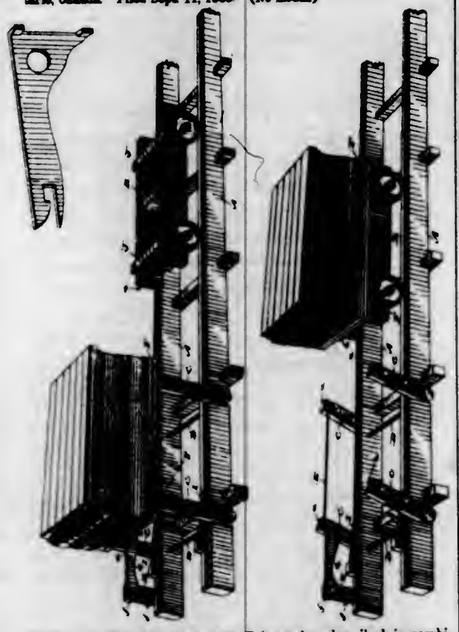
328,827. AUTOMATIC BARREL-FILLER. Charles Ward, Toronto, Ontario, Canada. Filed June 20, 1885. (No model.) Patented in England Feb. 23, 1885, No. 2,717, and in Canada July 3, 1885, No. 21,965.



Claim.—1. In a barrel-filler, the combination, with the graduated tube C, chamber B, and smaller pipe, F, arranged within said pipe C, of a float, G, within the pipe F, and connected to a lever attached to the spindle I, and the valve D, carried by the spindle E, provided with an arm adapted to engage an arm on the spindle I, all arranged and operating substantially as and for the purpose specified.

2. In a barrel-filling device, the combination of a float, a lever connecting said float with the spindle I, the valve D, carried by the spindle E, arm K, carried by said spindle and engaging with an arm in the spindle I, the bell P, and the hammer O, attached to the spindle I and arranged to strike said bell as the valve D closes, substantially as and for the purposes specified.

328,828. LUMBER-TRANSPORTER. William Way, Wilfrid, Ontario, Canada. Filed Sept. 11, 1885. (No model.)



Claim.—1. The pivoted uprights C, located as described, in combination with the bolsters F, arranged substantially as and for the purpose specified.

2. The uprights C, connected together in pairs by the rods E, which form pivot-supports for them, and the rod D, for connecting the pairs of uprights together, in combination with the bolsters F, arranged substantially as and for the purpose specified.

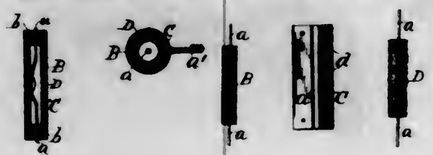
3. The pivoted arm G, having a notched slot, *b*, formed in its end, in combination with a pin, *d*, fixed to one of the uprights C, substantially as and for the purpose specified.

4. The arm G, pivoted to the post H and having lips *f* formed on its end to lap over the said post, and a notched slot, *b*, in its other end, in combination with the pin *d*, substantially as and for the purpose specified.

5. The pivoted arm G, having a notched slot, *b*, to fit over the pin *d*, in combination with a pin, *a*, arranged to act on the arm G, substantially as and for the purpose specified.

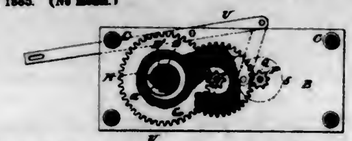
6. The pivoted upright C, connected together and located as described, and the pivoted arm G, having a notched slot, *b*, in its end to engage with the pin *d*, in combination with the track B, having a pin, *a*, to engage with the arm G, and the incline I, formed on the track A, substantially as and for the purpose specified.

328,829. ELECTRIC BELT. Paul Wiedhahn, Chicago, Ill., assignor to William D. Clark, same place. Filed Jan 14, 1885. (No model.)



Claim.—In an electric belt, the combination, with the element B, of the connecting-wires *a*, the insulating-buttons *b*, interposed felt cylinder D, and the element C, provided with the flaps *a'*, all combined and arranged as and for the purpose set forth.

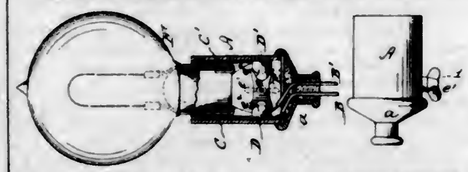
328,830. MOTOR. George C. Wheeler, Evergreen, Pa. Filed July 13, 1885. (No model.)



Claim.—1. The combination of the barrel-wheel G, spring H, inclosed in said barrel and connected to it at one end and at the other end to shaft D, on which the barrel loosely fits, shaft Q, and train of gearing connecting the same with barrel-wheel G, and beam U, connecting shaft Q by a pitman, substantially as described.

2. The combination of sides B, shaft D, journaled therein, barrel-wheel G, fitting loosely on shaft D, spring H, contained within said barrel-wheel and connected to it and to said shaft Q, journaled in sides B, and having brake-wheel R, secured to one end thereof, walking-beam U, connected by a pitman to the other end of said shaft, a train of gearing connecting shaft Q and barrel-wheel G, and a brake-shoe, V, connected at one end to side B, and having adjusting-screw W, connected to its other end to regulate its pressure on the brake-wheel, substantially as described.

328,831. INCANDESCENT ELECTRIC-LAMP SWITCH. Craig R. Arnold, Philadelphia, Pa. Filed Dec. 26, 1884. (No model.)



Claim.—1. A switch for electric incandescent lamps, comprising a holder or casing, spring-clamps C C', rotating block E, and contact-points D D', each of which is composed of two jaws, *d*, and one of which is insulated and separate from said clamps, substantially as shown and described.

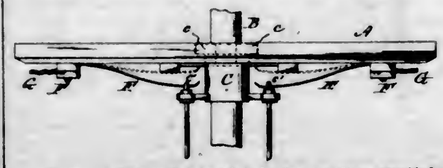
2. A switch for electric lamps, composed of two tubular clamps insulated from one another, a rotary switch-block, and contact-points, one of which is insulated from said clamps and the other connected to one of the clamps, substantially as shown and described.

3. A switch for electric incandescent lamps, composed of two split or doubled jaw contact-points, a switch-block rotating between the jaws of the contact-points, and metal clamps, one of which is insulated from the contact-points and the other connected to one of said contacts, substantially as shown and described.

4. In a switch for electric incandescent lamps, the contact-points D D', composed of split or double jaws which incline toward each other at their outer ends, substantially as shown and described.

5. The combination of case or holder A, clamps C C', contact-points D D', composed of jaws *d*, rotary switch E, and wires B B', substantially as shown and described.

328,832. AUTOMATIC SWITCH-BOARD FOR ELECTRIC LAMPS. Craig R. Arnold, Philadelphia, Pa. Filed May 13, 1885. (No model.)

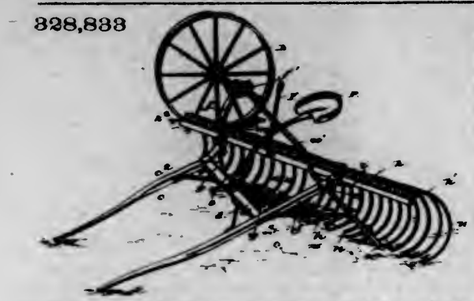


Claim.—1. The switch-board A, having opening *a* provided with recesses *a'*, the fixed bow D, and metal or spring fingers E, in contact with said bow, substantially as shown and described.

2. An electric lamp having collar C, with lugs *c* and hooks *c'*, in combination with a switch-board, A, having opening *a*, side recesses, *a'*, in said opening, bow D, and contact-fingers E E, substantially as shown and described.

328,833. HORSE HAY-RAKE. Saxton J. Arnold, Hubbardston, Mass. Filed Jan. 22, 1885. (No model.)

328,833

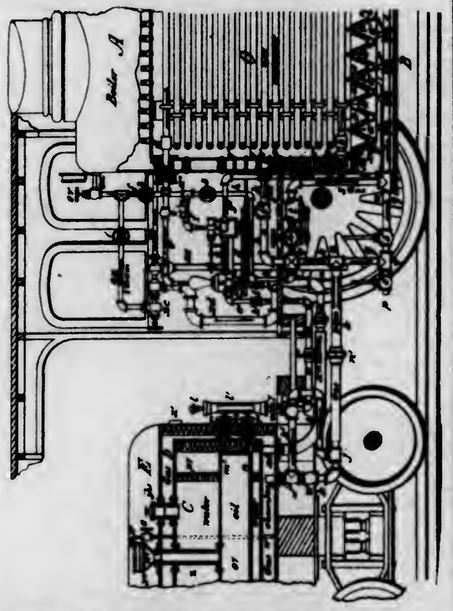


Claim.—1. In a horse hay-rake, the combination of the axle, the thills attached thereto, and the rake attached to the thills at an angle to the axle, substantially as described.

2. In a horse hay-rake, a rake-head secured at an angle to the axle and in an inclined position to the ground, substantially as described.

3. The combination of the axle, the thills attached to said axle, the rake pivoted to the thills at an angle to the axle, and a lever for tilting the rake for the purpose set forth, substantially as described.

328,834. APPARATUS FOR GENERATING GAS. Wm. F. Browne, Jersey City, N. J. Filed Aug. 14, 1883. Renewed June 23, 1885. (No model.)



Claim.—1. In an apparatus for generating gas for heating and illuminating purposes, the combination of the generating-coils, the supply-pipes connected therewith, and a coil for cooling the gas and heating water located in a steam-boiler.

2. The gas-generating coils and the gas-cooling coils, located in the boiler, in combination with the outlet-pipe and equalizing-valve *t*, and a furnace in which the gas is burned.

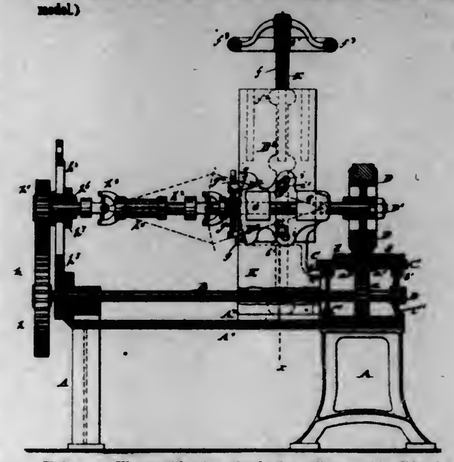
3. The gas-generating coils, the cooling-coils, and equalizing-valve *t*, in combination with the controlling-valve 5 and a furnace in which the gas is burned.

4. The gas-generator, in combination with the eduction-pipe connecting it with the holder, and provided with check-valve *z'*, and the by-pass pipe K, having valve 7, and a pipe connecting with the burner.

5. The oil-tank, in combination with the surrounding gas-holder and the blow-off pipe *w*, having a controlling-valve extending from near the bottom of the gas-holder to the filling-pipe of the oil-tank, as and for the purpose described.

6. The combination of the gas-generator, located in the fire-box of the locomotive, the holder located on the tender, the supply-pipe provided with an equalizing valve or valves extending the length of the car or train of cars to be lighted, and the service-pipe and burners.

328,835. MACHINE FOR ORNAMENTING PICTURE-FRAME MOLDINGS. Carl Hoffman, New York, N. Y. Filed Feb. 28, 1885. (No model.)



Claim.—1. The combination of a horizontally-movable slide-plate, supporting the molding, with a rotating molding-roller having an engraved rim, substantially as set forth.

2. The combination of a horizontally-movable slide-plate supporting the molding to be ornamented, a molding-roller, mechanism for transmitting rotary motion to said roller, and mechanism by which the molding-roller is adjusted to the face of the molding, substantially as set forth.

3. The combination of a horizontally-movable slide-plate supporting the molding to be ornamented, a molding-roller having an engraved rim, mechanism for transmitting rotary motion to the roller, a pivoted plate having bearings for the shaft of the molding-roller, a vertically-adjustable slide-plate, and a vertical standard for supporting said slide-plate, substantially as set forth.

4. The combination of a supporting-frame having vertical guide-pieces, a horizontally-movable slide-plate supporting the molding to be ornamented, a molding-roller having an enlarged rim, mechanism for transmitting rotary motion to the roller, a pivoted plate having bearings for the shaft of the molding-roller, a worm-gear for adjusting the bearing-plate, a vertical slide-plate supporting the pivoted plate, a screw-spindle for adjusting the slide-plate, and a vertical standard for guiding the slide-plate, substantially as described.

5. The combination of a molding-roller, a shaft attached to the molding-roller, a pivoted plate having bearings for the roller-shaft, a worm-gear for adjusting said plate, a vertically-adjustable slide-plate supporting the bearing-plate, transmitting gear-wheels, a main shaft, an auxiliary shaft having a splined extension-sleeve, and universal joints connecting the extension-sleeve and auxiliary shaft, respectively, with the shaft of one of the upper gear-wheels and the roller-shaft, whereby rotary motion is transmitted to the roller-shaft, whether the same is supported in horizontal or inclined position, substantially as specified.

328,836. WIND-WHEEL. Isaac P. Cadman, Beloit, Wis., assignor of one-half to George L. Cadman, same place. Filed Sept. 8, 1884. (No model.)

Claim.—1. In combination with a geared windmill, an equalizing device consisting of a lever, *b*, pivoted to the rotary shell or turn-table of the mill and provided at its inner end with a bearing for the vertical shaft of the mill, and a bar or shoe pivoted to the outer end of said lever, and arranged, substantially as shown and described, to press against the fixed cap or head of the tower or support.

2. In combination with cap B, rotary head or shell C, provided with vane G and wheel H, vertical shaft I, connected by gearing with the wind-shaft of wheel H, and lever *b*, pivoted to the head C, and provided at its inner end with a bearing for the shaft I, and at the outer end with bar or shoe *d*, having rollers *c*, to press against the cap B, substantially as shown and described.

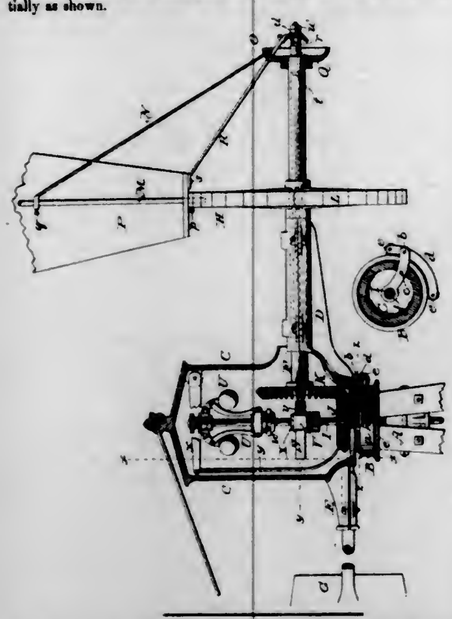
3. In combination with a wind-wheel having pivoted blades, governing mechanism consisting of a governor carried by the driven shaft, a rod provided with a yoke straddling a hub or boss on the driven shaft, and with a head connected by rods with the pivoted blades, and a slide connected with the governor and arranged to press against the yoke, substantially as shown and described, whereby one or the other arm of the yoke is pressed against the hub or boss whenever the speed of the wheel rises or falls above or below a predetermined point, thereby causing the yoke and its rod to be moved in or out and to turn the blades to take more or less wind, as required.

4. In combination with a wind-wheel having pivoted blades, a governor receiving motion from the wind-wheel, a shaft driven by said wheel and provided with a hub or boss, a movable head connected with the pivoted blades, a yoke connected with said movable head and extending on opposite sides of the hub or boss of the driven shaft, and mechanism, substantially as described and shown, connected with and actuated by the governor, for throwing the yoke into contact with one or the other side of the hub or boss, according to the rate of speed of the wheel.

5. The combination, substantially as herein described and shown, of wheel H, having pivoted blades P and tubular shaft F, rod Q, provided with head *r*, and yoke S, rods R, connecting the blades with head *r*, shaft I, provided with hub or boss T, and connected by gearing J K with shaft F, governor U, and slide V, connected with and adapted to be moved by the governor, said parts being constructed and arranged substantially as shown and described.

6. In combination with a wind-wheel having pivoted blades, a shaft driven by said wheel and provided with a hub or boss, a yoke straddling the hub or boss and connected with pivoted blades, a governor, a slide connected with the governor and adapted to press the yoke against the hub or boss, and a support for the slide, consisting of a bracket at one end and a swinging rod at the other end, substantially as shown and described.

7. In a geared windmill, an equalizer-lever, *b*, pivoted to the rotary head or turn-table of the mill, and provided at its inner end with a box or bearing for the vertical shaft of the mill, and having its outer end abutted against a part of the mill independent of the turn-table, substantially as shown.



328,837. ARTIFICIAL TOOTH-CROWN AND ITS ATTACHMENTS. Calvin S. Case, Jackson, Mich. Filed Sept. 11, 1884. (No model.)



Claim.—1. The combination, with an artificial tooth-crown and a tube or rod passing through it, of the strengthening pin or wire F, curved around the said tube or rod, and having enlarged heads *f*, substantially as set forth.

2. An artificial tooth-crown having a tube situated centrally therein and projecting beyond the face of the crown, which lies next the natural root, and a stop or shoulder within the tube, substantially as and for the purposes set forth.

3. The, herein-described artificial crown A, provided with tube B and smaller tube C, projecting from the end of tube B, and forming a shoulder, *c*, therein, substantially as and for the purposes set forth.

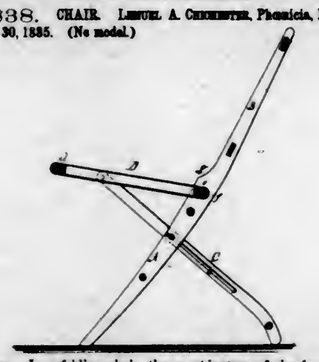
4. An artificial tooth-crown having a tube situated centrally therein and a stop or shoulder within the tube, substantially as set forth.

5. The combination, with the root of a natural tooth, of an artificial crown, a screw-threaded post inserted into the natural root and projecting through the crown when the latter is in place, and a nut which engages with said screw-threaded post and unites the crown with the root, substantially as set forth.

6. In combination with the root of a natural tooth having the cavity *r*, the screw-threaded post E, the crown having a tube extending centrally through it and adapted to enter the cavity *r*, the screw-threaded coupler D, and a stop with which the coupler engages, substantially as set forth.

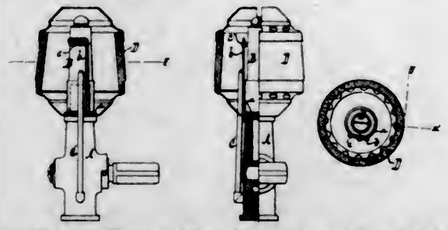
7. The combination, with the root of a natural tooth provided with the cavity *r*, of the artificial crown, the tube B, passing through the crown, the smaller tube C, seated in tube B and forming a shoulder therein, as at *c*, and adapted to enter cavity *r*, the screw-threaded post or stem E, seated in the root and adapted to extend through tubes B and C when the parts are in position, and the coupling-tube D, adapted to enter tube B and engage with the post, to unite the parts together, substantially as described.

328,838. CHAIR. Lemuel A. Chichester, Phœnicia, N. Y. Filed July 30, 1885. (No model.)



Claim.—In a folding chair, the combination of the front legs having pivots *b* and the rear legs, C, having slots *a*, engaged by said pivots, and a seat, D, with its rear half of less width than its front half and secured directly to the front and rear legs by fixed pivots, and said front legs continuous with and of greater width than the back post, B, to permit the seat to be folded up parallel with said back post, substantially as set forth.

328,839. GAS-BURNER. Wesley B. Cole, Brooklyn, N. Y. Filed Jan. 8, 1885. (No model.)



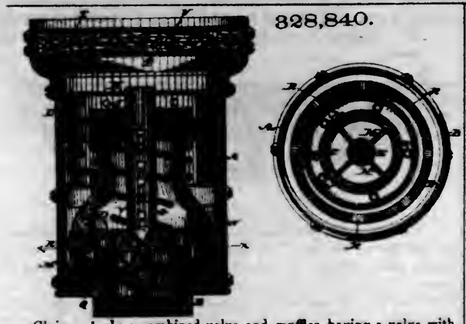
Claim.—1. The combination, with a gas-burner, of a gas-jet pipe communicating with the gasway and terminating at its upper end below the burner-tip, a washer movably supported below the burner, a standard rising from the washer, and a platina coil supported by the upper end of the standard between the gas-jet pipe and the burner-tip, substantially as described.

2. The combination of the detachable gas-burner, a gas-jet pipe communicating with the gasway, a washer movably supported below the burner and removable when the latter is detached, a standard rising from the washer beside the burner, and a platina coil supported by the upper end of the standard between the gas-jet pipe and the burner, substantially as described.

3. The combination of the gas-cock A, having its shell provided at its upper end with a shoulder, a gas-burner, a gas-jet pipe, C, communicating with the gasway below the gas-cock, a washer, *a*, removably held between the burner and the shoulder on the shell, a standard, *b*, rising from and removable with the washer, a platina coil, *c*, supported by the standard between the upper end of the jet-pipe and the burner-tip, and the illuminating-chamber D, supported at its lower end by the shell of the gas-cock, substantially as and for the purpose set forth.

328,840. POP-VALVE AND MUFFLER. Charles H. De Witt, Westerly, Pa. Filed June 11, 1885. (No model.)

328,840.



Claim.—1. In a combined valve and muffler having a valve with a perforated rim, a valve-seat, a casing surrounding the valve provided with ports, and an exterior shell, substantially as described.

2. A valve having a circumferential rim, a valve-seat, and a yielding bushing, said rim encircling said bushing, substantially as and for the purpose set forth.

3. The valve D, having a rim, F, with ports S, the valve-seat C, the bushing M, and spring N, in combination with the inclosing casing P, having ports R, substantially as and for the purpose set forth.

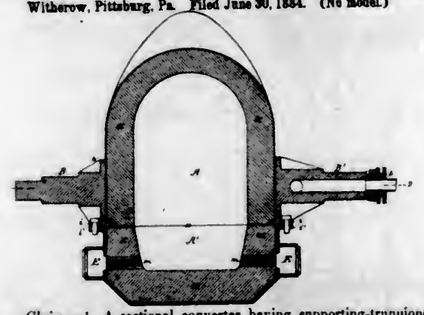
4. A valve provided with a depending stem and an upwardly-extending stem, in combination with the guide H for the depending stem, and the cap J and wall K for the upper stem, said cap having a support, substantially as and for the purpose set forth.

5. A valve having a seat, C, and an inclosing casing, P, having a seat, W, in combination with a perforated tubular stem, G, connected with the valve and located within said casing, substantially as and for the purpose set forth.

6. A pop-valve in combination with a surrounding casing having steam-ports, an exterior shell, and a cylinder with a perforated side located between said casing and shell for directing the steam of the pop-valve against the side of said shell, substantially as described.

7. A valve and valve-seat in combination with a surrounding casing having a valve-seat and steam-ports, a cap connected with the casing, a stem attached to the top of the valve passing through said cap, and a spring within the casing bearing against the valve, substantially as and for the purpose set forth.

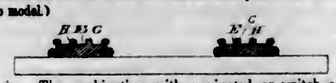
328,841. CONVERTER. John C. Dods, Philadelphia, assignor, by direct and mesne assignments, to Henry W. Oliver, Jr., and James P. Witherow, Pittsburg, Pa. Filed June 30, 1884. (No model.)



Claim.—1. A sectional converter having supporting-trunnions on its upper section, on which the converter may be tipped, and a removable lower section for containing the charge, provided with tuyeres extending through its sides at intervals entirely around the converter, substantially as and for the purposes described.

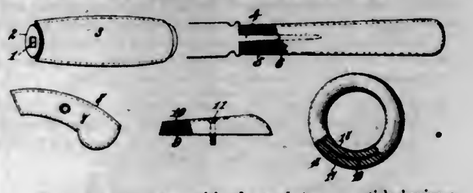
2. A sectional converter having supporting-trunnions on its upper section, on which the converter may be tipped, and a removable lower section for containing the charge, provided with a circular blast-chamber and side tuyeres, substantially as and for the purposes described.

328,842. RAILWAY-SWITCH. Herbert L. Ford, Aiken, S. C., assignor of one-half to William Turnbull, same place. Filed June 22, 1885. (No model.)



Claim.—The combination, with a pivoted or switch section of a main track, of a shoe having an integral cast raised middle portion and two switch-points, one of which is cast in one piece with the middle portion of the shoe and the other attached thereto, supported thereby, and movable thereon, the shoe carrying a curved section of the main track and a curved switch-guard, substantially as set forth.

328,843. CELLONITE OR NITRO-CELLULOSE ARTICLE. Joseph R. Franck, Newark, N. J. Filed July 22, 1885. (No model.)



Claim.—1. As a new article of manufacture, an article having a base or body of a non-shrinkable material not affected by ordinary thermal or hygrometric changes and a coating of nitro-cellulose compound, substantially as described.

2. The combination of a core, base, or body made of a shellac or equivalent composition and a coating of a plastic material, such as a nitro-cellulose compound, substantially as described.

3. The combination of a core, base, or body made of a shellac or equivalent composition, a stiffening or fastening strip, rod, or wire, and a coating of a plastic material, such as a nitro-cellulose compound, substantially as described.

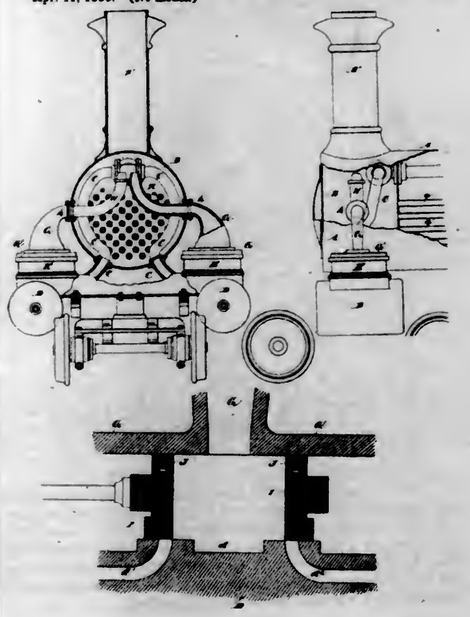
328,844. BOOT OR SHOE PROTECTOR. Thomas Gribble and Robert Abraham, Calumet, Mich.; said Abraham assignor to said Gribble. Filed Jan. 20, 1885. (No model.)



Claim.—1. The malleable metal upper and sole protector A, consisting of a bottom plate having studs on its bottom surface and formed with side and toe flanges, *b*, interrupted at intervals by the cuts *c*, whereby, when applied to a boot or shoe, the said flanges may be bent inward to inclose the sole edge and the lower portion of the upper, substantially as set forth.

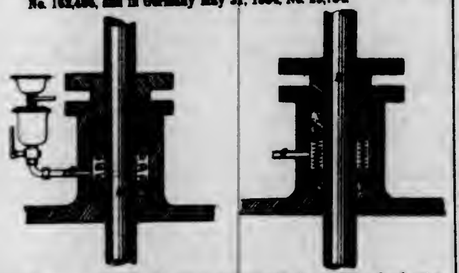
2. In a miner's boot, the combination, with the metallic studded upper and sole protector A, having upwardly-projecting flanges *b*, of the metallic shank-protector C, having upwardly-projecting side flanges in pivoted or articulated connection at their forward ends with the rear ends of the flanges *b*, as shown at *g*, substantially as specified.

328,845. LOCOMOTIVE. George H. Griggs, Providence, R. I. Filed Apr. 11, 1885. (No model.)



Claim.—In a locomotive, the steam-cylinder D, with its ports d' d^2, slide-valve I, chambered through, as shown, packing J, and steam-chest cover G', with its connected pipe G, formed in one, in combination with each other and with the continuation H of the exhaust-passage, and with the live-steam pipe C, smoke-box B, and boiler A a, all arranged as specified, so as to not only deliver the exhaust directly, but also to allow a clear space in the base of the smoke-box, as herein specified.

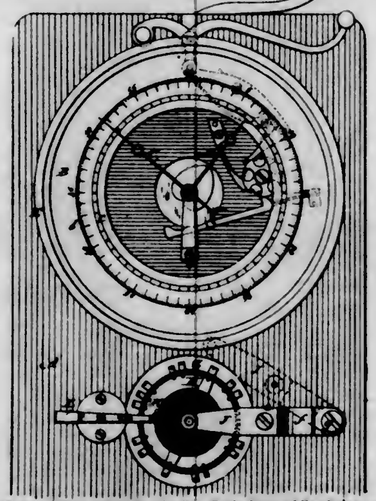
328,846. PACKING FOR STUFFING-BOXES. Edward S. Hough, Brooklyn, County of Kent, England. Filed July 22, 1885. (No model.) Patented in England Jan. 29, 1884, No. 2,345; in France May 30, 1884, No. 162,466, and in Germany May 31, 1884, No. 29,734.



Claim.—1. In a stuffing-box, the combination, with a gland entering one end of said box and having a concave surface, of a washer, W', surrounding the piston-rod and having a concave surface opposite the gland, a second washer, W^2, having a concave surface opposite the concave end of the stuffing-box, packing P' P^2, interposed between each pair of concave surfaces, and a helical spring placed between the washers for pressing the same constantly upon the packing W' W^2, substantially as described.

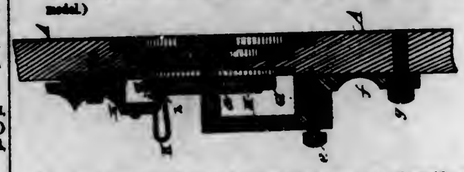
2. In a stuffing-box, the combination, with a gland entering one end of said box and having a concave surface, of a washer, W', surrounding the piston-rod and having a concave surface opposite the gland, a second washer, W^2, having a concave surface opposite the concave end of the stuffing-box, packing P' P^2, interposed between each pair of concave surfaces, and a helical spring placed between the washers for pressing the same constantly upon the packing W' W^2, with an oil-cup supported by the stuffing-box and communicating with the interior of the box through the chamber occupied by the spring, as set forth.

328,847. METHOD OF TESTING BALANCE-WHEELS OF WATCHES. Ferdinand F. Ide, Springfield, Ill. Filed May 12, 1883. (No model.)



Claim.—The method herein described of assembling balance-wheels and hair-springs of time-pieces so as to have a standard rate of vibration, which consists in first ascertaining the rate best of untested balance-wheels by substituting them in place of a standard balance-wheel, when driven by a standard train and actuated by a standard hair-spring, and then selecting a suitable hair-spring to give said balance-wheel a standard rate of vibration, substantially as specified.

328,848. DEVICE FOR TESTING BALANCE-WHEELS OF WATCHES. Ferdinand F. Ide, Springfield, Ill. Filed Sept. 11, 1885. (No model.)



Claim.—1. The combination, with the balance arranged outside or at one side of the dial of the time-piece or indicating-vibrator, of the bridge which supports the top pivot of the balance-staff, constructed and attached to admit of its being raised and of being swung laterally or back to provide for the removal and replacement of the balance, substantially as specified.

2. The combination, with the balance and its spring arranged outside of or at one side diametrically of the dial of the time-piece or indicating-vibrator, of the spring-clamp, and notched or stepped support for holding the outer end of the balance-spring, and to permit of its ready removal and replacement when required, essentially as specified.

3. The instrument for testing and grading balance-wheels, consisting of a stop-watch having a standard hair-spring and movable bridge adapted to be displaced to permit of the introduction and removal of balance-wheels, and their connection with and disconnection from said hair-spring, substantially as specified.

328,849. PORTABLE FENCE. William E. Jones, Asheville, N. C. Filed Feb. 24, 1885. (No model.)



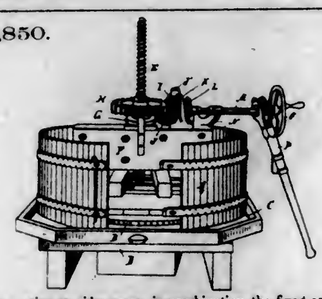
Claim.—A fence-panel consisting of strands of wire, the ends of which are twisted to form eyes, and stay-wires twisted around the twists caused by forming the eyes, for the purpose of strengthening the latter and preventing displacement, in combination with the posts, screw-eyes, and retaining-pins, substantially as and for the purpose set forth.

328,850. WINE AND CIDER PRESS. Otto Knoeri, Sandusky, Ohio. Filed May 13, 1885. (No model.)

Claim.—1. In a wine or cider press having its follower operated by a fixed screw, a master-wheel engaging thereon, a crank-shaft and intermediate gear operated by the crank-shaft, the ratchet-lever P, secured to said crank-shaft and operating in a vertical plane beside the press, all arranged substantially as described.

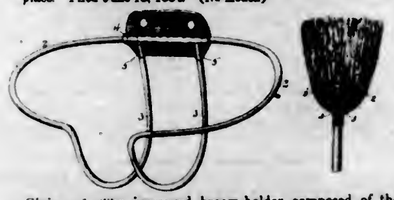
2. In a wine or cider press, in combination, the fixed screw E, the master-wheel H, having a spur-gear, the pinion-shaft J', the spur-gear pinion I, the bevel gear-wheel J, the crank-shaft M, the bevel gear-pinion L, and the reversible ratchet-lever P, and crank-wheel O, arranged to work in a vertical plane on the side of the press, all arranged as described.

328,850.



3. In a wine or cider press, in combination, the fixed screw E, the master-wheel H, having a spur-gear, the pinion-shaft J', the pinion I, the bevel gear-wheels J L, the crank-shaft M, the bearings K N, cast in one piece, and the reversible ratchet-lever P and crank-wheel O, arranged to work in a vertical plane on the side of the press, all substantially as described.

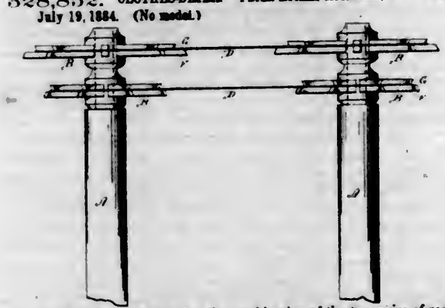
328,851. BROOM-HOLDER. Frank W. Lane, Waltham, Mass., assignor of two-thirds to Herbert W. Whitney and George A. Smythe, same place. Filed June 13, 1884. (No model.)



Claim.—1. The improved broom-holder composed of the single wire bent to form the substantially-horizontal embracing-loop 2 and the substantially-vertical parallel loops 3 3, extending across and under the space inclosed by the loop 2, the loops 3 3 being arranged to receive only the handle of the broom and support, without receiving between them, the brush portion of the broom, as set forth.

2. The improved broom-holder composed of the single wire bent to form the embracing-loop 2 and the vertical loops 3 3, and the socketed plate a, connecting the ends of the loops 3 3 to the central portion of the loop 2 and adapted to receive attaching-screws, as set forth.

328,852. CLOTHES-DRIER. Peter Locker, Rochester, N. Y. Filed July 19, 1884. (No model.)



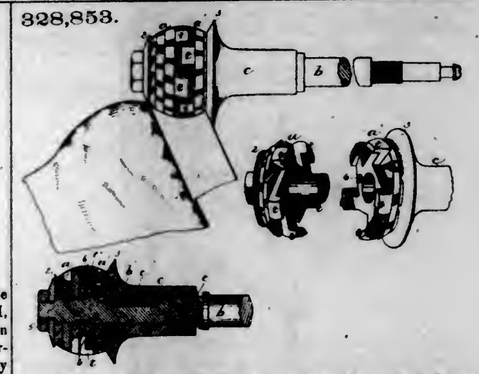
Claim.—In a clothes-drier, the combination of the two pairs of reels of unequal size, the standards upon which they are placed, and the lines or wires which are passed around each pair of reels, whereby the line or wire upon one pair of reels is thrown out of line with the one on the other pair of reels, substantially as specified.

328,853. ROTARY HEEL-TRIMMER. James L. Lord, Lynn, Mass., assignor of one-fourth to Patrick P. Sherry and Henry Robinson, both of same place. Filed May 6, 1885. (No model.)

Claim.—1. The combination, in a rotary heel-trimmer, of two cutting-sections overlapping each other and presenting a convex trimming-surface curved to adapt it for the contour of the side of a heel, one of said sections having a yielding movement, whereby the convex trimming-surface is automatically lengthened to act upon the extended rear portion of the heel, substantially as set forth.

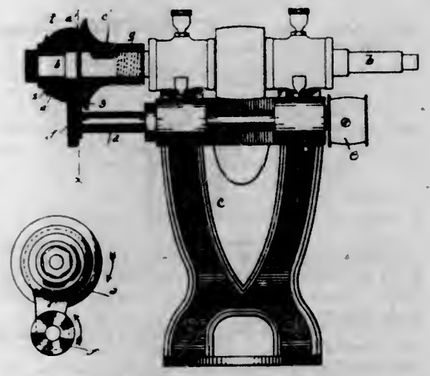
2. A rotary heel-trimmer composed of two cutting-sections overlapping each other, one formed to trim the heel-seat and the upper portion of the heel, and having a guard, 2, while the other is formed to trim the lower portion of the heel, and has a top-lift rest, 3, one of said sections having yielding movement, whereby the trimmer is enabled to adjust itself to the varying width of the heel, as set forth.

328,853.



3. The combination of an arbor, a cutting-section affixed thereto and provided with a guard formed to enter the groove between the counter and rand or heel-seat of a boot or shoe, and with knives formed to trim the heel-seat and the adjacent portion of the surface of the heel, a cutting-section rotating with but adapted to slide on the arbor toward and from the other section, and formed to trim the lower portion of the heel, a rest for the face of the top lift attached to the sliding section, and a spring, whereby said sliding section is enabled to conform to the variations in the width of the heel, said sections being formed to overlap each other, as set forth.

328,854. HEEL-TRIMMING MACHINE. James L. Lord and Nelson Ross, Lynn, Mass. Filed June 18, 1885. (No model.)



Claim.—1. The combination, with a positively-rotated tool formed to act on a boot or shoe heel, of a heel supporting and feeding roll, and means, substantially as described, for positively rotating said feeding-roll in a direction opposite to the direction of rotation of the tool, as set forth.

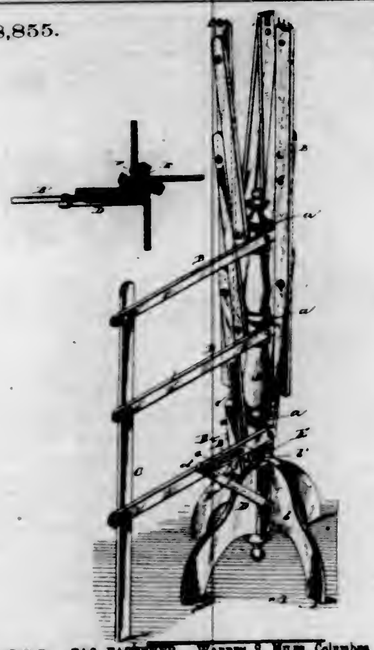
2. The combination, with the trimming-cutter composed of the non-adjustable section a and the yielding or adjustable section a', of the plate i, supported by the yielding section, and a guide, 3, engaged with said plate, whereby the plate is prevented from rotating and is permitted to slide with the yielding section, as set forth.

328,855. CLOTHES-DRIER. Frederick G. Manley, Syracuse, N. Y., assignor of one-half to Wilmot G. Manley, same place. Filed Mar. 12, 1885. (No model.)

Claim.—1. In a clothes-drier of the class shown and described, a vertical support having pivoted arms attached thereto and connected to support C, and the movable brace D, having a spring-catch adapted to engage with the block secured to the standard, so as to retain the arms and support in a vertical position, substantially as described, and for the purpose set forth.

2. In a clothes-drier, a vertical standard provided with rectangular portions, to which are pivoted arms B B B', said arms being secured at their outer ends to a support, C, the lower arm being slotted for the attachment of a brace, D, said brace being provided near its central portion with a spring-catch having a roller, f, which is adapted to engage with an inclined block, E, having a curved rear end, said block being secured to the standard, the parts being organized substantially as shown, and for the purpose set forth.

328,855.



328,856. TAG-FASTENER. Warren S. Hill, Columbus, Ohio. Filed Sept. 7, 1885. (No model.)



Claim.—1. A tag-fastener formed of a strip of metal having suitable lateral ears at or near the lower portion thereof, adapted to fold and form a loop above its attaching-point, and the remaining part of the said fastener gradually tapering off to a point, substantially as described, and for the purposes specified.

2. A tag-fastener formed of a suitable strip of flexible metal, lateral ears extending from the sides of the said strip near the lower end, a short strip of metal below the ears terminating in a blunt point, and serving to secure the fastener to the tag, and a main body portion above the ears terminating in a point which is adapted to be passed through the article to which a tag is to be applied, and then bent down to form a loop and inclosed by the said lateral ears, which are folded over the same, substantially as described.

3. A tag-fastener consisting of the blank A, having lateral ears *a a*, integral with the lower half thereof, a short strip of metal extending below the said ears, having a blunt point, a^3, and a longer strip above the ears terminating in a point, *a'*, all arranged and adapted to serve for the purpose herein specified.

328,857. MIXED PAINT. Charles Miller, Ingersoll, Ontario, Canada. Filed June 15, 1885. (Specimens.)

Claim.—1. A paint composed of the following ingredients: gloss, gum, or resinous oil, linseed-oil, silicate of soda, Prince's metallic, Rossie red, Venetian red, potash, copperas, sal-soda, alum, and white lime, substantially as described.

2. A paint composed of the following ingredients: gloss, gum, or resinous oil, linseed-oil, silicate of soda, Prince's metallic, Rossie red, Venetian red, solution of potash, and solution of white lime, substantially as described.

328,858. DRIVEN-WELL POINT. William C. Nye, Bradford, Pa. Filed June 2, 1885. (No model.)

Claim.—1. The combination, with a driven-well point having suitable openings for the admission of water, of a rod, spring-closing devices, and a nut placed upon the rod for operating the devices, substantially as shown.

328,858.



2. The combination of the point A with a removable rod, F, the devices G, for closing the openings D in the point, and the conical nut, which is both internally and externally screw-threaded, substantially as set forth.

328,859. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. C. E. Piper, Moline, Ill. Filed May 6, 1884. (No model.)



Claim.—1. In a commutator in the form of a cylinder, the metallic surfaces of which are insulated transversely, the combination of the metal cylinder having the enlarged portion forming one of the surfaces and provided with the insulated portions therein, the insulating-sleeve mounted on the smaller end of said cylinder, and a metallic sleeve mounted on said insulating-sleeve and having the sections of insulating material inserted therein, substantially as described.

2. In a commutator, the combination of the insulating core or sleeve, the metal cylinder mounted on said sleeve and having an enlarged end and the insulated strips therein, a sleeve of insulating material fitting over the smaller end of said cylinder, and having a ring or collar extending out flush with the surface of the larger end of the metal cylinder, and a smaller metallic sleeve or cylinder fitted over said insulating-cylinder and provided with the insulating-strips, substantially as described.

3. The combination, with the metal cylinder having the enlarged end, of the sleeve of insulating material fitting over the smaller end of the metal cylinder and having the collar extending out flush with the larger end of the same, the smaller metal cylinder fitting over the insulating-sleeve, and the pieces of insulating material inserted in the surface of the metal cylinders, substantially as described.

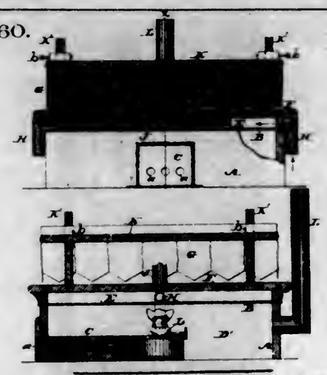
328,860. BROODER. George W. Pressey, Hammonton, N. J. Filed Oct. 1, 1884. (No model.)

Claim.—1. The floor F of the brooder, provided with vertical posts K' K', in combination with the top K, provided with side curtains, and having an opening at each end to fit over said posts, and pins *b b*, for securing said top in the desired position, substantially as described.

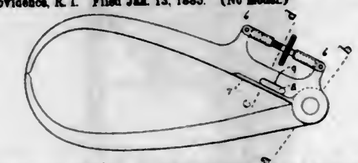
2. A brooder having an artificial mother provided with a vertically-adjustable roof, side curtains, and a non-conducting floor, a hot-air chamber having inlet and outlet pipes, the outlet-pipe leading into the said artificial mother, and a heating-chamber, said parts being combined substantially as set forth.

3. A brooder composed of the stand A, having the metallic roof B and outlet-pipe L, and provided with the drawer C, the hot-air chamber E, having pipes H and J, the artificial mother G, having the adjustable roof K, and posts K' and side curtains, all of said parts being arranged and combined substantially as and for the purpose set forth.

328,860.



328,861. CALIPERS FOR MEASURING. William G. Richards, Providence, R. I. Filed Jan. 13, 1885. (No model.)



Claim.—1. Calipers one limb of which in part of its length is composed of two chords, and so constructed that one chord can be extended or contracted, thereby deflecting the portion of limb beyond the chords, as and for the purposes set forth.

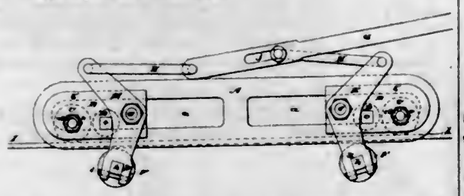
2. Calipers composed of two limbs, one of which has two projecting arms with a connection between, which forms one of the two chords, said chord being adjustable as to length, and the limb being reduced between the arms where it forms the opposite chord, as and for the purposes set forth.

3. In calipers composed of two limbs, the ribs 7 7, projecting from the body of one limb at right angles to the arms which connect the chords, in combination with the projecting arms and the opposite adjustable chord.

4. In calipers composed of two limbs, a differential screw forming one of the two chords which compose the base of one limb having a thread of a given pitch at one end, a thread of greater or less pitch at opposite end, and working in threaded bearings attached to the arms, said arms connecting the ends of the chords, as and for the purposes set forth.

5. In calipers composed of two pivoted limbs, the swinging threaded bearings 6 6, in combination with a differential adjusting-screw, a limb having ribs 7 7, the projecting arms, and reduced between said arms where it forms one of the two chords which compose the base of limb, so as to spring enough to permit the opposite chord to be extended or contracted.

328,862. BELT-STRETCHER. Don C. B. Robinson, Madison, Ind. Filed May 18, 1885. (No model.)



Claim.—1. A belt clamp and stretcher comprising a frame with slots to receive two sliding lever-clamps, the said sliding clamps, and an operating-lever connected with the levers of the clamps by links, substantially as described, whereby one movement of the operating-lever serves first to set both the clamps and then to draw them together, as set forth.

2. A belt clamp and stretcher comprising the slotted side frames, A A', the four slides B B', the bars C D, connecting said slides, substantially as set forth, the angle-levers E E, fulcrumed on the slides, the removable bars F F, mounted in the ends of said levers, the operating-lever G, and the links connecting said lever with the angle-levers, substantially as set forth.

3. In a belt-stretcher, the combination, with the slotted side frames, A A', of the slides B B', each constructed of a body-plate, *b*, and two side plates, *b' b'*, and the two bars C and D, each provided with square tenons fitted into similarly-shaped holes in the slides, and the nuts on the ends of bar C, substantially as and for the purposes set forth.

328,863. BICYCLE-SADDLE. Calvin T. Starbuck, Wilmington, Ohio. Filed Aug. 14, 1885. (No model.)

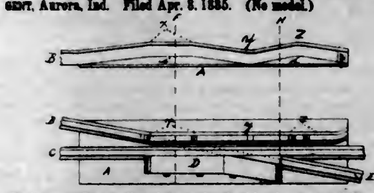


Claim.—1. In a bicycle, the combination, with the saddle and its carriage, held by a chain, of a drum actuated by a spring controlled by a ratchet and catch-tooth, substantially as described.

2. In a bicycle, the combination, with the saddle and its carriage, of a chain, *a*, drum E, ratchet *e*, spring *h*, and arm *k*, having catch-tooth *l*, substantially as described.

3. In a bicycle, the combination, with the saddle and its carriage, of a chain, *a*, drum E, ratchet *e*, spring *h*, and an arm, *k*, having tooth *l* and knob *m*, and projecting through a standard, *n*, and cam-faced locking-block *p*, substantially as described.

328,864. RAILROAD-FROG. Nathan Sherman and John N. Sargent, Aurora, Ind. Filed Apr. 8, 1885. (No model.)



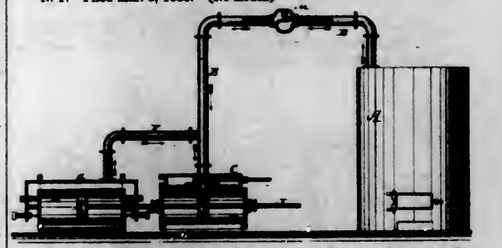
Claim.—1. In a railroad-frog, the double elevated rail B, as herein described, as and for the purposes set forth.

2. In a railroad-frog, the combination of the continuous rail and double elevated rail B, as and for the purposes herein set forth.

3. The combination, in a railroad-frog, of the double elevated rail B, the continuous rail C, and the lifting-bar D, as and for the purposes set forth.

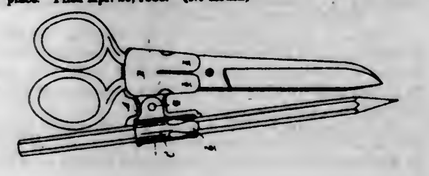
4. In a railroad-frog, the double elevated rail, in combination with the double-wedged-shaped supports *i i*, and main rail C, as and for the purposes set forth.

328,865. AERO-STEAM ENGINE. Edward M. Strange, Brooklyn, N. Y. Filed Mar. 5, 1885. (No model.)



Claim.—The combination of the steam-boiler A and its pipe B, steam-chest C, steam-cylinder D, air-cylinder H, and air-pipe F, with the check-valve *a*, placed in the pipe B between the air-pipe F and the boiler A, substantially as herein shown and described.

328,866. COMBINED PENCIL AND SCISSORS HOLDER. Ralph Thompson, Detroit, Mich., assignor of one-half to Hugo A. Winemann, same place. Filed Apr. 29, 1885. (No model.)



328,866.



Claim.—1. A combined pencil and scissors holder formed from a single blank of metal bent to bring both ends into contact with the body, and both ends secured to the body by a single rivet, as set forth.

2. A combined pencil and scissors holder comprising a single piece of metal cut to provide spring-fingers bent to throw the ends past each other and both ends secured to the body by a single rivet, as set forth.

3. The pencil and scissors holder described, consisting of the single piece of metal cut to form a carved blank with spring-fingers *b*, and bent and secured by a single rivet to form tapering receptacles, as set forth.

328,867. TRANSLUCENT PICTURE-CANDY. JOHN J. VAN LEEUWEN, Minneapolis, Minn. Filed Apr. 9, 1885. (Specimens.)

Claim.—As an article of manufacture, a translucent candy having characters or figures indented therein to different depths, so that when the candy is held up to the light the character or figure will appear in shaded lines, substantially as described.

328,868. STOCK-RACK. JAMES L. WILDER, Farmington, Mich. Filed May 13, 1885. (No model.)



Claim.—1. The combination, with the wagon-box D, and the side frames, A, having slotted tie-bars *c*, of the braces C, pivotally secured to said wagon-box, and their free ends passed through the slots in said tie-bars, and provided with nuts c^3, substantially as and for the purpose specified.

2. The combination, with the wagon-box D, of the side frames, A, having slotted tie-bars *c*, each terminating at one end in a hook, *c'*, adapted to engage a hole in the edge of the box, and the stay-plate thereon, substantially as described.

3. The combination, with the wagon-box D, having stop-brackets E, of the side frames, A, provided with slats *a*, slotted tie-bars *c*, and end bars, *b*, notched as shown, and the braces C, pivotally secured to the said box by the turn-buckles *f*, and their free ends passing through the slots in said tie-bars, and provided with nuts c^3, as and for the purposes specified.

4. The combination, with the wagon-box D, of the side frames, A, having slats *a*, provided with notches *m*, and the end-gates B, having slats *d*, the center one of which projects upon either side of the gate, and the cleats *n*, upon the projecting ends of said center slat, substantially as and for the purpose specified.

328,869. MEANS FOR REGULATING THE FLAME OF LAMPS. S. C. WILCOX, Dubuque, Iowa, assignor to Leroy D. Randall, same place. Filed May 15, 1885. (No model.)



Claim.—The combination, with a wick-tube of a lamp, of separate adjustable flame-guides, substantially as and for the purpose described.

328,870. AUTOMATIC CAR-BRAKE. WILLIAM A. WILDE, Chicago, Ill. Filed Mar. 5, 1885. (No model.)



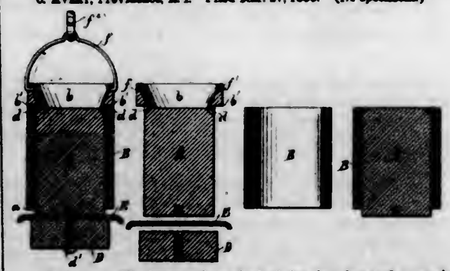
Claim.—1. In a car-brake in which the brakes are operated from the draw-bar against the resistance of a spring, the combination, with the spring, of a lever operated by a weight imposed on the car to increase the pressure against the wheels of the brakes when set, substantially as described.

2. In a car-brake in which a spring is combined with the sliding draw-bar, and brakes and operates automatically to set the brakes when the draw-bar occupies its normal position, and is operated automatically to effect the release of the brakes by the pulling outward or forcing inward of the draw-bar from its normal position, of a bell-crank lever, F, pivoted at its angle to a support on the car and connected at one end with the said operating-spring, and a suitable bearing, I, upon which the other end of the said bell-crank lever is adjusted, and which is secured upon a rigid portion of the car-truck, substantially as and for the purpose set forth.

3. The combination, with a car-brake in which a spring is combined with the sliding draw-bar, and brakes and operates automatically to set the brakes when the draw-bar occupies its normal position, and is operated automatically to effect the release of the brakes by the pulling outward or forcing inward of the draw-bar from its normal position, of a bell-crank lever, F, pivoted at its angle to a support on the car and connected at one end with the said operating-spring, and a suitable bearing, I, upon which the other end of the said bell-crank lever is adjusted, and which is secured upon a rigid portion of the car-truck, substantially as and for the purpose set forth.

4. An automatic self-regulating car-brake comprising, in combination with the sliding draw-bar of a car, the following elements: a lever, B, fulcrumed toward its center at one side of the draw-bar and secured to the draw-bar at one end, a lever, C, fulcrumed toward its center upon a suitable support, *s*, a connecting device, *q*, connecting the free end of the lever B with one end of the lever C, a connecting device, *q'*, connecting the same end of the lever C with the draw-bar, bell-crank lever F, pivotally secured at its angle to the car, spring E, connected at one end with an arm of the lever C and at its opposite end with an arm of the bell-crank lever F, and a bearing-frame, I, upon which the other arm of the said bell-crank lever is adjusted, and which is secured toward its base upon a rigid portion of the car-truck, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

328,871. METHOD OF MAKING INGOTS FOR PLATED WIRE. W. C. AVERY, Providence, R. I. Filed Mar. 27, 1885. (No specimens.)

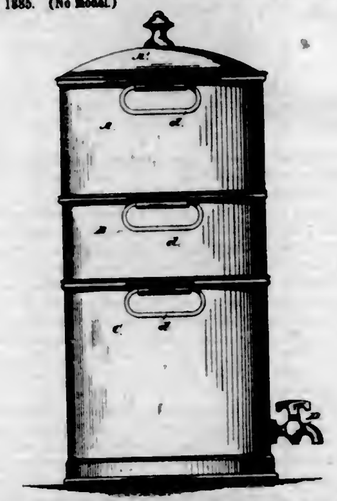


Claim.—1. The improved method of forming ingots for seamless plated wire, the same consisting in forming a cavity at the upper end of the core, then placing a tube around the core so that the cavity and the lower end of the core shall project beyond the tube, then supplying the cavity with solder, and subjecting the ingot to the action of the heat, as set forth.

2. The improved method of forming ingots for seamless plated wire, consisting in forming a cavity at the upper end of the core, then placing a tube around the core so that the cavity and the lower end of the core shall project beyond the tube, then attaching a shield to the lower end of said core, filling the cavity with solder, and finally subjecting the ingot to heat, as described.

3. The improved method of forming ingots for seamless plated wire, consisting in forming a cavity to receive solder in one end of the core, and then placing a tube around the core, so that the cavity shall extend beyond the tube, as specified.

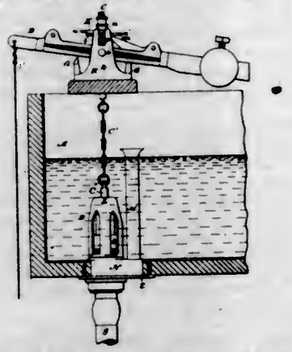
328,872. OIL-FILTER. JOHN BAKER, Salt Lake City, Utah. Filed Feb. 5, 1885. (No model.)



Claim.—1. A filter consisting of the combination of a filtering-vessel provided with a series of wick-tubes projecting into it upward and through its bottom, a series of wicks in said tubes, their upper ends hanging over the tops of the tubes and their lower ends extending down within the tubes sufficiently far to cause the wicks to act as capillary siphons, and a receiving-vessel for the filtered liquid arranged beneath the bottom of the said vessel and receiving the drip from said wicks, substantially as and for the purposes set forth.

2. The combination, to form a capillary filter, of two or more filtering-vessels constructed to fit one above another, and each provided with wick-tubes inclosed within it extending upward from its bottom, with a closed receiving-vessel for the filtered liquid arranged beneath and fitting the lowermost filtering-vessel, substantially as set forth, whereby the liquid in the upper vessel is subjected to successive capillary filtrations and the wicks are concealed and protected.

328,873. TANK VALVE AND LEVER. JAMES E. BOYLE, Brooklyn, N. Y. Filed Oct. 4, 1884. (No model.)



Claim.—1. The combination of a self-closing valve and its stem, a suitable guide for said stem, a tilting lever, and a suitable support for the fulcrum of said lever, with a disk, K, connected to said stem, and formed with under surfaces, *m* and *l*, in different vertical planes, and provisions in connection with said lever adapted to engage said surfaces *m l* alternately upon the tilting of the lever, substantially as set forth, whereby upon the engagement with one of said surfaces the valve is lifted to a different height than upon the engagement with the other of said surfaces.

2. The combination of lever D, a suitable support for the fulcrum thereof, dogs E E, pivoted thereto, spurs G G, arranged to tilt said dogs, stem C, and a suitable guide for said stem, with the disk K, attached to said stem and formed with under surfaces, *m* and *l*, in different vertical planes, substantially as set forth.

3. The combination of frame or standard F, having vertical seats *p p*, with disk K, having ears *n n* and formed with under surfaces, *m* and *l*, in different vertical planes, and a lever or levers adapted, when tilted, to move said disk vertically, substantially as set forth.

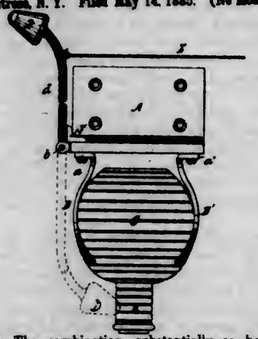
4. The combination of frame or standard F, having vertical slots *p p*, with disk K, formed with under surfaces, *m* and *l*, in different vertical planes and having projecting ears *n n* and *n' n'*, and the lever D, adapted, when tilted, to engage and move said disk vertically, substantially as set forth.

5. The combination, to form a self-seating tank-valve, of a valve-seat, a weighted valve proper having a tube projecting vertically from it, a capped leather piston working in said tube, a valve-stem fixed to said piston, a spring adapted to press said piston downward in said tube, a valve-operating tank-lever mounted above the valve, and a flexible connector intervening between said lever and said stem, whereby the pulling of said connector by said lever lifts the stem and piston against the pressure of said spring, the valve proper descends slowly by its own weight, and on the release of the connector the spring presses down the piston in the vertical tube, substantially as set forth.

6. The combination of valve proper, *b*, having vertical tube *d*, capped leather piston *f*, spring S, adapted to press said piston downward in said tube, divided valve-stem in two parts, C C'', flexible connector C', joining said parts, and the tank-lever adapted to pull upward on the stem C, substantially as and for the purposes set forth.

7. The combination, in a self-seating tank-valve, of casing N, formed with seat *c* and injector-tube *r*, depending therefrom, with overflow-tube M, connected to said casing, and valve proper, *b*, adapted to seat itself on said seat, substantially as set forth.

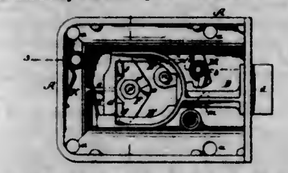
328,874. BRACKET FOR HAND-GRENADES. ALEXANDER F. BUCHANAN, Montreal, N. Y. Filed May 14, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a bracket, A, two arms arranged opposite to each other on the bracket to clasp and support a bottle between them, and a bottle-breaking hammer pivotally connected with the bracket.

2. The combination of the bracket A, the bifurcated arms attached thereto for supporting the bottle, the hammer pivoted to the bracket, the stop on the bracket, and the cord for holding the hammer, substantially as and for the purpose set forth.

328,875. LATCH-LOCK. SAML. W. BURD, Philadelphia, Pa., assignor to himself and Henry Budd, same place. Filed Sept. 8, 1885. (No model.)



Claim.—1. The combination of a bolt of a latch-lock with an operating-lever having an opening with notches or projections and a knob provided with a tubular stem adapted to the opening in the lever, substantially as described.

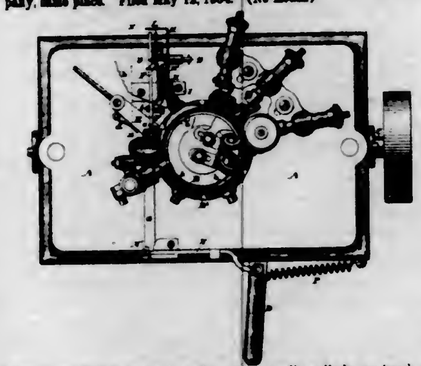
2. The combination of the bolt and an operating-lever having an opening with a knob having a tubular stem adapted to the opening in the lever to secure the latter, the tubular portion of the said stem forming a seat for the key, substantially as described.

3. The combination of the bolt of a lock with a pivoted catch therefor, the said bolt having a yoke extending over the pivot of the catch to retain it in place, substantially as described.

4. The combination of the bolt of the lock and casing therefor with a movable catch-lever, M, having a stem, 4, provided with a spiral friction-spring, S, bearing against the face of the latter to retain the catch-lever in the positions to which it may be moved.

328,876. STOP-MOTION MECHANISM FOR KNITTING-MACHINES.

John Byfield, Lowell, Mass., assignor to the Byfield Manufacturing Company, same place. Filed May 12, 1884. (No model.)



Claim.—1. The combination of a rotary needle cylinder or bead, a friction-pawl mounted upon an axis outside of said cylinder in a position to operate upon the periphery of the needle-head as a brake or dog, a spring for causing said pawl to engage with the needle-head, a lever for locking and holding said pawl in a retracted position, and an unbalanced lever held in a passive or inoperative state by the tension of the yarn and which acts upon and trips said locking-lever when the yarn breaks, becomes slack, or runs out, substantially as described.

2. The combination of a needle cylinder or head, a friction-pawl mounted upon an axis outside of said cylinder in a position to operate upon the periphery of the needle-head as a brake or dog, a spring for causing said pawl to engage with the needle-head, a lever for locking and holding said pawl in a retracted position or removed from contact with said head, an unbalanced lever held in a passive or inoperative position by the tension of the yarn and which acts to trip said locking-lever by the descent of its heaviest arm when the yarn breaks, becomes slack, or runs out, and a pair of stationary yarn-guiding eyes, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination of the needle-head B B², the friction-pawl E, the spring *d*, the levers F, H, and L, the stand I, provided with two yarn-guiding eyes, the conical-pointed bolt J, provided with the groove *m* to engage with the lever L, and the spring *l*, all arranged and adapted to operate, substantially as and for the purposes described.

4. The combination of the needle-head B B², the pivoted friction-pawl E, the levers F and H, the spring *d*, the gear-wheels B' and C', the shipper-lever D, the spring P, the catch-rod N N', and the locking-bolt O, all constructed, arranged, and adapted to operate, substantially as and for the purposes described.

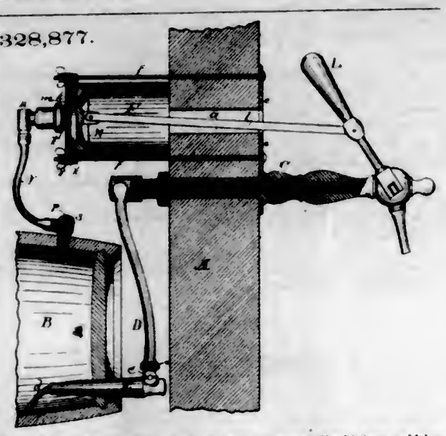
328,877. FORCE AND DRAIN FAUCET.

William P. Clark, Albert J. Weatherhead, and George Collins, Cleveland, Ohio; said Collins assignor, by mesne assignments, to Jacob J. Mayer, same place. Filed June 23, 1884. (No model.)

Claim.—1. The combination of a refrigerator, a faucet whose tube is fixed in and extends through the wall of said refrigerator, said wall being provided with a slot adjacent to said faucet-tube, and an air-pump whose piston-rod extends through said slot, the cylinder of said pump having one end closely fixed against said wall over and around said slot, and a lever pivoted to said faucet outside said wall, substantially as described.

2. The combination of a refrigerator, a faucet whose tube is fixed in and extends through the wall of said refrigerator, said wall being provided with a slot adjacent to said faucet-tube, an air-pump whose piston-rod extends through said slot, the cylinder of said pump having one end closely fixed against said wall over and around said slot, a lever pivoted to said faucet outside said wall, a flexible pipe connected at one end with the eduction-port of said pump for conducting air therefrom to a keg or barrel within said refrigerator, and a flexible pipe connected at one end

328,877.



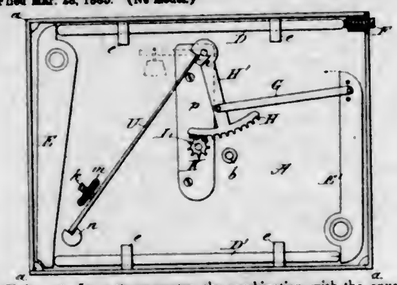
to said faucet for conducting thereto beer or other liquid from said keg, substantially as described.

3. The combination of a refrigerator, a faucet whose tube is fixed in and extends through the wall of said refrigerator, said wall being provided with a slot adjacent to said faucet-tube, and an air-pump whose piston-rod extends through said slot, the cylinder of said pump having one end closely fixed against said wall over and around said slot, a lever pivoted to said faucet outside said wall, a flexible pipe connected at one end with the eduction-port of said pump and provided at the other end with a tubular plug adapted to fit the bung or other hole in a keg or barrel within said refrigerator, and a flexible pipe connected at one end with the said fixed faucet and provided at the other end with a tubular plug or faucet adapted to fit the spigot-hole of said keg or barrel, substantially as described.

4. The combination of a refrigerator, a faucet the tube of which is fixed in and extends through the wall of said refrigerator, said wall being provided with a slot adjacent to said faucet-tube, an air-pump the cylinder of which is within the refrigerator, a lever pivoted to said faucet outside said wall, and a rod connected at one end to said lever and at the other with the piston of said pump, said rod passing through said slot and being adapted to reciprocate longitudinally and play laterally in respect to its axis within said slot, substantially as described.

328,878. OVEN-THERMOMETER.

David G. Cooper, Dover, N. H. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a thermometer, the combination, with the expansible bars D D' and levers E E', of the segment-gear H, connecting-bar G, pinion K, shaft L, index-finger M, and a dial, R, substantially as described.

2. The combination, with the expansible bars D D', levers E E', connecting-bars G, segmental gear H, having an arm, H', provided with shoulder *h*, the pinion K, shaft L, and index-finger M, of the cast-iron spring U, having an adjusting-screw, *k*, substantially as described.

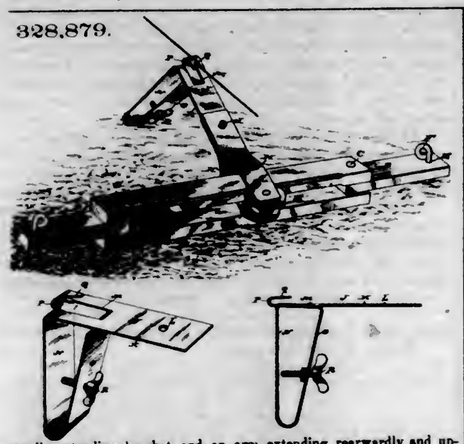
3. The combination of the casing A, provided internally with guides *e e*, the expansible bars D D', supported in said guides, the pivoted levers E E', the screw F, for adjusting said bars and levers, the pivoted segment-gear H H', connecting-bar G, adjustable spring U, shaft L, the pinion K, and index-finger M, mounted on said shaft, and a dial, R, graduated to indicate the temperatures at which various articles of food should be cooked, substantially as described.

328,879. CHECK-ROWER-WIRE ANCHOR OR EQUALIZER.

Abijah T. Crow, Clarinda, Iowa. Filed Apr. 18, 1885. (No model.)

Claim.—1. An anchor and equalizing device for check-rower wires, consisting of a strap of spring metal having a longitudinal slot, a down-

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wardly-extending bracket, and an arm extending rearwardly and upwardly from the lower end of the said bracket and terminating in a notched hook extending forwardly through the slot in the top plate of the device, substantially as and for the purpose set forth.

2. An anchor and equalizing device for check-rower wires, comprising a strip of spring metal bent so as to form a top plate, a downwardly-extending bracket, and an upwardly-extending arm having a notched hook extending through a longitudinal slot in the top plate, the said arm being provided with a set-screw arranged to bear against the said bracket, thereby adjusting the tension of the device, substantially as and for the purpose herein set forth.

3. The combination of a frame comprising a pair of horizontal parallel bars having laterally extending pivoted arms, stakes adapted to be driven through the said arms, a traveler arranged to move upon the upper horizontal bar and having forwardly-extending arms, and the herein-described anchor and equalizing device connected pivotally with the said arms, the same consisting of a single strap of spring metal bent so as to form a top plate, a bracket, and an upwardly-extending arm, the latter being provided with a notched hook extending forwardly through a slot in the top plate, and with a horizontally-arranged set-screw arranged to bear against the said bracket, substantially as and for the purpose herein set forth.

328,880. SHEET-SUPERIMPOSING MECHANISM.

Luther C. Crowell, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Feb. 25, 1884. (No model.)

Claim.—1. The combination, with means forming a pathway for the passage of a line or series of sheets and means for advancing the sheets therein so that all take the same course in the pathway, of a gripping mechanism located upon one side of the pathway and arranged to grasp and retain one sheet until the next following sheet is in register therewith and to then release the detained sheet so that the two can pass forward together, all substantially as described.

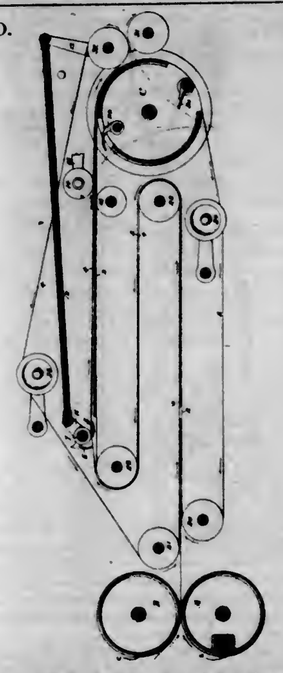
2. The combination, with means forming a single pathway for the passage of a line or series of sheets and means for advancing the sheets therein so that all take the same course in the pathway, of a sheet-arresting mechanism located outside the pathway and arranged to act upon the rear end or tail of the sheet, to arrest and detain one sheet until the following sheet has been advanced so as to be in register therewith, and means, as the conductors 17, for directing the advance end or head of said following sheet past the rear end or tail of the arrested sheet, all substantially as described.

3. The combination, with means forming a pathway for the passage of a line or series of sheets and means for advancing the sheets therein, of the stop-bar 5, arranged upon one side of said pathway so that all of the sheets pass upon the same side of the bar, and the grippers 6, arranged to grasp one sheet and retain it until the next following sheet is in register therewith, all substantially as described.

4. The combination, with means forming a pathway for the passage of a line or series of sheets and means for advancing the sheets therein so that all take the same course in the pathway, of a gripping mechanism located upon one side of the pathway, and arranged to grasp and retain one sheet until the next following sheet is in register therewith, and to then release the detained sheet so that the two can pass forward together, and the drop-roller 14, for causing the superimposed sheets to start forward promptly, all substantially as described.

5. A sheet-superimposing mechanism consisting of two series of moving tapes, as 2 4, between which are conveyed a line or series of sheets, a stop-bar, as 5, upon one side of which all of the sheets are caused to pass, and a set of sheet-grippers, as 6, which are operated to grasp and

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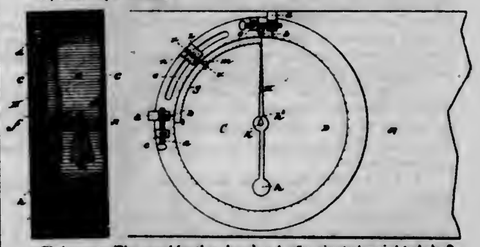


retain one sheet until the following sheet is in register therewith, all substantially as described.

6. The combination, with means forming a pathway for the passage of a line or series of sheets, and means for advancing the sheets therein so that all take the same course, of the grippers 6 and co-operating stop-bar 5, said bar being sufficiently removed from one side of said pathway to permit the grippers to carry and hold the rear end of the arrested sheet out of the way of the head of the incoming sheet, and conductors, as 17, projecting into the pathway beyond the nipping-face of the stop-bar, all substantially as described.

328,881. PENDULUM-LEVEL.

Stephen J. Duckard, Logansport, Ind., assignor of one-half to Jacob J. Peterbaugh, same place. Filed Feb. 27, 1885. (No model.)



Claim.—1. The combination, in a level, of a pivoted weighted shaft, a dial, and a weighted indicator-hand that is pivoted independently upon the pivoted weighted shaft, substantially as described.

2. The combination, in a level, of a pivoted weighted shaft having a notch on its upper side, a dial, and a weighted indicator-hand that is pivoted upon the weighted shaft in the notch thereof, substantially as described.

3. The combination, in a level, of a pivoted weighted indicator-hand, a shifting dial, and screws for shifting the dial, for the purpose set forth, substantially as described.

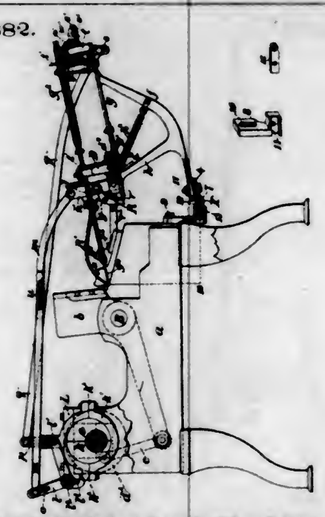
4. The combination, in a level, of a pivoted weighted indicator-hand and the dial having the scale *g*, and the adjustable indicator-point *m*, substantially as described.

328,882. NAIL-PLATE FEEDER.

Joseph H. Dunbar, Youngstown, Ohio, assignor of one-half to Anthony Welsh, H. W. Squire, and Frank Brown, all of same place. Filed Aug. 10, 1885. (No model.)

Claim.—1. In a nail-plate feeder, the combination, with a longitudinally-traveling and axially-rotating feed-rod provided with gear-teeth, of a driven feed-roll also provided with gear-teeth whose axis is

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inclined to the axis of the feed-rod, the teeth of the roll being set at an angle to its axis, substantially as and for the purposes described.

2. In a nail-plate feeder, the combination, with a longitudinally-traveling and axially-rotating feed-rod provided with gear-teeth, of a set of feed-rolls also provided with gear-teeth whose axes are inclined to each other, the teeth of the rolls being set at angles to their axes, substantially as and for the purposes described.

3. In a nail-plate feeder, the combination of a set of feed-rolls, a feed-rod, a set of guide-rolls, and a frame or support in which the guide-rolls are mounted, said frame or support being pivoted so as to be movable laterally, substantially as and for the purposes described.

4. In a nail-plate feeder, the combination of a set of rolls, a feed-rod, a set of guide-rolls having their axes inclined to each other, and a frame or support in which the guide-rolls are mounted, said frame or support being pivoted so as to be movable laterally, substantially as and for the purposes described.

5. In a nail-plate feeder, the combination of a set of feed-rolls, a feed-rod, a set of guide-rolls, a frame or support in which the guide-rolls are mounted, said frame or support being pivoted so as to be movable laterally, and a spring which bears upon the guide-roll frame or support, substantially as and for the purposes described.

6. The combination, in a nail-plate feeder, of a rocking frame having a feed-rod mounted thereon, a rotatory shaft, *s*, an eccentric mounted thereon, a cam-yoke encircling the eccentric, a bell-crank lever, one arm of which is secured to the cam-yoke, and a rod connected with an arm of said bell-crank lever and with the frame for rocking the latter, substantially as and for the purposes described.

7. The combination of the rocking frame *f*, having a feed-rod mounted thereon, an eccentric, and a bell-crank lever connected with the rocking frame for operating the same, the elbow of said bell-crank lever being adjustably journaled in a slot, substantially as and for the purposes described.

8. In a nail-plate feeder, the combination of a feed-rod, a driven feed-roll, a pawl and ratchet for operating the feed-roll, a driven eccentric, a cam-yoke encircling the eccentric, and a connecting-rod joined to the cam-yoke and to the pawl, substantially as and for the purposes described.

9. In a nail-plate feeder, the combination of a feed-rod, a rocking frame, a finger-lever, E′, for holding the nail-plate, and a lever connected with the finger-lever pivoted to the rocking frame and bearing upon a point independent of the frame, whereby the downward movement of the latter will raise the finger-lever, substantially as and for the purposes described.

10. In a nail-plate feeder, the combination of a feed-rod, a rocking frame, a finger-lever, E′, for holding the nail-plate, a lever connected with the finger-lever pivoted to the rocking frame and bearing upon a point independent of the frame, whereby the downward movement of the latter will raise the finger-lever, and a spring connected with the finger-lever and exerting a downward tension thereon, substantially as and for the purposes described.

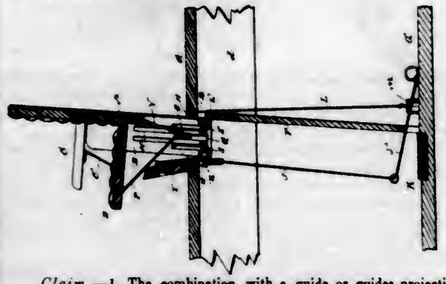
11. The combination, in a nail-machine, of a pivoted rocking frame carrying mechanism for feeding a nail-plate and cutters for severing the nails, said rocking frame being so arranged on its pivot as to be capable of being swung or turned as if on a center, substantially in the same perpendicular with the cutters, substantially as and for the purposes described.

12. As a device for swinging or turning the rocking frame of a nail-machine laterally, the combination of oscillatory support 4 and the rocking frame, the latter being connected with the support by securing devices arranged in guideways or slots, whereby the frame is oscillatory with the support and movable thereon laterally in the arc of a circle, substantially as and for the purposes described.

13. The combination, with the rocking frame of a nail-machine, of pivots for rendering it oscillatory, and standards for supporting said pivots, said standards being movable and adjustable vertically on the machine, substantially as and for the purposes described.

14. The combination, with the rocking frame of a nail-machine, of pivots for rendering it oscillatory, and standards 12, for supporting the pivotal blocks or supports 8, forming part of the standards and fixable thereto, said blocks being slotted vertically and provided with set-bolts traversing the slots, whereby the blocks are made vertically adjustable, substantially as and for the purposes described.

328,883. ADJUSTABLE CHAIR. Hamlet S. Felton, Chester, Ill. Filed Nov. 21, 1884. (No model.)



Claim.—1. The combination, with a guide or guides projecting downward from a floor having an opening at the upper end of the guide or guides, of a chair adapted to slide on the said guide or guides, substantially as herein shown and described.

2. The combination, with a guide or guides projecting downward from a floor having an opening at the upper end of the guide or guides, of a folding chair held to slide on the said guide or guides and of a trap-door for closing the opening, substantially as herein shown and described.

3. The combination, with two floors, of a guide or guides extending from one floor to the other, in front of which guide or guides an opening is formed in the upper floor, a sliding chair on the said guide or guides, the chair being adapted to pass through the opening, and of cushions on the lower floor and in front of the guide or guides on which the chair slides, substantially as herein shown and described.

4. The combination, with two floors, of a guide or guides uniting them, in front of which guide or guides an opening is formed in the upper floor, a sliding chair on the guides, a trap-door for closing the opening, a rope or its equivalent secured to the trap-door, and to a lever or spring on the bottom floor, substantially as herein shown and described.

5. The combination, with two floors, of a guide or guides extending from one floor to the other, a sliding chair on the guide or guides, a rope secured to the bottom of the chair and passing over a pulley at the top of the guide or guides, and a weight on the free end of the rope, substantially as herein shown and described.

6. The combination, with a guide or guides, of a chair adapted to slide up and down the same, spring-bolts held on the chair, and recessed or notched plates for receiving the said bolts when the chair is raised, thus locking the chair in place, substantially as herein shown and described.

7. The combination, with a guide or guides, of a sliding chair on the same, spring-bolts on the chair, notched plates for receiving the ends of the spring-bolts when the chair is raised, and ropes secured to the bolts and extending to the top of the back of the chair, substantially as herein shown and described.

8. The combination, with a vertically-sliding chair, of bolts held on the same by springs, notched plates for receiving the bolts, the rope U, uniting the bolts, and the rope V, extending from the rope U to the top of the chair, substantially as herein shown and described.

9. The combination, with a vertically-sliding chair, of bolts held on the same by springs, notched plates for receiving the bolts, the rope U, uniting the bolts, the rope V, extending from the rope U to the top of the chair, and of the lever W, pivoted in the top of the chair, to which lever the upper end of the rope V is secured, substantially as herein shown and described.

10. In a vertically-sliding chair, the combination, with the spring-bolts R, held at the inner surface of the sides of the chair, of the pivoted seat D, the braces P, pivoted to the same, the cross-piece O, sliding between the side pieces, and of the lugs Q at the ends of the cross-piece O, substantially as herein shown and described.

11. In a vertically-sliding chair, the combination, with the springs S, secured to the inner surface of the side pieces, of the bolts R, held on the free ends of the springs S, the brackets *g*, having their lower edges beveled and having notches *h*, the sliding cross-bar O, having end lugs, Q, the braces P, and the pivoted seat D, substantially as herein shown and described.

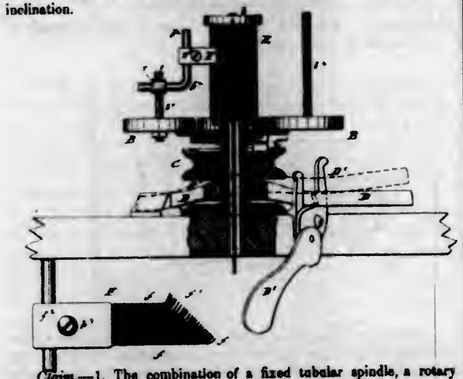
12. The combination, with a vertically-sliding chair, of the cross-pieces T, having longitudinal slots T′ at the ends, the bolts R, having their ends passed through the slots T′, the springs S, secured to the inner surfaces of the sides of the chair and to the bolts R, the brackets *g*, having notches *h*, the cross-piece O, having lugs Q, the hinged seat D, and the braces P, substantially as herein shown and described.

13. The combination, with two floors, of an upright extending from one floor to the other, a sliding chair on the upright, the chair being adapted to pass through an opening in the upper floor in front of the top of the inclined upright, a trap-door for closing the said opening, and of devices for automatically swinging down the trap-door in the upper floor when the chair arrives at the lower floor, substantially as herein shown and described.

14. The combination, with a guide or guides, of a chair sliding on said guide and of spring-latches for locking the chair in place when raised, substantially as herein shown and described.

328,884. MACHINE FOR COVERING CORDS WITH SILK THREADS. Ernst Franke, Paterson, N. J. Filed Sept. 25, 1884. (No model.)

Brief.—A fixed tubular spindle has a flier mounted thereon and capable of revolving when in engagement with the whirl. Mounted on the said flier are a number of vertical spindles which carry the spools containing the covering material, said material being wound several threads on one spool. Another spindle, also mounted on the same flier, carries a horizontal and vertical arm, on which is secured a comb which guides the threads to the cord to be covered. The comb consists of a series of parallel reeds having their outer ends bent up, the bent-up ends at one side being longer than at the other and at a different degree of inclination.



Claim.—1. The combination of a fixed tubular spindle, a rotary flier turning thereon, upwardly-extending spindles for the covering-thread spools supported on said flier, and a comb having a number of reeds between which the individual covering-threads are passed before they are wound around the cord to be covered, said comb being also supported on said flier, substantially as described.

2. The combination of a fixed tubular spindle, a rotary flier turning thereon, upwardly-extending spindles for the covering-thread spools supported on said flier, an upright arm also supported on said flier, and a comb having a number of reeds between which the individual covering-threads are passed before they are wound around the cord to be covered, said comb being adjustably supported by said upright arm, substantially as described.

3. The combination of a fixed tubular spindle, a rotary flier turning thereon, upwardly-extending spindles for the covering-thread spools supported on said flier, an upright arm also supported on said flier and provided with a horizontal sleeve at its upper end, a comb having two supporting-cheeks, and a number of reeds between which the individual covering-threads are passed before they are wound around the cord to be covered, an angle-bar, one arm of which is adjustably supported in said sleeve, and a clamping-screw passing through said cheeks for securing said comb to the other end of said angle-bar, substantially as described.

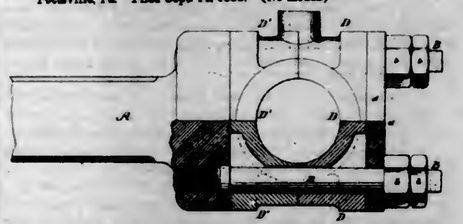
4. The combination of a fixed tubular spindle, a rotary flier turning thereon, means for rotating said flier, upwardly-extending spindles for the covering-thread spools supported on said flier, a comb having a number of reeds between which the individual covering-threads are passed before they are wound around the cord to be covered, said comb also being supported on said flier, feed-pulleys below and draw-pulleys above said covering devices, and a system of shafts and bevel-gears connecting said pulleys with the main driving-shaft, whereby they are rotated at the same speed, substantially as described.

5. A comb for silk-covering machines, consisting of a series of parallel reeds having bent-up outer ends, the bent-up ends at one side being longer than at the other, the bodies and ends of said reeds being in the same plane, substantially as described.

6. A comb for silk-covering machines, consisting of a series of reeds having their ends bent up at different degrees of inclination, the bodies and ends of said reeds being in the same plane, substantially as described.

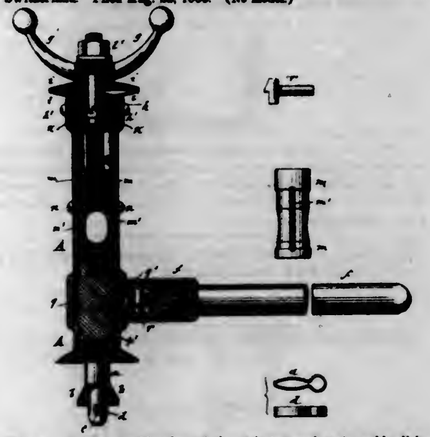
8. A comb for silk-covering machines, consisting of a series of reeds having bent-up outer ends, the bodies and ends of said reeds being in the same plane, supporting-cheeks, and a screw for clamping the cheeks together, substantially as described.

328,885. STUB END FOR CONNECTING-RODS. Lewis Gibson, Pottsville, Pa. Filed Sept. 14, 1885. (No model.)



Claim.—The stub end for the crank-pins of engines and other machines, said stub end having bearings and confining bolts or straps of a metal having a greater ratio of expansion than the crank-pin, substantially as described.

328,886. DRILLING-MACHINE. Felix Gut, Hottingen, near Zurich, Switzerland. Filed Aug. 22, 1885. (No model.)



Claim.—1. The combination of the tubular casing A, guide-disks *h* and *k*, screw *l*, having shoulder l^2 and levers *g g*, spring-disks *i i*, interior screw-nut, *m*, socket-piece *p*, coupling-piece *o*, ratchet *q*, oscillating lever *f*, having a spring-actuated pawl, *r*, and spindle *a*, having a detachable boring-tool, *b*, substantially as set forth.

2. The combination of a tubular casing, A, having guide-screws *n n*, guide-disks *h* and *k*, screw *l*, having shoulder l^2 and levers *g g*, spring-disks *i i*, screw-nut *m*, having guide-grooves *m′*, socket-piece *p*, coupling-piece *o*, and spindle *a*, having a detachable boring-tool, *b*, substantially as set forth.

3. The combination, of a tubular casing, A, having guide-screws *n n*, screw *l*, screw-nut *m*, having guide-grooves *m′*, socket-piece *p*, having groove *p′*, coupling-piece *o*, spindle *a*, having boring-tool *b*, ratchet *q*, having spline *q′*, and oscillating lever *f*, having a spring-actuated pawl, *r*, substantially as set forth.

4. In a boring-drill, the combination of a spindle having a shoulder, a detachable boring-tool splined to the spindle, and a spring-key inserted into a transverse recess at the end of the spindle, substantially as set forth.

5. In a boring-drill, the combination of the tubular casing A, socket-piece *p*, ratchet *q*, oscillating lever *f*, and a spring-actuated pawl, *r*, located in a socket-hole of said lever, substantially as set forth.

328,887. **TENSION DEVICE FOR HARVESTER-BINDERS.** Warren H. Bolens, Resnick Falls, N. Y. Filed Aug. 13, 1884. (No model.)



Claim.—1. A tension device composed of two disks having their inner faces oppositely inclined to their axis, in combination with a revolving sheave placed between the disks and having its lateral faces correspondingly inclined, the whole yieldingly connected by the bolt D and spring E, substantially as described.

2. The combination of the disks A and C, having their inner faces oppositely inclined to their axis, the bolt D, and spring E, the central sheave having its lateral faces correspondingly inclined and provided with lugs or their described equivalents, with the bolt D and spring E, substantially as set forth.

3. The combination of the disks A and C, the sheave B, bolt D, and spiral spring E, said sheave B provided with a large hole at its center to allow lateral movement on the bolt, substantially as described.

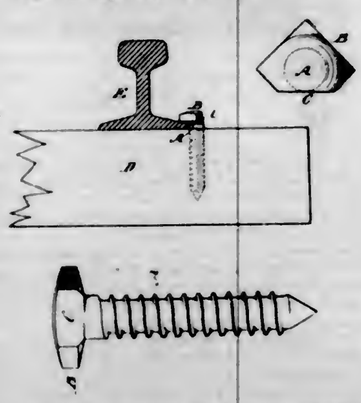
4. The combination of the disks A and C, having their inner faces oppositely inclined to their axis, and the inclination, as A^2, adjacent to the axis more acute than the outer inclination, as A^3, with a laterally-movable sheave, B, having its lateral faces correspondingly inclined, and a large central hole, the whole yieldingly connected by a spring-carrying bolt of smaller diameter than the central hole of the sheave, whereby the sheave can yield laterally and reduce any abnormal tension on the twine passing around the sheave by bringing its inclined frictional surfaces nearer the axle, substantially as described.

328,888. **METHOD OF FORMING PACKAGES OF PAPER BAGS.** Willis M. Howe, Glen Gardner, N. J. Filed Aug. 4, 1884. (No model.)



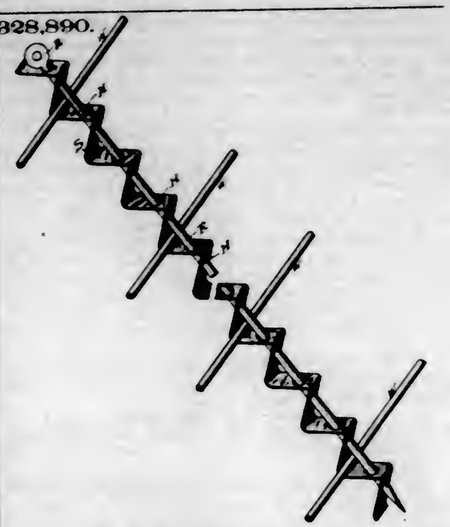
Claim.—The herein-described method of uniting bags to form a package, consisting in providing the bags in corresponding edges with slits, and placing a cord covered with glue or other adhesive material in the slits of the several bags forming the package, substantially as herein shown and described.

328,889. **RAILROAD-SPIKE.** William S. Huntington, New York, N. Y. Filed May 6, 1885. (No model.)



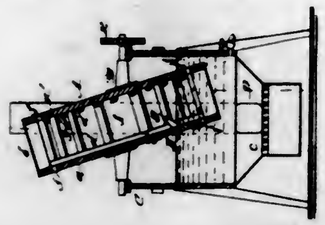
Claim.—The railway-track bolt, with its screw-threaded shank or stem provided with a head having its tangential cut-off portion inclined or beveled outwardly and away from that side of the bolt, substantially as and for the purpose set forth.

328,890. **WIRE-FENCE STAY.** William J. Hutchins, Joliet, Ill. Filed Dec. 4, 1884. (No model.)



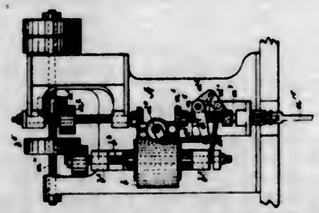
Claim.—A stay for a wire fence, consisting of a strip of metal crimped through its entire length and perforated through the said crimps, in combination with a rod which is passed down through all of the perforations in said strip, locking the wire in the angles thereof, substantially as set forth.

328,891. **WASHING-MACHINE.** James S. Jones, Crutchfield, Ky. Filed Mar. 23, 1885. (No model.)



Claim.—As an improved article of manufacture, a washing-machine consisting of a tank, an inclined drum, A, having an imperforate rim, *b*, and ends *a*, having perforations *f* near their edges, the buckets *e* projecting from the inner face of the rim *b* intermediate of the perforations *f*, substantially as set forth.

328,892. **CAN-CLEANSING MACHINE.** Edmund Jordan, Brooklyn, N. Y., assignor to E. W. Bliss, same place. Filed Feb. 23, 1884. (No model.)

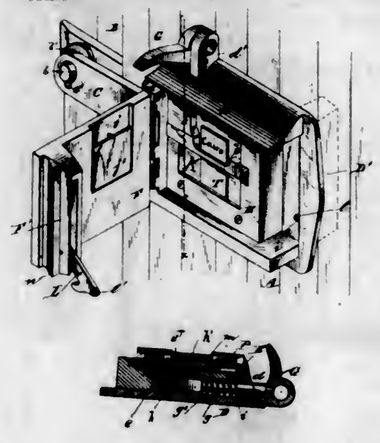


Claim.—1. In a can-cleaning machine, a revolving clamp, a treadle and connections for throwing the clamp into operation, a swinging frame, a revolving brush supported on such frame, and connections, substantially as described, with said treadle for throwing the brush simultaneously into or out of contact with the can, according as the can is clamped or released, all combined and operating as set forth.

2. The combination, with a revolving plate, as *a*, and a loose plate, as a^3, operated by a treadle, of a revolving brush carried on a swinging frame, and connections, substantially as described, between said frame and treadle, whereby the frame is oscillated simultaneously with the engagement or disengagement of the clamps to throw the brush into or out of contact with the can, as set forth.

3. In a can-cleansing machine, a swinging frame pivoted to the main frame carrying a revolving brush, a treadle and connections, substantially as described, for moving the brush into and out of contact with a revolving can, a valve supplying a sheet of water to the brush, the can, or both, while running in contact, and connections, substantially as described, between said valve and treadle for cutting off the water when the brush recedes, as herein specified.

328,893. **SEAL-LOCK.** Jesse Jordan and Oscar F. Lagerquist, Macon, Ga. Filed June 11, 1885. (Model.)



Claim.—1. In a lock for car-doors, the plates D E, secured to each other and provided with a spring-catch, the plate E provided with the seal-receptacle, and a door hinged thereto and having an opening opposite the seal-receptacle, in combination with a hasp adapted to slide within the casing and provided with an opening for the reception of the seal or label, so that the same will be destroyed when the hasp is withdrawn, substantially as shown.

2. In a lock for car-doors, a rear plate provided with a spring-catch, the plate E, recessed and slotted for the reception of a hasp and having a recess, K, in the front portion thereof, and a hinged door or covering-plate having a pivoted latch, adapted to engage with a cross-bar on the rear plate, in combination with a hasp adapted to slide within the casing and provided with an opening for the reception of the seal or label, substantially as shown, and for the purpose set forth.

3. The combination, with a casing constructed substantially as described, of a hasp adapted to be pivoted to the door-frame opposite the casing, said hasp having a projecting portion, *h'*, opening *o*, formed therein, and a beveled recess, *u*, for the reception of the seal, substantially as shown.

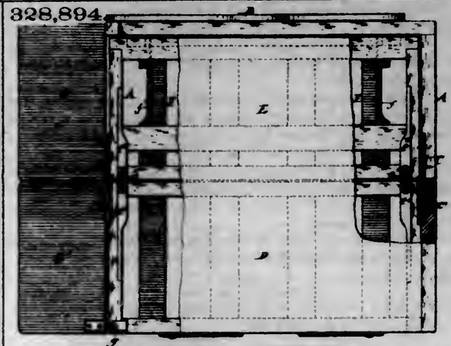
4. In a lock for car-doors, a rear plate, provided on its upper edge with a projecting flange, having an upwardly-projecting portion, *d'*, integral therewith, a vertically-moving spring-latch, inwardly-projecting walls between which is located a cross-bar, the plate E, having a transverse slot and vertical and transverse recesses on its inner face, its outer face recessed to form a receptacle for a seal, said plate having attached thereto a hinged door with an opening therein, said hinged door carrying a latch which is adapted to automatically engage with the cross-bar, and a hasp, C, the parts being organized and constructed substantially as shown, and for the purpose set forth.

5. In a lock for car-doors, constructed substantially as described, the plates D and E, the latter having a transverse slot and recessed on its front face and provided with a beveled projecting portion, *k*, in combination with the hasp C, having an opening, *o*, the parts being constructed substantially as shown, and for the purpose set forth.

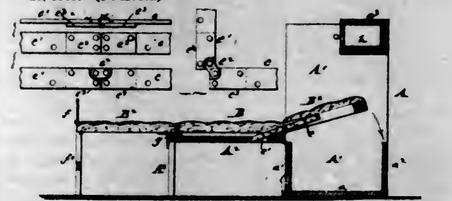
328,894. **BED-LOUNGE.** Anton Kulick, Brooklyn, N. Y. Filed Apr. 4, 1885. (No model.)

Claim.—In a bed-lounge, a main frame provided with supporting-brackets at its ends, a movable seat-section, metallic strap secured to the ends thereof and pivoted to said brackets, a second movable seat-section, oppositely-disposed metallic straps secured to both said seat-sections, the meeting ends thereof being bifurcated, connecting pivot-links pivoted in said bifurcated ends, and hinged legs for supporting the seat-sections, substantially as set forth.

328,894.



328,895. **BUREAU-BED.** Anton Kulick, Brooklyn, N. Y. Filed July 25, 1885. (No model.)



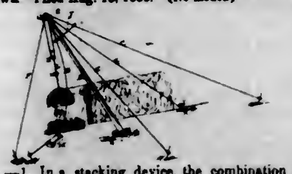
Claim.—1. The combination of a casing, A, having a fixed transverse front panel, *a'*, and hinged front and top panels, A^2 A^3, a middle section, B, attached to the front panel, A^2, a head-section, B', hinged by side straps *e e* to inclined side straps *e' e'* of the middle section, and a foot-section, B^3, hinged to the middle section, and provided with hinged supporting-legs *f'*, substantially as set forth.

2. The combination of the casing A, having a hinged front panel, A^2, a hinged top panel, A^3, and a fixed rear panel, a middle section, B, attached to the front panel, and having fixed inclined side straps *e' e'*, a head-section, B', having side straps *e e*, pivot-links e^2 for connecting said straps, and stop-plates e^3, attached to said straps for supporting the head-section in inclined position, substantially as set forth.

3. The combination of the supporting-casing having hinged front and top panels, a middle bed-section attached to the front panel, a head-section hinged to the middle section, and a foot-section also hinged to the middle section, and provided with a fixed stop or abutment for the top panel, substantially as set forth.

4. The combination of a supporting-casing having fixed front and rear panels, hinged front and top panels, and a transverse top piece, with a middle bed-section attached to the front panel, a head-section hinged to the middle section by pivoted straps having stop-plates, and a foot-section hinged to the middle section, and provided with folding legs and a fixed stop or abutment, substantially as set forth.

328,896. **HAY ELEVATOR AND CARRIER.** Wm. Louden, Fairfield, Iowa. Filed Aug. 18, 1885. (No model.)



Claim.—1. In a stacking device, the combination of the pivoted pole with the guy-ropes and the short cord or strap J, for securing the two guy-ropes B C together at their upper ends, substantially as shown.

2. The combination of the guy-rope B with the weight M, which has a hole through each of its ends, and which weight can be adjusted back and forth on the rope, substantially as set forth.

3. The combination of the locking-dog R, having an eye at one end for the rope C to pass through, with the pulley O, over which the draft-rope passes, substantially as shown.

4. The casting M, having two or more eyes, in combination with the rope L for supporting the fork or sling, whereby the rope L can be readily lengthened or shortened, according to the position to which it is desired to adjust the fork or sling, substantially as set forth.

5. In a hay elevator and carrier, the combination of the hook P with the pivoted point T, the end of the pivoted point being adapted to enter a slot in the body of the hook and be held in a closed position, substantially as shown.

6. The combination of the hook P with the pivoted point T, provided with the stop or projection U, substantially as specified.

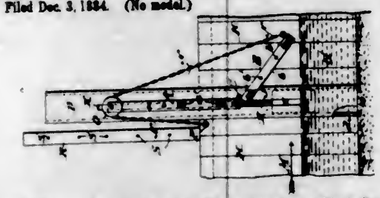
7. The combination of the sling-holder V, provided with the eyes W X, and the trip Y, with the catch which locks the trip in place, substantially as described.

8. The combination of the sling-holder V, provided with the eyes W X, and the trip Y, the body of the holder being recessed to receive the end of the trip, substantially as described.

9. The combination of the sling-ropes O' and the pins or pegs B', the pegs being driven into the ground so that their upper ends will not project above its surface, and the ropes being laid in recesses prepared to receive them, so that they will not be disturbed by the slide or rake, substantially as described.

10. In combination with the sling-ropes for elevating hay, the stakes set in holes for the purpose of looping the ropes over the stakes, substantially as and for the purpose set forth.

328,897. WATER-GATE. William A. Lovelace, Lovelaceville, Ky. Filed Dec. 3, 1884. (No model.)



Claim.—1. In a water-gate, the combination, with hollow posts having bottom openings, of a vertically-sliding gate composed of two hinged sections, floats in the said posts, and connected to the upper gate-section, and means for swinging backward the lower gate-section as the gate is lifted by the floats, as set forth.

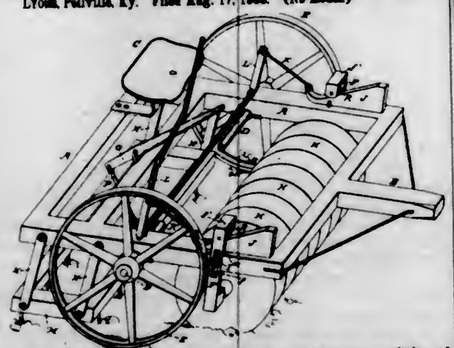
2. In a water-gate, the combination, with hollow posts having bottom openings, of a gate composed of two hinged sections guided on the posts, floats in the said hollow posts, and connected to the upper gate-sections, and chains connected to the lower gate-section, passing over the upper section, and secured to a fixed support, substantially as herein shown and described.

3. The combination, in a water-gate, of the gate-sections A B, hinged to each other at C, the hollow posts D, having bottom openings *d* and slots K, and the floats I, moving in posts D, and connected by arms J with the side posts *a a* of the upper gate-section, A, substantially as herein set forth.

4. The combination, in a water-gate, of the gate A B C, posts D, having openings *d*, and slots K, floats I, arms J, passing through the slots K, and connected to the gate-posts *a*, and the guide-studs L, on the posts *a*, also entering the slots K, substantially as herein set forth.

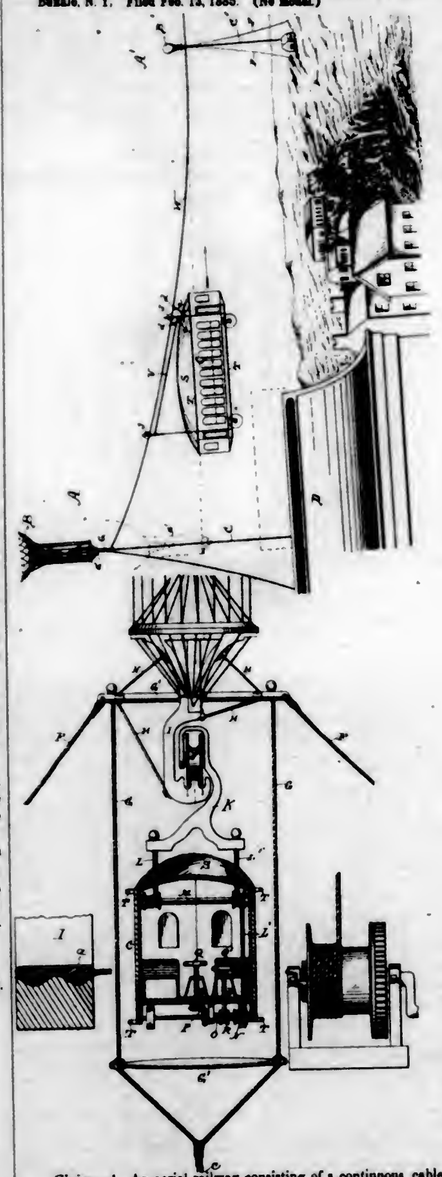
5. The combination, in a water-gate, of the gate A B C, the posts D, having openings *d* and slots K, the floats I, connected by arms J to the gate-section A, the guide-studs L, and the chains N, connected to gate-section B, passing over pulleys O at the top of gate-section A, and fastened to the banks onto the gate-posts at the front of the gate, substantially as herein set forth.

328,898. COMBINED HARROW AND SOD-CUTTER. Albert J. Lyon, Pellville, Ky. Filed Aug. 17, 1885. (No model.)



Claim.—The combined sod or clod cutter and harrow, consisting of the gang of cutting-disks H upon bent axle F G, occupying grooves *a* in the sulky-frame A, and resting upon wedges J, connected with a duplex lever, L, located conveniently to the driver's seat, the same being combined with harrow M, suspended by links N from the sulky-frame, and capable of elevation and depression by lever or treadle O, substantially as described.

328,899. AERIAL RAILWAY AND CAR. Andrew J. Morrison, Buffalo, N. Y. Filed Feb. 13, 1885. (No model.)



Claim.—1. An aerial railway consisting of a continuous cable suspended at intervals from balloons anchored to the earth, as and for the purpose described.

2. The combination, with a cable, of a series of balloons for suspending it in mid-air, anchor-ropes for holding the balloon captive, and means for winding and unwinding the anchor-ropes to give an inclination to the cable, substantially as shown and described.

3. The combination, with a cable, of a series of balloons suspending it, a set of anchor-ropes with means for winding and unwinding them, and a car provided with suspending pulleys supported upon the cable, whereby the sections of the cable may be successively thrown to an incline, and the car caused to travel from station to station by its own gravity, as described.

4. The combination, with the adjustable air-cable, of the car and supporting-pulleys and adjustable ropes for connecting the car to the cable and maintaining the horizontal position of the car irrespective of the inclination of the cable, as described.

5. The combination, with the balloon and its hanger, having a waved bearing, of the cable and the correspondingly-waved clamp for attaching the balloon to the cable without slipping, and forming a continuous track, as described.

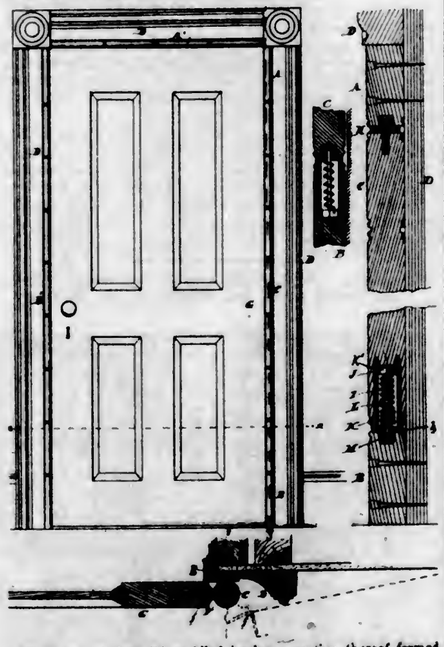
6. The combination, with a cable, of a car suspended thereon by supporting-pulleys, and having a gas-chamber in its top to reduce its weight, as described.

7. The combination, with the cable and the car, of the crossed brake-levers *c c*, having pulleys *d d*, arranged on opposite sides of one the supporting-pulleys and bearing against the bottom side of the cable, as described.

8. The trapeze, combined with the balloon, its anchor-rope, and the cable passing through the trapeze, as and for the purpose described.

9. The combination, with the balloon, its anchor-rope, and winding-drum, of the guy-ropes having an adjustment commensurate with the adjustment of the anchor-rope, as described.

328,900. DOOR. Jonah W. Moyer, Philadelphia, Pa. Filed Feb. 6, 1885. (No model.)



Claim.—1. A door, lid, or blind having a portion thereof formed to correspond to the ornamentation of the architrave, in combination with said architrave or frame, and hinges which connect the similar parts of the door and architrave, substantially as and for the purpose specified.

2. A door or lid having one of its stiles formed with a long strip corresponding to a part of the ornamentation of the architrave or frame and of less height or length than the door or lid, in combination with said architrave or frame, having a portion thereof cut away to receive the said strip of the door, and suitable hinges, by which said door-strip is hinged to the architrave, substantially as and for the purpose specified.

3. A door combined with a hinge-piece hinged to said door and the architrave or door-frame, the said hinge-piece corresponding to the finish of said architrave, substantially as and for the purpose specified.

4. A door or lid having a portion thereof formed to correspond to the ornamentation of the architrave, in combination with said architrave or frame, and hinges which connect the similar parts of the door and architrave, and a spring to keep said door normally closed, substantially as and for the purpose specified.

5. A door or lid having one of its stiles provided with a strip or hinge-piece corresponding to a part of the ornamentation of the architrave or frame of the doorway, in combination with hinges connecting the top and bottom of said hinge-piece with said architrave, and a spring contained within the hinge-piece or the corresponding part of the architrave to keep the door normally closed, substantially as and for the purpose specified.

6. The combination of a door having hinge-piece C, with architrave D, having parts A and B and hinges H, substantially as and for the purpose specified.

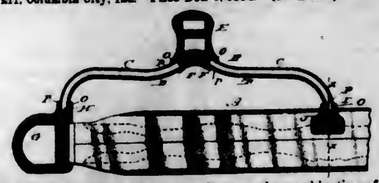
7. The combination of a door having hinge-piece C, with architrave D, having parts A A' and B' and B and hinge H, substantially as and for the purpose specified.

8. The combination of door G, having hinge-strip C, architrave D, having parts A and B, hinges H, and spring I, substantially as and for the purpose specified.

9. The combination of the door G, having hinge-strip C, with architrave D, having parts A B, hinges between the parts A B C, one of which is made of case K, nut J, having stud L, spring I, and plate *h*, having hole M, substantially as and for the purpose specified.

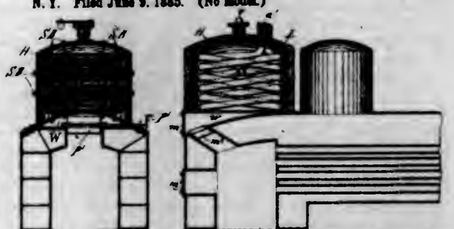
10. A door, lid, or blind having a portion thereof formed to correspond to the ornamentation of the architrave, substantially as and for the purpose specified.

328,901. BREECHING-STAY FOR HARNESS. Hershel A. Pruett, Columbia City, Ind. Filed Dec. 6, 1884. (No model.)



Claim.—In a breeching-stay for harness, the combination of a central buckle-plate having diagonally-extending sockets at its lower corners, said sockets being screw-threaded at their inner ends and provided with enlarged outer ends, a D-shaped link having an upwardly-extending screw-threaded socket enlarged at its outer end, a D-plate having an upwardly-extending screw-threaded socket enlarged at its outer end, and the curved metallic stay-rods having leather coverings, the ends of which enter the sockets of the buckle-plate, the D-link, and the D-plate, substantially as and for the purpose set forth.

328,902. FEED-WATER HEATER. Oscar Rothrock, New York, N. Y. Filed June 9, 1885. (No model.)



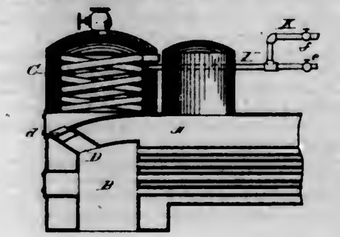
Claim.—1. In a feed-water heater, the combination of a tank having a portion of its surface forming a heating-chamber with a furnace and exhaust-steam pipes within its tank, said chamber having a connection with the furnace, all substantially as shown, and for the purpose described.

2. In a feed-water heater, the combination of a tank with a furnace, a passage between said furnace and tank, and a valve for controlling the heat from the furnace to the tank, substantially as shown and described.

3. In a feed-water heater, the combination of a tank with a furnace, a passage between said furnace and tank, a valve for controlling heat from the furnace to the tank, and exhaust-pipes passing through the tank, all substantially as shown and described.

4. In a feed-water heater, the combination of a tank with a furnace, a chamber formed between the boiler and the tank and communicating with the furnace, exhaust-pipes passing through the tank, and a valve for controlling the heat of the furnace to the tank, and a valve for directing the exhaust through the tank or up the stack, substantially as shown and described.

328,903. FEED-WATER HEATER. Oscar Rothrock, New York, N. Y. Filed Sept. 8, 1885. (No model.)

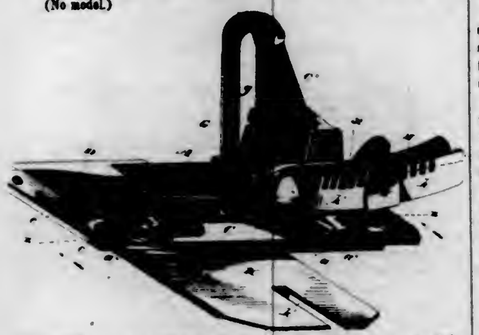


Claim.—1. In a feed-water heater, the combination of a boiler-furnace, a chamber above the furnace, a passage leading from the furnace to the chamber, a valve within the passage, and coiled water-pipes within the chamber, substantially as shown and described.

2. In a feed-water heater, the combination of a boiler-furnace, a chamber above the furnace, a passage leading from the furnace to the chamber, coiled water-pipes within and exhaust-steam pipes leading into the chamber, substantially as described.

3. In a feed-water heater, the combination of a boiler-furnace, a chamber above the furnace, a passage leading to the chamber from the furnace, a valve controlling the passage, coiled water-pipes within the chamber, and waste-steam pipes leading into the said chamber, substantially as described.

328,904. **RUFFLING OR GATHERING ATTACHMENT FOR SEWING-MACHINES.** William Rundquist, Elgin, Ill. Filed June 30, 1885. (No model.)



Claim.—1. As a means for varying the length of movement of the ruffler-blade, and in combination therewith, the longitudinally-slotted bar G, which is pivoted at its upper end, the bar H, pivoted at one end to the lower end of said bar G, and from thence passing through the guide or housing I, the spring-bar *h*, having the teeth *h'*, and the locking-lug *i* within said guide, substantially as and for the purpose shown.

2. As a means for ruffling or gathering fabrics, the device consisting, essentially, of the presser-foot A, having the extension-plate *a*, the slide C, provided with the arms *c'* and *c²*, the ruffler-blade D, the longitudinally-slotted inclined bar G, the adjusting-bar H, having the toothed spring-bar *h*, the guide I, provided with the lug *i*, and the separator-plate K, having the locking-lugs *k*, in combination with the presser-bar B, the needle-bar F, the set-screw *f*, and the bed-plate M, substantially as and for the purpose set forth.

328,905. **BOTTOM BAR FOR WINDOW-SHADES.** David Strasser and Andrew H. Gerdon, Albany, N. Y. Filed July 9, 1885. (No model.)



Claim.—1. A bottom bar for window-shades and the like, consisting of a main body provided with interlocking spring clamping lips or flanges adapted to retain the edge of the curtain between them, substantially as shown and described.

2. In a bottom bar for window-shades and the like, the main body thereof divided into separate longitudinal portions provided with interlocking spring clamping lips or flanges, substantially as shown and described.

3. In a bottom bar for window-shades, the combination, with the main body thereof, of an inwardly-projecting straight flange and a bent flange, the two adapted to retain the edge of the curtain or other fabric between them, the whole being constructed of elastic or resilient material, whereby the two flanges may be sprung together and interlocked, substantially as described.

4. In a bottom bar for window-shades, the main body thereof divided into separate longitudinal portions, both constructed of elastic or resilient material and having inwardly-projecting interlocking flanges, two of the flanges being straight and the others bent, substantially as shown and described.

5. In a bottom bar for window-shades, the combination, with the main body thereof, formed of elastic or resilient material, of the inwardly-projecting straight lip or flange and a bent or curved flange, the latter having an auxiliary lip extending downwardly and outwardly therefrom, whereby the flanges may be sprung together and interlocked and the auxiliary lip clamped against the inner surface of the bar, substantially as shown and described.

6. In a bottom bar for window-shades, the combination, with the main portion thereof, formed from a single piece of elastic material, and having interlocking spring clamping-flanges, and the chamber E, of the counterbalance-rod and the fringe ornament attached to the same, substantially as shown and described.

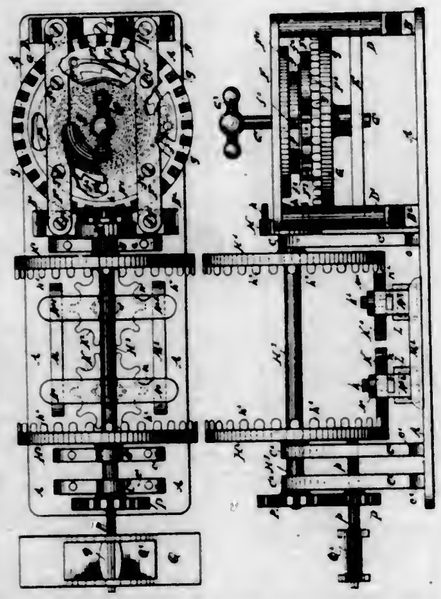
7. In a bottom bar for window-shades, the combination, with the main portion thereof, formed from a single piece of elastic material, and having interlocking spring clamping-flanges, and the chamber E, of the counterbalance-rod L, substantially as shown and described.

8. In a bottom bar for window-shades, an end cap or ferrule consisting of a tubular body having at its outer end an enlargement, as shown, soft material projecting beyond said enlargement, and a support for said soft material resting within the enlargement, substantially as shown and described.

9. In a bottom bar for window-shades, an end cap or ferrule consisting of a tubular body having at its outer end an enlargement, as shown, soft material projecting beyond said enlargement, and a spring-support resting within the enlargement, substantially as shown and described.

10. The combination, with the bottom bar of a window-shade, of a band encircling the same provided with a subjacent recess for the reception of a pendent ring, the band being united to the curtain fabric above the bar by stitching passing through said fabric and around the band, and having shoulders above the stitching, whereby when a strain is put upon the band in lowering the curtain it is prevented from slipping from the bar, substantially as shown and described.

328,906. **CHURN-POWER AND BUTTER-WORKER COMBINED.** James Sweeney, Corning, Ohio. Filed Dec. 29, 1884. (No model.)



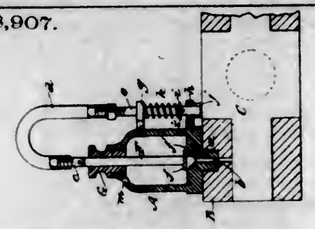
Claim.—1. The combination of the shaft G', spring *f*, disk F', ratchet F, gear-wheel G, provided with pawl F³, and pawl-spring F⁴, arranged to operate substantially as described, for the purpose set forth.

2. The shaft H², provided with the gearing H *h*, H', H², and shafting *k k'*, provided with sockets L and gearing K K', in combination with the gear-wheel G, arranged to operate as described, and the churn-dashers, for the purpose set forth.

3. The blade Q, having recess Q' *q*, arranged to operate as described, for the purpose set forth.

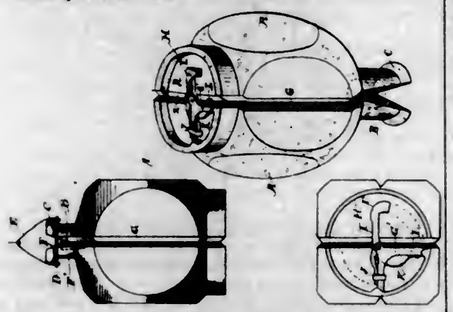
328,907. **OIL-CUP.** Albert L. Swift, Leavenworth, Kans. Filed Mar. 25, 1885. (No model.)

328,907.



Claim.—The spindle F, fitted in the oil-reservoir and connected by the adjustable link *c* to the bow *d*, in combination with the rod *e*, adjustably connected to the other end of the bow *d* and having the spring *k* placed thereon, the rod *e* being held in keepers *g h*, substantially as described.

328,908. **AUTOMATIC FIRE-EXTINGUISHER.** Edward H. Williams, Dayton, Ohio. Filed Oct. 31, 1884. (No model.)



Claim.—1. In a hand-grenade, a vitreous vessel, A, having a flanged neck, B, and grooved, as described, in combination with a spring-actuated hammer and a fusible band, J, substantially as described.

2. In a fire-extinguisher, the combination of the grooved vessel A, having a depression in it, a fixed angular piece, G', provided with a detonating cap, a hammer pivoted to this piece and acted on by a spring for exploding said cap, and a fusible connection, J, substantially as described.

3. The combination, in a fire-extinguisher, of the vessel having at the upper part a V-shaped groove and a corresponding groove extending around the said vessel, the flanged neck, its retaining-band and suspension-loop, a detonating cap, a spring-actuated hammer for exploding the same, and a fusible band, J, substantially as described.

4. The combination of the vessel having at the upper end a V-shaped groove and corresponding vertical grooves, the recess R, the fixed angular piece G', a pivoted spring-actuated hammer, a detonating cap, and fusible solder J, substantially as described.

5. The combination, with the grooved vessel A, provided with a detonating device in its recessed bottom, of a flanged neck having a V-shaped groove across it, the band D, and the suspension-loop attached thereto, substantially as described.

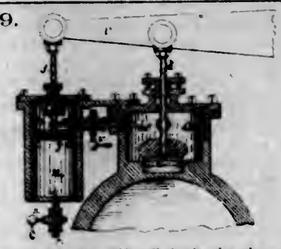
328,909. **DASH-POT FOR STEAM-ENGINES.** Benjamin F. Willson, West Bay City, Mich., assignor of one-half to Samuel A. Plummer, same place. Filed Jan. 3, 1885. (No model.)

Claim.—1. In a dash-pot, the combination of a steam-chest, and a valve within the chest, with a cylinder placed outside of and near the said chest, and provided with a packing-box at one end, and a waste-pipe and valve at the opposite end, a piston-head dividing said cylinder into two chambers, and provided with a passage for admitting steam from one of said chambers into the other, a piston connected with the said piston-head at one end, and with the opposite end connected with means of operating the said valve within the said steam-chest, means, as described, of admitting steam to the said cylinder, and means, as described, of regulating the pressure in one chamber of the said cylinder, substantially as and for the purpose specified.

2. In a dash-pot, the combination of the steam-cylinder *h*, provided at one end with a packing-box, and at the opposite end with a waste-pipe and valve, with a piston-head, *g*, provided with the passage *m*, the piston *f*, passed through the said packing-box and connected at its inner end with the said piston-head, and with its opposite end connected with means of operating upon the valve *b*, and the steam-pipe *n*, provided with the valve *v*, substantially as described.

3. In a dash-pot, the cylinder *h*, provided with the packing-box *t*, the piston-head *g*, having the steam-passage *m*, the piston *f*, and steam-pipe *n*, provided with the valve *v*, in combination with the expansion-

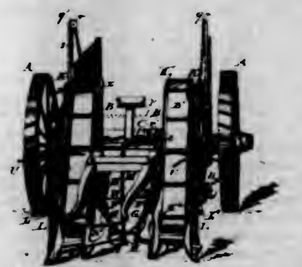
328,909.



chamber *p*, attached to the said cylinder by the pipe *o*, and provided with the waste-pipe *r* and valve *s*, substantially as shown, and for the purpose set forth.

4. In a dash-pot, a cylinder having a piston-head forming two chambers within the cylinder, and means, substantially as described, for admitting steam from one of the said chambers to the other, in combination with steam-pipe connected with the said cylinder, and arranged to produce a steady pressure of steam within one of the said chambers, and a waste-pipe and valve connected with the other of the said chambers for producing a variable pressure therein, substantially as and for the purpose set forth.

328,910. **CORN AND CANE HARVESTER.** James H. Wilson and John A. Forbes, Dover, Del. Filed Feb. 7, 1884. (No model.)



Claim.—1. In a corn-harvester, the combination of a large gear-wheel mounted on the axle, an elevator-belt, a shaft operating the elevator and carrying a pinion intermeshing with the said large gear, a shaft carrying at one end a bevel-gear and at the other end a pulley and a pinion, the latter intermeshing with the said large gear, a crank-shaft extending obliquely toward the front of the machine and carrying a bevel-pinion meshing with said bevel-gear, and obliquely-arranged cutter-connections between said crank-shaft and said cutter, a vertical reel-shaft carrying a pulley, and a belt connecting the said pulley with the first-named pulley, the whole operating simultaneously, substantially as and for the purpose specified.

2. In a corn-harvester, a dumping device consisting of a receptacle or receiving-box, an extra movable bottom therein, posts erected on one end of said box, pulleys carried on said posts, ropes passing from one end of the said extra bottom, and a windlass to operate said ropes, substantially as and for the purpose specified.

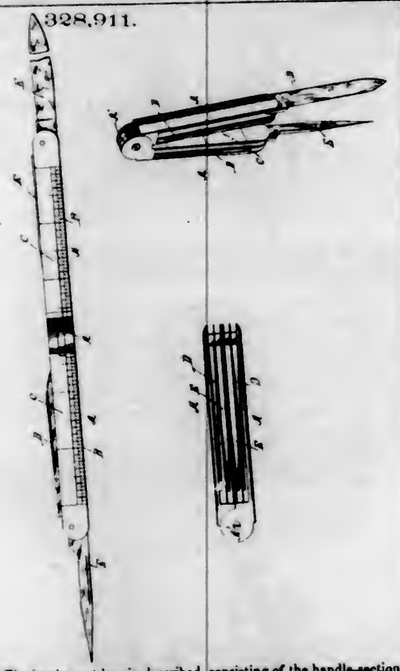
3. The corn-harvester described, consisting of drive-wheels mounted on an axle, a large gear-wheel on said axle, an elevator receiving motion from a shaft with a pinion meshing with said gear, an obliquely-arranged cutter at the mouth of said carrier or elevator frame, an oblique crank-shaft connected to said cutter, a shaft with gearing and a pulley, the gearing meshing with the said large gear, and a pinion on the said crank-shaft, a vertical reel-shaft with a pulley connected by a band with the said pulley on the gear-shaft, and a dumping-receptacle consisting of a box with an extra upwardly-moving bottom, substantially as specified.

328,911. **COMBINATION KNIFE, COMPASSES, AND RULER.** Thos. W. Wood, Asbury Park, N. J. Filed Feb. 28, 1885. (No model.)

Claim.—1. An implement, substantially as herein described, consisting of handle-sections connected together at one end by compass joint or hinge, a pivot-point hinged to the outer end of one section and capable of being turned outward from or incased within the said section, and a cutting-blade correspondingly supported and arranged in the other section, substantially as set forth.

2. An implement, substantially as herein described, comprising two handle-sections connected together at one end by hinge or compass joint, and pivot-points and cutting-blades pivoted to the outer end of each of the said sections and capable of being turned outward from or incased within their respective sections, substantially as set forth.

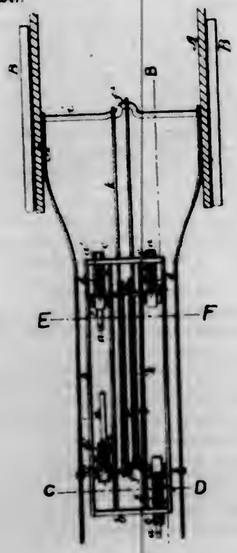
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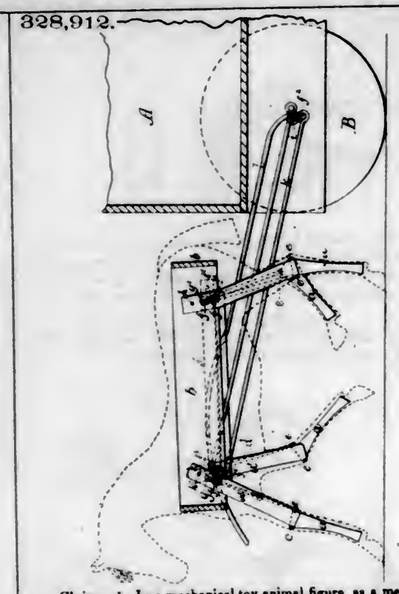
3. The implement herein described, consisting of the handle-sections connected at one end by compass-joint, and having their inner or meeting faces flattened and graduated as described, and scribers and cutting-blades pivoted one to the outer end of each of the handle-sections, substantially as and for the purposes set forth.

4. An implement comprising, in combination, pivoted handle-sections graduated on their inner or meeting faces and pivot-points and blades pivoted to the outer ends of such sections, all arranged substantially as described, whereby the said implement is capable of use as a pocket-rule, knife, dividers, washer-cutter, &c., as set forth.

328,912. MECHANICAL TOY ANIMAL FIGURE. William H. Hall, West Brighton, County of Sussex, England. Filed July 15, 1884. (No model.) Patented in England Apr. 17, 1884, No. 6,470; in Germany July 1, 1884, No. 29,806; in France July 4, 1884, No. 163,149; in Austria-Hungary Dec. 4, 1884, No. 34,163 and No. 56,714, and in Belgium Mar. 28, 1885, No. 68,347.



328,912.



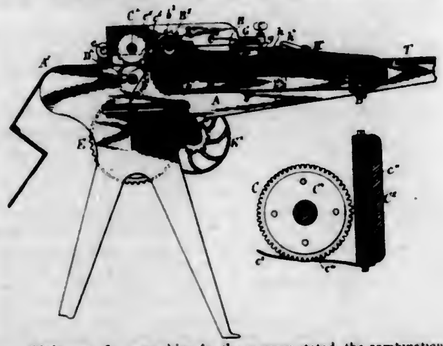
Claim.—1. In a mechanical toy animal figure, as a means for actuating the limbs, the combination, with a cranked axle-tree, of connecting-rods *k k*, operated thereby, another crank-shaft connected by these rods to the cranks of said axle-tree and having other cranks playing in slots formed in the limbs of the figure, the cranks and rods being arranged to give alternate similar movements to the limbs, as in walking or running, as set forth.

2. In a mechanical toy animal figure, the combination of the cranked axle-tree *i*, connecting-rods *k k*, the slotted limbs of the figure, cranked shaft *f f'*, for operating said limbs, pivots *h*, and connecting-rods *j*, substantially as and for the purposes set forth.

3. In a mechanical toy figure, a cranked axle or axles, such as *f f'*, working in slots in the legs *a a'*, rods *d*, and supporting-pins *h*, in combination with connecting-rods *j k* and cranked axle-tree *i*, as and for the purposes set forth.

REISSUES.

10,652. PERFORATING-MACHINE. Augustus G. Burton, Chicago, Ill. Filed July 18, 1885. Original No. 302,189, dated July 15, 1884.



Claim.—1. In a machine for the purpose stated, the combination, with a cutter, of a matrix having a continuous groove to admit the cutter-edge, and provided with openings for the exit of detached fibers from the groove, substantially as described.

2. In a machine for the purpose stated, the combination, with the cutting-disk, of separated disks d^3, provided with lateral openings d^4, substantially as and for the purposes set forth.

3. In a machine for the purpose stated, the combination, with the cutter, of a circular matrix having a continuous groove to admit the cutter, said matrix being constructed of two relatively movable parts, whereby the width of the groove between the parts may be varied, substantially as described.

4. In a machine for the purpose stated, the combination, with the cutting-disk, of a matrix composed of separate disks d^3, a disk, d^5, placed between said disks d^3, for holding them at a desired distance apart, and nuts D^3, for supporting said disks, substantially as described.

5. The combination, with the cutter beveled at its edge, of the matrix composed of elastic metal disks or plates adapted to yield as the beveled edge of the cutters enters between them, substantially as described.

6. In a machine for the purpose stated, the combination, with a cutter beveled at its edge, of a matrix composed of two separated elastic disks placed at a distance apart less than the thickness of the body of the cutter, substantially as and for the purpose set forth.

7. The combination, with the stationary matrix-shaft D', mounted in the frame A, of the hinged frame bearing the opposing cutter-shaft C', and an adjusting-screw, c^3, substantially as and for the purpose specified.

8. The combination, with the hinged frame C^3 C^3, carrying the rotating cutter-shaft C', of a lever, I, and cam E^3, substantially as and for the purpose set forth.

9. In combination with the feeding-apron, the vibrating presser-bar and gage H, and the shaft G, connected to alternately rise and fall, substantially as and for the purpose set forth.

10. The combination, with the feeding-apron, the oscillating shaft H', bar H, arms h', and cam-arm H^3, of the vibrating arms G', shaft G, and an actuating-cam, E^3, substantially as described.

11. The combination, with the feeding-apron, of a loose roller, B^4, having free lateral and vertical movement, substantially as described.

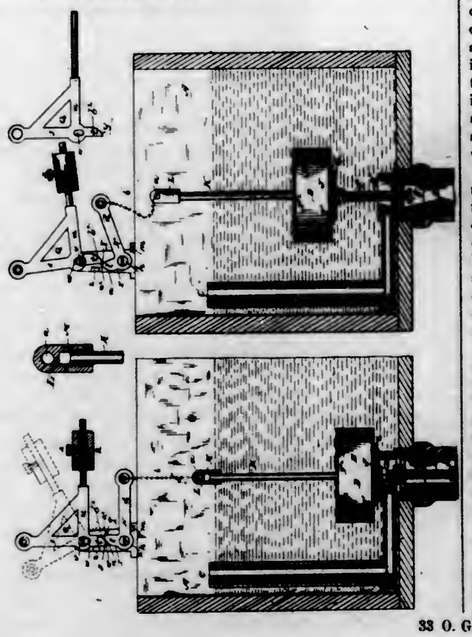
12. In combination with the matrix and cutter-shafts, one of which is movable for the purpose of adjustment, the feed-apron arranged to proximate said matrices and cutters and mounted on a movable frame, whereby access is afforded to the matrices and cutters, substantially as described.

13. In combination with the circular cutters and the traveling feed-apron, the intermediate guide-table, F, and the superposed rotating feed-roller F', actuated positively from the feed-gear, substantially as described.

14. In combination with the hub of the wheel E, two or more cam-plates, as e^5, mounted rotatably on said hub, and an interiorly-threaded clamp-nut fitted to the correspondingly-threaded exterior of the hub, whereby the cam-plates may be held in any position by a single central nut, substantially as described.

15. In combination with the shafts C' and D', of a perforating-machine having adjustable perforators thereon, and with adjacent parts of the frame, the adjustable supports c^3 and d^7, substantially as and for the purposes set forth.

10,653. VALVE AND OPERATING MECHANISM FOR VALVES. William Scott, Malden, Mass. Filed Mar. 25, 1885. Original No. 297,455, dated Apr. 22, 1884.



Claim.—1. The combination, with the outlet or discharge of a tank for water or other liquid, of a chambered valve which has openings or passages for the ingress and egress of the liquid of the tank and of air, and is otherwise constructed and arranged that when seated said discharge is closed and when raised said discharge is opened, and from the then ingress of liquid said valve is again seated, emptying its contents, substantially as described, for the purpose specified.

2. The combination, with a tank for liquid, an outlet-pipe for the liquid, a chambered valve for closing said outlet-pipe, provided with an air-inlet pipe and a liquid-inlet, the liquid-inlet being located at such a point that when the valve is unseated the liquid will pass from the tank into said valve and when seated the liquid will pass therefrom into the outlet-pipe of the tank, substantially as described.

3. The combination, with the seat H of the outlet or discharge B of a tank for water or other liquid, of a chambered valve, D, which has openings or passages J K for the ingress and egress of the liquid of the tank and of air, and is provided with a stem, P, suitably guided, all so that when said valve is seated said discharge is closed and when raised said discharge is opened, and from the then ingress of liquid from the tank said valve is again seated, emptying its contents into said discharge, substantially as described, for the purpose specified.

4. The combination, with the outlet or discharge of a tank for water or other liquid, of a chambered valve which has openings or passages J and K for the ingress and egress of the liquid of the tank and of air, and the port M of the air-passage made downwardly inclining, and all otherwise constructed and arranged that seated said discharge is closed and raised said discharge is opened, and from the then ingress of liquid said valve is again seated, emptying its contents into said discharge, substantially as described, for the purpose specified.

5. In combination, a tank for liquids, an outlet-pipe to said tank, an opening and closing valve to said outlet-pipe, a reciprocating lever for operating said valve, and a part connected to said valve as an abutment of said lever, and said operating-lever and said valve-abutment constructed with faces to have in one movement of said lever a working-contact with each other, and in the other movement thereof a yielding, moving, and non-working contact, whereby in the one movement the valve will be opened and released to close and in the other the lever can return to position to again open the valve, substantially as described.

6. In combination, a tank for liquid, an outlet-pipe to said tank, an opening and closing valve to said outlet-pipe, a reciprocating lever for operating said valve and having opposite faces b^2 a^2, and a part connected to said valve as an abutment of said lever and having opposite faces *q r*, in one movement of said lever its face a^2 and face *q* of said abutment to work against and to escape from each other, and thus to open and to release the valve to close, and in its other movement its face b^2 to pass the face *r* of said abutment, and thus to bring its said face a^2 and face *q* of said abutment in position to again open the valve, substantially as described.

7. In combination, a tank for liquid, an outlet-pipe to said tank, an opening and closing valve to said outlet-pipe, a reciprocating lever for operating said valve, having opposite faces b^2 a^2, and an elongated fulcrum or pivotal bearing, and a part connected to said valve as an abutment of said lever and having opposite faces *q r*, in one movement of said lever its face a^2 and face *q* of said abutment to work against and to escape from each other, and thus to open and to release the valve to close, and in its other movement to slide by its elongated bearing on its fulcrum, and its face b^2 to pass the face *r* of said abutment, and thus to bring its said face a^2 and face *q* of said abutment in position to again open the valve, substantially as described.

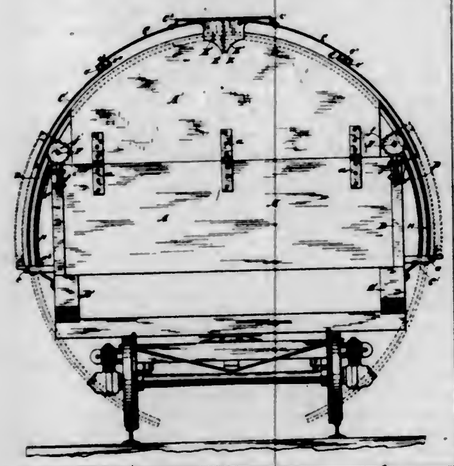
8. In combination, a tank for liquid, an outlet-pipe to said tank, a reciprocating lever for operating said valve, and a part carried by a reciprocating lever connected to the valve and as an abutment of said operating-lever, and said operating-lever and said abutment of said valve-connected lever constructed with faces to have in one movement of said lever a working-contact with each other, and in the other movement of said lever a yielding, moving, and non-working contact, whereby in the one movement the valve will be opened and released to close, and in the other the operating-lever can return to a position to again open the valve, substantially as described.

9. In combination, a tank for liquid, an outlet-pipe to said tank, an opening and closing valve to said outlet-pipe, a reciprocating lever for operating said valve and having opposite faces b^2 a^2, and a part carried by a reciprocating lever connected to said valve and as an abutment to said operating-lever, and having opposite faces *q r*, in one movement of said operating-lever its face a^2 and face *q* of said abutment to work against and to escape from each other, and thus to open and to release the valve to close, and in its other movement its face b^2 to pass the face *r* of said abutment, and thus to bring its said face a^2 and face *q* of said abutment in position to again open the valve, substantially as described.

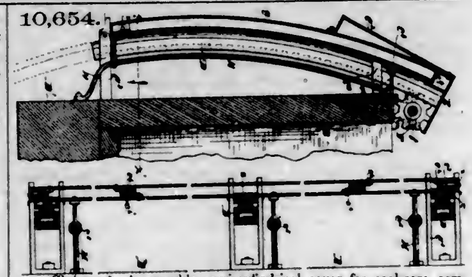
10. A lever, N, having arm *d*, connected to a valve of a tank for water or other liquid, and arm *l*, having faces *r* and *q*, and a rounded outer end, *n*, in combination with an operating-lever, Q, having an arm, *t*, rounded at its outer end and made with faces a^2 *y*, and an elongated fulcrum-bearing, *w*, substantially as described, and for the purpose specified.

11. The lever N, having long arm *d* and short arm *l*, rounded at its free end, in combination with a lever, Q, having its short arm *t* rounded at its free end, and formed with an elongated fulcrum-bearing, *w*, whereby said levers are adapted to operate substantially as described.

10,654. RAILWAY-CAR. Richard H. Wyman, Evanston, Ill. Filed June 23, 1884. Original No. 292,192, dated Jan. 22, 1884.



10,654.



Claim.—1. A movable semi-cylindrical cover for coal-cars, comprising separate convex segmental plates sustained in bearings at opposite sides of the car, and mechanism, substantially as described, for raising and lowering the said plates to cover and uncover the car, substantially as described.

2. A semi-cylindrical cover for coal-cars, comprising separate convex segmental plates C, sustained in bearings at opposite sides of the car, in combination with rack-and-pinion mechanism, substantially as described, for raising the sections, whereby the car may be covered by the segmental plates forming a semi-cylindrical top and for lowering the sections to uncover the car, substantially as described.

3. A movable cover for railway freight or coal cars, consisting of the plates C C C′ C′, having segmental racks D D attached thereto, shafts F, pinions *f*, ratchets *f′*, guide-bars H, eyebolts c^4, and brackets c^3, whereby the car may be wholly uncovered while loading and unloading, substantially as and for the purpose set forth.

4. A movable sectional cover for railway freight or coal cars, consisting of the plates C C C′ C′, having segmental racks D D attached thereto, shafts F, pinion *f*, ratchets *f′*, guide-bars H, eyebolts c^4, brackets c^3, and plates or aprons E, substantially as and for the purposes set forth.

PHOTO LITH NORRIS PETERS

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of New Jersey.

RAILWAY REGISTER MANUFACTURING COMPANY *v.* NORTH HUDSON RAILWAY COMPANY *et al.*

Decided August 24, 1885.

1. AMENDING AND ENLARGING CLAIMS BEFORE ISSUE.
An inventor may amend or enlarge his claims from time to time before the issue of his patent, in order to embrace everything which was specified at the start.

2. SAME—BY ATTORNEY.
On examination of the original specification of Patent No. 233,915, dated November 2, 1880, for a fare-register, *Held* that the invention for which the patent was issued was sufficiently shown and described therein, and that the attorneys of the inventor had authority to insert amended claims in consonance with said specification without having them verified by the oath and signature of the patentee.

3. SAME—ANTICIPATION—COMBINATION.
A combination is patentable only when the several elements of which it is composed produce by their joint action a new and useful result, or an old result in a cheaper or otherwise more advantageous manner.

4. SAME—PATENT NO. 233,915 FOR FARE-REGISTER.
Patent No. 233,915 for a fare-register, granted November 2, 1880, is not void for want of novelty.

Messrs. Dickerson & Dickerson for the complainant.
Messrs. Frost & Coe for the defendants.

NIXON, *J.*:

This suit is brought to recover damages for the infringement of Letters Patent No. 233,915, dated November 2, 1880, for fare-registers, issued to John B. Benton, assignor to the Railway Register Manufacturing Company of Buffalo, New York. The defenses set up in the answer are want of novelty, prior use for more than two years, and non-infringement.

I have no doubt that the mechanism used by the defendants infringe the complainant's patent. The complainant's expert (Quimby) properly describes the invention in Benton's patent when he says that it is to set back to the starting-point the index-hand or pointer of a trip-registering mechanism, which hand or pointer, during the registration of fares by a permanent register, partakes of the motion of a shaft rotated by the permanent-register mechanism. The defendants use substantially the same mechanism which is found in the Fowler and Lewis patent, (No. 231,161,) and embodied in exhibit marked "North Hudson Co. Indicator." The mechanism varies in some details, but the variety arises from the use of mechanical equivalents, and the mode of operation of the two mechanisms is substantially the same.

The principal questions left for me to consider are (1) whether, upon the original application made by Benton on the 29th of December, 1877, the Patent Office was authorized to issue the patent on which the suit is brought, and (2) whether the claims of the patent, as finally issued, have been anticipated by other inventors and patentees.

1. Turning to the specifications of Benton's original application I find that he states the object of his invention to be threefold, to wit, to produce a combination of mechanism which shall be capable (1) of registering fares, numbers, or amounts; (2) of separating the registrations belonging to each trip, or other definite period, by means of a trip-index being returned to zero; and (3) of indicating how many times such trip index or register has been returned to zero. In order to effect these results he proposes the following combination: first, a single-trip register for recording the actuations of the mechanism during a single trip, and capable of being set back to zero at the end of that trip; second, a general register or permanent index, which records the same actuations that the single-trip index does, and which cannot be set back; third, a register for indicating how many times the single-trip register has been set back to zero, and operated in and by the act of setting the single-trip register to zero. After further and minutely describing in the specifications the means by which he expects to secure these results in a single combined mechanism, he concludes with six claims. In view of the subsequent proceedings in the Patent Office it is only necessary to consider the fifth claim, which is as follows:

5. In a fare-register, the combination of a key, K, with a pawl, B, a ratchet-wheel, R, and a stop arrangement by which the indication of said register may at any time be changed to some other particular indication, as, for instance, zero, substantially as and for the purposes described.

The complainant insists that the three claims of the patent sued on are merely the restatement in a better and more formal manner of what is fairly indicated in this fifth claim of the original application, taken in connection with the specification describing the mechanism by which the claim was made operative. The patentee precedes the three claims with the following disclaimer:

I disclaim herein, in favor of my application filed July 9, 1880, all the patentable subject-matter of my present invention, save that covered by the following three clauses of claims, it being the intention to cover and include in this case only the three combinations of mechanism recited in said claims, while all the other patentable features, parts, or combinations of my invention are intended to be covered by the claims of my said application of July 9, 1880, which is filed as a division and continuation of this present application.

The claims are all combination claims, and are stated in the patent as follows:

1. The combination, substantially as hereinbefore set forth, of a registering-wheel or index-hand, actuated in one direction in the process of counting and capable of being moved in the other direction, to reset or carry it to zero, a resetting wheel or teeth connected with said registering-wheel or index-hand, a movable plate or pawl-carrier, inclosed within the register-casing, acting upon the said resetting wheel or teeth, and a removable reciprocating push-key to actuate said plate or carrier.

2. The combination, substantially as hereinbefore set forth, of a turning-shaft, a toothed wheel to actuate said shaft, a trip index-hand or registering-wheel connected with said shaft by a friction clutch or coupling which compels the said index-hand or registering-wheel to move with said shaft in the process of counting, while allowing said index-hand to be moved upon said shaft to reset it or bring it to zero, resetting teeth or projections connected with said index-hand, a movable plate acting upon said projections of the index-hand, a pusher or key movable endwise to actuate said movable plate in one direction, and a spring to move said plate in the opposite direction, or to return the plate to the position from which it was moved by said pusher.

3. The combination, substantially as hereinbefore set forth, of a trip-register, a general register, a prime mover or handle for actuating said registers simultaneously, or nearly so, and a resetting mechanism for the trip-register, consisting of a toothed wheel or projections connected with the trip-register, a backward and forward movable plate acting upon said projections, a reciprocating key or pusher to actuate said plate in one direction, and a spring to move the plate in the opposite direction to that imparted by said key, whereby the said trip-register is permitted to be moved with the general register clear of the resetting-plate in the process of counting, while capable of being reset by said plate by the simple reciprocation of the key or pusher without disturbing the record of said general register.

The question is not, as the counsel of the defendants seem to imagine, whether everything which appears in these three claims was incorporated in the fifth claim of the original application, but whether the specifications of that application fairly indicate all that was put into these claims. I do not understand that an inventor, applying for a patent, and before it is issued, may not amend or enlarge his claims from time to time, in order to embrace everything which was specified at the start. I have examined with care the original specifications of Benton, and am of the opinion that he has substantially shown and described the invention, to cover which the patent of the complainant was issued. If this be the case, his attorneys in the Patent Office had the authority to insert the amended claims without having them verified by the oath and signature of the patentee.

2. It is further insisted by the counsel of the defendants that the claims contain nothing new, and that the invention has been anticipated. This is probably true so far as the elements of the combinations are concerned. By searching the Patent Offices of the United States and Great Britain many patents may be and have been found which contain some one of these elements. They are all old. But have they ever before been put in combination? If not, and a new and useful result has followed such combination, the patent must be sustained.

In the recent case of *Stephenson* v. *Railroad Company* (5 Sup. Ct. Rep. 781) the Supreme Court, speaking by Mr. Justice Woods, say:

> A combination is patentable only when the several elements of which it is composed produce by their joint action a new and useful result, or an old result in a cheaper or otherwise more advantageous way.

No matter, then, how old the several elements are, have they been placed in such relation to each other that their joint action produces a new and useful result?

The date of the Benton invention is February 19, 1877, as the uncontradicted testimony of the case shows. Laying aside all patents which do not antedate that time, none are left that cover the combinations of the complainant's mechanism.

Let a decree be entered for the complainant for an injunction and an account.

FOREIGN PATENT LAWS.

PATENT LAW OF CEYLON.

Enacted November 2, 1859. Entitled An Ordinance for Granting Exclusive Privileges to Inventors.

Whereas, it is expedient for the encouragement of inventors of new manufactures that certain exclusive privileges in their inventions should be granted to them in Ceylon, it is enacted by the Governor of Ceylon, with the advice and consent of the Legislative Council thereof, as follows:

1. This ordinance may be cited for all purposes as the "Inventions Ordinance, 1859."

2. This ordinance shall come into operation on the day of passing the same.

3. The inventor of any new manufacture may petition the Governor for leave to file a specification thereof. Every such petition shall be in writing, in the form or to the effect mentioned in the schedule hereunto annexed, and shall be signed by the petitioner, or, in case the petitioner shall be absent from Ceylon, by an authorized agent, and shall state the name, condition, and place of residence of the petitioner and the nature of the invention.

4. An *alien ami*, whether resident in Ceylon or not, may petition for leave to file a specification under this ordinance.

5. Upon such petition, the Governor may, with the advice of the Executive Council, make an order authorizing the petitioner to file a specification of the invention: *Provided, always*, That before making such order the Governor shall refer the petition to any person or persons for inquiry and report, and such person or persons shall be entitled to a reasonable fee for such inquiry and report, to be paid by the petitioner, the amount of fee, in the case of dispute, to be settled by the district court of Colombo in a summary manner.

6. If within the space of six months from the date of such order the petitioner cause a specification of his invention to be filed, in manner hereinafter mentioned, the Governor, with the advice and consent of the Executive Council, may, in the form "D" in the schedule to this ordinance appended, under the public seal of the island of Ceylon, grant to the petitioner, his heirs, executors, administrators, and assigns, the sole and exclusive privilege of making, selling, and using the said invention in Ceylon, and authorizing others so to do, for the term of fourteen years from the time of filing such specification, and for such further term, if any, not exceeding fourteen years from the expiration of the first fourteen years, as the Governor, with the advice of the Executive Council, may think fit to direct, upon petition to be presented by such inventor at any period not more than one year and not less than six months before the expiration of the exclusive privilege hereby granted.

7. An order authorizing the filing of a specification or for extending the term of such exclusive privilege as aforesaid may be made, subject to such conditions and restrictions as the Governor, with the advice of the Executive Council, may think expedient.

8. Every specification of an invention filed under this ordinance shall be in writing, and shall be signed by the petitioner, and shall particularly describe and define the nature of the said invention and in what manner the same is to be carried out.

9. Every petition for leave to file a specification and every specification filed under this ordinance shall be left with the Colonial Secretary, and shall be accompanied by a declaration in writing, signed by the petitioner, in the form or to the effect mentioned in the schedule hereunto annexed, marked "A" and "B," respectively; and if the inventor be absent from Ceylon the petition and specification shall also be accompanied by a declaration, signed by the agent, who shall present or file the same, to the effect that he verily believes that the declaration purporting to be the declaration of the inventor was signed by him, and that the contents thereof are true, which declaration shall be in the form hereunto annexed, marked "C." The date of the delivery of every such petition and specification shall be indorsed on the same, respectively, and shall be also recorded at the office of the Colonial Secretary.

10. Any person who shall willfully and corruptly make any false statement in any declaration required by this ordinance shall be liable to the pains and penalties of perjury.

11. No specification shall be filed until the petitioner shall have paid all fees payable under this ordinance.

12. The specification, or a copy thereof, shall be open at all reasonable times at the office of the Colonial Secretary to public inspection, upon payment of a fee of five shillings.

13. A book shall be kept in the office of the Colonial Secretary, wherein shall be entered every such petition and specification, and every order made upon such petition or relating to the invention therein mentioned, and every grant of exclusive privilege. Every specification and every such grant as aforesaid shall be numbered according to the order in which it is entered in such book, and a reference shall be made in such book in the margin of the entry of each specification to every order relating to the invention.

14. Such book, or a copy thereof, shall be open at all convenient times for the inspection of any person upon payment of a fee of five shillings, and the said Colonial Secretary shall cause a copy of any entry therein, certified under his hand, to be given to any person requiring the same, on payment of the expense of copying.

15. Every such certified copy shall be *prima facie* evidence of the document of which it purports to be a copy.

16. No person shall be entitled to any exclusive privilege under the provisions of this ordinance—if the invention at the time of presenting the petition for leave to file the specification was not a new invention in Ceylon, or if the petitioner is not the inventor or importer thereof into Ceylon, or if the specification filed does not particularly describe the nature of the invention and in what manner the same is to be carried out.

17. An invention shall be deemed a new invention within the meaning of this ordinance if it shall not before the time of applying for leave to file the specification have been publicly used in Ceylon. The public use of an invention prior to the application for leave to file a specification shall not be deemed a public use within the meaning of this section if the knowledge thereof shall have been obtained surreptitiously, or in fraud of the inventor, or shall have been communicated to the public in fraud of the inventor, or in breach of confidence: *Provided*, The inventor shall within six months after the commencement of such public use apply for leave to file his specification and shall not previously have acquiesced in such public use: *Provided, also*, That the use of an invention in public by the inventor thereof, or by his servants or agents, or by any other person by his license in writing, shall not be deemed a public use thereof within the meaning of this ordinance.

18. If an inventor who, prior to the time of applying for leave to file a specification of an invention under this ordinance, shall have obtained her Majesty's letters patent for the exclusive use of such invention in any part of the United Kingdom, but not extending to this island, shall petition the Governor for leave to file a specification of such invention, it shall be competent for the Governor, with the advice of the Executive Council, to make an order authorizing the petitioner to file a specification of the invention and exemplification of the letters patent granted to him. On this being done the petitioner shall be entitled to the sole and exclusive privilege of making, using, and selling the said invention in Ceylon for the term or terms mentioned in the sixth section: *Provided*, The petition for leave to file the specification shall state that such letters patent have been granted, and shall also state the date thereof and the term during which the same are to continue in force.

19. And whereas it is expedient that sole jurisdiction over all actions, suits, and proceedings arising in respect of this ordinance should be vested in the District Court of Colombo, to the exclusion of other courts having jurisdiction under the twenty-fourth and twenty-ninth sections of the letters patent of his late Majesty King William the Fourth, bearing date the 18th day of February, 1833. And whereas, by letters patent of her present Majesty, bearing date the 2-th day of January, 1843, it is declared that it shall be competent to the Governor, by any law or ordinance to be by him from time to time made, with the advice and consent of the Legislative Council, to make provision for the better administration of justice within this island, anything in the said letters patent of King William the Fourth to the contrary notwithstanding: *It is therefore enacted*, That the said district court of Colombo shall have sole and exclusive jurisdiction over all such actions, suits, and proceedings, as aforesaid, wheresoever the same may arise, and to the exclusion of all other district courts in the island, subject, however, to appeal, as hereinafter provided.

20. In any suit for the infringement of such exclusive privilege the plaintiff shall deliver with his libel particulars of the breaches complained of in the said suit, and the defendant, in pleading thereto, shall deliver with his answer particulars of the grounds (if any) upon which he means to contend that the plaintiff is not entitled to an exclusive privilege in the invention. In like manner, upon any application to the said district court under the twenty-second, twenty-third, and twenty-fourth sections of this ordinance, the applicant shall deliver particulars of the objections on which he means to rely. At the trial of any such suit or issue no evidence shall be allowed to be given in support of any alleged infringement or of any objection impeaching the validity of such exclusive privilege which shall not be contained in the particulars delivered as aforesaid. If it be alleged that the invention was publicly known or used prior to the date of the petition for leave to file such specification, the places where and the manner in which the invention was so publicly known or used shall be stated in such particulars: *Provided, always*, That it shall be lawful for the court in which the suit or proceeding is pending, or in which the issue is tried, to allow the plaintiff or defendant, respectively, to amend the particulars delivered as aforesaid upon such terms as shall seem fit.

21. No such suit shall be defended upon the ground of any defect or insufficiency of the specification of the invention, nor shall any such suit be defended upon the ground of a misdescription of the invention in the petition, unless the defendant shall show that he is the actual inventor or derives title from him.

22. It shall be lawful for any person to apply by motion to the district court of Colombo for a rule to show cause why the court should not declare that an exclusive privilege in respect of an invention has not been acquired under the provisions of this ordinance, by reason of all or any of the objections following, (to be specified in the rule,)—that is to say: that the said invention was not, at the time of presenting the petition for leave to file the specification, a new invention, or that the petitioner was not the inventor thereof, and, in addition thereto, either that the applicant was the inventor, or that the inventor has dedicated or made known the invention to the public, or has acquiesced in the public use thereof, or that the specification filed does not particularly describe and define the nature of the invention, or in what manner the same is to be carried out, or that the petitioner has fraudulently inserted in the petition or specification, as part of his invention, something which was not new, or whereof he was not the inventor, or that the petition has willfully made a false statement in his petition, or that some part of the invention, or the manner in which that part is to be carried out as described in the said specification, is not thereby sufficiently described and defined, and that such defect or insufficiency was fraudulent, and is injurious to the public.

23. Any person may, in like manner, apply to the said district court for a rule to show cause why that court should not declare that an exclusive privilege has not been acquired under the provisions of this ordinance, in any part of the invention to be specified in the rule, by reason of all or any of the objections following, (to be specified in the rule,)—that is to say: that such part of the invention was not new at the date of the petition for leave to file the specification, or that the petitioner was not the inventor of that part of the invention, and, in addition thereto, either that the applicant was the inventor of that part, or that the inventor has dedicated or made known the same to the public, or has acquiesced in the public use thereof, or that that part of the invention and the manner in which it is to be carried out is not sufficiently described and defined in the specification, and that such defect or insufficiency is injurious to the public.

24. It shall be lawful for the Queen's Advocate, or any deputy queen's advocate, to apply to the said district court for a rule, calling upon the petitioner, his executors, administrators, or assigns to show cause why the question of the breach of any special condition upon which the leave to file a specification has been granted, or any other question of fact on which the revocation of the exclusive privilege by the Governor, under the power hereinafter reserved, may, in the judgment of the said Governor, depend, should not be tried in the form of an issue directed by the said court; and if the rule be made absolute, the court, unless the breach or other matter of fact be admitted, may thereupon direct such issue to be tried, and certify the result of such trial to the Governor. The costs of such trial, and also the costs of such proceedings, shall be in the discretion of the said court.

25. Every exclusive privilege under this ordinance shall cease if the Governor, with the advice of the Executive Council, shall declare, by notification in the *Government Gazette*, that the same, or the mode in which it is exercised, is mischievous to the State, or generally prejudicial to the public, or if a breach of any special condition, on which the petitioner shall have been authorized to file a specification, or upon which the term of the exclusive privilege shall have been extended, shall be proved to the satisfaction of the aforesaid district court, and if the Governor, with the advice of the Executive Council, shall thereupon declare that such exclusive privilege shall cease.

26. The said district court may, if it think fit, direct an issue for trial before the same court of any question of fact arising upon an application under sections 22, 23, and 24 of this ordinance, and such issue shall be tried accordingly in a summary manner.

27. If it shall appear to the said district court at the hearing of any application under the provisions of sections 22 and 23 of this ordinance that by reason of any of the objections therein mentioned the said exclusive privilege in the invention, or in any part thereof, has not been acquired, the court shall give judgment accordingly, and shall make such order as to the costs of and consequent upon the application as it may think just, and thereupon the petitioner, his heirs, executors, administrators, and assigns shall, so long as the judgment continues in force, cease to be entitled to such exclusive privilege.

28. If the court at the hearing of any such application as last aforesaid shall think that the petitioner has, in the description of his invention, in the petition or specification, included something which at the date of the petition was not new or whereof he was not the inventor, or that the specification is in any particular defective or insufficient, but that the error, defect, or insufficiency was not fraudulently intended, the said court may adjudge the said exclusive privilege to have been acquired and to be valid save as to the part thereof affected by such error, defect, or insufficiency; or, if the court shall think that the error, defect, or insufficiency can be amended without injury to the public, it may adjudge the exclusive privilege in the whole of the invention to be valid, and may, upon such terms as shall appear reasonable, order the specification to be amended in any of the said particulars, and thereupon the petitioner, his heirs, executors, administrators, or assigns shall, within the time limited by the court for the purpose, file a specification amended according to such order.

29. An exclusive privilege shall not be defeated upon the ground that there is any misdescription of the invention in the petition unless such misdescription was fraudulent.

30. Whenever it shall be adjudged by the said district court that an exclusive privilege as to the whole or any part of an invention has not been acquired, the Colonial Secretary shall, upon the production of the judgment or order, cause an entry thereof to be made in the said book hereinbefore directed to be kept, and shall cause a reference to such entry to be made in the margin of the entry of the specification contained in such book.

31. If, upon proceedings instituted within two years from the date of a petition to file a specification, the inventor shall prove to the satisfaction of the said district court that the petitioner was not the inventor, and that at the time of the petition he knew or had good reason to believe that the knowledge of the invention was obtained by himself or by some other person surreptitiously or in fraud of the inventor, or by means of a communication made in confidence by the actual inventor to him or to any person through whom he derived such knowledge, the court may compel the petitioner to assign to the inventor any exclusive privilege obtained under this ordinance, and to account for and pay over the profits thereof.

32. A book shall be kept in the office of the Colonial Secretary (such book to be open to inspection without fee) wherein every person filing a specification under this ordinance shall cause to be stated, under a number corresponding with the number of the specification, some place in Ceylon where service of any rules or proceedings for the purpose of canceling or revoking his exclu-

sive privilege may be made. Any person, partnership, or company, from time to time being proprietors of or having shares or interest in such exclusive privilege, shall cause to be entered in such book, under such number as aforesaid, their names, together with the name of some place for the service of such proceedings as aforesaid. All such rules and proceedings shall be deemed sufficiently served on any such person, partnership, or company if a copy thereof be left at the place entered in such book, or (if any other place be substituted for the same by entry in the said book) at the place last substituted by delivering the same to any person resident at or in charge of such place; or, if there be no person resident at or in charge of such place, or if such place be not within the local limits of the jurisdiction of the court, by causing such rule or proceeding to be sent by post by a registered letter directed to such person, partnership, or company at such place; and if any such person, partnership, or company shall neglect to make or cause to be made such entry, then service of such rule or proceeding may be effected by affixing a copy thereof to some conspicuous part of the court-house, or in such other manner as the court may direct: *Provided*, That notice of any rule obtained or proceeding taken under either of the sections 22, 23, and 24 shall be served on all persons appearing to be proprietors or to have shares or interests in the exclusive privilege under the provisions of this section, and it shall not be necessary to serve such notice on any other person.

33. Nothing in this ordinance contained shall abridge or affect the prerogative of the crown in relation to the granting or withholding the grant of any letters patent for inventions or otherwise, or affect or interfere with any letters patent for an invention heretofore granted or hereafter to be granted by the crown.

34. All decisions and orders of the district court of Colombo made under the authority of this ordinance, shall be subject to an appeal to the Supreme Court, and every such appeal shall be brought on and prosecuted in such manner and shall be subject to such regulations as now exist or shall be hereafter made by law; and subject to the rules and limitations contained in the fifty-second clause of the charter, any party or parties to any suit or proceeding under this ordinance may appeal to her Majesty, her heirs, and successors, in her, his, or their Privy Council, from any final judgment, decree, or sentence of the Supreme Court, or against any rule or order made by such Supreme Court, and having the effect of a final or definitive sentence.

35. Every petition for leave to file a specification under the provisions of this ordinance, or for the extension of the term of an exclusive privilege shall be written or printed on a stamped paper of the value of ten pounds.

36. In the construction of this ordinance the following words and expressions shall have the meanings hereby assigned to them, unless there be something in the subject or context repugnant to such constructions: The word "invention" shall include an improvement. The word "manufacture" shall be deemed to include any art, process, or manner of producing, preparing, or making an article, and also any article prepared or produced by manufacture. The word "inventor" when not used in conjunction with the word "actual" shall include the importer of an invention not publicly known or used in Ceylon. The words "inventor" and "actual inventor" shall include the heirs, executors, administrators, or assigns of an inventor or actual inventor, as the case may be. The word "assigns" shall include grantees of the sole use or benefit in Ceylon of an invention, or of the sole use of an exclusive privilege, for a limited time. The words "Colonial Secretary" shall include any person acting as or for the Colonial Secretary. The words "Queen's Advocate" shall include any person acting as or for the Queen's Advocate.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 33—No. 4. TUESDAY, OCTOBER 27, 1885. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., October 10, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that Junius B. Kaufman, of Lancaster, Pennsylvania, be not recognized from and after this date as agent or attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of October 27, 1885.

Patents	513	No. 328,913 to No. 329,425, inclusive.
Designs	11	No. 16,348 to No. 16,358, inclusive.
Trade-Marks	25	No. 12,698 to No. 12,722, inclusive.
Labels	3	No. 4,613 to No. 4,615, inclusive.
Reissue	1	No. 10,655.
Total issue	553	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	7	.....	Germany	8	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	1	.....	Ireland	.....	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	Russia	.....	.....
Canada	1	.....	Scotland	2	.....
Cape of Good Hope	.....	.....	Spain	.....	.....
Colombia, U. S. of	.....	.....	Sweden	.....	.....
Cuba	.....	.....	Switzerland	.....	.....
Denmark	.....	.....	Victoria	.....	.....
Egypt	.....	.....	Total to citizens of foreign countries	34	.....
England	14	.....			
France	1	.....			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	1	.....
Arizona Territory	1	.....	Nevada	.....	.....
Arkansas	2	1	New Hampshire	2	.....
California	11	2	New Jersey	22	1
Colorado	3	.....	New Mexico Territ'y	.....	.....
Connecticut	23	1	New York	111	7
Dakota Territory	.....	.....	North Carolina	1	.....
Delaware	2	.....	Ohio	30	.....
District of Columbia	1	.....	Oregon	2	.....
Florida	1	.....	Pennsylvania	38	3
Georgia	4	1	Rhode Island	4	1
Illinois	40	2	South Carolina	1	.....
Indian Territory	.....	.....	Tennessee	3	.....
Indiana	17	.....	Texas	3	.....
Iowa	9	.....	Utah Territory	1	.....
Kansas	2	.....	Vermont	1	.....
Kentucky	17	1	Virginia	2	1
Louisiana	1	.....	Washington Territ'y	1	.....
Maine	3	.....	West Virginia	.....	.....
Maryland	5	2	Wisconsin	12	1
Massachusetts	73	4	Wyoming Territory	.....	.....
Michigan	27	.....	United States Army	.....	.....
Minnesota	4	.....	United States Navy	.....	.....
Mississippi	.....	.....			
Missouri	7	.....	Total to citizens of the United States	490	28
Montana Territory	.....	.....			

DESIGNS.

16,348.—BUCKET-EAR.—*James H. Alexander*, Philadelphia, Pa. Application filed July 11, 1885. Serial No. 171,385. Term of patent 14 years.

16,349.—STABLE-HINGE.—*William Cameron Hanna, Jr.*, New York, N. Y., assignor to *J. W. Fiske*, same place. Application filed May 21, 1885. Serial No. 166,326. Term of patent 7 years.

16,350.—PENDANT FOR LAMPS, &c.—*Nicolas Jenkins*, Waterbury, Conn., assignor to *Holmes, Booth & Haydens*, same place. Application filed September 16, 1885. Serial No. 177,310. Term of patent 7 years.

16,351 to 16,354, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor F. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed September 24, 1885. Serial Nos. 178,093 to 178,096, inclusive. Term of patents 3½ years.

16,355.—PENDANT FOR LAMPS, &c.—*William B. Not*, Newark, N. J., assignor to *Holmes, Booth & Haydens*, Waterbury, Conn. Application filed September 16, 1885. Serial No. 177,311. Term of patent 7 years.

16,356.—BOWL AND TRAP FOR WATTE-CLOSETS.—*Arthur Shaw*, Hanley, county of Stafford, England, assignor to *The J. L. Mott Iron Works*, New York, N. Y. Application filed August 22, 1885. Serial No. 175,116. Term of patent 7 years.

16,357.—PANEL.—*Frederick Mankey*, Williamsport, Pa. Application filed July 18, 1885. Serial No. 172,007. Term of patent 7 years.

16,358.—CORNICE.—*Frederick Mankey*, Williamsport, Pa. Application filed July 18, 1885. Serial No. 172,008. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,698.—CARAMELS.—*George E. Adams*, Boston, Mass. Application filed September 16, 1885.

"The representation of a globe."

12,699.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed September 28, 1885.

"The arbitrarily-selected letters or initials 'C. W. A.'"

12,700.—ANTIDOTE FOR RHEUMATISM.—*Bernard G. Amend*, New York, N. Y. Application filed September 5, 1885.

"The words 'PRESCRIPTION No. A 2851.'"

12,701.—SOAP FOR LAUNDRY AND GENERAL HOUSEHOLD PURPOSES. *James Armstrong & Co.*, Baltimore, Md. Application filed September 11, 1885.

"The word 'STAG.'"

12,702.—BROWN AND BLEACHED COTTON SHEETINGS.—*Boott Cotton Mills*, Lowell, Mass. Application filed October 5, 1885.

"The picture of a magnet."

12,703.—WHISKY.—*Colburn, Birks & Company*, Peoria, Ill. Application filed October 5, 1885.

"The arbitrary letters and word 'C. B. AND Co.'"

12,704.—TOILET AND LAUNDRY SOAP.—*Colgate & Co.*, New York, N. Y. Application filed October 6, 1885.

"The words 'WHITE WING.'"

12,705.—PLUG-TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed August 31, 1885.

"The name 'DILL'S BEST' and a picture representing a young woman leaning against a window-frame."

12,706.—DRIED PRUNES.—*George A. Fleming* and *Charles F. Fleming*, San José, Cal. Application filed September 23, 1885.

"The words 'BLACK DIAMOND.'"

12,707.—AXES, HATCHETS, MATTOCKS, ADZES, PICKS, AND GRUB-HOES.—*Charles K. Hawkes*, San Francisco, Cal. Application filed January 13, 1885.

"The arbitrary word 'ELECTRIC.'"

12,708.—GUANO.—*L. N. & J. S. Hopkins*, Baltimore, Md. Application filed September 30, 1885.

"The arbitrary word-symbol 'CARIB' and the representation of a lizard with its tail curved over its back."

12,709.—CIGARS.—*J. Theodore Isert*, Louisville, Ky. Application filed July 13, 1885.

"The words 'OUR KAISER.'"

12,710.—DRIVING-WHIPS.—*Lay, Van Deusen & Co.*, Westfield, Mass. Application filed October 5, 1885.

"The words 'BULL ROPE CENTER.'"

12,711.—DRIVING-WHIPS.—*Lay, Van Deusen & Co.*, Westfield, Mass. Application filed October 5, 1885.

"The words 'BUCK BONE CENTER.'"

12,712.—COTTON GOODS, GRAY, COLORED, AND BLEACHED, PLAIN OR TWILLED.—*Laurus Loomis*, New York, N. Y. Application filed September 14, 1885.

"The picture of an Indian under a tree and the words 'ROYAL OAK.'"

12,713.—COTTON GOODS, GRAY, COLORED, AND BLEACHED, PLAIN OR TWILLED.—*Laurus Loomis*, New York, N. Y. Application filed September 14, 1885.

"The representation of an Indian woman on a horse, with a bolas, and the words 'INDIA MILLS.'"

12,714.—WOODEN PAILS AND TUBS.—*Menasha Wooden Ware Company*, Menasha, Wis. Application filed October 5, 1885.

"The word 'MENASHA' and the symbol of a star, forming together the word-symbol 'MENASHA STAR.'"

12,715.—PAINT.—*New York Fire Proof Paint Company*, New York, N. Y. Application filed October 5, 1885.

"The word-symbol 'VULCAN.'"

12,716.—MEDICINE FOR THE CURE OF NEURALGIA AND LIKE DISEASES.—*Joshua S. Nicolds*, Walnut Ridge, Ark. Application filed September 26, 1885.

"The arbitrarily-selected words 'WONDERFUL EIGHT.'"

12,717.—SEWING-MACHINES, AND SEWING-MACHINE ATTACHMENTS AND SUPPLIES.—*Singer Manufacturing Company*, New York, N. Y. Application filed October 3, 1885.

"The representation of a sewing-machine and a lady operator therefor, in connection with a large letter 'S.'"

12,718.—REMEDY FOR CERTAIN NAMED DISEASES.—*Stuart Manufacturing Company*, Atlanta, Ga. Application filed September 3, 1885.

"The pictorial representation of a background formed by the sun with divergent rays, and a hand grasping a bottle of medicine and a hand outstretched to receive the same, used in connection with the words 'STUART'S GIN AND BUCHU OR INVIGORATING CORDIAL.'"

12,719.—POWDERED SOAP.—*Frederick G. Taylor*, Providence, R. I. Application filed October 3, 1885.

"The pictorial or verbal designation 'BALLOON.'"

12,720.—CARTRIDGES.—*Union Metallic Cartridge Company*, Bridgeport, Conn. Application filed September 10, 1885.

"The letters 'U M C' and the word 'CLUB.'"

12,721.—HUNGARIAN WINES.—*S. B. Wortmann & Co.*, New York, N. Y. Application filed September 7, 1885.

"The arbitrary word 'PORTUGIESER' and a combination of the Hungarian national eagle embellished and surrounded with prize-medals."

12,722.—HUNGARIAN TOKAY WINES.—*S. B. Wortmann & Co.*, New York, N. Y. Application filed September 7, 1885.

"The arbitrary word 'SANITAS' and a combination of the Hungarian national eagle embellished and surrounded with prize-medals."

LABELS.

4,613.—Title: "TWIXT AND TWEEN, PUREST QUALITY SMOKING TOBACCO."—*George W. Conover*, Philadelphia, Pa. Application filed September 11, 1885. (Trade-Mark Registered.)

4,614.—Title: "STRASSBURGER GICHT & RHEUMATISMUS PFLASTER."—*Pfaelzer Bros. & Co.*, Philadelphia, Pa. Application filed October 7, 1885.

4,615.—Title: "TAYLOR'S HOREHOUND BALSAM."—*W. Scott Taylor*, Trenton, N. J. Application filed October 7, 1885.

DISCLAIMERS.

311,780.—*Willis J. Perkins*, Grand Rapids, Mich. IMPROVEMENT IN SHAFT-HANGERS. Patent granted February 3, 1885. Disclaimer filed October 13, 1885, by the patentee.

Enters his disclaimer to the clause "Fig. 7 represents modifications," in lines 46 and 47 of page 1 of the printed specification, and to the paragraphs included in lines 1 to 11, page 2, which are in the following words:

"I do not limit myself to the exact form of T-support shown, as an inferior equivalent could be substituted, such as that shown in Fig. 7, where vertical lugs are used at its ends to form supports for pivotal screws, or a rod on or by which the box could be supported and horizontally adjusted.

"The parts above described are adapted to the various forms of the supports shown, or to any convenient form of support, without change."

10,033, (Reissue.)—*Joseph B. Stearns*, Boston, Mass., assignor to *The Western Union Telegraph Company*, New York, N. Y. IMPROVEMENT IN DUPLEX-TELEGRAPH APPARATUS. Original patent dated May 14, 1872. First Reissue No. 5,344, dated April 1, 1873; present reissue dated February 7, 1882. Disclaimer filed October 22, 1885, by the assignee.

"Enters its disclaimer to said Reissued Letters Patent No. 10,033 and the claim thereof," said Reissued Patent No. 10,033 and its claim being part of the invention of Joseph B. Stearns, originally patented May 14, 1872, by the Letters Patent No. 126,847.

10,034, (Reissue.)—*Joseph B. Stearns*, Boston, Mass., assignor to *The Western Union Telegraph Company*, New York, N. Y. IMPROVEMENT IN DUPLEX-TELEGRAPH APPARATUS. Original patent dated May 14, 1872. First Reissue No. 5,344, dated April 1, 1873; present reissue dated February 7, 1882. Disclaimer filed October 22, 1885, by the assignee.

"Enters its disclaimer to the first, fourth, and fifth claims of the said Reissued Letters Pattent No. 10,034," said Reissued Patent No. 10,034 being part of the invention of Joseph B. Stearns, originally patented May 14, 1872, by Letters Patent No. 126,847.

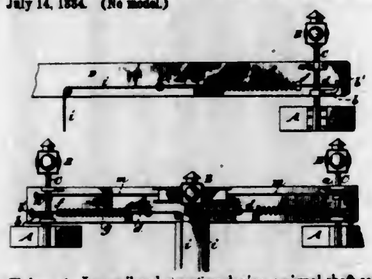
10,035, (Reissue.)—*Joseph B. Stearns*, Boston, Mass., assignor to *The Western Union Telegraph Company*, New York, N. Y. IMPROVEMENT IN DUPLEX-TELEGRAPH APPARATUS. Original patent dated May 14, 1872. First Reissue No. 5,344, dated April 1, 1873; present reissue dated February 7, 1882. Disclaimer filed October 22, 1885, by the assignee.

"Enters its disclaimer to the first claim of said Reissued Letters Patent No. 10,035," said Reissued Patent No. 10,035 being part of the invention of Joseph B. Stearns, originally patented May 14, 1872, by Letters Patent No. 126,847.

PATENTS

GRANTED OCT. 27, 1885.

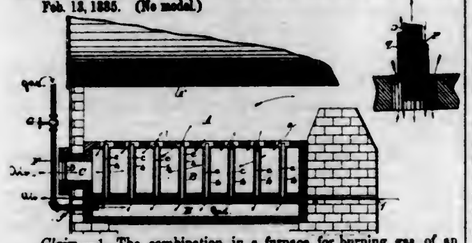
328,913. RAILWAY-SIGNAL. JOHN H. AHRN, St. Paul, Minn. Filed July 14, 1884. (No model.)



Claim.—1. In a railroad signaling device, a signal-shaft capable of partial rotation and carrying signals, a crank-arm upon said signal-shaft, a rod connected to said crank-arm capable of longitudinal movement, and having thereon a spring adapted to be compressed by force exerted longitudinally upon said rod, and by its expansive force to reset the signal-shaft to its normal position, all combined substantially as set forth.

2. In a railroad signaling device, the combination of a signal-carrying shaft capable of a partial rotation, a crank-arm, a stationary lamp, a movable slide operating in connection with the stationary lamp, and a spring for restoring the signals to their normal position, all combined substantially as set forth.

328,914. GAS-FURNACE. JOHN ABBOTT, New York, N. Y. Filed Feb. 13, 1885. (No model.)

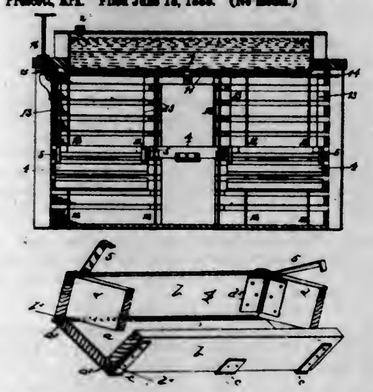


Claim.—1. The combination, in a furnace for burning gas, of an air chamber or chambers forming the bottom of the combustion-chamber and having a series of openings leading to the said combustion-chamber, a gas-chamber located below said air-chamber and communicating with the combustion-chamber by a series of pipes leading up into said openings, and a series of pipes surrounding the gas-pipes and connecting with the external air, as set forth, whereby the gas-pipes are prevented from becoming overheated.

2. The combination of the air chamber or chambers forming the bottom of the combustion-chamber, having apertures in the air-chamber leading to the combustion-chamber, the gas-chamber, its supply-pipe and pipes extending into said apertures, and the tubes surrounding said pipes and extending from air ducts or passages communicating with the open air, whereby a current of cold air may be established and maintained around the gas-induction pipes leading to the combustion-chamber, substantially as and for the purposes specified.

3. In devices for burning gas in furnaces, the perforated air chamber or chambers B, forming the bottom of the combustion-chamber, provided with the tubes *b*, which extend up to the openings in the top of the air-chamber, in combination with the gas-chamber E, provided with the tubes *c*, which extend through and slightly above the tubes *b*, as set forth.

328,915. CATTLE-CAR. JOSEPH A. BRYAN and JAMES B. FIELDING, Prescott, Ark. Filed June 15, 1885. (No model.)



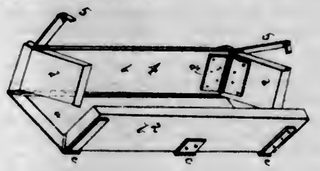
Claim.—1. In a cattle-car for watering and feeding stock, the combined top and water-tank 1, having the openings 2 and 3, the horizontal flange fitting under the top front cross-beam, and the perpendicular side and end flanges fitting on the inside of the top side and end beams of the car, all substantially as shown and described.

2. In a cattle-car for watering and feeding stock, the trough 4, consisting of the bottom *a*, having the beveled edges *a'* *a'*, sides *b*, having the beveled edges *b'*, and hinged to the said bottom by means of the hinges *c*, ends *d*, hinged on their inner face to the inner face of one of the said sides by hinges *d'*, and clasps 5, hinged to the upper edge of one of the sides, substantially as shown and described.

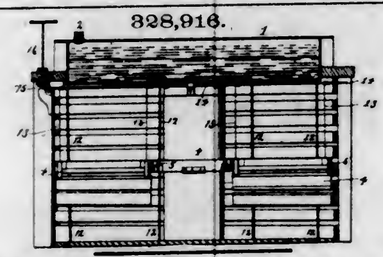
3. In combination with a cattle-car for watering and feeding stock, the combination of troughs 4, working up and down on the outside of said car, guards 6, secured to the outside of said car and holding the said troughs in place, cords 7, the lower ends attached to the said troughs and the upper ends to the winding-shaft 8, winding-shaft 8, cord 9, working on the drum rigidly secured to the shaft 8, cord 10, attached to the dog, and ratchet-wheel 11, all substantially as shown and described, and for the purposes set forth

328,916. STOCK-CAR. JOSEPH A. BRYAN and JAMES B. FIELDING, Prescott, Ark. Filed July 11, 1885. (No model.)

Claim.—In combination with a cattle-car for watering and feeding stock, the combination of the troughs 4, having the bottom *a*, the leaves or sides *b* *b*², ends *d*, and clasps 5, eyes 6, secured in either end, one near the upper edge and the other near the lower edge on the back of the top leaf, *b*, guides 12, secured perpendicularly in said car and running through said eyes, cords 13, their lower ends attached to the upper edge of said top leaf, *b*, and their upper ends to the winding-shaft 14, which is operated by the beveled gearing 15 and hand-wheel 16, substantially as shown and described.



328,916.



328,917. CAR FOR CABLE RAILWAYS. Chester Bullock, New York, N. Y. Filed Mar. 12, 1885. (No model.)

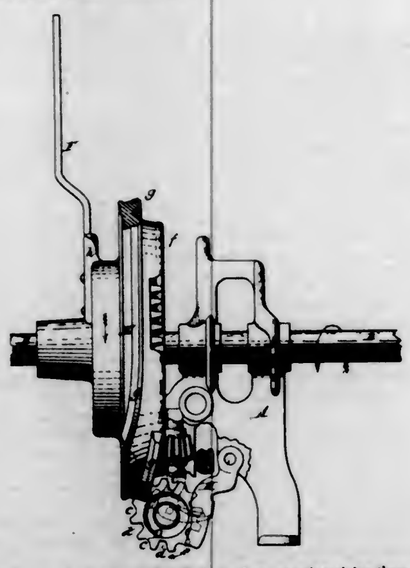


Claim.—1. A guide or anti-friction wheel attached to a grip-car or parts belonging thereto, and placed forward of the grip to bear or run against the rail of the track, and set at an angle sufficient to pass over the road-bed, substantially as shown, and for the purpose set forth.

2. A guide or anti-friction wheel attached to a grip-car or parts belonging thereto, and placed back from the grip to bear or run against the rail of the track, and set at an angle sufficient to pass over the road-bed, as shown, and for the purpose set forth.

3. Guide or anti-friction wheel or wheels attached to a grip-car or parts belonging thereto and placed to bear or run against a rail of a track for cable railways, in combination with traction cable, as described, and for the purpose set forth.

328,918. CORD-HOLDER FOR SELF-BINDERS. William Butterfield, Auburn, N. Y., assignor to D. M. Osborne & Co., same place. Filed July 2, 1883. (No model.)



Claim.—1. A rotary tying device and an actuating-pinion thereon, combined with a cord-clamping disk having notches in its periphery, and an actuating-wheel provided with teeth to drive the pinion, and also with a thread or lip engaging directly with the disk, whereby the single wheel is caused to operate both the tyer and the clamp without the use of intermediate parts.

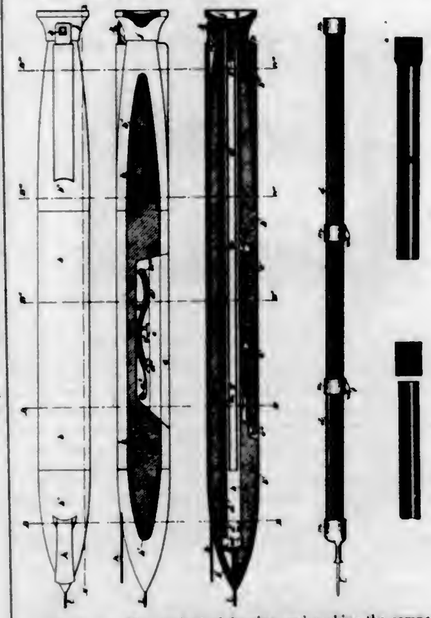
2. In combination with the cord-clamping disk and the tyer provided with a pinion, the actuating-wheel provided with teeth to actuate the pinion, and also with the continuously-acting thread having a portion of its length arranged spirally, and the remainder in a plane at right angles to its axis, whereby it is caused to impart an intermitting rotation to the disk, and to hold the same during the proper intervals against rotation.

3. A rotary cord-clamping disk with driving-teeth thereon, combined with a driving-wheel having its periphery curved transversely to encircle the disk and provided with a thread or lip to actuate the same.

4. In combination with the clamping-disk provided with peripheral notches, the actuating-wheel provided with the continuously-acting thread or lip, which is advanced or curved forward at the point *k*, as and for the purpose described

5. The wheel E, provided with teeth and delay-surfaces, and with a spiral thread, substantially as described, whereby it is adapted to serve the double purpose of operating a tyer and of imparting motion directly or indirectly to a cord-clamping device.

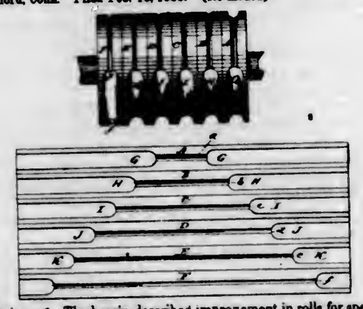
328,919. MARINE TORPEDO. Washington I. Chambers, Kingston, N. Y. Filed Mar. 13, 1885. (No model.)



Claim.—1. The method of forming and packing the composition-chamber of rocket-torpedoes, which consists in packing a series or number of short tubes separately, of different density, or with different kinds of composition, and then joining these packed tubes, end for end, to form a continuous chamber, as and for the purpose described.

2. The method of forming and packing the composition-chamber of rocket-torpedoes, which consists in packing a series or number of short tubes separately, joining or connecting these packed tubes to form continuous tubes, and forming the charge of a series of such compound tubes so arranged as to break joint, all as and for the purpose set forth.

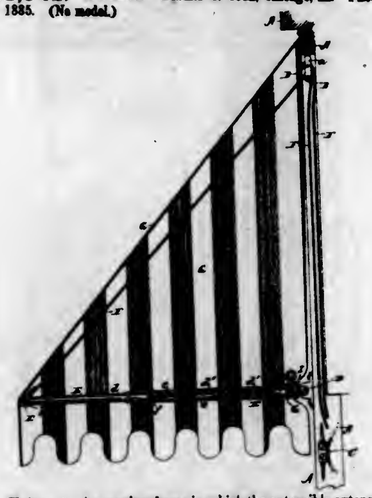
328,920. MAKING SPECTACLE-TEMPLES. Franklin A. Clark, Milford, Conn. Filed Feb. 16, 1885. (No model.)



Claim.—1. The herein-described improvement in rolls for spectacle-temples, consisting in companion rolls having circumferential cavities formed therein of angular shape in transverse section, said cavities forming a series successively increasing in length, but diminishing in transverse area, and each cavity terminating at each end in an enlarged cavity or recess in the face of the rolls, substantially as described.

2. A series of companion rolls, each roll having a circumferential cavity formed therein of angular shape in transverse section, the cavity increasing in length in each succeeding roll, but diminishing in transverse area, and the said cavity of each roll terminating at each end in an enlarged cavity or recess, substantially as described.

328,921. AWNING. Ernest C. Cook, Chicago, Ill. Filed June 8, 1885. (No model.)

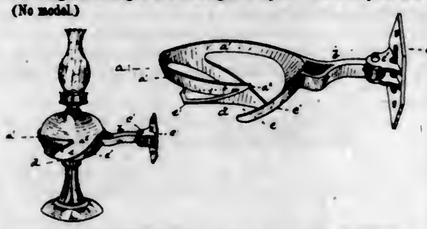


Claim.—1. An awning-frame in which the extensible extension bars or rods are combined with springs retaining the said bars or rods yieldingly at their minimum length, and with one or more cords for folding and extending the said frame, substantially as and for the purposes specified.

2. The combination, in an awning, of the canvas and tie-cords H H with extensible extension bars or rods having beads G G on the sliding sections thereof, substantially as and for the purposes specified.

3. The combination, in an awning-frame having extensible extension bars or rods, of the lugs D D and the cushions I I, the said cushions being arranged on the hinged section of the said bars or rods and between the said lugs and the inner ends of the sliding sections of the said bars, substantially as and for the purposes specified.

328,922. BRACKET FOR LAMPS. John W. Culmer, New Brighton Pa., assignor to Logan & Strebridge, same place. Filed July 23, 1884. (No model.)



Claim.—1. In a lamp-bracket, a basket having sides forming an indirect passage from the outer rim to the lower center of the basket, substantially as and for the purpose specified.

2. A lamp-bracket consisting of the open outer rim, *a'*, and the inner lower portion, *d'*, connected with the outer rim by arms *e' e' e'*, forming a seat for the lamp, and an indirect passage, *e*, for the passage of the stand of the lamp, substantially as described.

328,923. QUILTING-FRAME FOR SEWING-MACHINES. Henry T. Davis, New York, N. Y. Filed June 28, 1884. (No model.)

Brief.—The quilting-frame is supported in part on a roller or bearing on the upper face of the sewing-machine work-plate.

Claim.—1. The combination, with a sewing-machine, of a quilting attachment therefor consisting of a frame, a bar connected at its extremities to the ends of said frame, a single roller journaled below said bar at or near the central portion thereof, and a track or way upon which said roller bears, as and for the purpose set forth.

2. The combination, with a sewing-machine, of a quilting attachment therefor consisting of a single track or way, a superposed frame, a bar connected at its extremities to the ends of said frame, and a single roller swiveled to the under side of said bar at or near the center thereof, as and for the purpose set forth.

3. In combination, a single track, a superposed frame, a bar connected at its extremities to the ends of said frame, a housing secured to the under side of said bar, an axle supported by said housing, and a single roller placed on said axle and having clearance within said housing, whereby a lateral movement thereof is permitted, as explained.

4. The combination, with a sewing-machine, of a quilting attachment therefor consisting of a single track, a superposed frame, a bar secured at its extremities to said frame, a housing swiveled to the under side of said bar so as to be capable of horizontal rotation, and a single roller journaled in said housing, as and for the purpose set forth.

5. In a quilting attachment for sewing-machines, the combination of a single track or way, a superposed frame, a single roller secured to the under side of said frame and bearing upon said track, and an anti-friction roller secured to the sewing-machine table, as and for the purposes set forth.

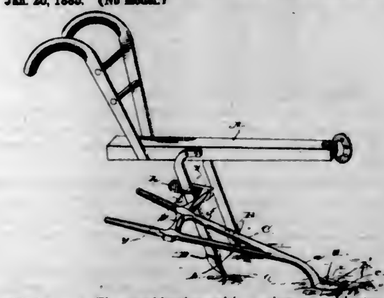
6. In a quilting attachment for sewing-machines, the combination, with a reciprocating frame supported by a suitable track or way, as described, of an anti-friction roller secured to the sewing-machine table beneath the preponderating side of the said frame for supporting the same, as explained.

7. In a quilting attachment for sewing-machines, the combination, with a reciprocating frame supported by a suitable track or way, as described, of a vertically-adjustable anti-friction roller secured to the sewing-machine table beneath the preponderating side of said frame for supporting the same, as explained.

8. In a quilting attachment for sewing-machines, the combination, with a reciprocating frame, of the anti-friction roller and the adjustable clamp for the purpose of modifying the inclination of the quilting-frame, as explained.

9. In a quilting attachment for sewing-machines, the combination, with a reciprocating frame, of the track or bead rail having cross-pieces provided with slots or sockets, substantially as described, and the legs or supports having clips or lugs for insertion in said sockets, as explained.

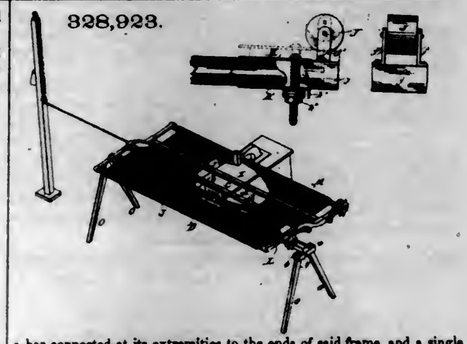
328,924. PLOW-FENDER. Isaac Davis, Perin's Mills, Ohio. Filed Jan. 20, 1885. (No model.)



Claim.—1. The combination, with a plow or cultivator, of the herein-described fender, comprising a series of bars connected together to form a frame, one side of which is attached to the standard of the plow or cultivator and the other side is inclined laterally downward, the frame also inclining downward toward the front in a longitudinal line, and a shoe or point provided at said front end, as set forth.

2. The combination, with a plow or cultivator, of the herein described fender, comprising a frame, one side of which is attached to the standard of the plow or cultivator and the other side inclined laterally downward therefrom, the frame also inclining downward toward the front and in a longitudinal line, as set forth.

328,923.



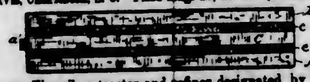
3. The herein-described fender, comprising a frame having the main longitudinal arm *b* bent downward at its front end, and the inclined arm *f* on a higher horizontal plane than the main arm, as and for the purpose set forth.

4. The herein-described fender, comprising the main longitudinal arm *b*, the inclined arm *f* on a higher horizontal plane than the main arm, the short arm *h*, and the connecting transverse bar *g*, as set forth.

5. The herein-described fender, comprising the main longitudinal arm *b*, the inclined arm *f* on a higher plane than the main arm, the short arm *h*, and the curved transverse bar *g*, the front end of the main arm being bent downward, as at *a*, and a clevis or equivalent means for attaching the short arm to one of the standards of the plow, as and for the purpose set forth.

328,925. DEVICE FOR EXTRACTING AND REFINING CRUDE OIL.

John Davis, Charleston, S. C. Filed Aug. 27, 1885. (No model.)



Claim.—1. The oil extractor and refiner designated by the letters A B C.

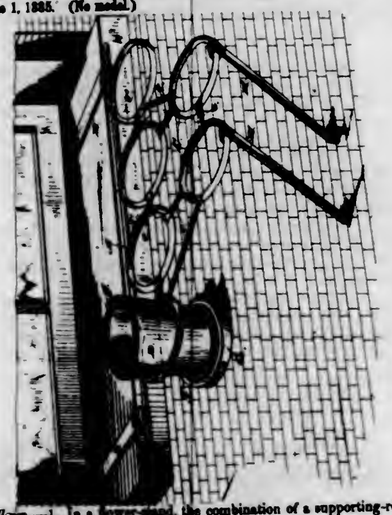
2. The combination, in an oil extractor and refiner, of the cork mats A and B, connected by the hinge *a'* with the wire-cloth a^2 a^2, substantially as shown, and for the purpose specified.

3. In a mechanical device for expressing oil from seed and for refining the same, the cork-wood mats A and B, connected by flap-hinge *a'* with the supplemental mat C, all substantially as shown, and for the purposes specified.

4. The mechanical device A B C, containing the lower mat, A, for refining the crude oil, combined with the mat B and supplemental mat C, all substantially as described, and for the purposes specified.

328,926. FLOWER-FRAME.

Sarah A. Elliott, Norfolk, Va. Filed June 1, 1885. (No model.)



Claim.—1. In a flower-stand, the combination of a supporting-rod, rings secured thereto for holding potted plants, having suitable tie-rods, clasps for attaching the same, and the front brace-rods, substantially as described.

2. In a flower-stand, the combination of a supporting-rod, rings secured to said rod for holding potted plants, and suitable tie-rods, a row of smaller rings on the outside thereof, means for holding the water-drain under the pots, the attaching-clasps, and the brace-rods secured to the front of the stand, substantially as described.

3. In a flower stand or frame, the combination of the rod A, rings C C, tie-rods *c c*, clasps B B, and the brace-rods E E, substantially as described, and for the purposes specified.

328,927. RAIL FRICTION-CLAMP.

William Emmett, Logansport, Ind. Filed Aug. 3, 1884. (No model.)

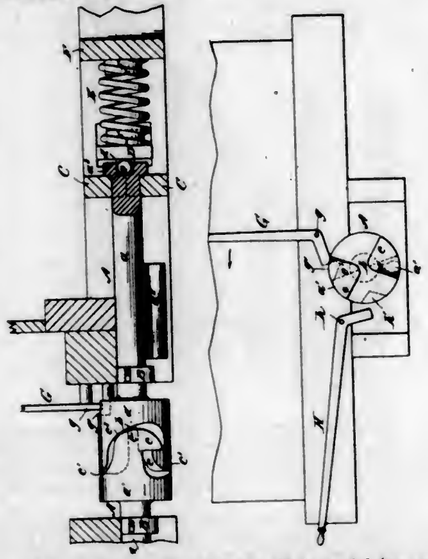
Claim.—A railroad-rail clamp consisting of two clamp-bars shaped to fit against the web and top of the base of the rail, which clamp-bars each have a flat straight base part so constructed that when the outer edge of the base part rests against the under side of the rail-base the inner edge will be a short distance from the inner side of the rail-base, the said base parts being provided with tongues or tenons and recesses for locking them together, substantially as herein shown and described.

328,927.



328,928. CAR-COUPLING.

William Emmett, Logansport, Ind. Filed Feb. 11, 1885. (No model.)



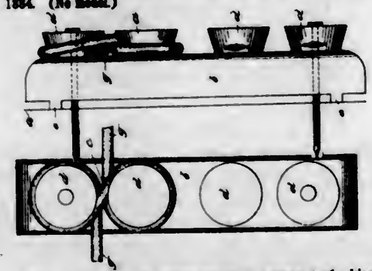
Claim.—1. The draw-head *a'*, formed with the rounded claws c and concave or cam c^3, for causing the draw-heads to rotate when the cars are brought together, substantially as and for the purposes set forth.

2. The draw-bar formed with a weight, a^3, in combination with the draw-head *a'*, having recesses *g' h'*, and operating-levers G H, the draw-head being formed with the claws c, substantially as described.

3. The draw-bar formed with the recess *d*, in combination with the ball c, plate D, and buffer and spring E, arranged substantially as and for the purposes set forth.

328,929. ELECTRIC-WIRE INSULATOR AND SUPPORTER.

William N. Fawcett and George F. Huntley, Brooklyn, N. Y. Filed Nov. 17, 1884. (No model.)



Claim.—1. An electric-wire supporter composed of a block formed of wood having a series of projections on one side thereof, the said projections being made integral with its base, as set forth.

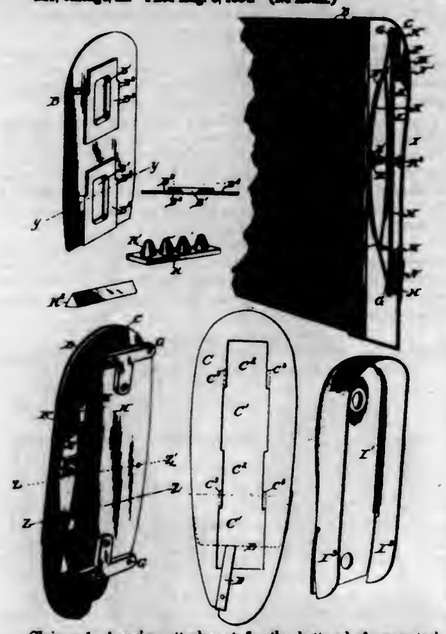
2. An electric-wire supporter and insulator consisting of a wooden block provided with annular projections formed integral with its base and impregnated with oil or equivalent insulating substance, as set forth.

3. The combination of the block *b*, having projections *d*, arranged as shown, and wire *c*, wound in the manner described by winding it around two of the projections and confining the free ends by the cross strands, for the purpose set forth.

4. The block *b*, having projections *d* formed integral therewith on the front, and projecting strips *s* on the under side, as set forth.

328,930. SPRING-SEATED BUTT-CAP FOR GUNS.

Henry E. Pinney, Chicago, Ill. Filed Aug. 8, 1884. (No model.)



Claim.—1. A spring attachment for the butt-end of a gun-stock, consisting of a butt-cap with an elliptic spring in a plane parallel with the butt and constituting a spring-seat therefor, and a base-support for said spring detachably secured to the butt-end of a gun-stock, substantially as described.

2. The butt-cap, in combination with a spring-seat therefor and a two-part base-support for the spring-seat, one part of said base-support detachably secured to the butt-end of a gun-stock, and both parts of the same detachably secured together, substantially as described.

3. The butt-cap and a spring-seat therefor, in combination with the two-part support, composed of a pair of interlocking plates, one of which is detachably secured to the butt-end of a gun-stock in place of the usual butt-plate, substantially as described.

4. The butt-cap and a spring-seat therefor, in combination with a base-support composed of a pair of plates detachably secured together by a dovetail joint, substantially as described.

5. The butt-cap and a spring-seat therefor, in combination with a base-support composed of a pair of plates detachably secured together by a dovetail joint, one of said plates being provided with a latch for locking the plates after they have been connected together by their dovetail connection, substantially as described.

6. The butt-cap, in combination with the elliptic spring having a sliding connection at one end with the butt-cap, substantially as described.

7. The butt-cap and a base-support for its spring-seat, in combination with an elliptic spring secured at its sides to the cap and base, and at its ends having a sliding connection with the cap, substantially as described.

8. The butt-cap, in combination with a spring-seat composed of a bow-spring having at its ends a sliding connection with the cap, and a shorter bow-spring arranged to form, in conjunction with the longer bow-spring, an elliptic spring, and having its ends resting against the longer spring and bearing against abutments formed on the concave side of the latter, substantially as described.

9. The spring E, secured at its middle to a base-support, and at its ends having a sliding connection with the butt-cap, in combination with the spring L, connected at its middle with the butt-cap and having its ends resting on the spring E, which latter is provided with stops or abutments for the ends of the spring L, substantially as described.

10. The butt-cap and elliptic spring, in combination with an elastic cushion situated within the elliptic spring, substantially as described.

11. The butt-cap and elliptic spring, in combination with the elastic cushion situated within the elliptic spring, and composed of a series of conical rubber springs, substantially as described.

12. The combination, with a spring-seat, of a two-part extensible butt-cap inclosing the same, whereby the butt-cap can be adapted to various sizes of gun-stocks, substantially as described.

13. The extensible butt-cap, composed of two parts having spring sides or flanges embracing each other, substantially as described.

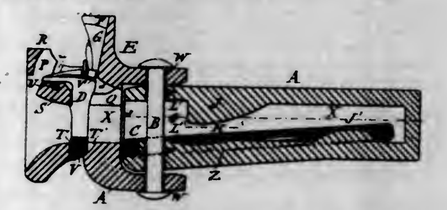
14. The extensible butt-cap, composed of two parts, I' and I^2, respectively provided with spring sides I^3 and I^3, said parts being fitted together and secured to a back plate, substantially as described.

15. The butt-cap, in combination with the bow-spring E, secured at its middle to a base-support, and at its ends connected with the butt-cap by a sliding connection, substantially as described.

16. The butt-cap and its spring-seat, in combination with the two-part base-support, composed of plates B and C, one being provided with openings for fastening-screws and with one or more ribs having dovetail edge portions, and the other being provided with a slot, C', having dovetail edge portions, substantially as described.

328,931. CAR-COUPLING.

George Forbes, New York, N. Y. Filed Sept. 6, 1884. (No model.)



Claim.—1. A draw-head made in two parts, A A', so that A' overlaps A, and the two parts A A' are hinged together by the pin B, so as to allow part A' play enough for the movements of the reserved link C when it is coupled to another draw-head, substantially as described, for the purpose specified.

2. The combination, with the draw-head, of the four slots W W and W' W', two to be longitudinally of greater length than width and two to be laterally of greater width than length, for the pin B to fit into, for the purpose of giving the part A' more play, as and for the purpose described.

3. The combination, with a draw-head, of the elevation E, having the slot G widened at F, which forms a shelf for resting the thickened part V' of the loose gravitating coupling-pin D for holding the pin in the slots G P up and out of the chamber X, as and for the purpose described.

4. The combination, substantially as hereinbefore set forth, with a draw-head, of the loose gravitating coupling-pin D of hook shape and the retracting-crank U, engaging the hook part of the pin, for the purpose specified.

5. The movable pieces Y in the sides of the longitudinal slot P, for allowing the thickened end V of the loose gravitating coupling-pin D to pass through the slot P, substantially as shown, for the purpose specified.

6. A loose gravitating coupling-pin, D, having its upper part at V' slightly thickened laterally for resting on the shelf F, formed in the slot G, and having its lower part at V thickened laterally, which stops the pin from being taken out of the slot P, and the extra weight aids the automatic action, substantially as shown, for the purpose specified.

7. The loose gravitating coupling-pin D, constructed in two parts for the purpose of allowing the lower part to be put into the slot P by way of the chamber X, and when the lower part is in the slot P, by fastening the upper part to it, the widened ends V and V' prevent the loose gravitating coupling-pin D from working out of the slot P, substantially as explained, for the purpose specified.

8. The combination, with a draw-head, of the slot P, the slot T, the loose gravitating coupling-pin D, fitting into the slots P T, so that when an entering link pushes against the loose gravitating coupling-pin D the end of the pin slides upward and inward in the groove T', which lifts the loose gravitating coupling-pin D and throws its upper end forward and around the stay S, which lifts its lower end in and up out of the chamber X, as and for the purpose specified.

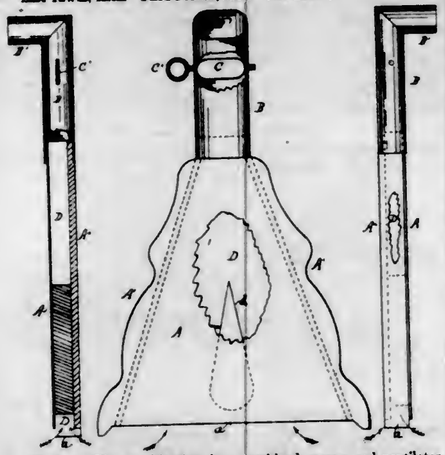
9. A draw-head constructed with the longitudinal slot P, having its inner part at Q widened sufficiently to allow the thickened end V of the loose gravitating coupling-pin D to be in the slot P and up and out of the chamber X, the divergence *a* and the vertical stop *n* in its rear end, the stop R and the rest or block S in its front end, the block S forming the rest *m*, and the vertical stop *g*, and having its side at Y movable to allow the thickened end V of the loose gravitating coupling-pin D to be put through the slot P, so that when the loose gravitating coupling-pin D is in its draw-head it cannot work out on account of the thickened end V and the shape of the slot P, all substantially as set forth.

10. The rod *h*, journaled to the face of a car, having the arm U' on the top and *h'* on its bottom, as and for the purpose described.

11. The combination, in the chamber X, of a draw-head with the stay J, the bed Z, and the reserve-link C, as and for the purpose described.

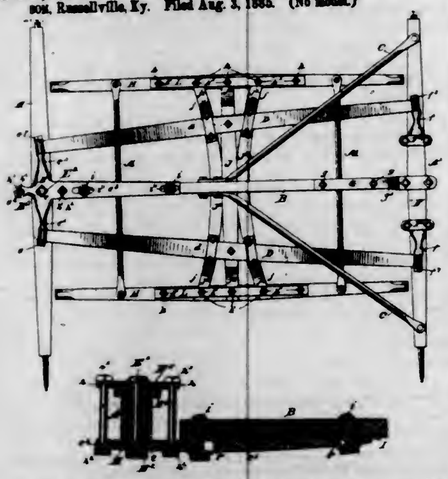
12. The combination, in the chamber X, of draw-head with the stay J, the pin B, the depressions L L', and similar depressions in the side of the chamber X, and the passage H, as and for the purpose described.

328,932. FIRE-SCREEN AND VENTILATOR. Albert E. French, East Tawas, Mich. Filed Feb. 26, 1884. (No model.)



Claim.—The combination, in a combined screen and ventilator, of the case or body composed of a front screen portion, A, sides A', and rear A'', the parts being contracted toward their mouth, a pipe-section, B, connecting with said contracted portion and having an elbow, B', a damper, C, and a central dividing-piece, *d*, designed to divide the lower portion of the casing into distinct apartments, and also to re-enforce the front and rear sections to prevent the same from warping.

328,933. RUNNING-GEAR FOR VEHICLES. George E. Garretson, Russellville, Ky. Filed Aug. 3, 1885. (No model.)



Claim.—1. In a running-gear, the combination of the axles, plates *e* F, rigidly bolted to said axles and having reduced supporting-arms, side springs, D, pivotally connected to said axle-plates at the reduced ends thereof, a slotted plate, e^3, formed with the plate *e* of the front axle, a perch-pole, rigidly secured to the rear axle and resting and free to slide upon the slotted plate e^3, through-bolts *i*, to connect said pole and plate together and limit the movement of the pole, and a packing, I, of leather interposed between the pole and plate e^3, as set forth.

2. In a running-gear, the combination of the axle, side springs arranged parallel with each other, a perch-pole, a head-block, pivotally connected with the axle and having side arms, *s'*, to which the ends of the springs are connected, an upper bearing-plate secured upon the axle, a plate adapted to bear on the upper plate and connected to the head-block, and a king-bolt passing through the bearing-plates, axle, and head-block, substantially as described

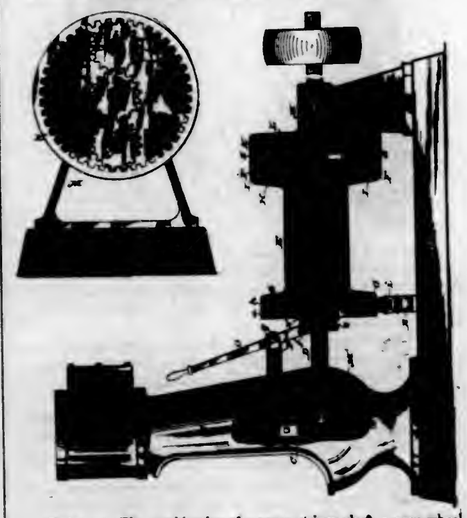
3. In a running-gear, the combination, with the rear axle and the side springs, of a plate bolted to the under side of the axle, and having a bent arm at each side, provided with a bearing for the rear end of one of the said springs, as and for the purpose set forth.

4. In a running-gear, the combination, with the axles, a perch-pole, and the side springs, of a plate secured to the under surface of each axle, and having lateral arms provided with bearings for the ends of the said springs, which are pivotally connected thereto, as set forth.

5. In a running-gear, the combination of the axles, the side springs, a perch-pole rigidly connected at its rear end to the axle and adapted to slide at its front end, a plate secured to the rear axle and having bearings for the rear ends of the springs, and a head-block pivotally secured to the front axle and provided with end bearings for the springs, and a plate having slots adapted to receive the front end of the perch-pole and its securing-bolts, substantially as described.

6. In a running-gear, the combination of the side springs, the transverse supporting-bars bolted together at their middle and to the elevated portions of the side springs, and parallel side bars bolted to the outer ends of the transverse supporting-bars and adapted to support the vehicle-body, substantially as described.

328,934. HOISTING-DRUM FOR ELEVATORS. Benjamin W. Grist, Reading, Pa. Filed Sept. 17, 1885. (No model.)



Claim.—1. The combination of a power-driven shaft, a gear-wheel fixed thereon, a friction-disk loosely mounted on said shaft and carrying two gear-wheels, a fixed annular gear, and a friction-surface adapted to be brought into contact with the disk, substantially as described.

2. A power-shaft having loosely mounted thereon a drum and a friction-disk, and a gear-wheel fixed to the shaft and revolving therewith, in combination with two gear-wheels revolving upon axles secured in the loose disk, and a stationary gear, substantially as described.

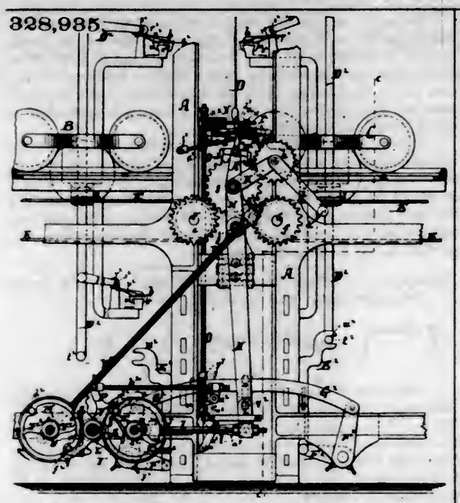
3. A pedestal forming a bearing for a shaft and provided with a disk having a flange, upon the inner surface of which gear is formed, in combination with a drum adapted to move longitudinally upon the shaft, an interposed loose friction-disk and gearing connecting the disk with the main shaft, substantially as described.

4. The shaft D, wheel *d*, fixed thereon, disk H, loosely mounted on said shaft and carrying two wheels, *c c*, and the fixed flange K, provided with gear, in combination with a friction-surface adapted to be brought into contact with the disk, substantially as described.

5. The shaft D, having loosely mounted thereon a drum, E, and friction-disk H, a gear-wheel, *d*, fixed to the shaft and revolving therewith, in combination with two gear-wheels, *c c*, revolving upon axles secured in the loose disk H, and the stationary gear on the flange K, substantially as described.

6. The pedestal M, forming a bearing for one end of the shaft D, and provided with disk L, having flange K, supplied with gear-teeth on its inner surface, in combination with drum E, adapted to move longitudinally upon the shaft D, an interposed loose friction-disk, H, and gearing *c c* and *d*, connecting the disk H with the main shaft, substantially as described.

328,935. EMBROIDERING-MACHINE. Joseph A. Grosbli, New York, N. Y., assignor to the Kursheedt Manufacturing Company, same place. Filed Aug. 19, 1884. (No model.)



Brief.—A wheel is automatically thrown into gear with the drum of the carriage that was stationary when the other carriage arrives next the fabric, and the said stationary carriage is thus started on its travel from the fabric, the operator thereupon turning the crank to continue moving the carriage until the threads are taut, and then to bring it back to the fabric until the needles shall have pierced the fabric and have been entered into the needle-grips of the other carriage.

Claim.—1. In an embroidering-machine, the combination of the carriages B and C with the pinions *e* and *f*, toothed wheel *g*, belts E E, and automatic mechanism composed of the bar H, rod *l*, crank-pin *m*, disk I, and wheel L, substantially as described, for alternately throwing the wheel *g* into gear with the wheels *e* and *f*, as specified.

2. The combination of the pivoted bar H, with means, substantially as described, for swinging it on its pivot, with the toothed wheels *g e f*, drums F G, belts E E, carriages B C, lever A^2, anchor B^2, stops k^2 and l^2 and with the rod W, for swinging the lever A^2 on its pivot and causing the anchor to turn the wheel *g*, as specified.

3. The combination of the carriages B and C and means, substantially as described, for moving them on their supporting-rails with the elbow-levers *s s*, rod *t*, elbow *u*, bolt N, and vertical slide O, all arranged to disengage the bolt from the vertical slide O when the carriages B and C are in the position of closest proximity to each other, substantially as specified.

4. The combination of the driving-wheel L with the notched disks I M, having pins d^3 f^3, notched arm P, notched arm V, star wheel S, levers T T^2, and springs c^3 *s p*, rod W, and the connections thereof with the needle-carriages B C, and with means, substantially as described, for swinging the arm P at intervals, substantially as specified.

5. The ribbed and grooved driving-wheel L, made in two sections, A^2 i^2, which are screwed together for combination with the grooved and ribbed disks I M, having pins d^3 f^3, and notched arms P and V, star-wheel S, and lever T, substantially as specified.

6. The combination of the disk I and means, substantially as described, for imparting to it intermittent rotary motion with the vibrating frame H, to which it is joined, toothed wheels *g e f*, carriages B C, and with the disk M, mechanism, substantially as described, for imparting intermittent rotary motion thereto, rod W, lever A^2, and anchor B^2, all arranged, substantially as described, for throwing the wheel *g* alternately into gear with the wheels *e f* and thereupon automatically turning said wheel *g* by means of the anchor, as specified.

7. The combination of the carriages B C with the vertical slide O and means, substantially as described, for lowering it when the two carriages are in the position of closest proximity, elbow a^2, notched arm F, notched disk I, and mechanism for turning the latter notched arm, frame H, wheels *g e f*, disk M, and mechanism for turning the latter, rod W, lever A^2, and anchor B^2, substantially as specified.

8. The combination of the carriages B C and their needle-holders c^2 p^2, having grips *b*, with the eccentrics r^2, placed above said grips, jointed levers D^2, slides E^2, bar H, yoke G^2, elbows F^2, and means, substantially as described, for moving said bar H, as set forth.

9. The combination of the two carriages B C of an embroidering-machine with the rod *l* and bar H, substantially as described, for alternately throwing them in gear with the driving-wheel *g* when they are in position of closest proximity, with the lever D^2, slide E^2, elbow F^2, yoke G^2, bar H, for automatically disengaging the needles from the carriage which last arrived near the fabric, and with rod W, lever A^2, and anchor B^2, substantially as described, for automatically starting the carriage which has longest been at rest on its outward motion, as specified.

10. The carriages B C of an embroidering-machine, combined with automatic mechanism composed of the toothed wheels *e f g*, bar H, rod *l*, crank-disk I, and driving-wheel L, for moving one carriage outwardly as soon as both have reached the position of closest proximity to the fabric D, as set forth.

11. The combination of the pivoted bar H and means, substantially as described, for vibrating it with the toggle a^2, sliding rod *c*, spring *y*, and bolt N, and with mechanism, substantially as described, for moving said bolt, as set forth.

12. The disk I, having pins d^3 f^3, in combination with the spring c^3, lever T, which is loose on the shaft, star-wheel S, and notched arms P and V, needle-carriages B C, rods *l* H, and pinions *e f g*, substantially as and for the purpose specified.

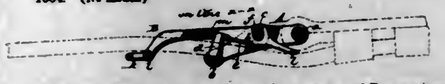
13. The disk I, having studs d^3 and f^3, in combination with stops, substantially as described, for arresting said disk after every partial rotation by means of said studs, and with the lever T, wheel S, and arms P and V, needle-carriages B C, rods *l* H, and pinions *e f g*, as set forth.

14. The combination of the carriages B C with the levers *s s*, which are connected, substantially as described, with the rod *t*, and mechanism, as described, for reversing the carriages, substantially as herein shown and described.

15. The carriages B C of an embroidering-machine, combined with the notched arm P and with the mechanism, substantially as described, for moving said notched arm when the carriages are in closest proximity to one another, with mechanism connecting said notched arm with the carriages, as set forth.

16. The combination of the slide O and mechanism for raising and lowering the same, substantially as described, with the bolt N, elbow-lever *u*, spring *z*, and needle-carriages B C, all arranged to release the bolt N from said rod O by the motion of the elbow *u*, and by the continued motion of said elbow to cause said bolt to move back toward said rod, as set forth.

328,936. BUCKLE. Emery E. Hardy, Newark, N. J. Filed Dec. 17, 1884. (No model.)



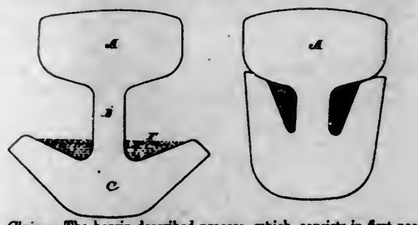
Claim.—1. The buckle consisting of the parts A and B, part A provided with the pivot-bar C and stud *d*, and part B inserted through part A and pivoted on bar C, as shown and described.

2. In a buckle, the part A, having the end bars, the stud *d*, and the pivot *c*, in combination with the part B, having the rear part, *i*, to lie against the outside of the strap, and the notches *f* to admit pivot *c*, as shown.

3. In a buckle, the part A, having the pivot-bar *c*, stud *d*, and inside shoulder, *e*, in combination with the part B, having the notches *f*, to receive the pivot-bar, and the shoulders *h*, adapted to interlock with shoulders *e*, as described, to prevent the accidental disconnection of the parts.

4. The external frame, A, provided with stud *d*, in combination with the internal member, B, pivoted near the middle of the frame A and extended both in front and in rear of its pivot, as and for the purpose set forth.

328,937. PROCESS OF REROLLING OLD RAILS. George Hargreaves, Winton Place, Ohio. Filed Feb. 18, 1885. (No model.)

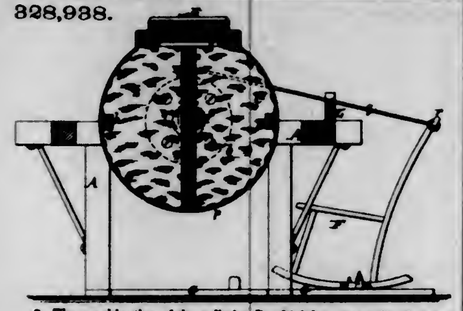


Claim.—The herein-described process, which consists in first passing the rail through the first set of rolls, so as to turn the flanges toward the web, and then placing in a trough formed by the first pass a suitable welding compound, and afterward successively passing said billet through suitable rolls to weld and shape the billet, substantially as described.

328,938. WASHING-MACHINE. Henry Hassenplug, Huntingdon, Pa. Filed Apr. 10, 1885. (No model.)

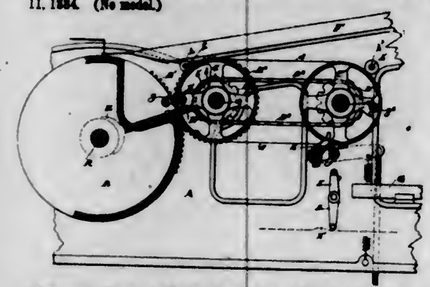
Claim.—1. The washing-cylinder C, constructed with grooved end plates, *b*, and fixed lower bar, *e*, in combination with the movable bar H, as specified.

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2. The combination of the cylinder C, which has grooved end plates, *b*, and corrugated body, with the internal fixed bars, *a b b*, and movable bar H, as specified.

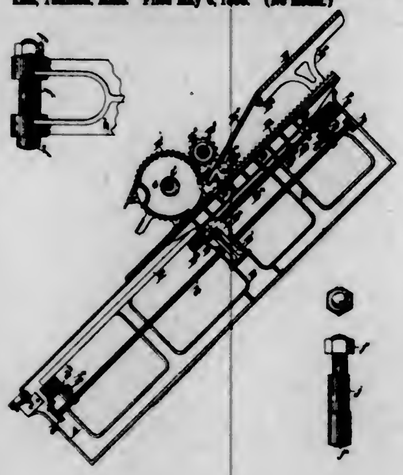
328,939. SHEET-DELIVERY FOR OSCILLATING-CYLINDER PRINTING-MACHINES. John T. Hawkins, Taunton, Mass. Filed June 11, 1884. (No model.)



Claim.—1. In an oscillating impression-cylinder printing-press, in combination with an intermittently-rotated delivery-cylinder provided with sheet-grippers, a series of oscillating grippers, as S, whereby said sheet-grippers are caused to receive and partially deliver the sheet during one printing operation, to remain at rest during the non-printing operation, and to complete the delivery to the said oscillating grippers during the succeeding operation of printing the next sheet, substantially as and for the purposes set forth.

2. In an oscillating-cylinder printing-press, the combination of an oscillating impression-cylinder, as B, an intermittently-rotated delivery-cylinder or series of cylinders, as C, a second delivery-cylinder or series of cylinders, as C', connected to the first delivery-cylinder or series of cylinders by cords or tapes, as *d*, and intermittently rotated from the first delivery-cylinder or series of cylinders by means of sprocket-wheels, as D D', and a chain, as D^2, or other suitable means, and a series of oscillating grippers, as S, substantially as and for the purposes set forth.

328,940. TYPE-BED FOR PRINTING-MACHINES. John T. Hawkins, Taunton, Mass. Filed May 6, 1885. (No model.)



Claim.—1. In a printing-machine, in combination with a reciprocating type-bed, as D, and buffer-springs, as D^4, vibrating stop-levers, as d^3 d^3, for putting in and out of action the said springs at the will of the operator, opening and closing stops attached to the frames or other solid part of the machine, as d^3, and a hand-lever, as d^3, the whole connected by connecting-rods, as d^4, and a shaft, as *d*, substantially as and for the purposes set forth.

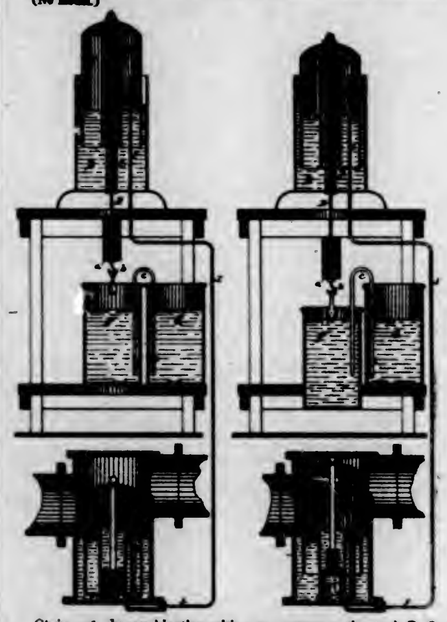
2. In a printing-press, means for the vertical adjustment of the type-bed-supporting rollers, consisting of a shaft upon which the said rollers run, as *j*, having three different diameters, the largest diameter at one end and the smallest at the other, concentric with each other, and the center diameter eccentrically placed with reference to the other two, whereby said shaft is adapted to be held in any required position, substantially as and for the purposes set forth.

328,941. FENDER FOR CARRIAGE-WHEELS. Carlos B. Hayden, North Adams, Mass. Filed Feb. 20, 1885. (No model.)



Claim.—As an article of manufacture, a shield for carriage-wheels, composed of an arc-shaped rim corresponding nearly to the circle of the wheel, and segmental sides adapted to cover a segment of the wheel, said shield being provided with a bifurcated spring adapted to grasp the felly of the wheel, and a handle applied to said shield near the spring to facilitate its opening and the adjustment and removal of the shield, substantially as described.

328,942. AUTOMATIC PRESSURE-REGULATOR FOR GAS-GOVERNORS. William Helme, Philadelphia, Pa. Filed Sept. 11, 1885. (No model.)



Claim.—1. In combination with a gas-governor, the tank B, float A, pipe I, vessel F, tank G, and siphon *c*, all constructed as shown, and adapted to operate substantially as and for the purpose set forth.

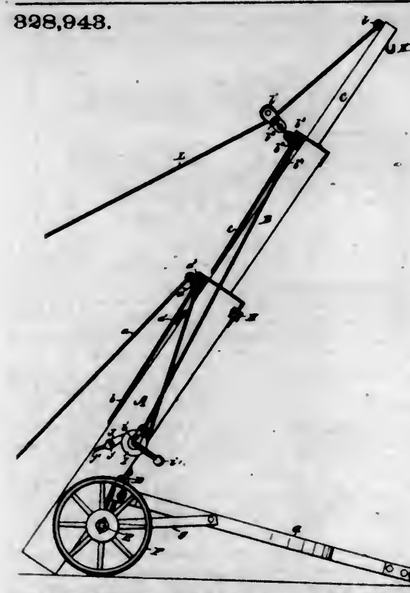
2. The combination, with a gas-governor, of the tank B with pipe C, float A with pipe D, pipe I, rod E, vessel F, tank G, and siphon *c*, all constructed as shown, and adapted to operate substantially as set forth.

3. The herein-described device for automatically regulating the weight upon the float A, consisting of the tank G and vessel F, both of which contain some fluid, and which are connected by a siphon, *c*, the whole arranged and operating substantially as set forth.

328,943. FIRE-ESCAPE LADDER. Robert M. Henderson and John A. Glaeleer, Jackson County, Ind. Filed Mar. 30, 1885. (No model.)

Claim.—1. The combination of the lower section, A, of the ladder, provided with guide-plates *a'*, pulleys a^2, brackets a^3, and trunnions D, axle E, wheels F, shafts G, having ring *g'*, guy-ropes *a*, section B of the ladder, having eyes *b'*, ropes *b*, rollers I, mounted on shaft *i*, pawl *j*, and ratchet-teeth i^2, substantially as described and shown, and for the purpose set forth.

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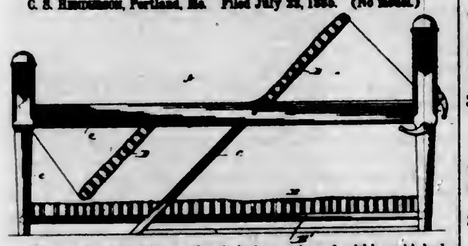


2. The combination of the lower section, A, of the ladder, having guide-plates *a'*, pulleys a^2, and brackets a^3, section B of the ladder, having eyes *b'*, pulleys b^2, and brackets b^3, ropes *b*, section C of the ladder, having eyes *c'*, ropes *c*, having links c^2, rollers I, mounted on shaft *i*, pawl *j*, and ratchet-teeth i^2, substantially as described and shown, and for the purpose set forth.

3. The combination of section C of the ladder, provided with eyes *l*, guy-ropes L, section B of the ladder, having guide-plates b^4, pulleys l', and blocks l^2, attached to it, and section A of the ladder, mounted upon wheels, and provided with the mechanism for raising sections B and C, substantially as described and shown, and for the purpose set forth.

4. The combination of the lower section, A, of the ladder mounted upon wheels, and provided with guide-plates *a'*, pulleys a^2, and brackets a^3, guy-ropes *a*, section B of the ladder, having eyes *b'*, pulleys b^2, guide-plates b^4, brackets b^3, pulleys l', and blocks l^2, ropes *b*, rollers I, mounted on shaft *i*, pawl *j*, ratchet-teeth i^2, section C of the ladder, having eyes *c'* and *l*, guy-ropes L, and ropes *c*, having links c^2, substantially as described and shown, and for the purpose set forth.

328,944. INVALID'S CONVERTIBLE CHAIR AND BED. Patrick C. S. Henderson, Portland, Me. Filed July 23, 1885. (No model.)



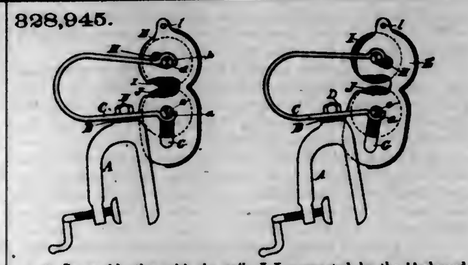
Claim.—1. A bed-frame, the chair-frame pivoted within said bed-frame, a cloth or thin mattress secured in said bed-frame and to the pivoted chair-frame, and slits or openings in said piece D for the legs of the occupant, combined with mechanism for adjusting and retaining said chair-frame in position, substantially as described.

2. A bed-frame, the chair-frame pivoted within said bed-frame, a cloth or thin mattress, D, secured in said bed-frame and to the pivoted chair-frame, and slits or openings in said piece D for the legs of the occupant, combined with a thick mattress, E, suspended beneath said piece D, and means for adjusting and supporting said chair-frame, substantially as described.

328,945. CLOTHES-WRINGER. Henry C. Hopkins, Jr., Covington, Ky., assignor of one-half to Henry C. Hopkins, same place. Filed Feb. 25, 1885. (No model.)

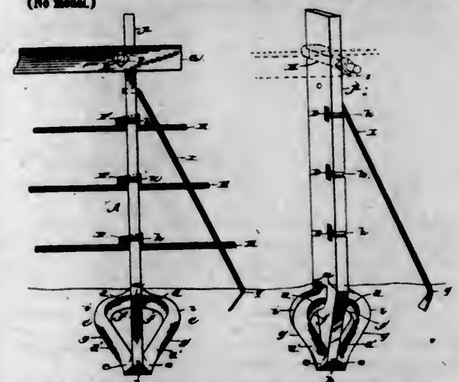
Claim.—1. In combination with the rolls I J, supported by the U-spring C, the housings E E', provided with the inclined slots H, for moving the rolls to or from each other, substantially as specified.

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2. In combination with the rolls I J, supported by the U-shaped spring C, the housings E E', having the inclined slots H, and the coupling-rod L, secured to the ears of the housings, substantially as specified.

328,946. FENCE-POST. Miles W. Huffaker, Knoxville, Tenn., assignor of one-half to C. H. Flournoy, same place. Filed May 16, 1885. (No model.)



Claim.—1. The bar or post A, having the braces secured thereto, said braces comprising the outwardly-extended arm *d*, having the horizontal inner cutting-edge, *f*, and the inwardly-extending arm *d'*, having the inclined outer cutting-edge, *g*, as set forth.

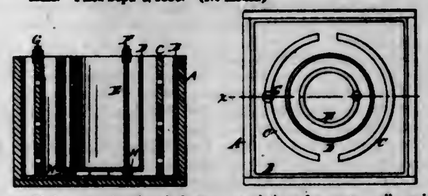
2. The bar or post A, having its lower end pointed, in combination with the foot-braces secured to the sides thereof and having their lower ends pointed and arranged on a line with the pointed lower end of the post, said braces comprising the upper arm, *d*, and the lower arm, *d'*, the arm *d* having the cutting-edge *f*, and the arm *d'* having the cutting-edge *g*, for the purpose set forth.

3. The bar or post A, in combination with the braces secured thereto, and comprising the upper outwardly-inclined arm and the downwardly-inclined arm, said arms being set at an angle to each other and sharpened to form cutting-edges, the lower end of the braces being beveled, for the purpose set forth.

328,947. FILTERING-PAPER. Sam. H. Johnson, Stratford, County of Essex, England. Filed Aug. 2, 1882. (No specimens.) Patented in England Nov. 3, 1881, No. 4,804.

Claim.—As a new article of manufacture, filtering-paper made by mixing carbon with paper-pulp and forming it into sheets, substantially as described.

328,948. ELECTRIC BATTERY. Theodore L. Kauffer, Boston, Mass. Filed Sept. 4, 1885. (No model.)



Claim.—1. A galvanic battery consisting of an outer cell, an inner porous cup, a positive and negative electrode, bichromate of soda, and common salt with an acid, preferably sulphuric acid, in aqueous solution.

2. In a galvanic battery, an outer cell consisting of the outer box, preferably made of an infrangible material, as wood, and an inner box, preferably made of paraffine or other similar material, substantially as described.

3. In a galvanic battery, a porous cell provided with a grooved bottom, said groove being constructed to hold free mercury and the zinc element and support the porous cell, substantially as described.

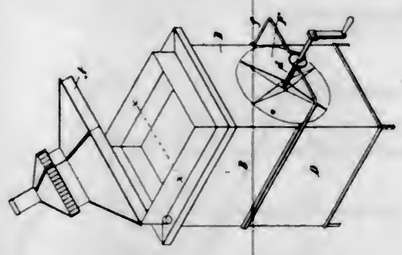
4. A galvanic battery consisting of an outer cell, an inner porous cup, a positive and negative electrode, bichromate of soda with an acid, preferably sulphuric acid, in aqueous solution, the said positive electrode being a cylinder of zinc and having its inside surface coated with paraffine, as and for the purpose substantially as described.

5. A galvanic battery consisting of the outer cell constructed by the combination of the outer box of an infrangible material with an inner box of paraffine, the negative element, the porous cup, the positive element, and the charging liquid, arranged substantially as shown and described, and for the purpose set forth.

6. In a galvanic battery, a depolarizing fluid, two elements of which are bichromate of soda and common salt.

7. The combination, in a galvanic battery, of the electrodes, a mixture of bichromate of soda and salt with an acid, preferably sulphuric acid, in an aqueous solution.

328,949. COFFEE-ROASTER. SAMUEL S. KINNEY, Cincinnati, Ohio. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a nut-roaster, the combination, with the furnace box or frame D and the warmer A, of the removable interposed box or frame B, adapted when in place to inclose the upper part of the roasting-cylinder and support the warmer above it, as set forth.

2. The combination, with the roasting-cylinder C, having a removable end piece, of the furnace-box D, the box B, resting thereon, and the warmer A, resting upon said box B, said boxes being cut away for the passage of one end of the cylinder, substantially as set forth.

3. In a peanut-roaster, the combination of the frame D, the journal-bearing bracket *f*, attached to frame D, the open cylinder-head *c'*, the screw-threaded crank-shaft *d*, firmly attached to the hub of the cylinder-head *c'* and sustained by the frame *f*, substantially as described.

4. The combination, with the furnace-box D, having the cut-away portion *g*, and the warmer A, of the interposed box B, having a cut-away portion corresponding to that of the box D, for use when roasting, and the plate H, for covering the cut-away portion *g* when the box B is removed, as set forth.

5. In a cylinder of a peanut-roaster, the combination of the cylinder C, the flanged cylinder-head *c'*, the screw-threaded shaft *d*, firmly attached to the center of the cylinder-head *c'*, and the cylinder-head F, movably adjustable on said shaft, substantially as described.

6. The combination, with the cylinder C, its journals, and the furnace-box D, having bearings for the said journals, of the removable frame or box B, and the warmer A, adapted to rest upon the top of either of the boxes D or B, substantially as set forth.

328,950. RAILWAY-SIGNAL. FREDERICK E. KIP, New York, N. Y. Filed Jan. 7, 1885. (No model.)

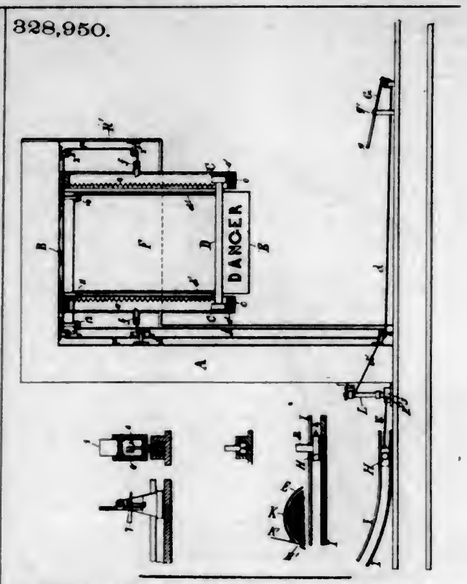
Claim.—1. The combination, with the sliding bar D, carrying the signals, and the spiral springs acting on said bar in an upright position, of the releasing-lever G, connected to the bolts by means of cords, chains, or wire, as set forth.

2. The combination, with the sliding bar D, carrying the signals, and with the spring-bolts for holding said bar in an upper position, of the slide H, connected to said bar by means of ropes, chains, or wires, the curved ways for guiding said slide, and the return spring and spindle connected to the slide.

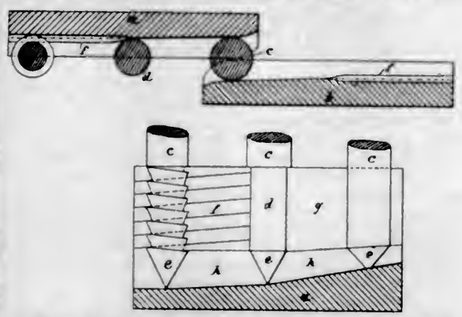
3. The combination of the sliding bar D, carrying the signals, the spring-bolts for holding said bar in an upper position, the releasing-lever G, connected to said bolts, the slide H, connected to the sliding bar, the curved ways for guiding said slide, and the return-spring connected to the slide, the whole being adapted to operate substantially as herein described.

4. The combination, with the sliding bar D, carrying the several danger-signals, of the spiral springs acting on said bar, the cord, wire, or rope acting on the spindle L, and the return-spring connected to the slide, substantially as shown and described.

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328,951. SCREW-SWAGING MACHINE. ALBERT C. LEWIS, Brooklyn, N. Y. Filed Oct. 16, 1883. Renewed Apr. 3, 1885. (No model.)



Claim.—1. In a screw-swaging machine, the pair of dies described, having a reducing portion to reduce the diameter of that part of the blank which is to receive the thread, combined with a threading portion, having the threading-grooves thereon partly sunk below and partly raised above the rear surface of the reducing portion for the purpose of forming a bolt in which the external diameter of the thread is equal to the diameter of the blank portion of the bolt, substantially as described.

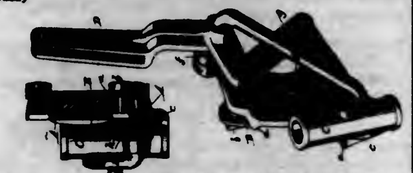
2. In a screw-swaging machine, the pair of dies described, having a reducing portion to reduce the diameter of that part of the blank which is to receive the thread, combined with a threading portion, having the threading-grooves thereon partly sunk below and partly raised above the rear surface of the reducing portion, and also with pointing-dies for the purpose of forming a pointed bolt in which the external diameter of the thread is equal to the diameter of the blank portion of the bolt, substantially as described.

3. In a screw-swaging machine, the pair of dies described, having a threading portion, a reducing portion, and a pointing portion in combination, said pointing portion extending the entire length of the threading and reducing portions, or nearly so, substantially as described.

4. In a screw-swaging machine, the pair of dies described, having threading portions, with grooves cut in their respective faces, combined with pointing portions sloping from the front to the rear of the threading portion to allow for the lengthening of the bolt during the process of swaging the thread thereon, substantially as described.

5. In a screw-swaging machine, a pair of threading-dies having right-angular grooves cut in a portion of their respective faces, combined with pointing portions sloping from the front to the rear of the threading part to allow for the lengthening of the bolt during the process of swaging the thread thereon, by which a screw is formed having an angular thread of the character shown and a smooth point, the base of which is equal to the external diameter of the screw-thread, substantially as described.

328,952. WHEEL-PLOW. ANTONY LEMMERMS, Moline, Ill., assignor to the Moline Plow Company, same place. Filed Mar. 19, 1885. (No model.)



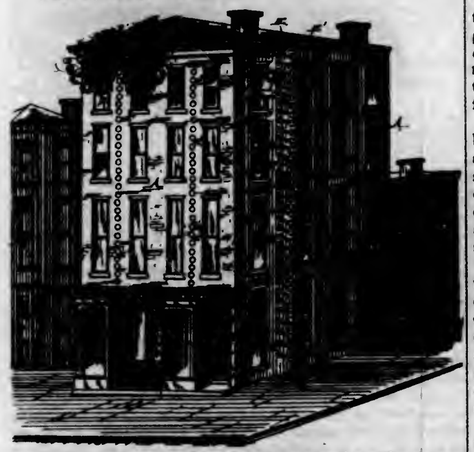
Claim.—1. The colter supporting and adjusting attachment for wheeled plows, consisting of a plate provided, substantially as described, with means of attachment to the plow beam or frame, a colter-supporting socket pivoted to said plate, and an operating-lever pivoted independently to said plate, said members being constructed and combined for joint operation substantially as described and shown.

2. The flanged plate A and fastening-bar B, with their connecting devices, in combination with the socket C and elbow-lever D, pivoted independently to said plate, and the connecting-link *g*.

3. In combination with the supporting-plate A and the socket and lever mounted thereon and connected with each other, as described, the fastening-bolt E, constructed and applied as described and shown.

4. In a wheeled plow, a wheeled frame, a vertically-adjustable colter, and a plow-adjusting lever, in combination with the colter, the pivoted socket having an arm thereon, the elbow-lever, the connecting-link, and the bar connecting said lever with the plow-adjusting lever.

328,953. FIRE-ESCAPE. DANL. J. MACLEAN, Reading, Pa., assignor of two-thirds to George E. Haak and John L. Parrott, both of same place. Filed July 20, 1885. (No model.)



Claim.—1. As an improvement in the construction of fire-escapes, sleeves of round, square, or oblong cross-section inserted or built within the walls of the building and passing entirely through the same at uniform distances between centers, having collars abutting against the inner face of the wall, and their outer ends flush with the same being perforated to admit, pass freely through, and support a series of rungs or bars in the aggregate forming a ladder, substantially as and for the purpose set forth.

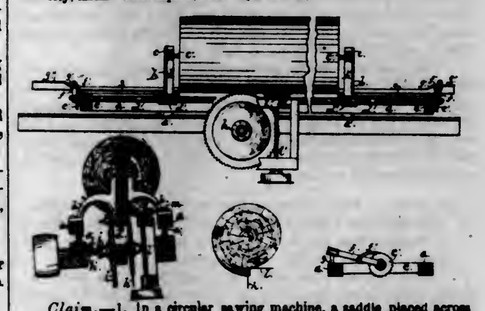
2. As an improvement in the construction of fire-escapes, a series of rungs or bars provided with integral or detachable bosses or collars at their outer ends, and with detachable bifurcated inner ends, said bifurcated jaws provided with grooved anti-friction rollers suitably spaced to admit a rod between the same, in combination with perforated wall-sleeves D and an operating-rod, F, substantially as shown, and for the purpose described.

3. As an improvement in fire-escapes, the continuous rods F and G, constructed as described, combined by clamps H I, and suspended and supported upon end and intermediate radial links from wall-brackets, the rod F passing between the anti-friction rollers of each rung of the series, the rod G, provided with handles Q upon each floor, in combination with the rungs or bars E, jaws E^2, sleeves D, bosses E', and rail E^4, whereby the raising or lowering of the rods by the handle Q will retract toward or project from the outer face of the wall a ladder, as and for the purpose specified.

4. The clamps H, with pivotal ears H' and clamping-bolt H^2, in combination with rods F G, links J, brackets K, and handles Q, whereby the rods are stiffened and caused to operate in unison with the rungs E, as and for the purpose disclosed.

5. As an improved article of manufacture, a fire-escape composed, essentially, of the following elements: sleeves suitably secured in the wall of the building, rungs or bars E, movable therein, provided with collars E', or hand-rail E^4 at their outer ends, with bifurcated jaws E^2 and anti-friction rollers E^3 at their inner ends, operating-rod F, continuous in length and diameter, engaging with the entire series of rollers E^3, and connected to a controlling-rod, G, by clamps H and I, said rod suspended and supported by end and intermediate radial links, J, pins J', and brackets K, having handles Q upon each floor, with alarms P, automatically released, and counter-balance L, M, and N, all arranged and combined to operate as and for the purpose set forth.

328,954. CIRCULAR SAWING MACHINE. DANIEL H. MASON, Bay City, Mich. Filed Apr. 8, 1885. (No model.)



Claim.—1. In a circular sawing machine, a saddle placed across the carriage and provided with an upward-extending inclined groove for guiding the log, in combination with a roller placed lengthwise of the carriage and adapted to carry the log upon its upper surface, and by an intermittent rotary motion to set over the said log to the saws for cutting dimension pieces, substantially as described, and for the purpose set forth.

2. In a circular sawing machine, the combination of a roller, *d*, placed lengthwise of a reciprocating carriage and adapted to carry the log and arranged to set over the said log to the saw, a vertical saw, *k*, and horizontal saw *l*, arranged to cut into the under side of the log on one side of the said roller, with a rossing-wheel, *i*, provided with cutters and located on the opposite side of the said roller *d*, and arranged to cut into and remove the bark from the log, substantially as and for the purpose set forth.

3. In a circular sawing machine, the roller *d*, placed lengthwise of the carriage and log, and supported by the saddles *b*, and arranged to carry the log, in combination with the ratchet-wheel *e'*, secured to end of the said roller *d*, the lever *f*, pivoted to the end of the roller *d* and carrying the pawl *f''*, adapted to engage with the said ratchet-wheel *e*, and the piece *g*, secured to the carriage and provided with the raised portion *g''* and the inclined part *g'*, and adapted to engage with the outer end of and operate the said lever *f*, substantially as and for the purpose set forth.

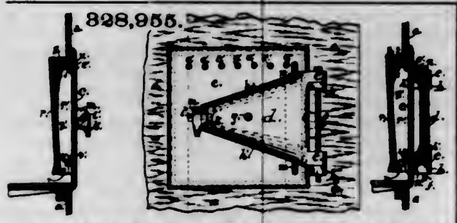
4. In a circular sawing machine, a roller, *d*, placed lengthwise of the carriage and adapted to sustain the weight of the log, and mechanism for revolving the said roller intermittently to set the log over to the saw, in combination with the saddles *b*, placed across the carriage near the ends of the said roller and arranged to support the same, an inclined groove *b'*, in the upward-extending portion of the said saddles, and the plugs *c'*, arranged for one end to be driven into the log, and the opposite end to rest into and be guided by the said inclined groove, substantially as and for the purpose set forth.

5. In a circular sawing machine, the combination of the saddles *b*, provided with the upward-extending groove *b'*, the feed-roller *d*, supported by the said saddles and adapted to receive the weight of the log, the sliding boxes *c* within the said groove, and the screw-plugs *c'*, passing through the said boxes and into the log, substantially as and for the purpose set forth.

328,955. FURNACE-DOOR. DANIEL H. MASON, Bay City, Mich., assignor to the McKinnon Manufacturing Company, same place. Filed Apr. 20, 1885. (No model.)

Claim.—1. In a furnace-door, the combination of the front *a*, provided with the lugs *b*, with the door *c*, provided with the holes *c'*, and the lug *m* and hooks *u* and *u'* on the outside thereof, and the hooks *u* and *v* on the inner side, the hinge-plate *d*, having the lugs *e* and lug *k*, and adapted to rest in the said hooks *u* and *u'*, the bolt *l*, passing through the said lugs *k* and *m*, and securing the said hinge-plate to the said door, the fire-plate *r*, provided with the inward-projecting portions *s* and *s'*, and flanges *t* and *t'*, adapted to engage with the said hooks *u* and *v*, substantially as and for the purpose set forth.

328,955.



2. In a furnace-door, the combination of a door, *c*, provided with the hooks *n* and *n'* and lug *m*, with a hinge-plate, *d*, having the hinge-lugs *o* and the inward-projecting edges *u* and *u'*, forming a space or chamber between the said door and hinge-plate, and adapted to rest into the said hooks *n* and *n'*, the outward-projecting lug *k*, and the fastening-bolt *l*, passed through the said lugs *k* and *m*, for securing the said plate in position, substantially as set forth.

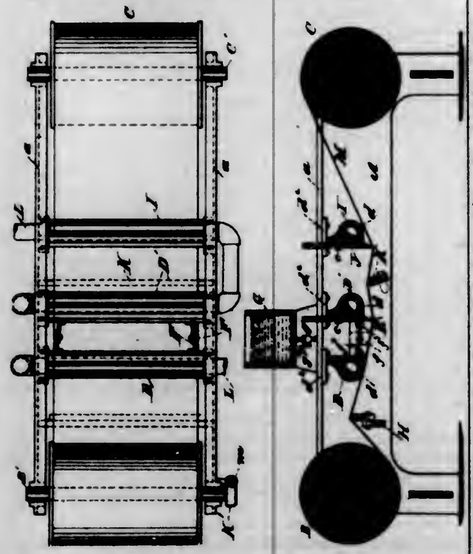
3. In a furnace-door, the combination of the door *c*, provided with the air-holes *c'* in its upper portion, and the hooks *n* and *o* on its inside surface, with the fire-plate *r*, provided with the inward-extending top *s* and sides *s'*, and the flanges *t*, projecting downward from the top *s* and adapted to catch into the hooks *n*, and the flanges *t'*, projecting inward from the sides *s'* and adapted to catch into the hooks *o*, substantially as and for the purpose set forth.

328,956. PRESERVING, STRENGTHENING, WATERPROOFING, AND GLOSSING TEXTILE FABRICS, INCLUDING PAPER. Charles A. Mayfield, New York, N. Y., assignor to Jacob Wallace, trustee, same place. Filed May 23, 1885. (No specimens.)

Claim.—1. As a new article of manufacture, textile fabrics, including paper, having applied to one surface only thereof the natural wax known as "ceocerite," whereby said fabrics are strengthened, &c., and their said surface rendered water-repellent, substantially as set forth.

2. As a new article of manufacture, wall-paper having its face or exposed surface treated with the natural wax known as "ceocerite," substantially as and for the purpose set forth.

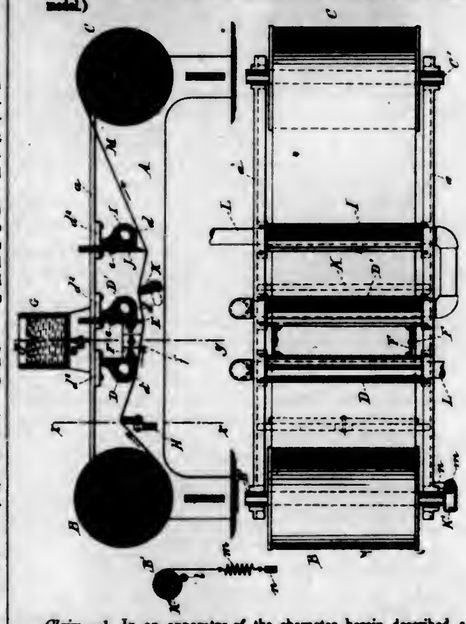
328,957. METHOD OF SATURATING OR COATING TEXTILE FABRICS, PAPER, &c. Charles A. Mayfield, New York, N. Y., assignor to Jacob Wallace, trustee, same place. Filed May 23, 1885. (No model.)



Claim.—1. In the art of coating or saturating textile fabrics, paper, leather, and similar materials with any desirable waterproofing, coloring, or glossing substance, the method of applying said substance, which consists in depositing a liquefied body or mass of the same in a confined space directly upon the surface of the material operated upon, and drawing said material beneath or away from said confined mass of liquefied substance, substantially as set forth.

2. In the art of coating or saturating textile fabrics, paper, &c., with any waterproofing, coloring, or glossing substance, the method of applying said substance and regulating the degree of penetration thereof into the material operated upon, which consists in depositing a liquefied body or mass of the substance of predetermined depth, in a confined space, directly upon the surface of the material operated upon, and drawing said material beneath or away from said confined mass of liquefied substance, substantially as set forth.

328,958. APPARATUS FOR TREATING TEXTILE FABRICS WITH WATERPROOFING, &c. Charles A. Mayfield, New York, N. Y., assignor to Jacob Wallace, trustee, same place. Filed May 23, 1885. (No model.)



Claim.—1. In an apparatus of the character herein described, a receptacle for the liquefied substance to be applied to the material operated upon, consisting of front and rear walls secured to the frame of the apparatus and provided with adjustable side walls, said structure being open at the bottom, so that the material to be operated upon, when passing beneath the same, is in direct contact with the liquid, substantially as set forth.

2. A receptacle for the liquefied substance to be applied to the material operated upon, consisting of front and rear walls provided with heating-pipes and secured to the frame of the apparatus, and adjustable side walls, said structure having an open bottom, substantially as set forth.

3. A receptacle for the liquefied substance to be applied to the material operated upon, consisting of front and rear walls adjustable longitudinally upon the frame of the apparatus, so that the distance between these walls may be regulated, and end plates which are adjustable in length and also capable of adjustment transverse of the machine, the bottom of said structure being open, substantially as set forth.

4. A receptacle for the liquefied substance to be applied to the material operated upon, consisting of the wall D' E and end plates, F, the material operated upon forming in operation the bottom of the said receptacle, substantially as set forth.

5. The walls D D' and end plates, F F, the wall D having a blade, E, substantially as set forth.

6. The walls D D', the former provided with a projection on its lower interior face, and the latter, D', having secured to its interior face the blade E, upon whose lower face is a projecting rib, combined with the plates F F, the latter being adjustably and detachably connected to the walls D D', substantially as set forth.

7. The open-bottom receptacle D D' F, provided with the blade E, by which the proper application of the liquefied substance to the material operated upon is regulated, substantially as set forth.

8. In combination with the receptacle D D' E F, pivoted equalizing tension-bar H, substantially as set forth.

9. In combination with the receptacle D D' E F, the supplemental distributing device, consisting of the casting I, having a heating-pipe, and blade J, substantially as set forth.

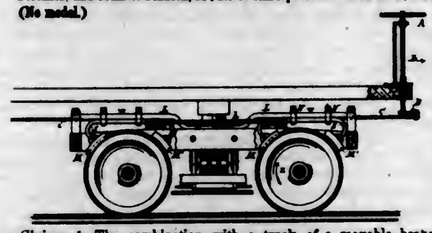
10. The receptacle D D' E F, combined with the distributing device I J and bar K, substantially as set forth.

11. The combination of the receptacle D D' E F and equalizing tension-bar H with the bar K and distributing device I J, substantially as set forth.

12. In an apparatus of the character described, the delivery-reel B, combined with a tension device upon its shaft, and the equalizing pivoted tension-bar H, substantially as set forth.

13. An apparatus organized for coating or saturating textile fabrics, paper, leather, and similar substances with strengthening, preserving, or coloring matter, comprising the following elements: delivery and receiving reels, an open bottom receptacle for the substance to be applied, an equalizing pivoted tension-bar, H, a bar, K, and a distributing device, I J, substantially as shown and described.

328,959. CAR-BRAKE. John Messmer, New York, N. Y., assignor to himself, Regnis Fleischman, Isaac Kayser, Philip L. Sondheim, Louis Stockler, and John C. Stanton, Jr., all of same place. Filed Nov. 25, 1884. (No model.)



Claim.—1. The combination, with a truck, of a movable brake-frame, brake-shoes, and a fixed part of or projection from said truck lying over said brake-shoes, whereby the brake-shoes may be wedged between the wheel and the fixed part of or projection from the truck lying over the brake-shoes, substantially as and for the purposes set forth.

2. The combination, with a truck, of a movable brake-frame, brake-shoes, and connecting brake-rod, all so arranged that the brake-shoes and connecting brake-rod may be wedged between the wheel and a fixed part of or projection from the truck, substantially as and for the purposes set forth.

3. In a car-brake, the combination of a movable brake-frame, brake-shoes M M', brake-rod S, rod L, and bearings N N, substantially as shown and described.

4. In a car-brake, the combination of a movable brake-frame, lever B, arm C, lever D, arm E, rod L, bearings N N, brake-rod S, and brake-shoes M M', substantially as and for the purposes set forth.

5. The combination, with a movable brake-frame, brake-shoes M M', connected by brake-rod S, rod L, and bearings N N, of arms K and *i*, substantially as and for the purposes set forth.

6. The combination, in a car-brake, of a movable brake-frame, lever B, arm C, lever D, arm E, brake-shoes M M', brake-rod S, rod L, bearings N, and rods K and *i*, substantially as and for the purposes set forth.

328,960. MATRIX-MAKING AND PRINTING MACHINE. Ottmar Mergenthaler, Baltimore, Md., assignor to the National Typographic Company, Washington, D. C. Filed June 4, 1884. (No model.)

Claim.—1. The combination of the revolving cylinder, the longitudinal slides having type on their sides, the finger-keys to effect the end motion of the individual slides, means, substantially as described, for returning the slides to their normal position, and a pressure device, substantially such as described and shown, to force the paper or equivalent material into contact with the slides.

2. In a printing-machine, a revolving cylinder provided with longitudinal slides each having a type or die, and each adapted to move radially as well as longitudinally.

3. The revolving cylinder, the longitudinally and radially moving slides having type or dies thereon, a device, substantially as described to sustain the paper against the action of the type, and a pressure-device, substantially as described, to urge the slides radially against the paper.

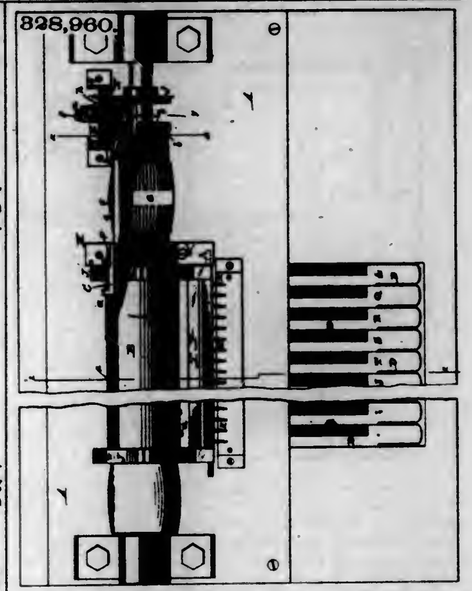
4. The grooved cylinder, in combination with the longitudinal type-bearing slides having projections on their inner sides, and the stationary cam arranged to encounter the projections of those slides which are moved endwise from the normal position and force the same radially outward, substantially as described and shown.

5. The revolving cylinder and the type-bearing slides thereon, in combination with the pressure-roll E, and gearing, substantially as described, to effect the positive rotation of said roll at a surface-speed corresponding with that of the type.

6. In combination with the cylinder, the radially and longitudinally moving type-bearing slides, and the pressure-spring acting against the outer edges of said slides.

7. The combination of the revolving cylinder, the longitudinally and radially movable type-bearing slides, the cam to urge said slides outward, and means, substantially as described, for adjusting said cam, whereby it may be caused to move the type a greater or less distance.

8. The combination of the revolving cylinder, the pressure device, substantially as described, to force the slides outward, and the series of



type-bearing slides having their edges which are acted upon by the pressure device made, respectively, of different widths corresponding to the different characters or letters.

9. In combination with the pressure-roll, the revolving cylinder, the stationary cam or pressure device, substantially as described, acting within said cylinder, and the type-bearing slides having their inner edges arranged to be acted upon by the pressure device and constructed of different widths, whereby each slide is held in its outer or projecting position for a longer or shorter period, according to the width of the letter or type borne upon its face.

10. The combination of the rotary cylinder, the type-bearing slides movable endwise therein, and the bearing provided with a cam groove or incline to retract the slides.

11. In combination with the revolving cylinder and the type-bearing slides therein, the pressure-roll E the swinging frame to sustain said roll, and means, substantially as described, for securing and releasing said frame.

12. The combination of the rotary grooved cylinder, the type-bearing slides mounted therein, and provided with projections disposed in a spiral line about the cylinder, and the finger-keys provided with inclined or beveled faces to act upon said projections and effect the longitudinal movement of the slides.

13. In combination with the cylinder and the longitudinal movable slides therein, the finger-keys, the locking-bar, and mechanism, substantially as described, for moving the same to and fro in a positive manner, and the yielding hooks or catches connecting the keys with the locking-bar.

14. In a printing-machine, the combination of the finger-keys, the revolving cylinder, the longitudinal slides to effect the printing of the selected characters, a locking-bar common to the series of keys, eccentrics to actuate said bar, and a yielding connection whereby breakage is prevented.

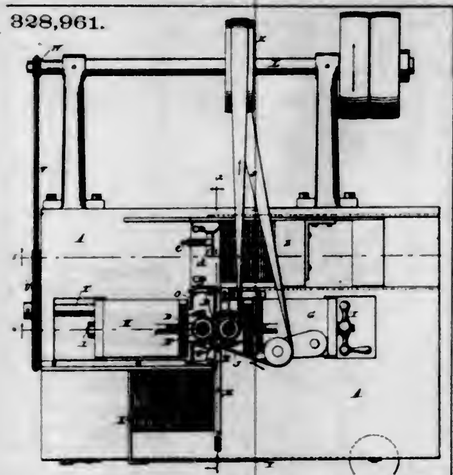
328,961. MACHINE FOR DRESSING TYPE-BARS. Ottmar Mergenthaler, Baltimore, Md., assignor to the National Typographic Company, Washington, D. C. Filed May 19, 1885. (No model.)

Claim.—1. In a machine for dressing metal type-bars, the combination, substantially as described, of the two rotary milling-heads or cutters, the stationary guide through which one of the heads acts, and the yielding pressure-arms.

2. The combination of the two cutter-heads, suitable guides to direct the type-bars between them, the feed-chain provided with a plurality of feed-fingers, and mechanism, substantially as described, for driving said chain in a forward direction, whereby the bars may be advanced one after another by the successive fingers to the cutters.

3. The two cutter-heads and suitable guides for the bars in their passage between the heads, in combination with the feed-chain provided with a series of fingers and moving always in one direction, and a pressure device, X, acting transversely of the chain, substantially as described, whereby the type-bars are delivered successively and automatically to the successive feed-fingers of the chain.

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4. In combination with the two cutter-heads and a bar or table to receive the type-bars therefrom, a reciprocating head or pressure device, substantially as described, to advance the bars sidewise, and a yielding resistant, substantially as described, against which the bars are assembled, whereby the bars are automatically arranged in column form after leaving the cutters.

5. The cutters, the endless feed-chain provided with fingers, the reciprocating pressure device *d*, the rock-shaft actuated by the teeth of the chain, and connecting devices, substantially as described, for imparting motion from the rock-shaft to the pressure device, said parts combined with joint operation, as set forth.

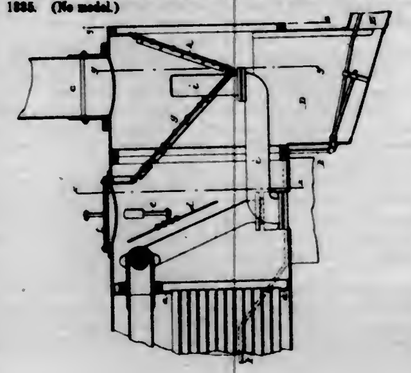
6. In combination with the bed to sustain the type-bars on edge, the upright guides to act on the vertical faces of the bars, cutter-heads and their spindles, and the supporting-frames for said spindles adjustable to and from each other, substantially as and for the purpose described.

7. In an automatic machine for dressing the sides of type-bars, the rotary cutters, in combination with the feed device to pass the bars endwise between them, the follower X, reciprocating at right angles to the path of said feed device to advance the bars thereto, the reciprocating pressure device *d*, acting at right angles to the path in which the bars are delivered from the cutters, and the resistant, substantially as described, whereby the bars assembled in column form are delivered automatically and successively between the cutters and reassembled in column form.

8. In combination with the cutter-heads, and the feed mechanism, substantially as described, for delivering type-bars endwise between said heads, the supporting bed or table extended downward in an inclined position beyond the delivery side of the cutters, substantially as described and shown, whereby each type-bar is caused to pass by gravity away from the succeeding bar and the feed mechanism, to the end that it may be moved laterally out of the path of the next succeeding bar.

9. In a machine for dressing type-bars, the combination of a bed or table to sustain the bars, the two rotary cutters, and the two spindles sustained in bearings wholly above the bed and having the cutters applied to their lower ends.

328,962. SPARK-ARRESTER. Frederick Hintermeister, Denver, Colo., assignor of one-half to I. H. Congdon, Omaha, Nebr. Filed June 29, 1885. (No model.)



Claim.—1. In combination with the boiler having a forward smoke-chamber, the perforated cinder-arresting plates and the imperforate deflector-plate *d*, suspended in rear of said plates in position to permit the passage of the smoke around its entire periphery.

2. The boiler having the forward smoke-chamber and the perforated plates therein, in combination with the inclined plate *d*, located between the flues and the perforated plates, and combined with means, substantially as described, for effecting its adjustment bodily in a vertical direction.

3. In a spark-arrester, the combination, with a boiler having a forward smoke-chamber, of an inclined plate or plates located in said chamber and provided with openings or perforations elongated in a horizontal direction, substantially as and for the purpose described.

4. In a spark-arrester for locomotives, a cinder-arresting plate arranged obliquely to the path of the outgoing products, substantially as described, whereby the cinders are caused to cross the openings in the direction of their lesser diameter and thus prevented from lodging therein.

5. In a locomotive-boiler, a cinder-arresting plate inclined downward and forward and provided with openings elongated horizontally, substantially as and for the purpose described.

6. In combination with a locomotive-boiler, an inclined perforated plate located in its forward end to arrest cinders and deflect the same downward, and the cinder-chamber built on the under side of the boiler beneath the plate and having its upper side in free communication with the boiler throughout its entire width.

7. In combination with a locomotive-boiler, an inclined perforated plate to arrest the cinders, a cinder-receiving chamber at the base, and a discharge-pipe extending laterally from said chamber to deliver the cinders outside of the track.

8. In a locomotive-boiler, the combination, with a cinder-arresting chamber and plates for directing the cinders thereto, of the discharge-pipe and a water delivery pipe extended into said discharge-pipe, substantially as described, whereby the automatic delivery of the cinders is effected.

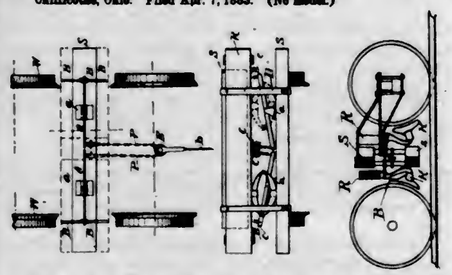
9. In a locomotive-boiler, a cinder-arresting chamber and spark-arresting devices, substantially as shown, to direct the cinders thereto, in combination with the delivery-pipe E, the water-pipe discharging into said chamber, and the water-pipe discharging into the delivery-pipe.

10. In combination with a locomotive-boiler having a spark-arresting chamber at the front, a laterally-extending discharge-tube, in combination with a valve to close said pipe, and means, substantially as described, for operating said valve from a distance, and a water-delivery pipe to effect the discharge of the cinders when said valve is open.

11. In combination with a locomotive-boiler having the smoke-chamber at its forward end, two perforated plates, *g* and *h*, located beneath the stack or chimney and approaching each other toward the lower edges.

12. The locomotive-boiler provided with the spark-arresting plates *g* and *h*, fixed in position with the man-hole plate *t*, affording access to the smoke-chamber in rear of the perforated plates.

328,963. CAR-BRAKE. Samuel E. Mosher and Laban R. Lyons, Chillicothe, Ohio. Filed Apr. 7, 1883. (No model.)



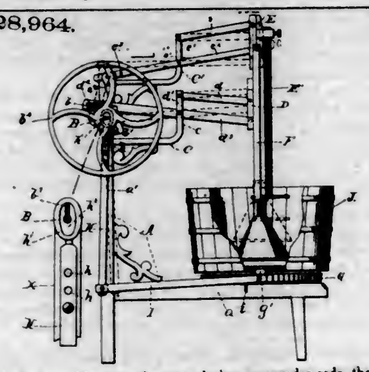
Claim.—1. The combination, in a railway-car brake mechanism, of levers A, pivoted to the spring-shelf, and bell-crank brake-levers hung to the cross-beams, connected and operated substantially as and for the purpose specified.

2. The levers A, pivoted to the spring-shelf *s*, and bell-crank brake-levers B, in combination with the chain P, pulleys C C and E, substantially as set forth.

328,964. MOTOR. George A. Myers, Schoolcraft, Mich., assignor of one-half to Jesse P. Earl, same place. Filed June 2, 1884. (No model.)

Claim.—1. In a machine for reciprocating dasher or pounder rods, the combination, with the frame A, bracket C, provided with the extension *c*, and crank-shaft B, turned by any proper means, of the lever *d*', provided with slot d^3, engaging the crank of said shaft, link *d*, and head-block D, properly formed to carry vertically upon it a longitudinally-adjustable rod, F, substantially as specified.

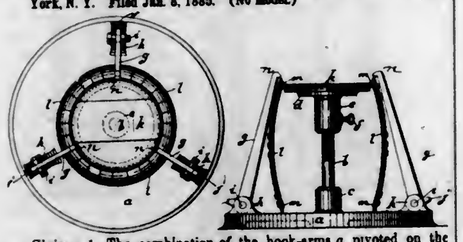
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2. In a machine to reciprocate dasher or pounder rods, the combination, with the frame A, bracket C', provided with the extension *c'*, and crank-shaft B, turned by any proper means, of the pitman c^4, connected to the crank of said shaft, lever *c'*, provided with the holes c^5 c^6, link *e*, and head-block E, properly formed to carry vertically upon it a longitudinally-adjustable rod, F', substantially as specified.

3. In a machine to reciprocate dasher or pounder rods, the combination, with the frame A, having attached the brackets C and C', crank-shaft B, turned by any proper means, and provided with the pin b^2, levers *d'* and *c'*, links *d* and *e*, pitman c^4, and head-blocks D and E, of the lever H, provided with holes A A and slotted piece A', rod I, provided with pawl *i'*, and ratchet-wheel G, pivoted centrally at a proper point on the frame A and turning in the friction-wheels *g g*, all constructed and arranged as shown and described, for the purposes specified.

328,965. BARREL-HEADING MACHINE. Frederick Myers, New York, N. Y. Filed Jan. 8, 1885. (No model.)

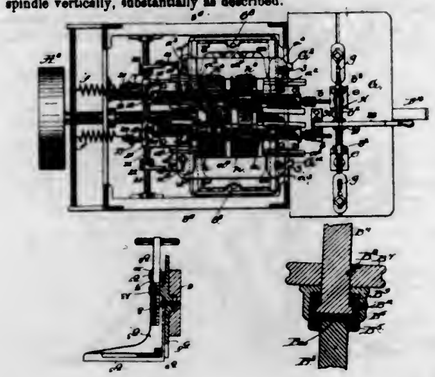


Claim.—1. The combination of the hook-arms *g*, pivoted on the base *a*, supporting-shaft *b*, centrally mounted on said base, and the gage-table *d*, fitted adjustably on said shaft, substantially as described.

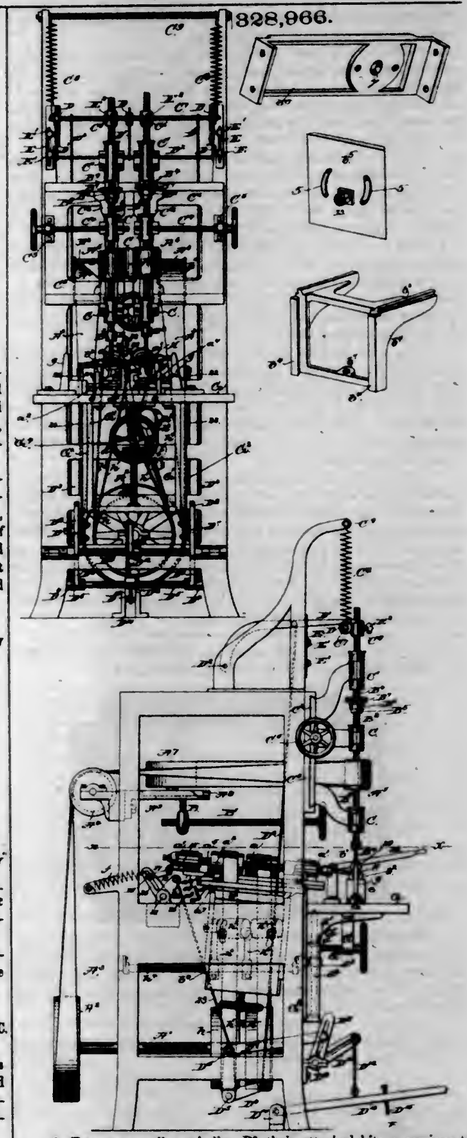
2. The combination of hook-arms *g*, pivoted on the base *a* and having toes *j*, supporting-shaft *b*, centrally mounted on said base, and the gage-table *d*, fitted adjustably on said shaft, substantially as described.

328,966. BORING-MACHINE. Levi G. McKinney and Henry C. Knowlton, Gardner, Mass. Filed Mar. 2, 1885. (No model.)

Claim.—1. In a wood-boring machine, the two or more spindles B^2, a carriage to support each spindle, a dead-spindle loosely connected with the said spindles B^2, and supports for the said dead-spindle, combined with means, substantially as described, to adjust the said dead-spindle vertically, substantially as described.



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2. Two or more live-spindles, B^2, their attached bits, a carriage to support each spindle, a dead-spindle loosely connected with each live-spindle, and a bearing for the dead-spindle, combined with adjusting devices, substantially as described, to adjust independently in horizontal direction the carriages containing the live-spindles, substantially as described.

3. Two or more live-spindles, independent carriages to support them, and loosely-connected threaded dead-spindles and independent carriages for each dead-spindle, combined with a threaded nut, into and from which the said dead-spindles may be turned to place the lower ends of their connected live-spindles in different horizontal planes, substantially as described.

4. In a wood-boring machine, the live-spindle, the carriage and bearings thereon to support it, the longitudinally-adjustable dead-spindle and the carriage and bearings thereon to support it in line with the live-spindle, combined with the two-part union B^5 B^6, to connect the live with the dead spindle, and with the set-screw to maintain the two parts of the union in adjusted position, substantially as described.

5. The live-spindles, their carriages, the loosely-connected dead-spindles, bearings to support them, the nuts C^9 to support the dead-spindles, and the spring-supported rod to sustain the said nuts, combined

with the arms to depress the said rod and the frame to support the said parts, to operate substantially as described.

6. The live-spindles, their carriages, the loosely-connected dead-spindles, bearings to support them, the nuts C^2 to support the dead-spindles, the spring-supported rod to sustain the said nuts, the arms to depress the said rod, and the treadle or lever D^{12}, combined with connecting means, substantially as described, between the said treadle and the said arms, to operate as set forth.

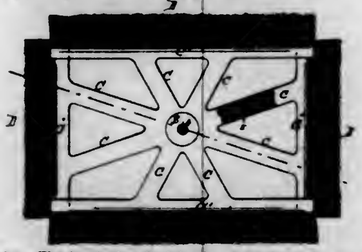
7. In a wood-boring machine, the swivel-plate b^3, the adjustable guide b^5 thereon, its attached cross-slide a^4, and the carriage a^3 and its spindle a, combined with the interposed adjustable guideway in which the said carriage is free to slide, the parts being constructed and arranged to operate substantially as described.

8. In a wood-boring machine, the spindle a, its carriage a^3, fitted to slide in a guideway, a^5, pivoted at one end and slotted at the other, so as to be adjustable in an arc of a circle, combined with a rock-shaft, 21, and means to move it, and a link, 17, connected to a slotted arm of said rock-shaft and to a curved slot in the said carriage, substantially as and for the purpose described.

9. In a wood-boring machine, two spindles, a a, the independent carriages a^3, in which they are mounted to rotate, the two independently-adjustable guideways in which the said carriages are free to slide, and the two cross-slides and vertically-adjustable guide-plates b^5, on which they are secured, combined with means, substantially as described, to adjust the said guide-plates vertically, each independently of the other, as and for the purposes set forth.

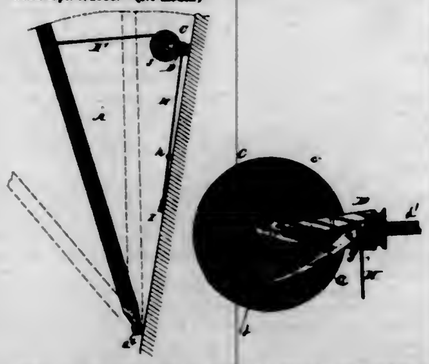
10. The independently-adjustable table G and its attached brackets and bearings to support the article to be bored, and the two or more live-spindles, their loosely-connected vertically-adjustable dead-spindles, and the independent carriages and bearings for the said live-spindles, and adjusting devices, substantially as described, to adjust the said carriages independently in horizontal direction, combined with two or more horizontal spindles, a a, their independent carriages, and with means, substantially as described, to adjust the said carriages both vertically and horizontally, substantially as described.

328,967. BRUSH FOR CLEANING CHIMNEYS. Anton Oelschlegel, Boston, Mass. Filed May 28, 1885. (No model.)



Claim.—The herein-described improved brush for cleaning chimneys, consisting, essentially, of the radial arms C and rims C′ C″, made of rubber, leather, or other flexible material, provided with internal springs, E, and suitable bristles and handle, substantially as and for the purpose described.

328,968. CLOTHES-DRIER. J. Herbert Pearsall, Wellsville, N. Y. Filed Apr. 6, 1885. (No model.)



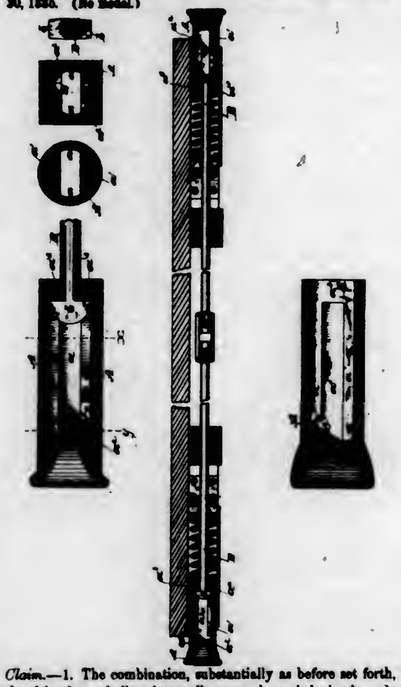
Claim.—1. In a clothes-drier, the combination of a rack composed of side and transverse rails and hinged to a wall with a spring-drum secured to a wall and free to rotate upon its axis, and a cord connecting said drum and rack, substantially as and for the purpose set forth.

2. In a clothes-drier, the combination of a rack pivotally supported upon a wall with a spring-drum having a ratchet, a cord connecting said drum and rack, a pawl, and an operating-cord, substantially as and for the purpose set forth.

3. In a clothes-drier, and in combination with the rack pivotally supported in hooks and adapted to be held at different angles, a spring-drum mounted in a bracket secured to a wall about on the plane of the top of the rack, a cord connecting said drum and rack, a ratchet secured to the drum, a pawl pivoted to one of the arms of the drum-supporting bracket, and an operating-cord connected to said pawl, substantially as and for the purpose set forth.

4. In a clothes-drier, a rack hinged at its lower end, and consisting of side and transverse rails, and straining-rods B, having thumb-nuts, in combination with a spring-drum, C, mounted in bracket D, having a screw-threaded shank, d, cord F, connected to said drum and the upper rail of the rack, ratchet f, secured to said drum, pawl G, pivoted to one of the arms of the bracket, a cord, H, weight I, and eyes A A′, through which said cord passes, substantially as and for the purpose set forth

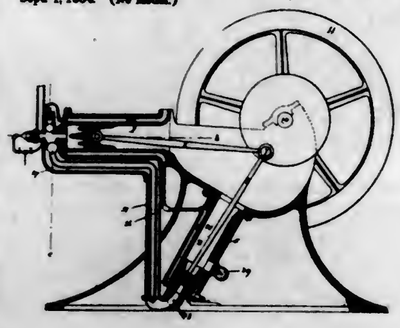
328,969. DRAW-BAR. Henry L. Peek, Newark, Ohio. Filed Apr. 30, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, of a draw-head having a hollow internally cross-channeled shank and a T-headed draft-rod.

2. A draw-head the hollow shank of which is internally cross-channeled, substantially as and for the purpose set forth.

328,970. GAS-ENGINE. James F. Place, New York, N. Y., assignor to the Place Gas Engine Manufacturing Company, same place. Filed Sept. 1, 1884. (No model.)



Claim.—1. In a gas-engine, the combination of the power-cylinder, having air-passages formed through its walls, with mechanism, substantially as described, for causing the air destined to form part of the explosive charge to flow through said passages, whereby the air is heated and serves to cool the cylinder, substantially as set forth.

2. In a gas-engine, the combination of the power-cylinder, having air-passages in its head, with a compression-cylinder for compressing air, and a compressed-air passage leading therefrom and communicating with the air-passage in the cylinder-head, and extending thence to the igniting-chamber of the power-cylinder, substantially as set forth.

3. In a gas-engine, the power-cylinder formed with recesses extending from the interior of the cylinder into the cylinder-head, in combination with air-heating passages formed through the cylinder-head in close proximity to the recesses therein, and extending to the igniting-chamber, substantially as set forth.

4. In a gas-engine, the combination of the power-cylinder, having a deep recess extending axially into its head, with an air-heating passage formed in the cylinder-head in close proximity to said recess, and the power-piston having a projection conforming to said recess, and adapted to enter the same when the piston is at extreme instroke, substantially as set forth.

5. In a gas-engine, the combination, with the power-cylinder having an annular recess extending into the cylinder-head, of the power-piston having a corresponding annular projection adapted to enter said recess when the piston is at extreme instroke, substantially as set forth.

6. The combination, in a gas-engine, of a power-cylinder having recesses extending into its head, a power-piston having projections adapted to enter said recesses, a compression cylinder and piston, and a compressed-air passage extending from the compression-cylinder through heating-passages in the power-cylinder head to the igniting-chamber of the power-cylinder, whereby during the first part of the outstroke of the power-piston the space behind it becomes filled with compressed air, which is heated by passing through the passage in the power-cylinder head, and is further heated on its entrance to the cylinder by flowing into said recesses in the cylinder-head and around said projections on the piston, substantially as set forth.

7. The combination, in a gas-engine, of a power cylinder and piston, a compression cylinder and piston relatively connected, substantially as specified, whereby the power-piston works in advance of the compression-piston, a compressed-air passage leading from the compression-cylinder to the power-cylinder, and regenerative surfaces adapted to heat the compressed air flowing through said passage, whereby the air after compression is transferred from the compression-cylinder to the power-cylinder without material further compression, and is heated during such passage, thereby increasing its pressure, substantially as set forth.

8. In a gas-engine, the combination of the power cylinder and piston, the compression cylinder and piston, the former piston being arranged to move in advance of the latter, a compressed-air passage leading from the compression-cylinder to the power-cylinder, an inlet-valve in said passage near its junction with the power-cylinder, and the exhaust-passage for the spent gases leading from the power-cylinder and extended in close proximity to said compressed-air passage, whereby the heat of the spent gases is utilized to heat the compressed air during its passage from the compression-cylinder to the power-cylinder, substantially as set forth.

9. In a gas-engine, the combination of a power cylinder and piston, a compression cylinder and piston of smaller diameter, the former piston arranged to move in advance of the latter, and a compressed-air passage extending from the compression-cylinder to the power-cylinder, and regenerative surfaces adapted to heat the compressed air flowing through said passage, whereby between the beginning of the outstroke of the power-piston and the termination of the instroke of the compression-piston the tension of the compressed heated air acts with the greater pressure on the larger area of the power-piston, and tends to force it outward and drive the engine forward previously to the explosion, substantially as set forth.

10. In a gas-engine, the combination of a power cylinder and piston, a compression cylinder and piston, an extended passage for the compressed air extending past heated surfaces, in order to superheat the compressed air and increase its pressure, and terminating at the power-cylinder, and an inlet-valve in said passage near its junction with the power-cylinder, and mechanism for operating said valve, arranged, substantially as described, to close said valve when the compression-piston turns its center on its instroke, whereby the increased pressure of the compressed air which remains in said passage is made effective by reacting on the compression-piston on its outstroke.

11. In a gas-engine, the combination, with the power cylinder and piston, of an exhaust-valve formed with a regenerating-passage extending through the same, and an air-inlet passage communicating with the passage through said valve, whereby said valve is heated by the passage of the spent gases around it and serves to transmit the heat to the air passing through it, substantially as set forth.

12. In a gas-engine, the combination, with the power-cylinder, of a force-pump arranged to discharge gas or liquid combustible into said cylinder, a variable cut-off valve controlling the admission of combustible to the pump, and a relief air-inlet valve adapted to remain closed so long as the pump is drawing in the combustible and to open upon the cutting off of the supply thereof in order to fill the remainder of the pump with air, substantially as set forth.

13. In a gas-engine, the combination of a power cylinder and piston, a compression cylinder and piston for compressing air, a force-pump for supplying the charge of combustible under pressure, passages leading from said compression-cylinder and force-pump uniting each other and entering the power-cylinder, an automatic valve for admitting the combustible to the pump, mechanism adapted to open and close said valve once to each power-stroke, and a cut-off governor controlling said mechanism, substantially as described, and thereby determining the duration of opening of said valve during each power-stroke, whereby the combustible is admitted to the pump during a longer or shorter interval of its stroke, proportioned to the varying demands upon the engine.

14. In a gas-engine, the combination of a power cylinder and piston, an air-compressing cylinder and piston adapted to inject a definite volume of compressed air into the power-cylinder for each explosion, a force-pump adapted to inject a definite volume of gas or gas and air for each explosion, a valve for admitting the gas into said pump at the commencement of each suction-stroke thereof, a governor, substantially as described, adapted to determine the closing of said valve at varying points in said stroke, and an air-valve adapted to admit air to the pump while completing said stroke, whereby the pump is filled with a charge of first gas and then air, which on its return or compression stroke it forces in reverse order into the power-cylinder with the charge of compressed air from the air-compressing cylinder, whereby the explosive charge in the former is varied in richness from time to time, proportioned to the varying work of the engine, while maintaining always a mixture of maximum density in the igniting end of the cylinder, substantially as set forth.

15. The combination of power cylinder and piston, air-compression cylinder and piston, force-pump, valve for admitting gas to said pump, a revolving cam adapted to open said valve always at the beginning of the stroke of said pump and to close it at different points in said stroke corresponding to different positions of the cam, and a centrifugal governor adapted to shift said cam and so vary the charge of gas admitted to the pump, substantially as set forth.

16. In a gas-engine, the combination of a power cylinder and piston, pumping mechanism adapted to admit an explosive charge to said cylinder at each outstroke of said piston, a gas-inlet valve for admitting the gas for said explosive charge, a valve-operating mechanism adapted to open and close said valve, both once to each outstroke of the power-piston and once to each alternate outstroke thereof, and an automatic governor for controlling said valve-operating mechanism, all constructed and adapted to operate substantially as set forth, whereby when the speed of the engine increases beyond a predetermined limit the engine receives an explosive charge only at every alternate outstroke, as described.

17. In a gas-engine, the combination of a power cylinder and piston, pumping mechanism adapted to admit an explosive charge to said cylinder at each outstroke of said piston, a gas-inlet valve for admitting the gas for said explosive charge, a valve-operating mechanism adapted normally to open said valve once for each outstroke of the power-piston, and adapted also to open said valve only once for each alternate outstroke, and an automatic cut-off governor, substantially as specified, adapted to control the closure of said valve and thereby vary the amount of the explosive charge according to the varying demands upon the engine, lessening it more as the speed increases, and adapted also when the speed exceeds a predetermined point to cause said valve-operating mechanism to open said valve only once for each alternate outstroke of the power-piston.

18. In a gas-engine, the combination, with a gas-inlet valve, of a revolving cam adapted to open and close said valve, geared to rotate once to every two strokes of the engine, formed with two opposite cam faces or projections, each adapted to open the valve at a predetermined point in the stroke and to close it at a variable point, depending on the position of the cam, and formed also with a third cam face or projection, a substantial counterpart of the others, and adapted, when brought by the longitudinal displacement of the cam into connection with the valve, to open and close the same for every alternate stroke only, and a centrifugal governor adapted to displace said cam longitudinally according to the variations in speed of the engine, substantially as set forth.

19. In a gas-engine, the combination, with power cylinder and piston and compression cylinder and piston, of a relief-cock, on opening which the charges admitted to the power-cylinder are not compressed, substantially as set forth.

20. In a gas-engine, the combination, with the power-cylinder, of an igniting chamber or passage extending from the cylinder into cylinder-head, the inlet-valve for the explosive charge opening into the end of said chamber, and the exhaust-valve also opening into the end thereof, whereby the spent gases are expelled through said chamber, and the entering charge is admitted through it and heated by it, substantially as set forth.

21. In a gas-engine, the combination, with the power cylinder and piston and a compression cylinder and piston, of the igniting slide-valve

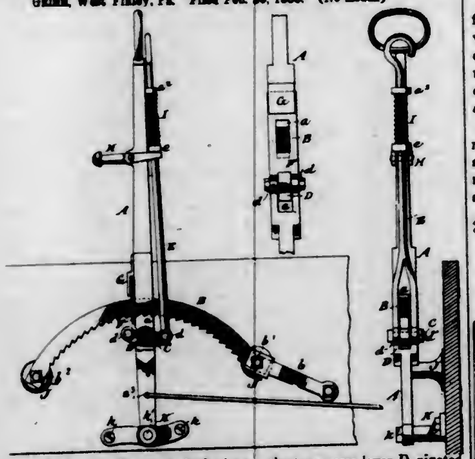
having a combustion-cavity formed in it, provided with an igniting-port coinciding with a port in the igniting-chamber of the power-cylinder in one position of the valve, and with relighting-ports coinciding with a relighting-jet in another position of the valve, an igniting gas-burner fixed opposite said cavity and adapted to direct its flame into it, an air-passage communicating with the compression-cylinder and terminating in an injector surrounding said igniting-burner, and a port in the valve opening and closing said passage, all combined and arranged to operate substantially as set forth, whereby said passage is opened at the beginning of the compression-stroke and supplies air at low pressure to the igniting-burner, and the pressure of this injecting-jet of air increases up to the instant of the explosion, whereupon the air-passage is cut off.

22. The combination, with the power-cylinder, the gas inlet valve, and the gas-pump of a gas-engine, of a centrifugal governor and a valve-operating mechanism, substantially as described, adapted to open the gas-inlet valve at a uniform point in the revolution of the engine, to close it at varying points proportioned to the variations of speed, and to be disengaged therefrom at either extreme of the conditions of the gaseous mixture, thereby varying the proportions of gas in the explosive charge, and interrupting the admission of gas when the speed of the engine becomes either so rapid as to give too small a proportion or so slow as to give too great a proportion of gas to constitute an explosive charge, as set forth.

23. The combination, with the governor and the sliding rotating cam operating the gas-inlet valve, of the spring 15, adapted to be set to hold the cam in position to open the gas-valve in starting the engine and tending to fly outwardly, whereby when the full working speed is attained the governor acts upon the cam and the spring is released, substantially as set forth.

24. The combination, in a gas-engine, of the power-cylinder, formed with a central igniting-chamber, 40, in its head, with the power-piston formed with a projection, 32ª, adapted when the piston is at extreme in-stroke to enter said igniting-chamber, substantially as set forth.

328,971. BRAKE-LEVER. William H. H. Powell and John T. Green, West Finley, Pa. Filed Feb. 26, 1885. (No model.)

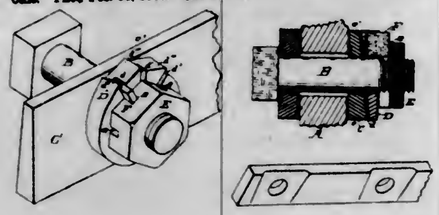


Claim.—1. In wagon-brake levers, the transverse lever D, pivoted at C to the lever A, in combination with a pivoted pull-rod, E, at one end, and at the other with a pivoted locking-slide, F, as shown and described.

2. In wagon-brake levers, the locking-slide F, slotted to straddle rack B, and working in a keeper, G, on lever A, as shown and described.

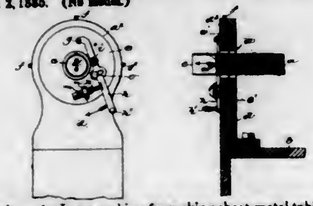
3. The combination, with lever A and rack B, of the pivot C, lever D, spring-actuated rod E, slotted slide F, and keeper G, all arranged as shown and described.

328,972. NUT-LOCK. Edwin R. Proctor, Washington Court-House, Ohio. Filed Feb. 16, 1885. (No model.)



Claim.—In a nut-lock, the combination, with a laterally-chamfered fish-plate, C, of a correspondingly-chamfered washer, D, having in its crown a series of radial notches, *d*, and a screw-nut, E, having in its sole a series of like notches, *e*, of slightly different angular separation to the said washer-notches, and a key or colter, F, adapted to be driven into the hole formed by the coincidence of either two of such notches *d* and *e*, and to be locked therein by the upsetting of one or both the salient angles of such notch *e*, as and for the purposes set forth.

328,973. TUBE-CUTTER. David A. Ritchie, Boston, Mass. Filed Feb. 2, 1885. (No model.)



Claim.—1. In a machine for making sheet-metal tubing, the combination, with the mandrel on which the tubing is formed, of a cutting device encircling the mandrel and adapted to act on and sever the tubing projecting from said mandrel, substantially as described.

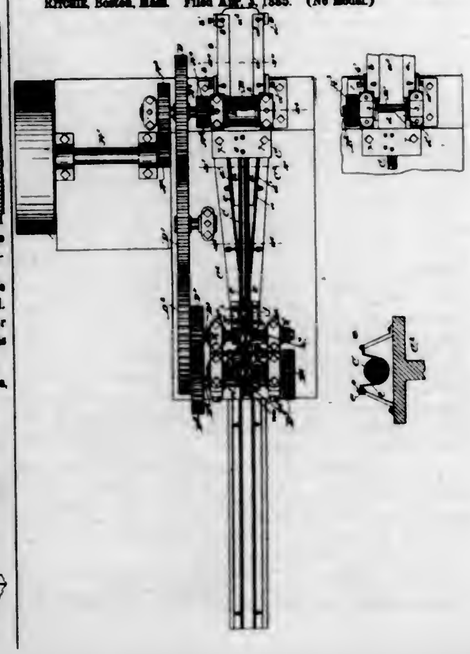
2. In a cutting device for machines for making sheet-metal tubing, the combination, with a mandrel upon which the tube is made and thereafter held while being cut, of a plate encircling and rotatable about the tubing, a lever pivoted upon said plate, and a cutter secured to said lever, substantially as described.

3. The combination of the bracket or upright and plate frictionally held therein with a cutter-lever pivoted on said plate, a spring-plunger forcing said cutter-lever into a position of inaction, and a stop limiting the pivotal movement of the said lever with relation to the said plate, substantially as described.

4. The combination of the bracket or upright and rotatable plate frictionally held therein with a lever pivoted to said plate and provided with a cutter, a spring-plunger normally holding said lever in a position of inaction, a stop co-operating with said lever to limit its pivotal movement, and a handle for said lever to first move it pivotally and thereafter cause it to carry around the plate within the bracket and so render the cutter operative, substantially as described.

5. The mandrel and its attached cutter combined with a bracket, a rotatable plate frictionally held in said bracket and encircling the mandrel, and a cutter arranged upon said plate in the plane of the cutter upon the mandrel and co-operating therewith in cutting the tube on the mandrel, substantially as described.

328,974. MACHINE FOR MAKING METAL TUBING. David A. Ritchie, Boston, Mass. Filed Apr. 3, 1885. (No model.)



Claim.—1. The flanging and feeding rollers B B', and the mandrel having its axis at right angles to the axis of the said rolls, combined with the preliminary curving-guide, the rollers acting to flange the edges of the strip preparatory to the action of the curving-guide to curving it longitudinally, substantially as described.

2. The flanging and feeding rollers B B', and the mandrel having its axis at right angles to the axis of the said rolls, combined with the preliminary curving-guide and with the helical or spiral guides to receive and act upon the flanges of the strip of flanged metal to fold the same about the mandrel, substantially as described.

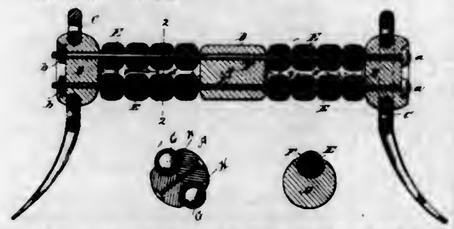
3. The mandrel and helical or spiral guide to fold the flanged tube about it, combined with the finger to turn the outer edge of the ⌐-shaped flange of the strip down over the L-shaped edge thereof, substantially as described.

4. The mandrel and the helical or spiral guide to fold the flanged tube about it, combined with the finger to turn the outer edge of the ⌐-shaped flange of the strip down over the L-shaped edge thereof, and with the rollers *h* *h*², the former roller having an annular groove to receive the flanges after they have been caught together, while the latter roller supports the interior of the tube, substantially as described.

5. The mandrel, the guides to fold the flanged strip about the same longitudinally, and the rollers *h* *h*², combined with flange-bending devices, substantially as described, to turn the locked flange over nearly upon the surface of the tube, substantially as set forth.

6. The mandrel, the guides to fold the flanged strip about the same longitudinally, and the rollers *h* *h*², combined with flange-bending devices, substantially as described, to turn the locked flange over nearly upon the surface of the tube, and with a pair of milled pulling-rollers, one inside of, the other outside, the tube on the mandrel, to operate substantially as described.

328,975. BRIDLE-BIT. Benjamin P. Roberts, Boston, Mass. Filed Feb. 9, 1885. (No model.)



Claim.—1. A bridle-bit provided with a surface or surfaces practically unyielding and arranged upon the bit and otherwise adapted for direct contact with or pressure from one jaw only of the animal, and under such contact or pressure to be capable of rotating or rolling without lateral pressure or force—that is, in the direction of the length of the bit or from side to side of the animal's mouth or jaws—to any practical degree, substantially as described, for the purpose specified.

2. A bridle-bit provided with surfaces practically unyielding, located in separate and distinct lines or rows, and the surface or surfaces of each line or row of surfaces arranged upon the bit and otherwise adapted for direct contact with or pressure from one jaw only of the animal, and under such contact or pressure to be capable of rotating or rolling without lateral pressure or force—that is, in the direction of the length of the bit or from side to side of the animal's mouth or jaws—to any practical degree, substantially as described, for the purpose specified.

3. A bridle-bit composed of end pieces, B, and parallel rods F, each carrying rollers E, substantially as described, for the purpose specified.

4. A bridle-bit having a rolling or rotating surface or surfaces in and along separate and distinct lines thereof, in combination with a bar or bars, J, located at the side or sides of said separate and distinct lines of rolling or rotating surface or surfaces, substantially as described, for the purposes specified.

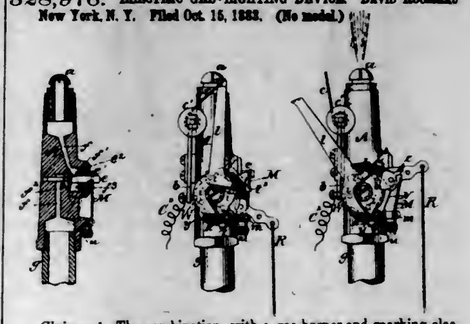
5. A bridle-bit composed of end pieces, B, parallel rods F, each carrying rollers E and bars J, connecting ends B, and at the side of parallel rods F, and their rollers E, substantially as described, for the purpose specified.

6. A bridle-bit composed of end pieces, B, and intermediate block, D, in combination with a rolling or rotating surface or surfaces between said end pieces and said block, substantially as described, for the purpose specified.

7. A bridle-bit composed of end pieces, B, intermediate block, D, and parallel rods F, each carrying rollers E, substantially as described, for the purpose specified.

8. A bridle-bit composed of end pieces, B, intermediate block, D, parallel rods F, each carrying rollers E, and bars J, connecting end pieces, B, and intermediate block, D, and at the side of rods F, and their rollers, substantially as described, for the purpose specified.

328,976. ELECTRIC GAS-LIGHTING DEVICE. David Rousseau New York, N. Y. Filed Oct. 15, 1883. (No model.)



Claim.—1. The combination, with a gas-burner and sparking-electrodes thereon, of the double-faced puppet-valve *d*, arranged to contact one face with a seat when forced inward and thus shut off the gas, and to contact the opposite face with a seat around the stem when forced outward, and thus prevent leakage around the stem, together with a manipulating device or lever operatively connected with said sparking-electrode and said valve, and a pendent pull for operating said parts by downward strokes of the hand, whereby said valve works without packing or friction, and therefore subjects the chandelier or fixture to slight downward strains through the actions of the pendent pull, substantially as herein set forth.

2. The combination, with a gas-burner, of a manipulating pawl-lever pivoted thereon, a ratchet-wheel adjacent thereto engaged by the pawl of said lever, a series of cams on the ratchet-wheel, whose intervals equal the length of the stroke of the pawl-lever, a gas-valve, and a valve-operating device between said cams and valve, arranged and operating substantially as herein set forth.

3. The combination of a gas-burner with a gas-valve and a valve-operating device, and a ratchet-wheel with a series of cams engaging the valve-operating device, and a manipulating pawl-lever with its pawl engaging said ratchet, the stroke of said lever equaling the interval between the cams, while the teeth of said ratchet equal half the length of said cam intervals, substantially as herein shown and described.

4. In an electric gas-lighter a gas-burner, a manipulating-lever, a ratchet-wheel, two pawls one for imparting a step-by-step movement to said ratchet-wheel and carried upon said lever, and the other for preventing a retrograde movement of said ratchet-wheel and fixed to the burner, in combination with each other and with a spring united to the fixed and to the moving pawl, whereby said lever may be retracted and the pawls maintained in engagement with the ratchet by means of a single force, substantially as set forth.

5. In an electric gas-lighter, the combination of a gas-burner, a wheel, means for imparting a step-by-step movement thereto, a series of pins, *i*, mounted concentrically upon said wheel, the lever N, provided with the head *n*, normally projecting in the path of said pins, and a cock or valve for admitting gas to the tip of the burner, and means for opening said valve when said head and one of said pins are in collision, and closing the same when they are detached, or vice versa, substantially as set forth.

6. In an electric gas-lighting burner, the combination of the burner A, lever L, ratchet-wheel W, having the series of pins *i* mounted concentrically thereon, the pawl A, carried upon said lever for advancing said ratchet-wheel, the pawl *k*, fixed to the burner and acting to prevent a retrograde movement of said ratchet-wheel, the spring *c*, united to both of said pawls, the lever N, provided with the head *n*, normally projecting in the path of said pins, the lever M, controlled by said lever N, and the valve controlled by said lever M, substantially as set forth.

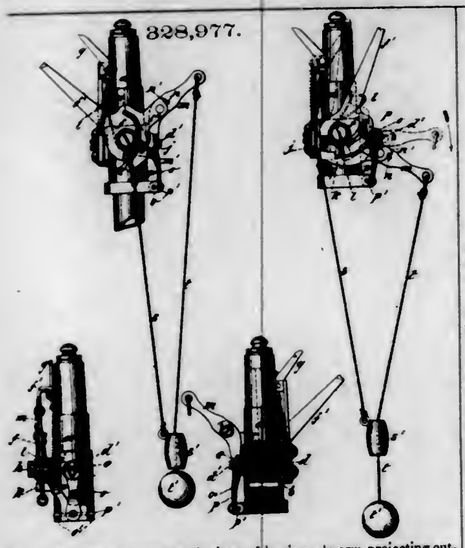
328,977. ELECTRIC GAS-LIGHTING BURNER. David Rousseau, New York, N. Y. Filed May 13, 1884. (No model.)

Claim.—1. The combination, with a gas-burner, of a reciprocating puppet-valve moving in a chamber in the body of the burner and controlling the gas-passage thereof, with a sparking lever mounted on the burner, a manipulating device for operating said lever, and a direct positive operative connection between said lever and said reciprocating valve, arranged and operating substantially as herein set forth.

2. The combination, with a gas-burner, of a reciprocating puppet-valve moving therein and controlling the gas-passage thereof, with the operating-lever *f*, pivoted on the burner, and provided with the cam-groove *r*, and with a second lever connected with the stem of said valve and engaged with the said groove in the lever *f*, and with means, substantially as set forth, for moving said lever *f* back or forth and holding it in either of its positions, substantially as herein shown and described.

3. The combination, with a gas-burner, of a lever, *f*, pivoted on the burner, and a valve controlling the flow of gas through the burner, with a positive operative connection between said valve and lever, with

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the pawl-lever *m* pivoted on the lever *f*, having one arm projecting outward and the opposite arm projecting inwardly and arranged to engage a stop or projection, *k*, with a manipulating-cord or its equivalent extending from the respective arms of the said pawl-lever, substantially as herein shown and described.

4. The combination, with a gas-burner and a valve therein for controlling the flow of gas, of a lever mounted on the burner and operatively connected with the valve, a spring tending constantly to move the lever back and close the valve, with a pawl-lever pivoted on the lever and adapted to engage a stop when the lever is moved over to hold the valve open, with a manipulating-cord arranged to pull the said lever or levers over into the position to open the valve, and a second cord arranged to release the pawl and allow the levers to fly back to close the valve, one of said cords passing through a loop on the other cord, substantially as and for the purpose set forth.

5. The combination, with a gas-burner with a valve to control the flow of gas, of the sparking-lever *f*, operatively connected with said valve and having a retiring spring, *l*, with the pawl-lever *m m'*, pivoted to said sparking-lever and having a limited play thereon, and the locking projection *k*, with which said pawl engages, arranged and operating substantially as and for the purpose set forth.

328,978. PROCESS OF TANNING. George F. Schweitzer, Lincoln, Nebr. Filed Feb. 23, 1885. (No specimens.)

Claim.—1. The method of treating hides, consisting of, first, thoroughly cleansing them in pure fresh water; second, liming them to remove the hair; third, submerging them in a bath of water containing salt and alum in solution; fourth, submitting them to the fumes of sulphur; fifth, tanning them in a liquor having in solution salt, alum, sulphuric acid, and the extract of bark; sixth, bleaching in a bath containing sulphuric acid in solution, and, seventh, bleaching in a bath containing sugar of lead in solution, all in successive order, and substantially as described.

2. In tanning hides, the following process: first, cleansing them by soaking in pure water from one to two days; second, liming them from six to nine days for removing the hair; third, submerging them in water having salt and alum in solution for two or more days; fourth, exposing them to the smoke of sulphur from twelve to twenty-four hours, and, fifth, curing them in a liquor containing in solution salt, alum, sulphuric acid, and the extract of a tanning-bark for from three to six days, the liquor to be made weak at first and gradually stronger, all substantially as described.

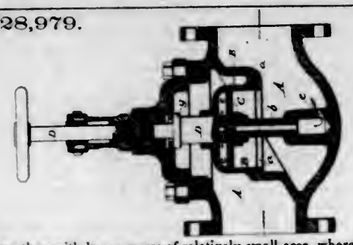
328,979. CHECK-VALVE. Louis Schutte, Philadelphia, Pa. Filed Aug. 24, 1885. (No model.)

Claim.—1. In combination with a valve-body and a check-valve therein, a fluid-pressure chamber located on the receiving side of the valve and communicating by a port or passage with the inlet side of the body, whereby the fluid in said chamber is applied to open the valve.

2. The body and the chambered check-valve therein, in combination with the fixed piston within the valve, and the port or passage of restricted area, forming a communication between the valve-chamber and the inlet-port.

3. A check-valve protected on its receiving side by a piston or diaphragm from the direct action of the inflowing current, but communi-

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cating therewith by a passage of relatively small area, whereby the force of the inflowing fluid is applied gradually to effect the opening of the valve.

4. In combination with the body, the valve, and the piston, the adjustable spindle secured to the piston and provided with a shoulder to limit the motion of the valve.

5. In a check-valve, the combination of a body, a check-valve communicating on its delivery side with the delivery-port of the body, and a chamber, substantially as described, for confining and applying the fluid-pressure on the receiving side of the valve, said chamber having a communication of relatively small area with the receiving side of the body, whereby the inflowing fluid is delivered to effect the opening of the valve and to retard its closing action against the counterpressure on the opposite side.

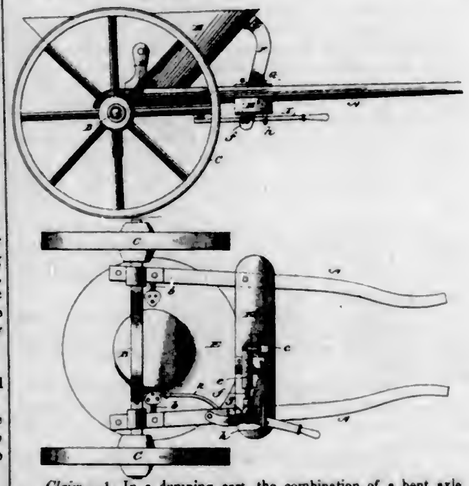
328,980. WRENCH. Albert W. Stoessenster, Newport, Ky. Filed June 20, 1884. (No model.)



Claim.—1. The improved wrench consisting of a two-part hollow handle held and reciprocally moved by an adjusting-screw at the rear, and extending into the flat bars in front, adapted to move longitudinally and be retained one upon the other, one such bar being provided with lateral wings projecting below at the sides of the other, and the other bar with a head projecting laterally at both sides and vertically flush with the other, arranged, as shown, to produce lateral jaw-spaces of different dimensions, and a third or vertical jaw-space adjustable to nothing, substantially as set forth.

2. The improved wrench in two halves, A A', constructed as shown, one part provided with lateral projections *g g* and the other with a head, C, in combination with an adjusting-screw, B, arranged at the rear and actuating the parts longitudinally, substantially as and for the purpose set forth.

328,981. DUMPING-CART. Samuel Sturgis, Manayunk, Pa. Filed July 17, 1885. (No model.)

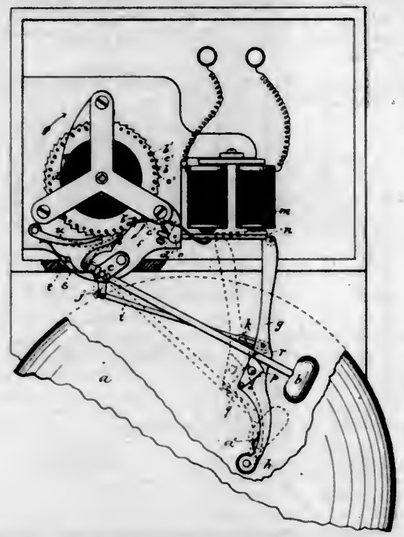


Claim.—1. In a dumping-cart, the combination of a bent axle, its bearing-wheels, shafts carrying bearings, an eccentrically-moving body mounted in said bearings, a slotted cross-bar arranged in front of the body and secured to the shafts, a curved arm, F, rigidly secured to the cart-body and passing through the slot in the cross-bar, a sleeve, *e*, rigidly secured to the slotted cross-bar, a bolt, *f*, sliding through said

sleeve and adapted to enter an aperture in the arm F to lock it and the cart-body in position, a lever, I, pivoted at its front end to one of the cart-shafts, a link, *g*, pivotally connected to the sliding bolt *f* and the lever I in rear of its fulcrum, and a guard, *h*, arranged over the pivoted lever I and adapted to limit the movement of said lever and the sliding bolt *f*, as set forth.

2. The combination, with the bent or curved axle, the carrying-wheels, and the shafts having brackets secured to the upper sides, of the body having gudgeons or trunnions bearing in boxes of said brackets, a bar having a slot and connecting the shafts, and a curved arm on the body having a lug or projection, as set forth.

328,982. ELECTRIC GONG. Jacob P. Terrell, Boston, assignor, by direct and mesne assignments, to James F. Emerson, Wakefield, George O. Carpenter, Boston, and John W. Carter, Newton, Mass. Filed Dec. 18, 1884. (No model.)



Claim.—1. In an electric gong, the combination of striking mechanism, substantially as described, a detent which automatically engages with and holds said mechanism and is withdrawn therefrom by the closure of an electric circuit, and mechanical devices, substantially as described, whereby the detent is held in an inoperative position until a predetermined number of blows have been given, as set forth.

2. In an electric gong, the combination of the striking mechanism having a spring-impelled toothed wheel, a detent which automatically engages with and holds said mechanism, and is withdrawn therefrom by the closure of an electric circuit, pins or projections secured to said wheel, and a pivoted lever bearing against the detent and projecting into the path in which said pins move, as set forth.

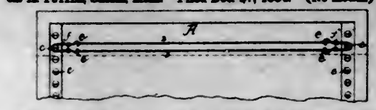
328,983. GRUB-PULLER. William D. Tompkins, Floyd Court-House, Va., assignor of one-half to William Leonhardt and John H. Leonhardt, Baltimore, Md. Filed Mar. 12, 1885. (No model.)



Claim.—1. A grub-puller consisting of two arms pivoted together, one of them being provided with a curved toothed jaw to encircle the grub, and the other having teeth projecting radially to said curved jaw, a rolling fulcrum, and a foot-support, as set forth.

2. The grub-puller herein described, consisting of arms A and B, the latter having a toothed end to engage the grub, and a handle, B', and the former having a curved toothed jaw, *a'*, to encircle the grub, a rolling fulcrum, and a foot-rest, *d*⁴, as set forth.

328,984. METHOD OF SUSPENDING HIDES IN TANNING. Francis R. Tuttle, Salem, Mass. Filed Dec. 27, 1884. (No model.)



Claim.—That improvement in the art of suspending hides in vats to be treated which consists in first temporarily engaging two connected hooks or clamps, substantially as described, to the corners or butt-ends of a pair of sides, next engaging a second pair of such connected hooks to the opposite corners or neck ends of the said pair of sides, and, lastly, suspending and spacing the pair of sides in a vat by passing the hook-connections over two pins or holders arranged at opposite sides of said vat, substantially as set forth.

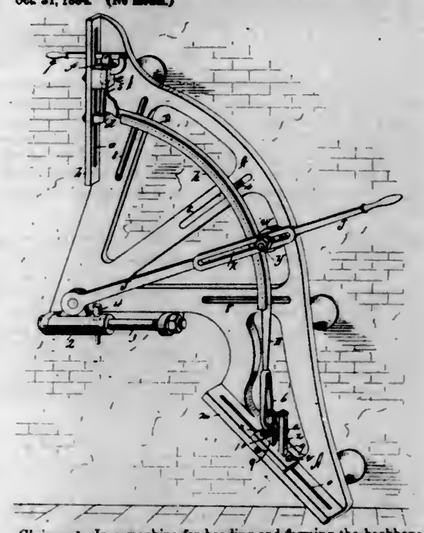
328,985. TRUSS. Seymour M. Van Alstine, Melrose, Mass. Filed May 14, 1885. (No model.)



Claim.—1. In a truss, the combination, with spring *a*, of bar *c*, formed with curved ears *b* at the ends thereof, adapted to secure it upon said spring, and the pads *c d*, pivotally mounted upon the respective ends of said bar, substantially as specified.

2. In a truss, the combination, with the recessed pad, its socketed back *j*, and conical spring *u*, of stud *m*, formed with a hemisphere, *p*, to fit socket *q* in back *j*, a shank, *t*, to enter and support said spring, and a neck, *n*, by which to secure it to the supporting-bar, all substantially as specified.

328,986. MACHINE FOR BENDING AND SETTING THE BACK-BONES OF BICYCLES. George T. Warwick, Springfield, Mass. Filed Oct. 31, 1884. (No model.)



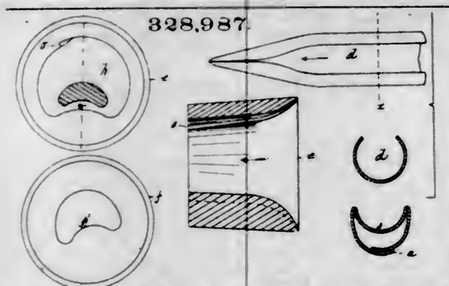
Claim.—1. In a machine for bending and forming the backbone of a bicycle, a frame, a lever pivoted to the frame, a roller adjustably attached to said lever, a former secured to the frame, and means, substantially as described, for holding the stem and forked ends of the backbone in position, and whereby said forked end is permitted to have suitable movements while the backbone is being shaped, combined and operating substantially as set forth.

2. In combination, the frame A, the blocks *d* and *e*, the movable former *h*, the block *n*, having standards thereon, the block 10, lever J, having a movable pivotal connection with the frame, and the roller *w*, adjustably attached to the lever, substantially as set forth.

3. In combination, frame A, the rod 3, sleeve 2, pin 4, the lever J, wheel *w*, and the former *h*, substantially as set forth.

328,987. TOOL FOR MAKING HOLLOW RIMS FOR BICYCLE-WHEELS. George T. Warwick, Springfield, Mass. Filed Aug. 3, 1885. (No model.)

328,987.



Claim.—1. A die for forming rims for bicycle and other wheels having a tapering tubular-formed passage through it, and having on its inner surface the projection *v*, and the guide-lip *a*, extending from near one end of the die to the other in a line inclined to that of the axial line of said die, substantially as set forth.

2. In tools for forming hollow rims for bicycle and other wheels, the die *e*, having the projection *v* and the lip *a* therein, the die *f*, having the projection *f'* on its inner surface, and the mandrel *h*, said dies and mandrel acting jointly to give form to the rims, substantially as set forth.

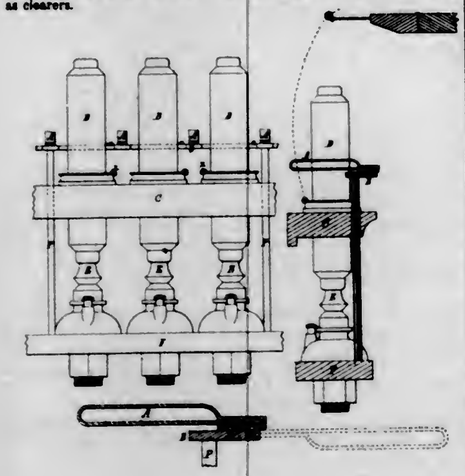
328,988. HYDRANT AND PLUG. George A. Warner, Des Moines, Iowa. Filed Mar. 14, 1885. (Model.)



Claim.—The combination of the case having the obliquely-slotted standard and an inlet, the turning valve located in the case and having the vertically-slotted standard, and the vertical pipe passing through the valve and having a projecting pin that works in the slots, and an opening, *d*, whereby, when the pipe is raised, the valve will be partially rotated in the case, and the opening *d* in the pipe will register with the inlet-opening in the case and the opening in the turning valve, substantially as described.

328,989. TRAVELER-CLEARER FOR RING-SPINNING FRAMES. Joseph W. Watkins, Canton, Mass. Filed May 6, 1885. (No model.)

Brief.—Each clearer is in the form of an arm with a long opening through it, allowing the current of air generated by bobbins and traveler to pass through and assist in clearing the adjacent traveler. The clearers are hinged to a rail supported by posts passing through the ring-rail and resting on the step-rail. The supporting-rail is notched, serving as clearers.

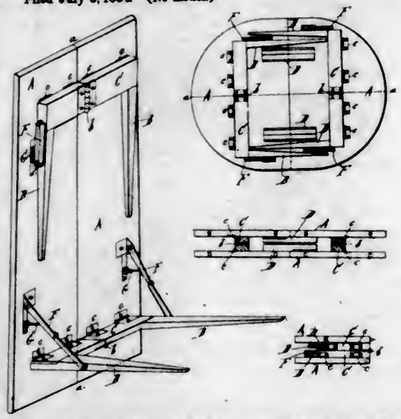


Claim.—1. The combination, with the spindles, the ring-rail, its rings, and their travelers, of the yarn-clearers, substantially as described, and their supporting-rail and its sustaining parts, such yarn-clearers not only having openings leading through them, as represented, but being hinged to the said rail, the supporting posts of which rest on the step-rail and extend upward through the ring-rail, as set forth.

2. The combination, with the spindles, their step-rail, the ring-rail, its rings, and their travelers, of the rail B, (provided with traveler-clearing notches *a*, arranged in it and with respect to the said rings and their travelers, as represented,) and its supporting-posts, such posts resting on the step-rail and extending upward through the ring-rail, as set forth.

3. The combination, with the spindles, their step-rail, the ring-rail, and its rings and travelers, of the traveler-clearers A, (extending between the paths of revolution of the travelers,) and their supporting devices, consisting of the posts P and the rail B, having notches *a* in rear of and concentric with the rings, such notched rail being to support the clearers A and to aid in clearing the travelers of filamentary deposits while such travelers may be in motion about their rings, all being substantially as described.

328,990. FOLDING TABLE. Hanson S. Webster, Boonville, N. Y. Filed July 3, 1884. (No model.)



Claim.—1. In a table, the legs secured upon string-pieces, each string-piece being divided into two parts of unequal lengths, said parts being hinged together, as explained, and each part hinged to the under side of the divided top board and combined therewith, substantially in the manner and for the purpose set forth.

2. In a table of the character herein set forth, the top board divided into two parts, the legs secured to string-pieces hinged upon the under side of the table-top, each string-piece being composed of two parts of unequal lengths connected by a hinge the axis of which is located in the same plane as the division between the section of the table-top, substantially as and for the purposes set forth.

3. In a folding table, the legs secured upon string-pieces which are hinged to the under side of the table-top, said string-pieces being each composed of two parts of unequal lengths hinged together, as explained, and combined with and arranged upon the under side of the table-top, as set forth, so that the legs will fold one by the other, and so that the legs will spread equally under each end of the table, substantially in the manner and for the purposes specified.

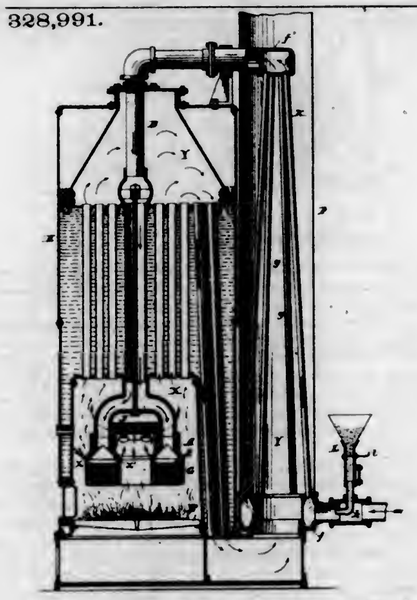
4. In combination with the table-top, and the legs secured to the unequal sections of the divided string-pieces, hinged to each other and to the table-top, the hinged and jointed braces, applied and operating substantially in the manner and for the purposes set forth.

5. The herein-described extension-table, the same being composed of the table-top having the two main sections each divided, as explained, the extensible slides connecting the two main sections, the legs connected with the unequal sections of the divided string-pieces hinged together and to the table-top, and the hinged and jointed braces, substantially as shown, and for the purposes set forth.

328,991. FURNACE FOR BOILERS. William Westlake, Brooklyn, N. Y., assignor to the United States Combustion Company, of New York. Filed June 21, 1884. (No model.)

Claim.—1. The combination, with a furnace, of an air-blowing apparatus, an air-distributing head suspended centrally within the combustion-chamber adjacent to but beyond the grate, arranged to leave a surrounding unobstructed passage, and provided with channels communicating with the blast apparatus, and arranged to direct the air in currents among the products of combustion and away from the fire, substantially as set forth.

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2. The combination of an air-blowing apparatus, an air-conducting tube, and an expanded air-distributing head communicating with said tube and arranged centrally within the combustion-chamber of a furnace to leave a surrounding passage, and provided with channels directing the air among the products of combustion away from the fire, the blowing apparatus being constructed and operating so as when at rest to permit a free flow of the air without any blast, substantially as set forth.

3. The combination, with a furnace, of a blowing apparatus, an air-distributing head provided with perforations through which the air can flow among the products of combustion, the said distributer being arranged within the combustion-chamber and beyond the grate, with an uninterrupted surrounding passage, with its end toward the fire-bed, and so as to be surrounded on all sides by the gases flowing to the chimney, and provided with channels arranged to direct the jets on all sides against a stationary portion of the furnace between the tubes and fire-bed, substantially as set forth.

4. The combination, with a furnace, of a blowing apparatus and an air-distributer communicating therewith, and arranged centrally within the combustion-chamber to be exposed on all sides to the hot gases, and provided with channels arranged to direct the air in currents both outward and inward in said chamber and against a stationary portion of the furnace, substantially as set forth.

5. An air-distributer for furnaces, consisting of a hollow ring open at the bottom and provided with channels upon its inner and outer sides, and with a refractory guard upon the open side of said ring, substantially as set forth.

6. The combination, in an air-distributer, of a perforated hollow ring, a guard of refractory material, and an air-pipe leading to and communicating with the ring at the side opposite the guard, to leave an uninterrupted surrounding passage, substantially as set forth.

7. The combination, with an air-distributer, of a guard of refractory material, connecting-bolts passing through sockets in said guard, and refractory fillings in said sockets over the heads of the bolts, for the purpose specified.

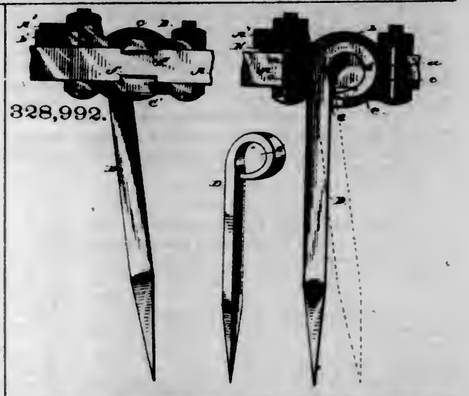
328,992. HARROW-TOOTH AND HOLDER. George E. Wilcox, Cedar Rapids, Iowa. Filed Feb. 4, 1885. (No model.)

Claim.—1. The harrow-tooth headed at its upper end, in combination with a holder consisting of two sections each of which is formed with one-half of the seat for the head of the tooth, so that when both sections are fitted together a complete seat is formed for said head, as set forth.

2. The combination, with a holder consisting of an upper and a lower section, the upper section having a semicircular seat and the lower section having an elongated slot, and a seat, *e*, of a harrow-tooth having a head at its upper end, substantially as set forth.

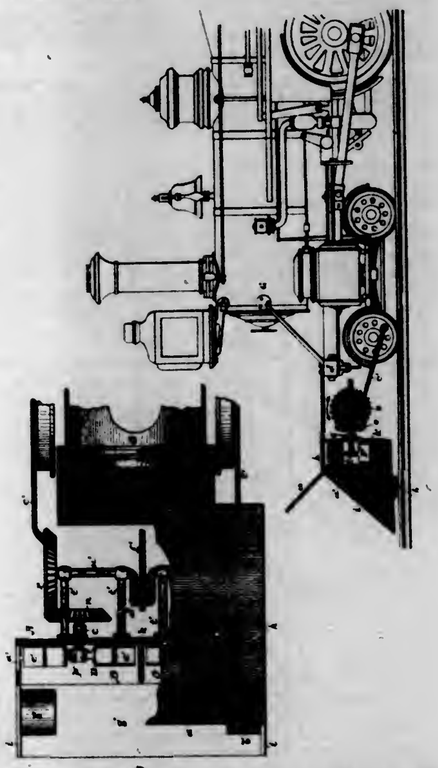
3. The combination, with a holder consisting of an upper and a lower section, the upper section having a semicircular seat and downwardly-extending lugs and the lower section having an elongated slot, a seat, *e*, and upwardly-extending lugs, of a harrow-tooth having a head at its upper end, substantially as set forth.

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4. The combination, with the harrow-frame, of a holder consisting of an upper and a lower section, the upper section having a semicircular seat and downwardly-extending lugs and ears and the lower section having an elongated slot, a seat, *e*, and upwardly-extending lugs and ears, and a harrow-tooth having a head at its upper end, said sections being adapted to be secured together by bolts, and arranged substantially as shown and described.

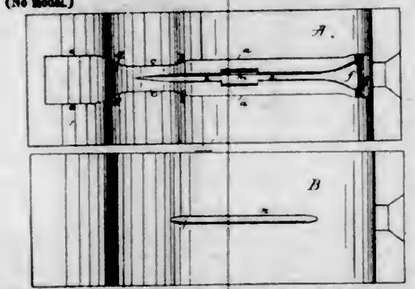
328,993. SNOW-PLOW. Adam J. Witt, Rochester, N. Y. Filed Feb. 8, 1884. (No model.)



Claim.—1. The snow-plow consisting of an inclined foot-board for taking up the snow, a raised inclined fender for preventing it from passing over the top of the plow, a case which is open in front to receive the snow and provided near the rear with two discharge-openings at the sides, a partition which divides the rear part of the interior of the case into two compartments, a rotating shaft in each one of said compartments, and a series of blades carried by each one of said shafts for the purpose of laterally expelling the snow.

2. In combination with two rotating shafts and the blades carried thereby, the mechanism for rotating said shafts and blades, and a snow-plow case which is open in front, and provided with a middle longitudinal partition that divides the case into two compartments, each of which contains one of said shafts, and is provided with a lateral discharge-opening, substantially as set forth.

328,994. DIE FOR MAKING SHUTTLE-BINDERS. Horace W. Wyman and Lyman F. Gordon, Worcester, Mass. Filed Mar. 31, 1885. (No model.)

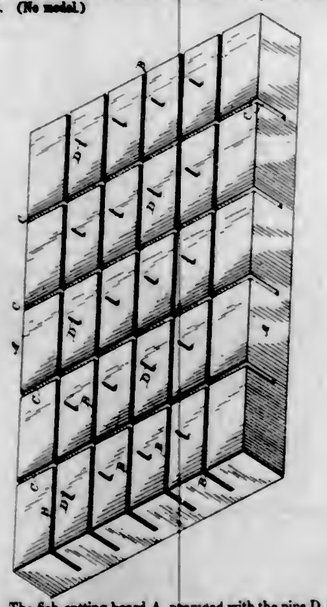


Claim.—1. Dies, substantially as herein described, for forming shuttle-binders, one part being recessed to form walls *a b c d e*, and depression *g*, the opposed part having its face shaped to conform to the face of the recessed part of the die, substantially as described.

2. The die A, recessed to leave walls *a b c d e*, and having the depression *g*, and the groove *h*, combined with the die B, having the rib *n*, all to operate substantially as described.

3. The die A, recessed to have walls *a b c d e*, and depression *g*, and with the face of the die inclined downward from the walls *b* toward the walls *e e*, substantially as described.

328,995. FISH-CUTTING BOARD. Oscar Andrews, Gloucester, Mass., assignor of three-fourths to Joseph H. Andrews and Walter S. Moss, both of same place, and George Tucker, Brockport, Mass. Filed Apr. 27, 1885. (No model.)

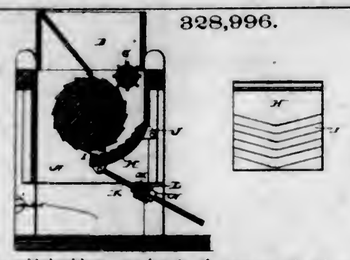


Claim.—The fish-cutting board A, provided with the pins D, the longitudinal grooves B, and the transverse grooves C, substantially as and for the purposes specified.

328,996. COTTON-SEED AND GRAIN CRUSHER. James W. Arthur, Rafiala, Ala. Filed Nov. 24, 1884. (No model.)

Claim.—1. The combination, with the box or casing, hopper, and grinding or crushing cylinder, of the concave grinding-surface H, provided with ears at its upper end, pins passing through the ears into the casing, an adjusting-rod, K, arranged in an inclined line and pivoted at one end in ears projecting from the grinding-surface, a cross-beam, L, journaled at its ends in the casing and adapted to be partially revolved,

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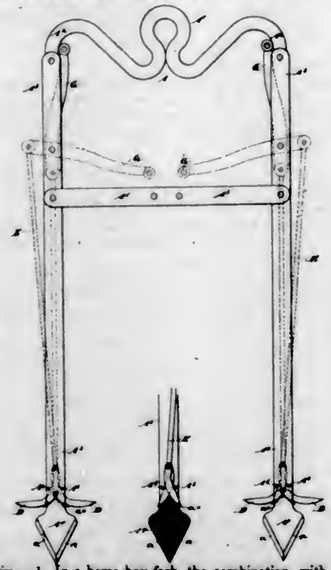


and provided with an opening for the passage of said rod, and nuts working on the rod on either side of the beam, so as to bind against the latter, as set forth.

2. The grinding-cylinder having teeth or flutes extending along its periphery or face, which teeth are arranged parallel with the axis of the cylinder, in combination with the concave segmental grinding-surface H, provided with teeth arranged at an angle and inclining inwardly and downwardly from its opposite edges toward its center, the abrupt sides of the teeth of the cylinder extending in an opposite direction from those on the concave, and devices for adjusting the concave relative to the cylinder, as set forth.

3. The box or casing A and the hopper B, in combination with the spiked feed-roller G, arranged transversely across the open bottom of the hopper at one end, the grinding-cylinder C, having longitudinal flutes or teeth, and located below the hopper, a portion of the circumference of the cylinder communicating with the open bottom of the hopper, so that the feed-roller and grinding-cylinder close up the bottom, a space being left between the side of the casing and the cylinder to provide a chute for the escape of the seed down after being acted upon between the feed-roller and cylinder, and the concave grinding-surface H, arranged at one side of the casing around the lower portion of the cylinder, and having teeth on its inner face, said concave surface H catching the seed as it descends and holding it for action by the grinding-cylinder, and also assisting in grinding it, as set forth.

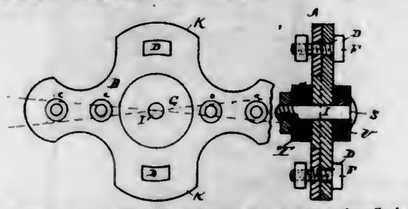
328,997. HORSE HAY-FORK. Henry D. Babcock, Leonardsville, N. Y. Filed Apr. 3, 1885. (No model.)



Claim.—1. In a horse hay-fork, the combination, with a tine having a lance-head, as A^4, of greater width than the shank of the tine, and having formed upon its upper or rear side inclines a^5, of barbs arranged directly in rear of said lance-head and working in guides, whereby the said barbs may be protected from the pressure of the hay by the lance-head, as set forth.

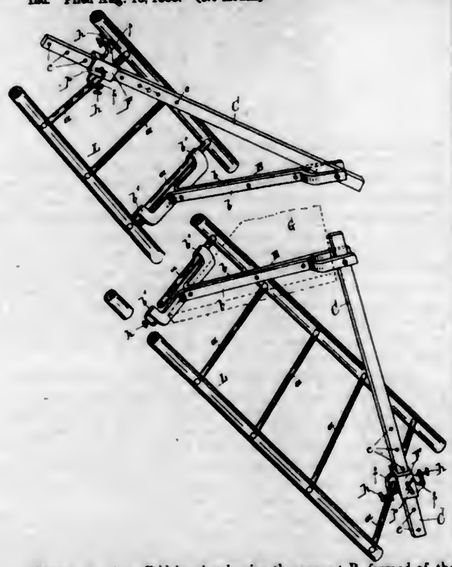
2. The hay-fork described, consisting of the tines A^3, carrying lance-heads A^4 of greater width than the shanks of the tines and having cutting-edges *a* and inclines a^5, as shown, the barbs D, arranged directly in rear of the lance-heads and held by guides A^6, and the levers G E, constructed and arranged for joint operation, as and for the purposes set forth.

328,998. WHIFFLETREE-CIRCLE. William Bailey, New Hartford, N. Y. Filed Oct. 11, 1883. (No model.)



Claim.—In a whiffletree-fastening of the character described, the plates A and B, provided with slots and holes, and one plate having a boss, G, as described, in combination with the three headed bolts F F and S, securing the plates together, substantially as described.

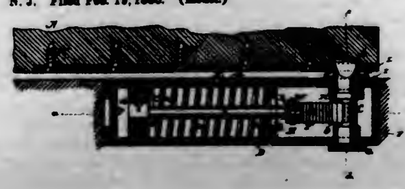
328,999. SCAFFOLD-BRACKET. J. Henry Ballmann, Indianapolis, Ind. Filed Aug. 18, 1885. (No model.)



Claim.—1. A scaffold-bracket having the support B, formed of the two L-shaped bars *b b*, riveted together and provided with the hooks *b' b'*, as described, the brace C, pivoted near its ends to and between the ends of the bars *b b*, a series of holes, *c c c*, cut through the center of the brace C, the adjustable sleeve F, sliding on the brace C, and provided with the double hooks *f f*, shaped and located as described, and the bolt or pin *p*, forming means to secure the sleeve F to the brace C, all constructed as described, and for the purpose specified.

2. A scaffold-bracket having the supports B, formed of the two L-shaped bars *b b*, riveted together and terminating in the hooks *b' b'*, as described, the hooks *b' b'* being provided with the thumb screws or clamps *h h*, to keep the same securely on the steps *a* when desired, the brace C, pivoted near its end to and between the ends of the bars *b b*, a series of holes, *c c c*, cut through the center of the brace C, the adjustable sleeve F, sliding on the brace C, and provided with the double hooks *f f*, shaped and located as described, the thumb screws or clamps *h h* on said hooks *f f*, for holding the same securely on the steps *a*, and the bolt or pin *p*, forming means to secure the sleeve F to the brace C, all constructed as described, and for the purpose specified.

329,000. DOOR SPRING AND CHECK. Joseph Bardsley, Newark, N. J. Filed Feb. 19, 1885. (Model.)



Claim.—1. In combination with a door, the pivot in connection therewith and carrying a segment, the sliding yoke whose sides are connected and inclose opposite sides of said pivot and segment, and are adapted to be alternately engaged by the said segment, a spring for returning the yoke after it has been moved by the rotation of the pivot, and a stop for the spring, substantially as set forth.

2. In combination with a door, the pivot in connection therewith and carrying a toothed segment, a sliding yoke having connected toothed sides, which inclose opposite sides of the said pivot and segment, and are adapted to be alternately engaged by said toothed segment when the pivot is rotated, a spring for returning the yoke after it has been moved by the segment, and a stop for the spring, substantially as set forth.

3. In combination with a door, the casing, the pivot seated in the casing and engaging the door, the sliding yoke adapted to be engaged and moved by a rack on the pivot, the piston, piston-rod, spring, stop for the spring, and a fluid about filling the casing, substantially as and for the purposes set forth.

4. In combination with a door, the pivot engaging an aperture therein and seated in a casing, D, a sliding yoke arranged in the casing and inclosing opposite sides of the pivot, a rack on the pivot adapted to engage either side of the yoke and to move the latter when turned, the piston and rod connected with the yoke, a spring encompassing the rod between the piston and a stop, and a fluid about filling the casing D, substantially as set forth.

5. In combination with a door, the casing D, pivot C, seated therein and engaging the door, the sliding yoke P, having toothed arms S, the rack O on the pivot and arranged between the said arms, the piston-rod X, piston Y, spring *e*, stop Z, and a fluid about filling the casing, substantially as set forth.

6. In combination with a door, the pivot C, engaging an aperture therein, the sliding yoke adapted to be moved by the pivot, the piston, piston-rod, spring, and stop, substantially as set forth.

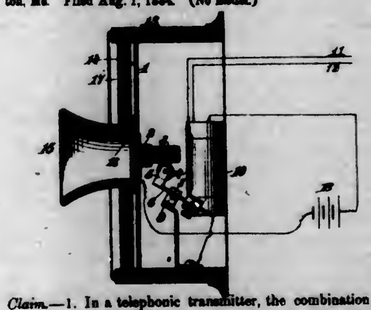
7. The casing D, having removable plugs or caps F, cap J, and plug H, in combination with the pivot C, having a rack, O, the yoke P, having toothed side arms adapted to be engaged by the rack, and having also lugs V, the piston, piston-rod, spring *e*, and washer Z, substantially as set forth.

8. The door, having the bar L and aperture *i*, in combination with the pivot C, having a tapered upper end and carrying the rack O, the sliding yoke engaging the rack, the piston, piston-rod, spring, and stop, substantially as set forth.

9. In combination with a door, the casing D, pivot C, seated in the casing and engaging the door, the yoke adapted to be moved by the pivot, the piston, piston-rod, spring, stop, grooves *m*, and a fluid about filling the casing, substantially as set forth.

10. In combination with a door, the pivot in connection therewith and mounted in a casing, a sliding rack arranged in the casing and adapted to be engaged and moved by the pivot when the door is opened, the spring, the piston-rod, piston, a stop for the spring, a fluid about filling the casing, and a passage for the fluid from one side to the other of the piston, substantially as set forth.

329,001. TELEPHONIC TRANSMITTER. Seth E. Beedy, Farmington, Me. Filed Aug. 1, 1884. (No model.)



Claim.—1. In a telephonic transmitter, the combination of a diaphragm, a carbon rod secured thereto and moving therewith, one or more contact-rollers adapted to impinge thereon, and one or more swinging or pivoted frames, one for each contact-roller, in which the contact-rollers are journaled, substantially as described.

2. In a telephonic transmitter, the combination of a diaphragm, a carbon rod attached thereto, one or more contact-rollers, each journaled in a swinging frame and adapted to impinge on the rod, and means for adjusting the degree of impingement or contact, substantially as described.

3. In a telephonic transmitter, the combination of a diaphragm, a carbon rod attached thereto, one or more contact-rollers, 4, each journaled in a frame, 5, the frame 5, and arm 6, pivoted in standard 9, and the adjustable weight 7 thereon, substantially as described.

4. In a telephonic transmitter, the combination of a diaphragm, a circular carbon rod attached thereto and moving therewith, and one or more contact-rollers pivotally journaled and adapted to impinge on the carbon rod, the circular carbon rod being slightly flattened along the line of impingement or contact, substantially as described.

329,002. PORTABLE SAWING-MACHINE. Eli Bemiss, Huntington, Ind. Filed Sept. 10, 1884. (No model.)



Claim.—1. A portable sawing-machine consisting of a supporting-frame, a driving-belt, a pulley at each end of said frame over which said belt passes, a sliding carriage, a saw and saw-arbor carried thereby, a pulley secured to one end of said frame, a roller at the other, a rope secured to said carriage, and passing around said pulley and roller, and means for imparting motion to said roller, substantially as and for the purpose specified.

2. In a portable sawing-machine, the combination, with a supporting-frame mounted on a truck, a carriage carrying a circular saw and saw-arbor and sliding on guide-bars attached to said frame, and means for transmitting motion to said saw, of a platform-extension attached to the rear of said frame, a boiler and engine fixed on said platform, and a belt for transmitting the power of said engine to the saw, all substantially as and for the purpose specified.

3. A portable crosscut-sawing machine consisting of the frame A B D, mounted on a truck, truss F F', bracing said frame, carriage G, sliding on guide-bars attached to said frame, circular saw H and saw-arbor H', carried by said carriage, pulleys H^2 K', and idlers I I, shaft K, carrying said pulley K', roller M, journaled in one end of said frame and provided with crank M', the pulley O, attached to the opposite end of said frame, and the rope N and belt Q, all combined, arranged, and operating substantially as herein shown and described.

4. In a portable crosscut-sawing machine, the combination, with the supporting-frame provided with guide bars, of a sliding carriage carrying a circular saw and provided with bars engaging said guide-bars, the roller M, journaled in said frame and provided with crank M', pulley O, secured to the frame at the end opposite said roller, and the rope N, secured to said carriage and after passing around the pulley O having its ends secured to said roller, substantially as and for the purpose described.

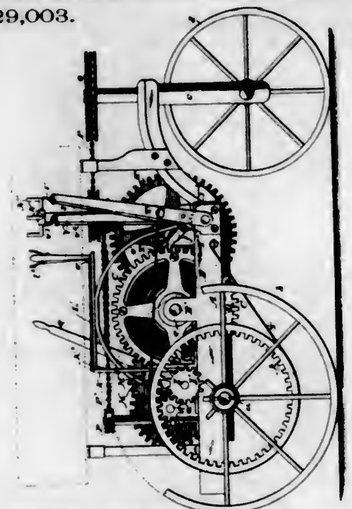
329,003. SPRING-PROPELLED VEHICLE. George B. Bissell, Willow Grove, Pa. Filed Dec. 8, 1884. (No model.)

Claim.—1. In a speed-motor for vehicles, the combination, with the traction-wheel driving-shaft, of the power spring or springs, their actuating rings or wheels, whose shaft is geared to said traction-wheel driving-shaft, substantially as and for the purpose described.

2. In a speed-motor for vehicles, the combination, with the traction-wheel driving-shaft, of the power-springs whose rings or wheels are mounted upon independent shafts, and each of which is geared to said traction-wheel driving-shaft to jointly or separately affect said shaft, substantially as and for the purpose set forth.

3. In a speed-motor for vehicles, the combination, with the traction-wheel driving-shaft, of the power-springs actuating toothed or cogged wheels whose shafts are geared jointly to a common pinion-shaft, the pinions of said latter shaft being geared to the traction-wheel driving-

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shaft, substantially as and for the purpose set forth.

4. In a speed-motor for vehicles, the traction-wheels having the circular racks or toothed rings and the driving-shaft carrying pinions gearing with said wheel-racks, in combination with the propelling or power-springs actuating rings or wheels whose shafts are geared to the driving-shaft, substantially as and for the purpose set forth.

5. In a speed-motor for vehicles, the combination, with the traction-wheels, of a propelling or power spring or springs whose shaft carries one or more toothed or cogged wheels or rings and an intermediate shaft geared to a pinion of the driving-shaft, the latter being geared to said traction-wheel, said intermediate shaft being geared to one of the cogged or toothed wheels of the said spring to effect the rewinding of the spring, substantially as described.

6. In a speed-motor for vehicles, the combination, with the traction-wheels having racks, of the driving-shaft carrying pinions gearing with said racks and the power-springs actuating toothed rings or wheels geared through intermediate shafts and pinions to the said pinions of the driving-shaft, the shafts of said toothed wheels or rings being geared to the traction-wheel driving-shaft, whereby the power of said springs can be applied, and either one of said springs can be synchronously put under tension or rewound, substantially as described.

7. In a speed-motor, the power or propelling springs whose toothed rings or wheels are mounted upon shafts to apply, through gearing, the propelling power of said springs to the traction-wheel driving-shaft, in combination with a shaft geared to said toothed rings or wheels and to supplementary shafts geared to a pinion of the driving-shaft geared to the traction-wheels, substantially as and for the purpose set forth.

8. In a speed-motor for vehicles, the shaft having a tiller or lever applied to its upper end and carrying a pulley, in combination with the chain passing in contact with said pulley and connected with lever-actuating clutches engaging with the driving-shaft pinions, substantially as and for the purpose described.

9. In a speed-motor for vehicles, the shaft carrying a tiller or lever and pulleys, in combination with the steering-wheel, the lever-actuating clutches engaging with the driving-shaft pinions, and the chains, one connecting said shaft to said clutch-actuating lever, and the other chain connecting said tiller-shaft to said steering-wheel, substantially as and for the purpose set forth.

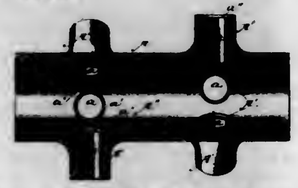
10. The combination, with the clutches which engage the driving-shaft pinions, the levers actuating said clutches, and the steering-chain, of the lever having a cross rod or bar adapted to engage the steering-chain, substantially as and for the purpose described.

11. In a speed-motor for vehicles, the strap-brakes comprising straps of sheet metal and the levers connected to said straps, in combination with the power-spring, applying-shaft, and the traction-wheels, together with the holding gravity pawls and racks, substantially as and for the purpose set forth.

12. In a speed-motor, the clutch-actuating levers of the spring-rewinding gear, in combination with the rod or bar connection connected to said levers and to a hand-lever, substantially as and for the purpose described.

13. In a speed-motor, the clutch-actuating levers of the spring-rewinding gear, in combination with the spring rod or bar connection connected to said levers, a rod or bar section of said connection being adjustable, and a hand-lever having means to effect the adjustment of said rod or bar section, substantially as and for the purpose described.

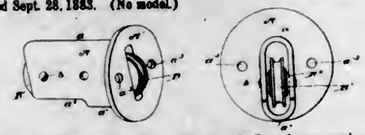
329,004. HUB. William P. Battendorf, Peru, Ill. Filed July 10, 1885. (No model.)



Claim.—1. A hub made of a single piece of metal, consisting of a main portion, A, provided with a series of projections, A', integral therewith, each having a hole, *a*, and a countersink, *a'*, at its inner end, substantially as and for the purpose specified.

2. A hub consisting of a main or body portion, A, and a series of projections, A', each having a hole, *a*, with a countersink, *a'*, at its inner end, and a countersink, *a''*, at its outer end, substantially as specified.

329,005. SASH-CORD GUIDE. Henry L. Blodgett, Chicago, Ill. Filed Sept. 28, 1883. (No model.)



Claim.—1. The combination, with the shell and two cord-pulleys mounted therein, one behind the other, of the circular face-plate extending from the lower to a point above the upper edge of the shell, said face-plate having diameter small enough to permit it to enter a single sash-groove, substantially as described.

2. In combination with a shell, a pulley recessed about its axis, and a plate or disk inserted in the recess of greater thickness than the depth of the recess, substantially as described.

329,006. SASH-PULLEY. Henry L. Blodgett, Chicago, Ill. Filed Apr. 16, 1884. (No model.)



Claim.—1. A cast-metal sash-pulley shell cast in two lateral halves composed of the body portions *a* and *a'* and parts A' of the face-plate, said body portions being cast with mutually-engaging projections and recesses on their meeting edges, and the parts of the face-plate being both cast with a marginal slot at right angles to the plane of division of the shell to receive a holding-screw, which slots are of depth sufficient to admit the screw-heads entirely within the circumference of the face-plate, substantially as shown, and for the purposes set forth.

2. A longitudinally and vertically divided sash-pulley shell and face-plate having its parts cast with mutually-engaging projections, and recesses adapted by themselves alone to bring the said parts into proper coincident position when being put together, and also cast with opposite bossed apertures for the wheel-trunnions, and with opposite holes for the connecting-rivet, and also with marginal countersunk slots in the face-plate portions to admit the holding-screws, in combination with a wheel having its trunnions integral therewith, substantially as shown and described.

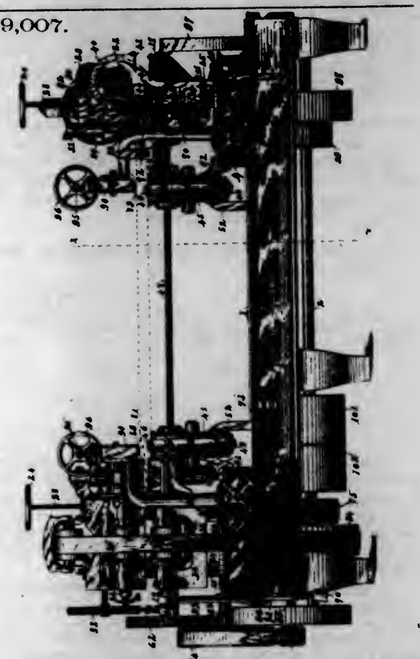
329,007. TENONING-MACHINE. Horace S. Boynton, Oshkosh, Wis. Filed Dec. 19, 1884. (No model.)

Claim.—1. In a tenoning-machine, the combination of the rotating disk 10, mounted upon a supporting-frame, with the thereon-supported cutter-heads 18 and 22, and the mechanism connected therewith, substantially as and for the purpose described.

2. In a tenoning-machine, the combination of the lower cutter-head, 18, with the upper cutter-head, 22, located in the rear of said lower cutter-head and so as to cut the stuff on the opposite side from the side cut by the knives in the lower head, and the adjustable bracket 42, located opposite to the rear cutter-head, 22, and adapted to hold the stoff up to the rear cutter, 22, substantially as and for the purpose described.

3. In a tenoning-machine, the combination of the lower cutter-head, 18, with the upper cutter-head, 22, located in the rear of the lower cutter-head, 18, and so as to cut the stuff on the opposite side from the side cut by the knives in the lower head, the adjustable bracket 42, located opposite to the rear cutter-head, 22, and adapted to hold the stuff up to the rear cutter, 22, and the adjustable bracket 44, located close in the rear of the rear cutter-head, 22, and adapted to steady the stuff by bearing against it on the side dressed by the front cutter, 18, while the rear cutter is still cutting the stuff, substantially as and for the purpose described.

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4. In a tenoning-machine, the endless rack-driving pinion 47, supported and rotating on the annular brackets 61, rigidly affixed to the frame 50, said pinions consisting of the cog-provided periphery 55, adjustably affixed to the encompassed sleeve 56 by set-screws 57 through slots for said adjustment, which adjustment is accomplished by the bolts 58 and cam 59, said sleeve rotating with but being movable longitudinally on the shaft 48, in combination with the endless racks 45, substantially as and for the purpose set forth.

5. In a tenoning-machine, the combination of the adjustable guide 81, located on the frame at one end of the machine and in front of the cutter-heads, with the adjustable and movable guide 82, located opposite thereto on the frame at the other end of the machine, and adapted to receive the stuff between them and adjust it in position to be carried forward therefrom by the endless racks, substantially as described.

6. In a tenoning-machine, the upper and lower cutter-heads, 18 and 22, one of said heads being located in the rear and on the opposite side of the stuff from the other head, said heads being each supported on an arbor provided with a driving-pulley, the adjustable bracket 42, located and adapted to support the stuff while being cut by the rear cutter, and the belt-tightening pulley 29, located and adapted for tightening the driving-belt running upon said tightening-pulley, and the two cutter-head driving-pulleys, all supported upon and in combination with the horizontal rotating disk 10, substantially as and for the purpose set forth.

7. In a tenoning-machine, the endless racks 45, in combination with the idle-wheels 46, located and supporting the racks 45 at the two ends of their circuits, respectively, the frame 50, provided with the adjustable extension end 53, in which one pair of said idle-wheels 46 is supported, and by which the tension of the racks 45 may be adjusted, and the independent driving-pinions 47, located midway between the ends of said circuits of said racks, said pinions being adapted to drive said racks forward by power applied to said racks through said pinions, substantially as described.

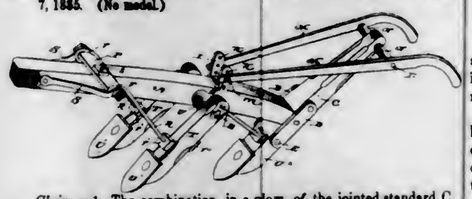
8. The screw-threaded rod 5, rigid at its end to frame 1, the thereon-traveling internally-screw-threaded mitered pinion 6, and the crank-rod 8, supported in carriage 4, and having at one end a mitered pinion meshing with pinion 6 and at the other end a crank-handle, 9, in combination with the carriage 4, traveling on frame 1, and provided with the rigid hanger 7, the lower forked end of which rides movably in a groove in the pinion 6, and frame 1, substantially as described.

9. The friction-wheel 66, rigid on shaft 65, shaft 65, supported and rotating in sleeve 68, and sleeve 68, having a pivotal support at its inner

end, in combination with lever 69, pivoted at one end on the frame 1 and supporting the outer end of the sleeve 68, said lever 69 being adapted to be raised and lowered, causing the friction-wheel 66 to engage against or be released from the wheel 67 on driving-shaft 2, substantially as described.

10. The sleeve 68, in which the shaft 65, carrying friction-wheel 66, is supported and rotates, having its inner end pivotally supported on frame 1 and its outer end supported in lever 69, and lever 69, pivoted at one end on frame 1, in combination with the link 71, connecting the outer end of lever 69 to the crank-arm of shaft 72, and shaft 72, having its bearings in frame 1 and provided with a lever-handle, 73, substantially as and for the purpose described.

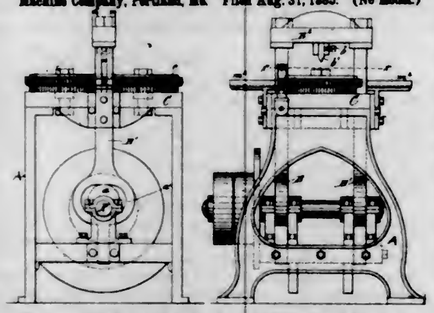
329,008. PLOW. John W. Burrows, White Mills, Ky. Filed Aug 7, 1885. (No model.)



Claim.—1. The combination, in a plow, of the jointed standard C, the beam having the transverse bolt or bar B, the cross-bar P, the bolts R, having eyes pivoted on the bar P, the brace-bars S on the ends of bar P and bolted to the beam, and the standards pivoted on the bar or bolt B, the free ends of the bolts R being passed through slots in the standards and having clamping-nuts to receive the standards at any desired angle, substantially as described.

2. In a plow, the combination of the beam, the brace-bar or standard C, the plates D, bolted on opposite sides of the bar and beam to secure them together, the lower ends of said plates depending below the beam and having a pivotal bolt for the attachment of a removable plow-standard or of a roller-carrying frame, substantially as described.

329,009. MACHINE FOR SHAPING COMB TACK-STRIPS. Matthias Brock, Boston, Mass., assignor to the McKay & Copeland Lasting Machine Company, Portland, Me. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination, in a machine for indenting comb tack-strips, of two disks or wheels provided with radially-placed punches to act upon and indent from each side the connecting-web of the comb tack-strip in line with the spaces between the shanks of the tacks, substantially as described.

2. The wheels or disks provided with punches to cut into or indent the connecting-web of a comb tack-strip, combined with a punch to cut partially into or indent the head-forming flange of the said comb tack-strip, substantially as described.

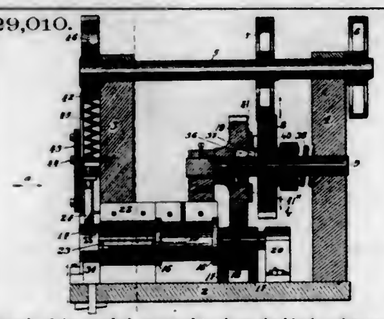
329,010. LINK-MACHINE. Jerome P. Bonney, Venice, Pa. Filed Aug. 3, 1885. (No model.)

Claim.—1. In a link-machine, the combination of a rotatory mandrel for forming the link-blank into a helical configuration, shaping-dies situate at the exit of the mandrel, arranged to clamp the blank and to compress it into proper shape, and mechanism for actuating the dies, substantially as and for the purposes described.

2. The combination, in a link-machine, of a rotary mandrel for forming the link-blank into a helical configuration, shaping-dies situate at the exit of the mandrel, and movable toward each other to clamp the blank and to compress it into proper shape, and mechanism for actuating the dies, one of the latter being so actuated as to move toward the blank during the process of forming the blank by the mandrel, and the other die actuated so as to be thus moved after the formation thereof, substantially as and for the purposes described.

3. In a link-machine, the combination of the rotatory mandrel for forming the link-blank into a helical configuration, shaping-dies situate

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at the exit of the mandrel, arranged to clamp the blank and to compress it into proper shape, mechanism for actuating the dies, and a spring for retracting the dies, substantially as and for the purposes described.

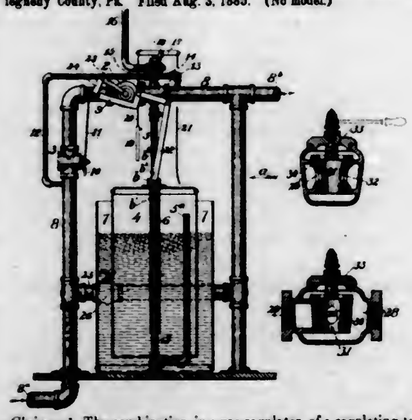
4. The combination of a mandrel for forming the link-blank into a helical configuration, reciprocally-moving clamping-dies situate at the exit of the blank from the mandrel, and cams for actuating the dies, said cams operating within yokes in the heads or frames of the dies, substantially as and for the purposes described.

5. In a link-machine, the combination of a rotatory mandrel for forming the link-blank into a helical configuration, shaping-dies situate at the exit of the mandrel, arranged to clamp the blank and to compress it into proper shape, mechanism for actuating the dies, and a knife actuated so as to sever the blank after it has been shaped by the dies, substantially as and for the purposes described.

6. The combination of a link-forming mandrel, 13, and a shaft for rotating the same, a shaping-die, 26, and a shaft for actuating it continuously, a gear-wheel, 8, movable lengthwise on its shaft, connected with the continuously-moving shaft of the said die, and provided with a lateral cam, 37, a gear-wheel, 19, mounted on the shaft of the wheel 8, and actuating the shaft of the mandrel, these gear-wheels being provided with lateral jogs, a lateral cam capable of engagement with the cam 37, and of separating the gear-wheels, and devices for causing them to approach when freed from the cams, substantially as and for the purposes described.

7. The combination of a shaft, 9, a gear-wheel mounted on the shaft and capable of motion lengthwise thereon, a second gear-wheel, 19, one of the gear-wheels being provided with a lateral cam, 37, a second cam for engaging the cam 37 and separating the said gear-wheels, and devices for causing them to approach, the adjacent faces of the gear-wheels being provided with jogs capable of engagement and disengagement by action of the cams, whereby a continuous rotation of the one wheel will impart an intermittent rotation to the other, substantially as and for the purposes described.

329,011. GAS-REGULATOR. Alexander W. Cadman, Sterrett, Allegheny County, Pa. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank and capable of operation by the movements thereof, the valve and connecting mechanism being so arranged that at the complete descent of the tank the valve will be closed, that it will be open when the tank is in an intermediate position, and that when the tank has completely risen the valve will be closed, substantially as and for the purposes described.

2. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank and capable of operation by the movements thereof, the valve and connecting mechanism being so arranged that at the complete descent of the tank the valve will be closed, that it will be open when the tank is in an intermediate position, and that when the tank has completely risen the valve will be closed, and an auxiliary valve, 3, for opening and closing the supply-pipe, said auxiliary valve being so connected with the tank as to be closed by the full descent thereof, substantially as and for the purposes described.

3. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank by rigid connecting mechanism, so as to be capable of a positive operation by the movements thereof, the valve and connecting mechanism being so arranged that at the complete descent of the tank the valve will be closed, that it will be open when the tank is in an intermediate position, and that when the tank has completely risen the valve will be closed, substantially as and for the purposes described.

4. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank and capable of operation by the movements thereof, a by-pass pipe, 12, leading from the supply-pipe at a point back of the valve, and re-entering the same at a point forward of the valve, and a valve for opening and closing the by-pass pipe, substantially as and for the purposes described.

5. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank and capable of operation by the movements thereof, a by-pass pipe, 12, leading from the supply-pipe at a point back of the valve, and re-entering the same at a point forward of the valve, and a valve for opening and closing the by-pass pipe, the last-named valve being connected with the tank, so as to be closed by the rise thereof, substantially as and for the purposes described.

6. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank and capable of operation by the movements thereof, the valve and connecting mechanism being so arranged that at the complete descent of the tank the valve will be closed, that it will be open when the tank is in an intermediate position, and that when the tank has completely risen the valve will be closed, an auxiliary valve for opening and closing the supply-pipe, said auxiliary valve being so connected with the tank as to be closed by the full descent thereof, a by-pass pipe, 12, leading from the supply-pipe at a point back of the first-named valve and the auxiliary valve, and re-entering the pipe forward of both thereof, and a valve for opening and closing the by-pass pipe, substantially as and for the purposes described.

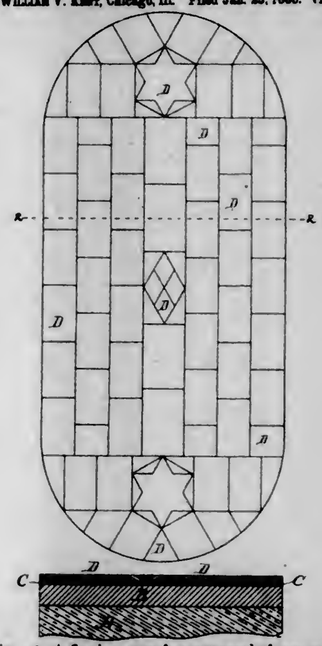
7. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank and capable of operation by the movements thereof, the valve and connecting mechanism being so arranged that at the complete descent of the tank the valve will be closed, and a safety-valve whose adit-pipe communicates with the tank, and the supply-pipe, and whose lever is connected with the tank, so that the safety-valve will be opened by the complete descent thereof, substantially as and for the purposes described.

8. The combination, in a gas-regulator, of a regulating-tank capable of rising and falling with the increase or diminution of gas-pressure, a gas-supply pipe having a discharge into the tank, a valve in the gas-supply pipe, whose stem is connected with the tank and capable of operation by the movements thereof, the valve and connecting mechanism being so arranged that at the complete descent of the tank the valve will be closed, that it will be open when the tank is in an intermediate position, and that when the tank has completely risen the valve will be closed, and a safety-valve whose adit-pipe communicates with the tank and the supply-pipe, and whose lever is connected with the tank, so that the safety-valve will be opened by the complete descent thereof, said lever having a counter-weight situate in the path of the tank, for opening the safety-valve when the tank approaches its highest point, substantially as and for the purposes described.

9. The combination, with a rising and falling gas-tank, 4, movable vertically within a water-filled tank of the nature described, of a vertical hollow standard, 5, which traverses the tank 4, and on which the latter moves, said standard being connected with a gas-supply pipe, and having a re-entrant arm, 5*, which opens into the tank 4, above the level of the water therein, for the purpose of enabling the standard to perform the double function of a gas-supply pipe and a standard, substantially as and for the purposes described.

10. The combination of a gas-regulating tank of the nature described, and a valve for regulating the supply of gas to the tank, and operated automatically by the movements thereof, said valve being situate above the level of the top of the tank, substantially as and for the purposes described.

329,012. METALLIC FLOOR AND SURFACE. Frank R. Cargill and William V. Kent, Chicago, Ill. Filed Jan. 23, 1885. (No model.)



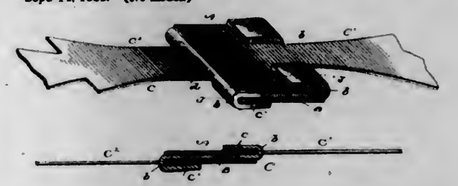
Claim.—1. A flooring or surface composed of non-resonant metal used as a base and having mixed therewith a metal to impart requisite hardness to the product.

2. A flooring or surface composed of a non-resonant metal used as a base, and mixed therewith a metal to impart requisite hardness and a metal to impart requisite tenacity to the product.

3. A flooring or surface consisting of blocks or sections composed of different metals mixed together, as and for the purpose set forth.

4. A floor consisting of a foundation of suitable material, such as asphaltum or concrete of sand and cement, a course or layer of cement, concrete, or plaster, and metallic blocks or sections laid upon the latter while plastic, substantially as and for the purpose set forth.

329,013. BALE-TIE. Steven L. Carpenter, Moscow, Tenn. Filed Sept. 14, 1885. (No model.)



Claim.—1. A bale-tie comprising a buckle having hooks bent on opposite sides and ends thereof, and a bale-band, one end of which is rigidly connected to one set of hooks and the opposite end of said band loosely and adjustably fitted between the other set of hooks, substantially as described.

2. As an article of manufacture, a bale-tie comprising a buckle having two integral hooks at opposite ends and bent in opposite directions upon the base-plate, and a bale-band having locking-shoulders d^*, one end of the said band being rigidly secured to the hooks on the lower face of the base-plate by bending the said hooks upon the band, and the other end of said band having its locking-shoulders loosely and adjustably fitted between the hooks on the upper face of the buckle, substantially as described.

329,014. SPINDLE-SUPPORT FOR SPINNING-MACHINES. William T. Carroll, Worcester, assignor to George Draper & Sons, Hopedale, Mass. Filed Nov. 24, 1884. (No model.)

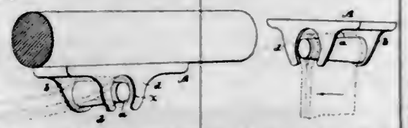
Brief.—A long, yielding, upright standard has chamber at its top for the reception of the pintle of the spindle and extends up within the sleeve-whirl of the spindle. It is provided near its top with a hook to prevent the spindle from rising, and has a flange at its bottom to rest upon the rail. The slip for the spindle is below the plane of the whirl.



Claim.—1. The rail and the spindle-supporting standard B, erected above it and provided with a flange or projection, B', to rest upon the said rail, and bored at its upper end for the reception of the pintle of the spindle, leaving a yielding portion of the said support between the flange or projection and the lower end of the spindle, combined with a sleeve-whirl spindle having a pintle extended below the sleeve-whirl, the sleeve of the whirl extending down about the upper end of the said standard, substantially as described.

2. The rail and the spindle-supporting standard B, provided with a flange or projection, B', to rest on the rail, and bored at its upper end for the reception of the lower end of the spindle, leaving a yielding portion of the said support between the flange or projection and the lower end of the spindle, combined with a sleeve-whirl spindle, the sleeve of the whirl extending down about the upper end of the said standard, and with a hook, *f*, and means to connect it with the spindle, substantially as described.

329,015. HOLDBACK FOR VEHICLES. William Chedwin and William A. Eldredge, Fond du Lac, Wis. Filed Apr. 2, 1885. (No model.)

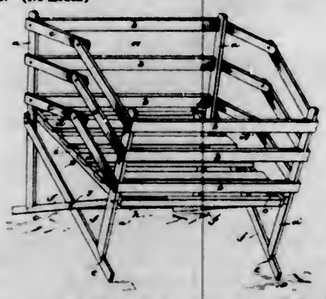


Claim.—1. A holdback consisting of a plate adapted for attachment to the under side of a shaft, and provided at one edge with a downwardly-extending standard, *b*, a finger extending below the plate from said standard, and a guard projecting down past the side of the finger at the opposite edge, constructed to leave an unobstructed passage beneath the finger, substantially as described.

2. The combination, with a shaft, of a holdback consisting of a plate having a downwardly-projecting standard and lateral finger below the plate, and a guard extending downward past the finger to leave the passage below the finger, as set forth.

3. A holdback attachment consisting of a plate having a standard at one edge and two guards at the other, and a finger projecting from the standard parallel to the under side of the plate and extending between the guards with a passage below the finger, substantially as set forth.

329,016. CRIB. Frank W. Clark, Granville, Mass. Filed May 5, 1885. (No model.)

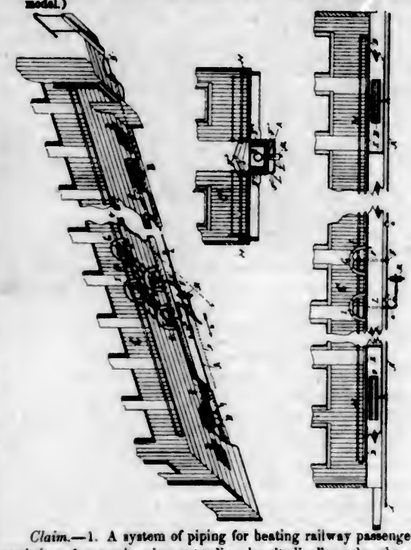


Claim.—1. In a folding crib, the combination, with the sides, of a series of jointed bars or slats pivoted thereto and to each other at intermediate points between the sides, and a bottom pivoted at one end to one of the sides, and having its opposite end notched and adapted to engage the lower bar of the opposite side, whereby the bottom will retain the sides extended and prevent collapsing of the cradle-body, as set forth.

2. The sides connected together by jointed rods or bars, in combination with the hinged or pivoted bottom, the rigid supporting-legs, and the pivoted cross-slats to receive the lower ends of the legs, as set forth.

3. The combination, with the folding cradle-body, of the rigid supporting-legs arranged at the corners of the body, the crossed slats pivoted together at an intermediate point of their length, and also pivoted to one end of the legs, the outer ends of the slats resting on the floor and provided with notches to receive the lower ends of the legs, as set forth.

329,017. STEAM CAR-HEATER. Elmore D. Cody, Erie, Pa., assignor of one-half to John W. Heyn, same place. Filed Aug. 11, 1884. (No model.)

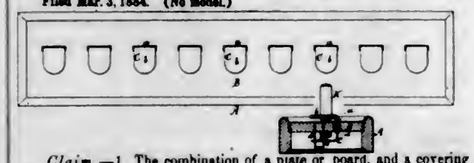


Claim.—1. A system of piping for heating railway passenger-cars, consisting of a supply-pipe extending longitudinally under the central portion of a car communicating with steam drums or coils inclosed in chambers under the floor of such car, in combination with pipes extending from the central portion of said supply-pipe to the upper courses of coils of pipe along the sides of such car, and escape-pipes from the central portion of the lower courses of said coils, communicating with and draining into a steam-trap under the floor of the car, substantially as and for the purpose set forth.

2. In a railway-car heater, side coils, H H, on either side of the car, substantially as shown, in combination with the continuous steam-supply pipe A under the body of the car, intermediate connections near the center of the car between the upper courses of the side coils, H H, and the supply-pipe A, an automatic steam-trap, M, under the central portion of the car, and intermediate connections between the lower courses of the side coils, H H, and the steam-trap M, substantially as and for the purpose set forth.

3. The combination, in a railway-car heater, of a steam-supply pipe, A, extending under the body of the car from end to end thereof, and communicating near each end of the car with steam-drums B B in chambers under the floor of the car, and communicating near the center of the car with the upper courses of both of the side coils, H H, with an automatic steam-trap, M, communicating near the center of the car with the lower courses of both of the side coils, H H, substantially as and for the purpose set forth.

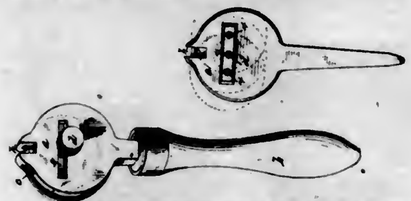
329,018. FINGER-RING TRAY. Thaddeus S. Coffin, Boston, Mass. Filed Mar. 3, 1884. (No model.)



Claim.—1. The combination of a plate or board, and a covering thereof of cloth or velvet, with a series of plate-metal clamps inserted and movable in openings of the board, and turned or bent down over such covering, so as to present flat bearings or hooks to enter and hold finger-rings upon it, the said covering, and also extended below and under the board, and provided with springs for depressing them, all being substantially as set forth.

2. The combination of a plate, B, covered with velvet or other suitable material, with the clamp C, and its operative spring and guide-staple, arranged and to operate with such covered plate and a finger-ring, substantially in manner represented.

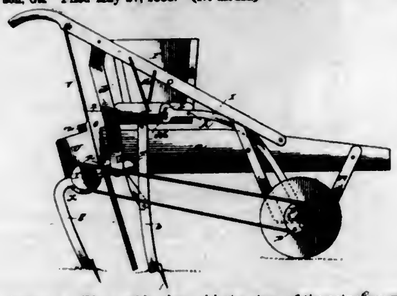
329,019. COMBINED RIPPER AND CUTTER. James W. Cole, Westfield, Mass., assignor of one-half to George T. Moore, same place. Filed Jan. 2, 1885. (No model.)



Claim.—1. In combination, the hollow case *a*, having the slot *e* and the screw-holes *x* in the opposite sides thereof, and the slotted cloth-guard *h* on its border, the cutter *c*, and the screw *d*, substantially as set forth.

2. In combination, the hollow case *a*, having the slot *e* and the screw-holes *x* in the opposite sides thereof, the cutter *c*, and the screw *d*, substantially as set forth.

329,020. FERTILIZER-DISTRIBUTER. William I. Collins, Jackson, Ga. Filed May 27, 1885. (No model.)

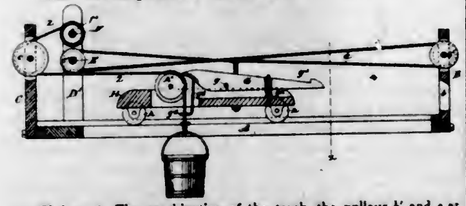


Claim.—1. The combination, with the plow, of the actuating-wheel having the pulley E on its shaft, the hopper F, the vibrating shaker suspended below the hopper and extending beyond the plow-beam, the seed-spout for conveying the fertilizer from the shaker to the ground, the seed-coverers having arms extending beyond the rear end of the plow-beam, the shaft W, journaled in said arms and having the pulley Y, and the seed-disk and the hopper U, located between the arms of the seed-coverers, substantially as described.

2. The combination, with a fertilizer-distributer having rearwardly-extending seed-coverers and ordinary plow-handles, of the hopper U, adapted to be located between the seed-coverers, and having a vertical extension, V, provided with a hook at its upper end, for suspending the hopper from the cross-bar of the handles, and a seed-disk working in said hopper, substantially as described.

3. The combination of the hopper U, the rotating seed-disk in its lower end, and the frame Z, having hooks whereby it is suspended from the sides of the hopper and bears between the front side thereof and the front side of the seed-disk, for the purpose set forth, substantially as described.

329,021. HAY ELEVATOR AND CARRIER. John B. Comer, Viola, Tenn. Filed Aug. 24, 1885. (No model.)



Claim.—1. The combination of the track, the pulleys *b'* and *c* at opposite ends thereof, the geared shafts E and F, the pulley *e'* on shaft E, and the drum on the shaft F, means for throwing said shafts out of gear, the crossed endless rope *a*, connecting the pulleys *b'* and *e'*, and the carriage on the track connected to rope *a* and having the pulley A', the latching-lever for locking the carriage at one end of the track, and adapted to bear on the pulley, the elevating-rope over the pulleys A' and *c* and connected to the drum, and means for tripping the latching-lever automatically, to release the carriage and apply the lever to the elevating rope and pulley A' while the carriage is moving on the track, substantially as described.

2. The combination of the track, the pulleys *b'* and *c* at opposite ends thereof, the geared shafts E and F, the latter being vertically movable, the pulley *e'* on shaft E, and the drum on shaft F, the lever L, for raising shaft F to disconnect it from shaft E, the crossed endless rope *a*, connecting the pulleys *b'* and *e'*, and the carriage on the track attached to rope *a* and having the pulley A', the latching-lever for locking the carriage at one end of the track and adapted to bear on the pulley, the elevating-rope *z* over the pulleys A' and *c*, and connected to the drum, and means for tripping the latching-lever to release the carriage and apply the lever to the elevating rope and pulley A' while the carriage is moving on the track, substantially as described.

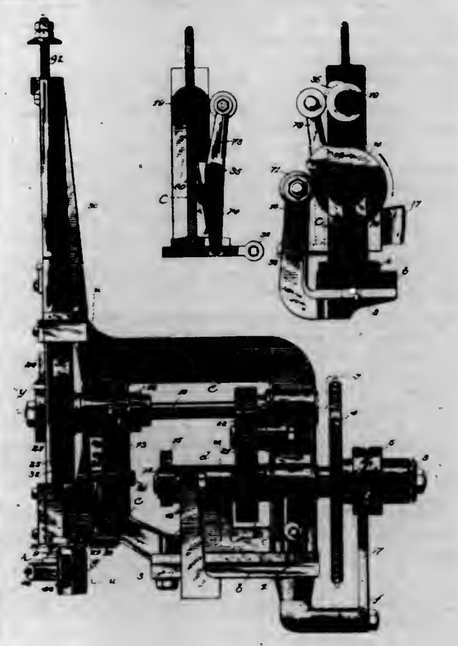
3. The combination of the carriage having the pulley, the rope, the lever G, forming a brake for the latter, and a latch for securing the carriage at one end of the track, with the track having the pulleys *b'* and *c* at opposite ends, the geared shafts E and F, the latter being movable and having a drum, and the spring *d'*, for pressing said shaft normally in engagement with shaft E, the pivoted lever L, having the head *l*, for moving the shaft F from shaft E to disconnect said shafts, and the latching-arm *l'*, for securing said shafts together when geared, a pulley, *e'*, on shaft E, the endless crossed belt *a*, connecting pulleys *e'* and *b'*, and to which the carriage is attached, the elevating-rope passing over pulley *c* and attached to the drum on shaft F, and the means for rotating said shaft, substantially as described.

329,022. HEEL-MACHINE. Frederick W. Coy, Boston, Mass., assignor to the Maxwell Heel Machine Company, same place. Filed Nov. 26, 1884. (No model.)

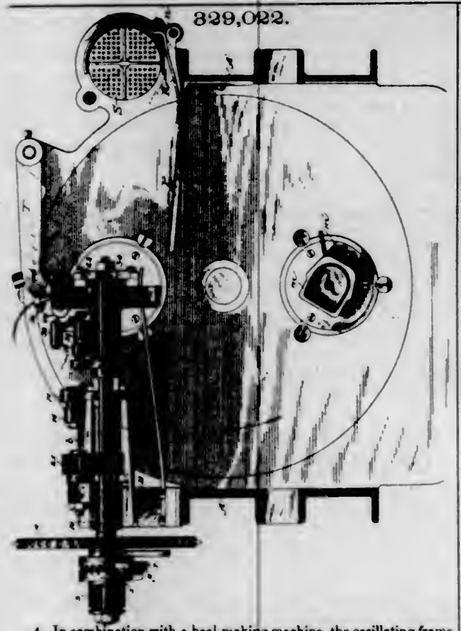
Claim.—1. In combination with the revolving table of a heel-making machine, dies carried thereby adapted in connection with a block to cut lifts to fill said dies, mechanism, substantially as described, carried on the machine above and in line with the movement of the dies adapted to perforate the lifts contained in the said dies and to insert the peg or nail therein when the die is in proper position under the same, and mechanism for operating the pegger mechanism connected with the driving mechanism of the machine, substantially as described.

2. In combination with the table of a heel-making machine, cutting-dies upon said table acting in connection with a suitable block or plunger to cut the lifts to form a heel within the said die, a peg or nail inserting mechanism supported upon a bracket in line with and above the movement of the dies, and mechanism, substantially as described, connected with the driving mechanism of the heel-machine for operating the peg or nail mechanism, all substantially as set forth.

3. The frame pivoted upon a bracket attached to the main frame of a heel-making machine and adapted to oscillate in horizontal plane, a driving-shaft carried thereby and connected to the driving mechanism of the machine, mechanism, substantially as described, for giving the frame intermittent lateral movement at suitable intervals, and mechanism for inserting the pegs or nails carried by said frame, all substantially as described.



329,022.



4. In combination with a heel-making machine, the oscillating frame C, the main driving-shaft, and means for oscillating the frame, the lever and pawl, and the cam for working the said lever for turning the feed-rolls, mechanism for holding the peg-strip, the knife, and the bar, and means for operating it, the driver attached also to said bar, the awl, and the mechanism for operating the awl, all substantially as described.

5. In combination with the feed-rolls and the channel for the peg-strip, the adjustable strip 41, adapted to the different widths of the peg-stripe, substantially as described.

6. In combination with the bracket carrying the peg-driving mechanism, the sprocket-wheels, and the connecting-chain, the spring-clutch connecting with the upper sprocket-wheel, the bell-crank levers, and the connecting-rod for throwing the clutch out of connection at the proper moment, substantially as described.

7. In combination with the table of a heel-machine and mechanism for operating the same, the reciprocating block and the dies raised above the level of the said table, and a collar, *m*, surrounding the same, substantially as described.

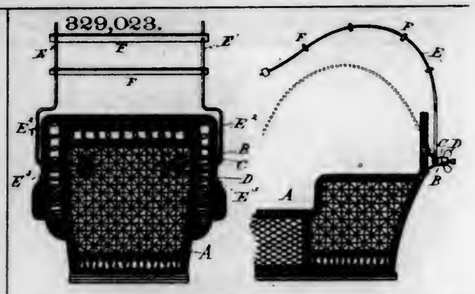
8. In combination with the feed-rolls and the channel for the peg-strip, the spring-plate 46, arranged opposite the feed-rolls and adapted to press the peg-strip directly against the feed-rolls in order to feed it forward, substantially as described.

9. In combination with the feed-rolls and their supporting-frame forming one side of the channel for the peg-strip, the hinged plate 4, forming the other side of said channel and adapted to be swung back for the admission of the strip, substantially as described.

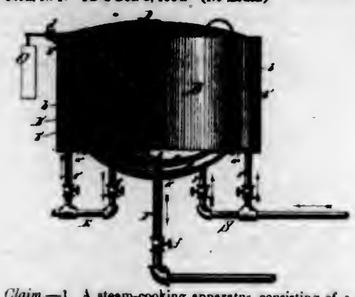
10. In the described machine, the combination of the clearer P, arm T, press S, and compound arm R, operating in connection with the heel-blank and die, substantially as described.

11. In combination with the table, the die raised above its surface and the inclined collar *m*, substantially as described.

329,023.



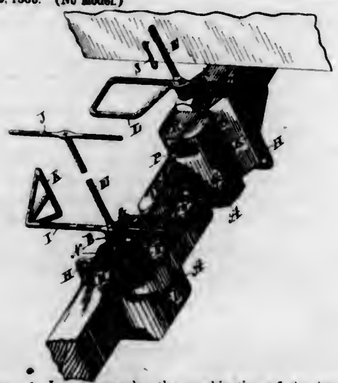
329,024. STEAM-COOKING APPARATUS. Royal E. Deane, New York, N. Y. Filed Dec. 3, 1884. (No model.)



Claim.—1. A steam-cooking apparatus consisting of a vessel provided with double walls forming two or more independent steam-spaces, whereby the different portions of the vessel may be heated separately or simultaneously, substantially as described.

2. In a steam-cooking apparatus, the combination, with the vessel having double walls forming two or more independent steam-spaces, of independent steam and exhaust pipes for each of said spaces, substantially as described.

329,025. CAR-COUPLER. Ezra Dederick, Milwaukee, Wis. Filed Sept. 5, 1885. (No model.)

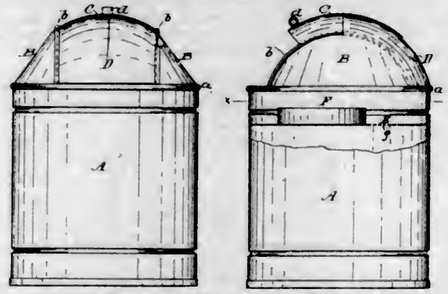


Claim.—1. In a car-coupler, the combination of the bumpers A, provided with broad vertical recesses B upon one of their vertical sides, dogs or latches C, pivoted to their opposite sides, vertical shaft E, having bearings in said bumpers and affixed to and adapted to turn said dogs C, springs F, affixed at one end to said shafts E and at the other to said bumpers A and adapted by their recoil to turn said shafts and move said dogs, dog-retaining keeper H, pivoted to said bumpers, arms M, rigidly affixed at one end to said shafts E, while their other ends engage against the arms N of said keepers, whereby as said shafts E are turned said retaining-keepers are moved away from said dogs, and brackets K and L, arranged to communicate motion from one of said levers I to the other as either of said levers I are moved, all substantially as and for the purpose specified.

2. The improvement in car-couplers herein described, consisting in the combination of the bumpers A, having vertical coupling-recesses B, link-receiving recess P, and pin-receiving aperture R, rectangular shaft E, fitted into rectangular holes formed therefor in the dogs C, levers J, affixed to the upper ends of said shafts E, dogs C, spiral springs F, affixed at one end to the bumpers and at the other to said dogs, dog-retaining keepers H, pivoted to said bumpers, arms M, rigidly affixed to said vertical shaft, arms N, forming an extension of or affixed to said keeper and adapted as said shaft E is turned to move said keepers, levers I, provided at one end with a vertical bracket, K, and at the other end with a horizontal bracket, L, said brackets being adapted to communicate motion from one of said levers to the other as the cars are coupled and uncoupled, substantially as and for the purpose specified.

3. In the car-coupler herein described, the combination, with the end of the car and with one end of the levers I, of the lever-retaining chain S, as adapted when engaged with said lever to hold said dogs out of coupling position, substantially as set forth.

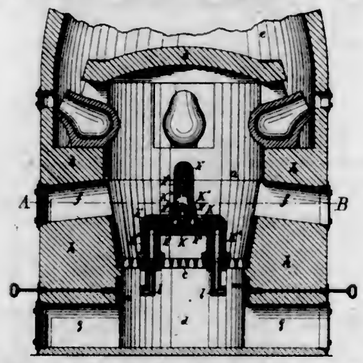
329,026. OIL-TANK. Cornelius B. de la Vergne, Jr., Glen Ridge, N. J. Filed Jan. 8, 1885. (No model.)



Claim.—1. An oil-tank consisting of a cylindrical body for containing the oil, a perforated diaphragm immovably fixed within the tank-body and below its top, as set forth, two opposite curved side cover-pieces rigidly fixed along the rim of the tank with their vertical edges apart and parallel with each other, a cover-section rigidly fixed between the side cover-pieces, and a sliding cover-section adapted and arranged to slide between the side pieces and over the fixed section that connects them, substantially as herein shown and described.

2. In an oil-tank of the character herein specified, a fixed diaphragm perforated for a pump-hole, drip-orifices, and an aperture for introducing oil, and having, in combination therewith, a removable drip-pan adapted to cover the aperture, the whole surmounted by a sectional cover, the fixed portions of which are fixed along the tank-rim, and the movable section whereof is adapted and arranged to slide upon the exterior of a fixed section and between the edges of two opposite fixed sections, substantially as herein shown and described.

329,027. SMOKE-CONSUMER FOR FURNACES. John Donovan, Boston, Mass. Filed Nov. 17, 1884. (No model.)

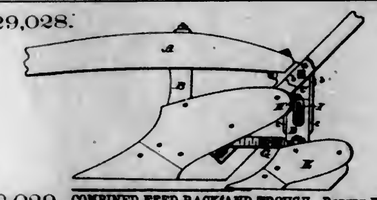


Claim.—The hollow ring K, its hollow arch K′, and hollow projection or projections K″, having the respective perforations k^2 k^4 k^3, combined with the downwardly-projecting pipes K^2 K^3 *l l*, and the adjustable valves or dampers *m m*, as and for the purpose set forth.

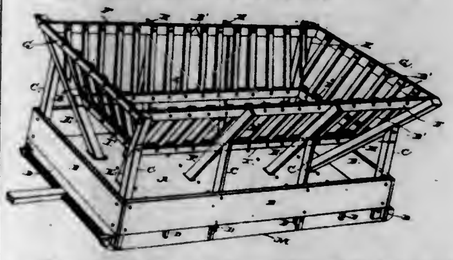
329,028. SUBSOIL-PLOW. John Dorrance and George L. Ebersole, Canton, Ohio. Filed July 22, 1885. (No model.)

Claim.—In a subsoil-plow, the combination of the handle *a*, the connecting-block C, having the flanges *c c* and slot *d*, the standard D, carrying plow E, and having slot *d* and shoulder F, the brace G, secured to standard D and to the lower end of handle *a*, and the cross-brace H, provided with slots I I, by which it is attached by suitable bolts to standards D and handle *a*, substantially as described.

329,028.



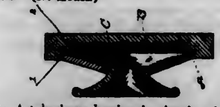
329,029. COMBINED FEED RACK AND TROUGH. Robert W. Dye, Oskaloosa, Iowa. Filed June 16, 1885. (No model.)



Claim.—1. In a feed-rack, the combination, with the floor or platform A, provided with the side and end inclosing boards, B, of a series of braces or supports, C, having their lower ends extending through openings in the floor or platform, runners attached to the lower ends of the braces or supports, braces D, connecting the runners, and the inclined standards or uprights E, carrying the frame-work of the rack and having their lower ends extending through openings in the floor and secured to the braces D, as set forth.

2. In a feed-rack, the combination, with the floor or platform A, the runners M, and transverse braces D, having their ends notched to fit over the upper edge of the runners, of the braces C, extending through openings of the floor, and having their lower ends notched or rabbeted to fit over the runners to which they are secured, and the inclined uprights E, carrying the rack and having their lower ends passed through openings of the floor and secured to the transverse braces D, as set forth.

329,030. TELEPHONE. Thomas A. Edison, Menlo Park, N. J. Filed Dec. 15, 1884. (No model.)



Claim.—1. A telephone having in circuit a body of granulated material, the granules being coated with an adhesive substance, substantially as set forth.

2. A telephone having in circuit a body of granulated carbon, the carbon granules being coated with an adhesive substance, substantially as set forth.

329,031. MACHINE FOR UNITING THE SOLES AND UPPERS OF BOOTS OR SHOES. Hadley P. Fairfield, West Medford, Mass. Filed Feb. 24, 1885. (No model.)

Claim.—1. In a machine for uniting soles to uppers, a horn to support the stock, combined with a compound driver composed of a movable rod and a movable tube arranged outside of the rod, the tube acting as a guide for the fastener, located above but not in contact with the stock, the rod striking the end of the fastener after it is cut off and driving it partially into the stock, leaving the upper end of the fastener flush with the lower end of the said tube, substantially as described.

2. The horn and its hammer, combined with the compound driver composed of an independently-movable rod and tube, the latter guiding the fasteners, while the former drives the fastening through it into the stock, with its upper end flush with the end of the tube, substantially as described.

3. The horn and its hammer, and the compound driver composed of the independently-movable center rod and tube, combined with means, substantially as described, to operate the said hammer and driver, imparting to the latter a divided movement, as set forth, whereby the center rod of the compound driver first drives the fastening through the tubular part of the driver into the stock, with the upper end of the fastening flush with the end of the said tubular part, in which position the driver remains while the hammer acts to clinch the lower end of the fastening, the hammer then in turn remaining at rest, forming an abutment for the lower end of the fastening, while the two parts of the compound driver descend and clinch the upper end of the fastening in the channel cut in the stock, substantially as described.

329,032. CARRIAGE-TOP. Jesse A. Crandall, Brooklyn, N. Y. Filed July 9, 1885. (No model.)

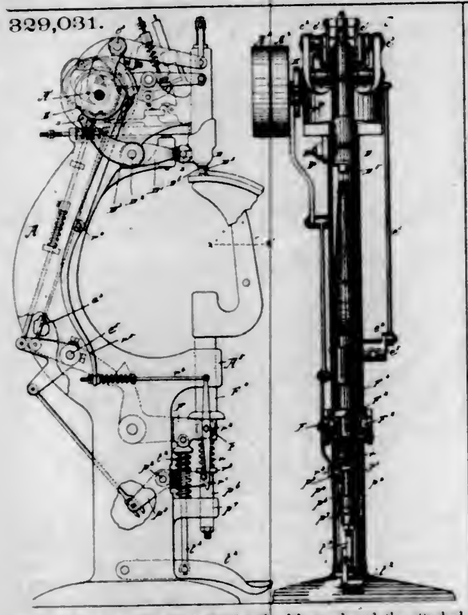
Claim.—1. In combination with the body of a carriage, the rods E E, attached to the rear of the carriage-body, as shown, and curving outward and forward to form supports for the top or canopy of a carriage, substantially as described.

2. In combination with the body of a carriage, the rods E E, swivel-jointed at the back of the carriage and provided with the sockets C C, supports B B, and screws D D, to permit of the partial rotation of said rods and any desired adjustment of the top or canopy over the carriage-body.

3. In combination with a carriage-body, a pair of canopy-rods made adjustable by pivoting at points on the back of the carriage-body, substantially as shown, and for the purposes specified.

4. A canopy-rod for carriages, constructed with the two parts E′ and E² bearing at right angles to each other, and with a curved or double-angled elbow, E³, between them, substantially as and for the purposes described.

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4. The sleeve, its attached tube, the driver-rod, and the attached center rod, and the part A^4 of the frame, combined with the independently-movable nose and nose-carrier, and with means, substantially as described, to operate the said parts.

5. In a machine for uniting soles to uppers, a driver-bar and attached rod having a divided downward movement, as described, to at first partially drive a fastening and then remain at rest, while the lower end of the fastening is clinched, and then by its further downward movement to clinch the upper end of the fastening, in combination with a horn and a hammer to clinch the lower end of the fastening and act as an abutment for the lower end of the fastening, of which the upper end of the latter is being clinched by the said rod, substantially as described.

329,032. COMBINED DOOR SPRING AND CHECK. William F. Falls, Boston, Mass., assignor to the Falls Automatic Door Spring and Check Company. Filed Feb. 24, 1885. (No model.)



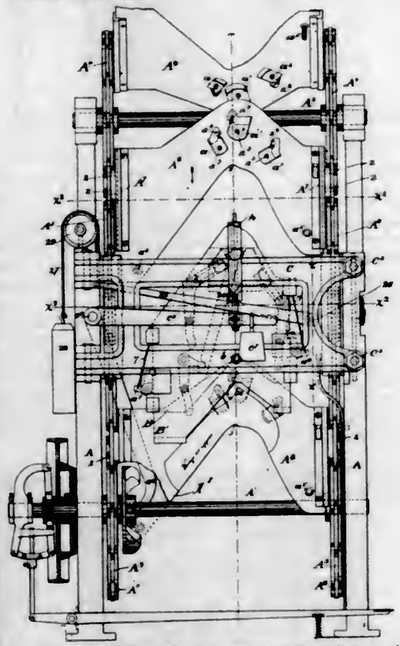
Claim.—1. A combined door spring and check embodying the following elements, viz: a hollow cylinder closed at both ends and provided with two spiral slots cut through its cylindrical walls, a flat-sided shaft mounted centrally in said cylinder, a lever or arm rigidly secured upon said shaft by one of its ends, with its other constructed and arranged to press upon a door to close it and to be moved about its axis of motion thereby, a circular collar provided with a central opening, and two anti-friction rolls to engage the flat sides of said shaft, and two anti-friction rolls to engage with the spiral slots in the cylinder, and a spring inclosed in said cylinder and arranged to press upon said collar and expand and contract in directions at right angles to the plane of movement of the door-pressing lever or arm, substantially as described.

2. A combined door spring and check containing the following elements, viz: a cylinder closed at both ends and having cut through opposite sides of its periphery two spiral slots, each having near one end thereof a section made of finer pitch and another section of quicker pitch than the main portion thereof, a shaft mounted in bearings in the heads of said cylinder, a collar fitted upon said shaft so as to be movable endwise thereon and revolve therewith, and having mounted upon suitable bearings upon its periphery two anti-friction rolls which engage with and move in said spiral slots, a spiral spring surrounding said shaft between said collar and one head of the cylinder, and a lever or arm rigidly secured by one of its ends to said shaft and arranged to press upon the door by its other end, substantially as described.

3. In combination with the cylinder A, shaft B, collar C, and spring E, the lever or arm F F', made in two parts, whereby its length is rendered adjustable, substantially as described.

4. In combination with the spring-actuated lever or arm F F', the anti-friction roll h', and the lug g, mounted upon said lever, and the rod G, mounted upon the door and co-operating with said roll and lug to guide the movable end of said lever, substantially as described.

329,033. CRIMPING-MACHINE FOR BOOTS AND SHOES. John W. D. Fifield and William H. Holt, North Brookfield, Mass. Filed Apr. 3, 1885. (No model.)



Claim.—1. In a crimping-machine, a form-plate provided with slides or blocks a a^2, and the auxiliary jaw provided with cam-slots and arms to support the said jaw, the said auxiliary jaw having co-operating with it the main jaw provided with levers, the said levers actuating the leg and foot dogs to grasp the upper or vamp between the dogs and the said blocks or slides, to operate substantially as described.

2. In a crimping-machine, a form-plate cut away and provided with a slide or block, a', the said block having a pivoted catch to hold the slide or block in place, substantially as described.

3. A crimping-machine containing the following instrumentalities, viz: a form-plate provided with a block or slide, a', two arms, C, two auxiliary jaws pivoted thereon and provided each with a cam-slot, b^2, and two main jaws having attached levers d, and the slides moved thereby, having mounted upon them the corner-engaging dogs, to operate substantially as described.

4. In a crimping-machine, the auxiliary jaws provided with the pits b^9, combined with the main jaws, and the clamping-plates provided with the projections or rolls to enter the said pits and permit the clamping-plates to retire from their forward position flush with the faces of the main jaws, substantially as described.

5. The auxiliary jaws provided with notches or projections, as at a^6, and the hooks b^{10} b^{12} and the main jaw provided with the pivoted catches, combined with the form-plates and pins or projections to release the said catches, and by pressure against them insure the descent of the main jaw within the auxiliary jaw, substantially as described.

6. The auxiliary jaw provided with the toothed plate c and the guide b^{13}, and the movable members c' of the corner-guide, having a shank extended into the said guide, combined with the lever c^3 and rock-shaft, and means, substantially as described, to operate it to lift the movable member of the said corner-guide, substantially as described.

7. The auxiliary jaw provided with the toothed plate c and the guide b^{13}, and the movable members c' of the corner-guide, having a shank extended into the said guide, combined with the weighted lever to pull the movable member of the corner-guide down upon the fixed member c, to operate substantially as described.

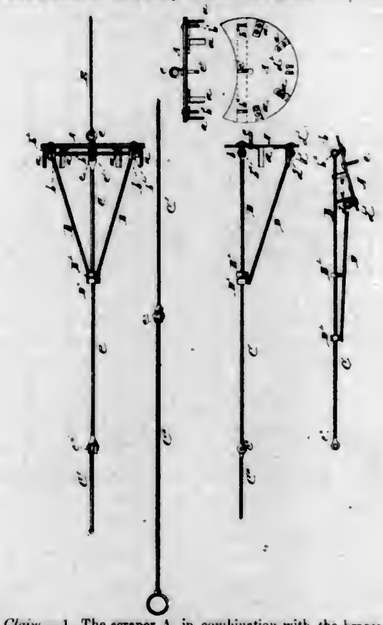
8. The jaw B' and its attached fixed member c of the corner-guide, and the guide b^{13}, provided with the irregular slot 33, combined with the movable member c' of the corner-guide and its shank, provided with the pin 32, to enter the slot 33 and turn the member c' aside, substantially as described.

9. The auxiliary jaw, slotted at b^3, and the independently-movable main jaw provided with the pin or stud, combined with the lever 25 and the weight thereon, to raise the main jaw, substantially as described.

10. The auxiliary jaw provided with depressions with a bridge between, and the main jaw and its pivoted levers, having pivoted dogs provided with projections 20, to enter the said recesses and ride upon the said bridges, substantially as described.

11. In a crimping-machine, two endless chains, A^7 A^8, parallel each with the other, two shafts, chain-wheels thereon to move the said chains in unison, and form-holders attached to the said chains in pairs, and form-plates attached at each end to the said form-holders, leaving the longitudinal centers of the said plates parallel with the said shafts, combined with two arms, C, and crimping-jaws mounted thereon and extended across the machine parallel with the shafts which drive the said chains, the combination being and operating substantially as described.

329,034. SELF-ADJUSTING SEWER-SCRAPER. Michael Fitzsimons, Lake, Ill. Filed July 28, 1885. (No model.)



Claim.—1. The scraper A, in combination with the braces B, rod C, and movable brace D, substantially as and for the purpose specified.

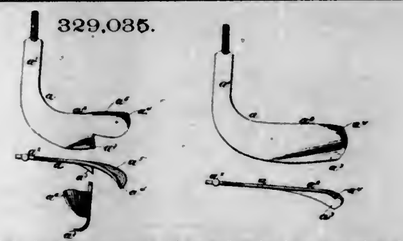
2. The scraper A, provided with the guards a, in combination with the braces B, rod C, and movable brace D, substantially as and for the purpose specified.

329,035. HARROW-TOOTH. John C. Forbis, Ashland, Mo. Filed Aug. 24, 1885. (No model.)

Claim.—1. A harrow-tooth having its forward end bent upward, and provided with means for securing it to a beam, its rearwardly-extended wing being arranged in an approximately-horizontal position, the lower rear end of said wing being bent laterally, and its upper rear corner curved to form a lip, which extends in the same lateral direction as the lower bent portion of the wing, substantially as and for the purposes set forth.

2. A harrow-tooth having its forward end bent upward, and provided with means for attaching it to the harrow-frame, its rearwardly-extended wing being arranged with its under edge in an approximately-horizontal position, the lower rear edge of said wing being bent laterally, and having an extension from the upper portion of the rear end, the said extension being provided on its upper corner with a curved lip bent over in the same direction as the lower bent portion on the under edge of the rear wing, substantially as and for the purposes set forth.

329,035.



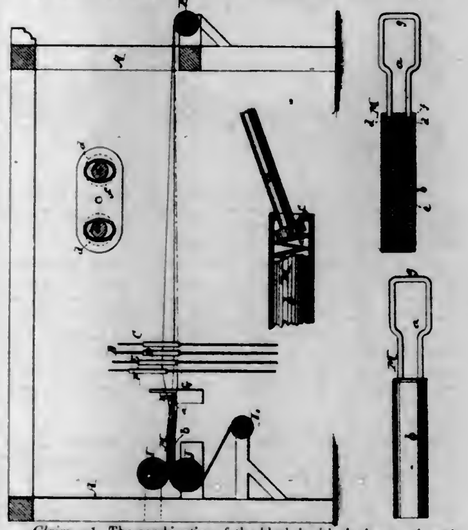
329,036. GRAIN-DRILL FLUKE. Philip M. Gundlach, Belleville, Ill. Filed Feb. 13, 1882. (No model.)



Claim.—1. A fluke for grain-drills, formed wholly of cast-iron, thickened at its point of greatest wear, and having its point portion chilled during the process of casting.

2. The chilled point C of a fluke for grain-drills, having its chill gradually decreasing toward the main body of the fluke, as described, and for the purpose set forth.

329,037. LOOM-TEMPLE FOR TUBULAR FABRICS. Wm. Hanse, Brooklyn, N. Y., assignor to Joseph T. Perkins, same place. Filed Nov. 15, 1884. (No model.)



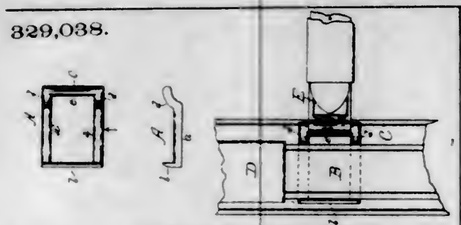
Claim.—1. The combination of the block b with the loop a, pivoted thereto, and with the springs therein contained, all arranged to constitute a compressible temple for looms to weave tubular fabrics around the same, as specified.

2. The combination of the compressible temple M with the abutting rollers I J of the loom, against which said temple is placed, substantially as herein shown and described.

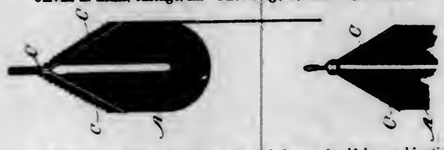
329,038. HARNESS-LOOP. Leander A. Hastings, Worcester, Mass. Filed July 27, 1885. (No model.)

Claim.—A harness-loop consisting of an open rectangular frame having the front and rear bars raised above the level of the side bars, in order that a strap may be received in the space between the former and above the latter, and sewed through the opening within the frame to another strap below the latter, substantially as set forth.

329,038.



329,039. PAPER PACKAGE FOR TOILET AND OTHER PURPOSES. Oliver H. Hicks, Chicago, Ill. Filed Aug. 20, 1885. (No model.)



Claim.—1. A package of paper doubled upon itself, in combination with a strip secured practically throughout its whole length to the edge or margin of the package at each end thereof, whereby the separate sheets are held in place, and means, substantially as described, for securing the package in its doubled position.

2. A package of paper doubled upon itself, in combination with a re-enforcing strip of flexible material passing across the line of junction of the meeting ends of the package, and secured substantially throughout its whole length to the ends of the package, as set forth.

3. The combination of the package of paper A, the stiffening-piece B, over which the package is doubled, and the re-enforcing strip C, passing through an aperture in the stiffening-piece and secured by means of an adhesive substance substantially throughout its whole length to the ends of the package, as set forth.

329,040. HARROW. Albert Hershberger, La Crosse, Wis. Filed July 11, 1885. (No model.)

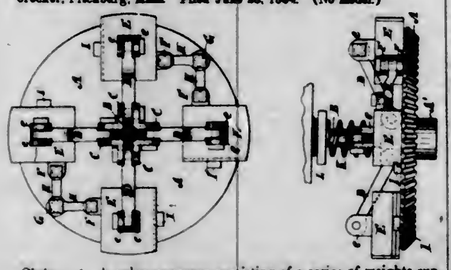


Claim.—1. As an improvement in harrows, a casting, F, adjustably secured to the beam, and provided with notches which engage the side links and secure the teeth in a vertical or in a slanting position toward or from the draft, substantially as described.

2. In a harrow, the beams A and side links, D, in combination with a casting bolted to and partially encircling the end of the harrow-beam, and a notched casting adjustably secured to the beam, whereby the teeth are adjusted to different positions, substantially as described.

3. In a harrow, the beam and the side links, in combination with a casting, B, partially inclosing the end of the beam, and provided with an upwardly-extending flange and double-inclined surfaces *d d'*, and a notched casting adjustably secured to the beam, substantially as herein described.

329,041. VALVE-GOVERNOR. Horace F. Hodgin, Boston, assignor to Charles F. Payne, Groveland, and George H. Spencer and Charles T Crocker, Fitchburg, Mass. Filed June 23, 1884. (No model.)

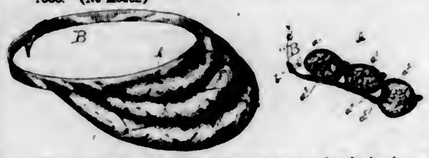


Claim.—1. A valve-governor consisting of a series of weights supported upon a rotating disk and capable of a radial movement, each weight being connected by a single separate link to a central valve-rod adapted to move longitudinally, so that the said links will form a toggle-joint at their union with the valve-rod, substantially as specified.

2. In a valve-governor, a series of weights arranged radially upon a revolving disk and connected to a central valve-spindle by means of links which form toggle-joints at their junction with the said valve-spindle, the said weights being maintained in position by means of jointed arms, so as to allow them to move radially when the centrifugal force exceeds the resistance of a spring acting on the toggle-joints to draw the weights toward the valve-stem, substantially as set forth.

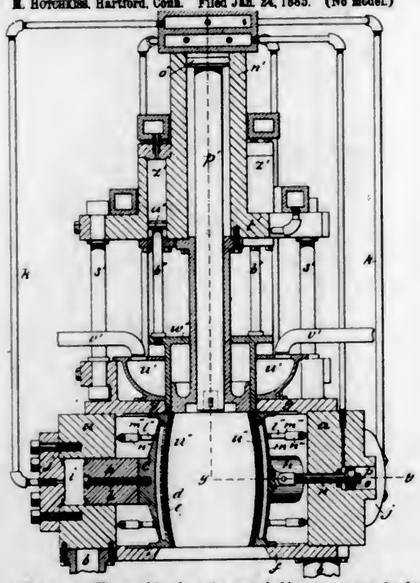
3. The combination of the disk A, the weights E E, links D D, ears or lugs C C, *e e*, and F F, links H H, studs G G, rod or spindle B and spring K, substantially as and for the purpose set forth.

329,042. BUSTLE. Emma E. Hodson, Chicago, Ill. Filed Apr. 28, 1885. (No model.)



Claim.—As a new article of manufacture, a bustle having a base extending underneath a series of rolls separately attached thereto by means of flaps on said rolls, with the ends of said rolls in the same plane, or nearly so, and covered or bound into a belt, together with said base, all combined substantially as described, and for the purpose set forth.

329,043. MANUFACTURE OF BARREL-BODIES FROM PULP. S. M. Hotchkiss, Hartford, Conn. Filed Jan. 24, 1885. (No model.)

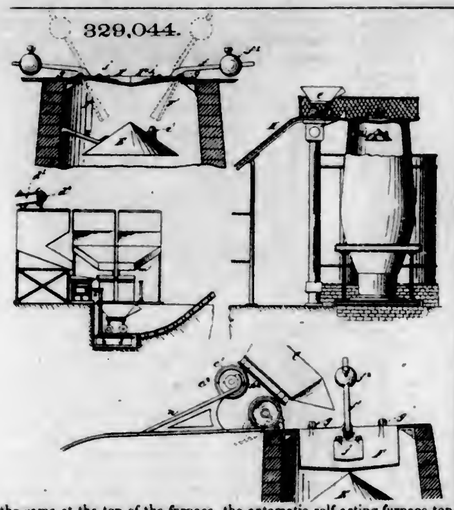


Claim.—1. The combination of external side compressors for forming and compressing pulp, also chambered by heat-ducts, with a core for forming the interior, also chambered by heat-ducts, substantially as described, and for the purposes set forth.

2. The process of forming and drying articles of pulp, which consists in forming the pulp and expressing the water thereof at one operation and in one machine, and then in the same machine applying heat to the surfaces of the article still held under pressure, substantially as described, and for the purposes set forth.

329,044. APPARATUS FOR CHARGING BLAST AND OTHER SHAFT FURNACES. Charles S. Hurd, New York, N. Y. Filed Dec. 22, 1884. (No model.)

Claim.—1. In an apparatus for charging blast-furnaces, the combination, substantially as hereinbefore described, of the series of charging-bins B' B^2 B^3, &c., provided with the tipping scales b' b^2 b^3, &c., placed in front thereof, the hoist H, terminating in the center of the group of bins, provided with the platform-scales *s* and the charging-car C, means, substantially as described, for hoisting said car to and tipping the same at the top of the furnace, the automatic self-acting furnace-top F F, provided with the explosion-ports *j j*, and the stationary distributing-cone E in the furnace-shaft, and means for supporting the same, substantially as described.



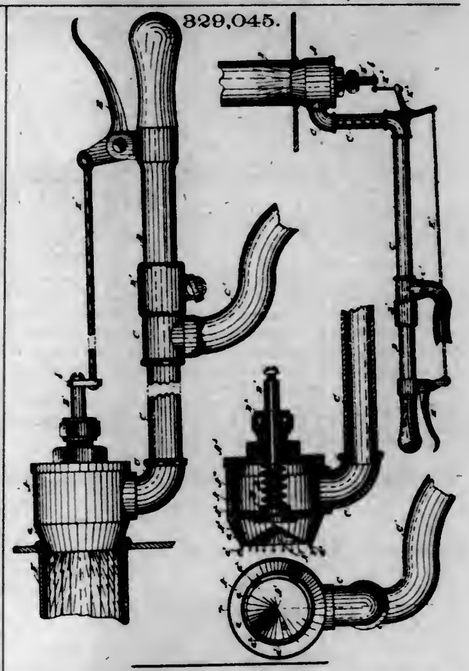
2. In an apparatus for charging blast-furnaces, the combination, substantially as hereinbefore described, of the series of charging-bins B' B^2 B^3, &c., provided with the tipping scales b' b^2 b^3, &c., placed in front thereof, the hoist H, terminating in the center of the group of bins, provided with the platform-scales *s* and the charging-car C, means, substantially as described, for hoisting said car to and tipping the same at the top of the furnace, the automatic self-acting furnace-top F F, provided with the explosion-ports *j j*, the stationary bell-shaped hopper and the distributing-cone E in the furnace-shaft, and means for supporting the same, substantially as described.

3. In an apparatus for charging blast-furnaces, the combination, as hereinbefore substantially set forth, of a stationary distributing bell-cone placed in and near the top of the furnace-shaft, means, substantially as described, for supporting the same, and a concave furnace-top consisting of two doors arranged to open into the furnace upon receiving upon them the weight of the charge, and to discharge the same upon the distributing-cone and to close automatically.

4. In an apparatus for charging blast-furnaces, the combination, substantially as hereinbefore described, of the inclined hoist H, the charging-car C, and the platform-scales *s*, with the series of charging-bins B' B^2 B^3, &c., provided with the tipping scales b' b^2 b^3, &c., placed in front thereof, arranged radially around the bottom of the hoist, so that the same shall discharge directly into said car, and means, substantially as described, for supplying and feeding said bins.

5. In an apparatus for charging blast-furnaces, the combination, substantially as hereinbefore described, of the series of charging-bins B' B^2 B^3, &c., provided with the tipping scales b' b^2 b^3, &c., placed in front thereof, the series of pan-conveyers d' d^2 d^3, for supplying said charging-bins, the hoist H, terminating in the center of the group of bins, provided with the platform scales *s* and the charging-car C, means, substantially as described, for hoisting the said car to and tipping the same at the top of the furnace, the automatic self-acting furnace-top F F, provided with the explosion-ports *j j*, and the stationary distributing-cone E in the furnace-shaft, and means for supporting the same, substantially as described.

329,045. FLUE-CLEANER. John A. Hurley, Erie, Pa. Filed June 9, 1885. (No model.)

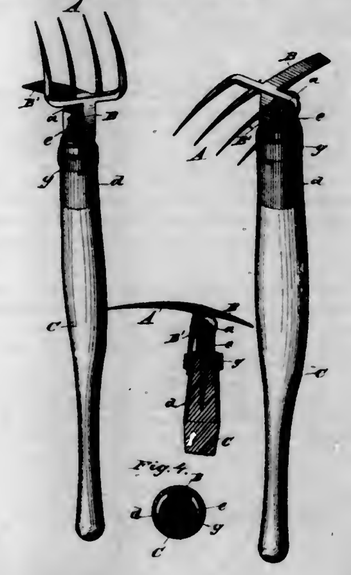


Claim.—1. In a flue-cleaner, substantially as shown, the combination of a nozzle, a shut-off valve operating in said nozzle and having an outward-extending stem, a steam-supply pipe connecting with a flexible hose, a handle connected with said steam-pipe, and a hand grip-lever on said handle, which is operatively connected with said valve-stem, substantially as and for the purposes mentioned.

2. In a flue-cleaner, substantially as shown, the nozzle-shell A, having conical face *a*, annular steam-passage *a'*, chambers A^4 and A^5, with connecting-passage, and steam-supply entrance into the chamber A^4, in combination with the valve B, with outward-extending stem B', the steam-supply pipe C, flexible hose C', handle D, hand grip-lever E, and connecting-rod E', connecting the said lever E with the valve-stem B'.

3. In a flue-cleaner, substantially as shown, the combination of a steam-nozzle, a shut-off valve within said nozzle, having a protruding stem, a handle connected with said nozzle, and a hand grip-lever on said handle, which is operatively connected with said valve-stem.

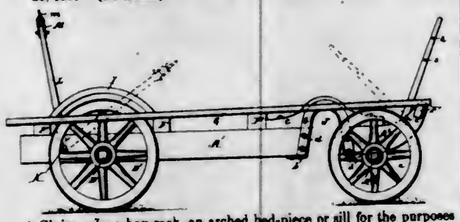
329,046. POTATO OR MANURE FORK. Melvin Jinkin, Conesus Centre, N. Y. Filed Mar. 19, 1885. (No model.)



Claim.—1. As a new article of manufacture, the within-described farm or stable implement, consisting of handle C, ring *e*, and fork A, said fork being formed integral with two extensions, B B', either of said extensions adapted to serve as a hoe whether the fork is in line or at right angles to the handle, all as specified.

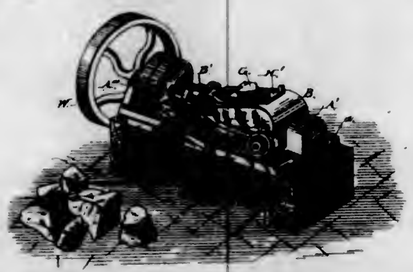
2. The combination of the handle C, ring *g*, and the shank *e*, driven into the ferruled end of the handle and having its outer end bifurcated, with the fork A, having the two hoe-points B B' made in one piece with it and provided with the extension *a*, which is pivoted in the bifurcation of the shank *e*, substantially as specified.

329,047. HAY-RACK. Frank L. Johns, Clay City, Ind., assignor of two-thirds to J. H. Medrell and J. P. Bradford, same place. Filed July 25, 1885. (No model.)



Claim.—In a hay-rack, an arched bed-piece or sill for the purposes described, consisting of parts A' A^2, the latter having an upward curved forward end, the adjacent ends of the two parts being at a distance apart, an arched block, *c*, uniting the parts, inverted-U-shaped bands *b*, bolted on either side of and extended beyond the top of the parts of the sill, to prevent lateral displacement of the block and define the inner contour of the arch, and the metal piece *d*, lining the arch formed between the parts A' A^2, and provided with flanges *b'*, extending beneath the parts, by which it is secured in place, all combined, arranged, and operating substantially as shown and described.

329,048. ROCK-CRUSHER. Evan W. Jones, Portland, Oreg. Filed Mar. 12, 1885. (No model.)

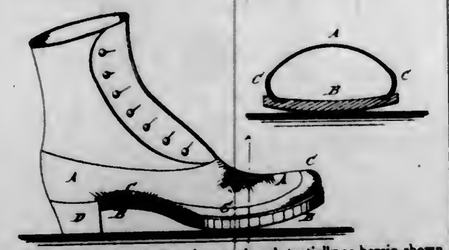


Claim.—1. In a crushing-machine, the bed-plate A, provided with bearing-blocks A', A'', and A''', in combination with an angular-faced die, G, a bolt, D, a bearing-block, F, a lever, B, fulcrumed upon said bolt and provided with die H', the rollers H, and a crank-shaft for imparting a rocking movement to the lever, substantially as described.

2. In a crushing-machine, the crushing-lever B, provided with the vertical angular-faced die H', straight-faced dies I, and journal-box B', in combination with an angular-faced stationary die, G, the bearings A', A'', and A''', bolt D, and a main shaft formed with a wrist-pin for giving a rocking movement to the lever B, substantially as and for the purpose specified.

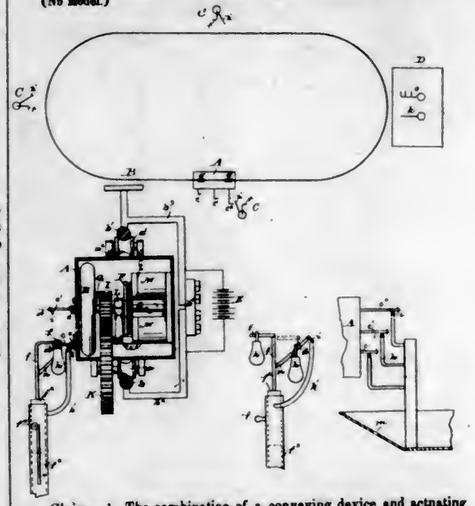
3. In a crushing-machine, the combination, with the bed-plate A, provided with suitable bearing-blocks, the stationary die G, and the shaft E, provided with a wrist-pin, and the pulley P, of the bolt D and the crushing-lever provided with the rollers H and a vertical angular-faced die, substantially as herein described.

329,049. BOOT OR SHOE. Henry W. Joslyn, Titusville, N. J., assignor to himself and George Agnew, same place. Filed Feb. 9, 1885. (No model.)



Claim.—A leather boot or shoe, made substantially as herein shown and described, with a strip of water-proof material secured to the outer side of the upper along the edge of the sole at the forward part of the boot or shoe, as set forth.

329,050. CASH SYSTEM. Thos. M. Kenney, Boston, Mass., assignor, by direct and mesne assignments, to the Kenney Electrical Cash Carrier Company, Portland, Me. Filed Apr. 13, 1883. Renewed Apr. 27, 1885. (No model.)



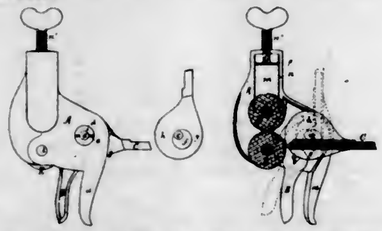
Claim.—1. The combination of a conveying device and actuating mechanism therefor, by which it is moved past the different stations, with a series of carriers on the said conveying device, and delivering and discharging devices whereby the receptacles are transferred to and removed from the said conveying device, substantially as described.

2. The railway forming a part of an electric circuit, and the conveying device or car, combined with an actuating electromotor for the said car and carriers, and delivering and discharging devices whereby the receptacles are transferred to and removed from the said carriers, substially as described.

3. The conveying device and a series of carriers moved thereby in different paths, combined with discharging devices at different stations located to operate the different carriers respectively, whereby the barden of each carrier is discharged at the corresponding station, substantially as described.

4. The conveying device and series of carriers moved thereby in different paths, combined with discharging and delivering devices at different stations located to co-operate with each corresponding carrier, the discharging device operating before the delivering device, whereby the carrier may first discharge the receptacle or burden belonging to the said station and then receive a receptacle or burden from the said station, substantially as described.

329,051. CLOTHES-WRINGER. James L. Kirby, Boston, assignor to the Colby Wringer Company, Highlandville, Mass. Filed July 7, 1884. (No model.)

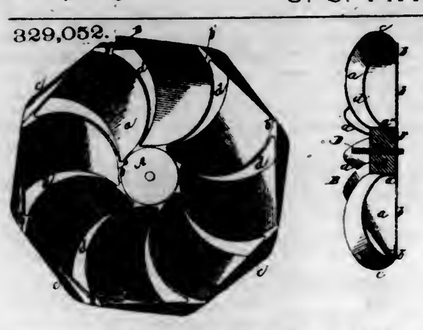


Claim.—The combination of the actuator having lips extending both upward and downward from it at its ends, and also having a cam to each of its journals, as described, with the end portions of the frame provided with stationary jaws and fulcra, as represented, and with jawed levers supported on such fulcra and arranged in rear of the stationary jaws and between the said end portions and lips, such jawed levers having their upper arms against the periphery of the cams, and all being substantially and to operate as set forth.

329,052. VENTILATOR WHEEL OR FAN. Edmund F. Kittor, Chicago, Ill. Filed June 2, 1884. (No model.)

Claim.—1. The ventilator fan or wheel composed of the hub A and the wings *a*, the outer edges of the wings connected with each other and

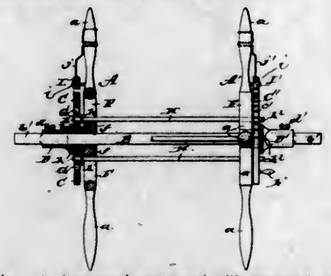
329,052.



describing the periphery of the rear face of the wheel in the plane of said face, and the wings being curved, substantially as shown, from said point to the hub, with the longest curve on the receiving-face and the shortest on the rear face of the wheel, the inner ends of the blades being secured to the hub obliquely to the axis thereof, whereby the wings will project beyond the periphery of the rear face of the wheel, and thereby increase the diameter of the wheel adjacent to such face, substantially as described.

2. The ventilating fan or wheel composed of the hub A and the wings *a*, the outer ends of the wings being connected with each other and describing the periphery of the rear face of the wheel in the plane of said face, and the wings being curved from said point to the hub obliquely to the axis of the hub, and secured to the latter obliquely to its axis, the front edge of one wing overlapping the rear edge of the preceding wing to form a passage, *d*, from the periphery of the wheel to its hub, decreasing in size from the front to the rear face of the wheel, substantially as described.

329,053. ROPE-REEL. William M. Kiser and Charles W. Clink, Winfield, Mich. Filed July 12, 1884. (No model.)



Claim.—1. A rope-reel constructed with connected end frames having radial slots, rotatable disks or plates mounted at the sides of the end frames and provided with cam or eccentric slots, and rods for supporting the rope coil entered into the radial and cam slots of the end frames and disks, respectively, substantially as herein shown and described.

2. The combination, in a rope-reel, of the connected end frames, A A', having radial slots F, the disks C C', having cam-slots G, and the rods H, entering the slots F G, substantially as herein shown and described.

3. The combination, in a rope-reel, of the end frame, A, provided with slots F and fixed to the shaft B, the disk C, having slots G and mounted to turn on a bearing, *b*, of the frame A, the rods H, passed through the slots F G of frame A and provided with the collars k between the frame and the disk, the collar D, fixed to the shaft B outside of the disk C, the loosely-mounted and correspondingly-slotted end frame, A', and rotatable disk C', and the collar D', substantially as shown and described.

4. The combination, with the radially-slotted end frames, A A', and eccentrically-slotted disks C C', of the spring-pawls I I', substantially as shown and described.

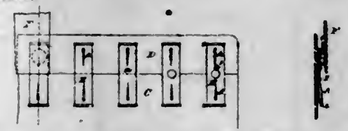
329,054. MERCHANT'S REGISTERING-TAG. Joseph Krauss, Lebanon, Pa. Filed Jan 21, 1885. (No model.)

Claim.—As an improved article of manufacture, a merchant's registering-tag consisting of a strip or sheet of paper or paper-board having spaces indicated thereon for recording the number of yards sold and number of yards remaining in the piece, and figures and fractions thereof adapted to be canceled or otherwise checked to indicate the number of yards sold at one or more sales, substantially as set forth.

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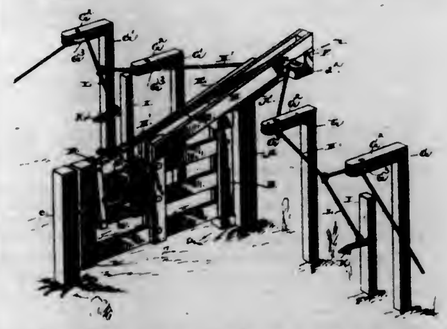


329,055. ELASTIC BUTTON-HOLE ATTACHMENT FOR GARMENTS. Amelia R. Lane, Brooklyn, N. Y. Filed Mar. 18, 1885. (No model.)



Claim.—The combination, with the waistband of a pair of trousers, of the series of double reversible elastic button-hole stripe permanently secured thereto at their centers in a vertical position, as set forth, said stripe being adapted and arranged to engage with buttons upon another garment at one or both extremities at one and the same time, substantially as shown and described.

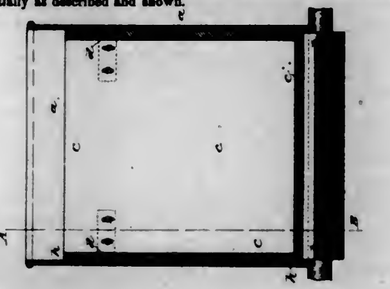
329,056. GATE. Enoch J. Lane, Williams, Cal. Filed June 6, 1885. (No model.)



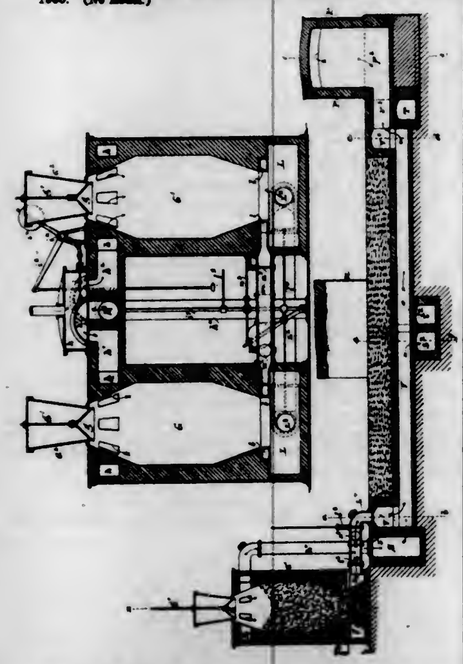
Claim.—The combination, with the post A, having the extended arm A', provided with a roller, and with the post *c*, against which the gate swings, of the gate hinged to post A, having the inclined rearwardly-extending beams E, carrying the bracket F at their outer ends, and the rollers journaled in said bracket, and the spring-actuated latching-bar *a*, the pivoted levers D, engaging with said bar to move the same and unlatch the gate, and the cords or ropes secured to the levers D and passing over the rollers to swing the gate, substantially as described.

329,057. FEED-REGULATOR FOR ROLLER-MILLS, &c. Sidney Lenthall, York, County of York, England. Filed Dec. 3, 1883. (No model.) Patented in England Aug. 13, 1883, No. 3,912.

Claim.—The combination, with the feed-hopper *a* and roller *b*, of the swinging plate or valve *c* within the hopper, and pivoted thereto at *d d*, intermediately between its top and bottom, and a spring connected at the top of the valve for pressing the bottom edge toward the feed-roller, substantially as described and shown.



329,058. GAS-PRODUCER FOR METALLURGIC OPERATIONS. Nils Lilienberg and George S. Dwight, New York, N. Y. Filed Feb. 27 1885. (No model.)



Claim.—1. The generators G G', having flues A A' A^2 A^3, in combination with the steam-dome and the slide-valve within the dome, and means for actuating such valve, substantially as specified.

2. The generators G G', the chambers L beneath the same, and the annular air-pipes l, in combination with the air-pipes n m and valves n' n^2, the gas-pipes L^2 L^3, the valves l^2 l^3, and mechanism for operating the same, substantially as set forth.

3. The combination of the generators G G' and flues A' A^2 A^3 with the steam-supply and valve k', the air-pipes n l, the chambers L beneath the generators, the gas-pipes L^2 L^3, the air and gas valves, and mechanism for actuating the same, substantially as set forth.

4. The combination, with two adjacent generators and mechanism, substantially as specified, for admitting steam and air alternately, of a furnace or hearth for metallurgic operations, and connections for conveying the gases from the generators, and adjacent flues for heating the atmospheric air in its passage to the furnace, so that the gas and heated air commingle and burn at a central point over the hearth, and flues for conveying away the products of combustion from the furnace, substantially as specified.

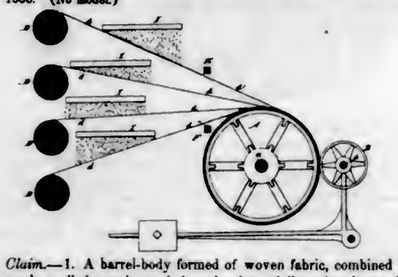
5. The combination, with two adjacent generators for alternately producing a heating-gas by steam passed through incandescent fuel, of a furnace for metallurgic operations, flues for conveying the gas from either of the generators to the furnace, and contiguous flues through which air passes to the furnace, and contiguous flues through which the products of combustion pass for heating the gases and air by the waste heat, substantially as set forth.

6. The combination, with two generators, and mechanism, substantially as specified, for operating the same alternately, of a furnace for metallurgic operations, the flues s s' for the waste heat from the generators, the flues t t' for the waste heat from the furnace, a chimney, and the flues V V' for gas, and the flues U U^2 for air, the same being contiguous to the flues through which the products of combustion pass, so that the air and gas reach the metallurgic furnace in a highly-heated condition, substantially as specified.

7. The adjacent generators G G', having flues A, and the flues A' A^2, escape-flue A^3, and means for supplying steam and heating the generators alternately for the production of a heating-gas, in combination with flues for the waste products of combustion, adjacent flues for air and gas, the flues P' P^2 P^3 P^4, the deflector Q, and the hearth O, for metallurgic operations, there being an opening beneath the deflector and over the hearth, at which point the gas and air commingle and burn, substantially as specified.

8. In an apparatus for producing gas for metallurgic operations, the combination of two adjacent gas-generators, flues A' A^2 A^3, for the products of combustion, and a valve for the admission of steam, air-pipes, and pipes for conveying away the gases, and valves for the respective pipes, and flues by which the generators are alternately heated up and gas produced, and a furnace or hearth for metallurgic operations, and air and gas flues leading from the generators to the furnace, substantially as specified, whereby a heating-gas is produced nearly continuously, and supplied, together with heated air, to the metallurgic furnace, substantially as specified.

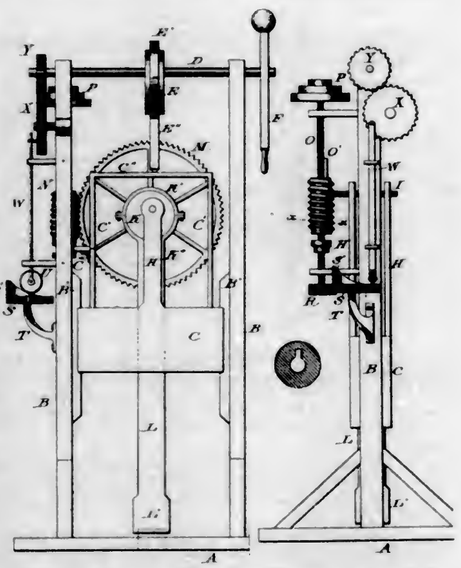
329,059. MANUFACTURE OF BARRELS. George S. Long, Hartford, Conn., assignor to George W. Williams, same place. Filed Jan. 23, 1885. (No model.)



Claim.—1. A barrel-body formed of woven fabric, combined with paper-pulp applied together and shaped, substantially as herein specified.

2. A fabric of pulp or paper with cotton, jute, or other staple combined, in layers or otherwise, so as to form a barrel-body or analogous extended ring, as herein specified.

329,060. POTTERY-PRESS. Joseph S. H. Lovett, Trenton, N. J. Filed Mar. 7, 1885. (No model.)



Claim.—1. The head-block C, with standards H, in combination with the shaft I, provided with the eccentric K' and plunger L, substantially as shown and described.

2. The head-block C, with standards C' and cross-piece C'', in combination with the eccentric E, arranged and combined substantially as shown and described.

3. The head-block C, with its standards H H and C' C', in combination with the eccentric K, the plunger L, connected with such eccentric, and the eccentric E, connected with the standards C' C', all substantially as shown and described.

4. The block C, carrying the shaft I, eccentric K, and plunger L, connected therewith, and gear-wheel M, in combination with the endless screw N and shaft O, substantially as shown and described.

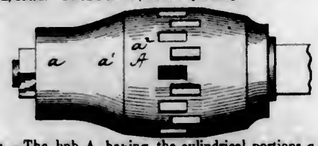
5. The block C, carrying the shaft I, eccentric K, and plunger L, connected therewith, and gear-wheel M, in combination with the eccentric E and connecting mechanism, and shaft D, and balance-lever F, substantially as shown and described.

6. The shaft O, provided with the feather O', and carrying the screw N, in combination with the gear-wheel R and S, cam S', arm W, gear-wheels X and Y, and shaft D, substantially as shown and described.

7. The shaft O, provided with pulleys P, carrying the screw N and having the gear-wheel R, in combination with the wheel S, cam S', arm W, provided with wheel U, wheels X and Y, and shaft D, and with the gear-wheel M, shaft I, eccentric K, collar K', collar-arm K'', and plunger L.

8. The shaft O, provided with pulleys P, carrying the screw N and having the gear-wheel R, in combination with the wheel S, cam S', arm W, provided with wheel U, wheels X and Y, and shaft D, carrying the eccentric E, connected by collar E' and collar-arm E'' with cross-piece C'', and gear-wheel M, shaft I, eccentric K, collar K', collar-arm K'', and plunger L, all substantially as shown and described.

329,061. HUB FOR VEHICLE-WHEELS. William G. Mercer, Burlington, Iowa. Filed Jan. 16, 1885. (Model.)



Claim.—The hub A, having the cylindrical portions a and a^2 and conical portion a', in combination with the sleeve B, having cylindrical portions b and c and conical portion f, the latter having corrugations on its inner face, as set forth.

329,062. HARVESTER-BUTTER AND APRON BELT OR CARRIER. Lewis Miller, Akron, Ohio. Filed July 5, 1884. (No model.)



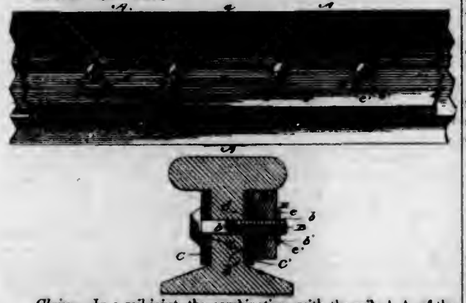
Claim.—1. The endless butter or carrier apron, of india-rubber or rubber-surfaced fabric, in combination with transverse ribs or lugs of similar material, formed upon or applied to the surface thereof, substantially as and for the purpose described.

2. The combination, with the endless butter or carrier belt or apron, of the transverse rubber ribs or lugs formed upon or applied thereto, substantially as described, and the slats secured to said belt or apron in rear of said ribs or lugs, substantially as described.

3. The combination, with the endless belt or apron of rubber or rubber fabric, of the transverse slats and the wedge-shaped or thickened and tapering facings or portions of rubber in front of said slats, substantially as and for the purpose described.

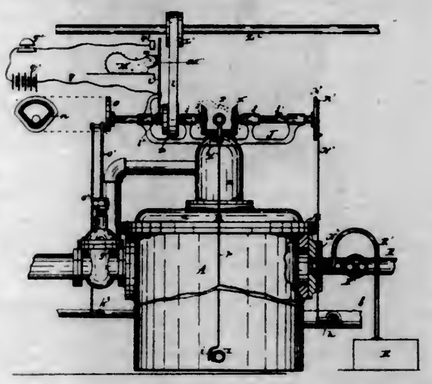
4. The combination, in an endless butter-belt or carrier-apron, of the rubber wearing-surface, the transverse ribs or slats, and the thickened wedge-shaped portions in front of said ribs or slats, substantially as described.

329,063. NUT-LOCK. William C. Mintle, Liberty, Ill. Filed July 27, 1885. (No model.)



Claim.—In a rail-joint, the combination, with the rails A A, of the apertured fish-plates C C', adapted to overlap said rails, a securing-plate, D, having openings d and countersunk portions d' on its inner surface, bolts B, passing through fish and securing plates and the rails, nuts b', fitted on said bolts and housed within the countersunk portion of the plate D, and spring fastening-keys E, passing through an opening in each bolt and bearing against the face of the plate D, all arranged and adapted to serve substantially as and for the purpose herein described.

329,064. FILTERING APPARATUS. George H. Moore, Norwich, Conn. Filed Nov. 25, 1884. (No model.)



Claim.—1. A filtering apparatus consisting of a receptacle or casing provided with a partition or false bottom for supporting the filtering material in a condition to be agitated while being cleansed, and forming an inclosed chamber below the filtering material, a water-supply pipe, and a sediment-discharge pipe communicating with the interior of the receptacle above the filtering material, a water-inlet, and a filtered-water-discharge pipe communicating with the chamber below the filtering material, and a steam pipe or conduit for discharging steam into the filter-receptacle and heating the water therein and agitating the filtering material, substantially as set forth.

2. In a filtering apparatus, a receptacle or casing provided with a partition or false bottom, subdividing the receptacle into an upper and lower chamber, a series of perforated stand-pipes mounted on the upper side of the false bottom and extending through and forming the only passages through the same, and filtering material placed around the perforated stand-pipes, in combination with a water-supply pipe and a sediment-discharge pipe communicating with the filter-receptacle above the false bottom, and a water-inlet and filtered-water-discharge pipe communicating with the chamber below the filtering material, substantially as set forth.

3. In a filtering apparatus, the combination, with the filtering-receptacle, water inlet and outlet pipes connecting therewith, valves for opening and closing the water inlet and outlet pipes, and gearing, substantially as described, connected with a driving-shaft for actuating said valve, of means for throwing the valve-actuating gearing into and out of connection with the driving-shaft and opening and closing said valves at any desired predetermined intervals of time, substantially as set forth.

4. In a filtering apparatus, the combination, with the filtering-receptacle, separate valves for governing the water-supply inlet, filtered-water-discharge outlet, sediment-discharge outlet, steam-inlet, and water-inlet, the latter for admitting water for cleansing the filtering medium, and gearing, substantially as described, connected with a driving-shaft for actuating said valves, of means for throwing the valve-actuating gearing into and out of connection with the driving-shaft and opening and closing all of said valves at any desired predetermined intervals of time, substantially as set forth.

5. In a filtering apparatus, the combination, with a pressure-gage connected with the filtering-receptacle, of an electric alarm, substantially as set forth.

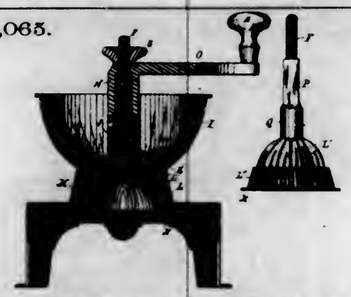
6. In a filtering apparatus, the combination, with the mechanism for automatically actuating the valves for cleansing the filtering material at any predetermined intervals of time, substantially as described, of an electric alarm, substantially as set forth.

329,065. COFFEE-MILL. Edgar H. Morgan and Charles Morgan, Freeport, Ill., assignors to the New Union Manufacturing Company, same place. Filed Nov. 13, 1884. (No model.)

Claim.—1. The herein-described coffee-mill, comprising the frame A, shell L, and hopper I, the braces K and hollow post J, formed integrally with said hopper, the grinding-cone L' L'', suspended within said shell and provided with the undressed or plain annular regulating-flange N, and the cone-shaft formed integrally with said cone and journaled in said hollow post, substantially as shown and described, and for the purpose set forth.

2. The herein-described coffee-mill, comprising the shell L and hopper I, the braces K and hollow post J, the cone suspended within said shell and provided with the undressed or plain annular regulating-flange N, the cone-shaft consisting of the cylindrical portion Q, the square portion P, and the screw F, the socket H, fitting on said square portion of the cone-shaft and resting on the post J, and the crank O,

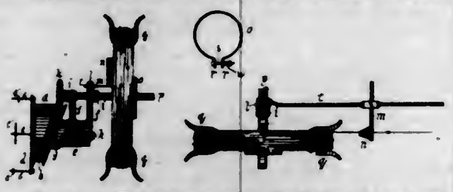
329,065.



formed integrally with said socket, and the nut G, engaging the screw F and adapted to raise and lower the cone, substantially as shown and described, and for the purpose set forth.

3. The combination of the shell L, the grinding-cone suspended within said shell and co-operating therewith, the undressed or plain regulating-flange N, formed on the lower margin of said cone, and means, substantially as shown and described, for supporting and for raising and lowering said cone.

329,066. REEL FOR CHECK-ROW WIRE. George W. Murphey and Frank P. Murphey, Decatur, Ill. Filed Mar. 7, 1885. (No model.)



Claim.—1. The device for evenly distributing wire on a reel, herein set forth, consisting in an oblique gear-wheel adapted to be attached to a planter-wheel and concentric therewith, a pinion on a reel-shaft in mesh with the oblique gear-wheel, and suitable means of imparting the deflecting motion of the gear-wheel to the pinion and reel, all in combination, substantially as set forth.

2. The tension-regulating device for check-row-wire reels, herein set forth, consisting in the combination of friction-wheel *v*, rigidly attached to the reel-shaft, tension-band *o*, secured to the loosely-revolving reel, and adjusting-bolt *s* in lugs *r r* of the tension-band, as set forth.

3. Friction-wheel *v* on shaft *k*, tension-band *o*, secured to reel *q*, bolt *s* in lugs *r r*, and spring *w* on bolt *s*, all in combination, as and for the purpose set forth.

4. The combination, in a device for evenly distributing wire on a reel, herein set forth, consisting in oblique gear-wheel *b*, pinion *k*, shaft *p*, reel-frame *q*, and wire-guide *n*, all constructed and arranged to operate substantially as specified.

329,067. PUMP FOR OIL-CANS, &c. John B. Nelson, Linden, Tex. Filed Apr. 11, 1885. (No model.)



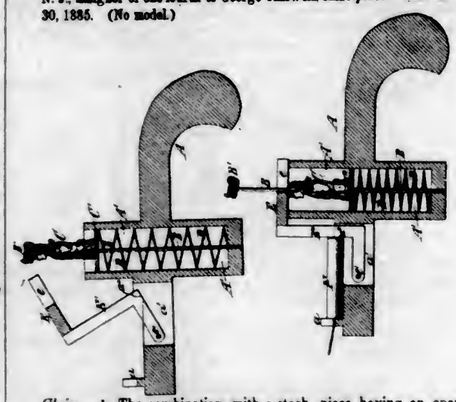
Claim.—1. The combination, with a can or other vessel, of a pump-cylinder provided with springs, the latter secured at their lower ends to said cylinder, and having their upper ends free and adapted to bear against the top of the can, through which they project, substantially as and for the purpose set forth.

2. The combination of a can, and a pump-cylinder provided with springs, the lower ends of the springs being secured to said cylinder and the upper ends thereof bent, as at *e*, and adapted to bear against the under side of the top of the can, and thence turned outwardly, substantially as and for the purpose set forth.

3. The combination of a can having an aperture, a pump fitted therein, springs secured to said pump and bent at their upper ends to bear against the top of a can, and thence bent outwardly from the cylinder, and a flanged sleeve fitted over said cylinder and adapted to rest on the can over the opening therein, substantially as and for the purpose set forth.

4. In a pump for oil-cans and the like, the combination, with the can having an aperture, of a pump comprising a cylinder having ports at its lower end and a spout at its upper end, a piston, springs secured to said cylinder below the edge of the top of the can, their upper bent ends being free and bearing against the top, through which they project, and are thence bent outwardly, and a flanged sleeve fitted over the cylinder and adapted to rest on the top of the can, the whole arranged and combined as and for the purpose set forth.

329,068. FIRE-CRACKER HOLDER. William Noghet, Paterson, N. J., assignor of one-fourth to George Chiswell, same place. Filed Mar. 30, 1885. (No model.)

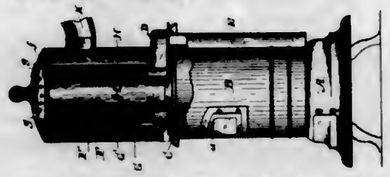


Claim.—1. The combination, with a stock-piece having an open box or cavity and stops or abutments arranged opposite each other on the stock-piece for holding the fire-cracker between them, of a spring-actuated figure within the box or cavity, a lid or cover for the box or cavity, and a lever-support for the lid or cover, extending downward and coincident with the abutment which is adjacent to the box or cavity, and pivoted to the stock-piece forward of the box or cavity, whereby the lid or cover will be held in place above the box until the fire-cracker explodes, substantially as herein described.

2. The combination, with the stock-piece and box A A', having shoulders a a^2 arranged opposite each other on the stock-piece, of the spring-actuated figure C in the box or cavity, the lid or cover E, and the lever-support E', extending downward so as to lie coincident with the shoulder a^2, and having a forwardly-extending portion, pivoted at e' to the stock-piece, substantially as herein described.

3. The combination, with a stock and box, A A', having the shoulders a a^2 arranged opposite each other on the stock, of the guide-rod B, arranged in and extending above the box or cavity and its surmounting cap B', the figure C, movable on the guide-rod, and the spring D, arranged below it, the lid or cover E, and its lever-support E', having a downwardly-extending portion, which lies coincident with the shoulder a^2 and pivoted to the stock, substantially as herein described.

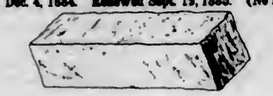
329,069. HEATING-STOVE. John B. Oldershaw, Baltimore, Md. Filed Apr. 13, 1885. (No model.)



Claim.—1. In combination, the fire-box, the inner and outer cylinders communicating therewith, the middle cylinder communicating with the outer air, the removable cover on the inner cylinder, and the damper at the bottom of the outer cylinder, as set forth.

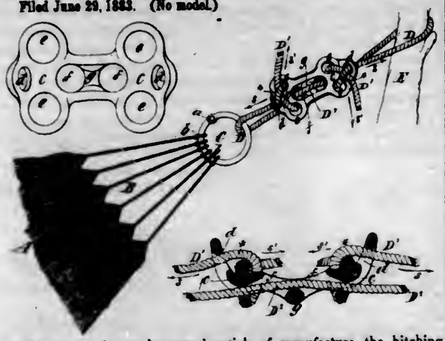
2. In combination, the fire-box, and the three concentric cylinders above the fire-box, the inner and outer ones of which have communication with the fire box and the middle one with the outer air, the outer and inner ones being connected near the top by a flue, the inner having a removable cover and the outer a damper at the bottom, as set forth.

329,070. FIRE-KINDLER. Leonard E. Osborne, Leominster, Mass. Filed Dec. 4, 1884. Renewed Sept. 19, 1885. (No specimens.)



Claim.—A compound, as herein described, for a fire-kindler, prepared from and consisting of hard-pan fire-brick clay, hard white-ash coal, and coarse sand, in the manner and for the purpose specified.

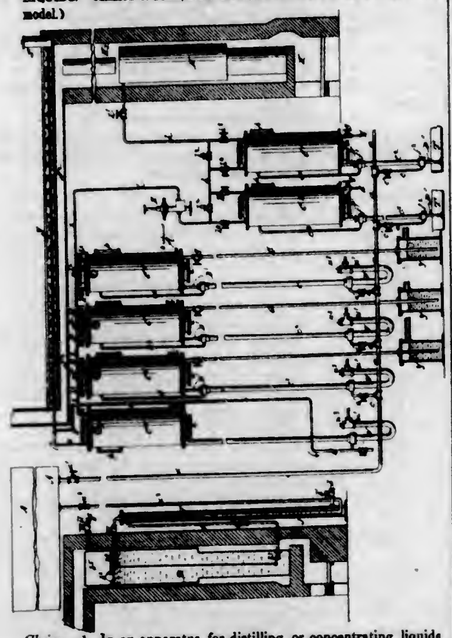
329,071. HITCHING DEVICE. Isaac E. Palmer, Middletown, Conn. Filed June 29, 1883. (No model.)



Claim.—1. As an improved article of manufacture, the hitching device herein described, having at opposite ends necks *c* and eyes *d*, arranged at angles relatively to said necks, whereby provision is afforded for passing each end of a rope through an eye, *d*, thence around a neck, *c*, and between the neck and the portion of rope which is passed through the eye, substantially as set forth.

2. As an improved article of manufacture, the hitching device herein described, having at opposite ends necks *c*, with or without the guard-eyes *e*, and eyes *d*, arranged at angles relatively to said necks, and also having between said necks the opening *f* and depressed cross-bar or keeper *g*, substantially as set forth.

329,072. APPARATUS FOR DISTILLING AND CONCENTRATING LIQUIDS. Cassius C. Peck, New York, N. Y. Filed June 29, 1885. (No model.)



Claim.—1. In an apparatus for distilling or concentrating liquids, substantially such as designated, a condensing-chamber provided with a discharge-pipe for conveying the liquid of condensation therefrom, which pipe passes through a liquid-jacket in such manner as to be free to expand and contract with relation to a stationary valve-seat, substantially in the manner and for the purpose described, in combination with an evaporating-chamber inclosing the said condenser, and connected with the said liquid-jacket in such manner that the latter constitutes a portion of its feed-service through which the condensing-liquid or liquid to be evaporated passes before entering the said evaporating-chamber, the whole arranged substantially in the manner and for the purpose described.

2. In combination with an evaporating-chamber containing a surface-condenser, substantially such as described, the series or coil of elevated pipes connected at one extremity to the upper part of the evaporating-chamber and at the other extremity to the lower part of the evaporating-chamber, and provided with an expansion-chamber, substantially in the manner and for the purpose described.

3. In combination with the evaporating-pan provided with a series or coil of pipes connected with the last evaporating-chamber in the series, the flue situated immediately under the said evaporating-pan, and connected at one end with the boiler-furnace and at the other with the discharge-flue, for the purpose and substantially in the manner described.

4. In an apparatus for distilling or concentrating liquids, substantially such as described, the combination, with a surface-condenser provided with a discharge-pipe which is free to expand and contract under changes in temperature, of a stationary valve-seat or cut-off arranged in relation to the said discharge-pipe in such manner as to limit the area of the aperture through which the liquid of condensation is discharged, substantially in the manner and for the purpose described.

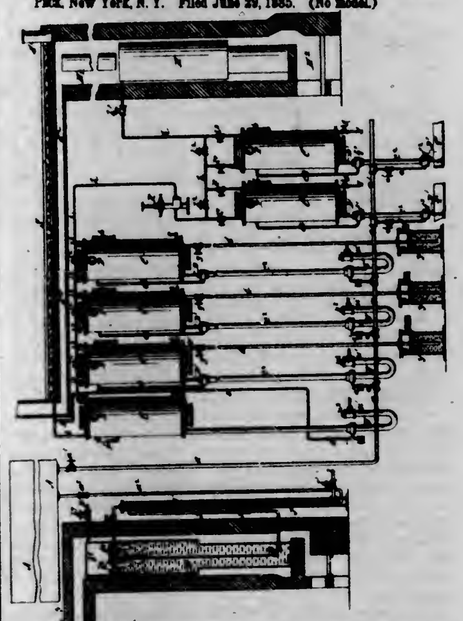
5. In an apparatus for distilling and concentrating liquids, substantially such as described, a low-pressure or vacuum condenser contained in a vaporizing-chamber, a Torricellian tube for effecting the discharge of the liquid of condensation without impairing the low pressure or vacuum, and a liquid-supply jacket surrounding the said Torricellian tube, and connected with the supply of condensing-liquid below and the vaporizing-chamber above, substantially in the manner and for the purpose described.

6. In an apparatus for distilling and concentrating liquids, substantially such as described, the combination, with a series of evaporating and condensing chambers arranged and operating substantially in the manner and for the purpose described, of means for boiling the liquid to be treated, and recooling the same by causing it to impart its excess of heat to the feed-liquid, for the purpose and substantially in the manner described.

7. In an apparatus for distilling and concentrating liquids, substantially such as described, the combination, with a vaporizing-chamber containing a surface-condenser, of a Torricellian discharge-tube provided with a cut-off valve, and connected with the said vaporizing-chamber above, and with a suitable liquid-seal below, for the purpose and substantially in the manner described.

8. In an apparatus for distilling and concentrating liquids, substantially such as described, the combination, with a high-pressure vaporizing-chamber and a low-pressure surface-condenser, of a pressure-regulator interposed in the pipe by which they are connected, substantially in the manner and for the purpose described.

329,073. DISTILLING OR CONCENTRATING LIQUIDS. Cassius C Peck, New York, N. Y. Filed June 29, 1885. (No model.)



Claim.—1. In a continuous system of distillation or evaporation, substantially such as described, the process herein set forth of simultaneously and automatically effecting the heating of the feed condensing-

liquid, the discharge of the liquid of condensation by gravity, and the preservation of the vacuum within the condenser, for the purpose and substantially as described.

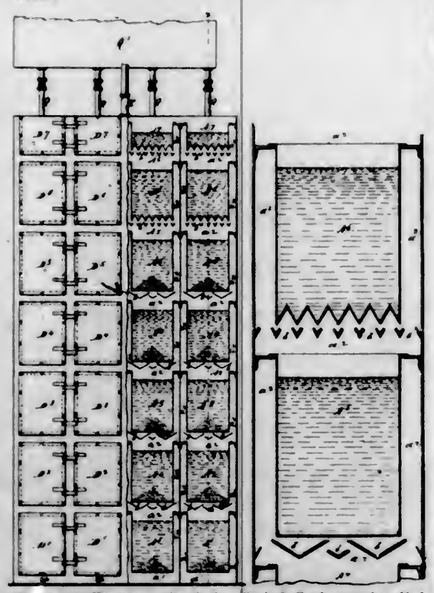
2. In a continuous system of distillation or evaporation, substantially such as described, the process herein described of lowering the temperature of the condensing-liquid by establishing a gravity-circulation of the liquid through the evaporating-chamber and through a coil or series of elevated cooling-pipes, substantially in the manner and for the purposes described.

3. In a continuous system of distillation or evaporation, substantially such as described, the process herein described of utilizing the heat imparted to the condensing-liquid during the process of condensation, consisting in establishing a circulation of the said condensing-liquid through the evaporating-chamber and through a coil or series of elevated pipes contained in an open evaporating-pan, substantially in the manner and for the purpose described.

4. In a continuous system of distillation or evaporation, substantially such as herein designated, the process herein described of preserving the vacuum in the low-pressure condensing and evaporating chambers, consisting in first eliminating the air and gases by heat from the liquid to be treated, and then recooling said liquid by causing it to impart its excess of heat to a fresh supply of such liquid, for the purpose and substantially in the manner described.

5. In combination with a continuous system of distillation or evaporation, substantially such as described, the process herein described of economizing the heat generated in the actuating-boiler furnace, which consists in utilizing the heat of the steam to effect a series of evaporations in separate chambers, and conveying the surplus or remaining heat which is absorbed by the liquid of condensation in the last evaporating-chamber into an open evaporating-pan, under which the products of combustion from the said boiler-furnace are made to pass, substantially in the manner described.

329,074. PROCESS OF DISTILLING AND CONCENTRATING LIQUIDS. Cassius C. Peck, New York, N. Y. Filed Aug. 29, 1885. (No model.)

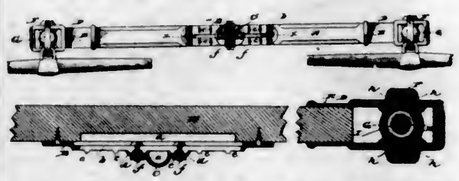


Claim.—1. The process herein described of effecting a series of independent evaporations and condensations of the liquid under treatment at tensions of vapor below the boiling-point of such liquid, under atmospheric pressure and by aid of gravity, consisting in causing the vapor arising from the distillation in one evaporating and condensing chamber to impart its latent heat to the liquid to be distilled in another separate, distinct, and independent evaporating and condensing chamber, the vapor thereby evolved being in turn used to effect the vaporization of another body of liquid contained in a like succeeding chamber, and so on continuously throughout the series, substantially in the manner and for the purpose described.

2. The process herein described of equalizing the amount of condensation effected in a series of separate and independent evaporating and condensing chambers under atmospheric pressure at tensions of vapor below the boiling-point of the liquid under treatment and aided by gravity, substantially as herein described, consisting in proportioning the amount of condensing-surface in each chamber with relation to the temperature to be maintained therein during operation, substantially in the manner and for the purpose described.

3. In combination with the system herein described of effecting a series of separate and independent distillations under atmospheric pressure at tensions of vapor below that of the boiling-point of the liquid under treatment by the aid of gravity, substantially as described, the process herein set forth of utilizing the heat liberated by one condensation to effect the evaporation of the condensing-liquid, consisting in causing the vapor to condense upon the cooler surface of a receptacle containing the condensing-liquid, collecting said liquid of condensation, and causing it to impart its excess of heat to the condensing-liquid, substantially in the manner and for the purpose described.

329,075. DOUBLE-TREE. William C. Peckham, Troy, Ohio. Filed May 14, 1885. (No model.)



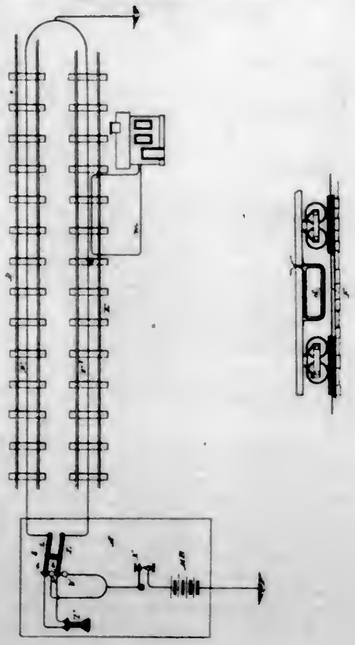
Claim.—1. The combination, with a double-tree, of a slotted plate having a series of ribs on its outer face secured thereto, a plate, C, having grooves to receive said ribs, and an eye adapted to receive a clevis, and bolts or equivalent fastening for securing said casing in place, as set forth.

2. The combination, with a double-tree, of a casting on the end thereof, said casting having bearing-recesses, and a casing having lugs to engage said recesses and carrying a spring-eyebolt, as set forth.

3. The combination, with a double-tree, of a casting comprising the socket, and portion F, having bearing-recesses, of a casing having lugs to engage said recesses, and an eyebolt in said casing, as set forth.

4. The combination, with a double-tree, of a casting comprising a socket, and portion F, having bearing-recesses, as described, of a casing having lugs to engage said recesses, an eyebolt in said casing, a spring on said eyebolt, and a nut to engage the end of said bolt, substantially as set forth.

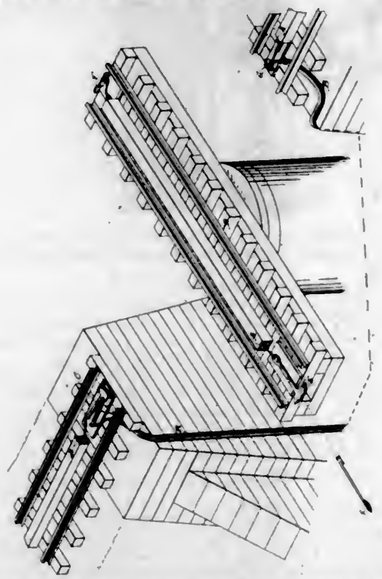
329,076. APPARATUS FOR MAINTAINING ELECTRICAL COMMUNICATION WITH MOVING VEHICLES. Lucius J. Phelps, New York, N. Y. Filed Feb. 20, 1885. (No model.)



Claim.—1. The combination, with the two conductors, one for each track, and grounded, of a receiving and transmitting apparatus at a station and a switch for connecting said conductors to one another through the receiver or to ground through the transmitting apparatus.

2. The combination, with the two conductors F F', substantially parallel to one another, and a ground as a distant point, of a receiver, a switch for connecting the said conductors with one another through the receiver, and a ground at the same station normally, or when the receiver is in use, disconnected from both conductors F F', said ground, with that at the distant point, serving to make the circuit when signals are to be transmitted over a track-conductor and by inductive transfer to an apparatus in inductive proximity thereto.

329,077. APPARATUS FOR MAINTAINING ELECTRICAL COMMUNICATION WITH MOVING VEHICLES. Lucius J. Phelps, New York, N. Y. Filed Feb. 20, 1885. (No model.)



Claim.—1. The combination, substantially as described, of a line-conductor between the rails, a draw-bridge, a branch, B, around the bridge, normally open, and a switch for establishing a circuit through said branch when the bridge is open, so as to disconnect the portion of the circuit located thereupon.

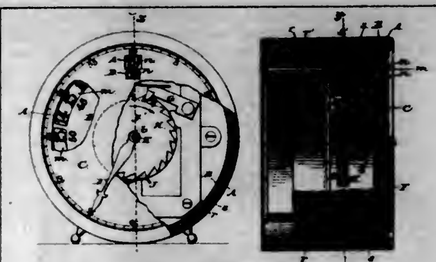
2. The combination, in a system of electrical communication between a moving vehicle and a fixed station, substantially such as described, of an induction line or conductor parallel to the path of the vehicle over said conductor, a draw-bridge over which the circuit is continued in continuous inductive relation to the apparatus upon the vehicle, a branch around said bridge, normally open, and an automatic switch for establishing the circuit through the branch when said circuit is broken by the movement of the bridge to open the same.

3. The combination, substantially as described, of the continuous induction-circuit A, a section or portion of which is located upon the draw-bridge, a cable, B, and a spring-jack switch, one portion of which is upon the bridge and the other upon the bridge-abutment, all arranged as described, so that when the bridge is closed the circuit of the line-conductor A is continued across the bridge, while when the bridge is open the circuit of the conductor A is automatically established through the cable B.

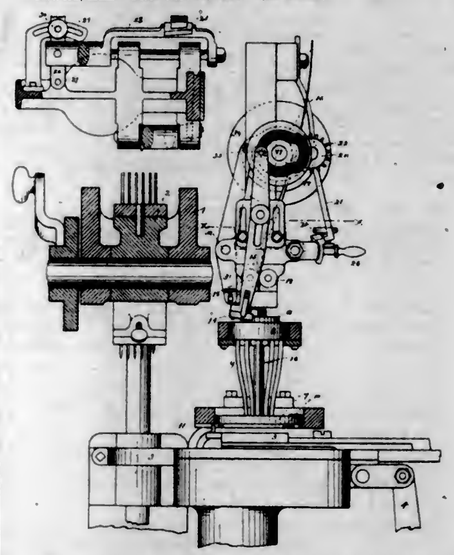
4. The combination, substantially as described, of the line-conductor A, having a section located upon the draw-bridge D, a branch, B, normally disconnected from the circuit A, and a spring-jack switch whose plug is on one side faced with insulated material.

329,078. CLOCK. Henry L. Phillips, New York, N. Y. Filed Feb. 19, 1885. (No model.)

Claim.—The combination, in a clock having a perforated case, with two revolving disks or dials actuated by its movements, the one to make an intermittent movement at each complete revolution of the other, of concentric flanges projecting, respectively, from the rim of each disk, the outer flange being wider than the inner, so that each shall be separately visible through an opening in the case to disclose the figures marked on its periphery, substantially in the manner and for the purpose herein set forth.



329,079. HEEL-NAILING MACHINE. Freeborn F. Raymond, 2d, Newton, Mass. Filed Jan. 13, 1885. (No model.)



Claim.—1. In a heel-nailing machine, the combination of the stationary block A, having the feedway *a*, the stationary block B, having a throat in continuation of the feedway *a*, and the reciprocating pointing and severing cutters C, adapted to be reciprocated between the blocks and across the feedway, all substantially as and for the purposes described.

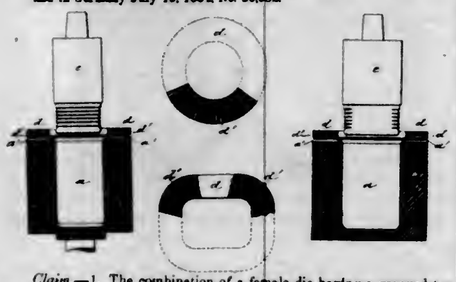
2. The combination, in a nailing-machine, of the stationary block A, having the feedway *a*, the stationary block B, having the throat in continuation of the feedway, the reciprocating pointing and severing cutters C, and a wire-feeding device adapted to feed wire through the feedway *a*, all substantially as and for the purposes described.

3. The combination of the stationary block A, having the feedway *a*, the stationary block B, having a throat in continuation of the feedway, the reciprocating pointing and severing cutters C, and a wire-feeding device adapted to feed the wire to the cutter C, and means for varying the extent or operation of the feeding-device, all substantially as and for the purposes described.

4. The combination of the stationary block A, having the feedway *a*, the stationary block B, having a feedway in continuation of the throat, the reciprocating pointing and severing cutters C, adapted to be moved across the feedway, a wire-feeding device, and a nail receiver and distributer having a series of nail-receiving passages which are successively brought into line with the throat of the machine, all substantially as and for the purposes described.

5. The combination of the stationary block A, having the feedway *a*, the stationary block B, having a throat in continuation of the feedway, the reciprocating pointing and severing cutters C, reciprocated across the feedway, a wire-feeding device, a nail-distributer having a series of passages adapted to be brought successively in line with the throat of the machine for receiving a nail therefrom, a nail-holder connected with said passages and arranged to receive the nails as they are successively made, and to hold them in one group, a reciprocating nail-transfer adapted to receive all the nails simultaneously from the nail-holder and to transfer them simultaneously to the driving devices, and said nail-driving devices, all substantially as and for the purposes described.

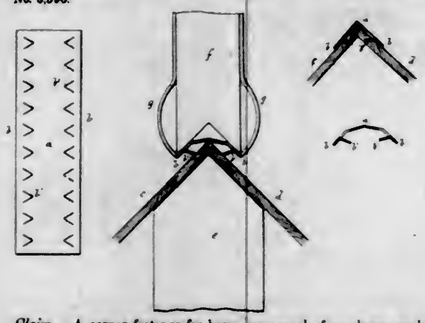
329,080. **DIE FOR MAKING PAPER BOXES.** Carl T. Renus, Dresden, Saxony, Germany, assignor to Jean Scharbel, same place. Filed June 12, 1885. (No model.) Patented in England May 19, 1885, No. 6,153, and in Germany July 15, 1884, No. 30,982.



Claim.—1. The combination of a female die having a grooved top surface, a ring-shaped holder having a grooved under side, and a ribbed male die, substantially as set forth.

2. The combination of a female die having a grooved top surface, a card-board holder having a grooved under side, and a male die having a ribbed lower part and a smooth upper part fitted into the female die, whereby the card-board is drawn down into the female die and pressed into shape and polished at the outer surface by friction, substantially as set forth.

329,081. **CORNER-FASTENER FOR BOXES.** Carl T. Renus, Dresden, Saxony, Germany, assignor of one-half to Jean Scharbel, same place. Filed Aug. 5, 1885. (No model.) Patented in England July 15, 1885, No. 8,590.



Claim.—A corner-fastener for boxes composed of an obtuse-angled metallic strip having bent edges provided with inwardly-projecting teeth, substantially as set forth.

329,082. **ANIMAL-TRAP.** Smith E. Reynolds, San José, Cal. Filed Mar. 28, 1885. (No model.)

Claim.—1. In an animal-trap, a swinging or pivoted platform or tray adapted to receive the earth thrown by the animal, in combination with a pivoted spring-hammer or lock engaging the platform or tray, and tripped by its movement, whereby it is adapted to explode a loaded cartridge, substantially as herein described.

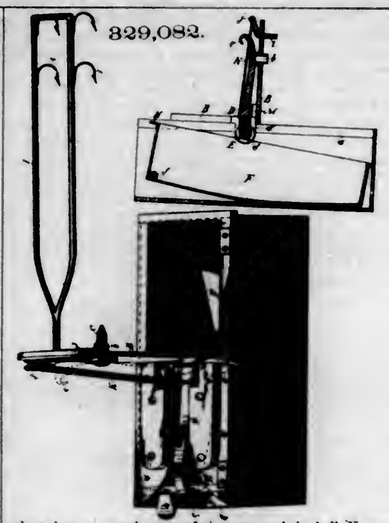
2. In an animal-trap, a swinging or pivoted platform or tray adapted to receive the earth thrown by the animal, a spring-hammer or lock engaging the platform or tray, and tripped by its movement, and a holder containing a projectile adapted to be exploded by the hammer when disengaged from the platform or tray, substantially as herein described.

3. In an animal-trap, the open-top box A and the tray F, pivoted by its rear end in said box, in combination with the swinging spring-hammer D, adapted to engage the rear end of the box, and the standard B, containing a cartridge against which the hammer is adapted to strike, substantially as herein described.

4. In an animal-trap, the open-top box A and the tray F, pivoted by its rear end in said box, in combination with the standard B, adapted to seat a cartridge, and the swinging spring-hammer D, adapted to engage the rear end of the tray and to strike the cartridge when disengaged from said tray, substantially as herein described.

5. In an animal-trap, the box A, having open-top lid *a*, and the standard B on said top in which to seat the cartridge C, in combination with the hammer D, having the shaft *d*, pivoted in top *a*, and a spring, E, and the tray F, within the box, pivoted at its rear end and adapted to engage the hammer, substantially as herein described.

6. In an animal-trap, the box A, having an open top, the standard B, and the grapple I, pivotally mounted on said standard, in combination with the tray F, pivoted in the box, the pivoted spring-hammer D,



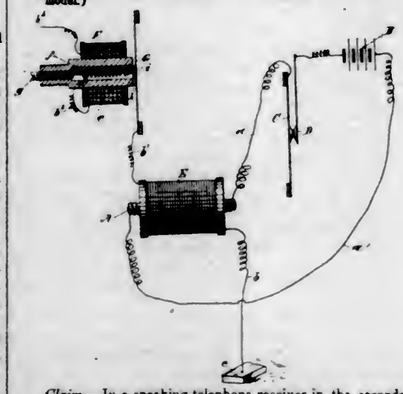
adapted to engage the rear of the tray, and the bail K, secured to the rear of the grapple and embracing the hammer, substantially as herein described.

7. In an animal-trap, the open-top box A, and the tray F, pivoted by its rear end in the box, and having a flange, H, on its rear top edge, in combination with the standard B, in which to seat the cartridge C, and the spring-hammer D, having a hooked top, *e*, adapted to engage the flange H of the tray, substantially as herein described.

8. An animal-trap comprising the open-top box A, the tray F, pivoted therein and having a flange, H, the standard B, secured to the top of the box, the grapple I, pivotally mounted on the standard, the pivoted spring-hammer D, having a hooked top, *e*, and the bail K on the grapple and engaged by the hammer, all substantially as herein described.

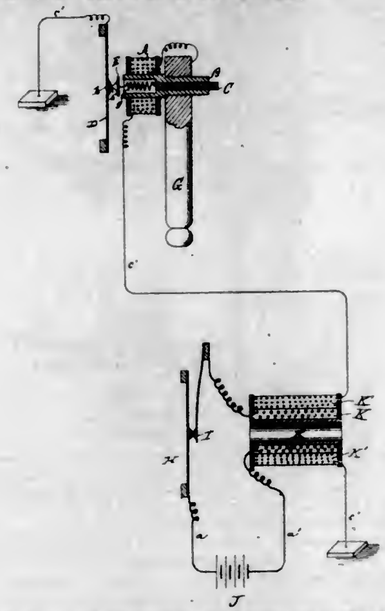
9. An animal-trap comprising the box A, having an open-top lid, *a*, the tray F, pivoted by its rear end in said box, and having a flange, H, and a thumb-piece, *h*, on its rear top edge, the standard B, secured to the top of the box, the cartridge C in the standard, the hammer D, having a shaft, *d*, pivoted in the top of the box, and a hooked top, *e*, adapted to engage the flange H of the tray, and the spring E, by which the hammer is operated, all arranged substantially as herein described.

329,083. **SPEAKING-TELEPHONE RECEIVER.** James H. Robertson, Brooklyn, N. Y. Filed Dec. 17, 1883. Renewed Mar. 20, 1885. (No model.)



Claim.—In a speaking-telephone receiver in the secondary circuit of an induction-coil, in the primary circuit of which is the transmitter, the combination of the magnet and a diaphragm capable of magnetic induction, or carrying a piece of metal capable of magnetic induction, in front of the pole of the magnet and in close proximity thereto, so as to be actuated directly by the magnet, the said secondary circuit being arranged as described, whereby the secondary current passes through an electrode on the diaphragm, and another vibrative electrode in the said circuit in contact with the electrode on the diaphragm, as and for the purpose set forth.

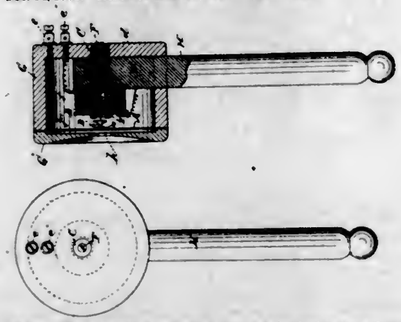
329,084. **TELEPHONE.** James H. Robertson, Brooklyn, N. Y. Filed Feb. 14, 1883. Renewed Mar. 20, 1885. (No model.)



Claim.—1. The combination of the permanent magnet G, the core B in a telephone-receiver comprising the said core, the coil A, diaphragm D, electrode *b* on the said diaphragm, and the electrode *b'* on the armature E in the secondary circuit of an induction-coil, in the primary circuit of which is the transmitter, all arranged as described, whereby the secondary current passes through the said electrodes and the said core is polarized by the said permanent magnet, as and for the purpose specified.

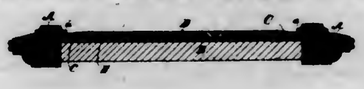
2. In a speaking-telephone, the diaphragm, the actuating-magnet having a hollow core, an armature arranged in front of the pole of said magnet, so as to be actuated thereby, and carrying a contact-point in contact with the diaphragm, and a spring in the said core, arranged as described, to control the contact between said contact-point and the diaphragm, as set forth.

329,085. **TELEPHONE.** James H. Robertson, Brooklyn, N. Y. Filed Feb. 14, 1883. Renewed Mar. 20, 1885. (No model.)



Claim.—The described operative parts of a telephone-receiver and the case, composed of the body G and top G', the handle H being inserted tightly in a hole in the wall of the case, and the core C, which carries the helix B, passing through a hole in the end of the said handle into the base of the said case, all constructed and combined to operate as and for the purpose described.

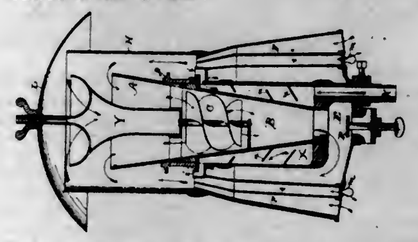
329,086. **TABLE-TOP.** Henry P. Sargent, Oakley, assignor to Kroeger, Sabbert & Co., Cincinnati, Ohio. Filed Aug. 18, 1884. (No model.)



Claim.—1. A top for tables, desks, and similar articles, consisting of an outer frame, a lower bed-plate ornamented or covered with an ornamental material, an upper transparent plate, and an intervening frame separating the transparent plate and the ornamental plate beneath it, substantially as described.

2. In a table-top, the combination, substantially as specified, of the outer frame, A, bed-plate B, sunk below the upper edge of said frame A, with the frame C, arranged around the bed B and against the edges of frame A and separating the bed B and plate D, with the covering E of velvet or other suitable material, and the beveled edged glass plate D, resting upon said frame C and held in place by the overhanging molding *a*.

329,087. **REGENERATIVE GAS-BURNER.** Eilert O. Schartau, Philadelphia, Pa., assignor of one-half to Clanmar P. Hoskins, same place. Filed Dec. 23, 1884. (No model.)

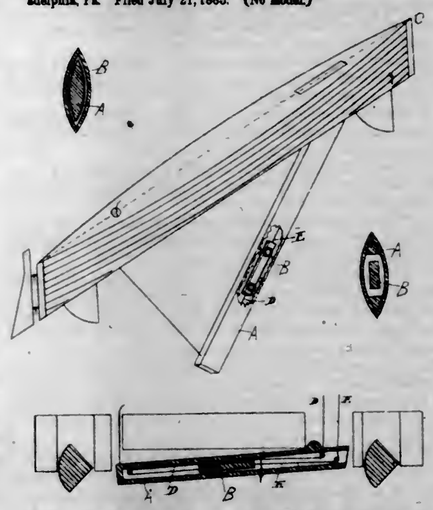


Claim.—1. The combination, in a gas-burner, of the porcelain tube A, the chimney, the gas-chamber X, provided with an inlet, K, and with a circular series of burners, *i*, the annular air-inlet F, the circular flange D, located below the tube A and in the path of gas issuing from the burners *i*, the hood L, the trumpet-mouthed tube Y, the vertically-pivoted screw C, the tube B, below the screw, and the receiver E, below and surrounding the chamber X and provided with outlets between the burners *i*, substantially as shown and described.

2. The combination of a circular series of gas-burners, *i*, a chimney, H, a tube, A, and air-inlet F, a down-tube, B, a receiving-chamber, E, having outlets between the gas-burners, and a vertically-journaled screw, C, within the circle of burners, substantially as shown and described.

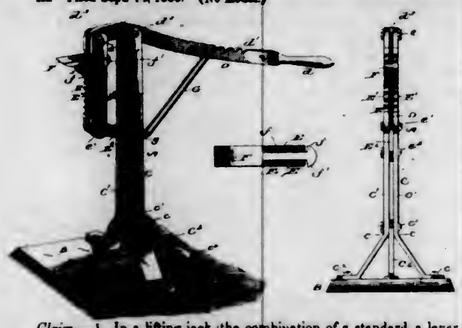
3. The combination of a circular series of gas-burners and a down-tube within the circle, and a broad-leaved screw, C, journaled vertically within the circle of the burners, substantially as shown and described.

329,088. **BALLAST FOR BOATS.** George W. Scheererhorn, Philadelphia, Pa. Filed July 21, 1885. (No model.)



Claim.—In a ballasting device for vessels, the combination of the weighted center-board pivoted at its forward end to the center-board box, the movable ballast shifting from end to end of the weighted center-board, and the ropes D and E, each secured to the movable ballast and passing over pulleys at the ends of the weighted center-board and passing up to the deck, all so connected that as the ropes are hauled upon the movable ballast will be shifted from end to end of the weighted center-board.

329,089. **WAGON-JACK.** Washington I. Schriver, Prophetstown, Ill. Filed Sept. 14, 1885. (No model.)



Claim.—1. In a lifting-jack, the combination of a standard, a lever pivoted thereto, parallel rack-bars pivoted to the lever, a link pivotally connected to the standard and the rack-bars, a bail pivoted to the link and fitting over the lever, and a vertically-adjustable dog mounted on the rack-bars, substantially as described.

2. In a lifting-jack, and in combination with the standard and operating-lever thereof, rack-bars pivotally connected to the lever and standard, and an adjustable dog mounted on the rack-bars and having a shank fitting between the same, and a tooth engaging one of a series of teeth thereof, substantially as described.

3. In a lifting-jack, the combination of the following elements, namely: a base, B, a standard, C, mounted thereon, braces C^3, connected to the base and standard, a lever, D, pivoted to the standard and having teeth d', parallel rack-bars E', pivoted to the lever, a link, E^2, pivoted to the standard and the rack-bars, an adjustable dog, F, having a shank, f, provided with lateral lugs f', and a downwardly-projecting tooth, f^3, and a bail, G, pivoted to an eye of the link E^2, substantially as described.

329,090. **TUNING-FORK.** David W. Sherrove, Springfield, Ohio. Filed Aug. 21, 1885. (Model.)



Claim.—1. The combination, with a tuning-fork provided with graduations on the prongs thereof, of an adjustable bridge between said prongs, said bridge being provided with projecting ends adapted to mark the position of adjustment, substantially as set forth.

2. The combination, with the prongs of a tuning-fork, of a sliding bridge provided with concave ends adapted to form a bearing on each side of said prongs, substantially as set forth.

3. The combination, with the prongs of a tuning-fork, of a sliding bridge between said prongs and backwardly-projecting guides on said bridge, substantially as and for the purpose set forth.

4. The combination, with the prongs of a tuning-fork, of a sliding bridge therein provided with backwardly-projecting guides formed in one piece therewith, substantially as specified.

5. The combination, in a tuning-fork, with the adjustable sliding bridge, of the fork-prongs provided with the enlarged or bell-shaped ends, substantially as and for the purpose set forth.

6. The combination, with a tuning-fork, of a removable handle adapted to be secured to the base of said fork, substantially as specified.

7. The combination, with the fork the prongs of which are formed with enlarged or bell-shaped ends, of an adjustable bridge with concave ends and backwardly-projecting guides, substantially as set forth.

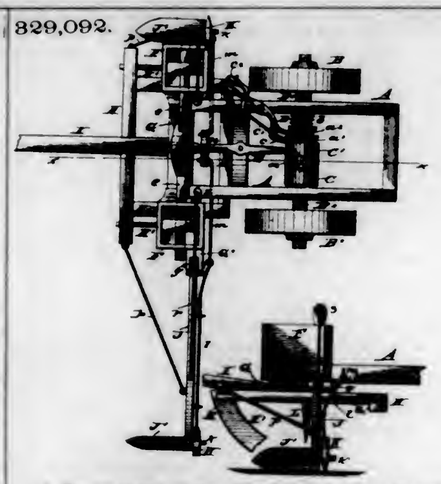
8. The combination, with a fork having graduated prongs, said prongs being provided with enlarged or bell-shaped ends, of an adjustable bridge provided with end projections adapted to extend over the said graduations and mark the position of said bridge, substantially as specified.

9. The combination, with a fork with prongs having enlarged or bell-shaped ends and enlarged base, of a separate or removable handle adapted to be secured in said base and an adjustable bridge in said prongs, substantially as set forth.

329,091. **SELF-CHECKING CORN-PLANTER.** Joshua A. Shaw, Gillespie, Ill. Filed July 23, 1885. (No model.)

Claim.—1. In a corn-planter, the combination, with the vibrating lever which actuates the dropping slides, of a pivoted arm bearing a marker and checker, the actuating-rods l m, linked together and connected to a cross-piece on said lever, and a grooved cam in the clutching-hub C', substantially as described.

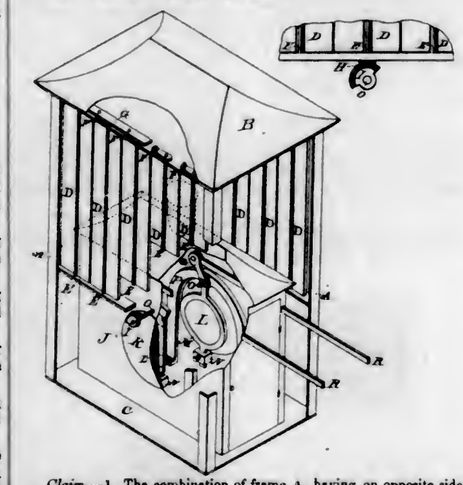
329,092.



2. The combination of the articulating marker-arms, the markers J', the vibrating checkers K, the pulley-standards s on the corn-boxes, and the ropes or chains, all constructed and adapted to operate as described and shown.

3. The combination, in a corn-planter, of an articulating line-marker, a checker, K, pivoted to its heel to vibrate at right angles to the line of draft, and means for vibrating said checker simultaneously with the dropping movements of the seed-slides e e, as shown and described.

329,092. **RAILWAY BLOCK-SIGNAL.** Eli H. Slaybaugh, Alliance, Ohio. Filed Nov. 10, 1884. (No model.)



Claim.—1. The combination of frame A, having on opposite sides pivoted slats D, with frame J, within frame A, and containing on opposite sides swinging glasses L, connected with said slats to move therewith, substantially as described.

2. In a signal, the combination of a series of pivoted slats, a swinging lens or glass connected to said slats to move with them, and a lever for moving said glass, substantially as described.

3. In a signal, the combination of a series of pivoted slats connected together and a pinion connected with one of said slats, a shaft having a segment engaging with said pinion, a glass connected to said shaft to move therewith, and a lever for turning said shaft, substantially as described.

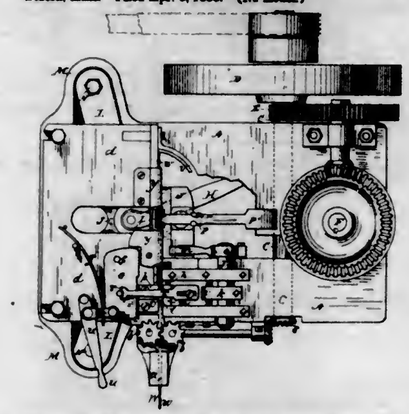
4. The shaft O, provided with the segment I, in combination with the pinion H and the slats O, substantially as and for the purpose specified.

329,093. **UTILIZING CELLULOID, &c., IN THE PRODUCTION OF ENAMELED GOODS OR VENEERING.** John H. Stevens and William H. Woon, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed July 23, 1885. (No specimens.)

Claim.—1. The within-described process of producing enameled goods, which consists in subjecting a sheet of seasoned pyroxyline material and a material suitable to form a backing to a high degree of heat and pressure while in contact with each other, substantially as described.

2. The within-described process of forming and finishing enameled goods, which consists in subjecting a sheet of seasoned pyroxyline material and a material suitable to form a backing to a high degree of heat and pressure, the exposed surface of the pyroxyline material being in contact with a polished surface, substantially as described.

329,094. **MACHINE FOR MAKING SPRINGS.** Charles K. Stimson, Boston, Mass. Filed Apr. 5, 1883. (No model.)



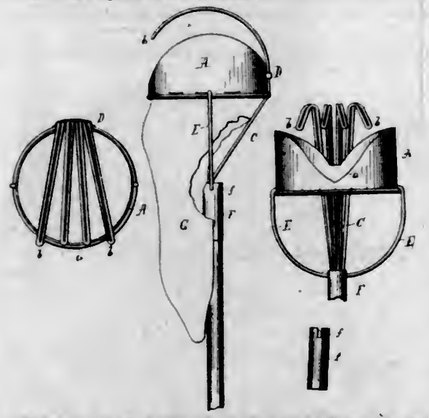
Claim.—1. The jaws L, each having the projection L', in combination with the reciprocating former, and its carriage, provided with grooves in which such projections engage, substantially as and for the purposes set forth.

2. The pivoted arm c, push-bar r, and spring g, in combination with the feed-rollers b b, substantially as and for the purpose set forth.

3. The spring-clamps y y, opening downward, having flaring mouths, and adapted to receive and hold the bar temporarily, for the purpose set forth.

4. The bell-crank lever P, and spring P', adapted to depress the bar W at the desired moment, for the purpose set forth.

329,095. **FRUIT-GATHERER.** Jeremiah Stoneraker, Barnesville, Ohio. Filed Apr. 13, 1885. (No model.)



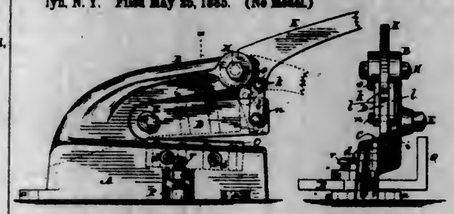
Claim.—1. In a fruit-picker, the combination, with the body, of the wires extended above such body to form the grasping-fingers and inclined below it to form the deflecting-platform, substantially as set forth.

2. In a fruit-picker, the combination of the body, a receiver of textile fabric secured to and projecting from its lower edge, the fingers across the open end or mouth of such body, a platform of wires extended below the mouth of said body in an inclined direction to deflect one side of the receiver, which rests thereon and forms a cushion to receive and guide the fruit into the receiver, substantially as specified.

3. In a fruit-picker, the combination, with the body, provided on its rear side with loops D, of the wires held by said loops and extended above and below the body, substantially as set forth.

4. A fruit-picker, substantially as herein described, consisting of the body, the socket, the bail secured at its ends to the body and secured to the socket, and the wires held between their ends to the body, and having one end secured to the socket and their other ends extended above the body and forming the grasping-fingers, substantially as herein set forth.

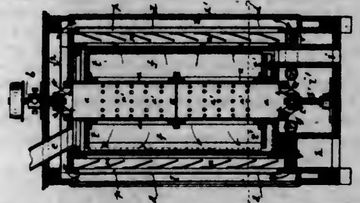
329,096. **METAL-SHEARING MACHINE.** Asher Stover, Brooklyn, N. Y. Filed May 25, 1885. (No model.)



Claim.—1. The base-block A and head-block B, cast in one piece and having recesses, and ribs i at the bottom of the recesses, in combination with the bed-shear C in the recesses in the base-block and bolted against the ribs thereof, the swinging shear D in the recess of the head-block and resting against the ribs i, the pivot-bolt E, passing through the shear and through a hub on the head-block, the joint H, lever K, links l, and bolts n o, substantially as set forth.

2. The combination, with the swinging shear D and bed-shear C, of the head-block B, recessed and provided with ribs for supporting the swinging shear D, the base-block A, integral with the head-block B and having a mortise through it, the stock P, passing through the said mortise, the gage Q upon the stock, and the clamping-screw r, substantially as set forth.

329,097. **CENTRIFUGAL BOLTING-MACHINE.** Emil Strube, Freienwalde, Prussia, Germany. Filed May 22, 1885. (No model.) Patented in Belgium Apr. 30, 1885, No. 68,709, and in England Apr. 30, 1885, No. 5,345.



Claim.—1. The combination of a perforated and tubular center shaft having radial beaters, a bolting-reel having a loose exterior bolting-cloth, and inclosing-frame having interior screens, exterior doors, and top and bottom chambers which communicate with the channels between the screens and doors and with the tubular center shaft, substantially as set forth.

2. The combination of a tubular and perforated center shaft having open ends and a horizontal partition, radial beaters attached to the shaft, a bolting-reel formed of a wire cage and a loose exterior bolting-cloth, an inclosing-frame having exterior doors and interior screens, inclined deflectors inside of the screens, and top and bottom chambers that communicate with the vertical-channels between the screens and doors and with the tubular center shaft, substantially as set forth.

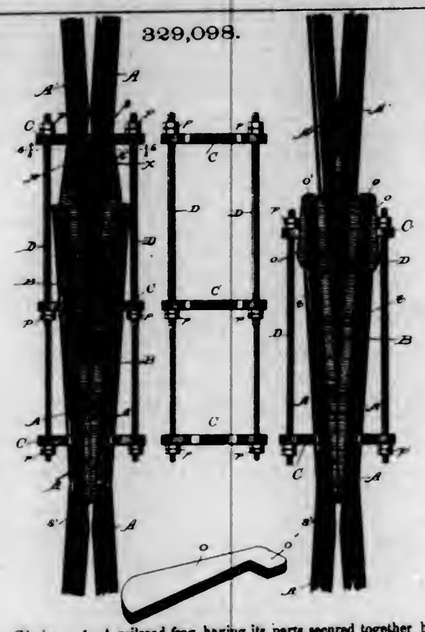
3. In a centrifugal bolting-machine, the combination of a center shaft having radial beaters with a bolting-reel formed of a wire cage and loose exterior bolting-cloth, substantially as set forth.

4. In a centrifugal bolting-machine, the combination of a tubular and perforated air-distributing shaft having open ends and a horizontal partition, radial beaters attached to said shaft, connecting shelves or disks, and a bolting-reel formed of a wire cage and a loose exterior bolting-cloth, substantially as set forth.

329,098. **RAILROAD-FROG.** Axel A. Strom, Austin, Ill. Filed June 23, 1885. (No model.)



329,098.



Claim.—1. A railroad-frog having its parts secured together by connected clamps independently adjustable longitudinally upon their connecting medium, substantially as described.

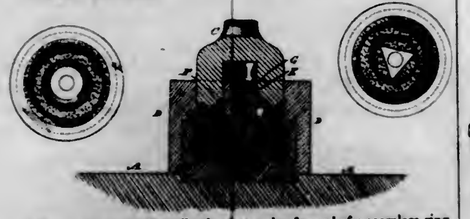
2. A railroad-frog having its parts secured together by connected clamps, independently adjustable longitudinally upon their connecting medium, embracing opposing beveled surfaces, substantially as described.

3. A railroad-frog comprising diverging rails A and converging rails A', plates *t*, forming filling and having their outer edges beveled toward one extremity, which extends beyond the diverging ends of the rails A, a plate, *t'*, forming filling, the rails A', clamps C, to secure the parts of the frog together, and means, substantially as described, connecting the clamps, the whole being constructed and arranged to operate as and for the purpose set forth.

4. A railroad-frog comprising diverging rails A and converging rails A', plates *t*, forming filling and having their outer edges beveled toward one extremity, which extends beyond the diverging ends of the rails A, a plate, *t'*, forming filling between the rails A', clamps C, to secure the parts of the frog together, and tie-rods D, connecting the clamps and provided with lock-nuts *p*, the whole being constructed and arranged to operate substantially as described.

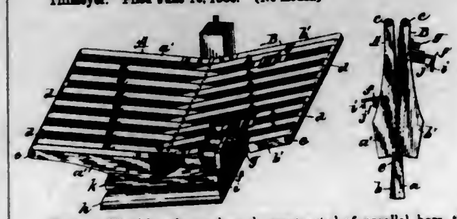
5. A railroad-frog comprising diverging rails A and converging rails A', plates *t*, forming filling and provided toward one extremity with lugs *s*, projecting between the adjacent flanges of the rails A, and having their outer edges beveled toward their opposite extremity which extends beyond the diverging ends of the rails A, a plate, *t'*, forming filling and provided toward one extremity with a lug, *s*, projecting between the flanges of the rails A', clamps C, to secure the parts of the frog together, and tie-rods D, connecting the clamps and provided with lock-nuts *p*, the whole being constructed and arranged to operate substantially as described.

329,099. COMPOSITE ROLLER. Franklin Taylor, Wilmington, Del., assignor to the Vulcanized Fibre Company, same place. Filed Mar. 17, 1885. (No model.)



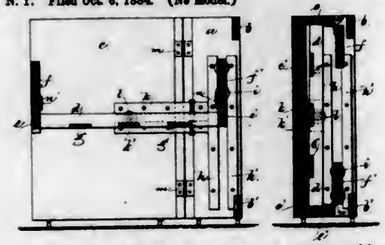
Claim.—A composite roller having a rim formed of a seamless ring of vulcanized fiber, a central bearing-hub of suitable material, and a body of some suitable plastic material compressed between the rim and hub, as set forth.

329,100. PORTABLE RACK FOR SCALES. Charles H. Tillmeyer and George W. Bolton, Milwaukee, Wis.; said Bolton assignor to said Tillmeyer. Filed June 16, 1885. (No model.)



Claim.—The bipartite scale-rack constructed of parallel bars, the two parts interlacing with each other and pivoted together by a cross-rod, and having supporting-blocks provided with clasps for grasping and retaining the rack on the scales, substantially as set forth.

329,101. FOLDING BEDSTEAD. Francis H. Tobias, New York, N. Y. Filed Oct. 6, 1884. (No model.)

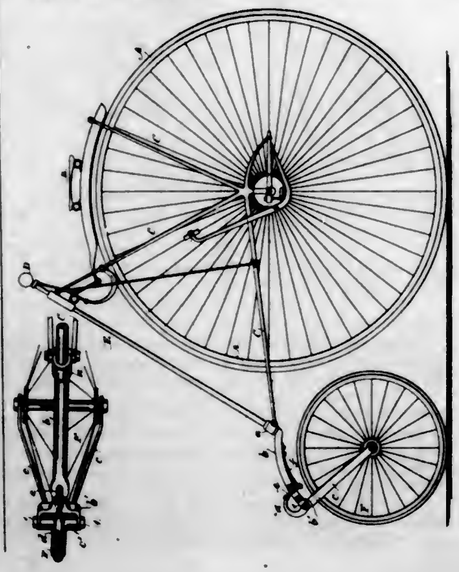


Claim.—1. In a folding bedstead, the combination, with a tilting bed-bottom and rollers upon the same, of the fixed case having the side pieces, *a a'*, back pieces, *b b'*, hinged front doors, *c c'*, and the slideways *k k'* and *k k'*, substantially as set forth.

2. In a folding bedstead, the combination, with a fixed case having hinged front doors, and slideways upon the respective parts, of the bed-bottom composed of the end rails, *d d'*, side rails *e e'*, hinged side rails *f f'*, and slats *g*, and the rollers *i* upon the ends of the side rails *f'*, and the rollers *l* upon the end rails, *d d'*, substantially as set forth.

3. In a folding bedstead, the combination, with a fixed case, hinged front doors, and folding bed-bottom, of the slideways *h h'*, placed perpendicularly upon the sides of the fixed case, and the slideways *k k'*, placed horizontally upon the hinged front doors and sides of the fixed case, respectively, and the rollers *l* and *i* between the respective slideways *k k'* and *h h'*, substantially as and for the purposes set forth.

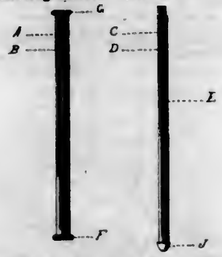
329,102. VELOCIPEDE. Joseph M. Tryon, West Farms, N. Y. Filed Sept. 9, 1885. (No model.)



Claim.—1. The combination, in a velocipede, with the wheels A and F, and the steering-handle D and rod E, of the curved spine *b*, the pivoted fork *c* at a forward inclination, the arm *c'* upon the fork, the link *e*, and spring *f*, substantially as specified.

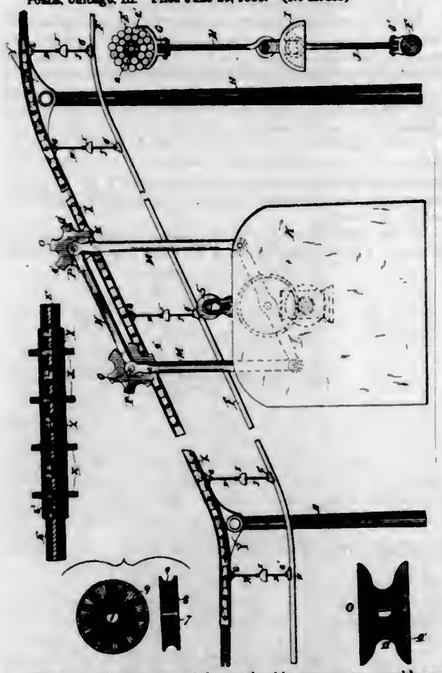
2. The combination, with the driving and steering wheels of a bicycle or tricycle, of a fork for the steering-wheel placed at an angle of about forty-five degrees, and having an arm, *c'*, a pivot connecting said fork to the spine, and a spring or springs to retain the parts in their relative position and yield to pressure against the wheel, substantially as and for the purposes set forth.

329,103. NURSING-BOTTLE TUBE. William W. Tomlinson, Baltimore, Md. Filed Aug. 22, 1885. (Model.)



Claim.—A nursing-tube formed by the combination and arrangement of tube C with the slot D, the long flange E, and the tapering flange J, and the tube A, (having slot B and flanges F and G,) all as shown and described.

329,104. ELECTRIC-CABLE CONVEYANCE. Charles J. Van Depoele, Chicago, Ill. Filed June 29, 1885. (No model.)



Claim.—1. In a system of electrical-cable conveyance, a cable provided with hangers firmly fixed to the under side of the same for the support of the lower conductor, substantially as described.

2. In a system of electrical-cable conveyance, a supporting-cable and an electrical conductor, the supporting-cable having hangers, as G, to support the conductor, said hangers having a concave upper surface to fit the under side of said cable and hanging from the same, whereby the upper cable is left free for the travel of the cars, substantially as described.

3. In a system of electrical-cable conveyance, a supporting-cable, a conductor below the same, and insulating-carriers between them secured to the bottom of the supporting-cable and the top of the conductor, substantially as described.

4. In a system of electrical-cable conveyance, two conductors, one of which carries the other by an insulating-support, the upper conductor having a hanger, as G, fastened to its bottom only and the lower conductor having a clip, G', attached to the top thereof only, whereby the top of one conductor and the bottom of the other are left clear, substantially as described.

5. In a system of electric-cable conveyance, two conductors, one of which carries the other, hanging device between the two having one part of the same in metallic connection with the upper cable, another part in metallic connection with the lower cable, and an insulating part between the two metallic connections, substantially as described.

6. In a system of electric-cable conveyance, a positive conductor, E, a link, H, connected thereto, an insulator, I, connected to said link, and a second link, J, connecting the insulator with the negative conductor, substantially as described.

7. In a system of electric-cable conveyance, and in combination with the links connecting the lower conductors with its main support, a bell-shaped insulator, as I, provided with apertures to receive said links, one above the bell and the other below the same, substantially as and for the purpose specified.

8. In a system of electric-cable conveyance, a support, an arm, as C, extending horizontally therefrom, a groove-pulley mounted on said arm, a conducting-cable resting on the groove of said pulley, and a conductor suspended below the same, substantially as described.

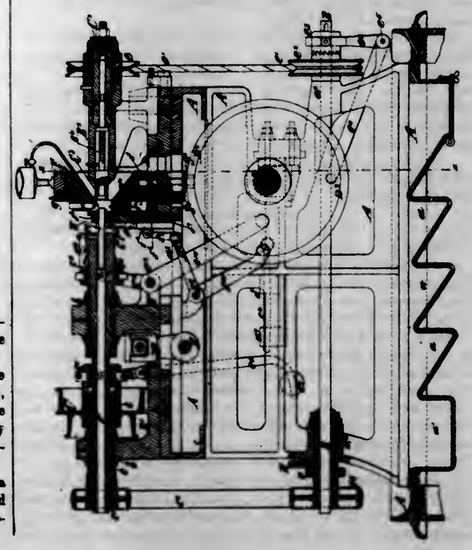
9. In a system of electric-cable conveyance, a support, as A, having a horizontal axle, a grooved pulley mounted thereon, a main conducting-cable resting in the groove, and a return-conductor below the same, in combination with a car suspended from the main cable and a motor carried by the same, and electrical connections, substantially as described between the motor and the two conductors, whereby the current described, erates the motor and the latter drives the car, substantially as described.

10. In a system of electric-cable conveyance, a supporting and conducting cable, a return-conductor, a lever, L, links M M and N, pulleys O, shafts P, wheels Q, a motor, as W, and mechanism, substantially as described, between the motor and the wheels Q, for driving the car, as set forth.

11. In a system of electric-cable conveyance in which a conductor is suspended below a supporting-cable, a sectional covering for a cable, the sections of which at suitable distances apart are provided with ears to receive supports for the lower conductor, substantially as described.

12. In a system of electric-cable conveyance, a conducting and supporting cable provided with an outer covering of strong wires to sustain the load, and a center of better conductivity to carry the current, both being electrically connected, and a conductor for the return-current suspended below said cable, substantially as described.

329,105. AUTOMATIC LATHE. Heinrich Vogt, Würzburg, Germany, assignor of one-half to Wunibald Braun, Frankfort-on-the-Main, Germany. Filed Sept. 6, 1883. (No model.) Patented in Germany Jan. 21, 1883, No. 23,706; in France Jan. 25, 1883, No. 153,231; in Belgium Jan. 30, 1883, No. 60,309; in Austria-Hungary Mar. 23, 1883, No. 3,958 and No. 12,516, and in England Apr. 3, 1884, No. 5,897.

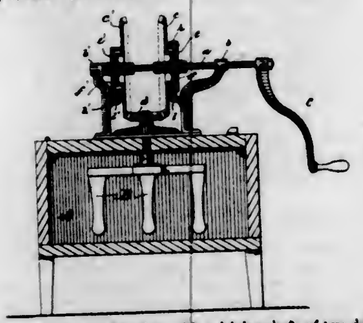


Claim.—1. In an automatic lathe, the combination, with the head-stock and its mandrel, and the bed whereon the head-stock is movable, of the arm E^2 and connections through which the swinging of said arm reciprocates the head-stock, the adjustable guiding-bar E^3 with its slotted arm d' and clamping-screw d^2, the slide E^4, fitting said guiding-bar, the rod E^5, connecting the slide E^4 and the arm E^2, and a rotary cam for operating the slide, substantially as herein described.

2. The combination, with the head-stock and its mandrel and the bed whereon the head-stock is movable, of the swinging arm E^2 and connections between it and the head-stock, the adjustable guiding-bar E^3 d', the slide and rod E^4 E^5, the cam-disk D' for operating the slide, the shaft D and worm-wheel D^2, the shaft B and the worm and worm-shaft G' G, and change-gears for operating the shaft G from the shaft B, substantially as herein described.

3. In an automatic lathe, the combination, with the reciprocating head-stock and its mandrel and the bed whereon the head-stock is movable, of the tool-holder F, fitting a transverse slideway on the bed, a cam whereby the said tool-holder is reciprocated in its slideway, an annular tool-stock, F', fitted to turn in the holder F, and cutting-tools f', arranged radially in the tool-stock for operating one or other of them upon the work as the tool-holder is moved transversely to the length of the mandrel, substantially as herein described.

329,106. GEARING. James F. Walker, Columbus, Kans. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with a driving-shaft, of two driving-gears journaled loosely thereon, the said gears being respectively adapted, by a forward motion thereof, to revolve a driven shaft in opposite directions, and clutch mechanism for alternately connecting and disconnecting the said gears by a continuous revolution of the driving-shaft, substantially as specified.

2. The combination, with a revolving shaft, of two beveled driving-gears journaled loosely thereon and adapted to engage on opposite sides of a beveled pinion, a pawl-and-ratchet mechanism for each of said driving-gears adapted, when engaged, to connect the said gears to the revolving shaft, and means for alternately withdrawing the said pawls, substantially as set forth.

3. The combination, with the revolving shaft, of two beveled driving-gears journaled loosely thereon and adapted to engage on opposite sides of a beveled pinion, each of said gears being provided on the back with a ratchet, a pawl-case for each of said gears secured rigidly to the shaft and provided with a pawl adapted to engage with a ratchet on the driving-gear, and tracks or ways adapted to alternately withdraw said pawls, substantially as specified.

4. The combination of the shaft *a*, gears *c c'*, pinion *d*, ratchets *e e'*, pawl-cases *f f'*, pawls *h h'*, and ways *l l'*, substantially as and for the purpose set forth.

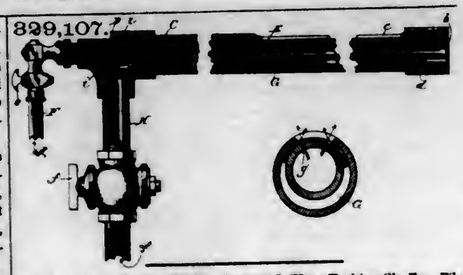
329,107. BURNER FOR HEATING PURPOSES. Lewis H. Watson, Chicago, Ill. Filed Aug. 3, 1884. (No model.)

Claim.—1. A burner constructed of an air-chamber, a gas-chamber inclosed therein, and perforations in the wall of the gas-chamber adjacent to a slot in the air-chamber, arranged, substantially as shown and described, so that a single series of perforations shall deliver gas practically at right angles to a single sheet of air.

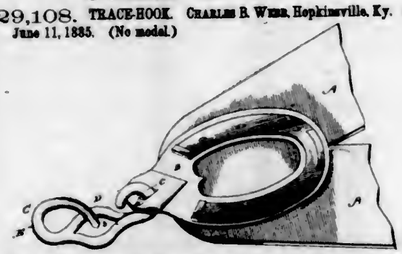
2. The air-chamber and the gas-chamber, arranged one within the other, a series of perforations in the walls of one chamber and a slot in the opposing wall of the other chamber constituting, respectively, gas and air discharge orifices opening at substantially a right angle to each other, in combination with an open passage between said two chambers at a point beyond their respective jets, whereby the pressure of air in both of said chambers is equalized, substantially as described.

3. The perforated burner, the slotted inclosing air-supply chamber, substantially as described, in combination with an air-supply pipe communicating with the air-supply chamber, and an aperture in the gas-supply chamber opposite the said supply-pipe, substantially as described.

329,107.



329,108. TRACE-HOOK. Charles R. Webb, Hopkinsville, Ky. Filed June 11, 1885. (No model.)



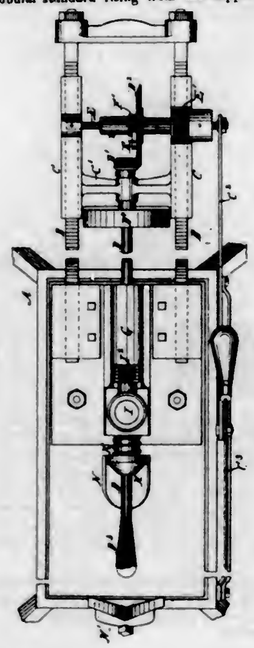
Claim.—The combination, with the straps A, connected by the eye B, having an opening, *a*, of the trace-carrier, having an opening, an integral hook, and an extension, *c*, engaging the opening, as set forth.

329,109. BOTTLE-WASHING MACHINE. Albert R. Webb, Brooklyn, N. Y. Filed May 22, 1884. (No model.)

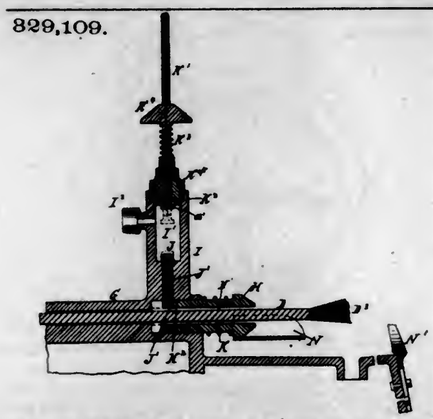
Claim.—1. A bottle-washing machine consisting of a tubular support, a nozzle carried thereby, a tubular standard rising therefrom and having a water-supply chamber, a rinsing-tube supplied with water from said chamber, a brush-shaft reciprocating longitudinally and revolving in the tubular support, and a valve for supplying water from the water-supply chamber to the nozzle of the tubular support, substantially as described.

2. The combination of the tubular support, the tubular nozzle sliding therein, the water-supply chamber, the valve in the lower part of the chamber having a stem acted on by the sliding nozzle, and the brush-shaft extending through the tubular support and the nozzle, substantially as described.

3. The combination of a tubular support, a nozzle sliding in one end thereof, a tubular standard rising from the support and provided



329,109.



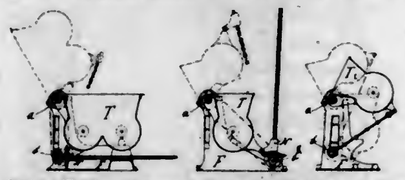
with a water-supply chamber, a valve in the lower part of the standard controlled by the sliding nozzle, and a brush-shaft reciprocating longitudinally and revolving in the tubular support, substantially as described.

4. The combination, with a tubular support, and a water-supply chamber, of a sliding nozzle in one end of the support, and a brush-shaft reciprocating longitudinally and revolving in the tubular support and a sliding nozzle, substantially as described.

5. The combination, substantially as hereinbefore described, of the guide-bars B B, one forming a rack, the slides C C of the guide-bars, the cross-head connecting the slides, the brush-shaft D, connected to the cross-head, the driving-shaft E, gearing with the brush-shaft, the pinion E' of the driving-shaft meshing into the rack-bar, the swinging lever C^2, and a connection between the lever and one of the slides.

6. The combination, substantially as hereinbefore described, with the brush-shaft D, of the tubular support G, the nozzle H, fitted into the tubular support at its outer end, and constructed with the inclined recess H^2, and lateral discharge-orifice J', the closing spring K of the nozzle the tubular standard I, rising from the tubular support, and having the water-supply chamber I' formed in its upper part, the valve J, seated on the bottom of the supply-chamber, and the valve-stem resting in the recess of the nozzle.

329,110. DOUGH-KNEADING MACHINERY. Hermann Werner, Cannstadt, Würtemburg, Germany. Filed May 15, 1884. (No model.)



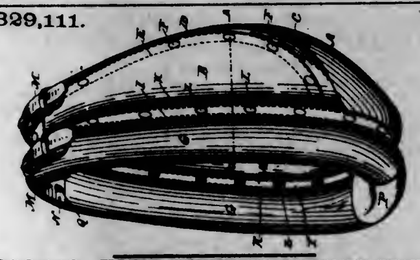
Claim.—The kneading-trough T, having mixing-blades, in combination with the pivot *a* near its upper end, and with tilting and lifting mechanism for swinging said trough and raising its stirrer-shaft around said upper pivot, and with mechanism for revolving said stirrer-shaft from the axis of said pivot *a*, so that said trough can be charged and emptied on the plane substantially of said pivot-*a*, substantially as herein shown and described.

329,111. HORSE-COLLAR. William H. Weymer, Raleigh, N. C. Filed June 20, 1885. (No model.)

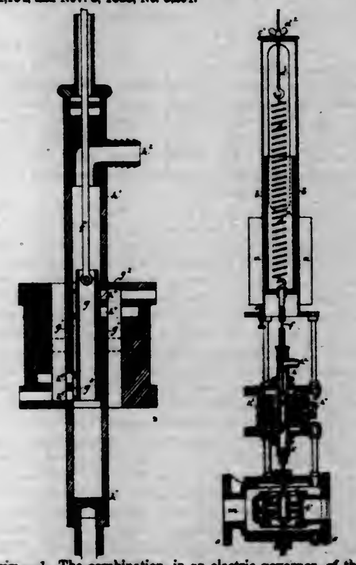
Claim.—1. A horse-collar having between the face and back a lapped seam secured by rows of stitching and an intermediate row of rivets, and provided with a welt inserted into said seam at one edge and projecting beyond the same to form a flap or flange overlying the adjacent portion of the bellies, substantially as described.

2. A horse-collar having between the stuffed rim and the stuffed bellies a seam formed by the projecting margins of the rim and belly-coverings, and secured by rows of stitching and an intermediate row of rivets, all passing through the said projecting margins from one side of the collar to the other, the rows of stitching being the diameter of the rivet-heads, or less, apart, and the heads of the rivets overlying both rows of stitching, or bearing upon the leather adjacent thereto, so that the rivets assist both rows in resisting the pressure lengthwise of the rivets and sewing-threads, due to stuffing the rim and bellies, as well as in resisting other strains, said stitching, furthermore, preventing the straw from getting between the rivets, and furnishing a smooth seam to stuff against, substantially as described.

329,111.



329,112. ELECTRIC GOVERNOR FOR CONTROLLING STEAM-ENGINES. Frederick W. Williams, Thames Ditton, County of Surrey, England. Filed Feb. 20, 1885. (No model.) Patented in England Mar. 5, 1883, No. 1,184, and Nov. 8, 1883, No. 5,291.



Claim.—1. The combination, in an electric governor, of the solenoid or electric governing device, the throttle-valve or other regulating part of the motor, the interposed relay, said relay consisting, primarily, of two related parts, mechanism whereby the movements of the solenoid bring about the proportional movements of the throttle-valve, and mechanism by which the two related parts of the relay are automatically restored to their normal condition at each movement of the throttle-valve.

2. The combination, in an electric governor, of the solenoid, the throttle-valve or other regulating part of the motor, and the interposed relay, said relay having two related parts, one being stationary and the other movable, and connected with the throttle-valve and with the solenoid, whereby the movements produced by the solenoid bring about proportional movements of the throttle-valve, which in turn restores the normal relation of said two related parts of the relay, substantially as set forth.

3. The combination, substantially as set forth, of the solenoid, the hydraulic cylinder, the hydraulic piston, the throttle-valve connected with the hydraulic piston, and the sliding valve in the hydraulic piston connected with the solenoid.

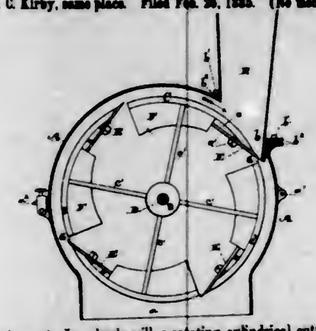
4. The combination, substantially as set forth, of the solenoid or electric governing device, the throttle-valve, a connection between the solenoid and the relay, a connection between the throttle-valve and the relay by which the throttle-valve is moved, and a connection between the throttle-valve and relay by which the relay is restored to its normal condition after each movement of the throttle-valve.

5. The combination, in an electric governor, of the regulating electric circuit and devices, of the cylinder, the piston, the inlet and discharge openings therein, the valve having the two annular piston-heads on each end, for the purpose specified, and the regulated engine or motor.

6. The combination of the throttle-valve, the relay to which the valve is connected, and the solenoid having a longitudinally-adjustable coil and a sliding core connected with the relay.

7. The combination, substantially as set forth, of the electric coil for operating the relay, the relay, the double-piston throttle-valve, and its casing and steam-passages.

329,113. BARK-MILL. William A. Woods, Santa Cruz, Cal., assignor to R. C. Kirby, same place. Filed Feb. 26, 1885. (No model.)



Claim.—1. In a bark-mill, a rotating cylindrical cutter-head having the segmental bands c^3, radial arms c, and a series of knives or bits secured to the inner surface of its periphery, and projecting beyond and intersecting the periphery at a slight angle, in combination with an adjustable hopper supported above and to one side of the vertical plane of the cutter-head, and having one of its walls projected approximately tangential and nearly to the periphery of the cutter-head, whereby the knives are adapted to slice the bark between themselves and said wall, substantially as herein described.

2. In a bark-mill, the two-part or hinged casing or shell A, and the adjustable hopper B, communicating therewith at one side of its vertical center, the lower wall of said hopper projecting within the casing, in combination with the rotating drum or cutter-head C, having adjustable knives or bits E, extending beyond its periphery and adapted to be brought into a more or less close relation with the projecting wall of the hopper, substantially as and for the purpose herein described.

3. In a bark-mill, the casing or shell A, and the vertically-adjustable hopper B, communicating with the shell to one side of its vertical center, and having its lower wall projecting therein, in combination with the rotating drum or cutter-head C, having adjustable bits or knives E, adapted to cut the bark between themselves and the projecting wall of the hopper, substantially as herein described.

4. In a bark-mill, the casing or shell A, and hopper B, having its lower wall projecting within the casing, as described, in combination with the rotating cutter-head or hollow drum C, the bits or knives E on its periphery, and the angled or sloping ejector-wings F on the inner surface of the periphery of the drum, and alternating with the knives or bits, spaces being left between the cutting-edges of the knives and the rear of the preceding wings, substantially as and for the purpose herein described.

5. In a bark-mill, the casing or shell A, having an open bottom, and the hopper B, having an inwardly-projecting wall, as described, in combination with the open-ended hollow drum C, mounted and rotated within the casing, and of less length than said casing, the knives or bits E on the periphery of the drum, and the angled or sloping ejector-wings F on the inner surface of the periphery of said drum, and alternating with and separated from the knives or bits, substantially as and for the purpose herein described.

6. A bark-mill comprising the two-part hinged cylindrical shell or casing A, having an open bottom, a the rotating open-ended hollow drum or cutter-head C, having the adjustable knives or bits E on its periphery, the alternating angled or sloping ejector-wings F, separated from the knives, as described, and the vertically-adjustable hopper B, let into the casing at one side of its vertical center, and having its lower wall projecting within at b in relation with the knives or bits, substantially as herein described.

329,114. BARK-MILL. William A. Woods, Santa Cruz, Cal., assignor to Richard C. Kirby, same place. Filed Apr. 1, 1885. (No model.)

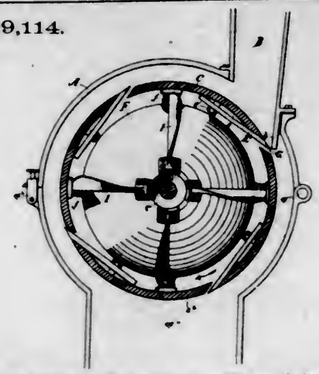
Claim.—1. In a bark-mill, the cylindrical head or drum, provided with the circular or annular ejector-core, which is conical in cross-section and arranged within the circumference of the cylindrical cutter head or drum, substantially as and for the purpose herein described.

2. In a bark-mill, the exterior casing or shell, in combination with the rotating cutter-head provided with the side wings, I, projecting into the spaces between the ends of the cutter head or drum and the exterior casing or shell, substantially as and for the purpose herein described.

3. In a bark-mill, the rotating open ended cylindrical cutter head or drum C, having knives or bits E projecting from its periphery, in combination with the circular or annular ejector-core F, within and concentric with the perimeter of the cutter-head and cone-shaped in cross-section, adapted to direct the bark toward the open ends of the head, substantially as herein described.

4. In a bark-mill, the rotating open-ended cylindrical cutter head or drum C, consisting of hubs c and a peripheral band, c^3, in combination

329,114.

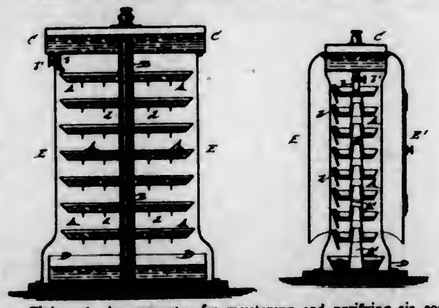


with the circular or annular ejector-core F, formed about and secured to the hubs, and having outwardly converging or slanting sides and the arms f, extending from the ridge-line of the core and supporting the peripheral band c^3 of the cutter-head, substantially as herein described.

5. In a bark-mill, the rotating open-ended cylindrical cutter head or drum C, consisting of hubs c and peripheral band c^3, in combination with the circular or annular ejector-core F, formed about and secured to the hubs, and having outwardly converging or slanting sides, the arms f, extending from the ridge-line of the core and supporting band c^3, and the side wings, I, secured to the base of the core and to the band c^3, and projecting beyond the ends of the cutter-head, substantially as herein described.

6. A bark-mill comprising the casing or shell A, having an open base, a, the rotating open-ended cylindrical cutter head or drum C, within the casing, the circular or annular ejector-core F, within and concentric with the cutter-head, having outwardly converging or slanting sides, the side wings, I, secured to the drum and core and projecting within the spaces between the ends of the cutter-head and the sides of the casing, the adjustable knives or bits E, projecting through openings G in perimeter of the casing, and the hopper B, let into the casing at one side of its vertical center, and having its lower wall projecting at b in relation with the knives, substantially as herein described.

329,115. APPARATUS FOR MOISTENING AND PURIFYING AIR. Casimir Wurster, New York, N. Y. Filed Feb. 2, 1885. (No model.)



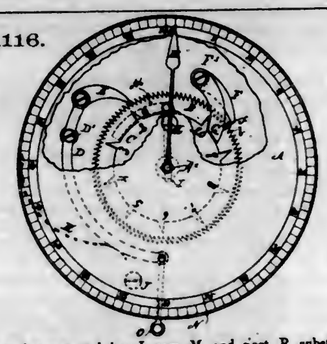
Claim.—1. An apparatus for moistening and purifying air, consisting of a series of superposed plates, in combination with bent pieces of glass or other non-oxidizable material that rest on the edges of the plates and project downwardly therefrom, acting as siphoning devices, substantially as described.

2. The combination of a series of superposed plates provided with bent pieces of glass or other non-oxidizable material having the bent portion resting on the edge of a plate and extending downward over the next succeeding plate, substantially as described.

329,116. REGISTER FOR TYPE-WRITERS. Harvey W. Yoxley, Denver, Colo. Filed May 23, 1885. (No model.)

Claim.—1. The combination, in a device for registering folio-work on type-writers, of the frame consisting of the back Q, side and end pieces, N, holding in position a glass plate, P, and dial A, dial A being fastened to said frame, hand H, pivoted to axle A′, said axle terminating in a squared end, U, ratchet-wheel B, pivoted to said axle A′, ratchet-wheel C, loose on said axle A′, washers t and T′, separating said ratchet-wheels B and C and dial A, hub B′, separating wheel B from back Q, lever D, pivoted on a post, R, and bearing on its long end the arm O, pawl E, pivoted to said lever D, spring K, dogs F and G, pivoted on screw F′, fastened to back Q, washers S and T, separating said dogs

329,116.

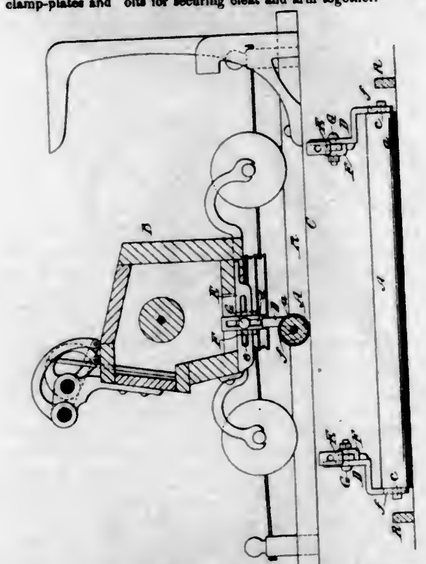


and back, spring-arm and key I, cam M, and post R, substantially as shown and described, and for the purposes set forth.

2. The combination, substantially as hereinbefore set forth, of the dial A, the hand H, the axle U, lever D, the post R, the spring K, the finger E, the ratchet-wheels B and C, the dogs F and G, the back Q, the spring-arm and key I, the rim N, the washers S and T, the cam M, and the stop J, securely attached to the back, as specified.

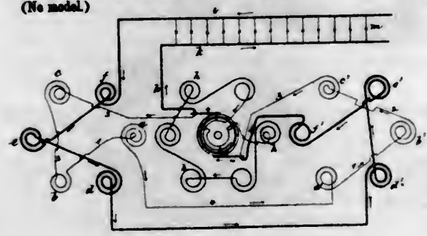
329,117. REVOLVING SWEEPING ATTACHMENT FOR SPINNING-MULES. Charles Ashworth, Grosvenor Dale, Conn. Filed May 8, 1884. (No model.)

Brief.—The revolving sweeping-roller is secured to the carriage by an improved device, which consists of a slotted cleat attached to the carriage, slotted arms provided with open bearings for the roller, and clamp-plates and bolts for securing cleat and arm together.



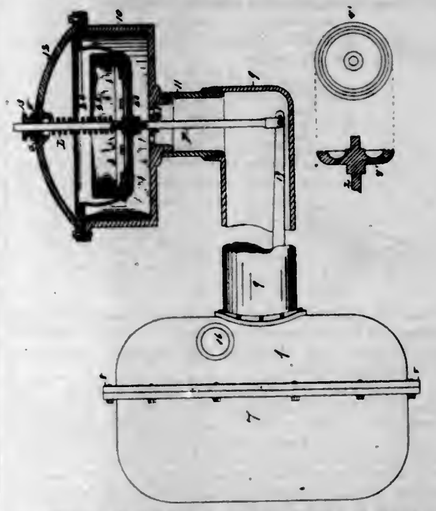
Claim.—The slotted cleats E, adapted to be secured to the under side of a mule-carriage, in combination with the clamp-plates F, bolts G, slotted arms D, provided with open bearings, and sweeping-roller A, journaled in said open bearings, substantially as and for the purpose set forth.

329,118. DYNAMO-ELECTRIC MACHINE. Clinton M. Ball, Troy, N. Y., assignor to Joseph A. Powers, same place. Filed Nov. 24, 1884. (No model.)



Claim.—The combination, with the revolving-armature coils and commutator-connections, of two circular ranges of field-magnets, between which the armature revolves, and helices for the field-magnets of coarse and fine wire arranged alternately, and branch circuit connections for the fine-wire helices, and connections between the coarse-wire helices and the external or working circuit, substantially as set forth.

329,119. PRESSURE-REGULATOR. Phineas Ball, Worcester, and John R. Smith, Springfield, assignors to the Union Water Meter Company, Worcester, Mass. Filed June 10, 1885. (No model.)



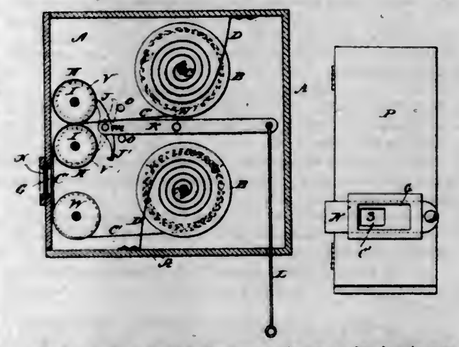
Claim.—1. In a pressure-regulator having a high and a low pressure chamber, two valves, substantially as described, one located in the high and the other in the low pressure chamber, and both connected with one common lever, and a rolling diaphragm connected with said lever and located in the low-pressure chamber, combined and operating substantially as set forth.

2. In a pressure-regulator, the valve-seat y, of rubber or of like elastic material; having a flat face for the valve to bear upon, combined with a valve having a series of annular corrugations on its face, and having a pivotal connection with a vibratory lever, by which its motions are governed, substantially as set forth.

3. In combination, the rolling diaphragm, the post F, connected with said diaphragm and with the lever 19, and the diaphragm-case having a supporting-passage through the bottom and cover thereof for said post, substantially as set forth.

4. In a pressure-regulator for natural gas, the inlet-bushing c^3, of cup form, and having perforated sides, and the screen 15, fitting said bushing, substantially as set forth.

329,120. AUTOMATIC REGISTERING-MACHINE. William H. Barber, Ward, Ohio. Filed June 1, 1885. (No model.)

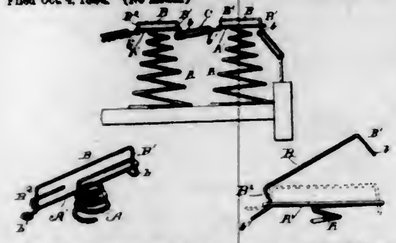


Claim.—1. In a machine for enumerating or registering, in combination with the tape C′ and drums B B, the intermediate transfer-rollers, H H, ratchet-wheels I I thereon, pawls J J′, and lever K, whereby articles may be enumerated consecutively, one after the other, as described.

2. In a machine for enumerating or registering, in combination with the tape C', having two columns of numerals thereon, and drums B B, the intermediate transfer-rollers, H H, ratchet-wheels I I, secured thereto, pawls J J', and lever K, whereby the tape may be transferred alternately from one drum to the other, as described.

3. In a machine for enumerating or registering, in combination with the tape C', having two columns of numerals thereon, drums B B, intermediate transfer-rollers, H H, and ratchet-wheels I I, the pawls J J', and lever K, to reverse the movement of the tape C', so as to enumerate in both directions, constructed and arranged as described.

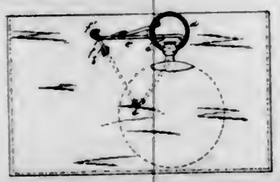
329,121. **BED-SPRING.** William W. Bartlett, Salt Lake City, Utah. Filed Oct. 4, 1884. (No model.)



Claim.—1. The securing-bail for bed-springs, substantially as herein described, consisting of a metallic rod having its ends bent at approximately a right angle and provided at their extremities with eyes or loops, substantially as set forth.

2. In a spring-bed, the combination of the slat, the spring having its upper coil elongated and extended beyond the sides of the slats, and the securing-bail extended over the slat, and having one arm projected downward through the top coil of the spring, and provided with the eye *b*, and its other arm extended down through the opposite end of the coil and bent laterally outward thereunder, and provided on its extremity with an eye, *b'*, and the connecting-links looped in said eyes *b b'*, all substantially as and for the purposes specified.

329,122. **WATCH-GUARD.** Charles F. Bauer, Newark, N. J. Filed Jan. 7, 1885. (No model.)



Claim.—1. A watch-guard consisting of a triangular body of wire having the wire of one of its sides pointed at its end and the side contiguous to the point bent back, as shown, to form a loop for said pointed end, and a catch-arm, which latter is provided with a hook, eye, or catch at its end to receive the watch-ring, substantially as set forth.

2. The watch-guard herein described, combining therein the body or frame *a*, catch *c* for the watch-ring, a pointed and notched pin, *b*, and loop or eye to engage the notch in said pin, substantially as set forth.

3. The triangular body-frame pointed at one end, looped at *f* to form a catching-arm, bent spirally, as at *h*, to secure increased elasticity, and bent at the end *c*, to form a hook or catch for the watch-ring, substantially as set forth.

329,123. **PLOW AND PLANTER.** William P. Breitmorf, Peru, Ill., assignor to himself and Peru City Plow Company, same place. Filed July 10, 1885. (No model.)

Claim.—1. The frog B, having the extensions B' B'', and attaching-plates B^2, for the attachment of a double-shovel plow, plow-beam, and handles, substantially as specified.

2. A double-shovel plow, A A', and frog B, having extensions B' B'' and plates B^2, in combination with a plow beam and handles, substantially as and for the purpose specified.

3. The socket C, having arms C' C'', in combination with a frog, B, having plates B^2, for attaching a subsoiler in position, substantially as specified.

4. The socket C, having arms C' C'', and fin E, with spindle E', in combination with a frog, B, having plates B^2, for attaching a subsoiler and a seed-dropping mechanism, substantially as specified.

5. The plate H, formed integral with the receptacle I, having the passage I' and the laterally-projecting flange I'', in combination with the dropping-wheel K K', substantially as described.

6. The spindle K^2, formed integral with the plate H, receptacle I, and lateral flange I'', said receptacle having the passage I', in combination with the dropping-wheel K K', having the hub K'', substantially as described.

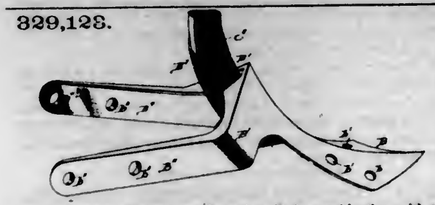
7. The plate H, formed integral with the flange I'', and the receptacle I, having the passage I', in combination with the dropping-wheel K K', the cut-off dog L, mounted on the shell with its acting end located back of the passage in the receptacle and resting on the part K' of the dropping-wheel, the sprocket-wheels M O, chain N, and ground-wheel P, substantially as described.

8. The plate H, provided with the flange I'', receptacle I, and rearward extension H', in combination with the ground-wheel P, the spindle O', and the reach O'', carrying said spindle and secured at its upper and forward end to the rearward extension of the said plate, substantially as described.

9. The plate H, having the rearward extension H', in combination with the ground-wheel P, the spindle O', the reach carrying the spindle and secured at its forward end to the said extension and extending rearward back of the ground-wheel, and the bar S, mounted on the rear extension of the reach for hanging up the ground-wheel, substantially as described.

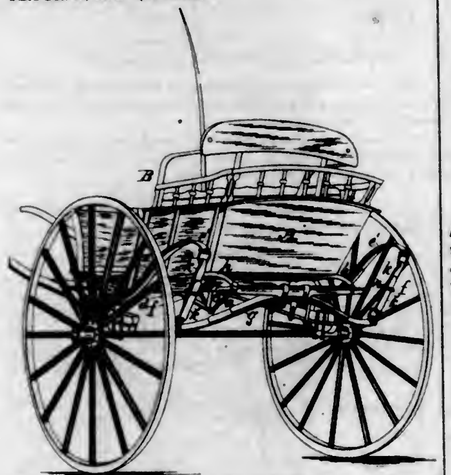


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10. The socket C, having a fin or lug, E, in combination with the plate H, pivoted to said fin or lug and carrying seed-dropping mechanism, and the dropping-tube F'', carried by the fin or lug of the socket, substantially as described.

329,124. **TWO-WHEELED VEHICLE.** John C. Blocher, Lima, Ohio. Filed Dec. 26, 1884. (No model.)



Claim.—1. The body of a road-cart, having its rear end swung freely from the ends of the long side springs by pendent links or hangers, the latter being flexibly connected at their lower ends with a transverse spring in rear of and below the same, and having the front end suspended by flexible straps which allow said body to move about the points of suspension, as set forth.

2. The combination, with the body of a road-cart, suspended by flexible straps at the front end, of the long cyma-reversa side springs, the pendent links connected therewith, and the transverse spring swung from the ends of the latter, substantially as and for the purpose set forth.

3. In combination with the body of a road-cart, the long cyma-reversa springs extending rearward and upward from the shafts, the pendulous links suspended from said springs, the semi-elliptic transverse spring, the spring-bar and bearing-irons, and the flexible hangers connecting the front end of said body with the cross-bar of the shafts, substantially as and for the purpose hereinbefore set forth.

4. In a road-cart, the S-shaped or cyma-reversa springs, the pendulous links flexibly attached thereto, and the semi-elliptic spring supporting the rear of the body, a line drawn through said links and the line of compression of said semi-elliptic spring cutting the points of resistance of the wheels, substantially as set forth.

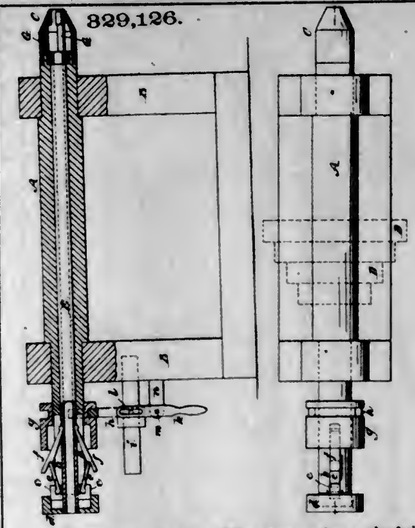
329,125. **PROCESS OF MAKING COLORING-MATTER.** Adolf T. Bömer, Dresden, Saxony, Germany. Filed Apr. 29, 1884. (No specimens.)

Claim.—The process of making coloring-matters, which consists in boiling glucosides derived from quercitrin, horse-chestnut, Brazilian wood, or the like, in water mixed with nitric or hydrochloric acid to precipitate the resin, then removing the brasiline or the like, and treating it with a solution of permanganate of potash, then filtering and lixiviating the resulting precipitate, then treating the same with acid, then cooling and neutralizing the solution, all as and for the purposes set forth.

329,126. **TURNING-MACHINE.** Albert T. Booth, Meriden, Conn. Filed Sept. 23, 1885. (No model.)

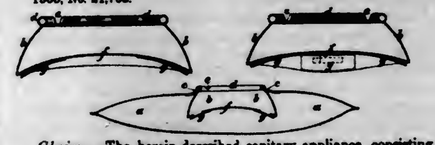
Claim.—1. The combination, with the hollow shaft A and the inner longitudinally-sliding tube, E, having a hollow cone, C, and spring-chuck G applied, respectively, to their forward ends, of the toggle-levers *e f* and the blocks *c c*, arranged to fit longitudinal slots in the hollow shaft, substantially as and for the purpose herein described.

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2. The combination of the sliding sleeve or box *g*, the forked slide A, and lever *k* with the hollow shaft A, the inner longitudinally-sliding tube, E, the hollow cone C, the spring-chuck G, and the toggle-levers *e f*, connected, respectively, with the hollow shaft and its inner sliding tube, essentially as shown and described.

329,127. **SANITARY APPLIANCE FOR CHILDREN, &c.** Edwin H. Booth, Preston, County of Lancaster, and Frederick N. Dyer, Macclesfield, County of Chester, England. Filed Apr. 27, 1885. (No model.) Patented in England Oct. 16, 1884, No. 13,656, and in Canada May 20, 1885, No. 21,706.



Claim.—The herein-described sanitary appliance, consisting of a bag or vessel having an opening provided with a shield, *b*, and a valved diaphragm, substantially as set forth.

329,128. **BRUSH BACK OR STOCK OF PLASTIC MATERIAL.** William Booth, Newark, N. J. Filed Apr. 1, 1884. (No model.)



Claim.—1. In a brush back or stock, a molded cap or hollow blank of plastic material, provided with a rabbet or groove at the edge, substantially as described.

2. A brush back or stock composed of a molded cap or hollow blank of plastic material, provided with a rabbet or groove at the edge, and an inclosed part having a projecting margin fitted in said rabbet or groove, the knots or tufts being set in said inclosed part, substantially as described.

3. A brush back or stock comprising a core or center, a facing-sheet of plastic material, and a molded cap or hollow blank of plastic material, the said cap or blank fitting around the edge of and being cemented to the facing-sheet, so that the seam between the two is on the face or under side of the brush back or stock, substantially as described.

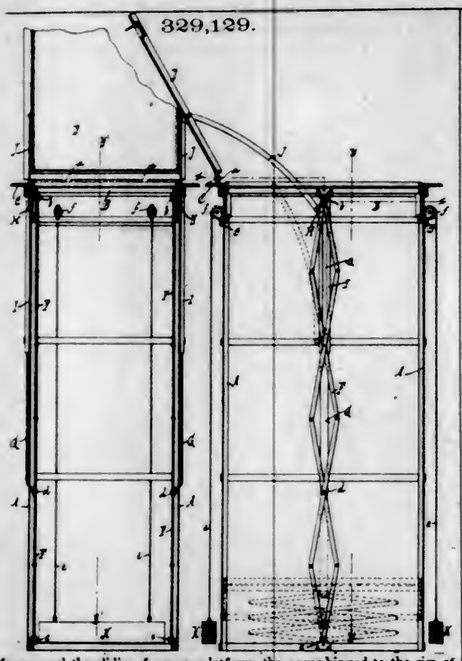
4. The brush back or stock composed of the center or core, the facing-sheet secured thereto, having a margin projecting beyond the edges of the core or center, and the molded cap or hollow blank provided with a rabbet or groove on the edge, the aforesaid margin fitting into said rabbet or groove, substantially as described.

329,129. **ELEVATOR.** Valentin Bobst, New York, N. Y. Filed Mar. 27, 1885. (No model.)

Claim.—1. The combination of the main frame, the sliding frame or platform supported on lazy-tongs, the cover hinged to the main frame, and the connections of the lever with the lazy-tongs, substantially as shown and described.

2. The combination of the main frame provided with a projecting rim, the sliding frame or platform, the lazy-tongs secured to the main

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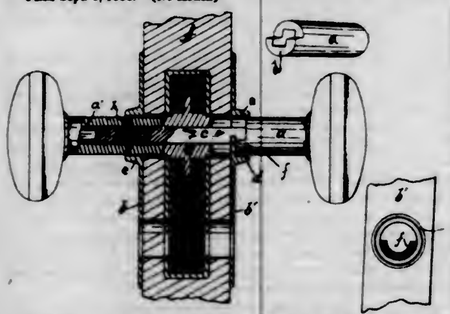


frame, and the sliding frame or platform, the cover hinged to the rim of the main frame, the connections of the cover with the lazy-tongs, and the balancing-weights connected with the sliding frame or platform, substantially as shown and described.

3. The combination of the main frame provided with a projecting rim, the sliding frame or platform, the lazy-tongs secured to the main frame and the sliding frame or platform, the cover hinged to the rim of the main frame, the guide-bars I, secured to the frame, the slides H, the rods G, connecting the slides with the lazy-tongs, the pivoted arms J, which connect the slides with the cover, and the balancing-weight secured to the sliding frame or platform, substantially as shown and described.

4. The combination of the main frame provided with a projecting rim, the sliding frame or platform, the lazy-tongs secured to the main frame and the sliding frame or platform, the cover hinged to the rim of the main frame, the guide-bars I, secured to the frame, the slides H, the yoked rods G, connecting the slides with the lazy-tongs, the pivoted arms J, connecting the slides with the cover, and the balancing-weights secured to the sliding frame or platform, substantially as shown and described.

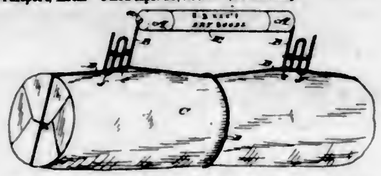
329,130. KNOB ATTACHMENT. Jeffry E. Bowman, Norwich, Conn. Filed Sept. 9, 1885. (No model.)



Claim.—1. A knob-attaching device consisting of a knob-neck, a spindle secured in said neck and perforated, as described, a companion neck adapted to slip over the free end of said spindle, a pin or similar device which may be passed through said neck and spindle, as described, an escutcheon into which that portion of the neck which contains the locking device may be drawn to conceal and protect said locking device, and means for retaining the locking device within the escutcheon, consisting of a segmental lip on the free end of neck and a corresponding segmental flange in the escutcheon, against which said lip abuts when said escutcheon is dropped to its normal position, all being combined as and for the object specified.

2. The knob-neck *a*, having the lip *d*, as described, a spindle secured fixedly within said knob-neck and provided near its free end with a series of transverse perforations, escutcheon *b'*, provided with the stop-flange *f*, as described, the perforated knob-neck *a'*, pin *h*, and escutcheon *b*, all of said elements being combined substantially as herein described, and for the objects set forth.

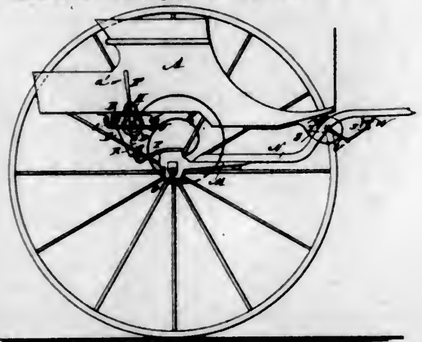
329,131. HANDLE FOR PACKAGE-CARRIERS. Carrie C. Boyd, Fruitport, Mich. Filed Apr. 18, 1885. (No model.)



Claim.—1. A handle for packages, made with a central part forming a hand-grasp and with opposite ends bent to form three open loops, substantially as herein set forth.

2. A handle for packages, made with a hand-grasp, A, and a wire, B, passed through grasp A, and having ends bent to form three open loops, *b c d*, substantially as herein set forth.

329,132. TWO-WHEELED VEHICLE. Walter C. Bradford, Germantown, Cal. Filed Aug. 26, 1885. (No model.)



Claim.—1. A cart having the supporting-springs each held at one end on the axle and at the other end on a rod mounted movably on the box or body, substantially as herein shown and described.

2. A cart having the supporting-springs each held at one end on the axle and at the opposite end on a shaft, provided with gearing for adjusting its position on the body, substantially as herein shown and described.

3. In a cart, the combination, with the body and axle, of springs secured on the axle, a shaft on the wagon-body, to which shaft the upper ends of the springs are secured, cog-wheels on the ends of the shaft, racks in which the cog-wheels can run, a handle-lever for turning the shaft, and devices for locking the shaft in place, substantially as herein shown and described.

4. The combination, with the body A and axle O, of the frames B on the body, the racks E, formed in said frames, the shaft C, passed through the frames, the cog-wheels D, mounted on the shaft and engaging with the racks E, the handle-bar F on the shaft C, the locking-bolt G on the handle-bar, and the curved racks H and J on one frame B, substantially as herein shown and described.

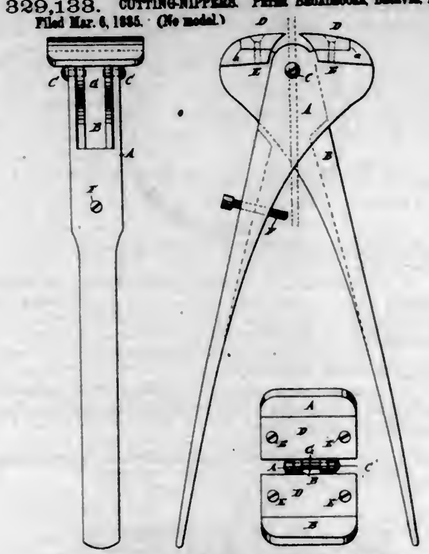
5. The combination, with the body A and the axle O, of the springs K, for supporting the body from the axle O, the arms P, projecting from the axle, and the cushions Q on the said arms, substantially as herein shown and described.

6. The combination, with a wagon-body mounted to rock above an axle, of a spring secured to said body and on a roller held adjustably on the frame of the vehicle, substantially as herein shown and described.

7. The combination, with a wagon-body mounted to rock above an axle, of a spring secured on the front of the body, a forked piece on the frame of the vehicle, a roller in said forked frame, to which roller the front end of the spring is secured, and a key for locking the roller in place on the forked piece, substantially as herein shown and described.

8. A vehicle having its body hung at the front and rear on springs, all the springs having tension-adjusting devices, substantially as herein shown and described.

329,133. CUTTING-NIPPERS. Peter Broadbooks, Batavia, N. Y. Filed Mar. 6, 1885. (No model.)



Claim.—The herein-described nippers, consisting of two levers pivoted together, and each provided in their jaw ends with coincident slots or recesses forming side bars, the bars of one lever being lapped between and close to the inner sides of those of the other lever, all arranged substantially as described, whereby a passage is provided through the nippers at right angles to the jaws and in line approximately midway between the sides thereof, as set forth.

329,134. PAPER BOX. Robert Brotz, Philadelphia, Pa., assignor to the Catersen & Brotz Company, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. A paper box having a lid or cover connected to the rear side of the box, and having both the front and rear sides of the box cut away at the top, so as to permit the contents of the box to be grasped between the thumb and finger in order to withdraw the same, as set forth.

2. The box having the front side cut away at the top, and a rear side also cut away and forming a yielding flap, *h*, connected to the lid of the box, as specified.

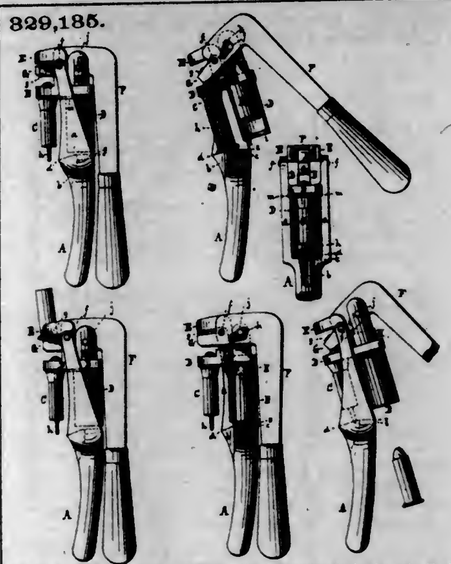
329,135. CARTRIDGE-RELOADING IMPLEMENT. Daniel Brown, Johnston, R. I. Filed July 10, 1885. (No model.)

Claim.—1. In a cartridge implement, the combination of the bifurcated handle A, having the inclined seat *d*, the lever F, the swinging supporting-block B, pivoted to said handle and lever, and the stud C, conically enlarged in diameter at its upper portion for the purpose of properly shaping the open end of a cartridge-shell, substantially as specified.

2. In a cap-seating cartridge-tool, the combination of the block B, having jaws E, and the lever F, pivoted to said block, and having its arm G provided with a set-screw adjustable in said arm, substantially as and for the purpose specified.

3. The combination of the bifurcated handle A, having the seat *e*, the block B, pivoted at *f* to said handle A, and having the tube D, the lever F, pivoted at *f* to said handle A, and the chamber H, mounted upon the lever F by the pivot *j*, and movable longitudinally in the tube D, for the purpose of seating the bullet in the cartridge-shell, substantially as shown.

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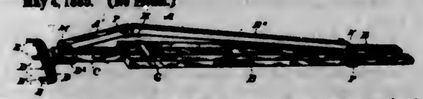
4. The combination of the bifurcated handle A, having the seat *e*, the block B, pivoted at *f* to said handle A, and having the tube D, the lever F, pivoted at *f* to the handle A, and having the slot *k*, and the chamber H, movable longitudinally within the tube D, and mounted upon the pin *j* in the lever F through said slot *k*, whereby the power of the lever F is increased during the operation of seating the bullet in the cartridge-shell, substantially as described.

5. In a cartridge implement, the cartridge-shell-extracting device, consisting of the combination of the bifurcated handle A, the block B, pivoted at *f* to said handle A, the tube D, having the annular beveled lip *i*, the lever F, pivoted at *f* to said handle A and block B, and the chamber H, mounted upon the lever F by the pivot *j*, and movable longitudinally in said tube D, and having its lower end beveled externally, substantially as specified.

6. The combined cartridge capping, uncapping, and loading implement herein described, consisting of the bifurcated and grooved handle A, having the inclined seats *d e*, the block B, pivoted to the handle A at *f*, and having the jaws E, the centrally-bored stud C, through which extends the expelling-pin *h*, the lipped tube D, the lever F, pivoted at *f* to said handle A and block B, and having a cap-seating arm, G, and the chamber H, mounted on said lever F by the pin *j*, substantially as specified.

7. The combination of the bifurcated and grooved handle A, having the angular seat *d*, the swinging block B, pivoted at *f* to the handle A, having the centrally-bored stud C, through which extends longitudinally the expelling-pin *h*, the lever F, pivoted to the handle A and block B at *f*, and having an arm, G, to swing the block B inwardly, so as to bring a cartridge-shell upon the seat *d*, and also to operate the expelling-pin *h*, substantially as described.

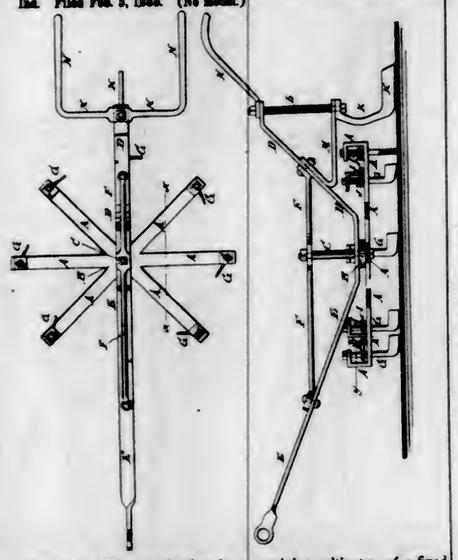
329,136. CARPET-STRETCHER. Cyrus L. Camp, Tremont, Ill. Filed May 4, 1885. (No model.)



Claim.—1. The twin bars B, the yoke F, encircling each of said bars, and having set-screws for holding said yoke in place upon said bars, the telescopic bar C, removable between said twin bars, and having the serrated head D attached to the outer end thereof, and the toggle-joint staff A, hinged at one end to said serrated head and at the other end to said yoke, substantially as and for the purpose specified.

2. The twin bars B, the strap G, and the yoke F for uniting said twin bars, said yoke being adapted to be secured at any point along said twin bars by means of the set-screws F^2, the telescopic bar C, removable between said twin bars, the serrated head D, having the socket M and the tack-holders E, and the bolt L for fastening said head to the outer end of said telescopic bar, in combination with the toggle-joint staff A, hinged at its ends to said socket and said yoke, and being provided with the grip-notches, as and for the purposes set forth.

329,137. REVOLVING CULTIVATOR. John T. Campbell, Rockville, Ind. Filed Feb. 5, 1885. (No model.)



Claim.—1. The combination, in a revolving cultivator, of a fixed frame, a horizontal circular frame pivoted to said fixed frame, spring-teeth swiveled in said circular frame, and stop arms and pins, whereby the said circular frame will be made to revolve, causing the part of the said circular frame next the row of plants to move forward faster than the advance of the cultivator, as set forth.

2. In a revolving cultivator, the combination, with the radial arms of the pivoted circular frame A B and the spring-teeth G, having rearwardly-projecting blades, of the stop-arms I and pins J, substantially as herein shown and described, whereby the blades of the teeth upon one part of the circular pivoted frame will engage with the ground, and the blades of the teeth upon the other part of the said circular pivoted frame will swing back and oppose very little obstruction to the movement of the said frame, as set forth.

3. In a revolving cultivator, the teeth G, made, substantially as herein shown and described, with projecting blades on their lower ends, and with spring-coils in their shanks, whereby the said teeth, when in one position, will be obstructed by the soil, and when in another position can move through the soil freely, as set forth.

4. In a revolving cultivator, the combination, with the radial arms A of the pivoted circular frame and the teeth G, of the stop-arms I, having eyes, and the stop-pins J, substantially as herein shown and described, whereby the said teeth will be turned successively into position to be obstructed by the soil, and then allowed to swing back, as set forth.

329,138. MANUFACTURE OF CHROMATES AND BICHROMATES. William J. Chrystal, Glasgow, County of Lanark, Scotland. Filed Apr. 22, 1885. (No specimens.) Patented in England Apr. 7, 1885, No. 4,290.

Claim.—1. The process herein described for the manufacture of alkaline chromates, said process consisting in decomposing chromate of soda with an alkaline sulphate and separating the alkaline chromate, as set forth.

2. The process herein described for the manufacture of alkaline bichromates, said process consisting in first decomposing chromate of soda with an alkaline sulphate, separating the sulphate of soda, and converting the alkaline chromate into a bichromate by adding a suitable acid, as set forth.

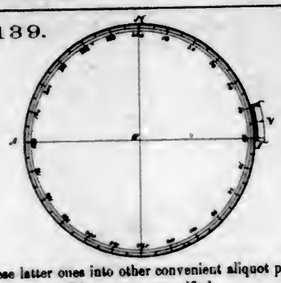
3. The process herein described for the manufacture of alkaline bichromates, said process consisting in decomposing bichromate of soda with an alkaline sulphate and separating the alkaline bichromate, as set forth.

329,139. GRADUATING ARCS UPON MATHEMATICAL AND OTHER INSTRUMENTS. Jacob M. Clark, Elizabeth, N. J., and Charles A. L. Totten, U. S. Army. Filed Mar. 7, 1884. (No model.)

Claim.—1. A scale for circular measure, the entire length of whose circumference is divided into two-hundred-and-forty-degree equal parts, as and for the purposes specified.

2. A scale for circular measure, the entire length of whose circumference is divided into two-hundred-and-forty-degree equal parts, and

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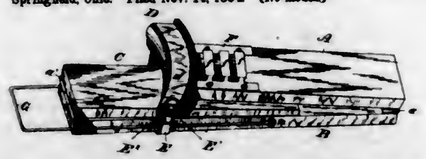
each of these latter ones into other convenient aliquot parts, (decimal or otherwise,) as and for the purposes specified.

3. A circular scale for draftsmen's use, divided into two hundred and forty equal parts, and suitable aliquot subdivisions, and bearing lines adapted to lay off the sides of rational and irrational polygons, or the chords of their "angles at the center," and vice versa, as specified.

4. A protractor consisting of a part of a circular scale or arc proportionally divided, as above set forth.

5. A scale for circular or angular measurements, divided as described, and adapted for application to mathematical and draftsmen's instruments, as and for the purpose set forth.

329,140. ARM-REST FOR EMBALMING-TABLES. Joseph H. Clarke, Springfield, Ohio. Filed Nov. 14, 1884. (No model.)

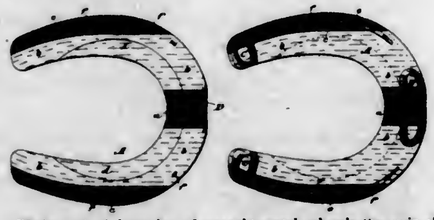


Claim.—1. An arm-rest for the purpose described, composed of an arm-supporting section, an intermediate section or sections, and an end section, all hinged together, as shown, the arm-supporting section of which is provided with a concaved arm-support, and is provided with a rack adapted to be engaged by a brace pivoted to the intermediate section, whereby the arm-supporting section may be adjusted to the desired angle with relation to the other sections and be retained in position, substantially as described, and for the purpose set forth.

2. An arm-rest composed of flat wooden sections hinged together, substantially as shown and described, one of said sections being provided with an arm support having an adjustable strip to support the arm and a rack and brace to adjust and hold the sections in the desired position relative to one another, one or more of said sections being adapted to extend under the body of the person upon the table and be held thereby, all substantially as described.

3. An arm-rest composed of the arm-supporting section A, provided with the concaved arm-support D, having the adjustable arm-holding strap E, the intermediate section, B, and the inclined end section, C, the section A being provided with a toothed rack adapted to be engaged by a brace pivoted to the intermediate section, whereby the said sections may be adjusted at different angles and retained in position, the sections A, B, and C being all hinged together and adapted to be folded one upon the other, substantially as shown and described.

329,141. HORSESHOE. Louis G. Claude, New York, N. Y., assignor by mesne assignments, to the Russell Horseshoe Company, same place. Filed Dec. 23, 1884. (No model.)



Claim.—1. A horseshoe of wrought metal, wherein the grain of the metal extends in parallel and substantially straight direction longitudinally of the shoe, substantially as specified.

2. A horseshoe of wrought metal, wherein the grain of the metal extends in parallel direction, crossing the toe portion thereof longitudinally of the shoe, and extending through the heel portions thereof with a slight inward deflection substantially parallel with the outlines of the heel portions, as specified.

3. A horseshoe of wrought metal, wherein the grain of the metal extends in parallel direction longitudinally of the shoe, and crossing the toe portion thereof transversely to its outline, and provided with a toe-calk extending across its toe portion transversely to the grain of the metal, thereby strengthening the toe portion, substantially as set forth.

4. A horseshoe of alternate stripe of iron and steel, wherein the grain of the metal extends in substantially parallel direction longitudinally of the shoe, and calk projections are formed in the steel portions of the shoe, substantially as set forth.

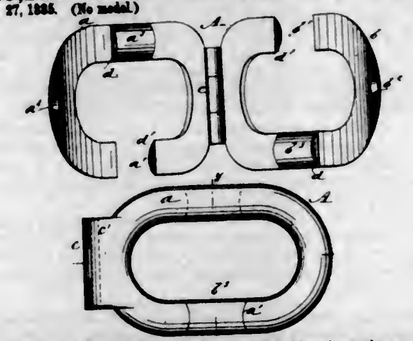
5. A horseshoe of combined iron and steel, wherein the grain of the metal extends in parallel direction longitudinally of the shoe, the middle of the toe portion of the shoe being of iron, and the toe-clip being formed from such iron middle, substantially as set forth.

6. A horseshoe of wrought metal having a toe-calk of combined iron and steel, the ends of the calk being of steel and its middle of iron, whereby the middle wears away faster in use than the ends, substantially as set forth.

7. A horseshoe of combined iron and steel, wherein the grain of the metal extends in parallel direction longitudinally of the shoe, crossing the toe portion transversely to the outline thereof, having steel sides and iron flanks, whereby the creases and nail-holes are formed in the iron flanks, substantially as set forth.

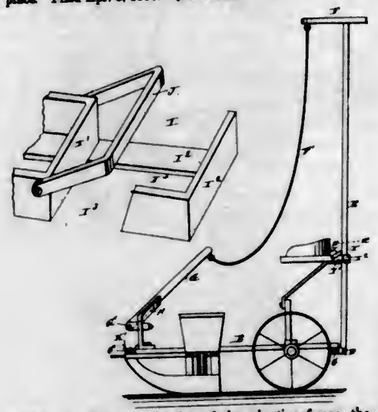
8. A horseshoe of combined iron and steel, wherein the grain of the metal extends in parallel direction longitudinally of the shoe, and consisting of a middle stripe, *a*, of iron, side stripes or cores, *b b*, of steel, and flanks *c c* of iron, substantially as set forth.

329,142. SPLIT LINK. William H. Clay, Paris, Ky. Filed Mar. 27, 1885. (No model.)



Claim.—A link consisting of the parts *a b*, hinged together at the end to open away from each other, and each provided on its inner surface with an enlargement or protuberance and an opening to receive the enlargement or protuberance, substantially as herein shown and described.

329,143. MARKING ATTACHMENT FOR CORN-PLANTERS. William H. Clay, Paris, Ky., assignor to himself and Frank P. Clay, Jr., same place. Filed Apr. 3, 1885. (No model.)



Claim.—1. The combination of the planting-frame, the marking-pole pivoted thereto, the rope-carrier swiveled at one end to the forward end of the planter-frame, a rope connecting said carrier with the marking-pole, and a centrally-depressed frame mounted on the forward end of the planter-frame, midway the sides thereof, and adapted to receive and support the rope-carrier, substantially as set forth.

2. In combination with the planter-frame and the marking-pole pivoted thereto, the locking device I, the catches K K', located at the opposite sides of the forward end of the machine, the rope-carrier G, swiveled at one end of the planter-frame, and having its other end connected with the marking-pole, and a centrally-depressed inclined frame, H, substantially as set forth.

3. In a marking attachment, the swiveled piece D, the pole E, the marker F, the rope F', the rope-carrier G, and the swiveled piece G', in combination with the inclined frame H, substantially as shown and described.

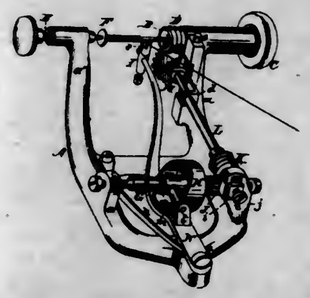
4. In a marking attachment, the swiveled piece D, the pole E, the marker F, the rope F', the rope-carrier G, the swiveled piece G', and the inclined frame H, in combination with the keepers K and K', attached to the front cross-bar, C', of main frame B, substantially as shown and described.

5. In a marking attachment, the swiveled piece D, the pole E, the marker F, the rope F', the rope-carrier G, the swiveled piece G', and the frame H, in combination with the locking device I, substantially as shown and described.

6. In a marking attachment, the locking device I, consisting of the frame I', L-shaped extension I², forming the aperture I³, and recess I⁴, and of the pivoted latch J, substantially as shown and described.

329,144. BOBBIN-WINDER. Abraham Coates, Watertown, N. Y. Filed Oct. 30, 1884. (No model.)

Brief.—Worm-wheel gearing connecting the spindle with a shaft provided with a cam operates a thread-guide. Worm-wheels of various sizes are provided for gearing with the worm on the spindle, the shaft pivoted to a sliding spring-held bar facilitating the interchange of the worm-wheels.



Claim.—1. In a bobbin-winder, the combination, with the thread-guide-actuating cam, of a bobbin-winder spindle, a worm on the bobbin-winder spindle, and means for securing the bobbin in operative position, an adjustable shaft intermediate between the bobbin-winder spindle and shaft of the thread-guide-actuating cam, and interchangeable worm-wheels adapted to be carried by the intermediate shaft and be engaged by the worm on the bobbin-winder spindle, substantially as and for the purpose specified.

2. The combination, in a bobbin-winder, of the spindle B, and means for securing the bobbin in operative position, the worm D, worm-wheel M, shaft L, worm K, worm-wheel J, shaft G, thread-guide I, and spring-acted lever N, substantially as herein specified.

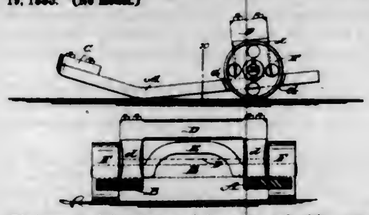
3. In a bobbin-winder, the combination, with the spindle B, and means for securing the bobbin in operative position, the thread-guide I, and intermediate parts, of the intermediate shaft, L, and spring-supported bearings at opposite ends thereof, adapted to press the worm K and worm-wheel M against the parts with which they engage, as herein specified.

4. In a bobbin-winder provided with the spindle B, and means for holding the bobbin in an operative position, the combination, with the shaft L, mounted in a pivoted bracket, and adapted to receive interchangeable worm-wheels of different sizes, of the spring *h*, for pressing the shaft L toward the spindle B, to bring the worm-wheel M into engagement with the worm-wheel D on the spindle, as specified.

5. In a bobbin-winder provided with a spindle, B, and bobbin-holder E, the combination, with the shaft L, mounted in a pivoted bracket provided with a hemispherical cavity, *b*, in the end thereof, of a spherical bearing fitted to the hemispherical step to allow of the rotation and swinging of the shaft L, as herein specified.

6. In a bobbin-winder provided with a spindle, B, and bobbin-holder E, the combination with the shaft L, having a hemispherical step, *b*, in the end thereof of the worm K, fixed to the said shaft centrally over the hemispherical cavity, and the screw *c*, having a spherical end adapted to the hemispherical cavity *b* in the shaft L, and located over the axis of the worm-wheel J, with which the worm K engages, substantially as specified.

329,145. LOG-BOAT. William A. Dexter, Dayton, N. Y. Filed Aug. 19, 1885. (No model.)

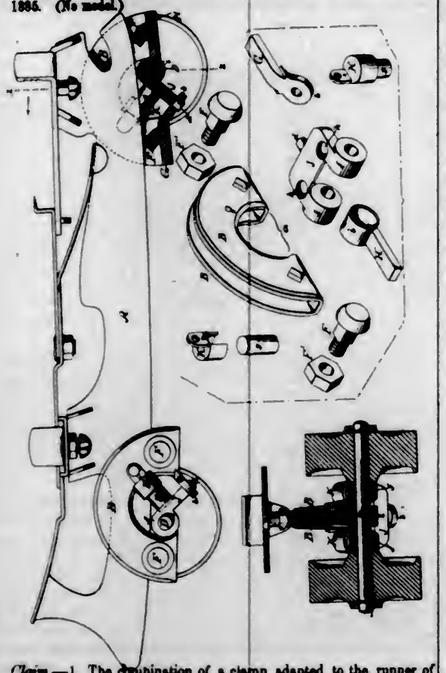


Claim.—1. A log boat or sled constructed with runners A B, a bolster, D, secured to the runners, an axle, E, held beneath the bolster, and wheels F F, fitted on the axle and projecting below the runners, substantially as herein set forth.

2. A log boat or sled comprising runners A B, a cross-bar, C, and bolster D, secured to the runners, an axle, E, held beneath the bolster, and wheels F F, fitted on the axle and projecting below the runners, substantially as herein set forth.

3. A log boat or sled comprising runners A B, bolster D, connected thereto, an axle, E, and wheels F F, arranged substantially as specified, the said runners having recesses, as at G, within which recesses the wheels F are located, substantially as herein set forth.

329,146. CONVERTIBLE SKATE. Thomas S. Denton, Philadelphia, Pa., assignor of one-half to Albert S. Carter, same place. Filed May 19, 1885. (No model.)



Claim.—1. The combination of a clamp adapted to the runner of an ice-skate, a pivoted plate, J, carrying bearings for the roller-spindle, sockets K, secured to the opposite sides of the clamp, and springs *g*, contained in said sockets, and bearing upon the plate J near its opposite ends, as set forth.

2. The combination of the clamp, the roller-spindle, the springs *g*, the sockets K, and the bearing-plate J, having recesses *h* for the springs, as set forth.

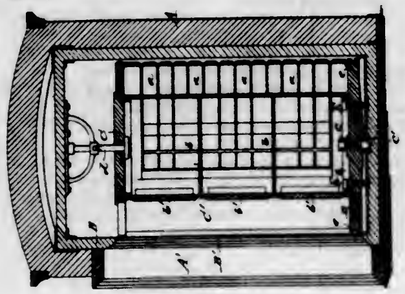
3. The combination of the roller-spindle, a fixed central bearing therefor having opposite conical flares, and a pivoted plate, J, having bearings for the spindle on each side of said central bearing, as specified.

4. The within-described clamp, having opposite wings for embracing the runner of the skate, and a central recess for the reception of a roller-spindle and its bearings, as specified.

5. The combination of a clamp adapted to the runner of an ice-skate, a pivoted plate, J, having bearings for a roller-spindle, a bar, G, having a bearing for the pivot of said plate, and a bar, H, carrying a central bearing for the roller-spindle, as specified.

6. The combination of a clamp adapted to the runner of an ice-skate, a pivoted bearing-plate, a bar, G, having a bearing for the pivot of said plate, a bar, H, having a central bearing for the spindle, and bolts F, whereby the clamp is secured to the runner and the bars G and H secured to the clamp, as set forth.

329,147. SAFE-DEPOSIT VAULT. Rufus E. Dixon, New York, N. Y., assignor to Frederick Foster, same place. Filed Dec. 30, 1884. (No model.)



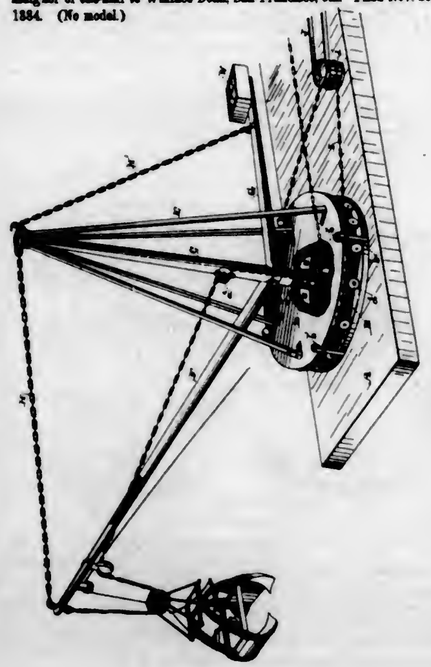
Claim.—1. The frame C, having central compartments, *b*, surrounded by boxes or outer compartments, *a*, and having a space, C', in combination with the shell B and surrounding masonry A, the frame C being adapted to be revolved in the shell B, substantially as described.

2. The shell B, provided at the top with the rod *d*, in combination with the revolving frame C, centered in the shell upon a point at the bottom, and held upon said point by the rod *d*, that passes through the top of the frame C, the rod *d* being of considerable length to permit the frame C to be elevated, substantially as and for the purposes set forth.

3. The shell B, provided with the rod *d*, in combination with the frame C, held upon the centering point or screw *c*, and provided with the elevating-screws E, the rod *d* passing through the top of the frame C, and being of considerable length to permit the frame C to be elevated, substantially as and for the purposes set forth.

4. The frame C, held in the vault upon suitable centering-points, and provided at the bottom with the grooved plate D, in combination with the endless chain F, shaft G, and table G', that serves as a lever to revolve the shaft G, for turning the frame C in the vault, substantially as described.

329,148. CRANE AND DERRICK. William S. Doan, Sacramento, assignor of one-half to Wallace Doan, San Francisco, Cal. Filed Nov. 20, 1884. (No model.)



Claim.—1. In a crane or derrick, the wheeled turn-table disk or pulley D, the mast C, secured thereto, and the braces E, joining the disk and mast, in combination with a boom, F, supported by a socket and deriving its movement from the rotation of the mast, and a counter-weight extension, G, substantially as described.

2. The mast C, having a socket near its lower end, and the boom F, supported thereby, in combination with the turn-table disk or pulley D, to which the base of the mast is secured, the upper and lower pulleys, *b'* and *d*, and the driving-chain I, by which the turn-table D is rotated to rotate the mast and adjust the boom, substantially as herein described.

3. The platform A, having a circular track, B, in combination with the mast C, stepped in the platform, the disk or pulley D, secured to the base of the mast, the wheels *d*, traveling on the track, the steadying-wheels *b'*, and the boom F, supported in a socket in the lower end of the mast, substantially as herein described.

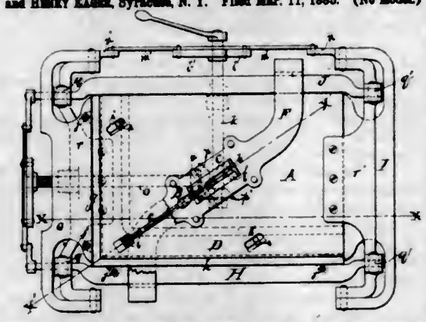
4. In a crane or derrick, the mast C, in combination with the boom F and a counter-weight extension, G, substantially as described.

5. In a dredger, the mast C, in combination with the boom F, the inner end of which bears against and is supported by the mast, and the weighted arm G, the inner end of which bears against and is supported by the mast, and is rigidly secured to the inner end of the boom, substantially as herein described.

6. In a dredger, the mast C, adapted to have a rotary movement, in combination with the boom F, the weighted arm G, and the uniting-straps *g*, said boom and arm resting against and supported by the mast and adjusted by its rotation, substantially as herein described.

7. In a dredger, the rotating mast C, in combination with boom F and weighted arm G, connected at the inner ends by straps *g*, embracing the mast, and the chains H H', supporting their outer ends from the top of the mast, substantially as herein described.

329,149. FOUR-EDGE-TIN-FOLDING MACHINE. James W. Eagen and Henry Eagen, Syracuse, N. Y. Filed Mar. 11, 1885. (No model.)

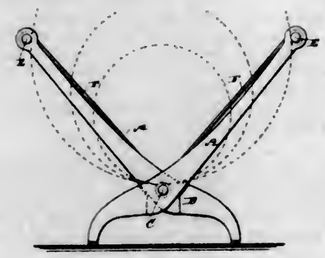


Claim.—1. In a four-edge-tin-folding machine, the beveled-edge plates A and E, in combination with the releasing-plate D, operated by the cam C, pivoted to the arm F, and having the arm *e*, with the lifting-pin *f*, the slotted connection *b*, and the connection c to the plate D, all as shown and described.

2. In a four-edge-tin-folding machine, the releasing-plate D, operated as described, and for the purpose set forth.

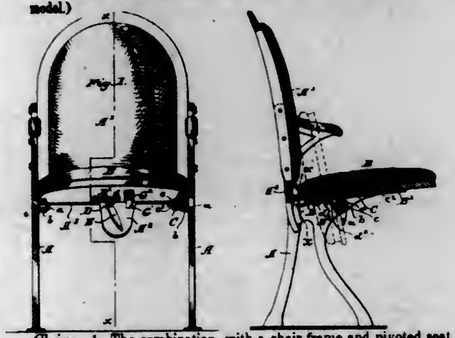
3. In a four-edge-tin-folding machine, the combination of the plate A, the plate E, the supports *r'* and *r'*, respectively attached to said plates, the yielding bearings *q q q' q'*, carried by said supports, and the folders or wings J and H, journaled in said bearings, so that the folders or wings are allowed to swing in a longitudinal direction as the plate A is raised or lowered, all substantially as described, and for the purpose set forth.

329,150. FOLDING DISH-DRAINER. Fred Eaton, Conway, N. H. Filed Mar. 21, 1885. (Model.)



Claim.—As an improved article of manufacture, a dish-drainer consisting, essentially, in the crossed end standards, A, cut away near their lower ends at their point of crossing to form stop-shoulders B, the rod C, pivotally connecting the crossed standards near their lower ends, the rods E E, connecting the upper diverging ends of the standard, and the spaced wires F, secured firmly at their lower ends to the rod C, and at their upper ends to the rods E E, thereby forming an open V-shaped frame adapted to receive plates of different sizes, substantially as set forth.

329,151. OPERA-CHAIR. Thomas W. Eaton, Chicago, assignor of one-half to John F. Eaton, Cambridge, Ill. Filed Oct. 29, 1884. (No model.)



Claim.—1. The combination, with a chair-frame and pivoted seat, of a spring or weight applied to throw the seat upwardly, a laterally-movable spring-detent upon the seat, and a cam-plate upon the chair-frame, provided with laterally-inclined side faces, and having a notch in its upper end adapted for engagement with the detent, whereby the seat will be held in its horizontal position against the force of the spring, and will be released by a further downward movement from such horizontal position, substantially as and for the purpose set forth.

2. The combination, with a chair-frame and pivoted seat, of a spring or weight applied to throw the seat upwardly, a laterally-movable spring-detent upon the seat, a cam-plate upon the chair-frame provided with laterally-inclined side faces, and a notch in its upper end adapted for engagement with the detent, so as to hold the seat from upward movement when the latter is horizontal, and a spring located between the seat and a part of the frame, adapted to arrest the downward movement of the seat in position for the engagement of the detent with the notch, and to permit said seat to yield downwardly under pressure applied thereto, so as to cause the disengagement of the detent from the notch, substantially as and for the purpose set forth.

3. The combination, with a chair-frame and pivoted seat, of a laterally-movable spring-detent pivoted upon the lower surface of the seat and projecting rearwardly therefrom, and a cam-plate located upon the rear face of the frame in position for engagement with the detent, and provided with laterally-inclined side faces, and with a notch in its upper end, substantially as and for the purpose set forth.

4. The combination, with a chair-frame and a pivoted seat, of a detent, D, pivoted upon the lower surface of the seat, a leaf-spring, D', attached to the detent and held at its free end upon the seat by pins *d'* or their equivalent, and a cam-plate, E, upon the chair-frame, having inclined side faces and provided with a notch, *e*, at its upper end, substantially as and for the purpose set forth.

5. The combination, with a chair-frame and pivoted seat, of a laterally-movable spring-detent, D, upon the seat, a cam-plate, E, upon the frame, provided with inclined side faces, and having a notch, *e*, at its upper end, and a block, e^3, of leather or similar material, secured in or to the vertical face of the notch, substantially as and for the purpose set forth.

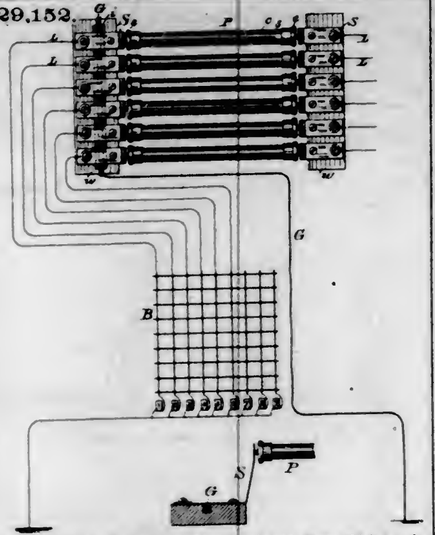
329,152. ELECTRICAL-APPARATUS PROTECTOR. Charles F. Elden, Malden, assignor to the American Bell Telephone Company, Boston, Mass. Filed June 8, 1885. (No model.)

Claim.—1. A circuit-protector consisting of the combination of a fusible wire or strip of metal located in the protected circuit between points sufficiently distant to prevent the formation of an arc, and a ground-wire in close proximity to the end of the fusible strip on the protected side.

2. In an electric-circuit protector, the combination of a fusible wire or strip of metal located in the protected circuit with a ground-connection located in close proximity to the end of the fusible strip on the protected side.

3. A protector for electrical circuits, consisting of a fusible wire or strip of foil, a non-conducting support therefor, metal end pieces for the said support electrically connected with the ends of the said strip, and the terminals of the divided circuit, combined with a ground-wire or earth-connection.

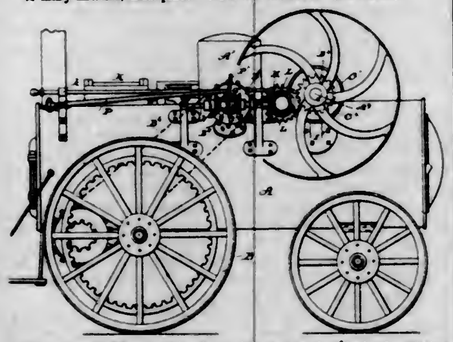
329,152.



4. The combination of a telephone-exchange, from which a series of subscribers' wires radiate to sub-stations, a series of strips of easily-fusible wire or foil, one strip included in each circuit, and a ground-wire or earth-connection in close proximity to the fusible strip, located on the exchange side of the strip, but insulated therefrom.

5. The combination of a series of circuit protectors, each consisting of a fusible strip or wire supported in a groove in a cylinder of insulating material, metal caps upon the ends of the cylinders, to which the fusible strip is electrically connected, springs for holding the protectors in position, respectively forming the terminals of a series of divided circuits, said springs located upon a grooved insulating-strip, containing a ground-wire which is insulated from the said springs.

329,153. TRACTION-ENGINE. John H. Elward, Pole, Ill., assignor to Mary Elward, same place. Filed Oct. 31, 1882. (No model.)



Claim.—1. The combination, with the engine-shaft, the sliding clutch, and the two collars loose on said shaft, of the levers respectively connected loosely to said collars, and the levers J, pivoted to both of said levers, substantially as set forth.

2. The combination, with the engine-shaft, the sliding clutch, and the two collars loose on said shaft, of the levers respectively connected loosely to said collars, the lever J, pivoted to both of said levers, and devices extending to the engineer's platform for operating said lever J, substantially as set forth.

3. The combination of the main shaft, mounted in two or more bearings, the clutch thereon, the shifting collar for the clutch, the thimble keyed to the shaft inside of the clutch, and the supporting-bracket below the clutch, separate from the bearing-brackets of the shaft, substantially as set forth.

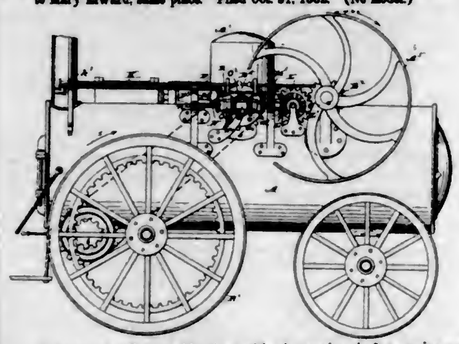
4. The combination, with the main shaft and the part C, loosely surrounding said shaft, of the detachable thimble keyed to the shaft within the loose part, substantially as set forth.

5. The combination with the chain-wheel and the shifting mechanism for imparting the power to said wheel alternately in opposite directions, of the link p', and the support for said link overhanging the chain-wheel, substantially as set forth.

6. The combination, with the traction-wheels, of a compensating gear having an outer power-transmitting peripheral portion, beveled or made conical, and a hollow conical part provided with teeth, substantially as set forth.

7. The combination, with the traction-wheels, independent of each other, the counter-shaft, and pinions upon said counter-shaft, respectively connected with the intermediate gear-wheels, b^2 b^2, of the part b^4 for transmitting power to said pinions, and the sliding part R R', arranged, substantially as set forth, to be brought into frictional engagement with the part b^4, substantially as set forth.

329,154. TRACTION-ENGINE. John H. Elward, Pole, Ill., assignor to Mary Elward, same place. Filed Oct. 31, 1882. (No model.)



Claim.—1. The combination, with the engine-shaft, a series or train of gear-wheels driven by said shaft, the ground traction-wheels, and the mechanism which is separable from said series or train of gear-wheels, and which drives the ground traction-wheels, of a reversing friction-clutch, substantially as set forth.

2. The combination, with the engine-shaft, the train or series of gear-wheels driven by said shaft, the ground traction-wheels, and the mechanism which is separable from said train or series of gear-wheels, and which carries power to the ground traction-wheels, of two opposite friction-clutches, each arranged, substantially as set forth, to brake by friction the momentum of the traction-wheels, and at the same time reverse said wheels, as described.

3. The combination, with the main engine-shaft, the traction-wheels, the continuously-rotating supplemental shaft, the means for driving the last said shaft from the engine-shaft, and a chain-wheel which operates the traction-wheels, and which is driven by said supplemental shaft, of two loose wheels on the supplemental shaft, and two opposing friction-clutches adapted to alternately engage said loose wheels with the chain-wheel, as set forth.

4. The combination, with the main engine-shaft and wheel B', of the two opposing friction-clutches, adapted, substantially as set forth, to operate as brakes and for reversing the motion of said wheel B'.

5. The combination of the main engine-shaft, the drive-wheels, the axle or shaft of the drive-wheels, an intermediate shaft separate from and interposed between the engine-shaft and the drive-wheel shaft, the two opposing friction-clutches upon the last said shaft, and the screw-rod connected with said clutches and adapted to operate them simultaneously, substantially as set forth.

6. The combination of the two opposing clutches interposed between the engine-shaft and the drive-wheel shaft, the means which connect the clutches, the lever pivoted to said connecting means, and the screw shaft or rod which engages loosely with said lever and engages by its thread with a stationary nut, substantially as set forth.

7. The combination of the main engine-shaft, the supplemental shaft mounted transversely to the main shaft, the toothed wheel permanently in engagement with the ground-wheel by means of the chain, the two toothed wheels on the counter-shaft, which engage with the wheel which is permanently connected with the drive-wheel, the sliding cones, the lever pivotally connected with said sliding cone, and the screw shaft or rod loosely connected to said lever and engaging by means of its thread with a stationary nut, substantially as set forth.

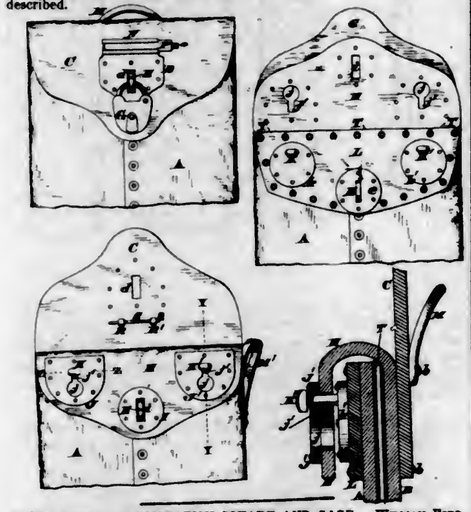
8. The combination, with the chain-wheel, the wheels for alternately rotating the chain-wheel in opposite directions, and the friction-cones for alternately rotating the last said wheels, of connecting and shifting devices adapted, substantially as described, to move the cones simultaneously one into and the other out of engagement with the corresponding friction-face, substantially as set forth.

329,155. MAIL-BAG. Frederick J. Feintuel and John G. Dunkelberger, Cincinnati, Ohio. Filed Aug. 17, 1885. (No model.)

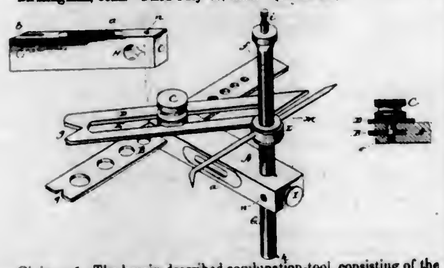
Claim.—1. The mail-bag A B, having its mouth closed by an outer flap, C, and inner flap, H, the front A of said bag being provided with a staple-plate, E e, and button-plates K k K' k', which buttons K K' engage with the slotted and eyed plates J j j' J' j' of inner flap, H, and the staple E passes through the slotted plates I i and D d of said inner and outer flaps, for the purpose specified.

2. The combination, with a mail-bag, of the flanged label-holder N n n', provided with detachable attaching devices, substantially as shown and described, open at one end, but closed at the other end, said open end being provided with a spring, O, whose shoulder o bears against the label-strip P in the manner herein described, and for the purpose stated.

3. The combination, in a mail-bag, of the label-holder N, having staples R R' on its back, which staples pass through suitable holes in the bag or flap and are traversed by the rod S, for the purpose herein described.



329,156. COMBINATION SQUARE AND GAGE. William Ford, Birmingham, Conn. Filed July 20, 1885. (No model.)

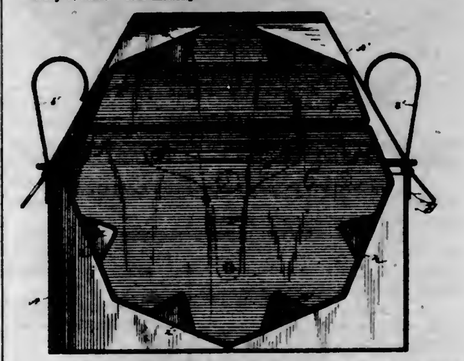


Claim.—1. The herein-described combination-tool, consisting of the stock A, provided with the level-bulb a, and constructed with a slot, b, at one end, a blade, B, constructed to enter said slot, a screw, C, in the stock, to secure said blade in its slot, a bevel-blade, D, constructed to be applied to the surface of the stock and be also secured by the said screw C, the stock constructed with a hole, H, transversely through it, a beam, G, adapted to slide through said hole H in the stock, a set-screw, I, in the stock to secure said beam, the said beam provided at one end with a tooth, h, and at the other with a longitudinal screw, i, said screw i adapted to enter a corresponding hole in the stock, and a collar, L, adjustable on said beam, and with a hole through it at right angles to the beam, with a scratch, M, adapted to pass through said transverse hole in the collar, all substantially as described.

2. The beam A, the bevel-blade D, constructed with a longitudinal slot of dovetail shape in transverse section, combined with a collar, F, arranged in said slot, the blade adapted to rest upon one side of the stock, and a set-screw, C, through said collar into said stock, adapted to bear upon said collar and clamp the blade to the stock, substantially as described.

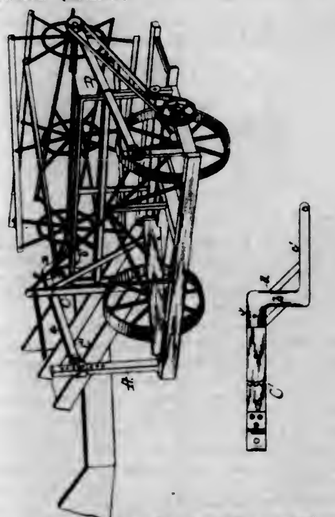
3. The stock A, provided with the level-bulb a, constructed with a hole, H, transversely through it, the beam G, adjustable through said hole, set-screw I, to adjustably secure said beam in said stock, the beam provided at one end with a scratch-tooth, h, and at the other with a longitudinal screw-stud, i, the stock constructed with a screw-threaded hole corresponding to said stud i, and collar L, adjustable on said stock, and adapted to carry the scratch M, substantially as and for the purposes described.

329,157. WASHING-MACHINE. Sidney Garrett, Mexico, Mo. Filed July 7, 1884. (No model.)



Claim.—In a washing-machine, the combination of a main vessel provided with a cover and re-enforced at the top by a band, B, angular castings D and D', the eye e', and the removable rod e, the shaft F, and spur-wheel E', secured to the main vessel, and having the removable handle G, with the polygonal rotary wash-drum mounted on a shaft, having the angular pocket H, and apertures j' j', having at one end a bevel-wheel, E, and an extended square end for the attachment of the handle direct to the rotary shaft, all constructed and combined to operate as set forth.

329,158. HARVESTER. John R. Gemmill, Red Bluff, Cal. Filed Dec. 16, 1884. (No model.)



Claim.—1. In combination with a supporting-standard and an elevator-trough of a harvester, a horizontal reel-supporting bar pivotally secured to the supporting-standard and having its rear end adjustably secured to a standard fixed in the frame of the carriage, and an angular reel-supporting arm rigidly secured to its free end and adapted to carry the journal of the reel, substantially as described, and for the purpose set forth.

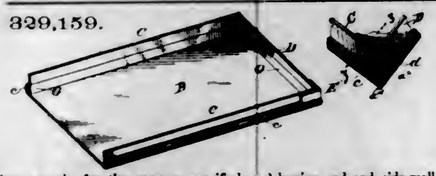
2. The reel-supporting bar herein described, adapted to be applied to the elevator side of the harvester, and consisting of the bar a, depending vertical arm d, and horizontal arm c', substantially as described, and for the purpose set forth.

3. The reel-supporting arm herein described, consisting of the arm e, provided with means for securing it to the end of the reel-supporting bar, the depending arm d, and the horizontal arm c', provided with bearings for the journal of the reel, substantially as described.

329,159. PRINTER'S GALLEY. William H. Golding, Boston, Mass. Filed May 5, 1884. (No model.)

Claim.—1. A galley formed at the ends and sides of its bottom-forming portion with outwardly-projecting longitudinal bends, grooves, or beads of substantially curved outline in cross-section to constitute an

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obtuse angle, for the purpose specified, and having end and side walls surmounting said beads, grooves, or beads, substantially as specified.

2. A galley formed of a single piece of metal having vertical end and side walls surmounting outwardly-projecting hollow longitudinal grooves or beads, substantially as specified.

3. A galley formed in one piece and comprising the bottom-forming portion B, the end and side walls, D C, having outwardly-projecting hollow beads *c d*, and a filling, as G, flush with the inner surfaces of said walls, substantially as specified.

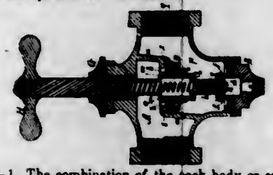
4. In a galley formed of a single piece of metal, the combination of the bottom B and longitudinally-beaded walls C D with the filled corner-pieces F, substantially as shown and described.

329,160. PACKING FOR PISTONS, JOURNAL-BEARINGS, &c. Byron W. Goodell, Chicago, Ill., and Benjamin F. Elson, Boston, Mass. Filed Mar. 17, 1884. (No model.)



Claim.—As a new article of manufacture, a packing having a rubber back and a plaited fibrous face secured together to form one contiguous piece in suitable lengths for immediate use, substantially as described.

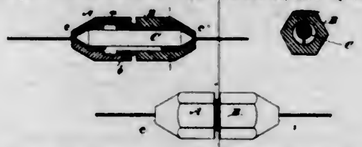
329,161. STOP AND WASTE COCK. Henry A. Gorham, Boston, Mass. Filed Apr. 3, 1885. (No model.)



Claim.—1. The combination of the cock body or case and its perforated partition, and the main valve and its spindle applied thereto, with the draining-educt and its auxiliary valve-seat in the lower part of such case, and with the auxiliary valve, its flanged spindle, lifting screw-nut, and depressing-spring applied to the main-valve spindle and the said auxiliary valve-seat, substantially as set forth.

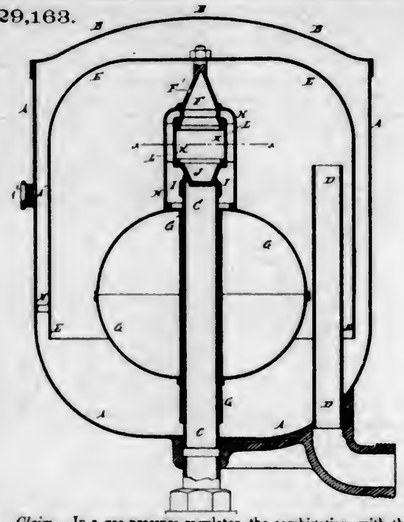
2. The combination, with the cock body or case A, having in it the perforated partition *a*, and with the main valve D, arranged below the partition, and having its spindle C provided with a screw, *l*, screwed into such case, of the cap B, screwed into the lower part of such case, and provided with the auxiliary valve-seat *f*, and its draining-educt, and of the auxiliary valve *g*, its flanged spindle *h*, lifting screw-nut *l*, and depressing-spring E, applied to the main-valve spindle, and to operate with such auxiliary valve-seat, and the main-valve spindle, substantially as represented, the said case having, besides its draining-educt, an induct to lead water into the space above and an educt to discharge water from the space below the said partition, as explained.

329,162. WIRE CLAMP AND COUPLING. Emery M. Hamilton, New York, N. Y., assignor, by mesne assignments, to Louis Goldsmith, same place. Filed Nov. 2, 1882. Renewed Dec. 24, 1884. (No model.)



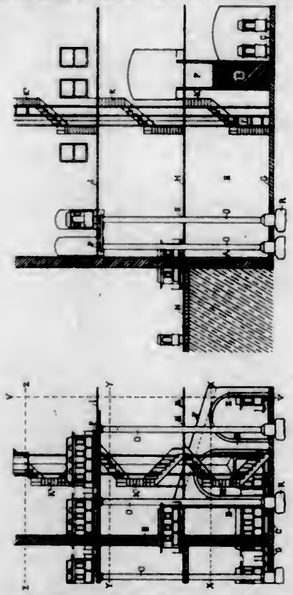
Claim.—The described metallic wire coupling, consisting of the thimbles A and B, provided with screw-threads *a* and *b*, and united together thereby, and with apertures *c c'*, and the solid cylinder or shaft C, placed loosely within said thimbles, all constructed and combined as and for the purpose described.

329,163. GAS-PRESSURE REGULATOR. Robert F. Hatfield, New York, N. Y. Filed Mar. 7, 1885. (No model.)



Claim.—In a gas-pressure regulator, the combination, with the inlet-pipe C, the cylinder H, attached to the float G, and the cone F, attached to the case E, of the valve J and cylinder K, rigidly connected with each other and the said cylinder H, substantially as herein shown and described, whereby the descent of the float will wholly prevent the inflow of gas, as set forth.

329,164. TRANSFER RAILWAY STATION OR TERMINUS. Rowland R. Hazard, New York, N. Y. Filed Feb. 27, 1885. (No model.)



Claim.—1. A structure or building arranged as an exchange or transfer railway station or terminus, in which the basement, ground or first floor, and second floor are connected by stairs, elevators, and inclined planes, or any one or two of them are arranged for and sustain or inclose tracks for underground, surface, and elevated railways, respectively, and are each furnished with alighting-floors or platforms adjacent to said tracks, substantially as described.

2. A structure or building arranged as a railway station or terminus and inclosing an elevated railway structure passing therethrough or terminating therein, and disconnected from the walls and floors thereof, whereby the vibrations of said railway structure incident to the movement of trains will not be transmitted to the said building, substantially as described.

3. A structure or building arranged as an exchange or transfer railway station or terminus, in which the basement is provided with tracks constituting part of an underground railway, the ground or first floor with a series of rooms or covered passages, provided with tracks for a number of surface railways, the second floor with tracks for elevated railways, supported on a structure disconnected from the walls and floors of the said building, and in which the several floors are provided with alighting-floors or platforms adjacent to said tracks, and are connected with each other by stairs, elevators, and inclined planes, or any one or two of them, substantially as described.

329,165. PROCESS OF ENAMELING. John Hems, Philadelphia, Pa. Filed May 18, 1885. (No model.)

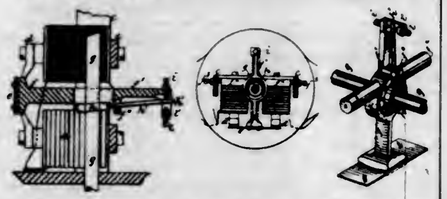
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Claim.—1. The mode herein described of making enameled articles having designs, letters, or figures thereon, said mode consisting in coating the article with a body of wet enamel, applying dry enamel-powder to the surface while unfired, to form the designs, letters, or figures, and then firing the article, substantially as set forth.

2 The mode herein described of making enameled articles having designs, letters, or figures thereon, said mode consisting in coating the article with a body of wet enamel, stenciling dry enamel-powder onto this surface while unfired, and firing the article thus prepared, substantially as set forth.

3. The mode herein described of making enameled articles with designs, letters, or figures thereon, said mode consisting in, first, coating the article with a body of wet enamel, evening and compacting the surface thereof, stenciling dry enamel-powder onto this wet surface, rolling the powder onto the body enamel, and, finally, drying and firing the article so prepared.

329,166. ELECTRIC-ARC LAMP. Alfred G. Holcombe, New York, N. Y., assignor to the Equitable Electric Company, same place. Filed Dec. 15, 1882. (Model.)

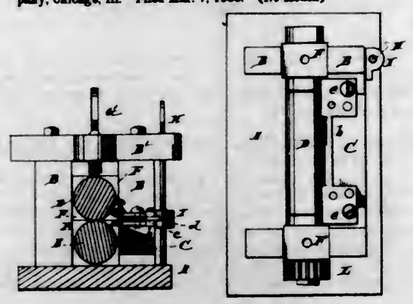


Claim.—1. In an electric-arc lamp, a rocking lever and actuating electro-magnet, in combination with a carbon-holding rod, a clutch, and two set-screws carried by the lever, whereby the working position of the lever and its range of motion are governed, substantially as and for the purpose set forth.

2. In an electric-arc lamp, in combination, the lever *f f' f'' l'*, clutch *k k'*, rod *g*, and set-screws *i* and *l*, substantially as and for the purpose set forth.

3. In an electric-arc lamp, as a means for determining the length of the arc, the combination, with a carbon-holding rod and a rocking lever, of a clutch provided with a tail-piece and carried by the lever near its fulcrum, and a set-screw passing upwardly through the lever at its end, so as to come in contact with the under side of the tail-piece of the clutch when the clutch and carbon-holding rod have been lifted the desired distance by the lever to form the arc, thereby preventing further movement of the rocking lever in the direction to lift the clutch and carbon-holding rod, substantially as set forth.

329,167. MACHINE FOR SPLITTING QUILLS, FEATHERS, &c. J. H. Holden, Michigan City, Ind., assignor to the Warren Featherbone Company, Chicago, Ill. Filed Mar. 7, 1885. (No model.)

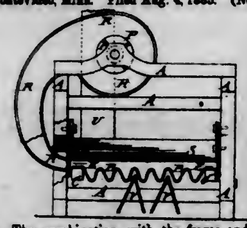


Claim.—1. The knife *c* and guide-plates *a b*, in combination with the rollers D E, substantially as specified.

2. The rocking knife *c*, having the projections *d*, in combination with the adjusting-nut I and adjusting-screw H, substantially as described.

3. The combination and arrangement of the rollers D E, adjusting-screws *g*, and support C with the guide-plates *a b*, adjusting-screws *h*, knife *c*, adjusting-nut I, and adjusting-screws H, all constructed and arranged substantially as set forth.

329,168. MIDDLINGS PURIFIER AND SEPARATOR. Edward W. Howard, Montevideo, Minn. Filed Aug. 4, 1885. (No model.)



Claim.—1. The combination, with the frame and a driving mechanism, of the inclined vibrating longitudinally-corrugated plate, a vertically-adjustable top plate on the frame and extending over the corrugated plate, and a fan-blower arranged to deliver a blast between the side edges of the top plate and corrugated plate transversely of the corrugations, substantially as set forth.

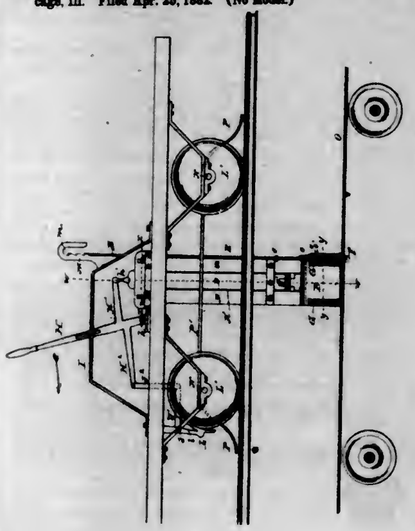
2. In a middlings purifier and separator, the combination, with the frame A, the blast-fan, and the suspended vibrating corrugated plate B, of the adjustable angular guide-plates V, substantially as herein shown and described, whereby the several grades of middlings will be guided into separate receptacles, as set forth.

329,169. WIRING FOR SECURING STOPPERS TO BOTTLES. Robert L. Howard, Luton, County of Bedford, England. Filed Sept. 17, 1885. (No model.) Patented in England Mar. 3, 1880, No. 926.

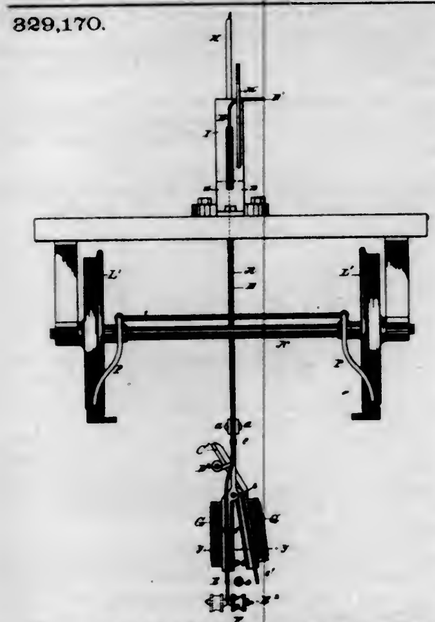


Claim.—The wiring for corks or stoppers of bottles, composed of four pieces of wire twisted together at opposite sides of the bottle-neck, two pieces thereof going across the cork or stopper to hold the same, and the other two around the neck to form the band, substantially as set forth.

329,170. CABLE-RAILWAY GRIP-CAR. Samuel W. Jackson, Chicago, Ill. Filed Apr. 25, 1882. (No model.)



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Claim.—1. In a grip-car for cable railways, the grip having its jaws arranged to open downward toward the cable, in combination with a laterally and vertically movable lifting-pulley for raising the cable from the cable-pulleys into position to be engaged by the jaws, and a pivotally-mounted support for said pulley, substantially as and for the purpose set forth.

2. In combination with a cable-car grip having its mouth directed downward toward the cable, a rotating and reciprocating rod, E, bearing a pulley, F, together with means for supporting said rod, substantially as described.

3. In combination with a cable-grip having its mouth directed downward, the rack M, and the rotating and reciprocating rod E, provided with the laterally-projecting pulley F, and arm E^2, substantially as and for the purposes set forth.

4. In combination with the rotating and reciprocating rod E, provided with the laterally-projecting pulley F, a retaining-guide, c', operating to hold the rod from rotation when raised, substantially as described.

5. In a cable-car grip, the combination, with the wooden jaw-facing, of a metal back provided with marginal flanges b', arranged to retain the wood facing on two sides, and the removable bolt b''', passing through said flanges and through the facing, whereby the latter may be conveniently replaced, substantially as described.

6. In a cable-railway grip-car, the combination, with a grip-actuating bar, D, and with brake mechanism, of a single lever, H, connected to actuate both grip and brake, substantially as described.

7. In a cable-railway grip-car, the combination, with the vertically-reciprocating grip-bar D and the vibrating brakes L, of the lever H, fulcrumed at its lower end, and provided with arms H' and H^3, respectively connected with the grip-bar D and the braking mechanism, substantially as described.

329,171. WITHDRAWN.

329,172. GRATE FOR BURNING GAS IN FIRE-PLACES. Walter S. Jarboe, Allegheny City, Pa. Filed Jan. 14, 1885. (No model.)

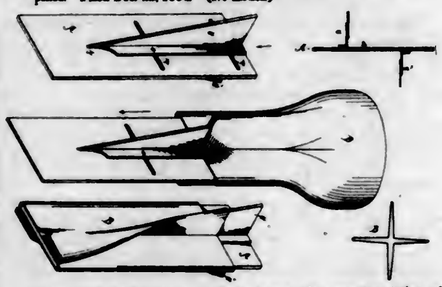


Claim.—1. A hollow grate for burning gaseous fuel, having a flat upper surface, perforations extending through the same, and a series of pins or projections on its upper surface adapted to hold refractory material above the body of the grate and so form an air-space above and protect the body of the grate from burning out, substantially as set forth.

2. In combination with a hollow perforated grate for burning gaseous fuel, a mixing-chamber, and a connecting-nipple fitting within a seat in the hollow burner, substantially as and for the purposes set forth.

3. The combination of the mixing-chamber *g*, secured to the gas-supply pipe *h*, the nipple *m*, secured to the mixing-chamber, and the covering-cap *v*, substantially as and for the purposes set forth.

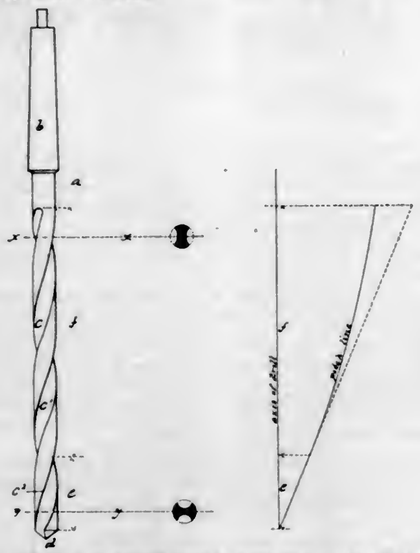
329,173. FORMER FOR PAPER BAGS. Philip Jehle, Philadelphia, Pa., assignor to Martin Nixon and William H. Nixon, both of same place. Filed Dec. 22, 1884. (No model.)



Claim.—1. The within-described former, the same consisting of a plate, A, and triangular vanes combined with the plate, substantially as set forth.

2. The combination of the plate A with vanes *a a'* laterally adjustable on the plate, substantially as specified.

329,174. TWIST-DRILL. Moses C. Johnson, Hartford, Conn. Filed Apr. 9, 1885. (No model.)



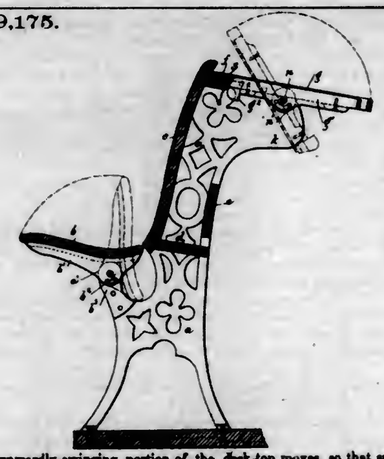
Claim.—As an improved article of manufacture, a twist-drill having grooves with a regular pitch for a certain distance near the point of the drill and an increased pitch to the upper end of the groove, all substantially as described.

329,175. SCHOOL-DESK. Nathaniel Johnson, New York, N. Y. Filed Oct. 18, 1884. (No model.)

Claim.—1. The combination, with the standards *a*, of the desk-top *g*, hinges connecting the standard and desk top, stop-pins on the hinges, and a ledge at the under surface of the back part of the desk-top, whereby the under side of the desk-top itself forms a book-holder when turned over into a backwardly-inclined position, substantially as set forth.

2. The combination, with the reversible desk-top and its end pivots, of standards *a*, that are formed as closed guards *k*, between which

329,175.



the downwardly-swinging portion of the desk-top moves, so that such guards prevent injury to the clothing or person using such desk, substantially as specified.

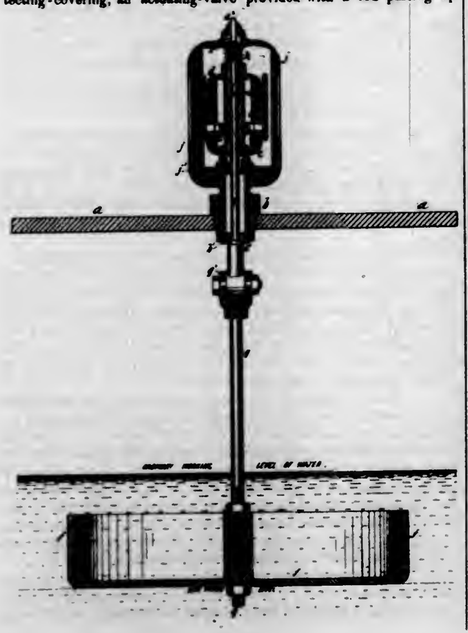
3. The combination, with the standards *a*, of the reversible desk-top, the hinges or pivots for the same, having stop-pins, and the frictional springs intervening between the metal end pieces of the desk-top and the standards, substantially as set forth.

329,176. LOW-WATER ALARM. John W. Kenyon, New York, N. Y., assignor to George H. Clarke, Montclair, N. J. Filed Mar. 26, 1885. (No model.) Patented in England Apr. 27, 1882, No. 1,965; in France Mar. 21, 1884, No. 161,095, and in Belgium Mar. 23, 1884, No. 64,600.

Claim.—1. In a low-water alarm, the combination, with a steam-whistle provided with an escape-valve and secured in the top of a boiler, of a hollow vessel suspended from the valve by direct connection to its stem, and so located in the boiler between the ordinary working-level and the low level of the water as to remain full of water when the water falls below the working-level, substantially as and for the purpose set forth.

2. In a low-water alarm, in combination, the whistle *b c d*, provided with a vertical bole through it, and secured to the top of the boiler *a*, the rod and valve *e e'*, the spring *h*, nut *i*, and the water-vessel *f*, connected to the rod *e*, substantially as and for the purpose set forth.

3. In a low-water alarm, in combination, a steam-whistle, a protecting-covering, an actuating-valve provided with a rod passing up

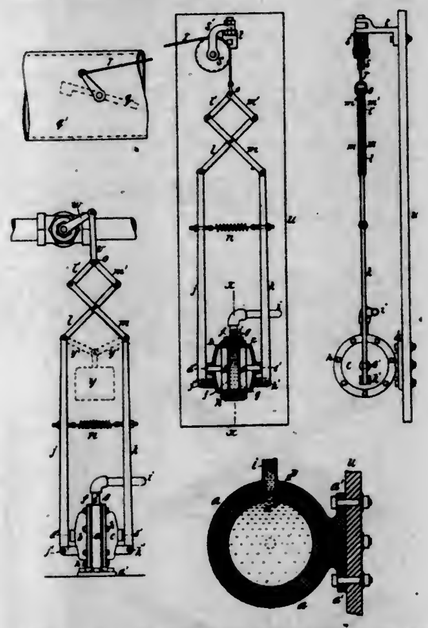


through the whistle and the top of the protecting-covering, substantially as and for the purpose set forth.

4. In a low-water alarm, in combination, the whistle *b c d*, the cover *j*, the rod and valve *e*, e^2, and e', the spring *h*, and nut *i*, substantially as and for the purpose set forth.

5. In a low-water alarm, in combination, the whistle *b c d*, the rod and valve *e* e^2 e', the water-vessel *f*, the suspending-rod *g*, the spring *h*, the nut *i*, and the cover *j*, substantially as and for the purpose set forth.

329,177. PRESSURE-REGULATOR. John W. Kenyon, Brooklyn, assignor to George H. Clarke, Port Washington, N. Y. Filed June 27, 1885. (No model.)



Claim.—1. In a pressure-regulator, the combination, with two elastic diaphragms, forming the opposite sides of a pressure-chamber, of levers pivoted at their free ends to a system of floating levers, and actuated by the elastic diaphragms at points near their fixed fulcrums, substantially as and for the purpose set forth.

2. In a pressure-regulator, in combination, an annular body-piece, two hollow covers, two elastic diaphragms secured between the body and the covers, two followers or pistons located in the covers, with stems or rods projecting therethrough, and a compound system of levers actuated by the projecting rods of the pistons, substantially as and for the purpose set forth.

3. The combination, with the pressure-chamber of a pressure-regulator, of a detachable perforated washer or disk located in the inlet-opening of said pressure-chamber, substantially as and for the purpose set forth.

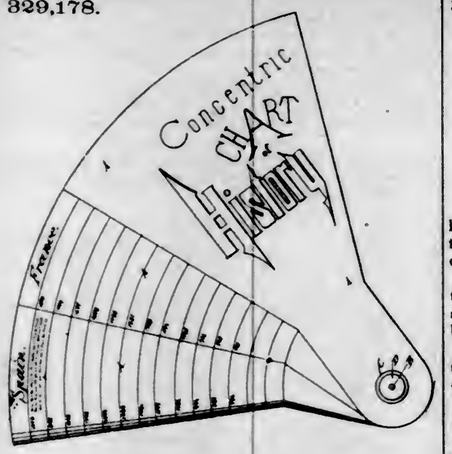
4. In a pressure-regulator, in combination, the annular body *a*, the covers *b* and *c*, the pistons *d* and *e*, provided with the rods *d'* and *e'*, the elastic diaphragms *f* and *g*, the levers *j* and *k*, and spring *n*, substantially as set forth.

5. In a pressure-regulator, in combination, a pressure-chamber having two elastic diaphragms, and followers arranged and actuated by the pressure, so as to move in opposite directions, the levers *j* and *k*, pivoted to the pressure-chamber and actuated near their fulcrums by the followers of the diaphragms, the spring *n*, connected to the two levers *j* and *k*, so as to draw them together and oppose the outward motion of the diaphragms, the diagonal levers *l* and *m*, and the links *l'* and *m'*, having a common connecting-joint, *o*, for connection to the governing device to which the apparatus is applied, substantially as set forth.

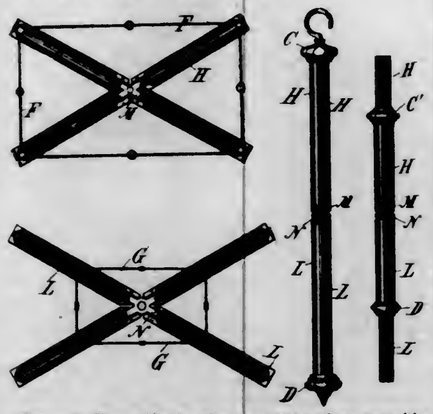
329,178. RADIALLY-FOLDING SYNCHRONOUS CHART. James H. Ludlow and Isaac K. Funk, Brooklyn, and Adam W. Wagnalls, New York, N. Y. Filed Jan. 8, 1885. (No model.)

Claim.—A radially-folding synchronous chart constructed substantially as herein shown and described, and consisting of a series of sector-shaped plates having extensions pivoted to a common center and divided into annular spaces by concentric lines, as set forth.

329,178.



329,179. STOOL AND SEAT. Artur Lobbe, Vienna, Austria-Hungary. Filed Sept. 15, 1884. (No model.) Patented in Germany Sept. 16, 1884, No. 31,869; in France Sept. 16, 1884, No. 164,307; in England Sept. 16, 1884, No. 12,464; in Austria-Hungary Dec. 6, 1884, No. 34,753 and No. 56,627, and in Italy Dec. 31, 1884, No. 17,441/116.



Claim.—1. The combination of an upper folding frame comprising arms connected at their outer ends, and a center-piece to which said arms are pivoted near their inner ends, a lower folding frame comprising connected legs and a center-piece to which said legs are pivoted near their inner ends, said center-pieces being out of contact with each other and the inner ends of said legs and arms abutting against each other, a screw on one of said center-pieces adapted to pass through a hole in the other, and a nut on said screw for drawing said center-pieces nearer to each other and stretching said frames, substantially as described.

2. A folding frame for a convertible camp-stool and cane, comprising arms, a center-piece to which said arms are pivoted at their inner ends, peripheral rods connecting said arms at their outer ends, radial rods connecting said peripheral rods at intermediate points between said arms, and a center link connecting said radial rods, substantially as described.

3. A folding frame for a convertible camp-stool and cane, comprising arms, a center-piece to which said arms are pivoted at their inner ends, peripheral rods connecting said arms at their outer ends, radial rods connecting said peripheral rods at intermediate points between said arms, and a center link connecting said radial rods, said radial rods and center link being united by knuckle-joints, substantially as described.

4. A folding frame for a convertible camp-stool and cane, comprising arms, a center-piece to which said arms are pivoted at their inner ends, peripheral rods connecting said arms at their outer ends, radial rods connecting said peripheral rods at intermediate points between said arms, and a center link connecting said radial rods, said peripheral and radial rods being connected by three-way links, substantially as described.

329,180. CAR WHEEL AND AXLE. William Malan, Edge Moor, Del. Filed Aug. 3, 1885. (No model.)



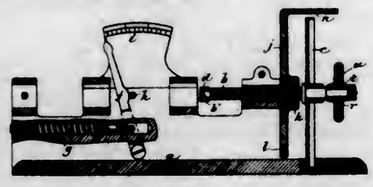
Claim.—1. An axle having a wheel-hub integral therewith, said hub having a projecting flange presenting two seats for the reception of the central portions of inner and outer plates constituting the body of a car-wheel, all substantially as specified.

2. The combination of an axle having a wheel-hub formed integral therewith, and presenting a projecting flange, with a body-plate having a bearing against the seat formed by said flange, and with bolts, whereby the plate is secured to the flange, all substantially as set forth.

3. The axle having a wheel-hub formed integral therewith, and presenting two outwardly-facing seats for the reception of the inner portion of the wheel-body, as specified.

4. The combination of the axle having a wheel-hub formed integral therewith, and presenting two outwardly-facing seats, as described, with the wheel, the body of which consists of annular plates adapted to said outwardly-facing seats, as specified.

329,181. MICROMETER-GAGE. Edward A. Marsh, Newton, Mass. Filed July 3, 1885. (No model.)



Claim.—1. The herein-described micrometer-gage, comprising a frame, an adjustable jaw adapted to be fixed in its adjusted position, a slide carrying a movable jaw, a screw working in a threaded socket in the frame, and engaging the slide, a pointer pivoted in the frame and held by a spring against the slide carrying the movable jaw, a fixed graduated surface which co-operates with said pointer to indicate the number of rotations of the screw, and a disk and pointer to indicate a fraction of a rotation of said screw, as set forth.

2. The combination, in a micrometer-gage, substantially as described, of a supporting-frame, a movable jaw secured to a slide which is fitted to move in a guide in said frame, a screw working in a threaded socket in the frame and engaged with the slide of the movable jaw, a pivoted pointer which is moved by the movable jaw or its slide, and a graduated surface over which the pointer moves to indicate rotations, as and for the purpose set forth.

3. The combination of a supporting-frame, a jaw affixed thereto, a movable jaw secured to a slide which is fitted to move in a guide in said frame, a screw working in a threaded socket in the frame and engaged with the slide of the movable jaw, a pointer which is moved by the movable jaw or its slide, and a fixed graduated surface which co-operates with said pointer to indicate the number of rotations of the screw, as set forth.

4. The combination of a supporting-frame, a jaw affixed thereto, a movable jaw secured to a slide which is fitted to move in a guide in said frame, a screw working in a threaded socket in the frame and engaged with the slide of the movable jaw, a graduated disk on said screw co-operating with a fixed pointer to indicate parts of a rotation of the screw, a pointer which is moved by the movable jaw or its slide, and a fixed graduated surface which co-operates with said pointer to indicate the number of rotations of the screw, as set forth.

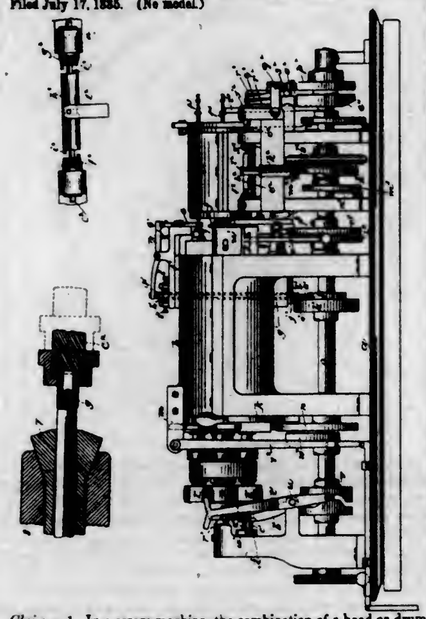
5. The combination, in a micrometer-gage, substantially as described, of a supporting-frame, a jaw affixed thereto, a movable jaw secured to a slide which is fitted to move in a guide in said frame, a screw working in a threaded socket in said frame and engaged with the said slide, with the improved operating crank or handle, made with a radial socket or cavity containing a spring, *u*, and a block or pad, *t*, against which the spring presses to hold the same against the surface of the screw to movably hold the handle or crank to the screw, whereby when the movable jaw meets an obstruction the movement of the screw is stopped, while the handle or crank is permitted to turn, as set forth.

6. The combination of a supporting-frame, a jaw affixed thereto, a slide movable in a guide in said frame and supporting a jaw co-operating with the fixed jaw, a screw working in a threaded socket in said frame and bearing at one end against said slide, and a spring which holds the slide in contact with the end of the screw, as set forth.

7. The combination of a supporting-frame, a jaw affixed thereto, a slide movable in a guide in said frame, a jaw affixed to said slide, a screw bearing at one end against said slide, an arm or pointer pivoted to the frame, a spring which presses said arm against a projection on the slide, and thereby presses the slide against the end of the screw, and a fixed graduated surface co-operating with the pointer, as set forth.

8. The combination of the supporting-frame, the fixed jaw, the movable jaw and its operating devices, including the screw *b*, the graduated disk on said screw, the arm *j*, co-operating with said disk, to indicate the fractional parts of a complete rotation of the disk, and means, substantially as described, for adjusting said arm and holding it in any position to which it may be adjusted, as set forth.

329,182. SCREW-MACHINE. Edward A. Marsh, Newton, Mass. Filed July 17, 1885. (No model.)



Claim.—1. In a screw-machine, the combination of a head or drum fitted to rotate in a head-stock or bearing, and provided with a series of running spindles, a series of devices arranged to act simultaneously on wire rods held by the series of chucks when the latter are in operative position, said devices being, first, a pair of feeding-jaws; secondly, a reducing or screw-shank-forming cutter; thirdly, a screw-cutting die; and, fourthly, a rod-severing cutter; mechanism for operating said devices, substantially as described, and mechanism for rotating said head step by step, and thereby presenting each spindle to each of the co-operative devices in succession, means whereby the spindles presented to the cutters are rotated, and means whereby each spindle when presented to the screw-cutting die is prevented from rotating, as set forth.

2. In a screw-machine, the combination of a rotary head or drum, provided with a series of running spindles, mechanism for rotating said head step by step, a pair of feeding-jaws, and mechanism, substantially as described, whereby said jaws are caused, first, to grasp the end of a rod held in the spindle presented to it; secondly, to move forward with the rod; thirdly, to release the rod and then move forward sufficiently to clear the rod until after the next partial rotation of the head; and, finally, to move back into position to grasp the rod of the next spindle, as set forth.

3. The combination of the rotary head, the series of spindles journaled therein, each having a clutch member at its rear end, a screw-cutting die arranged to act upon a blank held by one of said spindles, a sliding non-rotating clutch member supported by the frame of the machine, and mechanism, substantially as described, whereby said sliding member is engaged with the clutch member of each spindle when the latter is presented to the screw-cutting die and withdrawn after said die has operated, as set forth.

4. The combination of the rotary head, the series of spindles journaled therein, each having a pulley at its rear end, mechanism for rotating said head step by step, the cutters *f* *h*, arranged to act simultaneously on the rods held by two of said spindles, operating mechanism for said cutters, two idle-pulleys arranged to coincide with the pulleys of the two spindles presented to the cutters *f* *h*, a driving belt or belts, belt-shippers, and mechanism to operate them, whereby the belts are kept upon the idle-pulleys while the head is rotating and upon the coinciding spindle-pulleys when the head is in operative position after each partial rotation, as set forth.

5. The combination of the journaled head, the series of spindles journaled therein, each having a pulley and a clutch member at its rear end, mechanism for operating said head step by step, the cutters *f* *h*, and screw-cutting die *g*, arranged to co-operate simultaneously with three of said spindles, mechanism for operating said cutters and die, the sliding clutch member arranged to co-operate with the clutch member of the spindle presented to the screw-cutting die, the loose pulleys arranged to coincide with the pulleys of the two spindles presented to the cutters *f* *h*, the driving belt or belts, the belt-shippers, and mechanism, substantially as described, for reciprocating said belt-shippers and sliding clutch member, whereby the two spindles presented to the cutters are rotated, and the spindle presented to the screw-cutting die is locked after each partial rotation of the head, as set forth.

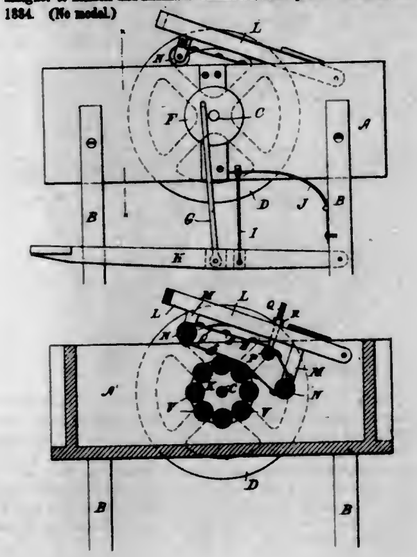
6. The combination of the rotary head, the spindles journaled therein, mechanism, substantially as described, for rotating said head and operating the spindles, the feeding-jaws, reducing-cutters, and screw-cutting die and their operating mechanism, the rotary tail-stock head or drum having a series of non-rotating longitudinally-movable spindles, f^3, with screw-threaded chucks, mechanism for rotating the tail-stock head step by step to bring its spindles successively into line with one of the head-stock spindles, means for moving each tail-stock spindle forward when brought to the position last indicated to engage it with a screw-shank, and then backward to remove the screw from the head-stock, a slotting saw or cutter, to which the screw-heads held by the tail-stock spindles are presented by each partial rotation of the tail-stock head, means for operating said cutter, and means for ejecting the screws from the tail-stock spindles after they have been slotted, as set forth.

7. The combination, with the spindles *d*, having the clutch members *w* at their rear ends, the sliding non-rotating clutch member *w'*, the spring *c'*, backing said sliding member, and mechanism, substantially as described, for applying pressure through said spring to move the sliding member forward, the spring permitting the sliding member to yield in moving forward, as as and for the purpose specified.

8. The combination of the threaded spindle c^3, having the screw-cutting die, the nut j^3, engaged with the threaded portion of said spindle, the pinions f^3 g^3, rotated continuously in opposite directions on said spindle, the sleeve h^3, rotating with and movable lengthwise on said spindle, and formed at its ends to engage with the pinions f^3 g^3, and mechanism whereby said collar is reciprocated lengthwise to engage it alternately with the pinion f^3 and the pinion g^3, as set forth.

9. The combination of the spindle c^3, the movable nut j^3, the mechanism for rotating the spindle and for reversing its rotation, and devices, substantially as described, for supporting the nut j^3 with a yielding pressure, as set forth.

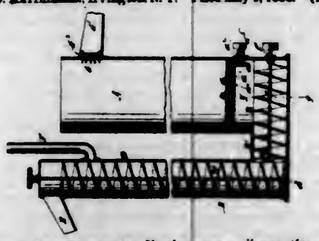
329,183. WASHING-MACHINE. Samuel Martin, Hartland, Mich., assignor to himself and Zabina E. Chambers, same place. Filed Sept. 23, 1884. (No model.)



Claim.—The washing-machine comprising the box or tub, within which is hung the rotary cylinder of rollers, hinged or pivoted frame, with its end rollers and an intermediate tension-roller encompassed by an endless ribbed belt, said frame having arms fixed to its ends at the sides, to which arms is connected the pressure-frame, and the foot-lever intermediately connected to a disk of the cylinder-shaft, and to an upwardly-drawing spring, substantially as shown and described, and for the purpose set forth.

329,184. CONTINUOUS FILTER FOR FILTERING SUGAR-LIQUOR.

FRANZ O. MATTHIESSEN, Irvington, N. Y. Filed May 9, 1885. (No model.)

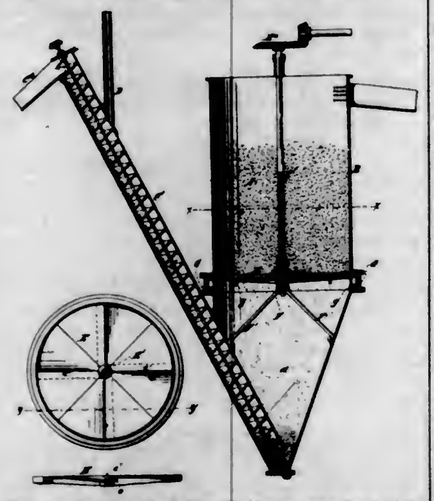


Claim.—1. In apparatus for filtering sugar-liquor through bone-black, a vertical cylinder, into the top of which bone-black is fed, and down which it falls by its own gravity, a receiving-chamber at the bottom of said vertical cylinder, and an elevator-tube connected with the said receiving-chamber, and means for moving the bone-black from the receiving-chamber and thence upward through the elevator-tube, and discharging it at or near the top of the elevator-tube, in combination with a service-pipe for introducing the sugar-liquor into the upper part of the elevator-cylinder, and a discharge outlet or outlets for the discharge of the sugar-liquor from the apparatus, the arrangement being such that the mass of bone-black is moved through the filtering apparatus in one direction, while the sugar-liquor is moved through it or through a suitable part of it in the opposite direction, substantially as described.

2. The combination, with the bone-black filter, of an upright elevator-cylinder provided with an elevator-screw, the axis of which is coincident with the axis of the said cylinder, for elevating bone-black through said cylinder and discharging it from the top thereof, and means for conveying the exhausted bone-black from the bottom of the filtering-chamber to the lower part of said cylinder, substantially as and for the purpose set forth.

329,185. BONE-BLACK FILTER FOR FILTERING SUGAR-LIQUORS.

FRANZ O. MATTHIESSEN, Irvington, N. Y. Filed May 18, 1885. (No model.)

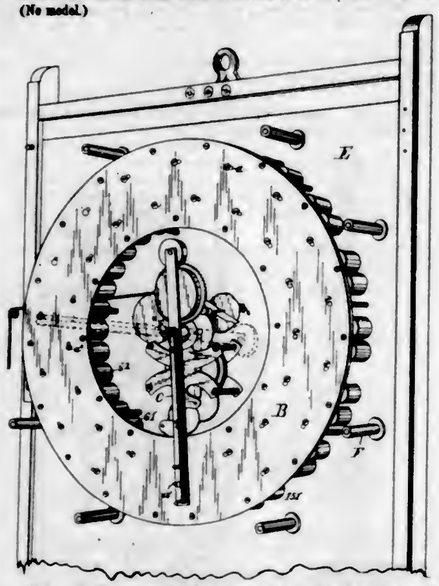


Claim.—1. In a bone-black filter for filtering sugar-liquor by the process of upward filtration, a filtering-chamber having at the bottom a discharger in the form of a screw or slotted disk provided with a shearing blade or blades, and means for rotating said discharger for the purpose of gradually removing the exhausted bone-black from the bottom of the mass of bone-black contained in the filtering-chamber, in combination with a receiving-chamber for receiving said exhausted bone-black, and means for removing the said exhausted bone-black from the receiving-chamber, substantially as set forth.

2. A filtering-chamber for containing bone-black, having arranged beneath it a receiving-chamber, and provided with means for the gradual lowering of the bone-black from the filtering-chamber into the receiving-chamber, in combination with an inclined elevator-screw contained in a correspondingly-inclined tube for removing the exhausted bone-black from the receiving-chamber, substantially as set forth.

329,186. CENTRAL-OFFICE APPARATUS FOR FIRE-ALARM TELEGRAPHS.

LEWIS H. MCCULLOUGH, Richmond, Ind. Filed Jan. 15, 1885. (No model.)



Claim.—1. In a central-office apparatus for a signaling system, the combination, with a train of gearing, a hand operated thereby, and a stop or detent for the said hand, of a dog engaging with one of the gear-wheels, for preventing the rebound of the hand, substantially as described.

2. In a central-office apparatus for a signaling system, the combination, with a traveling hand and a stop or detent for the same, both the hand and the stop forming part of an electric signaling-circuit, of means for preventing the rebound of the hand when it strikes against the stop, substantially as described.

3. In a central-office apparatus for a signaling system, the combination, with a train of gearing, a hand operated thereby, and a stop or detent for the said hand, both the hand and the stop forming part of an electric signaling-circuit, of a dog engaging with one of the gear-wheels for preventing the rebound of the hand, substantially as described.

4. In a central-office apparatus for a signaling system, the combination, with a motor and a hand operated thereby, of a stop or detent capable of being pushed out of the path of the hand, and automatic means for removing the detent after a predetermined time, substantially as set forth.

5. In a central-office apparatus for a signaling system, the combination, with a motor and a hand operated thereby, of a stop or detent capable of being pushed out of the path of the hand, and mechanism released by the starting of the hand, in combination with devices mounted thereon, whereby the detent is removed after a predetermined time, substantially as set forth.

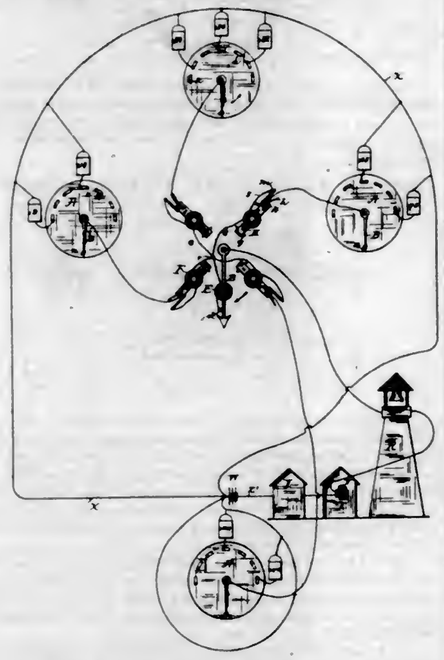
6. In a central-office apparatus for a signaliag system, the combination, with the hand C, the motor therefor, the detents of the rock-shaft *o*, having arms o' o^2 o^3, and means for operating the rock-shaft after a predetermined time to push back that one of the detents which may be in the path of the hand, substantially as set forth.

7. In a central-office apparatus for a signaling system, the combination, with the moving hand C and a detent, *a*, capable of being pushed out of the path thereof, the rock-shaft *o*, having an arm, o^3, and a forward arm, as o^2, the end of which rests, when the hand has been stopped, over the end of the detent, of the cam c^4, pin c^3, stop *k* on the lever K, and mechanism adapted to trip the lever K after a predetermined time, substantially as set forth.

8. In a central-office apparatus for a signaling system, the combination, with a moving hand, a detent therefor, and time mechanism for removing the detent, of means operated by the hand for stopping the time mechanism, substantially as set forth.

329,187. NON-INTERFERING FIRE-ALARM TELEGRAPH SYSTEM.

LEWIS H. MCCULLOUGH, Richmond, Ind. Filed Apr. 1, 1885. (No model.)



Claim.—1. The combination, with an electric-circuit conductor running in a loop from one pole of a generator back to the same pole, of two or more systems of circuit-closers connected with different engine-houses in multiple-arc relation between the said conductor and the opposite pole of the generator, electro-magnetic apparatus at every engine-house, adapted to be actuated by the operation of any circuit-closer, whereby every other circuit-closer is cut out of the circuit, similar apparatus at a central station for cutting out all the systems except one in which a circuit-closer is first operated, and suitable receiving apparatus for receiving the signal on the operation of any circuit-closer, substantially as set forth.

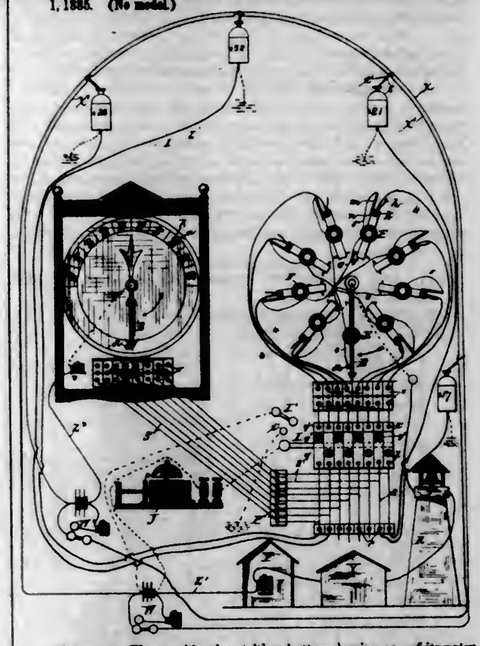
2. The combination, with an electric-circuit conductor running in a loop from one pole of a battery back to the same pole, of two or more systems of signal-boxes connected with different engine-houses in multiple-arc relation between the said conductor and the opposite pole of the battery, electro-magnetic apparatus at every engine-house, adapted to be actuated by the operation of any signal-box, whereby the particular signal-box is indicated and every other box is cut out of the circuit, similar apparatus at a central station for indicating the particular system and cutting out all the rest, and suitable gong and bell magnets for receiving the box-signals, substantially as set forth.

3. An electric-circuit conductor running in a loop from one pole of a battery back to the same pole, two or more systems of circuit-closers, each connected to a hand in the engine-house belonging to its system, and electro-magnetic apparatus at every engine-house, adapted to be actuated by the operation of any circuit-closer to release the hand and form a new circuit to the exclusion of the rest of the circuit-closers, in combination with conductors running from the different hands through similar apparatus to a hand at a central station, the latter hand being connected through a suitable receiving apparatus to the pole of the battery opposite that to which the loop is connected, substantially as set forth.

4. The combination, with two or more electric-circuit conductors, each running in a loop from the same pole of the same battery back to the pole from which it started, of two or more systems of circuit-closers connected with different engine-houses in multiple-arc relation between the said conductors and the opposite pole of the battery, electro-magnetic releasing apparatus at every engine-house, adapted to be actuated by the operation of any circuit-closer to cut every other circuit-closer out of the circuit, similar apparatus at a central station for cutting out all the systems except one in which a circuit-closer is first operated, and suitable receiving apparatus for receiving the signal on the operation of any circuit-closer, substantially as set forth.

329,188. TESTING APPARATUS FOR FIRE AND POLICE TELEGRAPH SYSTEMS.

LEWIS H. MCCULLOUGH, Richmond, Ind. Filed Apr 1, 1885. (No model.)



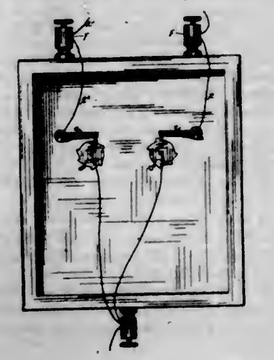
Claim.—1. The combination, with a battery having one of its poles grounded, of a series of open-circuit conductors connected through rheostats to ground, a series of springs connected to the said conductors, a contact bar or plate connected to the opposite pole of the battery and located behind the said spring, and an electro-magnetic bell of high resistance for indicating the condition of any or all the circuits when the springs are depressed, substantially as set forth.

2. The combination, with an open-circuit fire-telegraph system in which the signal-boxes are arranged in multiple-arc relation between the poles of the battery, of a ground-conductor at each box, including a rheostat, and connected to the return-circuit, a ground-conductor for the opposite pole of the battery, an electro-magnetic bell of high resistance, and means whereby the bell can be brought into the circuit of any box for testing purposes, substantially as set forth.

3. The combination, with an open-circuit fire and police telegraph system in which the signal-boxes are arranged in multiple-arc relation between the poles of two batteries, of a ground-conductor at each box, including a rheostat, and connected to the common return-circuit, a ground-conductor for the opposite pole of one of the batteries, an electro-magnetic bell of high resistance, and means whereby the bell can be brought into the circuit of any signal-box for testing purposes, substantially as set forth.

329,189. NON-INTERFERING FIRE AND POLICE TELEGRAPH SYSTEM.

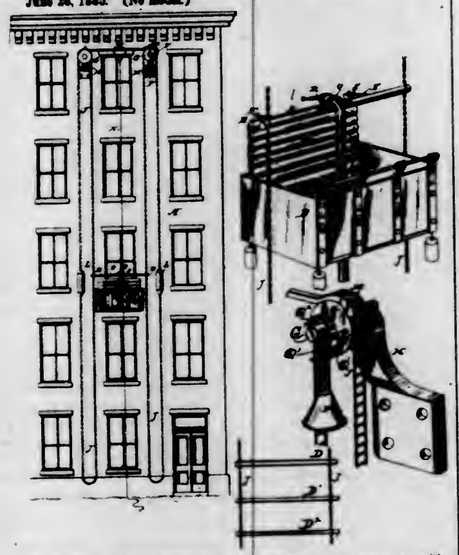
LEWIS H. MCCULLOUGH, Richmond, Ind. Filed Apr. 1, 1885. (No model.)



Claim.—1. The combination, with two generators, each having a conductor running in a circuit from one of its poles back to the same pole, of two or more circuit-closers in multiple-arc relation between each of the said conductors and the opposite pole of the corresponding generator, the return-circuits being for the most part common, but dividing at some convenient point or points, and passing to the respective generators through separate receiving apparatus, substantially as set forth.

2. The combination, with two batteries, one designed to operate a system for sending one class of signals and the other a system for sending another class of signals, and each having a conductor running in a circuit from one of its poles back to the same pole, of two or more circuit-closers, each representing its own class of signals in multiple-arc relation between each of the said conductors and the opposite pole of the corresponding battery, the return-circuits being for the most part common, but dividing at some convenient point or points, and passing to the respective batteries through separate receiving apparatus, substantially as as set forth.

329,190. **FIRE-ESCAPE.** Thomas D. McKinnie, Colorado, Tex. Filed June 26, 1885. (No model.)



Claim.—1. The combination, in a fire-escape, of a car open at the rear and provided with a cross-bar, D, and holders F, and a series of slats, C, fitted to slide vertically in the said rear opening, hinged to fold together, and provided with hooks E, adapted to engage the holders F, substantially as shown and described.

2. The combination of the stud G', fixed to the bracket H, the pulley G, mounted to revolve thereon and provided with the projecting pin P', the spring Q^2, attached at one end to the stud G', and the bell P, having a shank, Q', provided with a portion projecting to one side of the spring Q^2 into the path of the pin P', such projection hanging in a plane radial to the stud G', substantially as shown and described.

3. The combination of an elevator-chain, a car provided with a cross-bar, D, a hasp, Q, hinged at one end to the said bar and perforated and notched at one side of its other end, and a thumb-screw, S, substantially as shown and described, whereby a hose or its pipe may be clamped to the said bar to be elevated, as set forth.

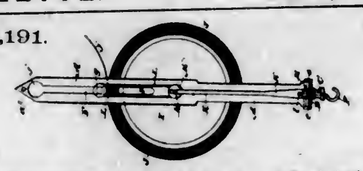
329,191. **RIBBON-REEL.** Jas. H. McMurtrie, Saxton, Pa., assignor to himself, William Bartle, Samuel R. Stoler, and David M. Stoler, all of same place. Filed May 1, 1885. (No model.)

Claim.—1. A ribbon-reel comprising opposite frame-bars A B, slotted at F, and having interned and slotted end parts, *a b*, clamp-plates D E, and screws C C, the adjustable ribbon-clamp bar G H, elastic arms K K, having journals *k k* for the ribbon bolt, and elastic connections drawing the clamp-bar to the ribbon bolt, substantially as herein set forth.

2. The combination, with the reel-frame bars A B, slotted at F, elastic arms K K, having journals *k k*, and the ribbon-clamp bar G H, of elastic connections, as at L L, between the clamp-bar and arms K K, substantially as herein set forth.

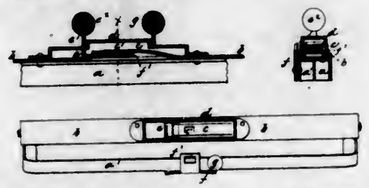
3. The combination, with the reel-frame bars A B, slotted at F, arms K K, having journals *k k*, the ribbon-clamp bar G H, and elastic connections, as at L L, of the rollers M on journals *k*, substantially as herein set forth.

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4. The combination, with the reel-frame bars A B, of elastic arms K K, secured at *l* to the bars, and having journals *k k* passing through the bars, and provided also with bends or projections, as at *m*, forming grasps to withdraw the journals from the ribbon bolts, substantially as herein set forth.

329,192. **FASTENER FOR BAGS.** John Menahan, New York, N. Y. Filed Jan. 26, 1885. (No model.)



Claim.—1. In a fastener for bags, &c., in combination, the two parts of a hinged frame, a positive spring lock or catch for securing the two parts of the frame together, and two similar knobs or handles, one attached to each part of the frame and connected to the spring-catch, so arranged when the bag is closed as to be manipulated by one hand, and by which the spring catch or lock is first released and the parts of the frame then separated by one continuous motion applied to the knobs or handles, substantially as set forth.

2. In a fastener for bags, &c., in combination, a spring-catch and a movable lifting-plate provided with an upwardly-projecting knob or handle carried by one part of the frame, and a hasp-plate and upwardly-projecting knob or handle secured to the other part of the frame, substantially as set forth.

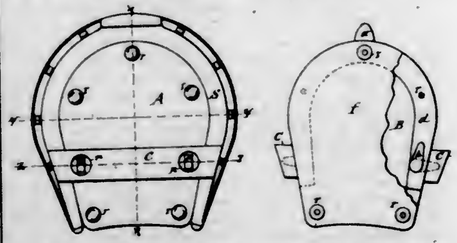
3. In a fastener for bags, &c., a vertically-moving spring-catch secured at one end to one part of the frame, and a tilting lifting-plate for raising the same, provided with an upwardly-projecting knob or handle, in combination with a projecting knob or handle secured to the other part of the frame, arranged to be in line with the other knob or handle when the bag is closed, and a hasp arranged to engage the spring-catch, substantially as and for the purpose set forth.

4. In a fastener for bags, &c., in combination, a lock secured to one part of the frame and composed of a base-plate covering the top and sides of the same, said base-plate having a spring-catch integral therewith, a lifting-plate located under the free end of the spring and having an upwardly-projecting arm, a box inclosing said spring and lifting-plate, and a hasp and projecting knob or handle secured to the other part of the frame, substantially as set forth.

5. In combination, the spring-catch *c*, the lifting-plate *e*, provided with the knob or handle *e'*, the inclosing-box *d*, the hasp *f'*, and the knob or handle *g*, substantially as and for the purpose set forth.

6. In combination, the bag-frame *a a'*, the covering-strip *b*, provided with the spring-catch *c*, integral therewith, and the hasp *f'*, and means, substantially as described, for raising the spring-catch and separating the two parts of the frame, as and for the purpose set forth.

329,193. **HORSESHOE-PAD.** David Meredith, Syracuse, N. Y. Filed Feb. 19, 1884. Renewed Sept. 16, 1885. (No model.)

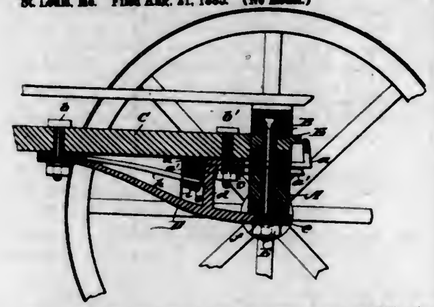


Claim.—1. The improved horseshoe-pad having its perimeter corresponding to the inner edge of the shoe, and composed of the metal plate A, leather disk B, re-enforcing rim *d*, provided with the lug *a*, the leather cover *f*, and pivoted keys *b b*, substantially as described and shown.

2. In combination with a horseshoe, the plates A, B, and *d*, fitted to abut against the inner edge of the shoe, the lug *a*, pivoted keys *b*, and the cross-bar C, attached to the under side of the plate A, and projecting over the bottom of the shoe, substantially as described and shown.

3. In combination with the horseshoe-pad having pivoted keys *b b*, provided with heads *c*, as shown, the cross-bar C, fixed to the under side of the pad and having apertures *n*, surrounding the heads *c*, substantially as described and shown.

329,194. **FIFTH-WHEEL ATTACHMENT.** Adelbert A. Meyers, St. Louis, Mo. Filed Aug. 21, 1885. (No model.)



Claim.—1. The combination, with the running-gear and fifth-wheel of a wagon, of a spring-arm carrying a roller, arranged to bear upon the movable portion of the fifth-wheel, substantially as described.

2. The combination, with the running-gear and fifth-wheel of a wagon, of a spring-arm mounted in a case secured to the under side of the reach, and carrying a roller arranged to bear upon the under side of the movable portion of the fifth-wheel, substantially as described.

3. The combination, with the running-gear and fifth-wheel of a wagon, of a casting, D, which is secured to the reach and reaches forward to engage with the king-bolt, and has a spring-arm, *h*, arranged within the rear box-like portion, said spring-arm carrying a roller arranged to bear upon the movable portion of the fifth-wheel, substantially as described.

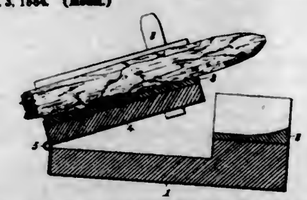
329,195. **WOOL-COMBING MACHINE.** John Midgley, Pawtucket, R. I., assignor of three-fourths to William F. Sayles, Frederick C. Sayles, and William Hall, all of same place. Filed Mar. 16, 1885. (No model.)

Brief.—A rod is supported, with its axis parallel to the axes of the drawing-off rolls, within the triangular space between said rolls and the comb, to assist the rolls in more perfectly gathering the beard from the comb.



Claim.—The combination, with the combs and drawing-off rolls of a wool-combing machine, of a rod or spindle supported between said rolls and combs, substantially as described, and for the purpose set forth.

329,196. **CIGAR-MOLD.** Frederick C. Miller, Newport, Ky. Filed Nov. 3, 1884. (Model.)



Claim.—1. A cigar-mold consisting of a base, end portion secured permanently to the base, body portion secured at the bottom to the top of the base and removable therefrom, and an upper member, substantially as set forth.

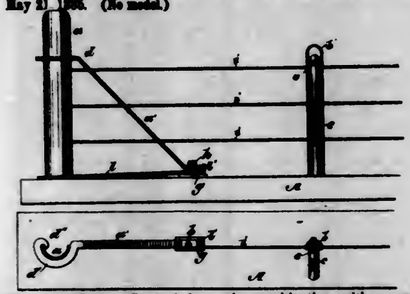
2. A cigar-mold consisting of a base, end portion secured permanently to the base, body portion 3 4, hinged at the bottom directly to the rear upper corner of the base, and an upper member, substantially as set forth.

3. A cigar-mold consisting of base 1, end portion, 2, secured permanently to the base, body portion 3 4, secured movably to the base, upper member, and dowel-pins 8, secured to the body portion, and by which the base and upper members are engaged with the body portion, substantially as set forth.

4. A cigar-mold consisting of a base, 1, and movable body portion 3 4, having forefinger-recesses 6 at the ends thereof, end portion, 2, permanently secured to the base and having thumb-recesses 7, and an upper member, substantially as set forth.

5. A cigar-mold consisting of a base, 1, end portion, body portion 3 4, and upper member having a metal plate, 9, at the opening end of the mold, the body portion and end portion being recessed to admit a lever for opening the mold endwise, substantially as shown and described.

329,197. **FENCE.** Samuel J. Miller, Cambridge City, Ind. Filed May 21, 1885. (No model.)



Claim.—1. In an all-metal fence, the combination, with a semi-cylindrical post, of a sill or ground-plate having one end embracing the foot of said post, and a brace similarly attached to its upper portion and having its end resting upon the sill and abutting against its upturned extremity, substantially as specified.

2. In an all-metal fence, the combination, with a semi-cylindrical post, of a ground sill or plate having one end embracing the foot of the post, a brace similarly attached to its upper portion and inclined downward toward the end of the sill, a screw-bolt tapped through the end of said brace, and a plate beneath the sill upon which the end of the bolt rests, substantially as specified.

3. In an all-metal fence, the combination, with a semi-cylindrical post, of a ground sill or plate having one end curved around the foot of said post, and lapping over its edge upon the concave face thereof, a brace similarly connected to its upper portion and having its end lying upon the sill and abutting against the upturned extremity thereof, a plate beneath the sill, a bolt tapped through the end of the brace, passing through the sill, and resting upon said plate, and wire strands supported by said posts and by suitable sub-posts, substantially as specified.

4. In an all-metal fence, the combination, with a post having a ground sill or plate connected to its lower part, of a brace having one end attached to its upper portion and its other end resting upon the ground-sill at a distance from the post, and a screw-bolt tapped through the end of said brace and having its end resting upon a solid support beneath the same, substantially as specified.

329,198. **GRAIN-DRIER.** Jas. Milne, Aberdeen, Scotland, assignor to Milne Brothers, same place. Filed Dec. 31, 1884. (No model.)

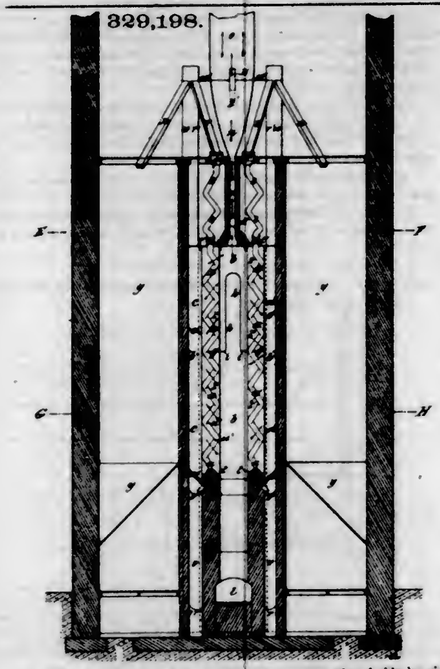
Claim.—1. In a grain-drier, the combination of a heating-chamber, a transverse partition in said chamber, a zigzag screen through which the grain descends, and a second chamber, into and through which the heated air and vapor pass after having passed once through the grain, as set forth.

2. The combination of the hot-air chamber *b*, the transverse plate *i*, dividing it into an upper and a lower compartment, the zigzag screen *a*, through which the grain passes, the chamber or air-passage *c*, between which and the chamber *b* said screen is located, the baffle or reflector *c'*, placed across said chamber *c*, and the chimney *m*, opening from the upper compartment of the chamber *b*, all constructed and arranged substantially as set forth.

3. In a grain-drier, the combination, with the screen or passage through which the grain descends, of a hot-air chamber and a flue leading from said hot-air chamber, for shunting the air and discharging it against the grain in the upper part of the said screen or passage, substantially as set forth.

4. The combination, with the hot-air chamber *b*, having the plate *i*, by which it is divided into an upper and a lower compartment, and the zigzag screen *a*, through which the grain descends, of the air-chamber *c*, between which and the chamber *b* said screen *a* is located, and the hot-air flue or passage *z*, leading from the heating-chamber and discharging heated air into the chamber *c* opposite or nearly opposite the upper compartment of the chamber *b*, as and for the purpose set forth.

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5. The combination of a pair of zigzag screens placed side by side in an upright position, the air-chamber between them having a transverse plate by which it is divided into an upper and a lower compartment, two air spaces or chambers between which and the central chamber the respective screens are located, deflectors above the dividing-plate of the central chamber, for directing the heated air from the upper portions of the outer air-chambers into the upper compartment of the central chamber, and a chimney leading from said upper compartment, as set forth.

6. The combination, with the hopper and the drying-screen, of the zigzag distributing-spouts for conducting the grain from said hopper to said screen, said distributing-spouts increasing in width from top to bottom, whereby the grain is spread out evenly in a sheet the whole width of the drying-screen before being delivered thereonto, substantially as described.

7. In a drying apparatus, the combination, with a screen through which the grain passes, of an air chamber or passage on each side thereof, transverse partitions or deflectors across the respective chambers, so arranged as to direct the air back and forth through the screen and direct communication between said chambers and the furnace or heater, whereby the air is heated in each chamber prior to passing through the screen, as set forth.

8. In a drying apparatus, the combination, with a screen containing the grain, an air passage or chamber on each side thereof, and transverse partitions or deflectors arranged across said chambers, so as to direct the heated air back and forth through said screen, of hot-air flues leading from the hot-air chamber and opening into the air-chambers in such a manner as to reheat the air after it has passed through the screen, and before it passes through again, substantially as set forth.

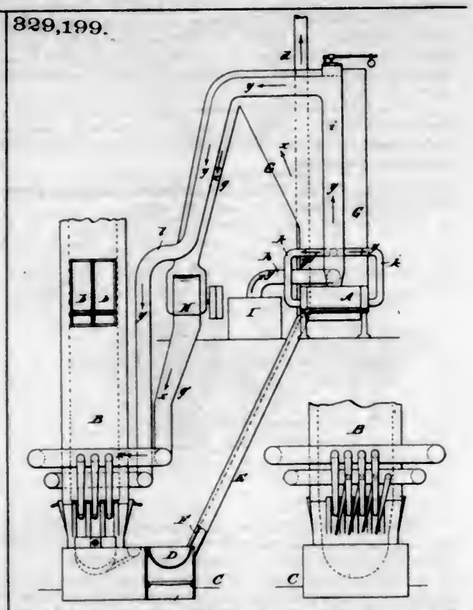
9. In a grain-drier, the combination, with the drying-screen, of a discharge-roller, and gearing having a segmental pinion for imparting an intermittent motion to said discharge-roller, as set forth.

329,199. APPARATUS FOR SMELTING AND CALCINING LEAD AND OTHER ORES. Elliott R. Mosyer, Joplin, Mo. Filed June 30, 1885. (No model.)

Claim.—1. The combination, with the calcining-furnace, the cupola, and the duct or ducts connecting said furnaces and arranged to pass the fumes direct from the calcining-furnace to the cupola-furnace, of a suction device for thus passing said fumes from one furnace to the other, and a blower with connected ducts for supplying air to both furnaces, substantially as and for the purposes specified.

2. The combination, with the connected calcining and cupola furnaces, of the blower for supplying air to both furnaces, and pipes or ducts for conveying the air to the calcining-furnace, and for supplying air warmed by heat derived from the calcining-furnace to the cupola-furnace, essentially as shown and described.

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3. The combination, with the elevated calcining-furnace, cupola-furnace connected therewith, and a refining-kettle common to both furnaces, of the spout for passing the metal from the calcining-furnace to the kettle and the stack of the kettle arranged to inclose said spout, whereby the metal passing down said spout is prevented from being chilled, substantially as specified.

329,200. PAPER HOLDER AND CUTTER. Ebenezer Morrison and James P. Herron, Washington, D. C. Filed Aug. 19, 1885. (No model.)



Claim.—1. A closed cabinet adapted to receive a roll of paper, and provided with an opening giving access to the end of the web only, a knife, and with mechanism for controlling the same, arranged within the case and operated by a pull on the end of the web, substantially as and for the purposes specified.

2. In a fixture of the class described, a measuring roll or roller, a roll of paper supported by the measuring-roll, and a knife mechanically connected with the measuring-roll, whereby sheets of a predetermined length are severed from the paper roll, substantially as specified.

3. The combination of a measuring-roll, a knife, and an independent lever receiving motion from the measuring-roll and serving to throw the knife into operative position, substantially as specified.

4. The combination, with the cabinet or case provided with ways or bottomless guides, of a roll of paper provided with a weighted core, and of a measuring-roll upon which the roll of paper is supported, substantially as specified.

5. In a paper holder and cutter, the combination, with a roll of paper and a support upon which said roll rests, of a weighted core arranged within the roll and otherwise unsupported, and a knife whereby tension is produced in the web regardless of the size and weight of the roll, so as to prevent the web slipping over the knife when pulled to sever sheets therefrom, substantially as specified.

6. The combination of a measuring-roll having a pin projecting from the end thereof, a pivoted slotted lever, and a pivoted knife-plate having an arm projecting into the slot of the lever, substantially as specified.

7. In a fixture of the class described, a knife positively pivoted at one end and provided at its opposite end with a projecting arm, in combination with end supports, one of which is provided with a projection whereby one end of the knife is elevated as it is oscillated, substantially as specified.

8. The combination of a measuring-roll, an oscillating knife, and a guard for covering the cutting-edge of the knife when at its inoperative position, substantially as specified.

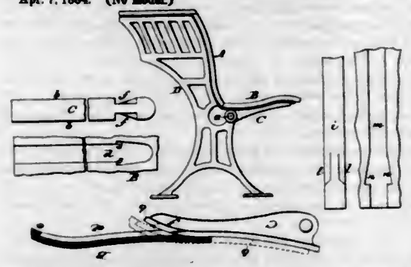
9. The case A, provided with the cover A', locking device A^2, bottom or partition A^3, thumb-hole A^4, a roll of paper, and a measuring-roll, substantially as specified.

10. The combination of the case A, having ways A^5, paper roll C, having weighted core B extended into said ways, measuring-roll D, supporting said paper roll, knife F, having arm F^2, lever E, mechanically connected with said knife and with said measuring-roll, substantially as specified.

11. The combination of the roll D, having pin D' extending from an end thereof, slotted lever E, pivoted to the case A, knife F, having arms F^3 F^3 and pivoted at one end in a slot, A^6, substantially as specified.

12. The knife F, having arms F^3 F^3, in combination with the case A, having slot A^6, and a projection, A^7, whereby when the knife is tilted on its pivots one end thereof is raised, substantially as specified.

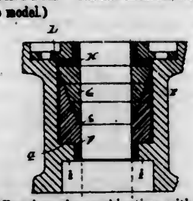
329,201. SCHOOL-DESK. George Munger, East River, Conn. Filed Apr. 7, 1884. (No model.)



Claim.—1. In a school-desk standard having its front formed of two reverse curves corresponding to the shape of the back of the seat in front of it, the said curved portion constructed with a dovetail, *i*, with a notch, *l*, through each side of the dovetail at the intersection of the two curves, the back A, of a corresponding curved shape, constructed with a dovetail groove, *m*, corresponding to the dovetail on the standard, and provided with notches *n*, which, together with said notches *l* in the dovetail on the standard, permit the dovetail groove on the back to pass onto the dovetail on the standard, substantially as described.

2. A seat-arm for school-desk standards, its bearing-surface composed of two reverse curves constructed with a dovetail, *b*, following said two curves, a notch, *f*, in each side of said dovetail at the intersection of the two curves, combined with the seat B, curved correspondingly to the curve of the said arm, and constructed with a dovetail groove, *d*, the said groove *d* provided with notches *s*, which, together with the said notches in the dovetail on the arm, permit the grooves in the seat to pass onto the dovetail on the arm, and whereby the reverse curves of the dovetail enter and interlock with the corresponding curve in the seat, substantially as described.

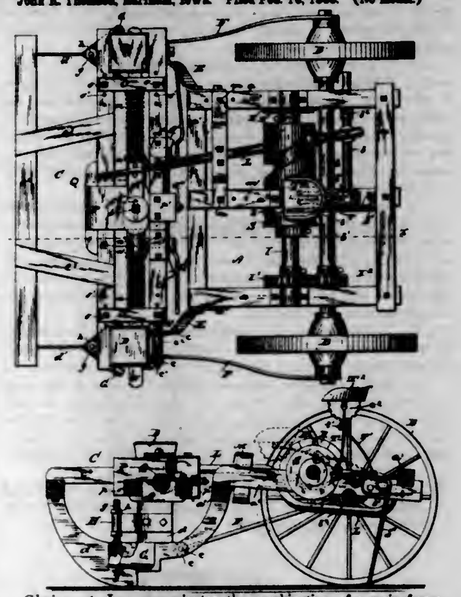
329,202. STUFFING-BOX. Thomas Murphy, Detroit, Mich. Filed Mar. 18, 1885. (No model.)



Claim.—1. In a stuffing-box, the combination, with the sleeve F, conically recessed at one end and having a shoulder, *a*, near the other, of the conical packing-rings G, fitting within the conical recess of the said sleeve, and a follower, as H, these parts having free lateral play in the stuffing-box, and the sleeve and follower having cylindrical necks which extend to the exterior of said stuffing-box, as set forth.

2. In a stuffing-box, the combination, with the sleeve F, having a shoulder, *a*, near one end and a conical recess near the other, terminating in a small shoulder, *c*, of the conical packing-rings G and the follower H, all arranged and confined within the stuffing-box so as to have a free lateral play therein, substantially as and for the purpose described.

329,203. CORN-PLANTER. By Numsacker, De Soto, assignor to John R. Thomson, Earlham, Iowa. Filed Feb. 16, 1885. (No model.)



Claim.—1. In a corn-planter, the combination of a main frame carrying the driving mechanism with a forward frame carrying the seed-dropping devices and hinged at its lower part or foot to the main frame, substantially as and for the purpose shown and described.

2. The combination, in a corn-planter, of a main frame carrying the driving mechanism, a forward frame carrying the seed-dropping devices, and connecting-rods secured to the main frame and hinged to the lower part or foot of the forward frame, substantially as and for the purpose shown and described.

3. The combination, in a corn-planter, of a main frame carrying the driving mechanism, a forward frame carrying the seed-dropping devices, suitable hoppers and dependent seed-tubes secured to said forward frame, and connecting-rods secured to the main frame and hinged to the foot of the seed-tubes, substantially as shown and described.

4. The combination, in a corn-planter, of an operating-lever connected with a reciprocating slide-bar, and actuated by gearing, as shown, and fulcrumed in an adjustable fulcrum-bar secured to the main frame, substantially as described.

5. The combination, in a corn-planter, of a main frame supported upon suitable wheels, a shaft mounted upon the main frame and carrying a cam-wheel, and connected by gearing with the driving-axle, and a lever connected with a reciprocating slide-bar, and having its rear end bent, as shown, and engaging with the cam-wheel, and fulcrumed in an adjustable fulcrum-bar secured to the main frame, all arranged substantially as shown and described.

6. The combination, in a corn-planter, of a main frame supported upon suitable wheels, a shaft mounted upon the main frame and carrying a cam-wheel, and connected by gearing with the driving-axle, a lever connected with a reciprocating slide-bar, and having its rear end bent, as shown, and actuated by the cam-wheel, and fulcrumed in an adjustable fulcrum-bar, and a reciprocating rod mounted in bearings in the main frame, pivoted to and supporting the rear end of the lever, all arranged and operating substantially as shown and described.

7. The combination, in a corn-planter, of a shaft carrying an actuating-cam, a register-plate having a register-point and secured to the main frame, diametrically-opposite register-fingers mounted upon the cam-shaft, and provided with a set-screw, and adapted to register with the point on the register-plate at each half-revolution of the cam-shaft, substantially as and for the purpose set forth.

8. In a corn-planter, the combination, with a reciprocating slide-bar, of independent springs operating alternately to actuate the slide-bar in opposite directions, a reciprocating compressor for compressing the springs, detents and spring-catches for holding the springs after compression, and adjustable releasing-tappets actuated by the compressor, substantially as shown and described.

9. In a corn-planter, the combination, with a slide-bar, of independent springs operating alternately to actuate the slide-bar in opposite directions, a reciprocating compressor for compressing the actuating-springs, a lever actuating the compressor and adjustably secured to said

compressor, automatic stops for holding the springs after compression, and adjustable releasing devices actuated by the compressor for releasing the springs alternately from the stops and causing them to project the slide-bar quickly in opposite directions, all arranged and operating substantially as shown and described.

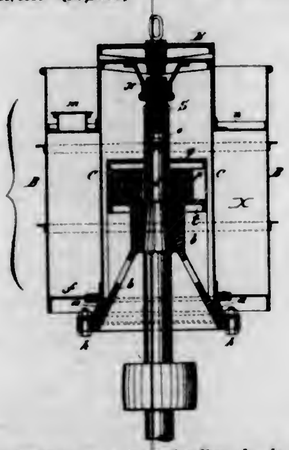
10. In a corn-planter, the combination of a forward frame, a reciprocating slide-bar, independent springs operating alternately to actuate the slide-bar in opposite directions, adjustable blocks for regulating the tension of the springs, a reciprocating compressor for compressing the actuating-springs, detents and spring-catches for holding the springs after compression, and adjustable releasing-tappets actuated by the compressor for releasing the springs, all arranged and operating substantially as shown and described.

11. The combination, in a corn-planter, of runners secured in front of the seed-tubes, vertical bearings fastened to the front of the seed-tubes, screw-threaded rods mounted in said bearings and having their lower ends bifurcated and adapted to fit over the runners, and provided with gaging-flanges secured to the bifurcated ends of said rod, and nuts for adjusting the rods, whereby the flanges can be raised or lowered, substantially as shown and described.

12. In a corn-planter, the combination of the seed-tube *d*, bearing H, runner *d'*, and pin *q'* with the screw-threaded and bifurcated rod *g*, provided with the flanges G, substantially as shown and described.

13. In a corn-planter, the seat-standard T, hinged to the main frame and having the slots *t t*, and the brace T', hinged to the main frame and provided with the adjusting-bolt and nut *t'*, in combination with the seat T², provided with the semicircular plate *t²*, having a notched edge, *t³*, and slot *t⁴*, and the pin *t⁵*, substantially as shown and described.

329,204. CENTRIFUGAL MACHINE FOR TREATING TEXTILE FABRICS, &c. Julius O. Ohnemaus, Lambrecht, Bavaria, Germany. Filed June 25, 1885. (No model.)



Claim.—1. The improvement in treating fibers, &c., for dyeing the same, consisting in confining them in a perforated vessel, transferring said vessel from one vat to another, and after removal from each vat revolving said vessel to remove the surplus liquor, substantially as described.

2. The combination, with the vessel having inner and outer connected perforated casings, of a ring adapted to a bearing on the shaft of a centrifugal machine, to permit the ready application of the receptacle thereto, substantially as described.

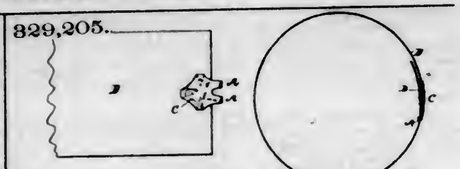
3. The combination of the vessel I, ring *a*, cap E, screw S, and shaft *d* of a centrifugal machine provided with a bearing for the ring *a*, and with a recess, *o*, for the screw S, substantially as described.

4. The combination of the vessel I, ring *a*, cap E, screw S, and socketed nipple N, substantially as described.

5. The combination of the shaft *d*, flange *t*, and loose rings *p*, substantially as and for the purpose set forth.

6. The combination, with the shaft *d* of a centrifugal machine, and vessel I, adapted to be readily applied to and removed from the shaft, of a flange on the shaft and loose rings supported by the flange, substantially as described.

329,205. FASTENING-BAND FOR PACKAGES OF MERCHANDISE. Samuel W. Page, Jersey City, N. J. Filed Nov. 28, 1882. (No model.)



Claim.—As a new article of manufacture, a flexible band for holding articles of merchandise, as described, having its one end portion plain and without special fastening perforations or devices, and its other end having an attached metal clip arranged to project beyond said end of the band, and provided at its attached end with clinching-prongs for securing it to the band, and at its projecting or overlapping end or portion with short hook-shaped sharp teeth for engagement with the plain end or portion of the band, substantially as specified.

329,206. GRATE FOR COAL-BURNING STOVES. Daniel E. Parr, Troy, N. Y. Filed Dec. 31, 1884. (No model.)



Claim.—1. The combination of a fire-pot, a movable grate, a basket above the grate, and a gear-connection between the grate and the basket, substantially as described.

2. The combination of an oscillating grate, a basket above the same, and a gear-connection between the grate and the basket, substantially as described.

3. The combination of a grate composed of the outer sections and a central oscillating section, with a basket above the grate, and a gear-connection between the oscillatory grate-section and the basket, substantially as described.

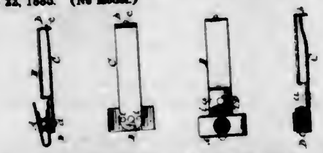
4. The combination of a fire-pot, a grate beneath the same, and a movable basket having depending teeth bearing directly upon the upper side of the grate for loosely supporting the basket thereon, whereby the basket may be reciprocated in a right line across the grate, substantially as described.

5. The combination of a grate composed of two outer stationary sections and a central section provided with a shaft, a gear adjacent to each end of the shaft, and a basket having racks engaging the gears, and provided with a toothed or notched lower edge, substantially as described.

6. The combination, with a fire-pot, of a grate composed of two outer sections, and a central oscillating section provided with gears, and a basket having a horizontal flange and provided with racks engaging said gears, substantially as described.

7. The combination of a movable grate, a basket above the grate, segmental gears connected with the movable grate, and racks upon the basket engaging the segmental gears, substantially as described.

329,207. CUFF-FASTENER. John V. Pilcher, Louisville, Ky. Filed June 22, 1885. (No model.)



Claim.—1. The combination, with a spring-clamp or equivalent fastener, of another fastener secured thereto, consisting of a body-piece having the bend *b*, provided with a hook, *c*, and a tongue with a narrow end adapted to engage the said hook.

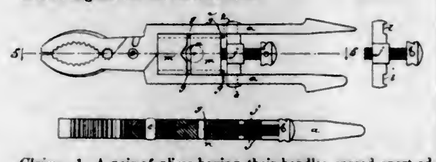
2. The combination, in a cuff-fastener, of a body, B, having the bent end *b*, provided with a hook, *c*, a bar, *e*, across the mouth of the latter, and a narrow channel, *f*, nearly parallel to the inner edge of the hook, and a tongue, C, provided with a narrow end adapted to engage the said hook, substantially as shown and described.

3. The combination of a clamp having spring-closed jaws, and a fastener, substantially as described, adapted to engage a cuff through a button-hole thereof, and having a tang pivoted to the clamp at or near the longitudinal center of the latter, substantially as shown and described, whereby the clamp may turn on its center from side to side on the cuff-fastener, as set forth.

4. The combination, with a clamp having spring-closed jaws pivoted together, of a cuff-holder comprising a body, B, having the bent end *b*, an elastic tongue, C, and a shank, *a*, the latter being pivoted to the center of the said clamp, substantially as shown and described.

5. The combination of a fastener adapted to attach to a cuff by a button-hole, and having a sheet-metal shank, and another fastener adapted to clamp a portion of a sleeve, the two fasteners pivoted together, the one to turn from side to side upon the other, a series of indentations in the face of one fastener at the said pivot-joint, and a projection on the other fastener to register therewith, substantially as shown and described, whereby the two fasteners may be retained in position with one projecting from either side of or straight out from the other.

329,208. COMBINATION-TOOL. George Plimpton, Warrington, County of Lancaster, England. Filed Mar. 13, 1885. (No model.) Patented in England Jan. 25, 1884, No. 2,123.



Claim.—1. A pair of pliers having their handles spread apart adjacent to their pivot and provided with square socket-holes perpendicular to their inner walls, substantially as herein specified, whereby they are adapted to hold threading-dies or the like between the handles, or alternatively to be used as a T-handle for a reamer or screw-tap, as herein set forth.

2. The combination of a sliding die, a pair of pliers having handles spread apart and provided with internal way-flanges to receive and hold or guide said die, and a screw attachment composed of a bridge-piece having a central nut-bore, and adapted to be interlocked with the respective handles, and a perpendicular screw engaging at its inner end with said die, substantially as hereinbefore specified.

3. The combination, substantially as hereinbefore specified, of a pair of dies having grooved lateral edges, a pair of pliers having handles spread apart from adjacent to their pivot, and provided with inwardly-projecting way-flanges to receive and hold said dies when the pliers are closed, and a screw attachment composed of a bridge-piece having a central nut-bore and notched ends, and a perpendicular screw working in said bore and engaging at its inner end with the sliding die of said pair of dies, said handles having also a pair of socket-holes to engage with said bridge-piece, for the purposes set forth.

329,209. METALLIC SEAL. Charles L. Pond, Buffalo, N. Y. Filed Sept. 3, 1884. (No model.)

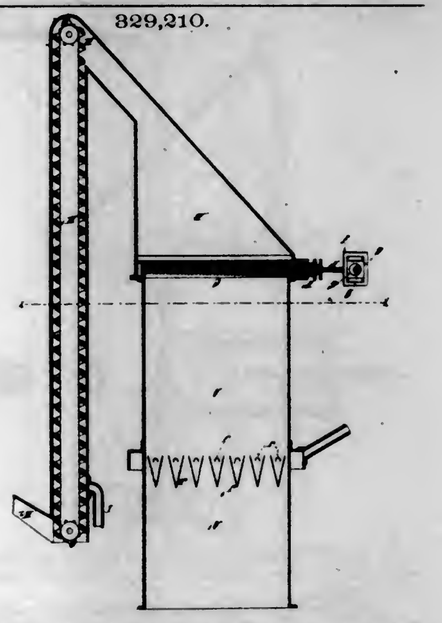


Claim.—1. A metallic seal composed of a strip of tin or other suitable metal, provided at one end with a trough-shaped threading end having sides, and at its opposite end with a U-shaped slot adapted to receive the trough-shaped threading end, substantially as set forth.

2. A metallic seal composed of a strip of tin or other suitable metal, provided at one end with a trough-shaped threading end, *b*, having sides b^3 and a tongue or lip, *c*, and at its opposite end with a U-shaped slot adapted to receive the trough-shaped threading end *b*, and a slot, *d*, adapted to receive the tongue or lip *c*, substantially as set forth.

3. A metallic seal composed of a strip, A, of tin or other suitable metal, provided at one of its ends with a U-shaped slot, *a*, having its opposite or threading end provided with a narrow center portion, b^3, and sides b^2, connected with the center portion, b^3, and separated from the main portion of the strip by transverse slits, substantially as set forth.

329,210. APPARATUS FOR DECOLORIZING SUGAR-LIQUOR BY UPWARD FILTRATION THROUGH BONE-BLACK. Edward K. Quibell, Orange, assignor to the F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Filed Aug. 20, 1885. (No model.)



Claim.—1. In apparatus for effecting the decolorization of sugar-liquor by the process of upward filtration through bone-black, a filtering-chamber for containing a column of bone-black of uniform area in cross-section from top to bottom, and a movable supporting and discharging instrumentality whose area of action equals the cross-area of said column, and means for imparting movement to the said supporting and discharging instrumentality for removing from the lower end of the said column a stratum of bone-black of prescribed uniform depth.

2. The combination, with the filtering-chamber A and the receiving-chamber B, of the horizontally-reciprocating supporting and discharging instrumentality herein described, the same consisting of a grate the bars of which are set parallel to and equidistant from each other, and have their upper portions inclined laterally in the same direction.

3. A reciprocating supporting and discharging instrumentality consisting of a grate the bars of which are set parallel to and are equidistant from each other, and have their upper portions inclined laterally and formed into cutting-edges terminating in a plane inclined in the direction opposite to the direction in which the upper portions of the grate-bars are inclined.

4. The supporting and discharging instrumentality herein described, provided with the shield e^2, as and for the purpose set forth.

5. In a supporting and discharging instrumentality, substantially such as herein described, the girder D', having its upper surface rounded or chamfered, as and for the purpose set forth.

6. In apparatus for effecting the decolorization of sugar-liquor by the process of upward filtration through bone-black, the combination, as herein set forth, of a filtering-chamber for containing a solid column of bone-black of uniform area in cross-section from top to bottom, a supporting and discharging instrumentality for supporting said column, outlets for the escape of the sugar-liquor from the filtering-chamber at a prescribed elevation above the said supporting and discharging instrumentality, means for supplying fresh bone-black at the top of the filtering-chamber, a receiving-chamber for receiving the exhausted bone-black and collected impurities discharged from the filtering-chamber, means for removing the said exhausted bone-black and impurities from the said receiving-chamber, and means for introducing into the receiving-chamber sugar-liquor under sufficient pressure or head to enable it to make its way upward through the column of the bone-black contained in the filtering-chamber and escape therefrom through the outlets aforesaid.

329,211. TARGET-TRAP. Jos. L. Raub, New London, Conn. Filed Aug. 31, 1885. (No model.)

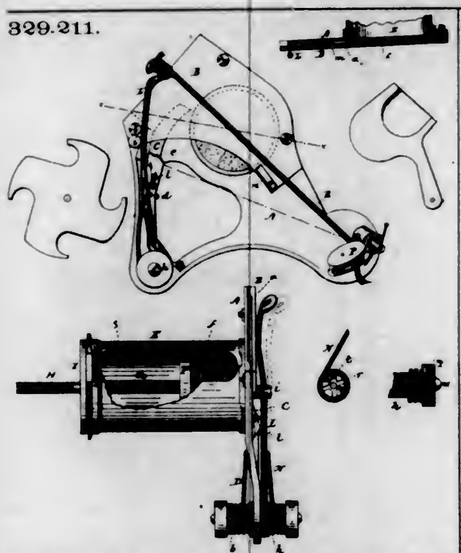
Claim.—1. In a target-trap, the combination of the base A, provided with a pocket, *a*, adapted to receive the disk-target, and the spring-arm C, hung below the pocket, and so as to work in the plane of the pocket, the upper end of the arm curved backward and downward, substantially as described.

2. In a target-trap, the combination of the base A, provided with the pocket *a*, adapted to receive a disk-target, and the spring-arm C, adapted to work in the plane of the pocket, substantially as described.

3. The combination of the base A, constructed with the pocket *a*, adapted to receive a disk-target, the spring-arm C, adapted to work through said pocket and in the plane of the pocket, the lever L, arranged to swing in a plane parallel with the said spring-arm C, the spring-arm constructed with a projection, *l*, in the path of movement of said arm, and a trip on the face of the trap, adapted to throw the said lever out of engagement with the said arm as the arm approaches its extreme rear movement, substantially as described.

4. The combination of the base A, constructed with the pocket *a* a cylinder, E, opening into said pocket at right angles to the plane of the pocket, the said cylinder adapted to receive a succession of flat disks, a spring-follower, F, arranged in said cylinder to bear against said col-

329,211.



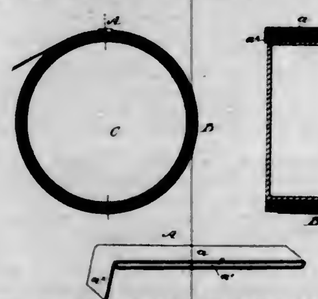
sion of disks, and a spring-arm, C, arranged to work in a plane through and parallel with said pocket and across the mouth of the disk, substantially as described.

5. The combination of the base A, constructed with the pocket *a*, the cylinder E, opening into said pocket at right angles to its plane, the said cylinder adapted to receive a succession of flat disks, a spring-follower, F, in said cylinder adapted to bear against said disks, the said cylinder constructed with a removable head, I, and the longitudinal slot S, with a spring-arm, C, arranged to work in a plane through and parallel with said pocket across the mouth of the said cylinder, substantially as described.

6. The combination of the base A, constructed with the pocket *a*, the cylinder E, opening into said pocket at right angles to its plane, a spring-follower in said cylinder, the spring-arm C, and the lever L, the said arm constructed with a projection, *l*, in the path of and back of said lever, with a trip adapted to disengage said lever from said projection, substantially as described.

7. In a target-trap in which the target is thrown by an arm arranged to work in the plane of the direction in which the target is to be thrown, a coiled spring arranged upon a stud at right angles to the plane in which the arm moves, one end of the spring arranged to resist the opening movement of the arm, and thereby apply the force of the spring to throw the arm forward, the other end of the coil of the spring turned inward, the end of the stud constructed with two or more radial grooves, adapted to receive the turned-in end of the spring, and a holder adapted to hold the said turned-in end in either of said radial grooves, substantially as and for the purpose described.

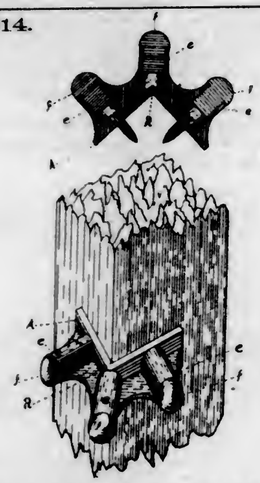
329,212. CLASP FOR RIBBON-ROLLS. Edwin W. Raymond, Coupeville, Wash. Filed June 6, 1885. (No model.)



Claim.—As an improved article of manufacture, a clasp for ribbon-rolls, composed of parallel arms *a a'*, the arm *a* being bent to form stop *a²*, substantially as and for the purpose set forth.

329,213. FURNITURE-PAD. Charles M. Reeds, Lynn, Mass., assignor to John B. Reeves, same place. Filed Jan. 5, 1885. (No model.)

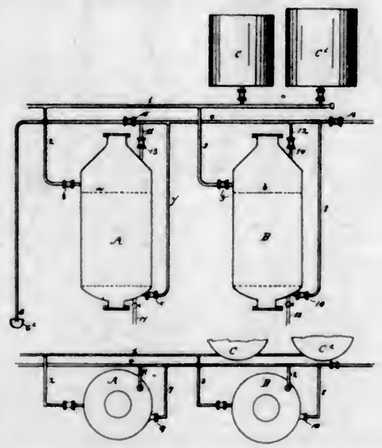
329,214.



Claim.—1. A furniture-pad composed of the frame A, provided with angle *a* and extensions *e*, said extensions being chambered and having pads fitted therein, as described

2. A furniture-pad composed of the frame A, provided with angle *a* and extensions *e*, said extensions being chambered and having pads fitted therein, as described, and screws concealed within the chambers for attaching the frame to an article of furniture, as stated.

329,214. APPARATUS FOR THE MANUFACTURE OF CELLULOSE OR PAPER-PULP FROM WOODY FIBER. Eugen Baron Ritter and Carl Kellner, Pedgorz, Austria-Hungary. Filed Sept. 18, 1884. (No model.) Patented in Austria-Hungary Aug. 2, 1883, No. 20,034 and No. 31,730; in France Sept. 27, 1883, No. 157,754; in Belgium Sept. 29, 1883, No. 62,746, and in Italy Jan. 22, 1884, No. 16,316.

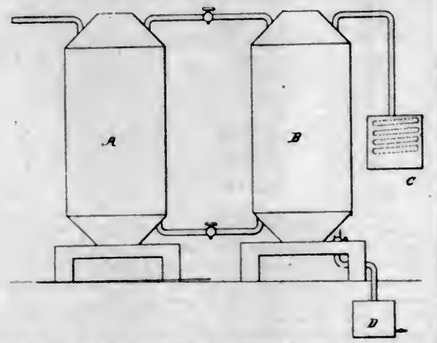


Claim.—1. In an apparatus for boiling or digesting paper-pulp, the combination of two similar boilers, a tank for containing the digesting-solution, connected by pipes having suitable cocks to both said boilers, and a pipe for supplying sulphurous acid and steam to the boilers having branch pipes leading into the tops and bottoms of the same, substantially as described.

2. In an apparatus for boiling or digesting cellulose, the combination of two boilers or digesters, a tank for containing the digesting-solution, and a tank for containing fresh water, with a pipe for conveying steam and sulphurous acid to the boilers, both said tanks being connected by suitable pipes with the boilers, substantially as described.

3. In an apparatus for boiling or digesting paper-pulp, the combination of the boilers A B and the solution-tank C with the solution-pipe 1, having branches 2 and 3, leading to the said boilers, and the steam-pipe 4, having the branches 7 8 11 12, also leading to said boilers, substantially as described.

329,215. PROCESS OF MANUFACTURING CELLULOSE OR PAPER-PULP FROM WOOD FIBER. Eugen Baron Ritter and Charles Kellner, Pedgorz, near Goerz, Austria-Hungary, assignors to William A. Russell, trustee, Lawrence, Mass. Filed Jan. 13, 1885. (No specimens.) Patented in Austria-Hungary Aug. 2, 1883, No. 20,034 and No. 31,730; in France Sept. 27, 1883, No. 157,754; in Belgium Sept. 29, 1883, No. 62,746, and in Italy Jan. 22, 1884, No. 16,316.



Claim.—1. In the manufacture of cellulose or paper-pulp from wood fiber, the process of disintegrating and bleaching the fiber in one continuous operation, consisting, essentially, in subjecting the fiber to the action of a double salt solution wherein sulphurous acid is combined with a double base in the proportions of about three atoms of the acid to one atom of the base in a closed vessel or boiler to which steam is admitted, substantially as described.

2. In the manufacture of cellulose or paper-pulp from wood fiber by one continuous operation, the process of disintegration and bleaching, which consists in first soaking the wood in a disintegrating-solution in a closed vessel, then, prior to heating, forcing in sulphurous acid until a pressure of at least two atmospheres is created, then forcing in steam, or steam mixed with sulphurous acid, and maintaining the contents of the boiler at a temperature exceeding that of boiling water, and finally bringing the temperature to a point corresponding to a steam-pressure of three to five atmospheres, substantially as described.

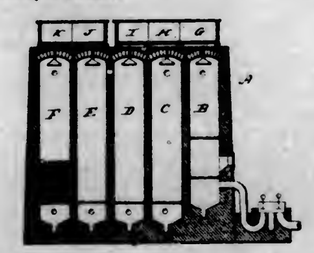
3. In the manufacture of cellulose or paper-pulp from wood fiber by the action of sulphite solutions, the method of facilitating the disintegration and bleaching operations, which consists in an alternation of the solution between two or more boilers or digesters containing the fiber under different conditions of treatment, whereby each charge of fresh wood is subjected to the action of a solution already used and next subjected to the action of fresh solution, substantially as described.

329,216. PROCESS OF MAKING SOLUTIONS OF BISULPHITES. Eugen Baron Ritter and Carl Kellner, Pedgorz, near Goerz, Austria-Hungary, assignors to William A. Russell, trustee, Lawrence, Mass. Filed Feb. 4, 1885. (No specimens.) Patented in Austria-Hungary Aug. 2, 1883, No. 20,034 and No. 31,730; in France Sept. 27, 1883, No. 157,754; in Belgium Sept. 29, 1883, No. 62,746, and in Italy Jan. 22, 1884, No. 16,316.

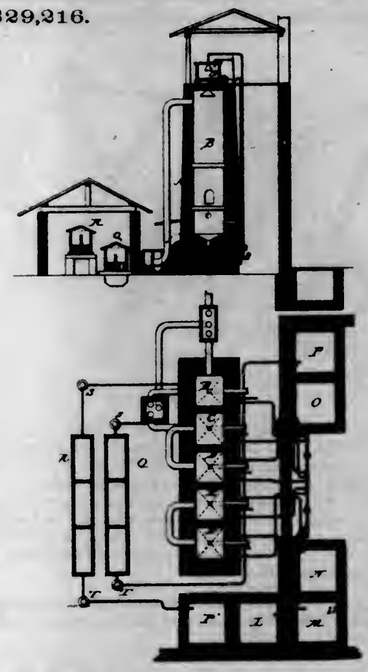
Brief.—The bases may be lime and magnesia.

Claim.—1. The process or method of producing a solution of bisulphites, which consists in combining sulphurous acid with bases, in the proportion of more than two molecules of the acid with one molecule of each base, substantially as described.

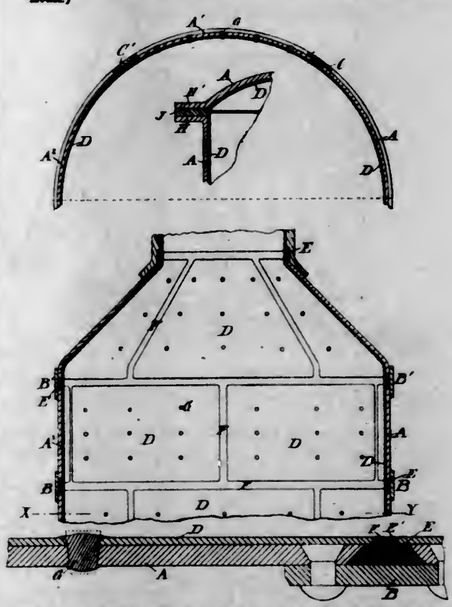
2. The process of producing a solution of bisulphites, wherein sulphurous acid is combined with bases, in or about the proportions stated, said process being carried into effect by first bringing a solution of sulphurous acid and water in contact with one of the bases, and thereby forming a sulphite solution, then reimpregnating the sulphite solution with sulphurous acid and bringing the same in contact with a second base, substantially as described.



329,216.



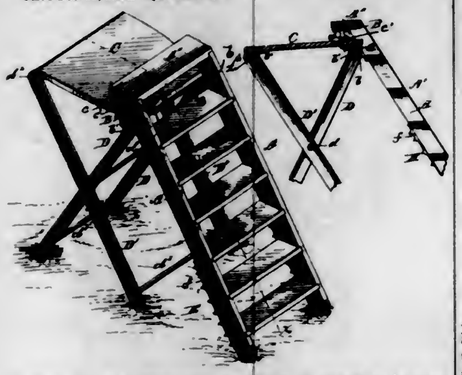
329,217. PULP-DIGESTER FOR PAPER-MAKING. Eugen Baron Ritter and Charles Kellner, Goerz, Austria-Hungary, assignors to William A. Russell, trustee, Lawrence, Mass. Filed May 27, 1885. (No model.)



Claim.—1. The combination, in a digester for treating fibrous materials, of the circumferential and longitudinal spaces E E E, left between the several plates composing the hard-metal shell of same, the edges of which are beveled so as to form a dovetail groove, as shown, D D, the soft-metal lining-plates secured to E by autogeneous solder and filling-strips E', substantially as and for the purpose herein set forth.

2. Interposing between the joining-flanges of a digester hard-lead rings to which the adjoining sheets are secured by autogeneous soldering, substantially as and for the purpose specified.

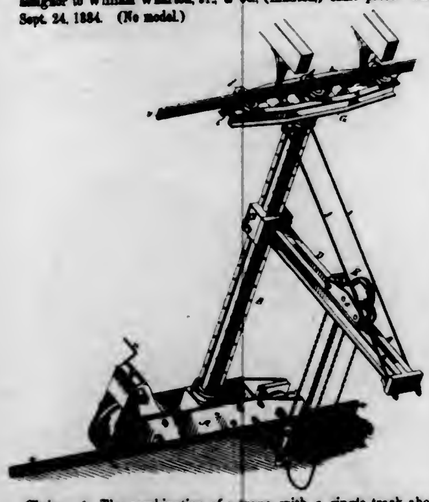
329,218. STEP-LADDER. CHRISTIAN A. RITTMANN, Sandusky, Ohio. Filed Dec. 11, 1884. (No model.)



Claim.—1. In a step-ladder, the legs D D, pivoted to the upper portion of the side bars of the ladder, and having attached thereto by a central cross-bar the legs D' D', in combination with a platform provided with hooks in its under side, for the purpose set forth.

2. The ladder consisting of side bars, steps, and top piece provided with brackets B B, as shown, in combination with the legs D D, pivoted thereto, and platform C, having hooks attached to its under side and rail c' on its upper side, adapted to engage with the notches c in said brackets, substantially as shown.

329,219. TRAVELING CRANE. EDWARD SAMUEL, Philadelphia, Pa., assignor to William Wharton, Jr., & Co., (Limited,) same place. Filed Sept. 24, 1884. (No model.)



Claim.—1. The combination of a crane with a single track above and a single track below, on which the train is guided and travels, substantially as set forth.

2. The combination of a single track above and a single track below with a crane-post, and carriages adapted to said tracks and having bearings for the crane-post, substantially as described.

3. The combination of the single tracks, above and below, with traveling carriages adapted thereto, and a post, B, adapted to bearings in said carriages, and having a jib, D, and hoist, substantially as set forth.

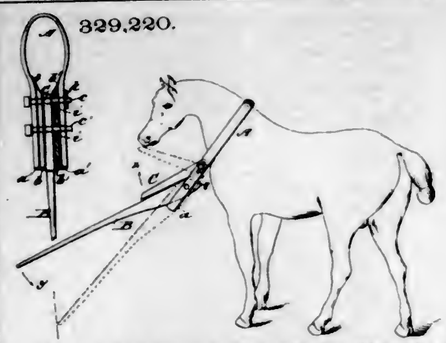
4. The combination of the upper guide-rail with a traveling crane having a guide-carriage, G, provided with rollers adapted to bear on the under side of said rail, substantially as described.

5. The combination of the guide-rail with the traveling crane having a guide-carriage provided with rollers *j j*, adapted to bear against the opposite sides of said rail.

6. The combination of the guide-rail with a traveling crane having a guide-carriage, G, provided with a bearing-socket, the upright post having a spindle adapted to said socket, and an adjusting-screw, *k*, substantially as and for the purpose set forth.

329,220. ANIMAL-POKE. DAVID F. SANDUSKY, McLeansborough, Ill. Filed June 13, 1885. (No model.)

329,220.

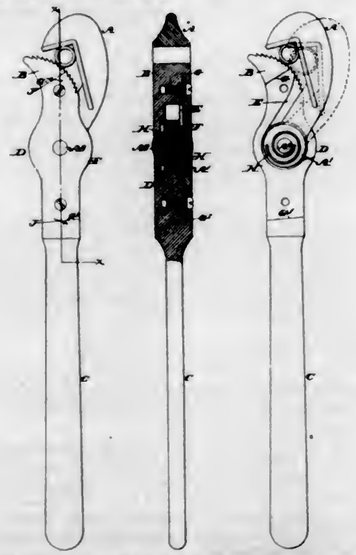


Claim.—1. In an animal-poke, the combination, with a neck-yoke A, and the short lever C, pivoted between the ends of the yoke, of the long lever B, pivoted between the ends of the yoke below the pivot of the lever C, and having a cam-face, *o*, and the curved extension *o'*, substantially as herein shown and described, whereby provision is made for raising the lever C and limiting its upward movement, as set forth.

2. In an animal-poke, the combination, with the neck-yoke A and the levers B C, of the clamping-strips *b b'*, secured on opposite sides of the lever between the ends of the neck-yoke, substantially as described, whereby provision is made for holding the levers in position when one end of the yoke is released for applying it, as set forth.

3. In an animal-poke, the combination, with the neck-yoke A and the levers B C, of the clamping-strips *b b'*, the strip *b'* being provided with recesses in its outer surface, the bolts *c c'*, the pins *i*, passing through the bolts and fitting in the recesses of the plate *b'*, and the pin *k*, passed through one of the bolts outside of the end *a'* of the neck-yoke, substantially as described.

329,221. PIPE-WRENCH. FRANZ A. SCHRAMM, Philadelphia, Pa. Filed July 24, 1885. (No model.)



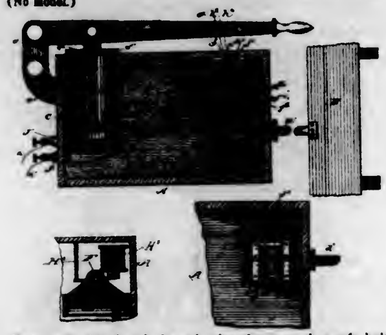
Claim.—1. A wrench having a stationary jaw and a stock, and a movable jaw pivoted in a recess of said stock and provided with springs located in said recess and secured to said movable jaw and said stock, substantially as and for the purpose set forth.

2. In a pipe-wrench, the handle C, having the fixed jaw B and stock D, in combination with the movable jaw A, pivoted in the recess E of said stock, plate F, secured to said stock D and jaw B, and springs H, located in said recess E and secured to the jaw A and stock D, substantially as and for the purpose set forth.

3. A pipe-wrench consisting of the handle C, having recessed stock D and fixed jaw B integral therewith, movable jaw A, pivoted in the recess E, and plate F, secured to said stock and fixed jaw, and having a bearing for the axis of said movable jaw, substantially as and for the purpose set forth.

4. In a pipe-wrench, the handle C, having fixed jaw B, and recessed stock D, having shoulders G G', in combination with movable jaw A, pivoted in recess E, and plate F, having oblique ends, and springs H, connected to said movable jaw and stock, substantially as and for the purpose set forth.

329,222. ELECTRICAL MECHANISM FOR OPERATING SAFE BOLT-WORK. FREDERICK SIDGWICK, Chicago, Ill. Filed Mar. 10, 1885 (No model.)



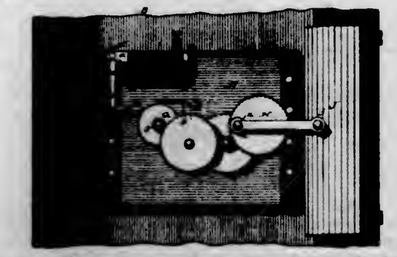
Claim.—1. An electrical mechanism for operating safe bolt-work, consisting of an air-chamber provided with means, substantially as described, for compressing air therein, a valve for alternately admitting said air behind or in front of a piston within a suitable cylinder, the rod of which piston is connected with the bolt-work, an armature connected with said valve and in position to be attracted by electro-magnets having electrical connections with a circuit-breaking mechanism without the safe, and a battery-cup, whereby said magnets may be alternately excited, substantially as and for the purposes specified.

2. An electrical mechanism for operating safe bolt-work, provided with one or more electro-magnets having electrical connections with a circuit-breaker outside of the safe, a battery-cup, and an armature within the safe in electrical proximity to said magnet, by the movement of which armature a valve may be actuated, whereby a volume of compressed air is admitted from a suitable receptacle to a cylinder having a piston connected with the bolt-work, substantially as described, and for the purposes set forth.

3. The combination, with the usual multiple safe bolt-work, of an air-chamber arranged within the safe, with means for compressing air therein, a cylinder communicating with said chamber, the piston of which is connected with the bolt-work, electro-magnets having electrical connections with the outside of the safe, a circuit-breaker and battery-cup, and an armature connected with the cylinder-valve, whereby the excitement of one or the other of said magnets may serve to operate said valve and admit the air to said piston, substantially as described.

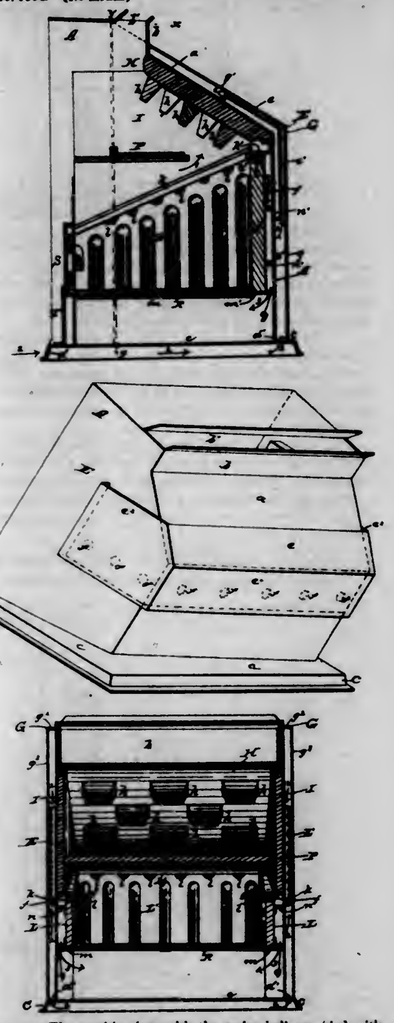
4. The combination, with the usual safe bolt-work, of an air-chamber, A, an air-pump, and a cylinder, B, the piston of which is connected with said bolt-work, said cylinder having communication with said chamber by means of ports which are alternately opened and closed by a valve actuated by one or more armatures and electro-magnets having electrical connections with a battery-cup and a circuit-breaking mechanism outside of the safe, substantially as described, and for the purposes specified.

329,223. ELECTRIC MECHANISM FOR OPERATING SAFE BOLT-WORK. FREDERICK SIDGWICK, Chicago, Ill. Filed Mar 10, 1885. (No model.)



Claim.—The combination, with the bolt-work of a safe, of the magnet C, electrically connected with a circuit-breaker, C'', and battery-cup, an armature attached to a loosely-depending arm provided with a pawl arranged to engage a ratchet-wheel, and means, substantially as shown, for connecting the latter with said bolt-work, substantially as described, and for the purposes specified.

329,224. FIRE-PLACE. GEO. E. SHARPE, Steubenville, Ohio. Filed June 18, 1884. (No model.)



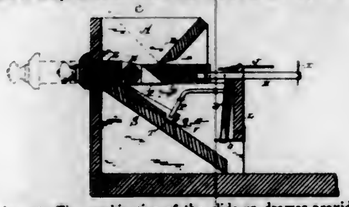
Claim.—1. The combination, with the main shell provided with a fire-chamber and elevated hearth-plate having openings to admit air beneath, of the rear shell and the intermediate casing, E, open at top and closed at bottom, suitable openings being provided to permit air to rise from below the hearth-plate into the space between the main and rear shells and to pass from between the intermediate casing and main shell to the fire-chamber, substantially as described.

2. The combination, with the main shell, its fire-chamber, and oblique top lining provided with flat teeth *h*, arranged in tortuous or zigzag rows, of the deflecting-plate P, projecting from the front rearwardly toward the lower edge of said lining, as set forth.

3. The combination of the main shell having the oblique shelves *k* and rear straight shelf, *k'*, and provided with openings *f*, the fire-chamber linings arranged below said shelves, and having openings at top, the rear shell and intermediate casing, and the elevated hearth-plate with openings for access of air beneath it, and provided with openings to admit air to the space between the main and rear shells, substantially as described.

4. The combination, with the main shell mounted on the elevated hearth-plate, its fire-chamber, and oblique top lining provided with flat teeth *h*, arranged in tortuous or zigzag rows, of the deflecting-plate P, projecting from the front rearwardly toward the lower edge of said lining, and the rear shell and intermediate casing constructed, as described, with intervening spaces connected with the space under the hearth-plate and with the fire-chamber, substantially as set forth.

329,225. MECHANICAL AUTOMATIC SELLING-MACHINE. Daml. W. Shiek, Lettsville, Iowa, assignor of two-thirds to C. O. Cole, same place, and E. G. Grosjean, Mount Eaton, Ohio. Filed June 23, 1884. (No model.)

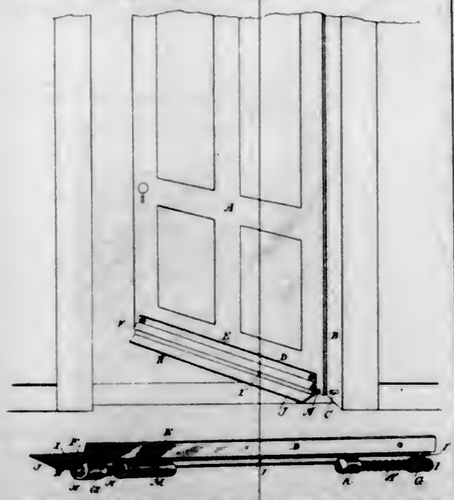


Claim.—1. The combination of the slide or drawer provided with a suitable opening to receive the article being sold, a frictional rod which projects from the rear end of the slide, an automatically-acting clamping device through which the rod passes, and a rod connected to and operated by the clamping device for catching upon the coin, substantially as shown.

2. The combination of the slide or drawer provided with a slot or opening and having a rod projecting from its rear side, the automatic clamping device through which the rod passes, and which is provided with an arm, the U-shaped rod Q, provided with hooks at its upper end and with an opening at its lower end to receive the coin, substantially as described.

3. The combination of the drawer or slide provided with a slot, E, smooth rod H, clamping device N, provided with the arm P, the U-shaped rod Q, having hooks at its upper end to be operated by the cigar or other article in the slot, and the opening V at its lower end to hold the coin, the inclined board S, and the passage-way, substantially as set forth.

329,226. WEATHER-STRIP. Jesse Shilling, Sr., and Jesse Shilling, Jr., Troy, Ohio. Filed Apr. 15, 1885. (No model.)



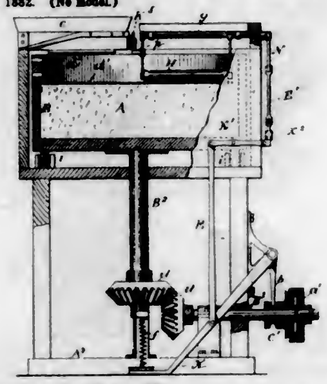
Claim.—1. A weather-strip having a strip or plate adapted to be attached to a door, an apron hinged to said strip or plate, a spiral spring connected to one end of said apron, and a spiral bit connected to the other end thereof so as to project therefrom, substantially as and for the purpose set forth.

2. A weather-strip having a top plate or strip adapted at its upper portion to be connected to a door and having a curved lower portion, an apron having an upper curved portion adapted to rest and reciprocate within the lower curved portion of the upper strip, a spring-connection connecting the strip and apron at or near one end, and a spiral bit and spirally-bored box or nut connecting the opposite ends of the strip and apron, substantially as and for the purpose set forth.

3. The combination of the strip D, having at or near one end a depending eye or hook, G, and at its opposite end a spirally-bored box or nut, G', and the apron H, having near one end a spring, A', adapted to impinge against the eye G, and at or near the other end a spiral bit having guide-bearings within and projecting from the spirally-bored box G', substantially as and for the purpose set forth.

4. The combination, with a door-frame, B, having on its inner face an outwardly-projecting screw or stud, C, of a weather-strip composed of two plates hinged together at or near their respective ends by a spiral spring and a spiral bit, each having suitably-shaped bearings connected with the lower member of the strip, the outer end of said spiral bit projecting outward beyond its bearing, to adapt it to impinge with the screw or stud C upon the door being closed, substantially as and for the purpose set forth.

329,227. SLUDGE-BOX. Henry R. Sillman, Brooklyn, N. Y. Filed Apr. 6, 1882. (No model.)



Claim.—1. A rotating sludge-box.

2. The friction-clutch c' and a', levers b, gears d d, and shafts B^2 and B^3, in combination with a rotating sludge-box, substantially as shown and specified.

3. A roller having an alternate swinging movement from the cloth of a sludge-box to a varnish or color supply tank, in combination with a rotating sludge-box, substantially as shown and described.

4. The tank c and roller H, in combination with a rotating sludge-box, substantially as shown and specified.

5. The tank c, plug and lever K^2, springs A and A', binge-lever K^{12}, and swinging rod p, with mechanism, substantially as described, to operate the same, in combination with a rotating sludge-box.

6. The rollers i i, sludge-box B, shaft B^2, and gears d d, in combination with shaft B^2 and friction-clutch c' and a', substantially as shown and specified.

7. The treadle K, rods E and E', and levers K' and K^2, with crank N, combined with the swinging frame containing roller H, substantially as shown and described.

8. In a sludge-box, a varnish or color tank placed above the cloth of a sludge-box and having in the bottom of tank a plug or valve, in combination with a trip on the roller-frame to operate the plug or valve to supply the required amount of material to the cloth of sludge-box.

329,228. COVERED DISH. Wilmer F. Snively, Bellaire, Ohio. Filed Jan. 7, 1885. (No model.)



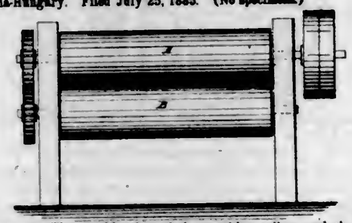
Claim.—1. The combination, with a dish having retaining-sockets on its opposite sides, of a detachable bail consisting of pieces of wire secured together and bent fork shape at the ends for engaging the sockets, substantially as set forth.

2. The combination, with a dish having retaining-sockets on its opposite sides, of a detachable spring-metal bail provided at its opposite ends with fork-shaped projections for entering the sockets in the dish, and provided centrally with an elongated closed loop, and a knob or handle on the cover adapted to pass through said closed loop and lock the cover in an elevated position.

3. The combination, with a dish and its cover, of a wire bail consisting of pieces of wire secured together and detachably secured to the dish, the wire sections of the bail being separated at the top to form an elongated loop adapted to receive a knob on the cover, substantially as set forth.

4. The combination, with a dish and its cover and a detachable bail provided with an elongated loop at its top, of a cover-handle adapted to pass through the loop, and provided with undercut wings for locking the cover to the bail in elevated adjustment, substantially as set forth.

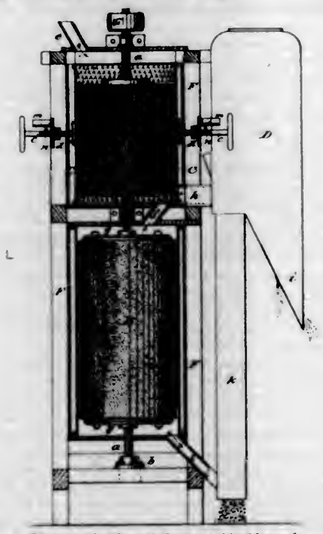
329,229. MANUFACTURE OF STARCH. Sigmund Spitzer, Vienna, Austria-Hungary. Filed July 25, 1885. (No specimens.)



Claim.—1. The combination of the crushing-rollers and the machine for separating the starch from the bran, smut, &c., with a machine having a perforated drum in a receptacle for separating the gummy substances from the refuse, in the manner herein shown and set forth.

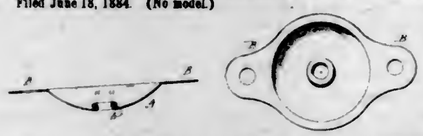
2. The combination of the crushing-rollers A and B, the machine consisting of the vessel C, perforated lining D, having shaft d, provided with beaters e, and the apparatus herein shown, consisting of the perforated drum E, arranged in the receptacle F, all arranged substantially as and for the purpose specified.

329,230. RULLING-MACHINE. Sigmund Spitzer, Vienna, Austria-Hungary. Filed July 25, 1885. (No model.)



Claim.—The combination of the movable bisected casing C, set-screws c c, having pointers n, indicator-scales m, and a hulling-stone substantially as set forth.

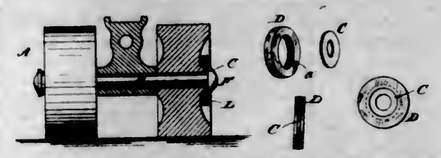
329,231. PAIL-EAR. Jas. Spruce and Asa M. Comstock, Waterbury, Conn., assignors to the Scovill Manufacturing Company, same place. Filed June 18, 1884. (No model.)



Claim.—1. As an article of manufacture, a pail-ear made from sheet metal, consisting of the cup-shaped center A, with projections B therefrom to secure the ear to the pail, the center pierced to form a bearing for the bail, the bearing re-enforced by the metal turned in from the hole upon the surface of the cup, so as to form a bead around the bearing, substantially as described.

2. A pail-ear made from sheet metal, consisting of the cup-shaped center A and projections B therefrom, the center pierced to form the bearing, combined with a ring, b, around the bearing, the metal being turned over the wire to inclose and secure it in place, substantially as described.

329,232. OIL-DRIP WASHER FOR ROLLER-SKATES. L. Stemmerer, New York, N. Y. Filed May 9, 1885. (No model.)



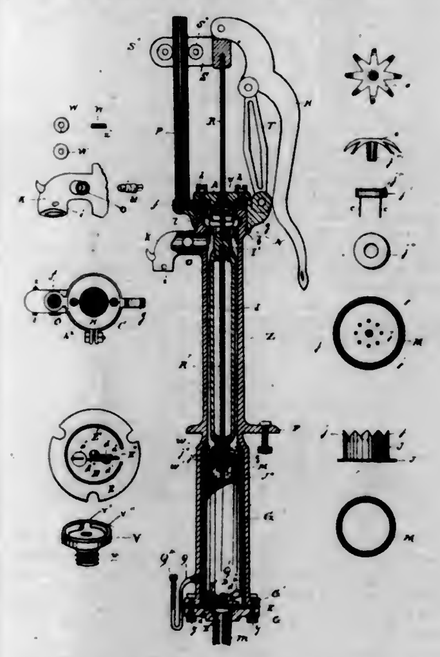
Claim.—1. As a new article of manufacture, a combination washer and oil-drip for rollers for skates and other purposes, consisting of the metallic washer C, provided with an adjustable and removable fibrous drip, D, to catch and absorb the oil escaping from the axle and hub, substantially as described.

2. As a new article of manufacture, the combined washer and oil-drip for rollers for skates and other purposes, consisting of the metallic washer C and the fibrous drip D, which surrounds the edge and extends over a portion of the two surfaces of the washer, substantially in the manner and for the purpose described.

3. As a new article of manufacture, the combined washer and oil-drip for rollers for skates and other purposes, consisting of the independent removable fibrous drip D, having an annular recess, a, therein to receive the rim or edge of the washer, and the metallic washer C, substantially as herein described.

4. As a new article of manufacture, a fibrous disk having an annular interior groove, a, to receive the edge or rim of the washer, as described.

329,233. NON-FREEZING FORCE-PUMP. William M. Stevenson, Cleveland, Ohio. Filed Aug. 13, 1884. (No model.)

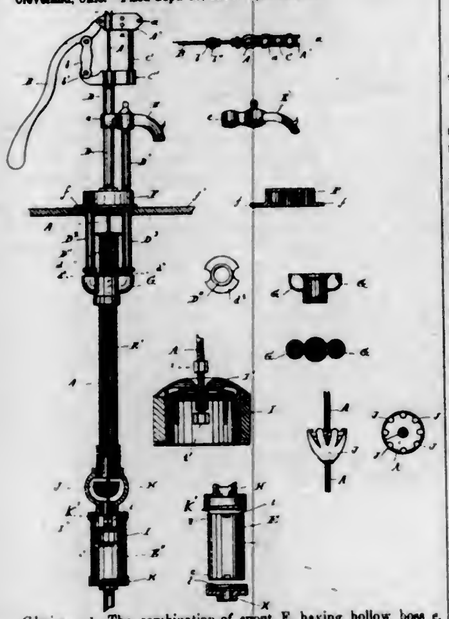


Claim.—1. The cylinder G and the piston J, in combination with the check-valve E', consisting of the leather E, hinge E'', and flap E', provided with metal plate D, having a lug, d, and projecting pin d', the opening a, and auxiliary drain-valve a', having wire d'' and spring a'', as described, and for the purposes set forth.

2. In combination with handle H, secured to the top of a pump-cylinder, the piston-rod R, the guide-arm S, having friction-rollers s' s^2, and guide-bar P, secured to the opposite side of said pump-cylinder, as described, and for the purposes set forth.

3. In combination with the lower cylinder of a pump, G, the bent tube Q, screwed into one side thereof above the bottom valve of said cylinder, and provided with reduced aperture Q', opening into said cylinder, the bent portion of the tube extending below the bottom of said bottom valve, then upwardly to a level with said aperture Q', the outer end of said tube being provided with a perforated cap, Q'', the perforation therein being of less internal diameter than the internal diameter of the tube, substantially as described.

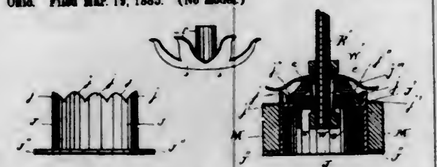
329,234. NON-FREEZING FORCE-PUMP. William M. Stevenson, Cleveland, Ohio. Filed Sept. 12, 1884. (No model.)



Claim.—1. The combination of spout E, having hollow boss e, pipes D D', and bracket C', with toggle b, handle B, slide A', having (two or more) friction-rollers, a, and guide-rod C, with piston-rod A, substantially as described, and for the purposes set forth.

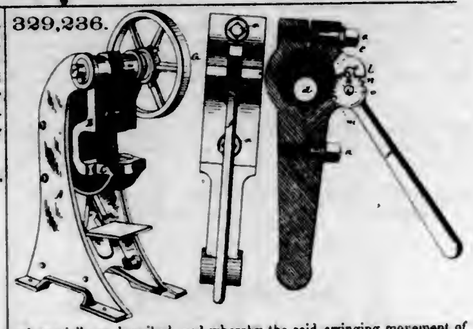
2. In a force-pump, the cylinder D', the piston d, the intermediate detachable chamber, G, the pipes D^2, D^3, and E', and valve-casing H, in combination with the valve J, consisting of a serrated metal cup having inwardly-projecting points inclosing leather packing-rings adapted to slide up and down over the piston-rod A, as described, and for the purposes set forth.

329,235. PUMP-PISTON. William M. Stevenson, South Cleveland, Ohio. Filed Mar. 19, 1885. (No model.)



Claim.—The combination, with a piston-rod, of a cage having a hollow stem, and a metal cylinder flanged at the bottom and surrounded by a suitable solid ring-packing, said cylinder having a perforated top and serrations j, said perforated top being covered by a leather ring, j', surmounted by a metal cap, j'', having pins c, the whole secured to each other by nuts w w', as described, and for the purposes set forth.

329,236. POWER-PRESS. Norman C. Stiles, Middletown, Conn. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a power-press, the frame of the press carrying the bed and slide, constructed with trunnions projecting at each side at the upper end in a plane parallel with the slide, the said trunnions supported in bearings in uprights, and whereby the bed and all it carries may swing on said trunnions as a center of motion, combined with the driving-shaft concentrically through said trunnions, the said shaft constructed with an eccentric, and with a pitman from said eccentric to said slide, substantially as described, and whereby the said swinging movement of the frame is made concentric with the driving-shaft.

2. In a power-press, the combination of the uprights forming bearings through which the driving-shaft extends, the frame carrying a slide and die-bed hung between said uprights, with the said driving shaft as its center of motion, the said shaft being parallel with the slide carried by the frame, and about which said shaft said frame and all it carries may swing as its center of motion without changing the relation of the slide to the die-bed, substantially as described.

3. In a power-press, the frame of the press carrying the bed and slide, constructed with a trunnion projecting at each side at the upper end in a plane parallel with the slide, the said trunnions supported in bearings in uprights, whereby the bed and all it carries may swing on said trunnions as a center of motion, combined with the driving-shaft concentrically through said trunnions, the said shaft constructed with an eccentric, and with a pitman from said eccentric to said slide, substantially as described, and whereby the said swinging movement of the frame is made concentric with the driving-shaft, and a mechanism, substantially such as described, for adjusting the inclination of the said frame.

4. In a power-press, the combination of the uprights forming bearings through which the driving-shaft extends, the frame carrying a slide and die-bed hung between said uprights, with the said driving-shaft as its center of motion, the said shaft being parallel with the slide carried by the frame, and about which said shaft said frame and all it carries may swing as its center of motion without changing the relation of the slide to the die-bed, and the mechanism, substantially such as described, for adjusting the inclination of the said frame, substantially as described.

5. A pitman having a circular recess at its head, the axis of which is parallel with the axis of the driving-shaft, combined with a circular disk, b, arranged in said recess, the said disk constructed with an eccentric opening, d, parallel with its axis, and the said disk also divided in two parts in the plane of its axis and of the axis of the said eccentric opening, and the said disk also constructed with teeth upon its periphery, with a lever, f, hung in said pitman, and arranged to swing in a plane parallel with the plane of said disk, the said lever constructed with a toothed segment, b, corresponding to the teeth on the periphery of the disk, substantially as described.

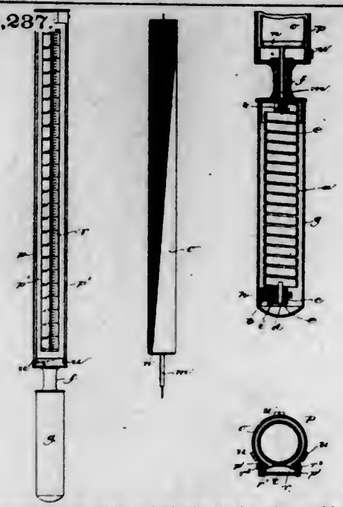
6. A pitman having a circular recess in its head, the axis of which is parallel with the axis of the driving-shaft, combined with a circular disk arranged in said recess, the said disk constructed with an eccentric opening, d, the axis of which is parallel with the axis of the disk, and the disk also constructed with teeth upon its periphery, the pitman constructed with projections l m in the plane of said disk, and so as to leave a space, n, between said projections, each of said projections constructed with bearings o, parallel with the axis of said disk, the lever f, constructed with trunnions i, adapted to rest in either of said bearings, as also to pass in and out through the said space n, the said lever also constructed with a toothed segment, h, corresponding to the teeth on the periphery of the disk b, substantially as described.

329,237. INDICATING DEVICE FOR SENSITIVE INSTRUMENTS. George B. St. John, Boston, Mass. Filed Jan. 8, 1885. (No model.)

Claim.—1. In an instrument for indicating changes of condition—such as temperature, pressure, &c.—the combination of a sensitive device capable of producing movement upon a change of condition to be indicated, and an indicating device consisting of a stationary member provided with a line or edge, and a movable member actuated by the said sensitive device, provided with a line or edge intersecting that of the stationary member, one of the said members being provided with graduations by which the position of the intersection of the said lines or edges may be read, substantially as described.

2. The combination of a sensitive device and an indicating-cylinder provided with a line or edge actuated thereby with a co-operating member having a line or edge, the lines or edges of the indicating members intersecting at an acute angle, and one of them being provided with graduations, substantially as and for the purpose described.

329,237.

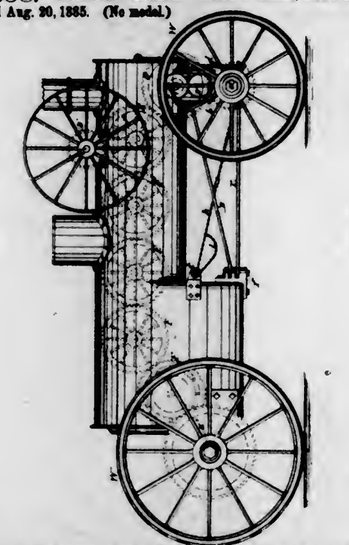


3. The combination, with an indicating device, of a sensitive strip connected at one end with the said indicating device, and a slotted block provided with an engaging-pin, A, and tapered screw i, holding the other end of the said strip, substantially as described.

4. The combination of the base f and the sensitive device and indicating-cylinder with the inclosing-tube provided with the co-operating indicating member and adjustably connected with the said base, substantially as and for the purpose described.

5. The sensitive device and indicating-cylinder actuated thereby, combined with the inclosing-cylinder provided with holders, and the co-operating indicating member adjustably connected with the said holders, substantially as described.

329,238. TRACTION-ENGINE. Loyal C. Taber, Danforth, N. Y. Filed Aug. 20, 1885. (No model.)



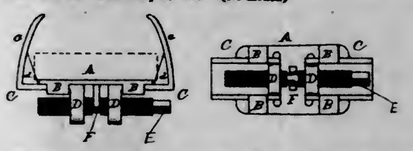
Claim.—1. In combination with the boiler A A' and forward axle, a, the reach r, extending from the axle to the rear portion of the boiler, and the brace B, extending from the forward portion of the boiler to the rear portion of the same, and having its attachment at the rear end, in common with that of the reach, substantially as set forth.

2. In combination with the boiler A, semispherical bearing-post K, and forward axle, a, the sleeve s, provided on top with the socket b and on the bottom with the stud-pin u, the reach r, extending across the under side of the sleeve, and provided with an eye for the reception of the stud-pin, and the coupling-link d, pivoted on the post K, and connected with the forward end of the reach, whereby said post is retained in the socket without interfering with the oscillations of the axle, substantially as set forth and shown.

3. In combination with the boiler A, having the downwardly-extended fire-box A', and reach r and brace B, the knee f, embracing the bottom corner of the forward portion of the fire-box, and having forward-projecting ears n n n', and bolt's, for the attachment of the reach and brace, substantially as described and shown.

4. In combination with the boiler A, axle a, sleeve s, provided with the socket b, hollow semi-spherical bearing-post K, provided with the side opening, c, compensating gear R on the axle, and the counter-shaft supported on the sleeve and having a universal joint in the hollow post K, and provided with the pinion P, meshing in the gear R, and the steering-chains A, wound in opposite directions on the shaft t, and connected to the ends of the sleeve s, as described, the check-chains l, having their rear ends attached stationary and independent of the steering-chains, and their forward end securely coupled to the steering-chains, and each check-chain of a length to be drawn taut by the unwinding of the steering-chain, to which it is connected, whereby the action of the steering-chains is limited, to prevent the binding of the counter-shaft in the side opening of the bearing-post, and injury to the same and to the gears P R, substantially as set forth.

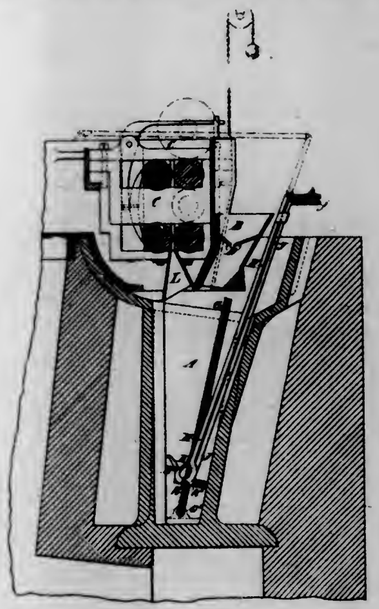
329,239. CLAMP FOR ROLLER-SKATES. Norman A. Tanner, New Haven, Conn. Filed May 5, 1885. (No model.)



Claim.—In a clamp for roller-skates, the plate A, having inclined projections B B and journal F, in combination with the clamping-pieces C C, having bearings D D at their inner ends, provided with upward projections e e at their outer ends, said outer projections provided with a fillet, d, and the screw-threaded key E, all as and for the purposes specified.

329,240. APPARATUS FOR COATING METAL PLATES. Henry F. Taylor, Neath and Briton Ferry, County of Glamorgan, and George Leyson, Tividale, County of Stafford, assignors to Taylor, Struvé, Eaton & Price, Neath and Briton Ferry, South Wales, England. Filed Aug. 11, 1883. (No model.) Patented in England May 4, 1882, No. 2,106, and Apr. 20, 1883, No. 2,012; in France Nov. 3, 1882, No. 151,883, and in Belgium Nov. 8, 1882, No. 59,515.

Claim.—1. The combination, in an apparatus for coating and finishing a plate in one operation, of a vertical pot for the molten coating metal, an entrance-hopper therein containing preparatory flux and stationary guides for the plates to be coated, a nipping appliance and cradle which receives the plate to be coated from the said guides, and which



is adapted to nip and to lower the plate and hold it while being coated and to raise and release the plate, and operating handles and stops which prevent the nipping part from rising out of the coating metal, and a box on the exit side of the coating-pot, which box contains finishing material and the finishing-rollers, and a box-guide which leads the coated plate into the nip of the finishing-rollers and keeps the rising and floating scruff from the plate, substantially as set forth.

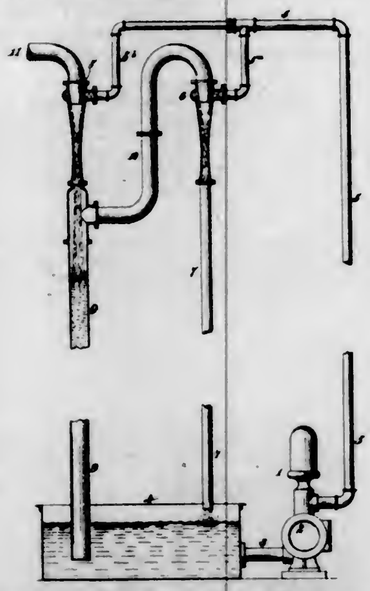
2. The nipping appliance and cradle consisting of the frame H', having handle-rod H, for raising and lowering it, and to which the nipping-finger K, with handle-rod J, is jointed for closing or opening the finger K against the plate, the said frame H' being guided on rods or cradle G, which, with their spindle G', can be rocked or canted in bearings by means of rod F, for the purpose of canting the plate over against the exit side and for bringing the empty cradle back to the entrance side, substantially as set forth.

3. The pot A, for containing coating metal, in combination with the entrance-hopper B, having guides D D', and with a nipping appliance and cradle for lowering, canting, and raising the plate, and with the exit grease-box C, having guide L, with closed ends, and provided with finishing-rollers E, substantially as and for the purposes described.

4. The combination, with the pot A for melted metal, of the guide-rods G, pivoted at G', and lever F for moving the same, the frame H', horns H^2, and handle J for receiving and raising the plate, and the delivery-rolls E, substantially as specified.

5. The combination, with the pot A for melted metal, of the guide-rods G, pivoted at G', and lever F for moving the same, the frame H', horns H^2, and handle J, the handle H, and pivoted gripper K, for receiving and raising the plate, and the delivery-rolls E, substantially as specified.

329,241. VACUUM-PUMP. Burchard Thoms, New Orleans, La. Filed Dec. 27, 1884. (No model.)



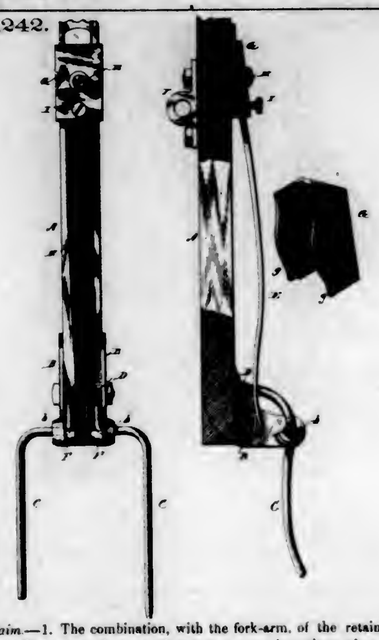
Claim.—1. In apparatus for producing high vacua, the combination of a main ejector-pump, to which the vessel to be exhausted is connected, and one or more auxiliary ejector-pumps, each having its suction-pipe connected to the drop or discharge pipe of the preceding ejector-pump, substantially as described.

2. In apparatus for producing high vacua, the combination of a main ejector and one or more auxiliary ejectors, each connected with the discharge or drop pipe of the preceding ejector at a point below the discharge-nozzle thereof and above a point representing the barometric height of a column of the fluid used, substantially as described.

3. In an apparatus for producing high vacua, the combination of a main ejector-pump, one or more auxiliary ejector-pumps, connected as described, supply tubes or branches leading thereto, a reservoir or tank for the fluid, and a pump or forcing apparatus for supplying the liquid therethrough under pressure, substantially as described.

329,242. TEDDER-FORK. John H. Thomas, Springfield, Ohio. Filed Oct. 17, 1884. (No model.)

329,242.

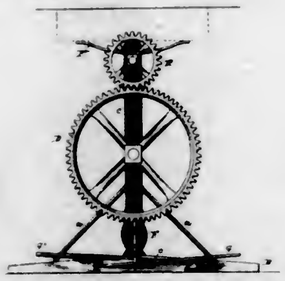


Claim.—1. The combination, with the fork-arm, of the retaining-clip, made flaring upon its inner face to accommodate the spring, and means, substantially as described, for adjusting the tension or pressure of the spring.

2. The combination, with the fork-arm, of the pivoted fork provided with the U-shaped portion or crank-arm, the spring acting on said crank-arm, the clip for securing said spring to the fork-arm, and the set-screw connected therewith, substantially as described, for adjusting the spring.

3. In a hay-tedder, the combination, with the tedder-arm, of the spring secured thereto, and a tedder-fork pivotally mounted in bearings located at the rear of said arm, and provided with a U-shaped bend at its upper end, against which said spring bears, and which is extended forward of the axis of the fork, so as to bring the axial line in the rear of a line drawn from the fork-points to the center of the cross portion of said bend, whereby the relative position of the cross portion and the axial line is such that the fork can be thrown a greater distance above the ground, and the spring still be capable of bringing the fork back to operative position.

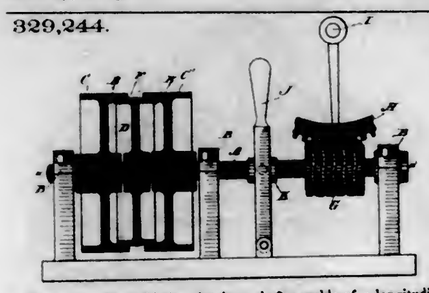
329,243. PAINTER'S JACK. Orville W. Van Denburgh, Schuylerville, N. Y. Filed Aug. 10, 1885. (No model.)



Claim.—In a machine for holding and adjusting vehicle-bodies, articles of furniture, &c., during the operation of being painted, a frame, substantially as herein described, said frame being provided with a revolving bar, gear-wheels and an adjusting-pawl, combined and used with a bolster or bar which is connected to the article to be painted and secured to the revolving bar, the several parts being so constructed and arranged that any desired position or adjustment may be given to the article to be painted, as is herein set forth.

329,244. FRICTION-CLUTCH. Edward P. Walter and Henry C. Walter, Bridgeport, Conn. Filed June 10, 1884. Renewed Sept. 29, 1885. (No model.)

329,244.



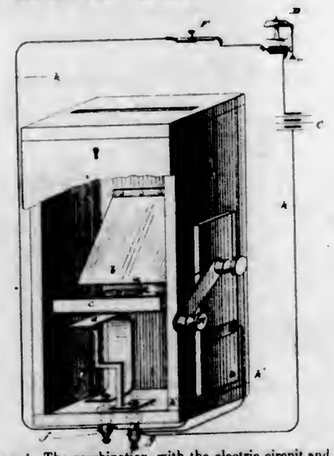
Claim.—1. In a friction-clutch, a shaft capable of a longitudinal movement in its bearings, and having arranged thereon tight and loose pulleys, and adapted to be thrown into engagement by frictional contact, and a worm which engages with a gear-wheel secured on a primary shaft, in combination with a lever attached to said shaft, and operating to effect an initial engagement between the tight and loose pulleys, substantially as set forth.

2. In a friction-clutch, a shaft capable of a longitudinal movement within its bearings, and having rigidly mounted thereon a worm and one or more pulleys, in combination with a gear-wheel adapted to engage with said worm, loose pulleys arranged in close proximity to the tight pulley, and adapted to transmit motion thereto by frictional contact, and a lever attached to said shaft and operating to effect the initial engagement of said pulleys, substantially as shown and described.

3. In a friction-clutch, the combination, with loose and tight pulleys adapted to engage by frictional contact, and arranged on a shaft capable of a longitudinal movement in its bearings, of a worm secured on said shaft and engaging with a gear-wheel mounted on a primary shaft, substantially as set forth.

4. In a friction-clutch, the combination, with a worm secured on a shaft capable of longitudinal movement within its bearings, said worm adapted to engage with a gear-wheel secured on a primary shaft, of one or more loose and tight pulleys adapted to engage by frictional contact and mounted on the same shaft with said worm, whereby the frictional contact between said pulleys may be sustained by the end-thrust of the worm, substantially as shown and specified.

329,245. ELECTRICAL INDICATOR FOR LETTER-BOXES. Ephraim E. Weaver, Philadelphia, Pa., assignor to Peter I. Fitzgerald, same place. Filed Dec. 4, 1884. (No model.)



Claim.—1. The combination, with the electric circuit and alarm or indicator therein, of the letter-box provided with the spring-supported platform B, the separate and independent flexible contact-strip *d*, placed beneath and in proximity to the free end of the platform, and the contact-post *e*, beneath the contact-strip *d*, as and for the purposes shown and described.

2. The letter-box, the movable platform within the same, and the circuit-closer operated by said platform, in combination with the circuit A, the alarm or indicator D, the branch circuit A', and the circuit-closing key E, external to the box, under the arrangement and for operation as herein shown and described.

329,246. MACHINE FOR LAYING DRAIN-TILE. Ivory Webster, West Liberty, Iowa. Filed June 24, 1885. (No model.)

329,246.



Claim.—1. In a combined ditching-plow and tile-laying machine, the herein-described furrow-opener, having a flat inclined landside, and a mold-board which is curved from the front end to about the center, and thence recurved to the rear end of the said furrow-opener, substantially as and for the purpose herein set forth.

2. In a combined ditching-plow and tile-laying machine, the combination, with the furrow-opener, constructed and arranged substantially as herein described, of a shoe hinged horizontally to the front end of the said furrow-opener, and a share pivotally secured to the top of said shoe, substantially in the manner and for the purpose herein set forth.

3. In a combined ditching-plow and tile-laying machine, the combination, with the furrow opener, of the shoe hinged horizontally to the front end of the same, a share pivotally secured to said shoe, and provided at the sides with slots, and the upwardly-extending colter-arms, having notches upon the rear edge of the lower ends, substantially as herein described, for the purpose set forth.

4. In a combined ditching-plow and tile-laying machine, the combination of the main beam, the furrow-opener, a transverse beam secured to the main beam in front of the furrow-opener, a shaft journaled to the latter, and having a worm-wheel meshing with a suitably-arranged screw, cranks at the ends of the said shaft, entering or engaging notches in the colter-arms extending upwardly from the cutter hinged to the front end of the furrow-opener, all arranged and operating substantially as and for the purpose herein set forth.

5. In a combined ditching-plow and tile-laying machine, the combination of the main beam, the furrow-opener, the hinged point of cutter having upwardly-extending colter-arms, mechanism for the adjustment of the latter, a carrying-sled connected adjustably with a transverse beam secured to the main beam by means of screw-threaded rods, and an adjustable frame secured to the said carrying-sled, the sides of said frame being connected by pivoted diagonal bars and equipped with colters or cutters, substantially as and for the purpose set forth.

6. In a combined ditching-plow and tile-laying machine, the combination, with the furrow-opener having a flange upon one side the front end of which is provided with forwardly-projecting lugs having upwardly-extending projections upon their front ends, of a shoe having apertures and a rearwardly-projecting lug, and a share pivotally secured to said shoe, substantially as and for the purpose set forth.

7. In a combined ditching-plow and tile-laying machine, the combination, with the furrow-opener and tile-laying mechanism, of a vertical beam secured adjustably to the front end of said machine, and having its lower end swiveled or mounted pivotally in a carrying-sled the under sides of the runners of which are provided with sharp impinging-boards or cutters, substantially as and for the purpose herein set forth.

8. In a combined ditching-plow and tile-laying machine, the combination, with the furrow-opener and tile-laying mechanism, of a supporting-sled the front part of which is provided with holes or apertures, a vertical beam swiveled in said sled, and an upright rod or standard secured therein, and the hitching-rod passing through the upper end of said standard, substantially as and for the purpose set forth.

329,247. SWINGING CAN. Charles Wehnedl, Louisville, Ky., assignor of one-half to Otto E. Mueller, same place. Filed July 27, 1885. (No model.)



Claim.—1. A can jacketed at front, rear, top, and bottom, and provided with side pivots, combined with a casing and stand having fixed sides, top, and bottom and fixed bearings for the pivots of the can in its sides, substantially as described.

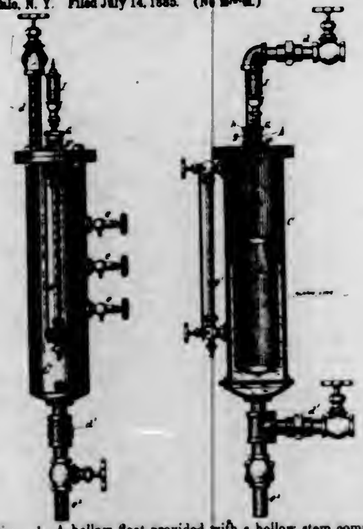
2. A can having its top and bottom inclined in parallel planes and jacketed at front, rear, top, and bottom, and provided with side pivots, combined with a casing and stand having fixed sides, top, and bottom and fixed bearings for the pivots of the can in its sides, substantially as described.

3. A can having an inclined top and bottom, and suitably jacketed, combined with a combined casing and stand rigid throughout, but open at front and rear, and supporting the can in fixed bearings, substantially as described.

4. A can having an inclined top and bottom, and suitably jacketed, combined with a combined casing and stand rigid throughout, but open at front and rear, and supporting the can in fixed bearings, and having an opening in its top for access to the nozzle, handle, and vent of the can, substantially as described.

5. The casing and stand comprising the sides *a b*, top *c*, battens *d e*, and bottom brace, *f*, combined with the can having the jacket *k l m n* and battens *o p*, substantially as set forth.

329,248. FLOAT FOR LOW-WATER ALARMS. ALFRED WELDON, Buffalo, N. Y. Filed July 14, 1885. (No model.)

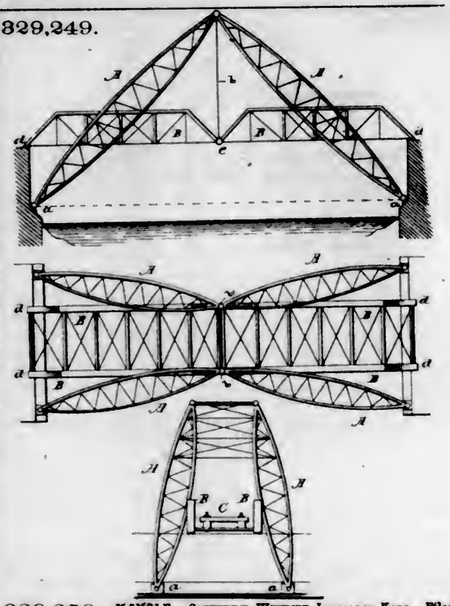


Claim.—1. A hollow float provided with a hollow stem communicating with the cavity of the float, and an annular valve surrounding the hollow stem, whereby the cavity of the float is placed in communication with the outer air through the hollow stem and valve, substantially as set forth.

2. The combination, with an inclosing-chamber having an outlet-passage provided with a valve-seat, of a hollow float provided with a hollow stem, whereby the cavity of the float communicates with the outer air, and a valve which is formed or secured around said hollow stem and closes against said valve-seat, substantially as set forth.

3. The combination, with the chamber C, having an outlet-passage, *f*, provided with a valve-seat, *g*, and a whistle, I, of the hollow float A, provided with a hollow stem, *a*, communicating with the cavity of the float and opening into the outer air, and a valve, *b*, formed on or secured to the hollow stem *a*, substantially as set forth.

329,249. BRIDGE. EMERSON A. WHITE, New York, N. Y. Filed Oct. 10, 1884. (No model.)

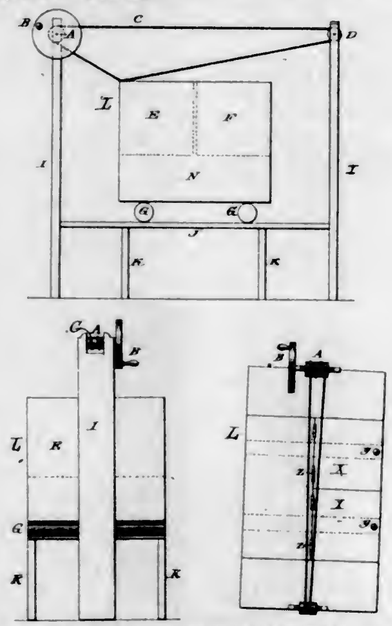


Claim.—1. The combination of two struts united at their upper ends, and inclined to each other, and resting on abutments or analogous supports, and two ordinary girders or beams, both having their inner or adjacent ends supported by rods from the top of the struts, the land ends of the beams or girders resting on abutments or analogous supports, and said beams or girders being otherwise independent of said inclined struts, substantially as described herein, and for the purposes set forth.

2. The combination of two ordinary beams or girders of any description with two struts of suitable form inclined under any angle against the abutments, and hinged together at the top to support by suitable means the two beams carrying any road over an opening of given length, without the aid of intermediary supports resting on the ground, the struts being inclined to the vertical planes of the girders, substantially as described herein, and for the purposes set forth.

329,249.

329,250. MANGLE. CATHERINE WHITNEY, Lawrence, Kans. Filed May 31, 1884. (No model.)



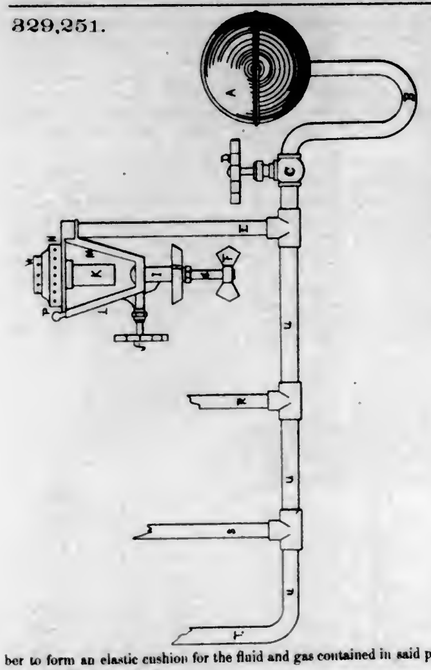
Claim.—In a clothes-mangle, the combination, with the table, the posts secured about centrally of the ends of the table, and the pulleys, one supported in each post, and one having a crank, of the rollers resting upon the table, the box superposed upon the rollers, and the rope passing over one pulley and rove around the other, the crank-operated pulley, the ends of said rope being connected to one edge of said box, substantially as shown and described, and for the purpose set forth.

329,251. VAPOR-BURNER FOR STOVES. JOHN O. ALLEY, Detroit, Mich., assignor to the Peninsular Stove Company, same place. Filed Feb. 19, 1885. (No model.)

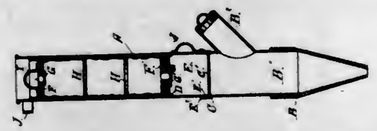
Claim.—1. The combination, with a vapor-burner, of an air-chamber attached to the fluid-supply pipe thereof to receive liquid passing through the pipe, whereby said fluid will compress the air in said chamber to form an elastic cushion for the fluid and gas contained in said pipe, substantially as described.

2. In a vapor-burner, the combination, with the fluid-supply pipe, of the trap B, connected therewith to receive the fluid therefrom, and the hollow ball A, to receive the fluid from said trap, substantially as described.

329,251.



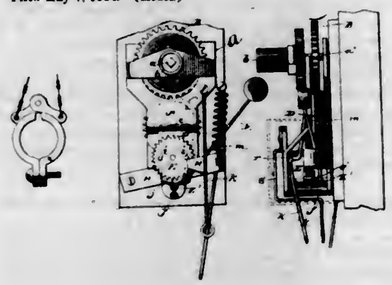
329,252. MACHINE FOR EXTERMINATING GROUND-BURROWING ANIMALS. ARCHIE ANDERSON, San José, Cal., assignor of two-thirds to Frank A. Wert and Edmond P. Boden, same place. Filed Aug. 12, 1885. (No model.)



Claim.—1. In an animal or insect exterminator, the combination and arrangement in one machine of a fire-proof portable cylinder provided with a tapering end and a combustion-chamber and air-chamber, together with an internally-operating bellows, constructed substantially in the same manner as herein set forth and specified.

2. In a ground-burrowing-animal exterminator, the main cylinder provided with a tapering end tube and a combustion-chamber with feed-pipe, an air-chamber separated from the combustion-chamber by a perforated plate, together with a suitable space in the cylinder above for operating a bellows, constructed, arranged, and operating substantially in the manner as set forth and specified.

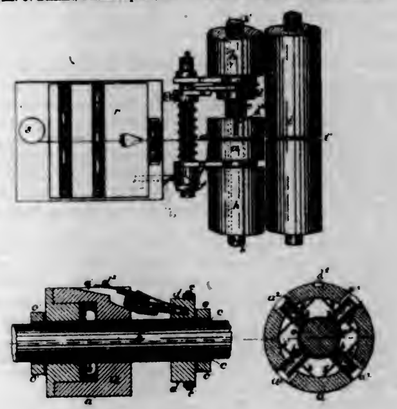
329,253. BURGLAR-ALARM. CYRUS P. BACHELDER, Pawtucket, R. I. Filed May 7, 1884. (Model.)



Claim.—1. In a burglar-alarm, the combination, with a spring-actuated train of gearing, of a shaft, having an escapement-wheel mounted thereon, a pallet to engage said escapement-wheel, outwardly-extending pins on the escapement-wheel, a pivoted spring-actuated stop, and a pivoted shouldered arm for engaging said stop, substantially as set forth.

2. In a burglar-alarm, the combination, with a spring-actuated train of gearing, of a shaft carrying an escapement-wheel, a shaft carrying a pallet to engage the escapement-wheel, an angular arm projecting from the pallet-shaft, and a shifting-lever to engage said angular arm, whereby the alarm may be rendered inoperative, substantially as set forth.

329,254. DEVICE FOR SEWING BOOKS, PAMPHLETS, &c. MIFFLIN J. BAKER, Philadelphia, Pa. Filed Mar. 12, 1884. (No model.)



Claim.—1. In a book-stitcher, the carrier *a*, constructed as above described, having forked looping-pins *b*, constructed and operating as and for the purposes specified.

2. In a book-stitching machine, the forked looping-pins *b*, in combination with the grooved carrier-cylinder *a*, in which they are moved radially out and in for inserting loops of thread through the sheets of paper, constructed and arranged substantially as and for the purposes specified.

3. The combination of the forked looping-pins *b* within the grooved carrier *a*, for guiding the thread and forming the loop, as specified.

4. In a book-stitcher, the combination of the carrier *a*, sleeve *c*, cam c^2, and looping-pins *b*, constructed and arranged as specified.

5. The combination of the driving-roller *i* and carrier *a*, as described, by which intermittent motion is imparted to the carrier *a* by the passage of the folded paper to be sewed between them, as herein specified.

6. The roller *i*, having a groove, *i'*, therein for receiving the loops of thread, as described, in combination with looping-pins *b* and carrier *a*, substantially as specified.

7. The carrier *a*, having the guiding-groove *a'* around it for holding and guiding the cemented thread, in combination with the forked looping-pins *b*.

8. The thread-cutter d^3, in combination with the carrier *a*, substantially as and for the purposes specified.

9. The combination of the thread-cutter d^3 with the carrier *a* and roller *i*, by which the cutter is brought into action, as specified.

10. The combination of the sliding grooved collar on sleeve *c* with the knife-slide *d*, for bringing the knife into position to cut the thread and retracting it, substantially as specified.

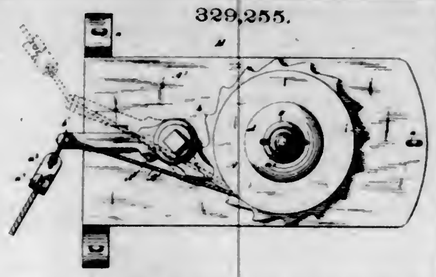
11. The combination of the cement-reservoir with the revolving grooved carrier *a*, by which the cemented thread is laid straight and guided to the forked pins *b*, as specified.

12. The combination of the roller *y* with the revolving grooved carrier *a*, as and for the purposes specified.

329,255. ANCHOR FOR CHECK-ROW PLANTERS. JOSEPH C. BARLOW, Quincy, Ill. Filed Aug. 3, 1885. (No model.)



329,255.



Claim.—1. An anchor for a check-row cord or wire, provided with a holder for the rope or wire, and a device actuated by the said rope or wire for releasing said holder to automatically effect the release or withdrawal of the rope or wire, substantially as described.

2. An anchor for a check-row cord or wire, provided with a drum or holder to which the rope or wire is connected, a tension device for restraining the yielding of said holder, and a brake or stop mechanism engaging said holder to prevent the withdrawal of the check-row cord or wire until the latter has been deflected to one side, substantially as and for the purpose set forth.

3. An anchor for check-row cords or wires, provided with a holder to which the cord or wire is connected, a brake or catch applied to said holder and maintained in position to engage or disengage the latter by the cord or wire, and an adjustable brake or tension device acting upon the holder to resist the pull of the cord or wire when the said brake or catch is disconnected from the holder, substantially as described.

4. In an anchor for check-row cords or wires, the combination, with a rotary drum and its ratchet, of the pawl provided with guides or bearings for the rope or wire, substantially as described.

5. In an anchor for check-row cords or wires, the combination of the drum, the ratchet-plate to which the drum is attached by devices such as indicated for permitting an independent movement of the one with respect to the other, and a brake or catch applied to the said ratchet-plate and operated upon by the rope or wire, substantially as and for the purpose set forth.

6. In an anchor for check-row cords or wires, the combination of a rotary drum to which the wire is applied, a ratchet-plate with which said drum is connected by devices such as described to permit an independent motion in one direction, a brake or catch engaging said ratchet-plate, and a frictional brake or tension device applied to the said ratchet-plate independent of the drum, substantially as described.

7. In combination with the check-row cord or wire, and as a means for automatically securing and releasing the ends thereof, an anchor, substantially such as indicated, attached to each end of the said check-row cord or wire, said anchors being provided with devices for automatically holding and releasing the check-row cord or wire and maintaining the tension of the latter, substantially as described.

8. In combination with the ratchet-plate and its sleeve or boss surrounding the spindle, the drum loosely mounted upon said sleeve and connected to the ratchet-plate by a pawl, and the cap held in frictional contact with the sleeve, substantially as described.

9. In combination with the pawl and ratchet-plate, the former provided with a guide for the rope or wire, and actuated thereby, as described, the drum connected to the ratchet-plate and movable thereon in one direction only, and the brake applied to the said ratchet-plate to maintain the tension on the rope or wire when the pawl is withdrawn, substantially as described.

10. In an anchor for a check-row cord or wire, and in combination with the device to which the said cord or wire is attached, a retaining-catch adapted to be operated upon by the rope or wire when deflected to one side to release the said check-row cord or wire and permit the latter to be extended, substantially as described.

11. In an anchor for check-row cords or wires, and in combination with a device for holding the rope or wire and maintaining it under tension, a detaining-catch for holding the rope or wire in position, provided with a guide against which the rope or wire operates when deflected to effect the release of the latter and permit the elongation or paying out of the check-row cord or wire, substantially as described.

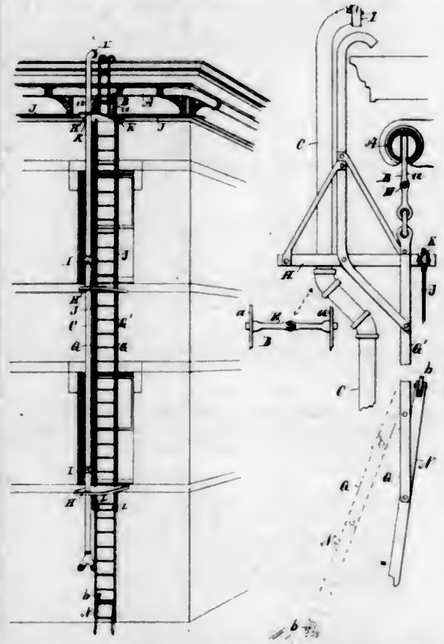
12. In an anchor for check-row cords or wires, a rotary holder upon which the end of the rope or wire is wound, and devices, substantially as indicated, for automatically locking and unlocking said holder by the lateral movement of the rope or wire.

13. In an anchor for check-row cords or wires, a rotary holder upon which the end of the rope or wire is wound, a device for automatically locking or releasing said holder by the lateral movement of the rope or wire, and a ratchet-and-pawl connection between said holder and locking mechanism to permit an independent rotation of the former for tightening the rope or wire, substantially as described.

14. The combination, in an anchor such as described, and with the check-row cord or wire, of a rotary drum or holder to which the cord or wire is attached, a movable detent or catch applied to the holder, and operating to prevent the movement of the latter when in engagement therewith, and a tension device applied to the holder and operating, when the detent or catch is released, to restrain or retard the unwinding of the drum and the extension of the cord, as and for the purpose set forth.

15. In combination with the ratchet-plate and its engaging pawl or detent, the drum loosely connected to said plate and capable of rotating in one direction independently of said ratchet-plate, and the tension device applied to the ratchet-plate, substantially as described, whereby when the pawl or detent is withdrawn the ratchet-plate and drum will rotate in unison, but against the pressure of the tension device, while the drum is free to turn in the opposite direction to wind up the cord or wire independently of the tension device or ratchet-plate.

329,256. FIRE-ESCAPE. Albert G. Bierbach, Milwaukee, Wis. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination of a slotted tubular track or tramway, a metallic stand-pipe suspended from a carriage in said tramway, having inlet and outlet hose-connections, and a ladder suspended from said tramway and connected at intervals rigidly with said stand-pipe, substantially as set forth.

2. The combination of the movable ladder G' and stand-pipe C, as together suspended from a tramway upon the side of a building, the pulleys K K, and chain or cable J, passing over said pulleys and affixed at its ends to the building, substantially as set forth.

3. The combination of the track A, truck or carriage B, movable ladder G', stand-pipe C, and series of balconies H H, substantially as set forth.

4. The combination of the track A, affixed to the side of a building, truck or carriage B, ladder G', stand-pipe C, series of balconies H, affixed to said ladder and stand-pipe, pulleys K K, and chain or cable J, passing over said pulleys and connected at its respective ends to the building, substantially as set forth.

5. The combination, with the lower end of the movable ladder G', of the jointed extension N, provided with rollers *b b* and pivoted to the lower end of said ladder, the upper end of said extension being of such length as when in line with the ladder to come in contact with and bear against the next succeeding round of said ladder, as set forth.

329,257. CARPET-SWEEPER. Melville R. Bissell, Grand Rapids, Mich. Filed May 9, 1884. (Model.)

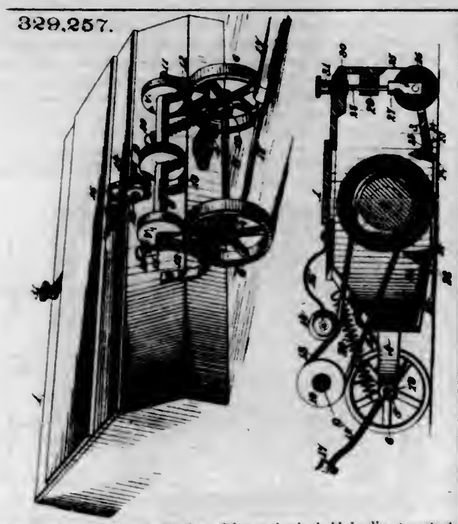
Claim.—1. The combination, with the case or frame and the brush shaft, of the friction drive-wheels, the curved spring-plates carried at their inner ends by the case, the axle journaled in the outer ends of the spring-plates and provided with friction-driven wheels held in direct contact with the drive-wheels, and a belt-connection between the axle of the driven wheels and the brush-shaft, substantially as described.

2. The combination of the sweeper-case, the friction drive-wheels, the axle for said wheels carried by the case, the propelling-handle loosely hung on the axle, and the springs connected at one end with the case and at the other end with the handle, and acting to throw the handle to an upright position and to balance the sweeper-case when the handle is depressed, substantially as described.

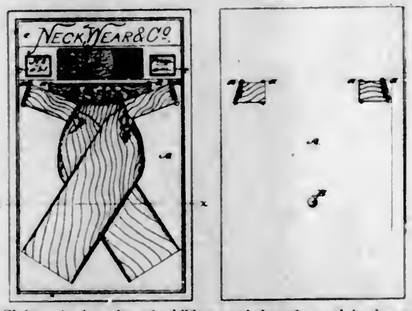
3. The combination, with the sweeper-case and the revolving brush-shaft journaled therein, of the dust-pans arranged in front and rear of the brush-shaft, and each having its bottom wall provided with a flexible duplex dust-guard, substantially as described.

4. The combination, with the sweeper-case and the revolving brush-shaft, of the dust-pan having its bottom wall longitudinally grooved and the duplex flexible dust-guard secured in said groove, substantially as described.

329,257.



329,258. NECKSCARF-EXHIBITOR. John H. Boyce, Brooklyn, N. Y. Filed Sept. 6, 1884. (No model.)



Claim.—1. A neckscarf-exhibitor consisting of a card having two openings, *a a*, on each side for the passage of the neckband of the scarf, a fastening for the skirts, and patterns of the material of which the scarf may be formed, substantially as described.

2. A neckscarf-exhibitor having two openings on each side of the card, and having secured thereto a necktie the band of which passes through the said openings, and being also provided with patterns of the material of which the said scarf may be formed, substantially as described.

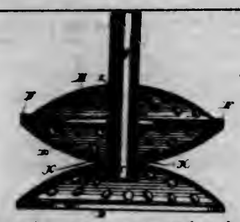
3. A neckscarf-exhibitor consisting of a card having openings for the passage of the neckband and a fastening device for connecting the skirts of the scarf with the card, substantially as and for the purpose set forth.

329,259. CHURN-DASHER. John W. Boyd, Vevay, Ind. Filed Aug. 7, 1885. (No model.)

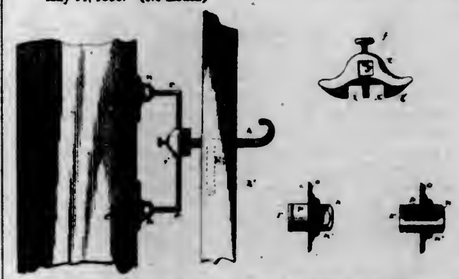
Claim.—1. In a churn-dasher, the combination of a dasher-tube, a concavo-convex perforated disk secured upon the tube with its concave side facing downward, a concavo-convex perforated disk secured upon the tube with its concave side facing upward, and with its edges bearing against the edge of the upper disk, and an upper concavo-convex perforated disk secured upon the tube with its concave side facing downward, as and for the purpose shown and set forth.

2. In a churn-dasher, the combination of a dasher-tube forming a socket for the dasher-staff, and having a screw-threaded open end provided with a flange at the upper end of the thread, a perforated concavo-convex disk secured upon the dasher-tube with its concave side facing downward, and having a downwardly-projecting flange at its periphery, a concavo-convex perforated disk having an upwardly-projecting flange at its periphery, and having its concave side facing upward, and its central aperture bearing against the flange of the threaded end of the dasher-tube, the flange at its periphery fitting around the flange of the upper disk, an upper concavo-convex perforated disk having its concave side facing downward, and having its central aperture fitting against the central apertured portion of the disk above, and a screw-cap fitting upon the threaded end of the dasher-tube and confining the disks, as and for the purpose shown and set forth.

329,259.

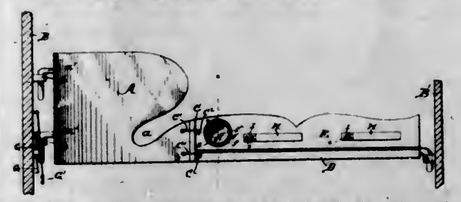


329,260. GATE-LATCH. Charles T. Bond, Webster, Ind. Filed May 11, 1885. (No model.)



Claim.—The catch-frame e, having horizontal arms e', the catch-block i, the thimble-nut n, and collar p, in combination with the latch h, substantially as and for the purpose specified.

329,261. ATTACHMENT FOR BEDSTEADS. James W. Bowler, Louisville, Ky. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a guard attachment for bedsteads, the main section A, provided in its lower end with a forwardly-extended slot, whereby the bed-clothing may be drawn close around the necks of the sleepers, substantially as set forth.

2. A guard attachment for bedsteads, comprising a support and a table-section pivoted at its lower edge thereto, whereby such table-section may be turned to a horizontal position, substantially as set forth.

3. The combination, in a guard attachment for bedsteads, of a support, a table-section pivotally secured at its lower edge thereto, whereby it may be turned to a horizontal position, and braces for such table, substantially as set forth.

4. The improved guard attachment, substantially as herein described and shown, consisting of the main section provided at its lower end with a forwardly-projected slot, the lower section detachably secured to said main section, and comprising a support and a table-section pivoted thereto, a bracket mounted on said table-section, and braces for such section, substantially as set forth.

5. A guard for bedsteads, comprising an upper or main section and a lower section having its upper end detachably connected with the lower end of the main section, substantially as set forth.

6. The combination, with a bedstead-guard, of a bracket, F, pivoted at one edge to such guard and having its other edge movable to the opposite sides thereof, and a stop whereby said guard may be secured horizontally, substantially as set forth.

329,262. CAR-COUPLING. William R. Bowman, Danville, Ky. Filed Aug. 31, 1885. (No model.)

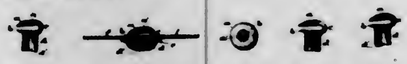


Claim.—1. In a car-coupler, a link-support consisting of a transverse shaft with squared ends and carrying a handle and ratchet-wheel, and a frame with slotted ends surrounding the shaft, said ends having a contracted continuation, substantially as and for the purpose specified.

2. In a car-coupler, a pin-support consisting of a curved arm with adjustable stops at one end and an enlargement and friction-rollers at the other end, said arm resting within the draw-head, and having an end passing through a slot therein, substantially as and for the purpose specified.

3. In a car-coupler, the combination, with a draw-head, of a link-support consisting of a frame with slotted ends having contracted continuations and a transverse shaft supporting the same, and a pin-support consisting of a curved arm with an adjustable stop and friction-rollers, the whole arranged substantially as and for the purpose specified.

329,263. LACING-STUD. Mellen Bray, Newton, Mass. Filed Feb. 14, 1885. (No model.)



Claim.—In combination with a lacing stud or hook, a concavo-convex washer provided with a central apertnre to receive the shank or fastening portion of said stud or hook, and applied thereto with its concave side toward the head of the stud or hook, with its outer rim beyond the base of the stud peripherally, and inclosing and surrounding the same, and pressing the material all around said base above the outer face thereof, substantially as and for the purposes described.

329,264. DEVICE FOR SETTING LACING-STUDS. Mellen Bray, Newton, Mass. Filed Apr. 29, 1885. (No model.)



Claim.—1. As a means for holding a lacing-stud while being set and receiving the blow of the setting-tool, a stationary anvil having its upper end shaped to fit the outer surface of the head of the lacing-stud, in combination with a plate arranged above said anvil and adapted to fill the space between the outer head and the base-collar of the stud to be set, and a spring arranged to act upon and press said plate toward said anvil to clamp the head of the stud between it and said anvil, so that the shock of the blow of the clinching-plunger shall be transmitted to the stationary anvil instead of being received and sustained by said plate, substantially as described.

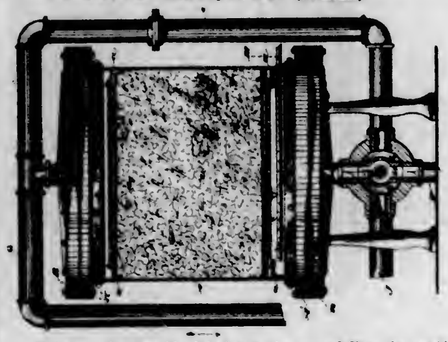
2. The combination of a stationary anvil having its upper surface shaped to fit the outer surface of the outer head of the stud to be set, a sleeve surrounding said anvil, a removable plate secured to and extending across the top of said sleeve and arranged to fill the space between said outer head and the base-collar of said stud, and a spring arranged to press said sleeve and plate downward so as to clamp the head of the stud between said plate and anvil, substantially as described.

3. The combination of the stationary anvil *a b*, the sleeve *d*, arranged to surround the anvil, and provided with the recess d^3, the plate *e*, secured to the upper end of the sleeve *d*, and provided with the recess e' and the notch e^3, and the spring *g*, all arranged and adapted to operate substantially as and for the purposes described.

4. The combination of the anvil *a b*, the sleeve *d*, provided with the collar *d'*, the plate *e*, secured to said sleeve, the spring *g*, and the lever E, all arranged and adapted to operate substantially as described.

5. The combination of the anvil *a b*, the sleeve *d*, the plate *e*, the spring *g*, the clinching-tool *i*, the sleeve *j*, and the spring *k*, and mechanism, as described, for imparting to said clinching-tool a reciprocating motion, substantially as described.

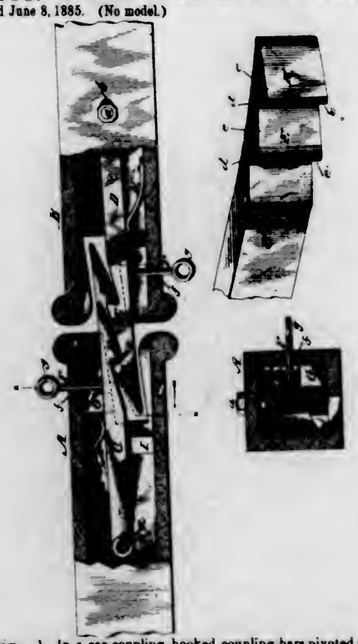
329,265. FEED-WATER HEATER AND FILTER. Philip Brickman, Cleveland, Ohio. Filed July 31, 1885. (No model.)



Claim.—1. In a combined feed-water heater and filter, the combination, with an upright container, and a filtering-chamber and a heating-chamber arranged therein, the former located above the latter, of pipes and a valve arranged to feed upward through the container in supplying the boiler, and by reversing the valve to pass water downward through the container to cleanse the same, substantially as set forth.

2. In a combined feed-water heater and filter, the combination, with an upright container having a concaved bottom, a heating-chamber next above the said bottom, a perforated pipe in said heating-chamber for admitting live steam, and a filtering-chamber arranged above the heating-chamber, of pipes and valves arranged to pass water upward or downward through the container by reversing the valve, substantially as set forth.

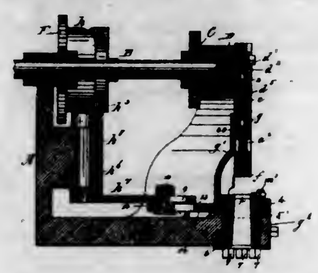
329,266. CAR-COUPLING. Parcel Brinkerhoff, Battle Creek, Mich. Filed June 8, 1885. (No model.)



Claim.—1. In a car-coupling, hooked coupling-bars pivoted at their inner ends in elongated slots through one side of the draw-heads and provided with operating-rods connected to the bars, in combination with inclined planes upon the inner side of the draw-heads, substantially as and for the purpose specified.

2. A car-coupling consisting of the draw-heads, provided with inclined planes, supports, and springs, and hooked coupling-bars having operating-rods connected to them and pivotally supported in the draw-heads by belts passing through elongated slots therein, as and for the purpose specified.

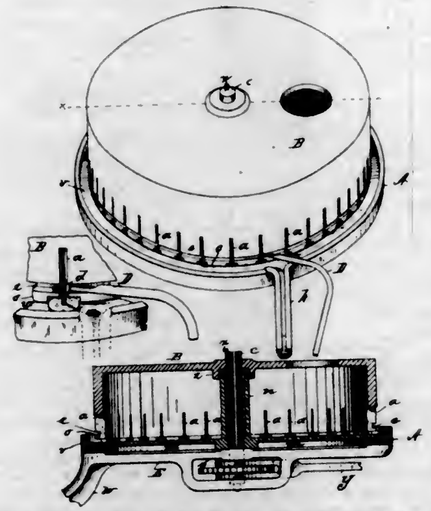
329,267. MACHINE FOR MAKING COMB TACK-STRIPS. Matthias Brook, Boston, Mass., assignor to McKay & Copeland Lasting Machine Company, Portland, Me. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a machine for forming comb tack-strips, a guide for the strip, combined with the oscillating head and the punch and die therein, substantially as described.

2. The shaft B, the loosely-connected punch-carrier and punch actuated by it, and the head provided with the guideway for the punch-carrier and the die, combined with means, substantially as described, to oscillate the head in one and then in the opposite direction, to punch through the nail-strip at different angles to its longitudinal center, substantially as described.

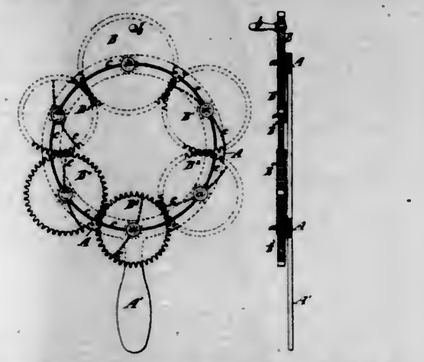
329,268. TACK-FEEDING DEVICE. Cornelius J. Brosnan, Springfield, Mass., assignor of two-thirds to W. E. Wright and H. A. Gibbs, same place. Filed July 20, 1885. (No model.)



Claim.—1. In tack-feeding devices, a rotating tack-reservoir of cylindrical form, having slots or openings of inverted-T form in the side thereof for the exit of the tacks, said slots extending at right angles to the plane of the rotation of the reservoir, combined with a fixed ring surrounding the lower edge of the latter, within which the reservoir rotates, having the groove *v* beyond the side of the latter, a chute leading from said groove, a fixed finger outside of the reservoir to guide the tacks into said chute, and means, substantially as described, for imparting a rotary motion to the reservoir, substantially as set forth.

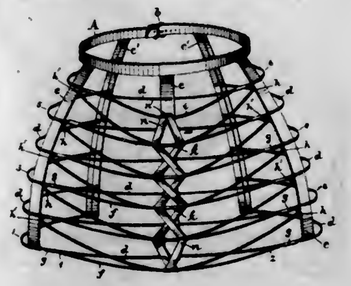
2. In combination, the reservoir having the series of inverted-T-shaped slots through its side and the groove *v* therein, the shaft *c*, attached to the reservoir, the ring A, having the groove *v* beyond the side of the latter and a chute leading therefrom, and the finger D, penetrating said groove *v*, and means, substantially as described, for imparting an intermittent rotary motion to the reservoir, substantially as set forth

329,269. TOY. Addison P. Brown, New York, N. Y. Filed Sept. 15, 1884. (No model.)



Claim.—The combination, with a supporting-frame, of a number or series of wheels of different sizes, pivoted to said frame and gearing one with another, and having delineated or formed on their surfaces a figure which is complete only when the wheels occupy certain relative positions each with the others, substantially as and for the purpose herein described.

329,270. BUSTLE. Caleb E. Brown, Jackson, Mich. Filed June 23, 1885. (No model.)



Claim.—1. A bustle having in combination the waistband and vertical tapes, horizontal wires *d*, "set" or "fixed" to a definite hoop curvature to partly encircle the body, and a series of curved elliptic or V-shape springs, each of which has both ends rigidly fastened to the same horizontal wire, as set forth.

2. A bustle having in combination horizontal wires *d*, curved elliptic or V-shape springs having at each end a half-round turn to form a spring end, and a metal hasp, *g*, rigidly fastening the spring at a point next to each half-round turn to said horizontal wires, as set forth.

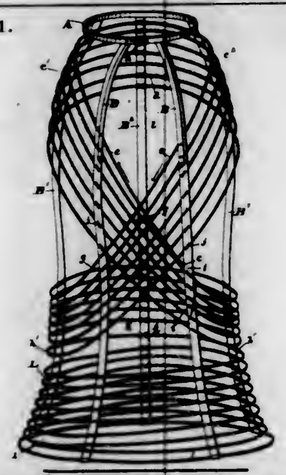
3. A bustle having in combination horizontal wires *d*, curved elliptic or V-shape springs having each end rigidly fastened to said horizontal wires, and the wire which forms the top or bottom of one spring at the center crossing the wire which forms the bottom or top, as the case may be, of the spring next above or below, and a clasp, *k*, firmly securing the two wires at said center crossing, as set forth.

4. A bustle having in combination horizontal wires *d*, curved elliptic or V-shape springs having each end rigidly fastened to said horizontal wires, and the wire which forms the top or bottom of one spring at the center crossing the wire which forms the bottom or top, as the case may be, of the spring next above or below, a clasp, *k*, firmly securing the two wires at said center crossing, and a tape or cord, *n*, uniting the springs on a vertical central line by taking on opposite sides alternately of the center clasps, thus forming a zigzag course, as set forth.

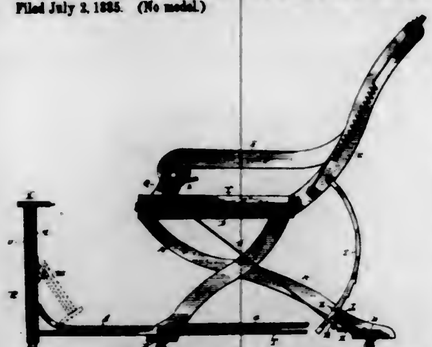
329,271. HOOP-SKIRT. Caleb E. Brown, Jackson, Mich. Filed June 23, 1885. (No model.)

Claim.—A hoop-skirt having in combination a waistband, vertical tapes hanging from the waistband, a lower series of horizontal hoops below the knee, and an upper series of hoops which extend across the back *d* just below the waistband, incline down at the hips, extend from the hips diagonally down and across the front, the portions which come from the opposite hips crossing each other in front, and each portion then extending to the opposite side and around the back *h*, as set forth.

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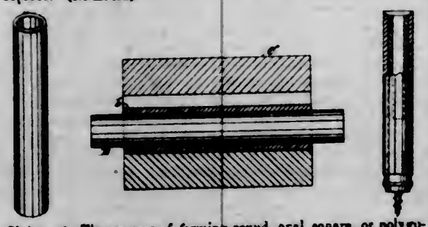
329,272. RECLINING-CHAIR. Mira G. Cameron, Charlotte, Mich., assignor of one-half to Andrew L. Hines and Daniel B. Green, same place. Filed July 2, 1885. (No model.)



Claim.—1. A chair having an adjustable back, an extensible seat, and an independently-extensible foot-rest, serving the additional function of a support for the seat-extension, substantially as and for the purpose specified.

2. A chair having a reclining-back, ratchet-arms on said back, a pawl normally engaging said arms, pivoted arms connected to said back, an extensible seat, and a foot-rest formed of two sections hinged together and having guiding-ways in the chair-frame, said foot-rest performing the additional function of a support for the extensible portion of the seat, substantially as and for the purpose specified.

329,273. MANUFACTURE OF ARTICLES FROM CELLULOID AND OTHER PLASTIC MATERIALS. Charles C. Cheekering, New York, N. Y., assignor to American Zylonite Company, Adams, Mass. Filed June 18, 1885. (No model.)



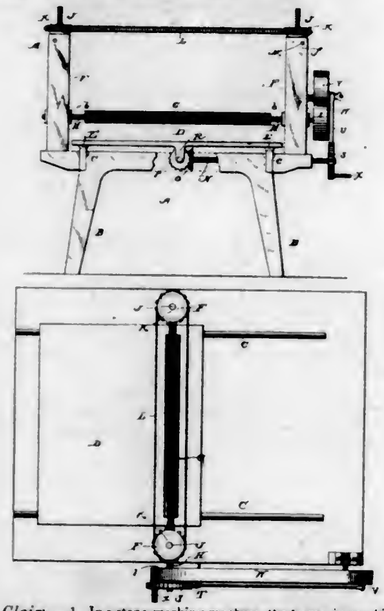
Claim.—1. The process of forming round, oval, square, or polygonal tubes from sheets of plastic material having pyroxyline for its base by pressing together the edges of a strip of such material with or without a cement or solvent in a sectional die upon and in contact with a mandrel, substantially as described.

2. Forming tubes from sheets of plastic material having pyroxyline for their bases by pressing strips with beveled edges in a sectional die upon and in contact with a mandrel aided by a cement or suitable solvent, the interposition over the joint and between the die and the plastic compound or strip of a fibrous, textile, membranous, or other suitable material, substantially as described, and for the purpose set forth.

3. The process of forming martingale and other rings from round, oval, square, or polygonal tubes composed of plastic material having pyroxyline at its base by pressing together the edges of a strip of such material in a sectional die upon and in contact with a mandrel, substantially as described.

4. The combination of a sectional die with a removable mandrel for the purpose of forming tubes from a plastic material having pyroxyline for its base.

329,274. STONE-WORKING MACHINE. Philip Christa, Detroit, Mich. Filed Nov. 12, 1884. (No model.)



Claim.—1. In a stone-working machine, the frame, in combination with the adjustable roller, the sliding table, and means, substantially as described, for revolving the roller, and at the same time automatically moving the sliding table forward at regular intervals, for the purpose set forth.

2. In a stone-working machine, the frame, in combination with the adjustable roller, the sliding table, the feed-shaft for the latter carrying the ratchet-wheel at one end, the operating means for the roller, and a pawl or feed-dog engaging with the ratchet-wheel and connecting with the operating means, said feed-dog operating automatically upon a certain number of the teeth of the ratchet-wheel at regular intervals, as set forth.

3. In a stone-working machine, the frame provided with supporting-uprights, and the roller having its bearing-blocks fitted in the same, in combination with the screws engaging with the blocks, wheels turning on the screws and connected by chain or band, and a pin or bolt for holding the wheels to the uprights and forming bearings for the wheels, so as to prevent the upward movement thereof, as set forth.

4. In a stone-working machine, the combination, with the frame provided with supporting-uprights, and the roller having its bearing-blocks journaled in the latter, of screws engaging with the bearing-blocks, wheels turning on the screws and connected by a chain or band, and means, substantially as described, for holding the wheels to the uprights, and yet allowing their horizontal movement at will, as set forth.

5. In a stone-working machine, the combination, with the frame, of the adjustable roller, the sliding table, the feed-shaft for the latter carrying a ratchet-wheel at one end, a drive-wheel for communicating motion to the roller, and a feed-dog connecting the drive-wheel with the ratchet to give a slight forward movement automatically and at regular intervals to the same, as set forth.

6. In a stone-working machine, the combination, with the frame, of the adjustable roller carrying a band-wheel at one end, a sliding table moving on ways of the frame, a screw for operating the table, a shaft conveying motion to the screw, a drive-wheel communicating motion to the aforesaid band-wheel, and means, substantially as described, for communicating to said feed-shaft from the drive-wheel a partial rotary movement, as set forth.

7. In a stone-working machine, the combination, with the frame, of the adjustable roller carrying a band-wheel at one end, a sliding table moving on suitable ways formed on the frame, a screw for operating the table, a feed-shaft conveying motion to the screw, a ratchet-wheel on one end of the shaft, a detent-pawl engaging with the ratchet, a drive-wheel communicating motion to the aforesaid band-wheel, and a feed-dog engaging with the ratchet-wheel and adjustably attached to the drive-wheel, as set forth.

8. In a stone-working machine, the combination, with the frame, of the adjustable roller carrying a band-wheel at one end, a sliding table moving on suitable ways, lugs depending from the table, a screw working through the lugs, a gear-wheel mounted on the screw, a feed-shaft carrying a gear-wheel engaging with the other, a ratchet-wheel on the outer end of the shaft, a detent-pawl, a drive-wheel connecting by a band with the wheel on the end of the roller, and a feed-dog engaging with the ratchet-wheel and adjustably attached to the drive-wheel, as set forth.

329,275. CASTER. Henry Clark, Milwaukee, Wis., assignor of one-half to Frank W. Erbacher, same place. Filed July 27, 1885. (No model.)



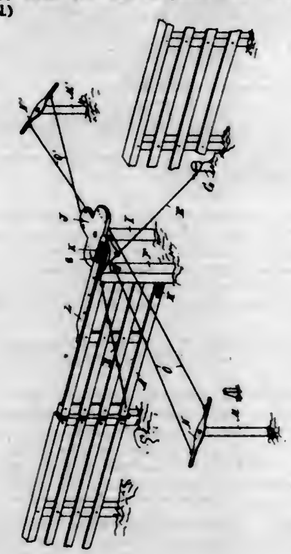
Claim.—1. An improved caster, consisting of a casing formed of separable sections secured to each other and adapted to be secured to the trunk or other article of furniture, each section being formed with chamfered adjacent inner sides, a caster-wheel spool or spindle formed with oppositely-coned faces, and anti-friction balls supported between the chamfered sides of the casing and the coned faces of the spool, substantially as and for the purpose described.

2. The combination of the caster-supporting spool B, the balls D, and the casing A, formed of separable sections, one of which is provided with flanges A^3, to overlap the corners of the article to which it is attached, substantially as described.

3. The combination of the cap-plate A', provided with a central opening, having the beveled edge a^4, the base-plate A^2, provided with a central opening, having the beveled edge a^5, the balls D, a spool, B, arranged to bear against the inner surfaces of the balls, and provided with a disk secured to its under side to bear against the cap-plate, lugs secured to the disk, and a caster journaled to said lugs, substantially as and for the purpose described.

4. The combination of the casing formed with the channels upon its inner side, friction-balls arranged within said channel, and a caster-supporting spool adapted to bear upon the inner side of said balls, and arranged to move freely and change its axial position to adjust itself to the inequalities of the bearing-surfaces, substantially as described.

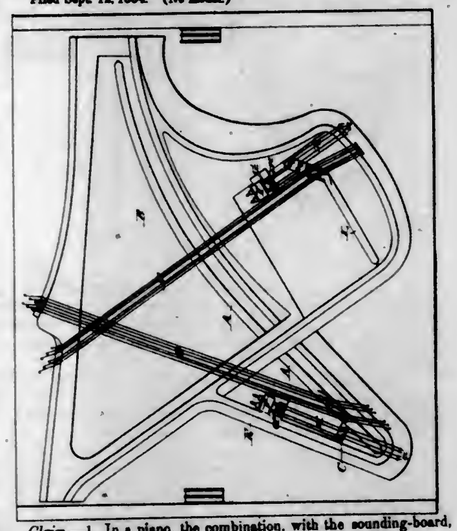
329,276. GATE. Daniel I. Cobb, Ypsilanti, Mich. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with a swinging gate having the slotted bar L projecting rearwardly therefrom, of the turn-table J, having a wrist-pin engaging with said bar, and so arranged that when the gate is closed the line connecting said wrist-pin to the pivoted point of the turn-table is at right angles to the line of the gate.

2. The combination, with a farm-gate, of the hinge braces B E, the hinge-post F, and the stake G, the slotted bar L, projecting rearwardly from the gate, the turn-table J, engaging the slotted bar by its wrist-pin, the post I, supporting said turn-table, the posts M M', the horizontal levers N N', pivoted thereon, and the cables O O', connecting levers N N' with the turn-table, all constructed, arranged, and operating substantially as set forth.

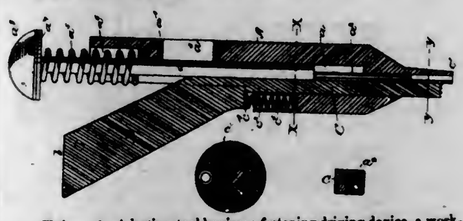
329,277. STRINGING PIANOS. James F. Convers, New York, N. Y. Filed Sept. 12, 1884. (No model.)



Claim.—1. In a piano, the combination, with the sounding-board, the bridges, and the plate E, having brackets or projections F, of short strings resting on the bridges and secured to fastening devices on the brackets, substantially as herein shown and described.

2. In a piano, the combination, with the sounding-board B and the bridge A, having its lower end forked, of the usual strings, and of additional strings resting on the forked end of the bridge and serving to exert a pressure on the sounding-board, substantially as herein shown and described.

329,278. BOOT AND SHOE LASTING TOOL. George W. Copeland, Malden, Mass. Filed May 27, 1885. (No model.)



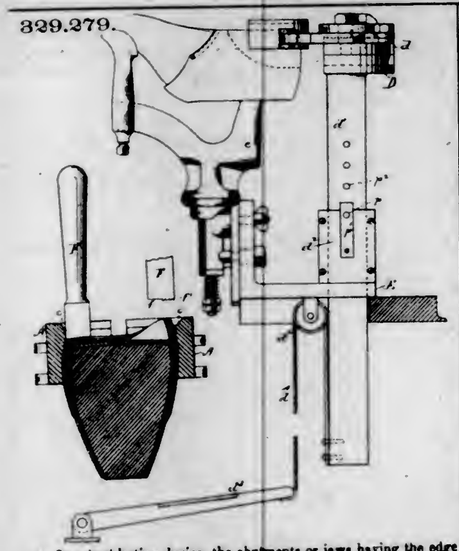
Claim.—1. A lasting-tool having a fastening driving device, a working-surface of the character described, and the pressure or impulse receiving surface *b*, all substantially as and for the purposes described.

2. A tack-driver consisting of the tube or cylinder provided with a suitable nose at its lower end, and containing a nail driver or plunger, in combination with the lateral impulse-receiving device connected therewith, substantially as described, and for the purposes set forth.

329,279. HEEL-LASTING MACHINE. George W. Copeland, Malden, Mass. Filed May 27, 1885. (No model.)

Claim.—1. In a heel-lasting device, an abutment or jaw adapted to be brought in contact with the heel of the upper when upon the last, and to project above the surface of the insole a distance substantially the width of the folded portion of the upper to form a guide for positioning the turning-tool with reference to the outer edge of the heel, substantially as described.

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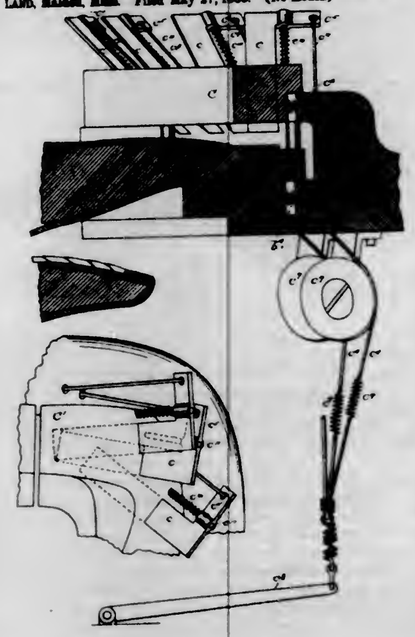
2. In a heel-lasting device, the abutments or jaws having the edge or surface extending above the surface of the insole when moved or brought against the sides of the last substantially the width of the folded upper, and the inclined surface *c*, all substantially as and for the purposes described.

3. The combination, in a heel-lasting device, of the jack, last, heel-abutment, extending above the insole substantially the width of the upper and counter to be folded or broken down, and the folding-tool, all substantially as and for the purposes described.

4. The combination, in a heel-lasting device, of the plate *d*, jack *c*, last, post *d'*, and the abutments carried by the post and moving in relation to the heel end of the last as described, all substantially as and for the purposes set forth.

5. The combination of the abutments B, levers *a a'*, pivoted as described, the lever a^4, having the curved slots a^5, and the pins a^6, all substantially as and for the purposes described.

329,280. BOOT AND SHOE LASTING MACHINE. George W. Copeland, Malden, Mass. Filed May 27, 1885. (No model.)



Claim.—1. In a machine for forming slits in boot and shoe uppers, a suitable support for the edges of the upper, and a series of obliquely-arranged knives for cutting the diagonal slits, substantially as described.

2. The combination, in a machine for slitting the edges of boot and shoe uppers, of a table or surface for supporting the edge of the upper during the slitting operation, and two series of slitting-knives mounted obliquely on suitable supports, adjustable laterally, and mechanism, substantially as described, for operating the same.

3. The combination, in a machine for slitting the edge of the uppers, of the support B, made in laterally-movable sections, the surface *b*, the knife blocks or supports made in laterally-movable sections, and the knives carried thereby, adapted to be vertically reciprocated, all substantially as and for the purposes described.

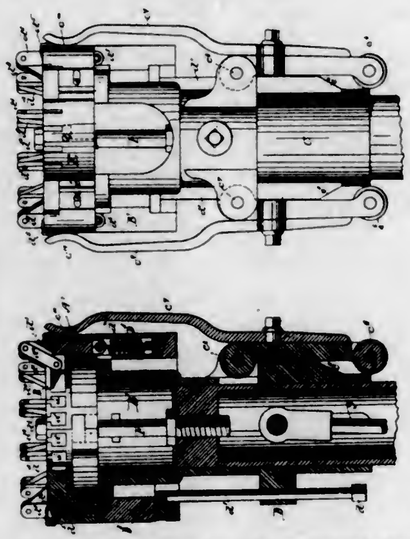
4. The combination of the support B, having the cavity for the reception of the toe of the last, and the surface *b*, the knife-blocks C C', having the knife-guiding recesses or holes c^9, the knives *c*, the treadle c^8, and connecting mechanism, substantially as specified, all substantially as and for the purposes described.

5. The combination of the knife block or blocks, the knives supported thereby, the guide-posts c^{11}, springs c^{10}, and treadle c^8, and connecting mechanism, as specified, all substantially as and for the purposes described.

6. The combination of the support B, made in laterally-movable sections, and the springs b^1, all substantially as and for the purposes described.

7. The combination of the support B, made in movable sections, having the surface *b*, the knife-block made in movable sections and supporting the knives, and connected with the block B, so as to be movable therewith, and the springs c^3, all substantially as and for the purposes described.

329,281. HEEL-LASTING MACHINE. George W. Copeland, Malden, Mass. Filed Aug. 3, 1885. (No model.)



Claim.—1. In a heel-lasting device, the combination of the abutments A A' with the series of converging breakdown-irons B, all substantially as and for the purposes described.

2. The combination of the last-support F, the abutments A A', and means, substantially as described, for moving the abutments toward the last with a yielding pressure, all substantially as and for the purposes described.

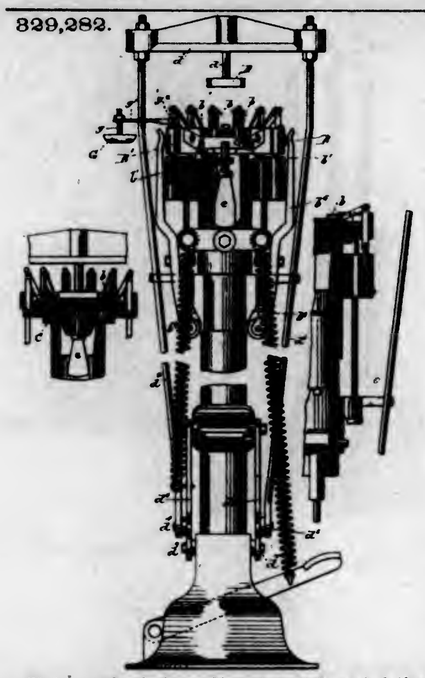
3. The combination of the abutments, breakdown-irons B, and means, substantially as specified, for operating the same, all as and for the purposes described.

4. The combination of the last-support, the last, the movable abutments, and the breakdown-irons, and means, substantially as described, for moving the abutments toward the last for closing the same thereon and for operating the breakdown-irons, all substantially as described.

5. In a lasting-machine, the breakdown-irons B, having the inclined or wedge-shaped operating-surface *b*, substantially as described.

329,282. LASTING-MACHINE. George W. Copeland, Malden, and Joseph E. Crisp, Boston, Mass. Filed Aug. 12, 1885. (No model.)

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Claim.—1. In a lasting-machine, a last spindle or pin held normally at its highest position by means of a suitable spring, in combination with a treadle and intermediate mechanism, substantially as described, for releasing the locking mechanism and allowing the bar or spindle to be automatically locked in any desired position, and said locking mechanism.

2. The combination, in a heel-lasting machine, of the breaking-down irons *b* with the vertically-movable last-pin, and devices for automatically locking it rigidly in any desired position, substantially as described.

3. In a heel-lasting machine, in combination with an upper holding or conforming band or abutment, C, a vertically-movable last-pin, and devices for automatically locking it, substantially as described.

4. The combination of the last-pin E, post *e*, mounted on a yielding support, the teeth F, and automatically-operated block *f*, all substantially as described.

5. The combination of the last-pin E, post *e*, mounted on a yielding support, the block *f*, and the catch f^2, for holding said bolt from contact with the jack-post, all substantially as described.

6. The combination of the pin E, post *e*, mounted on the yielding support, the locking-block, and a device for automatically releasing or moving the locking-bolt from the post, all substantially as described.

7. The combination of the vertically-movable jack-pin and devices for locking it with the gage G, for determining the height or level of the work, substantially as described.

8. In a heel-lasting machine, the combination of the inclined band C, extending above the line of the turned-down upper, with the blocks B B', whereby the said band is first drawn by its ends toward the toe end of the last and then closed around the last, substantially as described.

9. In a lasting-machine, the combination of the last with the compressing and conforming iron D, and mechanism, substantially as set forth, for operating the same, all substantially as described.

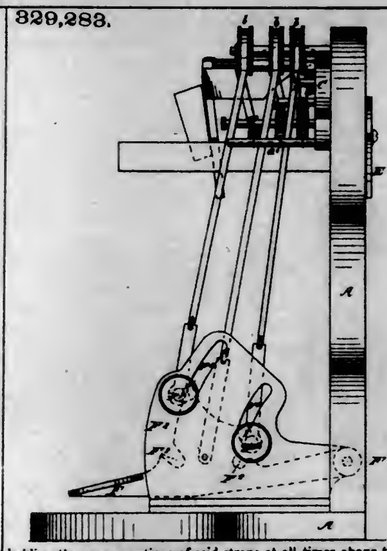
10. The combination of the last, a band for holding the upper to the surface thereof, and a compressing-plate, D, to smooth, compress, and consolidate the upper after it has been folded, and while it is held by the band above and against the side surfaces of the last, substantially as described.

11. The combination, in a lasting-machine, of breaking-down irons having horizontal movements, a band for holding the upper against the side surface of the last, and a compressing-plate for compressing, conforming, and molding the upper's edge and upper after the operation of the breaking-down irons, all substantially as described.

329,283. LASTING-MACHINE. George W. Copeland, Malden, and Joseph E. Crisp, Boston, Mass. Filed Sept. 1, 1885. (No model.)

Claim.—1. In a strap lasting-machine, the straps *a*, permanently secured at both ends, and mechanism, substantially as described, for

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holding the upper portions of said straps at all times above the plane of the insole, substantially as described and set forth.

2. In a strap lasting machine, in combination with the straps *a*, the bell-crank levers C and lever E, whereby the straps *a* are made ready for the reception or removal of a boot or shoe, substantially as described.

3. In a strap lasting-machine, the combination of the straps *a* with the treadle F and intermediate connecting mechanism, whereby the straps are tightened and held in succession, substantially as described, and for the purposes set forth.

4. In a strap lasting-machine, a treadle composed of the lever F, provided with U-shaped notches and guide-plates F^2, having slots F^3, adapted to be moved and hold a series of reciprocating devices by a continuous movement of the treadle F, substantially as described, and for the purposes set forth.

5. In a strap lasting-machine, in combination with a treadle adapted to be oscillated about a fixed pivot, a series of connecting-rods with a series of straps attached thereto, said rods hooked to said treadle, and a series of switching-guides engaged with the joint between the treadle and the connecting-rods, which retain the said joint in engagement with the treadle during a part of its movement and switch it out of connection with the treadle, substantially as described, and for the purpose set forth.

6. In a strap lasting-machine, the combination of the straps which fit and hold the upper to the last, with springs at one end, a movable tightening-treadle at the other end, and a device for spreading the bight of the straps near the corners of the last, substantially as and for the purposes described.

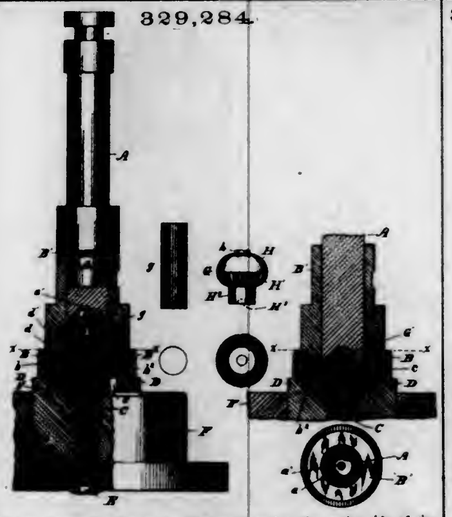
329,284. APPARATUS FOR MAKING CORES FOR WATCH-CROWNS. Allan C. Dalzell, Newport, Ky. Filed Apr. 15, 1885. (No model.)

Claim.—1. In an apparatus for forming watch-crown cores and similar articles from solid metallic blanks, the combination, with the upper die, A, having a matrix preferably semi-spherical in shape, with a central cavity, of the lower die, B, having a corrugated matrix and a central opening, and the die C, projected into said opening, all substantially as and for the purpose described.

2. In an apparatus for forming watch-crown cores and similar articles from solid metallic blanks, the die B, seated in the die-box D, and having a semi-spherical (or nearly so) matrix provided with radiating corrugations and a central opening, said die B being rabbeted upon its upper face to form guides for the upper die, A, and its collar B', in combination with the upper die, A, provided with a semi-spherical matrix having a central cavity, and its collar B' having a shouldered end to fit the rabbet of the lower die, said collar B' forming a guide for the upper die, and centering it with relation to the blank to be operated upon, substantially as described.

3. The combination, in an apparatus for forming watch-crown cores and similar articles from solid metallic blanks, of a lower die constructed in two halves, having a corrugated matrix with a central screw-threaded opening communicating therewith, said die being seated in a die-box, which die-box is provided with springs to bear against the under side of the lower die, said die being tapered, an upper die having a matrix and a collar to guide and direct the movement of the upper die during operation, said dies forming a round metallic blank into a core with a head

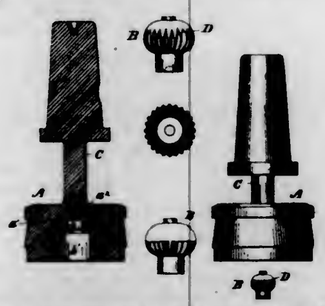
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and stem integral with one another, corrugating the under side of the head and screw-threading the stem, substantially as described.

4. In an apparatus for forming watch-crown cores from solid metallic blanks, the lower die, B, having a corrugated matrix and a central stem-forming opening, and the die C, projected into said opening from the under side and having a tapered body, in combination with the die-box D, upper die, A, having a matrix, and the collar B', to guide the upper die, all constructed and arranged substantially as shown and described.

329,285. APPARATUS FOR CORRUGATING CORES FOR WATCH-CROWNS. ALLAN C. DALSELL, Newport, Ky. Filed Apr. 15, 1885. (No model.)



Claim.—1. In an apparatus for cutting corrugations in the heads of watch-crown cores and similar articles, the die A, having the opening a', provided with the corrugated cutting-edge a^2, and the punch or equivalent to press a core through the central opening, substantially as described.

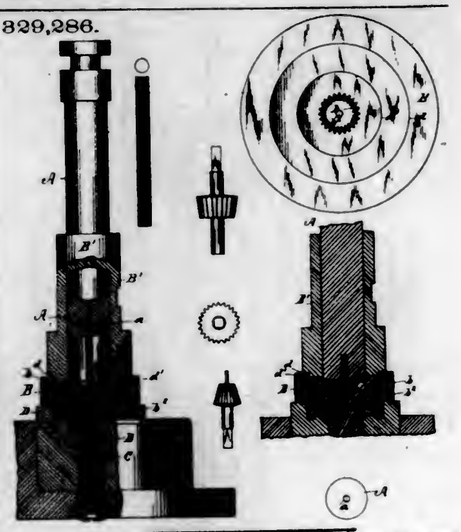
2. In an apparatus for corrugating the upper part of watch-crown core-heads, the die A, having the opening a', provided with the corrugated cutting-edge a^2, of a diameter slightly less than the major diameter of the core-head, in combination with the punch C, having the concaved lower end, said concavity being of a shape to correspond to the shape of the upper face of the core-head, and of a diameter less than the diameter of the opening a', said opening a' having a discharge-opening, b b', communicating therewith, through which the core passes after being operated upon, substantially as and for the purpose described

329,286. APPARATUS FOR MAKING PINIONS. ALLAN C. DALSELL, Newport, Ky. Filed Apr. 27, 1885. (No model.)

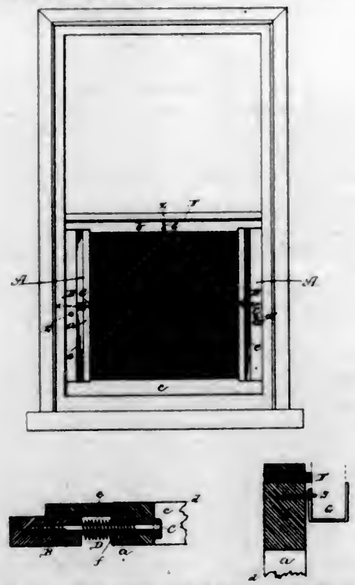
Claim.—1. In an apparatus for forming pinions from solid metallic blanks, a lower die having a pinion-shaped matrix, and an upper die having a staff-forming matrix to press the metal blank and upset the same to form a pinion, substantially as described.

2. The combination, in an apparatus for making pinions from solid metallic blanks, of the die A, having an elongated staff-forming matrix, a, and the die B, having the pinion-shaped matrix b, and staff-forming central opening, b^2, constructed and operating substantially as described

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329,287. WINDOW-SCREEN. WILLIAM M. DANA, Ripon, Wis. Filed July 15, 1885. (No model.)



Claim.—1. The combination, with a window-screen, of the U-shaped keeper G, pivoted to the screen at its upper side, to secure said screen to the lower side of the upper window-sash, substantially as described.

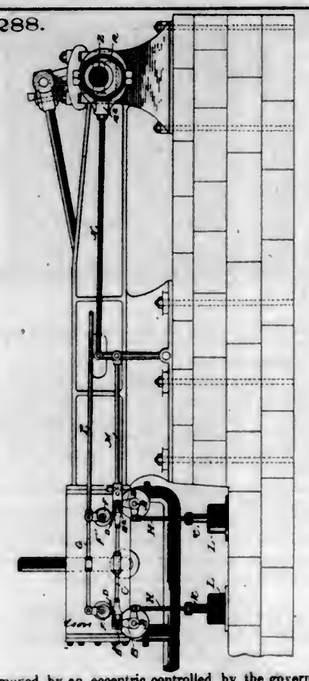
2. A window-screen adapted to fit in a window-frame below the upper sash, and having the laterally-extended rubber strip f at the upper side of the screen to bear against the upper sash to form a tight joint therewith, and the U-shaped keepers pivoted to the screen to embrace the lower side of the upper sash and secure the screen thereto, substantially as described.

329,288. VALVE-GEAR. FRANCIS M. DAVIS, Denver, Col. Filed July 3, 1885. (No model.)

Claim.—1. The slotted rod C, operated by a fixed cam, box B^2 connected to the wipers and sliding in the slots in the rod C, in combination with trips D and cams F, moved by the eccentric controlled by the governor, substantially as described.

2. In combination with the rotary valve V, the stems A, having wipers B fixed thereon and carrying pins, box B^2, sliding in slots in the rod C, and the trips D, pivoted upon the rod C and operated by cams

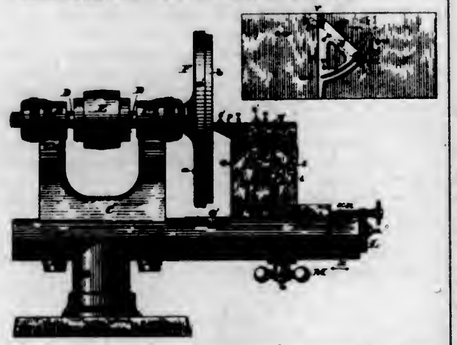
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which are moved by an eccentric controlled by the governor, the box B^2 being provided with means for leaving them in the slots in the rod C, substantially as described.

3. In combination with the wipers on the valve-stems carrying the boxes sliding in slots with trips that are controlled by a governor, regulated eccentric, dash-pot L, having a piston-head, rod H, and tubular rod K, and spring, substantially as described.

329,289. MACHINE FOR GRINDING METAL SURFACES. ALFRED DAWES, Boston, Mass. Filed Nov. 10, 1884. (No model.)



Claim.—1. The combination, in a grinding-machine, of the grinding-wheel F, the tail-stock G, provided with the upwardly-projecting ears or cheeks d and d', and having formed in one of said cheeks the curved slot f, the semi-cylindrical bed H, provided upon its upper surface with the dovetailed slide e, the shaft I, mounted at each end in said cheeks, and extending longitudinally through said bed, concentric to its semi-cylindrical periphery, and the rectangular work-supporting table J, having a plain flat upper surface, to receive the work to be ground, and provided with the handle K, and fitted to and movable upon the dovetailed slide on said bed H, and the clamping-bolt g, all arranged and adapted to operate substantially as described.

2. The combination of the bed A, the tail-stock G, provided with the upwardly-projecting ears or cheeks d d', and the curved slot f, the semi-cylindrical or D-shaped bed H, provided with a dovetailed slide upon its upper surface, and a graduated scale upon its curved peripheral surface, near one end thereof, the bolt g, for clamping said bed H in the desired position, the index i' on the front of the cheek d, and coinciding with the periphery of the bed H, and the table J, having a flat upper surface and made rectangular in plan, and of a length equal to the length of the bed H, plus the desired movement to be given thereto, substantially as shown and described.

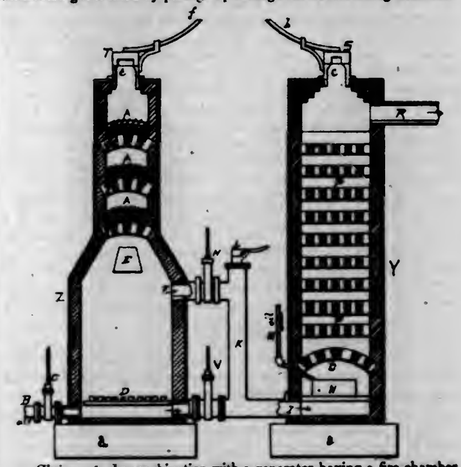
3. In combination with the tail-stock G and bed A, the set-screw k and the adjustable plate L, arranged and adapted to operate substantially as described.

4. The gage N, provided with the slots s and t, in combination with the carriage J, the fulcrum-pin s', and the clamping-bolt t', all constructed and arranged to operate substantially as described.

5. The gage N, provided with the slots s and t, and the scale of degrees u, in combination with the carriage J, the fulcrum-pin s', the clamping-bolt t', and the index u', all arranged and adapted to operate substantially as described.

329,290. APPARATUS FOR MAKING WATER-GAS. PETER E. DU MILL, Jr., Detroit, Mich. Filed May 4, 1885. (No model.)

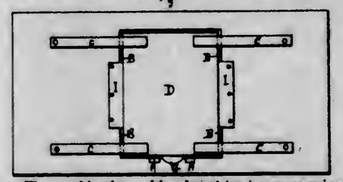
Brief.—Products of combustion from a cupola-furnace are used to heat a steam-superheating chamber composed of brick arches and iron-scrap supported thereon above the fuel-chamber of the furnace, and a fixing-chamber filled with brick is also heated by waste gaseous products from the fuel-chamber when blowing up with air. Steam is superheated and partially decomposed by passage down through the superheater in contact with heated iron and brick, and decomposition is completed in the fuel-chamber below. The resulting water-gas is carbureted by liquid hydrocarbon in the base of the fixing-chamber, and the carbureted gas is fixed by passage up through the heated fixing-chamber.



Claim.—1. In combination with a generator having a fire-chamber and a superposed chamber containing a perforated arch and iron-scrap, a steam-pipe leading into the top of said generator, an outlet-pipe leading from said generator below the fire, a superheater connected at its bottom with said last-named pipe, a receptacle for holding liquid hydrocarbon in the bottom of the superheater, above the inlet-pipe thereto, and means for supplying liquid hydrocarbon to said receptacle, substantially as shown and described.

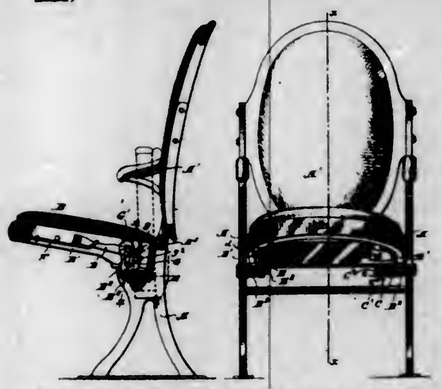
2. In combination with the generator Z, having at its bottom the grate-bars D, and in its upper portion the arches g, iron A, and pipe c, with clapper-valve T, the superheater Y, having in its bottom the pan N, closed at the top by the pipe c and clapper-valve S, and having the bricks P therein, said generator and superheater being connected by the pipes F K I, having therein the water-cooled valves H V and the clapper-valve L, substantially as shown and described.

329,291. DEVICE FOR HOLDING WRITING-PAPER. PETER E. DU MILL, Jr., Detroit, Mich. Filed May 20, 1885. (No model.)



Claim.—The combination, with a board having an opening formed therein, of the $\mathcal{I}$-shaped plates F, applied to the opposite edges thereof, the board D, lying between said flanges, the springs C, guides B, and stops H, substantially as described.

329,292. OPERA-CHAIR. Thomas W. Eaton, Chicago, assignor of one-half to John F. Eaton, Cambridge, Ill. Filed Dec. 27, 1883. (No model.)



Claim.—1. The combination, with the chair-frame and pivoted seat, of a spring or weight applied to throw the seat upwardly, and mechanism for holding the seat in a horizontal position against the action of the said spring, comprising a projection and a detent upon the seat and frame located in position for mutual engagement when the seat is horizontal, said projection and detent being relatively movable to permit their engagement with each other in the downward movement of the seat, a spring or its equivalent applied to hold the said projection and detent normally in position for engagement, and means constructed to move and hold the detent out of engagement with the projection when the said detent and projection are relatively moved by a downward movement of the seat from its horizontal position, whereby the seat will be free to rise when the pressure thereon is removed, substantially as described.

2. The combination, with the chair-frame and pivoted seat, of a spring or weight applied to throw the seat upwardly, mechanism for holding the seat in a horizontal position against the action of the said spring, comprising a detent and a projection upon the seat and frame located in position for mutual engagement when the seat is approximately horizontal, said projection and detent being relatively movable to permit their engagement and disengagement with each other, a spring or its equivalent applied to hold the said detent and projection normally in position for engagement, and means constructed to move and hold the detent out of engagement with the projection when the said detent and projection are relatively moved by a downward movement of the chair-seat from its horizontal position, and a spring interposed between the seat and a part of the frame, constructed to arrest the downward movement of the seat in position for engagement of the detent and projection, and to yield when additional downward pressure is applied to the seat, substantially as and for the purpose set forth.

3. The combination, with the chair frame and pivoted seat and a spring or weight applied to throw the seat upwardly, of a notched plate upon the frame and a spring-actuated detent upon the seat, the said detent being located in position to engage the notch of the plate when the seat is approximately horizontal, and a movable part, as G, upon the said plate, located in position to engage the detent when the said detent has been carried out of the notch by a downward movement of its seat from its approximately-horizontal position, and a spring or weight applied to throw said movable part G into position to engage said detent, substantially and for the purpose set forth.

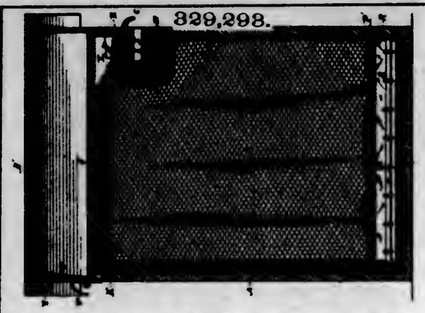
329,293. LETTER-BOX. Leo Ehrlich, St. Louis, Mo. Filed Sept. 19, 1884. (No model.)

Brief.—The bag contained in the box receives the mail through coincident openings. The opening in the bag is automatically closed on removing the latter from the box. A separate chamber for papers or packages is formed in the top of the box.

Claim.—1. The combination of a mail-box having a letter-receiving slot, on each side of which inwardly project strips, and having on its inner opposite side a hook, with a mail-bag, provided with an open end normally closed by a strap and suitable lock, and having at one corner of the opposite side an eye and at the other a rigid frame surrounding the letter-receiving slot of the bag, said frame being provided with spring-actuated wings pivoted therein, the frame also adapted to fit over the projecting strips of the box, the several parts operating substantially as and for the purpose specified.

2. In combination with a box having a letter-receiving slot and inwardly-projecting strips or flanges on each side thereof, and having on the inner side opposite the slot a hook, a mail-bag having at one corner an eye and at the other an automatically-closing orifice adapted to coincide

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with the letter-receiving slot in the box, substantially as and for the purpose specified.

3. The combination, with a mail-box having a letter-receiving slot, on each side of which there are inwardly-projecting strips or flanges, the said box having on the inner side, opposite the slot, an inwardly-projecting hook, of a mail-bag having an eye at one end and at the other end a frame carrying spring-actuated wings, said frame being adapted to receive the strips or flanges on the box, substantially as and for the purpose specified.

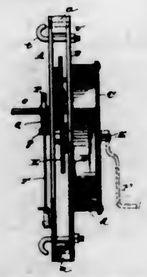
4. A mail-box having a rounded top and a partition dividing the main portion of the box from the said top, and thereby forming two independent compartments, the upper compartment having one end permanently closed and the other end normally closed by a door, the two compartments forming, respectively, a paper-receptacle and a letter-receptacle, substantially as and for the purpose specified.

329,294. ELECTRICAL ALARM FOR LETTER-BOXES. Leo Ehrlich, St. Louis, Mo. Filed May 12, 1885. (No model.)



Claim.—The combination, with a letter or mail box, of an electric alarm apparatus consisting of an arc-shaped strip secured to the door of the box and guided on the side of said box, a lever pivoted to the side of the box on the interior, and having one end in normal engagement with the arc strip, a strip having one end resting on the other end of the lever and the other end secured to the box and engaging or connecting with an electric wire, and a strip having one end secured to the box and connected to an electric wire and the other end provided with an angle extension resting under the other strip secured to the box, substantially as and for the purpose specified.

329,295. MOTOR. George S. Elliott, Mobile, Ala. Filed Sept. 23, 1885. (No model.)



Claim.—1. In a spring-motor, the combination, with a two-compartment frame-work, of the mainspring located in one of the compartments, the transmitting-gear located in the other compartment, and the winding and brake mechanism located on opposite sides of the frame-work, substantially as set forth.

2. In a spring-motor, the combination, with the two-compartment frame-work and the mainspring and transmitting-gear, located in their respective compartments, of threaded hook-bolts and draw-nuts located at the corners of the frame-work and adapted to removably secure the frame-work to different machines, substantially as set forth.

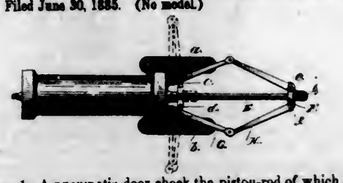
3. In a spring-motor, the combination, with a set of multiplying-gear actuated by a mainspring, of a spring-actuated brake adapted to conform to a portion of the face of the brake-wheel, and a foot-lever adapted to release the brake from the wheel, substantially as set forth.

4. In a spring-motor, the combination, with a set of multiplying-gear actuated by a mainspring, of a spring-actuated brake secured to a rotary adjustable stud, and a foot-lever adapted to release the brake, substantially as set forth.

5. In a spring-motor, the combination, with a set of multiplying-gear mounted between two plates separated by non-metallic packing, and a mainspring located in an adjoining compartment, of a spur-wheel loosely mounted on the main axle, a crank adapted to rotate the axle, a ratchet-wheel rigidly secured on the axle, and a spring-pressed dog adapted to lock the spur-wheel to the axle in the direction of the tension of the spring and allow the axle to rotate freely against the tension of the spring, substantially as set forth.

6. The motor, substantially as described, consisting, essentially, of the three-plate frame, the actuating-spring located between two of the plates, the system of multiplying-gear separated from the mainspring by the middle plate, the ratchet mechanism for winding the spring, the spring-actuated brake mechanism, and the adjusting hook-bolt, the whole arranged substantially as set forth.

329,296. PNEUMATIC DOOR-CHECK. Gilbert R. Elliott, Boston, Mass. Filed June 30, 1885. (No model.)



Claim.—1. A pneumatic door-check the piston-rod of which is provided with spring toggle-levers acting in combination to draw the piston to one end of the cylinder, for the purpose substantially as described.

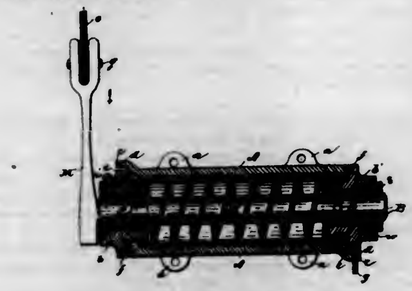
2. The combination, in a pneumatic door-check having a cylinder and piston, of the rod provided with the cross-head, as described, the toggle-levers, and the springs, all being arranged to operate as set forth.

3. A pneumatic door-check having one of its cylinder-heads provided with fastening devices or flanges, a stuffing-box, and bifurcated hinge-lugs, in combination with the spring toggle-levers, in the manner and for the purpose set forth.

4. In a pneumatic door-check, the combination of the piston, the piston-rod, and the spring toggle-levers, the springs being arranged on pintles working in flanges formed on the toggle-joint, arranged for joint operation substantially as described.

5. The combination, in a door-check having the spring toggle-lever, as described, of the cross-head provided with the anti-friction rollers and with the buffers on the door for contact with the said rollers, whereby their combined action lessens the shock of the door when violently closed, as set forth.

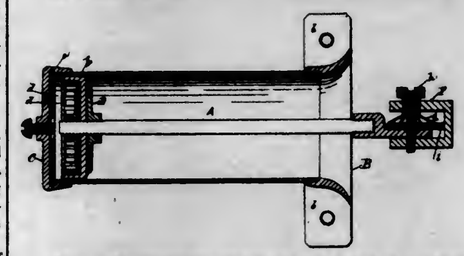
329,297. DOOR-SPRING. Gilbert R. Elliott, Boston, Mass. Filed July 3, 1885. (No model.)



Claim.—1. In a door-check, the combination of the casing having flanges formed at its ends and lateral projections for the purpose of securing the check to the door or jamb with a hub or sleeve at each end of the casing, and with the shaft and spring, as hereinbefore set forth.

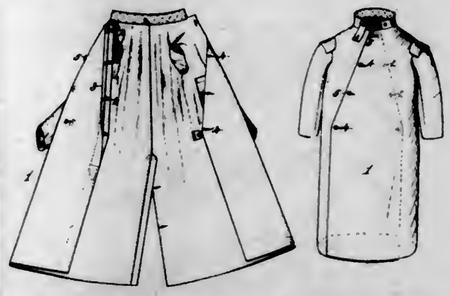
2. In a door-check, the combination of the casing A, having flanges *c c*, into which are formed holes *d*, for the insertion of pin *g*, lugs *a*, as described, with hubs *b b'*, provided with flanges *f*, having formed therein pin-holes *e*, which register with the holes *d*, an aperture, *u*, adapted to receive screw *i*, and the slot G and spring H, as hereinbefore set forth.

329,298. DOOR-CHECK. Gilbert R. Elliott, Boston, Mass. Filed Sept. 3, 1885. (No model.)



Claim.—The combination, substantially as described, of a cylinder open at one end and having an air-aperture at the other, a piston adapted to reciprocate in the cylinder, and a spring friction-hinge upon which the piston-rod is mounted, as set forth.

329,299. POMMEL-COAT. Henry Emanuel, New York, N. Y., assignor to the Standard Oiled Clothing Co., same place. Filed June 19, 1885. (No model.)



Claim.—1. In a pommel coat having an expanded skirt adapted to cover the pommel and cantle of the saddle, two series of buttons attached to one of the flaps and diverging downwardly, the other flap being provided with a corresponding series of marginal button-holes, whereby the skirt may be adapted to use in or out of the saddle, substantially as described.

2. In a pommel-coat having an expanded skirt adapted to cover the pommel and cantle of the saddle, a marginal series of buttons attached to one flap, a second series of buttons diverging from the upper button of the marginal series downward and attached to the same side, and a series of button-holes formed in the margin of the opposite flap and adapted to engage with either of the series of buttons, substantially as described.

3. A pommel-coat having an expanded skirt adapted to cover the pommel and cantle of the saddle, the body of said coat being composed of two pieces or strips of cloth cut bias, and united by a single seam at the center of the back, and provided with two diverging series of buttons upon one side and a marginal series of button-holes upon the other, substantially as described.

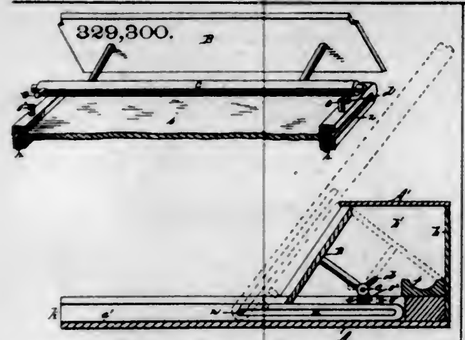
329,300. COMBINED BLACKBOARD AND DRAWING-CASE. Wm. A. Emerson, Leominster, Mass. Filed Jan. 12, 1885. (No model.)

Claim.—1. A drawing-case, substantially as described, provided with a reciprocally-rotating design-board connected to a shaft in said case, and with a blackboard, substantially as described, having a pivotal and sliding connection with the case and adapted to engage with said shaft, combined and operating substantially as set forth.

2. A drawing-case, substantially as described, having an elevated chamber thereon, a shaft hung in the latter, a design-board attached to said shaft, and a blackboard adapted to slide and swing on said case, and provided with means, substantially as described, for engaging with said shaft when moving under the latter, combined and operating substantially as set forth.

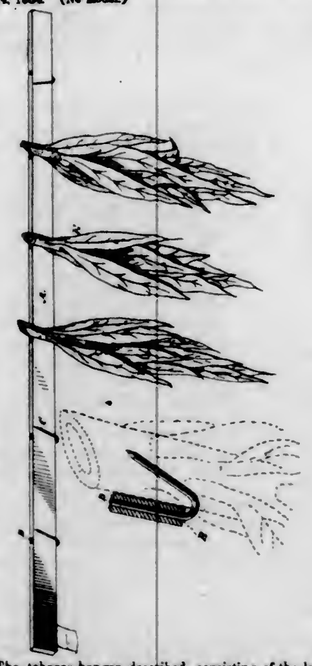
3. In combination, the sliding pivoted board *i* and the case A, having an elevated chamber at the rear end thereof, forming a support to hold said board in an upwardly-inclined position, substantially as set forth.

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4. In combination, the case A, the shaft *c*, provided with the pins *d* and *e*, the design-board B, and the blackboard *i*, provided with the pins *o o'*, and adapted to slide in the case, substantially as shown and described.

329,301. TOBACCO-HANGER. Charles Ehbert, Brooklyn, N. Y. Filed Apr. 14, 1884. (No model.)



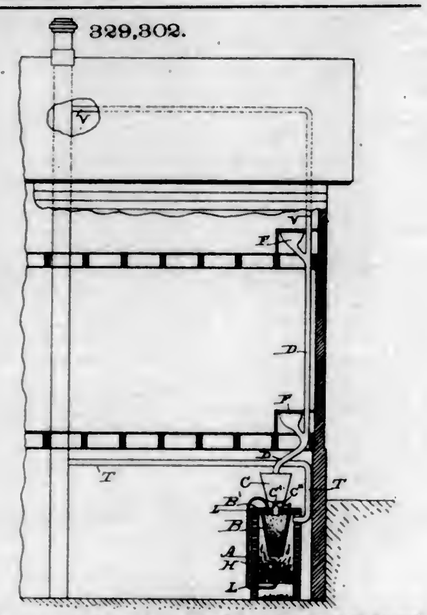
Claim.—The tobacco-hanger described, consisting of the lath A, having headed spikes fitted loosely in holes therein, and the spikes formed into inclined hook-arms by bending the spikes close to the lower edge of the lath, as shown, whereby the tobacco-stalks being pressed upon the hooks are brought flat against the face of the lath, and the weight of the suspended plants serves to hold the lath edgewise upon its supports, as set forth.

329,302. METHOD OF CONSUMING NIGHT-SOIL, OFFAL, &c. A. Engle, Metz, Iowa. Filed Nov. 3, 1884. (No model.)

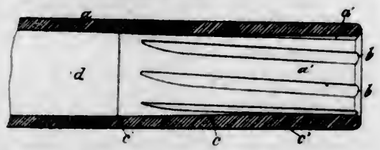
Claim.—1. The herein-described method of disposing of sewage, (night-soil and urine,) which mode or method consists in conveying such solid and fluid matter direct from the places of original deposit through tubes into a reservoir or retort in a furnace, then closing the retort and subjecting the solids and fluids in the retort jointly to furnace-heat, then conveying the volatile matter as it rises in the retort from the retort into a superheater, then converting the volatile matter in the superheater into inflammable gas, and at the same time converting the solids remaining in the retort to charcoal.

2. The herein-described method of simultaneously disposing of sewage—solids and liquids—and making such matter partially self-destroying, which mode or method consists in placing such solid and liquid matter in a reservoir or retort in a furnace, then closing the retort, then subjecting the solids and fluids therein jointly to furnace-heat, then conveying the vapor and volatile matter as it rises in the retort through tubes into a superheater in the same furnace to produce inflammable gas and to discharge the gas into the combustion-chamber of the furnace to augment and maintain the furnace-heat under the retort, simultaneously with the production of charcoal from the solids retained in the retort.

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329,303. GUN-BARREL. Geo. V. Fonbury, Liege, Belgium. Filed Aug. 18, 1885. (No model.) Patented in Belgium Feb. 13, 1885, No. 67,370, and in England June 20, 1885, No. 7,568.



Claim.—1. A shotgun-barrel having its muzzle provided with a conical portion constructed with spiral or inclined grooves which extend along such conical portion and vanish within the same at their inner ends in advance of the cylindrical smooth bore for rendering the barrel available for accurately shooting small shot and also conical or similar bullets, substantially as described.

2. A shotgun-barrel having its muzzle formed integral therewith, and provided with a cylindrical portion, *a'*, and a conical portion, *a*, containing spiral or inclined grooves *b*, which extend along the cylindrical and conical portions and vanish at their inner ends within such conical portion of the muzzle in advance of the cylindrical smooth bore *d*, substantially as described.

329,304. MECHANICAL MUSICAL INSTRUMENT. Merritt Gally, New York, N. Y. Filed Feb. 12, 1885. (No model.)

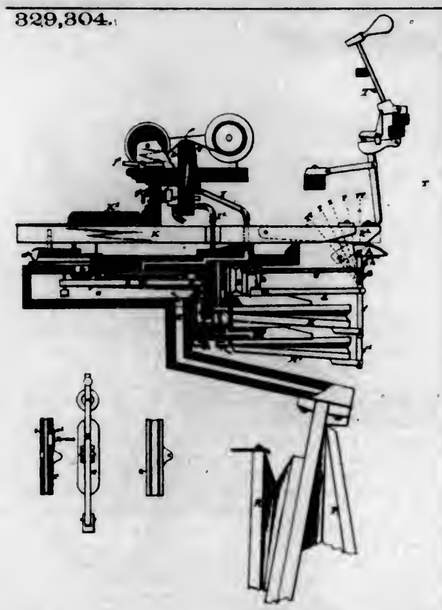
Claim.—1. In a musical instrument constructed to be operated both mechanically and manually, the combination, with a pneumatic action placed below the manual keys or key-levers, of pneumatic tubes passing through or between said key-levers toward a perforated music-sheet placed above them, substantially as set forth.

2. The combination, with the pneumatic tube or duct leading from the music-sheet tracker-range, of the tubular key-pin passing through the manual key-lever toward the pneumatic action.

3. In a mechanical musical instrument, a tracker-range, a tube having a single opening in said range, and connections from said tube leading to the pneumatics, which operate separate sets of sounding devices, all in combination, substantially as set forth.

4. In combination with the striking-bar, as *f*, an oscillating bar hinged thereto, and the yielding hammer pivoted or hinged to said oscillating bar, as set forth.

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5. The hammer hinged at or near its heel to the striking-bar, and provided with an adjustable spring for adjusting the tension of the leverage of the hammer.

6. The combination, with the striking-bar, of an oscillating bar hinged thereto, the yielding hammer pivoted to the oscillating bar, and a plurality of pneumatics connected to said hammer mechanism, said pneumatics having different amounts of movement to control the positions of the hammer.

7. In combination with the actuating mechanism of a mechanical musical instrument, a hammer interposed between the actuating and the wire-striking devices, said hammer having separate parts of its striking-face covered with material of different degrees of hardness.

8. The reciprocating expression-bar *b*, connected with the reciprocating hammer or hammers, in combination with the friction retaining-clutch and its releasing pneumatic, substantially as and for the purpose specified.

9. The elongated reed-valve pneumatic having both ends free to move independently of the lever, and lying lengthwise in the direction of the lever, in combination with the valve-lever having its bearing on the central part of the pneumatic, all in combination, substantially as stated.

10. A pneumatic motor of the character described having a vent in its body portion, said vent being covered by a porous material, substantially as described.

11. The perforated music-sheet in which a group or succession of perforations represents a continued tone, having notes the leading perforation of which is elongated, substantially as and for the purpose specified.

12. The music-sheet in which a group or succession of perforations represents a continuous tone, having notes made longer than any exact number of regular perforations by the elongation of one or more of its perforations.

13. The perforated music-sheet in which a group or succession of perforations represents a continuous tone having arpeggio-chords, the beginning of one note of the chord preceding another by less than the measure of a complete perforation.

14. The perforated music-sheet having bass-notes cut to begin in advance of higher notes in the scale, for the purpose specified.

15. The perforated music-sheet in which a group or succession of perforations represents a continuous tone, containing notes composed of perforations differing in diameter crosswise of the sheet, substantially as and for the purpose specified.

16. The perforated music-sheet in which a group or succession of perforations represents a continuous tone, having perforations for producing trills or tremolo effects of less size than the perforations forming the ordinary notes.

17. The music-sheet having short notes consisting of a small perforation elongated transversely as to the music-sheet, substantially as and for the purpose specified.

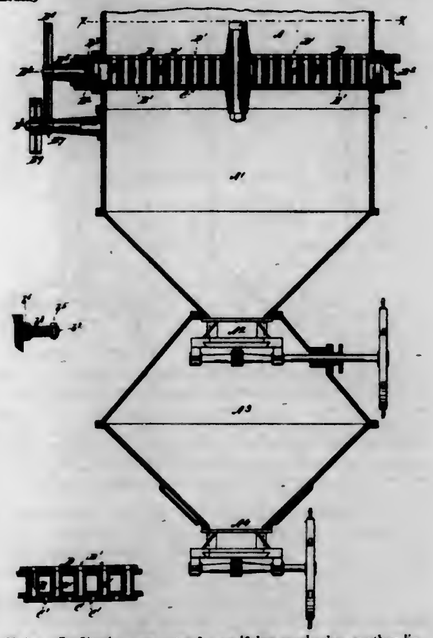
18. In a mechanical musical instrument, the sounding devices arranged in a scale, having added thereto auxiliary bass-notes not in the progression of the scale, substantially as and for the purpose specified.

19. The perforated music-sheet the notes of which are arranged from a scale, and having added thereto auxiliary bass-notes not in the progression of the scale, substantially as and for the purpose specified.

20. The combination, with bar *b* and its motor pneumatic D, of the pneumatic returning-spring n^3, substantially as specified.

21. The reed-valve pneumatic having carved ends, substantially as and for the purpose specified.

329,305. BONE-BLACK DISCHARGER FOR CONTINUOUS FILTERS. Thomas Gaunt, Cold Spring, N. Y. Filed June 18, 1885. (No model.)



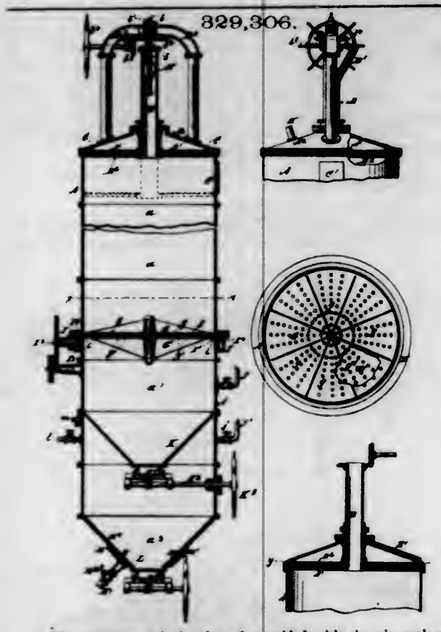
Claim.—In filtering apparatus for purifying saccharine or other liquids by the process of upward filtration through bone-black or other filtering material, a discharger for discharging definite quantities of filtering material from the bottom of the filtering-chamber, consisting, essentially, of a movable horizontal diaphragm provided with a series of perforations, in combination with and superposed upon a stationary horizontal diaphragm provided with a like series of perforations, and means for moving the said discharger, for the purpose of moving its perforations alternately into and out of vertical alignment with the perforations of the said stationary diaphragm beneath it, substantially as described.

329,306. BONE-BLACK FILTER FOR FILTERING SACCHARINE LIQUIDS. Thomas Gaunt, Cold Spring, N. Y. Filed June 19, 1885. (No model.)

Claim.—1. In apparatus for decolorizing saccharine or other liquors by the process of upward filtration through bone-black, a filtering-chamber provided at the bottom with a fixed suitably-apertured diaphragm and a movable bone-black-discharging valve, and means of operating said valve, and thereby successively moving an aperture or apertures in said valve into or out of alignment with the apertures in the said diaphragm, and means for introducing fresh bone-black into the top of said filtering-chamber, in combination with a receiving-chamber beneath the bone-black-discharging valve, a valve for closing the bottom of the receiving-chamber, and means for operating the said valve, and a supplemental chamber beneath the said receiving-chamber, provided with a drain-cock, and a valve at the bottom for discharging its contents, substantially as set forth.

2. In combination with the filtering-chamber *a* in the upper part of the vertical cylinder A, and provided at the bottom with a movable bone-black-discharging valve, a receiving-chamber, *a'*, having its lower portion in the form of an inverted frustum of a cone, and provided at its lower end with the valve K', and means for operating the said valve, and a supplemental chamber beneath the said receiving-chamber, provided with a drain-cock, and a valve for discharging its contents, substantially as described.

329,306.

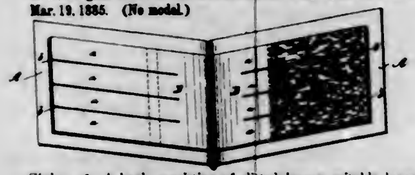


3. The supplemental chamber a^2, provided with the air-cock m, and provided with the sugar-liquor-supply pipe J', in combination with the receiving-chamber a', provided with the valve K', and the filtering-chamber a, and means for effecting the gradual discharge of the lowest stratum of bone-black from the filtering-chamber into the receiving-chamber, and a suitably-screened outlet at the top of the filtering-chamber for the discharge of the filtered sugar-liquor, substantially as set forth.

4. The filtering-chamber a, for containing the bone-black, and means for gradually discharging the bone-black from the bottom of the said chamber, in combination with the feed-tube B, and a suitably-perforated screen occupying the annular space between the said feed-tube B and the shell of the cylinder A, as and for the purpose set forth.

5. A screen for a filtering-cylinder, composed of suitably-perforated plates and sector-shaped pieces of blanket.

329,307. **BENGAL-LIGHT BOOK.** Charles Gerhard, New York, N. Y., assignor to the Unexcelled Fireworks Company, same place. Filed Mar. 19, 1885. (No model.)



Claim.—1. A book consisting of slitted leaves suitably bound together, said leaves being provided with a bengal-light composition, substantially as shown and described.

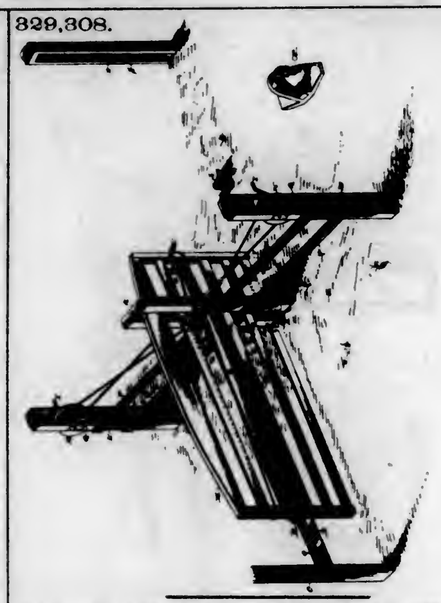
2. The combination, with a book-cover, of the slitted leaves B B, &c., bengal-light composition spread upon the divided parts, and the covering-sheet over said composition, substantially as shown and described.

329,308. **GATE.** Hiram S. Harris, Millville, Ky. Filed May 12, 1885. (No model.)

Claim.—1. In combination with a sliding gate, drums journaled in side posts, wires passing therefrom to both front and rear of the gate, and a latch consisting of a spring-arm with an enlargement at its free end, and a pivoted bell-crank lever straddling said arm and having a strap which engages over it, the whole combined and operating substantially as and for the purpose specified.

2. The combination, with a sliding gate, of drums journaled in side posts, wires passing therefrom to both the front and rear of the gate, sheave-pulleys with the under side of the casing extended, a spring-catch with a bell-crank lever engaging with it and connected to the wires, and a recessed abutting post having a piece for the end of the gate to rest on, substantially as and for the purpose specified.

329,308.



329,309. **HAND CHEMICAL FIRE-EXTINGUISHER.** Arthur B. Harrison, Baltimore, Md., assignor of three-fourths to Duncan Veasey, same place, and William M. Harrison, Laurel, Md. Filed May 11, 1885. (No model.)

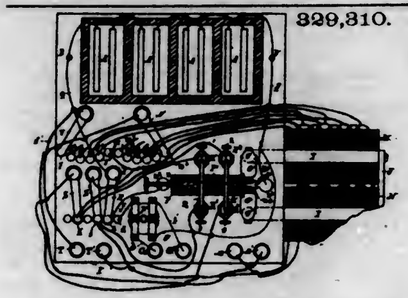
Claim.—1. A chemical fire-extinguisher consisting of a cylinder having a sealed exit, an interior piston, a sealed rear end, and a removable piston rod or handle, as set forth.

2. In combination, the piston-rod, the flexible disk, the two oppositely-concaved metal disks of different diameters, the screw and nut, the card-board disk, and the wax seal, as set forth.

329,310. **ELECTRO-MEDICAL BATTERY.** Thomas H. Hess, Detroit, Mich. Filed Jan. 21, 1885. (No model.)

Claim.—1. In an electro-medical battery, an induction-coil having the terminals of its primary wire connected, as described, to four stationary contacts arranged in pairs, each pair forming the terminals of the primary wire of the coil, in combination with a circuit-breaker carrying two contact-springs which are in electrical connection with the poles of the battery, and which are adapted, in the operation of the circuit-breaker, to form, make, and break contacts with each pair of stationary contacts to alternately reverse the current through the primary wire of the coil, as and for the purpose described.

329,310.



2. In an electro-medical battery, a circuit-breaker carrying four contact-points arranged in pairs upon opposite sides thereof, each pair constituting the poles of the galvanic battery, four stationary contact-points grouped in pairs upon opposite sides of the circuit-breaker and adapted to make and break contacts with the contact-points of the circuit-breaker, an induction-coil having its terminals connected with each pair of stationary contact-points, and an electro-magnet in the induction-coil for operating the circuit-breaker, which latter is itself a permanent magnet, all arranged and operating as described, whereby the current is sent alternately in opposite directions through the coil to cause its magnet to alternately present poles of unlike polarity to the poles of the fixed magnet, as and for the purposes set forth.

3. In an electro-medical battery, a circuit-breaker carrying four contact-points arranged in pairs upon opposite sides thereof, each pair constituting the poles of the galvanic battery, four stationary contact-points grouped in pairs upon opposite sides of the circuit-breaker and adapted to make and break contacts with the contact-points of the circuit-breaker, an induction-coil having its terminals connected with each pair of stationary contact-points by distinct and independent connections which have switch-keys for breaking the circuits through them, an electro-magnet in the induction-coil for operating the circuit-breaker, which is itself a permanent magnet, all arranged substantially as described, whereby the current is caused to flow alternately in reverse directions through the primary wire of the coil, or in a single direction, substantially as specified, and for the purposes set forth.

4. In an electro-medical battery, the devices for changing the galvanic current into an alternating current, the same consisting in the combination of the permanent magnet P, supported upon centers and carrying the two contact-springs Q Q', forming the terminals of the battery, of the stationary contacts 1 2 3 4, arranged in pairs, of the induction-coil with its electro-magnet and pole-pieces O O', and of the connections of the terminals of the primary wire of the induction-coil with each pair of stationary contacts, all arranged and operating substantially as described, whereby the primary current is alternately sent in reverse directions through the coil, as and for the purposes set forth.

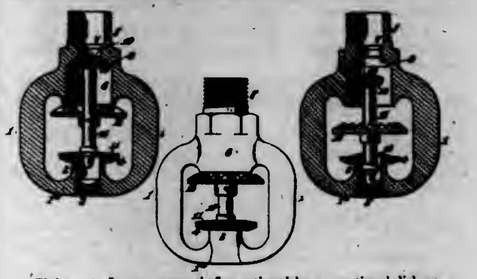
5. In an electro-medical battery, the combination of the permanent magnet P, supported upon centers and having the two contact-springs Q Q', which are electrically connected with the poles of the battery, of the stationary contacts 1 2 3 4, arranged in pairs upon opposite sides of the permanent magnet, and adapted to make and break contact with the contact-springs Q Q', of the induction-coil having its terminals connected to contact-points k l, of the switch-keys S S'. of the connections between the stationary contacts 1 2 3 4, and the contacts k l and switch-keys S S'. and of the electro-magnet with its pole-pieces O O', all arranged and operating substantially as described.

6. In an electro-medical battery, a circuit-breaker mounted on centers and carrying two contact bars or springs, Q Q', electrically connected by way of the centers to the respective poles of a battery, but insulated from each other, substantially as described.

7. In an electro-medical battery, the combination of the current-breaker P, carrying four contacts arranged in pairs upon opposite sides, each pair forming the poles of the galvanic battery, of four stationary contacts arranged in pairs in relation to the contacts of the current-breaker, of an induction-coil having primary and secondary circuits, of connections between the terminals of the primary coil and two electrodes, T T', and of connections between the secondary coil and the electrodes M M', all arranged substantially as described.

8. In an electro-medical battery, the combination of the oscillating magnetic circuit-breaker consisting of the magnet P, provided with contact-springs Q Q', electrically connected to the respective poles of a battery, but insulated from each other, and its actuating electro-magnet having the poles arranged in relation to each other substantially as described, and means for interrupting the primary circuit through said electro-magnet, with an adjustable counter-balance for said circuit-breaker, to oscillate the latter to one side or the other, according to the direction in which the galvanic current is flowing through the primary coil, substantially as and for the purposes set forth.

329,311. **AUTOMATIC FIRE-EXTINGUISHER.** John Hill, Columbus, Ga. Filed Mar. 12, 1885. (No model.)



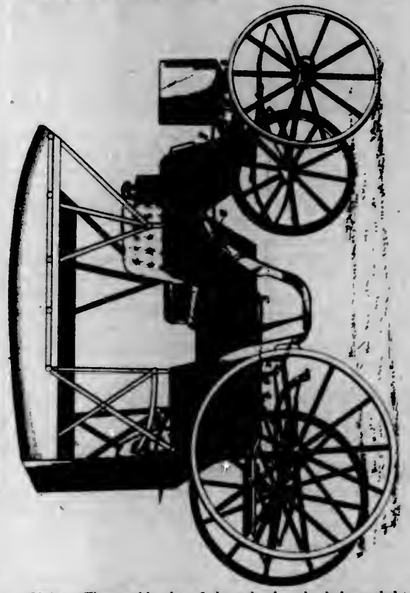
Claim.—1. In an automatic fire-extinguisher, a sectional disk supporting the inlet-valve, and a spring underlying said disk, substantially as described.

2. In an automatic fire-extinguisher, the combination, with a valve closing an inlet-pipe containing extinguishing-fluid under pressure, of a disk which supports the stem of said valve, and a spring underlying said disk and seated in a recess in the support upon which the disk rests, substantially as described.

3. In an automatic fire-extinguisher, the combination, with an inlet-pipe containing an extinguishing-fluid under pressure, of a valve closing said pipe, a disk composed of separable sections united by a fusible metal, and a spring underlying said disk and seated in a groove in the support upon which said spring rests, substantially as described.

4. In an automatic fire-extinguisher, the combination, with an inlet-pipe containing the extinguishing-fluid, of a valve closing said pipe, a disk composed of two or more separable sections united by a fusible metal, and having a countersunk opening to receive the conical end of the valve-stem, and a spring under tension underlying said sectional disk and rupturing the same upon the fusion of the joint, substantially as described.

329,312. **BRAKE FOR VEHICLES.** John B. Hinton, San Diego, Cal. Filed Apr. 15, 1885. (No model.)



Claim.—The combination of the axle, the wheels journaled to, and a pulley, 3, supported on, said axle, the body, the guide-pulleys and brake-lever supported on said body, the brake-shaft, a crank-arm, 2, projecting from such shaft, and the brake-cord secured at one end to said arm and extended thence around the pulley 3, thence forward around the guide-pulleys on the body and connected with the lever, substantially as set forth.

329,313. **MANUFACTURE OF PYROXYLINE COMPOUNDS.** J. Geo. Jarvis, Adams, Mass., assignor to the American Zylonite Company, same place. Filed July 22, 1885. (Specimens.)

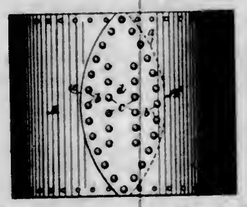
Claim.—1. The combination of gum-dammar with pyroxyline, with or without pigments or other coloring-matter, fixed or volatile oils, substantially as described.

2. The combination of gum-guaiacum with pyroxyline, with or without pigments or other coloring-matter, fixed or volatile oils, substantially as described.

3. The combination of gum-mastic with pyroxyline, with or without pigments or other coloring-matter, fixed or volatile oils, substantially as described.

4. The combination of a mixture of two or more of the following gums—viz: gum-dammar, gum-guaiacum, and gum-mastic—with pyroxyline, with or without pigments or other coloring-matter, fixed or volatile oils, substantially as described.

329,314. JOINT OR SEAM FOR STEAM-BOILERS. John E. Jerold, Milwaukee, Wis., assignor of one-half to William R. Edwards and Abraham B. Black, same place. Filed Aug. 4, 1885. (No model.)



Claim.—A boiler having its edges curved outwardly from end to end and lapped, and securing means—such as bolts or rivets—securing the lapping edges together, substantially as described.

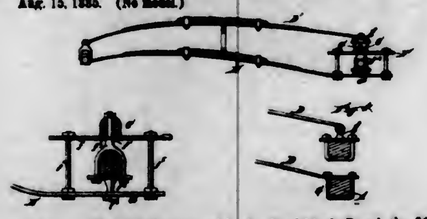
329,315. CONDUCTOR'S BOOK. Madison L. Johnson, Galena, Ill. Filed July 22, 1884. (No model.)



Claim.—1. In a book to register and keep account of cash fares, the combination, with the detachable check-leaves E E and leaves C C, divided by the perforations *e e* into coupons, each coupon having the name of a station on one side and gum or paste on the other, of means, substantially as described, for registering each coupon given out during a run between the stations named in the book and ascertaining the amount of cash taken in, substantially as specified.

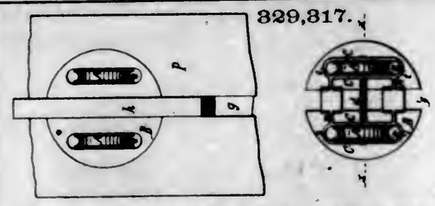
2. In a book to register and keep an account of cash fares during a run between any two stations named in said book, the combination, with the leaves A, B, and F, and leaf G, having the instructions to conductors upon it, of the check-leaves E E, provided with the line of perforations *e*, the coupon-leaves C C, provided with the line of perforations *e e*, and the check-list leaves D D, equal in number to the check-leaves, substantially as specified.

329,316. VEHICLE-SPRING. Joseph Kensel, Detroit, Mich. Filed Aug. 15, 1885. (No model.)



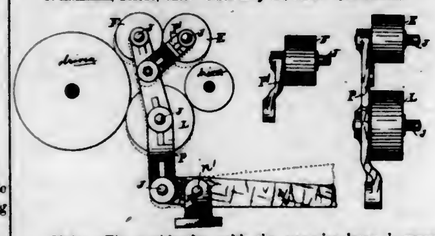
Claim.—The combination, with the head-block C and the fifth-wheel F, having the rigid arm *f*, and bolted to the head-block and the axle, and having a head-plate, *f*⁵, below the axle, of the spring-reach E, secured to the said head-plate, and bolts *f*⁶ and *f*⁷, connecting the spring-reach with the rigid arm *f* of the fifth-wheel in front and in rear of the axle and the head-block, substantially as shown and described.

329,317. SASH-PULLEY. Thos. M. Kibbia, New Haven, Conn. Filed Mar. 5, 1885. (No model.)



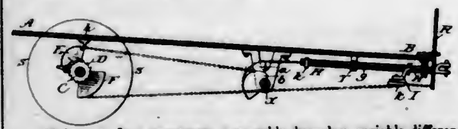
Claim.—A double sash-pulley-case having a circular front or flange provided with bearing-surfaces or guides arranged equidistant from the periphery of the flange, and adapted to enter and bear against the walls of a circular hole bored in the window-jamb, substantially in the manner described.

329,318. MECHANISM FOR REVERSING ROTARY MOTION. A. J. Knieriem, Toledo, Ohio. Filed May 11, 1885. (No model.)



Claim.—The combination, with the reversing-lever A, support *n*, and friction-pulleys L, E, and F, of the main link and gudgeons J and the compound link attached oscillatively therewith, substantially as shown, and for the purpose specified.

329,319. CAR-STARTER. John A. Lane and James M. Thorp, Detroit, Mich. Filed Apr. 17, 1885. (No model.)

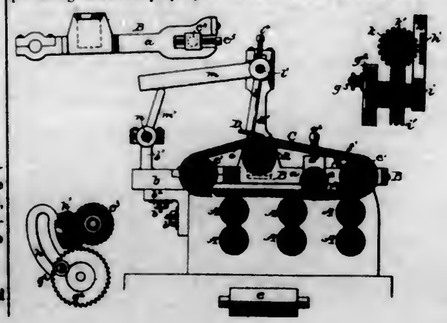


Claim.—1. In a car-starter, a movable draw-bar, variable differential pulley, loose wheel carrying a pawl, ratchet-wheel fixed upon the car-axle, and the compound lever I K, adapted to be drawn behind the projecting lug upon the movable draw-bar, and the chain belting for transmitting motion from one part to another, arranged substantially as and for the purposes described.

2. The loose wheel mounted upon the car-axle, ratchet-wheel fixed to the axle, the pawl mounted upon the loose wheel and adapted to engage in the teeth of the ratchet-wheel, and a hook or lug on the car-bottom for disengaging the pawl from the ratchet-wheel and holding the same out of engagement while the usual draft conditions continue, all arranged as described.

329,320. AUTOMATIC TOP-ROLL CLEARER. Stephen D. Learned, Westerly, R. I. Filed May 12, 1884. (No model.)

Brief.—The endless-band clearer is made of a brush-like material, so that it can be cleaned by a doffing-comb. Its operative surface moves in a direction opposite to that of the coincident surfaces of the top rolls. Devices are provided to preserve the tension of the band and to aid in presenting its surface properly to the rolls and to the doffing-comb.



Claim.—1. The combination, with drawing-rolls, of the endless-band brush operating as a roll-clearer, provided with distinctive brushing filaments, substantially as described.

2. The combination, with drawing-rolls, of an endless-band clearer and gearing for driving the coincident and contact surfaces of the rolls and band-clearer in opposite directions, substantially as described.

3. The combination of the traveling endless-band clearer, the vibrating comb, and the tension-roll beneath the comb, substantially as described.

4. The combination, with the band-clearer and vibrating comb, of a band-tension roll beneath the comb, and means, substantially as described, for vertically adjusting said roll, and thereby adjusting the band-clearer with relation to the comb, and presenting an angular or curved surface of the brush within the path of said comb, as set forth.

5. The combination of the traveling endless-band clearer, the vibrating comb, and means, substantially as described, for adjusting said comb with relation to the surface of the band-clearer, as set forth.

6. The combination, with the traveling endless-band clearer, of the vibrating comb and means, substantially as described, for varying its vibratory movements.

7. The combination, substantially as hereinbefore described, of the drawing-rolls, the traveling endless-band clearer and its pivoted frame, and means, substantially as described, for vertically controlling the outer end of said frame, and thereby varying the pressure of the band against said rolls.

8. The combination of the endless-band clearer and its rolls, the comb, the gearing for operating the clearer and comb, and the frame upon which they are organized and mounted, substantially as described, whereby the whole may be conveniently mounted upon a machine containing drawing-rolls and in proper working relation thereto, as set forth.

9. The combination, with the band-clearer, of the segmental bracket provided with the studs, worm-gears, and pinions, substantially as described, as a detachable system of gearing for connecting the band-clearer shaft with a driving-pinion in a spinning-machine, as set forth.

329,321. COMBINED DOOR KNOB AND STOP. John Leser and Ernest Keller, New York, N. Y. Filed Mar. 25, 1885. (No model.)

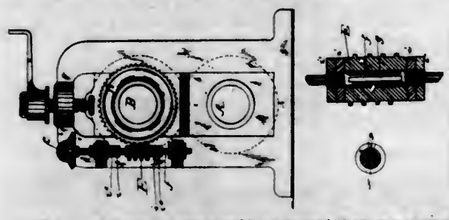


Claim.—1. As an article of manufacture, a door-knob having a soft and elastic cushioning-face, substantially as and for the purpose set forth.

2. In combination, a door-knob provided with a recess in its face, and an elastic cushioning-piece shaped so as to fit into said recess and project beyond the face of the knob, substantially as and for the purpose set forth.

3. The combination, with the knob *a*, having the undercut recess *a'*, of the elastic cushion *b*, with or without the flange *b'*, having its inner side, *b*², hollowed or recessed, substantially as and for the purpose set forth.

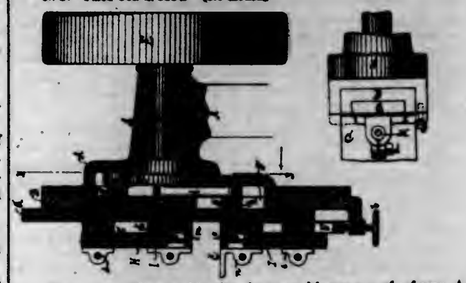
329,322. SHEET-METAL-CORRUGATING ROLL. John L. Lewis, Pittsburg, Pa., assignor to the Lewis Foundry and Machine Company, (Limited,) same place. Filed Aug. 4, 1885. (No model.)



Claim.—1. In a corrugating-machine composed of two corrugating-rolls, one of which is adjustable to or from the other, and both positively driven, the combination, with the adjustable roll, of driving-gear adapted to be correspondingly adjusted in the same direction, substantially as described, whereby the symmetrical relations of the two rolls are preserved.

2. In a corrugating-machine composed of the roll A and the adjustable roll B, the combination, with said roll B, of the worm-wheel D, the grooved worm E, vertical driving-shaft *f*, having spline *g*, and threaded as described, nuts *i*, and jam-nuts *i'*, substantially as described.

329,323. PAPER-PUNCHING PRESS. Charles A. Lee, New York, N. Y. Filed Oct. 2, 1884. (No model.)

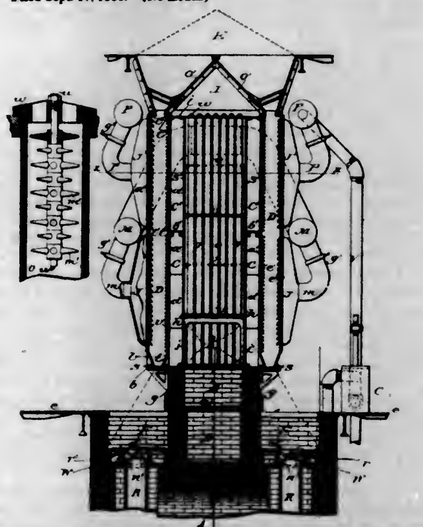


Claim.—1. The combination, in a punching-press, of a frame, A, provided with a stationary abutment, L, a table-carriage, B, automatically reciprocated in a right line in guides on the frame, a table, C, connected to and moving with the table-carriage, a reciprocating tool-carriage, G, and a punch, H, carried by the latter, substantially as described.

2. The combination, in a punching-machine, of a frame, A, provided with guides and a stationary abutment, L, a table-carriage, B, arranged in the guides of the frame, and provided with an attached table, C, mechanism, substantially as described, for reciprocating the table-carriage and table in a right line on the frame, and a reciprocating tool-carriage, G, provided with two punchers acting in opposite directions, substantially as described.

3. The combination, substantially as hereinbefore described, of the stationary abutment L, the table C, mechanism, substantially as described, for imparting to the table a movement toward and from the abutment, and two punches, H I, acting in opposite directions.

329,324. BONE-BLACK DRIER. S. Morris Lillie, Philadelphia, Pa. Filed Sept. 17, 1885. (No model.)



Claim.—1. A drier located above a bone-black-revivifying kiln and consisting of the following elements, viz: horizontal flue B, surface-heater with vertical tubes above the flue B, horizontal flue I above surface-heater, vertical chamber G, chambers *c c'* on each side of the surface-heater, hollow walls D, having perforated sides and opening above into the hopper E and below into boxes F, lower set of hoods, J, and upper set of hoods, J', covering air-tight the outer face of each wall, and exhausting-apparatus connected by mains P and *p* with the upper series of hoods, J', the various parts connected together and operating in conjunction, substantially as specified.

2. In a char-drier, the hollow walls D, for containing the char to be dried, and having perforated sides, chamber or chambers *c*, covering one face of each hollow wall and having connections for bringing heated gases to them, chamber or chambers J, covering the other and opposite faces of the walls, and exhausting apparatus connected by suitable mains with the chamber or chambers J, and operating to draw air or gases from the chamber or chambers *c* through the hollow walls and the moist black contained therein, substantially as specified.

3. The combination, with a char-drier in which the products of combustion from the kiln in connection with which the drier is used are employed in a surface-heater in heating air to be drawn through the black in the drier for the drying of the same, of exhausting apparatus communicating with the flue or chamber, such as I, into which the cooled products of combustion flow from the surface-heater, and operating to effect a draft for the kiln-fire independently of the temperature of its products of combustion, substantially as specified.

4. In a char-drier, the combination of a central surface-heater having vertical flue-tubes, with air-chambers, char-channels, and exhaust-chambers arranged symmetrically on each side of the surface-heater in the order specified, all connected and working in combination, substantially as specified.

5. The combination, with a bone-black-revivifying kiln and superimposed drier operating on the principle described, of the floor *e*, or its equivalent, for retaining the heated air which rises from around the various parts of the kiln, conduits leading from the space beneath the floor *e* to the air-channels of the drier, and exhausting apparatus operating to draw the heated air from below the floor through the said conduits and through the channels and black in the drier, substantially as specified.

6. In a surface-heater, tubes which break spaces with each other in the direction along which the matters to be heated flow through the heater, in combination with ribs *r*, parallel to the tubes and projecting from the side walls of the heater among the tubes, the effect of the combination being to leave no free channels along which the matters to be heated might flow, and so avoid contact with the surfaces of the heating-tubes, substantially as specified.

7. In the surface-heater of a char-drier, the combination, with the tubes in the chamber through which the air and gases to be heated flow, of partial partitions *v*, which are parallel to the tube-plates, and which form the interior of the heater into a zigzag channel, through which the air or gases to be heated are led back and forth among the tubes, entering the heater-chamber through a port at one end of the zigzag channel and leaving it through one at the other end, substantially as specified.

8. With the tubes *o* of the surface-heater, the combination of a perforated diaphragm, *a*, in the chamber B, from which the gaseous products of combustion flow into the tubes of the heater, the diaphragm operating to distribute the gases more evenly among the heater-tubes, substantially as specified.

9. The combination, with the tubes of the surface-heater of a char-drier, of perforated caps *w*, closing the ends of the tubes and operating to cause a more even distribution of the products of combustion among the tubes, substantially as specified.

10. In a surface-heater in which hot gases—such as products of combustion—are used for heating other substances, the combination, with the flues or heating-surfaces, of "heat-arresters" formed of metal, earthenware, or other material, arranged in the flues or passages through which the hot gases flow, and operating to absorb the heat by contact from the passing gases, and to radiate the same upon the heating-surfaces, by them to be absorbed and conducted to the matters to be heated, substantially as specified.

11. The combination, with the vertical flues *o* of a surface-heater, of the perforated caps *w*, rods *u*, suspended in the interior of the tubes from the caps *w*, and star or other shaped pieces of heat-absorbing substances strung on the rod in each tube, the pieces acting as heat-arresters to absorb heat by contact from the hot gases and to radiate it upon the walls of the tubes, substantially as specified.

12. In a surface-heater in which air or other gases are heated, the arrangement, as specified, in the channels in the heater through which the said air or gases to be heated flow, of heat-arresters formed of solid heat-absorbent substances, the heat-arresters operating to absorb the heat radiated from the heating-surfaces and to transfer it through contact to the air or gases to be heated.

13. In a char-drier constructed substantially as shown and specified, the vertical divisional plates N, dividing the hollow side walls through which the black flows into two or more separate or distinct channels, D, hoods J, one covering the outer face of each channel opposite the lower air-channel, *c*, hoods J', covering, respectively, the outer faces of the channels opposite the upper air-channels, *c'*, the hoods J communicating through the mains M and branches *m* with the surface-heater of the drier, and the hoods J' through the branches *p* and mains P S with an exhausting apparatus, substantially as described.

14. In a char-drier constructed substantially as described, gates *g*, or equivalent devices, located in the mains or branches leading from the exhaust-chambers of the drier to the exhausting apparatus, by means of which gates the flow of air or gases through the black back of said exhaust-chambers may be regulated as desired.

15. In a char-drier operating substantially as described, char-channels, such as D, formed with perforated sides or walls, air chamber or chambers *c* on the one side of the channels, hood or hoods J, covering air-tight the other face of each channel, the hoods of each channel being independent of those of the other channels, exhausting apparatus connected with several hoods by suitable connecting-mains, and gates *g'* or equivalents in the connecting-mains by which the draft of air or gases through the several channels, and consequently the desiccation of the black in each, may be regulated, substantially as specified.

16. In a char-drier located above a revivifying-kiln and delivering char to the retorts of the same, in which drier the desiccation of the char is effected by passing heated air or gases through it as it flows downward through the char-passages of the drier, char-passages divided into a number of vertical sections, each section delivering char to a certain number of the retorts below, and the combination, with each vertical section, of means—such, for example, as the separate exhaust-pipes and gates *g'* in the drawings—by which the draft of air or gases through the black in each section may be regulated independently of the other sections, the object of the arrangement being to permit the regulating the degree of desiccation of the black delivered to the different retorts of the kiln, and so to compensate for differences in the efficiency of the latter, substantially as specified.

17. The combination, in the construction of the hollow side walls or char-passages, D, of a char-drier, (in which drier the char is desiccated by passing currents of air or currents of air or gases through it,) of the vertical divisional plates N and end plates, L R, horizontal members *l l' l²* and *l l' l²*, extending between the vertical plates and dividing the two walls of the char-passages into panels, and perforated plates *e'*, filling the said panels, substantially as specified.

18. In a char-drier operating substantially as described, char-passages, with walls constructed in panels, as set forth, and hoods J, one covering each panel of the outer walls of the char-passages, each hood communicating with exhausting apparatus through intermediate connecting mains or apparatus, substantially as specified.

19. The combination, with the retorts of a char-revivifying kiln, of plates *d'*, covering the mouths of the retorts, and having funnels *o'*, projecting one into each retort, nipples *r'*, and manifolds W, with sockets *r²*, the combination affording means for collecting and conducting away from the retorts the vapors formed in the same, substantially as specified.

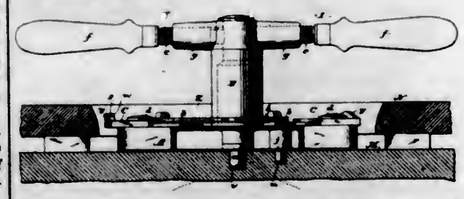
20. The combination, with the retorts of a char-revivifying kiln, of a condenser, conduits connecting the retorts with the condenser, and means for drawing the vapors formed in the retorts through the conduits to the condenser, substantially as specified.

21. In a char-drier in which the products of combustion from the kiln-fire are used in a surface-heater for heating the air to be drawn through the char in the drier, the combination, with the flue, such as I, into which cooled products of combustion pass from the surface-heater, of two flues or conduits, such as *f* and G, one of which leads directly into a flue or main, such as S, leading to draft-producing apparatus, while the other leads to the rear or induction side of the channels, with perforate sides in which the black to be dried is contained, and of a suitable damper, such as *n'*, or its equivalent, which may be operated to either send the cooled products of combustion through one of the two conduits to the draft main or through the other conduit to the rear of the char-channels, thence to be drawn through the char, substantially as specified.

22. The construction of the inclined plates *o o'* of the hopper E as hinged doors or wings, which, when thrown back or open, give access to the interior of the drier, substantially as specified.

23. The combination of a bone-black kiln and drier, two condensers, one connected with the drier by suitable mains, and the other with the retorts of the kilns by other suitable mains, and proper exhausting apparatus or equivalent means for drawing the water vapors evolved in the drier through its condenser, and the vapors generated in the retorts through their condenser, the object of the combination and of separate condensers for the drier and for the retorts being substantially as specified.

329,325. **CENTERING DEVICE FOR STONE-CUTTING MACHINES.** James W. Malot, Boston, Mass., assignor, by mesne assignments, to the American Marble Cutting Company, same place. Filed Dec. 15, 1884. (No model.)

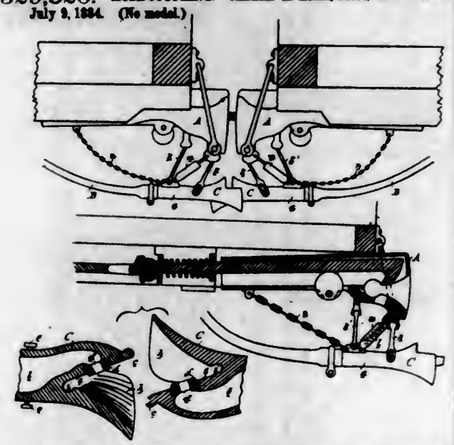


Claim.—1. The combination, with the base-plate A, provided with guide-studs *d*, of a standard pivoted centrally on said plate and provided with radial arms, and slides jointed to said arms and swinging and sliding on said studs, substantially as described.

2. The combination, with the base-plate A, provided with guide-studs *d*, of a standard pivoted centrally on said plate and provided with radial arms, and slides jointed to said arms, swinging and sliding on said studs, and a clamping arm or arms carried by the standard and adapted to engage with the pivot thereof to secure the standard in position after adjustment, substantially as described.

3. The combination of the base-plates, slides, standard connected with the slides, central bolt, *a*, and arms consisting of handles provided with screw-rods turning in the standard and adapted to be brought against the central bolt, as described.

329,326. **HOSE-COUPLING.** Charles E. Mabe, Flint, Mich. Filed July 9, 1884. (No model.)



Claim.—1. A hose-coupling consisting of two parts substantially alike, each of which is provided with an inclined face, *e*, through which the passage-way extends, and a fixed flaring mouth-shaped guide, *h*, arranged directly opposite to and partially surrounding its inclined face *e*, and constructed to guide the opposite parts in place when they come together, substantially as described.

2. The coupler C, flexibly connected to the draw-bar, in combination with a spring, *l*, imparting a constant forward impulse to the coupler, and a chain, *n*, limiting said impulse, as and for the purposes specified.

3. A hose-coupling in two parts, each of which is provided with a hook-shaped point, *c*, an inclined diaphragm, *e*, a socket, *i*, at the inner terminal of the diaphragm *e*, and a flaring mouth to guide the hook-shape points of the opposed parts to the sockets when the parts come together, substantially as specified.

4. A hose-coupler in two like parts, each part having a hook-shaped point, *c*, a socket, *i*, a mouth flaring outward from said socket to guide the hook-point of one part into the socket of the other part when the parts come together, air-passages leading from the coupler to the hose, elastic bushings surrounding the mouths of the air-passages, and flexible supports connecting the two parts with the draw-bars, substantially as specified.

5. In combination with the hose-coupling of a system of air or steam brakes, the hose of which is required to be detachably connected between the cars to which the system is attached, the links *k k'*, supporting the hose-couplings, the spring *l*, running diagonally between the links to exert a constant forward pressure on said couplings, the chain *n*, attached to the coupler and inclining in a reverse direction to the spring to limit the extent of such pressure, substantially as and for the purposes specified.

6. The hose-coupler C, pivotally supported near its rear end to the draw-head or buffer by means of the link *k'*, with its front or free end supported from such draw-head by the bifurcated link *k*, which is slotted at its junction with the coupler to allow a vertically-radial movement at that end of the coupler, substantially as and for the purposes set forth.

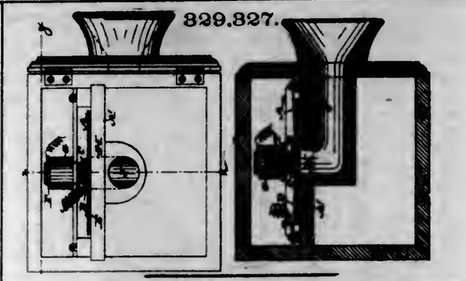
329,327. **TELEPHONE-TRANSMITTER.** F. Du Pont Marston, Philadelphia, Pa. Filed May 7, 1885. (No model.)

Claim.—1. In a telephonic transmitter, the glass diaphragm A, suitably supported on the annular pad E, in combination with the holder B, resting on said diaphragm, electrode C, and spring D, substantially as described.

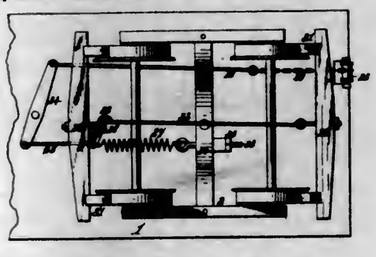
2. In a telephonic transmitter, the diaphragm A, resting on the annular pad E, in combination with the plate A', having opening H, tube J, and spring D, substantially as and for the purpose set forth.

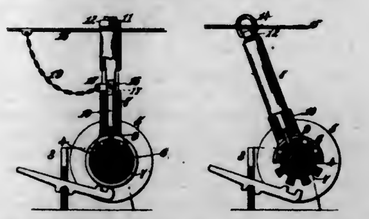
3. The diaphragm A, resting on the pad E, in combination with plate A', having opening H, tube J, spring D, holder B, supported on the diaphragm A, carbon or electrode C, supported on the holder B, electrode F, and annular guide G, the said electrodes being suitably connected to an induction-coil and battery, substantially as described.

329,327.



329,328. **CAR-BRAKE.** Chandler L. Matthews, Temple, Tex. Filed May 11, 1885. (No model.)





Claim.—1. In an automatic car-brake, the combination, with brake-beams suspended beneath the car, and a perpendicular brake-lever fulcrumed to one of said beams and connected to the other brake-beam by a rod, as 32, of a power-spring having an adjustable support at one end and connected at its other end to the brake-lever, a pivoted relief-lever, a rod, as 25, for connecting said relief-lever to the brake-lever and power-spring, a brake-controlling mechanism located on the top of the car, and means for connecting said mechanism with the pivoted relief-lever, substantially as described.

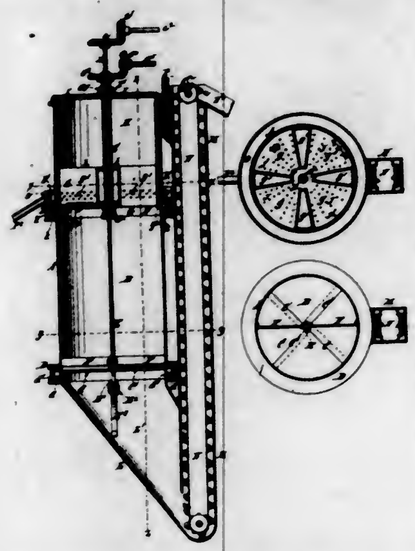
2. In an automatic car-brake, the combination of brake-beams suspended beneath a car, a brake-lever pivoted to one of said beams, an adjustable power-spring connected directly to said brake-lever, a pivoted relief-lever, a rod, 25, for connecting the brake-lever and relief-lever, a rod, 32, for connecting the brake-lever to the opposite brake-beam, a brake-controlling mechanism located on the top of each car, a rod and chain for connecting said mechanism to the relief-lever, and a cable, 15, for connecting the brake-controlling mechanism of the several cars, substantially as described.

3. In an automatic car-brake, a controlling mechanism consisting of the sheave 5 and socketed disk 6, fixed to a shaft, 4, journaled in a frame on the top of the car, in combination with a tubular lever, 8, loosely mounted on said shaft 4, a bolt, 10, inclosed in said tubular lever and adapted to engage the socketed disk, and a cable, 15, connected to the several levers and bolts on the different cars, substantially as described.

4. In an automatic car-brake, the combination, with the brake-beams 29 29, power-spring 27, relief-lever 24, and connections, of a socketed disk, 6, and a sheave, 5, fixed to a shaft, 4, journaled in a frame on the top of the car, said sheave being connected by a chain, 20, to the brake-actuating mechanism beneath the car, a tubular lever, 8, mounted loosely on the shaft 4, the bolt 10, inclosed in said tubular lever, and the cable 15, for connecting the several levers, substantially as described.

5. In an automatic car-brake, the combination of the brake-beams 29 29, power-spring 27, relief-lever 24, brake-lever 26, connecting-rods 23 25 32, chain 20, sheave 5, and socketed disk 6, mounted fast on a shaft, 4, lever 8, mounted loosely on said shaft, and having a bolt, 10, for engaging said disk, and the cable 15, for connecting the brake mechanism of several cars, substantially as described.

329,329. BONE-BLACK FILTER. Frank O. Matthiessen, Irvington, N. Y. Filed May 20, 1885. (No model.)



Claim.—1. In continuously-operating filters for decolorizing saccharine liquors by the process of upward filtration through bone-black, a filtering-chamber provided at the top with a rotating compressor or screw having openings between its blades for feeding fresh bone-black into the filtering-chamber, means for rotating the said compressor, and thereby pressing downward and compacting the mass of bone-black contained in the filtering-chamber, in combination with means for supporting the bottom of the said mass of bone-black and for gradually removing the exhausted bone-black therefrom, whereby the bone-black in the filtering-chamber may be maintained in a compacted condition by feeding into and compressing at the top of the filtering-chamber a quantity of fresh bone-black corresponding to the quantity of exhausted bone-black removed from the bottom of the filtering-chamber.

2. The scraper C, for supporting the mass of bone-black contained in the filtering-chamber in combination with a transverse stripping-plate, F, and means for rotating the said scraper, and thereby gradually shearing or scraping the exhausted bone-black from the bottom of the mass of bone-black contained in the filtering-chamber.

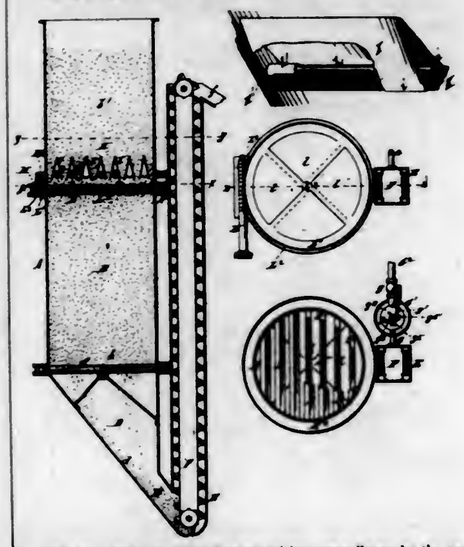
3. The filtering-chamber B, means for supporting the mass of bone-black therein, and for gradually removing the exhausted bone-black from the bottom of the said mass, the receiving-chamber L', having its side walls suitably inclined, as shown, the elevator-tube M, and the chain-and-bucket elevator N, in combination with a supply-pipe for supplying the receiving-chamber L' with sugar-liquor under sufficient pressure to enable it to force its way upward through the mass of bone-black contained in the filtering-chamber and out of discharge-openings at or near the top of the filtering-chamber.

4. The compressor G, the fresh-bone-black magazine H, the tubes g' g', for feeding the fresh bone-black from the magazine H downward through the spaces between the blades of the compressor, the shaft G', to which the compressor and the magazine H are affixed, and means for rotating the said shaft, and thereby feeding fresh bone-black downward upon the mass of bone-black contained in the filtering-chamber, and compressing it thereon, and means for supporting the bottom of the mass of bone-black contained in the filtering-chamber, and means for gradually removing the exhausted bone-black therefrom, substantially as described.

5. The compressor G, provided with openings between its blades through which fresh bone-black is fed into the top of the filtering-chamber, means for rotating the said compressor, and the scraper C, for supporting the mass of bone-black contained in the filtering-chamber, means for rotating the scraper C independently of the compressor G, and thereby regulating the degree of compactness of the mass of bone-black contained in the filtering-chamber.

6. The compressor G, affixed to the hollow shaft G', and means for rotating said shaft, and the scraper C, affixed to the vertical shaft E, inserted through the hollow shaft G', and provided at its upper end with gearing, substantially as shown, for effecting the rotation of the scraper C independently of the compressor G, as and for the purpose set forth.

329,330. APPARATUS FOR DECOLORIZING SACCHARINE AND OTHER LIQUIDS BY FILTRATION THROUGH BONE-BLACK. Frank O. Matthiessen, Irvington, N. Y., and Edward R. Gurney, Orange, N. J., assignors to the F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Filed June 1, 1885. (No model.)



Claim.—1. In apparatus for decolorizing sugar-liquor by the process of upward filtration through a column of bone-black contained in a suitable vessel or cylinder, a system of draining-troughs extending transversely into or across the column of bone-black at the height at which it is desired to drain the sugar-liquor therefrom, and a system of shields over the draining-troughs for preventing the bone-black from falling into the said troughs, and a conduit or conduits for receiving and conducting off the sugar-liquor discharged through the draining-troughs.

2. The draining-troughs h h, &c., extending transversely into or across the column of bone-black at the desired height, and the shields I I, &c., each having the flaring sides or wings i i, as and for the purposes set forth.

3. The draining-troughs h h, &c., and the shields I I, &c., each provided with a sieve for preventing particles of bone-black from being floated upward into the said troughs by the rising of the sugar-liquor through the column of bone-black, into or across which the draining-troughs extend.

4. A system of draining-troughs provided with suitable shields and arranged transversely across a column of bone-black contained in a filtering-cylinder and connected by comparatively short tubes with perforations in the wall of the filtering-cylinder leading to a conduit or conduits for receiving and conducting off the sugar-liquor drained from the column of bone-black, for the purpose of increasing the facility of drainage from the interior portion of the column of bone-black, and diminishing the facility of drainage from the exterior portion thereof, and thereby rendering the upward current of sugar-liquor through all parts of the column of bone-black as nearly uniform as may be.

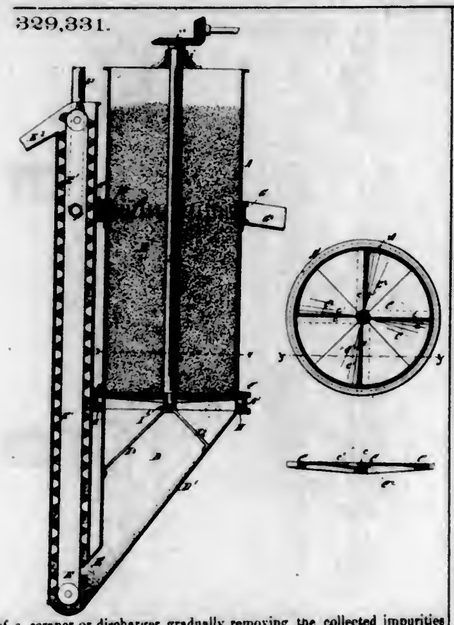
5. In combination with the filtering apparatus for decolorizing sugar-liquor by the process of upward filtration through bone-black, substantially such as described, a cistern for supplying sugar-liquor to the apparatus, suitably elevated, and provided with means for adjusting the height of the sugar-liquor in the said cistern relatively to the height of the outlets through which the sugar-liquor is discharged from the filtering-chamber, substantially as described.

6. The filtering-cylinder A, provided at a prescribed elevation with discharge-outlets H', for the discharge of the sugar-liquor after filtration, in combination with a cistern, G', and a suitable connection therefrom to the lower part of the cylinder A, the supply-pipe G^2, the valve g, provided with the operating-arm g', and the vertically-adjustable float g^3, connected with the free end of the arm g', and means for vertically adjusting the float g^3 relatively to the said arm, as and for the purpose set forth.

329,331. PROCESS OF REMOVING THE IMPURITIES OF RAW SUGAR. Frank O. Matthiessen, Irvington, N. Y. Filed July 3, 1885. (No model.)

Claim.—1. The herein-described process of removing the impurities from raw sugar, the same consisting in dissolving the raw sugar in water, then filtering it by forcing it upward through bone-black, and by means

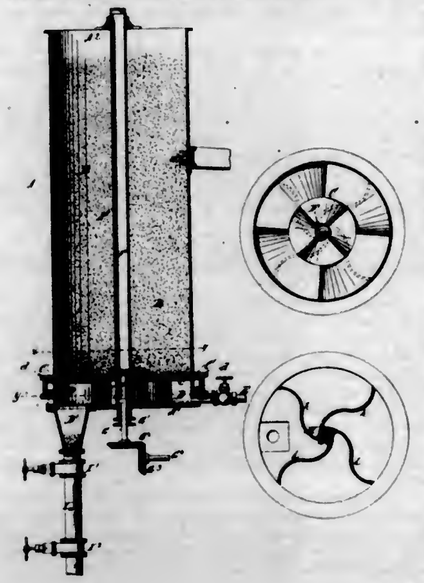
329,331.



of a scraper or discharger gradually removing the collected impurities and exhausted bone-black from the bottom of the mass of bone-black contained in the filtering-chamber through which the sugar-liquor is forced.

2. In apparatus for effecting the decolorization of sugar-liquor by the process of upward filtration through bone-black, the combination, as herein set forth, of a filtering-chamber having a movable bottom for supporting the column of bone-black contained in the filtering-chamber, and for gradually removing the bone-black from the bottom of said column, a receiving-chamber for receiving the bone-black so removed from the filtering-chamber, and means for removing the bone-black from the receiving-chamber without interrupting the upward flow of the sugar-liquor through the column of bone-black to outlets provided for its exit from the filtering-chamber.

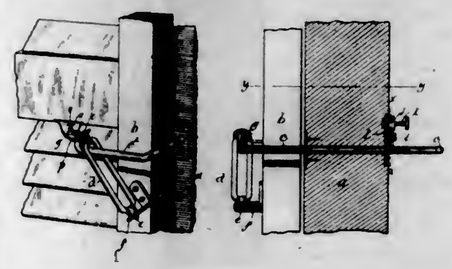
329,332. APPARATUS FOR DECOLORIZING SUGAR-LIQUOR BY UPWARD FILTRATION THROUGH BONE-BLACK. Frank O. Matthiessen, Irvington, N. Y. Filed Aug. 20, 1885. (No model.)



Claim.—1. In apparatus for effecting the decolorization of sugar-liquor by the process of upward filtration through bone-black, the combination, as herein set forth, of a cylindrical filtering-chamber, a rotating supporter and discharger at the bottom of and of larger dimensions than the filtering-chamber, and a central vertical columnar shield arranged within the filtering-chamber immediately above the central undotted portion or hub of the supporter and discharger, whereby a vertical line drawn through any portion of the bone-black contained within the filtering-chamber will at its lower end necessarily intersect a part of the stratum of bone-black which is in contact with the discharger and which is removed by the rotation of the discharger.

2. The combination of the flat-bottomed receiving-chamber D and the conduit D', leading therefrom to a suitable depository, with the sweeper or plow H, the filtering-chamber A', for containing a column of bone-black, and means for gradually discharging the exhausted bone-black and collected impurities from the bottom of said column into said receiving-chamber.

329,333. SHUTTER-WORKER. Patrick K. O'Lally, Boston, Mass. Filed Oct. 10, 1884. (No model.)



Claim.—1. The rod *c*, extending through the window-casing, and adapted both to rotate and to move lengthwise, and provided with the arm c^2, combined with the diagonally-arranged slotted plate *d*, pivoted to ears *r* on the outer side of the blind, and adapted to turn on its pivots to accommodate itself to the rotary movements of the rod, as set forth.

2. The combination of the rod *c*, extending through the window-casing, and provided at its outer end with an arm, c^2, engaged with an attachment on the blind, and at its inner end with screw-threads or corrugations, and a plate, *i*, notched or serrated to engage with the teeth or corrugations of the rod, and the stud *k*, having the eccentric *j*, whereby said plate is supported and operated, as set forth.

3. The combination of the ear *g* on the blind, having orifices *o o*, and the operating-rod *c*, having an arm, c^2, and a stud, *p*, on said arm, formed to enter either of said orifices, and means, substantially as described, for locking said rod, as set forth.

329,334. CHAIN-MACHINE. Charles F. Pardee, North Attleborough, Mass., assignor to G. W. Cheever & Co., same place. Filed July 23, 1885. (No model.)

Claim.—1. In a machine for making chain, the combination of an intermittent feed mechanism and cutter, a reciprocating former, means for bending the wire around the former to form a link, and the hook adapted for the proper manipulation of the finished links to make a continuous chain, substantially as described.

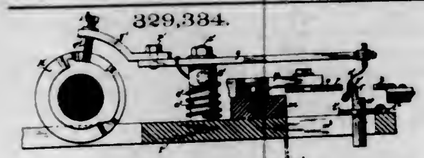
2. In a machine for making chain, the combination of an intermittent feed mechanism and cutter, and an adjustable step-gage for limiting the forward movement of the wire and for holding the same prior to bending, a reciprocating former, means for bending the wire around the former to form a link, and the hook adapted for the proper manipulation of the finished links to make a continuous chain, substantially as described.

3. In a machine for making chain, the combination of an intermittent feed mechanism and cutter, a reciprocating former, grooved jaws having a forward and backward and closing and opening movement, reciprocating swage for closing the open end of the link upon the former, and the hook adapted for the manipulation of the finished links to make a continuous chain, substantially as described.

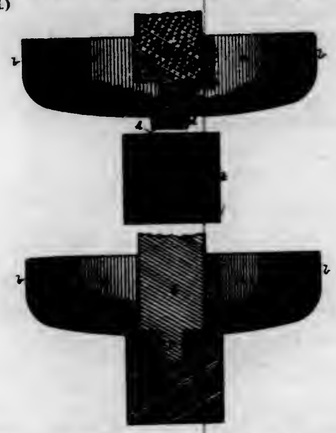
4. In a machine for making chain, the combination of the reciprocating former, means for bending the wire around the former to form a link, the hook adapted to receive the finished link from the wire-bending means, and the guide-rest adapted to secure the proper revolution and alignment of the finished chain, substantially as described.

5. In a machine for making chain, the combination of the reciprocating former, means for bending the wire around the former to form a link, and the hook adapted to receive the finished link from the wire-bending means, substantially as described.

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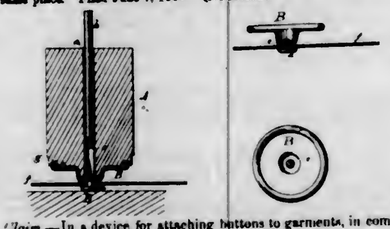
329,335. METHOD OF SECURING RINGS IN BOILER-HEADS. Peter Patterson, McKeesport, Pa., assignor of one-half to the National Tube Works Company, same place and Boston, Mass. Filed July 31, 1885. (No model.)



Claim.—1. The herein-described method of securing snugs or rings within boiler-heads, consisting in inserting the ring within the eye of the boiler-head, raising the ring and boiler-head to a welding heat, and welding the parts together.

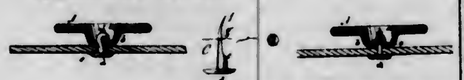
2. The herein-described method of securing snugs or rings within boiler-heads, consisting in flanging the metal around the eye of the boiler-head, inserting the ring within the flanged eye, raising the parts to a welding heat, and welding the parts together.

329,336. DEVICE FOR ATTACHING BUTTONS TO FABRICS. Irving G. Platt, Waterbury, Conn., assignor to the Patent Button Company, same place. Filed June 7, 1884. (No model.)



Claim.—In a device for attaching buttons to garments, in combination, a cylinder, A, with its lower end constructed to conform to the face of a button, and with a guide-channel, *a*, passing through the same, and a plunger, *b*, with a recess, *c*, formed in the lower end thereof, as and for the purpose described.

329,337. BUTTON AND BUTTON-FASTENER. Irving G. Platt, Waterbury, Conn., assignor to the Patent Button Company, same place. Filed June 19, 1885. (No model.)

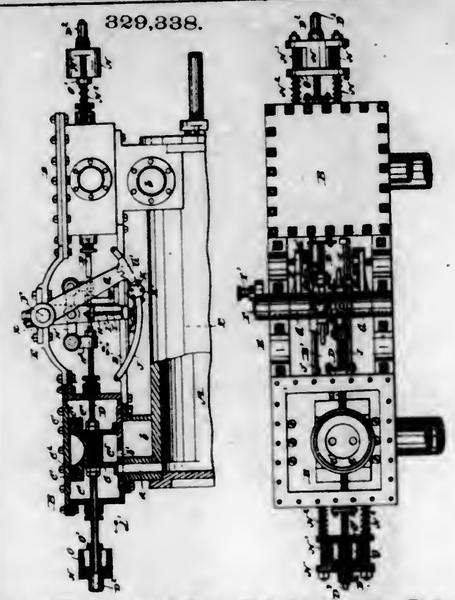


Claim.—A button-shell with a central depression, hub, and perforation, combined with a fastening device, C, provided with a head, *d*, and with its shank pointed and flattened, as and for the purpose described.

329,338. VALVE-GEAR. James R. Quinn, St. Paul, Minn. Filed Aug. 7, 1885. (No model.)

Claim.—1. In a steam-engine, the swinging arms G, deriving their motion by suitable connections from the wheel-shaft, in combination with

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the arms H, the segment J, the dogs K, the links H', the lugs H³, the valve-rod D, the balanced slide-valve C, and the cylinder A, substantially as shown and described.

2. In a steam-engine, the swinging arm G, provided with the notched piece G', in combination with the arm H, the rod I, the link H', the lug H³, the valve-rod D, and the balanced slide-valve C, substantially as shown and described.

3. In a steam-engine, the swinging arm G, provided with the notched piece G', in combination with the arm H, the rod I, the angular arm I³, the spring I', the segment J, and the dog K, substantially as shown and described.

4. In a steam-engine, the swinging arm G, provided with the notched arm G', the arm H, the rod I, the angular arm I³, the spring I', the segment J, and the dog K, in combination with the link H', the adjustable leg H², the valve-rod D, the slide-valve C, the keeper N, the springs N³, the dash-pot O, and the yoke O', substantially as shown and described.

5. In a steam-engine, the arm G, the arm H, the segment J, the dog K, the valve-rod D, the slide-valve C, the keeper N, the rods N', the spring N³, the dash-pot O, and the yoke O', in combination with the cylinder A, the inlet-port *a*, and the exhaust-port *b'*, substantially as shown and described.

6. In a steam-engine, the segments J, the dogs K, and the studs K', in combination with the slotted keepers L², the racks L, and the pinion M, substantially as shown and described.

7. In a steam-engine, the arms G and H, the rod I, the angular arm I³, and the spring I', in combination with the segments J, the dog K, the studs K', the keepers L², the racks L, the pinion M, and the hand-wheel M', substantially as shown and described.

8. In a steam-engine, the segments J, the dogs K, and the studs K', in combination with the slotted keepers L², the racks L, the keepers L', the pinion M, the hand-wheel M', and the spring-latch M³, substantially as shown and described.

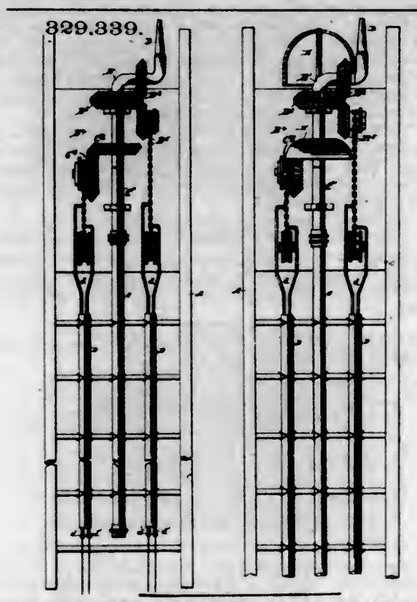
329,339. HOSE-MANIPULATOR. James Rost, Detroit, Mich. Filed May 28, 1885. (No model.)

Claim.—1. The combination, with a ladder or with the top section of an extension-ladder, of a length of hose or water-pipe connected with its upper section, a swiveled hose-nozzle connected with the upper end of the hose or pipe, rods, chains, or cables for operating said swiveled nozzle from the ground, and one or more pipes, D, through which said operating rods, chains, or cables are passed, substantially as described.

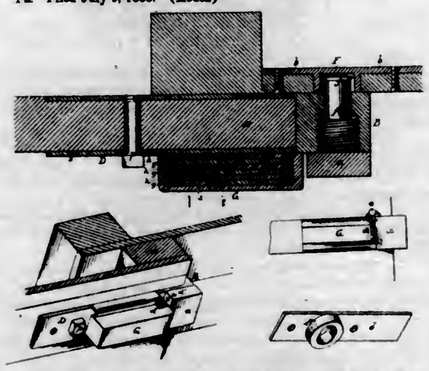
2. The combination, with a ladder or the top section of an extension-ladder, of a swiveled nozzle, rods, chains, or cables for operating said nozzle from the ground, and a fixed pipe or pipes for containing said rods, chains, or cables, substantially as and for the purpose described.

3. The combination, with a ladder or the top section of an extension-ladder, of a swiveled nozzle, operating rods, chains, or cables, and a pipe or pipes through they are passed, and rings or loops below the lower ends of said pipes for ready engagement with other chains or cables, substantially as described.

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329,340. CAR-DOOR RETAINER. Anthony Roelofs, Philadelphia, Pa. Filed July 9, 1885. (Model.)



Claim.—1. A car-door retainer in which are combined a nut secured to the door, a screw-stem adapted to said nut, and having a head bearing upon the face of the same when the stem is screwed in, and a car-side having an opening or recess for the reception of the inner projecting end of the stem, all substantially as specified.

2. The combination of the car-door having a nut, and a screw-stem adapted to said nut, with a car-side having an opening or recess larger than the end of said stem to receive the same, and a bolt for locking the screw-stem, substantially as specified.

3. The combination of the car-door, and the screw-stem forming a retainer therefor, with the locking-bolt guided on the car-door, and carrying a series of tumblers adapted to engage with a fixed stump on the door, as specified.

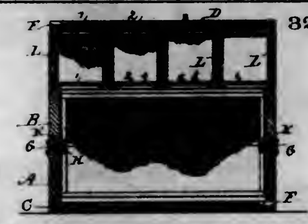
4. The combination of the car-door, and the screw-stem forming a retainer therefor, with the locking-bolt guided on the door containing a series of tumblers, and having a key-hole in the under side, as specified.

5. The combination of the car-door, and the screw-stem forming a retainer therefor, with the locking-bolt guided on the door, and containing a series of tumblers, said bolt having in the under side a key-hole, and a longitudinal slot communicating therewith, so as to permit longitudinal movement of the key after its insertion, as specified.

329,341. BEE-HIVE. John M. Shuck, Des Moines, Iowa. Filed July 11, 1884. (No model.)

Claim.—1. The combination of angular arms or projections with the ends of a movable honey-frame for bee-hives, said arms or projections extending horizontally in opposite directions from the ends of the axis of the frame and in the plane of said axis, to suspend, fasten, and invert the frame in a hive, in the manner set forth, for the purposes stated.

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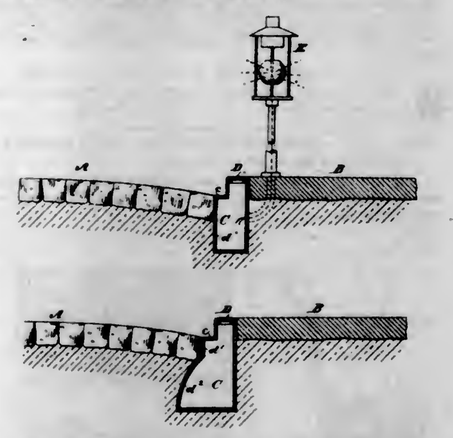
2. A comb-frame provided with sheet-metal plates H, having projecting points J, and ends K, projecting from between said points, and the said plates fastened to the frame, as shown and described, for the purposes stated.

3. The combination of the wall L, the strips N, the series of removable veneers 1 2 3, and a series of removable surplus-honey sections, 4 5 6, for the purposes stated.

4. An invertible bee-hive composed of two separable mating wall-sections, each having supports for invertible frames at the inner edges of their ends, two detachable boards, each having a passage cut in one of its edges, and a series of invertible frames each having fixed outward projecting arms on the center of its side bars, to operate in the manner set forth, for the purposes specified.

5. A movable frame for bee-hives, having arms or projections extending horizontally from the opposite ends of its axis and in the plane of said axis, in combination with separable mating sections of the wall of a bee-hive, having rabbets in their mating edges adapted to receive the projections on the ends of the frame, for the purposes stated.

329,342. STREET CURB AND GUTTER. George D. Sutton, New York, N. Y. Filed June 17, 1885. (No model.)



Claim.—1. A combined hollow curb and gutter comprising a single chamber without interior division-walls, the curb portion thereof being open at top and provided with a removable cover, substantially as set forth.

2. A combined hollow curb and gutter comprising a single chamber without interior division-walls, and having its outer or gutter wall curved outwardly, substantially as set forth.

3. A combined hollow curb and gutter comprising a single chamber, C, and having a short vertical wall, *d'*, and a curved wall, *d²*, substantially as set forth.

329,343. STREET-CURB. George D. Sutton, New York, N. Y. Filed Aug. 10, 1885. (No model.)

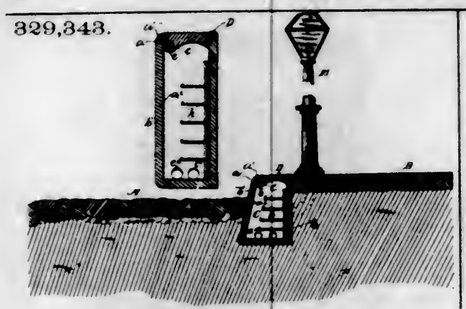
Claim.—1. A hollow street-curb having its front wall inclined from the top to the bottom and provided with a removable cover, substantially as and for the purpose set forth.

2. A hollow street-curb having a perpendicular rear wall and an inclined front wall and provided with a removable cover, substantially as set forth.

3. A hollow street-curb having a lug, *c*, formed on its inner surface, and having the upper edge of its exterior surface rounded or beveled, as shown, in combination with the cover D, whose under surface is provided with a downwardly-projecting hook-shaped extension, *e*, and whose outer edge, *a'*, is rounded or beveled, substantially as set forth.

4. The hollow curb C, having the supports or ledges *h*, and provided with the removable cover D, substantially as set forth.

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329,344. STREET CURB AND GUTTER. George D. Sutton, New York, N. Y. Filed Aug. 29, 1885. (No model.)



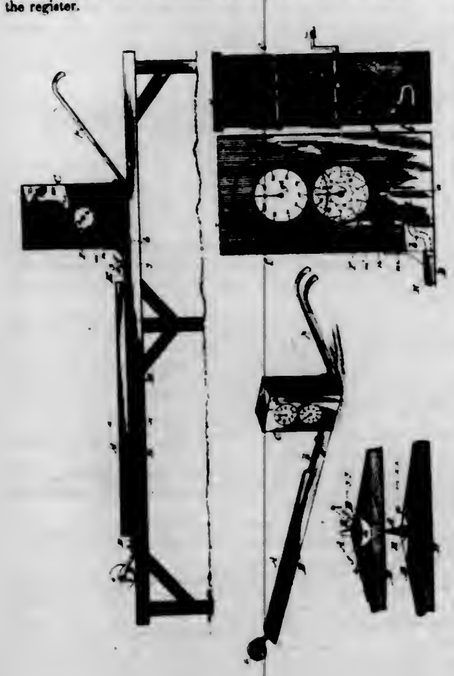
Claim.—1. The hollow gutter B, combined with the hollow curb A, both receptacles being independently constructed, and connected to each other, so that the gutter may be adjusted vertically with relation to the curb, substantially as set forth.

2. The hollow curb A, whose outer wall is inclined from the top to the bottom, in combination with the hollow gutter B, whose inner and outer walls are similarly inclined, the two receptacles being independently constructed and adjustably connected to each other, substantially as set forth.

3. The hollow curb A, having elongated slits or openings in its outer wall, in combination with the hollow gutter B, having bolt-holes in its inner wall, and the bolts *e*, substantially as set forth.

329,345. FREIGHT-CHECKING DEVICE. William B. Thomas, Athens, Ga. Filed Mar. 14, 1885. (No model.)

Brief.—The truck passing in one direction over the flange A operates the register, but in the other direction the lever is disengaged from the register.

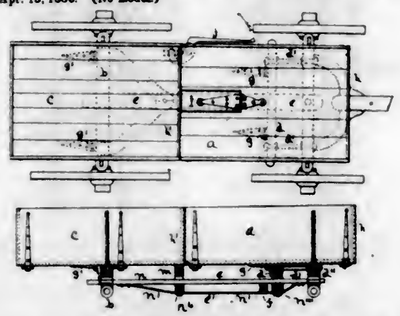


Claim.—1. The combination, with a registering mechanism, of the long tilting lever or blade A, journaled in a horizontal position, but standing normally vertical, and adapted to tilt either way, the base-piece provided with a groove to receive said lever, and also beveled on each side, and a pawl and ratchet connecting the said lever with the registering mechanism proper, substantially as shown and described.

2. The combination, with a registering mechanism and the grooved base-piece, of a tilting lever provided with lateral arms or lugs, the spring *g*, acting on the latter, for holding said lever normally elevated, and means for connecting said lever and registering mechanism, substantially as shown and described.

3. The combination, with registering mechanism and the pull-rod F, having its lower end, *d*, constructed in the hook form specified, of the tilting lever A, having the bent end *b*, which is adapted to engage with and disengage from the pull-rod, whereby the register is operated once for every two opposite movements of said lever, as shown and described.

329,346. DUMPING-WAGON. Charles M. Titus, Ithaca, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a dumping-wagon, the second or additional front bolster attached to the front bolster, and to which second bolster the front division or box is hinged, in combination with the reach *n*, as set forth.

2. The reach *e'*, made of the reach proper, *n*, in combination with the truss-bracing rod *n'*, and with the stud-blocks *n'''' n⁴*, and adapted to sustain the additional bolster *d* and the bolster cross-bar *m*, as shown and described.

3. A second bolster, *d*, secured by the rods *d' d'* to the front bolster, and constituting with the front bolster a fixed resting support for the division *a* of the wagon-box.

4. The cross-bar *m*, secured to the reach *n*, in combination with the rear axle, to which the reach *n* extends, the said cross-bar and axle constituting the supports of the rear division of the box, as set forth.

5. A two parted or divided wagon-box, each division dumping in a separate cart-like manner, in combination with and adapted to a wagon with a reach, as set forth.

6. A wagon with dumping division-boxes *o* and *c*, suited to a wagon-reach by means of a hinged piece in the bottom of the front division of the box, whereby a pit for the reach is made, as shown and described.

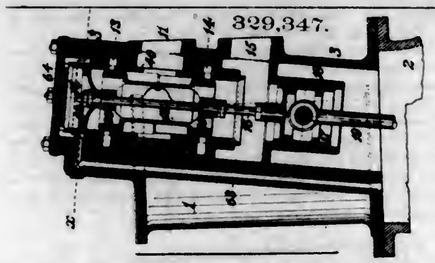
7. A lever, *j*, or cross-rod *j''*, provided with hook-shaped or inclined tightening-surfaces, whereby when the lever or rod is in the closed position for holding the boxes or divisions together these surfaces act as tightening-wedges, thus making a firm locking together of the divisions.

329,347. STEAM-ENGINE VALVE. H. Herman Westinghouse, New York, N. Y., and William A. Bole, Pittsburg, Pa., assignors to the Westinghouse Machine Company, Pittsburg, Pa. Filed Aug. 15, 1885. (No model.)

Claim.—1. The combination of a steam-engine valve having two end pistons connected by a tubular body, a guide-piston and a supplemental back-pressure piston corresponding, substantially, in area and secured upon opposite ends of the stem of the valve, a valve-chamber having a closed head at one end and an open-ended guide-cylinder at the other and ports governed by the end pistons of the valve, a steam-passage opening into the valve-chamber between the end pistons of the valve, and an exhaust-passage leading out of the valve-chamber between an end piston of the valve and the guide-piston, substantially as set forth.

2. The combination of a steam-engine valve having two end pistons connected by a tubular body, a guide-piston and a supplemental back-pressure piston corresponding, substantially, in area and secured upon opposite ends of the stem of the valve, a valve-chamber, substantially as described, and a relief-passage leading from the space between the supplemental back-pressure piston and the head of the valve-chamber to a suitable point of discharge, substantially as set forth.

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329,348. CALENDAR BLOTTING-PAD. Howard C. Whitney, Albany, N. Y. Filed July 15, 1885. (No model.)



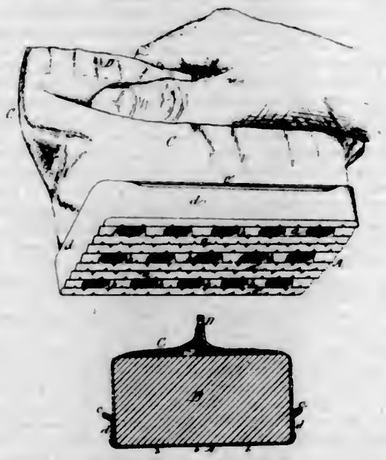
Claim.—As an article of manufacture, a combined blotting-pad and book-holder, consisting of a base, B, provided at one end with means for holding sheets of blotting-paper and at the other end with a pocket, as described, to receive one cover of a book, substantially as and for the purposes set forth.

329,349. SUBSTITUTE FOR BILLIARD-CUE CHALK. William H. Wiggins, Brooklyn, N. Y. Filed Apr. 1, 1885. (No specimens.)

Claim.—1. As a substitute for billiard-cue chalk, a preparation of finely-granular barytes made coherent by mixing it with an adhesive liquid, substantially as and for the purpose set forth.

2. As a substitute for billiard-cue chalk, a preparation formed of finely-granular barytes mixed with liquid dextrine and a small percentage of gypsum, and molded into blocks, substantially as and for the purpose set forth.

329,350. HAND WASHING-RUBBER. James W. Williams, Louisville, Ky. Filed Aug. 23, 1884. (No model.)

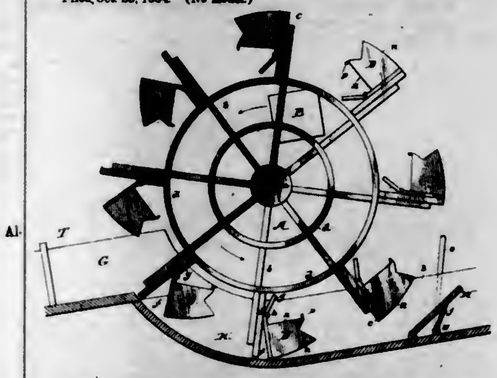


Claim.—1. The combination, in a hand-rubber for washing purposes, of a flexible pocket and a rigid perforated bottom connected to one end of said pocket, substantially as and for the purpose set forth.

2. The combination, in a hand-rubber for washing purposes, of a receptacle or pocket of flexible material, and a rigid perforated bottom having rim clamp-laps to bind and hold said bottom to said pocket, substantially as and for the purpose set forth.

3. The rigid perforated rubbing-surface formed with a surrounding rim having side hand-grasps, combined with an open fabric pocket bound to the rim of said rubbing-surface, substantially as herein set forth.

329,351. WATER-WHEEL. James H. Williamson, Branchville, N. J. Filed Oct. 23, 1884. (No model.)



Claim.—1. The combination, in a paddle-wheel, of base-pieces carrying buckets at one end and provided at the opposite end with inclined extensions, and hinges connecting said base-pieces at the junction of said inclined extensions therewith to the floats of the wheel, substantially as set forth.

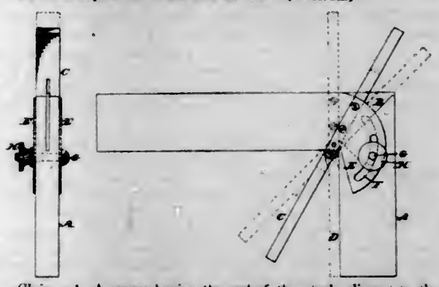
2. The combination, with the wheel having radial arms, of floats extending laterally beyond said arms and carrying buckets pivoted thereto at each end, and receptacles arranged to allow the buckets to be carried over them, substantially as set forth.

329,352. NOSE-BAND FOR BRIDLES OR HALTERS. Richard Winder, Faringham, County of Kent, England. Filed Aug. 11, 1885. (No model.) Patented in England Jan. 5, 1884, No. 797.



Claim.—A device for curbing and controlling horses, consisting of the nose-band *a*, having sharpened inner edges, and provided with slots *b*, for attachment of the headstall or bridle, and rings *c*, for attachment of the driving-reins, and a strap, *d*, attached to both ends of the nose-band *a* and passed over the lower jaw of the animal in line with the nose-band, as and for the purpose described.

329,353. ATTACHMENT TO SQUARES. William S. Winterbotton, Philadelphia, Pa. Filed Feb. 20, 1885. (No model.)



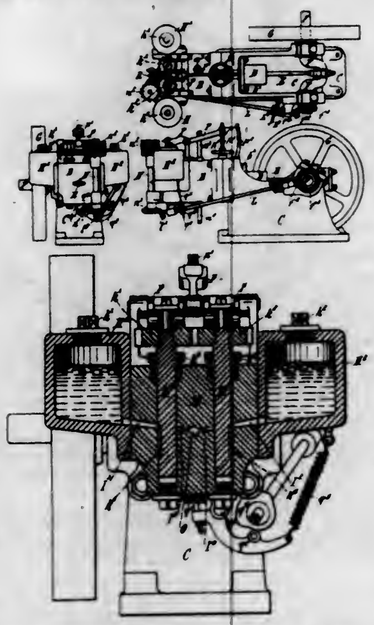
Claim.—1. A square having the end of the stock adjacent to the blade diagonal, provided with a slotted arm pivoted to the blade, and adapted to abut against either the side or end of the stock, substantially as described.

2. A square provided with an attachment for marking out angles between a right angle, consisting of a pivoted arm which is capable of abutting against the side or end of the stock of the square, substantially as and for the purpose set forth.

3. A square having a stock, A, provided with a diagonal end, and a blade, B, in combination with slotted arm C, pivoted to said blade, plates E, having slots F, secured to the said arm C on both sides of the stock A, and clamping devices.

4. A square having a stock, A, provided with a diagonal end, and a blade, B, in combination with a slotted arm pivoted to said blade, the said arm embracing said blade, which passes through the said slot, substantially as described.

329,354. **EXPLOSIVE ENGINE.** George Asher, Balsall Heath, and John Buffums, Sparkbrook, County of Worcester, England. Filed Apr. 16, 1885. (No model.) Patented in England Feb. 2, 1885, No. 1,434, and in Belgium May 27, 1885, No. 69,037.



Claim.—1. In a motor operated by the explosive combination of liquid substances, the combination of a vessel, H', having an outlet or outlets, I' I², and a vessel, H², having an outlet or outlets, I² I⁴, communicating with each other and with a cylinder containing a piston, as and for the purposes set forth.

2. In a motor, the combination of a cylinder and piston with a pair of plugs or valves, K' K², arranged to continuously rotate or oscillate, so as to intermittently bring together portions of certain liquids from general supplies to cause successive explosions to act upon the said piston, as herein set forth.

3. In a motor, the combination of a cylinder and piston with two pairs of plugs or valves, K' K² and K³ K⁴, arranged to continuously rotate or to oscillate, so as to intermittently bring together portions of certain liquids from general supplies, to cause successive explosions alternately on either side of the said piston, as herein set forth.

4. In a motor, the combination of a cylinder and piston with a pair of plugs or valves, K' K², each having a slot, k^2 k^3, arranged to slide longitudinally, so as to intermittently bring together portions of liquids from general supplies, to cause successive explosions alternately on one side of said piston, as herein set forth.

5. In a motor, the combination of a cylinder and piston with two pairs of plugs or valves, K' K² and K³ K⁴, each having a slot, k^2 k^3, arranged to slide longitudinally, so as to intermittently bring together portions of liquids from general supplies, to cause successive explosions alternately on either side of the said piston, as herein set forth.

6. In a motor operated by the explosive combination of substances, a pair or pairs of plugs or valves, K' K², having grooves or recesses k^2 k^3, in combination with a lever, P, and a screw and hand-wheel, p', so as to be adjustable longitudinally, to regulate the quantity of the explosive liquid or liquids used in each explosion, as herein set forth.

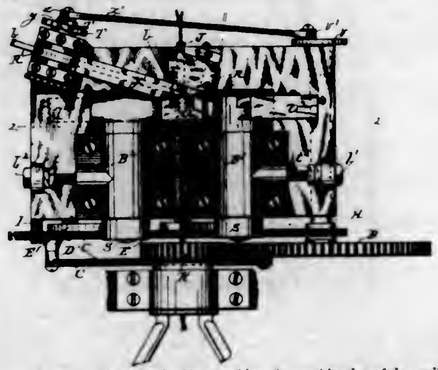
7. In such a motor, a pair or pairs of plugs or valves, K' K², having grooves or recesses k^2 k^3, in combination with a lever, P, and a governor, S, so as to be automatically adjustable longitudinally, to regulate the quantity of the explosive liquid or liquids used in each explosion, as herein set forth.

8. In such a motor, a pair or pairs of plugs or valves, K' K², having slots k^2 k^3, and receiving vibratory motion by means of levers P and a slotted lever, P', in combination with a governor, S, so as to automatically obtain an increased or diminished length of travel of the plugs or valves, as and for the purposes specified.

9. In a motor operated by the explosive combination of liquid substances, the combination of a governor with the plugs or valves, so as to automatically regulate the quantities of the explosive substances used in each explosion, as herein set forth.

329,355. **WIRE-BARBING MACHINE.** Albert J. Bates, Joliet, Ill. Filed June 25, 1885. (No model.)

Brief.—Two oscillating shafts carry arms, to each end of which are secured heads carrying the cutters. When the barb-strip has been fed between the strand-wires, the shafts are oscillated, bringing the upper cutter on one arm down and the lower cutter on the other arm up, thus, with a stationary cutter, cutting and bending down two points of the barb. The shafts are then oscillated in the other direction, bringing the lower cutter on the first arm up and the upper cutter on the other arm down. These cutters sever the barb, and with the stationary cutter bend up the remaining points of the barb. The strand-wires are then twisted, securing the barb in position.



Claim.—1. In a wire-barbing machine, the combination of the oscillating cutter-heads a a' a^2 a^3, having the cutters P P' P'' P² P³, stationary cutter R, strand-wire guide J, having the guide-channels r r', shafts S S', arms E E', having respectively the slots F F', slide D, having roller-wrists to traverse said slots, pitman C, drive-wheel B, and the barb-strip mechanism, all adapted to operate substantially as and for the purpose set forth.

2. In the wire-barbing machine shown and described, the combination of the oscillating cutter-heads a and a^3, cutters P, P', P'', and R, and guide J, having the guide-channels r and r', arranged to operate as and for the purpose set forth.

3. In the automatic wire-barbing machine shown and described, the cutter-heads a a' a^2 a^3, for holding their several respective barb-cutters, and arranged to be oscillated to alternately bring their barb-cutters together, substantially as and for the purpose set forth.

4. In the wire-barbing machine shown and described, the several movable barb-cutters, supported in their respective oscillating heads, and arranged in such manner that the cutters of the first two facing heads will, in conjunction with a stationary cutter, cut and form the first two prods of a barb, and the cutters of the opposite heads, when brought to face each other, will, in conjunction with a stationary bender and supporter, sever the barb loose from the barb-strip and form its two last prods in the manner substantially as set forth.

5. In a wire-barbing machine, the oscillating or rocking shafts S S', each respectively having a pair of cutter-heads arranged to support their respective cutters, in combination with a stationary cutter, R, and strand-wire guide J, and the mechanism, substantially as shown and described, for oscillating said cutter-heads and their barb-cutters, whereby the oppositely-located cutter-heads of each shaft are caused to alternately face each other, to automatically cut and form the several prods of a flat-metal barb and seat it between a pair of strand-wires in the manner substantially as set forth.

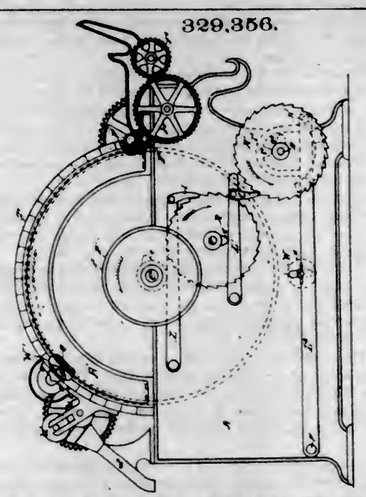
6. In a wire-barbing machine, the combination of the stationary cutter R, oscillating cutter-heads a a' a^2 a^3, cutters P P' P'' P² P³, and strand-wire guide J, for cutting, forming, and setting a four-pointed flat metal barb between a pair of strand-wires, substantially as set forth.

7. In the wire-barbing machine shown and described, the combination of the oscillating cutter-heads a' a^2, cutters P², P³, and R, and guide J, having the guide-channels r and r', arranged to operate as and for the purpose set forth

329,356. **CARDING-ENGINE.** John A. Bradshaw, Lowell, Mass., assignor to Daniel Walker, trustee, same place. Filed Dec. 18, 1884. (No model.)

Brief.—The stripper, supported upon levers pivoted to the frame is automatically raised and brought into contact with the main cylinder at regular intervals by means of a series of cams, pawls, and ratchet-wheels driven from the main shaft. The stripper is driven through a clutch, which is automatically closed just before the stripper is brought into contact, whereby it attains its full speed before contact, thus avoiding injury to the teeth of the main cylinder.

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Claim.—1. The combination, with the frame, carding-cylinder, and main shaft of a carding-engine, and means of rotating said cylinder-shaft, of a cam secured to said shaft, a pawl-lever pivoted to said frame, adapted to be struck by said cam, and provided with a pawl, a ratchet pivoted to said frame and adapted to be engaged by said pawl and to be rotated thereby, the hub of said ratchet being provided with a cam which rotates therewith, another pawl-lever secured to said frame and adapted to be struck by said last-named cam and provided with a pawl, another ratchet pivoted to said frame and adapted to be engaged by said last-named pawl and to be rotated thereby, a shaft to which said last-named ratchet is secured, said shaft extending through said frame from side to side thereof, and being provided with cams, stripper-levers pivoted on opposite sides of said frame and provided near their free ends with arches having downward projections adapted to be struck by the cams last named, and a stripper-cylinder arranged beneath and parallel with said carding-cylinder and having its journal-bearings on the levers last named, whereby said stripper-cylinder is automatically brought at intervals into contact with said carding-cylinder, as and for the purpose specified.

2. In combination with the stripper-levers and stripper-cylinder, and means, substantially as described, of raising said levers, one of the said levers being provided with a bracket, the clutch-disk secured to the shaft of said stripper-cylinder and provided with a stud parallel to said shaft, the clutch-pulley provided with a stud at an equal distance from said shaft with the stud in said disk, said clutch-pulley turning loosely and sliding freely on said shaft and having a hub provided with an annular groove, a lever pivoted to said bracket and having at one end a fork to engage with the groove in said hub, a rod pivoted to the end of said last-named lever and sliding in said shipping-levers, a ratchet provided with a cam adapted to strike the free end of said rod and to move said rod longitudinally, and means, substantially as described, for rotating said ratchet, as and for the purpose specified.

329,357. **TACK-PULLING MECHANISM FOR BOOT AND SHOE SEWING MACHINES.** William S. Brainard, Brockton, Mass. Filed Oct. 6, 1884. (No model.)



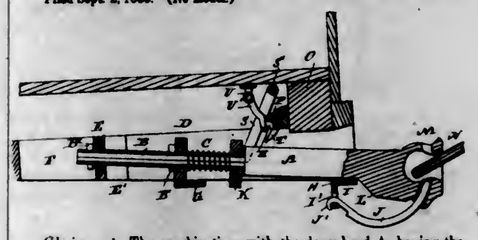
Claim.—1. A boot and shoe sewing machine provided with a stationary welt-guide, and a tack-puller borne by said guide on its lower face, and a reciprocating rod deriving motion for operating said tack-puller from the main shaft of the machine, substantially as described.

2. The combination, with a boot or shoe sewing machine, of a stationary welt-guide, a tack-puller attached to the lower side of said guide by a slot and screws, and a rod attached to said tack-puller and reciprocated from the main shaft of the sewing-machine, substantially as described.

3. The reciprocating tack-puller, having a lip or claw and placed close to the under side of the welt-guide, combined with the welt-guide, support B', and sewing mechanism, and with means, substantially as described, to move the tack-puller, for the purposes set forth.

4. In a sewing-machine, a welt-guide combined with a tack-puller provided with a beveled lip or claw and adapted to slide under and close to the welt-guide, to operate substantially as described.

329,358. **CAR-COUPLING.** Thomas E. Buckman, Jacksonville, Fla. Filed Sept. 2, 1885. (No model.)



Claim.—1. The combination, with the draw-head A, having the bevel L on its bottom, of the cross-piece H, and the curved coupling-pin J on the cross-piece, substantially as herein shown and described.

2. The combination, with the draw-head A, having the bevel L on its bottom, of the cross-piece H below the draw-head, the flange I, having the aperture I', and the curved coupling-pin J, substantially as herein shown and described.

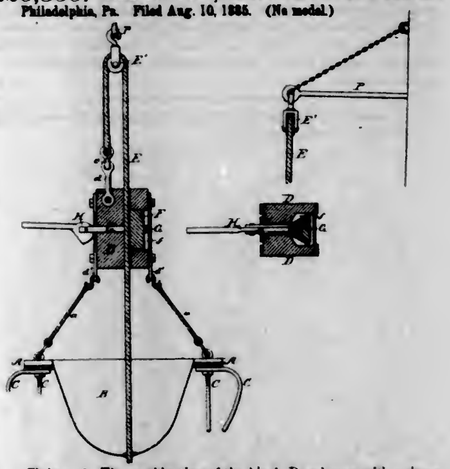
3. The combination, with the draw-head A, of the frame S on the same, and the rock-shaft P, having a groove, R, substantially as herein shown and described.

4. The combination, with the draw-head A, of the frame S, the rock-shaft P, having the groove R, and the cam-arm T on the rock-shaft, substantially as herein shown and described.

5. The combination, with the draw-head A, of the frame S on the same, the rock-shaft P, the shaft U, having the cam-arm U', and a spring on the said shaft U, substantially as herein shown and described.

6. The combination, with the draw-head A, of the frame S on the same, the rock-shaft P, having a groove, R, the cam T on the shaft P, the shaft U, the cam U', and the spring V, substantially as herein shown and described.

329,359. **FIRE-ESCAPE.** John Brückner and John J. Brückner, Philadelphia, Pa. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination of the block D and rope with a clamp, F, stirrup G, and cam H, substantially as set forth.

2. The combination of the rope, block, and clamp with an open rectangular frame suspended from the block, and having a round-bottomed bag, B, secured to the frame.

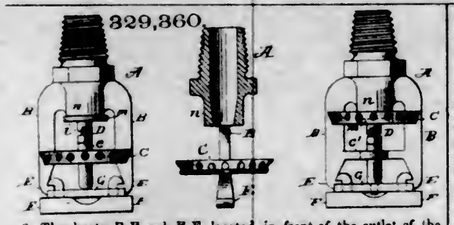
3. The combination of the rope, block, and clamp with the folding frame A, suspended from the block, substantially as described.

4. The combination of the rope, block, and clamp with a frame, A, suspended from the block and carrying fingers C, substantially as and for the purpose described.

329,360. **AUTOMATIC FIRE-EXTINGUISHER.** James Buel, Woburn, Mass. Filed Apr. 20, 1885. (No model.)

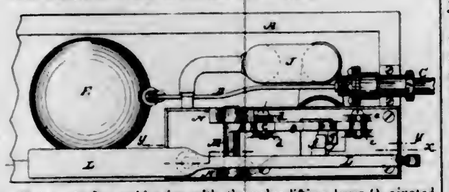
Claim.—1. In an automatic fire-extinguisher, an unobstructed outlet, a spreader rigidly secured in front of said outlet, and a valve held to normally close said outlet by a cross-bar resting upon a separable yoke and interlocking with said yoke, and with the supporting-hooks E E, substantially as described.

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2. The hooks E E and F F, located in front of the outlet of the sprinkler and held locked together by the cross-bar G until acted upon by heat.

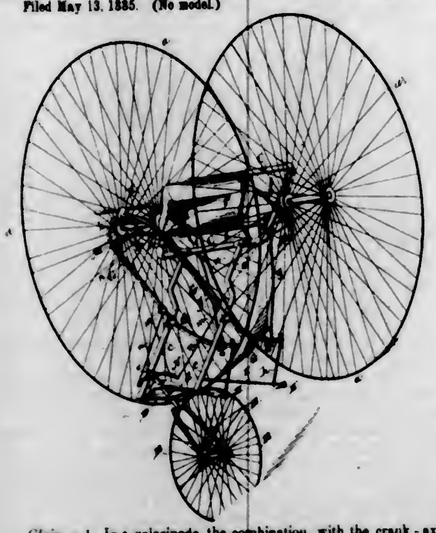
329,361. SUPPLY-TANK FOR WATER-CLOSETS. William Buntin, Jr., Boston, Mass., assignor to the Meyer-Sniffen Company, (Limited,) New York, N. Y. Filed June 9, 1885. (No model.)



Claim.—1. In combination with the valve-lifting lever O, pivoted at one end to a fixed fulcrum, and a rocking lever, *c*, similarly pivoted, an arm or lug, *b*, on the axis of the main lever L, arranged and operating to throw up the longer arm of the lever *c* (to elevate the free end of the valve-lever) at each downward movement of the main lever L, as described, and means, substantially such as described, for effecting the lifting of the free end of said valve-lever at each upward movement of the longer arm of the main lever L, all substantially in the manner and for the purposes set forth.

2. In combination with the valve-lifting lever O, the main lever L, and suitable means for lifting the free end of the said valve-lever during each descent and each ascent of the longer arm of the main lever L, an air-pipe, K, communicating at one end with the siphon and alternately opened and closed at its other end by a suitable packing or valvular device, which is removed from and reseated on the exposed end of said air-pipe by the said lever L, all substantially in the manner and for the purposes set forth.

329,362. VELOCIPEDE. Herman L. Chapman, Marcellus, Mich. Filed May 13, 1885. (No model.)



Claim.—1. In a velocipede, the combination, with the crank-axle and supporting-frame and a stationary seat, of a vibrating propelling-lever pivoted to the frame and a tilting steering-handle connected with the lever, substantially as set forth.

2. The combination, with the crank-axle and the supporting-frame, and the seat rigidly secured to the supporting-frame, of the propelling-lever pivotally secured to the supporting-frame, treadles attached to the lower end of the lever, a handle-bar attached to the upper end of the lever, and rods connecting the crank-axle and lower portion of the lever, substantially as set forth.

3. The combination, with the crank-axle, the supporting-frame, a seat rigidly secured thereto, and a guide-wheel, of the propelling-lever pivotally secured to the supporting-frame and having its lower portion connected with the crank-axle by pitmen, a laterally-tilting handle-bar attached to the upper end of the lever, and flexible cords or chains connecting the handle bar with a cross-head on the guide-wheel fork, for the purpose substantially as set forth.

4. In a velocipede, the combination, with the crank-axle, supporting-frame, and vibrating hand and foot lever pivoted to the frame, of pitmen connecting the crank-axle and lever, said pitmen being secured to the lever in vertical adjustment, substantially as set forth.

5. In a velocipede, the combination, with the crank-axle, supporting-frame, and vibrating hand and foot lever hinged to the frame, of pitmen connecting the crank-axle and lever, and swinging treadle-rods, both treadle-rods and pitmen being secured to the lever in vertical adjustment, substantially as set forth.

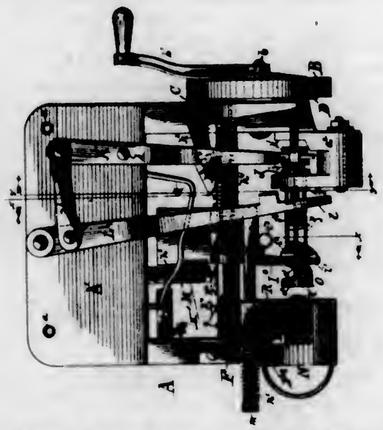
6. The combination, with the crank-axle, the supporting-frame, and the guide-wheel, of the vibrating propelling-lever, the handle-bar secured in tilting adjustment to the lever, and flexible cords, chains, or their equivalent, leading from the handle-bar around pulleys, and thence to the ends of a cross-head on the guide-wheel fork, substantially as set forth.

7. The combination, with the two-branch propelling-lever adapted to vibrate forwardly and backwardly, the laterally-tilting handle-bar secured to its upper end, and the guide-wheel, of connections extending from the arm on the handle-bar laterally to the branches of the propelling-lever, and thence to the cross-head on the guide-wheel fork, and means for changing the direction of the connections, whereby the tension of the connections remains unchanged during the vibration of the lever, substantially as set forth.

8. The combination, with the propelling-lever and its hand attachment at the upper end, of treadles attached to its lower end and suspended in a free swinging motion from the front portion of the supporting-frame, substantially as set forth.

9. The propelling and guiding mechanism herein shown, consisting, essentially, of the two-branch propelling-lever, the treadles attached to its lower end, the pitmen connecting it with the crank-axle, the tilting handle-bar secured to the upper end of the lever, and the connections leading right and left from the arm on the handle-bar to the cross-head on the fork of the guide-wheel, substantially as set forth.

329,363. APPLE PARING AND CORING MACHINE. Francis Clingman, Albany, Oreg. Filed July 10, 1885. (No model.)



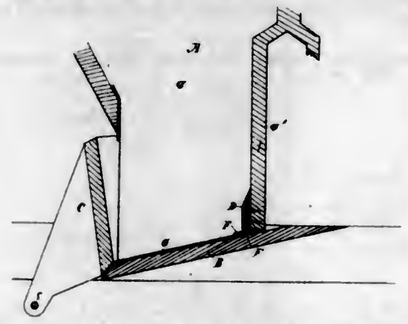
Claim.—1. In an apple-parer, the combination of the main frame A, provided with the bed-plate A' and having attached the spring h^4, and the main shaft C', provided with the worm *c*, with the carriage G, arranged to travel on the transverse bars forming part of the main frame, and having attached the pivoted arm H, provided with the rod A, actuated by the worm *c*, and paring, coring, and slicing devices, substantially as described.

2. The combination, with the rotating shaft D', provided with the collar j^2, and having the cylindrical block j^3 on its inner end, and the loose collar J, provided with the flanges *j*, of the lever K, pivoted on the bed-plate A', the clutch-piece k', and the carriage G, moving laterally on the main frame and provided with a lug, g^4, arranged to strike against the lever and move it outward, substantially as specified.

3. The combination, with the rotating shaft D', arranged to hold the fruit, the laterally-moving carriage G, and the lever K, moved laterally by the carriage, of the link-bar *l'* and the lever L, having the downwardly-extending arms *l l*, adapted to press the pared and sliced fruit off the shaft D when actuated by the movement of the lever K, all substantially as specified.

4. The combination of the rotating shaft D', the carriage G, carrying the paring devices and moving laterally on the main frame, the levers K and L, and link-bar *l'*, with the bar M, secured to the carriage and carrying the coring and slicing devices, the fruit-receiver N, arranged to slide on the bar M, and the coiled spring *n'*, adapted to move the receiver N in the opposite direction to that in which it is moved by the lever L, all substantially as specified.

329,364. MILL-STOCK FEEDER. George Cottrell, San Francisco, Cal. Filed July 27, 1885. (No model.)



Claim.—1. In a mill-stock feeder, the combination of the hopper provided with a feed-aperture, the feed-board, and the vibrating fingers G above the feed-board, lying parallel therewith and extending to and projecting within the feed-aperture, substantially as herein described.

2. In a mill-stock feeder, the combination of a fixed bar, a moving bar upon one edge and parallel with the fixed bar, and the agitator-fingers pivoted in the two bars, whereby said fingers are vibrated on their bases, substantially as herein described.

3. In a mill-stock feeder, a hopper, a feed-board, and a feed-gate, in combination with the vibrating fingers G, lying over and parallel with the feed-board and projecting within the feed-aperture, and the parallel bars E F, in which the fingers are pivoted, one of said bars being fixed and the other having a lateral longitudinal motion, whereby the fingers are vibrated over the board, substantially as herein described.

4. In a mill-stock feeder, the hopper, the shaker B, having a movement parallel with its delivery-edge, and the feed-gate C, in combination with the vibrating agitator-fingers G over the shaker and parallel therewith, substantially as herein described.

5. In a mill-stock feeder, the hopper A, the laterally-moving shaker B, and the feed-gate C, in combination with the agitator-fingers G, lying over and parallel with the feed-board, and the bars E and F, in which the fingers are pivoted, the bar E being secured to the hopper and the bar F to the shaker, whereby the fingers are vibrated, substantially as herein described.

6. In a mill-stock feeder, the combination, with the hopper, of the agitating mechanism in the throat of the hopper, comprising the bars E F, having sockets *e*, the short shafts *f*, pivoted in the said sockets, and the fingers G, passing through the sockets and shafts of the two bars, substantially as herein described.

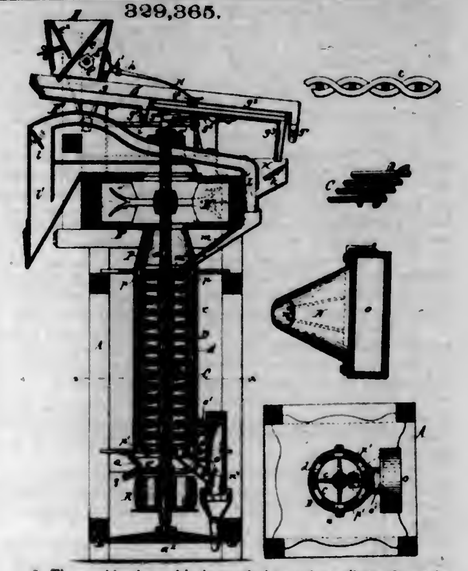
7. In a mill-stock feeder, the combination, with a hopper, of the agitating mechanism in the throat of the hopper, comprising the bars E F, fitted with short shafts *f*, made of leather, and the fingers G in said shafts, substantially as herein described.

8. In a mill-stock feeder, the agitating mechanism in the throat of the hopper, comprising the bars E F, having sockets *e* and short shafts *f*, pivoted in said sockets, and the fingers G in the shafts, in combination with a hopper to which the material is fed, and to which one of the bars is fixed, a reciprocating shaker to which the other bar is fixed, and a gate by which the material is allowed to discharge, substantially as herein described.

329,365. GRAIN-SCOURER. Giles S. Cranson, Silver Creek, N. Y. Filed Apr. 8, 1885. (No model.)

Claim.—1. In a grain-scourer, the combination of a scouring-cylinder constructed of wire-cloth which is woven of edged or angular wire, and rotating arms or flights arranged at different angles to the movement of the grain in different portions of the scouring-cylinder, the flights near the feed end facilitating the movement of the grain through the scouring-cylinder, and the flights near the discharge end retarding the same, substantially as set forth.

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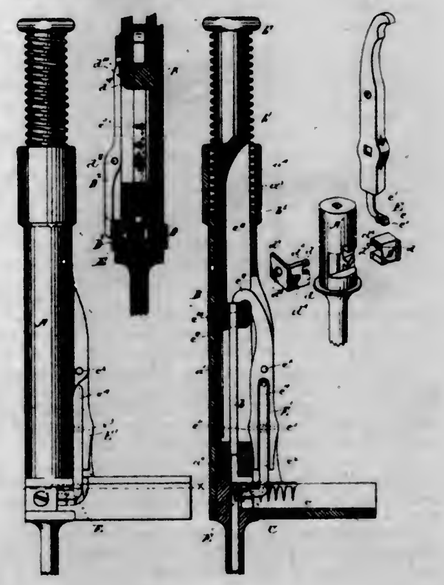


2. The combination, with the vertical scouring-cylinder C and inclosing-case D, having an intervening space, *d*, the top and bottom plates, *m' n*, provided with openings *p p'*, and the fan B, of the wind-trunk *o*, connected with the space *d*, and the spout N, extending from the bottom of the scouring-case to the wind-trunk, substantially as set forth.

3. The combination, with the vertical scouring-cylinder C and inclosing-case D, having an intervening space, *d*, the top and bottom plates, *m' n*, provided with openings *p p'*, and the fan B, of the receptacle Q, suspended below the bottom plate, *n*, and a revolving stirrer, *q'*, whereby the screenings are discharged from the receptacle Q, substantially as set forth.

4. The combination, with the vertical scouring-cylinder C and inclosing-case D, having an intervening space, *d*, and the wind-trunk *o*, connected with said space, of the flaring discharge-spout N, provided with downwardly-diverging strips *n'*, substantially as set forth.

329,366. TACKING-MACHINE. Jos. E. Crisp, Boston, Mass. Filed Aug. 12, 1885. (No model.)



Claim.—1. In a tacking-machine for driving tacks from tack-strips, the combination, with the reciprocating driver, of the stationary block D, having the abutment *d*, and the movable block D′, having the teeth d^6 d^7, all substantially as described.

2. The combination, in a machine for driving tacks from tack-strips, of the reciprocating driver B, laterally-movable clamping-jaw D′, having the teeth d^6 d^7, and the reciprocating feed-pawl E, all substantially as described.

3. The combination, in a machine for driving tacks from tack-strips, of the reciprocating driver B, a stationary abutment against which the tack-strip is adapted to be positively operated and held, a movable jaw for locking the tack-strip against said abutment, and a feed-pawl having a shank-receiving notch and provided with reciprocating and lateral movements, as set forth, all substantially as described.

4. The combination of the reciprocating plunger *b*, the nose of the machine formed with the passage a^3, and the tack-strip holder provided with the feedway C, and the block D′, the inner edge of which acts as a cutter in connection with the plunger, all substantially as described.

5. The combination of the nose of the machine formed with the passage a^3, and the tack-strip holder provided with the feedway C, and the reciprocating driver B, supported above the entrance of the feedway to the passage a^3, as described, all substantially as set forth.

6. The combination of the lever E′, pivoted to the stock, as described, and shaped as specified, and carrying the feed-pawl E, with the plunger B, having the recess c^9 and the portion or section c^{10}, all substantially as described.

7. The combination of the lever E′, and the pawl E, pivoted to the lever E′ to have a lateral movement in relation to the line of its movement with the plunger, all substantially as and for the purposes described.

8. The combination of the block D′, its operating-lever D^2, and the plunger B, shaped to move the said lever D^2 and lock it, all substantially as described.

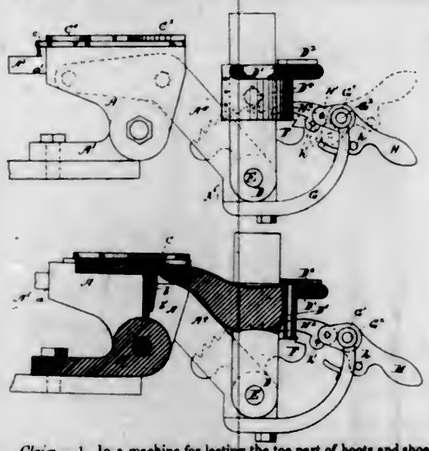
9. The combination of the lever E′, the pawl E, pivoted to the lever, as described, and the spring c^8 and the plunger, all substantially as described.

10. The combination of the block D, the lever D^2, for moving it inward and holding it locked, and the spring d^{11}, for moving it in a reverse direction with the plunger, all substantially as and for the purposes described.

11. In a tack-driving machine, a pawl for feeding tack-strips, having a notch, *e*, for the reception of or for holding the shanks of the tacks, all substantially as described.

329,367. MACHINE FOR LASTING BOOTS OR SHOES.

Jos. E. Crisp, Boston, and Geo. W. Copeland, Malden, Mass. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a machine for lasting the toe part of boots and shoes, the combination, with toe-lasting mechanism, of the heel pressing and holding device, swinging on the arc of a circle, for the purpose of positioning and locking a last with the upper thereon with reference to the toe-lasting mechanism, substantially as shown and described.

2. In a machine for lasting the toe part of boots and shoes, the combination of the swinging lever D, ratchet F, spring G, handle H, pawl H^3, and the stop-pins *h* and *h′*, substantially as and for the purposes set forth.

3. In a machine for lasting the toe part of boots and shoes, the combination of the lever D, the sliding piece D′, and gage D^4, substantially as shown, and for the purposes set forth.

4. In a machine for lasting the toe part of boots and shoes, the combination of the lever or arm D, the sliding piece D′, gage D^4, and sling D^3, operating as described, and for the purposes set forth.

5. In a machine for lasting the toe portion of boots and shoes, a band, *b*, and mechanism, substantially as described, for pressing it against the median line of the toe and drawing it around the sides thereof, in the manner described, and for the purposes set forth.

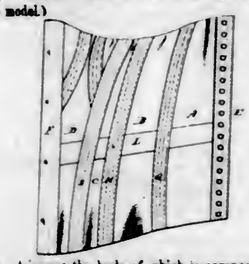
6. In a machine for lasting the toe portions of boots and shoes, the combination of the band *b*, block b^2, connections b^3, slide-bars A^3, springs a^2, rods a^3, and pins a^4, for the purposes set forth.

7. In a machine for lasting the toe portions of boots and shoes, the combination of the slide-bars A^3, the links *c*, bolt-heads *c′*, rolls c^2, the base having half-round cavities $A^\times$ and grooves C^9, and handles C^4, provided with curves C^7, for the purposes set forth.

8. In a machine for lasting the toe portions of boots and shoes, the combination of the handle C^4, links C^5 C^6, lasting-plates C′, toe-down-hold C, and plate C^8, all operating as described, substantially as set forth.

329,368. CORSET.

John S. Crotty, Chicago, Ill. Filed Apr. 20, 1885. (No model.)

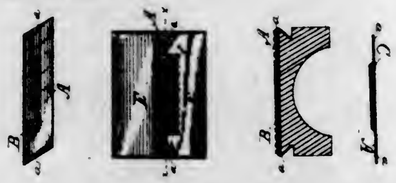


Claim.—1. A corset the body of which is composed of several sections cut from knit fabric, the longitudinal line of the knitting being transverse of the corset, combined with an eyelet-strip at the rear and a busk-strip at the front, with vertical overlays, the said eyelet and busk strips and the overlays made from woven fabric stitched to the knit fabric, the said overlays forming pockets to receive bones or stays, substantially as described, and whereby transverse non-elasticity is secured and vertical elasticity is permitted.

2. A corset the body of which is composed of several sections of knit fabric, combined with an eyelet-strip at the rear edge and a busk-strip at the front edge, with a transverse overlay, L, extending from the eyelet-strip at the rear to the busk-strip at the front, and vertical overlays stitched to the knit body of the corset, the said eyelet-strip, busk-strip, and overlays made from woven fabric, substantially as described, and whereby transverse non-elasticity is secured and vertical elasticity is permitted.

329,369. PRINTER'S DASH.

John R. Cummings, Chicago, Ill., assignor to the American Press Association, same place. Filed Apr. 22, 1885. (No model.)



Claim.—The combination, with a plane-faced base-block and removable electrotype-shells, of a dash whose face and beard are raised on a strip of thin flexible metal by a depression in the under side of the strip, the plane portions of the strip on either side of the beard and face constituting the holding-flanges, which extend under the adjacent edges of the shells, by which the dash is secured in place, substantially as described.

329,370. PROCESS OF MAKING PAPER-PULP FROM WOODEN BLOCKS.

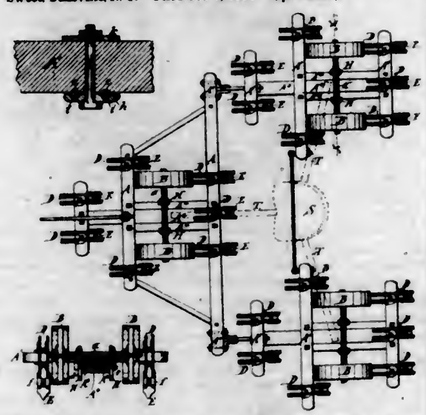
George F. Cushman, Barnet, Vt., assignor to himself, Francis A. Cushman, Lebanon, N. H., and Asa C. Russell and George S. Cushing, Lowell, Mass. Filed June 29, 1885. (Specimens.)

Claim.—1. The herein-described process of treating wooden blocks for the production of pulp, consisting in first cooking the blocks in a hot solution of lime, soda-ash, or equivalent chemical substances, to promote lateral separation and toughening of the fibers, and afterward removing the blocks from such solution and subjecting them to the action of a grinding-roller, substantially as and for the purpose set forth.

2. The herein-described process of producing paper-pulp from wooden blocks, consisting in sawing the blocks transversely to short lengths, chemically treating them in a hot liquid solution such as described, for the purpose of loosening and toughening the fibers, and subsequently disintegrating the fibers by grinding the blocks on a revolving stone, substantially as set forth.

329,371. ROLLER SPRING-TOOTH HARROW AND CULTIVATOR.

Robert W. Davis and Arthur W. Davis, Elmira, assignors to Sidney Sweet, Dansville, N. Y. Filed Oct. 7, 1884. (No model.)



Claim.—1. A hammer composed of separate and distinct frames detachably connected, and each provided with a set of teeth and supported independently of the other by rollers connected with said frame, substantially as set forth and shown.

2. A roller-harrow composed of three separate and distinct frames, each equipped with a set of spring-teeth, one of said frames being arranged in advance of the others and provided at opposite sides with lateral extensions, the two rear frames being detachably connected to said extensions, carrying-rollers connected with the respective frames, and the driver's seat supported on braces resting with their feet respectively on the three frames, substantially as described.

3. The combination of the harrow-frame composed of cross-bars and longitudinal bars attached to the central portion of said cross-bars, an axle secured across the longitudinal bars, carrying-rollers on said axle, teeth attached to the forward cross-bars at points inside and outside of the line of travel of the rollers, a tooth attached to the rear cross-bar central between the tracks of the rollers, and teeth attached to said cross-bar in range with the track of the rollers, substantially as described and shown.

4. The harrow composed of a long cross-bar, a shorter cross-bar at the rear, a still shorter cross-bar in front, longitudinal beams connected to the central portions of the cross-bars, two teeth attached to the front cross-bar respectively at opposite sides of the center thereof, a tooth attached to the center of the rear cross-bar, and two teeth on the same bar arranged outside of the teeth of the forward cross-bar, and two teeth on the intermediate cross-bar arranged outside of the outer teeth of the rear cross-bar, substantially as described and shown.

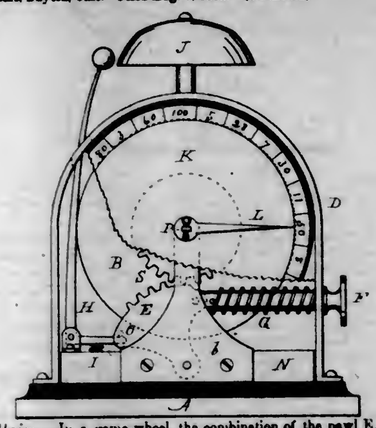
5. The combination of the harrow-frame composed of three separate and distinct frames, each equipped with a set of spring-teeth, one of said frames being arranged in advance of the others and provided at opposite sides with lateral extensions, the two rear frames being detachably connected to said extensions, carrying-rollers connected with the respective frames, and the driver's seat supported on braces resting with their feet respectively on the three frames, and an axle extended across the longitudinal bars between the central and rear cross-bars, and rollers on said axle in front of and in range with the outer teeth of the rear cross-bar, substantially as described.

6. The forward harrow-frame, composed of a long rear cross-bar, a shorter cross-bar in front of it, a still shorter cross-bar in front of the latter, longitudinal bars connected to the central portion of the cross-bars, teeth on the ends of each of the two front cross-bars one tooth in the center of the rear cross-bar, and two teeth on the latter at opposite sides of the center and in line with the center of the space between the tracks of the forward teeth, in combination with harrows at the rear of and detachably hung on the ends of the rear cross-bar of the forward harrow, substantially as described and shown.

7. A harrow composed of separate and distinct frames detachably connected, and each provided with a set of teeth and supported independently of the others by rollers connected with the frames, and a driver's seat supported by braces resting with their feet centrally on the respective frames, substantially as set forth.

329,372. GAME-WHEEL.

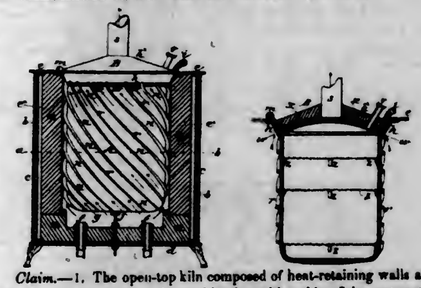
William Dennison, National Military Home, Dayton, Ohio. Filed Aug. 7, 1885. (No model.)



Claim.—In a game-wheel, the combination of the pawl E, with teeth and pin O, the wheel S, pointer L, and dial, the pull F, with spiral spring, lever H, spring I, and bell, substantially as set forth.

329,373. KILN FOR FIRING DECORATED CHINA.

Emanuel Dietweiler, Milwaukee, Wis. Filed June 30, 1885. (No model.)



Claim.—1. The open-top kiln composed of heat-retaining walls and having bottom gas-burners, in combination with a china-firing pot seated within the heating-chamber of said kiln, substantially as described, for the purpose specified.

2. The combination, with a kiln having its heating-chamber provided with gas-burners, of a china-firing pot having wall flue-forming ribs and a lid having a draft-passage, substantially as described, for the purpose specified.

3. The combination of a kiln having walls formed of refractory substance, and an air-space and gas-burners entering the bottom of said kiln, with a china-firing pot having wall flue-forming ribs and a double-walled lid forming a draft-passage communicating with flue-forming ribs, covered with fire-clay, substantially as herein set forth.

4. The removable china-firing pot having wall-ribs, and a hinged lid having a draft-passage leading to a central exit, covered with fire-clay, in combination with a kiln having gas-burners, within the heating-chamber whereof the firing-pot is suspended from its top, substantially as herein set forth.

5. The baking pot or oven having a hinged-top heating-flue, combined with a bottom combustion-chamber and a heating-flue surrounding said pot communicating with said hinged-top flue, substantially as described.

6. The pot or baking-oven having a double-walled cover forming a top heating-flue, in combination with heating-flues surrounding said oven and a bottom combustion-chamber communicating with the flue of said cover, substantially as described, for the purpose specified.

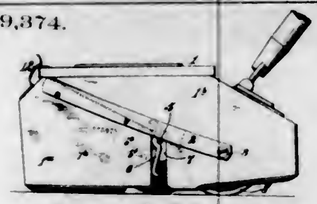
7. The pot or baking-oven having outside surface-wall flue-forming ribs, in combination with a bottom combustion-chamber, and a removable double-walled cover forming a top heating-flue having heat-retarding ribs, and a central exit-flue, substantially as described.

329,374. CARPET-SWEEPER.

Walter J. Drew, Grand Rapids Mich., assignor to the Bissell Carpet Sweeper Company, same place. Filed Feb. 12, 1885. (Model.)

Claim.—1. A carpet-sweeper having its casing divided into two unequal parts or sections, one comprising the entire top and rear portion and carrying the driving-wheels, and the other carrying the brush, the

329,374.



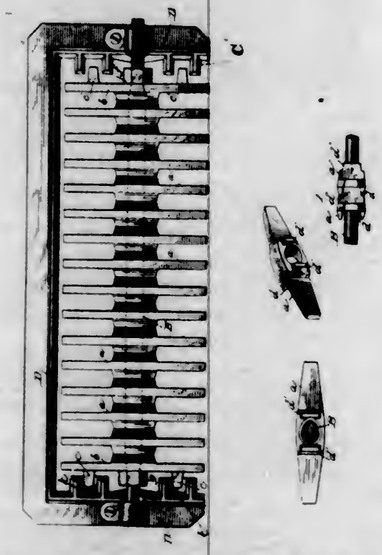
latter section being pivotally connected to the former at a point coincident with or below the axis of the driving-wheels, and each section being provided with a dust-pan, substantially as described.

2. A carpet-sweeper having its casing divided longitudinally by a vertical cut passing from the bottom above the axis of the brush-shaft, and thence toward the front, dividing the casing into two unequal parts or sections, each provided with a pan, one comprising the entire top and rear portion and carrying the driving-wheels and the handle, and the other carrying the brush-shaft, the latter section being pivotally connected to the former at a point coincident with or below the axis of the drive-rolls, substantially as described.

3. In a carpet-sweeper, the combination, with a casing divided into the sections 1^a and 1^b, of a brush carried by the former section, drive-wheels carried by the latter section, straps or bars pivotally connecting the section 1^a to the section 1^b at a point coincident with or below the axis of said driving-wheels, and pans carried by both sections, substantially as described.

4. In a carpet-sweeper, the combination, with a casing divided into two unequal sections, 1^a and 1^b, the former carrying the brush and the latter comprising the entire top of the casing and carrying the driving-wheels, of straps or bars pivotally connecting the section 1^a to the section 1^b at a point coincident with or below the axis of the drive-wheels and a spring attached to each section above said point, substantially as described.

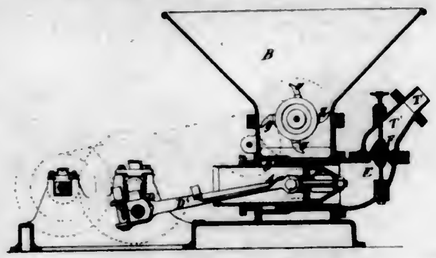
329,375. GRATE. James Duffy, Quincy, Ill. Filed Mar. 3, 1885. (No model.)



Claim.—1. In combination with a frame having pockets at one end, a reversible grate movable endwise in its bearings, composed of sections alike on both sides, a central pivoted shaft supporting said sections, which turn therewith, and studs on the end section of the grate, said studs engaging with the pockets on the frame, whereby the grate is prevented from tilting, substantially as described.

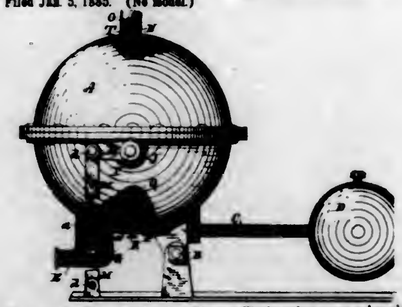
2. A grate composed of sections alike on both side, having enlarged central portions, said central portions having horizontal projections *d* upon one side and vertical projections *d'* upon the other, whereby said sections are caused to interlock with each other, and a central opening through each for the tie bar or rod pivoted on the grate-frame, combined with said bar or rod, substantially as described.

329,376. APPARATUS FOR KNEADING AND ELEVATING DOUGH-LIKE, &c., MATTER. Adrien J. A. Dubouleix, Paris, France, assignor to Compagnie de Fives Lille, same place. Filed July 25, 1885. (No model.) Patented in France Oct. 31, 1882, No. 151,353; in Spain Apr. 20, 1883, No. 3,845; in Belgium Jan. 28, 1884, No. 63,965; in England Jan. 29, 1884, No. 2,344, and in Austria-Hungary Feb. 2, 1884, No. 5,190 and No. 26,177.



Claim.—The combination of the reservoir B B', the rotary kneading or mixing cylinder G *g*, provided between the upper and lower parts thereof, the compression-cylinder A in the lower part of said reservoir, communicating therewith by openings *a b c d* in the sides thereof, the reciprocating compressing-piston within said cylinder, and the compression-chamber E, throat T', valve F, and delivery-tube T at the delivery end of said cylinder, all substantially as herein described.

329,377. AIR-COMPRESSOR. James B. Erwin, Milwaukee, Wis. Filed Jan. 5, 1885. (No model.)



Claim.—1. The combination of an oscillating air-compression chamber mounted upon a pivotal support and counterbalanced by a weight, a valve-shaft extending through the wall of the chamber, provided upon its inner end with valve-actuating arms, valve-rods, and inlet and outlet valves, and upon its protruding end with an actuating-arm connecting said shaft by a bar or rod at a fixed point to the base or supporting bracket, substantially as set forth.

2. The combination, in an air-compressor, of an oscillating chamber, A, formed in two parts, and having lugs for the reception of the pivotal support, bracket V, having upward-extending pivotal lugs, pivotal support B; lever C, rigidly affixed at one end to said chamber, above said pivotal support, and adjustable weight D, said chamber being provided with inlet and outlet water and air valves, and adapted to oscillate on said pivotal support as it is filled and emptied, as set forth.

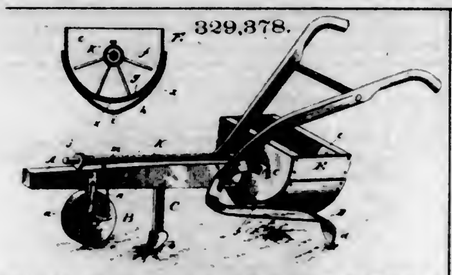
3. The combination, with the compression-chamber A, mounted upon a pivotal support and counterbalanced by a weight and lever, of the shaft I, arms *b b*, valve-rods *a a*, valves G and H, operating in reversely-arranged valve-seat docts E and F, lever L, affixed to the protruding end of said rod I, bracket V, and bar M, connected at one end to said arm and at the other to said bracket, whereby as said compression-chamber and counterpoise are oscillated said valve will be alternately opened and closed, substantially as and for the purpose set forth.

4. The combination, in an air-compressor, with a single water-receiver provided with inlet and outlet water-pipes and counterbalanced upon a pivotal support by a weight, of inlet air-tube P, having self-acting valve Q, adapted to be opened by external air-pressure and closed by internal air and water pressure, and outlet air-tube N, having self-closing valve O, adapted to be opened by internal air-pressure and closed by gravity and external air-pressure, substantially as set forth.

329,378. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. Jos. A. Eddy, Crawford, and Edward G. Roane, Athens, Ga. Filed Aug. 21, 1884. (No model.)

Claim.—1. The combination, in a seed-planter or fertilizer-distributer, of a beam supported at its forward end by a wheel and at its opposite end by covering-blades, a mixing-hopper secured to the upper ends

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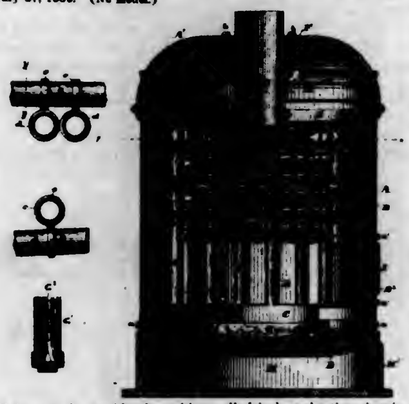


of said blades, and a stirrer arranged within said hopper and adapted to be rocked by the movements of the wheel, substantially as set forth.

2. The combination, with the beam and supporting-wheel at its forward end, of covering-blades secured to and supporting the rear end of the beam and terminating at their upper ends in ears *c*, a mixing-hopper secured to said ears, a rock-shaft arranged parallel with and journaled upon said beam, a stirrer supported by said shaft within the hopper, and connections between said shaft and supporting-wheel whereby the stirrer is rocked by the movements of the wheel, substantially as set forth.

3. The combination, with the beam, of the supporting-wheel, plow *b*, covering-blades, shaped as shown, mixing-hopper supported by the upper ends of said blades in rear of the beam, said hopper being provided with a double bottom, in each wall of which is a feed-opening, the one running at right angles to the other, a regulating-slide arranged between the walls of said bottom, and means, substantially as shown, for stirring the contents of the hopper, as set forth.

329,379. STEAM-BOILER. William Esty, Laconia, N. H. Filed July 27, 1885. (No model.)



Claim.—1. In combination with a cylindrical combustion-chambe. of a steam-boiler, a series of vertical tubes and one or more series of horizontal tubes, all extending across or through said combustion-chamber and communicating at each end with the water-chamber, substantially as described.

2. In combination with a cylindrical combustion-chamber of a steam-boiler, one or more series of horizontal tubes extending across said chambers, each of said series consisting of one straight tube and two or more curved tubes upon each side of said straight tube, all communicating at each end with the water-chamber, substantially as described.

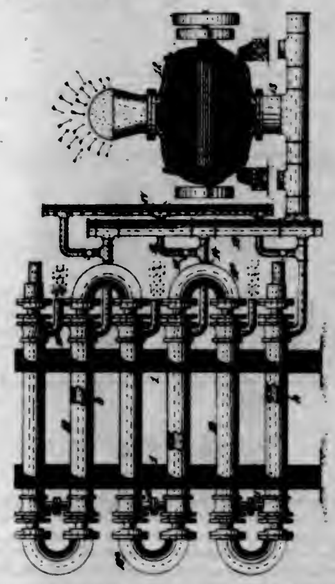
3. In combination with a cylindrical combustion-chamber of a steam-boiler, a series of vertical tubes extending across said chamber from top to bottom, near its inclosing-wall, and one or more series of horizontal tubes extending across said chamber, each of said horizontal series consisting of one straight tube and two or more curved tubes upon each side of said straight tube, all communicating at each end with the water-chambes, substantially as described.

4. In combination with a cylindrical combustion-chamber of a steam-boiler and vertical and horizontal tubes extending across said chamber and communicating with the water-space surrounding said combustion-chamber, the outer shell of the boiler secured to the inner portions of the boiler by screw-bolts, substantially as and for the purposes described.

5. In combination with a cylindrical combustion-chamber of a steam-boiler, one or more series of horizontal tubes extending across said chamber, all the tubes in each series being arranged in the same horizontal plane and opening at each end through the shell of said chamber in directions radial to its axis or center, substantially as shown and described.

6. In an upright steam-boiler provided with a cylindrical combustion-chamber, one or more series of curved tubes extending horizontally, or nearly so, across the combustion-chamber and passing in a radial direction through the cylindrical wall thereof, substantially as described.

329,380. REFRIGERATING APPARATUS. Charles H. Evans, New York, N. Y., assignor to Daniel H. Craig, agent, same place. Filed Dec. 5, 1884. (No model.)



Claim.—1. In the manufacture of ice and other analogous processes, the combination, with receptacles containing the substance under treatment, of means, substantially as described, for driving over or through said receptacles a current of air under pressure and at a temperature above the freezing-point, substantially as described.

2. In the manufacture of ice or other analogous processes, the combination, with receptacles containing the substance under treatment, of means, substantially as described, for driving a current of air under pressure in conjunction with a finely-divided spray of water over or through said receptacles, substantially as described.

3. The refrigerating apparatus described, consisting of a coil of pipe containing the material under treatment, air-pipes surrounding the coil upon three sides and having suitable outlets, and a sprinkling-trough arranged above the coil, substantially as described.

4. A supporting-frame for the condensing, absorbing, and generating coil of an ice or refrigerating machine, said frame having standards composed of separable sections connected together, substantially as described.

5. A standard for the support of the condensing, absorbing, and generating or still coils of an ice or refrigerating machine, composed of a series of separable sections, each containing a half-seat for the pipe, in combination with an integral section or sections containing a series of registering half-seats, substantially as described.

6. The combination, with the condensing-coil of an ice or refrigerating machine, of a standard composed of separable sections 2, united by bolts 4, substantially as described.

7. The combination, with the condensing-coil of an ice or refrigerating machine, of a standard composed of separable sections 2, united to an integral half-standard, 8, substantially as described.

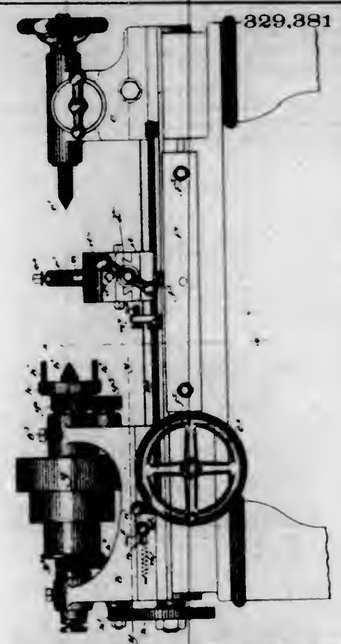
329,381. LATHE. Ribson C. Fay, Hopedale, Mass. Filed Nov. 30, 1883. (No model.)

Claim.—1. In a lathe, the bed provided with ways for the head and tail stocks, and an independent guide for the tool-carriage combined with said stocks and carriage, a templet to oscillate said carriage, and means to move the latter longitudinally, substantially as described.

2. The bed having a cylindrical guide, a^2, combined with the tool-carriage having a foot fitted in said guide to permit oscillation and longitudinal movement of the carriage with respect to the bed, a templet co-operating with the carriage to oscillate it, and a feed-screw, and means to rotate it to move the carriage longitudinally, substantially as described.

3. In a lathe, the head-stock, its spindle, and the pulley *g*, adapted to be connected with and disconnected from the spindle, combined with

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gearing interposed between the head-stock and the pulley, whereby the work or piece to be turned is rotated independently of the spindle, substantially as described.

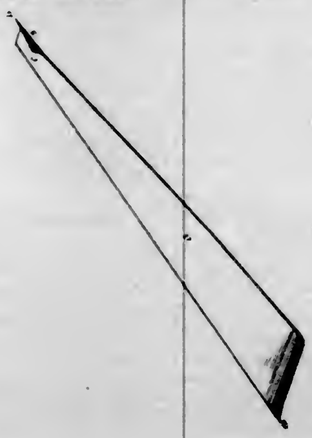
4. The head-stock and spindle having bearings therein, combined with the actuating-pulley capable of rotation upon the spindle, and fastening devices whereby the spindle may be held stationary or may be fastened to and rotated with the actuating-pulley, substantially as described.

5. In a lathe, the combination of the tool-carriage and its tool with the feed mechanism k k' k^2 k^3 and i i' i^3 and tool-controlling device f f' f^3, substantially as described, and for the purpose specified.

6. The bed having a cylindrical guide, a^2, arranged below and clear of the head and tail stocks, and the head and tail stocks on the said bed, combined with the tool-carriage provided with a foot having a longitudinal and pivotal movement in the said guide, the said foot being capable of passing beneath the said head and tail stocks, substantially as and for the purpose described.

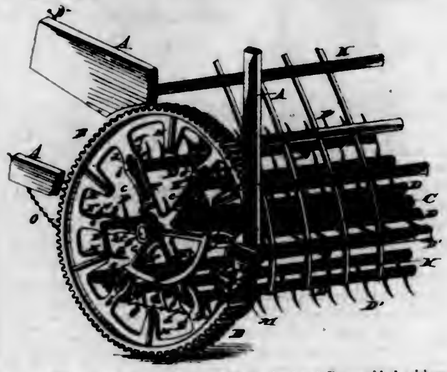
7. The lathe-bed and tool-carriage having a pivotal movement therein, combined with a templet controlling the said movement and the block interposed between the said carriage and templet, the said carriage having an inclined bearing on the said block and having a limited movement with relation thereto, substantially as and for the purpose described.

329,382. DUST-PAN. Nehemiah T. Folsom, Boston, Mass. Filed Sept. 29, 1884. (No model.)



Claim.—A dust-pan having its main body portion composed of the usual thin material and having a protuberance or rib near the front edge thereof, extending across the pan, and a rigid piece filling the space beneath said protuberance extending forward of the body of the pan proper to a thin edge, substantially as set forth.

329,383. HAY-LOADER. James W. Foust, Rock Falls, assignor to Thomas A. Galt and George S. Tracy, Sterling, Ill. Filed Sept. 10, 1884. (No model.)

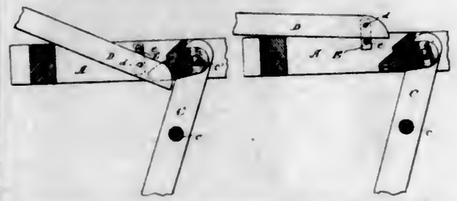


Claim.—1. The combination of the rake-head B, provided with radial slots b, the rake-bar D, seated in such slot, and the spring d, whereby such rake-bar is rendered flexible in the line of such slot, substantially as shown, and for the purpose described.

2. The combination of the wheel B, provided with radial slots b, the rake-bar D, seated in such slots, the arm E, the arm G, spring d, and cam I, substantially as shown, and for the purpose described.

3. The combination of the trip-lever L, spokes F, and bars D, provided with the arms G, substantially as shown, and for the purpose specified.

329,384. COT-BED. Abel H. Frost and Fred L. Bryant, Chicago, Ill., assignors to Ames & Frost, same place. Filed July 5, 1883. (No model.)



Claim.—1. In a cot, the combination, with main frames A A and a head-rest frame, D, the main frame being provided with a fixed support, as B, for the head-frame, of a pivotal connection between the head-rest frame and the said main frame, comprising plates or links E E, pivoted at their opposite ends, respectively, to the main frame and the head-rest frame, substantially as and for the purpose set forth.

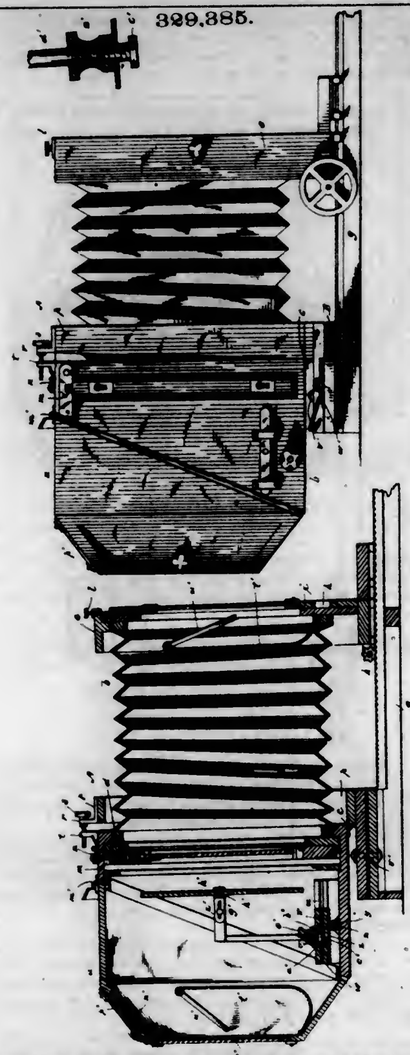
2. In a cot, the combination, with the main frame A A and a head-rest frame, D, links E E, pivotally connected at their ends with the head-rest and main frame, and a support, as B, upon the main frame for the head-frame, of stops, as C', upon the main frame, located in position to engage the head-rest frame, substantially as and for the purpose set forth

329,385. CAMERA. William W. Grant, Brooklyn, N. Y. Filed June 28, 1883. (No model.)

Claim.—1. The method of producing photographic negatives of an object or sitter and surroundings or secondary matter, by impressing on a sensitive plate the image of the object or sitter, by means of the light from the same passing through the lens, and at the same time impressing surroundings or secondary matter upon said sensitive plate by light transmitted through a transparent plate or medium containing the matter to be impressed, the light for which purpose being admitted independently of that passing through the lens at the front of the sensitive plate, substantially as specified.

2. The method of producing photographic plates of an object with engraved lines, etch, stipple, scenic, or such other secondary and combined effects, showing throughout the image and the border surrounding the image, by juxtaposing a transparent or semi-transparent medium embodying one part of the secondary matter in front of the sensitive plate,

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and juxtaposing another transparent or semi-transparent medium embodying the further matter, to be combined behind the sensitive plate, and transmitting the light passing from the object through a lens and the said transparent or semi-transparent medium in front to the sensitive plate, and transmitting light (independently of that passing through the front lens) through the said transparent or semi-transparent medium juxtaposed behind to the sensitive plate, substantially as specified.

3. The method herein described of producing photographic negatives of an object or sitter and a suitable background by impressing the image of the object or sitter upon the sensitive plate in front by the reflected light from the same passing through the lens of a camera, and printing upon the said plate from the rear the image of the background by transmitted light passing through a transparent positive, substantially as specified.

4. The method herein described of producing photographic negatives embracing the image of an object or sitter and a suitable background, the same consisting in first posing the object or sitter before a non-actinic background in front of the camera, receiving the image on a faint transparent positive on ground glass or opaline to determine its location, then blocking out the image in non-actinic paint on a transparent masking-plate, and then impressing the respective images from the front and rear by reflected and transmitted light, substantially as set forth.

5. The combination, in a photographic camera, of the front and rear sections having an intervening recess for the plate-holder, and the plate-holder having sliding covers front and rear, and adapted to receive the sensitive plate and a transparent positive, the camera being provided with translucent windows front and back, for the admission of light in addition to the lens, substantially as and for the purpose specified.

6. The combination, with the camera, consisting of front and rear sections having an intervening frame-holding recess, of the sliding block and its operating mechanism located in the rear section, and the standards and uppers adapted to carry a masking-plate, substantially as and for the purposes specified.

7. The combination, with the front section of the camera, of the rear section thereof, constructed in two hinged parts, and the mechanism for carrying the masking-plate, substantially as specified.

329,386. AUTOMATIC HARMONIC RECORDER. Elisha Gray, Highland Park, Ill. Filed Aug. 1, 1885. (No model.)



Claim.—In a telegraphic receiving-instrument, the combination, substantially as hereinbefore set forth, of tuned reed or bar, an electro-magnet actuated or controlled by the main-line current for intermittently throwing said reed or bar into vibration, a marking-point mechanically moved by said reed or bar, and mechanism for moving a band of paper in a direction perpendicular to the direction of vibration of the marking-point.

329,387. DEVICE FOR PRESERVING EGGS. Franklin D. Griffin, Amber, N. Y. Filed July 13, 1885. (No model.)



Claim.—The apparatus for turning eggs, consisting of the case A, having rigidly attached thereto the solid bottom b, and transverse partitions c c, dividing the case into separate compartments, horizontal slots through the ends and through the partitions of the case immediately above the bottom, and the false bottom B, extending through said slots and to the exterior of the ends of the case, substantially as described and shown.

329,388. TRAP FOR SOIL AND OTHER PIPES. Samuel S. Hellyer, London, County of Middlesex, England. Filed Oct. 10, 1884. (No model.)



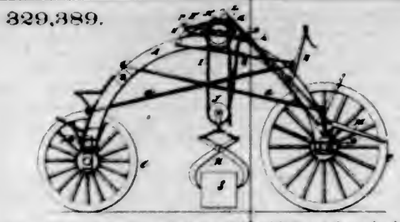
Claim.—1. A trap having a flattened top, c^2, arranged at an angle of less than ninety degrees from the line of the upstand, whereby any suddenly-ascending column of water in the upstand of the trap will be deflected backwardly and downwardly, substantially as and for the purpose set forth.

2. A trap having the inlet and bowl-like portion translated from a form which is circular in cross-section into a form about square in cross-section and of greater area about at the locality where the bowl-like portion runs into the upstand or ascending portions of the trap, substantially as set forth.

329,389. STONE LIFTER AND CARRIER. Riley J. Horner, Romeo, Mich. Filed Sept. 12, 1885. (No model.)

Claim.—1. The combination, with a truck, of a frame engaged therewith, said frame consisting of integral timbers bent upwardly intermediate of their ends and suitably braced, and hoisting-gear mounted

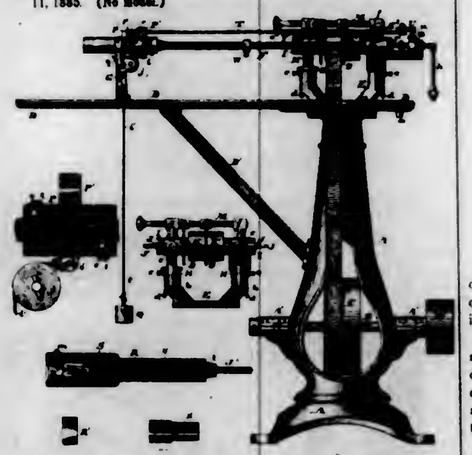
329,389.



thereon, and consisting of a shaft provided with a sprocket-wheel and a ratchet-wheel, said ratchet-wheel operated by a pawl and lever, and said sprocket-wheel provided with a chain having a gripping device connected therewith, substantially as described.

2. The combination, with a truck, of a frame engaged therewith, said frame elevated intermediate of its ends and provided with a sprocket-wheel, a ratchet-wheel, and a brake, a pulley and lever to operate said ratchet-wheel, a dog to prevent back motion, and a gripping device connected with said sprocket-wheel, the construction being such that when the ratchet-wheel is rotated in the proper direction power will be applied through the sprocket-wheel to the gripping device, substantially as described.

329,390. BOTTLE-WASHER. Joseph M. Hoyt and William G. Hoyt, Lynn, Mass., assignors to Hoyt Brothers & Co., same place. Filed Mar. 11, 1885. (No model.)



Claim.—1. The brush-receptacle herein described, having a non-revolving but removable funnel-shaped mouth-piece to receive the neck of the bottle, and an inner revoluble sleeve having a uniform inner diameter throughout its length, which diameter is the same as the inner diameter of the rear portion of the outer fixed sleeve and the smallest diameter of the funnel-shaped mouth-piece, all arranged and adapted to operate substantially as and for the purposes described.

2. The combination of the guide-rods F F, the cross-head P, two anti-friction balls, *t t*, and two adjustable sockets, *s s*, set in each end of said cross-head, substantially as described.

3. The combination of the guide-rods F F, the cross-head P, and two anti-friction balls, *t t*, and adjustable sockets *s s*, set in each end of said cross-head, one rear one end of the bearing of said cross-head and below the rod F, and the other near the other end of said bearing and above said rod F, substantially as described.

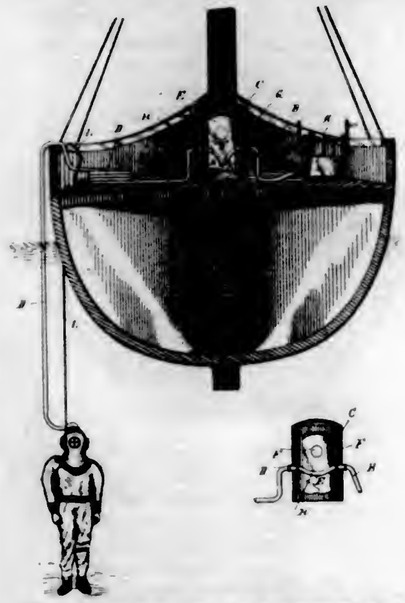
4. The combination, in a bottle-washer, of the revolving tubular brush-carrying spindle J', the boxes I I, the forked supports H H, the screw-centers e e, the stand E, and the set-screws *d d* and *e e*, all arranged and adapted to operate substantially as described.

5. The combination, in a bottle-washer, of the movable cross-head P, the headed rod T, mounted in guide-bearings and passing freely through the ear P' of said cross-head, so as to permit a free movement of said cross-head without moving said rod, the spring V, constructed and applied to move the rod T toward the rear of the machine to open the valve, the valve O *n*, and the lever U, forming a positive connection between the valve and the rear end of said rod T, substantially as described.

6. The combination, in a bottle-washer, of the valve O *n*, the lever U, the rod T, provided with the head *p*, the springs V and *r*, the cross-head P, the cords *i' i'*, the pulleys *j j*, and the weight Q, all arranged and adapted to operate substantially as described.

7. The combination of the cross-head P, provided with the ear P', the valve O *n*, the lever U, the rod T, provided with the pin *p'*, the spring V, and the catch *q*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

329,391. SYSTEM OF COMMUNICATION WITH DIVERS. Perry Huntley, Bridgeport, Conn. Filed Mar 19, 1885. (No model.)



Claim.—1. The combination, with an air-pump and a diving-suit, of an intermediate air-tight chamber having a door and windows, a pipe or tube leading from the pump to said chamber, and a pipe or tube leading from said chamber and connected to the diving-suit.

2. The combination, with an air-pump, a diver's suit or armor, and an intermediate air-tight chamber, of pipes leading from said diver's suit or armor and coupled to the chamber, and a pipe or pipes within the chamber coupled thereto and connecting with the diver's pipe, whereby a person within the chamber is enabled to communicate with the diver through said pipe.

3. The air-pump, diver's suit, and an intermediate air-tight chamber having windows and a door, in combination with pipes leading from the air-pump and the diver's suit to said chamber, a pipe or pipes within said chamber, and a union, whereby direct connection may be established between the air-pump and the diver.

329,392. DRAWING-BOARD. Edmund Jordan, Brooklyn, N. Y. Filed Dec. 1, 1884. (No model.)

Claim.—1. A drawing-board formed of a marginal frame of cast metal, having its edges planed true and square, adapted to receive the T-square head, with a filling of wood or its equivalent, substantially as set forth.

2. A drawing-board formed of a continuous marginal metallic frame cast in one piece, with its edges planed true and square, adapted to receive the T-square head, and filled with wood or other supporting material, substantially as set forth.

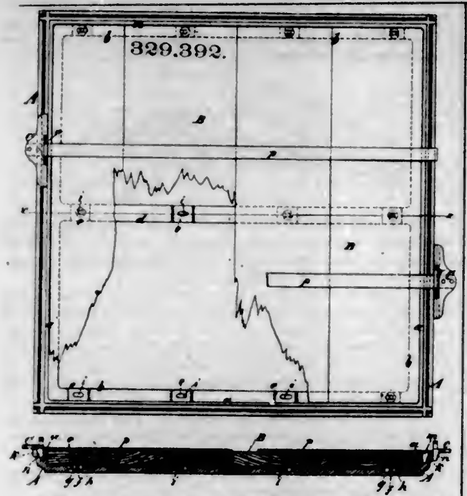
3. A drawing-board having one or more of its margins made of metal, having the lower portion of its edge formed with a retreating curve, and the upper portion planed to a true straight edge, substantially as shown and described.

4. A drawing-board having a wedging groove sunk in the top thereof longitudinally along the margin of the board, one wall of said groove forming a straight edge, and adapted to receive a flanged T-square head, substantially as and for the purpose set forth.

5. A drawing-board having one or more of its sides provided with a metallic margin, having its outer face planed to a true edge, and a wedging groove sunk in its top surface parallel with the said edge, whereby the board is adapted to receive T-squares of different kinds in different positions, substantially as set forth.

6. A drawing-board formed with a marginal metallic frame having its outer and upper edge planed true with an inwardly-projecting base-rim, *b*, and a central filling resting on said rim, substantially as set forth.

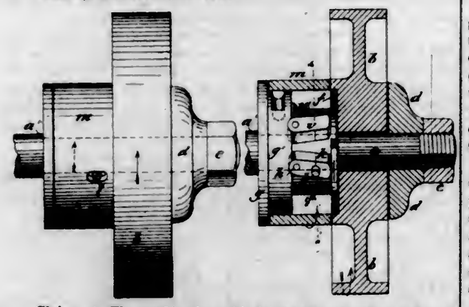
329,392.



7. The combination, with the metallic frame A, trued at the edges, with the internal base-rim, *b*, the bosses *g*, and slots *i*, of the filling B and screws *f*, substantially as herein shown and described.

8. A drawing-board formed by the combination of the metallic frame A, trued on the upper and outer edges, with bar *d*, and base-rim *b*, and a central filling, B, supported on said rim and bar, substantially as set forth.

329,393. FRICTION-CLUTCH. Edmund Jordan, Brooklyn, N. Y. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination, with the shaft *a* and collar *d* and pawl or pawls *k*, pivotally connected with the shaft, of the wheel or hub *c*, arranged on the shaft between the collar and the free ends of the pawls, and an operating device independent of the shaft to force the pawls to and from the wheel, whereby the wheel is wedged against and relaxed from the collar *d*, substantially as shown and described.

2. The combination, with the shaft *a*, collar *d*, and wheel or hub *c*, of the abutting collar *g*, and pawl or pawls *k*, arranged between the wheel and abutting collar, pivoted on one and having a curved cam-face to bear against the other, substantially as shown and described.

3. The combination, with shaft *a*, collar *d*, and wheel or hub *c*, of the wedging pawl or pawls *k*, pivoted on the shaft or an abutment thereof, and bearing against the wheel, and the partly-rotary ring *m*, engaged with the pawls for operating the same, substantially as set forth.

4. The combination of the shaft *a*, collar *d*, and wheel or hub *c* with the wedging pawl or pawls *k*, operating-ring *m*, spring *o*, projection *r*, and stop *s*, arranged and operating substantially as and for the purpose set forth.

5. In a friction-clutch, the combination, with a shaft and friction-collar thereon, and a fly-wheel or its equivalent revolving on the shaft with its side approaching said collar, of a second collar carrying a wedging device for locking the fly-wheel and shaft together, and a second wedging device acting in a reverse direction, whereby the momentum of the shaft is overcome, substantially as described.

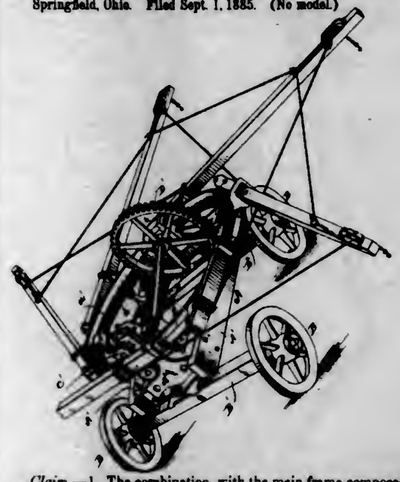
6. The combination, with shaft *a*, collar *d*, and wheel or hub *c*, engaged by a forwardly-acting clutch, of the reverse pawl or pawls *v*, arranged and operating substantially as and for the purpose set forth.

7. The combination, with shaft *a*, collar *d*, and wheel or hub *c*, of the reverse-pawl *v* and spring *w*, arranged and operating substantially as and for the purpose set forth.

8. The combination, with the shaft *a*, collar *d*, and wheel or hub *c* and collar *g*, of the pawls *k* and *v*, pivoted on the collar *g*, and bearing against the wheel at reverse inclinations, substantially as and for the purpose set forth.

9. The combination, with the shaft *a*, and collar *d*, and wedging pawl or pawls *k*, pivotally connected with the shaft, of the wheel or hub *c*, arranged on the shaft between the collar and the pawls, and provided with the bearing-ring *f*, substantially as shown and described.

329,394. HORSE-POWER. Oliver W. Kelly and Louis F. Dieter, Springfield, Ohio. Filed Sept. 1, 1885. (No model.)



Claim.—1. The combination, with the main frame composed of iron girders at the ends connected together by the wooden side pieces, the master-wheel having a series of gear-teeth on either side thereof, and a circular track at the ends of said gear-teeth, of driving-pinions on either end of the main shaft, adapted to engage with the respective master-wheel gears, and adjustable travelers on the opposite sides of the master-wheel from said pinions, said pinions and travelers being provided with circular flanges adapted to travel on the master-wheel tracks, substantially as set forth.

2. The combination, with the master-wheel provided on opposite sides with a series of teeth, and tracks at the ends of said teeth, of driving-pinions provided with circular flanges on the respective ends of the main shaft, adapted to engage said gear-teeth, lateral travelers adapted to bear against the inside of the master-wheel rim, and circular toothed travelers adapted to engage said master-wheel on either side thereof opposite the driving-pinions, said toothed travelers being adjustable to and from the said master-wheel, as set forth.

3. The combination, with the iron girders at the front and rear, of the main shaft with driving-pinions at each end thereof, supported in bearings on said girders, the vertically and laterally adjustable travelers, also supported on said girders, and the supporting-guides quartering to said travelers, substantially as specified.

4. The combination, with the master-wheel and main shaft having driving-pinions at either end adapted to engage said master-wheel, of the iron girders supporting said main shaft at either end, said girders being provided at either end with bosses adapted to enter the wooden side pieces which connect the said girders, and are bolted thereto, substantially as set forth.

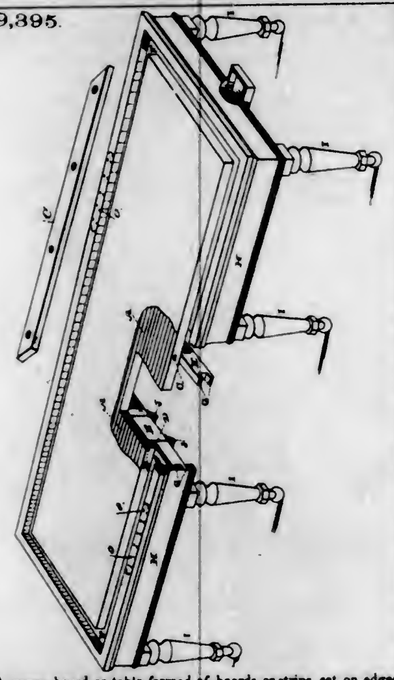
5. The combination, with the master-wheel and main shaft, of the main frame having the iron girders at the ends thereof for supporting said master-wheel and shaft, a driving-shaft supported in a universal bearing at the bottom of the rear girder, and the rear axle, made in two parts and secured to said rear girder, substantially as specified.

6. The combination, with the master-wheel and main shaft, of the end girders supporting said wheel and shaft, and side pieces connecting said girders, a driving-shaft supported in adjustable bearings at the bottom of said frame, and the axles connected to said girders, the rear axle being in two parts and bolted to the rear girder, as set forth, to form an opening for said shaft, substantially as specified.

329,395. GAME-BOARD. Albert F. Kropf, San Francisco, Cal. Filed May 4, 1885. (No model.)

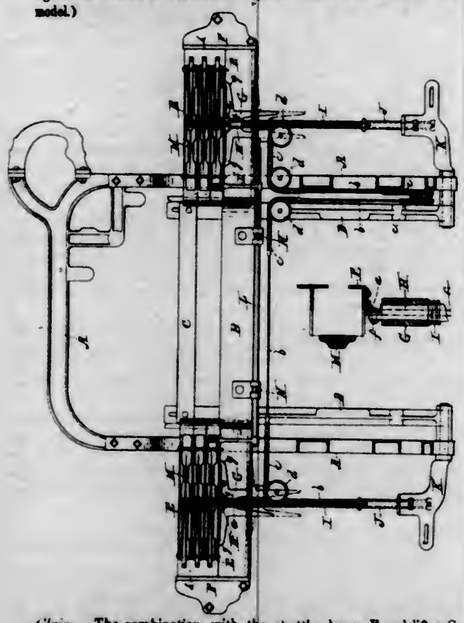
Claim.—1. A game board or table formed of boards or strips set on edge side by side, having plates or bars extending through openings made transversely through them, and supporting-sills upon which the table rests, in combination with screw-bolts extending through the sills and into the transverse bars or the table, substantially as herein described.

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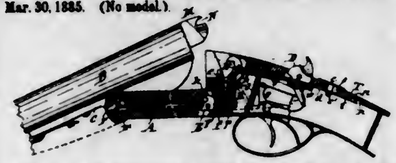
2. A game board or table formed of boards or strips set on edges having openings made through them, and bars or rods driven through these openings, in combination with sills or beams upon which the table is supported, vertical screw-bolts extending through the sills into the table, and a means for adjusting and leveling the table upon the sills, substantially as herein described.

329,396. SHUTTLE-BOX-OPERATING DEVICE FOR LOOMS. Lucius J. Knowles, Worcester, Mass.; Helen C. Knowles, Francis B. Knowles, and Henry A. Marsh, executors of said Lucius J. Knowles, deceased, assignors to Francis B. Knowles, same place. Filed July 16, 1881. (No model.)



Claim.—The combination, with the shuttle-boxes E and lifter G, having arms *g*, of lifter-rod H, pin *f*, and flange *s*, substantially as shown and described, for the purpose stated.

329,397. BREECH-LOADING FIRE-ARM. Daniel M. Lefever, Syracuse, N. Y., assignor to the Lefever Arms Company, same place. Filed Mar. 30, 1885. (No model.)



Claim.—1. The safety-catch *l*, consisting of a lever pivoted on the thumb-piece D, a slide, *c*, on the tang, and a strap, *d*, connecting the slide with the safety-catch, to release the sear from said catch when desired to fire the gun, substantially as set forth.

2. In combination with the safety-catch and locking-hook, a sliding bar arranged to transmit motion from the locking-hook to the safety-catch and a bolt arranged movably in the path of the top fastener of the barrels, and automatically holding the locking-hook in its retracted position when the gun is opened, whereby the safety-catch is held clear of the sear, and the latter is enabled to engage with the hammer when closing the gun, substantially as and for the purpose specified.

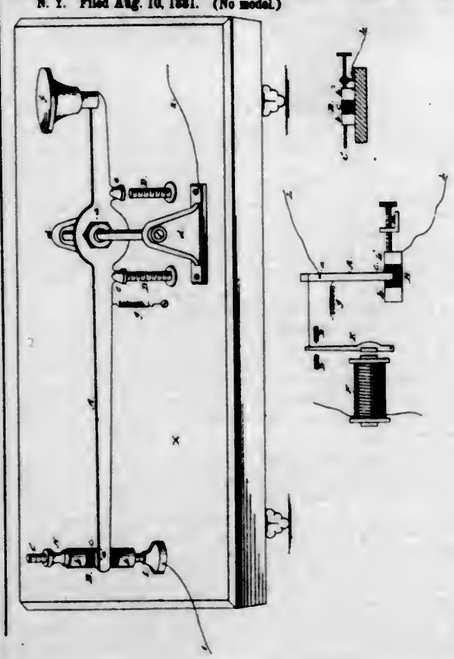
3. The combination, with the locking-hook, of the thumb-piece pivoted on the tang, a sliding bar connecting the thumb-piece with the locking-hook, the safety-catch pivoted on the thumb-piece, a slide on the tang, and a strap connecting said slide with the safety-catch, substantially as described and shown.

4. The combination, with the locking-hook H, of the bolt *e*, arranged in the path of the top fastener of the barrels, the spring *f* under the bolt, the stud-pin *e'*, projecting from the bolt, the thumb-piece D, pivoted on the tang, the bar *g*, connecting the locking-hook with the thumb-piece, the safety-catch *l*, pivoted on the thumb-piece, and the slide *c*, connected with the safety-catch by the strap *d*, substantially as described and shown.

5. In combination with the top fastener, M, attached to the barrels, the locking-hook H, pivoted at its foot, the spring *h*, bearing against the back of said hook, the bolt *e*, provided with the stud-pin *e'*, and the spring *f* under the bolt, substantially as described and shown.

6. In combination with the pivoted thumb-piece D, connected with the locking-bolt, as described, and the safety-catch *l*, pivoted on the thumb-piece, the tang T, provided with notches *n n*, the strap *d*, connected at one end with the safety-catch above the pivot thereof, and formed at the opposite end into the shape of the spring-catch *i*, and the slide *c*, connected with said strap, substantially as described and shown.

329,398. CIRCUIT-CONTROLLER. William A. Leggo, New York, N. Y. Filed Aug. 10, 1881. (No model.)

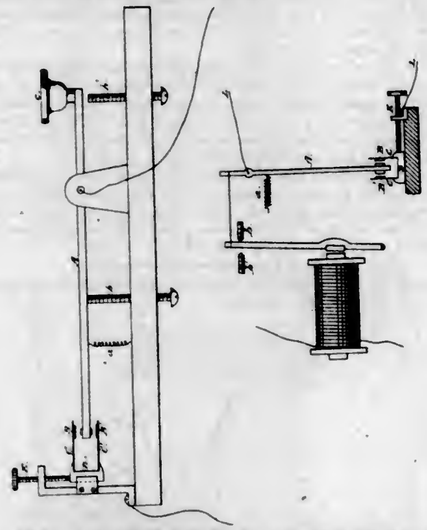


Claim.—1. The combination, with a circuit-controlling lever, of an adjustable contact-block having a metallic and an insulated portion, whereby it may be changed to maintain normally an open or a closed circuit, substantially as set forth.

2. In a circuit-controller, and in combination with the controlling-lever, a contact-block having metal ends and insulating center, and suitably mounted on an adjustable screw, the block and lever being held in contact by the spring of said lever, substantially as set forth.

3. In a circuit-controller, the combination of an adjustable contact-block having metal ends and insulating center, a controlling-lever held in contact therewith by its own elasticity, and a pair of adjustable screws for regulating the play of said lever, substantially as and for the purposes set forth.

329,399. CIRCUIT-CONTROLLER. William A. Leggo, New York, N. Y. Filed Aug. 20, 1881. (No model.)

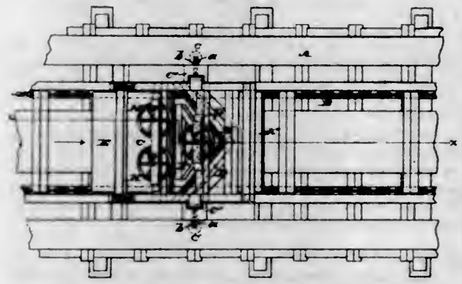


Claim.—1. In a circuit-controller, the combination, with the controlling-lever, of a sliding block to which is secured a pair of springs provided with contact-points, substantially as described.

2. In a circuit-controller, the combination, with the controlling-lever, of a sliding block, a screw for adjusting said block, and a pair of springs secured to the block and carrying contact-points, substantially as described.

3. In a circuit-controller, the combination, with the controlling-lever, of a pair of adjusting-screws for varying the play of said lever, a sliding block, a screw for adjusting said block with relation to the lever, and a pair of springs secured to said block and carrying contact-points, substantially as and for the purposes set forth.

329,400. ICE-PLANER. Thomas D. Lording and Albion P. Giles, Booth Bay, Me., assignors to the Knickerbocker Ice Company, Philadelphia, Pa. Filed Mar. 24, 1884. (No model.)



Claim.—1. An ice-planer having a rising and falling frame carrying planing blades or cutters, and a guide at the front of said frame, substantially as and for the purpose set forth.

2. An ice-planer having a rising and falling frame carrying planing blades or cutters, and a guard at the rear of said frame, substantially as and for the purpose set forth.

3. An ice-planer having a rising and falling frame carrying planing blades or cutters, and a guide and a guard at the front and rear of said frame, substantially as and for the purpose set forth.

4. An ice-planer provided with a vertically-adjustable apron in front of the planing blade or cutter, substantially as and for the purpose set forth.

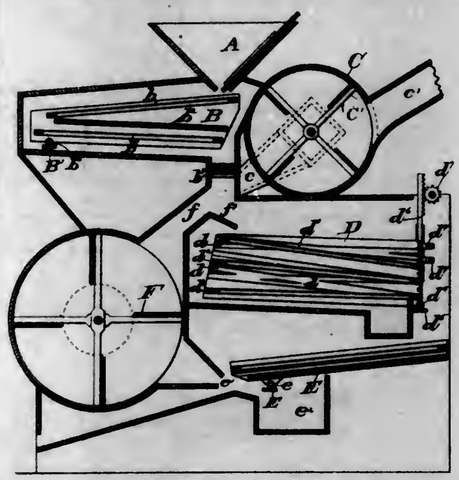
5. An ice-planer provided with a rising and falling frame carrying a planing blade or cutter, and a vertically-adjustable guide at the front of said frame, substantially as and for the purpose set forth.

6. An ice-planer having a planing blade or cutter and a vertically-adjustable guide and apron in front of said blade or cutter, the guide and cutter being pivoted or hinged together, substantially as and for the purpose set forth.

7. In an ice-planing machine, the guide E, hinged or pivoted to the frame C, in combination with the adjusting-screw G and nut H, substantially as described.

8. The V-shaped apron F, having the adjusting-screw J, with nut K, in combination with the adjustable guide E, substantially as described.

329,401. FANNING-MILL. Jacob Luxem, Racine, Wis. Filed Dec. 1, 1884. (No model.)



Claim.—1. The combination of the shoe B, having oppositely-inclined sieves *b b'*, dust-board b^2, slanting shelf b^3, suction-fan C', flues *c c*, communicating with the shelf b^3 and dust-board b^2, blast-fan F, air-passage *f*, and shaking shoe D, having screens *d*, substantially as and for the purpose set forth.

2. In a fanning-mill, the combination of the shoe B, having oppositely inclined sieves *b b'*, dust-board b^2, slanting shelf b^3, suction-fan C', drum C, with spout *c'*, and flues *c c*, communicating with shelf b^3 and dust-board b^2, and extending to and opening into the center of said drum C on each side, whereby there is a double suction from the center of each side of the drum, substantially as and for the purpose set forth.

3. In a fanning-mill, in combination with the shaking shoe D, having rollers d^4 d^4, the supporting-bars d^6 d^6, each having the racked block or rail d^5 at its lower end and a rack on its upper portion, guides d^9 d^9, the transverse shaft D', having a pinion, d^7, keyed at each end, and a pawl and ratchet, d^8, substantially as and for the purpose set forth.

329,402. BICYCLE. Wallace Lyon, Bridgeport, Conn. Filed Apr. 26, 1884. Renewed Sept. 19, 1885. (No model.)

Claim.—1. In a bicycle, as described, the drum surrounding the axle, provided upon its periphery with cam-surfaces, one of which is notched, and having coiled within the same a spring, in combination with means for establishing a rigid connection between said drum and the fork of the bicycle, substantially as described.

2. The cap having securely attached thereto the axle and provided with a notched cam-surface, as shown, in combination with means for securely binding said cap to the body of the crank, substantially as set forth.

3. The central plate having upon its outer face the friction-pawls, as described, in combination with the cap, upon whose inner circumference said pawls are adapted to bind, and with the drum and spring upon the rear side of the plate, substantially as described.

4. The front plate, O, having lug P, and the rear plate, N, secured together and adapted to slide within the frame, in combination with the cam-surface D upon the drum, whereby the lug P may be raised out of the notch of the cap, substantially as set forth.

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5. The double-faced cam secured between the front and rear plates and adapted to slide with them within the frame, in combination with the cam-surfaces M and the springs actuating the same, substantially as set forth.

6. In combination with the drum, the sliding bar upon the fork of the bicycle, provided with a lug and adapted to engage with the notch in the cam-surface of the drum, substantially as set forth.

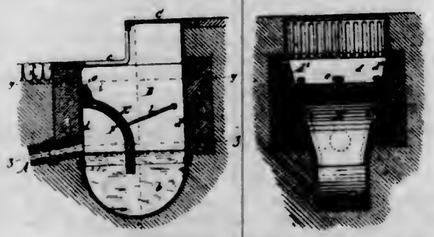
7. In combination with the central plate of the crank, the drum A, and the cams C and D thereon, and spring F therein, the pawls U, actuated by springs V, and the front cap R, all as described, and for the purpose set forth.

329,403. PISTON FOR SYRINGES. Elbert W. McAllister, South Bend, Ind. Filed Apr. 27, 1885. (No model.)



Claim.—In a piston for syringes, the combination, with a screw-threaded piston-rod having a handle at one end and a washer at the other, of two inverted expansible cup-shaped disks filled with elastic material secured thereon, and a screw-threaded nut fitting said rod above said disks and packing material, and expanding them, substantially as and for the purpose set forth.

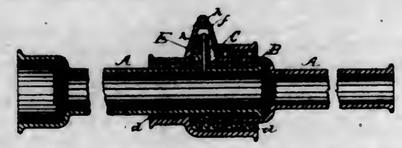
329,404. COMBINED STREET-RECEIVER AND STENCH-TRAP. David W. McConnell, Buffalo, N. Y. Filed Apr. 8, 1885. (No model.)



Claim.—1. The combination, with the receiver B, having its side walls provided with supporting-ledges F, of a rigid plate, E, hinged to the front wall of the receiver and capable of being swung upwardly upon its hinges without coming in contact with the rear wall of the receiver, and packings applied to the ledges F and to the upper edge of the hinged plate E, substantially as set forth.

2. The combination, with the receiver B, constructed with grooved or channeled ledges F, having tubular packings *g*, and a horizontal rib, *i*, of the plate E, hinged to the receiver and provided with ribs *h* along its sides, and a groove, I, and tubular packing J, along its upper edge, substantially as set forth.

329,405. DEVICE FOR SEALING PIPE-JOINTS. Junius A. McConnell, Pittsburg, Pa. Filed Aug. 17, 1885. (No model.)

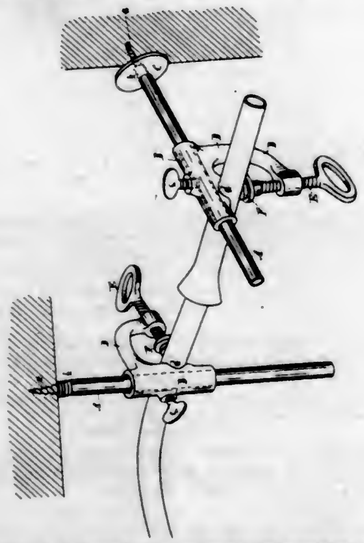


Claim.—1. In a device for sealing pipe-joints, the combination, with the adjoining sections of pipe and the joint thereof, of a casing consisting of a single annular chamber surrounding said joint and containing a liquid, and an opening for the introduction of the liquid into the casing, said opening being tightly closed after the liquid has been introduced, whereby if there be any leakage of gas into the casing the pressure of the same upon the liquid will eventually equal the pressure within the pipe, substantially as described.

2. In a device for sealing pipe-joints, the combination, with two sections of pipe and the joint thereof, of a casing comprising a single annular chamber entirely surrounding the point of juncture or seam of the pipe-joint, and provided with a suitable orifice for the introduction of a liquid to said chamber, and an escape-pipe opening from said chamber into the interior of the pipe, substantially as described.

3. The combination, with two sections of pipe and a joint securing said sections together, of a casing having a single annular chamber surrounding all the seams of said joint, a liquid substance contained in said chamber, and an air-space at the top of said substance for the reception of gas escaping from the pipe, substantially as described.

329,406. PIPE-VISE. Henry Meadows, Windsor, Ontario, Canada. Filed June 4, 1885. (No model.)



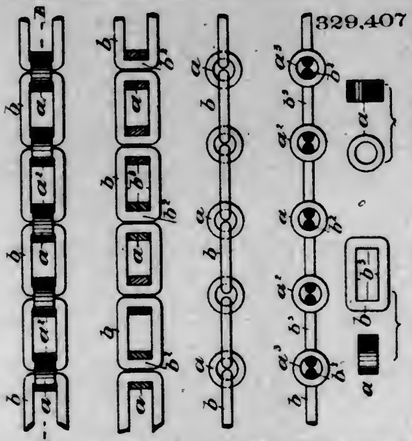
Claim.—1. A clamp for the purpose described, consisting of a rod which terminates at one end in a screw, a standard adjustably secured to said rod and having an arm carrying a set-screw in its overhanging end, the parts being constructed, combined, and operating substantially as specified.

2. A clamp for the purpose described, consisting of a rod which terminates at one end in a screw, a standard adjustably secured to said rod and having a curved seat formed thereon, and an arm carrying a set-screw in its overhanging end, in combination with a supporting-disk which can be screwed upon said rod, the parts being constructed, arranged, and operating substantially as set forth.

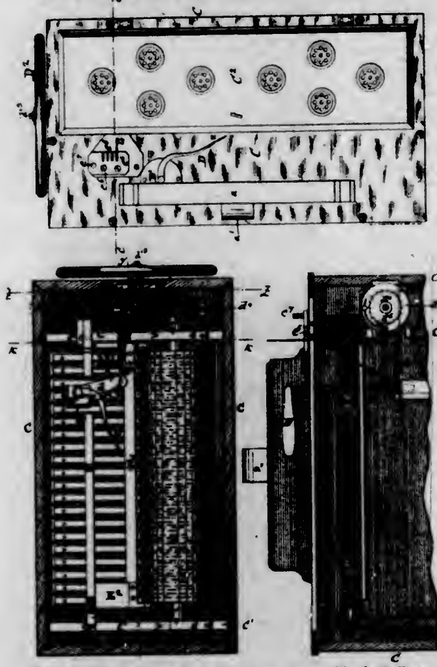
329,407. MACHINE-ROLLER CHAIN. William Morgan, Birmingham, County of Warwick, England. Filed Feb. 18, 1885. (No model.) Patented in England Mar. 13, 1883, No. 1,352.

Claim.—A drive-chain consisting of a series of open rectangular links coupled together by tubular rollers surrounding the end bars of each link, and adapted to receive the frictional contact of the chain when in use, said rollers forming the sole connections between the links, substantially as shown and described.

329,407



329,408. MECHANICAL ACCORDION. Carl Oettel, Gohlis, near Leipsic, Saxony, Germany; Carl Karp, New York, N. Y., administrator of said Oettel, deceased. Filed Nov. 6, 1883. (No model.) Patented in Germany Feb. 23, 1883, No. 24,405, and in Austria-Hungary June 14, 1883, No. 1,161 and No. 1,128.



Claim.—1. In an accordion, the combination, with the bellows, of an inclosing-box at one end of the same, having reeds and valve-levers, and provided with an exterior handle or thumb-strap, a cylinder-barrel located within the box and having a number of pins and staples for actuating the valve-levers, an exterior oscillating lever-handle arranged adjacent to said handle or thumb-strap, and intermediate mechanism by which a continuous rotary motion is imparted to the cylinder-barrel by the oscillations of the lever-handle, substantially as and for the purpose set forth.

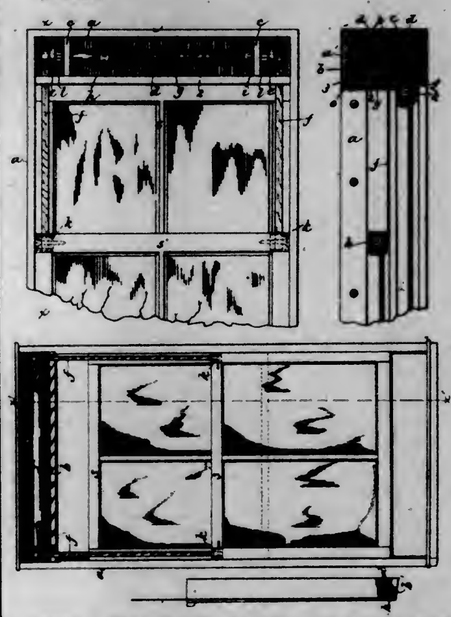
2. In an accordion, the combination of the bellows, an inclosing-box, a cylinder-barrel located within the box, bearings for supporting the shaft of the same, a vertically-guided shifting-frame engaging the barrel, and means arranged at the exterior of the box and connected to the shifting-frame, so as to set the latter and the cylinder-barrel, substantially as set forth.

3. In an accordion, the combination of a bellows, A, a box, C, having interior walls, C', a rotating cylinder-barrel, E, supported in bearings of the walls C', a vertically-guided shifting-frame, E^2, engaging the barrel, an exterior slide-plate, e^2, connected to the shifting-frame and having side recesses, e^3, and a fulcrumed lever, G, that is set into one of the recesses e^3 of the slide-plate, so as to lock the cylinder-barrel into proper position, substantially as set forth.

4. The combination, in an accordion, of a bellows, A, a box, C, having reeds and valve-levers, a rotating cylinder-barrel, E, a pivoted and spring-actuated frame, F', valve-levers F, fulcrumed to frame F', and a fulcrumed lever-handle, G, extending from the pivoted frame F' to the outside of the box, so that the valve-levers may be moved clear of the cylinder-barrel, substantially as set forth.

5. The combination, in an accordion, of a bellows, A, a box, C, at one end of the same, said box having reeds and valve-levers, a pivoted and spring-pressed frame, F', valve-levers F, fulcrumed to the frame F', a rotating cylinder, E, a vertically-guided shifting-frame, E^2, engaging the barrel, an exterior slide-plate, e^2, having a handle, e^1, and side recesses, e^3, and a fulcrumed locking-lever, G, that extends from the frame of the valve-levers to the outside and is adapted to be set into one of the recesses of the slide-plate e^2, so as to lock the cylinder-barrel in position, substantially as and for the purpose set forth.

329,409. SASH-BALANCE. Wm. Ormsby, Boston, Mass., assignor to the Ormsby Sash Holder Company, Portland, Me. Filed June 8, 1885. (No model.)



Claim.—1. The combination of a casing, a sash movable vertically therein, a detachable section having arbor-supporting brackets, an arbor mounted in said brackets and actuated by a coiled spring having one end secured to the arbor and the other to one of the brackets, and the flexible strips secured to said roller and to the sash, as set forth.

2. The combination, with the casing and sash, of the spring-actuated roller or arbor, the spools independently rotatable thereon, the flexible strips secured to said spools and sash, and means, substantially as described, for adjusting the spools upon the arbor, whereby the adjustment of the length of the flexible strips is permitted, as set forth.

3. The combination, with a window-casing having a box at its top, of the removable section at the bottom of said box having brackets c c, and arbor or roller mounted in said brackets and actuated by a coiled spring having one end secured to the arbor and the other to one of the brackets, and flexible strips connected to said roller and passing through slots in the bottom of the box or case, as set forth.

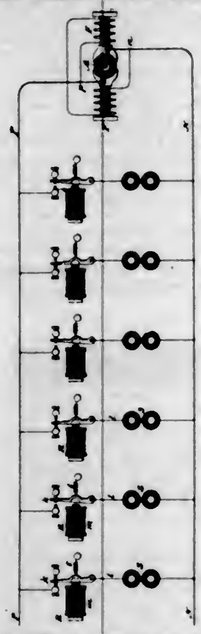
4. The combination of the casing, the head having the detachable section 2, the brackets attached to said section and the rollers or arbors journaled in said brackets, and the flexible strips *f f*, as set forth.

5. The combination of the casing, the spring-rollers journaled over the head of the casing, the flexible strips secured to said rollers, and the detent-latch, whereby the rollers may be locked, as set forth.

6. The combination of the window-frame, the sash, and flexible spring-actuated cords or strips, adjustable spools located in said sash to which the flexible spring-actuated cords or strips are secured, substantially as set forth.

7. The sash having the strip or cord holding spools inserted in recesses in its lower portion, and provided with slots *b'*, whereby said spools may be reached from below, and with set-screws inserted in the side of the sash to hold said spools, as set forth.

329,410. MULTIPLE LOCAL CIRCUIT FOR TELEGRAPHS. Frank L. Pope, Elizabeth, N. J. Filed Mar. 11, 1885. (No model.)



Claim.—1. The combination of a dynamo-electric generator having an armature coil or coils of low resistance and a field or exciting coil or coils of comparatively high resistance placed in multiple arc with each other, with a group of electro-magnetic instruments placed in multiple arc with the said field and armature coils, and having a minimum joint resistance which is a mean proportion between the resistance of the armature-coils and that of the field-coils, as set forth.

2. The combination of a dynamo-electric generator having an armature coil or coils of low resistance and a field or exciting coil or coils of comparatively high resistance placed in multiple arc with each other, with a group of electro-magnetic instruments placed in multiple arc with the said field and armature coils, and having a minimum joint resistance which is a mean proportion between the resistance of the armature-coils and that of the field-coils, and a series of circuit-breakers, one for each electro-magnetic instrument, as set forth.

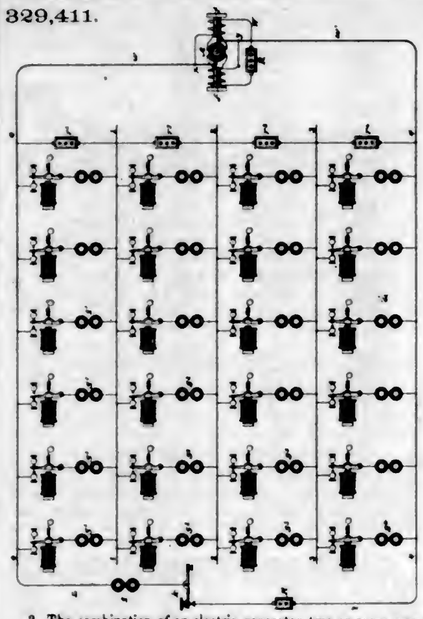
3. The combination of a dynamo-electric generator having an armature coil or coils of low resistance and a field or exciting coil of comparatively high resistance placed in multiple arc with each other, with a group of electro-magnetic instruments, each provided with a circuit-breaker and placed in multiple arc with the said field and armature coils, and having a minimum joint resistance which is a mean proportion between the resistance of the armature-coils and that of the field-coils, a series of circuit-breakers, one for each electro-magnetic instrument, and an independent electro-magnet for actuating each of said circuit-breakers, as set forth.

329,411. MULTIPLE LOCAL CIRCUIT FOR ELECTRIC TELEGRAPHY. Frank L. Pope, Elizabeth, N. J. Filed Mar. 12, 1885. (No model.)

Claim.—1. The combination of an electric generator, two or more groups of sounders or other local receiving-instruments deriving their actuating-current therefrom, each groups being placed in series, while the individual sounders or receiving-instruments composing each group are placed in the parallel branches and provided with circuit-controllers independently actuated by electro-magnets placed in different main-line circuits.

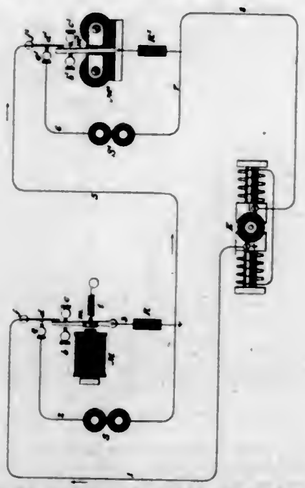
2. The combination of an electric generator, two or more groups of sounders or other local receiving-instruments deriving their actuating-current therefrom, each groups being placed in series, while the individual sounders or receiving-instruments composing each group are placed in parallel branches, an independent circuit-controller in each of said parallel branches, and an adjustable rheostat in an additional parallel branch of each group.

329,411.



3. The combination of an electric generator, two or more groups of sounders or other receiving-instruments deriving their actuating-current therefrom, said groups being placed in series, while the individual sounders or receiving-instruments of each group are placed in parallel branches, and one or more additional branches or circuits containing apparatus for transmitting or receiving telegraphic signals, placed parallel to two or more of said groups and deriving their current from the same source.

329,412. MULTIPLE LOCAL CIRCUIT FOR ELECTRIC TELEGRAPHS. Frank L. Pope, Elizabeth, N. J. Filed Mar 20, 1885. (No model.)

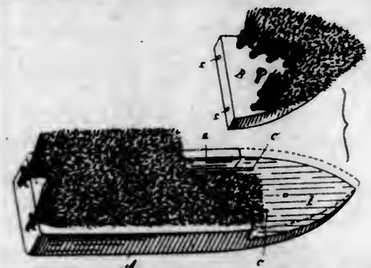


Claim.—1. The combination, substantially as hereinbefore set forth, of an armature-lever which is caused to vibrate to and fro between fixed stops by the attractive force of an electro-magnet in a main-line circuit, a contact spring or tongue which bears against a fixed stop when said lever is in contact with its front stop, but is lifted therefrom by said lever when the latter is in contact with its back stop, and a local circuit having two branches, one containing a sounder or local receiving-instrument and closed by the contact of the tongue with the fixed stop, and the other containing an artificial resistance and closed by the contact of the armature-lever with the tongue, as set forth.

2. Two or more sounders or other telegraphic receiving-instruments placed in series in the same local circuit, and each provided with its own

circuit-controller, in combination with electro-magnets included in different main-line circuits for independently actuating said circuit-controllers, substantially as set forth.

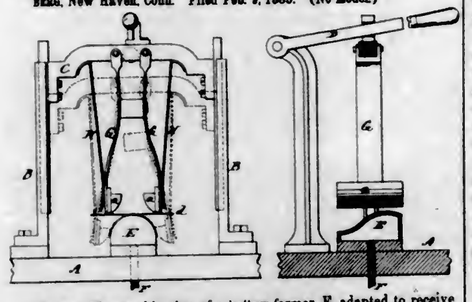
329,413. BRUSH. Edwards W. Porter, Detroit, Mich. Filed Jan. 14, 1885. (No model.)



Claim.—1. A pointed-ended brush having straight rows of bristles secured in grooves by straight wires, substantially as described, and curved rows forming continuations of such straight rows, the curved rows being secured in the ordinary manner in a separate head, which is afterward secured to the main head, substantially as specified.

2. A brush having the straight rows of bristles secured in grooves by straight wires, one end of which is secured in the head, and a detachable pointed portion of the head, which, when in place, secures the other end of said wires, substantially as set forth.

329,414. MACHINE FOR SHAPING CORSETS. Seymour H. Rosenberg, New Haven, Conn. Filed Feb. 9, 1885. (No model.)



Claim.—The combination of a hollow former, E, adapted to receive steam or hot water therein, its outer surface corresponding to the shape of the part of the corset to be pressed, said former stationary, a slide arranged in guides to reciprocate in a plane transverse to the longitudinal plane of said former, a pair of arms hung to said slide and extending toward the former, the said arms each carrying a presser, *a*, parallel with the said former, adapted under the reciprocating movement of the slide to work the one upon one side and the other upon the opposite side of said former, and a spring, H, applied to each of said arms tending to yieldingly force said pressers toward the former, substantially as described.

329,415. BRICK-MACHINE. Robert N. Ross, St. Louis, Mo. Filed Mar. 17, 1885. (No model.)

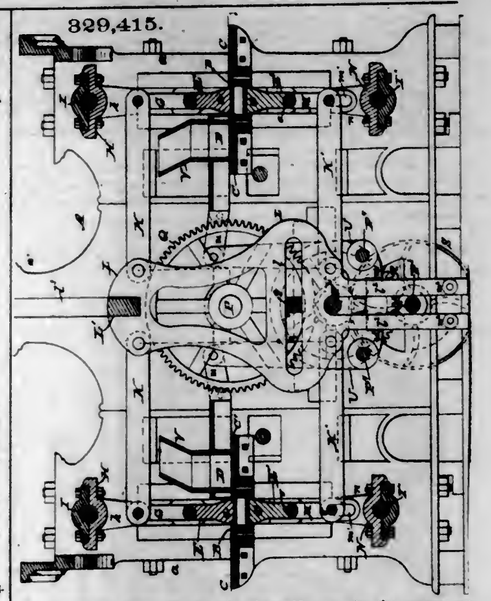
Claim.—1. In a double-acting or double-end brick-machine, the combination, with the upper and lower plungers and toggle-joints for operating them at the opposite ends of the machine, of the intermediate vertically-moving pitman and the toggle-operating bars connecting said pitman with the toggle-joints of the plungers at the opposite ends of the machine, substantially as described.

2. The combination, with the two sets of upper and lower plungers and brick-molds at the opposite ends of the machine, of the vertically-moving pitman having the horizontal slot, one or more wheels mounted on a shaft or shafts and having a wrist-pin projecting through said slot, suitable means for rotating said wheel or wheels, the toggle-joints for operating said plungers, and the intermediate toggle-operating bars connecting said toggle-joints with said vertically-moving pitman, essentially as set forth.

3. The combination, with the lower plungers and upper plungers operated, substantially as described, for pressing bricks, of the discharge-levers connected with the lower plungers at their outer ends, and the cams arranged to operate the inner ends of said levers, essentially as and for the purpose set forth.

4. The combination, with the chargers and the levers U, connected therewith at their upper ends, of the vertically-moving pitman and devices connected therewith for vibrating said arms, for the purpose set forth.

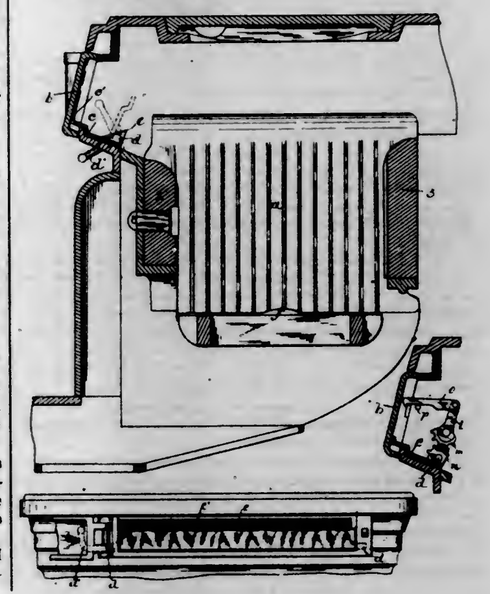
329,415.



5. The combination, with the stationary molds at each end of the machine, the upper and lower plungers, and toggle-joints for operating the same, of the vertically-moving pitman, the intermediate toggle-bars connecting said pitman with the toggle-joints of the plungers, the chargers and the arms U, connected thereto at their upper ends, and intermediate devices for communicating an intermitting vibratory motion to said arms from the said pitman, substantially as set forth.

6. In a double brick-machine, the combination, with two sets of molds and plungers, of an intermediate system of toggle-levers and means for operating the same, whereby the power exerted is divided between the two sets of plungers and the resistance offered to the pressure of one set serves to cause a reactionary pressure of the other set, essentially as set forth.

329,416. STOVE OR RANGE. William H. Swanton, Boston, Mass. Filed Mar. 7, 1885. (No model.)

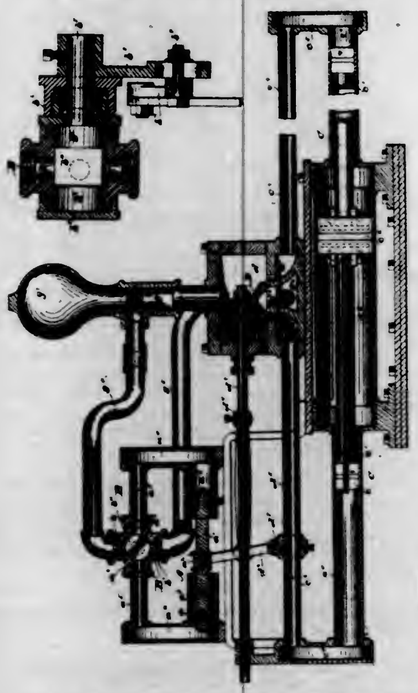


Claim.—1. A stove or range having a front opening above the front wall of the fire-box, combined with the pivoted plate or ash-dump, normally constituting the bottom of said opening, as set forth.

2. A stove or range having a front opening above the front wall of the fire-box, combined with a pivoted plate or ash-dump, normally constituting the bottom of said opening, and provided with a handle, *d'*, or its specified equivalent, whereby said plate may be raised to remove the ashes, &c., as set forth.

3. A stove or range having a front opening above the front wall of the fire-box, in combination with a pivoted plate or ash-dump, constituting the bottom of said opening, and provided with a raised lip bearing against the door which covers the opening, as set forth.

329,417. **CUT-OFF FOR HYDRAULIC AND OTHER ENGINES.** LILY B. TUBBS, Philadelphia, Pa. Filed Feb. 4, 1885. (No model.)



Claim.—1. In combination with the prime motor C, having pistons *c*, piston-rod c^3, and valve D, and the supplemental motor A, having pistons *a* and rod *a'*, the levers d^5, connected at one end to the rod *a'*, and links b^9, connected at opposite ends to the lever d^6 and valve-rod d^3, substantially as described.

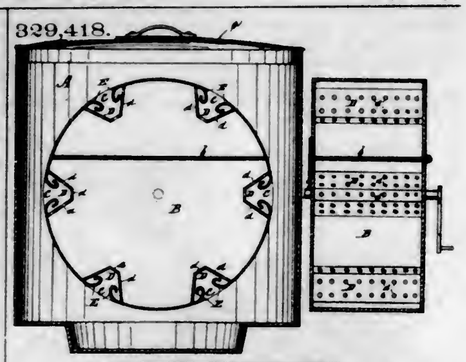
2. In combination with the prime and supplemental motors C and A, the slide-valve D, controlling flow of liquid in prime motor, rod d^3, links b^9, levers d^6, oscillating valve B, controlling flow of liquid in supplemental motor, arm b^8, link b^{10}, lever b^{11}, bar b^{13}, link b^{14}, and pin *f*, carried by rod *f'*, and actuated by piston of prime motor, substantially as described.

3. In combination with the cylinders and pistons of the prime motor C, the slide-valve D, supplemental motor A, and connections, such as described, intermediate the supplemental motor and slide-valve, the oscillating valve B, actuated by the prime motor and governing the inlet and exhaust of the supplemental motor, said valves D and B being connected to the same supply-pipe, substantially as described, whereby when the valve B is reversed to admit the liquid to the supplemental motor the pressure on the valve D is temporarily relieved.

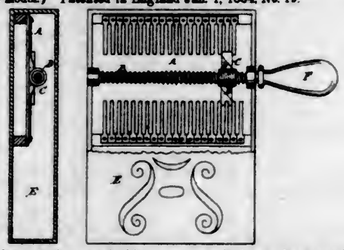
329,418. **WASHING-MACHINE.** HIRAM H. TUTTLE, Phœnix, Ariz. Filed July 3, 1885. (No model.)

Claim.—A washing-machine cylinder consisting of the body having peripheral openings elongated in the direction of its axis, foraminated steam-boxes located within said body and having their side edges secured on opposite sides of the openings therein, and water-cups connecting at one edge with the sides of the opening in the body and having their other edges projected into said openings and deflected toward the center of the body, substantially as and for the purposes set forth.

329,418.



329,419. **MECHANICAL MUSICAL INSTRUMENT.** MARSHALL A. WIER, Upper Norwood, County of Surrey, England. Filed Nov. 4, 1884. (No model.) Patented in England Jan. 1, 1884, No. 19.



Claim.—1. In a musical instrument, a shaft or arbor, sound-producing devices, and a picker for setting them into vibration, all being combined and organized substantially as described, whereby a relative movement between the sound-producing devices and picker may be effected, and the picker will set the sound-producing devices in vibration one after another.

2. In a musical instrument, a shaft or arbor, sound-producing devices, and a picker for setting them into vibration, all being combined and organized substantially as described, whereby a relative rotary motion between the shaft or arbor and picker will cause the picker to travel past the sound-producing devices successively and effect their vibration.

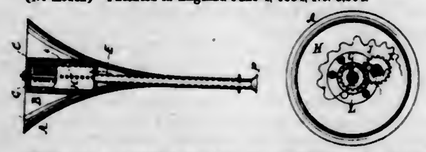
3. In a musical instrument, a shaft or arbor, sound-producing devices, a holder therefor, and a picker for setting them into vibration, all being combined and organized substantially as described, whereby a relative movement between the sound-producing devices and picker may be effected, and the picker will set the sound-producing devices into vibration one after another.

4. In a musical instrument, a shaft or arbor, sound-producing devices, a revolving holder therefor, and a picker for setting them into vibration, all being combined and organized substantially as described, whereby a relative movement between the sound-producing devices and picker may be effected, and the picker will set the sound-producing devices into vibration one after another.

5. In a musical instrument, a shaft or arbor, sound-producing devices, a chest containing the sound-producing devices, and a picker for setting them into vibration, all being combined and organized substantially as described, whereby a relative movement between the sound-producing devices and picker may be effected, and the picker will set the sound-producing devices into vibration one after another.

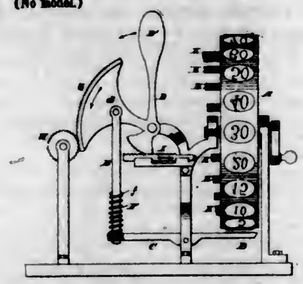
6. In a musical instrument, sound-producing devices arranged in a circle, and a traveling picker for setting them into vibration one after another, substantially as specified.

329,420. **MECHANICAL MUSICAL INSTRUMENT.** MARSHALL A. WIER, Upper Norwood, County of Surrey, England. Filed Nov. 15, 1884. (No model.) Patented in England June 4, 1884, No. 8,564.



Claim.—In a musical instrument, the combination of a trumpet-like shell, an air-tube adapted to be blown into through the mouth of a person and extending into the said shell, a connection between said shell and air-tube which admits of one being rotated or turned relatively to the other, a series of sound-producing devices connected to one of said parts, and a music sheet or tablet connected to the other of said parts, substantially as specified.

329,421. **ADDING DEVICE FOR CHECK-MACHINES.** CHARLES W. WEBB, Brooklyn, and CHARLES KRUSE, New York, N. Y. Filed July 23, 1884. (No model.)

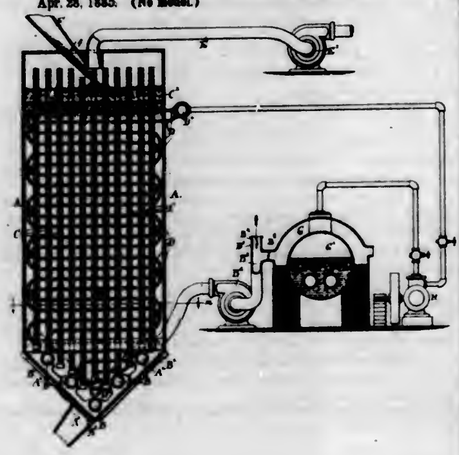


Claim.—1. The combination, with a wheel or carrier, an indicator denoting the position of the same, a scale of numbers employed in connection with said indicator, and a suitable adding mechanism, of a series of separate or connected stops formed upon or moving in unison with said wheel or carrier and adapted severally to limit, more or less, in proportion to their distance from a common initial plane or center, the effective movement of the adding mechanism, the distance of the several stops from said common plane or center being defined each by a measure of length whose value is indicated by one of the numbers upon the indicating-scale.

2. In a check-machine, the combination, with an indicating device, and with mechanism for delivering checks of different denominations and which moves synchronically with the indicating device, whereby the denomination of each check issued shall correspond with the figures denoted at that moment by the indicator, of mechanism for registering automatically the sum of the denomination of the last check added to the sum of the checks previously issued from the machine, substantially in the manner and for the purpose herein set forth.

3. In a check-machine the combination, with a device for issuing checks of different denominations, mechanism for actuating said device and for indicating the position thereof required for the delivery of a check of any given denomination, a device for registering at each complete movement of the check-delivering device the sum of the units represented by the check issued by said movement added to that of the checks previously issued, and mechanism for communicating the movement of the check-delivering device to the registering device, of a series of stops or stop-surfaces moving synchronically with the indicating mechanism, each of which is made to approach or depart from a common initial plane or point to a degree which shall correspond proportionately to the difference between the denomination denoted at the moment by the indicating mechanism and the unit of said denomination, and which operates to govern the mechanism by which the movement of the check-delivering device is imparted to the registering device, substantially in the manner and for the purpose herein set forth.

329,422. **GRAIN-DRIER.** AMBON WOLCOTT, Wolcott, Ind. Filed Apr. 28, 1885. (No model.)



Claim.—1. The combination, with a closed bin for holding grain, having imperforate side walls and provided with an air-exit opening at its top and with apertures at its lower part for the admission of air to the grain, of a series of vertical perforated air-tubes, C, located within the bin, and opening at their upper ends within the latter, and means for producing an upward air-current through the bin, substantially as described.

2. The combination, with a closed bin for holding grain, provided with an air-exit opening at its top and inlet-apertures at its bottom, of a series of vertical perforated tubes, C, located within the bin and opening at their upper ends within the latter, a second series of vertical air-inlet tubes located between the tubes C, closed at their upper ends, communicating with the said inlet-apertures at their lower ends, and perforated for the admission of air to the grain, and means for producing an upward current of air through the bin, substantially as described.

329,423. **CENTRIFUGAL BOLTING-REEL.** LOUIS WORMER and JOSEPH BOCK, Minneapolis, Minn. Filed Mar. 13, 1885. (No model.)

Claim.—1. In a centrifugal separator, the combination of a main shaft, a beater-cylinder, a bolting-reel outside of said beater-cylinder, and provided with sleeves E' E^2 and collars E' E', surrounding the main shaft near its ends, bearings having anti-friction rollers and supporting said sleeves, means for revolving said beater-cylinder, and means for revolving said reel in the same direction, but at a less speed than said beater-cylinder, substantially as and for the purpose set forth.

2. In a centrifugal separator, the combination of a main shaft, a beater-cylinder, a bolting-reel outside of said beater-cylinder, and provided with sleeves E' E^2 and collars E' E', surrounding the main shaft near its ends, bridge-trees D' D^2, attached to the frame of said machine, bearing-casings formed in two parts, F' F^2, and provided with anti-friction rollers b' b^2 b^3, and resting upon said bridge-trees, substantially as set forth.

3. In a centrifugal separator, the ribs E'' E'' and sides F' F^2, having, respectively, grooves provided with bolting-strips *a a*, substantially as and for the purpose herein specified.

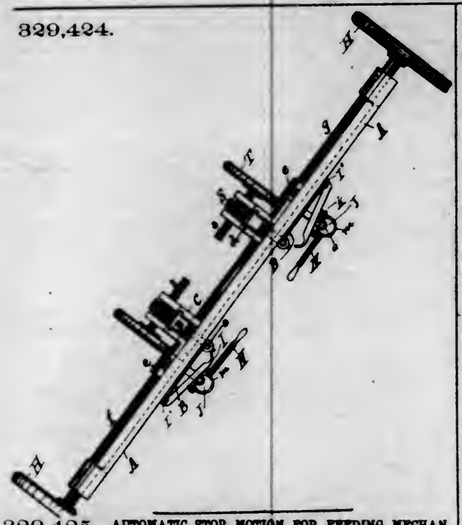
4. In a centrifugal separator, the combination of an external bolting-reel, an internal beater-cylinder mounted on a shaft, clamping-hoops surrounding said cylinder, and sectional beater-ribs pivoted thereto, substantially as and for the purpose set forth.

329,424. **DASH-MAKING MACHINE.** RICHARD G. WOOD, Cincinnati, Ohio, assignor to Patrick Reilly and James E. Reilly, Newark, N. J. Filed Aug. 14, 1885. (No model.)

Claim.—1. In a leather-stretching machine, the clamping mechanism consisting in the jaw-bed B, the jaw I, hinged thereto at one edge as described, the openings *l* through the jaws, the posts *k*, attached to the bed and projected through the openings, and the eccentric J, bearing upon the back of the jaws, the eccentric being fitted longitudinally along the back of the jaw, so as to press its edge toward the bed through its entire length, substantially as shown and described.

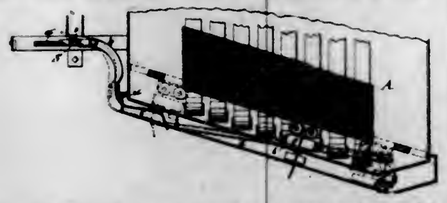
2. The combination, with the frame formed of parallel bars A A', of the jaw-beds B, the jaws I, and eccentrics J, mounted movably upon one side of the frame, and the guides C, secured thereto upon the opposite side of the frame, the nuts *e*, and screws *f g*, applied to the frame and jaws, and the racks D and pinions S, mounted upon spindles *s*, substantially as herein shown and described.

329,424.



329,425. AUTOMATIC STOP-MOTION FOR FEEDING MECHANISMS OF CARDING-ENGINES. Edward G. Woods, Marcellus, N. Y. Filed June 2, 1885. (No model.)

Brief.—Improvement on the stop-motion shown in United States Letters Patent No. 62,917. In order to secure a quicker action of the stop-motion, the tripper is carried on the reciprocating feed-carrier, and is held out of contact with the shifter-releasing levers at either side of the frame by the weight of the roving passing over it. When the roving breaks, the end of the balanced tripper falls so as to be brought into contact with the shifter-releasing levers. As the shifter acts upon the belt of the card-cylinder, the entire machine stops upon the breaking of the roving.



Claim.—1. In combination with the actuating mechanism of the condenser, and the reciprocating feed-carrier, and mechanism for automatically moving said feed-carrier, as described, a shifter held normally in position for holding said actuating mechanism out of gear, a catch for holding the shifter in its abnormal position, a lever pivoted at one side of the condenser-frame and connected with the aforesaid catch, a lever pivoted at the opposite side of the aforesaid frame, a rod extending from lever to lever, and a tripping-arm carried on the feed-carrier and normally in position to actuate the aforesaid levers, and arranged to be traversed by the roving passing through the feed, and thereby held in abnormal position, substantially as described and shown.

2. The combination, with the driving-belt, of the condenser A and the reciprocating feed-carrier B, and mechanism for automatically moving said feed-carrier, as described, of the belt-shifter S, the spring *a*, for throwing the belt-shifter to carry the belt onto the loose pulley, the catch *b*, for holding the belt-shifter to maintain the belt on the driving-pulley, the lever c, connected to said catch and arranged at one end of the path of the feed-carrier B, the lever c' at the opposite end of the path, the rod *d*, for transmitting motion from the lever c' to the lever *c*, and the pivoted arm *e*, carried on the feed-carrier, and having one end weighted to depress it into position for colliding with the levers *c c'*, and the opposite end in the feed-passage to receive the pressure of the roving passing through said passage, and thereby become tilted to clear the aforesaid levers, substantially in the manner specified and shown.

3. In combination with the frame of the condenser, driving-belt of the card-cylinder, reciprocating feed-carrier B, and mechanism for moving said feed-carrier, as described, a spring-actuated belt-shifter arranged to hold said driving-belt on the loose pulley, a catch for holding the belt-shifter on the driving-pulley, a lever pivoted on the frame and connected with the catch, and a tripper carried on the feed-carrier and normally in position to actuate the aforesaid lever, and arranged to be traversed by the roving, and thereby held in abnormal position, the whole combined and arranged to stop the motion of the card-cylinder automatically with the breakage of the roving, substantially as set forth.

REISSUES.

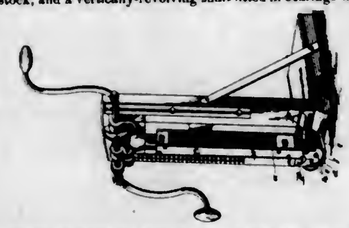
10,655. MORTISING-MACHINE. James Oppenheimer, Shenandoah, Iowa, assignor to the Square Hole Auger Company, Wooster, Ohio. Filed Sept. 22, 1885. Original No. 307,045, dated Oct. 21, 1884.

Claim.—1. In a mortising-machine, an oscillating cutter-head having a cam-groove running spirally across one portion of the head, and a shaft with a lug or toe connected and eccentric with the shaft acting as a cam and operating in the cam-groove of the cutter-head, and so arranged that by rotating the shaft an oscillating movement is given to the cutter-head, substantially as set forth.

2. In a mortising-machine, in combination with a sliding stock, a cutter-head and shaft journaled therein, a cam-groove running spirally across the periphery on one side of the cutter-head, and a lug or toe connected and eccentric with the shaft for operating in the cam-groove of the cutter-head, by means of which an oscillating movement is given to the cutter-head by rotating the shaft, substantially as set forth.

3. In a mortising-machine, a sliding stock with a cutter-head and shaft journaled therein, a cam-groove on the periphery of the cutter-head, and an engaging lug or cam connected with the shaft for oscillating the cutter, and the parts arranged substantially as indicated, so that the mortising device may be attached to and operated by an ordinary boring-machine.

4. The cutter-head having a flat base, a cam formation at the side opposite to the base, and end journals, combined with a flat cutting-blade having side and end cross segmental cutters, a vertically-operating slide-stock, and a vertically-revolving shaft fitted in bearings in said slide-



stock, having the lower end terminating in a nose-cam projection adapted to act upon the cam formation of the cutter-head, substantially as described, for the purpose specified.

5. The combination, with the slide-stock A and the cam cutter-head journaled therein, of a cutter-blade having side cutting-edges, *e e*, and projecting end segmental cutters, *f f*, secured to the said cutter-head, and the vertical revolving shaft C, having a free engaging cam projection with said cutter-head, the said end cross-cutters extending outside of the vertical plane of the said slide-stock, substantially as herein described, for the purpose specified.

6. The slide-stock A, having its lower end rounded at each side and formed with the side clearing shelves or projections, combined with the cam cutter-head, the cutter F, and the revolving cam-shaft, the cam whereof has a free engagement with the cutter-head cam, for operation substantially as shown and described.

7. The cutter-head having the cam hollows or steps c c, and the cutter F, having the side and end cutters formed substantially as described, in combination with a driving-shaft having a cam projection adapted to engage with said cutter-head, cam-steps, and a stock in which the cutter-head and its operating shaft are mounted in the relation to each other as described.

8. An oscillating mortising cutter-head having journal-bearings, combined with a cutter having parallel side cutting-edges, *e e*, and segmental end projections having cutter-teeth *f*, beveled from their inner sides in opposite directions from the middle of said cutter, substantially as herein set forth, for the purpose specified.

9. The combination, with an oscillating cutter-head and a shaft adapted to operate said cutter-head by a revolving motion, of a vertically-operating stock having side clearing shelves or projections arranged above the oscillating cutter, substantially as described, for the purpose specified.

10. The combination, with the slide-stock, of an oscillatory cutter-head and a cutter proper having opposite edge cutters and end cutters, the latter being toothed to cut across the grain in the direction of its operation both ways, substantially as described.

11. An oscillating mortising cutter-head having journal-bearings, combined with a cutter having parallel side cutting-edges and parallel end cutters, substantially as described.

N. Peters Photo-Lithographer, Washington, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Massachusetts.

LORD *et al.*, EXECUTORS, *v.* WHITEHEAD & ATHERTON MACHINE COMPANY *et al.* SAME *v.* WHITEHEAD *et al.*

Decided August 26, 1885.

EQUITY JURISDICTION—INFRINGEMENT—EXPIRATION OF PATENT—DISCOVERY—ACCOUNT—REMEDY AT LAW.

A bill in equity brought for the infringement of a patent which has expired previous to the bringing of the suit will be dismissed for want of jurisdiction, notwithstanding it avers that defendants manufacture and use the infringing machines secretly, and that complainant is ignorant of the number of machines so used and unable to estimate the amount of damages, and prays for an account of profits, the damages to complainant from said infringement, other than the profits, being sued for in a pending action at law.

Mr. B. F. Thurston, *Mr. D. H. Rice*, and *Mr. A. Eastman* for the complainants.

Mr. F. P. Fish, *Mr. F. T. Greenhalge*, and *Mr. A. M. Moore* for the defendants.

COLT, *J.*:

These bills in equity are brought for the infringement of letters patent granted to Edward Lord, January 9, 1866, and which expired previous to the bringing of the suits. The defendants have demurred to the bills on the ground that they disclose no cause of action cognizable in a court of equity, and that the complainants have a plain, adequate, and complete remedy at law. The demurrer is based upon the principle laid down in *Root* v. *Railway Company*, (105 U. S. 189.) In that case suit was brought for the infringement of a patent that had expired prior to the filing of the bill. The bill stated that the complainant was ignorant, and could not set forth how many of the patented articles the defendant had used, but that he believed the number was large, and that the defendant had realized great gains and profits therefrom. The prayer of the bill was for an account. The defendant demurred to the bill, and the demurrer was sustained on the ground that a bill in equity for a naked account of profits and damages against an infringer cannot be sustained; that such relief, ordinarily, is incidental to some other equity, the right to enforce which secures to the patentee his standing in court.

In the present bills the complainants, instead of the simple allegation that they are ignorant of the extent of the infringement and the amount of profits, and praying discovery, set out special allegations in the bill relating to the discovery sought; such as that the infringing machines were made by the defendants in different rooms of their factory, and put together either in the factory, or at the place of business of the purchasers in distant parts of the country; that some have been shipped to foreign countries; that sometimes the outer doors of defendants' factory have been locked, and sometimes the purchasers and users of such machines lock the doors of their factories while the machines are in use; that the defendant corporation succeeded to the business of Whitehead & Atherton, a copartnership, and the complainants are unable to determine the precise time when such transfer was made, and what machines were then in process of construction, and whether or not the machines made about the time of the transfer were made by the defendants or by Whitehead & Atherton, and that by reason of the course and manner of conduct by the defendants, and the use of said machines by the purchasers aforesaid, and of other matters connected with the business, the complainants are ignorant of, and not able to ascertain, the number or size of the machines made and sold by defendants in violation of complainants' rights, and are unable to estimate the amount of damages.

The complainants pray for an account of profits, "the damages to your orators from said infringement, other than said profits, being sued for in any action at law now pending in this honorable court."

In substance, we cannot but consider these bills as the ordinary bills brought for the infringement of a patent, and we cannot see how they can be sustained under the rule laid down in *Root* v. *Railway Company*, *supra*.

It is contended that by reason of the discovery asked for the complainants have a standing in a court of equity. At least since the law authorizing the examination of parties as witnesses, we understand the more general and better rule to be that equitable jurisdiction will not attach for discovery simply, except in aid of a suit at law; but the party must invoke some other distinct equitable ground. And where the broader rule may be said to prevail, based upon the proposition that the court having acquired jurisdiction for the purpose of discovery, it will proceed and determine the whole matter in controversy, the plaintiff must allege that the facts concerning which he seeks a disclosure are material to his cause of action; that he has no means of proving these facts by the testimony of witnesses, or by any other kind of evidence used in courts of law; that the only mode of establishing them is by compelling the defendant to make disclosure; and that therefore a discovery by suit in equity is indispensable; and, further, if the defendant by his answer fully denies all the allegations with respect to which a discovery is demanded, the suit must fail. (1 Pom. Eq. Jur., secs. 223—230.)

These are not bills of discovery brought in aid of suits at law, and the allegations therein contained are not sufficient to support them, even under the broader rule of equitable jurisdiction adopted by some courts.

But equitable jurisdiction is invoked on the ground of account. The account sought, however, must be incidental to some other equitable relief. (*Root* v. *Railway Co.*, *supra*.) Stress is here laid by the complainants on the words of the court in *Root* v. *Railway Company*, that

such an equity may arise out of, and inhere in, the nature of the account itself, springing from special and peculiar circumstances, which disable the patentee from a recovery at law altogether, or render his remedy in a legal tribunal difficult, inadequate, and incomplete.

These are actions of tort, for which the plaintiffs are entitled to damages. In such cases the mere intricacy of the account does not furnish a ground for equitable interference. In *Hipp* v. *Babin* (19 How., 271) Mr. Justice Campbell says:

No instances exist where a person who had been successful at law has been allowed to file a bill for an account of rents and profits during the tortious possession held against him, or in which the complexity of the account has afforded a motive for the interposition of a court of chancery to decide the title and to adjust the account.

In citing this in *Root* v. *Railway Company*, the court say:

These principles were announced in a case for the recovery of the possession of real estate held adversely, but they are of general application, and embrace as well the case of torts to personalty and infringements of patent and copy rights.

(See, also, *Parrott* v. *Palmer*, 3 Mylne & K. 632, 642; *Higginbotham* v. *Hawkins*, L. R., 7 Ch. App., 676; *Smith* v. *London & S. W. Ry. Co.*, Kay, 408.)

The demurrers are sustained and the bills dismissed.

FOREIGN PATENT LAWS.

PATENT LAW OF NORWAY.

The following translation of the new patent law lately passed by the Norwegian Government has been made from an official copy in Norse by Messrs. W. P. Thompson & Co., international patent agents, Liverpool and London, and forwarded for publication:

We, OSCAR, by the Grace of God, King of Norway and Sweden, the Goths, and the Vends, make known that there has been laid before us the resolution of the now assembled honorable Storthing, on the 8th of June, this year, as follows:

1. Patents shall be granted for new inventions which are useful in industry, excepting, however, (a) inventions which, if brought out, would be contrary to the law, morality, or public order; (b) inventions the subject-matter of which is a beverage, food, or medicine. Nevertheless in relation to those, patents will be granted for processes or apparatus specially described for their manufacture.

2. An invention shall not be considered new if it have already been so known before the application for the patent was handed in that it could by other conversant persons be brought into practice. However, publication by printing or by an ordinary exhibition shall not prevent a grant of letters patent applied for within the next ensuing six months after such publication.

3. The right to obtain patent is available, subject to a conformity with section 4, to the first inventor only, or to a person having the legal power to act for him. In cases where it cannot be clearly ascertained who, among several applicants for a patent for a given invention, is the first inventor the patent will be granted to the first one that handed in an application.

4. When a patent is granted for an invention here in the kingdom, the inventor shall, in the course of two years, counted from the time when the application for patent was handed in, have the exclusive privilege of obtaining a patent for improvements on or addition to the former patented invention. In consequence of this every application for such patent that might come in from third parties shall remain in abeyance under seal in the Patent Office and shall be decided upon after the first-mentioned interval is expired, unless the older patentee has made use of his right of preference.

5. Patents shall be granted for a period of fifteen years, counted from the time of the handing in of the application. If anybody having obtained a patent for an invention shall wish to take out a patent for an addition to or improvements on the same, he shall have the option of taking out a special patent or only a supplementary patent which shall expire the same time as the original patent.

6. At the handing in of every application for a patent thirty kroner shall be paid as a fee for the consideration of the matter. For granted patents, with exception of supplement patents, a yearly payment shall also be demanded, which begins with ten kroner for the second year of the patent and increasing five kroner each year for every following year,—that is, fifteen kroner the third year, twenty the fourth. This fee shall be paid before the beginning of the patent year for which it is due. However, it may be paid within the period of three months afterward, but in such a case with an increase of one-fifth part.

7. The patent confers the privilege that nobody can without the consent of the patentee, excepting for his own use, manufacture or import from abroad the patented article, neither keeping nor selling the same. If the patented matter be a process, an apparatus, a machine, a tool, or other implement, the patent also confers the privilege that nobody can without the consent of the patentee make use of the patented matter in his business. However, ship-fittings can be used without hinderance from the patent upon ships engaged in foreign navigation while staying in Norwegian ports or in Norwegian waters.

8. The patent shall have no effect against any one who already had made use of the invention within the kingdom before the handing in of the application or made the necessary arrangements for the same. If the patentee have in an earlier stage published the invention in the manner as described in the latter section of section 2, the power of the patent does then extend back to the publication, provided he at the same time and in conjunction therewith (in case of exhibition by notification on the object exhibited) has published that a patent will be applied for, and besides beforehand has handed in a preliminary notice to the Patent Commissioners.

9. Without the consent of the patentee the patented invention can be used by the public authority, if the King so decides. Likewise can the patented invention that is of particular importance for one or another trade by similar provision be adopted for private use. In both cases compensation shall be due to the patentee, which amount and mode of computation, in default of amicable agreement, shall be settled by judgment of impartial men, (arbitration.) Compensation is procured in the first case from the public authority—in the latter case from the person or persons who take the invention into use. If the compensation be settled as a lump sum once for all, the same shall be paid before the invention is taken into use. If it be settled as a royalty, the arbitration shall, at the request of the patentee, also settle by what installments this shall be paid, and also shall fix the amount of the security which ought to be given for the correct payment of the royalty. The royalty fixed by the arbitration can be levied by distraint.

10. The investigation and decision upon applications for patents shall rest in a Patent Commission that shall have its sitting in Christiania, and which shall consist of a juridically educated chairman and at least five technical skilled members, who shall be appointed by the King for a period of five years. For the technical skilled members deputies shall also be appointed. No decision by which an application for a patent is to be decided shall take place unless at least four, or—in case of difference of opinion—at least five, members of the Commission shall be present, including always the chairman and such members as have previously dealt with the matter. If the votes be equal, the decision shall rest with the chairman. Every such decision shall be accompanied by reasons, and complete written copy handed to the applicant, the patentee, or his deputy.

11. None of the members of the Patent Commission shall have personally or through others a grant of a patent for any invention, or shall act as deputy for others (patent agent) in patent matters. They shall resign if they are in such a manner connected with an applicant for a patent that they as judges should give up their seat.

12. Anybody who desires to obtain patent on an invention shall hand in to the Patent Commission (1) an application for the patent addressed to the Commission; (2) a specification of the invention, in duplicate; (3) the drawings necessary for the understanding of the specification, also in duplicate, also, according to circumstances, models, samples, &c.; (4) a list of all the documents, &c., which are handed in.

13. If the applicant is not a resident in Norway, he must name in his application a deputy residing within the kingdom, who shall represent him in all matters connected with the patent, and who can be summoned on his account. A ratified copy of the document appointing such deputy with full powers and accepted by said deputy shall accompany the application. Likewise always shall the application, if not signed by the applicant himself, be accompanied by the necessary full powers to the person who signs it.

14. The application, which must only relate to one principal invention, (with the details belonging to the same,) shall give the applicant's name, occupation, and residence, as well as a short description of the invention, such as it is wished should be stated in the patent. If the invention have not been made by the applicant himself, the necessary proofs shall be attached that it has been lawfully intrusted to him by the inventor. The specification shall be so explicit and complete that others conversant with the trade to which it relates shall be able to carry out and apply the invention. It shall finish with a specific declaration as to what the applicant considers as his invention and desires to protect by patent. The application, as well as the specification, is to be written in the Norwegian language.

15. If the Patent Commission find that a deposited application is not fulfilling the terms of sections 12, 13, and 14, it shall as soon as possible give a written communication about it to the applicant or his deputy, in which shall be given a reasonable time during which the defects shall be remedied. If during this period, or any extension thereof that may be granted according to circumstances, the necessary corrections be not made, the application will be laid aside.

16. If the invention treated in the application be evidently not new, or there be other reason which would prevent the legally granting of a patent for the same, the application can be refused at once.

17. On the other hand, if the application, with its accompanying documents, &c., be in proper form, and, as far as can be judged, there be no defect present, as mentioned in section 16, the Commission shall draw up as soon as possible, and at latest within four weeks, a public notification about the application, stating the principal contents of the same and the name of the applicant. At the same time the application, with the document and other vouchers belonging to it, shall be laid open for public examination in the Patent Office.

18. If the inventor in his application shall desire and at the same time pay down an additional sum of twenty kroner, the enjoined publication and laying out for examination, as stated in the preceding section, shall be deferred until four months after the inventor or his deputy has received information that the Patent Commission from the previous examination finds no hinderance for a grant of patent. For the preliminary examination the Commission has in this case an extension of time of eight weeks, during which it is entitled to obtain statements of men conversant in the matter, as stated in section 20.

19. During the period of eight weeks following the publication anybody shall be at liberty to hand in to the Patent Commission an objection to a grant of the patent applied for. Such objection shall be in writing, and shall be accompanied by the reasons on which it is based, which must also be presented in writing.

20. Before the expiration of sixteen weeks after the publication the Commission shall come to a decision concerning the application. Before its decision it can demand more particular declarations or explanations from those interested in the matter. It shall also be entitled to obtain statements of men conversant with the same, or make other necessary arrangements to throw light upon the matter.

21. If the applicant shall be dissatisfied with the decision of the Patent Commission in conformity to section 16 or section 20, and he shall think himself able to give explanation or information which could convey another result, he shall have the right during the next ensuing six weeks after the giving of the decision to hand in to the Commission a representation, which in such a case shall bring the matter under a renewed consideration. Should this also not bring it to a decision satisfactory to the applicant, he shall still, during four weeks more, have the option of making an application to the Patent Commission asking for a decision of a Supreme Patent Commission, consisting of seven men especially selected by the King for this case, and with an eye to the circumstances of the case. With the request the applicant shall pay a fee of one hundred and fifty kroner, which, however, shall be returned to him if the former decision be not confirmed. The Supreme Patent Commission shall decide the case from the documents handed over by the Patent Commission.

22. When the final decision shall be given that a patent be granted, the Commission shall draw up the letters patent, stating the nature of the patent, as well as the day from which its duration is to be counted, in accordance with section 5. As soon as possible after the drawing up of the letters patent the Commission shall make a public notification of the same, containing also the essential part of the specification, &c., and other documents, as the case may demand, together with the name and residence of the deputy. When a final decision shall have been made that the patent be refused, this shall also be published.

23. If the patentee leave the country, or the patent be transferred to an owner not residing in Norway, such a deputy must be made known to the Patent Office, and such authorized power be forwarded as stated in section 13.

24. A register shall be kept at the Patent Office of all the completed patents. This shall show the nature of the patent and date as well as the name and residence of the patentee, or, as the case may be, those of his deputy. When a patent expires, becomes void, is by judgment abolished, or is wholly or partly declared invalid, this shall be noted in the register and publicly notified. The same shall hold good with respect to transfer of patent right and choice of deputy or substitution of a new one (sections 13 and 23) when notice concerning the same with necessary legitimation shall be handed in to the office. As long as this latter shall not have taken place, the transfer or the choice shall be without effect with the public authorities as well as with third persons. Both the register and the specifications, drawings, models, &c., connected with patents shall be accessible to everybody who might wish to make themselves acquainted with the same.

25. A patent shall expire (1) if the fixed fee in section 6 be not paid into the office within the time stated in the said section; (2) if the notified deputy will not or cannot any longer undertake the charge, and the patentee within three months after he has been notified about it in the newspaper for publications of patents has not registered new deputy with the Patent Commission.

26. A patent shall by judgment be found wholly or partly invalid if it be shown that in accordance with the provisions of sections 1, 2, 3, and 4, either in whole or in part, it ought not to have been granted.

27. A patent shall by judgment be made void if the patentee shall not have worked the patent within the termination of three years from the date of the patent either himself or through others in the kingdom or have offered the patented object for sale; also, if after that period the working or the offering for sale has been discontinued during one year. If this be caused by a casual incident, the last-mentioned period can be increased by the Patent Commission on application. In particular cases the Patent Commission shall have power after representation to make exceptionally distinct provision for what is required for the working or arrangement for sale within the kingdom.

28. Anybody who may desire to have a patent declared void (section 26) or abolished (section 27) can prosecute the patentee to accept judgment. Such questions shall come within the jurisdiction of Christiana town court. The summons shall be four weeks regardless of the summoned person's residence. Settlement by arbitration will not be allowed. The chairman of the Patent Commission shall always be summoned.

29. Any person who shall encroach upon the rights belonging to any one pursuant to a patent shall be obliged to compensate the injured person for all damage to him thereby caused. Should the infringer have knowingly committed such violation of rights he shall besides, provided he be not liable at law to a more severe punishment, be fined (the penalty to be paid into the state treasury) from fifty to one thousand kroner, and in case of repetition up to two thousand kroner; also, all unlawfully manufactured goods offered for sale, in case the article itself be patented, may by judgment be confiscated.

30. The public authority shall not prosecute the offense treated in section 29. The prosecution concerns the patentee himself or any other person to whom he wholly or partly transferred his right, or in any other person who by the offense shall have sustained loss.

31. If the defendant, in a case of infringement of a patent, shall base his claim for acquittal on the ground that the patent is invalid (section 26) or forfeited, (section 27,) the court shall, if requested, if it be any other court than the town court of Christiana, give him such delay that he can have an opportunity to obtain judgment in conformity to section 26. If the matter is taken before the town court of Christiana, he can, through counter prosecution, without arbitration, obtain a hearing under the procedure to get the patent made null and void or abolished.

32. No punishment or compensation shall be decreed under this law if the infringement complained of at the court shall have been committed more than two years before the commencement of the action, or if the action has not been commenced by the injured party within a year from the time when he was first acquainted by established proof, through judicial act of the infringement complained of, or if he delay to prosecute for a full year a trial already judicially commenced.

33. If any one who shall have in a foreign country applied for patent for an invention within a period of seven months after such foreign application hands in an application for patent in this country for the same invention, this last application shall (in case the said foreign country grants reciprocal rights to Norwegians) be considered in relation to other applications, as it had been handed in at the same time that the application was made in the foreign state.

34. The present law has no application to patents issued before the law comes into force. However, after the period of one year the inventor of such a patent shall be at liberty to apply for change of patent so as to come under the rules of the present law, which in such a case will be fully applied to such patent. The question of the novelty of the invention (section 2) shall be decided, however, according to the condition of the time when the application of the older patent was given in. If a new patent is granted, its duration shall (section 5) be counted from the issue of the older patent and the yearly fee (section 6) shall be determined according to its age.

35. The particular provisions of the administration of the Patent Commission, the form and contents of patents, and what more may be required for the execution of this law shall be in the jurisdiction of the King.

36. The present law shall come into force on the 1st of January, 1886, after which time section 82 in the artisan's law of the 15th of July, 1839, shall be null and void.

We hereby accept and ratify this resolution as law under our hand and Seal of the Realm.

Given at Stockholm Castle on the 16th of June, 1885.

OSCAR. [L. S.]

TRADE-MARK LAWS OF VICTORIA.

GENERAL RULES UNDER THE TRADE-MARKS REGISTRATION ACT 1876.

At the Executive Council Chamber, Melbourne, the 31st day of March, 1885.

Whereas, by an act of the Parliament of the Colony of Victoria, passed in the fortieth year of the reign of Her present Majesty Queen Victoria, intitled "The Trade-Marks Registration Act 1876," it was among other things enacted, that the Governor in Council might from time to time make, and when made alter, annul, or vary such general rules as to the registry of trade-marks and as to notices to be given by advertisement before the registration of trade-marks, and as to the classification of goods for the purposes of the said act, and as to the registration of first and subsequent proprietors of trade-marks, and also for the continuance of a trade-mark on the register or otherwise, and as to the removal from the register of any trade-mark as to notices, and as to the persons entitled to inspect the register, and as to any proceedings to be taken to obtain the judgment or leave of the court in any matter in which the judgment or leave of the court is required to be obtained under the said act, and as to the fees to be charged, and, generally, for the purpose of carrying into effect the said act as he might deem expedient—

Now, therefore, His Excellency the Governor, by and with the advice and consent of the Executive Council, doth hereby, in ex-

ercise of the powers conferred by the above recited act, make the following general rules—that is to say:

1. *Fees.*—The fees specified in the first schedule hereto shall be payable to the Registrar-General.

2. *Classification of goods.*—For the purposes of these rules goods are classified in the manner appearing in the second schedule hereto.

3. *Determination of doubt as to classes.*—If any question arise as to the class to which any particular description of goods belongs, the matter shall be determined by the Registrar-General.

4. *Registration of different trade-marks or trade-marks in different classes.*—A trade-mark may be registered in pursuance of the same application by the same person in respect of all or any goods, subject to the payment of the additional fees specified in the first schedule in respect of the registration of different trade-marks or the extension of the same trade-marks to goods in different classes.

5. *Application for registration.*—Any person desiring to register a trade-mark shall make application to the Registrar-General in the form of the third or fourth schedule hereto, the application to be on foolscap paper having a margin on the left hand of not less than one inch and a half.

6. *Nature and size of representation of trade-mark.*—A description of a trade-mark shall be given and shall be accompanied, when practicable, by a drawing or other representation, in duplicate, not more than three inches square, on foolscap paper, by pasting or otherwise fastening on such paper a specimen of the trade-mark. When a drawing or other representation or specimen cannot be given in manner aforesaid, a specimen or copy of the trade-mark may be sent either of full size or on a reduced scale. The Registrar-General may, if dissatisfied with the drawing or other representation of a trade-mark, require a fresh drawing or other representation either before he proceeds with the application or before he registers the trade-mark. The Registrar-General may also in exceptional cases receive and keep in his office a specimen or copy of any trade-mark which cannot conveniently be placed on his register.

7. *Advertisement of trade-mark application.*—As soon as may be after the receipt of an application the Registrar-General shall require the applicant to advertise such application in the *Government Gazette*, and in such other newspaper as the Registrar-General may, if he think necessary, direct, during such time, in such form, and generally in such manner as the Registrar-General may determine.

8. *Means of advertising trade-mark to be supplied.*—For the purposes of such advertisement the applicant may be required to furnish the Government Printer and the printer of such other newspaper with a wood block or electrotype of the trade-mark of such dimensions or with such information or means of advertising the trade-mark as may be determined by the Registrar-General.

9. *Notice and proceedings for objection.*—Notice of objection to any application may be given within three months of the publication of such advertisement to the Registrar-General by sending the same in duplicate on foolscap paper, stating the grounds of the objection. The Registrar-General shall send one copy of such notice to the applicant. Within three weeks after receipt of such notice, or such further time as the Registrar-General may allow, the applicant may send to the Registrar-General a counter-statement on foolscap paper, and if he fails to do so his application shall be deemed to be withdrawn. The Registrar-General, after hearing the applicant and objector, may order costs to be paid by either of them as he may think fit.

10. *Time of registration of trade-mark.*—On the expiration of three months from the date of the first appearance of the advertisement in the *Government Gazette*, the Registrar-General may, if he is satisfied that the applicant is entitled to registration, register the trade-mark in respect of the description of goods for which he may be entitled to be registered, and the applicant as the proprietor thereof.

11. *Date of registration.*—When a trade-mark shall be registered, the date on which the application for registration was received by the Registrar-General shall be deemed to be the date of registration.

12. *Assignment.*—When a trade-mark has been assigned, any person claiming to be registered as assignee shall send to the Registrar-General an application in the form of the fifth schedule hereto, and shall forward therewith an assignment by deed duly executed.

13. *Transmissions.*—When a trade-mark is transmitted by operation of law, the person applying to be registered as the transmittee shall send to the Registrar-General an application in the form of the fifth schedule hereto, and shall produce to the Registrar-General such evidence as he may desire in support of such application.

14. *Removal of trade-mark after seven years, unless fees paid.*—At the expiration of seven years from the date of registration, or within six months thereafter, unless the fees prescribed for continuance be paid, the trade-mark may be removed from the register.

15. *Payment of additional fee after expiration of seven years.*—If before the expiration of the said six months the registered proprietor pays the said fee, together with the additional prescribed fee, the Registrar-General may, without removing such trade-mark from the register, accept the said fee as if it had been paid before the expiration of the said seven years.

16. *Power of Registrar-General to restore trade-mark.*—When a trade-mark has been so removed from the register, the Registrar-General may, if he is satisfied that it is just so to do, restore such trade-mark to the register on payment of the additional fee prescribed and compliance with such conditions as he may think fit.

17. *Trade-mark like one removed not to be registered for five years.*—When a trade-mark has been removed from the register for non-payment of the fee or otherwise, such trade-mark shall nevertheless for five years after the date of such removal be deemed, for the purpose of section 8 of the act No. 539, to be a trade-mark which is already registered.

18. *Publication of rectification or alteration of register.*—Whenever the register is rectified or altered in any particular, the Registrar-General shall, if he consider that such rectification or alteration should be made public, publish, at the expense of any person interested, by advertisement or otherwise, the circumstances attending such rectification or alteration.

19. *Notice to Registrar-General of opposition in any matter.*—When any person objects to the registration of any assignee or transmittee, or to any rectification or alteration of the register, the Registrar-General shall give to the applicant or his agent for such registration, rectification, or alteration, the like notice. The Registrar-General in such case may, if he think fit, require the parties interested to submit their claims to the Supreme Court.

20. *Submission to court of conflicting claims.*—Where the Registrar-General refuses to comply with the claims of any persons until their rights have been determined by the Supreme Court, the manner in which the rights of such claimants may be submitted to the Supreme Court by the Registrar-General, or by the claimants, if the Registrar-General so require, shall, unless the Court otherwise order, be by a special case or statement of questions of fact without pleadings, and the same shall be filed and proceeded with in like manner as in the case of any other special case or statement of questions of fact without pleadings submitted to the Supreme Court.

21. The special case or statement of questions of fact may be agreed to by the parties, and, if they differ, may be settled by the Registrar-General.

22. Applications, statements, notices, and documents, required by the act No. 539, or by these rules, to be served or sent, shall be in writing or print, or partly in writing and partly in print, and may be delivered personally or sent by post, and if sent by post shall be deemed to have been served and received, respectively, at the time when the letter containing the same would be delivered in the ordinary course of post; and in proving such service or sending it shall be sufficient to prove that the letter containing the notice was prepaid, duly stamped, and put into the post properly stamped.

23. In these rules words importing the masculine gender shall be deemed and taken to include females, and the singular to include the plural and the plural the singular.

Fees.

The following fees shall be payable to the Registrar-General on or for the following occasions or purposes:

1. On application to register one trade-mark for one or more articles included in one class, five shillings.
2. On application to register more than one trade-mark for one or more articles included in one class, for each additional trade-mark after the first, five shillings.
3. On application to register a trade-mark in respect of goods in different classes, for every class after the first to which such trade-mark is extended, an additional fee of five shillings.
4. For registration of one trade-mark, one pound.
5. Where the same person is registered at the same time for more than one trade-mark, for registration of each additional trade-mark after the first, ten shillings.
6. For entering notice of objection, for each trade-mark one pound.
7. For registering subsequent proprietor, for each trade-mark ten shillings.
8. For altering address on the register, two shillings and six pence.
9. For every entry in the register of a rectification thereof, or an alteration therein not otherwise charged, five shillings.
10. For continuance of trade-mark on or before day of expiration of seven years, one pound.
11. Additional fee where fee is paid within six months after expiration of seven years, one pound.
12. Additional fee for restoration of trade-mark when removed for non-payment of fee, two pounds.
13. For certificate for each trade-mark, five shillings.
14. For inspecting register, one shilling.
15. For office copy of documents, for folio of seventy-two (72) words, six pence.
16. Settling a special case, one pound.
17. For a sketch or copy of a trade-mark, such fee as may be determined in each case by the Registrar-General.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 33—No. 5. TUESDAY, NOVEMBER 3, 1885. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., October 23, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that William A. Frush, of Garden City, Kansas, be not recognized from and after this date as agent or attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

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DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., October 27, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that William R. Davis, of Chicago, Illinois, be not recognized from and after this date as agent or attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of November 3, 1885.

Patents	448—No. 329,426 to No. 329,873,	inclusive.
Designs	12—No. 16,359 to No. 16,370,	inclusive.
Trade-Marks	24—No. 12,723 to No. 12,746,	inclusive.
Labels	5—No. 4,616 to No. 4,620,	inclusive.
Reissues	4—No. 10,656 to No. 10,659,	inclusive.
Total issue	493	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	2	.....
Arizona Territory	.....	.....	Nevada	1	.....
Arkansas	1	.....	New Hampshire	1	.....
California	10	.....	New Jersey	23	.....
Colorado	6	.....	New Mexico Territ'y	.....	.....
Connecticut	20	.....	New York	71	5
Dakota Territory	1	.....	North Carolina	2	1
Delaware	.....	.....	Ohio	35	.....
District of Columbia	4	.....	Oregon	1	.....
Florida	2	.....	Pennsylvania	46	1
Georgia	2	.....	Rhode Island	4	.....
Idaho Territory	.....	.....	South Carolina	2	.....
Illinois	43	1	Tennessee	1	.....
Indiana	14	1	Texas	3	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	5	.....	Vermont	6	.....
Kansas	6	.....	Virginia	3	1
Kentucky	13	5	Washington Territ'y	.....	.....
Louisiana	.....	.....	West Virginia	2	1
Maine	6	.....	Wisconsin	11	2
Maryland	5	1	Wyoming Territory	.....	.....
Massachusetts	41	5	United States Army	.....	.....
Michigan	8	1	United States Navy	.....	.....
Minnesota	6	.....			
Mississippi	.....	.....	Total to citizens of the United States	423	25
Missouri	12	.....			
Montana Territory	2	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic	.....	.....	Germany	14	.....
Austria-Hungary	2	.....	Holland	.....	.....
Barbadoes	.....	.....	Italy	.....	1
Belgium	.....	.....	New Foundland	1	.....
Bermuda	.....	.....	Peru	1	.....
British Columbia	.....	.....	Russia	.....	.....
Canada	5	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
China	.....	.....	Switzerland	1	.....
Colombia, U. S. of	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	37	4
England	8	2			
France	5	1			

DESIGNS.

16,359.—STAND.—*Moritz Eisner* and *Joseph Mendelson*, Philadelphia, Pa. Application filed August 27, 1885. Serial No. 175,513. Term of patent 3½ years.

16,360.—FAN.—*James Henry Ferguson*, Brooklyn, N. Y. Application filed June 25, 1885. Serial No. 169,771. Term of patent 7 years.

16,361 and 16,362.—CARPET.—*James Lyall*, New York, N. Y. Applications filed June 25, 1885. Serial Nos. 169,773 and 169,774. Term of patents 7 years.

16,363.—ORNAMENTATION OF WHEEL-HUBS.—*Jared Maris*, Columbus, Ohio. Application filed July 22, 1885. Serial No. 172,343. Term of patent 3½ years.

16,364 and 16,365.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Mankey*, Williamsport, Pa. Applications filed July 18, 1885. Serial Nos. 171,987 and 171,994. Term of patents 7 years.

16,366.—CHENILLE.—*Hugo Maul* and *Frederick Landenberger*, New York, N. Y. Application filed July 23, 1885. Serial No. 172,471. Term of patent 7 years.

16,367.—BADGE.—*Durand A. Reese*, Philadelphia, Pa. Application filed August 7, 1885. Serial No. 173,872. Term of patent 7 years.

16,368.—[Withdrawn.]

16,369.—GROUP OF STATUARY.—*John Rogers*, New Canaan, Conn. Application filed October 8, 1885. Serial No. 179,370. Term of patent 14 years.

16,370.—HEATING-STOVE.—*William C. Smith*, Warsaw, Mo. Application filed September 21, 1885. Serial No. 177,779. Term of patent 7 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,723.—ROASTED COFFEE.—*Simon Baer's Sons*, Wheeling, W. Va. Application filed October 7, 1885.
"The words 'THE PAN HANDLE.'"

12,724.—CHEESE.—*Burrell & Whitman*, Little Falls, N. Y. Application filed October 10, 1885.
"The arbitrary word 'NOSEGAY.'"

12,725.—DISTILLATION FROM ITALIAN JUNIPER-BERRIES.—*Colburn, Birks & Company*, Peoria, Ill. Application filed October 5, 1885.
"The words 'VAN WINKLE'S HOLLAND CORDIAL' and the representation of the bust of a monk."

12,726.—TOILET AND LAUNDRY SOAP.—*Colgate & Co.*, New York, N. Y. Application filed October 9, 1885.
"The word 'LACE.'"

12,727.—LIQUID PREPARATION OF HOPS.—*Heptonic Company*, Grand Rapids, Mich. Application filed August 28, 1885.
"The representation of the globe sphere surmounted by a cherub, in combination with the words 'HEALTH TO THE WORLD' and 'HOPTONIC.'"

12,728.—CROUP CURE.—*Anna Poole Hoxsie*, Buffalo, N. Y. Application filed September 14, 1885.
"The words 'DR. A. C. HOXSIE'S,' associated with the picture of a target with an arrow striking a bull's-eye."

12,729.—CHAMPAGNE-WINES.—*Kunkelmann & Co.*, Rheims, France. Application filed July 22, 1885.
"The words 'PIPER SEC.'"

12,730.—LAMPS AND LANTERNS FOR BICYCLES, TRICYCLES, AND OTHER VELOCIPEDES.—*Joseph Lucas & Son*, Birmingham, England. Application filed October 1, 1885.
"The words or phrase 'KING OF THE ROAD.'"

12,731.—WHISKY.—*Charles P. Moorman*, Louisville, Ky. Application filed October 12, 1885.
"'A No. 1,' in connection with registrant's general trade-mark, 'J. H. CUTTER' and a crown, and the fac-simile signature of the firm-name."

12,732.—WHISKY.—*Charles P. Moorman*, Louisville, Ky. Application filed October 12, 1885.
"The letters 'O K' with a crown between them, and the fac-simile signature of registrant's firm-name, all in connection with the general trade-mark, 'J. H. CUTTER.'"

12,733.—WHISKY.—*Charles P. Moorman*, Louisville, Ky. Application filed October 12, 1885.
"The letter 'A,' in connection with registrant's general trade-mark, 'J. H. CUTTER' and a crown, and the fac-simile signature of the firm-name."

12,734.—WHISKY.—*Charles P. Moorman*, Louisville, Ky. Application filed October 12, 1885.
"The arbitrary word-symbol 'OLD RESERVE,' a representation of palm leaves and bulbs, and oak-leaves and acorns, and the fac-simile signature of registrant's firm-name, all in connection with the general trade-mark, 'J. H. CUTTER' and a crown."

12,735.—WHISKY.—*Charles P. Moorman*, Louisville, Ky. Application filed October 12, 1885.
"The arbitrary word-symbol 'J. H. CUTTER' and the representation of a regal crown."

12,736.—LINIMENT.—*Walter Nixon Mullen*, Charlotte, N. C. Application filed September 5, 1885.
"The picture of a hornets' nest."

12,737.—FOOT-WEAR MADE OF FELT AND FELTING MATERIAL.—*The Merino Shoe Company*, Kennebunk, Me., and Boston, Mass. Application filed October 13, 1885.
"The word 'POLAR.'"

12,738.—PEANUTS.—*Norfolk Storage Company*, Norfolk, Va. Application filed September 10, 1885.
"The arbitrarily-selected symbol 'ELECTRIC LIGHT.'"

12,739.—BEER.—*Phillip Best Brewing Company*, Milwaukee, Wis. Application filed October 8, 1885.
"A conventionalized hop-leaf with the letter 'B' thereon.

12,740.—BEER.—*Phillip Best Brewing Company*, Milwaukee, Wis. Application filed October 8, 1885.
"A red band encircling a conventionalized hop-leaf with the letter 'B' thereon."

12,741.—COMPOUND FOR CLEANING CLOTHING, FABRICS, PAINT-WORK, &c.—*Henry R. Stevens*, Boston, Mass. Application filed October 7, 1885.
"The arbitrary word 'SAVENA.'"

12,742.—MEDICINES CONTAINING MALT.—*Vogeler, Son & Co.*, Baltimore, Md. Application filed October 7, 1885.
"The representation of a hand grasping a wisp or sheaf of barley."

12,743.—YEAST.—*Hulbert H. Warner*, Rochester, N. Y. Application filed October 12, 1885.
"The arbitrary word-symbol 'WARNER'S BALLOON' and the representation of a balloon."

12,744.—SAIL-CLOTH OR DUCK.—*Whiton, Brother & Co.*, Boston, Mass. Application filed October 8, 1885.
"The word 'PACIFIC.'"

12,745.—ALKALIES AND BLEACHING-POWDER.—*Wigg Brothers & Steele*, Runcorn, county of Chester, England. Application filed October 12, 1885.
"A fouled anchor."

12,746.—OLIVE-OIL.—*S. Ras & Co.*, Leghorn, Italy. Application filed October 12, 1885.
"A medallion bearing the monogram 'S R & Co.' and surrounding sprays or branches of the olive-tree."

LABELS.

4,616.—Title: "ARMSTRONG'S ASTHMA AND HAY FEVER REMEDY." *Thomas L. Armstrong*, Indianapolis, Ind. Application filed October 10, 1885.

4,617.—Title: "SILK SILVER TOWEL," (FOR TOWELING.)—*George S. Brown*, Boston, Mass. Application filed October 10, 1885.

4,618.—Title: "GENUINE SILK SPONGE TOWEL," (FOR TOWELING.)—*George S. Brown*, Boston, Mass. Application filed October 10, 1885.

4,619.—Title: "CAMPBELL'S TONIC WINE OF COCA AND CELERY."—*Milton Campbell*, Philadelphia, Pa. Application filed September 29, 1885.

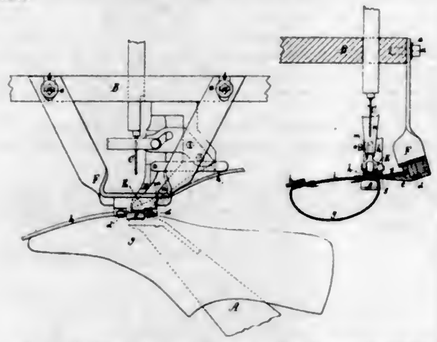
4,620.—Title: "PEARL WHITE TOOTH PASTE."—*Matthew S. Gooding*, Le Roy, N. Y. Application filed October 12, 1885.

PATENTS

GRANTED NOV. 3, 1885.

329,426. MACHINE FOR SEWING WELTS TO SHOE INSOLES AND UPPERS. EDWARD F. ARNOLD, North Abington, Mass. Filed May 13, 1885. (No model.)

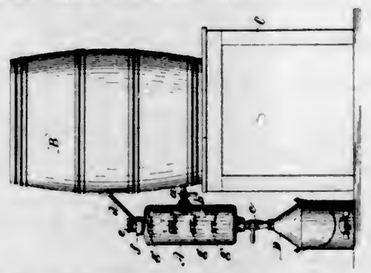
Brief.—The purpose of the construction is to automatically guide the shoe upon the horn in such manner that the line of sewing shall be essentially parallel with the edge of the insole. A beveled arm or conical roller serves as a gage to press the upper against the edge of the insole.



Claim.—1. The combination of the presser-foot provided with the welt-passage extending through it in its heel or rear part, as described, with the shoe-supporting horn, and with the rotary and conical gage, substantially as set forth, arranged above the said horn, and for use therewith as specified.

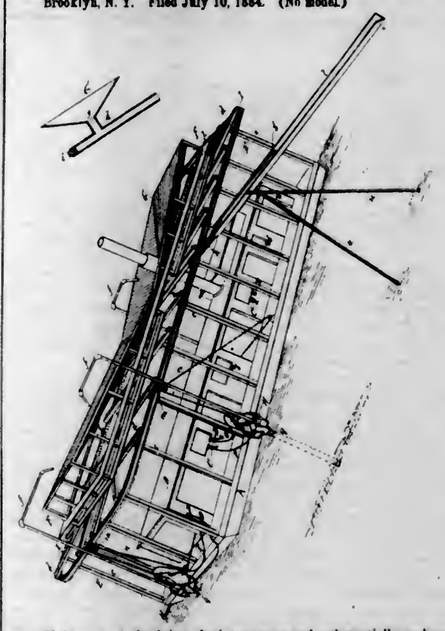
2. The combination, with a McKay sewing-machine, of the rotary conical gage *f* and its adjustable sustaining-arm and the adjustable stirrup of the latter, such stirrup being applied to the base-plate of the machine, and the rotary gage being arranged above the horn, in manner and to operate therewith substantially as set forth.

329,427. DEVICE FOR MEASURING LIQUIDS. FRED BACH, Carlton, Wis. Filed Dec. 29, 1884. (No model.)



Claim.—The transparent-glass measure A, having its top, sides, and bottom constructed in one piece, and provided with quantity-indicating marks *g g*, and with a side inlet-orifice and a bottom discharging-orifice, in combination with the inlet-faucet *a*, provided with stop-valve *b*, the discharging-faucet *c*, provided with a stop-valve, the metallic top *f*, secured to the measure A, and the brace *d*, secured at one end to the metallic top *f* and at the other end secured to the cask to which the measure is attached, substantially as set forth.

329,428. APPARATUS FOR DREDGING. GARDNER F. BADGER. Brooklyn, N. Y. Filed July 10, 1884. (No model.)



Claim.—1. A dredging device constructed substantially as herein shown and described, consisting of a barge or boat having fixed thereon frame-work supporting an elevated receiving and discharging hopper and a continuous rail, a pump suspended by trolley and chain from the continuous rail, and provided with flexible steam and water attachments for operation, and provided also with rigid suction-pipe, suitable discharge-pipes connected with the elevated hopper, and an adjustable trough, all arranged and operated as set forth.

2. In a dredging device, the combination, with a barge supporting an elevated continuous rail, as I, of pump H, having flexible steam and water connections, and devices for suspending said pump from said rail, substantially as herein shown and described, whereby said pump may be raised, lowered, and moved, as set forth.

3. In a dredging device of the character substantially as herein shown and described, the combination, with a barge carrying a hopper, as G, and a continuous overhanging rail, of a pump and of attachments for raising, lowering, and laterally moving said pump, and a pipe projecting from said pump and having its discharge end over said hopper, as set forth.

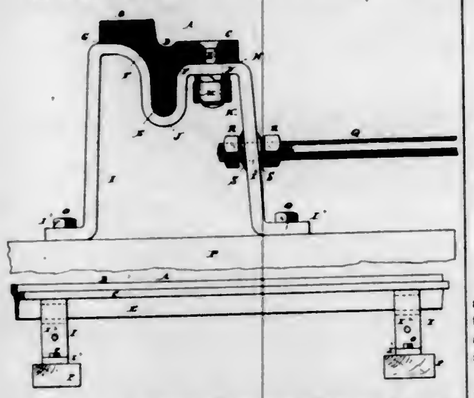
4. In a dredging device, as a means for supporting a dredging-pump and facilitating its adjustment in position, an elevated continuous rail, as I, fixed on and in combination with a supporting boat and frame, whereby the pumping mechanism may be used upon all sides and over a large area without moving the boat, as set forth.

5. In a dredging device, the combination, with an elevated continuous rail, as I, a carrier, *m*, traversing said rail, and pump-suspending chain *n*, of a pump, as H, provided with flexible steam and water connections, substantially as herein shown and described.

6. In a dredging device of the character substantially as herein shown and described, the combination, with an elevated hopper, as G, and suitable hopper-discharging pipes, of flexible pipe *k*, iron pipe *s*, and V-shaped trough *l*, as set forth.

7. The combination, with a barge carrying a hopper, as G, with discharging means, as shown, of one or more pumps, as H, having flexible water and steam connections with controlling-cocks, and having discharge-pipes, as *f*, and suction-pipes, as *q*, all arranged and operating substantially as and for the purposes set forth.

329,429. RAILWAY. GEORGE E. BALDWIN, Philadelphia, Pa. Filed Oct. 21, 1884. (No model.)



Claim.—1. A rail formed with the upper treading part, B, lower or base part, C, and a longitudinal rib or web projecting downward from the line of juncture or thereabout of the said parts B and C, in combination with chairs formed of stamped metal and having their upper faces made to receive the lower face of the rail and its rib, substantially as and for the purpose specified.

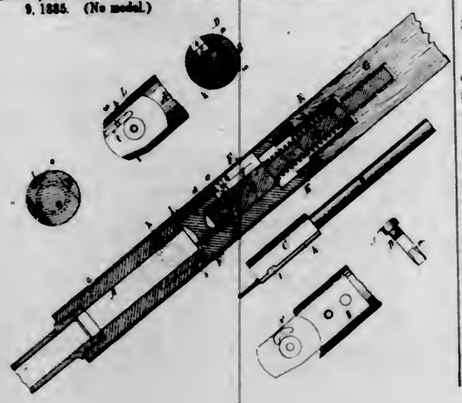
2. A rail formed with the upper treading part, B, lower or base part, C, and a longitudinal rib or web projecting downward from the line of juncture or thereabout of the said parts B and C, in combination with chairs formed of stamped metal and having their upper faces made to receive the lower face of the rail and its rib, and bolts L, extending through base parts, C, of the rail and face H of the chair, substantially as and for the purpose specified.

3. A rail formed with the upper treading part, B, lower or base part, C, and a longitudinal rib or web projecting downward from the line of juncture or thereabout of the said parts B and C, in combination with chairs formed of stamped metal and having their upper faces made to receive the lower face of the rail and its ribs, and bolts L, extending through base parts, C, of the rail and face H of the chair and furnished with round nuts M, substantially as and for the purpose specified.

4. The rails and their chairs, in combination with rods Q, nuts K, and adjusting-washers S, substantially as and for the purpose specified.

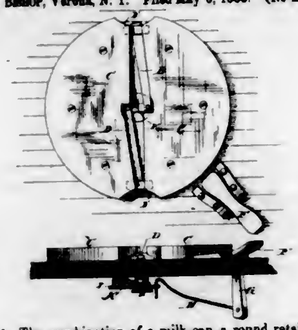
5. The combination of rail A, having base part C, treading part B, and rib E, with chairs I, made as shown, and metallic supporting-plates upon which said chairs rest, substantially as and for the purpose specified.

329,430. CANE-GUN. EDWARD D. BEAN, Boston, Mass. Filed Feb. 9, 1885. (No model.)



Claim.—The combination of the gun-barrel the hollow breech-piece jointed to the barrel and having the groove *e* and slot *f*, the firing-pin having the pin *g* and its operative spring arranged lengthwise within the breech, the trigger and its operative spring arranged transverse the firing-pin, the bolt I, having the pin *o* and arranged in the groove *e*, the sleeve having a slot with a notch at each end, and the stock or handle secured to such sleeve, as set forth.

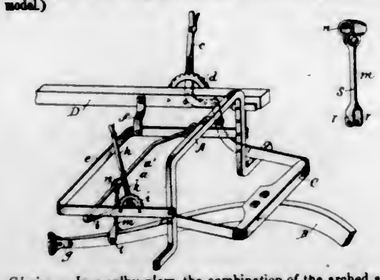
329,431. DEVICE FOR ATTACHING MILK-CANS TO WAGONS. CALVIN W. BISHOP, Verona, N. Y. Filed May 6, 1885. (No model.)



Claim.—1. The combination of a milk-can, a round retaining-plate attached to the transporting-vehicle and fitting within the bottom rim thereof, the locking-bolts, the vibrating arm connecting them, the operating-pedal, and the lever and rod connecting the pedal and locking-bolts, substantially as described.

2. The combination of the can A, plates C C, locking-bolts D D, vibrating arm E, lever I, connecting-rod H, and pedal G, substantially as described.

329,432. SULKY-PLOW. JOSEPH P. BLACK, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Aug. 21, 1885. (No model.)



Claim.—In a sulky-plow, the combination of the arched axle supported on wheels, the rear bail, C, having a pivotal connection on the said axle, and an operating-lever connected therewith, a plow having a pivotal connection on said bail, the foot-rail *e*, brace *f*, and tongue D with the front bail, *a*, having a pivotal connection on said foot-rail, and an operating-lever connected therewith, and the link *m*, connecting the plow-beam with the said front bail, all constructed and arranged to operate substantially as and for the purpose set forth.

329,433. SUSPENDERS. J. TALMAN BUDD, Buffalo, N. Y. Filed Apr. 6, 1885. (No model.)

Claim.—1. A device for suspenders, consisting of a metallic or other suitable plate attached to the suspender-ends, in combination with the drawers-supports connected to said plate by a cast-off, substantially as set forth

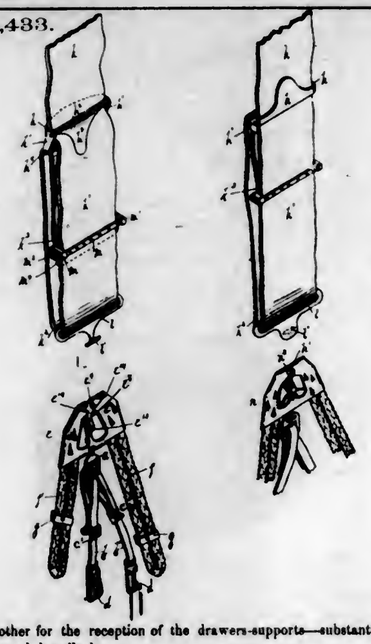
2. A device for suspenders, consisting of a metallic or other suitable plate attached to the suspender-ends, in combination with the drawers-supports connected to said plate by a cast-off, and means, substantially as described, for adjusting the said drawers-supports in length or position, or both, substantially as set forth.

3. In suspenders, the combination, with the end of the shoulder-strap, of a combined clamp and roller constructed substantially as shown and described, by means of which such shoulder-strap is adjustable as to length, substantially as shown and described.

4. In suspenders, in combination with the shoulder-strap, the combined clamp and roller, consisting of the frame A, having the wings A' A', the clamp A^3, with its lever A^3, and the roller A^4, substantially as shown and described.

5. In suspenders, and in combination with a shoulder-strap, a double clasp having the two catches—one for attachment to the shoulder-strap

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and the other for the reception of the drawers-supports—substantially as shown and described.

6. In suspenders, and in combination with a shoulder-strap, a clasp having two catches and a frame adapted to receive and hold the ends of the pants-supports, substantially as described, such clasp being adapted for attachment to the end of the shoulder-strap and for the reception of the drawers-supports, substantially as shown and described.

329,434. CLASP FOR SUSPENDERS AND OTHER ARTICLES. J TALMAN BUDD, Buffalo, N. Y. Filed May 20, 1885. (No model.)



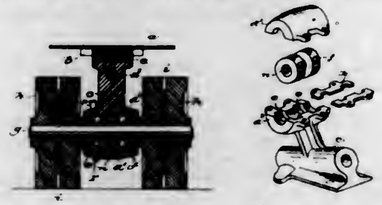
Claim.—1. In a clasp for suspenders, &c., a frame having a slot or slots within or under which is provided a shoulder, in combination with a T-shaped hanger adapted to co-operate with such slotted frame, substantially as set forth.

2. A clasp consisting of the spring-strip a^9, having the shoulder a^{10} and the slot a^{15}, within or under which the spring-strip a^8 a^{10} is located, the whole arranged upon a suitable frame and adapted for the reception of a T-shaped hanger, substantially as shown and described.

3. A double clasp consisting of the spring-strip a^8, having the shoulder a^{10} and the slot a^{12}, forming the upper clasp, and the spring-strip a^7 having the shoulder a^{11} and the slot a^8, forming the lower clasp, the whole arranged upon a suitable frame, all the parts, with the frame, being integral, substantially as shown and described.

4. The combination, with a clasp consisting, substantially, of a frame having a slot within or under which is arranged a shoulder, of a T-shaped hanger having its cross-bar thicker in horizontal than in vertical section, substantially as and for the purpose stated.

329,435. ANTI-FRICTION BEARING FOR ROLLER-SKATES. GEO. D. BURTON, Boston, Mass. Filed Feb. 24, 1885. (No model.)

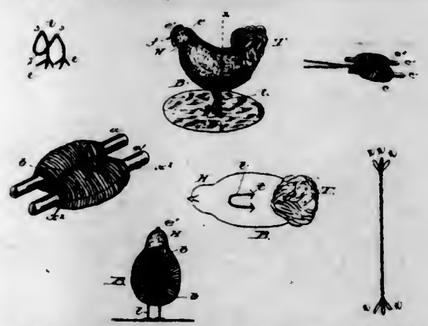


Claim.—1. The axle and its attached wheels or rollers, combined with a pedestal having a transverse bore of a diameter slightly in excess of that of the axle to receive said axle, and provided with internal grooves opening into said bore, and with anti-friction devices placed in said grooves and held against displacement in one direction by the axle and against displacement in all other directions by the substance of the pedestal itself when said axle is secured in the bore in said pedestal, substantially as shown and described.

2. In a roller-skate, a roller-pedestal having the axle-bearing box integral therewith, bored transversely and provided with one or more internal grooves around the said bore, combined with a roller-axle extending through the said bore, and anti-friction balls or rollers in the said groove, surrounding and constituting the bearing for the said axle, substantially as described.

3. A bearing-pedestal transversely bored and provided with internal grooves, combined with the roller and axle extending through the said bore, and anti-friction balls or rollers arranged in said grooves and supporting and in immediate contact with the axle, and an oil cup or passage entering the upper portion of the box and the closed outlet-passage from the lower portion of the box, as and for the purpose described.

329,436. TOY ANIMAL. SARAH M. BUTLER, Haverhill, Mass. Filed Feb 9, 1885. (No model.)



Claim.—1. A toy animal having a body composed of thread or yarn in short lengths, but connected together at or near the center of the body, the free ends of the yarn being exposed to form the exterior or visible part of the body, and of an attached head composed of short lengths of thread or yarn connected together centrally and trimmed to shape, and of stiffened legs, substantially as described.

2. A toy animal having a body composed of thread or yarn in short lengths, but connected together at or near the center of the body, the free ends of the yarn being exposed to form the exterior or visible part of the body, and provided with legs stiffened with wire and laid against the body for part of their length, substantially as described.

3. The head H, having a beak connected therewith by a strand, *g*, as and for the purpose described.

329,437. BUTTON-FASTENER. JAMES CHERRY, Jr., Akron, Ohio. Filed Aug. 19, 1885. (No model.)



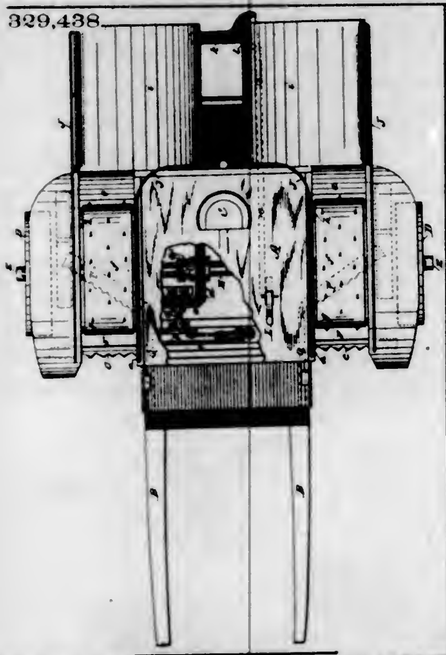
Claim.—A button-fastener consisting of a single wire folded in two contiguous parallel halves, the folded end bent upward, and thence curved forward, downward, and backward, forming a hook with its end below and back of said upward bend, the two wires back of said upward bend being flattened, turned outward, and curved backward and thence downward, substantially as shown, and for the purpose specified.

329,438. CORN HARVESTER. EDWARD W. CORBETT, Edesville, Md. Filed Apr. 8, 1884. (No model.)

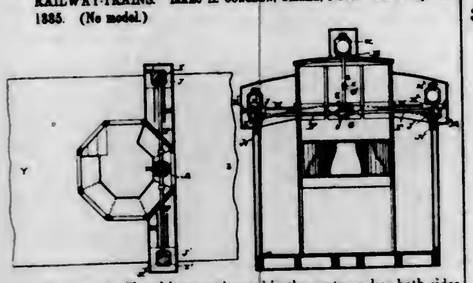
Claim.—1. The combination, with the frame A, the wheels D, and the axle E, of the bar F, the cutter-blades C, mounted thereon, and means, substantially as described, for connecting the bar F with the axle E, the toothed belts *f*, the rollers *g* and *h*, the gear-wheels H and I, and the guide-rods J, substantially as and for the purpose specified.

2. The combination, with the cutters C, the belts *f*, and guide-rods J, of the slanting aprons *i i*, the platform K, the pivoted arm *k*, and the hand-lever L, as and for the purpose specified.

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329,439. DEVICE FOR OPERATING REAR SIGNAL-LIGHTS OF RAILWAY-TRAINS. ISAAC H. COMSTOCK, Omaha, Nebr. Filed Apr. 20, 1885. (No model.)



Claim.—1. Signal-lanterns located in the center and on both sides of a car, and operated by a single lever, in combination with a railway-car and shaftings and gears therein, as described, whereby one or more signal-lights upon said car are revolved, substantially as and for the purpose described.

2. The shaft C, with taper seat C' and key C², in combination with shaft *c* and the lamp-tables, substantially as and for the purpose described.

3. The lamp-slide and spring secured thereto, in combination with the lamp-table having tapering grooved seat and supporting-shaft, substantially as and for the purpose described.

4. The combination of the shafts C and *c*, collar B and lever B', table A, gear D, shaft F, gears J and J', gears I and I', gear-collar G, lamp-tables, and lamps, with a railway-car, substantially as and for the purpose herein described.

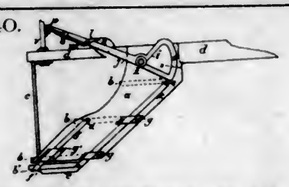
5. Lamp-slides U, and spring A secured thereto, in combination with the lamp-tables T, T', and T² and their supporting-shafts, substantially as and for the purpose described.

6. The combination of the shafts C and *c*, lever-collar B, lever B', table A, shaft F, a central gear and gears at each end, lamp-tables mounted upon each vertical shaft, lamps upon said tables, and box-brackets M, with a railway-car, substantially as and for the purpose herein described.

329,440. FOLDING CAR-STEP. JAMES H. CRUSER, Cruger, N. Y. Filed Sept. 7, 1885. (No model.)

Claim.—1. The combination, with the fixed steps of a car, of the folding step *b'*, supported by the sliding bars *f* and *e*, having bearings on the framing of the steps, cam *i*, pivot *k*, connection *s*, and lever *j*, provided with a pawl and an operating lever, and stop *n*, substantially as and for the purposes described.

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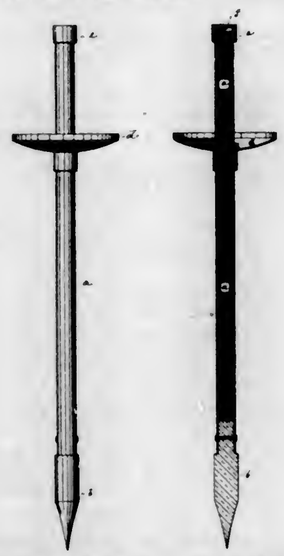
2. In combination with the platform of a car, for the purposes of a folding car-step, substantially as described, the cam *i*, supported on pivot *k* and united with lever *j*, which is provided with a pawl and pawl-operating lever, and a stop, *n*, substantially as shown and described.

329,441. COVER FOR CHAMBER-VESSELS. JOHN S. DAVISON, Cranbury, N. J. Filed Aug. 15, 1885. (No model.)



Claim.—The cover for chamber-vessels, made of rubber or other similar material, and having the central opening and the valve, and the weighted ring at its edge to encircle the top of the vessel, and the expansible cap secured at its edge to the edge of the cover, and having the central button or loop, whereby the cap may be distended to exhaust the air from the vessel and cause the cover to fit tightly thereon, substantially as described.

329,442. PYROTECHNIC SIGNAL-TORCH. JOHANN DAX, Cologne, Germany. Filed Feb. 19, 1885. (No model.)



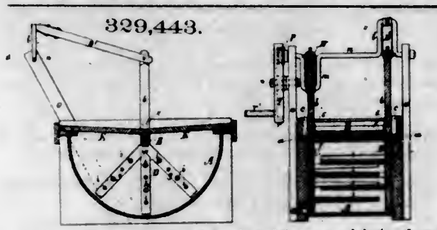
Claim.—1. The combination of a zinc tube, *a*, with a charge which consumes the zinc tube in burning down, and with a drip-cup, *d*, and cap *e*, substantially as and for the purpose specified.

2. The combination of zinc tube *a* with pointed handle *b*, drip-cup *d*, and cap *e*, and with a charge which consumes the tube in burning down, substantially as specified.

3. The combination of zinc tube *a* with handle *b*, drip-cup *d*, and cap *e*, and with a charge composed of sulphur, nitrate of potassium, sulphide of antimony, realgar, and zinc filings, substantially as specified.

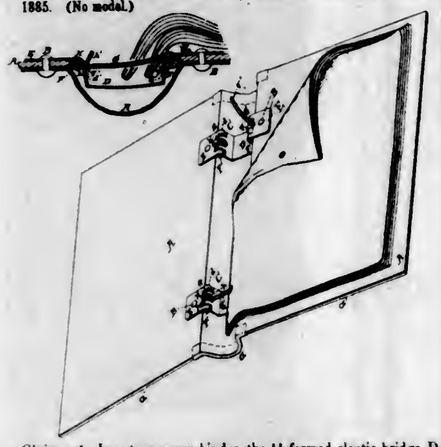
329,443. CHURN. GEORGE F. DAY, Shubenacadie, Nova Scotia, Canada. Filed Mar. 2, 1885. (No model.)

329,443.



Claim.—The combination of the pivoted three-armed dasher-frames, the cross-bar, the churn-body provided with slots for reception of the tenons on the ends of said bar, and the operating mechanism, all being substantially as set forth.

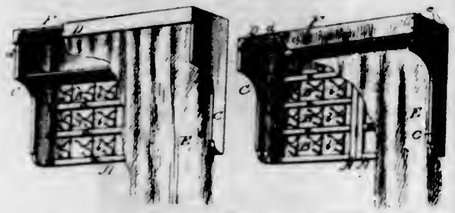
329,444. TEMPORARY BINDER. ALEXANDER DOM, Mount Healthy, assignor to the Globe Files Company, Cincinnati, Ohio. Filed June 19, 1885. (No model.)



Claim.—1. In a temporary binder, the U-formed elastic bridge D, having hinged to it a tongue, G, and two wings, E, by which it is attached to the binder-cover, the length of the tongue relatively to the distance separating the hinge-pintles F being such as to permit the forcing of the tongue-point past the opposing pintle and to cause it to be locked behind the same, as and for the purpose designated.

2. The combination, with the releasing-latchet H, of the clasp consisting of the U-formed elastic bridge D, terminating in knuckles *d*, the wings E, having knuckles *e*, the pintles F, and the tongue G, whose eye *g* encircles that part of the pintle that is included between the knuckles *d*.

329,445. FOLDING AND PORTABLE WARDROBE. MICHAEL F DUNN, Pullman, Ill. Filed May 23, 1884. (No model.)



Claim.—1. A folding and portable wardrobe consisting of the open rectangular frames hinged together, oscillating hooks pivoted therein, the bracket-shaped side frames hinged to the outer edges of said rectangular frames, and a curtain-pole connecting the said side frames.

2. The combination, in a wardrobe, of the open frames A A, hooks B, hinged thereon, side frames, C C, pole D, and curtain E.

3. The combination, in a wardrobe, of the open frames A, hooks B, hinged thereon, side frames, C, and cover F, substantially as set forth.

4. The combination, in a wardrobe, of the open frames A, hooks B, hinged thereon, side frames, C, cover F, and curtain E, substantially as and for the purpose set forth.

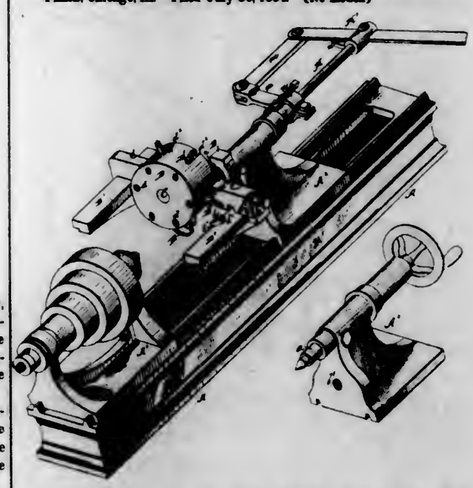
5. The combination, in a folding and portable wardrobe, of the open frames A, hinged together, hooks B, pivoted thereon, side frames, C, hinged to the outer sides of frames A, pole D, connecting said side frames, curtain E, hung therefrom, and cover F, as hereinbefore described.

329,446. PROCESS OF TREATING STEAM-BOILERS FOR PREVENTING FRACTURES AND EXPLOSIONS. CHARLES S. ERADUS, St. Louis, assignor of one-tenth to Charles D. Meady, Webster Groves, Mo. Filed Sept. 8, 1885. (No specimens.)



Claim.—The herein-described mode of treating steam-boilers, for preventing fractures and explosions, with a working steam-pressure, which consists in subjecting the entire boiler, without any water in it, to an annealing heat, and allowing it to cool gradually, substantially as described.

329,447. TOOL-HOLDING ATTACHMENT FOR LATHES. WILLIAM FERRY, Chicago, Ill. Filed July 30, 1884. (No model.)



Claim.—1. The combination, with the tail-stock of a lathe, of a turret-head pivoted thereon, and means, substantially as described, for automatically turning it as it is moved to and from the work, substantially as and for the purpose set forth.

2. The combination, with the tail-stock of a lathe, of a guide-frame secured to the stock, a cross-head sliding thereon and secured to the spindle of the tail-stock, a turret-head pivoted upon the cross-head, socketed for the reception of the dies, and provided with screws for clamping the dies which project from the side of the turret, a spring-catch engaging notches in the turret to hold it in position, a dog on the guide-frame for withdrawing the catch, and an incline on the guide frame to engage and automatically turn the turret, substantially as and for the purpose set forth.

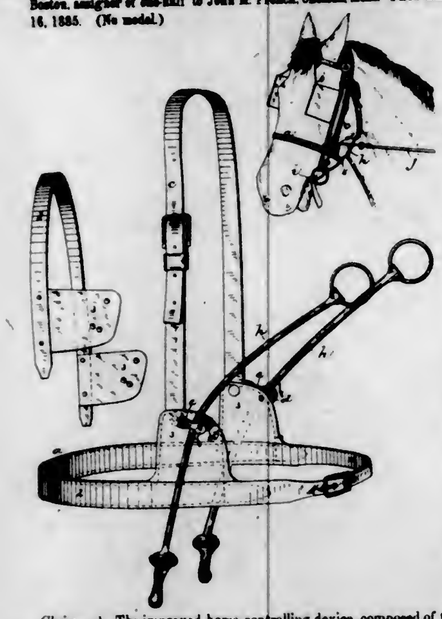
3. A turret-head for lathes, formed with sockets for receiving the dies, and provided with projecting set-screws for securing them in place, in combination with an incline or arm on the frame B, against which the projecting screws strike to revolve the head, substantially as and for the purpose set forth.

4. In a screw-cutting attachment for lathes, the turret-head D, formed with sockets *d*, the set-bolts D', having a short plain portion, *d'*, and the cross-head C, sliding on guides or ways to and from the work, in combination with the hinged and inclined arm E, having a shoulder, *e*, and the spring-pin *e'*, socketed in the frame and bearing against the arm, substantially as and for the purpose set forth.

5. The frame B, removably clamped to the tail-stock of a lathe, having guides B', provided with a pivoted spring-pawl, *h*, in combination with a cross-head sliding upon said ways, and a pivoted turret-head, D, thereon, formed with notches on its periphery, and the spring-catch G, having an arm, *g*, engaging the pawl on the guides, substantially as and for the purpose set forth.

6. In a screw-cutting attachment for lathes, the tail-stock provided with a removable frame, B, having the hinged spring-arm E, and the guides B', carrying the pivoted spring-pawl *h*, in combination with the cross-head C, attached to the tail-spindle, the turret-head D, pivoted upon said cross-head, and formed with sockets *d*, notches d^3, and set-screws D', the spring-catch G, recessed in one arm of the cross-head, and provided with an arm, *g*, for engagement with the pawl *h* to release the turret, the shaft M, attached to the rear end of the spindle, the operating-lever M', pivoted on the end of said spindle, and the opposite end hinged to the frame, the set-bolt *n*, and stop-lug *n'* for limiting the motion of the cross-head, all constructed and arranged to operate substantially as and for the purpose set forth.

329,448. **DEVICE FOR CONTROLLING HORSES.** James C. Gill, Boston, assignor of one-half to John M. French, Chelsea, Mass. Filed Mar. 16, 1885. (No model.)



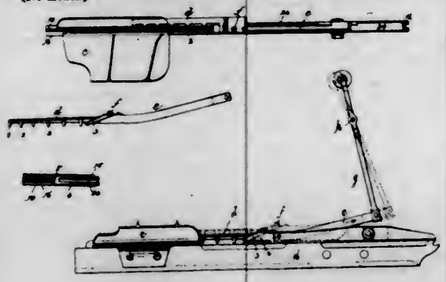
Claim.—1. The improved horse-controlling device, composed of the nose-band having the side rollers, *d d*, and supporting-strap *c*, and the rein-sections adapted to move on said rollers, and having means for attachment to a bit, as set forth.

2. The nose-band composed of the metal portion having the rigid studs *f f*, and the connecting-straps 4, and the rollers *d* on said studs, combined with the rein-sections adapted to move on the rollers, and the supporting-strap, as set forth.

3. The combination, with a bridle and its bit, of the controlling device or attachment composed of the nose-band having the side rollers, the supporting-strap, and the rein-sections supported by said rollers and connected to the bit, as set forth.

4. The nose-band composed of the metal portion having the rigid studs *f*, the connecting-straps 4 4, the rollers *d d* on said studs, and the guard-plates *e e*, combined with the supporting-strap *c*, and the rein-sections supported by the rollers and kept in place by the guard-plates, as set forth.

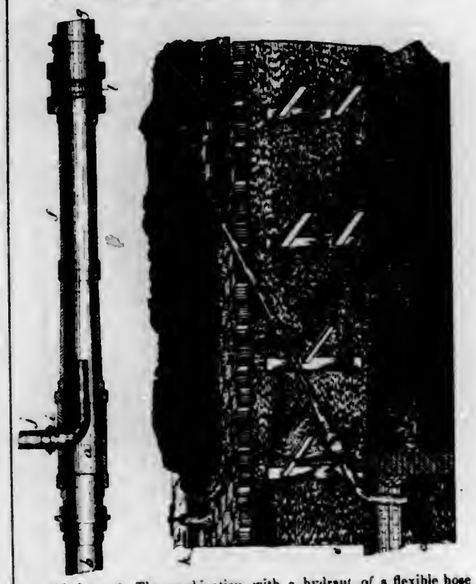
329,449. **NAILING-MACHINE.** Louis Golou, Winchester, assignor to James W. Brooks, trustee, Cambridge, Mass. Filed Aug. 3, 1885. (No model.)



Claim.—1. In a nailing-machine for boot and shoe work, the raceway and its cover under which the heads of the nails pass singly, combined with the reciprocating rake having one or more prongs to act upon the nails lodged upon and not properly suspended in the raceway above the cover, substantially as described.

2. The raceway, its cover, and the reciprocating bar provided with a lip, 3, to co-operate with an incline, 4, above the raceway, combined with a rake attached to the said bar, substantially as described.

329,450. **WATER-ELEVATING APPARATUS.** Alson M. Granger, Medford, Mass. Filed Dec. 1, 1884. (No model.)

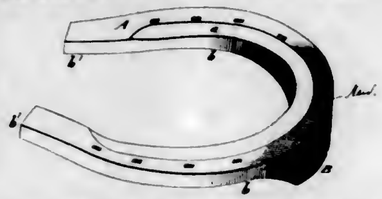


Claim.—1. The combination, with a hydrant, of a flexible hose leading therefrom, a nozzle forming the termination of said hose, a tube into which said nozzle extends and flexible pipes *b g*, leading into and away from said tube.

2. The combination, with the tube *a*, of the flexible pipe *j*, terminating in a nozzle in said tube, the flexible pipe *b*, leading to said tube, and the pipe *g*, having gate *l* therein, leading from the tube *a* in front of the nozzle.

3. The combination, with a hydrant, of the flexible pipe *j*, leading therefrom, the tube *a*, into the side of which pipe *j* enters and terminates in a nozzle extending axially in the tube, the flexible pipe *g* in front of said nozzle and having a gate-valve therein, and the flexible pipe *b*, entering the reverse end of tube *a*, substantially as described.

329,451. **HORSESHOE-BLANK.** Aaron W. Hamaker and John E. Pree, Moundsville, W. Va. Filed June 10, 1885. (No model.)



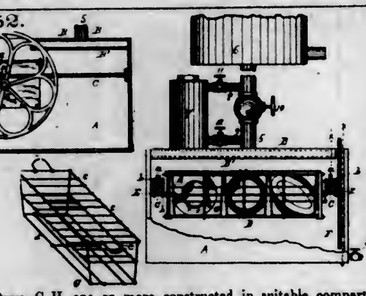
Claim.—A horseshoe-blank having the metal drawn up under the toe to a flat bearing of nearly or quite twice the thickness of the heel ends, as shown and described.

329,452. **DISH-WASHER.** Charles A. Haskins, Chicago, Ill. Filed Apr. 16, 1884. (No model.)

Claim.—1. The hot-water tank or boiler 6, soda-receptacle 7, connected by pipes and cocks, as specified, in combination with the spray-box B B', for ejecting streams of water evenly onto the tray-receptacle, as specified.

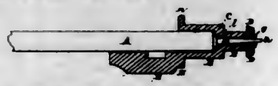
2. The tray-receptacle D, in combination with the track C C, wash-box A, tank 6 and spray-box B B', wheel F, and rollers *a a* with the tank 6, substantially as specified.

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3. The trays G H, one or more constructed in suitable compartments to hold different styles of dishes, in combination with the traveling and oscillating tray-receptacle D, the tank 6, and spray-box B B', substantially as specified and shown.

329,453. **AXLE.** Franklin C. Hockensmith, Irwin's Station, Pa. Filed Apr. 22, 1885. (No model.)

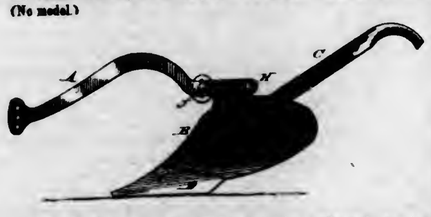


Claim.—1. The cover B, in combination with the bolt *a*, washer D, and nut or key *g*, as described.

2. The cover B, formed with shoulders C and *l*, in combination with bolt *a*, washer D, and nut or key *g*, substantially as described.

3. The hanger G, clamp *m*, and axle A, combined substantially as shown and described.

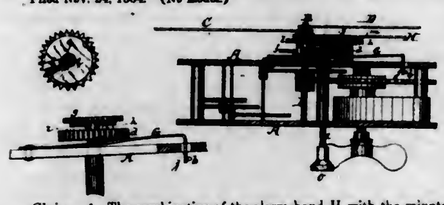
329,454. **PLOW.** Franklin B. Hunt, Richmond, Ind., assignor to the Richmond Sulky Plow Company, same place. Filed Sept. 2, 1884. (No model.)



Claim.—1. In a plow, the standard having a flanged cross-bar integral therewith, in combination with the detachable yoke G and handles secured to said yoke.

2. The combination, with the standard, clamping-plate, and beam of a slotted wedge between the plate and beam, and a bolt passing through all the enumerated parts, substantially as described.

329,455. **ALARM-CLOCK.** Arthur O. Jennings, Southport, Conn. Filed Nov. 24, 1884. (No model.)



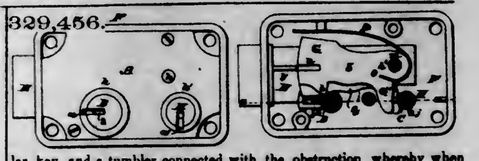
Claim.—1. The combination of the alarm-hand H with the minute-hand arbor B, wheel *l* on said arbor, said wheel carrying the hand H, wheels *m g*, the wheel *g* having recess *i*, wheel *d*, having pin *h*, spring-arm G, having projection *j*, the detent *b* of the alarm-hammer F, and the separate alarm-spring, substantially as specified.

2. The combination of the arbor *e*, having button *o* at the back of the clock, and notched wheel *g*, with the sliding wheel *d*, spring-arm G, alarm-detent *b*, and with the wheels *m l*, the latter being on the arbor of the minute-hand of the clock, with the alarm-hand H, which is connected with the wheel *l*, and with the separate alarm-spring, substantially as herein shown and described.

329,456. **LOCK.** Albert Kiser, Canton, Ohio, assignor to the Diebold Safe and Lock Company, same place. Filed Aug. 17, 1885. (Model.)

Claim.—1. In a safe-deposit lock having two separate key holes on one side of the lock operated by two different keys—a pass-key and a regular key—an obstruction adapted to cover the key-hole of the regular key, and a tumbler connected with the obstruction, whereby when the pass-key is introduced and turned the tumbler is operated and the obstruction removed from the key-hole of the regular key, substantially as set forth.

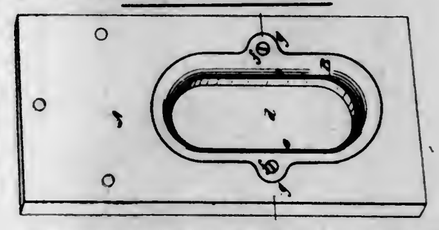
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2. In a safe-deposit lock having two separate key-holes on one side operated by two different keys—a pass-key and a regular key—a tumbler and an obstruction connected therewith, and adapted to cover the key-hole of the regular key and prevent the insertion of the regular key without the assistance of the pass-key, the parts being constructed and arranged to permit of the removal of the regular key without the assistance of the pass-key.

3. In a safe-deposit lock having two different key-holes on one side operated by two different keys, both operating one set of tumblers, so that one key operates one part of the tumblers, the other key the remaining tumblers and the lock-bolt, one or more of the tumblers operated by the pass or master key, so constructed that said tumbler or tumblers form an obstruction to the key-hole of the individual key, substantially as described, and for the purpose set forth.

329,457. **CLOTH-GUIDE FOR FULLING-MILLS, &c.** Thomas Kyhon, Stroudsburg, Pa. Filed Jan. 27, 1885. (Model.)

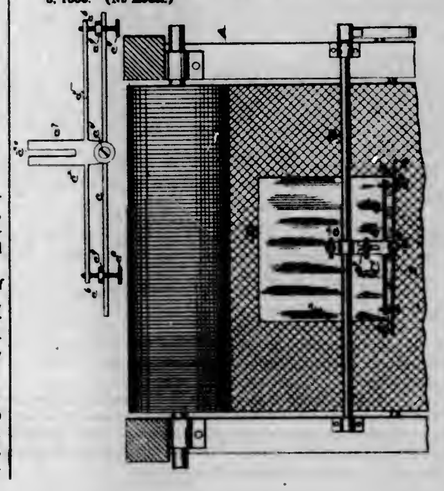


Claim.—1. A cloth-guide for fulling-mills and cloth-washers, composed of glass or other vitreous material, substantially as and for the purposes specified.

2. The oblong cloth-guide B, composed of glass or vitreous material and having its front and exposed side edges, *e*, of rounded and flaring construction, essentially as described.

3. In cloth-guides for fulling-mills and cloth-washers, the combination, with the perforated face-piece or guide-holder A, having a recess, *c*, in its front, outside of the aperture *d* through it, of the inserted and detachably-secured guide B, composed of vitreous material and having its front sides, *e*, of rounded and flaring construction, essentially as shown and described.

329,458. **RULING-MACHINE GATE.** Edward Knapp, St. Louis, Mo., assignor of one-half to George D. Barnard, same place. Filed May 8, 1885. (No model.)



Claim.—1. The combination of the pivoted part *c*, the holder *c'*, the arm c^{11}, and the bar B, substantially as described.

2. The combination of the pivoted part *c* and the holder *c'*, having the stops c^{8}, substantially as described.

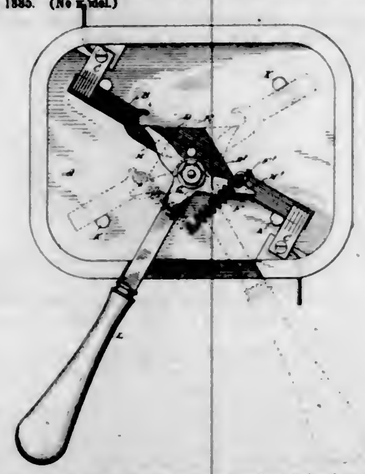
3. A ruling-machine gate pivoted in its holder to swing horizontally, as described.

329,459. **BRAKE-SHOE.** JOHN J. LAPPIN, Toronto, Ontario, Canada. Filed Mar. 2, 1885. (No model.)



Claim.—A brake-shoe, A, constructed with thick chilled parts and thin projecting chilled parts, alternately, in the face of the shoe, the thin chilled parts having one or more circular veins of soft metal projecting through the chill and cast with the face down, thereby providing for the coarse and inferior metal rising to the top and making the back of the shoe, and the pure metal to fall to the bottom and make the face thereof, substantially as described, as a new manufacture.

329,460. **ELECTRIC SWITCH.** HERMANN LEMP, Hartford, Conn., assignor to the Schuyler Electric Light Company, same place. Filed July 17, 1885. (No model.)



Claim.—1. The combination, with an electric switch, of an actuator therefor, two oppositely-inclined ways or cam-surfaces upon which said actuator may ride, and a lifter for moving the actuator from either cam into engagement with the other.

2. The combination, with an electric switch, of a spring-actuator adapted to engage with either of two oppositely-inclined ways or cams connected to the switch, and a lifter for lifting the actuator from the bottom of either incline over the top thereof to engagement with the other at or near its top.

3. The combination of the pivoted switch-lever having the two oppositely-inclined surfaces at opposite sides of the fulcrum, the spring terminating in a block or follower for engagement with the inclines, and a forked lifting-lever for raising the cam from either incline to the top of the other.

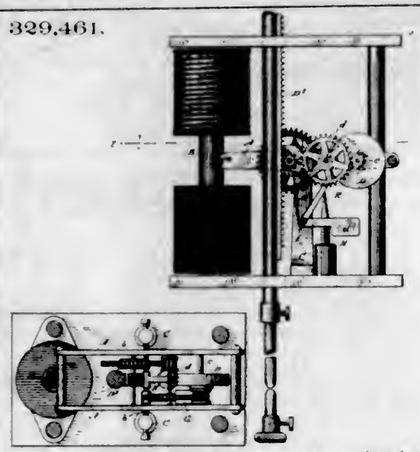
4. The combination of the switch-lever, the helical spring terminating in the roller, the two cams on the lever, and the lifting-lever engaging with the roller, as and for the purpose described.

329,461. **ELECTRIC-ARC LAMP.** HERMANN LEMP, Hartford, Conn., assignor to the Schuyler Electric Light Company, same place. Filed July 25, 1885. (No model.)

Claim.—1. The combination, in an electric-arc lamp, of a carbon or carbon-carrier, a wheel-work mounted on a pivoted frame or lever, a brake-wheel gearing with the wheel-work and also mounted on said frame or lever, a pivoted brake-lever supported from the frame and normally engaging with the brake-wheel, and a fixed stop for acting upon the brake-lever.

2. The combination, with the arc-lamp brake-wheel mounted on the pivoted frame of the pivoted brake-lever mounted on an arm or arms extending downward from said frame, and a releasing-stop arranged with relation to the lever, as described, so that the latter may by the lateral movement of the arm be disengaged from the stop.

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3. The combination, with the brake-wheel mounted on the frame, of the pivoted brake-lever mounted in a downward extension from the frame at a point below the brake-wheel and extending upward at an angle to engage therewith, of the stop engaging with the lever between its pivotal point and its engaging end, and for the purpose described.

4. The combination, with the brake-wheel mounted on the frame, of the brake-lever mounted in the frame on the side of the wheel toward the pivot and at a point below the level of the wheel, and the stop H, arranged to one side of the brake-lever, as described.

5. The combination, with the brake-wheel, of the brake-lever mounted in the downwardly-extending arm M, the weight G, connected to the lever, and a suitable stop for releasing the brake-lever from the brake-wheel, as and for the purpose described.

6. The combination, with the brake-wheel mounted on the pivoted frame, of the pivoted brake lever, also pivoted on an extension of said lever, and the stop H, mounted on a fixed support, all arranged and combined as shown and described.

7. In an electric-arc lamp, a pivoted clock-work frame carrying the train of wheels for engagement with the carbon-carrier and provided with a downwardly-extending arm, M, carrying the brake-lever for acting on the brake-wheel of said clock-work, as and for the purpose described.

329,462. **CAR-BRAKE.** JOHN F. MALLINCKRODT, Allegheny City, Pa. Filed Mar. 13, 1885. (No model.)

Claim.—1. The combination, with a set of car-supporting levers fulcrumed on the axles, and a crank-shaft journaled transversely to the levers and connected therewith by a link or its equivalent, of two sets of projections secured to the shaft, rods connecting the said projections and brake-beams, and means for rocking the shaft, substantially as set forth.

2. The combination, with a set of car-supporting levers fulcrumed on the axles, and a crank-shaft journaled transversely to the levers and connected therewith by an operating-link, of longitudinally-adjustable push-rods connecting the brake-beams with projections on the crank-shaft, and means for rocking the crank-shaft, substantially as set forth

3. The combination, with a set of car-supporting levers fulcrumed on the axles and having their adjacent ends lapped, of a crank-shaft journaled transversely to the levers, a link attached to a lug or arm on the shaft and embracing the lapped ends of the levers, push-rods connecting the shaft and brake-beams, and means for rocking the shaft, substantially as set forth.

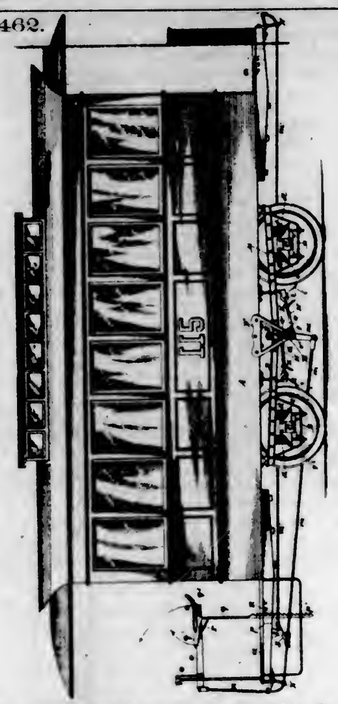
4. The combination, with a set of forked car-supporting levers and winged or flanged axle-boxes, of spring-caps secured between the branches of the levers, guide-bolts having their heads secured in the spring-caps, and their opposite ends secured in a bracket attached to the lever, and springs interposed between the caps and axle-boxes, substantially as set forth.

5. The combination, with a set of brakes adapted to be operated by the weight of the driver, of a brake-operating lever detachably connected with the braking mechanism and constructed to be transferred from one end of the car to the other, substantially as set forth.

6. The combination, with a set of gravity-brakes adapted to be taken off by the weight of the driver, of a brake-operating lever detachably connected with the braking mechanism and adapted to be transferred from one end of the car to the other, substantially as set forth.

7. The combination, with a set of gravity-brakes and a brake-operating lever secured to the platform-rail, of a spring-actuated ratchet-bar secured to the lever, and a pawl secured to the platform for engaging the ratchet-bar and locking the brakes off, substantially as set forth.

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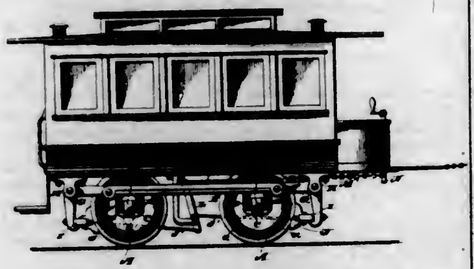
8. In a system of brakes adapted to be operated by the weight of the driver, an operating-lever provided with a driver's seat, a ratchet-bar, and a connecting-rod, the lever being removably secured to the platform-rail and adapted to be transferred from one platform to another, substantially as set forth.

9. In a system of brakes, a push-rod for transmitting the rotary motion of the crank-shaft to brake-beams, consisting, essentially, of a hollow section and a screw-section, and a nut for adjusting the screw within the hollow section, substantially as set forth.

10. In a system of brakes, the combination, with a push-rod for transmitting the motion of the crank-shaft to the brake-beams, said push-rod consisting of a hollow section and a screw-section, of an adjusting-nut provided with a female-threaded sleeve adapted to enter an enlarged bore in the hollow section, thereby forming a guide for the screw-section, substantially as set forth.

11. In a system of brakes, the combination, with a two-section rod for transmitting the motion of the crank-shaft to the brake-beams, of an adjusting-nut provided with a bandle and adapted to form a guide for the screw-section and a disk or button on the end of the screw-section for protecting the thread, substantially as set forth.

329,463. **STREET-CAR BRAKE.** JOHN F. MALLINCKRODT, St. Louis, Mo., assignor to the Mallinckrodt Brake Company, East St. Louis, Ill. Filed Mar. 27, 1883. Renewed May 2, 1885. (No model.)



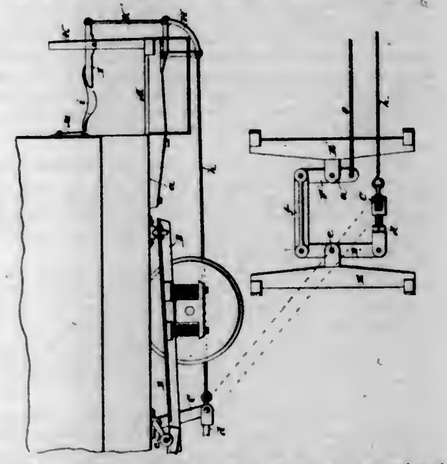
Claim.—1. The combination, with a car-body, truck, and bell-crank levers connecting the car-body and truck in such a manner that the car-body may move vertically, of brake-beams connected with the bell-crank levers and adapted to be moved toward the wheels when the car-body is lowered, and away from the wheels when the car-body is raised.

2. The combination, with a car-body, truck, and bell-crank levers connecting the car-body and truck in such a manner that the car-body may be moved vertically, of brake-beams attached to the bell-crank levers, and means for raising the car-body by the brake-shaft and taking off the brakes, substantially as set forth.

3. The combination, with a car-body, supporting-wheels, side bars of the truck, and bell-crank levers pivoted to the car-body and pivoted at one end to the opposite ends of the side bars, of brake-beams secured to the other ends of the bell-crank levers, and connecting-links, lever, and chain for operating the bell-crank levers, substantially as set forth.

4. The combination, with the car-body, supporting-wheels, side pieces or bars, E, and springs interposed between the axle-boxes and bars E, of the bell-cranks pivotally connected to the opposite ends of the side bars, E, and to the car-body, the brake-beams I, brake-shoes J, connecting-rods J' J' M, lever I., chain, and brake-shaft, substantially as set forth.

329,464. **CAR-BRAKE.** JOHN F. MALLINCKRODT, Denver, Colo. Filed Dec. 20, 1884. Renewed Sept. 16, 1885. (No model.)



Claim.—1. The combination, with a car-brake, of a lever adapted to be actuated by the weight of the driver, so connected with the braking mechanism that when the weight is applied to said lever the brakes are released or taken off.

2. The combination, with a car-brake, of a brake-operating lever adapted to form a seat for and be actuated by the weight of the driver, substantially as set forth.

3. The combination, with a system of brakes adapted to be "put on" by the weight of the car and its load, of a lever adapted to form a seat for the driver and take the brakes off when the driver's weight is applied thereto, substantially as set forth.

4. The combination, with a gravity-brake, of a lever pivoted to the front platform of the car and connected with a system of levers for operating the brake-beams, said lever being adapted to receive the weight of the driver and take off brakes when his weight is applied, substantially as set forth.

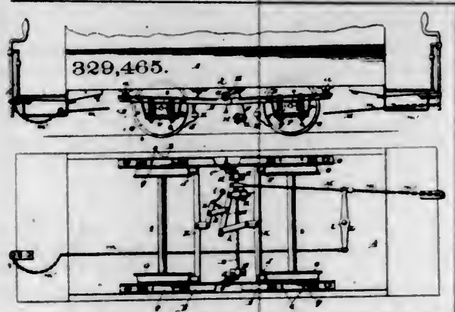
5. The combination, with a car-brake and a brake-operating lever adapted to form a seat for the driver and be actuated by his weight, of a pawl or catch for locking the lever in depressed adjustment, substantially as set forth.

6. The combination, with a car-brake and a brake-operating lever pivoted to a suitable support on the platform and adapted to be actuated by the weight of the driver, of a pawl or catch secured to the front of the car and adapted to engage the lever and lock it in a depressed position, substantially as set forth.

7. The combination, with the system of levers connecting the brake-beams and devices for actuating the same by the weight of the car, of the connecting-rods leading from the said system to the operating-lever, the angle-bar or its equivalent for changing the direction of draft, and operating-lever adapted to form a seat for the driver and be actuated by his weight, substantially as set forth.

329,465. **CAR-BRAKE.** JOHN F. MALLINCKRODT, Denver, Colo. Filed Nov. 10, 1884. Renewed Sept. 16, 1885. (No model.)

Claim.—1. The combination, with two sets of levers fulcrumed on the axles, and a car supported on the outer ends of the levers, of a crank-shaft journaled to the bottom of the car, the cranked ends of said shaft resting in contact with the inner ends of the supporting-levers, a pair of brake-beams suspended beneath the car and connected by a system of



vers, and means for communicating the action of the supporting-levers to the crank-shaft and the action of the crank-shaft to the system of levers, substantially as set forth.

2. The combination, with a set of levers fulcrumed on the axles, and a car supported on the outer ends of the levers, of a set of brakes suspended in a suitable position beneath the car, a system of levers connecting the brakes, and mechanism connecting the inner or free ends of the supporting-levers with the system of levers connecting the brakes, whereby the weight of the car, operating through the supporting-levers, moves the brakes simultaneously in opposite directions, substantially as set forth.

3. The combination, with a set of levers fulcrumed on the axles, and a car supported on the outer ends of the levers, of a crank-shaft journaled to the car and connected with the inner or free ends of the supporting-levers, and adapted to be rotated by the motion of the adjacent ends of the levers, and a set of brakes operated by an arm secured to the rotary shaft, substantially as set forth.

4. In a brake system, a set of levers arranged on opposite sides of the car, pivotally secured near their outer ends on the axles, and adapted to support a car on their extreme outer ends and operate the brakes by the motion of their adjacent ends, substantially as set forth.

5. In a brake system, a set of levers pivotally secured on the axles, adapted to support a car on their opposite ends, and having their adjacent ends locked against lateral displacement by a flanged roller on the brake-operating shaft, substantially as set forth.

6. In a car-brake, the combination, with the body of the car, supporting-axles, and axle-boxes, of levers supported near their outer ends on springs secured near their outer ends to the axle-boxes, the short arms of said levers engaging the car and the longer arms connected with the brake-actuating mechanism, substantially as set forth.

7. In a car-brake, the combination, with the car-body and supporting-axles, of axle-boxes and levers supporting the car at their outer ends and connected with the braking mechanism at their inner ends interposed between the axle-boxes and car-body, and supported in a yielding manner on the axle-boxes, substantially as set forth.

8. In a car-brake, the combination, with the car-body and supporting-axles, of brake-actuating levers, and axle-boxes suspended from or secured to said levers, substantially as set forth.

9. In a car-brake, the combination, with a car-body supported upon brake-actuating levers, and axle-boxes secured in vertical adjustment on guide-bolts set in the levers, of springs interposed between the boxes and levers, substantially as set forth.

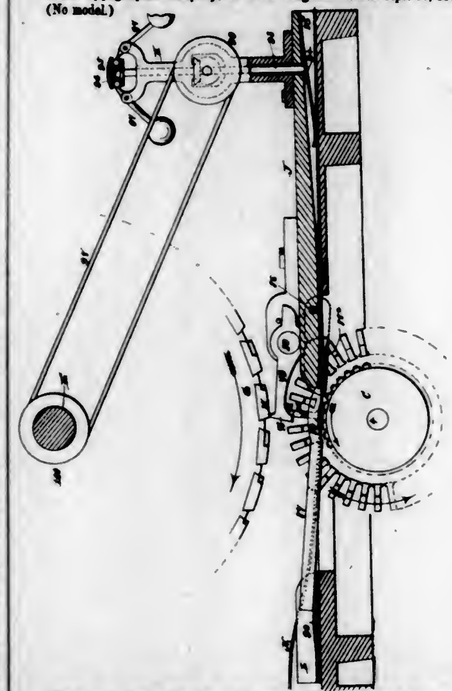
10. In a car-brake, the combination, with brake-actuating levers fulcrumed on the axles in a yielding vertical adjustment, and a car-body supported on the outer ends of the levers, of a crank-shaft journaled to the car and connected with the inner or free ends of said actuating-levers, and adapted to transmit the motion of the levers to the brakes, substantially as set forth.

11. In a car-brake, the combination, with a vertically-movable car-body and a set of brake-beams connected thereto, of a live-lever actuated by the movement of the car-body, and mechanism connecting the lever directly with one beam and indirectly with the other beam, whereby the pressure upon the two beams is equalized, substantially as set forth.

12. In a car-brake, the combination, with a vertically-movable car-body, brake-beams suspended therefrom, and live-lever connected with the brake-beams and actuated by the movement of the car, of draw-rods and chains connecting the live-lever with brake-cranks at each end of the car, for the purpose substantially as set forth.

13. A car-brake system consisting, essentially, of a set of levers fulcrumed on the axles, and supporting the car on their outer ends, and actuated by the weight of the car, a lever connected with the brake-beams by pressure-equalizing mechanism, a crank-shaft connected with the inner or free ends of the supporting-levers for transmitting the action of the car-supporting levers to the brake-beam-actuating lever, and suitable mechanism connecting the latter with the brake-crank at the ends of the car, substantially as set forth.

329,466. **MACHINE FOR MAKING TYPE-MATRICES.** FRANK D MALTBY, New York, N. Y., assignor, by mesne assignments, to the National Typographic Company, of West Virginia. Filed Apr. 10, 1883. (No model.)



Claim.—1. In combination with a series of keys arranged as shown, and each key having a metal base, 41, with a central longitudinal slot, 44, a bar common to all the keys, having lugs 45, which operate loosely in said slots, to maintain the keys in their proper relation to each other, substantially as described.

2. In combination with a series of keys having metal bases 41, each provided with central longitudinal slots at either end, the bar 46, common to all such keys and having lugs 45, which operate loosely in the slots 44, and the bar 65, having pins 64, which operate loosely in the slots 66, substantially as and for the purpose set forth.

3. In combination with the keys and hammer-rods, a series of hammers having beveled lugs 71, and a hammer-way having a cam-recess, substantially as and for the purposes set forth.

4. In combination with a series of type-disks, a corresponding spacing-wheel, a series of hammer-rods, and a series of corresponding hammers, each having a beveled lug, 71, a hammer-race, 72, a cam-recess, 74, and a pawl, 79, substantially as and for the purposes set forth.

5. In combination with the cylinder A, having longitudinal recesses, and the gear F, having internal recesses which register therewith, a series of hammers operating loosely in said recesses, the hammer-race 73, and the two-part rings 75, against which the hammers abut to limit their throw, substantially as set forth, for the purpose specified.

6. In combination with the gear-wheel having recesses 37 and annular recess 76, the race 73, and cam-recess 74, the two-part ring 75, and the hammers, substantially as and for the purposes set forth.

7. In a machine substantially as described, having the bearing I' and cylinder A, having hardened friction-ring I, the hammer-race 73, made in two parts, the lower part having a flange, 132, by which it is secured to the bearing I', and the upper part being secured to the lower part by screws 134, substantially as and for the purpose specified.

8. In combination with the type-disks and the paper-guide J and block L, a lever pivoted to said guide J, and resting upon a spring upon the said block L, so as to lie across the type-disks, said lever being adapted to guide the paper across the disk and to automatically lock said paper when the indenting devices are not in operation, substantially as set forth.

9. In combination with the type-disks, the guide J, and block L, having spring 90, the lever 87, having guides 88 and 88* and curve 89, and the hammers having lug 92, substantially as described.

10. In combination with the frame J, having paper passage or way 85 and inclined bearing 91, the spring 90, pawl 79, and hammer having lug 92, the lever 87, having guide-bearing 88* and curved portion 89, substantially as and for the purposes set forth.

11. The combination, with a paper passage or way, 85, of a spring, 94, for holding the paper N between it and the bottom of said way, a governor for controlling the force of said spring, and connections, substantially as described, with the running-gear, whereby the confining force of the spring is automatically augmented by the increased speed of the machine, substantially as and for the purpose set forth.

12. In combination with the pulleys 99 and 100, the belt 98, and shaft E, the spring 94, pin 93, paper-way 85, and a governor, K, whereby the rate of speed of the said shaft E will automatically regulate the pressure of the spring 94 upon the paper N, substantially as set forth.

13. In combination with the plate B and the frame M, pivoted thereto so as to be folded thereon, a dampening-wheel journaled in said frame and connected to the shaft E by a belt, a liquid-holding vessel in which a portion of said wheel is immersed, and means, substantially as described, for automatically throwing the paper N out of contact with said wheel when the feed of the paper is stopped, substantially as described.

14. In combination with the pivoted frame M and reel-frame adjustably hinged thereto, the reel 115, having adjustable friction-spring, and the dampening-wheel having cam 128, the lever 119, having arms 121 and roll 120, the lever 124, having arm 126, and the lug 127 on said lever 119, arranged for operating with the paper N, substantially as and for the purposes set forth.

15. The combination, with the folding-frame M and dampening-wheel 105, of the reel-carrying arm 113, fitting loosely over the boss 111 on the frame M, and the adjusting-nut 112, substantially as described, whereby the said arm and reel may be adjusted to regulate the direction of the paper as it is fed to the wheel, as set forth.

16. In combination with the wheel 105, having cam 128, and the lever 119, having roll 120, lug 127, and arms 121 and 122, the lever 124, having arms 123 and 126, all arranged for operation upon the strip of paper or other material to be acted upon, substantially as and for the purpose specified.

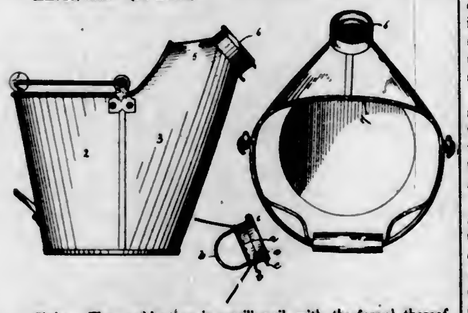
17. In combination with a series of perforated type-disks, a cylinder or sleeve, 135, having an annular flange against which said disks abut, and to which is secured the pin 136, a nut, 137, arranged upon said sleeve for clamping the disks between it and said flange, substantially as set forth.

18. In combination with the sleeve 135, pin 136, and nut 137, the perforated disks and a pin, 141, having a shoulder, 142, said pin being common to all the disks, for operation substantially as described.

19. In combination with the sleeve 135 and the disks, the steel ring 138, constructed to furnish a flat bearing or seat for each type, substantially as set forth.

20. In combination with the disk-cylinder C and the frame 12, 16, and 18, having hook 17, the shaft 4, and the movable plate 140, operating in guides 139, substantially as and for the purposes set forth.

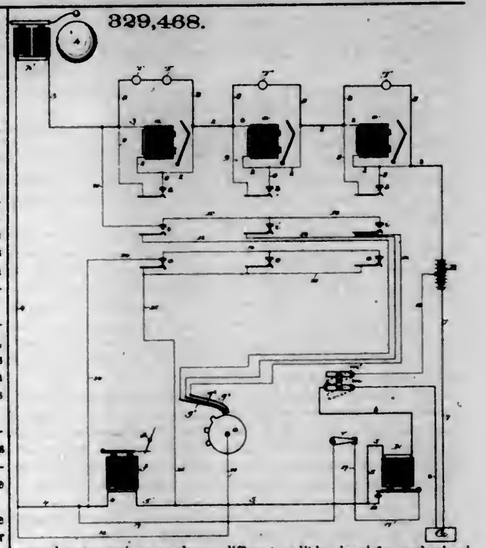
329,467. **MILK-PAIL.** CHARLES G. MANLEY, Brockton, Mass. Filed Mar. 23, 1885. (No model.)



Claim.—The combination, in a milk-pail, with the funnel thereof, of a strainer inserted in said funnel from the inner side thereof, and comprising a circular piece of gauze or other foraminous material, having the projecting circumferential flange, the looped handle *b*, secured to said flange and projecting downwardly, said handle being arranged on the inner side of the strainer, and the lugs on the spout, substantially as set forth.

329,468. **AUTOMATIC FIRE-ALARM TELEGRAPH.** MORRIS MARTIN, Malden, and JOHN C. WILSON, Boston, Mass. Filed Apr. 28, 1884. (No model.)

Claim.—1. The combination of a series of visual indicating signal-instruments, each of which, when operated, shows that a change has been made in an electric circuit extending from said instruments to a locality corresponding to the said instrument, and a multiple-signal-transmitting apparatus, and means governed by the indicating-instruments controlling the operation of the said transmitting apparatus, which is



caused to transmit or produce a different audible signal for each visual instrument corresponding to the indication of the said instrument, substantially as and for the purpose described.

2. The combination, with a visual indicating signaling-instrument, which, when operated, shows that a change has been made in an electric circuit connected therewith, of a signal-transmitting instrument comprising a motor and break-circuit device actuated thereby, and a signaling-instrument and normally open or inoperative circuit connecting it with the transmitting-instrument, and a circuit-closer in the latter circuit, operated by the visual-signaling instrument, which renders the said circuit operative when the visual instrument is operated, substantially as described.

3. The combination of a visual indicating-signal with a transmitting-instrument consisting of a motor and controlling electro-magnet, and a normally-open branch circuit or shunt around the said magnet and circuit-closer therein, controlled by the said visual indicating-signal, whereby the said transmitting-instrument is set in operation when the visual signal is operated, substantially as described.

4. The combination of a series of visual indicating-instruments having controlling-magnets in a normally-closed electric circuit and shunts of low resistance around said magnets, combined with a transmitting-instrument and circuit-controlling instruments operated by the visual instruments controlling both the operation of the transmitting-instrument and the circuit over which it transmits its signal, substantially as described.

5. A signal-transmitting instrument comprising a mechanical motor and controlling electro-magnet therefor, included in a normally-closed main circuit, having a normally-open shunt-circuit, combined with a visual signal operated by the said motor, which is set in operation by the breaking of the main circuit or closing of the shunt, substantially as described.

6. A signal-transmitting instrument operated by a mechanical motor, and provided with a releasing electro-magnet in a closed electric circuit, the said electro-magnet having a controlling-shunt, 16 17, around its coils, the said shunt containing two circuit-controllers, one of which is normally closed and is mechanically opened by engagement with the said mechanical motor, and the other of which is normally open and is closed by the release of the armature of an electro-magnet forming a component part of one of the said circuit-controllers, substantially as described.

7. In an automatic fire-alarm apparatus, a signal-transmitting instrument and electro-magnet controlling the operation thereof, and a normally-closed electric circuit including the said controlling electro-magnet, and a normally-opened shunt for the said controlling-magnet, combined with an indicating electro-magnet included in the said circuit, adjusted to be operated by a predetermined weakening of the circuit, and a circuit-closer operated thereby for the shunt of the transmitter-controlling magnet, substantially as and for the purpose described.

8. A series of signaling-instruments and a normally-closed ground electric circuit controlling the operation thereof, combined with an indicating electro-magnet included in circuit between the said instruments and the ground, and an electric switch and actuating mechanism therefor controlled by the said indicating-magnet, by which the line-wire is disengaged from the ground, substantially as described.

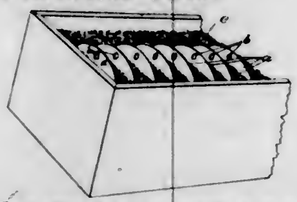
9. A transmitting-instrument comprising a motor and break-wheel or contact-surfaces actuated thereby, and a series of contact-springs co-operating with different portions of the said contact-surfaces, combined with a series of visual signals, each operated by a change in an electric circuit connected therewith, and each controlling the circuit of one of the said contact-springs, substantially as described.

10. In a signal apparatus, a motor and controlling electro-magnet therefor, combined with an audible signaling device mechanically actuated by the said motor, a visual signal device normally concealed, and releasing mechanism therefor operated by the said motor, which releases the said visual signal, permitting it to be displayed at the end of a period of operation of the motor, substantially as described.

11. A metallic electric circuit or loop including a battery and an indicating electro-magnet, the said circuit being normally connected with the ground at a point between one of the poles of the battery and one of the terminals of the coils of the said electro-magnet, and the said battery having a normally-open earth-branch connected at or near its center, combined with an electric switch adapted to be engaged by a motor mechanism and operated thereby to break the said normal connection of the circuit with the ground, and to close the said normally-disconnected ground-branch, substantially as described.

12. A normally closed and grounded electric circuit including signal-transmitting instruments, and having a battery in the said circuit in proximity to one of its terminals, and an indicating electro-magnet in the same circuit in proximity to its other terminal, combined with a motor mechanism and releasing electro-magnet therefor controlled by the armature of the said indicating electro-magnet, substantially as described.

329,469. MANUFACTURING THERMOSTATS. Morris Martin, Malden, Mass. Filed Feb. 24, 1885. (No model.)



Claim.— The herein-described improvement in the art or method of manufacturing thermostatic instruments, which consists in introducing a liquid into the metallic reservoir through a hole in the said reservoir, surrounding the reservoir with cooling material, and sealing the said hole while the reservoir is in the cooling material, substantially as described.

329,470. THERMOSTATIC ELECTRIC CONTROLLING DEVICE. Morris Martin, Malden, Mass. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a thermostatic electric-circuit-controlling instrument, an annular metallic frame, circuit-controlling devices connected therewith and insulated therefrom, and an independent metallic reservoir supported by and detachable from said frame, it containing a volatile liquid and having a flexible side which is distorted or bulged by volatilization of the inclosed liquid, and actuates the circuit-controlling device to produce a change in the circuit controlled thereby, substantially as described.

2. In a thermostatic circuit-controlling instrument, the combination, with an actuating device sensitive to a rise in temperature, of an independent pivoted circuit-controlling device frictionally held from turning on its pivot until positively moved, substantially as described.

3. In a thermostatic circuit-controlling instrument, the combination of an actuating device sensitive to a rise in temperature with two contact-pieces connected with the terminals of the circuit controlled by the instrument and a pivoted lever always in contact with one of the said contact-pieces, and having one end movable with relation to the other contact-piece, which is provided with a projection resisting the free movement of the said lever, substantially as described.

4. In a thermostatic circuit-controlling instrument, the combination of an actuating device sensitive to a rise in temperature with two contact-pieces connected with the terminals of the circuit controlled by the instrument and a pivoted lever always in contact with one of the said contact-pieces, and having one end movable with relation to the other contact-piece, which has two contact portions separated by an intervening recess, the movable lever being in contact with the said contact-piece when in its extreme positions, and breaking the electrical connection while moving from one to the other position, substantially as described.

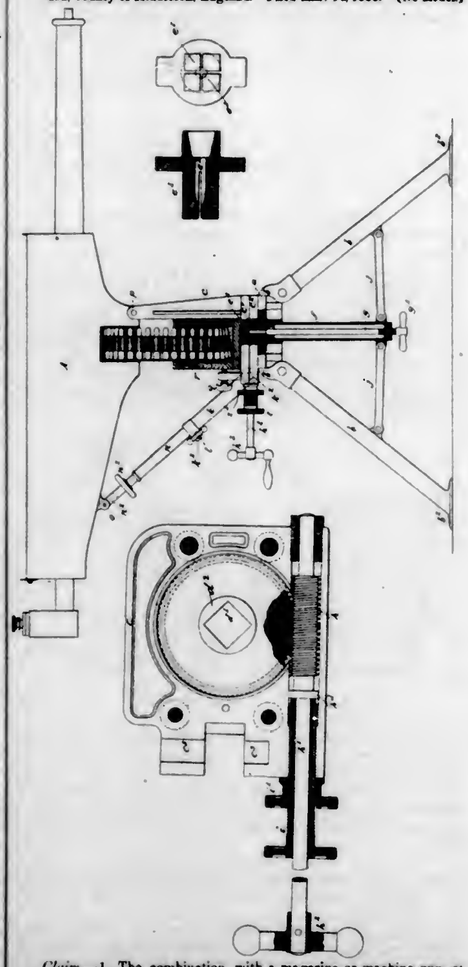
5. In a thermostatic circuit-controlling instrument, the combination of an actuating device sensitive to a rise in temperature with two contact-pieces connected with the terminals of the circuit controlled by the instrument and a pivoted lever always in contact with one of the said contact-pieces, and having one end movable with relation to the other contact-piece, the said lever having a bearing portion to be engaged by the said sensitive actuating device, substantially as described.

6. In a thermostatic circuit-controlling instrument, the combination of an actuating device sensitive to a rise in temperature with two contact-pieces, connected with the terminals of the circuit controlled by the instrument and a pivoted lever always in contact with one of the said contact-pieces, and having one end movable with relation to the other contact-piece, the said lever having an indicating projection visible from the outside of the instrument, substantially as and for the purpose specified.

7. A thermostatic circuit-controlling instrument consisting of a struck-up metallic frame, and circuit-controlling devices connected therewith, and a metallic reservoir detachable from said frame, containing a volatile liquid, and having a flexible face for actuating the circuit-controlling devices, substantially as described.

8. A thermostatic circuit-controlling instrument consisting of a frame, and circuit-controlling device connected therewith, and an actuating device sensitive to change in temperature, supported by and detachable from said frame, and a cap or cover to inclose the actuating mechanism, substantially as described.

329,471. SUPPORT FOR MACHINE-GUNS. Hiram S. Maxim, London, County of Middlesex, England. Filed Mar. 14, 1885. (No model.)



Claim.—1. The combination, with a magazine or machine gun, of a carriage or support consisting of the casting or piece *a*, the pivoted tripod-legs *b*, the tube *f*, entering the casting *a*, and links *j*, pivotally connected with the tube and with the legs, as and for the purpose specified.

2. In the gun support or carriage, the combination, with the suitably-supported casting *a*, of the bracket *c*, pivoted to said casting by a pivot which is secured to the casting by an expanding stud, *e'*, and screw-rod *g*, having a wedge-like end, which enters said stud, substantially as set forth.

3. The combination, with the suitably-supported casting *a*, of the worm-wheel *d*, fixed to said casting, the gun-supporting bracket *c*, pivoted to the casting concentrically with said worm-wheel, and the endless screw or worm mounted on said bracket and engaging with the fixed worm-wheel, substantially as described.

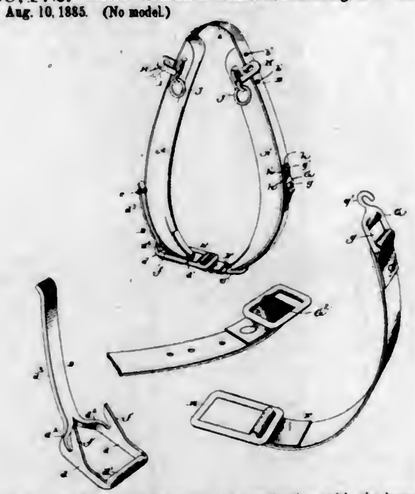
4. The combination, with a stand or support, of a bracket carrying a gun and pivoted thereto, a worm-wheel, *d*, fixed to the stand or support, a screw, *h*, for turning the same, and a screw-threaded bush, *i*, and check-nut *i'*, arranged in conjunction with the spindle of screw *h* in such manner as to permit a play or movement of the bracket or gun, as set forth.

5. The combination, with a gun and a support or carriage therefor, of a device for elevating and depressing the gun, consisting of the tubular telescoping rods *k m* and clamping-screw *l*, the screw-threaded spindle *n*, and adjusting-screw for turning it into or out of the rod *m*, as set forth.

6. The combination, with a tripod stand or support for machine-guns, of a horizontally-revolving gun-supporting bracket mounted upon said stand or support and provided with ribs *c'*, and a suitably-mounted clamping-screw, *q*, arranged upon the bracket for holding in place a cartridge-receptacle, as set forth.

7. The combination, with a tripod stand or support, of a revolving bracket carrying a gun and mounted on said stand and shields or plates *s*, inserted in suitable grooves in the bracket to form a defensive armor or covering, as herein described.

329,472. HAME. Murdoch M. McKinnon, Laurinburg, N. C. Filed Aug. 10, 1885. (No model.)

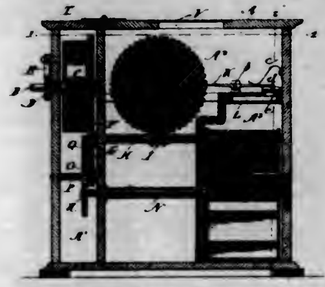


Claim.—1. In a hame-fastening, the combination, with the hame-sections, of a hooked lever pivoted in the lower end of one section, a loop, *e*, a connecting-link adapted to engage the pivoted lever at one end and carrying a plate, G, at its opposite end, provided with a hook, and a cross-bar, *h'*, with which the hook is adapted to engage, as set forth.

2. In a hame-fastening, the combination of the hame-sections A A', a lever, D, pivoted in the lower end of one of the sections and carrying hooks *f f*, a pivoted loop, *e*, adapted to engage the free end of the lever D, a connecting-link, F, a loop, C, pivoted in the lower end of the opposite hame-section and through which the link F passes, a plate, G, having a hook, *g'*, adapted to engage a cross-bar, *h'*, of the plate B, and a loop, E, pivoted in the free end of the link F and adapted to engage the securing-hooks *f f* of the pivoted lever D, all arranged and adapted to operate substantially as and for the purpose described.

3. In a hame-fastening, the combination, with the hame-sections, of a connecting-link, F, connected to one of the hame-sections and having a loop, E, at its opposite end, a lever, D, pivoted at one end in the lower end of one of the hame-sections and having hooks *f* on its inner edge with which the loop of the connecting-link is adapted to engage, a loop, *e*, pivoted in one of the hame-sections to engage the free end of the lever D, and a loop, C, pivoted in the lower end of the opposite hame-section and embracing the connecting-link F and arranged to force the same into close contact with the outer face of the hame-section to which the link is connected when the sections are locked together, as set forth.

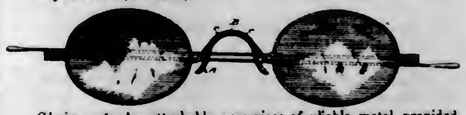
329,473. MECHANICAL MUSICAL INSTRUMENT. Theodor Meinhold, Klingenthal, Saxony, Germany. Filed June 24, 1884. (No model.)



Claim.—1. In a mechanical musical instrument, the combination, with the driving mechanism, of a rotary air-feeding device operated by intermediate connections with said mechanism, and thus adapted to act as a speed-regulator, substantially as and for the purpose set forth.

2. In a mechanical musical instrument, the combination of suitable driving mechanism, a revolving pin-studded barrel, a series of vibrating tongues, a series of reeds, and a rotary fan mounted on a shaft driven by intermediate gearing with the driving mechanism, substantially as and for the purposes set forth.

329,474. SPECTACLES. Emil B. Meynowitz, Ridgefield, N. J. Filed May 5, 1885. (No model.)

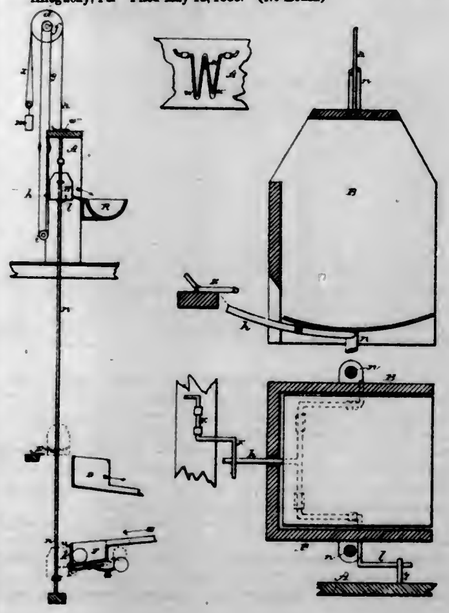


Claim.—1. An attachable nose-piece of pliable metal, provided with pliable fingers or clips by which to attach it to the spectacles-bridge, substantially as herein specified.

2. The within-described attachable nose-piece for spectacles, constructed of pliable metal, of saddle shape, and concavo-convex in cross-section, and with attaching fingers or clips integral with its upturned edges, substantially as set forth.

3. The combination, with spectacles, of a nose-piece attached to the bridge of the frame and adjustable upon said bridge with reference to the plane of the lenses, substantially as herein specified.

329,475. ELEVATOR FOR CASH-CARRIERS. James C. Miller, Allegheny, Pa. Filed May 18, 1885. (No model.)



Claim.—1. The combination of the carrier-box, provided with a tilting bottom and the projections *h l*, with suitable stops or devices attached to the stationary frame-work, for the projections to strike against, substantially as shown.

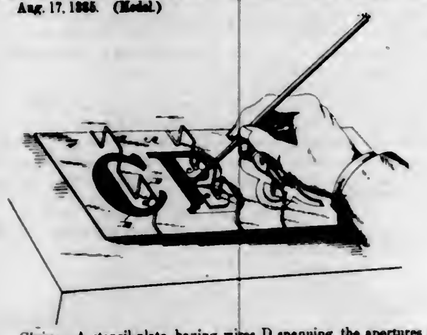
2. The combination of the delivery-box having a movable side, and the weighted lever which holds the side closed, with the delivery-box, substantially as described.

3. The combination of the carrier-box, the suspension-cord *a*, sheaves *d f*, endless cord *g*, and pulley *i*, substantially as set forth.

4. The combination of the frame A, carrier-box B, guides *n*, receiving-box D, arm E, and delivery-box F, the box B being provided with a tilting bottom and projections and the box F with a movable side and lever for keeping it closed, substantially as specified.

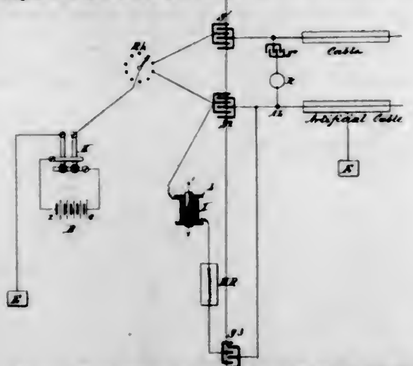
5. The combination of the movable check W with the cord *a* and box B, substantially as shown.

329,476. STENCIL-PLATE. WILLIAM J. MILLER, Aurora, Ill. Filed Aug. 17, 1885. (Model.)



Claim.—A stencil-plate having wires D spanning the apertures in the design, said wires being bent outwardly from the plate to form loops or arches under which the brush or other marking-instrument may be readily inserted and manipulated to form letters or characters entirely solid, substantially as described.

329,477. MEANS FOR ADJUSTING SUBMARINE DUPLEX TELEGRAPHS. ALEXANDER MUIRHEAD, Upper Norwood, County of Surrey, England. Filed Feb. 20, 1885. (No model.)



Claim.—1. In an electrical or telegraphic circuit, the combination, substantially as hereinbefore set forth, of an adjustable condenser with an adjustable resistance-circuit having an electro-magnetic inductor included in said circuit, and means, substantially as described, for adjusting the energy and duration of the electric discharge from said inductor.

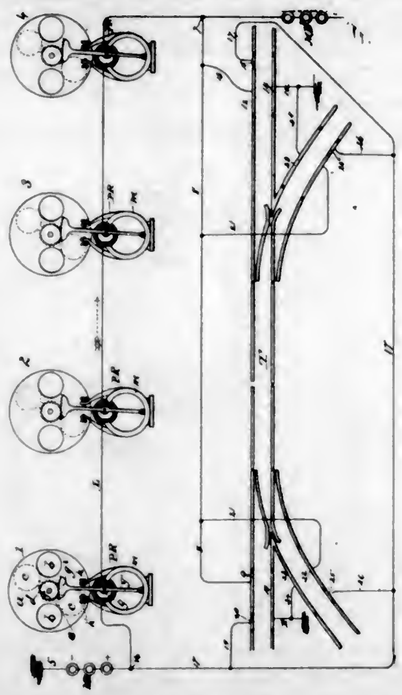
2. In an electrical or telegraphic circuit, the combination, substantially as hereinbefore set forth, of the receiving-instrument, the adjustable rheostat, the separate condensers in the circuit, one connecting with the actual and the other with the artificial or compensating line, the adjustable supplementary condenser, the adjustable resistance-coil, and the adjustable electro-magnetic inductor in connection with the circuit of said supplementary condenser, with the key and battery and the condenser in the circuit between the actual and artificial line.

3. In an electrical or telegraphic circuit, the combination, substantially as hereinbefore set forth, of the receiving-instrument, the adjustable rheostat, the separate condensers in the circuit, one connecting with the actual and the other with the artificial or compensating line, the adjustable supplementary condenser, and the adjustable electro-magnetic inductor in connection with the circuit of said supplementary condenser, with the key and battery and the condenser in the circuit between the actual and artificial line.

4. In an electrical or telegraphic circuit, the combination, substantially as hereinbefore set forth, of the receiving-instrument, the adjustable rheostat, the separate condensers in the circuit, one in connection with the actual and the other with the artificial or compensating line, the adjustable supplementary condensers placed in independent circuits surrounding said main condensers, and the adjustable electro-magnetic inductors in connection with said circuits, with the key and battery and condenser in the circuit between the main and the artificial line.

5. In an electrical or telegraphic circuit, the combination, substantially as hereinbefore set forth, of the receiving-instrument, the adjustable rheostat, the separate condensers in the circuit, one in connection with the actual and the other with the artificial or compensating line, the adjustable supplementary condensers placed in independent circuits surrounding said main condensers, and the adjustable electro-magnetic inductors and resistance-coils in connection with said circuits, with the key and battery and condenser in the circuit between the main and the artificial line.

329,478. ELECTRIC RAILWAY-SIGNAL. HENRY C. NICHOLSON, Mount Washington, Ohio. Filed May 20, 1884. (No model.)



Claim.—1. The combination, substantially as before set forth, of a closed main-line signaling-circuit containing two equal but opposed batteries, one at each end, and two independent normally-open shunt-wires, 8 and 17, connected to the circuit and with the track or tracks, substantially as described, so that said shunt-wires are adapted to be closed automatically by a locomotive or car, one of said shunt-wires, when closed separately, operating exclusively to cause the display of the danger-signals, and the other to cause the display of the safety-signals.

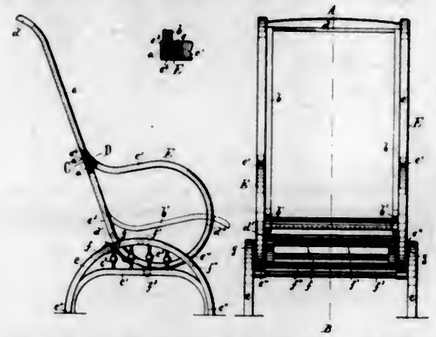
2. The combination, substantially as before set forth, of a main-line signaling-circuit containing two equal but opposed batteries, one at each end, a polarized relay (one or more) in the main line, signals operated by said polarized relay, and two normally-open shunt-wires connected to the main line and track or tracks, substantially as described, so that the closing of one shunt-wire causes a current to flow over the main line in one direction, effecting the display of a danger-signal, while the closing of the other shunt-wire causes a current to flow over the main line in the opposite direction, effecting the display of a safety-signal.

3. In combination with a main-line signal-circuit and an opposed battery at each end of the line, one or more oscillating signals connected to the armature working between the poles of a magnet, said armature having a coil connected in the main-line circuit, and two or more shunt-circuits connected to the main line and to an insulated rail, whereby two different signals are made by reversing the direction of currents sent over the main line as either one of the batteries is cut out the main-line circuit and brought into the shunt-circuit by car-wheels passing over the insulated rails, substantially as before set forth.

4. In combination with the main track of a railroad and one or more switch-tracks, a main signal-circuit operated alternately by a battery at each end and a shunt for each switch or side track, said shunts connecting the track to the main signal-circuit, and one or more signals connected in the main line with the armature of a magnet, said circuit normally arranged to have no current, but adapted to be automatically electrically excited by the passing of train-wheels either upon the main or switch line bringing a shunt into circuit with one battery, whereby danger and safety signals are alternately brought into view as the respective shunt-circuits are brought into operation, substantially as before set forth.

5. The combination, substantially as before set forth, of a main-line signaling-circuit containing two equal but opposed batteries, one at each end, a polarized relay in the main-line circuit, signals operated by said polarized relay, and at each end of the circuit a normally-open connection from the main line to earth adapted to be closed automatically by a locomotive or car to short-circuit the adjacent battery.

329,479. ROCKING-CHAIR. ALBERT H. ORDWAY, Melrose, Mass. Filed June 11, 1885. (No model.)

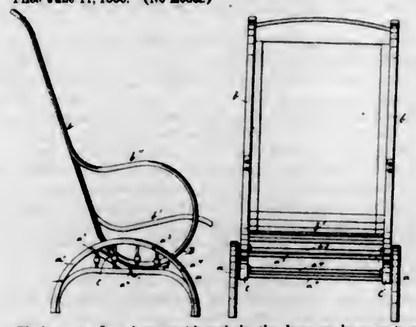


Claim.—1. As an improvement in bent-wood chair-frames, the side piece, E, having its back portion, *e*, and arm-rest *e'* made in a continuous piece with the return-bend *e''*, terminating as the back piece, *e²*, secured at its upper end to the rear of piece *e*, as and for the purpose set forth.

2. In a chair-frame, the continuously-bent side piece, E, having its rear end, *e²*, jointed to the back of the upright *e*, as described, in combination with the inwardly-projecting strengthening-rib *b*, as and for the purpose set forth.

3. In a chair, the herein-described truss-base, consisting of a pair of side frames, each composed of outer and inner curved pieces, *c c'*, united together at or near their lower ends, *c'' c''*, and provided about midway with one or more stays or connections, *c³ c³*, as and for the purpose set forth.

329,480. ROCKING-CHAIR. ALBERT H. ORDWAY, Melrose, Mass. Filed June 11, 1885. (No model.)

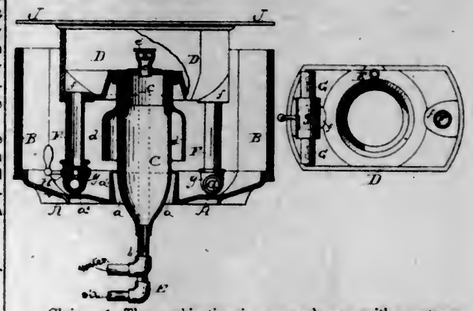


Claim.—1. In a base rocking-chair, the base or base parts *a a*, having inclined ways *d d*, adapted to serve as beds on which the frame is rocked, as and for the purpose set forth.

2. In a base-rocker, the base or base parts *a a*, having the inclined ways *c c*, and the frame *b b*, with its rockers B B, in combination with the springs *d d*, secured, respectively, to the said inclined ways and rockers, as and for the purpose set forth and described.

3. In a base-rocker, the base or base parts *a a*, having the inclined ways *c c*, and stops *a³ a⁴*, in combination with the frame *b b*, its rockers B B, and springs *d d*, constructed and arranged in a manner as herein set forth and described.

329,481. VAPOR-BURNER. EDMOND C. PECK, Chicago, Ill. Filed Apr. 21, 1885. (No model.)



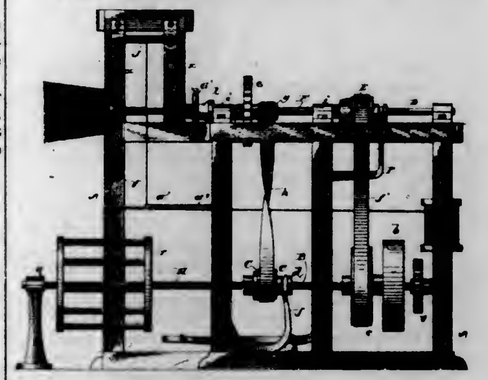
Claim.—1. The combination, in a vapor-burner, with a water-vaporizing chamber having a suitable water-supply pipe connected thereto, of an oil receiving and vaporizing and vapor-mixing chamber having an oil-supply pipe connected therewith, having the lower portion of its side walls adjacent to its bottom inclined inward, and having hollow bosses extending downward from the inclined side walls, to which the eduction-pipes are connected.

2. In a vapor-burner, the combination, with a water-vaporizing chamber, water-supply pipe connected thereto, and escape-tube, of an oil receiving and vaporizing and vapor-mixing chamber having a raised central portion, the central portion of its bottom to which said water-vaporizing chamber is connected raised above the plane of the surrounding bottom thereto, and the eduction-pipes leading therefrom.

3. In a vapor-burner, the combination, with a drip-pan, A, casing B, and chamber D, of a water-vaporizing chamber and shield *d*, surrounding said chamber, as and for the purpose set forth.

4. In a vapor-burner, the combination, with a water-vaporizing chamber, C, tube *e*, and cap *e'*, of the mixing-chamber D and eduction-pipes F F.

329,482. BROOM-WINDING MACHINE. LEON PERRON, Toledo, Ohio, assignor of one-fourth to Charles Hohly, same place. Filed Oct. 17, 1884. (No model.)



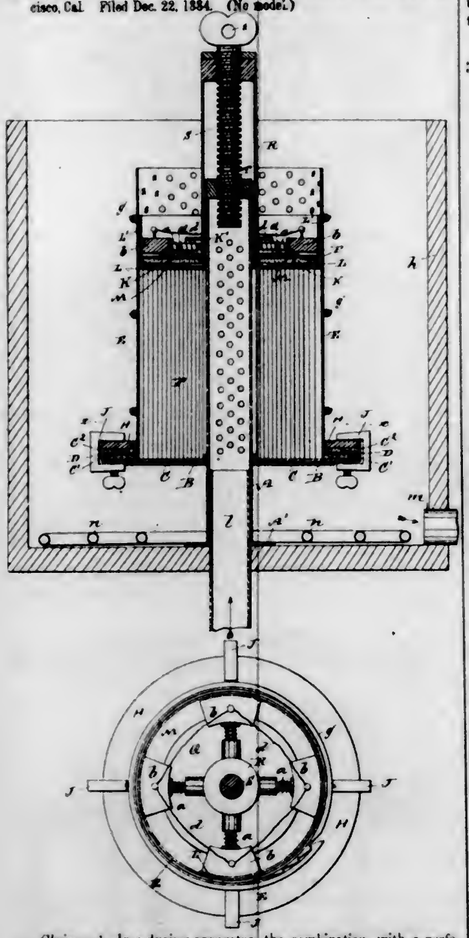
Claim.—1. In a broom-winding machine, the combination, with a supporting-frame, of a spindle provided with a vertically-adjustable collar adapted to support a spool, a tension-shaft, a wire-guide located below the same, a screw-threaded guide-shaft located above the tension-shaft, a hollow shaft and clamping-brackets located therein, and a gear-wheel on said hollow shaft adapted to be connected with any suitable train of gearing, as set forth.

2. In a broom-winding machine, the combination, with a supporting-frame, of a spindle adapted to receive a spool, a tension-shaft, a screw-threaded guide-shaft located above the tension-shaft, brackets fitting the ends of the shafts and having set-screws working in openings thereof for increasing the tension of the shafts, a guide for the wire located beneath the tension-shaft, a hollow shaft having a gear-wheel, and

set-screws carrying clamping-brackets at their ends, which work in openings of the hollow shaft, substantially as set forth.

3. In a broom-winding machine, the combination, with a hollow shaft carrying a gear-wheel, and carrying brackets for clamping the broom, of a shaft carrying a band-wheel, a shaft carrying a friction-clutch composed of a core and a sleeve, a belt connecting the band-wheel and clutch, a spur-wheel on said shaft to engage the gear-wheel on the hollow shaft, and a lever for separating the parts of the clutch, as set forth.

329,483. APPARATUS FOR DYEING. LUDWIG PFAFF, San Francisco, Cal. Filed Dec. 22, 1884. (No model.)



Claim.—1. In a dyeing apparatus, the combination, with a perforated tube, of a fixed projecting plate, a perforated cylinder resting on the said plate, and a removable top fitted in between the perforated cylinder and the perforated tube, substantially as herein shown and described.

2. In a dyeing apparatus, the combination, with a perforated tube provided with a projecting plate, of a perforated cylinder resting on the plate, a cover fitting in between the perforated tube and the perforated cylinder and provided with an upwardly-projecting tube, and a screw held in the said upwardly-projecting tube and adapted to be screwed into the upper end of the perforated tube, substantially as herein shown and described.

3. In a dyeing apparatus, the combination, with the perforated tube A, having the base A′ and the plate B, of the perforated cylinder E, formed of two semi-cylinders, the cover K, the plate Q, provided with the tube R, and the screw S, held in the upper end of the tube R, and adapted to be screwed into the upper end of the tube A, substantially as herein shown and described.

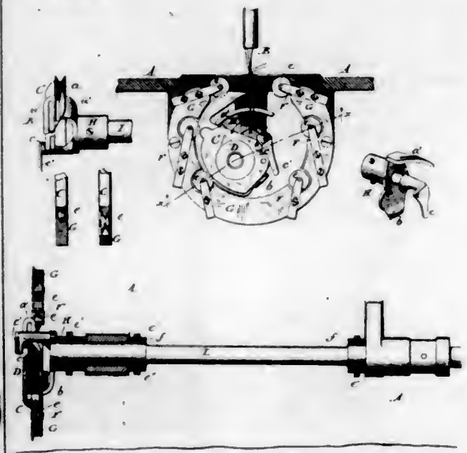
4. In a dyeing apparatus, the combination, with the perforated tube A, having the base A′ and the plate B, of the perforated cylinder E, the cover K, the plate Q, the bolts *n*, the blocks *b*, the tube R, and the screw S, substantially as herein shown and described.

5. In a dyeing apparatus, the combination, with the tube A, having the base A′ and the plate B, of the packing-strips C′ C², the half-rings H, the clamps J, the cover K, the plate Q, the tube R, and the screw S, substantially as herein shown and described.

6. In a dyeing apparatus, the combination, with the perforated tube A, of the cylinder E, having hooks, and of the spring-hoops *g*, substantially as herein shown and described.

7. In a dyeing apparatus, the combination, with the vat *h*, of the tube *l*, projecting up from the bottom of the same, the perforated tube A, the perforated cylinder E, surrounding the said tube A, and of the top and bottom plates for closing the spaces between the cylinder E and the tube A, substantially as herein shown and described.

329,484. SEWING-MACHINE. WILLIAM A. POLMATTER, Johnstown N. Y., assignor to William S. Northrup, same place. Filed May 29, 1885. (No model.)



Claim.—1. In a sewing-machine, the combination, substantially as described and shown, of a sustaining-frame, an oscillating shuttle, and a series of peripheral rolls acting as the sole guides for the shuttle.

2. In a sewing-machine, the combination of an oscillating shuttle, a series of rolls grouped around the peripheral path of the shuttle, and engaging therewith, as described, for the double purpose of supporting and guiding the same and preventing lateral motion, and the oscillating shuttle-driver acting to hold the shuttle outward and maintain the engagement of the rolls.

3. In a sewing-machine, the combination of an oscillating shuttle having a peripheral V-shaped groove therein, a series of bevel-edged rolls grouped in a circular line about the shuttle, and affording constant support therefor, and the oscillating driver.

4. In a sewing-machine, the combination of a needle, an oscillating shuttle, and a fixed roll to engage the periphery of the shuttle and prevent side-play thereof, said roll located in advance of the needle on the side from which the shuttle-point advances, whereby said point is compelled to pass in close proximity to the needle, but prevented from striking the same.

5. In combination with the reciprocating needle, the oscillating shuttle-driver, the shuttle of the general form herein shown, the peripheral guides for the shuttle, and the movable lip attached to the driver and loosely engaging the inner or forward edge of the shuttle, substantially as described and shown, whereby the point of the shuttle is held out of contact with the needle while passing thereby.

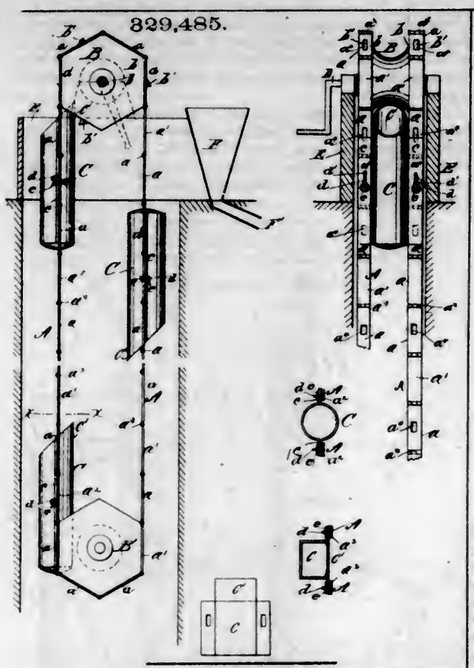
6. In combination with a metallic shuttle, a series of peripheral guiding-rolls of rawhide or equivalent non-conducting non-resonant material, whereby electrical disturbances and noise are prevented.

7. In combination with the oscillating shuttle and the peripheral guiding-rolls therefor, the roll-sustaining arms adjustable independently in radial directions, affording compensation for wear, and permitting the position of the shuttle to be varied as required.

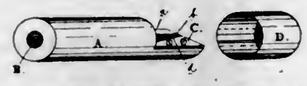
329,485. WATER-ELEVATOR. THOMAS A. PORTER, Cameron, Tex. Filed July 30, 1884. (No model.)

Claim.—The combination, with endless chains having the links a^2, provided with staples *d*, of the buckets C, having apertured side flanges through which the staples pass, and fastenings *e*, passing through the staple in front of the apertured side flanges to hold the buckets in place, substantially as set forth.

329,485.

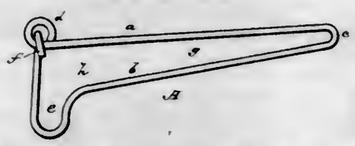


329,486. PENCIL-SHARPENER. GEORGE C. PRICE and WALLACE C PRICE, San Francisco, Cal. Filed June 6, 1884. (No model.)



Claim.—In a pencil-sharpener, the combination, with a casing having a longitudinal passage or opening, and also having an extension formed with a groove or channel, of a cutting-knife secured upon the upper side of the extension and having its cutting-edge inclined to the groove, as shown, and a removable cap inclosing the extension and knife and fitting on the casing, substantially as set forth.

329,487. CLOTHES-PIN. LYMAN B. PRINDLE, Litchfield, Conn. Filed Nov. 13, 1884. (No model.)



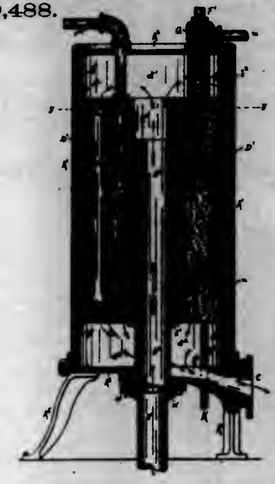
Claim.—The combination of the diverging arms *a b*, continuous at *c*, the open handle *e*, and the interlocking eyes *d f*, located at the angle opposite the said open handle, as shown and described.

329,488. FEED-WATER HEATER. CHARLES H. ROBINSON, St. Paul, Minn. Filed Jan. 31, 1885. (No model.)

Claim.—1. A heater-shell provided with flues open at both ends and extending therethrough from end to end, and water feed and discharge pipes communicating with said shell, in combination with a casing or jacket inclosing said shell, and of a greater length than said shell, whereby chambers are formed above and below said shell, a steam-inlet pipe which enters the bottom of said jacket, a flue or flues within the jacket which convey the steam from said inlet-pipe to the chamber above the heater-shell, and a steam-exhaust port leading from the chamber below the heater-shell, substantially as set forth.

2. A heater-shell, and a steam jacket or casing inclosing the same, in combination with steam inlet and discharge pipes which communicate with the interior of the casing or jacket through the bottom thereof, and water feed and discharge pipes which pass through the top of the casing or jacket and communicate with the heater-shell through the top thereof, substantially as set forth.

329,488.



3. A heater-shell provided with flues open at both ends, and extending therethrough from end to end, and a casing or jacket inclosing said shell, of a length greater than said shell, whereby chambers are formed above and below said shell, in combination with water feed and discharge pipes which pass through the top of the casing and communicate with the heater-shell through the top thereof, a steam-inlet pipe which enters the bottom of said jacket, a flue or flues within the jacket which convey the steam from the inlet-pipe to the chamber above the heater-shell, and a steam-exhaust port leading from the chamber below the heater-shell, substantially as set forth.

4. In a feed-water heater, a heater-shell formed with a large central flue, and with smaller side flues open at both ends and extending through said shell from end to end, and feed and discharge water-pipes communicating with said shell, in combination with a casing or jacket inclosing said shell, of a length greater than said shell, whereby chambers are formed above and below said shell, a steam-admitting pipe which enters the bottom of said casing and conveys the steam to said central flue, and a steam-discharge pipe at the bottom of said casing, whereby the current of steam is upward through said central flue and downward through said side flues, substantially as set forth.

5. In a feed-water heater, a heater-shell formed with a large central flue, and with smaller side flues between said central flue and the periphery of the shell, said flues being open at both ends and extending through said shell from end to end, and feed and discharge water pipes communicating with said shell, in combination with a casing or jacket inclosing said shell, of a length greater than said shell, whereby chambers are formed above and below said shell, and of a greater diameter than said shell, whereby an open space is left between the sides of said shell and casing, a steam-admitting pipe which enters the bottom of said casing and conveys the steam to said central flue, and a steam-discharge pipe at the bottom of said casing, whereby the current of steam is upward through said central flue and downward through said side flues and the space between the sides of the casing and shell, substantially as set forth.

6. In a feed-water heater, a heater-shell, in combination with a water-discharge pipe which passes through the upper end or head of said shell, and which extends into said shell, and has its opening at a point below the surface of the water in the shell and away from the sides of the shell, substantially as set forth.

7. In a feed-water heater, a heater-shell, in combination with water feed and discharge pipes which pass through the upper end or head of said shell, and which extend into said shell, and have their openings at points below the surface of the water in the shell and away from the sides thereof, substantially as set forth.

8. In a feed-water heater, a heater-shell, in combination with a large tube suspended therein, and a feed-water pipe which enters said heater-shell and extends into said tube, whereby the cold water is admitted into said tube, substantially as set forth.

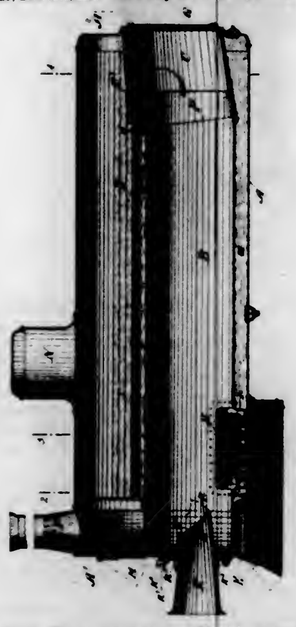
9. In a feed-water heater, a heater-shell, D′, having flues through a portion only of its interior, whereby an open space, *g*, is left therein, water-feed pipe F′, tube H, and discharge-pipe F², substantially as set forth.

10. In a feed-water heater, the combination of jacket A′, head A², shell D′, having flues E′ E², tube G, connecting said jacket with the outer air, and feed-water pipe F′, passing down through said tube G into said shell, substantially as set forth.

11. In a feed-water heater, a base having one of the legs cast in a single piece therewith, and with a passage extending from the upper surface of said base outward through said leg, which passage constitutes the steam-discharge passage, substantially as set forth.

12. The combination of a jacket, A', head A^3, heater D', having flues E' E^2, base A^4, having leg A^4, and discharge-opening C, cast in one piece therewith, pipes B' B^2, packing a^4, and legs A^3, substantially as set forth.

329,489. STEAM-BOILER. Mednad Ruehly and William N. Ruehly, La Porte, Ind. Filed May 22, 1885. (No model.)



Claim.—1. The combination, in a Cornish or return-flue boiler, of shell A with the main flue B, extending from the front head of the boiler to the combustion-chamber, and having a straw-feed chute and door or opening at its front end, and a grate, H, the upper surface of which is depressed below the interior wall of said main flue, substantially as specified.

2. The combination, in a return-flue boiler, with shell A, of main flue B, provided with a recess or opening, H', between said main flue and shell, and a grate, H, supported on a projecting edge of said shell A, surrounding said opening H', and said grate having its upper surface depressed below the interior wall of said main flue, substantially as specified.

3. The combination of shell A, fire-flue B, grate H, depressed below the surface of said fire-flue, and straw-feed chute K, at the front end of said flue B, substantially as specified.

4. The combination of shell A with fire or main flue B, combustion-chamber C, return-flues D, and curved grate H, depressed below the surface of said fire-flue, substantially as specified.

5. The combination, in a return-flue boiler, of the fire-flue B with a curved grate, H, divided longitudinally into two parts, substantially as specified.

6. The combination, in a return-flue boiler, of shell A, fire-flue B, straw-feed chute K, and a grate, H, depressed below the surface of said fire-flue, and provided with holes h, substantially as specified.

7. The combination of shell A, fire-flue B, return-flues D, combustion-chamber C, having crown-sheet C' over the same extending below the water-line of the boiler, and fire-arch F, projecting from the rear end of said main flue into said combustion-chamber, substantially as specified.

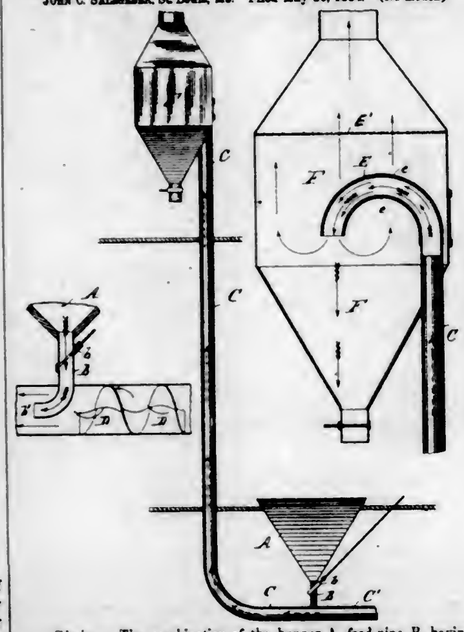
8. The combination of shell A with fire-flue B, combustion-chamber C, having crown-sheet C', and an annular or continuous water-space surrounding said chamber between the same and said shell A, return-flues D, and grate H, depressed below the interior surface of said main flue B, substantially as specified.

9. The combination of shell A with fire-flue B, return-flues D, and combustion-chamber C, having an annular or continuous water-space surrounding it between it and said shell A, and having its bottom wall or sheet inclined upward toward its rear end, substantially as specified.

10. The combination, with the main or fire flue of a boiler and a grate therein, of the straw-feed chute K, having inclined inner end, *k*, and door *k'*, hinged thereto at its upper side, the inner end of said feed-chute projecting into said main flue near and above said grate, substantially as specified.

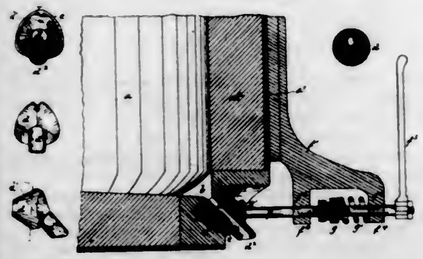
11. The combination of main flue A, combustion-chamber C, having an annular or continuous water-space surrounding the same, return-flues D, water leg or space *g* at the end of the combustion-chamber, rings *g'*, having boiler A^2 and end sheets, g^2, of the combustion-chamber secured thereto, and door G, closing the opening in said ring, substantially as specified.

329,490. APPARATUS FOR TREATING HOT ROASTED COFFEE. John C. Salgsieber, St. Louis, Mo. Filed May 26, 1884. (No model.)



Claim.—The combination of the hopper A, feed-pipe B, having bent lower end, B', the air-pipe C, having stationary spiral vanes D, and its upper bend, E, having interior lining, *e*, the upper hopper, F, having screen E', all constructed, arranged, and operating substantially as and for the purposes specified.

329,491. APPARATUS FOR CONTAINING AND TRANSFERRING MOLTEN METAL. Hermann Schulze-Berge, Rochester, Pa. Filed Mar. 22, 1884. (No model.)



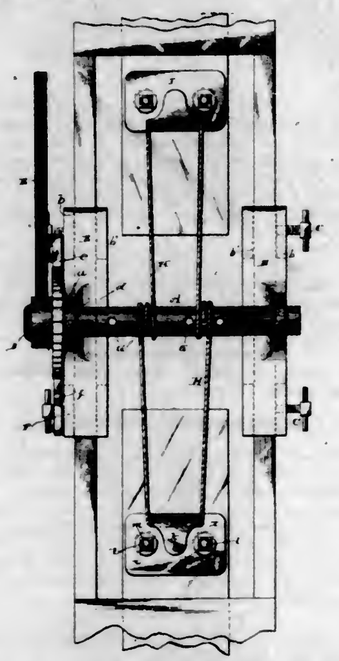
Claim.—1. A metallurgic vessel having a tapered stopper-seat, a port situated at the meeting angle of the side and bottom thereof, a tapering revoluble stopper having an eccentric port therethrough, and a metallic securing-plate for confining the revoluble stopper, substantially as and for the purposes specified.

2. The combination, with a metallurgic vessel having a port and a tapered stopper-seat recessed therein, of a tapering revoluble stopper having an eccentric discharge-port therethrough, a stopper-axle, a bracket wherein the stopper-axle is journaled, and a counter-weight which acts on the stopper, substantially as and for the purposes specified.

3. The combination, with a metallurgic vessel having a port and a recessed seat adapted to receive a revoluble stopper, of a revoluble stopper arranged in said seat, an axle for actuating the stopper, and an adjustable pressure device which bears on the stopper-axle, substantially as and for the purposes specified.

4. The combination, with a metallurgic vessel having a port and a recessed seat adapted to receive a revoluble stopper, of a revoluble stopper and a skeleton for securing a lubricating substance to the face of the stopper, substantially as and for the purposes specified.

329,492. BELT-TIGHTENER. Fred. J. Schupp, Marshall, Mo. Filed Sept. 9, 1885. (No model.)



Claim.—1. In a belt-tightener, the combination, with a rotary drum or shaft and a suitable support for the same, of a flexible cord or chain adapted to be attached to the drum or shaft and to the ends of the belt on opposite sides of the drum or shaft, whereby the rotary motion of the drum or shaft simultaneously draws the opposite ends of the belt toward each other, substantially as set forth.

2. In a belt-tightener, the combination, with a rotary drum or shaft, a flexible cord or chain adapted to connect the drum or shaft with the opposite ends of the belt, of a ratchet-toothed wheel rigidly secured on the shaft, an operating-lever loosely mounted on the shaft, a pawl adapted to throw the lever into engagement with the wheel, and a pawl adapted to lock the wheel against a retrograde movement, substantially as set forth.

3. In a belt-tightener, the combination, with a rotary drum or shaft and means for supporting and operating the same, of clamps, each consisting of an upper plate provided with a hook or lug and draw-bolts for securing the plates together and to the belt, and a flexible cord or chain adapted to connect the rotary drum or shaft with the hooked clamp-plates, substantially as set forth.

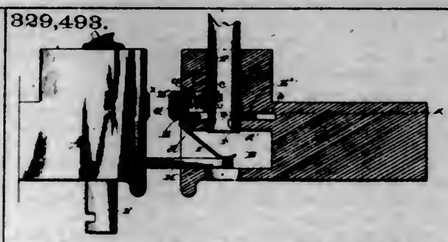
4. In a belt-tightener, the combination, with a rotary drum or shaft and means for connecting it with the belt, of a drum or shaft support adapted to be secured to the boxing or housing of an endless-belt carrier, substantially as set forth.

5. In a belt-tightener, the combination, with a rotary drum or shaft and means for attaching it to the belt, of a drum or shaft support adapted to be adjusted to boxes of different widths, substantially as set forth.

329,493. CAR-COUPLING. Fred. J. Schupp, Marshall, Mo. Filed Sept. 15, 1885. (No model.)

Claim.—1. In a car-coupler, the combination, with a draw-head having a link-pocket, a hole for the coupling-pin, and a recess or socket, of the sliding plate located within said recess or socket and provided with an enlarged head, and a spring located between said enlarged head and the draw-head, substantially as set forth.

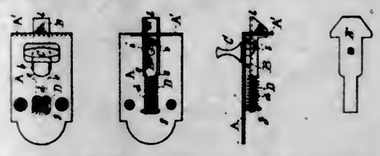
329,493.



2. In a car-coupler, the combination, with a draw-head having a link-pocket, a recess or socket, and a hole for the coupling-pin, of yielding arms located within the link-pocket for holding the link in a horizontal position, the sliding plate having an enlarged head, and an opening for the coupler-pin, and springs interposed between said enlarged head and the draw-head, substantially as set forth.

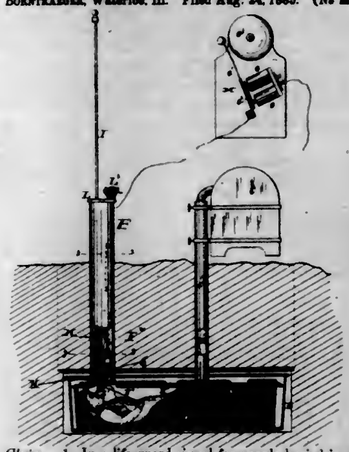
3. The combination, with the draw-head having a link-pocket, the spring-arm located within said pocket, and the coupling-pin, of the sliding plate, substantially as set forth, springs for forcing the plate outwardly, and the pin for locking the plate within the draw-head.

329,494. BOLT FOR DOOR-LOCKS. Augustus Schwempurt, Philadelphia, Pa. Filed Apr. 2, 1885. (No model.)



Claim.—The bolt B for door-locks, constructed of sheet metal, and provided with the flanges *i i*, bent over upon one of the faces of the blank at right angles to the main portion, substantially as shown and described, for the purpose set forth.

329,495. BURIAL-CASKET. Charles Sieber and Frederick H. Borntraeger, Waterloo, Ill. Filed Aug. 24, 1885. (No model.)



Claim.—1. In a life-guard signal for people buried in a trance, the combination of a tube extending from the coffin upward through the ground, a lamp suspended in the tube, and a reflector above the lamp, substantially as and for the purpose set forth.

2. In a life-guard signal for people buried in a trance, the combination of the tube extending from the coffin upward through the ground, a lamp suspended in the tube, and a reflector above the lamp, the tube being oval in transverse section at its lower end and made round with projections at its upper end, substantially as described.

3. The combination, with the coffin, of a tube extending upward therefrom, a spider and a fixed rod in said tube, a spring surrounding said rod, rods passing through openings in said spider, disks secured to the extremities of said rod, a signal secured to the upper one of said disks, a bail and trigger connecting the lower disk with the fixed rod, and connection between the body and the trigger, as set forth.

4. The combination, with a coffin, of an electric-alarm circuit having a make and break and connection between said make and break and the body in the coffin, as set forth.

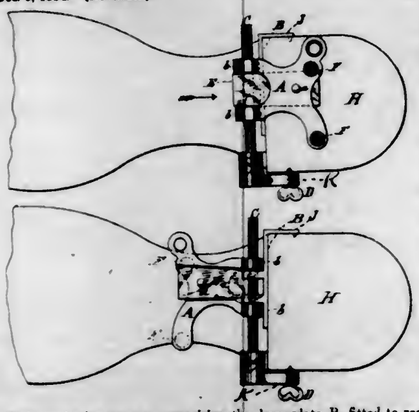
5. In a life-guard signal for people buried in a trance, the combination of the coffin, a fan, and a connection between the fan and the body in the coffin, whereby the fan is set in motion by the movement of the body, substantially as set forth.

6. In a life-guard signal for people buried in a trance, the combination of the coffin, fan, tube connecting the fan with the coffin, train of gearing for operating the fan, and connection between the gearing and the body in the coffin, substantially as set forth.

7. In a life-guard signal for people buried in a trance, the combination of the coffin, tubes extending upward from the coffin, valves or slides pivoted to the top of the coffin, and springs for operating the valves or slides when the tubes are removed, substantially as set forth.

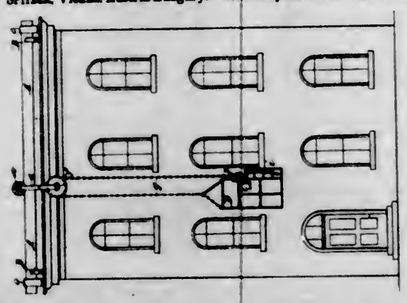
8. In a coffin, the combination, with the glass, of a groove in which it slides, a spring within said groove, a slot opening from said groove, and a stem projecting through said slot and secured to the glass, substantially as and for the purposes set forth.

329,496. ICE-CREEPER. LAMPHEAR H. SCOTT, Newark, N. J. Filed Dec. 9, 1884. (No model.)



Claim.—An ice-creeper comprising the base-plate B, fitted to rest against the breast of the heel, and provided at one end with a clamp-arm, J, and near its other end with lugs projected in a reverse direction to the arm J, the calk-plate having lugs lapped alongside those of the base-plate, the spring, and the rod C, having one end threaded and inserted through the lugs of the calk and base plates, and provided at its other or outer end with a clamp, substantially as set forth.

329,497. CARRIER OR ELEVATOR FOR PAINTERS, &c. SIGMUND SPITZER, Vienna, Austria-Hungary. Filed July 25, 1885. (No model.)



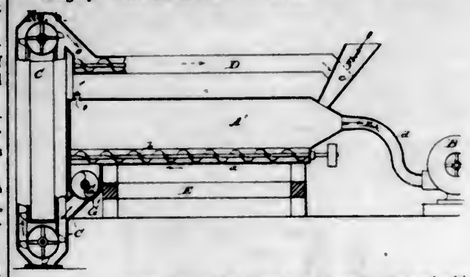
Claim.—1. The carrier for painters, &c., consisting of a cage having a receptacle for the folding chain, and provided with a sprocket-wheel and crank-axle, in combination with the roller-hanger and the rail, all substantially as specified.

2. The rail A, supported as described, and the roller-hanger *a e f*, from which the cage D is suspended, said cage being capable of lateral and vertical adjustment, and arranged for operation substantially as shown and set forth.

3. The combination of a rail, A, supported by bars B and cross-bar C, and carrying the roller-hanger *a e f*, with the chain *g*, supporting the cage D, having the compartments and gearing for manipulating it, in the manner shown and for the purpose specified.

4. The combination of the cage D, having compartments and the operating mechanism herein described, with a rail for a roller-hanger, from which said cage is suspended and operated in the manner substantially as set forth.

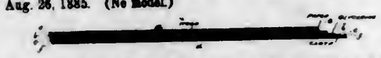
329,498. FLOUR-PURIFIER. SIGMUND SPITZER, Vienna, Austria-Hungary. Filed July 25, 1885. (No model.)



Claim.—1. The horizontal hollow cylinder formed at one end with openings for the egress of the air and the supply of the material, at the other end with openings for the ingress of the air and the discharge of the material, and on its under side with an extension or trough, in combination with a suction-fan and a longitudinal spiral conveyer and agitator located in said trough, whereby the material to be purified is conveyed in one direction while the air-current passes in the other, substantially as specified.

2. The combination of a series of horizontal hollow cylinders, a series of longitudinal conveyers in the bottoms thereof, means, substantially as described, for producing air-currents in the direction opposite to the course of the material, a conveyer, G, receiving from the series of conveyers *b* through suitable spouts, and elevators C and conveyers D for returning the material to be re-treated, substantially as set forth.

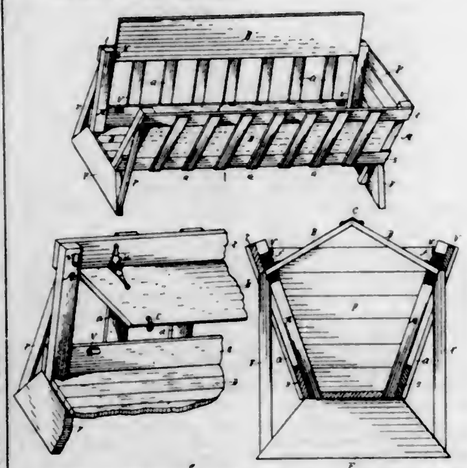
329,499. VENEERING. CHARLES W. SPURR, Boston, Mass. Filed Aug. 26, 1885. (No model.)



Claim.—1. As a new manufacture, veneering consisting of a veneer of wood and a backing of paper, pasted together and expanded by water and subsequently dried, a solution of glycerine applied to the veneer and paper, and a backing of cloth pasted or glued to the glycerine on the outer face of the paper, all being essentially as specified.

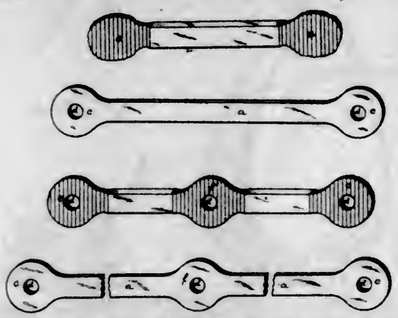
2. As a new manufacture, veneering composed of a thin layer of wood, a backing of paper pasted thereto, a backing of glycerine applied to the paper, and another backing of cloth pasted or glued to the glycerine backing, all as set forth.

329,500. FEEDING-RACK. HENRY D. STREATOR, Galesburg, Mich. Filed Sept. 5, 1884. (No model.)



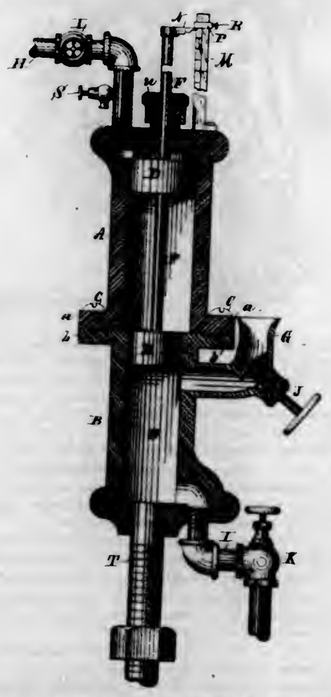
Claim.—A feeding-rack consisting of end supporting-blocks, a floor forming the bottom of the rack, slanting corner-posts, braces securing the posts in their slanting upright position, side strips secured to the posts and bounding the upper and lower side of the side openings, cleats attached to said strips subdividing the openings, and doors hinged to the upper side strips within the rack, and adapted to be swung upward to allow access to the rack through the side openings and to form a roof over the interior of the rack, all substantially as set forth.

329,501. MANUFACTURE OF EYE-BARS AND SIMILAR ARTICLES. CHARLES L. STROBEL, Pittsburg, Pa. Filed Feb. 16, 1885. (No model.)



Claim.—The herein-described method of making bars having eyes or similar enlargements thereon, consisting in die-forging on a billet or slab enlargements of approximately the finished shape of head, reheating the blank so formed, and rolling it to the desired length and finished form of bar.

329,502. LUBRICATOR. MARTIN STRODER, Chicago, Ill. Filed Oct. 20, 1884. (No model.)

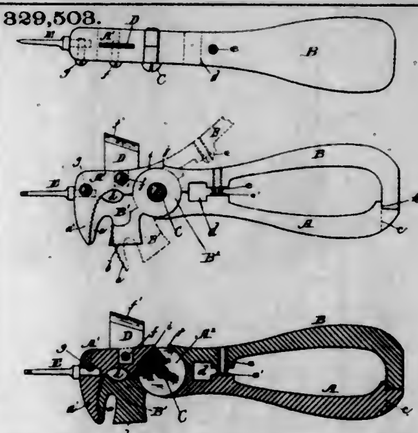


Claim.—In a lubricator for steam-engines, the combination of the cylinders A and B, of unequal diameters, two separate pistons, D and E, of unequal diameters, operating in their respective cylinders, connecting piston-rod F, protruding at its upper end through the upper end of each cylinder A, ducts H and I, communicating with their respective cylinders A and B, and oil-duct G, provided with valve J, substantially as and for the purpose specified.

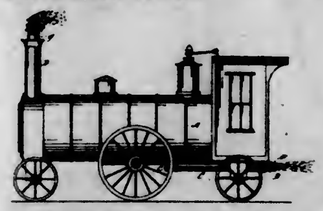
329,503. COMBINATION-TOOL FOR BOOT OR SHOE MAKERS' USE. THOMAS E. TATHUM, Worcester, Mass., assignor of one-half to Dwight C. Sumner, same place. Filed July 16, 1885. (No model.)

Claim.—As a new article of manufacture, the combination boot and shoe tool described, consisting of the lasting-pinchers, the awl, the knife, the hammer-faced butt, the punch, and wrenches, all constructed and operating in the manner and for the purposes as above set forth and described.

329,508.

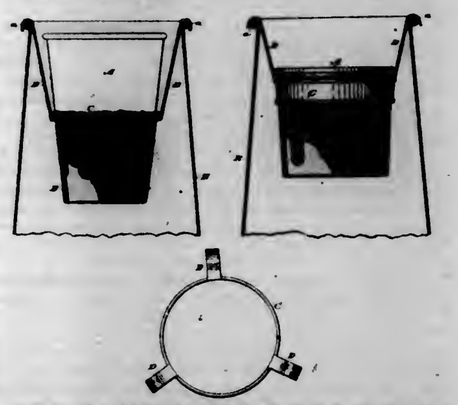


329,504. PYROTECHNICAL TOY. GEORGE TAYLOR, Jersey City, N. J. Filed Feb. 19, 1885. (No model.)



Claim.—The pyrotechnical toy herein described, the same being composed of the body A, of suitable construction, provided with wheels and with a squib or rocket holder, C, said holder adapted, as described, to hold a squib or rocket, B, and impart the reactive force of the same to said body A, as and for the purpose set forth.

329,505. FILTER. HORACE H. TREVER, Carbondale, Ill. Filed Sept. 15, 1884. (No model.)

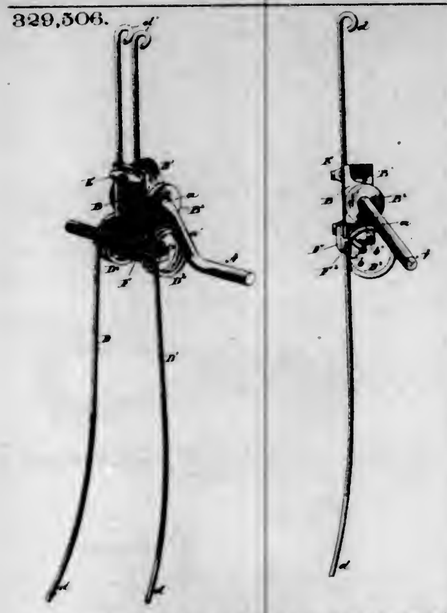


Claim.—In a filter, the combination of a receiving-vessel, a filter-tube having a filter-cloth stretched around its lower part, and a clamping and supporting band or ring provided with upwardly-extended suspending-hooks adapted to catch over the upper edge of the receiving-vessel, substantially as herein specified.

329,506. HAY-TEDDER. JOHN H. THOMAS, Springfield, Ohio. Filed Nov. 7, 1884. (No model.)

Claim.—1. The combination, with the fork crank-box of a hay-tedder, of forks or teeth secured to said box, and provided with coils located between the operative ends of the teeth and said box and in contact with the latter, for preventing end movement of the teeth relatively to the box, and arranged to move between the arms of and to fall within the path of the actuating-crank in the upper portion of said path, substantially as described.

329,506.



2. The combination, with the fork crank-box, of the forks or teeth provided with coils between said box and the ends of the teeth, and also with coils in their heel-extension above said box, substantially as described.

3. The crank-box provided with lateral spurs engaging and in combination with coils in the forks or teeth arranged to move between the arms of and to fall within the path of the actuating-crank in the upper portion of said path, substantially as described.

4. The fork crank-box provided with grooves to receive and hold the forks or teeth, and lugs or spurs for preventing the downward slipping of and receiving the strain on the forks, in combination with forks or teeth provided with coils engaging said spurs and resting in contact with the crank-boxes, for preventing the teeth from slipping upward, substantially as described.

5. The crank-box composed of two parts, B and B', provided with the spurs *b* and *b'*, in combination with the clamping-plates E and F, for uniting the teeth to said box, the latter provided with the inwardly-projecting flanges *f'*, substantially as and for the purpose described.

6. The spool C, forming the enlarged crank-wrist, provided with the central perforation, with the wall thereof notched or recessed at the ends of the spool, for the purpose and substantially as described.

7. The combination, with the fork-actuating tedder-crank, of the enlarged wrists or spools C, the grooved crank-box provided with the lateral spurs *b* and *b'*, the forks or teeth provided with coils located in the described relation to said crank, crank-box, and spurs, and the clamping-plates for uniting said teeth to the crank-box and preventing them from spreading, substantially as described.

329,507. **HORSE-COLLAR AND HAME.** ALBION W. TOURGEE, Mayville, N. Y., assignor to Limon De Ferriet Jennings and S. E. Kilbourne, same place. Filed Feb. 18, 1885. (No model.)

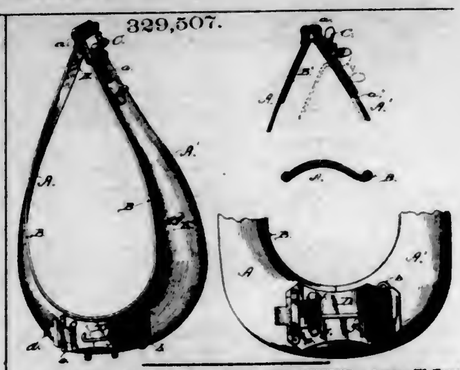
Claim.—1. A horse-collar formed, as described, of one or more metallic sheets having the edges thereof bent or lapped over and provided with a small curve or roll, B, around the front portion thereof, and the sides of said collar being provided with suitable traction attachments, all substantially as and for the purpose described.

2. A horse-collar formed, as described, and provided with the clasp or fastening D, pivotally secured at one end to one section of the collar and connected at the opposite end to the other section thereof by headed pins *f*, engaging with corresponding holes in said clasp or fastening, a slide, *d*, working in bearings *e*, engaging with said headed pins *f* to hold the clasp or fastening in a locked position, substantially as described.

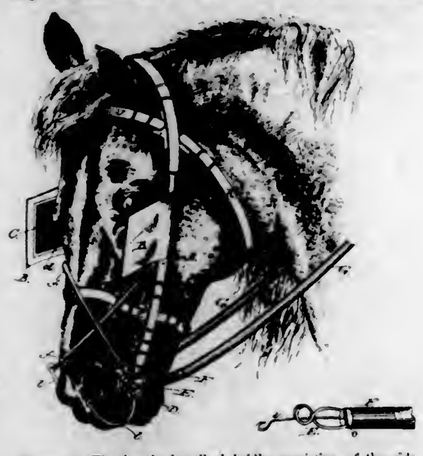
3. A horse-collar formed of two or more metallic plates, the edges whereof are bent or lapped over one upon the other, substantially as and for the purpose specified.

4. A horse-collar formed, as described, of two parts or sections, A A', hinged together at their upper ends by a loop, *a*, and united together at the bottom by a clasp or fastening, D, and provided with a metallic cap, B', adjustably connected to one part or section, A, by means of the set-screw C, substantially as and for the purpose specified.

329,507.



329,508. **BRIDLE AND BRIDLE ATTACHMENT.** ALBION W. TOURGEE and LIMON DE F. JENNINGS, Mayville, N. Y., assignors to said Jennings and S. E. Kilbourne, same place. Filed Mar. 19, 1885. (No model.)



Claim.—1. The herein-described bridle, consisting of the side or cheek straps, A, formed as described, and provided with the adjustable blinkers B, having blinders C, the bit D, provided with bend *k* and levers *l*, the flexible rein G, having wires *e e'* extending through the same, brow-piece J, throat-latch K, and compound buckles H and I, all substantially as and for the purpose specified.

2. The side or cheek straps, A, formed as described, and provided with the metallic blinkers B, adjustably connected thereto, in combination with the blinders C, formed as described and provided with the coiled spring *c*, wire *e*, flexible tube *f*, bit D, and hollow cylindrical rein G, substantially as and for the purpose specified.

3. The hinged frame C, secured to the metallic blinker B and provided with a covering, *d*, of textile material, coiled spring *c*, flexible wire *e*, and flexible tube *f*, substantially as and for the purpose specified.

4. The bit D, formed, as described, with rectangular bend *k* and levers *l*, in combination with the wires *e e'*, rein G, and side or cheek straps, A, substantially as specified.

5. The rein G, formed of a hollow, flexible, and cylindrical core, *p*, having a leather or other suitable covering, substantially as specified.

6. The rein G, formed of a hollow, flexible, and cylindrical core, *p*, having a leather or other suitable covering and provided with the screw-cap F, snap-hook E, wires *e e'*, and hook or slide *i*, substantially as and for the purpose specified.

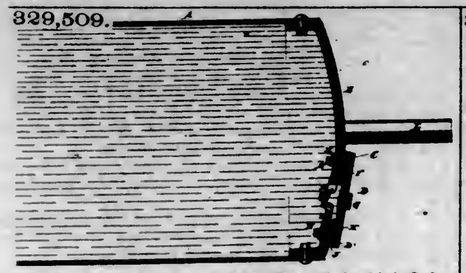
7. The metallic screw-cap F, provided with slot *o*, for the reception of the one end of the snap-hook E, and for the passage of the wire *e*, substantially as specified.

8. The compound buckle H, in combination with the side or cheek straps A, and the brow-piece J, substantially as and for the purpose specified.

329,509. **SAFETY DEVICE FOR BOILERS.** WILLIAM A. TRACY, Philadelphia, Pa. Filed Jan. 6, 1885. (No model.)

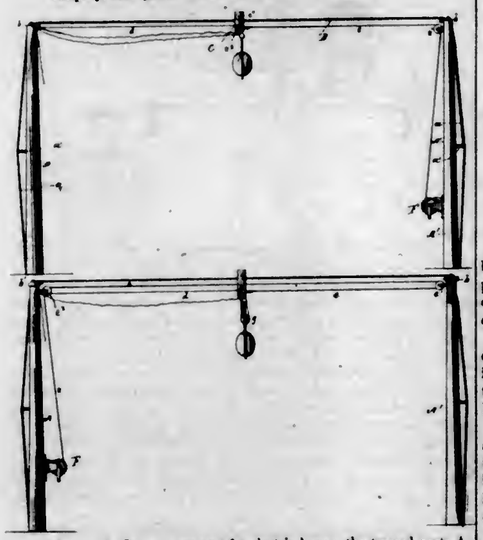
Claim.—1. The boiler A, having head B, provided with hand-hole C, furnished with cam-faces H, in combination with cap D, having nut G, weakened part F, and lugs E, having inclined faces *e*, substantially as and for the purpose specified.

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2. The boiler A, having head B, provided with hand-hole C, furnished with cam-faces H, in combination with cap D, having flange D', weakened part F, and lugs E, having faces *e*, substantially as for the purpose specified.

329,510. **SUPPORT FOR ELECTRIC LIGHTS.** CHARLES L. TRAVER, Minneapolis, Minn., assignor of one-half to the Minnesota Brush Electric Company, same place. Filed June 1, 1885. (No model.)



Claim.—1. In a a support for electric lamps, the trussed posts A and A', trussed on the sides opposite to and in combination with the connecting rod or rail forming the track for the pulley-block, substantially as and for the purpose described.

2. The combination, with the supporting-posts and the rod connecting said posts, of the pulley-block adapted to move on said rod, and the cords *d* and *e* for effecting the adjustment of the pulley-block and lamp, substantially as described.

3. The combination, with the supporting-posts A and A', of the connecting rod or rail B, the pulley-block C, moving on said rod, means, substantially as described, for adjusting said pulley-block, and the lamp suspended from said block by means of a cord attached at one end to one of the supporting-posts and at the other to the traveling pulley-block, substantially as described.

4. In a device for supporting electric lamps over streets, the combination, with the trussed posts and the fixed supporting wire or track connecting said posts, of the adjusting-cords and the traveling sheaves or pulleys adapted to be moved horizontally by the weight of the lamp.

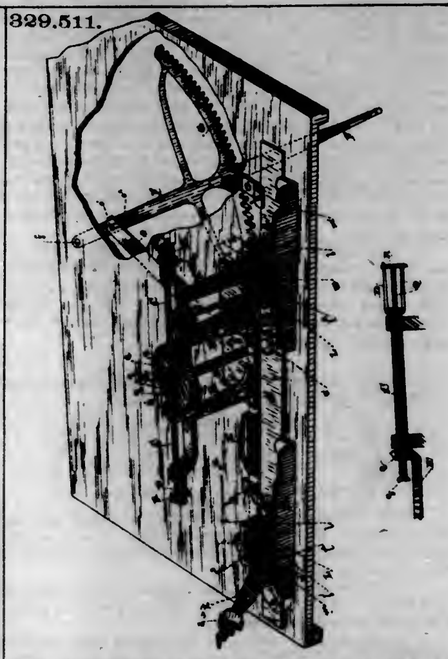
5. The combination, with the supporting wire or track, of the traveling sheave or pulley and the suspending-cord adapted to impart both a lateral and a vertical movement to the lamp when actuated by the weight of the lamp, substantially as described.

6. The combination, with the traveling sheave or pulley, of the supporting wire or track and the holding and releasing ropes adapted to act as safety-supports for the lamp in case of breakage of the said supporting wire or track.

329,511. **APPLE PARER, SLICER, AND CORER.** JOHN B. TOPPER, Petaluma, Cal. Filed May 25, 1885. (No model.)

Claim.—1. In an apple parer, slicer, and corer, the plate H, the bracket I, the knives J K, the arm *m*, and base L, pivoted in the bracket, in combination with the track M, having cam-notch *m'*, whereby the knives are thrown to an upright position, and the stop-screw *i*, passing through the back of the bracket and impinging against the back of the base L, whereby the movement of the knives on their pivot is controlled, substantially as herein described.

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2. In an apple parer, slicer, and corer, the combination of the reciprocating carriage-plate H, the brackets I, secured thereto, the swinging base-piece L, pivoted to the bracket and provided with an arm, *m*, the vertically-swinging paring and slicing knives mounted on the base L, and a track having a cam-notch, substantially as herein described.

3. In an apple parer, slicer, and corer, the paring and slicing knives and the plate H, by which they are carried, in combination with the mechanism by which the plate is reciprocated, consisting of the pivoted lever F, the pivoted lever O, a pivot-connection between one end of the lever O and the plate, and a sliding pivot-connection between its other end and lever F, substantially as herein described.

4. In an apple-parer, slicer, and corer, the bench A, the knives J K, and the plate H on top of the bench, and by which the knives are carried, in combination with the arm N under the bench and connected with the plate H, the lever F, pivoted under the bench, and the lever O, pivoted at one end to the arm N, and having a stud at its other end playing in a slot in lever F, said lever O being pivoted under the bench at a point between its end connections, substantially as herein described.

5. In an apple parer, slicer, and corer, the bench A, the carriage-plate H, fitted and adapted to slide on the bench, the swinging knives J K, having arm *m*, and the tracks M, having cam-notches *m'*, into which the arm drops, in combination with the means by which the knives are reciprocated, consisting of the arm N under the bench and connected with the plate H, the pivoted lever F, and the pivoted lever O, pivoted at one end to arm N, and connected at the other end by a sliding pivot-connection with lever F, substantially as herein described.

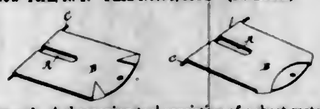
6. In an apple parer, slicer, and corer, the oppositely mounted and aligned forks D, the knives J K, and the plate H, carrying said knives, in combination with the means by which the forks are rotated and the knives fed, consisting of the pivoted lever F, a gear and shaft connection between said lever and the forks, the pivoted lever O, a pivot-connection between one end of said lever and the plate, and a sliding pivot-connection between its other end and the lever F, substantially as herein described.

7. In an apple parer, slicer, and corer, the forks D, having spindles C, the knives J K, and the knife-carrying plate H, having arm N, in combination with the pivoted lever F, the means for rotating the forks, consisting of the segmental gear G on the lever, the vertical shaft *e*, having pinion *e'* on its base and master-gear E on its top, and the pinions *c* on the spindles, and the means for reciprocating the plate H and feeding the knives, consisting of the pivoted lever O, pivoted by one end to the arm N, and having a stud on its other end playing in a slot in lever F, substantially as herein described.

8. An apple parer, slicer, and corer comprising the bench A, the bracket B, the forks D, having hollow spindles C, and arranged oppositely and mounted in line on the bracket, the sliding doffer-disks R on the forks, and the abutting rods Q of the disks passing through the hollow spindles, the sliding carriage-plate H on the bench, the pivoted paring and slicing knives J K, secured to the plate and having the arms *m*, the tracks M on the bench, having cam-notches *m'*, the main lever F, pivoted under the bench, a gear and shaft connection between said lever and the fork-spindles, whereby they are rotated, and the pivoted lever O, pivoted at one end to an arm of the carriage-plate, and having a stud, *o'*, on its other end, playing in a slot in the lever F, whereby the knives are fed, all combined, arranged, and adapted to operate substantially as herein described.

9. In an apple parer, slicer, and corer, the reciprocating carriage-plate H, the brackets I on the plate, knives J K on the brackets, and the guide-tracks M, in combination with the shield or casing P, secured to the brackets and covering the carriage-plate, the tracks, and the base of the knives, and having slots or openings through which the knives pass, substantially as herein described.

329,512. **SHARPENING DEVICE FOR SCISSORS.** Thomas G. Turner, New York, N. Y. Filed Nov. 8, 1884. (No model.)



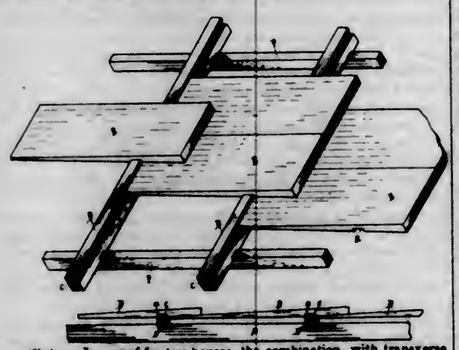
Claim.—1. A sharpening-tool consisting of a sheet-metal holder, the edges of which are constructed to act as a guide, and a steel pin held solely by said holder, and having a portion of its length exposed on all sides, substantially as described.

2. A sharpening-tool consisting of a sheet-metal holder and guide and a steel pin held in the fold of said holder and exposed for a portion of its length, substantially as described.

3. A sharpening-tool consisting of a sheet-metal holder formed of a blank folded over onto itself and united at its ends, and a steel pin, partly exposed, held in the fold of said holder, substantially as described.

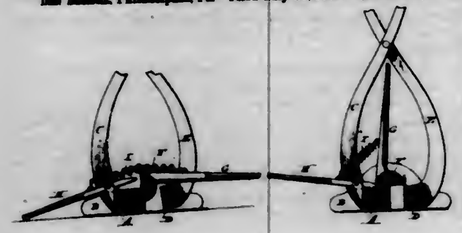
4. A sharpening-tool consisting of a sheet-metal holder and guide and a roughened steel pin, partly exposed, held in the fold of said holder, substantially as described.

329,513. **ROOF FOR TOY HOUSES.** H. Channing Underwood, Wabash, Ind. Filed May 18, 1885. (No model.)



Claim.—In a roof for toy houses, the combination, with transverse scantlings for supporting the shingles, provided with a channel in the side to receive one end of the shingles, of shingles provided with a transverse groove in the under side for fitting over the upper portion of said scantlings, substantially as set forth.

329,514. **METAL-SEAMING TOOL FOR ROOFERS, &c.** Peter Vanderbeek, Philadelphia, Pa. Filed July 30, 1885. (No model.)

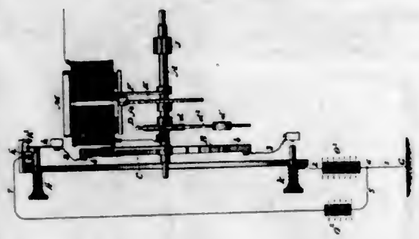


Claim.—1. In a tool for the formation of standing seams, the combination, with operating levers or handles, substantially as described, of the jaw A, having the vertical face, the opposing jaw D, having a vertical face, the rolling bar F, having a flat face from end to end, and a spring, substantially as described, to hold the bar F normally with its face in a horizontal position, as described, whereby the closing of the jaws is caused to turn the edge of the metal to a horizontal position and the turning of the bar F caused to complete the seam.

2. In combination with the clamping-jaws A D and their operating-levers, the rolling bar F and the two foot-levers for imparting motion thereto.

3. In combination with the jaws A D and their operating-levers, the rolling bar F, the arm or lever G, formed rigidly thereon, the lever H, pivoted to the jaw A, and the spring I.

329,515. **PRINTING-TELEGRAPH.** Samuel B. Van Nortwick, New York, N. Y. Filed Jan. 5, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a type-wheel and a shaft carrying the same, of a mechanical escapement applied to said shaft, a stop carried upon said shaft, a detent normally standing in the path of said stop, means, substantially such as described, for removing said detent from the path of said stop once in each revolution of the type-wheel shaft, a printing-platen, and means, substantially such as described, for actuating said platen at will.

2. The combination, substantially as hereinbefore set forth, with a type-wheel and its shaft, of a stop moving with said type-wheel shaft, a detent normally standing in the path of said stop, means for removing said detent from the path of said stop once in each revolution of the shaft, a printing-platen, means, substantially such as described, for actuating the same by currents of a given polarity, a ratchet-wheel moving with said shaft, and a pawl moving with said detent, which pawl engages the teeth of said ratchet-wheel when said printing-platen is actuated.

3. The combination, substantially as hereinbefore set forth, with a type-wheel and its shaft, of a mechanical escapement applied thereto, means for actuating said shaft, a unison-arm moving with said shaft, a detent normally standing in the path of said unison-arm, an electro-magnet for removing said detent from the path of said arm, which electro-magnet responds to currents of either polarity, a printing-platen, an electro-magnet for actuating the same, which magnet responds to currents of one polarity only, a ratchet-wheel moving with said type-wheel shaft, and a detent actuated by said unison-magnet and serving to engage the teeth of said ratchet-wheel except when said wheel is in a given position when the printing-magnet is vitalized, thereby arresting said type-wheel.

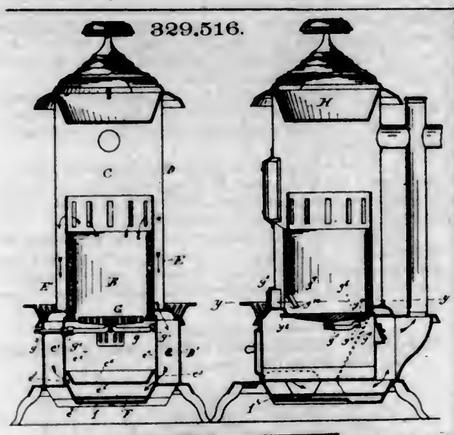
4. The combination, substantially as hereinbefore set forth, with a type-wheel, a type-wheel shaft, and means for revolving the same, of a mechanical escapement applied thereto, a ratchet-wheel moving with said shaft, a unison-arm carried upon said shaft, a detent applied to said unison-arm, means for automatically removing said detent from the path of said unison-arm, a printing-platen applied to said type-wheel, a permanent magnet provided with magnetizing-coils and applied to said printing-platen, and means, substantially such as described, for transmitting currents through said unison-magnet once in each revolution of the type-wheel in a given direction, and for transmitting currents in the opposite direction through the coils of said printing-magnet at will.

329,516. **HEATING-STOVE.** William E. Walker and George E. Wilbur, Taunton, Mass. Filed Dec. 22, 1884. (No model.)

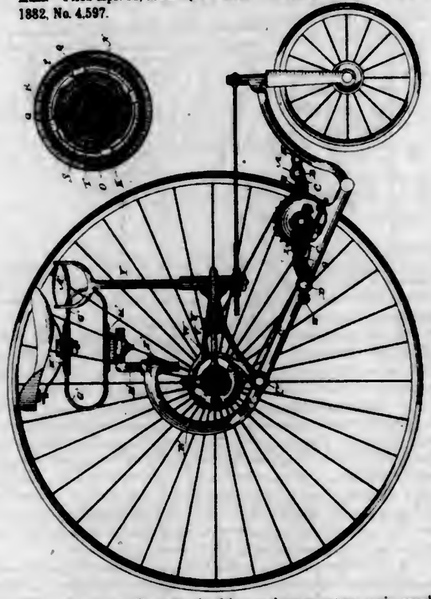
Claim.—1. The combination, in a heating-stove, of the fire-pot B with the flues *e e' e²*, the cold-air passage F *f⁵ f⁶*, and outlets *f⁴*, all substantially as and for the purposes described.

2. In a heating-stove, the combination of the fire-pot B with the base-section D', having the flue-plates *e⁴ e⁵ e⁶ f⁵*, which form the base-flues and cold-air passages, substantially as specified.

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329,517. **VELOCIPEDE.** Thomas Warwick, Birmingham, County of Warwick, England, assignor to the Overman Wheel Company, Chicopee, Mass. Filed Apr. 11, 1884. (No model.) Patented in England Sept. 27 1882, No. 4,597.



Claim.—1. Auxiliary cranks fulcrumed upon rotary main cranks and having pedals mounted in their outer ends, and means for holding the pedals in front of, behind, and above the fulcra of the auxiliary cranks, substantially as set forth.

2. Auxiliary cranks fulcrumed upon rotary main cranks and having pedals mounted in their outer ends, and spring-arms secured to the rotary main cranks for engaging with notches formed in the auxiliary cranks, substantially as set forth.

3. Auxiliary cranks fulcrumed upon rotary main cranks and having pedals mounted in their outer ends, and spring-arms secured to the rotary main cranks for engaging with notches located, as shown, in the auxiliary cranks for holding the pedals in front of, behind, and above the fulcra of the auxiliary cranks, substantially as set forth.

4. Auxiliary cranks fulcrumed upon rotary main cranks and having pedals mounted in their outer ends, and extensions from the pedals for engaging with the upper faces of the rotary main cranks at points on opposite sides of the fulcra of the auxiliary cranks, substantially as set forth.

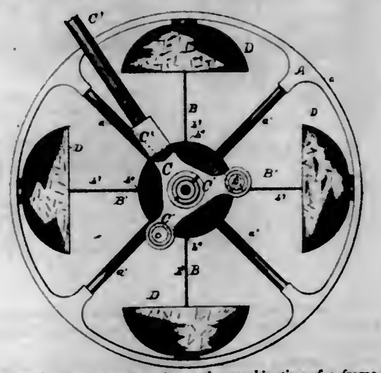
5. Auxiliary cranks having pedals mounted in their outer ends, and fulcrumed upon rotary main cranks having bearings located upon opposite sides of the fulcra of the auxiliary cranks, substantially as shown.

6. Auxiliary cranks fulcrumed upon rotary main cranks and having pedals mounted in their outer ends, and means for binding the outer ends of the auxiliary cranks to the rotary main cranks, substantially as set forth.

7. Means for disconnecting one of the driving-wheels of a velocipede from the axle thereof, to facilitate the turning of the vehicle, consisting of a box formed integral with the hub of the vehicle and having a serrated inner face, a skeleton hub secured to the axle of the vehicle and located within the box aforesaid, radial reciprocating bolts mounted in the skeleton hub and having serrated heads, a taper sleeve, and springs for operating the bolts, as described, and means for operating the said sleeve, substantially as set forth.

8. A seat-support for a velocipede, consisting of an arm secured to the frame of the vehicle at a point below the axle thereof, and thence curving rearward, upward, and forward, as shown, substantially as set forth.

329,518. **TRUNDLE AND HOOP.** Walter Webster, Richmond, Ind. Filed Nov. 7, 1884. (No model.)



Claim.—1. In a trundle or hoop, the combination of a frame having the bells, a hub, a plate attached to the hub and having clapper-arms attached thereto, and a handle having arms provided with cams, substantially as described.

2. The combination of a frame, a hub having slotted flanges, a plate having clapper-arms provided with coiled springs located in said slotted flanges, and a handle having cams, substantially as described.

3. The combination of a frame having the bells, a hub having a slotted flange, a plate having clapper-arms provided with coiled springs, a cap which with said plate covers said flange, and a handle provided with cams, substantially as described.

329,519. **SHOE TYING AND KNOTTING MACHINE.** Albert W. Weeks, Newton Upper Falls, Mass. Filed Mar. 24, 1884. (No model.)

Claim.—1. In combination with a knotting device, a spring, D, of suitable material and shape, adapted to materially assist in forming a knot, substantially as herein shown and described, and for the purpose set forth.

2. In a knotting-machine, the combination of the spring D, having the lug *d* and the curved lip *d²*, of the hook *f*, having the lip *f'*, the shoulder *f²*, and the projected head *f³*, of a plunger, F, having one end taper and carrying therein the hook *f*, and having the other end milled and fitted with the screw *f⁴*, of a sleeve, E, having the shoulder *e⁴*, the spline key and groove *e²*, the groove *e³*, for receiving the hook *e*, the aperture *e⁵*, and the flattened pin E', and of the nipple H, having the lug *h*, the shoulder *h'*, and the screw or thread *h²*, all arranged to mutually assist in forming a knot, substantially as herein shown and described.

3. In a knotting-machine, the combination, with a spring, D, having the lug *d* and the lip *d²*, of an eccentric disk, *d'*, and the screw *d³*, adapted to adjust the said spring, as shown and described.

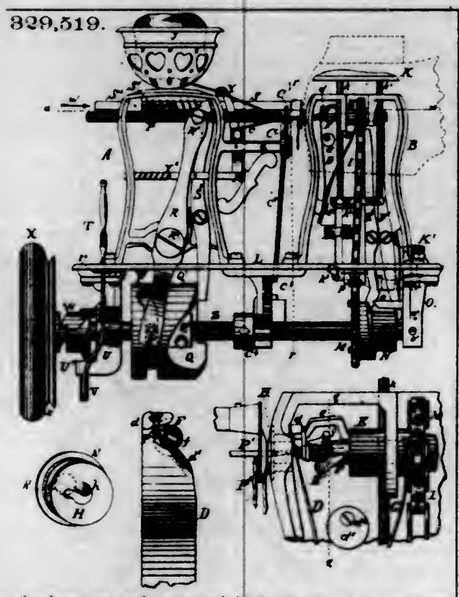
4. In a knotting device, the plunger F, having one end tapered and fitted with the hook *f*, and the lever F', having the slot *f⁶* in its upper end, adapted to fit the milled end of the plunger F, and the screw *f⁴*, for securing the above lever to the plunger, substantially as shown, and for the purpose set forth.

5. In a knotting-machine, the hook *f*, fitted within the tapered end of the plunger F and having the lip *f'*, the shoulder *f²*, and the projected bead *f³*, and the nipple H, secured in line with the plunger F, and having the lug *h*, the shoulder *h'*, and the screw *h²*, adapted to co-operate with the hook *f* in forming a knot, all substantially as herein shown and specified.

6. In a knotting device, the sleeve E, having the shoulder *e⁴*, the spline groove and key *e²*, the groove *e³*, for carrying the hook *e*, the aperture *e⁵*, and the flattened projecting pin E', and the spring G, having the forked end G', substantially as shown, and for the purpose specified.

7. In a knotting-machine, the combination, with the spring D, the plunger F, and the sleeve E, of the combined cam N, having the set-screw *n²*, the protuberance *n'* upon the cam-edge *n⁴*, the spiral cam-edge

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n^2, the abrupt portion thereof, n, and the shoulder n^3, adapted to receive the adjustable wheel M, substantially as herein shown and described, and for the purpose set forth.

8. In a knotting-machine, the combination, with the combined cam N, of the adjustable wheel M, having the slots M^3, and adapted to move more or less upon the shoulder n^3, the screws n^4, for securing the wheel M to the combined cam N, the chain I, having its links arranged the one to fit between and the other to span the solid cogs of the wheels M and M', as shown, and of the tightening-pulley p, having the friction-roller p^2, the slot p', and the tightening-screw p^3, all substantially as herein shown and described, and for the purpose set forth.

9. In a knotting-machine, the combination, with the levers F' and F^2 and the combined cam N, of the hanger G, adapted to carry the main shaft Z, and having the guides o o, the screw o', and the aperture o^2, substantially as described, and for the purpose set forth.

10. In a shoe tying and knotting machine, the lever R, having the forked end R' and carrying the friction-roller R^2, the pivot-screw R^3, having the shoulder R^3, the screw R^4, for connecting said lever to the needle-bar, a presser-foot bar having the groove S', adapted to receive the pin S^2, the cam Q, having the cam-groove Q', and the set-screw Q^2, all arranged to operate at the times and in the manner specified.

11. In a shoe tying and knotting machine, the combination, with a shoe-holding casting, B, of an adjustable head adapted to gage the distance of the knot from the inner sole of the shoe, substantially as shown and described.

12. In a shoe tying and knotting machine, the combination, with a shoe-holding casting, B, having the hangers b^4 and b^5, of the lug B', having the oil-channels b' and the aperture b^2, of the lugs b and B^2, the latter having the recess b^3, of the adjustable head K, the operating-rods k and k', the square-shanked casting k^2, having a looped end, the belt k^4, and of the lever k^3, having one end forked, the grooved nut K^2, and the milled-headed thumb-screw K', all arranged and adapted to operate the said head K in a manner substantially as shown, and for the purpose set forth.

13. In a shoe tying and knotting machine, the combination, with a standard, A, having the lugs A' and A^2, of the lug a^4, of the oil-channel a^3 and the aperture a^5, the arm or bracket a, carrying upon its end the hub a^2 and the slotted lug a', and of the string-holding cup J, substantially as herein shown and described, and for the purpose set forth.

14. In a knotting device, the combination, with a casting, A, having the arm a, of the string-distributer Y, having the aperture y^4 and the forked end Y', and of the reciprocating distributer-rod Y^2, having the pins y and y', the spiral spring y^3, and the shouldered screws y^2 and y^4, substantially as shown and described.

15. In a shoe tying and knotting machine, an automatic cutter adapted to sever the tie-string every second knot tied—i. e., at the completion of joining every two shoes—substantially as herein shown and described.

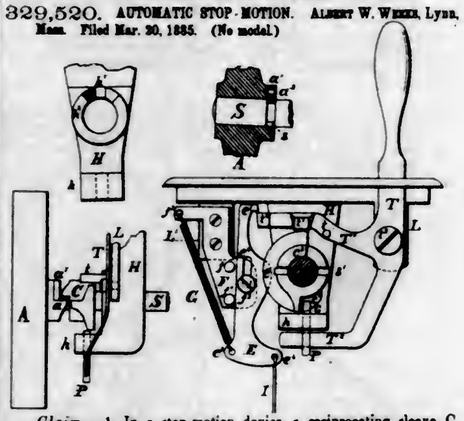
16. In a shoe-tying machine, the combination, with the casting A, having the arm a, of the automatic cutter C^3, consisting of the knife C and the pawl C', having the slit C^4 and the milled surface C^5, and further consisting of the springs C^2 and c, of the rod c^3, the wheel c^4, the wheel c^5, having twice as many cogs upon its perimeter as the wheel c^4, and carrying the cam-edge c^6 and the band c^7, and of the screws C^6 and c^7 and c^8, all constructed and adapted to co-operate in cutting the tie-string at the times and in the manner specified.

17. In a shoe-tying machine, the base-plate L, having the apertures l, l^2, l^3, and l^4, the guide-groove l^5, the slotted lug L^2, for carrying the lever k^3, and the lug L', for carrying the wheel c^5, substantially as shown and described.

18. In a shoe tying and knotting machine, the combination, with the hangers O and U, of a shaft, Z, having around each end a groove adapted, respectively, to receive the screws o' and z^2, and having, further, the pin Z', substantially as shown and described.

19. In a shoe tying and knotting machine, the combination, with the base-plate L, of a hanger, U, adapted to support the main shaft, and having the arm U', for carrying the lever T, of the lipped spring t, screw t', and pin t^2, all substantially as herein described, and for the purpose set forth.

329,520. AUTOMATIC STOP-MOTION. ALBERT W. WEBER, Lynn, Mass. Filed Mar. 20, 1885. (No model.)



Claim.—1. In a stop-motion device, a reciprocating sleeve, C, adapted to either connect or disconnect the motion of the driving-pulley with or from the driving-shaft of a machine, substantially as herein described.

2. In an automatic stop-motion, the sleeve C, having the lugs c^2 and c^3, the cam-edge c', and the square lug or stop c^3, and having, further, the cam-surface c and the semicircular projecting band c^4, all substantially as shown and described, and for the purpose set forth.

3. In an automatic stop-motion, the combination consisting of the reciprocating sleeve C, having the lugs c^2, c^3, and c^3, the cam-face c, and cam-edge c', the semicircular band c^4, and the lateral slot c^5, further consisting of the lever T, pivoted by the screw t^2, and having the arms T' and T^2, the former carrying the cam-lug t', the lug t^3, and the projecting pin t, consisting, further, of the slotted pin P and of the pin s', and consisting, further, of the shaft-hanger H, having the beveled-lipped recess h' and the face-surface h^2, all adapted to co-operate in starting and stopping a machine, substantially as herein shown and described.

4. In an automatic stop-motion device, the combination, with a reciprocating sleeve, C, and lever T, of a driving wheel or pulley, A, having the projecting lug a, and secured to the driving-shaft by the semicircular flange a', substantially as and for the purpose shown and specified.

5. In an automatic stop-motion, the combination, with the lever T, of a latch-bar, E, having the projecting lip e', the slot e^2, and the protruding breast e, and having at its lower end the holes e^3 and e^4, of a plate, F, having a pivot-screw, f^2, a projecting arm, f^3, and the studs f and f', and of the spring G, connecting the said latch-rod E with the plate F, all adapted to co-operate in starting the machine, substantially as and in the manner specified.

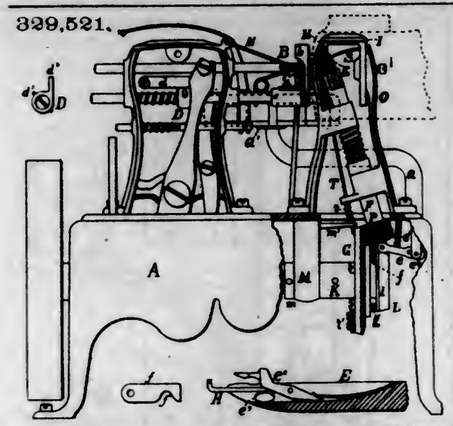
329,521. SHOE TYING AND KNOTTING MACHINE. ALBERT W. WEBER, Lynn, Mass. Filed Mar. 20, 1885. (No model.)

Claim.—1. In a shoe tying and knotting machine, the combination, with a shoe-receiving standard, O, of the knotting device, substantially as described, placed longitudinally within the said standard, in a manner substantially as shown.

2. In a knotting-machine, the plunger E, having through its tapered end the hole e^2, and carrying at the same end the small hook e^3, and having jointed at the opposite end the slotted lever e, substantially as herein shown.

3. In a knotting device, the combination, with a bevel-gear, G, of a pinion, P, fixed upon the hook-carrying sleeve F, and having one-third as many teeth as the gear G, a plunger, E, having the needle-receiving hole e^2, a hook, e^3, a slotted lever, e, a spring, e', a lever, f, having the

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cam-face f', a friction-roller, g, and pin f^2, for operating said lever, a knot-tightening rod, T, having the upper end flat and flaring, and having the spring t upon its lower end, and the guide m' and cam t', all substantially as herein shown and described, and for the purpose set forth

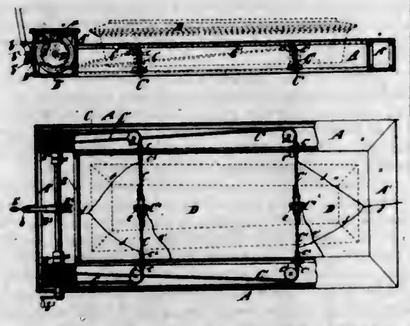
4. In a knotting device, the hub K, having the flange k and shoulder k^2, in combination, and adapted to receive the gear G and the cam L, substantially as herein shown and described.

5. In a knotting-machine, the combination, with a hub, K, of the large bevel-gear G, having three times as many teeth as the pinion P, and carrying upon that side opposite the teeth the cam l', the cam L, having the beveled edge l, the cam-edge l^2, and the drop l^3, and further carrying the pin l^2, all substantially as herein shown and specified, and for the purpose set forth.

6. In a shoe tying and knotting machine, the combination of a presser-foot and cutter, B, with a knife-protecting hood, b, a spline-collar, D, having the flange d^2 and the pin d', and a spline-cap, d, substantially as and for the purposes shown and specified.

7. The combination, in a shoe tying and knotting machine, of the knotting mechanism with the string-gage arm a, carrying a shoe-receiving cradle, a', all substantially as shown and described.

329,522. APPARATUS FOR LOWERING COFFINS. JACOB WEIDENMANN and OTTO GRÜNINGER, New York, N. Y. Filed Mar. 23, 1885. (No model.)



Claim.—1. In an apparatus for lowering coffins, the combination, with a hollow frame the top of which is closed to form a platform, of a shaft arranged in one end of the frame, drums upon said shaft, and ropes or bands passing around said drums and extending therefrom through the hollow frame and inward through opposite sides of the frame, and serving to support a coffin near the head and foot thereof, substantially as herein described.

2. The combination, with a hollow frame and a shaft arranged in one end of the frame, of drums upon said shaft, ropes or bands passing around said drums and extending therefrom through opposite sides of the frame, in order to support the coffin near the head and foot thereof, and a brake mechanism applied to the shaft for controlling its rotation in lowering a coffin, substantially as herein described.

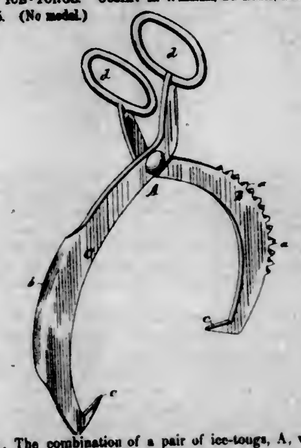
3. The combination, with a shaft, B, and its drums B', of ropes or cords C C', passing around and extending from said drums, and the hollow frame A A', within which said parts are arranged for operation as described, and the top of which has a covering, °, of india-rubber or analogous material, substantially as described.

4. The combination, with the frame A A', the shaft B, arranged transversely to the length thereof, and the drums B' of said shaft, of the ropes or bands C C', passing around said drums and extending therefrom through opposite sides of the frame, in order to support the coffin near the head and foot thereof, the brake-wheel B^2 on said shaft, and the brake strap and lever B^2 E, all arranged for operation substantially as described.

5. The combination, with a hollow frame and shaft arranged in one end of the frame, and drums upon said shaft, of ropes or bands C C', passing around said drums and extending therefrom through opposite sides of the frame, in order to support a coffin near the head and foot thereof, and stops c^2 upon said ropes or bands, for the purpose of maintaining the required amount of slackness in said ropes or bands when the coffin is placed upon them, substantially as described.

6. The combination, with a hollow frame and a drum-shaft arranged therein, of ropes or bands passing around the drums and extending through opposite sides of the frame, and eyes d, with which the ropes or bands extending through one side of the frame are connected, bolt-sockets and spring-actuated bolts d' d^2, provided upon the ends of those ropes or bands which extend through the opposite side of the frame, and the keepers e, whereby the bolts are held with their springs under tension, substantially as herein described.

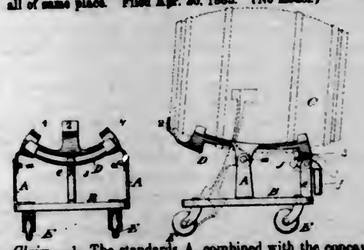
329,523. ICE-TONGS. GUSTAV H. WERNER, St. Louis, Mo. Filed Sept. 10, 1885. (No model.)



Claim.—1. The combination of a pair of ice-tongs, A, with the saw-shaped arm B, substantially as herein shown and described, to form a new combination-tool, as and for the purpose set forth.

2. The combination of a pair of ice-tongs, A, with the saw-shaped arm B and blade-shaped arm C, substantially as herein shown and described, to form a new combination-tool, as and for the purpose set forth.

329,524. BARREL-SUSTAINING APPARATUS. JOSEPH D. WHITGATE, Worcester, Mass., assignor, by direct and mesne assignments, of three-fourths to Frank N. Eddy, Alfred Elcock, and William E. Hadwen, all of same place. Filed Apr. 30, 1885. (No model.)

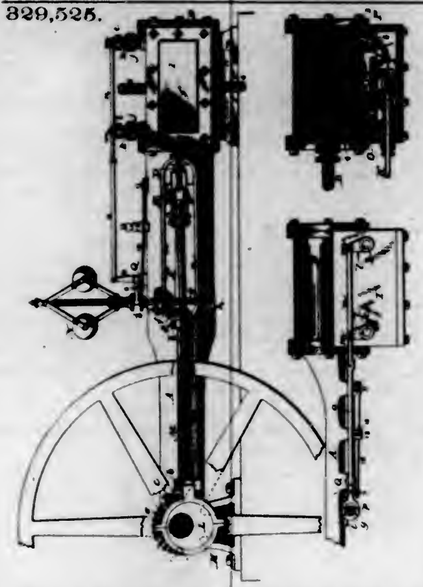


Claim.—1. The standards A, combined with the concave frame D, journaled in said standards eccentrically and having the projection 2 and barrel-rests 4, and the latch f, pivoted upon the standard e in position to engage the frame to hold it in position, substantially as shown and described.

2. The standards A, concave frame D, journaled in said standards, and having the projection 2 and barrel-rests 4, and the latch f, pivoted upon the standard e in position to engage the frame to hold it in position, combined with the platform B and its wheels E, substantially as shown and described.

329,525. VALVE-GEAR. GUSTAV ABRAHS and NILS NILSON, Dassel, Minn. Filed Feb. 14, 1885. (No model.)

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Claim.—1. In a steam-engine, the combination of a frame, a cylinder, a steam-chest, a slide-valve therein actuated by the engine-shaft, rocking valves interposed between the steam-chest and cylinder to govern the supply of steam to the latter, a bar or rod connecting said valves, a governor actuated by the engine-shaft, an elbow-lever upon the frame adapted to be rocked by the rise and fall of the governor, and a rod connecting the elbow-lever with the valves, as and for the purpose set forth.

2. In a steam-engine such as shown and described, the combination of the following elements, to wit: a frame, a cylinder provided with a piston, a steam-chest, a slide-valve therein, rocking valves interposed between the steam-chest and cylinder, a rod connecting said valves, a governor, an elbow-lever mounted on the frame of the engine and adapted to be rocked by the governor, and a rod or bar connecting said lever with the rocking valves, all arranged as shown, whereby when the speed of the engine enduly increases or diminishes the rocking valves will be rotated to compensate for the same.

3. In an engine substantially such as described, the combination of a governor, rocking valves interposed between the cylinder and slide-valve for controlling the admission of steam to the cylinder and provided with crank-arms, a rocking lever actuated by the governor, and a rod connecting said lever and the valve-arm.

4. The combination, in a steam-engine, with a cylinder, piston, steam-chest, and slide-valve, of rocking valves interposed between the slide-valve and cylinder and actuated by the engine-governor through a rocking lever, and a spring bearing upon the latter and adapted to act in opposition to the governor, as set forth.

5. The combination, in a steam-engine, with a cylinder, piston, steam-chest, and slide-valve, of rocking valves interposed between the cylinder and slide-valve and actuated by the engine-governor, a spring arranged to act in opposition to the governor, and a set-screw for varying the action of the spring, as and for the purpose set forth.

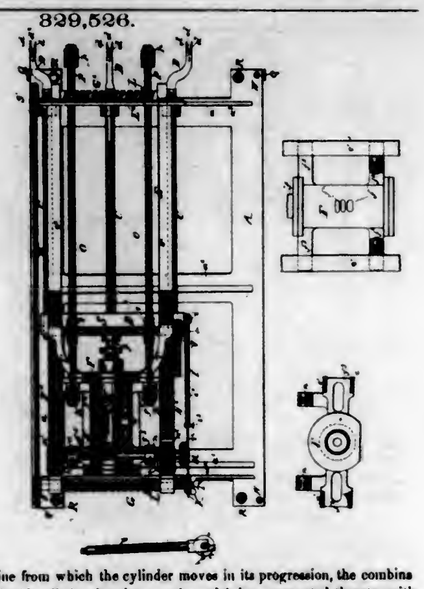
6. In combination with a steam-engine, its governor N, and cut-off valves O P, lever *p*, connected with the governor and with the valves, spring 10, connected with said lever *p*, guide 12, and set-screw 13, all combined and arranged to operate substantially as explained.

7. The herein-described engine, consisting of frame A, cylinder B, steam-chest I, slide-valve J, rocking valves O P, interposed between the slide-valve and cylinder, rod *n*, connecting the valves O P, governor N, rocking lever *p*, actuated thereby, and rod *o*, connecting the lever *p* and the rod *n*, as and for the purpose set forth.

329,526. COAL-MINING MACHINE. BENJAMIN F. ASPER, Pittsburg, assignor to John C. Grady, trustee, Philadelphia, Pa. Filed Dec. 2, 1884. (No model.)

Claim.—1. In a coal-mining machine having a flat horizontal frame, a carriage laterally movable thereon, a motor-cylinder mounted on said carriage and movable forwardly as the work proceeds, and a screw which communicates such lateral motion to said carriage, said screw being located in the rear of said cylinder, or on that end of the machine from which the cylinder moves in its progression, the combination of said cylinder, its piston, and a pick-bar connected thereto, with said screw and an extensible connecting-rod, I, between said pick-bar and screw, substantially as described.

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2. The combination, in a mining-machine, of a bed-piece or base, a horizontal carriage or frame laterally movable thereon, and a cylinder mounted on said carriage and movable laterally with said carriage and longitudinally thereon, said cylinder being connected to a horizontal pick-bar, and both said cylinder and pick-bar resting on horizontal guides or ways consisting of the side bars of said carriage or frame, substantially as shown and described.

3. The combination, in a coal-mining machine, of a bed piece or base, a supporting frame or carriage, a cylinder mounted thereon, a pick-bar connected to the piston of said cylinder, a double-threaded screw mounted on the frame which supports the cylinder, a follower or fork attached to the bed of the machine and engaging with said screw, and a rod or pitman connecting said bar with a rock-arm on the shaft of said screw, whereby the movement of the piston will communicate an intermittent rotation to said screw and cause said carriage, cylinder, and pick-bar to traverse the base or bed-piece of the machine, substantially as shown and described.

4. In a coal-mining machine, the combination, with a frame or carriage having a rack, of a cylinder whose piston is connected with a pick-bar, a pinion gearing with said rack, a lever for moving said pinion, and a pawl which also engages with said rack, said pawl operating to prevent the recoil of the cylinder on the carriage or frame when the picks make a stroke, substantially as shown and described.

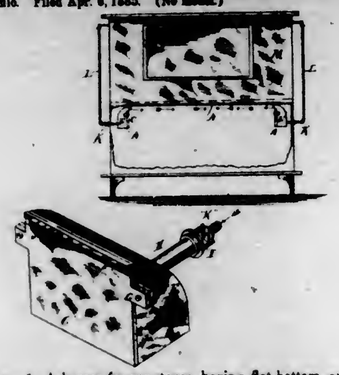
5. The combination, in a coal-mining machine, of a laterally-reciprocating frame forming a support for a cylinder and pick-bar, a double-threaded intermittently-rotating screw and follower at one end of the machine, and another double-threaded screw and follower at the other end of the machine, said screws having sprocket-wheels connected by a drive-chain, one of said screws being connected with and moved from said pick-bar, whereby the reciprocating movement of said pick-bar imparts an intermittent rotation to said screws, and the latter causes said frame to reciprocate laterally by intermittent impulses, substantially as shown and described.

6. In a coal-mining machine having scraper-chains, the combination, with a shaft supported on arms attached to the motor-cylinder, and carrying sprocket-wheels for moving the chains, and a loose pinion, V, and clutch *v*, of a rack secured to the pick-bar and with which said pinion gears, whereby the return-stroke of said pick-bar communicates an intermittent rotation to said shaft and a corresponding forward movement to said chains, substantially as set forth.

7. In a mining-machine, telescopic rods for the picks or cutters to permit the extension of said rods and the projection of the picks or cutters, substantially as set forth.

8. The combination, in a mining-machine, of a bed-piece or base, a carriage or frame laterally movable thereon, and a cylinder mounted on and movable laterally with said carriage and longitudinally thereon, said cylinder being connected to a pick-bar, and both said cylinder and pick-bar resting on guides or ways consisting of the side bars of said carriage or frame, substantially as shown and described.

329,527. BURNER FOR GAS-STOVES. AUGUSTUS W. BRALL, Dayton, Ohio. Filed Apr. 6, 1885. (No model.)

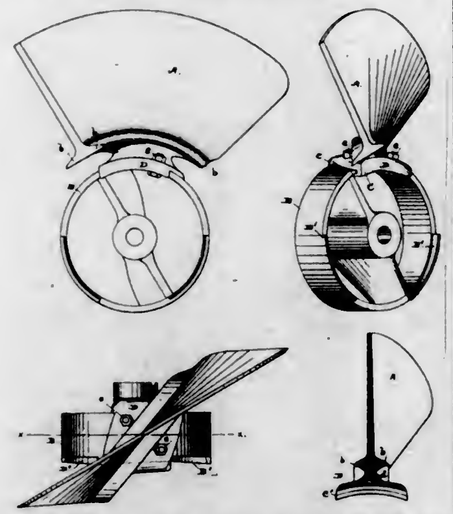


Claim.—1. A burner for gas-stoves, having flat bottom, ends, and face-plate, a single inlet which enters through the curved back, and a narrow outlet or burner-slot between the face-plate and curved top plate, substantially as described.

2. A burner for gas-stoves, having flat bottom, ends, and face-plate, a single inlet which enters through the curved back, a narrow burner-slot between the face-plate and curved top plate, and an overhang on the curved plate above said slot, extending in front of the face-plate, as set forth.

3. The combination, in a burner for gas-stoves, of the inclosing ends and bottom plate, and a supply-pipe entering through the arched back and opening directly toward the flat front plate, and the flat front plate, and the arched back and top plate, said top extending slightly beyond the face-plate and leaving a narrow opening between, as set forth.

329,528. SCREW-PROPELLER. JOSEPH BELDUKE, San Francisco, Cal. Filed Jan. 10, 1883. Renewed Feb. 27, 1885. (No model.)



Claim.—1. The propeller for ships or vessels, consisting of the hollow cylindrical hub B, having central bearings for the propeller-shaft, and the spiral blades A, having the bottom web or flange, and fastening-block D, placed over and securing them to the cylinder and extending beyond the ends of the cylinder, substantially as hereinbefore described.

2. In a propeller for ships or vessels, the combination, with a hollow cylindrical hub, B, of spiral blades A, the length of which is in excess of the width so that they extend over and beyond the ends of the cylinder, and fastening-blocks D, secured to both the blade and the cylinder, whereby the said parts are united, substantially as described.

3. The combination, with the propeller-blade A, of the fastening-block D, secured to said blade and having dovetail grooves c c, which are adapted to take over the rim of the cylinder-hub, substantially as described.

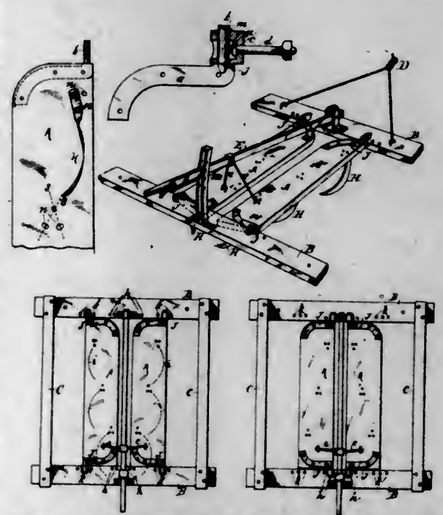
4. The combination, with the propeller-blade A, of the fastening-block D, having dovetail grooves c c, which take over and secure the block to the cylinder of the hub, and provided with the contracted neck or web *d*, whereby the block D is joined to the blade, substantially as described.

5. The combination, with the fastening-block D, having dovetail grooves c c, of the cylinder-hub and the wedge-shape projections on the rim of the said cylinder-hub, substantially as described.

329,529. STOVE-POLISH. ALBERT N. BENDER, Manhattan, Kans. Filed Sept. 14, 1885. (Specimens.)

Claim.—A compound of dammar varnish, turpentine, drier, black-lead, and gasoline, substantially as and for the purposes set forth.

329,530. LISTING-CULTIVATOR. JOSEPH P. BLACK, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Aug. 10, 1885. (No model.)



Claim.—1. In a listing-cultivator, the frame having the cross-plank B B', adapted to ride the ridges, and the beams A A, connected directly to the said cross-plank by a hinge-joint, permitting said beams to swing from one side, combined, arranged, and adapted to operate substantially as and for the purpose set forth.

2. In a listing-cultivator, the combination of the two plank beams provided with blades or teeth for stirring the soil, the two cross-plank adapted to ride the ridges, a hinge-joint connecting the said beams directly to the said plank in such a manner as to permit the beams to swing from one side or edge, and an operating-lever adapted to swing the said beams, all substantially as and for the purpose set forth.

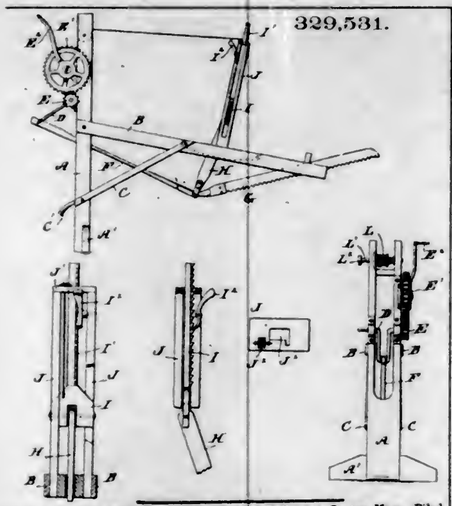
3. The cross-plank B B', provided with the perforations *h* and perforations *k*, by which the beams may be connected to swing either inwardly or outwardly, as desired, in combination with the two plank beams, provided with a hinge-joint connecting directly to the said cross-plank, all substantially as and for the purpose set forth.

4. The combination of the two cross-plank adapted to ride the ridges, two side bars attached to and adapted to support the ends of said cross-plank, two swinging beams provided with blades or teeth, with a hinge-joint directly connecting the said beams to the said cross-plank, substantially as and for the purpose shown.

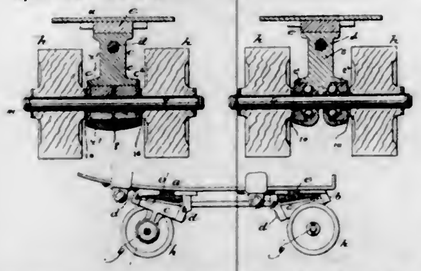
329,531. DRAG-SAW. ARNET P. BOSTON, Eureka, Tex. Filed July 20, 1885. (No model.)

Claim.—The herein-described drag-saw, consisting of a standard, two beams connected to the standard on opposite sides thereof, a crank-shaft held by the standard, suitable drive-gearing for operating the same, a pitman connecting the crank-shaft and the saw, a pendulum attached to the saw and the pitman at one end and to a sliding head-block at the other end, the head-block sliding in the slotted standards and having a rack-bar extended therefrom, a pawl engaging the rack, the operating-cord attached to the head-block and passing over a guide-pulley on the slotted standards and around a spool rigidly secured to a laterally-movable shaft, a projection on one end of the spool to engage a pin on the standard, and a spring coiled around the shaft and bearing upon the opposite end of the spool and an arm of the standard, as and for the purposes set forth.

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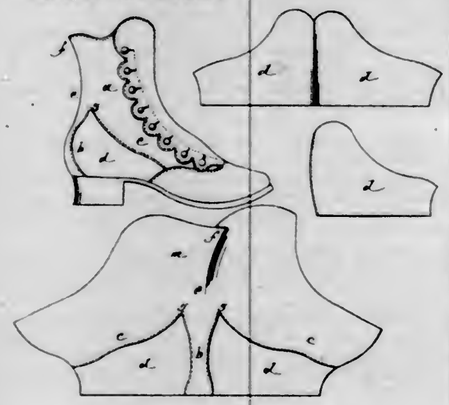
329,532. ROLLER-SKATE. George D. Burton, Boston, Mass. Filed Apr. 13, 1885. (No model.)



Claim.—1. A roller-skate provided with the pedestal *c*, having heads bored, as shown and described, to receive the axle of the wheels and the rollers surrounding the axles, the heads c' c^2, let in the openings in said heads to close them and hold the rollers in place, and the washers 10 10, interposed between said heads and the wheels to hold the heads in place without the necessity of additional fastenings for said heads, and consequently retain the rollers in the pedestal-heads, substantially as shown and described.

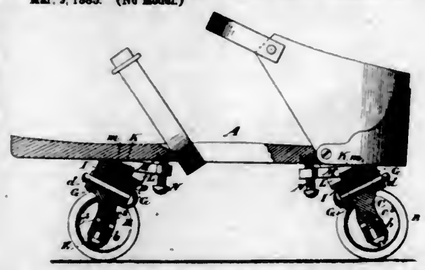
2. The skate body, wheels, and axle, combined with a pedestal having a head or hub bored from either side, and having internal beveled walls, rolls, or balls placed in said head and secured therein around and in immediate contact with the axle by heads c' c^2, having inner beveled faces, substantially as shown and described.

329,533. SHOE OR GAITER. Freeman P. Buzzell, Toledo, Ohio. Filed Apr. 15, 1884. (No model.)



Claim.—The upper portion of quarters *a* and *c* and tongue *b*, formed in one piece and drawn over and attached to the lower quarters or facings, *d*, formed of two pieces rounded and stitched together at their rear edges, with the tongue or stay-piece covering the seam in the rear of the lower quarters, and the upper portion, *a c*, being stretched outward or backward and from the point *g* upward, substantially as described.

329,534. ROLLER-SKATE. Robert Chesnut, Richmond, Ind. Filed Mar. 9, 1885. (No model.)



Claim.—1. The axle-fasteners c^3 c^3, in combination with V-shaped notches a^2 a^2, for holding the divided axle *a a* stationary.

2. The combination, with the divided axle *a a*, of the rollers B B, cap *b*, bearings *c c*, fasteners c^3 c^3, and screw E, substantially as described.

3. The hollow standard D, containing an independent spring-metal pressure-plate, I, rubber block *m*, and adjusting-lever M.

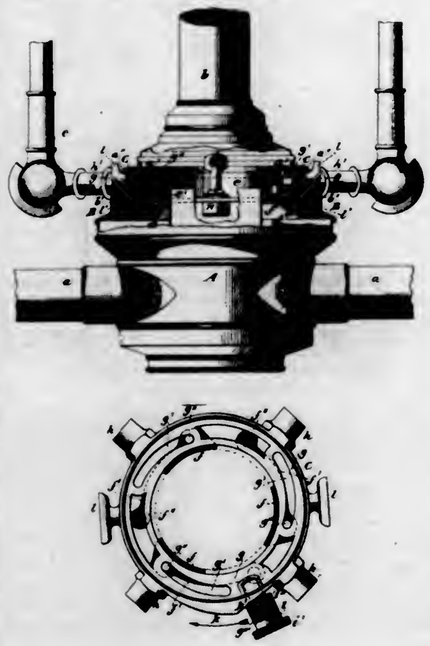
4. The tension device consisting of the spring-metal plate I, arm M, and rubber block *m*, operated within the hollow standard D, through the slot L, by means of the set-screw N, as described.

5. The combination, with the hanger C, by means of a pivot, *d*, of the hollow standard D, arranged above the pivot and containing a spring-metal pressure-plate and a tension device, constructed and operating as described.

6. The arms F F over the hanger C, for arresting the action of the spring-metal plate I and limiting the deflection of the foot-board A as described.

7. The combination, with the hanger C, by means of the pivot *d*, of the hollow standard D, spring-plate I, and arms F F, as described.

329,535. CAR-LAMP. George M. Clark and William H. Briggs, Chicago, Ill., assignors to the Adams & Westlake Manufacturing Company, same place. Filed Jan. 24, 1885. (No model.)



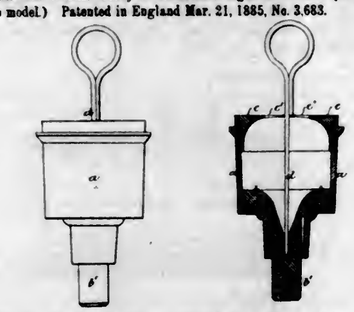
Claim.—1. In a lamp-support, a fixed clamp-ring having within it pivoted segmental plates, each provided with a tongue, and a ring, adapted to be partially revolved, having eccentric slots to engage with a pin or part of each segmental plate, and thus move said plates to and from the center of the clamp-ring or support, substantially as set forth.

2. A clamp-ring constructed to be secured to the frame-work or support of the lamp and inclosing an eccentrically-slotted ring adapted to be partially revolved and pivoted segmental arms provided with tongues, said arms having pins resting in the eccentric slots of said revolving ring, combined with a stem attached to said revolving ring and moving in a segmental slot of the clamp-ring and a spring-sleeve sliding upon said stem and having contact with an eccentric portion of the periphery of the said clamp-ring agreeing with the eccentricity of the slots in the said revolving ring, substantially as set forth.

3. In a lamp-support, a clamp-ring having a portion of its periphery eccentric, said eccentric surface uniting with a straight surface, an internal revolving ring having eccentric slots, and pivoted segmental plates provided with tongues and having pins entering said slots, combined with means, substantially as described, engaging with the said eccentric and straight surfaces of the clamp-ring for rotating and locking the pivoted segmental plates, substantially as set forth.

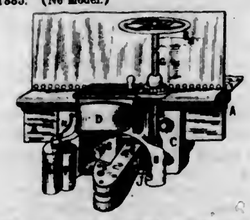
4. In a lamp-support, a clamp-ring attached to a fixed part of the frame-work of the lamp and containing an eccentrically-slotted ring and segmental plates operated thereby, combined with a top for the oil-pot, having a ring slotted to be engaged by the said segmental plates, substantially as set forth.

329,536. MANUFACTURE OF NIGHT-LIGHTS. Samuel Clarke, Childs Hill Works, County of Middlesex, England. Filed Apr. 9, 1885. (No model.) Patented in England Mar. 21, 1885, No. 3,683.



Claim.—The process for the manufacture of night-lights, which consists in casting upon a wire a cylindrical mass of fatty material having a conical or tapering projection from its upper surface, withdrawing the said wire, and inserting in its place a rush wick, also surrounding the mass with a wrapper projecting beyond it on the under side, and filling this projecting part of the wrapper with plaster, all substantially as herein described.

329,537. CAR-COUPLING. George H. Colby, Boston, Mass. Filed Sept. 14, 1885. (No model.)



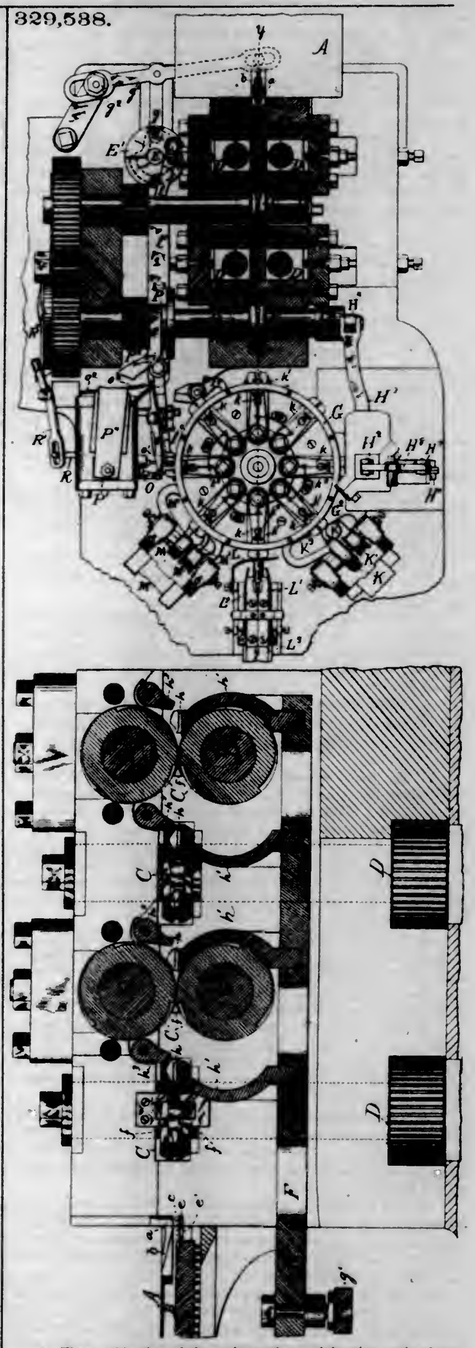
Claim.—The combination, with the guide-wing K of the case B, provided with a vertical groove, L, of the detachable guide-block P, substantially as described, as and for the purposes set forth.

329,538. MACHINE FOR FINISHING HORSESHOE-NAILS. Edward Croft, Waterbury, Conn.; Margaret Croft (administratrix of said Edward Croft, deceased) assignor to James Shepard, New Britain, Conn. Filed Jan. 5, 1885. (No model.)

Claim.—1. The combination of a series of roller-dies for cold-rolling the nail and an intermittently-revolving head containing jaws for receiving the nail from the roller-dies and presenting it successively for subsequent operations, substantially as described, and for the purpose specified.

2. The table A, provided with the nail-delivering orifice having inclines *b* upon two opposite sides, the distance between which is less than the width of the nail-head to be fed through said orifice, substantially as described, and for the purpose specified.

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3. The combination of the reciprocating rack bearing spring-jaws, the stationary inclines *d*, and spring-actuated swinging jaws *c'*, bearing gages *e*, substantially as described, and for the purpose specified.

4. The combination of the slide or rack carrying spring-jaws *c*, mechanism for reciprocating said rack and opening the jaws to receive the nail, and a pair of roller-dies having nail receiving recesses in their periphery, substantially as described, and for the purpose specified.

5. The combination of a table having a nail-delivering orifice, a suitable conveyer underneath the table carrying spring-jaws to receive

and hold the nail, and roller-dies having die-recesses in their periphery, substantially as described, and for the purpose specified.

6. The combination of two or more roller-dies, the spring-fingers arranged between said dies, a spring-pressed oscillating arm, and mechanism for reciprocating the spring-fingers between the pair of rollers and past the spring-pressed oscillating arm, substantially as described, and for the purpose specified.

7. The combination of the rack bearing spring-jaws *c*, the stationary inclined lugs *d*, the swinging arms and gages *e* and *e'*, a series of roller-dies, the series of fingers and spring-pressed oscillating arms between the roller-dies, and mechanism for reciprocating the fingers and rack, substantially as described, and for the purpose specified.

8. The combination of the roller-dies, the intermittently-revolving head, and the nail-holding fingers for conveying the nail from the roller-dies to the intermittently-revolving head, substantially as described, and for the purpose specified.

9. The combination of an intermittently-revolving head bearing a series of holding-jaws and an oscillating cam-plate concentrically mounted with said head for opening and closing the jaws, substantially as described, and for the purpose specified.

10. The combination of the jaws *k k*, having inclines on their outer ends and passing through the rim of the head G, the slide *k'*, and springs k^3 and k^4, substantially as described, and for the purpose specified.

11. The combination of the intermittently-revolving head, the pivoted jaws mounted upon the slide *k'*, the oscillating plate bearing cam for acting upon the slide *k'*, and mechanism for operating the cam-plate and head, substantially as described, and for the purpose specified.

12. The combination of a series of roller-dies and their transferring mechanism, the intermittently-revolving head bearing holding-jaws, and mechanism for trimming the point of the nail, substantially as described, and for the purpose specified.

13. The combination of the slide H^9, lever H^8, the slide-bar H^7, angle-lever H^5, and gaging and conveying jaws H^{11}, substantially as described, and for the purpose specified.

14. The combination of die and punch for trimming the point of nail, the jaws H^{11} and H^{11}, for gaging the point of the nail, and mechanism for operating the jaws to carry away the trimming after the nail has been gaged and trimmed, substantially as described, and for the purpose specified.

15. The combination of the pivoted jaws H^{11}, the slide H^{10}, upon which they are mounted, the stationary inclines H^{13} and H^{12}, and mechanism for reciprocating the slide, substantially as described, and for the purpose specified.

16. The combination of the intermittently-revolving head bearing holding-jaws, the nail-point trimming die and punch, and the incline *m*, for guiding the nail into the proper position between the die and punch, substantially as described, and for the purpose specified.

17. The combination of a series of roller-dies, conveying-fingers, an intermittently-revolving head bearing holding-jaws, mechanism for trimming the point of the nail, and mechanism for grinding or polishing the nail-point upon one side, substantially as described, and for the purpose specified.

18. The combination of an intermittently-revolving head bearing holding-jaws, mechanism for trimming the points of the nail, a suitable abrading-wheel for grinding or polishing the point of the nail, and mechanism for reciprocating the abrading-wheel longitudinally over the nail-point, substantially as described, and for the purpose specified.

19. The combination of the intermittently-revolving head bearing holding-jaws, an abrading-wheel mounted upon a suitable carriage, the oscillating plate having cam-slot K^2, for reciprocating the carriage upon which the abrading-wheel is mounted, substantially as described, and for the purpose specified.

20. The combination of an intermittently-revolving head bearing holding-jaws, mechanism for trimming the point of the nail, mechanism for polishing or grinding one side of the nail at the point, and mechanism for rasping or filing the edge of the nail, substantially as described, and for the purpose specified.

21. The combination of the intermittently-revolving head bearing holding-jaws, the reciprocating rasping or filing jaws L' and L^2, the gage or rest L^4 for the nail, and mechanism for reciprocating the rasping or filing jaws both horizontally and vertically, substantially as described, and for the purpose specified.

22. The combination of filing or rasping jaws L' and L^2, mounted with the face of one jaw projecting downward below the face of the other, the guide or rest L^4 for the nail-point, the vertical reciprocating carriage L^3, an oscillating plate bearing cam-groove, L^5, and the intermittently-revolving head bearing holding-jaws, substantially as described, and for the purpose specified.

23. The combination of an intermittently-revolving head, mechanism for trimming the point of the nail, mechanism for grinding or polishing one side thereof, mechanism for filing or rasping the edges of the point, and mechanism for polishing or grinding the opposite flat side of said nail-point, substantially as described, and for the purpose specified.

24. The combination of an intermittently-revolving head carrying holding-jaws, mechanism for trimming the point of the nail, for grinding or polishing the two sides thereof, mechanism for rasping its edges, the oscillating cam-plate for forcing open the jaws, and the knockout for removing the nail from the jaws, substantially as described, and for the purpose specified.

25. The combination of the intermittently-revolving head bearing holding-jaws, mechanism for trimming the point of the nail, for rasping or filing its two edges and polishing or grinding its two flat sides, mechanism for removing the nail from the jaws, and mechanism for swaging the nail, substantially as described, and for the purpose specified.

26. The combination of the knockout mechanism, the inclined table O', and the swaging die and punch P and P^5, substantially as described, and for the purpose specified.

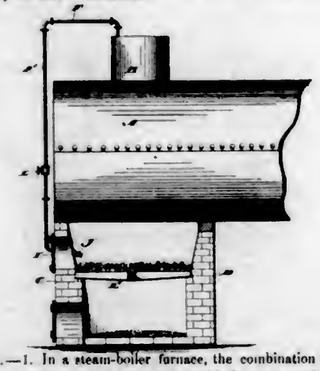
27. The combination of nail-holding jaws, knockout-lever *o*, hung upon a double joint for oscillating in two different directions, and mechanism for depressing the knockout into the jaws and then withdrawing it therefrom, substantially as described, and for the purpose specified.

28. The combination of the swaging-die, the inclined table O', the spring-pressed and pivoted guide o^3, the slide R, links p' and p^3, the friction-slide R^3, and mechanism for reciprocating said slides R and R^3, substantially as described, and for the purpose specified.

29. The combination of the swaging-die P^5, inclined table O', the punch P, and mechanism for lifting the same, substantially as described, and for the purpose specified.

30. The combination of the swaging-die, the slides R and R^3, connected by links p' and p^3, the lever R', and mechanism for imparting to said lever one long forward and backward stroke, and then a shorter stroke for the purpose of knocking out the nail, substantially as described, and for the purpose specified.

329,539. BOILER-FURNACE. CHAS. B. DAVISON, Ann Arbor, Mich. Filed May 12, 1885. (No model.)



Claim.—1. In a steam-boiler furnace, the combination of doors having slots or perforations about on a line with the upper surface of the fuel, as described, for the admission of air into the fire-chamber, with steam-pipes having distributing-nozzles set at such an angle that the steam forced therethrough will strike the current of air coming in through the doors at a point about two-thirds the distance back from said doors, substantially as described.

2. In a steam-boiler furnace, the combination of a pipe leading from the steam-dome and one or more branch pipes provided with nozzles extending into the fire-chamber at such an angle as to bring the currents or jets of steam in contact with the air entering through slots or perforations in the doors, about on a line with the upper surface of the fuel, and the gases arising from combustion, about two-thirds the distance back from the doors, substantially as described.

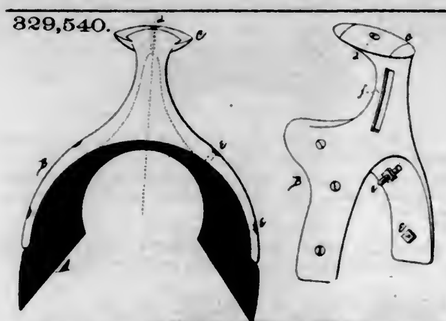
3. In a steam-boiler furnace, the combination of slotted or perforated doors, as described, steam-pipes entering the furnace through the front wall at such an angle that the steam will come in contact with a current of air coming in through slots or perforations in the doors, about on a line with the upper surface of the fuel and the incomplete products of combustion arising from the fuel, about two-thirds of the depths of the furnace back from the front wall, substantially as described.

4. In a steam-boiler furnace, the combination of the pipe F, having cock L, distributing-pipe G, branch pipes H H, nozzles J J, doors I I, provided with slots or perforations K K, grate E, and front and bridge walls C and D, constructed and arranged substantially as described.

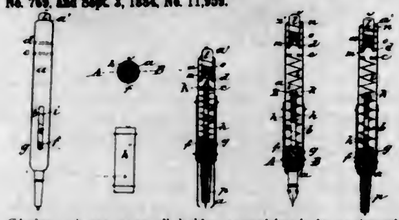
329,540. SADDLE-HORN. FRANK DEHLER, Denver, Colo. Filed Apr. 15, 1885. (No model.)

Claim.—The saddle-horn B, provided with the opening *f*, for the purposes named, the wooden top piece, C, the bolt *d*, and the wear-edges in front and in rear of said top piece, substantially as shown and described, and for the purpose set forth.

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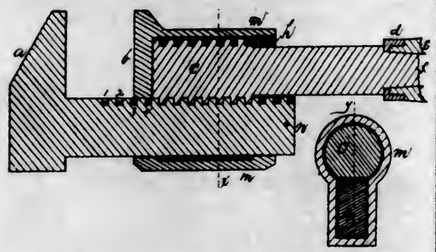


329,541. PEN AND PENCIL CASE. WILHELM G. DÖMELMEIER, Nuremberg, Bavaria, Germany. Filed Sept. 22, 1884. (No model.) Patented in Germany Nov. 16, 1883, No. 27,617, and in England Jan. 5, 1884, No. 769, and Sept. 3, 1884, No. 11,959.



Claim.—A pen or pencil holder comprising in its construction a casing, *a*, having an internal ring, *c*, and inclosing a spring, *i*, a tube, *e*, carrying the nib or pencil and having a split-cone extremity, *k*, a sleeve, *h*, connected with the tube *e* through a slot of the casing *a*, and a spring-pressed cap, *l*, having a hollow cone or cavity, *m*, adapted to contract the split extremity *k* of the tube *e*, the said ring *c* having an inner diameter allowing the extremity *k* to pass in the contracted position only, and the spring *i* being adapted to draw the tube *e* partly out of the casing *a*, substantially as described.

329,542. WRENCH. JAS. A. FAIRBANKS, Augusta, Me. Filed June 29, 1885. (No model.)



Claim.—1. In a wrench of the class described, a handle having a bolt integral therewith, said bolt being connected to one jaw of the wrench and having an external screw cut thereon, in combination with the second jaw of the wrench, all operating as fully described.

2. In a wrench of the class described, a handle having a bolt integral therewith, said bolt being connected to one jaw of the wrench and having an external screw cut thereon, said screw being cut off on the side to give a quick return, in combination with the second jaw of the wrench, all operating as fully described.

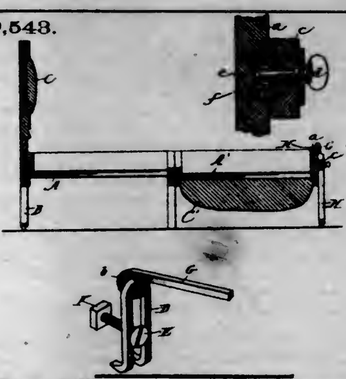
3. In a wrench of the class described, the combination of the shank *f*, having the bolt *c*, with external screw integral therewith, the jaw *b* on the case *m*, the sleeve *h*, and the shank *n*, having concave screws 1 2 3 4, &c., and jaw *a* thereon.

329,543. SOFA-BED. FREDERICK FISCHBECK, Chicago, Ill. Filed Oct. 14, 1884. (No model.)

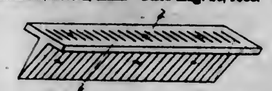
Claim.—1. The combination, with sections A A' and staples D, secured to the latter, of arms G, hinged in said staples, rail *c*, secured to arms G, and legs H, secured to said rail, as set forth.

2. The combination, with sections A A' and staples D, of arms G, hinged in said staples, leg-carrying rail *c*, secured to said arms, and suitable locking mechanism, as set forth.

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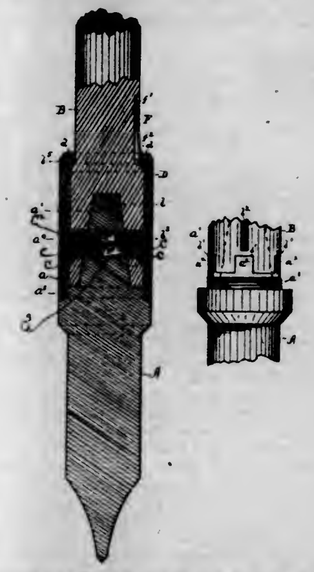


329,544. LASTING-TACK STRIP. GEORGE H. P. FLAGG and GEORGE A. FULLERTON, Boston, Mass. Filed Aug. 20, 1883. (No model.)



Claim.—The tack-strip above described, composed of a shank-forming portion and a head-forming portion, having the cuts *a* extending through and separating the shank-forming portion and through the central part of the head-forming portion, substantially as and for the purpose set forth.

329,545. ROCK-DRILL. PATRICK H. FOLEY, Clinton, N. Y. Filed June 9, 1885. (No model.)



Claim.—1. In a drill-coupling, the tapering shank on the head of the drill, in combination with the stem, which is recessed or mortised to receive and accommodate the tapering shank, and the sleeve having the strengthening-flange at the top, which serves to re-enforce the stem-head and encircles and secures together both shank and stem, substantially as set forth.

2. In a drill-coupling having a tapering chamber and tapering pin or shank, the combination of the locking device, consisting of the interlocking projections and recesses on the drill and corresponding projections on and recesses in the stem to prevent rotation of the drill, and the sleeve D, substantially as set forth.

3. In a drill-coupling, the perforated tapering shank, in combination with the correspondingly perforated and recessed or mortised stem-head, and keys b^3 and b^4, (one of which is provided with the projections c c,) and means for securing the keys in place in the coupling, substantially as described.

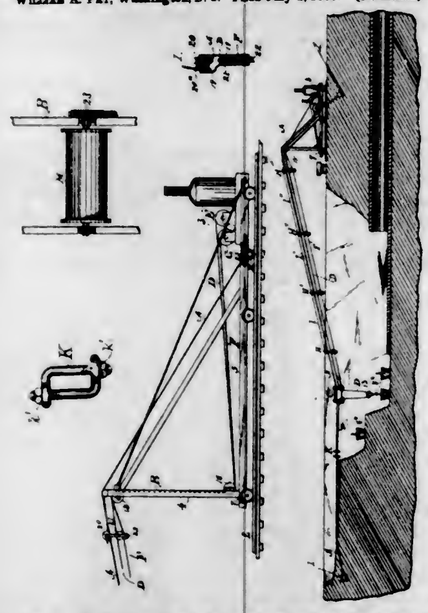
4. In a drill-coupling having a tapering chamber for receiving a tapering shank on the end of the drill, the combination of the drill and the sleeve with inwardly-projecting flanges fitting over and resting on a projecting shoulder on the drill-stem and engaging with screw-threads on the drill, substantially as described.

5. In a drill-coupling having a tapering box or chamber for receiving a tapering shank on the end of the drill, a sleeve for covering the coupling, in combination with a spring rivoted to the stem in a recess in the latter and engaging with the sleeve, whereby the sleeve is prevented from working loose, substantially as described.

6. In a drill-coupling, the perforated tapering shank on the drill and the correspondingly perforated and recessed or mortised stem, in combination with a sleeve, which serves the double purpose of a re-enforcing or strengthening device for the stem-head and a means for securing the stem and drill together, and the secondary fastening consisting of a pair of keys extending through the stem-head and drill-shank, all constructed, arranged, and combined to operate substantially as set forth.

329,546. HOISTING, CARRYING, AND DELIVERING APPARATUS.

William A. Fry, Washington, D. C. Filed July 2, 1885. (No model.)



Claim.—1. In combination, the metallic standing or track rope, the jointed or articulated traveling carriage C, hung thereon, the hoisting-rope D, and traversing-rope F, these parts being arranged for joint action, substantially as set forth.

2. In combination with the standing-rope A, the hoisting-rope D, adjustably fastened thereto by clips, and a traveling carriage, substantially as and for the purposes set forth.

3. In combination, the track-rope A, hoisting-rope D, fastened thereon, traversing-rope F, balance-frame B, and a steam-engine supported on such frame, all substantially as set forth.

4. In combination with the hoisting, traversing, and track ropes, and with a railway in line substantially with the course of the excavation, a railway-carriage adapted for such track, and ballasted at its rear end by the engine which operates the hoisting mechanism.

5. In combination with the track-rope A, hoisting-rope, and traversing-rope, the series of wheeled devices H H', &c., provided with wheels 20 21 22, for running on said ropes, and connected together and to the balance-frame by cords or ropes I I', &c., as and for the purposes set forth.

6. In combination, the track-rope, hoisting-rope, traversing-rope, and a series of take-up devices, H H', &c., connected as described, and each provided with a drum for automatically winding up the slack of the cords or ropes I I', &c., all substantially as set forth.

329,547. NUT-LOCK.

Andrew S. Goodrich, Clifton, assignor to himself and Oscar F. Shaw, Brooklyn, N. Y. Filed Nov. 3, 1884. (No model.)

Claim.—1. In combination with a nut and bolt, a pin or screw inserted into the nut obliquely through the face of said nut adjoining and nearly parallel with the side of the bolt, substantially as and for the purpose described.

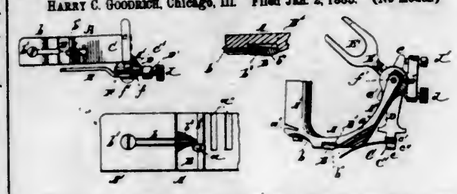
329,547.



2. The combination of a bolt, a nut having its outer face provided with a perforation, C, made obliquely therein adjoining its bolt-receiving central opening, and a soft-metal plug inserted within the oblique perforation C, with a pin or screw, substantially as and for the purpose described.

329,548. RUFFLING ATTACHMENT FOR SEWING-MACHINES.

Harry C. Goodrich, Chicago, Ill. Filed Jan. 2, 1885. (No model.)



Claim.—1. The combination, with a presser-foot and a ruffling-blade, of a compensating block arranged at the under side of the presser-foot, and a spring to which the block is pivoted, and by which it is carried so as to have vertical play, said block being adapted to rock transversely, substantially as described.

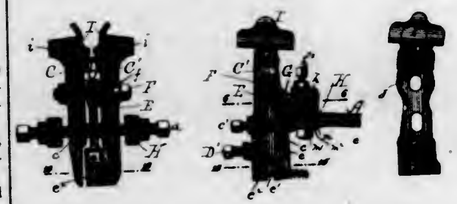
2. The combination, with a presser-foot and a ruffling-blade, of a compensating block arranged at the under side of the presser-foot, and provided with a front biting-edge, b', and a spring to which the block is pivoted, and by which it is carried to have vertical play and a transverse rocking motion, substantially as described.

3. The combination, with the needle G' and a ruffling-blade, C, of a presser-foot, A, a compensating block, B, at the under side thereof, and provided with a biting-edge, b'', arranged approximately in a vertical line with the center of the needle, and a spring, b, to which the block is pivoted, and by which it is carried, said block serving to hold the crimp of the ruffle in the vertical line with the descent of the needle, and the needle serving to catch the crimp where it is held, substantially as described.

4. The presser-foot A, having a bearing-point, o, in combination with the head or block B, pivotally supported and carried by the spring b, and ruffling-blade C, substantially as and for the purposes specified.

329,549. GRIPPING DEVICE FOR NAIL-PLATE FEEDERS.

John C. Gould, Chicago, Ill. Filed Mar. 28, 1885. (No model.)



Claim.—1. In a nail-plate feeder, the combination, with the grippers, of the concave elongated pieces I, forming the jaws by which the nail-plate rod is seized, substantially as specified.

2. In a nail-plate feeder, the combination, with the grippers, of concave elongated jaws I, for seizing the nail-plate rod, said jaws being mounted upon horizontal pivots, substantially as specified.

3. In a nail-plate feeder, the combination, with grippers and the concave jaws I, of the spreading-spring O, located between said jaws, substantially as specified.

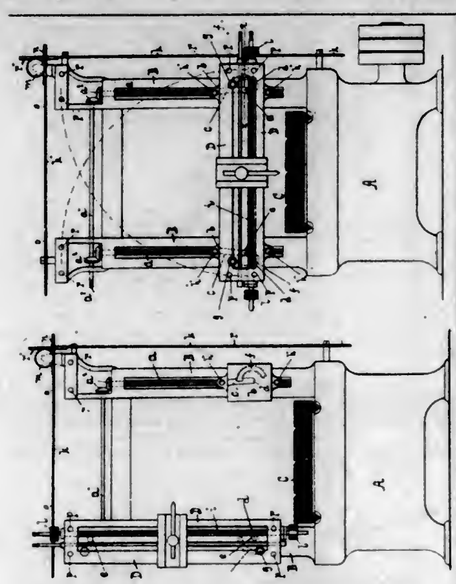
4. The intermediate piece, E, having recesses for the stop-rod and the roller, and the pin e^2, relatively arranged in the manner shown.

5. The yoke H and the parts supported therein, in combination with the bracket A, having the horizontally-projecting lip m, and the securing-bolt passing into the yoke through an elongated slot in the lip, substantially as specified.

6. The gripping-surface pieces I, having depending forks I', in combination with the adjusting-bolts J, substantially as specified.

329,550. METAL-PLANER.

Duane D. Griffin and Lewis H. Bachtell, Baltimore, Md. Filed Feb. 26, 1885. (No model.)



Claim.—1. In a metal-planer, the combination of the beam D and mechanism by which it may be moved from a horizontal to a vertical plane, whereby two or more surfaces of the work may be planed without unfastening the same.

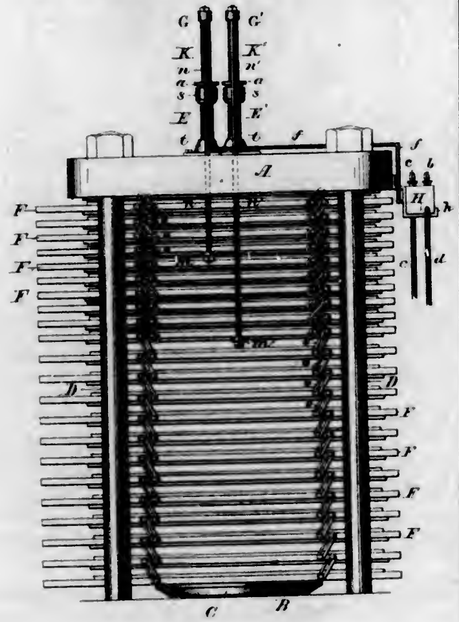
2. The combination of the posts B B, the beam D, the blocks b b, and means by which the beam may be pivoted to either block, for the purpose as herein set forth.

3. In a metal-planer, the combination of the swiveled beam D and the feed mechanism described, whereby the tool-head may be operated when the beam is in either position, as set forth.

4. In a metal-planer, the combination of the beam D, adapted to pivot at either end, the posts B B, and the grooved blocks b b, provided with pins c, bolts g, and screws a a, as set forth.

329,551. HYDRAULIC PRESS.

Charles S. Hamilton, Milwaukee, Wis. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination, in a hydraulic press, of the mats F F, suspended from the top of said press and from each other in a vertical series, and means whereby the upper mats are sustained, with the compressed meal-cakes between them, in two or more independent sections while pressure is removed from the mats below, permitting them to descend sufficiently to be refilled with fresh cakes, substantially as and for the purposes set forth.

2. The combination, in a hydraulic press, of the mats F F, linked together and suspended from the top of said press, and rods m m', arranged to engage with and sustain at or near the top of the press a number of said mats, with the compressed meal-cakes between them, in two or more independent sections or groups, while pressure is removed from the mats below, allowing them to descend and separate sufficiently to permit of the removal of the compressed cakes between them and the insertion of fresh cakes in their places, substantially as and for the purposes set forth.

3. The combination, in a hydraulic press, of mats or division-plates F F, linked together and suspended from the top of said press in a vertical series, and two or more lifting-jacks, E E', or any device or devices which are the mechanical equivalents of said lifting-jacks, connected therewith, whereby a number of the upper mats of the press are sustained in two or more groups when pressure is removed from those below, substantially as and for the purposes set forth.

329,552. VEHICLE-SPRING.

Elmer J. Hess, Cincinnati, Ohio, assignor of one-half to Alfred Hess, same place. Filed Aug. 10, 1885. (No model.)



Claim.—1. The elastic plate B, of uniform width, secured at each end to a support, having above its middle portion the space or recess A', and the two crossed springs C C, each wholly attached to the plate B at a point within the extent of the space A', and passing over for attachment to the side bar of the opposite side, substantially as and for the purposes specified.

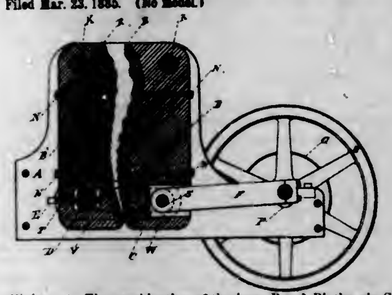
2. The combination of the cross-bar A, provided with recess A', and crossed springs arranged with their inner ends side by side, attached to the plate B within the space of the recess A', and extending in opposite directions across the median line of the vehicle for attachment to the side bars, substantially as and for the purposes specified.

3. A vehicle-spring composed of the springs C C, attached to the spring-bar B at or near its center, the spring bar or plate B, supported at each end by the cushions or rubber plates N N, and bar A, substantially as and for the purposes specified.

4. In a vehicle-spring, the cushions or rubber plates N N, attached to the spring plate or bar B at its ends and forming a support for the same, in combination with said spring plate or bar, substantially as and for the purposes specified.

329,553. CRUSHING-MACHINE.

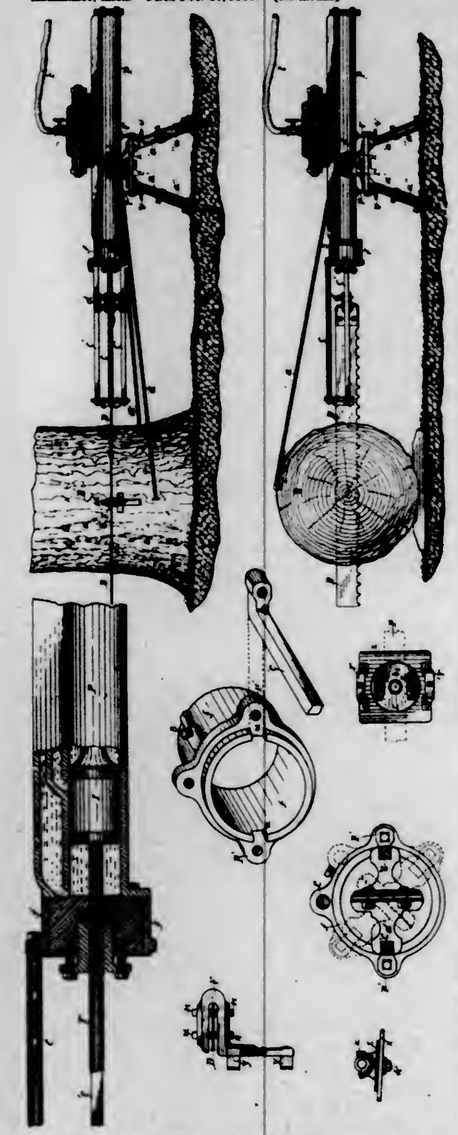
Aaron Hedley, Cleveland, Ohio. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination of the jaws B and B', the pin S, links C C, the pin D, passing through a suitable opening in jaw B', and the set-screws E E, all arranged substantially as shown and described.

2. The combination of the jaws B and B', pin S, links C C, the pin D, passing through a suitable opening in jaw B', the set-screws E E, and pitman F, operated by suitable mechanism, all arranged substantially as shown, and for the purposes described.

329,554. TREE AND LOG SAWING MACHINE. William R. Hill, Kalamazoo, Mich. Filed Feb. 20, 1885. (No model.)

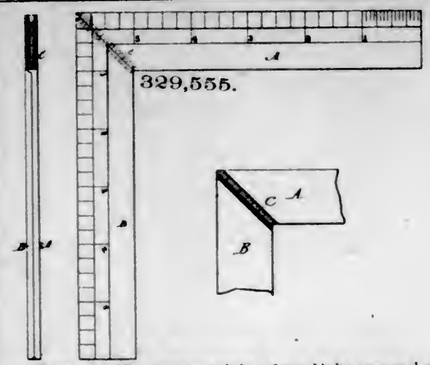


Claim.—1. A tree-felling machine consisting of the engine, a swiveled support therefor, a saw secured to the free end of the piston-rod, and a guide-frame swiveled to the end of the engine, substantially as set forth.

2. A combined tree-felling and log-sawing machine consisting of the engine, a support therefor, said engine pivoted to said support in a manner to tilt vertically, and the support swiveled to allow the engine to swing laterally, a saw secured to the free end of the piston-rod, and a saw-guide frame swiveled to the end of the engine, substantially as set forth.

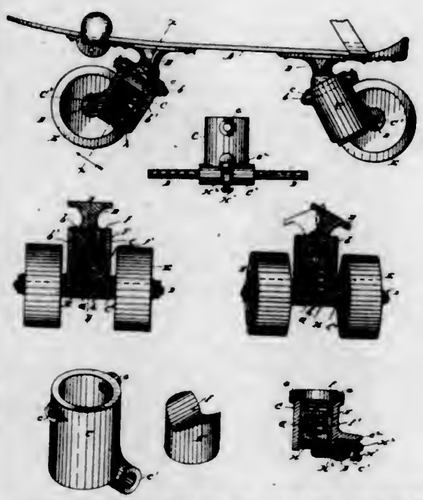
3. The combination of a base-plate, a bearing-support swiveled therein, an engine pivoted to said bearing-support in a manner to tilt vertically, a saw connected with the free end of the piston-rod, a saw-guide support swiveled to the end of the engine, and suitable rods for anchoring the machine to the stump or log, substantially as set forth.

329,555. RULE AND SQUARE. Ludwig Hirsch, New York, N. Y. Filed Apr. 10, 1884. (No model.)



Claim.—A folding square consisting of two blades connected by a miter-joint, so as to fold one upon the other, the inner straight edges being continued to their point of intersection, substantially as described.

329,556. ROLLER-SKATE. Charles F. Hirt, Erie, Pa. Filed Feb. 12, 1885. (No model.)



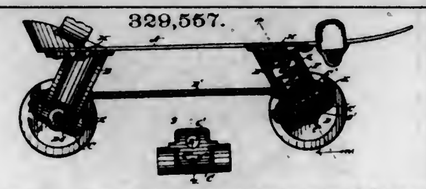
Claim.—1. In a roller-skate, the combination, substantially as shown, of the following elements: the stud B, the socket C, the pivot *b*, the spring G, contained within said socket, and the follower F, interposed between the spring and the stud B and held against lateral tipping on the spring by the walls of the socket C.

2. In a roller-skate, the combination, substantially as shown, of the following elements: the stud B with V-formed end, the socket C, the pivot *b*, the spring G, contained within the socket, and the follower F, having a V-formed notch to receive the V-formed end of the stod interposed between the spring and the stud and guided against lateral movement by the walls of the socket C.

3. In a roller-skate, the combination, substantially as shown, of the following elements: the stud B and socket C, pivoted together, a bearing-plate or follower setting against the inner end of the stud B and held against lateral action by the walls of the socket, a spring contained within the socket and acting upon the said bearing-plate, a second follower, H, at the bottom of said socket acting against said spring, and means, substantially as described, for adjusting said follower H to regulate the tension of said spring.

4. In a roller-skate, the combination, substantially as shown, of the following elements: the stud B on the foot-piece, having a V-formed end, the socket C on the truck-frame, the pivot *b*, the follower F, having a V-formed notch on its upper side to receive the end of the stud, a spring-seat on its lower side, and guided by the walls of the socket against lateral action, the spring G, and the adjustable spring-seat or follower H.

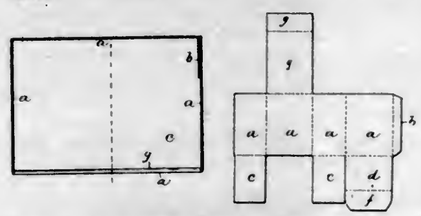
329,557. ROLLER-SKATE. Charles F. Hirt, Erie, Pa. Filed May 26, 1885. (No model.)



Claim.—1. In a roller-skate, the combination, substantially as set forth, of the truck-frame C, having axle-hole D^3, pintle-hole E', notches *c c*, and the flat centrally-located bearing-face C', with the hangers B, having the ears *b b*, and the vertical bore containing the follower F, seating on the bearing-face C', the spring G, and adjusting-nut H.

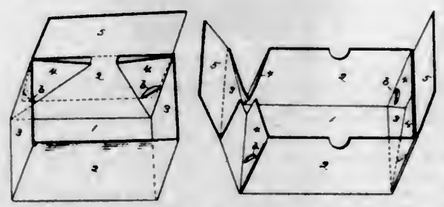
2. In a roller-skate, the combination, substantially as shown, of the hangers B, having ears *b b*, and the truck-frame C, having notches *c c*, receiving said hanger, and the oil-cup *c'* in one of said notches, with opening c^3 into the axle-hole D^3.

329,558. PAPER BOX. Archie G. Hohenstein, New Britain, Conn., assignor to Miner, Nichols & Co., same place. Filed Aug. 24, 1885. (No model.)



Claim.—The herein-described paper box, consisting of the four contiguous sides *a* and fastening-flap *b*, having at one edge the flaps *c c* and *d*, the latter of which is provided with a tuck, *f*, and having at the opposite edge the bolding-flap *g*, adapted to reach through the inside of the box and have its end folded over the flaps *c c*, all substantially as described, and for the purpose specified.

329,559. PAPER BOX. Archie G. Hohenstein, New Britain, Conn., assignor to Miner, Nichols & Co., same place. Filed Aug. 24, 1885. (No model.)



Claim.—A box or cover having the portions 1, 2, and 3, the tucking and holding flaps 5, and the corner pieces, 4, connected to the side and end portions, 2 and 3, with lines of fold at their junction and an intermediate diagonal line of fold in each corner piece, and having at one side of said diagonal line of fold in each corner piece the perforation *b*, all substantially as described, and for the purpose specified.

329,560. AUTOMATIC GRAIN-BINDER. Hector A. Holmes and Watson M. Holmes, Hoosick Falls, N. Y. Filed Dec. 29, 1884. (Model.) Patented in England May 30, 1884, No. 8,439.

Claim.—1. The combination of the knotter-jaw F, having the ledge f^2, the depression *f'*, and the abrupt projection F^2 with the stripper D, substantially as described.

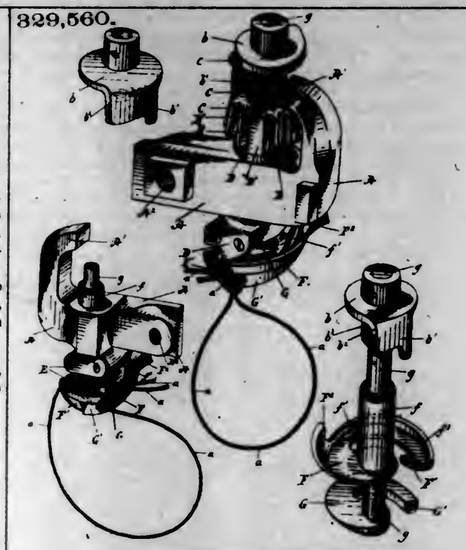
2. The combination of the upper jaw, F, having the ledge f^2 and the abrupt projection F^2, and the lower knotter-jaw with stripper D, substantially as and for the purpose specified.

3. The combination of the upper jaw, F, having the ledge f^2 and the abrupt projection F^2, and the lower knotter-jaw with the cord-rest E, substantially as and for the purpose described.

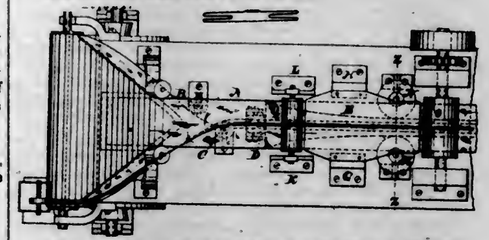
4. In combination with the upper jaw, F, having the ledge f^2 and the abrupt projection F^2, and the lower knotter-jaw, the stripper D, and cord-rest E, substantially as described.

5. In combination with the partially-rotating knotter-jaw F, having the ledge f^2 and the abrupt projection F^2, the jaw G, the stripper D, and cord-rest E, located above the knotter-jaws and opposite, or nearly so, to each other, substantially as described.

329,560.



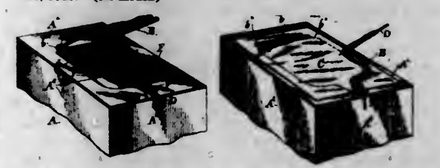
329,561. PAPER-BAG MACHINE. William H. Howes, Hartford, Conn., assignor to Felix W. Leinbach and Clarence A. Wells, both of Bethlehem, Pa. Filed June 16, 1884. (No model.)



Claim.—1. The combination of the rectangular former A, the drawing-rolls O and P, the rollers M and N, and the plates E and F, all constructed and operating together substantially as described.

2. The combination of the rectangular former A, the drawing-rolls O and P, the rollers M and N, and the rollers I and J, all constructed and operating together substantially as described.

329,562. PAPER BOX. Warren B. Howe, Chicago, Ill. Filed July 22, 1885. (No model.)



Claim.—1. A paper box or canister provided with a filling-orifice in one of its walls, a hinged cover or lid for covering said orifice, and a string attached to the box or lid and capable of extending across the lid beneath the same and out of the box between the lid and box-wall, substantially as described.

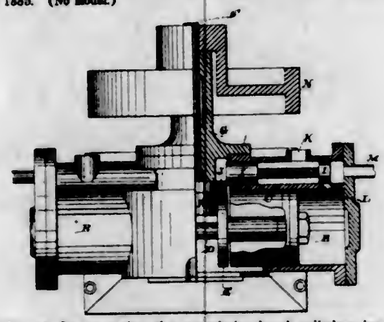
2. A paper box or canister provided with a filling-orifice in one of its walls, combined with a hinged cover or lid for closing said orifice, a sheet or label secured to the box over said lid, and a string secured at one end to the box or lid, said string extending within the box and emerging therefrom between the lid and the box-wall, whereby said string may be employed to sever the covering sheet or label, substantially as described.

3. A paper box or canister provided with a filling-orifice in one of its walls, combined with a hinged cover or lid fitted within said orifice for closing it, a sheet or label secured to the box over the lid, and a string attached at one end to the box or lid, said string extending within the box and emerging therefrom between the lid and the box-wall, whereby said string may be employed to sever the covering sheet or label, substantially as described.

4. A paper box or canister having a wall, A', provided with a filling-orifice, and a hinged cover or lid for closing said orifice, and having the margins of its side walls adjacent to the wall A' bent inwardly and constructed to extend past the margin or margins of the orifice and secured to the said wall A', substantially as described.

5. A paper box or canister having a wall, A', provided with a filling-orifice, and a hinged cover or lid fitted within the orifice, and having a strip of pasteboard or other material secured to the inner surface of said wall and extending beyond the margin of the orifice to form a ledge or support for the lid, combined with a paper sheet or label secured over the lid, and a string or its equivalent attached at one end to the box or lid and extending within the box, and emerging therefrom between the lid and the box-wall, whereby said string may be employed to sever the covering-sheet, substantially as described.

329,563. ENGINE. ALFRED E. JOHNSON, Austin, Nev. Filed July 18, 1885. (No model.)



Claim.—1. In an engine, the oppositely-placed cylinders having their axes in line with each other, pistons fitted to reciprocate within said cylinders, united by a single piston-rod and having disks which rotate loosely upon said piston-rod in close proximity with the pistons, in combination with an eccentric mounted upon the engine-shaft and between the disks, so that its periphery rotates in contact with the disks, substantially as herein described.

2. In an engine, the cylinders standing in line and having their pistons united by a single rod extending from one to the other, loosely-rotating disks fitted to said piston-rod in front of the pistons, in combination with the main engine-shaft, standing at right angles with the piston-rod and having an eccentric fixed to it so that its periphery moves in contact with and between the faces of the disks, substantially as herein described.

3. In an engine, the cylinders mounted opposite each other, with pistons connected by a single piston-rod extending between them, disks rotating upon said piston-rod and actuating an eccentric, which is fixed to the main engine-shaft, in combination with cylindrical steam-valves having circular disks at their ends and an eccentric fixed to the main engine-shaft so as to rotate in contact with the valve ends, substantially as herein described.

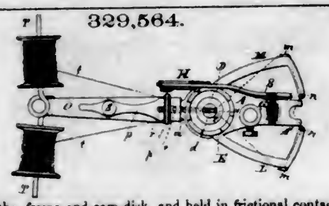
4. In an engine, the oppositely-placed cylinders and the pistons united by a single piston-rod, in combination with the main engine-shaft, valves by which steam is admitted to the cylinders, and the eccentric upon the shaft and bearing against the ends of the valves, whereby the latter are rotated during their reciprocating movement, substantially as herein described.

5. In an engine, the combination of the oppositely-placed cylinders having their axes in line with each other, pistons fitted to reciprocate in said cylinders and united by a single piston-rod, an engine-shaft projecting partly through the casing, the valves by which steam is admitted to the cylinders, and the eccentrics H and J on the end of the main shaft, the eccentric J bearing against the ends of the valves, whereby said valves are caused to rotate while being reciprocated, substantially as herein described.

329,564. EMBROIDERY ATTACHMENT FOR SEWING-MACHINES. ALBERT W. JOHNSON, New Haven, and JOSEPH P. LAVIGNE, Wallingford, Conn. Filed Nov. 5, 1884. (No model.)

Claim.—1. In an embroidery attachment, the combination of the vibrating arms L M, the rotating cam-disk E, held in frictional contact with said arms by the spring-washer F, the pivot-post D, forming a guide for the embroidery-threads, the pawl C, and bell-crank B, when constructed and arranged substantially as described, and for the purpose set forth.

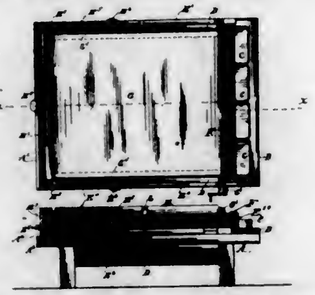
2. In an embroidery attachment, a cam-disk arranged to rotate in a plane parallel with the plane of the frame, having in its flat side a quadratic cam-groove, the angles of which are equidistant from the center of the disk, in combination with two arms for delivering the embroidery-threads, separately pivoted to the frame, arranged to vibrate between the frame and cam-disk, and held in frictional contact with both by a spring, the said arms being provided with cylindrical studs engaging with and arranged to run in said cam-groove, whereby a rotary movement of the cam-disk imparts a vibratory motion to the arms, substantially as described and set forth.



3. In an embroidery attachment, the combination of the spool-holder O, adjustable tension-spring P, secured thereto, provided with a cross-rib, *p*, constructed to bear upon and press the embroidery-threads against the surface of said spool-holder, and guide-studs *r r*, fixed to said spool-holder, one upon each side of said rib, whereby the embroidery-threads are made to cross each other directly under the central part of said rib, between it and the surface of said spool-holder, substantially as and for the purpose set forth.

4. The combination of the tension-spring P, provided with a cross-rib, *p*, guide-studs *r r*, spool-holder O, with spool-arms T T, pivoted thereto, and lips *o o*, formed upon said spool-holder, constructed to operate as stops to prevent said spool-arms from turning on their pivot in the direction in which the embroidery-threads are drawn therefrom, substantially as described.

329,565. DEVICE FOR ASSORTING BERRIES, &c. JOHN B. JOHNSON, Judsonia, Ark. Filed Aug. 1, 1885. (No model.)



Claim.—The herein-described device, comprising the table A, rectangular frame A^2, of less length than the top of the table A and placed thereon near one end, rectangular frame D, narrower and longer than the frame A^2, the sectional frame E, united at one end by the cross-bar E^2, and at its other end by a cross-bar, F, having beveled portions to form chutes, the section united by the bar F being stationarily mounted on the frame A^2, the other section being loosely mounted thereon, and having its sides slotted and held to the frame D by set-screws, and adjusted by a thumb-screw bearing against the end of the frame D, rollers mounted in slots near each end of the sections, a carrier-belt supported by the rollers and prevented from sagging by a bulge in one of the rollers, and a tray resting on the end of the table to receive fruit-boxes, substantially as set forth.

329,566. SIGNAL FOR TRAM-CARS. TOM L. JOHNSON, Cleveland, Ohio. Filed May 27, 1884. (No model.)

Claim.—1. A head-light signal for tram-cars, consisting of a field-plate or glass of one color covering the whole field, and one or more fixed bull's-eyes or lenses less in area than the field-plate, and fixedly retained in front of and in proximity to the field-plate, substantially as set forth.

2. A tram-car lamp-signal frame holding within its border a smaller frame, the large frame constructed for holding a field-glass and the smaller frame for holding a glass bull's-eye, the planes of the two glasses differing, substantially as and for the purpose set forth.

3. A tram-car signal consisting of a frame supporting a field-glass, lettered or marked as set forth, and a smaller inner frame supporting a bull's-eye in front of the field-glass and of a different color, substantially as specified.

4. The combination, with the lamp of a tram-car, of a signal head-light consisting of a field-glass covering the whole field, a supporting-frame, and one or more smaller bull's-eyes supported fixedly by the frame in front of and in close proximity to the field-glass, substantially as set forth.

329,566.

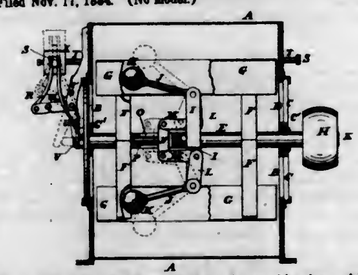


5. A frame for the head-light signal of tram-cars, consisting of an outer frame adapted to receive and hold the field-glass, and a smaller inner frame adapted to support the bull's-eye, and connections between the two, substantially as set forth.

6. A frame for a signal-glass, consisting of an outer frame and an inner frame fixedly supported in a position in advance of the former, substantially as set forth.

7. A tram-car signal provided with a frame consisting of an inner and an outer frame fixedly connected in one piece and adapted to support the field-glass, and a bull's-eye in front of the field-glass, substantially as specified.

329,567. BLAST-REGULATOR FOR FANS. ADOLPH KAHL, Sorento Ill. Filed Nov. 17, 1884. (No model.)



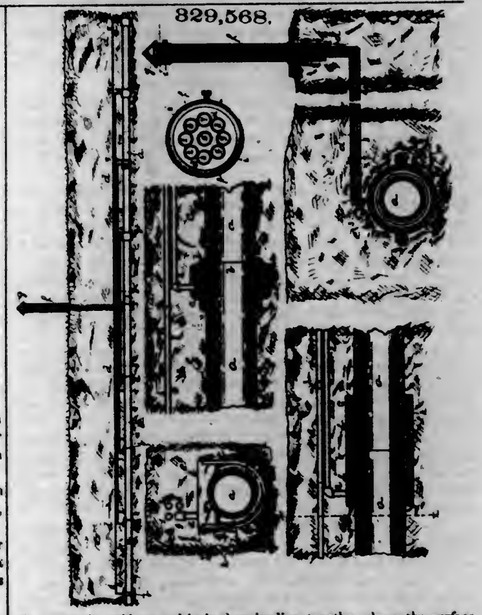
Claim.—1. In a blast-regulator for fans, the combination, with the fan-shaft having a diametric slot therethrough and an axial bore or socket extending from said slot to the end of said shaft, of a push-rod occupying said socket, a cross-head passed through and working in said slot in contact with said push-rod, the bell-crank governor-arms, each having a ball at one extremity and connected at the other with said cross-head, and the register acted upon by said push-rod, substantially as set forth.

2. In a blast-regulator for fans, the combination, with the main shaft having a diametric slot therethrough and an axial bore or socket extending from said slot to the extremity of said shaft, a push-rod occupying said bore or socket, and the weighted bell-crank governor-arms connected with said rod, of a bell-crank lever outside of the case, against one arm of which the push-rod engages, a lever having a weight, the register, and connections between the weighted lever and the bell-crank lever and register, substantially as set forth.

3. In a blast-regulator for fans, the combination, with the main shaft having a diametric slot therethrough, and an axial bore or socket extending from said slot to the end of the shaft, of a push-rod occupying said socket, a cross-head passed through and working in said slot in contact with said push-rod, the bell-crank governor-arms, each having a weight secured to one end, a link connecting the other extremity of each of said bell-crank governor-arms with said cross-head, a bell-crank lever pivoted on the outside of the casing, a lever having a weight secured thereto, connection between said weighted lever and the bell-crank lever, the register, and connection between said regulator and weighted lever, substantially as set forth.

329,568. GAS-CONDUIT. JAMES I. KAY, Allegheny, Pa. Filed Sept 24, 1885. (No model.)

Claim.—1. In a gas-conduit, the combination, with an underground gas-main, of a leak-chamber at or around each joint, and a separate leak-pipe extending from each chamber in the same trench with the gas-main, said several leak-pipes leading together above the surface of the ground, substantially as and for the purposes set forth.



2. In a gas-conduit, the combination, with an underground gas-main, of a leak-chamber at or around each joint, a separate leak-pipe extending from each chamber in the same trench with the gas-main, and a ventilating-post, said several leak-pipes leading together above the surface of the ground into said ventilating-posts, substantially as and for the purposes set forth.

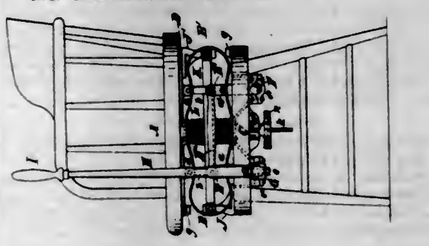
3. In a gas-conduit, the combination, with an underground gas-main, of a ventilating-post having a removable cowl and a series of separate leak-pipes, each extending from a joint of the gas-main in the same trench with the main, the said pipes leading together above the surface of the ground and through said ventilating-post, substantially as and for the purposes set forth.

329,569. SHAFT-TUG. ORLANDO KERR, Allentown, Pa. Filed July 25, 1885. (No model.)



Claim.—As an article of manufacture, a harness-tug comprising a loop, A, a metallic wear-plate, B, cut or stamped from a single piece of metal with the spaced-apart lateral flanges *e f*, said plate being fitted in the loop A and having the flanges thereof bent at an angle to embrace the side edges of said loop, a friction-roller, E, journaled in the wear-plate, a pin, *g*, passing through the lugs *f*, and a strap, D, connected to said pin *g*, substantially as described.

329,570. EXERCISING-CHAIR. JOSEPH M. W. KITCHEN, New York, N. Y. Filed Jan. 27, 1885. (No model.)



Claim.—1. In an exercising-chair, the combination, with a vertically-movable seat, of springs upon which said seat is supported, a frame below the springs and supporting the same, toggles consisting of arms *a a'* and links *b*, for imparting a vertical motion to the chair-seat, and levers for operating the toggles, substantially as specified.

2. In an exercising-chair, the combination, with a vertically-movable seat, of pairs of springs B B', supporting the seat, a frame below the springs supporting the same, toggles for imparting a vertical movement to the seat, and levers for operating the toggles, substantially as specified.

3. In an exercising-chair, the combination, with a vertically-movable seat, of springs upon which said seat is supported, a frame below the springs supporting the same, a frame affixed to the under side of the seat to which said springs are secured, toggles secured at one end to shafts supported in bearings in the frame upon which the springs are mounted, and pivotally connected at the other end to lugs or projections upon the frame, secured to the under side of the seat, links connecting said toggles, and levers for operating the toggles, substantially as specified.

4. In an exercising-chair, the combination, with a vertically-movable seat, of springs upon which said seat is supported, a frame supporting the springs, the toggles E E', having the arms *a a'* and the links *b*, the arms *a a'* being approximately twice the length of the links *b*, and the levers H, substantially as specified.

5. In an exercising-chair, the combination, with a vertically-movable seat, of springs for supporting the seat, a frame below the springs and supporting the same, toggles arranged between the seat and the frame, levers for operating the toggles, and bumpers arranged between the seat and the frame, substantially as specified.

6. In an exercising-chair, the combination, with the chair-seat A, of the frame C, the springs B B', toggles, the brackets J J', the rod K, of frame-like construction, and the levers H, substantially as specified.

7. In an exercising-chair, the combination, with the chair-seat A, of the frame C, the springs B B', toggles, the brackets J J', the bumpers *g*, and the levers H, substantially as specified.

8. In an exercising-chair, the combination, with a vertically-movable seat, of springs for supporting the seat, a frame below the springs and supporting the same, toggles arranged between the seat and the frame, levers for operating the toggles, and an adjustable spring arranged between the seat and the frame, substantially as described, whereby the pressure of the seat upon the first-mentioned springs may be varied.

9. In an exercising-chair, the combination, with the seat A, of the frame C, the springs B B', the spring L, rod *k'*, and the nut *n*, substantially as specified.

10. In an exercising-chair, the combination, with a seat, A, of a frame, C, a frame, D, the springs B B', the brackets J J', the rod K, of frame-like construction, having the aperture a^2, and the spring L, substantially as specified.

11. In an exercising-chair, the combination of the seat A, the frame D, having the brace-pieces *p*, the recess *i*, the recess *p'*, the recesses p^2, and the lugs *d*, the frame C, having the portions *o'*, the rims or flanges o^2, with depressed portions o^3, the recess o^6, the portion o^7, and brace-pieces o^8, with the springs B B', the toggles E E', and the levers H, substantially as specified.

12. In an exercising-chair, the combination, with the seat A, of the springs B B' and the frame C, having sockets for the legs of the chair cast therein, substantially as specified.

329,571. LAMP-CHIMNEY CLEANER. MORTIMER D. LAMB, Butte City, Mont. Filed May 16, 1884. (No model.)



Claim.—A lamp-chimney cleaner consisting of the section B, having handle A and rubbing-surface C, the section B', having rubbing-surface C', the hinges D, uniting their backs, whereby they are adapted to fold to lie one upon the other, and to open out to form a continuous plane, and the springs E, to facilitate the folding and to hold them in position, substantially as herein described.

329,572. THILL-COUPLING. BENJAMIN H. LAMB, New York, N. Y. Filed May 12, 1885. (No model.)

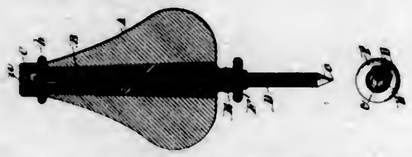
Claim.—1. In an anti shaft-rattler, the combination of the brass and rubber cushion D, riveted to the T-iron B, with the iron B and wedge A inserted with thick end upward, and held in place by the head of B turning back over it, substantially as set forth.

329,572.



2. The anti shaft-rattler, consisting of the brass and rubber cushion and T-iron riveted together, and wedge A, inserted between the T-iron and the axle and held in place by the head of the T-iron being bent over, substantially as set forth.

329,573. PLUMB-BOB. ADAM LEIDGEN, Milwaukee, Wis. Filed Jan. 5, 1885. (No model.)

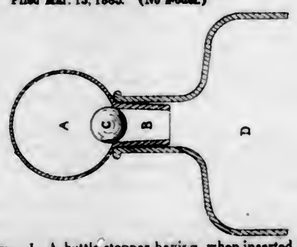


Claim.—1. The combination of a plumb-bob provided with a central vertical aperture and a rod-retaining device in connection therewith, and an extensible centering-rod fitted and movable endwise in said aperture, said rod moving independently of and extending beyond the retaining device both above and below it, substantially as and for the purpose set forth.

2. The combination of a plumb-bob provided with a central vertical aperture, the therein-fitting vertically-adjustable centering-rod, the outwardly-extending cleft-clamp having an inclined screw-threaded outer surface and the thereon-turning screw-threaded clamping-nut, substantially as described.

3. The combination of a vertically-perforated bob, A, with the truncated cone-shaped vertically-perforated core B, fitting into the vertical aperture in and supporting the bob A, and provided with the screw-threaded clamp E, the nut F, turning on the clamp E, and the central vertical rod D, fitting and adjustable in the aperture in the core B, substantially as and for the purpose set forth.

329,574. BOTTLE-STOPPER. BENJAMIN R. LEWIS, West Stratford, Conn. Filed Mar. 13, 1885. (No model.)



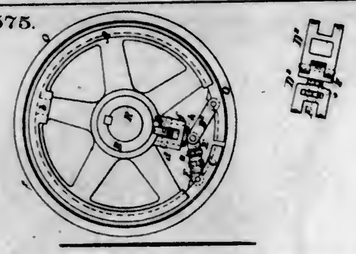
Claim.—1. A bottle-stopper having, when inserted within a bottle, a hollow outside bulb or reservoir, A, communicating with the inside of the said bottle D through the tube B, forming the actual stopper, and having its interior separated from the inside of the said bottle D by the self-acting valve C, operating to admit or retain the fluid from the bottle by the inversion or restoration to an upright condition of the said bottle in the manner described.

2. In a bottle-stopper, the combination of the outside reservoir, A, the communicating-tube, and actual stopper B, and the self-acting valve C, for use as set forth.

329,575. FRICTION-PULLEY. CHARLES A. LEE, New York, N. Y. Filed Sept. 1, 1885. (No model.)

Claim.—In a friction-pulley, the combination of the following elements: a pulley, O, flanged wheel A, hollow journal B, split ring C, toggles D^2 and D^3, with central link, E, screw-threaded stud F, with lock-nuts *e*, and the curved lever D, constructed and operating substantially as and for the purposes specified.

329,575.



329,576. BOOT-JACK. HENRY LEHTWARDT, Jr., Philadelphia, Pa. Filed Aug. 29, 1885. (No model.)



Claim.—1. A convertible boot-jack formed of two members, A A', hinged together at *e e'*, and being provided with legs *g g'* and guards *b b'*, for the purposes set forth.

2. The combination of members A A', hinges *e e'*, legs *g g'*, and guards *b b'*, having projections b^3 b^3, for the purpose set forth.

3. The combination of members A A', hinged together and having grooves *f f'*, the legs *g g'*, rigidly secured in said grooves, and the guards *b b'*, secured to said members, respectively, for the purpose set forth.

4. A convertible boot-jack made of the form of a toy double-barreled pistol, consisting of two members, A A', each consisting of a barrel and half-handle, and each provided with a leg, which, when unfolded, forms the leg of the boot-jack, and a half-guard having a projection to assist in unfolding a device, the member A having a lock provided with a trigger, hammer, and nipple, the two members being hinged together by hinge *e e'*, one leaf of which forms the lock-plate, and the member A' being recessed to receive and contain the hammer and nipple when the device is used as a boot-jack, as set forth.

329,577. WASHING-MACHINE. JAMES A. LOOMIS, Arkansas City, Kans. Filed Aug. 16, 1884. (No model.)

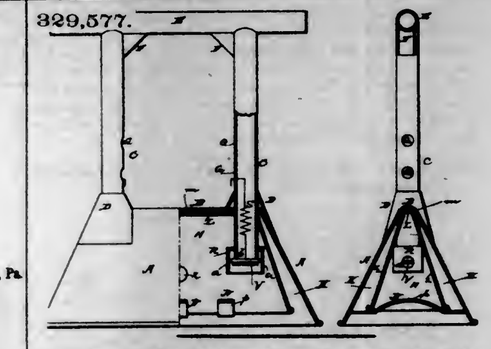
Claim.—1. In a clothes-pounder, the combination, with the inner and outer shells, A and H, of the perforated tubes C C, having their upper ends connected by the handle and their lower ends projecting within the guard enlargements R, to form seats for the valves, substantially as specified.

2. The combination, with the inner and outer shells, the perforated tubes C, and their guard enlargements, of the disk-valves and springs, as specified.

3. The clothes-pounders consisting of the outer elongated A-form shell, A, the inner perforated shell, H, of sharper angle, the cross-braces, the tubes C C, projecting within the inner shell, and having the guards R, the handle, the frustam-braces D, the corner-braces F, the removable valves, and springs, substantially as specified.

4. In a clothes-pounder, the combination, with the tubes C, having their upper ends connected by a handle, of the removable disk-valves surrounded by guards, as described, and springs in said tubes engaging the perforations thereof, the whole adapted to serve with inner and outer cones, substantially as specified.

329,577.

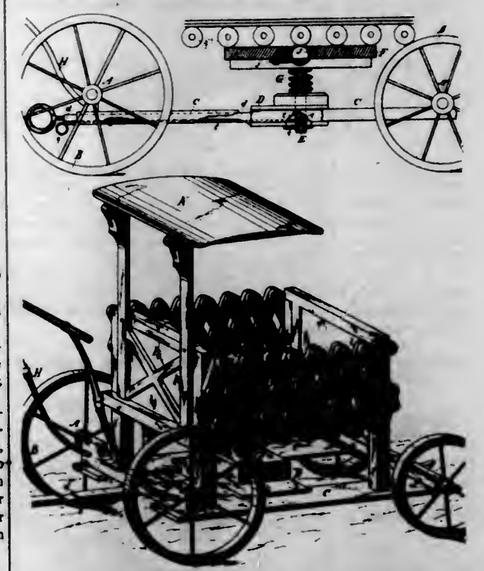


329,578. PRESERVING COMPOUND. REBECCA A. MCDANIEL, Burr Oak, Kans. Filed Aug. 29, 1885. (No specimens.)

Claim.—1. A preserving compound adapted to be burned and the fumes arising from combustion to be utilized in preserving edibles and the like, which consists in salicylic acid, sulphur, pulverized orange-peel, and ground cinnamon, combined in substantially the proportions named.

2. A preserving compound consisting of salicylic acid, sulphur, orange-peel, cinnamon, and nitrate of potash, combined in about the proportions named.

329,579. EXTENSION BABY-CARRIAGE. ANTHONY MCLEAN, San Francisco, Cal. Filed Oct. 27, 1884. (No model.)



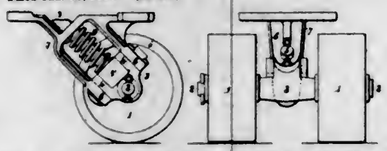
Claim.—1. In a baby-carriage, the sliding traveler D, having handle *d*, and mounted on the reaches of the running-gear, in combination with the rotary king-bolt E, rigidly secured to the body and mounted in the traveler, the platform F, mounted upon the king-bolt, and having apertures for staples J, and suitable latches for said staples, a spiral spring surrounding the king-bolt and supporting the platform, and a body secured to the king-bolt and adapted to rotate the same, substantially as and for the purpose herein described.

2. In a wheeled vehicle, the combination of a body, 1, having a divided bottom, between the sides of which moves a traveler, a rotary king-bolt, the lattice-work strips which constitute the sides of the body, and the bars i^2, which join these sides together, substantially as described.

3. In a baby-wagon, the body suitably supported on a perforated platform, the king-bolt which is vertically reciprocating through the perforated platform, and provided with a spring, G, also having the elongated slots in its lower portion, which are adapted to receive the end of the spring-rod *e*, and by their elongation facilitate the vertical reciprocation of the king-bolt and body without withdrawing the spring-rod, substantially as set forth.

4. In a baby-carriage, the body suitably supported on the king-bolt, which extends through a hole in the platform of the wagon, and which is provided with a series of elongated slots in its lower portion adapted to receive the spring-rod *e*, in combination with the spring G and the spring-rod *e*, whereby the carriage-body may be made to automatically reciprocate vertically, and also be adjusted to different angles to the front of the carriage on account of wind or sunshine, as the case may be, substantially as and for the purposes set forth.

329,580. ROLLER-SKATE. FREDERIK C. MILLER, Newport, Ky. Filed Jan. 21, 1885. (Model.)



Claim.—The combination of a housing, 7, formed with arms 6 6, projecting downwardly in parallel oblique planes, and having a bridge-piece formed with an eye, journal-box 3, formed with lugs 4 4, and filling the space between said arms, a pintle by which said journal-box is hinged by said lugs to said arms, a pin, 8, formed with a bifurcated head having broad ends 8′ 8′, filling the space between said lugs and resting on said journal-box beneath said pintle, and a spring surrounding said pin and bearing against said broad head at one end and against said bridge-piece at the other end, said pin occupying said eye in said bridge-piece, and said pintle being straddled by said head of said pin and guiding the latter, substantially as set forth.

329,581. ROLLER-SKATE. FREDERIK C. MILLER, Newport, Ky. Filed Mar. 18, 1885. (No model.)

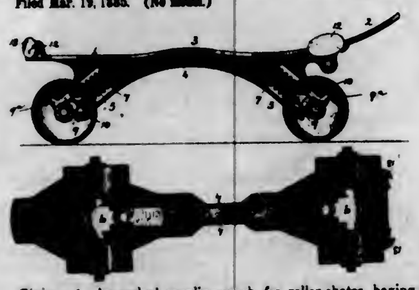


Claim.—1. An arched coupling-reach for roller-skates, having recesses at each end, providing housings, with upper and lower arms, 7 7, forming extensions to the body of the reach, substantially as set forth.

2. A coupling-reach for roller-skates, of arch form, the ends of said reach being bifurcated, providing arms 7 7, and surmounted by standards 3 3 for the toe and heel plates, substantially as set forth.

3. A coupling-reach for roller-skates, formed in one piece and of arch form, having bifurcated ends 7 7, standards 3 3, surmounting said ends, and parallel longitudinal ribs extending from end to end of said reach, substantially as set forth.

329,582. ROLLER-SKATE. FREDERIK C. MILLER, Newport, Ky. Filed Mar. 19, 1885. (No model.)



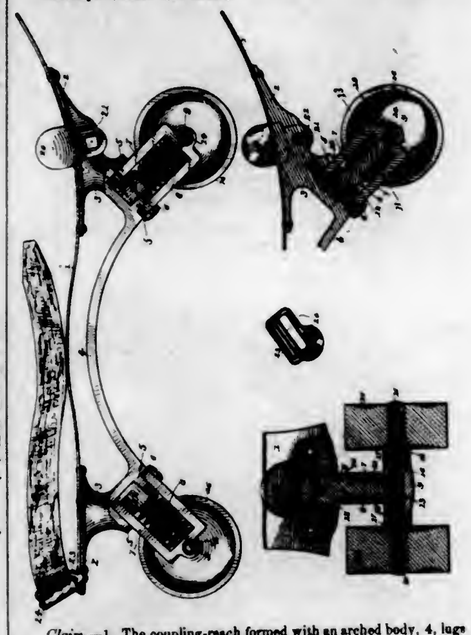
Claim.—1. An arched coupling-reach for roller-skates, having recessed ends 5 5 providing housings with lower arms forming extensions to the body of the reach, and a toe-plate and a heel-plate formed on the respective ends of the reach, substantially as set forth.

2. A roller-skate coupling-reach of arch form, having bifurcated ends 5 5, recessed toe and heel plates, and side flanges, 4 4, the whole formed in one piece, substantially as set forth.

3. A coupling-reach for roller-skates, of arch form, having a toe-plate formed with lugs, in combination with toe-clamps working between said lugs, the said reach, toe-plate, and lugs being cast in one piece, substantially as set forth.

4. A coupling-reach, 3, having flanges 4 4, ends 5 5, toe-plate 2, having recesses 8, heel-plates having recesses 8, clamp-lugs 11 11 on the toe-plate, and upturned lugs 12 on the heel-plate, the whole cast in one piece, substantially as set forth.

329,583. ROLLER-SKATE. FREDERIK C. MILLER, Newport, Ky. Filed Apr. 7, 1885. (No model.)



Claim.—1. The coupling-reach formed with an arched body, 4, lugs 5,6 at the extremities of the body, and standards 3 3, having flanges 2, in combination with a foot-plate, 1, secured to the flanged standards over the arched body, substantially as set forth.

2. The combination of a journal-box having cheek-plates 7 7 projecting upwardly in parallel oblique planes, and a socket, 13, a coupling-reach formed with lugs 5, a pin, 6, by which the cheek-plates are hinged to the lugs, a guide-pin, 11, having shoulder 10 and bifurcated head 12, and a spring, 8, surrounding the socket and guide-pin between the journal-box and shoulder.

3. A roller-skate constructed with an oscillating journal-box kept to its normal position by a spring bearing down upon it, and a guide-pin which has an enlarged head at its upper end bearing against the end of the coupling-reach, and having its other end guided in the oscillating journal-box to permit an up-and-down movement, substantially as and for the purpose set forth.

4. The combination of an axle-box having a socket housing, reach, foot-plate, and the guide-pin having enlarged bearing-face at its upper end, and bearing in the socket at its lower end, substantially as set forth.

5. The combination of a floor-wheel having a bushing closed at its outer end, an axle, an oscillating journal-box carrying the axle, and means for connecting the bushing to the journal-box, substantially as set forth.

6. In combination with the axle of a roller-skate and its oscillating journal-box, a floor-wheel having a bushing closed at its outer end and a gland fastened on the axle-box and retaining the floor-wheel by its bushing upon the box, substantially as set forth.

7. In combination with an axle, a floor-wheel, a bushing having a collar or rim and connected with the floor-wheel, an oscillating journal-box mounted on the axle, and a gland-nut connecting the bushing by its collar or rim to the journal-box, so as to allow of their relative rotary movement, substantially as set forth.

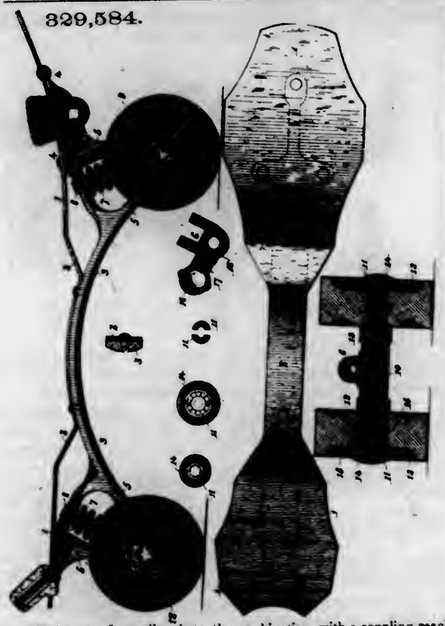
8. The combination of a coupling-reach formed integral with body 4, lugs 5 5, standard 3, and flange 2, having screw-recess, the toe-clamps 20, foot-plate, and right-and-left screw having central groove, 22, the flange serving as an abutment to the screw and clamps, substantially as set forth.

9. The combined heel-stop and heel-strap lug 23, inclined upwardly and inwardly, and formed with central bridge-piece, 24, inclined in the same direction, substantially as set forth.

10. The combination of the foot-plate and paired heel-stop, and strap-lugs riveted thereto and inclined upwardly and inwardly toward each other, and formed with bridge-pieces 24, inclined in the same direction as the lugs, substantially as set forth.

329,584. ROLLER-SKATE. FREDERIK C. MILLER, Newport, Ky. Filed Apr. 21, 1885. (No model.)

329,584.



Claim.—1. In a roller-skate, the combination, with a coupling-reach of arch form having standards for attachment to the wheel-trucks, of a foot-plate having a downwardly-bent body portion connected to the body of the reach and its ends secured to the ends of the reach, substantially as set forth.

2. In a roller-skate, the combination, with the floor-wheels, of an axle having grooves at its outer ends, split disks occupying said grooves for retaining the wheels upon the axle, bushings having screw-threads at their outer ends and forming boxes for the ends of the axle, and screw-threaded caps secured to said bushings for retaining the disks in place, substantially as set forth.

3. In a roller-skate, the combination, with the floor-wheels, axle, and axle-box having reduced ends, of bushings having annular extensions at their inner ends for surrounding the ends of the axle-box, substantially as set forth.

4. In a roller-skate, the combination, with the floor-wheels, of an axle having grooves at its outer ends, split disks occupying said grooves for retaining the wheels upon the axle, bushings having screw-threads at their outer ends and surrounding the ends of the axle, axle-box, cylindrical rollers occupying the annular spaces around the ends of the axle within the bushings between the ends of the axle-box and disks, and screw-threaded caps secured to said bushings for retaining the disks in place, substantially as set forth.

5. In a roller-skate, the combination of floor-wheels, axle having grooves at its outer ends, axle-box having reduced ends, bushings having annular extensions at their inner ends and screw-threads at their outer ends, series of cylindrical rollers between the axle ends and bushings in line with the axle-box, split disks, and screw-threaded caps, substantially as set forth.

6. In combination with an axle and floor wheel or roller, a cylindrical bushing and a cap applied to the bushing, and a series of anti-friction cylindrical rollers occupying the space in the bushing between the disks and axle-box, substantially as set forth.

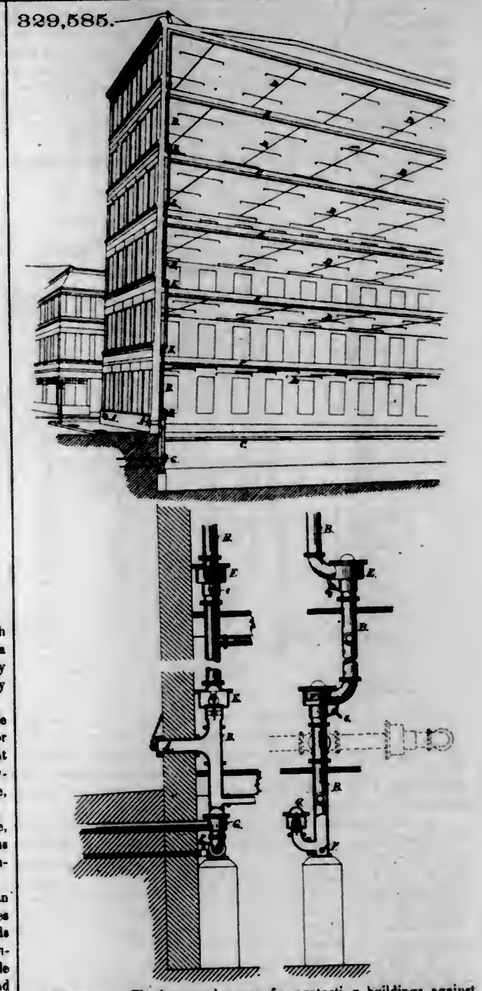
7. In combination with an axle and floor wheel or roller, a cylindrical bushing projecting outwardly to receive a cap-nut, and a washer in a groove at the end of the axle to prevent the wheel or roller from coming off, and a series of anti-friction rollers arranged between the bushing and axle, substantially as set forth.

8. The combination of the grooved axle, split disks applied thereto, floor-wheels or floor-rollers, bushings in said floor-wheels or floor-rollers having screw-threaded outer ends, and screw-caps for covering the ends of the axle and bushing and retaining the floor-wheels or floor-rollers and split disks in position, substantially as set forth.

9. The combination of an axle-box formed with a screw-threaded projection, and having duct or way 16 through the screw-threaded projection, and the removable cap or lubricator 18, having screw-threaded mouth 17, secured to the projection, substantially as set forth.

329,585. AUTOMATIC SPRINKLER FOR EXTINGUISHING FIRES. JOSEPH A. MILLER, Jr., Providence, R. I. Filed Mar. 9, 1881. Renewed Apr. 27, 1883. (No model.)

329,585.

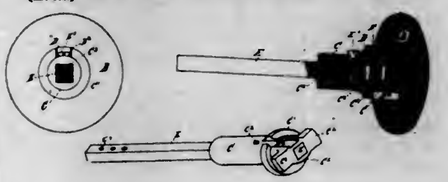


Claim.—1. The improved means for protecting buildings against fire, the same consisting in a rising main provided with one or more nozzles extending to the outside of the building, a system of horizontal mains and branch pipes provided with distributers constructed to open by the action of heat, so that water pumped into the building is distributed on the fire, and the check-valves E E, placed one above each of the horizontal mains except the uppermost main, as described.

2. In a system for extinguishing fire, the combination, with the rising main and the horizontal mains and distributers, of the check-valves E E, one above each of the horizontal mains except the uppermost main, constructed to prevent the descent of the water from the upper to the lower stories, as described.

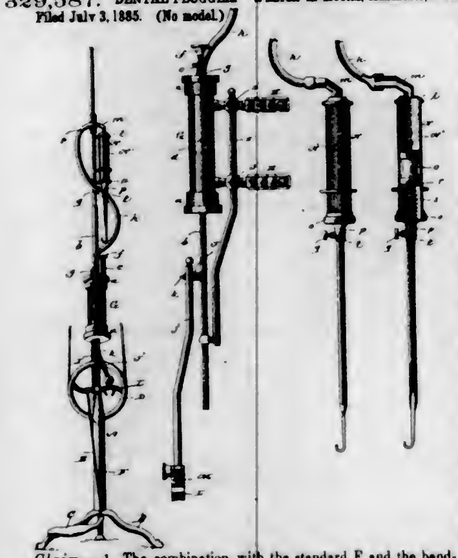
3. The combination, with the rising main and the distributing-mains, of the drain-outlet F, the check-valves E E, and the by-ways *e*, constructed to draw the water from the system, as described.

329,586. KNOB ATTACHMENT. SAMUEL D. MONTGOMERY, Paterson, N. J., assignor to John B. Florance, same place. Filed Feb. 19, 1885. (Model.)



Claim.—The combination, with the knob B, having recesses B^2 and B^3, of the shank C, provided with lugs C^4, and recess D^2, said shank adapted to enter the knob and the lugs thereon to engage with the recess B^3, and the key D, having incisions D', said key being adapted, when the parts are in assembled position, to engage recesses B^2 and D^2 of the knob and shank, respectively, and held in place by the screw E', which secures the shank to the spindle, substantially as described.

329,587. DENTAL PLUGGER. Walter K. Moore, Marinette, Wis. Filed July 3, 1885. (No model.)

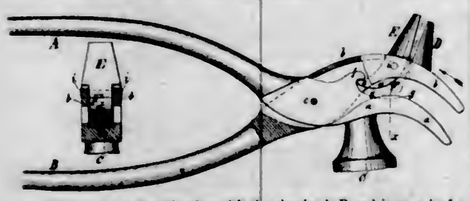


Claim.—1. The combination, with the standard F and the band-wheel and treadle of a dental machine, of an air-cylinder carrying clamping-brackets engaging with said standard, a piston working in said cylinder, and a rod, J, having a pivot for the piston-rod, and connected to the band-wheel of the dental engine, and adapted to be operated thereby, substantially as described.

2. The combination, with a standard and the band-wheel and treadle of a dental engine, of an air-cylinder having an exhaust-port controlled by a valve, brackets secured to said cylinder and adjustably secured to the standard F, a piston-rod working in said cylinder, a rod, J, carrying a pivot for the piston-rod and having a swiveled lower end adapted to engage the band or drive-wheel of a dental engine, and a rod, I, connected to the clamping-brackets and carrying a guide for the piston-rod, substantially as described.

3. The combination of the plugger-cylinder, a plugging-point having a hooked end and a disk, a coiled spring arranged between the cylinder-head and the plugger-point disk, a set-screw working through a collar secured to the cylinder-head and adapted to clamp the plugging-point, and a reversible follower having an elastic disk, substantially as described.

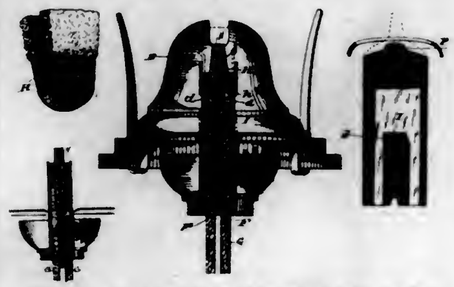
329,588. SHOE-MAKER'S PINCHERS. Carl F. O. Nordin, New York, N. Y. Filed Dec. 6, 1884. (No model.)



Claim.—1. In combination with the shanks A B and jaws *a b* of a pair of pinchers, an auxiliary pair of clamping-jaws, consisting of a butt, D, rigid upon the jaw *b*, and a jaw, E, pivoted to the jaw *b*, and with its inner arm, F, movably held and connected to the other jaw, *a*, substantially as specified.

2. In a pair of pinchers, the combination of the jaw *a*, provided with the jog *f* and concave inner surface, *g*, the jaw *b*, provided with the fixed butt D, and the jaw E, pivoted to the jaw *b* and provided with the arm F, having toe *e* and convex surface *d* to engage the said jog, and surface *f g*, substantially as and for the purpose set forth.

329,589. LAMP-WICK AND BURNER. William Painter, Baltimore, Md. Filed June 4, 1884. (No model.)



Claim.—1. A removable wick-tip formed by doubling or folding a piece of flat wicking in the middle of its length, whereby the burning-point is fixed at the said bend or fold, substantially as set forth.

2. A removable wick-tip having its burning-point formed and pressed into shape, while its remaining portions are left soft and yielding, whereby effectual contact with the supply-wick is secured, substantially as set forth.

3. A removable wick-tip formed with a pocket-shaped interior, combined with and adapted to seat on a supporting-plate of similar form, whereby the tip is made self-adjusting as to position in the cone, substantially as described.

4. A removable wick-tip composed of cotton or other similar vegetable or animal fiber, formed into proper shape at the tip or burning-point by heat, moisture, and pressure, substantially as described.

5. A center-plate attached to the burner, provided with means for supporting the supply-wick, and an upward extension above said support for holding the tip, combined with a supply-wick and tip, substantially as described.

6. A tip-holder or supporting-plate located above the upper limit of the supply-wick, combined with a wick-tip seated upon said holder, and provided with pendent ends adapted to embrace the sides of the supply-wick, whereby the burning-point of said tip is removed to such a distance from the supply-wick as to prevent its charring, substantially as described.

7. A center-plate provided with retaining-spurs, a supply-wick, and tip, in combination with an inclosing-sleeve adapted to press the pendent ends of said tip into contact with the retaining-spurs and supply-wick, substantially as described.

8. A supply-wick, means for supporting it in and near the top of the burner, and a removable wick-tip independently supported and held above said supply-wick, but pendent beside it, combined with a regulating-sleeve, which presses the pendent parts of said tip into contact with its holding devices and with the supply-wick, while said sleeve may freely move up and down to regulate the flame, substantially as described.

9. A wick-tip of rounding or convex form, combined with a regulating-sleeve having its upper end of similar shape, both conforming approximately with the interior figure of the cone employed, whereby a proper surface exposure of the tip and a perfectly-shaped flame are secured, substantially as described.

10. In combination with the burner-cone, a stationary wick and a regulating-sleeve having prolongations at or near the center of its upper edges, arranged to intercept the air-currents at the middle of the flame, whereby a sharp and narrow flame is produced when the sleeve is at its highest point, substantially as described.

11. In combination with a stationary wick and a regulating-sleeve, a removable stop for limiting the upward movement of the sleeve and arresting it before coming in contact with the cone, substantially as described.

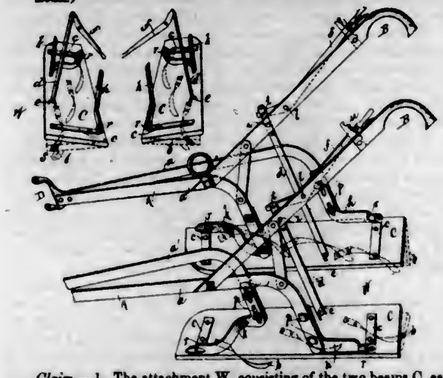
12. In combination with a stationary wick and a regulating sleeve, a removable stop attached to the interior of the cone, whereby the stop is withdrawn when the cone is turned on its hinge, and the sleeve is free to be lifted from the burner, substantially as described.

13. In combination with a removable wick-tip formed by bending or doubling a piece of flat wicking, a suppply-wick bent or doubled in a similar manner, and adapted to be embraced at its bend by the pendent ends of said tip, substantially as described.

14. In combination with a supply-wick and a removable wick-tip, means for holding the tip in contact with the supply-wick, which means shall, in the act of being applied to the same, also cause the tip to be carried down firmly onto its seat, substantially as described.

15. In combination with a wick-tip of loop form, a tip-supporting plate, inclosed at its edges as well as at its sides by said wick-tip, whereby direct contact of the flame with said plate is prevented, substantially as described.

329,590. CULTIVATOR. William S. Pates, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Aug. 17, 1885. (No model.)

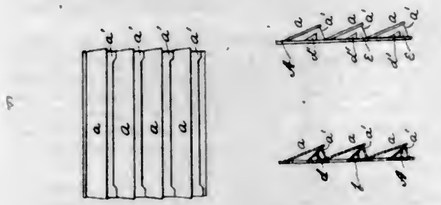


Claim.—1. The attachment W, consisting of the two beams C, each provided with hinge-joints adapted to be attached to the drag-bars of a cultivator, said hinge-joints provided with slotted upright parts and adapted to be moved and adjusted up and down, and a rod or link adapted to connect the said beams with the said drag-bars, substantially as and for the purpose set forth.

2. The combination of the beam C, provided with the strap *c*, the bracket *h*, and the bracket *k*, the latter provided with the offset, as shown, and the rod or link *d*, with the drag-bar A and with the lever *f*, all constructed, arranged, and adapted to operate substantially as and for the purpose set forth.

3. The combination of the beam C, provided with the hinge-joints having an upright part for attachment to the drag-bars, the drag-bar A, having the long beam *a* and the shorter beam *a'*, having their rear ends bent downwardly and provided with perforations, and handles B, and the said hinge-joints attached to the said rear ends, and permitting the said beam C to swing, all substantially as and for the purpose set forth.

329,591. CAR-VENTILATOR. Ebenezer S. Perry, New Bedford, Mass. Filed Sept. 5, 1885. (No model.)

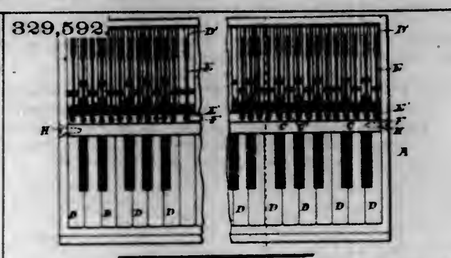


Claim.—1. In a ventilator, the combination, with the base A, provided with openings C, one above the other, of the slats *a*, attached at one edge to the upper edge of the openings C, and extending outwardly at an angle to base A, the slats *a'*, attached to slats *a* so as to form an angle therewith, the slats *b*, attached to the lower edges of openings C, and the sides *e* at each end of the slats *a*, substantially as described.

2. In a ventilator, the combination, with the base A, having openings C, one above the other, of the slats *a*, attached at one edge to the upper edge of the openings, and extending outwardly at an angle to base A, the slats *a'*, attached to slats *a* so as to form an angle therewith, the slats *b*, attached to the lower edges of openings C, and the sides *e* at each end of the slats *a*, provided with openings *d'*, substantially as described.

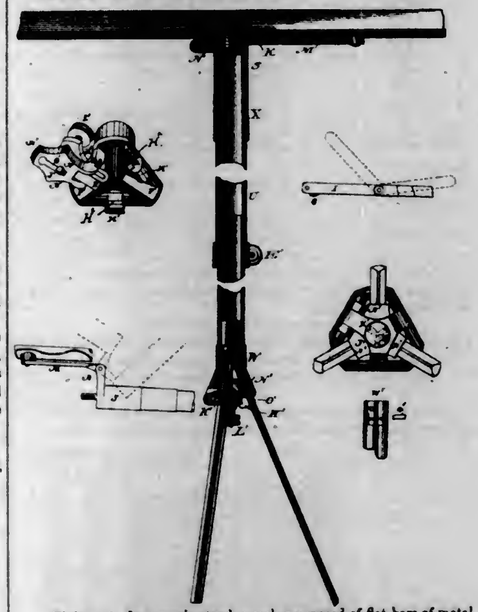
3. In a ventilator, the combination, with the base A, having openings C, one above the other, of the slats *a*, attached at one edge to the upper edge of the openings C, and extending outwardly at an angle to base A, the slats *a'*, attached to slats *a* at an angle thereto, the slats *d*, attached to the base A and to the under side of slats *b*, and the sides *e* at each end of slats *a*, substantially as described.

329,592. MUTE PIANO. Carlyle Petersilea, Boston, Mass. Filed Oct. 25, 1884. (No model.)



Claim.—The combination, with the keys, of the rotatable name-bar, screws pivotally supporting the same and serving as a means whereby said bar may be held at any desired point of rotation, and the springs E, having one end secured to the name-bar and their other ends bearing on the keys, substantially as set forth.

329,593. FOLDING MUSIC-STAND. Frank P. Pelishar, New Haven, Conn. Filed Mar. 28, 1885. (Model.)



Claim.—1. In a music-stand, a rack composed of flat bars of metal pivoted together for allowing them to be folded into line, and having the terminal parts F I of the bars G H pivoted to turn back between the bars thus folded in line, substantially as set forth.

2. The arm M, pivoted to the rack, and the part S, held to the post by the nut A', and provided with the elbow N, hinged to the arm, in combination, to allow the folding of the connected rack and post, as set forth.

3. In a music-stand, the upper tube of the post, in combination with the lower tube, which is telescoped therein, a series of legs which fold within said lower tube, and a hinged plate which holds said legs spread apart when they are protruded for supporting the stand, substantially as set forth.

4. A tubular post for a music-stand provided with an inwardly-extending stud or pin near its lower end, in combination with a block which is grooved to receive said pin and prevented from turning thereby, and a series of legs pivoted to said block, the latter, with said legs, being movable up into said post, substantially as set forth.

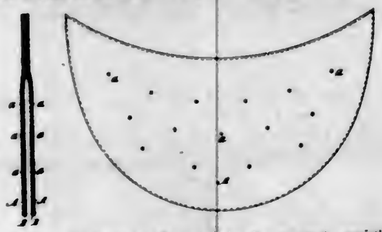
5. The hollow post provided with an enlargement at its lower end, in combination with the pivoted legs, the plate J', which holds the legs against said enlargement and is slotted at O', the plate K', having the slot R', through which the pivot of the plate J' passes, and the thumb-screw, which passes through a threaded hole in plate K' and into the slot in plate J', allowing plate K' to be moved into grooves *a* and the plate J' to be thereby locked for holding the legs spread, substantially as set forth.

6. In combination with a set of spreading legs, a hinged plate fitting between them to hold them spread and a movable plate and grooved lugs engaging therewith to hold said hinged plate in position, substantially as set forth.

329,594. INSECTICIDE. Rudolf Eisterhold, New York, assignor of one-half to Robert Hilge, Katona, Westchester County, N. Y. Filed Aug. 1, 1885. (No specimens.)

Claim.—An insecticide consisting of a solution of salicylic acid, bicarbonate of soda, starch, perchloride of iron, spirits of ammonia, and a flavoring-oil, in the proportions and for the purpose set forth.

329,595. **GUSSET FOR THE ARMHOLES OF GARMENTS.** WILLIAM SACHS, Berlin, Germany. Filed June 22, 1885. (No model.) Patented in Belgium Nov. 11, 1880, No. 53,001; in France Nov. 30, 1880, No. 139,753; in Austria-Hungary Jan. 29, 1881, No. 25,063 and No. 2,615; in Germany Feb. 8, 1881, No. 12,683, and in England Mar. 29, 1881, No. 1,377.

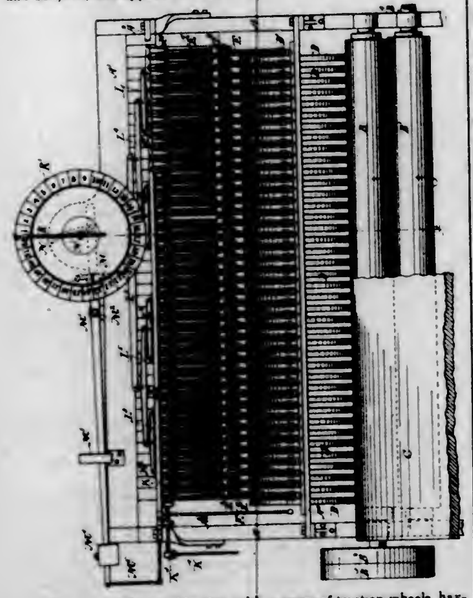


Claim.—1. A gusset for the armhole of a garment, consisting of one or more pieces of perforated material and one or more pieces of absorbent material, all said pieces having concave upper edges along which they are united, and one or more pieces of the absorbent material being also otherwise united to an adjacent piece or pieces of perforated material, substantially as specified.

2. A gusset for the armhole of a garment, consisting of one or more pieces of perforated impermeable water-proof material, all said pieces having concave upper edges along which they are united, and one or more pieces of the absorbent material being also otherwise united to an adjacent piece or pieces of perforated impermeable water-proof material, substantially as specified.

329,596. **MACHINE FOR MEASURING THE AREAS OF SURFACES.** WILLIAM A. SAWYER, Deaversport, assignor to the Sawyer Leather Machinery Company, Boston, Mass. Filed May 9, 1885. (No model.)

Brief.—Improvements on Sawyer's Patents Nos. 256,058, 269,962, and 286,078, and application No. 166,645, dated May 25, 1885.



Claim.—1. The combination, with a series of traction-wheels having toothed hubs, and a series of gear-wheels located over these hubs, of pivoted lever-supports for said gear-wheels and for said traction-wheels, said pivoted lever-supports being connected, whereby the position relatively to each other of said toothed hubs and their corresponding gear-wheels is controlled, all arranged and operating substantially as described.

2. The combination, with a registering device, of a weighted lever-arm, a series of aggregating-levers, a series of cords, a series of gear-wheels, and a series of traction or measuring wheels having toothed hubs and resting on a roller, and adapted to be raised by the passage of an article whose area is to be measured, so that these toothed hubs engage and set in motion the gear-wheels, which transmit their motion by cords to the system of aggregating-levers, all arranged substantially as described.

3. The combination of a series of traction-wheels having toothed hubs and a series of gear-wheels located over these hubs, and friction hubs or pulleys for these gear-wheels, having an adjustable friction device and a stop to determine their normal position, so that the friction-pulleys revolve with the gear-wheels, and are readily pulled back into their normal position, substantially as and for the purpose set forth.

4. In a machine for measuring the area of surfaces, the combination of a registering device, consisting, preferably, of a dial, pointer, axis, and pinion, with the system of aggregating-levers, by means of a weighted lever-arm provided with a curved rack to engage with the pinion on the axis of the pointer of the registering device, and also with a curved piece having a strap attached thereto to engage with the system of aggregating-levers, whereby an even leverage is secured in all positions of the weighted lever-arm, substantially as described.

5. In a machine for measuring the area of surfaces, a system of aggregating-levers, the two main levers W^5 W^5 of which are connected by a curved lever, W^6, interposed between the two longer arms of the two said main levers, which arms are provided with a simple lever, W^7, having pivoted at each end a grooved wheel or pulley, while on each of the shorter arms is pivoted a lever, W^4, at the ends of which is pivoted a lever, W^3, which have pivoted in turn at each of their ends the levers W^2, which are each provided with a grooved wheel or pulley, all proportioned and operated substantially as described.

6. The combination of the graduated scale, its pointer, with a weighted lever-arm provided with a curved rack to engage the pinion on the shaft of the pointer and connected to the system of aggregating-levers, which are connected to the hubs of gear-wheels, the traction-wheels having toothed hubs and resting on a roller, the pawls acting on the gear-wheels, and wiping-roll, all arranged together substantially as described, and for the purpose set forth.

7. The combination, with a series of traction-wheels having toothed hubs and a series of gear-wheels located over these hubs, of supports for these gear-wheels, consisting of a lever, H, pivoted to the supporting-arm H^3, substantially as described.

8. In a machine for measuring the area of surfaces, a system of aggregating-levers, in combination with a transmitting-lever, the said system of levers and transmitting-lever being connected by a device consisting of a curved bracket attached to the transmitting-lever, and provided with a strap adjustably attached at one end to the curved bracket and at the other end to the system of aggregating-levers, whereby, with said transmitting-lever, an even leverage is secured, substantially as described.

9. In a machine for measuring the areas of surfaces, the combination of a system of gear-wheels free to move up and down, provided with friction-collars adapted to wind up cords, and a system of pawls pivoted on a rod and secured thereto by a pin which works in a slot made in the rear end of the pawl, with the lever M', connected by suitable mechanism to said cords, whereby the said gear-wheels are held firmly in position while the friction-hubs are pulled back to the zero-point, substantially as described.

10. In a machine for measuring the area of surfaces, the combination of a bent rod attached to a weighted lever, the said weighted lever, a system of aggregating-levers, a series of cords attached to the friction hubs or pulleys of gear-wheels, and a series of friction-hubs or pulleys of gear-wheels, whereby all of said friction-pulleys moved are revolved back simultaneously into their normal position, substantially as described.

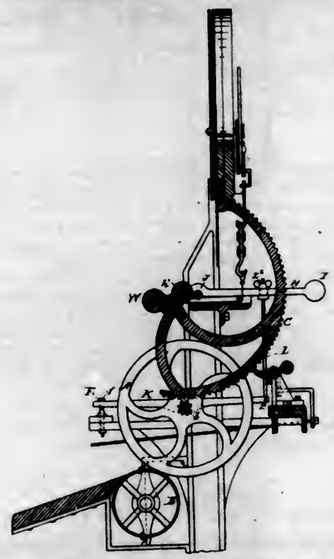
11. In a machine for measuring the areas of surfaces, a series of gear-wheels provided with friction hubs or pulleys, having an adjustable friction device and a stop to determine their normal position, in combination with lever-supports for said gear-wheels, substantially as described.

12. In a machine for measuring the areas of surfaces, the combination of a registering device, a weighted lever-arm, a system of aggregating-levers, a series of cords, a series of gear-wheels, and a series of traction or measuring wheels resting on a roller, with a series of pawls acting on said series of gear-wheels, all arranged and operated substantially as described, and for the purpose set forth.

13. The combination of a registering device, a weighted lever-arm, a system of aggregating-levers, a series of cords, a series of gear-wheels, and a series of traction or measuring wheels resting on a roller, all arranged and operated substantially as described, and for the purpose set forth.

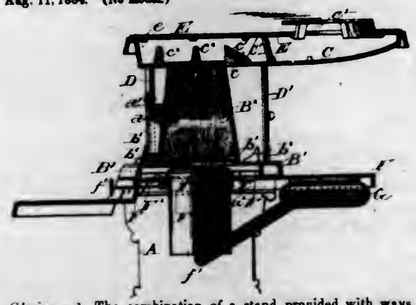
14. In a machine for measuring the areas of surfaces, a rod secured by brackets to a cross-beam of the machine, in combination with a series of pawls pivoted on said rod, which is provided with an arm positively fixed thereto, the said pawls being individually secured to said rod by a pin positively fixed in said rod, and which works in a slot made in the rear end of the pawl, whereby the said pawls have a slight individual movement independent of each other, and are all positively operated by said arm, substantially as described.

329,597. **MACHINE FOR MEASURING THE AREAS OF SURFACES.** WILLIAM A. SAWYER, Deaversport, assignor to the Sawyer Leather Machinery Company, Boston, Mass. Filed May 12, 1884. Renewed May 25, 1885. (No model.)



Claim.—The combination, with a series of wheels having toothed hubs and a series of toothed segments located over these hubs, of pivoted lever-supports for said segments and for said wheels, said pivoted lever-supports being connected, whereby the position relative to each other of said toothed hubs and their corresponding toothed segments is controlled, all arranged and operating substantially as set forth.

329,598. **OIL-STOVE.** CHARLES O. SCHWARTZ, Milwaukee, Wis. Filed Aug. 11, 1884. (No model.)



Claim.—1. The combination of a stand provided with ways, a plate having burner-cones rigidly connected to said stand, a sliding frame mounted in the ways of the stand, and wick-tubes connected to said frame and extending upward to the under side of the cone-plate, said tubes being surrounded by air-spaces and an independent reservoir connected by pipes to said tubes and supported on the said frame, as and for the purposes set forth.

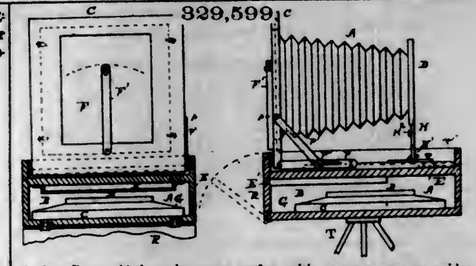
2. The combination of a stand provided with ways, a plate having burner-cones rigidly connected to said stand, a sliding frame mounted in the ways of the stand, and wick-tubes connected to said frame and extending upward to the under side of the cone-plate, said sliding frame being provided on its under side with a reservoir, and pipes connecting the reservoir and wick-tubes, as and for the purposes set forth.

3. In an oil-stove, in combination with the feed-tube f' and the wick-tubes F', having slot f^3 and the wicks F^3, the adjusting-frame f^4, having the endless chain f^5 to carry the prong-plate f^6, and the hook-jointed rod f^7 to operate the same, substantially as shown and described, and for the purpose set forth.

329,599. **ADJUSTABLE CAMERA AND BOX COMBINED.** CHARLES H. SCOFIELD, Utica, N. Y. Filed Feb. 25, 1884. (No model.)

Claim.—1. The herein-described detachable camera A, adapted to open and close into a compact space, as described, in combination with

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the box B, provided on the upper surface with moving ways or guides M M, pivoted to the upper surface of the box and adapted to move horizontally to bring the lens at an angle with the focusing-glass, as described.

2. The camera A, in combination with a carrying-box having on its outer surface a track or way attached to the same, provided with suitable means to swing or move the tracks horizontally, as described.

3. The camera A, in combination with a carrying-box provided on the outer surface with oscillating track, one end pivoted to the box, the other end guided and held by cross-guide n, as described, as and for the purposes stated.

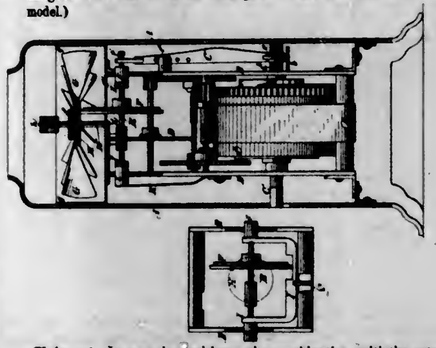
4. The combination, with a camera and box, of springs P and P', adapted to hold the camera at any desired angle by means of slots and set-screws, as described, the camera being removable by disengaging the springs from the projecting pins in the outer rear surfaces of the camera, as described.

5. In a camera, the box B, in combination with springs P and P', adapted to hold the rear of the camera in an upright or angular position by means of a slot and set-screw, as described, as and for the purposes stated.

6. In a camera, the projecting arm F', provided at the end with a button, and attached to the frame by a screw adapted to hold the glass in position when the impression is taken, as described, as and for the purposes stated.

7. The combination of a photographic camera, a frame at the rear of the bellows having a square recess in the front surface corresponding in size with the rear of the bellows, provided with suitable means of attaching the frame to the bellows either horizontally or vertically.

329,600. **MECHANICAL LAMP.** THOMAS SILVER, New York, N. Y., assignor to Orville D. Lovell, same place. Filed Nov. 15, 1884. (No model.)



Claim.—1. In a mechanical lamp, the combination, with the rotary fan and the train of mechanism for obtaining the power for driving the same, of a friction-disk on the shaft of the fan, and a friction-wheel on the last shaft of the train, working in contact with said disk and adjustable toward and from the center thereof for the purpose of varying the speed of the fan, substantially as herein described.

2. In a mechanical lamp, the combination, with the rotary fan and spring-actuated mechanism for rotating it, of a friction-disk on the fan-shaft and a friction-wheel for transmitting motion from the said mechanism to said disk, and an automatic device actuated by said mechanism for moving the said wheel toward and from the center of said disk, substantially as herein described.

3. The combination, with the rotary fan-shaft H', the friction-disk H upon said shaft, and a train of spring-actuated wheels comprising a shaft, E, carrying a friction-wheel, F, engaging with said disk, of the movable frame I, carrying said shaft E, the screw C^2, moving with the spring-winding arbor, the nut c on said screw, and the lever C between said nut and said movable frame, substantially as and for the purpose herein described.

329,601. DANDY-ROLL FOR PAPER-MAKING MACHINES. CHAS. SMITH, Belleville, N. J. Filed Apr. 2, 1885. (No model.)



Claim.—1. In a dandy-roll, a series of peripherally-notched ribs having longitudinal wires arranged and held therein, substantially as and for the purposes set forth.

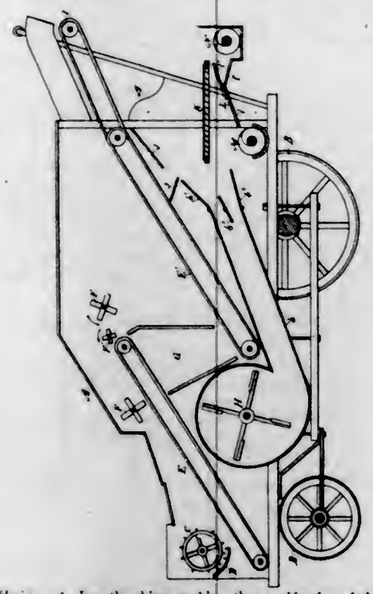
2. In a dandy-roll for paper-making, the notched ribs, longitudinal wires, and removable heads, arranged and combined as set forth.

3. In combination, a series of peripherally-notched ribs or disks, wires arranged in the notches thereof, projecting binding-wires, and journal-heads secured to the end ribs.

4. In combination, peripherally-notched ribs, wires laid in the notches of said ribs, circumferential wires, and journal-heads, substantially as set forth.

5. In combination, notched ribs and notched longitudinal wires laid in the notches of said ribs, and transverse projecting wires laid on the notches of said longitudinal wires.

329,602. GRAIN-SEPARATOR. JAMES M. SMITH, Etna, Cal. Filed Feb. 28, 1885. (No model.)

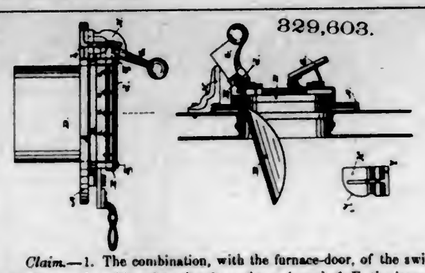


Claim.—1. In a thrashing-machine, the combination of the two grain carriers or belts E E', having tight or closed surfaces for carrying all the grain and straw, and arranged the one below the other in different inclined planes, whereby a drop is obtained from the discharge end of one to the receiving end of the other, the oppositely-rotating beaters F' F^2 at the discharge end of the upper carrier, and consisting of small shafts having long straight arms, as described, and the hopper G, into which the beaters discharge the material upon the lower carrier, substantially as herein described.

2. In a thrashing-machine, and in combination with a riddle through which the grain is sifted or falls, a shoe-bottom having an inclined floor, *l*, adapted to receive the clean grain from the forward portion of the riddle and discharge it into a conveyer, an oppositely-inclined floor, l', adapted to receive the dirt and trash from the rear portion of the riddle, and to discharge them into a separate conveyer, and a sliding floor, l^2, having the inclination of and lying above the floor *l*, and adapted to cover wholly or partially the floor l', substantially as and for the purpose herein described.

329,603. DEFLECTOR-PLATE FOR FIRE-BOXES. ANDREW J. STEVENS, Sacramento, Cal. Filed July 2, 1884. (No model.)

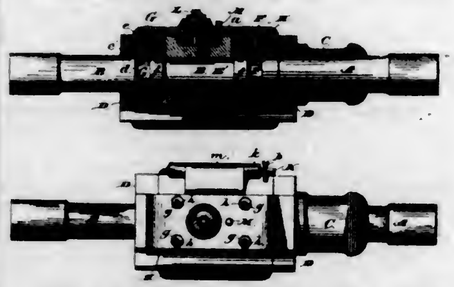
329,603.



Claim.—1. The combination, with the furnace-door, of the swinging deflector-plate hinged to the door, the rod or shaft E, the lever G, and the fixed plate H, constructed and applied to operate to raise the plate into an inclined position behind the air-opening as the furnace-door is closed and to allow the plate to drop or be closed against the door by the act of opening the door, substantially as described.

2. The combination, with the air-opening in a furnace-door, of the deflector-plate attached to the back of the door and adapted to be withdrawn from and returned into the furnace by the movements of the door in opening and in closing, and the shaft E, the lever G, and fixed plate H, having the curved outer edge, h^3, as a means of mechanically turning the deflector into and out of position during such times of movement, for the purposes set forth.

329,604. DIVIDED CAR-AXLE. HANS THIELSEN and HENRY W. DILG, Portland, Oreg. Filed Apr. 30, 1885. (No model.)



Claim.—1. In combination with the axle-sections A B, a coupling-box, D, triangular in cross-section and fixed to one of said axle-sections, and the brasses E and keys F, in three sets, removably secured within said box in engagement with the loose axle-section, substantially as described.

2. In combination with the fixed axle-section A and the loose axle-section B, having collars *f f* and reduced portions F' E' G', the three-sided coupling-box D, secured to the fixed axle-section and provided with recesses *a c c'*, the keys F, brasses E, and packing-blocks G, placed in said recesses, the packing-ring *d*, springs *e e*, and removable lids H, substantially as described.

3. The combination, in a divided axle, of the three-sided box D, having recesses *a c c'*, the removable keys F, brasses E, and packing-blocks G, and the detachable lids H, having screw-plugs M and adjustable screw-bolts L, substantially as described.

4. The combination, with the fixed axle-section A and loose axle-section B, having shoulders or collars and reduced portions, of a three-sided coupling-box, D, secured to the fixed axle-section, the keys F, brasses E, having oil grooves or depressions *b b*, and the removable lids H, provided with screw-plugs M and adjusting-bolts L, for regulating the pressure of the brasses against the loose axle, substantially as described.

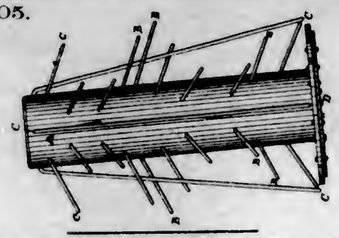
5. In a divided car-axle, the combination, with a three-sided coupling-box, of three sets of brasses, E E E, formed with concaved lower surfaces provided with beveled edges, and having depressed upper surfaces provided with oil-grooves *b b*, substantially as described.

6. In a divided car-axle, the combination, with the loose axle-section B and coupling-box D, having recesses *c'*, of the packing-ring *d*, packing-blocks G, springs *e*, and lids H, substantially as described.

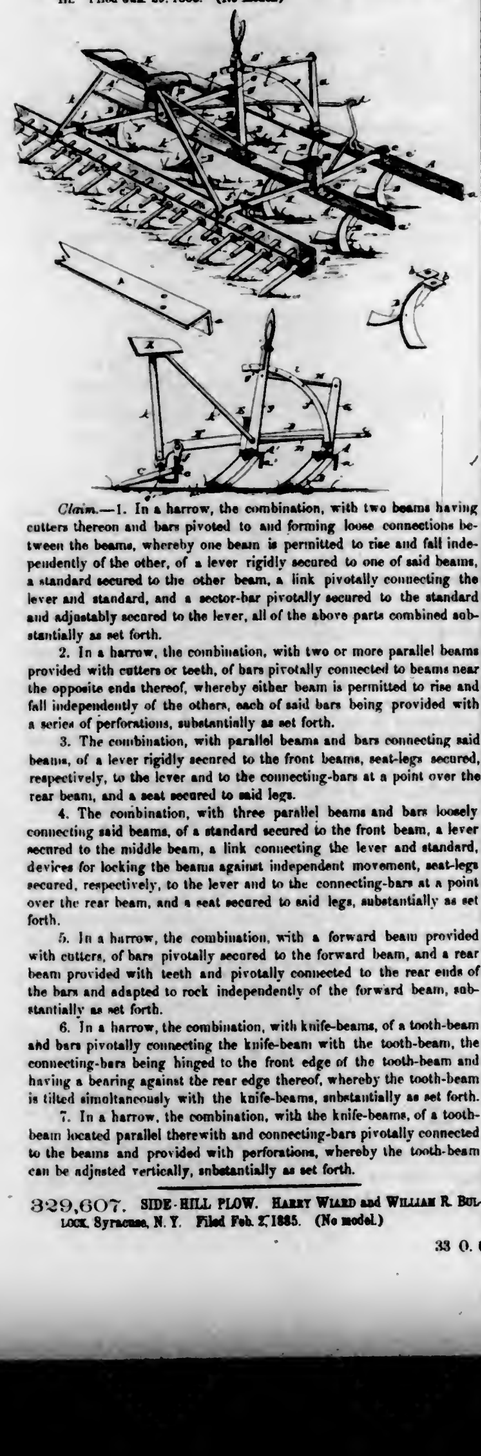
329,605. APPARATUS FOR CLEANING OUT PIPE-LINES. BENJAMIN F. WARREN, Philadelphia, assignor to B. D. Benson, Titusville, Pa. Filed Feb. 12, 1884. (No model.)

Claim.—An improvement in apparatus for cleaning out a pipe-line for transporting petroleum, such apparatus consisting of the core or body, the head or disk, the wire guides, and scrapers, combined with a pipe containing flowing liquid and operating in combination, substantially as and for the purposes described.

329,605.



329,606. PULVERIZING-HARROW. JOHN WHERRY, Jr., Putnam, Ill. Filed Jan. 29, 1885. (No model.)



Claim.—1. In a harrow, the combination, with two beams having cutters thereon and bars pivoted to and forming loose connections between the beams, whereby one beam is permitted to rise and fall independently of the other, of a lever rigidly secured to one of said beams, a standard secured to the other beam, a link pivotally connecting the lever and standard, and a sector-bar pivotally secured to the standard and adjustably secured to the lever, all of the above parts combined substantially as set forth.

2. In a harrow, the combination, with two or more parallel beams provided with cutters or teeth, of bars pivotally connected to beams near the opposite ends thereof, whereby either beam is permitted to rise and fall independently of the others, each of said bars being provided with a series of perforations, substantially as set forth.

3. The combination, with parallel beams and bars connecting said beams, of a lever rigidly secured to the front beams, seat-legs secured, respectively, to the lever and to the connecting-bars at a point over the rear beam, and a seat secured to said legs.

4. The combination, with three parallel beams and bars loosely connecting said beams, of a standard secured to the front beam, a lever secured to the middle beam, a link connecting the lever and standard, devices for locking the beams against independent movement, seat-legs secured, respectively, to the lever and to the connecting-bars at a point over the rear beam, and a seat secured to said legs, substantially as set forth.

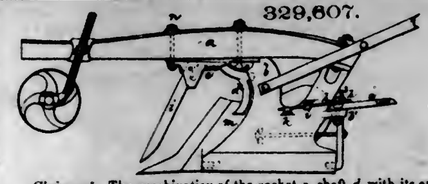
5. In a harrow, the combination, with a forward beam provided with cutters, of bars pivotally secured to the forward beam, and a rear beam provided with teeth and pivotally connected to the rear ends of the bars and adapted to rock independently of the forward beam, substantially as set forth.

6. In a harrow, the combination, with knife-beams, of a tooth-beam and bars pivotally connecting the knife-beam with the tooth-beam, the connecting-bars being hinged to the front edge of the tooth-beam and having a bearing against the rear edge thereof, whereby the tooth-beam is tilted simultaneously with the knife-beams, substantially as set forth.

7. In a harrow, the combination, with the knife-beams, of a tooth-beam located parallel therewith and connecting-bars pivotally connected to the beams and provided with perforations, whereby the tooth-beam can be adjusted vertically, substantially as set forth.

329,607. SIDE-HILL PLOW. HARRY WIARD and WILLIAM R. BULLOCK, Syracuse, N. Y. Filed Feb. 7, 1885. (No model.)

329,607.



Claim.—1. The combination of the socket *c*, shaft *d*, with its arms, as described, and the colter *i*, constructed and arranged substantially as and for the purposes specified.

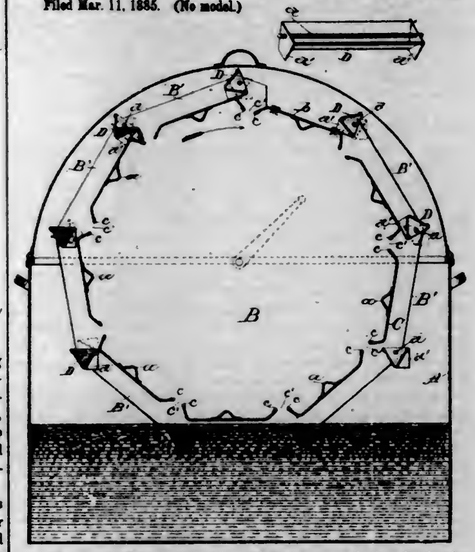
2. The combination of the shaft *d* and arms d' d^2, for guiding and holding the colter in position in a reversible plow, as described.

3. The brace-hook *e* and cam e^2, combined with the spring *h*, constructed and arranged in the manner and for the purposes specified.

4. The combination of the looped wire spring *h*, as described, with the brace-hook and cam, in the manner and for the purposes specified.

5. The combination of the brace-hook *e*, washer e^2, and screw-bolt *f*, jointly forming a pivot for holding the brace-hook *e* in the socket b', substantially as herein specified.

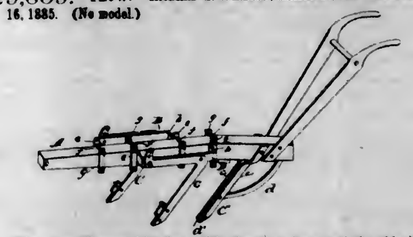
329,608. WASHING-MACHINE. EDGAR N. WEED, Meridon, Ill. Filed Mar. 11, 1885. (No model.)



Claim.—1. The combination, with the drum and slats having inturned rims or edges, of the pivoted buckets having guiding-flanges, as described.

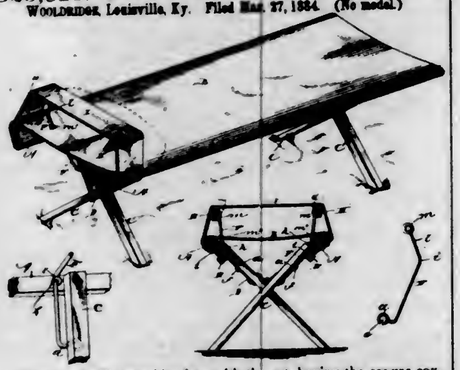
2. In a washing-machine, the combination of the wash-boiler with a slotted revolving drum, and buckets pivoted thereto, and to take water from beneath the drum and pour it automatically into the drum from the top thereof when the drum is revolved in one direction, and to turn on their pivots without receiving water when the drum is revolved in the opposite direction, whereby the clothes in the drum may be alternately soaked and drained, substantially as set forth.

329,609. PLOW. RICHARD S. WHITMOR, Americus, Ga. Filed Jan. 16, 1885. (No model.)



Claim.—The combination, with the plow-beam, of the side bars having end portions bent toward the beam and provided with cross-heads arranged to receive the bolts above and below the beam, said bolts connecting opposite cross-heads or cross-heads and clip-pieces, substantially as described, and for the purpose set forth.

329,610. **AUTOMATIC HEAD-SUPPORT FOR COTS.** WILLIAM H. WOOLDRIDGE, Louisville, Ky. Filed Mar. 27, 1884. (No model.)



Claim.—1. The combination, with the cot having the canvas covering extending out to the extreme end at the head, of the herein-described automatic head-support, comprising the spring wire bails pivoted at their lower ends to the legs, and passing upward through eyelets or holes in the canvas between the side rails, strips or blocks at the upper end of the bails, and a canvas covering connecting the strips or blocks, and attached at its ends to the side rails, whereby a pillow may be placed on the canvas beneath the head-support, as set forth.

2. The combination, with the cot having the canvas covering extending out to the extreme end at the head, of the herein-described automatic head-support, comprising wire bails pivoted to the legs and working through eyelets or holes in the canvas, eyes or staples secured to the inner face of the side rails of the cot for the bails to work in, and a covering connecting the upper ends of the bails, and having its ends secured to the side rails, arranged and operating as described, whereby a pillow may be supported on the canvas beneath the head-support, as set forth.

3. In an automatic pillow or head-support, the combination, with the side rails and legs of a folding cot, of the bails pivoted at their lower ends to the legs, and extending upwardly between the side rails, and a canvas covering connecting the upper ends of the bails, the latter being formed with a bend at an intermediate point of their length, which bends bear against the inner face of the side rails, and work through staples or eyes secured thereto, for the purpose set forth.

4. In an automatic pillow and head-support, the combination, with the side rails and legs of the cot, of the bails comprising the arms *a*, attached to the legs, bends *i* at an intermediate point of their length, vertical arms *l* at the upper ends of the bails, and a canvas covering connecting the upper ends of the said bails, the latter working through screw-eyes secured to the side rails, as set forth.

5. In an automatic pillow-support, the combination, with the sides and legs of a folding cot having the canvas covering extending out to the extreme end at the head, of the head or pillow support comprising the spring wire bails having their lower ends pivoted to the outside of the legs, bent at an intermediate point of its length around the upper end of the latter within the sides and bearing against the inner face thereof, and then extending upward substantially in a vertical line, eyes or staples secured to the side rails for the bails to work in, and a canvas covering connecting the upper ends of the bails, whereby a pillow may be placed on the canvas beneath the head-support, as set forth.

329,611. **STEM-WINDING WATCH.** LEO ARNY, Madretsch, near Bienne, Switzerland. Filed July 18, 1884. (Model.)

Claim.—1. In a stem-winding watch, the combination, with the barrel-arbor, ratchet-wheel thereon, and a click, of the piece *a*, attached to the plate by the pivot of the click and having its outer end engaging the said arbor, substantially as described.

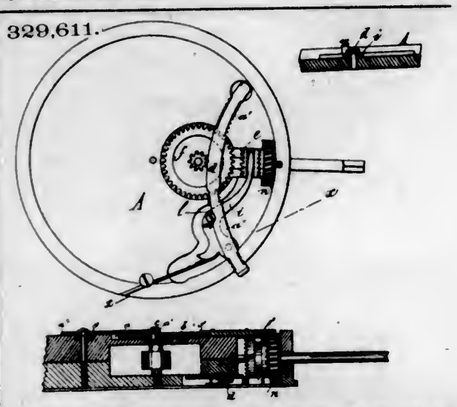
2. In a stem-winding watch, the combination, with a grooved barrel-arbor, a ratchet-wheel thereon, and a click, of the piece *a*, attached to the plate by the pivot of the click, having a forked outer end, and formed with a spring at its inner end, substantially as herein shown and described.

3. In a watch, the piece *a*, having the outer forked end, *a'*, and formed with a spring, a^2, at its inner end, whereby the said piece is made to serve as the click-spring and to hold the ratchet-wheel in place, as set forth.

4. In a stem-winding watch, the combination, with a sliding ratchet-pinion and a lever engaging therewith, of a slide for operating said lever, substantially as herein shown and described.

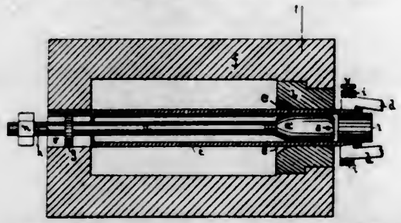
5. In a stem-winding watch, the combination, with the minute-wheel *f*, a worm-wheel, *s*, on the stem, a sliding ratchet-wheel, *e*, on said stem, and a lever, *i*, engaging said ratchet-wheel, of the slide *d*, engaging said lever *i*, substantially as herein shown and described.

329,611.



6. In a stem-winding watch, the combination, with the plate having undercut grooves *a'*, of the curved piece *d*, moving and held in the grooves *a'*, substantially as herein shown and described, whereby the said curved piece is made to serve both as a slide and a bridge, as set forth.

329,612. **DIE FOR DRAWING AND COMPRESSING TUBES.** WILLOW ALDERIDGE, Akron, Ohio. Filed June 3, 1885. (No model.)



Claim.—1. A die for drawing, compressing, and polishing cold metal tubes, consisting of an outer part formed with an opening to admit the tube, and an inner part arranged centrally in said opening to operate on the interior sides of the tube, the greatest diameter of said inner part being in the same plane with and less than the smallest diameter of said opening in the outer part, substantially as described.

2. A die for drawing, compressing, and polishing cold metal tubes, formed with an outer part having an opening, tapering at both ends within said opening, whose sides operate on the exterior of the tubes, in combination with an inner part consisting of a rod formed with an enlargement to operate on the interior sides of the tube, substantially as described, the greatest diameter of said opening being in the plane with and less than the smallest diameter of said opening.

3. A die for drawing, compressing, and polishing cold metal tubes, formed with an outer part having an opening to admit the tube, and an inner part consisting of a rod formed with an enlargement, the front ends of said opening and of said inner part being tapering in opposite directions at the entrance of the die, substantially as described.

4. The rod *a*, formed with bulb *a'*, in combination with collar *g*, a suitable frame, *f*, formed with an opening, *o*, of sufficient size to admit the tube to be drawn, and part *b*, formed with opening *e*, substantially as described.

5. The rod *a*, formed with bulb *a'*, in combination with key *k*, a suitable frame, *f*, formed with opening *o*, of sufficient size to admit the tube to be drawn, and part *b*, formed with opening *e*, substantially as described.

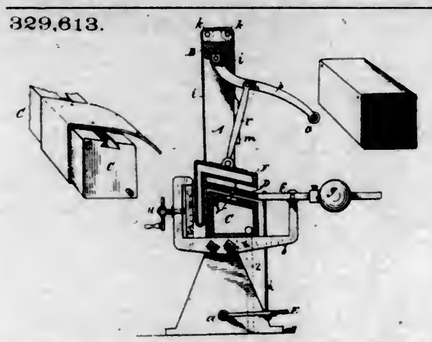
329,613. **BENDING-MACHINE.** EMERY ANDREWS, Kennebunk, Me., assignor to the Leatheroid Manufacturing Company, same place. Filed Sept. 8, 1884. (No model.)

Claim.—1. The combination of the hollow bed-plate C, the clamping-plate D, and the bending-bar F, arranged and to operate substantially as specified.

2. The bed-plate C, in combination with the clamping-plate D, the bending-bar F, the blocks *s s*, and adjusting-screws *u u*, substantially as set forth.

3. In a machine for bending paper-boards, a heated bed-plate, a clamping-plate adapted to hold a sheet of material thereto, and a bending-bar adapted to press upon the clamping-bar and the adjacent side of the bed-plate at the same time and by the same motion of the operating mechanism, substantially as shown and described.

329,613.

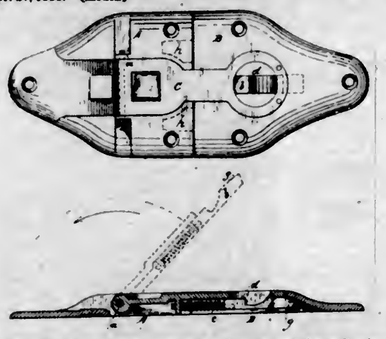


4. In combination with the bed-plate C, the plate D, supported by the pivoted arms *f f* and counter-balances *g g*, and the bending-bar F, substantially as set forth.

5. In combination, the bed-plate C, the plate D, and the bar F, operated by the arms *r r* and *p p*, substantially as specified.

6. In a bending-machine, a bed-plate, C, provided with the adjustable pins *v v*, arranged to project from the face of said bed-plate beneath the bar F and to enter holes in the material to be bent, and thus determine the line along which the bending shall take place, in combination with the bending-bar F, substantially as specified.

329,614. **BOX-FASTENER.** EMERY ANDREWS, Kennebunk, Me., assignor to the Leatheroid Manufacturing Company, same place. Filed Apr. 27, 1885. (Model.)



Claim.—The combination, with the plate A, and hasp C, pivoted thereto and provided with a groove and cut-away portion, into which said groove opens, of the bolt *b*, sliding in said hasp and adapted to be moved along said groove, and the end thereof exposed in the cut-away portion, whereby it may be moved back by the finger of the operator, and the plate B, with a recess to receive the end of the hasp, and a socket to engage the bolt *b*, substantially as shown and described.

329,615. **NUT-LOCKING WASHER.** EMERY ANDREWS, Kennebunk, Me., assignor to the Leatheroid Manufacturing Company, same place. Filed Aug. 14, 1885. (No model.)



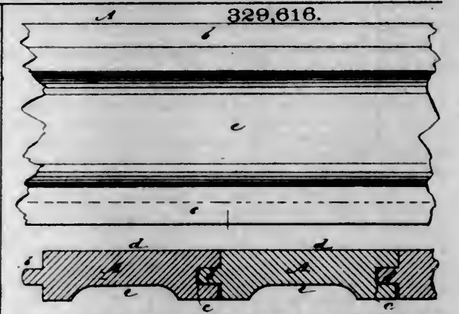
Claim.—1. A nut-washer composed of the double metallic cover A A, the two parts thereof being connected by a neck, C, in combination with the elastic washer D, substantially as shown and described.

2. A nut-washer composed of the double concave metallic cover A A, the two parts of which are connected by a neck, C, in combination with an elastic washer, D, substantially as set forth.

3. A nut-washer composed of a double metallic cover, A A, the two parts thereof being connected by an elastic neck, C, so as to hold between them with a yielding pressure the elastic washer D, substantially as specified.

329,616. **FLOORING-BOARD.** JOHN R. BALDWIN, Montgomery, Ala. Filed Aug. 1, 1885. (No model.)

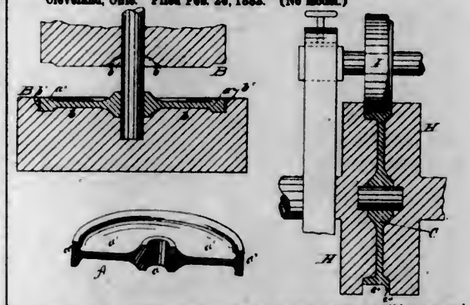
329,616.



Claim.—1. A flooring-board having one or more longitudinal concave-shaped recesses in its under side of approximately the same area as the area of its upper side, substantially as and for the purposes herein set forth.

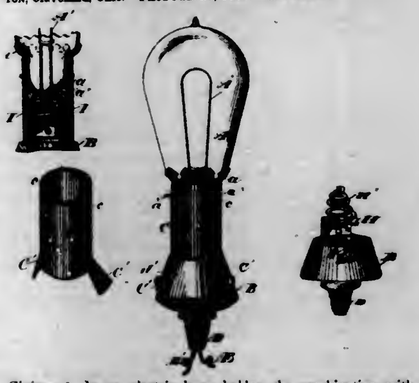
2. The flooring board A, having in its under side a longitudinal concave or arch shaped groove, *e*, extending nearly wholly across it, essentially as and for the purposes described.

329,617. **MANUFACTURE OF CAR-WHEELS.** CLIFTON B. BEACH, Cleveland, Ohio. Filed Feb. 26, 1883. (No model.)



Claim.—As an improvement in the manufacture of solid cast-steel car-wheels, the method of operation hereinbefore described, which consists in enlarging the cast blank radially by swaging to a diameter greater than that of the finished wheel-tread, and working the periphery back to the desired circular line of finish, and simultaneously spreading the tread portion thereof and shaping the flange, substantially as set forth.

329,618. **HOLDER FOR INCANDESCENT LAMPS.** CHARLES H. BENTON, Cleveland, Ohio. Filed Jan. 21, 1885. (No model.)



Claim.—1. In an electric-lamp holder, the combination, with a hollow wooden part, of binding-posts secured thereto on the inside, so that the terminals are concealed, and having as a means of attachment screws with the heads abutting against the wood on the outside and the screw ends engaging threaded holes in the respective binding-posts, substantially as set forth.

2. In an electric-lamp holder, the combination, with a binding-post, of a spring secured thereto and arranged to form an electrical connection with one end of the filament of the lamp, and the said spring coiled spirally, and the spiral arranged conical or conoidal in form, substantially as set forth.

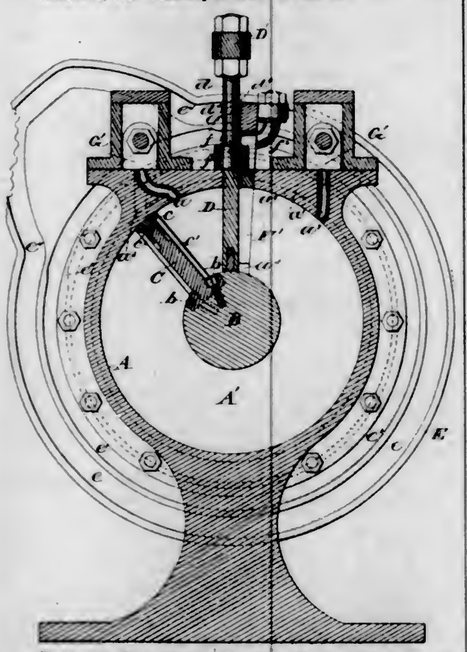
3. In an electric-lamp holder, the combination, with the sleeve C and the spring H', each forming a part of the electrical circuit, of a lining in the sleeve of non-conducting material intermediate between the said sleeve and spring, substantially as set forth.

4. In an electric-lamp holder, the combination, with the band *a*, having one end of the filament electrically connected therewith, and the spring H', electrically connected with one of the terminals, and arranged to be electrically connected with the other end or leg of the filament, of the sleeve C and a pin and angular slot forming a bayonet-lock for connecting sleeve C to the band *a*, substantially as set forth.

5. In an electric-lamp holder, the combination, with the hollow wooden part B, with binding-posts secured on the inside thereof in the manner described, and a suitable duct or passage-way forming a concealed exit for the terminals, of the sleeve C, provided with the ears or equivalent devices C', arranged to connect electrically with one of the binding-posts, and to cover such connecting parts and to secure the sleeve to the part B, substantially as set forth.

6. In an electric-lamp holder, the sleeve C, provided with the ears C', integral therewith, and forming a means of attaching the sleeve to the wooden part of the structure, and forming a concealed electrical connection with one of the binding-posts, substantially as set forth.

329,619. ROTARY ENGINE. MICHAEL BOYNE and ALBERT E. SMITH, Watertown, Wis. Filed July 21, 1884. (No model.)



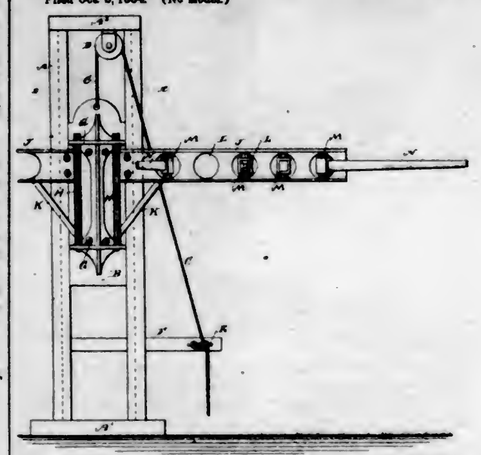
Claim.—1. In a rotary engine, in combination with a movable diaphragm adapted to slide up and down through a suitable opening of the cylinder in the grooved inner faces of the cylinder-heads, and provided with anti-friction rollers working in lifting-grooves of cam-wheels attached to the driving-shaft, a frame carrying wedges that are adapted to be moved slightly in advance and in rear of the said diaphragm in the grooves of the cylinder-heads, substantially as and for the purpose set forth.

2. In a rotary engine, in combination with a movable diaphragm adapted, by means substantially as described, to be moved in and out of the steam-cylinder, a frame having wedges adapted to move slightly in advance and rear of the said movable diaphragm, and having anti-friction rollers in each of its ends, and with wheels fastened onto the driving-shaft and having suitable grooves to receive the anti-friction rollers of the wedge-frame, substantially as and for the purpose set forth.

3. In a rotary engine, the combination of the cylinder A, having grooved heads A' A', shaft B, provided with the rotating vane C, the diaphragm D, having arms d^3, anti-friction rollers d^4 d^4, and packing-strip d^5, and cam-wheels E E', having grooves *e e*, substantially as shown and described, and for the purpose set forth.

4. In a rotary engine, the combination of the cylinder A, having grooved heads A' A' and opening a^3, the diaphragm D, shaft B, and rotating vane C, provided with packing-strips *c* and *c' c'*, substantially as shown and described, and for the purpose set forth.

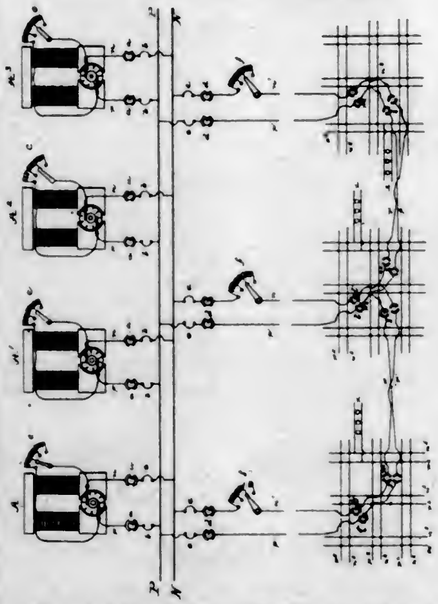
329,620. CLOTHES-DRIER. BENJAMIN F. BUXTON, Brookfield, Vt. Filed Oct. 2, 1884. (No model.)



Claim.—1. In a clothes-holder, the combination, with standards, of a plate sliding between them, arms hinged on the plates, and bars hinged on the arms, substantially as herein shown and described.

2. In a clothes-holder, the combination, with the plate B, of the arms J, pivoted on the same, which arms are provided with apertures L, the boxes or sockets M, pivoted in the apertures L, and of the bars N, held in the said boxes, substantially as herein shown and described.

329,621. SYSTEM OF ELECTRICAL DISTRIBUTION. HENRY M. BYLLESBY, New York, N. Y. Filed Oct. 10, 1884. (No model.)



Claim.—1. A system of electrical distribution comprising one or more generators, main conductors to which said generators are connected, a system of lighting-conductors divided electrically into sections, two or more feeding-circuits extending from said main conductors, one to each of said sections, and circuit-controlling devices for each feeding-circuit, substantially as set forth.

2. A system of electrical distribution comprising one or more generators, main conductors to which said generators are connected, a system of lighting-conductors divided electrically into sections, two or more feeding-circuits, one extending from said main conductors to each of the sections of the lighting-conductors, and adjustable resistances for the feeding-circuits, substantially as set forth.

3. A system of electrical distribution comprising one or more generators, main conductors to which said generators are connected, a system of lighting-conductors divided electrically into sections, two or more feeding-circuits extending from said main conductors, one to each of said sections, and means for temporarily connecting together any two of the sections, substantially as set forth.

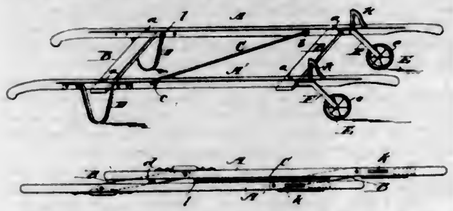
4. A system of electrical distribution comprising one or more generators, main conductors to which such generators are connected, a system of lighting-conductors divided electrically into sections, two or more feeding-circuits extending from said main conductors, one to each of said sections, two or more relief-conductors connecting said sections together, a circuit making and breaking switch for each of said relief-conductors, and a circuit making and breaking switch for each conductor of each feeding-circuit, substantially as set forth.

329,622. RAILROAD FISH-PLATE. JAMES L. CATHCART, Alexandria, Va., assignor to Mrs. M. J. Colley, James E. Bell, C. M. Bell, and J. Wood Bell, all of Washington, D. C. Filed Apr. 10, 1885. (No model.)



Claim.—A railway fish-plate constructed in one piece and having the ends of its bars beveled for the purpose specified, and as shown and described.

329,623. FOLDING BARROW-TRUCK. JOSEPH W. COLEMAN, Schooley's Mountain, N. J. Filed Aug. 10, 1885. (No model.)

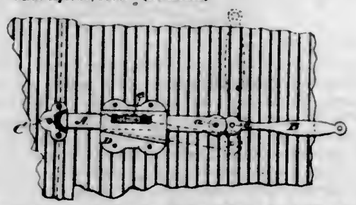


Claim.—1. The combination, with the bars A A', carrying wheels E E, of the pivotally-connected bars B B and brace-rod C, substantially as described.

2. The combination, with the bars A A', carrying wheels E E and stops *k k*, of the bars B B, connected to said bars A A' by pivot-bolts *a a*, and the brace-rod C, secured to the bar A by a staple, *b*, and formed with a hook, *c*, arranged to engage with an eye, *d*, carried by the bar A', substantially as described.

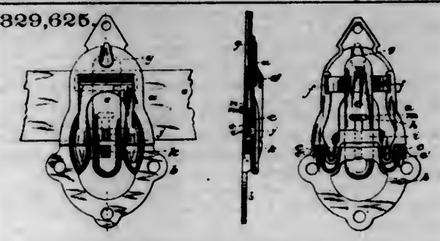
3. The combination, with the bars A A', carrying wheels E E, having rubber tires *e*, of the cross-bars B B, pivotally connected to the bars A A', and the brace-rod C, substantially as described, and for the purpose specified.

329,624. FASTENING FOR DOORS. CHARLES P. COMBS, Newark, N. J. Filed Apr. 27, 1885. (No model.)



Claim.—A door-fastening device consisting of a bolt, one end of which is tapering, a lever having a short and long arm and pivoted by the short arm to the end of the bolt opposite the tapering end, a nose-piece the inside of which is inclined to correspond with the taper end of the bolt, and a loop having a tapering recess therein through which the bolt works, substantially as and for the purposes set forth.

329,625. TRUNK-CATCH. JOHN J. COWELL, Newark, N. J. Filed Jan. 13, 1885. (No model.)



Claim.—1. In combination, in a trunk-catch, a plate, *a*, having a lug formed thereon, and a hasp secured thereto, said hasp being recessed and perforated at its free end, and a plate, *b*, having a tent, *k*, said parts being arranged and operating substantially as and for the purposes set forth.

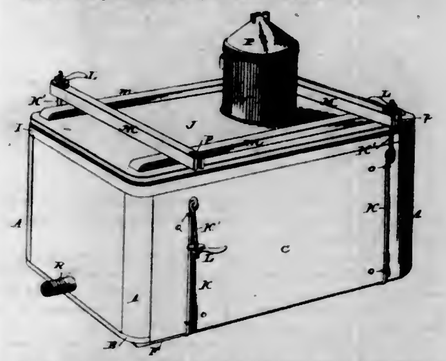
2. In combination, a plate, *a*, having a passage or opening, *h*, and a cross-bar and spring, and having a perforated or recessed hasp secured on the back side of said plate, and extending through said opening and over said cross-bar to the front of said plate, and thereat providing a finger-piece to enable the operator to lift or raise said lever from a holding-lug on the opposite plate, *b*, said plate *b* provided with said holding-lug, the parts being arranged and adapted to operate substantially as and for the purposes set forth.

3. In combination, in a trunk-catch, a plate, *a*, having a lug, *j*, a hasp secured to said plate and extending therefrom to enter holding engagement with a co-operating plate, and adapted to be raised to rest on said lug to hold the hasp open or in a disengaged position, and said co-operating plate *b* to engage said hasp, all substantially as and for the purposes set forth.

4. The improved trunk-catch cover-plate *a*, having a catch to engage the trunk-body plate, a cross-head to enter and be held in a vertically-oblong slot of the trunk-valance, and a perforation whereby said plate may be nailed to the trunk, substantially as shown and described.

5. In combination, the plate *a*, having perforation *g*, opening *h*, cross-bar *i*, and notches *f*, the hooked and recessed hasp, a spring, *d*, and a plate, *b*, having a lug, *k*, to engage the recessed hasp, substantially as set forth.

329,626. REFRIGERATOR-TANK. DAVID W. CURTIS, Fort Atkinson, Wis., assignor of two-thirds to Oscar S. Cornish and Walter S. Greene, both of same place. Filed July 21, 1885. (Model.)



Claim.—1. The herein-described refrigerator box or body, consisting of corner-pieces A, having seats *a b* and *c d*, inner sheathing, B, and outer sheathing, C, secured to said corner-pieces, and a suitable bottom.

2. The box or body consisting of corner-pieces A, having inner seats, *a b*, and outer seats, *c d*, inner sheathing, B, and outer sheathing, C, applied to the corner-pieces and made flush therewith, as shown, and partitions D, extending from each corner-post to the next intermediate between the sheathings B C.

3. In combination with corner-pieces A, inner sheathing, B, outer sheathing, C, and intermediate partitions, D, strips *e*, applied to opposite faces of said partitions and serving to retain the same in position.

4. In combination with corner-pieces A, sheathings B C, and partition D, strips H, placed above said partition and filling the space between the two sheathings.

5. In combination with corner-pieces A, inner sheathing, B, outer sheathing, C, intermediate partition, D, and a suitable bottom, sheet-metal lining G, closely fitting the interior of the box or chest thus formed, and provided with outwardly-turned flanges *i*, extending to and resting upon the outer sheathing.

6. The combination of corner-pieces A, sheathings B C, intermediate partition, D, bottom E, lining G, having outwardly-turned flanges *i*, extending to and resting upon the outer sheathing, C, and strip I, secured upon said flanges.

7. The herein-described refrigerator-chest, consisting of corner-pieces A, sheathings B C, intermediate partition, D, bottom E, lining G, cover J, provided with slotted cleats M, and jointed rods K K', secured to the chest and provided with nuts L.

8. In combination with a refrigerator chest or box constructed substantially as described, a cover, J, composed of two layers of wood with an intermediate layer of straw-board or paper.

9. In combination with a refrigerator-chest, a cover consisting of wooden layers *j k* and intermediate paper or straw-board layer, *l*, longitudinal strips *m*, and packing-strip *n*.

10. In combination with chest A B C E, lining G, cover J, and fastening devices therefor, a combined funnel and strainer applied to said cover and communicating with the interior of the chest, substantially as and for the purpose explained.

11. In combination with a portable refrigerator-tank, a charging-funnel, N, provided with a removable strainer, O, substantially as shown and described.

12. In a portable refrigerator tank or vessel, an upright removable partition, substantially as shown.

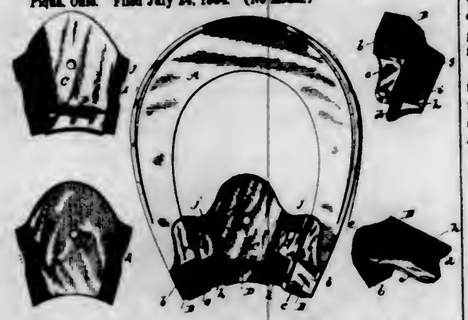
13. In a portable refrigerator-tank, a sheet-metal lining provided with an outlet-tube, and with a removable upright partition having its lower edge raised above the bottom of the lining, whereby the contents of the tank are permitted to drain off.

14. In combination with a portable refrigerator-tank having an outlet at or near the bottom, a float provided with feet on its under side, whereby it is held up from the bottom of the tank to permit the free drainage thereof.

15. In combination with a refrigerator-tank, a float placed therein and supports to arrest the float before it reaches the bottom of the tank.

16. In combination with a portable refrigerator-tank, a charging-funnel, N, substantially as shown and described.

329,627. **DETACHABLE HEEL-CALK AND HOOF-PAD.** John Daher, Piqua, Ohio. Filed July 24, 1884. (No model.)



Claim.—1. A horseshoe having removable heel-calks and a wedge-shaped plate adapted to pass between the inner edges of the calks and clamp the same to the shoe.

2. A horseshoe having a longitudinal groove or recess in each upper inner edge of the heel, in combination with the heel-calks having flanges to engage within said recesses, and a wedge-shaped plate adapted to pass between the inner edges of the calks and clamp the same to the shoe, substantially as and for the purpose set forth.

3. The combination, with a horseshoe having a longitudinal groove or recess in the upper inner edge of the heel, of a heel-calk having on its upper face a flange adapted to fit within said recess, on its under face a flange adapted to overlap the shoe, and at its rear end a stop for limiting the inward movement of the calk upon the shoe, and means, substantially as described, for clamping the calk in position.

4. The combination, with a horseshoe, of detachable heel-calks adapted on their outer edges to fit the inner edges or walls of the shoe, and having on their inner edges inwardly-extending flanges and a curved key-seat, and a wedge-shaped key-plate having side flanges adapted to fit within the flanges on the calks and against the curved seat on said calks, substantially as and for the purpose set forth.

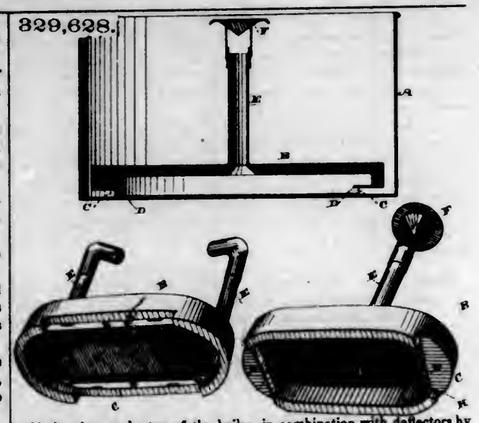
329,628. **WASH-BOILER.** Martin F. D. C. Dannmeyer, San Francisco, Cal. Filed Mar. 6, 1885. (No model.)

Claim.—1. In a wash-boiler, a removable chamber fitted to the lower part of the boiler, and having double walls and sides, with a filling of non-conducting material, substantially as herein described.

2. In a wash-boiler, a chamber having its top and walls made non-conducting, with the sides or ends extending downward so as to rest upon the bottom of the boiler, with intermediate spaces opening from the exterior of the chamber beneath, in combination with vertical pipes or passages extending upward from said chamber to the top of the boiler, substantially as herein described.

3. A wash-boiler having a chamber of smaller dimensions fitted to rest upon the bottom so as to form an inclosed space beneath, the walls and top of said chamber being filled with a material which is a non-conductor of heat, and pipes or passages extending upward from this

329,628.

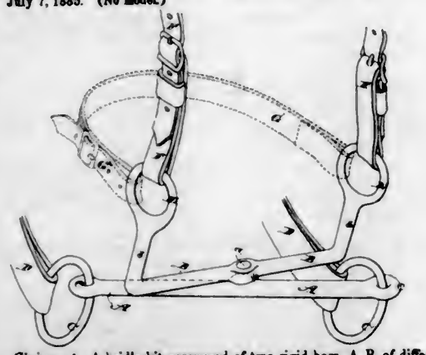


said chamber to the top of the boiler, in combination with deflectors by which the water is distributed from the upper end of the pipes, substantially as herein described.

4. A wash-boiler having within it a chamber of smaller diameter, the sides or ends of which rest upon the bottom of the boiler so as to form an inclosed space beneath, the top and sides being made non-conducting, as shown, and pipes or passages extending upward from the inclosed chamber to the top of the boiler, in combination with horizontal guides or plates extending inwardly above the passages which lead to the chamber, substantially as herein described.

5. A wash-boiler having within it a chamber of smaller diameter, the sides or ends of which rest upon the bottom of the boiler so as to form an inclosed space beneath, and upwardly-extending pipes or passages from said chamber, in combination with the inwardly-opening doors or valves H, substantially as herein described.

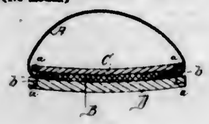
329,629. **BRIDLE-BIT.** Emry Q. Darr, Shelbyville, Ind. Filed July 7, 1885. (No model.)



Claim.—1. A bridle-bit composed of two rigid bars, A B, of different lengths, one bar placed above the other, the two bars pivoted together centrally and suspended by cheek-straps F and rings E in the rigid side projections, *b*, extending upwardly, so that the upper bar, B, may remain in a fixed position across the horse's mouth, and the swiveled lower bar, A, to turn on its pivot to guide the horse, substantially as herein described.

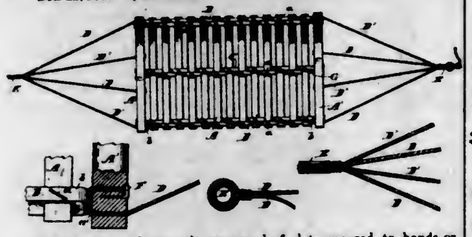
2. A bridle-bit constructed and operating substantially as herein set forth, consisting of two rigid bars, A B, of different lengths, pivoted together centrally, one above the other, the upper and shorter bar, B, with rigid side projections, *b*, extending upwardly to prevent lateral movement across the horse's mouth, in combination with the lower and longer bar, A, of sufficient length not to touch the corners of the mouth with the enlarged ends of the bar or with the rings C in guiding the horse, as set forth.

329,630. **BOOT OR SHOE.** George W. Day, Haverhill, Mass. Filed Feb. 5, 1883. (No model.)



Claim.—An improved sewed boot or shoe having the upper lasted to the middle sole only, and an inner sole and outer sole, both channeled, united to the upper by a line of stitches passing through the outer sole, upper, and inner sole in a line outside of the edge of the middle sole, and covered on the inside of the sole by the lip of the channel of the inner sole, and on the outside of the sole by the lip of the channel of the outer sole, as shown and described.

329,631. **HAMMOCK.** Augustus C. Dillman, Bryan, Ohio. Filed Dec. 22, 1883. (No model.)



Claim.—1. A hammock composed of slats secured to bands or straps interwoven therewith to form loops at the ends, in combination with suspension-cords having their outer ends looped and passed through the loops of said bands or straps, substantially as described, for the purpose set forth.

2. A hammock composed of slats secured to bands or straps interwoven therewith to form loops at the ends, in combination with suspension-cords having their outer ends looped and passed through the loops of said bands or straps, and the inner ends secured to the end slats, the inner end of each cord being secured to the slat between the outer and inner end of the other cord, substantially as described.

3. A hammock composed of slats A, bands B and C, interwoven therewith and formed into loops at their ends, end slats, A′, secured to the loops of band C by loops G, and suspension-cords D and D′, having their outer ends looped and passed through the loops of bands B and their inner ends secured to the end slat, the inner end of each cord being secured to the slat between the outer and inner end of the other cord, substantially as described.

329,632. **COLORING-MATTER OBTAINED FROM TETRAZO-DITOLYL.** Carl Duisberg, Barmen, Prussia, Germany. Filed July 29, 1885. (Specimens.)

Claim.—The coloring-matter herein described, which is produced by the action of tetrazo-ditolyl upon the alpha-napthylamine sulpho-acid by the process herein described, or any process which will produce a like result, substantially as described.

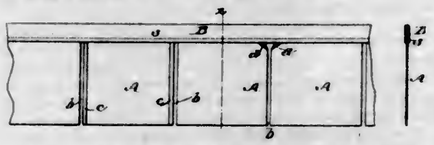
329,633. **COLORING-MATTER OBTAINED FROM TETRAZO-DITOLYL.** Carl Duisberg, Barmen, Prussia, Germany. Filed July 29, 1885. (Specimens.)

Claim.—The coloring-matter herein described, which is produced by the action of tetrazo-ditolyl upon the beta-naphthylamine sulpho-acids by the process herein described, or by any other process which will produce a like result, substantially as described.

329,634. **RED DYE-STUFF OR COLORING-MATTER.** Emil Elsasser, Barmen, Prussia, Germany. Filed June 14, 1884. (Specimens.) Patented in Germany Mar. 2, 1884, No. 29,084, and in England May 14, 1884, No. 7,713.

Claim.—The new artificial coloring-matter herein described, obtained by the reaction of the diazoic derivate of the within-described monosulpho-acid of beta-naphthylamine, and the monosulpho-acids of alpha-naphthol derived from naphthionic acid and sulpho-naphthyladamic acid, and having the characteristics and qualities herein described.

329,635. **METHOD OF WORKING BUTTON-HOLES.** Sherwood B. Ferris, Lakewood, N. J. Filed Apr. 28, 1885. (Model.)



Claim.—1. The mode of making button-holes herein shown and described, which consists in arranging a series of detached pieces of fabric at suitable distances apart to form the sides of the button-holes and uniting said detached pieces by applying and sewing a binder along the adjacent ends or edges of the detached pieces transversely to the spaces between said pieces, as set forth.

2. In the mode herein described of making button-holes, first arranging a series of detached pieces of fabric at suitable distances apart to form the sides of the button-holes, and then closing the ends of the button-holes and uniting said detached pieces together along their opposite outside ends or edges transversely to the button-holes by sewing binders to or on said detached pieces along the opposite edges of the strip, substantially as specified.

329,636. **PRODUCTION OF NEW VIOLET DYE-STUFFS.** Friedrich Fischer, Barmen, Prussia, Germany. Filed July 29, 1885. (No specimens.)

Claim.—The process of producing a violet dye-stuff herein described, which consists in treating dimethyl-aniline with perchlormethyl-mercaptan, extracting the coloring-matter from the residual mass, and purifying and separating such violet coloring-matter, substantially as described.

329,637. **VIOLET COLORING-MATTER.** Friedrich Fischer, Barmen, Prussia, Germany. Filed July 29, 1885. (No specimens.)

Claim.—The violet coloring-matter herein described, having the properties specified.

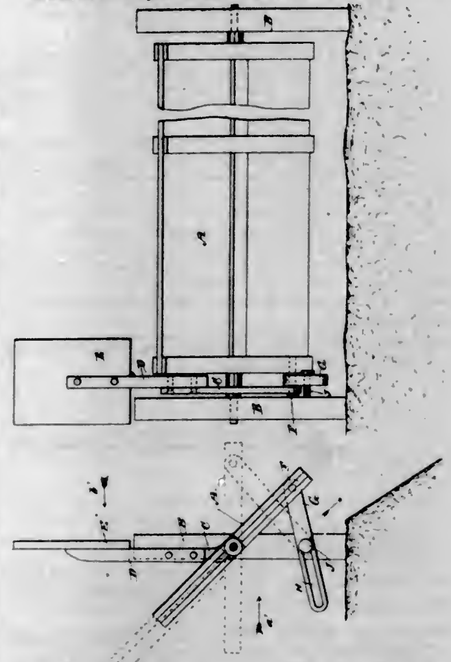
329,638. **YELLOW COLORING-MATTER.** Eugen Frank, Elberfeld, Prussia, Germany, assignor to Farbenfabriken, vormals Friedr. Bayer & Co., same place. Filed July 15, 1884. (Specimens.)

Claim.—The coloring-matter herein described and having the properties specified.

329,639. **PRODUCTION OF NEW YELLOW COLORING-MATTER.** Eugen Frank, Elberfeld, Prussia, Germany. Filed July 29, 1885. (No specimens.)

Claim.—The process of producing the new coloring-matter herein described, which consists in the azotation of benzidine sulphate by means of sodium nitrite, forming tetrazo-diphenyl, and treating it with oxibenzoic acids, (especially salicylic acid,) and finally separating and purifying the yellow coloring-matter by filtration and washing, as set forth.

329,640. **ADJUSTABLE-PANEL SNOW-FENCE.** Rollin H. Gleason, Egan, Dak., assignor to himself, H. Palmer French, and Charles W. French, all of same place. Filed Feb. 2, 1885. (No model.)



Claim.—1. In a snow-fence, the combination, with a pivoted panel, of an arm held on the panel, and a vane on the free end of the arm, substantially as herein shown and described.

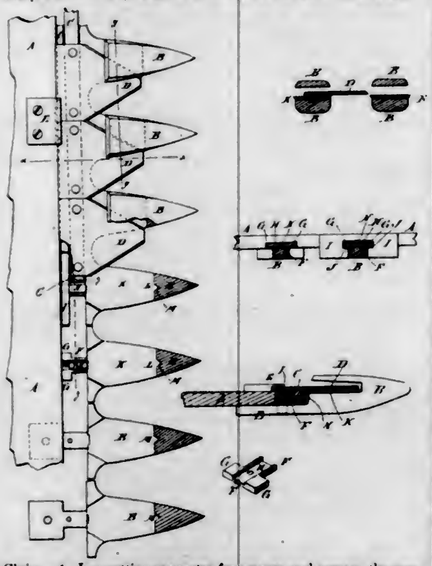
2. In a snow-fence, the combination, with a panel pivoted between two stands to swing on its horizontal axis, of an arm connected with the panel, a vane on the arm, and of a check-bar for limiting the swinging movements of the panel, substantially as herein shown and described.

3. In a snow-fence, the combination, with a panel pivoted between the two standards, of an arm connected with the panel and projecting at an angle of forty-five degrees, a vane on the arm, a slotted check-bar connected with the panel, and of a pin passed through a slot in the bar into one of the posts, substantially as herein shown and described.

4. In a snow-fence, the combination, with the pivoted panel A, of the angle-bar C, the bar D, the vane E, and the check-bar G, having a longitudinal slot, H, substantially as herein shown and described.

329,641. CUTTING APPARATUS FOR MOWERS AND REAPERS.

John M. L Gore, Raymond, Kans. Filed Jan. 23, 1885. (No model.)



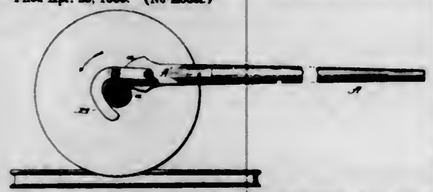
Claim.—1. In a cutting apparatus for mowers and reapers, the combination, with the shanks of the fingers B, having flanges G, the finger-bar A, and the sickle-bar C, of the sectional wear-bar I, having T-grooves J, substantially as herein shown and described, whereby the wear can be readily taken up, as set forth.

2. In a cutting apparatus for mowers and reapers, the finger-bar A, and fingers B, having their shanks provided with grooves H and flanges G, in combination with the fixed cutters K, having shanks N resting in the grooves H, sectional wear-plates I, having T-grooves J, the walls of the arms of which hold the shanks N in place, and the sickle-bar C in front of the sectional wear-plates, substantially as set forth.

3. The combination, with the finger-bar, and the finger having a shank provided with side flanges, of the stationary cutter provided with shanks resting on finger-shanks, and the wear-plate having a T-groove adapted to receive the flanged finger-shank and the cutter-shank, substantially as set forth.

329,642. CAR-MOVER.

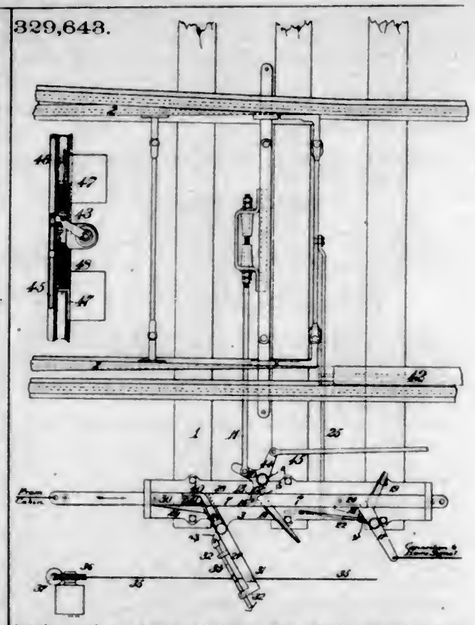
Clarence V. Greenamyer, Western, Nebr. Filed Apr. 23, 1885. (No model.)



Claim.—A car-mover consisting of the combination, with a lever having two working-faces, of a hook pivoted to the lever at a point eccentric to the working or gripping faces, substantially as described.

329,643. RAILWAY SWITCH AND SIGNALING APPARATUS.

James T. Handay, Allegheny, Pa. Filed Jan. 12, 1885. (No model.)



Claim—1. In a switch and signal actuating mechanism, a slide having thereon devices for successively engaging suitable mechanisms for shifting the switch and signals, said devices being suitably arranged to operate the switch and signals by a continuous movement, and in combination with such switch and signal shifting mechanisms, substantially as set forth.

2. In a switch and signal actuating mechanism, a slide having thereon devices for successively engaging suitable mechanisms for shifting the switch and signals, said devices being suitably arranged to operate the switch and signals independently, in combination with such switch and signal shifting mechanisms, substantially as set forth.

3. In a switch and signal actuating mechanism, a slide having thereon devices for engaging suitable mechanism for shifting the switch and signals, said devices being suitably arranged to operate the switch and signals in succession and by a continuous movement, in combination with such switch and signal mechanism and a bolt operated by the slide for locking the switch-rails, substantially as set forth.

4. In a switch and signal actuating mechanism, a slide having thereon a series of friction-rollers, in combination with a series of levers for shifting the switch and signals adapted to be operated in succession during the continuous movement of the slide, substantially as set forth.

5. The combination of a slide, a switch-shifting lever engaged and operated thereby in the first part of its movement, a switch-locking bar, a locking-bolt also taking its motion from the slide and arranged to lock the switch immediately on its being shifted, and a signal-shifting lever engaged by the slide at or toward the latter end of its stroke, whereby to shift a signal at or after the locking of the switch is effected, substantially as set forth.

6. A sliding bar, 7, a wrist or friction-roller, 16, thereon, and a switch-shifting lever, 9, having an arm, 14, suitably arranged and proportioned, whereby after the switch is shifted it will be retained or locked in its new position by the wrist or roller 16 engaging the arm 14 in combination with signal-shifting mechanism and one or more devices moving with the slide and successively engaging such signal-shifting mechanism while the wrist or roller is moving along and in engagement with the arm 14, substantially as set forth.

7. In a switch and signal actuating mechanism, a slide having thereon a series of friction-rollers, in combination with the switch and signal shifting levers 9 and 17, the locking-bar 25, provided with one or more slots, and one or more bolts, 23, actuated by or from the slide, substantially as set forth.

8. The slide 7, having thereon the rollers 30 and 41, in combination with the lever 27, having the opening 31 in its outer end, the rod 33, having a corresponding opening, 34, and the lever 38, connected to said rod, substantially as set forth.

9. In a switch and signal actuating mechanism, a slide having thereon a series of friction-rollers, in combination with a series of levers connected, respectively, to the switch-rails, and the home and distant signals, said rollers being so arranged on the slide as to operate the levers in succession during the continuous movement of the slide, and the levers being so constructed that during the operation of any one lever the other levers are held stationary, substantially as set forth.

10. In a switch and signal actuating mechanism, a slide having thereon a series of friction-rollers, in combination with the levers 9, 17, and 27, connected, respectively, to the switch-rails and the home and distant signals, said levers being provided with horns or prongs for engagement with the rollers, one of the horns on the lever 9 being of such a length as to engage the roller 16 during approximately the entire movement of the slide, the horns of the lever 17 having each a length approximately equal to half the movement of the slide, and the lever 27 being constructed similar to the lever 9, but oppositely arranged, substantially as set forth.

11. In a switch and signal actuating mechanism, a slide having thereon a series of friction-rollers, in combination with a series of levers for shifting the switch and signals, and a detector-rail connected to a moving part of the actuating mechanism, substantially as set forth.

12. The slide 7 and wrist or frictional rollers 20 and 30 thereon, in combination with levers 17 and 27, having arms suitably arranged and proportioned, whereby the lever 27 is locked during the movement of the lever 17, which in turn is locked in its new position during the shifting of the lever 27, substantially as set forth.

13. In a switch and signal actuating mechanism, a swinging detector-rail, in combination with the operating-lever 43 and the retiring-springs 48, arranged on opposite sides of the lever 43 and adapted to assist in swinging the detector, substantially as set forth.

329,644. BUTTON-FASTENER.

Chas. F. Harlan, Ottumwa, Iowa. Filed Apr. 6, 1885. (No model.)

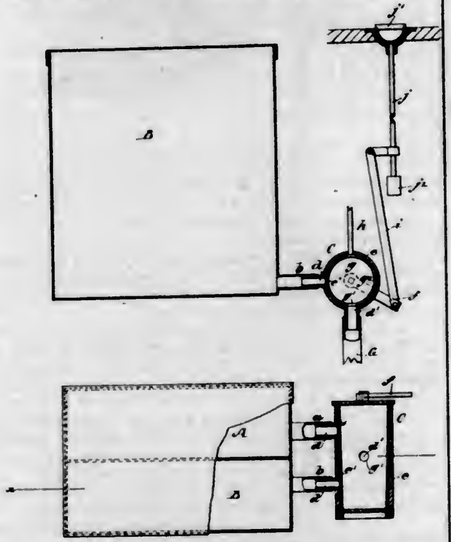


Claim.—1. As an improved article of manufacture, a button-fastener made of wire bent to form an eye, *a*, and rings above and below the cloth, and loops or folds *c d*, to receive the extremities of the wire, substantially as described.

2. An improved button-fastener consisting of a single piece of wire bent to form a central eye, *a*, semicircles *e e' b b'*, and loops or folds *c d* for the reception of the ends of the wire, the said loops or folds being opposite each other and on opposite sides of the cloth to which the fastener is applied, substantially as shown and described.

329,645. DEODORIZING AND DISINFECTING APPARATUS.

Wm. A. Hawkins, New York, N. Y. Filed June 10, 1885. (No model.)



Claim.—1. The herein-described disinfecting or deodorizing apparatus, consisting of two tanks, A B, both connected by pipes with a single measuring device for dispensing the disinfectant or deodorizing material in measured quantities, substantially as set forth.

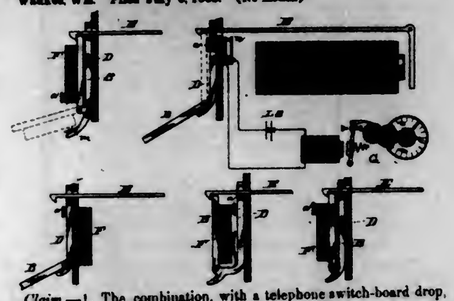
2. The measuring device C, connected by large and small pipes *a b* with the tanks A B, substantially as and for the purposes set forth.

3. The measuring device C, composed of the shell *e*, having inlet and outlet ports *d d'*, in combination with the inclosed hollow valve *e'*, having ports *g g'*, and lever *f*, for operating the valve *e'*, substantially as described.

4. The shell *e*, connected by pipe G to the waste-pipe F or other object to be disinfected, and by pipes *a b* to the chambers A B, the valve *e'*, and the lever *f*, connected thereto for operating the valve, substantially as and for the purposes set forth.

329,646. TELEPHONE CALL-REGISTER.

Anson S. Hubbard, Milwaukee, Wis. Filed July 6, 1885. (No model.)



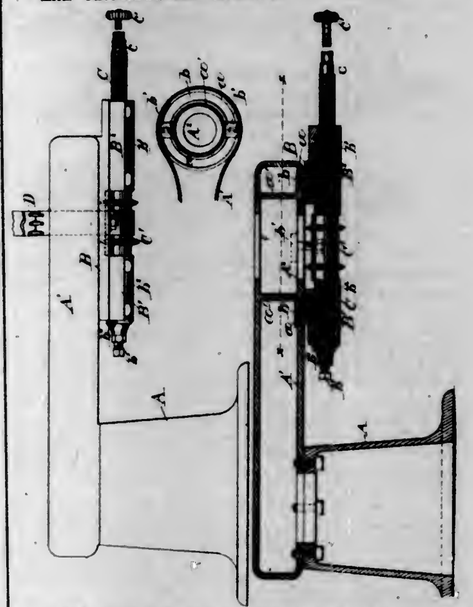
Claim.—1. The combination, with a telephone switch-board drop, of a call-register arranged in connection therewith and operated by the movement thereof, substantially as set forth.

2. The combination, with a telephone switch-board drop, of a call-register arranged in connection therewith, and having an operating-stem arranged in the line of movement of the drop, substantially as set forth.

3. The combination, with a telephone switch-board drop and a register-operating stem arranged in the line of movement of the drop, of two ratchet-wheels of different sizes, and the pawl and its operating parts, the larger wheel having a deep notch for permitting the pawl to engage with smaller wheel at intervals, substantially as set forth.

329,647. CARVING-MACHINE.

Franklin Holland, Grand Rapids, Mich. Filed Oct. 21, 1884. (No model.)

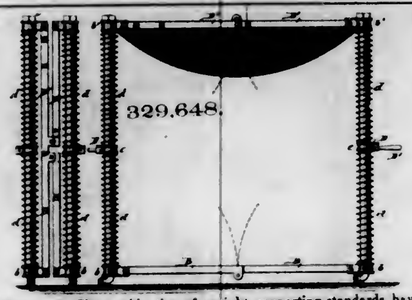


Claim.—1. In a carving or ornamenting machine, the combination of a horizontal supporting-arm having an annular groove in its under side, a yoke provided with an annular flange working in the arm-groove, and with vertical adjusting clamp-bolts to hold the said yoke in any desired adjustment, and a spindle adapted to be rotated in box-bearings of the yoke, substantially as and for the purpose set forth.

2. In a carving or ornamenting machine, the combination of the frame A, having horizontal supporting-arm A', with annular slot *a a* on the under side, and central circular opening, A^2, the swinging yoke B, having annular flange *b b*, adjusting clamp-bolts *b' b'*, and bearing-boxes $B' B^2$, with caps b^2 b^2, and step b^4 and step-screw b^5, for adjusting the spindle, and the spindle C, carrying the pulley C' and its center *c*, with cutter *c'*, substantially as shown and described, and for the purpose set forth.

329,648. FIRE-ESCAPE.

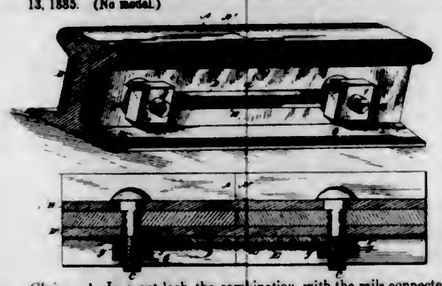
Peter Huber, New York, N. Y. Filed June 30, 1885. (No model.)



Claim.—1. The combination of upright supporting-standards having fixed collars at the lower ends and sliding collars at their upper ends, folding braces hinged to said fixed and sliding collars, the upper folding braces being provided with locking devices, a sheet or net attached to eyes of the sliding collars, and by spiral springs to the upper braces, and spiral cushioning-springs placed around the standards below the sliding collars of the sheet-supporting frame, substantially as set forth.

2. The combination of the upright standards, folding braces hinged respectively to fixed collars at the lower ends and to sliding collars at the upper ends of the standards, the upper braces being provided with locking devices, a sheet or net mounted to the upper movable braces, spiral cushioning-springs placed on the standards, and sliding collars having friction-levers interposed between the springs, substantially as set forth.

329,649. NUT-LOCK. JOHN B. T. HULL, Baltimore, Md. Filed Aug. 13, 1885. (No model.)

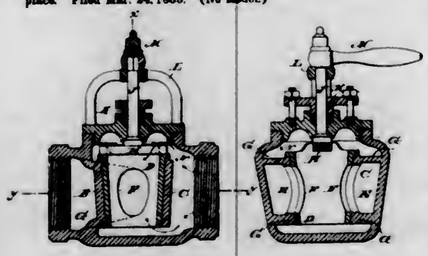


Claim.—1. In a nut-lock, the combination, with the rails connected by fish-plates arranged upon threaded bolts, of a washer-plate arranged upon and connecting the bolts and having recesses in its ends, and a locking-plate arranged upon said bolts, and having spring-arms adapted to engage grooves or notches on the inner faces of the nuts, and to rest in the recesses of the washer-plate, whereby the nuts may be removed by forcing the spring-arms out of engagement with the notches and into the recesses of the washer-plate, substantially as set forth.

2. In a nut-lock, the combination, with the rails, fish-plates, and bolts, of the washer-plate having recesses in its ends, the locking-plate having spring-arms located in said recesses, the ends of said arms projecting beyond the locking-plate, and nuts having notches on their inner faces, said washer and locking plates being arranged upon and connecting the bolts, as set forth.

3. In a nut-lock, the combination, with the rails, the bolts passing through the latter and the fish-plates connecting said bolts, of the washer-plate consisting of a bar having heads formed with openings and recesses, the locking-plate consisting of a bar having heads formed with openings, and cut out to form spring-arms, and the nuts having notches on their inner faces, substantially as set forth.

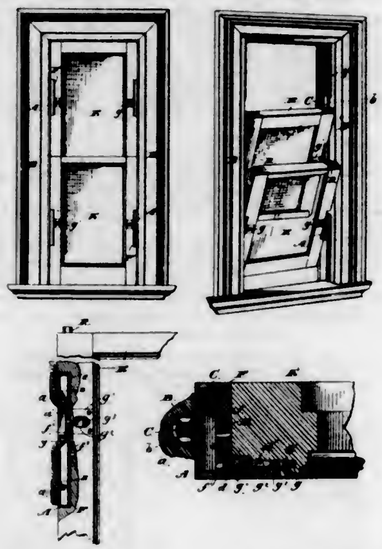
329,650. BALANCED STOP-VALVE. WILLIAM JACKSON, Allegheny, Pa., assignor to the Specialty Manufacturing Company, (Limited,) same place. Filed Mar. 24, 1885. (No model.)



Claim.—1. In a balanced stop-valve, the combination, with the casing or shell having the internal circular seat open both at its top and bottom, and having in its sides opposite openings, of the hollow or tubular valve or plug having openings both in its bottom and top, and in its sides, substantially as and for the purpose set forth.

2. In a balanced stop-valve, the combination, with the casing or shell having the internal circular seat open both at its top and bottom, and having in its sides opposite openings, of the hollow or tubular valve or plug having openings both in its bottom and top, and in its sides, and provided with a flange at its top edge, and the stem or spindle with its lower end cross-piece fitting in opposite notches or recesses in the top edge of the valve or plug, said stem or spindle having a handle, substantially as and for the purpose set forth.

329,651. WINDOW. GEORGE H. KING, Salisbury, assignor of two-thirds to William Henry Harrison Tainter, Kansas City, and Michael Jordan, Hermann, Mo. Filed June 12, 1885. (No model.)



Claim.—1. The combination, with a window frame and sash, of a guide-plate secured to the side of the sash, and provided with a grooved tongue adapted to receive the sash-cord and fit within a groove in the jamb, substantially as set forth.

2. The combination, with a guide-plate having a free sliding movement in a groove formed in the jamb, of a window-sash pivotally secured to the guide-plate, and a sliding catch for holding the window in different open adjustments, substantially as set forth.

3. The combination, with the window frame and sash, of the guide-plate provided with a pivot on which the sash is adapted to rotate, and with a grooved tongue for retaining the guide-plate to the jamb in a vertically-sliding adjustment and for housing the sash-cord, substantially as set forth.

4. In a window provided with a tilting sash, a guide-plate having a recessed face, a grooved tongue, and a series of perforations extending from the recess in the face to the groove in the tongue, whereby the sash-cord may be secured to the plate, substantially as set forth.

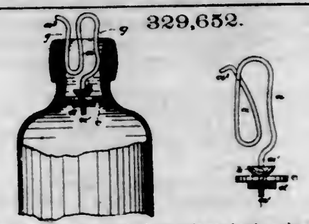
5. The combination, with the bearing-plate, of the guide-plate riveted thereto in a free rocking adjustment, substantially as set forth.

6. The combination, with the bearing-plate secured to the sash-rail, and the guide-plate pivotally secured to the bearing-plate, of a sliding bolt adapted to pass through a perforation in the bearing-plate and engage a series of perforations in the raised portion of the guide-plate, thereby locking the window in the desired tilted adjustment, substantially as set forth.

329,652. BOTTLE-STOPPER. LOUIS KIRCHNER, Newark, N. J. Filed Apr. 25, 1885. (No model.)

Claim.—1. In a bottle-stopper, a wire bent to form a double loop, whereby increased elasticity is attained, one of the ends of said wire being provided with a thread to receive a removable nut, and the opposite end being hook-shaped to engage the top of the bottle, the outer sections of the wire being concaved, as at *g g*, to engage the convexity in the mouth of the bottle, in combination with an abutment, *b*, a removable washer, *c*, and nut *d*, substantially as set forth.

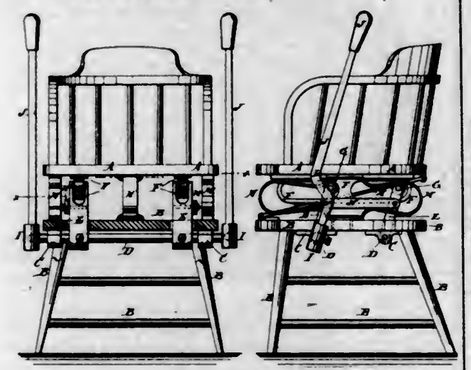
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2. In a bottle stopper, the bent wire *a*, having the hook-shaped outer extremity, a^3, to engage the edge of the bottle and prevent said wire from being forced into said bottle.

3. In a bottle-stopper, the wire bent into the form of a double loop, one end being threaded and the other provided with a hook or stop projection, in combination with a washer and means for holding the same in position.

329,653. EXERCISING-CHAIR. JOSEPH M. W. KITCHEN, New York, N. Y. Filed June 19, 1884. (No model.)



Claim.—1. In an exercising-chair, the combination, with a seat and a pedestal below the same, of rock-shafts provided with arms and means for connecting said arms together and to the chair-seat, substantially as herein shown and described.

2. In an exercising-chair, the combination, with a seat and a pedestal below the same, of shafts journaled in the pedestal, and provided with arms connected together and having their upper ends provided with rollers working in ways on the under side of the chair-seat and a handle for rocking said shafts, substantially as herein shown and described.

3. In an exercising-chair, the combination, with the seat A and its pedestal B, of the two shafts D, the two pairs of standards E, the rollers G, the slotted bars F, the connecting-bars H, and the handles I, substantially as herein shown and described, whereby the oscillation of the said handles will give an up-and-down movement to the chair-seat, as set forth.

4. In an exercising-chair, the combination, with the chair-seat A, the pedestal B, the shafts D, the standards E, the rollers G, the slotted bars F, the connecting-bars H, and the handles I, of springs M, substantially as herein shown and described, whereby the motion of the seat will be equalized and the said seat will be assisted in rising as the handles are being brought to a vertical position, as set forth.

5. In an exercising-chair, the combination, with sockets I, of handles J, having bends or offsets, and adapted to be fitted into the sockets in such different positions that their upper parts may be located conveniently for occupants of the chair-seat having different lengths of arms and breadths of shoulders, substantially as specified.

6. In an exercising chair, the combination, with the socket I, of the handles J, having bends or offsets L, and adjustably secured in said sockets by set-screw, substantially as herein shown and described, whereby provision is made for adjusting the handles to the length of trunk of the operator, as set forth.

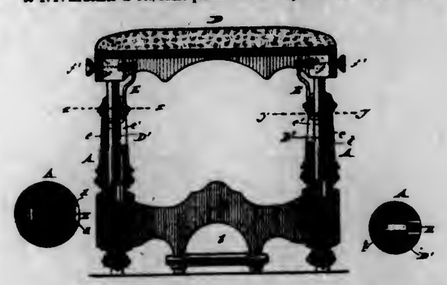
7. In an exercising-chair, the combination, with a chair-seat, a pedestal below the seat, and mechanism for producing a vertical vibratory motion in the seat, of a spring or springs supported by the pedestal, and which equalizes the motion of the seat, substantially as specified.

8. In an exercising-chair, the combination, with the seat A and pedestal B, of the bar or strap N, extending between the seat and pedestal, and having its ends pivoted to the seat and pedestal, respectively, substantially as herein shown and described.

9. In an exercising-chair, the combination, with the seat A, the pedestal B, the shafts D, the standards E, the rollers G, the slotted bars F, the connecting-bars H, and the handles I, of the hinged connecting-bar N, substantially as herein shown and described, whereby the backward and forward oscillation of the said seat while being raised and lowered is limited, as set forth.

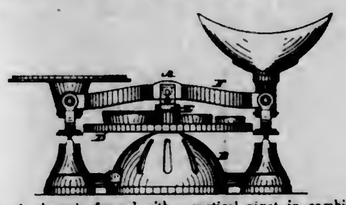
10. In an exercising-chair, the combination, with the seat A, of the pedestal B, the springs M, the shaft D, provided with sockets near its outer ends, and the handles I, interlocking with said sockets, substantially as specified.

329,654. PIANO-STOOL. FELIX KRAEMER, New York, N. Y., assignor to T. F. Kraemer & Co., same place. Filed May 21, 1885. (No model.)



Claim.—The combination of a frame having hollow supporting-pillars provided with elongated slots on their inner faces, with interior recesses opposite said slots, and with ears above said slots, ratchets fixed in said recesses, a seat provided with posts which slide in said hollow pillars, said posts being provided with transverse slots, angular pawls or levers pivoted to said ears, the lower ends of which pass through slots of the pillars and of the posts and take into the fixed ratchets, horizontal guide-rods passing through the seat-frame and connected at their inner ends to said pawls, and springs interposed between said pawls and seat-frame, substantially as described.

329,655. COMBINATION SCALE, WEIGHT-TRAY, AND TWINE-BOX. J. FRANKLIN LAWRENCE, Philadelphia, Pa., assignor to John Lawrence, same place. Filed Jan. 24, 1885. (No model.)



Claim.—1. A scale formed with a vertical pivot, in combination with a rotary weight-tray which is centrally mounted on said pivot, substantially as and for the purpose set forth.

2. A scale, in combination with a rotary weight-tray and a vertical pivot which supports the bearing of the scale-beam and forms the axis for said tray, which is centrally mounted thereon, substantially as described.

3. A rotatable weight holder or tray, in combination with a twine-box which is provided with an axis for said tray, substantially as and for the purpose set forth.

4. A scale and a rotatable weight-holding tray, in combination with a twine-box having an axis for said tray and supporting the bearings of the scale-beam, substantially as and for the purpose set forth.

5. A scale provided with a rotatable weight-holding tray, connected therewith and located below the scale-beam, substantially as and for the purpose set forth.

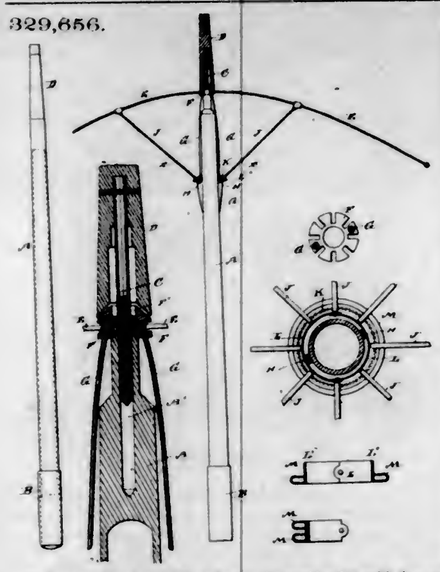
6. A scale provided with a weight-holding tray and a twine-box, both connected therewith and located below the scale-beam, substantially as and for the purpose set forth.

329,656. COMBINED UMBRELLA AND CANE. GEORGE LELAND, Jacksonville, Fla. Filed July 24, 1884. (No model.)

Claim.—1. In a combined umbrella and cane, the combination, with the cane A, of the nut F, the ribs E, the braces J, the chain-ring K, and the spring-rods G, having offsets H, substantially as herein shown and described.

2. In a combined umbrella and cane, the combination, with the cane A, of the nut F, the ribs E, the braces J, a ring to which the lower ends of the braces are pivoted, the spring-wires G, projecting down from the nut, and having offsets H, and of the slide L, substantially as herein shown and described.

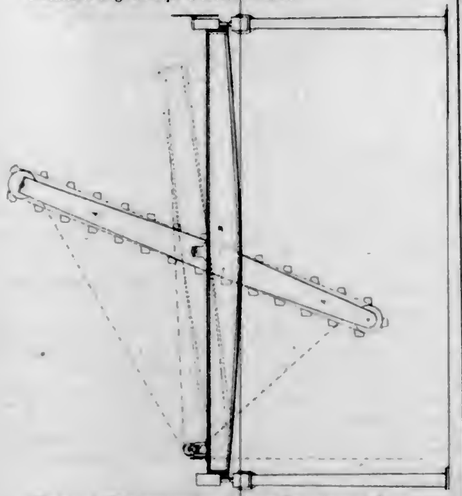
329,656.



3. In a combined umbrella and cane, the combination, with the cane A, of the screw C, the cap D, the nut F, the ribs E, the braces J, the ring K, and the spring-wires G, substantially as herein shown and described.

4. In a combined umbrella and cane, the slide L, formed of two half-rings, L', pivoted to each other, and provided with flanges M, having their free edges bent over, substantially as herein shown and described.

329,657. APPARATUS FOR RAISING AND DELIVERING GRAIN, &c., ONTO AN ELEVATED PLATFORM. FRANCIS LEY, Vulcan Iron Works, County of Derby, England. Filed May 25, 1885. (No model.) Patented in England Sept. 4, 1884, No. 12,002.



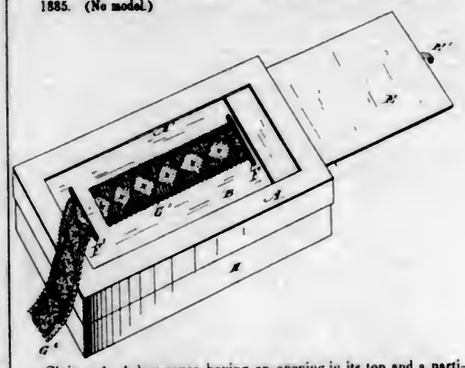
Claim.—1. The combination of the endless elevator, the elevator-frame A, its axis X, the girders B B', in bearings at the center of which the axis is supported, the carriages D D', supporting the ends of the girders, and the rails F F', parallel with the elevator-axis, substantially as described.

2. The combination of the endless elevator, the elevator-frame A, its axis X, the girders B B', in bearings at the center of which the axis is supported, the carriages D D', the rails F F', and gear-wheels on the elevator-axis for transmitting motion to the endless elevator, substantially as described.

3. The combination of the endless elevator, the elevator-frame A, its axis X, supported in bearings at the center of girders B B', the carriages D D', parallel rails F F', and gearing for driving the endless elevator, and for traversing the carriages, all receiving the motion from a shaft, H, driven by a running rope or otherwise, substantially as described.

4. The combination of the endless elevator, the elevator-frame A, its axis X, the girders B B', in bearings at the center of which the axis is supported, the carriages D D', and the apparatus mounted on one of these carriages for canting the elevator-frame, substantially as described.

329,658. SAMPLE-BOX. ABRAHAM LIEBERTHAL, DANIEL H. LIEBERTHAL, and ELIAS H. LIEBERTHAL, Iron Mountain, Mich. Filed Mar. 28, 1885. (No model.)

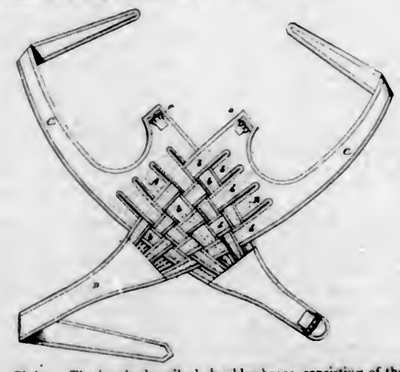


Claim.—1. A box-cover having an opening in its top and a partition below the top, the said partition having two slots, substantially as herein shown and described.

2. The combination, with a box-cover having an opening in its top, of a partition a short distance below the top, and provided with two slots, and of a slide in the cover, substantially as herein shown and described.

3. The combination, with the cover A, having an opening, A', in its top, and an end slot, D, of the partition B, having slots F F' and the slide E between the top and the partition B, substantially as herein shown and described.

329,659. SHOULDER-BRACE. MAURICE F. LINQUIST, New Haven, Conn. Filed Aug. 31, 1885. (No model.)



Claim.—The herein-described shoulder-brace, consisting of the two straps A B, each constructed at its upper end to be secured around the respective shoulders, and at the opposite end for engagement at the waist, the straps crossing each other at the back, each strap constructed with a series of longitudinal slits forming a corresponding series of strips, *b*, the strips of the two parts interlaced through the slits in the respective parts, and the several strips provided with a stay arranged longitudinally therein, substantially as described.

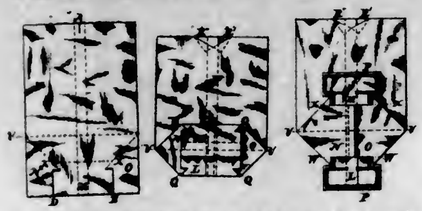
329,660. AUGER-BIT. HENRY S. LORD, Hartford, Conn., assignor to Richard J. Allyn, same place. Filed Aug. 31, 1885. (No model.)

Claim.—In an auger-bit, the head A, constructed with a central hole, *b*, internally screw-threaded, the body B, cast onto the head A, the head being constructed to interlock with the cast metal of the body, combined with the point C, constructed with a shank, *e*, upon its head end, the said shank externally screw-threaded, corresponding to the screw-thread in the hole *b* in the head, substantially as and for the purpose described.



329,660.

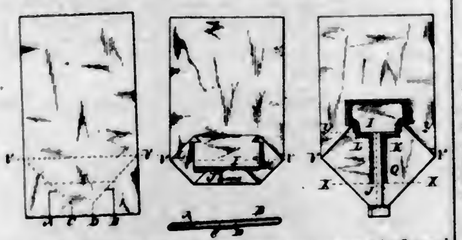
329,661. PAPER BAG. WILLIAM A. LORENZ and WILLIAM H. HOBBS, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wolle, both of Bethlehem, Pa. Filed June 16, 1884. (No model.)



Claim.—1. The process of making the bottom of a paper bag, which consists in first cutting four angular slits in the lower edge of a paper tube, the longitudinal parts of which slits are respectively on a line with the future four corners of the body of the bag, respectively, and then in folding the four flaps thus made and pasting them in place in the manner particularly set forth in the foregoing description and illustrated in the accompanying drawings.

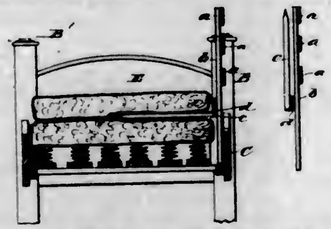
2. A paper bag the bottom of which is composed of four flaps, each of which is integral with the body of the bag, and all of which are formed by cutting four angular slits in the lower edge of a paper tube, the longitudinal parts of which slits are respectively on a line with the four corners of the body of the bag, respectively, and all of which flaps are folded and pasted in place in the manner particularly set forth in the foregoing description and illustrated in the accompanying drawings.

329,662. MANUFACTURE OF PAPER BAGS. WILLIAM A. LORENZ, Hartford, Conn., assignor to Felix W. Leinbach and Clarence A. Wolle, both of Bethlehem, Pa. Filed Oct. 1, 1884. (No model.)



Claim.—A tubular paper blank having one wide rectangular flap and one narrow rectangular flap formed by slits cut in the lower edge of its opposite sides, and otherwise adapted to be made into a paper bag, all substantially as described.

329,663. SAFETY ATTACHMENT FOR BEDS AND BERTHS. JOHN C. MCMURRAY, Brooklyn, N. Y. Filed July 16, 1885. (No model.)



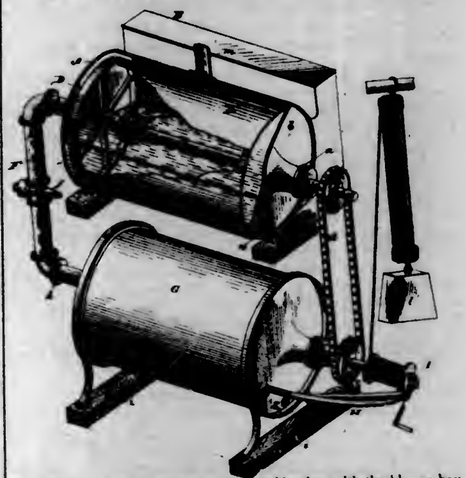
Claim.—1. A removable safety attachment for beds, consisting of longitudinal bars or slats *a*, uprights *b*, connecting said bars or strips, and a flat horizontal arm, *c*, at right angles to the inner sides of the uprights, and adapted to be passed under a mattress to hold the uprights in a vertical position, substantially as set forth.

2. A removable safety attachment for beds, consisting of longitudinal slats *a*, uprights *b*, connecting said slats and projecting below the lower slat, and the horizontal arms *c*, hinged to the inner faces of the uprights, above their lower ends, and adapted to be passed under a mattress, the lower ends of the uprights being adapted to fit between the side bar of a bed and the outer edge of a mattress, substantially as set forth.

3. A removable safety attachment for beds, consisting of the longitudinal slats *a*, the uprights *b*, connecting the slats and projecting below the same, the horizontal folding arms *c*, adapted to rest under a mattress, and the hinges *d*, connected to the inner faces of the uprights, above their ends, and to the upper sides of the adjacent ends of the arms *c*, whereby the ends of the arms *c* will form abutments or stops for the uprights to hold them vertical, substantially as set forth.

4. The combination, with the bed or berth and its mattress, of the longitudinal slats *a*, the uprights *b*, having their lower ends placed between the side bar and mattress, and the folding arms *c* above the lower ends of the uprights and extending at right angles thereto under the mattress, substantially as set forth.

329,664. CARBURETOR. LYMAN F. MCNETT, New York, N. Y., assignor to the Excelsior Gas Machine Company, same place. Filed Jan. 14, 1885. (No model.)

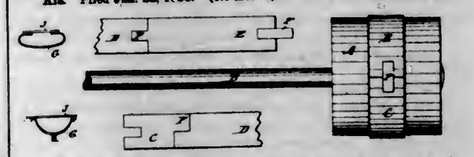


Claim.—1. In a carburetor, the combination, with the blower having central revolving shaft, and provided at one end with the tube A, of the stationary cylinder A, bearing a central revolving shaft, and having outlet *m*, a frame secured to said shaft, covered with absorbent material, a hollow sleeve extending a short distance through one end of the cylinder surrounding the shaft, and terminating in a hollow perforated sphere, and the air-supply pipe connecting with said sleeve and the tube A, all substantially as described.

2. In a carburetor, the blower-cylinder and the carbureting-cylinder with their valved connection at one end and hollow trunnions at the other, the shaft C, hollow at one end and adapted to carry the rotary skeleton cylinder, and the perforated sphere or globe *g'*, for the uniform distribution of air, whereby the air becomes thoroughly saturated with hydrocarbon, substantially as described.

3. The combination, in a carburetor, of the cylinder A, provided with hollow trunnions in its heads, and the shaft C, having the sleeve and perforated sphere, with the inner revolving skeleton cylinder covered with wire-netting and flannel or other porous material, substantially as described.

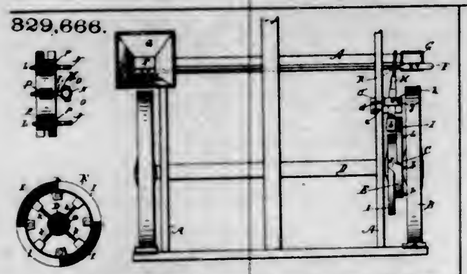
329,665. PISTON-PACKING. WILLIAM C. MCTYEIRE, Hatchechubbee, Ala. Filed Jan. 22, 1885. (No model.)



Claim.—The improvement in pistons, substantially as herein described, consisting of the body formed in a single piece provided with an annular peripheral groove, the ring seated in the annular groove and made in sections, the ends of which are formed parallel with the line of motion of the piston, and are connected by interlapping tongue-joints, and springs held within the groove of the body and engaging the ring-sections directly below the joints of the said sections, all arranged substantially as and for the purposes specified.

329,666. CORN PLANTER AND DRILL. EDGAR V. MITCHELL and JAMES V. MITCHELL, Martinsville, Ind. Filed Feb. 17, 1885. (No model.)

329,666.



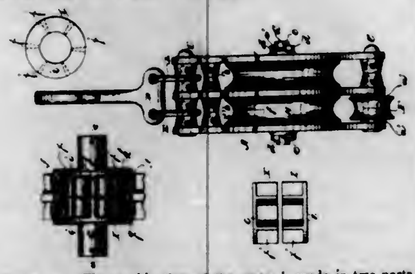
Claim.—1. In a seeder and planter, the combination, with the cam-wheel, of the dropping-slide operating or actuating lever, having its cam-engaging roll or end connected to itself by a knuckle-joint and retained in position by a spring, substantially as and for the purpose set forth.

2. In a seeder and planter, the combination, with the cam-wheel, of the dropping-slide-actuating lever, and the chair with its upper plate provided with a pivot-receiving hole, said lever having an adjustable pivot-receiving block or slide, substantially as and for the purpose set forth.

3. In a planter and seeder, the combination, with the cam-wheel and the dropping-slide, of the slide-actuating lever and the chair with its longer plate or arm adjustably connected to the planter or seeder frame, and its shorter plate or arm having a pivot-aperture, said lever having an adjustable pivot receiving block or slide, substantially as and for the purpose set forth.

4. In a planter and seeder, the combination, with the dropping-slide-actuating lever, of the cam-wheel, said wheel being connected by set or adjusting screws to the hub of the driving or motor wheel, substantially as and for the purpose specified.

329,667. SHEAVE OR PULLEY-BLOCK. Edward Y. Moore, Evanston, Ill. Filed July 9, 1885. (No model.)



Claim.—1. The combination of the cage I, made in two parts, each consisting of annular end pieces on the inner faces of which are bars or webs *j j*, forming tapering pockets narrowest at the inner circumferences of the said end pieces, the rollers J J, arranged in the said pockets, etc., and being such in diameter as to project both inwardly and outwardly therefrom, the axle G, passing between the said rollers, the sheave or pulley H, having a hollow hub bearing on the said rollers and the sides of the sheave-block, the latter overlapping the ends of the said cage, substantially as and for the purposes specified.

2. The combination, in a pulley-block, of the side plates, *a a*, each having the studs *a' a'* and *a'' a''* cast on their inner faces, the said studs being arranged for contact with each other at their inner ends, one of the studs *a'' a''* having thereon a nib, *b*, and the other having a socket to receive the end of the nib on a corresponding plate, and fastenings for clamping the said plates together, substantially as and for the purposes specified.

3. The combination of the sheave-axle G, the lateral extensions *d d* on the outer sides of the sheave-block, and the wires or fastenings *e' e'*, passing through the said axle and between the said extensions, substantially as and for the purposes specified.

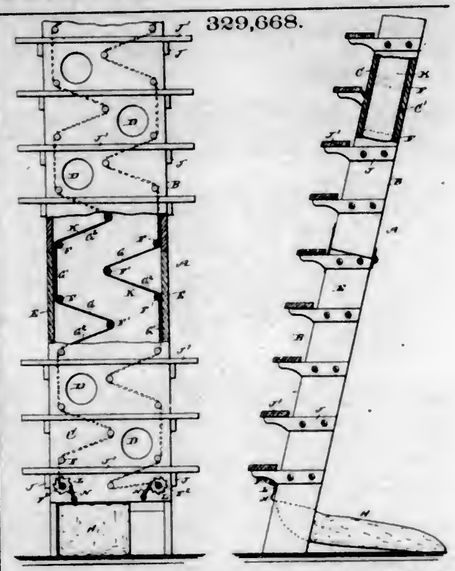
329,668. LADDER AND FRUIT-CONVEYER. George W. Moore, Dunedin, Fla. Filed May 15, 1884. (No model.)

Claim.—1. A ladder to which is attached a fruit-conveyer, substantially as shown and described.

2. A ladder to which is attached a fruit-conveyer provided with alternate inclines and openings, through which the fruit is passed, substantially as shown and described.

3. A ladder to which is attached a fruit-conveyer, provided with alternate inclines and openings, through which the fruit is passed, and an inclined apron near the bottom of the conveyer, substantially as shown and described.

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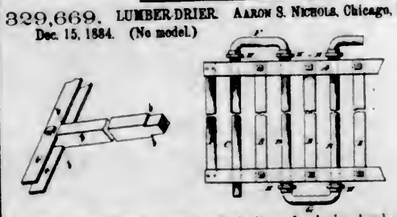


4. A fruit-conveyer, A, provided with a box, B, open at the top and bottom, and provided with the stays F and F' and lining K, forming the alternate inclines G, substantially as shown and described.

5. In a fruit-conveyer, A, the box B, open at the top and bottom, the stays F and F', the lining K, forming the alternate inclines G, in combination with the apron H, substantially as herein shown and described.

6. In a fruit-conveyer, A, the box B, open at the top and bottom, and provided with the front plate, C, having the alternate holes D, the stays F and F', the lining K, forming the alternate inclines G, and the apron H, in combination with the brackets J and steps J', substantially as shown and described.

329,669. LUMBER-DRIER. Aaron S. Nichols, Chicago, Ill. Filed Dec. 15, 1884. (No model.)



Claim.—1. The herein-described platen for drying lumber, consisting of a horizontal frame, combined with a series of tubes, the tubes extending at both ends through the frame, the tubes connected outside the frame, the first to the second at one end, the second to the third at the opposite end, and so on, thereby forming a continuous coil adapted to receive a circulating fluid, substantially as described.

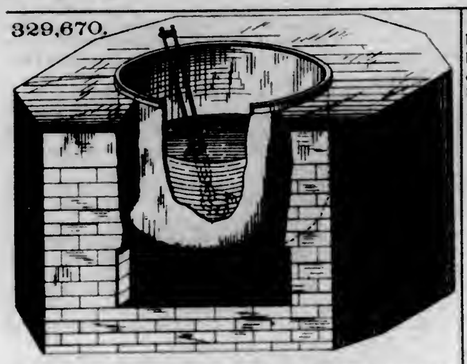
2. A platen for drying lumber, consisting of a frame, the sides of which are composed of two parallel bars, *a a*, the said sides connected by transverse bars B, the ends of said transverse bars B extending between the said bars *a a* and there secured, substantially as described.

329,670. PROCESS OF OBTAINING CARBON FOR INCANDESCENTS. Stephen Nicholson and Herbert A. Bowen, Providence, R. I. Filed June 18, 1884. (No specimens.)

Claim.—1. An improved method of obtaining carbon from materials containing carbon, which consists in confining the material in a mold, next plunging the mold in a bath of liquefied material adapted to support a high temperature, to hermetically seal the confined material next subjecting the material while in the bath to sufficient heat to carbonize it, and lastly removing the mold containing the carbonized material from the bath, substantially as set forth.

2. The improved method of obtaining carbon from materials containing carbon, which consists in immersing the material in a liquid metallic bath to hermetically seal the same, next raising the temperature of the bath to drive off or consume all volatile and organic matter, next cooling the bath to a comparatively low degree of temperature, and lastly removing the carbonized material from the bath while at such low degree of temperature, substantially as set forth.

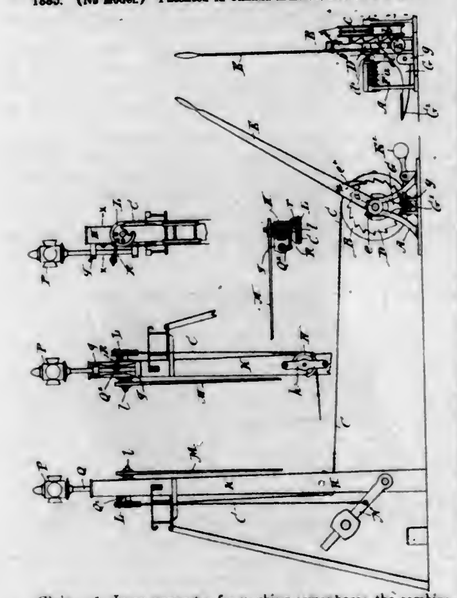
329,670.



3. The herein-described process of obtaining carbon from materials containing carbon, which consists in confining the material in a mold, next immersing the mold in a bath of liquid metal or metal alloy fusible at a low degree of temperature, next raising the temperature of the bath, next allowing the bath to cool in part, and lastly removing the mold containing the carbonized material from the bath while the latter is at a temperature above the fusing-point, substantially as set forth.

4. The improved method of obtaining carbon from materials containing carbon, which consists in retaining or confining the material below a confined layer or stratum of melted metal or metallic compound to hermetically seal the same, next to drive off by heat all organic or volatile substances from the material while so confined, and lastly removing the material from confinement before the layer or stratum of metal solidifies in its confined state, substantially as set forth.

329,671. APPARATUS FOR OPERATING RAILWAY-SEMAPHORES. Henry O'Neill, Montreal, Quebec, Canada. Filed July 8, 1885. (No model.) Patented in Canada Mar. 16, 1885. No. 21,274.



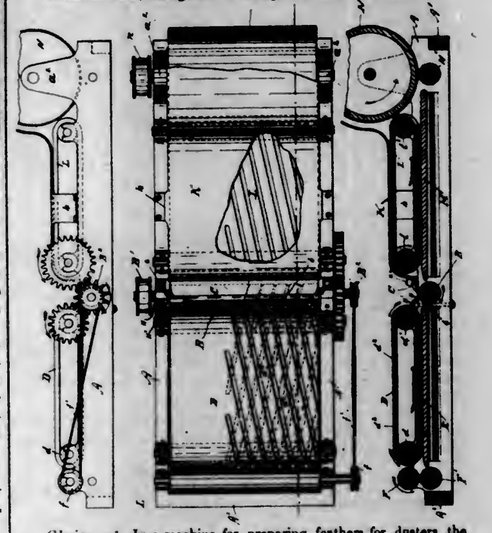
Claim.—1. In an apparatus for working semaphores, the combination, with the drum and a ratchet-wheel normally in clutch with the same, of a bell-crank lever pivoted to stand and operating to withdraw ratchet-wheel from clutch with drum, as and for the purposes set forth.

2. In an apparatus for operating railway-semaphores, the combination, with a drum and drum-shaft, of a ratchet mounted loosely on said shaft and normally in clutch with said drum, a lever and pawl for rotating same, a retaining-pawl, and a bell-crank lever operating to throw said ratchet out of clutch with said drum, substantially as and for the purpose described.

3. The combination of the segment L, mounted on spindle *l*, carried in post K, chain C, weighted lever N, and semaphore-board M, all arranged and operating as and for the purposes set forth.

4. The combination, with the segment L and semaphore-board M, both mounted on a horizontal spindle carried in post, of vertical signal-lamp spindle Q, having projecting arm Q', said arm and segment being connected by link R, so that when segment is operated and semaphore-board raised the lamp will turn simultaneously, substantially as described.

329,672. MACHINE FOR PREPARING FEATHERS FOR DUSTERS. Samuel M. Park, Chicago, Ill. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of a spirally-grooved movable guide for the feather, substantially as described.

2. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of a knife roll or guide having a spiral groove of gradually-decreasing depth, substantially as described.

3. In a machine for feathers for dusters, the combination, with a cutting-knife and a knife-roll, of a guide-blade in front of the cutting-knife, substantially as described.

4. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of a supporting-table and a spirally-grooved delivery belt or surface for presenting the feather to the knife, substantially as described.

5. In a machine for preparing feathers for dusters, the combination, with the cutting-knife and the spirally-grooved knife roll or guide, of the spirally-grooved delivery-belt in gear with the knife-roll, substantially as described.

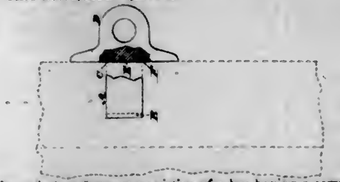
6. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of the spirally-grooved discharge-belt and its supporting-table, substantially as described.

7. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of the spirally-grooved discharge-belt, its supporting-table, and the sandpapering-rolls, substantially as described.

8. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of the spirally-grooved delivery-belt and its supporting-table, and the front feed-rolls, one of which is spirally grooved, substantially as described.

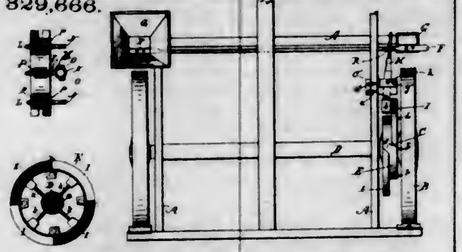
9. In a machine for preparing feathers for dusters, the combination, with the cutting-knife and the discharge-belt, of the hood extending over said discharge-belt, substantially as described.

329,673. DOOR-SECURER. David H. Parkhill, Jr., Philadelphia, Pa. Filed Nov. 1, 1884. (Model.)



Claim.—A door-fastener consisting of a bar having a serrated limb at one end and a perforated limb at the other end, in combination with a rotatable head having a stud and handle on opposite sides thereof formed integral therewith, substantially as and for the purpose set forth.

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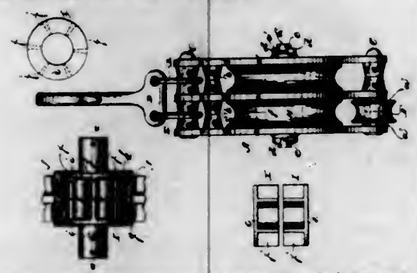
Claim.—1. In a seeder and planter, the combination, with the cam-wheel, of the dropping-slide operating or actuating lever, having its cam-engaging roll or end connected to itself by a knuckle-joint and retained in position by a spring, substantially as and for the purpose set forth.

2. In a seeder and planter, the combination, with the cam-wheel, of the dropping-slide-actuating lever, and the chair with its upper plate provided with a pivot-receiving hole, said lever having an adjustable pivot-receiving block or slide, substantially as and for the purpose set forth.

3. In a planter and seeder, the combination, with the cam-wheel and the dropping-slide, of the slide-actuating lever and the chair with its longer plate or arm adjustably connected to the planter or seeder frame, and its shorter plate or arm having a pivot-aperture, said lever having an adjustable pivot receiving block or slide, substantially as and for the purpose set forth.

4. In a planter and seeder, the combination, with the dropping-slide-actuating lever, of the cam-wheel, said wheel being connected by set or adjusting screws to the hub of the driving or motor wheel, substantially as and for the purpose specified.

329,667. SHEAVE OR PULLEY-BLOCK. Edward Y. Moore, Evanston, Ill. Filed July 9, 1885. (No model.)



Claim.—1. The combination of the cage 1, made in two parts, each consisting of annular end pieces on the inner faces of which are bars or webs *j j*, forming tapering pockets narrowest at the inner circumferences of the said end pieces, the rollers J J, arranged in the said pockets, ets, and being such in diameter as to project both inwardly and outwardly therefrom, the axle G, passing between the said rollers, the sheave or pulley H, having a hollow hub bearing on the said rollers and the sides of the sheave-block, the latter overlapping the ends of the said cage, substantially as and for the purposes specified.

2. The combination, in a pulley-block, of the side plates, *a a*, each having the studs *a' a'* and *a'' a''* cast on their inner faces, the said studs being arranged for contact with each other at their inner ends, one of the studs *a'' a''* having thereon a nib, *b*, and the other having a socket to receive the end of the nib on a corresponding plate, and fastenings for clamping the said plates together, substantially as and for the purposes specified.

3. The combination of the sheave-axle G, the lateral extensions *d d* on the outer sides of the sheave-block, and the wires or fastenings *e' e'*, passing through the said axle and between the said extensions, substantially as and for the purposes specified.

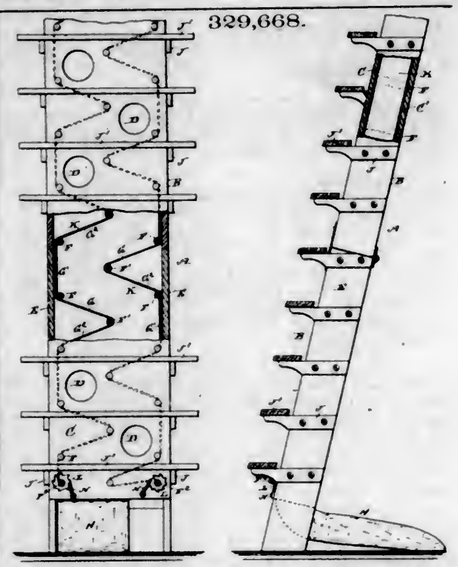
329,668. LADDER AND FRUIT-CONVEYER. George W. Moore, Dunedin, Fla. Filed May 15, 1885. (No model.)

Claim.—1. A ladder to which is attached a fruit-conveyer, substantially as shown and described.

2. A ladder to which is attached a fruit-conveyer provided with alternate inclines and openings, through which the fruit is passed, substantially as shown and described.

3. A ladder to which is attached a fruit-conveyer, provided with alternate inclines and openings, through which the fruit is passed, and an inclined apron near the bottom of the conveyer, substantially as shown and described.

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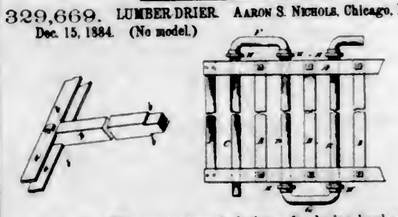


4. A fruit-conveyer, A, provided with a box, B, open at the top and bottom, and provided with the stays F and F' and lining K, forming the alternate inclines G, substantially as shown and described.

5. In a fruit-conveyer, A, the box B, open at the top and bottom, the stays F and F', the lining K, forming the alternate inclines G, in combination with the apron H, substantially as herein shown and described.

6. In a fruit-conveyer, A, the box B, open at the top and bottom, and provided with the front plate, C, having the alternate holes D, the stays F and F', the lining K, forming the alternate inclines G, and the apron H, in combination with the brackets J and steps J', substantially as shown and described.

329,669. LUMBER-DRIER. Aaron S. Nichols, Chicago, Ill. Filed Dec. 15, 1884. (No model.)



Claim.—1. The herein-described platen for drying lumber, consisting of a horizontal frame, combined with a series of tubes, the tubes extending at both ends through the frame, the tubes connected outside the frame, the first to the second at one end, the second to the third at the opposite end, and so on, thereby forming a continuous coil adapted to receive a circulating fluid, substantially as described.

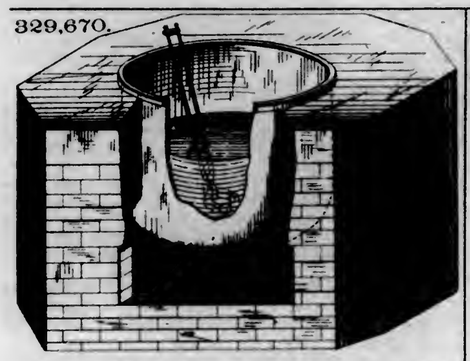
2. A platen for drying lumber, consisting of a frame, the sides of which are composed of two parallel bars, *a a*, the said sides connected by transverse bars B, the ends of said transverse bars B extending between the said bars *a a* and there secured, substantially as described.

329,670. PROCESS OF OBTAINING CARBON FOR INCANDESCENTS. Stephen Nicholson and Herbert A. Bowen, Providence, R. I. Filed June 18, 1884. (No specimens.)

Claim.—1. An improved method of obtaining carbon from materials containing carbon, which consists in confining the material in a mold, next plunging the mold in a bath of liquefied material adapted to support a high temperature, to hermetically seal the confined material next subjecting the material while in the bath to sufficient heat to carbonize it, and lastly removing the mold containing the carbonized material from the bath, substantially as set forth.

2. The improved method of obtaining carbon from materials containing carbon, which consists in immersing the material in a liquid metallic bath to hermetically seal the same, next raising the temperature of the bath to drive off or consume all volatile and organic matter, next cooling the bath to a comparatively low degree of temperature, and lastly removing the carbonized material from the bath while at such low degree of temperature, substantially as set forth.

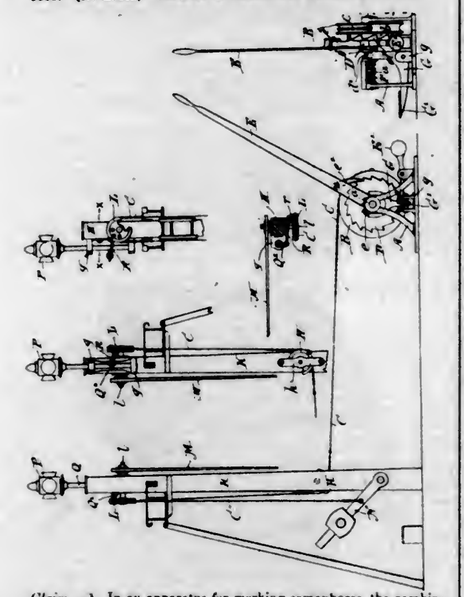
329,670.



3. The herein-described process of obtaining carbon from materials containing carbon, which consists in confining the material in a mold, next immersing the mold in a bath of liquid metal or metal alloy fusible at a low degree of temperature, next raising the temperature of the bath, next allowing the bath to cool in part, and lastly removing the mold containing the carbonized material from the bath while the latter is at a temperature above the fusing-point, substantially as set forth.

4. The improved method of obtaining carbon from materials containing carbon, which consists in retaining or confining the material below a confined layer or stratum of melted metal or metallic compound to hermetically seal the same, next to drive off by heat all organic or volatile substances from the material while so confined, and lastly removing the material from confinement before the layer or stratum of metal solidifies in its confined state, substantially as set forth.

329,671. APPARATUS FOR OPERATING RAILWAY-SEMAPHORES. Henry O'Neill, Montreal, Quebec, Canada. Filed July 8, 1885. (No model.) Patented in Canada Mar. 16, 1885, No. 21,274.



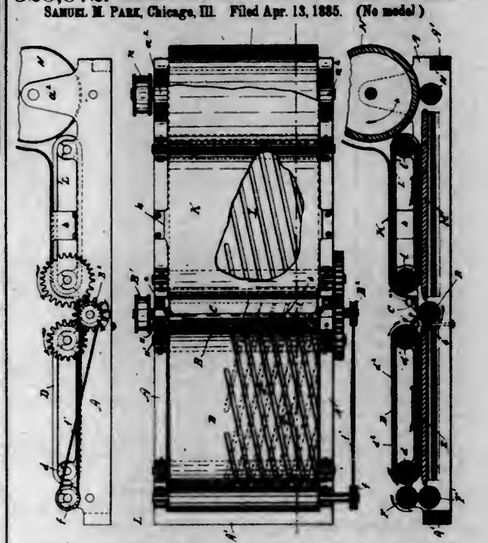
Claim.—1. In an apparatus for working semaphores, the combination, with the drum and a ratchet-wheel normally in clutch with the same, of a bell-crank lever pivoted to stand and operating to withdraw ratchet-wheel from clutch with drum, as and for the purposes set forth.

2. In an apparatus for operating railway-semaphores, the combination, with a drum and drum-shaft, of a ratchet mounted loosely on said shaft and normally in clutch with said drum, a lever and pawl for rotating same, a retaining-pawl, and a bell-crank lever operating to throw said ratchet out of clutch with said drum, substantially as and for the purpose described.

3. The combination of the segment L, mounted on spindle *l*, carried in post K, chain C, weighted lever N, and semaphore-board M, all arranged and operating as and for the purposes set forth.

4. The combination, with the segment L and semaphore-board M, both mounted on a horizontal spindle carried in post, of vertical signal-lamp spindle Q, having projecting arm Q', said arm and segment being connected by link R, so that when segment is operated and semaphore-board raised the lamp will turn simultaneously, substantially as described.

329,672. MACHINE FOR PREPARING FEATHERS FOR DUSTERS. Samuel M. Park, Chicago, Ill. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of a spirally-grooved movable guide for the feather, substantially as described.

2. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of a knife roll or guide having a spiral groove of gradually-decreasing depth, substantially as described.

3. In a machine for feathers for dusters, the combination, with a cutting-knife and a knife-roll, of a guide-blade in front of the cutting-knife, substantially as described.

4. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of a supporting-table and a spirally-grooved delivery belt or surface for presenting the feather to the knife, substantially as described.

5. In a machine for preparing feathers for dusters, the combination, with the cutting-knife and the spirally-grooved knife roll or guide, of the spirally-grooved delivery-belt in gear with the knife-roll, substantially as described.

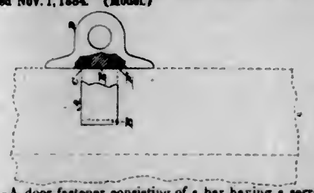
6. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of the spirally-grooved discharge-belt and its supporting-table, substantially as described.

7. In a machine for preparing feathers for dusters, the combination, with the cutting-knife, of the spirally-grooved discharge-belt, its supporting-table, and the sandpapering-rolls, substantially as described.

8. In a machine for prepering feathers for dusters, the combination, with the cutting-knife, of the spirally-grooved delivery-belt and its supporting-table, and the front feed-rolls, one of which is spirally grooved, substantially as described.

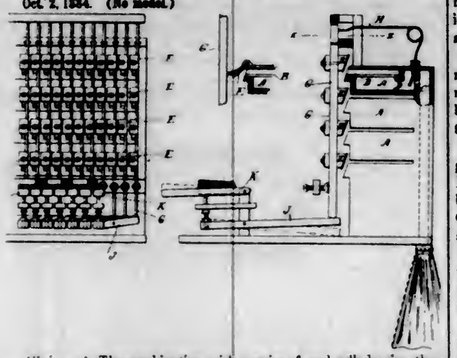
9. In a machine for preparing feathers for dusters, the combination, with the cutting-knife and the discharge-belt, of the hood extending over said discharge-belt, substantially as described.

329,673. DOOR-SECURER. David H. Parkhill, Jr., Philadelphia, Pa. Filed Nov. 1, 1884. (Model.)



Claim.—A door-fastener consisting of a bar having a serrated limb at one end and a perforated limb at the other end, in combination with a rotatable head having a stud and handle on opposite sides thereof formed integral therewith, substantially as and for the purpose set forth.

329,674. ORGAN-ACTION. JAMES PELOUBET, Bloomfield, N. J. Filed Oct. 2, 1884. (No model.)

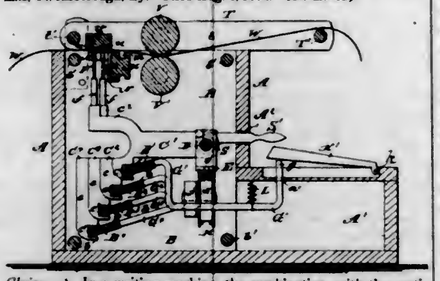


Claim.—1. The combination, with a series of reed-cells having their ends beveled, of a vertically-movable bar, and a series of pallets held adjustably on the said bar, one pallet at the beveled end of each reed-cell, which pallets have their ends beveled to fit the beveled ends of the reed-cells, substantially as herein shown and described.

2. The combination, with a series of reed-cells having beveled ends, of a vertically-movable bar in front of the beveled ends of the reed-cells, and as many pallets held on said bar as there are reed-cells, the inner ends of the pallets being beveled to fit against the beveled ends of the reed-cells, substantially as herein shown and described.

3. In a reed-organ, the combination, with a series of reed-cells, of pallets held to and adjustable longitudinally along a rod, substantially as herein shown and described.

329,675. WRITING-MACHINE FOR THE BLIND. WILLIAM H. PERKINS, Owensborough, Ky. Filed Aug. 2, 1884. (No model.)



Claim.—1. In a writing-machine, the combination, with the vertically-movable punctorers or needles, of the stepped levers provided with arms having movement upon a support near their forward ends, and adjusted in a carriage connected to an endless traveling belt, together with means, substantially as described, for actuating the said levers and belt, substantially as and for the purpose set forth.

2. The combination, with the needles arranged, substantially as described, to have independent vertical movement, of mechanism, substantially as described, for operating the needles, a toothed wheel and chain, and connections, substantially as described, for moving the series of needles transversely, substantially as set forth.

3. The combination, with a series of needles connected to independent rocking arms fitted to slide transversely, of independent pivoted bars or plates engaging said arms, and means, substantially as described, for rocking them to cause the needles to puncture the paper, substantially as described.

4. The combination, with a series of needles arranged in the form of a square, of independent rocking arms fitted to slide transversely, and independent rocking bars or plates engaging said arms, and connected by rods or stems with a series of keys for raising the needles to puncture the paper from the under side, substantially as described.

5. The combination, with a series of needles arranged in the form of a square and connected to independent rocking arms fitted to slide transversely of said arms, of independent rocking bars or plates engaging said arms, means, substantially as described, for rocking them to raise the needles, and a plate apertured for the passage of the needle-points and fitted to slide with the needle-arms, substantially as described.

6. The combination, with a group of needles arranged in the form of a square and connected to independent rocking arms fitted to slide transversely of said arms, of independent pivoted bars or plates engaging said arms, means, substantially as described, for rocking them to raise the needles, a plate apertured for the passage of the needle-points and fitted to slide with the needle-arms and needles, and a bar or plate held above and in the path of the needles, and provided with grooves into which the needle-points pass in puncturing the paper, substantially as described.

7. The combination of the pivoted rocking bars B' B^2 B^3 B^4, the needle-arms C' C^2 C^3 C^4, carrying the group of needles F' F^2 F^3 F^4, and mounted to slide on a rod or bar and adapted to be lifted by the rocking bars, and a needle guide-plate, N, fitted to slide along a bar, M, substantially as shown and described.

8. The combination, with the needle-arms C' C^2 C^3 C^4, carrying the group of needles and fitted to slide on a bar, D, of the rocking bars B' B^2 B^3 B^4, engaging notches or shoulders of the needle-arms, a series of buttons or keys for actuating the needles, and the rods or stems G' G^2 G^3 G^4, connecting the rocking bars with the keys, substantially as shown and described.

9. The combination, with the group of needles F' F^2 F^3 F^4, fitted to sliding and rocking arms C' C^2 C^3 C^4, as specified, of the guide-plate N, apertured for the passage of the needles and fitted to slide along the bar M, substantially as shown and described.

10. The combination, with the group of needles F' F^2 F^3 F^4, held in rocking arms C' C^2 C^3 C^4, which slide on a bar, D, and are actuated by the rocking bars B' B^2 B^3 B^4, respectively; and the apertured needle guide-plate N, fitted to slide on a bar, M, as specified, of a bar, U, held above the needle-plate and having the grooves *u u* in its under side above the points of the needles, substantially as shown and described.

11. The combination, with the needle-arms C' C^2 C^3 C^4, carrying the group of needles and fitted to slide on the bar D, of the yoke E, connected to the endless chain H, and means, substantially as described, for moving the chain to shift the needles to form successive characters in a line, substantially as shown and described.

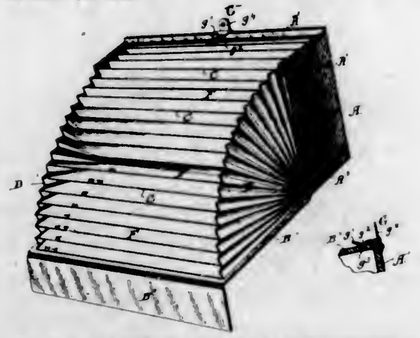
12. The combination, with the needle-arms C' C^2 C^3 C^4, carrying the group of needles and fitted to slide on the bar D, of the yoke E, endless chain H, wheels I J, ratchet-wheel O, pawl P, and the lever Q, substantially as shown and described.

13. The combination, with the needle-arms C' C^2 C^3 C^4, held on a bar, D, within a yoke, E, fixed to the endless chain H, wheels I J, and the ratchet-wheel O, pawl P, and lever Q, of the arm R, having the shoulder *r*, and means, substantially as described, for sliding the yoke and needle-arms back to the initial position, substantially as shown and described.

14. The combination, with the needle-arms C' C^2 C^3 C^4, held on a bar, D, within a yoke, E, fixed to the endless chain H, wheels I J, the ratchet-wheel O, pawl P, lever Q, and arm R, of the lever or arm S, adapted to move the yoke and needle-arms, substantially as shown and described.

15. In a writing-machine, the combination, with the vertically and transversely movable needles, of the bar disposed above the needles and having grooves in its under side in the path of the needle-points, substantially as shown and described, and for the purpose set forth.

329,676. FILING-CASE. HENRY W. READE, Chicago, Ill. Filed Sept. 15, 1884. (No model.)

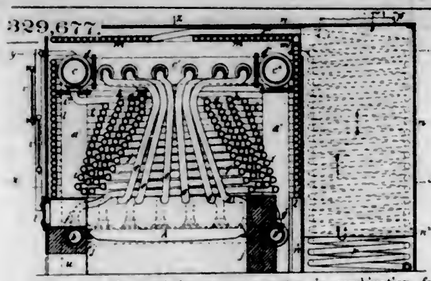


Claim.—1. A filing-case comprising a box or receptacle, as A, provided with a wide back or bottom, A^2, and with a side or cover, B, hinged to said back or bottom, a series of index-sheets, and folding webs or gussets attached to the receptacle and cover and to the side margins of the sheets, operating to hold said leaves apart when the receptacle is open, and forming with said leaves a series of pockets for containing the papers to be filed, substantially as described.

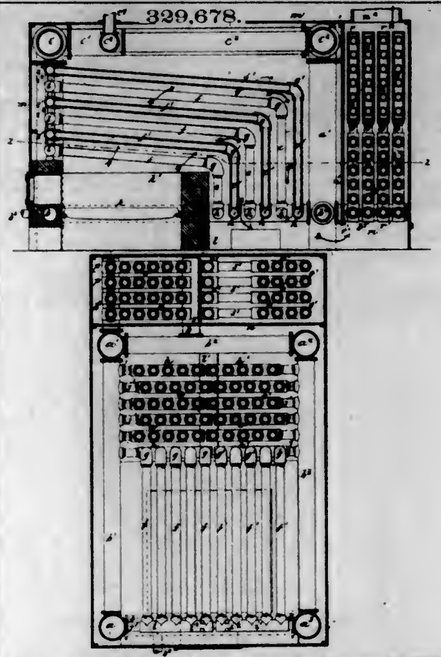
2. The combination, with the box or receptacle comprising a side wall, A', a back, A^2, and side pieces, A^3 A^3, of a cover, B, hinged to the back A^2, and provided with a flap, B', and a series of index-sheets,

329,677. TUBULAR STEAM-GENERATOR. PATRICK REILLY, Brooklyn, N. Y. Filed July 20, 1885. (No model.)

329,677.



329,678.



Claim.—1. In a tubular steam-generator, in combination, four stand-pipes, horizontal pipes connected to and between them at their upper ends and lower parts, and steam-generating tubes, each connected to an upper and a lower horizontal pipe, and inclined, so as to come together at the upper central part of the generator, and furnace-grate bars located directly under the steam-generating tubes, substantially as described.

2. In a tubular steam-generator, in combination, a main supporting-frame comprising stand-pipes and horizontal connecting-pipes, furnace-grate bars located within the same, central steam-generating tubes connected to the upper and lower parts of the main supporting-frame pipes and formed so as to extend over the grate-bars, and tubular coils arranged around and supported by the central tubes and independently connected to the upper and lower parts of the main supporting-frame pipes, substantially as and for the purpose set forth.

3. In a tubular steam-generator, in combination, the stand-pipes *a* *a'* a^2 a^3, the horizontal connecting-pipes *b* *b'* b^2 b^3, *c* *c'* c^2 c^3, and triple-bend connections *d* *d'* d^2 d^3, substantially as and for the purpose set forth.

4. In a tubular steam-generator, in combination, the stand-pipes *a* *a'* a^2 a^3, the horizontal connecting-pipes *b* *b'* b^2 b^3, *c* *c'* c^2 c^3, and the steam-generating pipes *e* *e* *e'* *e'*, substantially as and for the purpose set forth.

5. In a tubular steam-generator, in combination, the stand-pipes *a* *a'* a^2 a^3, the horizontal connecting-pipes *b* *b'* b^2 b^3, *c* *c'* c^2 c^3, the steam-generating pipes *e* *e* *e'* *e'*, and the tubular coils *f* *g* *h* *i*, substantially as and for the purpose set forth.

6. In a tubular steam-generator, in combination, the stand-pipes *a* *a'* a^2 a^3, the lower horizontal connecting-pipes, *b* *b'* b^2 b^3, the upper horizontal pipes, *c* *c'* c^2 c^3, and bend-connections *d* *d'* d^2 d^3, constituting the steam-receiver, steam-generating tubes connected to the pipes *b* *b'* b^2 b^3, and the pipes *c* *c'* c^2 c^3, and the furnace composed of the walls *j* *j* and grate-bars *k* *k*, substantially as and for the purpose set forth.

7. A tubular steam-generator consisting of a main frame of pipes, *a* *a'* a^2 a^3, *b* *b'* b^2 b^3, *c* *c'* c^2 c^3, steam-generating pipes *e* *e* *e'* *e'*, *f* *g* *h* *i*, furnace *j* *j* *k* *k*, water-heater composed of the coils *l* and *m*, surrounding the generator, and coils *q* and *r*, located in the chambers *o* and *p* at the back of the generator, substantially as and for the purpose set forth.

329,678. TUBULAR STEAM-GENERATOR. PATRICK REILLY, Brooklyn, N. Y. Filed Aug. 12, 1885. (No model.)

Claim.—1. In a tubular steam-generator, the combination, with the main supporting-frame consisting of stand-pipes and horizontal connecting-pipes, of steam-generating tubes having a single bend, one part extending about horizontally from the front upper part of the main frame toward the rear, and the other part of the tubes extending vertically and downward to the rear lower part of the main frame, substantially as and for the purpose set forth.

2. The combination, with the main supporting-frame of a tubular steam-generator comprising four corner stand-pipes and upper steam and lower water horizontal connecting-pipes, of sections of tubes composed of single-bend tubes and connecting-headers at their ends secured by their headers arranged horizontally in two sets to the sides of the rear part of the lower water-tubes of the frame, with spaces left between the opposed free ends of the headers of the two sets of steam-generating tubes, and to the upper front part of the frame, substantially as and for the purpose set forth.

3. In a tubular steam-generator, in combination, a main supporting-frame comprising stand-pipes and horizontal connecting-pipes, steam-generating tubes having single bends and arranged in sections longitudinally in and connected at their ends to the main frame, a rear chamber formed by a partition extending nearly to the bottom of the generator, and sections of right-angle tubes transversely arranged in said rear chamber and also connected to the rear end of the main frame, substantially as and for the purpose set forth.

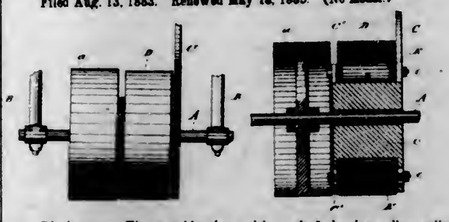
4. In a tubular steam-generator, in combination, the main supporting-frame comprising stand-pipes *a* *a'* a^2 a^3, horizontal water-pipes *b* *b'* b^2 b^3, and steam-pipes *c* *c'* c^2 c^3, and the steam-superheating pipes c^4 c^7, arranged between the pipes *c* *c'* c^2 c^3, and connected at one of their ends to the rear pipe, c^3, and at their other ends to the short pipe c^4, substantially as set forth.

5. In a tubular steam-generator, in combination, the main supporting-frame comprising the stand-pipes *a* *a'* a^2 a^3 and horizontal connecting-pipes *b* *b'* b^2 b^3 and *c* *c'* c^2 c^3, the single-bend steam-generating tubes *e* *f* *g* and *e'* *f* *g'*, the headers *h* and *i* and *h'* *i'*, the right and left threaded connecting-pieces *j* *j'*, and furnace *k* *k'*, substantially as set forth.

6. In a tubular steam-generator, in combination, the main supporting-frame comprising the stand-pipes *a* *a'* a^2 a^3 and horizontal connecting-pipes *b* *b'* b^2 b^3 and *c* *c'* c^2 c^3, the single-bend steam-generating tubes *e* *f* *g* and *e'* *f* *g'*, the headers *h* and *i* and *h'* *i'*, the right and left threaded connecting-pieces *j* *j'*, the rear chamber, *n*, pipes b^4 and b^5, projecting from the lower part of the main frame, pipes a^4 a^5, projecting from the upper part of the main frame, and sections of right-angled tubes composed of headers *p* *r* and *p'* *r'*, tubes *o* *s* and *o'* *s'*, and bends *q* and *q'*, and furnace *k* *k'*, substantially as set forth.

7. In a tubular steam-generator, in combination, the main supporting-frame comprising the stand-pipes *a* *a'* a^2 a^3 and horizontal connecting-pipes *b* *b'* b^2 b^3 and *c* *c'* c^2 c^3, the rear chamber, *n*, pipes b^4 and b^5, projecting from the lower part of the main frame, pipes a^4 and a^5, projecting from the upper parts of the main frame, and sections of right-angled tubes composed of headers *p* *r* and *p'* *r'*, tubes *o* *s* and *o'* *s'*, and bends *q* and *q'*, and the furnace *k* *k'*, substantially as set forth.

329,679. DEAD-PULLEY. WILLIAM R. SANTLEY, Wellington, Ohio. Filed Aug. 13, 1883. Renewed May 18, 1885. (No model.)



Claim.—1. The combination, with a shaft having a live-pulley thereon, of a dead-pulley loosely encircling the shaft alongside of the live-pulley and supported by rollers located between the axis and circumference of the rim and adapted to revolve thereon, substantially as described.

2. The combination, with a shaft having a live-pulley thereon, of a dead-pulley loosely encircling the shaft alongside of the live-pulley and provided with annular flanges on opposite sides, the said dead-pulley being supported by rollers located between it and the shaft, substantially as described.

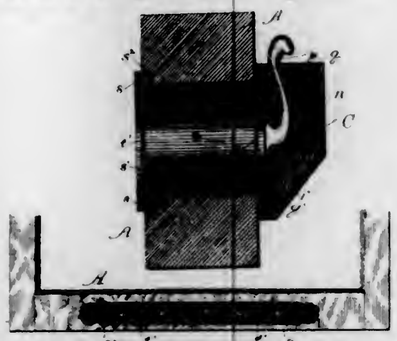
3. The combination, with a shaft and live-pulley, of a dead-pulley encircling the shaft alongside of the live-pulley, rollers for supporting the pulley, and devices for holding the rollers in position within the pulley.

4. The combination, with a live-pulley, of a contiguous dead-pulley of smaller diameter and supported by rollers located between the periphery and axis of the same, and adapted, by means of the adjustability of the supporting-rollers, to be placed with its face flush with the face of live-pulley on the leading side of the belt, substantially as and for the purpose set forth.

5. In a dead-pulley, the bracket C and the arms C', provided with slots and adapted to support the rollers E and render them adjustable, substantially as shown and described.

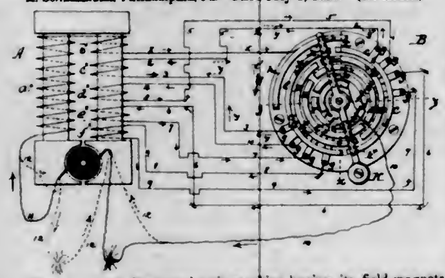
6. The combination of the bracket C, the hub c, the arm C', the rollers E, and the rim D, substantially as and for the purpose shown and described.

329,680. VENTILATOR. William Scharnweber, Jefferson, Ill. Filed June 23, 1885. (No model.)



Claim.—A ventilator comprising, in combination with a window-sash, door, or the like, provided with one or more openings leading from the external atmosphere into an apartment, a shield, C, secured over the said opening or openings, and entirely open at its upper side, whereby the volume of air may escape from the shield without obstruction of the current, and means, substantially as described, within the said shield to control the supply of air through the said opening or openings, as set forth.

329,681. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. Wm. M. Schlesinger, Philadelphia, Pa. Filed July 1, 1885. (No model.)



Claim.—1. A dynamo-electric machine having its field-magnets wound in sections, in combination with a single controlling circuit-reverser connected with the ends of the field-magnet sections, substantially as and for the purpose set forth.

2. A dynamo-electric machine having its field-magnets wound in sections, in combination with a circuit-reverser common to all of said sections and having a single switch-lever for changing the direction of the current through a greater or less number of said sections, substantially as set forth.

3. A dynamo-electric machine having its field-magnets wound in sections and the ends of each section connected to separate insulated plates grouped in pairs, and a single controlling switch-lever for electrically connecting said pairs to change the direction of the current through a greater or less number of the field-magnet sections, substantially as shown and described.

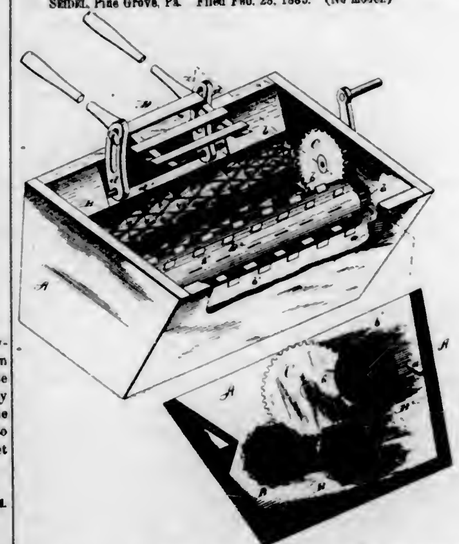
4. A regulator for sectionally-wound magnets, composed of insulated strips grouped in pairs, each of which is in circuit with the ends of the magnet-section, and of a single-controlling switch-lever for electrically connecting said strips to change the direction of the current through a greater or less number of the magnet-sections, as set forth.

329,682. TRUSS. Louis Schmitt, Providence, R. I. Filed Dec. 4, 1884. (Model.)



Claim.—As a new article of manufacture, a truss having its pad made concave upon its under or bearing surface, and having one or more notches formed in its edge, thereby adapting it for use in scrotal hernia, substantially as shown and set forth.

329,683. HOG SCALDING AND SCRAPING MACHINE. Peter F. Seidel, Pine Grove, Pa. Filed Feb. 28, 1885. (No model.)



Claim.—1. In a hog scalding and scraping machine, the combination, with the scalding-tank, of rollers and scrapers so disposed within the tank below the water-line as to support and operate on the body of a hog, substantially as described.

2. In a hog scalding and scraping machine, the combination, with the scalding-tank, of a plurality of scraping-rollers so disposed within the tank and below the water-line as to support and operate on the body of a hog, substantially as described.

3. The combination of a scalding-tank, scraping-rollers arranged therein below the water-line, and a cradle or skid for pressing down upon the body and removing the same from the tank, as set forth.

4. The combination of the scalding-tank and a plurality of scraping-rollers geared together and arranged substantially as described, whereby they are driven with different circumferential speeds and operate upon the body of a hog, as described.

5. The combination of a tank, scraping-rollers arranged below the water-line thereof, and a cradle or skid flexibly connected with the tank, as and for the purpose set forth.

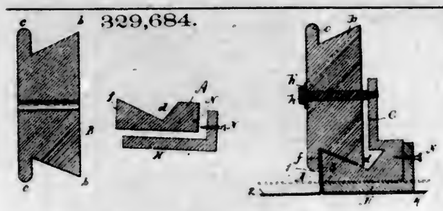
6. The combination of scraping-rollers with a tank provided with a trough or receptacle for catching bristles or other solid matter, as set forth.

7. The combination of a plurality of scraping-rollers disposed, as shown, so as to form a cradle to support the body of a hog, and gearing, substantially as described, for driving one or more of said rollers at a different speed from the others, as specified.

329,684. TURNER FOR TIN ROOFS. Robert F. Snow, Cincinnati, Ohio. Filed Feb. 14, 1885. (No model.)

Claim.—1. The combination of a grooved plate and a grooved wheel journaled thereto, the said plate adapted to press against and uphold the upright edge of one plate of metal, and the wheel adapted to uphold the upturned edge of another sheet of metal and to run over and turn down the partly-overturned edge of the latter sheet over the edge of the former sheet, substantially as shown and described.

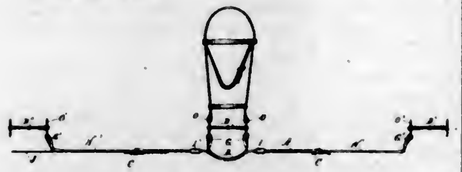
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2. A turner for metal roofing, consisting of the grooved base-plate A, the grooved wheel B, journaled to the said base-plate, and the handle K, substantially as shown and described.

3. The combination of a grooved plate, A, a grooved wheel, B, and a shoe, H, substantially as shown and described.

329,685. HARNESS. David Steussy, Monticello, Wis. Filed June 3, 1885. (No model.)



Claim.—1. In a device for coupling an odd number of horses harnessed abreast, the combination, with a strap, of two snap-hooks near its center adapted to engage both the bit-rings of the center horse, and other snap-hooks placed at suitable intervals, and each adapted to engage one of the bit-rings of a horse on either side of the central horse.

2. The combination of the center strap, A, the bar B, and snaps G, the buckles C, extension-straps H, and snaps G', substantially as shown and described, and for the purpose set forth.

3. The combination of the center strap, A, the bar R, and snaps G, the buckles C, extension-straps H and J, and snaps attached to the outer ends of said extension-straps, substantially as shown and described, and for the purpose set forth.

329,686. HAND NAILING IMPLEMENT. Edward L. Taft, Gardner, and Henry M. Rich, Athol, Mass. Filed June 4, 1885. (No model.)

Claim.—1. A pair of nail or pin driving pliers provided with an automatic nail-feeding device, substantially as described, which is operated automatically by the opening and closing movements of the pliers, one of the jaws or levers of the pliers only serving to drive the nail, and the other serving only as a rest against the rod or article through which the nail or pin is to be driven, as herein shown and described.

2. The combination, with a pair of nail or pin driving pliers, of a bar held on the same adjacent to one of the jaws or levers, and of a nail-feeding device, substantially as described, on said bar, operated automatically by the opening and closing of the pliers, as herein shown and described.

3. The combination, with a pair of nail or pin driving pliers, of a bar held on the jaws or levers of the same, a nail-feeding device, substantially as described, on said bar, and a lever for operating the nail-feeding device automatically from only one of the handle-levers of the pliers by the opening and closing movements of the handle-levers, as herein shown and described.

4. The combination, with a pair of pliers, of a bar held between the jaws to permit one jaw to pass by said bar, and a nail-feeding device held on said bar, substantially as herein shown and described.

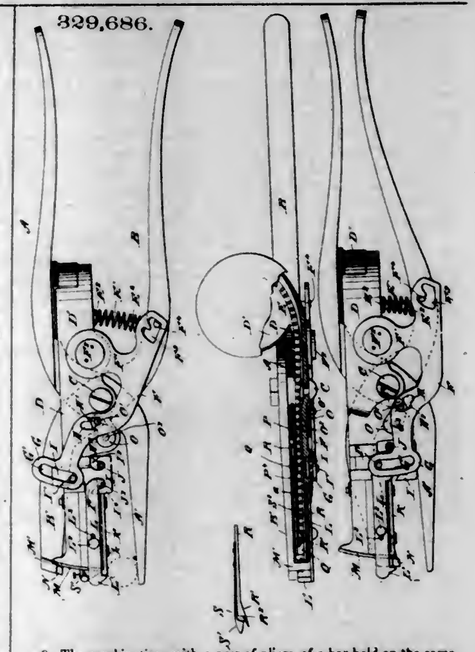
5. The combination, with a pair of pliers, of a bar held on the same between the jaws to permit one jaw to pass by said bar, said jaw being provided at its outer end with a lug resting on the end of the bar, and of a nail-feeding device held on said bar, substantially as herein shown and described.

6. The combination, with a pair of pliers, of a bar held between the jaws, a nail-feeding device on the bar, and a nail-receptacle on the rear end of the bar, substantially as herein shown and described.

7. The combination, with a pair of pliers, of a bar held on the same, a nail-feeding and a nail-holding device on the bar, a cam-plate on the bar for operating the nail-feeding device, and a lever pivoted on the bar and actuating the cam-piece, which lever is operated from one of the handle-levers of the pliers, substantially as herein shown and described.

8. The combination, with a pair of pliers, of a bar held on the same, two sliding bars on the above-mentioned bar, a cam for moving the sliding bars toward and from each other, a sliding nail-feeding bar, and a lever pivoted on the bar held on the pliers, which lever operates the sliding bars and the nail-feeding bar, and in turn is operated from one of the handle-levers, substantially as herein shown and described.

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9. The combination, with a pair of pliers, of a bar held on the same, a sliding nail-feeding bar on the above-mentioned bar, a shaft pivoted in the said bar and having two cranks, one of which is connected with the sliding nail-feeding bar, and the other with a lever operated from one of the handle-levers, substantially as herein shown and described.

10. The combination, with a pair of pliers, of a bar held between the jaws, a sliding nail-feeding bar in said bar, a sprig on the nail-feeding bar, and mechanism for operating the sliding nail-feeding bar from one of the handle-levers, substantially as herein shown and described.

11. The combination, with a pair of pliers, of a bar on the same, the sliding nail-feeding bar R on the above-mentioned bar, having a prong, R', and shoulder R^2, a spring, S, secured on the nail-feeding bar and having a hook-head, S', and of the mechanism for operating the nail-feeding bar from one of the handle-levers, substantially as herein shown and described.

12. The combination, with a pair of pliers, of a bar held on the same, a sliding nail-feeding bar, R, having a prong, R', the end of which is forked, and which prong is provided with a shoulder, R^2, the spring S, secured on the bar R and having a head, S', and of a lever for operating the nail-feeding bar from one of the handle-levers of the pliers, substantially as herein shown and described.

13. The combination, with a pair of pliers, of a bar held between the jaws, a sliding cam-plate having notches in the opposite sides at the bottom, and sliding bars on the above-mentioned bar held between the jaws, which sliding bars are provided at their inner ends with pins passed into cam-notches of the cam-plate, and a lever for operating the cam-plate from one of the handle-levers of the pliers, substantially as herein shown and described.

14. The combination, with a pair of pliers, of the bar D, held on the same, the sliding bar L, having the half-socket L' on its end, the sliding bar K, having the half-socket K' on its end, and a cam-plate and lever for operating the said sliding bars from one of the handle-bars of the pliers, substantially as herein shown and described.

15. The combination, with a pair of pliers having two jaws, one of which is provided on its bottom edge with a head, of the bar D, held on the pliers, the sliding nail-holding bars K L, a cam-plate for operating said bars, a sliding nail-feeding bar, and the lever F, for operating the nail-holding and the nail-feeding bars, substantially as herein shown and described.

16. The combination, with a pair of pliers, of a bar held on the same, a sliding nail-feeding bar on the above-mentioned bar, springs for pressing a nail-tape against the feeding-bar, and mechanism for operating the nail-feeding bar from one of the handle-levers of the pliers, substantially as herein shown and described.

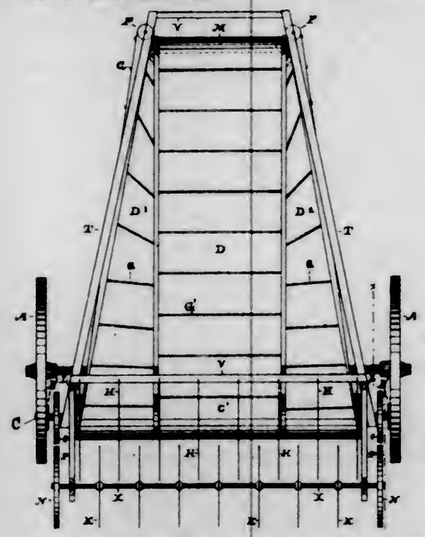
17. The combination, with a pair of pliers, of a bar held on the same between the jaws, a sliding nail-feeding bar on the above-mentioned bar, and a spring for pressing the nail-feeding bar against a tape of nails passed over the above-mentioned bar secured to the pliers, substantially as herein shown and described.

18. The combination, with a pair of pliers, of the bar D, the sliding nail-holding bars K L, the cam-plate I, the sliding nail-feeding bar R, the crank P, for operating the same, the crank O on the same shaft with the crank P, the pin O', and the lever F, pivoted on the bar D and having a slot, through which a pin on the cam-plate I can pass, and a slot through which the pin on the end of the crank O passes, substantially as herein shown and described.

19. The combination, with a pair of pliers, of the bar D, nail-holding and nail-feeding mechanism on the said bar, and a lever, F, provided with a projection, F', pivoted on the bar D, which lever F serves to operate the nail-holding and nail-feeding devices, and a pin projecting from one handle-lever into a slot in the lower end of the lever F, substantially as herein shown and described.

20. The combination, with a pair of pliers, of the bar D, nail-feeding and nail-holding devices on the same, a lever for operating the said devices from one of the handle-levers, and the spring E', interposed between one of the handle-levers and a tape-box formed on the inner end of the bar D, substantially as herein shown and described.

329,687. **HAY-LOADER.** David B. Tapper, near Bellefontaine, Ohio. Filed Jan. 3, 1885. (No model.)



Claim.—1. In a hay rake and loader, the apron D, the twisted belts D' D², for elevating the hay and delivering it onto the wagon, the drums or rollers C' M F F, and the operating-pinion B', and internal cog-circle, B, for actuating the aprons, as and for the purpose set forth.

2. In a spring-tooth hay rake and elevator, the swinging continuous feed-rollers K, which swing between the rake-teeth H and press upon the hay continuously, feeding it onto the aprons D D' D², substantially as shown and described.

3. In a hay rake and loader, the actuating-drum C', rollers M F F, apron D, and the auxiliary twisted or condensing aprons D' D², (having spring-ribs G,) that condense the hay onto apron D, which delivers it onto the wagon, substantially as shown and described.

4. The combination, with the wheels A and cog-circle B, of the pinion B', drum C', rollers M F F, aprons D D' D², rake-teeth H, and hinged feed-rollers or disks K, as and for the purpose set forth.

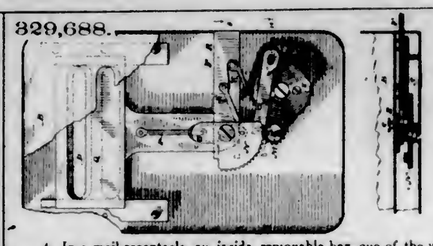
329,688. **STREET LETTER-BOX.** Warren H. Taylor, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same, place. Filed Jan. 28, 1884. Reissued Mar. 13, 1885. (No model.)

Claim.—1. A mail-receptacle composed of an inner box and an outer case, the inner box being provided with a lock which locks the door of the outer case, substantially as set forth.

2. In combination with a mail-receptacle composed of an inner box and an outer case, a locking mechanism which operates a bolt for locking the door (having a letter-aperture) of the outer case, and a slide for closing the letter-aperture of the inner box, and connecting mechanism between the lock and slide so arranged that when the door is unlocked the slide is closed, and when the door is locked the slide is open, substantially as set forth.

3. In a mail-receptacle, an inside removable box, one of the sides of which is double, and through which is a mail-receiving aperture, substantially as set forth.

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4. In a mail-receptacle, an inside removable box, one of the walls of which is double, and carries locking and safety mechanism, and another of which is provided with a door, substantially as set forth.

5. In a street mail-receptacle consisting of an outer case and an inner removable box, the combination of the outside door of the case and its locking mechanism carried by one wall of the box, and an automatic stop mechanism connected and operating with the lock mechanism, as set forth, and set from the inside of the box which will only permit the door of the outer case to be locked and unlocked a predetermined number of times before said stop mechanism shall be reset, substantially as set forth.

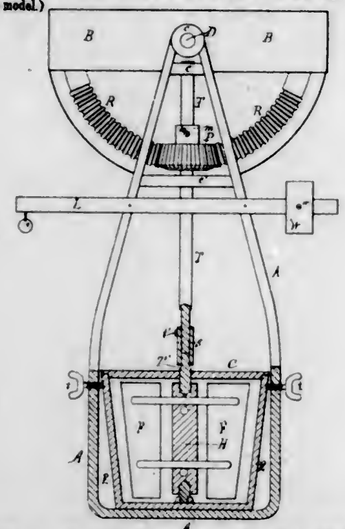
6. In a street mail-receptacle consisting of an outer case and an inner removable box, the combination of the outside door of the case and its locking mechanism carried by one wall of the box, and an automatic stop mechanism and a registering mechanism connected and operating with the locking mechanism, as described, the combination being and operating substantially as set forth.

7. The combination, with the inner box and the outer case and its door, (having a letter-aperture,) of the lock, the bolt, the slide, the segmental rack, and pinion, all connected and operating together substantially as set forth.

8. The combination, with the inner box and the outer case and its door, (having a letter-aperture,) of the lock, the bolt, the slide, the rack, and the register mechanism, all connected and operating together substantially as set forth.

9. The combination, with the inner box and the outer case and its door, (having a letter-aperture,) of the lock, the bolt, the slide, the rack, the registering mechanism, and the stop mechanism, all organized and operating substantially as set forth.

329,689. **SWINGING CHURN.** William J. Temple, Hampden, assignor of one-half to Charles E. Hill, Bangor, Me. Filed May 13, 1885. (No model.)

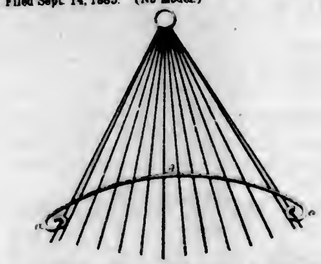


Claim.—1. The combination of the loose bearing B, adapted to be secured to a fixed support, and provided with shaft D and curved rack R, frame A A' C, sleeved at its upper end upon said shaft, dasher-shaft T, having pinion P near its upper end, dasher F, connected to said shaft, and the churn-body E, secured in said frame, substantially as described.

2. The combination of the loose bearing B, adapted to be secured to a fixed support, and provided with the shaft D and curved rack R, frame A A' C, sleeved at its upper end upon said shaft, dasher-shaft T, having pinion P near its upper end, dasher F, connected to said shaft, churn-body E, secured in said frame, lever L, secured across the face of said frame, substantially as described.

3. The combination of the loose bearing B, adapted to be secured to a fixed support and provided with the shaft D and curved rack R, frame A A' C, sleeved at its upper end upon said shaft, dasher-shaft T, having pinion P near its upper end, dasher F, connected to said shaft, churn-body E, secured in said frame, lever L, secured across the face of said frame, and weight W, adjustable upon said lever, substantially as described.

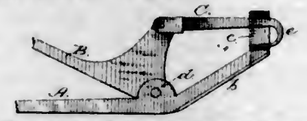
329,690. **HAMMOCK-SPREADER.** Frank A. Thomas, Cedar Rapids, Iowa. Filed Sept. 14, 1885. (No model.)



Claim.—1. As an article of manufacture, the hereinbefore-described hammock-spreader, consisting of an elastic metal bar constructed with underturned hooks *a* at each end, substantially as described.

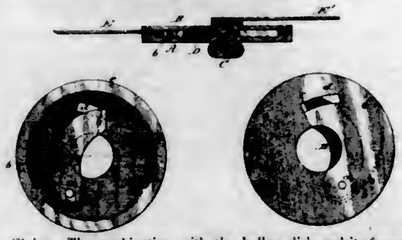
2. A hammock-spreader consisting of an elastic metal bar constructed with underturned hooks *a* at each end and with one or more coils in its body, substantially as described.

329,691. **CASTRATING-INSTRUMENT.** John F. Allen, Martinsdale, Mont. Filed Sept. 7, 1885. (No model.)



Claim.—The herein-described veterinary surgical instrument, consisting of the lower stationary member, A, provided with the elongated handle and loop at one end and with the slotted bent portion at the opposite end, and the upper movable member, B, pivoted to the lower member, A, and provided with the hook C, substantially as and for the purpose specified.

329,692. **METAL EYELET OR BUTTON-HOLE.** Thomas B. Ashford, Clinton, N. C. Filed Feb. 19, 1885. (No model.)



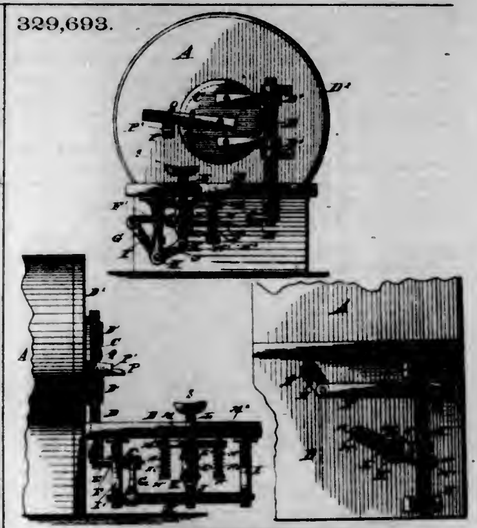
Claim.—The combination, with the hollow disk and its face-plate centrally perforated, of a flat latch-plate, D, pivoted between the disk and face-plate and having a range of movement partly across the central perforation, and a spring, *b*, having one end affixed to the latch, and the other bearing against the inner periphery of the hollow disk, substantially as shown and described.

329,693. **FIRE-DOOR FOR FURNACES.** John W. Baker, Bunker Hill, Ind. Filed Aug. 17, 1885. (No model.)

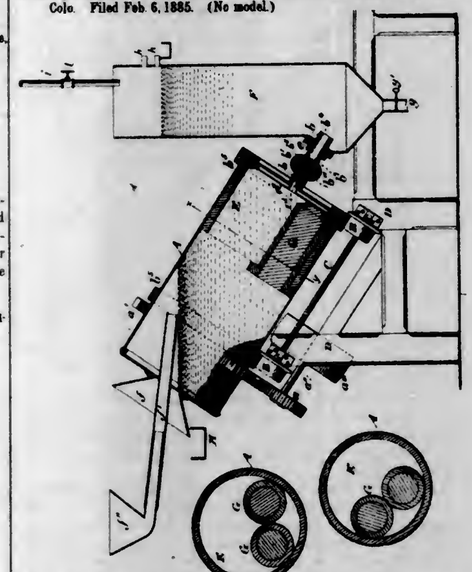
Claim.—1. The combination, with the fire-box of the furnace having external hinge-bearings, of the door with the strap hinges, the pintle with the crank at its lower end, the pivoted connecting-rod with bifurcated end, the depending bearings, and rock-shaft with the longer and shorter arms, the foot-rod and foot-plate, and the guide-rods, and the spring-actuated cross-head, substantially as specified.

2. The combination, with the boiler-head provided with the notched projecting keeper, of the hinged door with the pivoted latch, the pintle with the crank at its lower end, the pivoted connecting-rod with the bifurcated end, the depending bearings, the rock-shaft with the longer and shorter arms, the foot-rod and foot-plate, and the guide-rods and spring-actuated cross-head, substantially as specified.

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329,694. **ORE-CONCENTRATING MILL.** John W. Bailey, Denver, Colo. Filed Feb. 6, 1885. (No model.)



Claim.—1. In an ore-concentrating mill, an inclined rotating cylinder having an upper overflow, combined with a perforated diaphragm at its lower end, a water-tank, and a tubular connection between said water-tank and the cylinder, substantially as set forth.

2. In an ore-concentrating mill, a revolving inclined cylinder, combined with a lower discharge-pipe having a bulb and shot, substantially as set forth.

3. In an ore-concentrating mill, a water-pressure tank combined with a cylinder having a discharge-pipe containing shot, and an outer or surrounding passage, whereby provision is made for the passage of two currents of water under pressure from the tank into the cylinder, one through the filtering material and the other through the surrounding passage, substantially as set forth.

4. In an ore-concentrating mill, a revolving inclined cylinder having a lower discharge-outlet, combined with a water-tank, from which water under pressure is forced through the discharge-outlet into the cylinder, substantially as set forth.

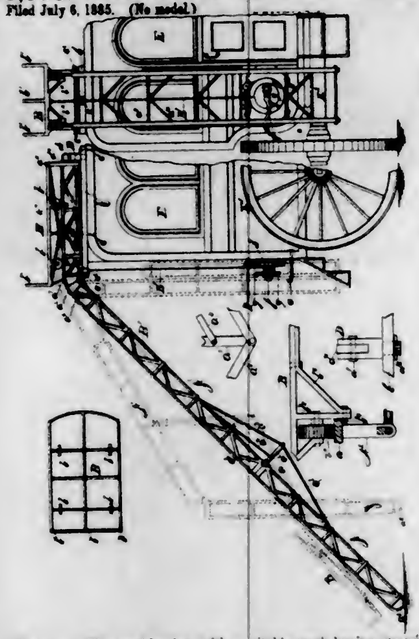
5. In an ore-concentrating mill, a water-pressure tank having an outflow and a feed pipe, combined with an inclined rotating cylinder disbetween said sections and an adjoining section, as and for the purpose described.

charging into said tank and receiving water therefrom under pressure, the water being maintained at a level within and discharged from the upper end of the cylinder, substantially as set forth.

6. In an ore-concentrating mill, an inclined rotating cylinder having an upper funnel-shaped discharge-outlet for the water and tailings, combined with a sluice-box adapted to receive the discharge from the funnel-shaped outlet, and a feed-pipe extending into said outlet, substantially as set forth.

7. In an ore-concentrating mill, an inclined cylinder having a perforated diaphragm near its lower end, and a tubular neck and bulb, combined with shot contained within said bulb, and a screen at the lower end thereof, whereby a discharge-outlet from and a passage for the water upward to the cylinder are formed, substantially as set forth.

329,695. **BAGGAGE-ELEVATOR.** Ira S. Banta, Kansas City, Mo. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with a suitable track having opposite sections hinged together, of a self-adjusting folding truss, all adapted to fold together, as shown and described.

2. The combination, with a suitably-extended frame adapted to support a trackway, having opposite sections hinged together, of a truss pivotally connected to said opposite sections of said truss-frame, and also pivotally connected to a detachable center bar, and adapted to fold together, as described.

3. The combination, with a suitable folding frame adapted to support a trackway, having opposite sections hinged together, of a truss pivotally connected to said opposite sections of said truss-frame, and also pivotally connected to a detachable center bar, and a self-adjusting rod pivotally connected to said center bar, and also to said truss-frame at a lesser angle than that described by said truss, as shown and described.

4. The combination, with a vehicle, of a folding frame having opposite sections hinged together and adapted to be extended and inclined from the vehicle to the ground, and pivotally attached at its upper end to a swivel-joint upon said vehicle, and adapted to operate as described.

5. The combination, with a vehicle, of a folding frame having opposite sections hinged together and adapted to be extended and support a track, and inclined from the vehicle to the ground, and having one of said sections of said frame pivotally attached at its upper end to a swivel-joint upon the top of said vehicle, and obliquely-inclined hinged bearings.

6. The combination, with a vehicle, of a folding frame having adjoining sections hinged together and adapted to be extended and support a trackway, and inclined, as described, and having one of said sections pivotally attached to a swivel-joint upon the top of said vehicle, and flanges arranged upon the top of said vehicle on opposite sides of said sections of said frame, as and for the purpose described.

7. The combination, with a suitable frame upon the top of the vehicle, provided with a suitable cross bar or head, and adapted to support a track, of a swivel attached to the top of said vehicle, and a tongue upon said cross-bar, and a slot in said swivel, and pivotally connected together, as described.

8. The combination, with a vehicle, of a folding frame having opposite sections hinged together and adapted to be extended and support a track, and inclined, as described, and a carriage provided with rollers mounted upon said track, and a retaining device attached to suitable brace-irons depending from the bottom of said carriage, and extending beneath the said track, for the purpose described.

9. The combination, with a vehicle, of a suitable stationary supporting-frame rigidly attached to the top of said vehicle and extending a suitable distance over the end of said vehicle, and a pulley upon the end of said frame, a movable track-frame pivotally attached to and above said stationary frame, and provided with an end cross-bar, a carriage upon said track-frame, and an elevating-rope attached to one end of said carriage and extending over the said pulley on said stationary frame, and also attached at its opposite end to a suitable spool on the vehicle, whereby tension applied to said rope will prevent the side oscillation of the folded track, as described.

10. The combination, with a vehicle, of a folding frame having adjoining sections hinged together and adapted to be extended at an angle from and folded against the end of said vehicle, and one of said sections pivotally connected with the top of said vehicle, and hooks upon the end of said vehicle to support and retain the said sections in place, as described.

329,696. **SICKLE-BAR.** Marion M. Barnes, Weller, Iowa. Filed Feb. 16, 1885. (No model.)

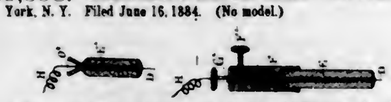


Claim.—A sectional sickle-bar for harvesters, consisting of the sections A, having their ends beveled at B B′ to fit one another endwise, and having a notched or serrated section, C, between said bevels, so arranged that the serrated section of one part A will interlock with the serrated section of the adjacent part, said sections being so arranged that each interlocking portion will come at the central portion of the sickle-section, substantially as and for the purpose set forth.

329,697. **REMEDY FOR RHEUMATISM.** John R. Barr, Union Star, Ky. Filed Aug. 11, 1885. (Specimens.)

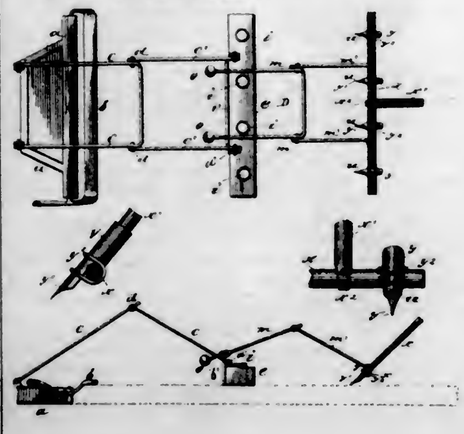
Claim.—The herein-described medical composition for the treatment of rheumatism, consisting of apple-brandy, star-root, (*Aletris,*) guaiacum, nitrate potash, and prickly-ash berries, in or about the proportions specified.

329,698. **THERMOMETRIC ELECTRIC ALARM.** John Barry, New York, N. Y. Filed June 16, 1884. (No model.)



Claim.—An electric thermometer-tube provided where the electric conducting-wire passes through, and is hermetically sealed within it, with an integral funnel-shaped or outwardly-flaring external shield surrounding the said wire and having a rounded outer edge, substantially as and for the purpose herein described.

329,699. **RULING APPARATUS.** Daniel E. Bedinger, Richwood, Ky. Filed May 9, 1885. (No model.)



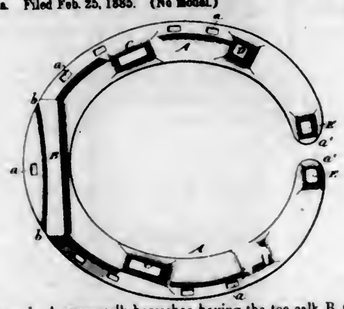
Claim.—1. A polygraph consisting of a holder-frame, a movable ink-carrying frame, and a pen-holder respectively connected by hinge of pivotal joints, substantially as specified.

2. A polygraph consisting of a main frame provided with a paper-clamp, an ink-carrying frame connected with the main frame by hinge-joints and provided with a knife-edge fulcrum, and a pen-carrying frame connected with the said ink-carrying frame by joints having weighted and slotted ends to engage the said knife-edge, substantially as specified.

3. A polygraph consisting of a base or main frame, an ink-carrying frame, and a pen-holder respectively connected by hinge-joints, the said ink-carrying frame being provided with a plurality of bottles or receptacles, which are respectively adapted to coincide with the pens in their holder on a longitudinal line, substantially as specified.

4. The combination, with the pen-holder bar, of the pens and the loops passed over the pens and formed in eyes or loops at opposite ends for the passage of the said holder-bar, substantially as specified.

329,700. **HORSESHOE.** Luther H. Bellamy, Brockville, Ontario, Canada. Filed Feb. 25, 1885. (No model.)

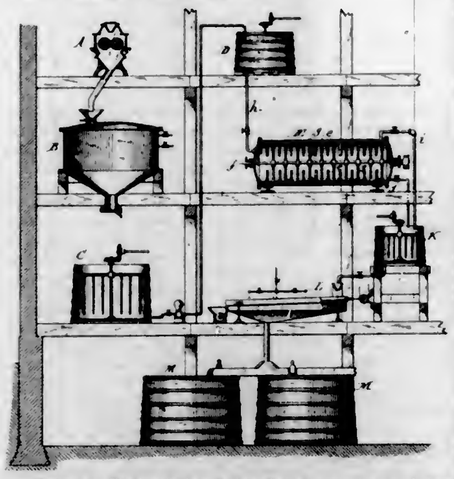


Claim.—1. A seven-calk horseshoe having the toe-calk B, the side calks, C C, the heel-calks D D, and the frog-calks E E, arranged on the web, as shown and described.

2. The horseshoe-web A, made elastic near the ends, then provided with calks at said ends, and having heel-calks made shorter than said frog-calks, as and for the purpose specified.

3. A horseshoe provided with the toe-calk B, concaved on its front face and gradually increasing in width or horizontal thickness from the middle to each end, as and for the purpose described.

329,701. **MANUFACTURE OF STARCH.** Walter F. Birge, Buffalo, N. Y. Filed July 3, 1885. (No model.)

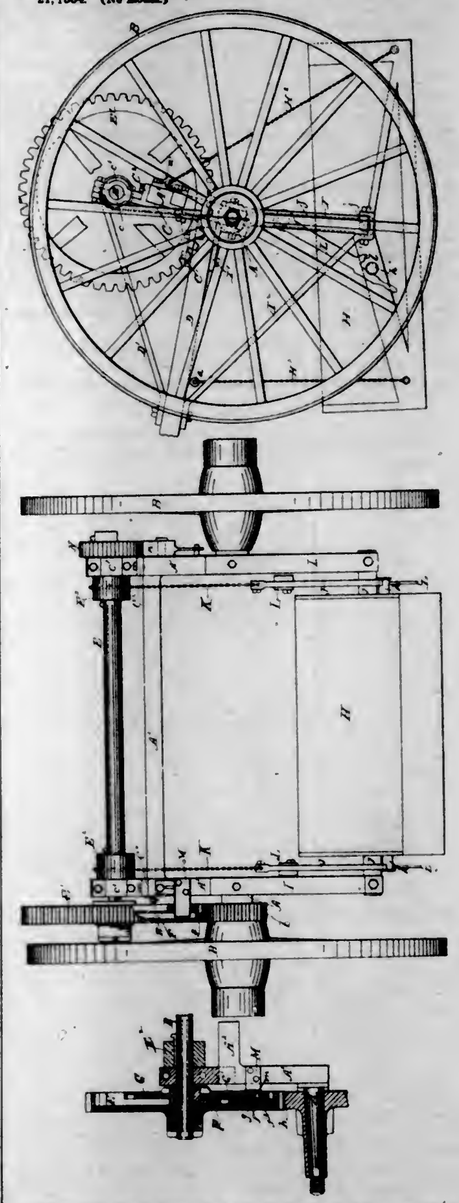


Claim.—1. The herein-described method of extracting starch from grain, which consists in agitating the liquid containing the reduced grain in a closed vessel under pressure, whereby the starch becomes detached from the bran or offal, and then separating the starch from the bran or offal, substantially as set forth.

2. The herein-described method of extracting starch from grain which consists in reducing and steeping the grain, then reducing the liquid to the proper gravity, then agitating the liquid in a closed vessel under pressure, and then separating the starch from the offal, substantially as set forth.

3. The herein-described method of extracting starch from grain, which consists in reducing and steeping the grain, then reducing the liquid to the proper gravity and adding the alkali, then agitating the liquid in a closed vessel under pressure, and then separating the starch from the offal, substantially as set forth.

329,702. **DIRT-CART.** J. Nixon Bodder, Bridgeton, N. J. Filed May 21, 1884. (No model.)



Claim.—1. In a dirt-cart, the combination of supporting-wheels and an axle, the upright guides, the hangers sliding on the guides, the dirt-box pivoted to the hangers, the chains supporting the front edge of the box against downward thrust, and a latch pivoted at its upper end to a sliding hanger, and engaging at its lower end with the dirt-box, and adapted to prevent the front edge of the dirt-box from tilting upward, substantially as set forth.

2. In a dirt-cart, the combination of supporting-wheels and an axle, the upright guides, the hangers sliding in the guides, the dirt-box piv-

oted to the hangers, the latch pivoted to and traveling with the hangers, the lifting-chains, means for winding up the chains and lifting the dirt-box to a predetermined height, means for automatically stopping the further winding of the chains, and means for supporting the dirt-box after the winding of the chains has ceased, substantially as set forth.

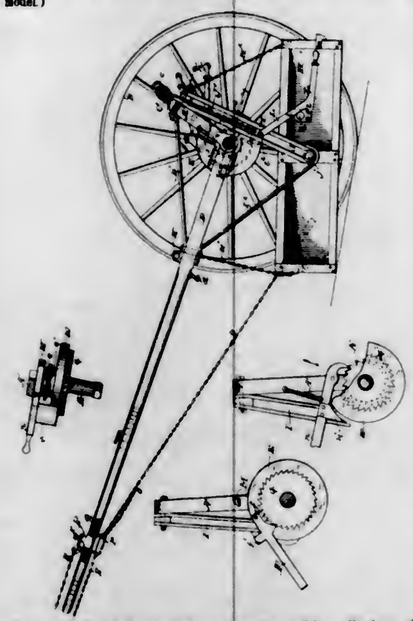
3. In a dirt-cart, the combination of supporting-wheels and an axle, the upright guides, the hangers sliding on the guides, the dirt-box pivoted to the hangers, the lifting-chains, means for winding the chains and lifting the dirt-box to a predetermined height, means for automatically stopping the winding of the chains, and means for supporting the box after the winding of the chains has ceased, substantially as set forth.

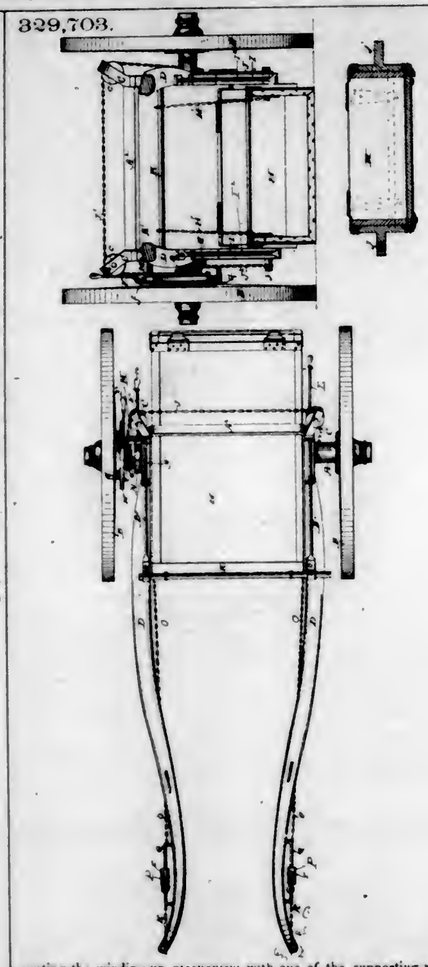
4. In a dirt-cart, the combination of supporting-wheels and an axle, the upright guides, the hangers sliding in the guides, the dirt-box pivoted to the hangers, chains connecting the rear side of the dirt-box with the supporting-frame, chains connecting the front side of the dirt-box with the supporting-frame, the chains which lift the hangers, and means for winding the lifting-chains and elevating the dirt-box to a predetermined height, and means for stopping the winding of the chains after the dirt-box has been elevated to the predetermined height, substantially as set forth.

5. In a dirt-cart, the combination of supporting-wheels and an axle, the hangers, the dirt-box pivoted to the hangers, a latch for preventing the box from tilting during transportation, the lifting-chains, a general winding mechanism operated by the supporting-wheels, and means for automatically disconnecting the chain winding mechanism from the wheels when the dirt-box has been elevated to a predetermined height, substantially as set forth.

6. In a dirt-cart, as a means for winding the lifting-chains, the combination of the shaft E, the cogged wheel E', provided with seats *e e*, the arm F, the latch and the shipper, and the pinion A, substantially as set forth.

329,703. DIRT-CART. J. Nixon Bodine and Oberlin Smith, Bridgeton, N. J.; said Smith assignor to said Bodine. Filed Mar. 16, 1885. (No model.)





Claim.—1. In a dirt-cart, the combination, with a dirt box, the supporting-wheels, an axle between the wheels, and lifting-chains, of a winding-up mechanism mounted loosely upon the axle and means for intermittently connecting the winding-up mechanism with one of the supporting-wheels, whereby the dirt-box may be raised without rotating the axle, substantially as set forth.

2. In a dirt-cart, the combination, with a dirt-box, the supporting-wheels, a cranked axle, and lifting-chains, of a winding-up mechanism mounted upon the axis of revolution of the wheels and means for intermittently connecting the winding-up mechanism with one of the supporting-wheels, whereby the dirt-box may be elevated above the hubs of the wheels, substantially as set forth.

3. In a dirt-cart, the combination, with a dirt-box, the supporting-wheels, an axle between the wheels, and lifting-chains, of a winding-up mechanism mounted loosely upon the axle, means for intermittently connecting the winding-up mechanism with one of the supporting-wheels, and mechanism, substantially such as described, for automatically disconnecting the winding-up mechanism from the supporting-wheel when the box has been elevated to a predetermined point, as set forth.

4. In a dirt-cart, the combination, with a dirt-box, the supporting-wheels, a cranked axle, and lifting-chains, of a winding-up mechanism mounted upon the axis of revolution of the wheels, means for intermittently connecting the winding-up mechanism with one of the supporting-wheels, and mechanism, substantially such as described, for automatically disconnecting the winding-up mechanism from the supporting-wheel when the box has been elevated to a predetermined point, as set forth.

5. In a dirt-cart, the combination of a dirt-box, a winding-up mechanism mounted upon one of the axles, means for connecting the winding-up mechanism with one of the supporting-wheels, a chain connected at its upper end to the winding-up mechanism and running thence down to the dirt-cart, and a chain connected at one end to the winding-up mechanism, running thence above the axles of the supporting-wheels across the upper edges of the dirt-box, thence downwardly to the side of the dirt-box which is opposite to the winding-up mechanism, substantially as set forth.

6. In a dirt-cart, the combination, with the dirt-box and the lifting-chains, of the sleeve loosely mounted upon the axle and having one end of each chain attached thereto, a supporting-wheel loosely mounted upon the same axle, a ratchet-wheel attached to and rotating with the supporting-wheel, and means for locking the supporting-wheel to the sleeve which has the chains attached thereto, substantially as set forth.

7. In a dirt-cart, the combination, with the dirt-box and the lifting-chains, of the ratchet-wheel G, provided with the sleeve mounted upon the axle, the supporting-wheel mounted upon the same sleeve and connected to the ratchet, the disk E and its hub mounted loosely upon the sleeve of the ratchet-wheel, and means for connecting the plate with the ratchet-wheel, substantially as set forth.

8. In a dirt-cart, the combination of the plate E, provided with a sleeve adapted to receive the lifting-chains, and with the ratchet-wheel N, the plate G, attached to and rotating with one of the supporting-wheels, and the pawls engaging with the ratchet-wheels G and N, substantially as set forth.

9. In a dirt-cart, the combination, with the rising and falling hanger J, of the dirt-box pivoted in the lower end of the hanger, the latch-lever L, provided with the jaws *l l'* and pivoted at its upper end to the hanger above the pivotal point of the dirt-box, and the stud *k*, affixed to the dirt-box and adapted to engage alternately with the jaws *l l'* of the latch-lever, substantially as set forth.

10. In a dirt-cart, the combination, with the axle, the dirt-box, and the lifting-chains, of the disk E, provided with the tubular hub, chain-grooves, and ratchet-wheel N, the ratchet-wheel G, the locking-lever F, pivoted to the plate E, and the lever *n*, pivoted to the crank-axle and provided with the brake projecting over the chain-grooves and engaging with the plate E, substantially as set forth.

11. In a dirt-cart, the combination, with the plate E and ratchet G, of the lever F, pivoted to the plate E and adapted to engage with the ratchet G, and means for holding the lever out of engagement with the ratchet, substantially as set forth.

12. In a dirt-cart, the combination, with the plate E and the ratchet G, of the lever F and means for automatically releasing the lever from engagement with the wheel at a predetermined point, substantially as set forth.

13. In a dirt-cart, the combination of supporting-wheels, a dirt-box, means for raising and lowering the dirt-box, and draft devices attached at their rear ends to the front side of the dirt-box and running thence in an upward and forward direction to the thills, and means for connecting the forward upper ends of the draft devices to the thills loosely, so that the draft devices may have a forward and backward movement independently of the thills, substantially as set forth.

14. In a dirt-cart, the combination of supporting-wheels, a dirt-box pivoted below the wheels, so that its front edge can rise and fall, and draft devices attached at their rear ends to the front side of the dirt-box and running thence forward and upward to the thills, and devices loosely connecting the upper forward ends of the draft devices to the thills, so that the draft devices can move forward and backward independently of the thills, substantially as set forth.

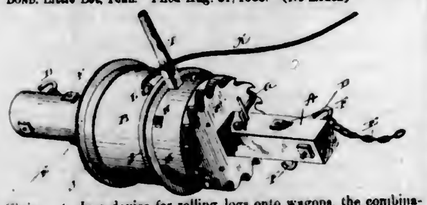
15. In a dirt-cart, the combination of supporting-wheels, a dirt-box pivoted between the wheels, draft devices attached at their rear ends to the front of the dirt-box and running thence upward and forward to the thills, supporting-chains H', attached at their lower ends to the front of the box and adjustably connected at their upper ends to the thills, whereby the inclination of the box and the depth to which it shall dig may be regulated, and means for locking the chains after adjustment, substantially as set forth.

16. In a dirt-cart, the combination of supporting-wheels, the dirt-box pivoted between the wheels, the hangers P, the bars Q, and chains O, each chain attached at its rear end to the dirt-box and at its front end adjustably connected to a hanger, P, substantially as set forth.

17. In a dirt-cart, the combination of the supporting-wheels, the dirt-box pivoted between the wheels, the chains O O, the hangers P P, and the chains H', substantially as set forth.

18. In a dirt-cart, the combination of the supporting-wheels, the dirt-box pivoted between the wheels, the hangers P P, the chains O O, the chains H' H', and the roller K, mounted upon the shafts, substantially as set forth.

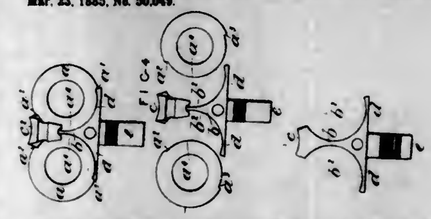
329,704. DEVICE FOR LOADING LOGS ON WAGONS. John T. Bond, Little Lot, Tenn. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a device for rolling logs onto wagons, the combination of a beam or shaft, a drum journaled on the same, and provided with notches or mortises to receive an operating-lever, and having a ratchet-wheel at one end, a dog or pawl hinged to the beam or shaft and engaging the said ratchet-wheel, the ropes or chains having one end attached to the said drum, hooks or staples at the ends of the beam or shaft, chains attached to the same, and hooks extending downwardly from the said beam or shaft near the ends of the drum, all arranged and operating substantially as and for the purpose herein set forth.

2. In a device for rolling logs onto wagons, the combination, with a suitable beam or shaft, of a drum arranged to revolve upon the same, and having metallic flanged hoops or bands for strengthening the same and guiding and confining the rope wound upon said drum, and a pawl and ratchet for checking reverse motion of the drum, substantially as and for the purpose herein shown and specified.

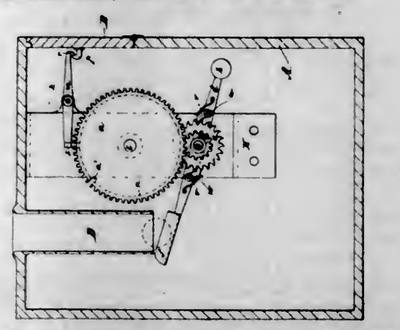
329,705. DOUBLE-BARRELED GUN. Christopher G. Bonehill, Birmingham, County of Warwick, England. Filed Oct. 17, 1884. (No model.) Patented in England May 31, 1884, No. 8,469, and in Belgium Mar. 23, 1885, No. 59,049.



Claim.—1. The combination, with the barrels *a a*, having the shoulders a^2 a^3, of the breech end piece, *b*, having the concavities b^2 b^3 and flats *d d*, substantially as described.

2. As a new article, a breech end piece for double-barreled guns, formed of a single piece of metal, and comprising the central web, *b*, the flats *d d*, the top rib, *c*, extension c^2, and the double lumps *l l*, all made in one solid piece, substantially as shown and described.

329,706. SAVING-BOX. Friedrich W. Bossert, Offenbach-on-the Main, Hesse, Germany. Filed Oct. 14, 1884. (No model.)



Claim.—The combination of lever *d*, provided with trough *f* at one end and counter-weight *h* at the other end, spring-pallets *w w*, attached to the lever *d*, ratchet-wheel *c*, pinion *b*, gear-wheel *a*, with rim *n*, having recess *a'* in periphery of rim *n*, and wheel *a* and lever *m* with projection J at one end and hook *r* at the other end, with the hook *p* at the inside of a door, B, of a saving-box, A, arranged to operate in the manner and for the purpose substantially as described.

329,707. CULTIVATOR. David W. Boyer, Richland Centre, Wis. Filed Sept. 2, 1885. (No model.)



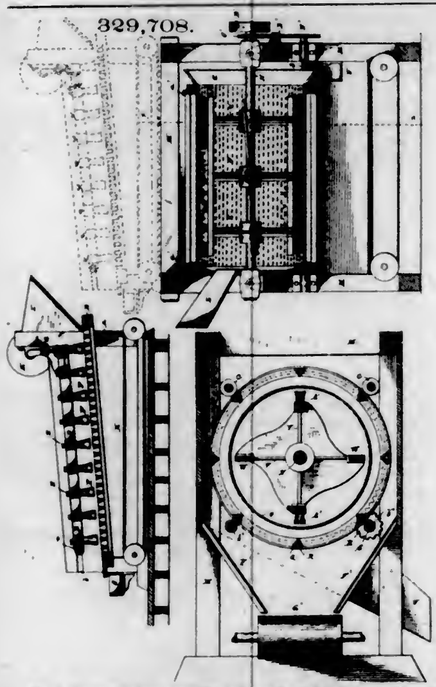
Claim.—1. The combination of the combined tongue and frame with the wheels, which can freely follow the movements of the team, and the beams pivoted directly to the tongue and frame, and having only a vertical movement, substantially as described.

2. The combination with the beam and frame, united together by means of the rod B and cross-piece C, the swinging wheels, and the cultivator-beams pivoted upon the top of the tongue and frame, and having only a rising and falling motion, substantially as specified.

329,708. CLAY-PULVERIZER. James A. Boyd, Minneapolis, Minn. Filed Mar. 12, 1885. (No model.)

Claim.—1. In a machine for pulverising clay for brick-making purposes, a separator having an inclined floor and reciprocating brushes arranged to operate above said floor, as described, in combination with a pulverizer having a perforated rotating cylinder and a central shaft provided with brushes and beaters located in said cylinder, as set forth.

329,708.



2. A clay-pulverizer consisting of a perforated independently-rotating cylinder having an independently-rotating shaft mounted therein, said shaft being provided with beaters and metallic brushes, as set forth.

3. In a clay-pulverizer, a rotating shaft mounted in a perforated cylinder or chamber, provided with adjustable metallic brushes, whereby the brushes can be moved toward the walls of the perforated cylinder or chamber as they become worn.

4. In a clay-pulverizer, a perforated screen-cylinder, mounted on and between friction-wheels, as set forth, the rotating shaft provided with adjustable brushes and beaters, in combination with the shaft S, located below the center of the cylinder and forming a support for one side of the same, and the intermediate gearing for driving the shaft and cylinder, as set forth.

5. A clay-pulverizer consisting of a perforated screen-cylinder, with heads or rings, as described, the heads being connected together by angle bars and rods, as set forth.

6. A clay-pulverizer consisting of a perforated cylinder having one end partially closed to receive the feed-spout L, the other end being enlarged or flared, as described, to facilitate the discharge of the stones or pebbles, as set forth.

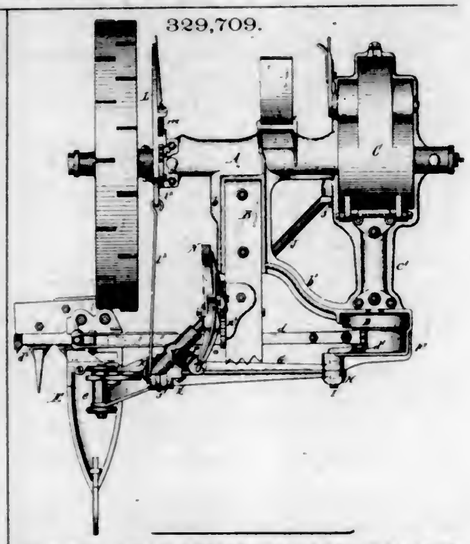
329,709. MOWING-MACHINE. CHRISTOPHER C. BRADLEY, Syracuse, N. Y. Filed Apr. 1, 1884. (No model.)

Claim.—1. The combination, with the main frame, of a straight connecting-bar pivoted to the front end of the main frame so as to be capable of a vertical and rolling movement, a thrust-bar pivoted at one end to the main frame and provided at its opposite end with a bearing in which the free end of the connecting-bar is supported and allowed to rotate, a shoe hinged to the free end of the connecting-bar in advance of the cutter-bar, and a hand-lever for imparting a rotary adjustment to the connecting-bar, substantially as set forth.

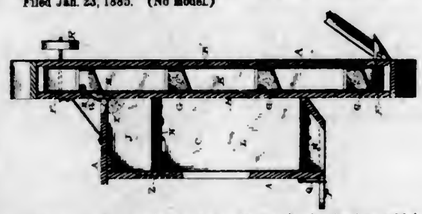
2. The combination, with the main frame and the pitman for operating the cutter, of a straight connecting-bar arranged in front of the pitman and attached to the front end of the main frame by a ball-and-socket joint, a thrust-bar pivoted at one end to the main frame and provided at its opposite end with a bearing in which the free end of the connecting-bar is supported so as to be capable of turning therein, mechanism whereby a rolling adjustment is imparted to the connecting-bar, and a shoe hinged to the connecting-bar in advance of the cutter-bar, substantially as set forth.

3. The combination, with the main frame and tongue, of a connecting-bar and thrust-bar pivoted to the main frame and connected at their opposite ends, a shoe pivoted to the connecting-bar, a hand-lever mounted on the tongue, and a spring connecting the hand-lever with the thrust-bar, substantially as set forth.

329,709.



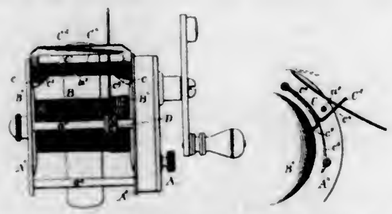
329,710. GRAIN-ELEVATOR. GEORGE S. BRICKER, Newville, Pa. Filed Jan. 23, 1885. (No model.)



Claim.—1. In a grain-meter, an elevator having buckets which are provided with hinged doors or ends, in combination with the frame A, having an opening, H, substantially as shown.

2. The combination of the frame A, divided into the two parts B' C, and having the two compartments J L, with the elevator having buckets, which are provided with hinged ends, the two valves, and a lever for operating them, substantially as described.

329,711. LINE-REEL BRAKE. CHARLES H. BRIGGS, Chicago, Ill. Filed Sept 17, 1885. (No model.)



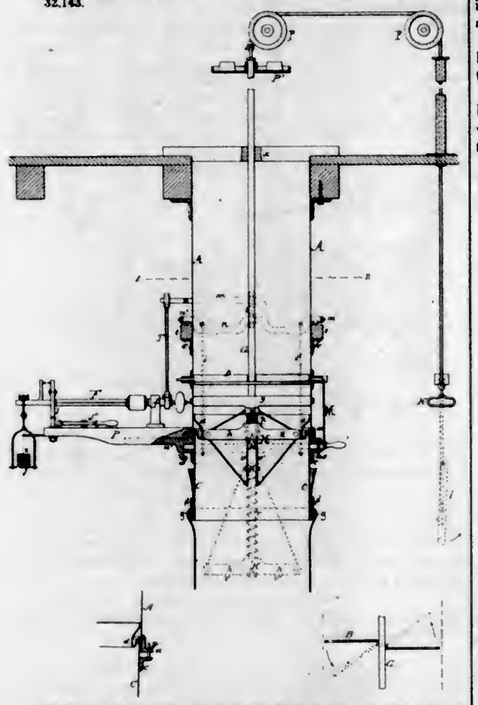
Claim.—1. The combination, with a line-reel, of a brake for the reel engaged with the line, whereby the brake will be automatically released when the line is tightened and applied when the line is slackened, substantially as described.

2. The combination, with a line-reel and frame, of a brake consisting of a movable piece or plate adapted for engagement with the reel-heads and provided with an opening or slot for engagement with the line, and stops upon the frame for holding said plate in place and limiting its movement, substantially as described.

3. The combination, with a line-reel and reel-frame, of a movable brake, C', provided with inwardly-directed projections c^3, a slot, c', and arms c^2 and stops a a^3 upon the reel-frame for retaining said plate movably in position, substantially as described.

4. The combination, with a line-reel and reel-frame, of a movable brake, C', provided with a slot, c', and having projecting parts c c and c^3 c^3 formed of a single piece of sheet metal bent substantially as described.

329,712. APPARATUS FOR FILLING SACKS AND WEIGHING THE CONTENTS THEREOF. PAUL CAILLEAUX and CHARLES CAILLEAUX, Gironville, Seine-et-Oise, France. Filed Dec. 22, 1884. (No model.) Patented in France Oct. 31, 1884, No. 165,122; in Belgium Nov. 4, 1884, No. 66,783; in England Nov. 7, 1884, No. 14,719, and in Germany Nov. 18, 1884, No. 32,143.



Claim.—1. The combination of the fixed cylinder of a sack filling and weighing machine with a movable cylinder, C, levers m and n, and four rods by which said cylinder C is suspended from the levers, and a scale-beam to which the lever m is connected.

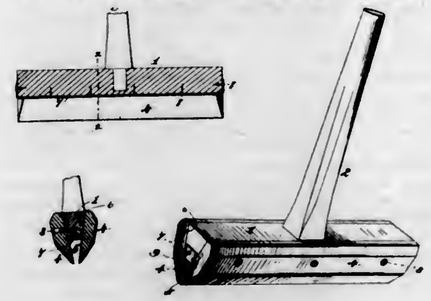
2. The combination of the fixed and movable cylinders of a sack filling and weighing machine with the forked lever m and levers n, connected thereto and embracing the fixed cylinder, the forked end of the lever m and levers n being connected by cross-pieces m' n'.

3. The combination of the fixed cylinder of a sack filling and weighing machine and the movable cylinder with a weighing-beam, and levers from which the movable cylinder is suspended, devices to throw the weighing-beam out of action, and fingers to sustain the movable cylinder.

4. The combination of the cylinders of a sack filling and weighing machine with a ramming-plunger having hinged wings, substantially as set forth.

5. The combination of the cylinders of a sack filling and weighing machine with a ramming-plunger having hinged wings v v', collar u, and connecting cords and springs, substantially as set forth.

329,713. DEVICE FOR BENDING ROOFING-PLATES. BENJAMIN F. CALDWELL, Wheeling, W. Va. Filed June 1, 1885. (No model.)



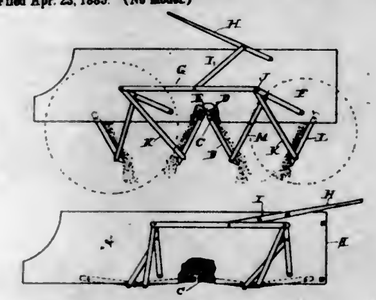
Claim.—1. A tool for bending metal roofing-plates, consisting of a head, a handle fixed thereto, and two jaws rigidly and immovably connected with the head, and having their inner surfaces converging from the head toward the edge of the jaws, substantially as described.

2. A tool for bending metal roofing-plates, consisting of a head having beveled sides, an attached handle, and two jaws rigidly and immovably secured to the beveled sides of the head, substantially as described.

3. A tool for bending metal roofing-plates, consisting of a wooden head, two jaws rigidly secured thereto, and the metallic shoe secured to the inner edge of the head between the jaws, substantially as described.

4. A tool for bending metal roofing-plates, consisting of a head, a handle secured thereto, and two jaws rigidly and immovably connected with the head, and having their ends beveled to form a converging entrance to the jaws, substantially as described.

329,714. DUMPING-WAGON. JOSEPH CAMERON, Cynthiana, Ohio. Filed Apr. 23, 1885. (No model.)



Claim.—1. A series of dumping-slats disposed in pairs and hinged laterally within the sides of the bed, connected by means of a canvas and elevated above the joint by means of a transverse rod, substantially as herein set forth.

2. In a dumping-bed, a longitudinal bar connected upwardly with a lever and hinged to the sides of the bed by means of a series of upright rods, each upright rod having a rod extending from the juncture of the upright rod with the bar to the edge of one of the dumping-slats, and a second rod extending from a point somewhat lower than the first one to the side slat of the opposite pair, substantially as herein set forth.

3. In a dumping-bed, a series of dumping-slats disposed in pairs and hinged laterally within the sides of the bed, connected by means of a canvas and elevated above the joint by means of a transverse rod, the dumping-bed having a longitudinal bar connected upwardly with a lever and hinged to the sides of the bed by means of a series of upright rods, each upright rod having a rod extending from the juncture of the upright with the bar to the edge of one of the dumping-slats, and a second rod extending from a rod somewhat lower than the first one to the side slat of the opposite pair with the bed, as and for the purpose substantially as herein set forth.

329,715. MACHINE FOR NUMBERING PAPER. JOHN R. CARTER, Niagara Falls, N. Y. Filed Aug. 7, 1884. (No model.) Patented in Canada Nov. 19, 1884, No. 20,235.

Claim.—1. The combination of two sets of printing-types with two platens, each platen mounted on a separate vibrating support, as the arm M, and coacting with its set of printing-types, and the two platens having their faces in substantially the same plane and moving in opposite directions and acting on the opposite sides of a sheet of paper passing between said vibrating supports, substantially as described.

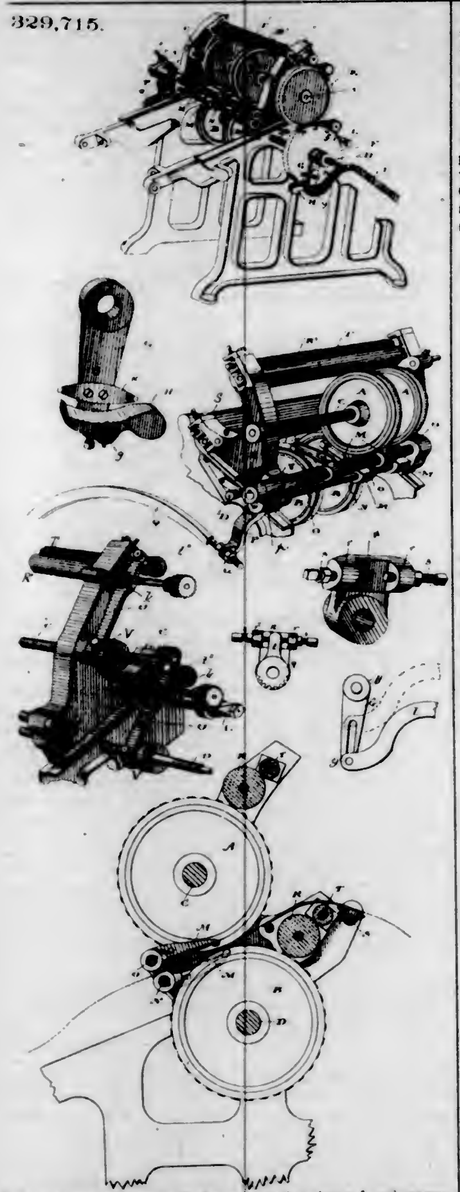
2. The combination of two sets of intermittently-changing printing-types with two reciprocating platens having their faces in substantially the same plane and facing in opposite directions, each platen acting on the face of its appropriate set of types and moving in the opposite direction when printing to the direction the other platen moves when printing, substantially as described.

3. The wheels A, marked as specified and fastened to the shaft C, having keyed it to the spur-wheel E, the wheels B, also marked as specified and keyed to the shaft D, on which the spur-wheel F is fastened, which spur-wheel gears with the spur-wheel E, in combination with the arm G, loosely journaled on the shaft D and having the dog H attached to it, with the operating-rod I and the platens M, the whole being arranged and operated substantially as and for the purpose specified.

4. The combination, in a numbering-machine, and with the wheels A B and shafts C D, geared together by wheels E F, the crank-arm G, and connections, substantially as described, for imparting motion to the wheel F, a detent, as L, and the spring-plate K, all operating as and for the purposes set forth.

5. The combination, in a numbering-machine, and with the wheels A B, mounted on shafts C D, respectively, and geared together by wheels

329,715.



E F, as shown, of the arm G, the reciprocating pitman I, and connections, substantially as described, for adjusting the stroke of said arm, and the pawls H and L, all arranged and operating as set forth.

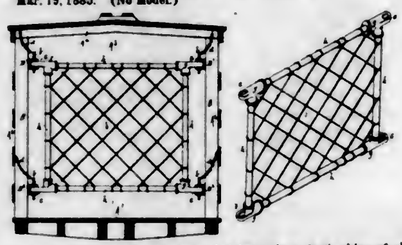
6. The intermittently-moving printing-wheels A B, platens M, fastened, respectively, to the shafts N and O, and located substantially as specified, the arm P, connected to the shaft N and driven by the rod Q, in combination with the toothed collar *q*, fitting loosely on the shaft O and meshing with the toothed boss *p*, fastened to the shaft N, the lug *t*, extending from the collar *q* between the jaws *r*, substantially as and for the purpose specified.

7. In a numbering-machine, substantially as described, the combination, with the wheels A B, arranged, as shown, with the platens M, facing in opposite directions and supported on rock-shafts arranged parallel with each other and having a space between them, the shafts being connected, substantially as described, so as to move together by mechanism arranged outside the path of the paper being operated upon, as set forth.

8. In a numbering-machine, substantially as described, the combination, with the wheels B, the platens M, and their rock-shafts N and O, of the arm P and boss *p*, rigid on the shaft N, the collar *q*, mounted loosely on the shaft O and having arm *t*, the block R, rigid with the shaft O and having jaws *r*, and the set-screws *s*, all arranged and operating as set forth.

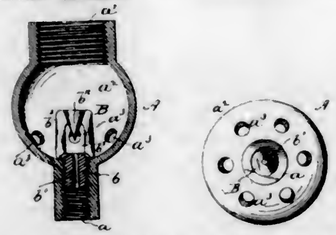
9. In a numbering mechanism, substantially as described, the combination, with the wheels A B and shafts C D, of the disks E and F, geared together, the disk F having a scale upon its face to correspond with the printing-wheels and receiving its motion through an arm, as G, hung loosely on the shaft D, and a seat upon said shaft D, whereby the wheels A B may be turned independent of the arm G and be made to register at desired points by means of the wheel F, as set forth.

329,716. STOCK-CAR. JOHN H. CHAMBERLIN, St. Paul, Minn. Filed Mar. 19, 1885. (No model.)



Claim.—In a stock-car, channeled bars along both sides of the car at top and bottom, provided with series of holes on opposite sides of the channels throughout their length, in combination with interchangeable and reversible gates, each provided with apertured projections at the four corners thereof, which projections fit in the channels of said bars, and pins permanently attached to the car, which pass through the holes in the channeled bars and the apertures in the gate projections, whereby they form fastening devices for the gates on one side and hinges for the gates on the other side, substantially as set forth.

329,717. GAS-MIXER. JOSEPH L. CHAPMAN, Haddonfield, N. J. Filed July 13, 1885. (No model.)



Claim.—1. A mixing-chamber, A, having a series of air-inlets, a^3, in combination with a gas-inlet nipple, *b*, a raised frame, b^2, and an inverted cone, b^4, extending down from the upper part of said frame, and arranged centrally over said nipple, so as to spread the gas and cause a more intimate mixture of it with the air, substantially as set forth.

2. The detachable gas-inlet nipple *b* and the frame b^2, and cone b^4, supported on said nipple and removable therewith, in combination with the mixing-chamber A, having the air-inlets a^3, substantially as set forth.

329,718. CAR-LAMP. GEORGE M. CLARK and WILLIAM H. BRIGGS, Chicago, Ill., assignors to the Adams & Westlake Manufactoring Company, same place. Filed Jan. 24, 1885. (No model.)

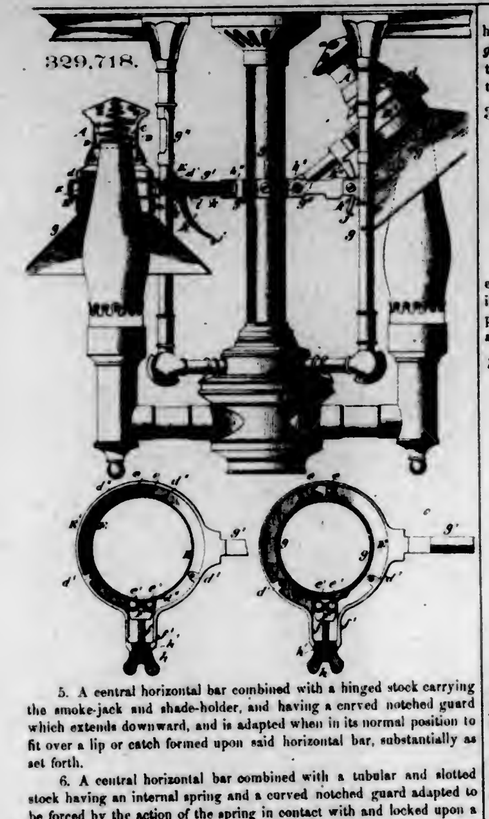
Claim.—1. A smoke-jack, an annulus or projection fixed thereto, and a sleeve placed above the said annulus or projection and adapted to move vertically within the smoke-jack, combined with a spring interposed between the top of the smoke-jack and said moving sleeve and pressing thereon, substantially as set forth.

2. A smoke-jack having the fixture *b*, combined with the movable cone-shaped sleeve D, and spiral spring D', substantially as set forth.

3. The ring or support E', having the standard *f''* and posts or pins *e*, combined with the plate-spring E, formed in two sections, the moving block F, screw *f*, thumb-nut *h*, and sleeve *h'*, one end of each section of the plate-spring being secured to a post, *e*, and the other end to the moving block F, substantially as set forth.

4. A central horizontal bar attached to the fixed portion of the lamp and a stock pivoted to the said bar at *h''*, combined with the smoke-jack and shade-holder, the said stock being adapted to be lifted inwardly toward the fixed portion of the lamp, substantially as set forth.

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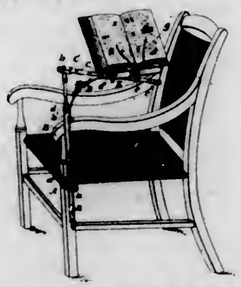


5. A central horizontal bar combined with a hinged stock carrying the smoke-jack and shade-holder, and having a curved notched guard which extends downward, and is adapted when in its normal position to fit over a lip or catch formed upon said horizontal bar, substantially as set forth.

6. A central horizontal bar combined with a tubular and slotted stock having an internal spring and a curved notched guard adapted to be forced by the action of the spring in contact with and locked upon a lip formed upon said horizontal bar, substantially as set forth.

7. A hinged stock carrying the smoke-jack and shade provided with a curved notched guard having a lower hook, the pivoted end of said stock being slotted and tubular and provided with a spring, substantially as set forth.

329,719. BOOK-SUPPORT. ALMON CLARKE, Sheboygan, Wis. Filed Feb. 29, 1884. (No model.)



Claim.—1. In a book-support, the standard B, having pivot *b*, in combination with the arm C, brace D, having ring *d*, and a book-rest, substantially as and for the purpose set forth.

2. In a book-support, the standard B, having pivot *b* and shoulder *b'*, in combination with the arm C, brace D, having ring *d*, and a book-rest, substantially as and for the purpose set forth.

3. The combination, in a book-support, of the shell-casting E, a leaf-holder hinged thereto and adapted to swing as described, and a spring, H, independent of, but bearing against, said leaf-holder, to lock the same in either of the positions to which it may be adjusted, substantially as set forth.

4. The combination, in a book-support, of a suitable book-support, the shell-casting E, provided with the extension *e'*, pivot-pin *e*, the ledges e^2, the spring H, and angle-plate *h h'*, substantially as set forth.

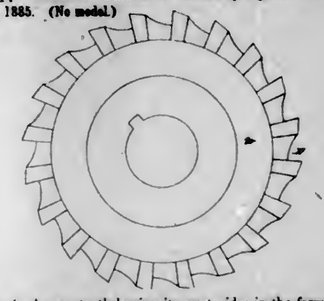
5. The combination, in a book-support, of a book-support, a leaf-holder consisting of an arm, *g*, central lever-arm, *g'*, and hinged portions g^2, a spring, H, and a spring-pressed plate independent of, but adapted to exert a horizontal pressure against, said central lever-arm, *g'*, substantially as set forth.

329,720. COVERING FOR GAS, WATER, AND OIL PIPES. HENRY A. CLIFFORD, Allegheny, Pa. Filed Apr. 20, 1885. (No model.)



Claim.—The combination, with the box C, having openings at the ends for the pipe, of the pipe-sections A, the sleeve-joint B, and the filling consisting of a compound impervious to gas, whereby the pipe is protected at its joint and the parts secured firmly in place, substantially as specified.

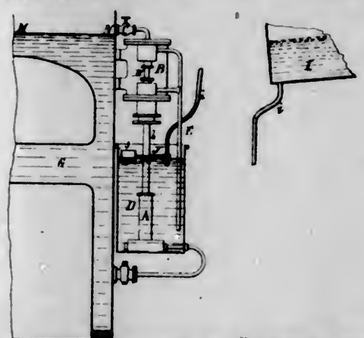
329,721. GEARING. FRANCIS W. CLOUGH, Springfield, Mass. Filed Sept. 21, 1885. (No model.)



Claim.—1. A gear-tooth having its crest sides in the form of segments of circles, which circles intersect at a point above the tooth conjointly with the lines of circles having the pitch-line point each side of the tooth for their centers, substantially as set forth.

2. A gear having teeth whose crest sides are made on a regular curve from their bases to their extremities, the lines of which curves, when extended beyond the end of the teeth, intersect at a point central between said sides thereof.

329,722. FEEDING WATER TO BOILERS. ALBERT DE DION, GEORGES BOUTON, and CHARLES TREPARDOUX, Lutecaux, Seine, France. Filed Aug. 6, 1884. (No model.) Patented in France May 5, 1884, No. 161,913; in Belgium July 18, 1884, No. 65,906; in Germany July 22, 1884, No. 30,059; in England July 23, 1884, No. 10,492; in Italy Sept. 30, 1884, No. 17,304; in Austria-Hungary Oct. 5, 1884, No. 24,075 and No. 45,104, and in Spain Nov. 15, 1884, No. 6,431.

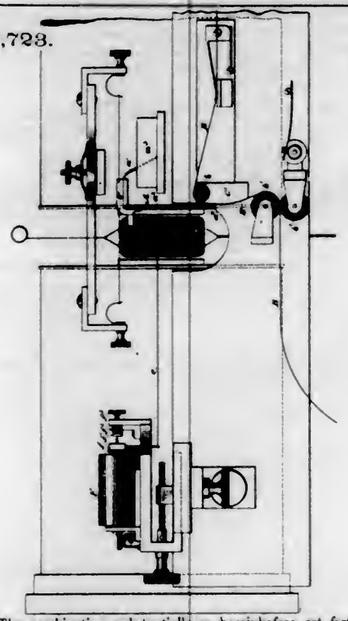


Claim.—In a feed-water apparatus for steam-boilers, the combination, with the boiler, of a tank, as D, having the exhaust projected beneath the surface of the water therein, and having means, as J, for maintaining said water at a proper level, and a pump, as A, submerged in the tank, as set forth.

329,723. SIPHON RECORDING-INSTRUMENT FOR CABLES. WM. DICKINSON, Heart's Content, Newfoundland. Filed Aug. 15, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with the marking-point of a recording-instrument, of a vibrating arm and a mechanical connection between said vibrating arm and said recording-instrument.

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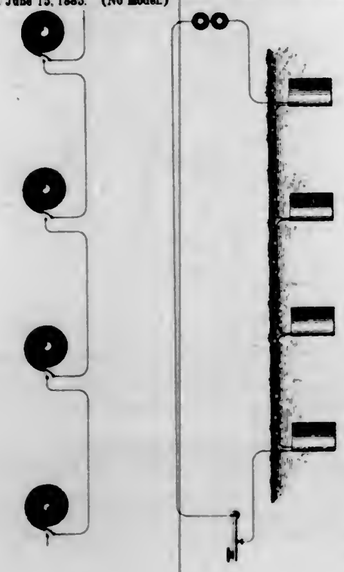


2. The combination, substantially as hereinbefore set forth, with a siphon-recorder, of a rheotome and a mechanical connection between said rheotome and recorder, substantially as and for the purposes specified.

3. The combination, substantially as hereinbefore set forth, with the marking-point of a siphon-recorder, of an electro-magnet, its armature, a circuit for said electro-magnet, the connections of which are automatically made and interrupted by the to-and-fro movement of said armature, and a mechanical connection, substantially such as described, between said armature and siphon, whereby the latter is vibrated.

4. The combination, substantially as hereinbefore set forth, with a marking-point and means for moving the same laterally, of a rapidly-vibrating arm, and a connection between said arm and marking-point, substantially such as described, whereby the vibrations of said marking-point are in a plane at right angles to its lateral movement.

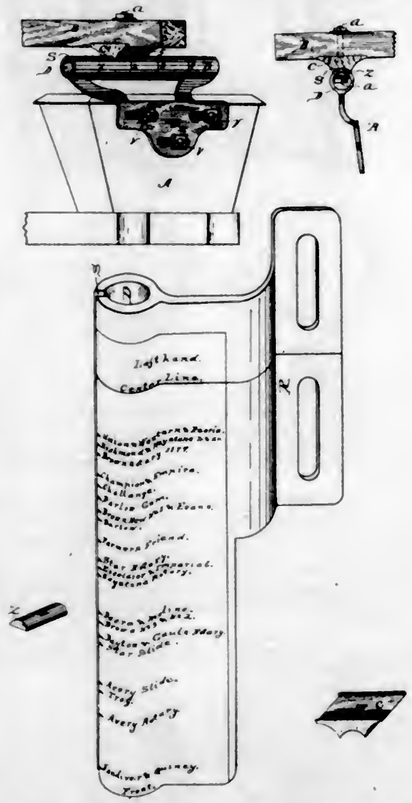
329,724. ELECTRIC EARTH-BATTERY. George F. Dieckmann, New York, N. Y., assignor of one-fourth to Paul Gmehlin, same place. Filed June 15, 1885. (No model.)



Claim.—1. An earth-battery consisting of a number of couples or elements buried in the earth and connected in series, the two electrodes of each couple being placed near together, while the couples or elements are placed comparatively far apart, whereby the short-circuiting effect of the couples upon each other is avoided, and an indefinitely high electro-motive force obtained.

2. An earth-battery consisting of a number of couples or elements composed of sheet-electrodes rolled up in a spiral form and buried in the earth and connected in series, the couples being arranged comparatively far apart, whereby the short-circuiting effect of the couples upon each other is avoided.

329,725. CHECK-ROWER ATTACHING-IRON. Lloyd Eberhart and Irving D. Stevens, Joliet, Ill. Filed Sept. 11, 1884. (No model.)



Claim.—1. The attachment for attaching check-rowers to seed-planters described, consisting of the plate R, having an integral slotted and sealed barrel, D, extending from its upper end, sliding seat *c*, having an indicating point or mark thereon, sliding plate *z*, and bolt *a*, combined and arranged substantially as and for the purpose set forth.

2. A check-rower attaching-iron having the names of several planters, or their equivalent, marked thereon to indicate the position of the check-rower on different planters, substantially as shown and described.

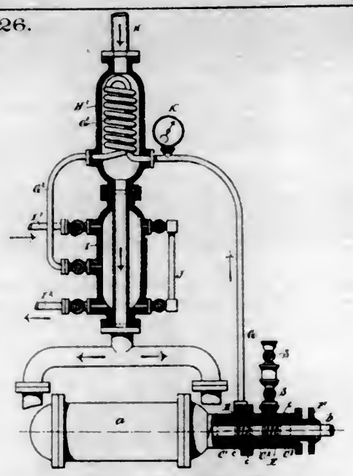
329,726. GAS-COMPRESSOR. Peter Effertz, Chemnitz, Saxony, Germany. Filed June 29, 1885. (No model.)

Claim.—1. In combination with the pipe G and means, as G' H', for concentrating and condensing the gas, the spring E, in the chamber of the stuffing-box, adapted to maintain the tightness of the packing by its elastic action, as herein specified.

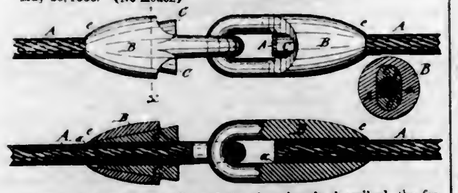
2. A cold-storage reservoir, I, and provisions, as I' I², for emptying it at will, in combination with cooling means G' H' H², the pipe G, and the stuffing-box A' of a gas-compressor having separate packing C' C², as herein specified.

3. The triple packing C' C² C², in combination with the stuffing-box of a gas-compressor, and means S and connection for supplying oil, and with means G G' H' for leading away the gas from one of the chambers, substantially as herein specified.

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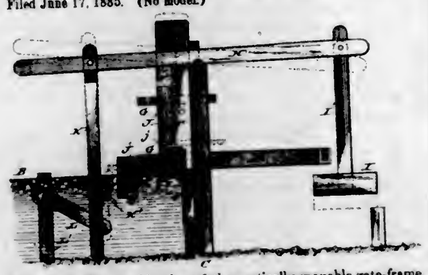


329,727. CABLE-COUPLING. Henry F. Gale, Syracuse, N. Y. Filed May 25, 1885. (No model.)



Claim.—In a cable-coupling of the class herein described, the ferrules or collars B B', beveled externally toward opposite ends, substantially as described and shown, for the purpose set forth.

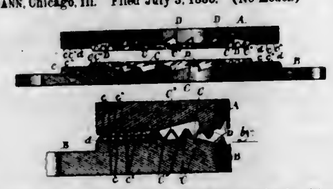
329,728. FLOOD-GATE. James A. Galloway, Spring Hill, assignor to Edward James Rembert and Edward English Rembert, Rembert, S. C. Filed June 17, 1885. (No model.)



Claim.—1. The combination of the vertically-movable gate-frame, the gate supported thereon, the pivoted lever connected with said gate, a stop-bar depending from the forward end of said lever, and a guide whereby to direct the said stop-bar, substantially as set forth.

2. The combination, with the gate, the frame thereof, the lever, and the stop-bar, of a support, L', and a hanger, L, pivoted at one end to the support and at its other end to the stop-bar, substantially as set forth.

329,729. GRINDING-MILL FOR REDUCING GRAIN, &c. Louis Gathmann, Chicago, Ill. Filed July 3, 1885. (No model.)

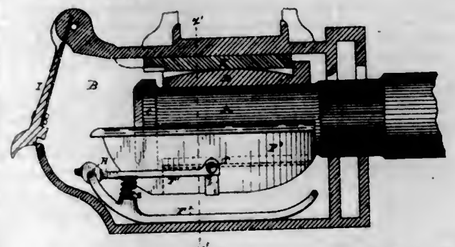


Claim.—1. Two opposing grinding-disks provided with series of interfitting concentric ribs and grooves upon the inner portions of their working-faces intersected by tapering feed-furrows, and upon the outer portions of their faces with smaller and less elevated concentric ribs and grooves, also intersected by feed-furrows, substantially as described.

2. In a pair of opposing grinding-disks, a form of dress comprising a series of inner ribs, C, and grooves C', intersected upon one of the disks by suitable deep feed-furrows, as D, the apices of the said inner ribs on one of the disks being more elevated than the outer dress of the disk, substantially as described.

3. In a pair of opposing grinding-disks, a form of dress comprising a series of inner ribs, C, and grooves C', intersected upon one of the disks by suitable deep furrows, as D, the apices of the said inner ribs on both of the disks being more elevated than the outer dress of the disks, substantially as described.

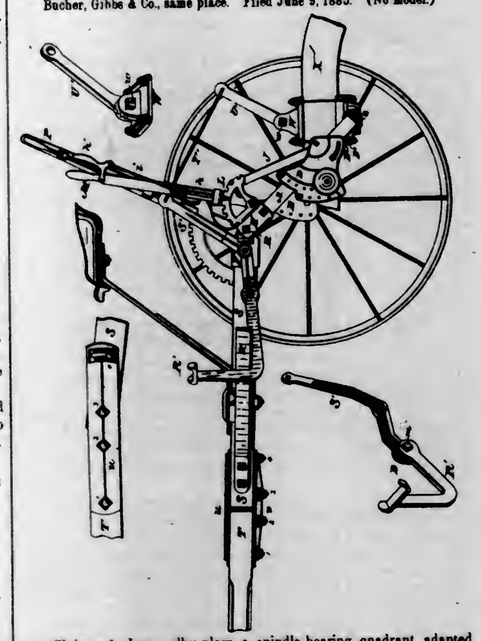
329,730. CAR-AXLE OILER. John Gibbons, West Troy, N. Y., assignor to the Mousely Hardware Company, same place. Filed May 6, 1885. (No model.)



Claim.—1. In a car-axle oiler, the combination of the frame M, made with the bearings e e, and the pan P², made with the trunnions T, chamber C², cover L, and slot S², said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

2. In a car-axle oiler, the combination of the frame M, made with the bearings e e, and the pan P², made with the trunnions T, chamber C², cover L, slot S², and a supply passage or passages connecting with said chamber, substantially in the manner as and for the purposes set forth.

329,731. SULKY-PLOW. Lewis Gibbs, Canton, Ohio, assignor to Bucher, Gibbs & Co., same place. Filed June 9, 1885. (No model.)



Claim.—1. In a sulky-plow, a spindle-bearing quadrant adapted to vibrate about a pivotal point mounted on a sliding plate and for adjustment thereto, as described, and for the purpose set forth.

2. In a sulky-plow, the combination of the adjustable spindle-bearing quadrant, the sliding plate, and the connecting-link with the locking hand-lever, as described, and for the purpose set forth.

3. In a sulky-plow, the combination of a sliding spindle-bearer that embraces the side piece of the main frame, a connecting-link, and a locking hand-lever, as shown and described, and for the purpose set forth.

4. In a sulky-plow, a corner-support, H, to the main frame A, provided with flanges to embrace and support the frame and ears as a hinged support for the tongue-frame, and a toothed sector integral and adapted to support and engage with the locking hand-lever, as shown and described, and for the purpose set forth.

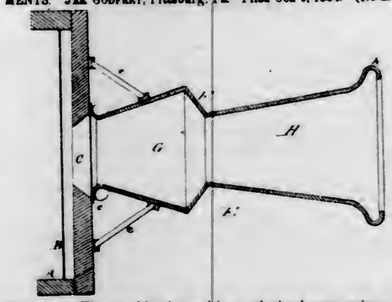
5. In a sulky-plow, a corner-support, N, to the main frame, provided with flanges to embrace and support the main frame and ears as a hinge-support for the tongue-frame, and a hand locking-lever integral therewith and adapted for engagement with a toothed sector, as shown and described, and for the purpose set forth.

6. In a sulky-plow, the combination of the foot-lever R', bell-crank S', connecting-link T', adjustable arm U', and plate W, as shown and described, and for the purpose set forth.

7. In a sulky-plow, a spindle-bearing quadrant or plate adapted to vibrate about a center and for adjustment and engagement with the side piece of the main frame, in combination with the locking hand-lever P, as described by which the frame may be rocked forward and over the spindle, as described and set forth.

8. In a sulky-plow, the combination, with a plow-frame, wheels secured thereto, the corner irons or supports N, the tongue-frame hinged to said corner-irons, and a hand-lever formed integral with said corner-irons, of the sector O, rigidly secured to the tongue-frame and loosely secured to the ears *l* of the corner-irons, substantially as set forth.

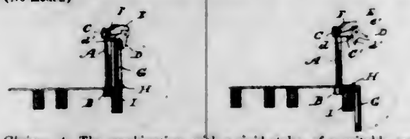
329,732. SOUND-CONCENTRATOR FOR TELEPHONIC INSTRUMENTS. JAS. GODFREY, Pittsburg, Pa. Filed Oct. 6, 1884. (No model.)



Claim.—1. The combination, with a telephonic transmitter, of a trumpet composed of two truncated cones united by a deflecting annular flange, said trumpet being attached to the transmitter-box by flexible fastening devices, substantially as described.

2. A trumpet mouth-piece adapted to be applied to the mouth-piece of a telephonic transmitter, comprising two cone-shaped chambers joined by a dished annular disk, substantially as described.

329,733. AUTOMATIC SIDE-DOOR LATCH FOR CARS. JAMES T. GORDON and J. HENRY HAMILTON, Concord, N. H. Filed Aug. 26, 1885. (No model.)



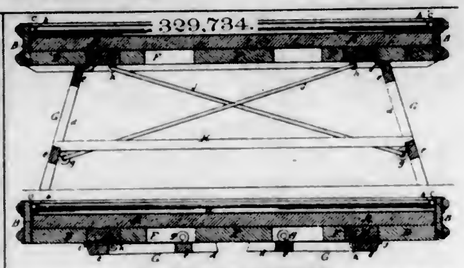
Claim.—1. The combination, with a rigid stake, of a suitable cap-piece secured to the top thereof and projecting horizontally over the top of the side-board, a swivel hook or dog pivoted to the outer end of said cap-piece, and adapted to rise when said side-board is swung down and to drop when said side-board is closed by contact with the same, and a suitable latch for retaining said hook in either position, for the purpose set forth.

2. The combination, with a rigid stake, of a cap-piece rigidly secured to the top thereof and projecting horizontally over the top of the side-board, a swivel hook or dog pivoted to the outer end of said cap piece, and adapted to be lifted or dropped by contact with the side door, a suitable latch for retaining said hook in either position, and a spring acting upon said latch, all constructed and operating substantially in the manner and for the purpose set forth.

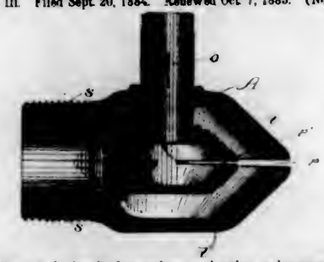
329,734. FOLDING GAME-TABLE. DAVID GOSNER, Philadelphia, Pa. Filed Apr. 30, 1884. (No model.)

Claim.—The combination of the rigid table A, the supporting-frames G, hinged thereto, the rigid longitudinal brace H, extending from frame to frame, and the rigid diagonal braces J, extending from each frame to the body of the table, as set forth.

329,734.

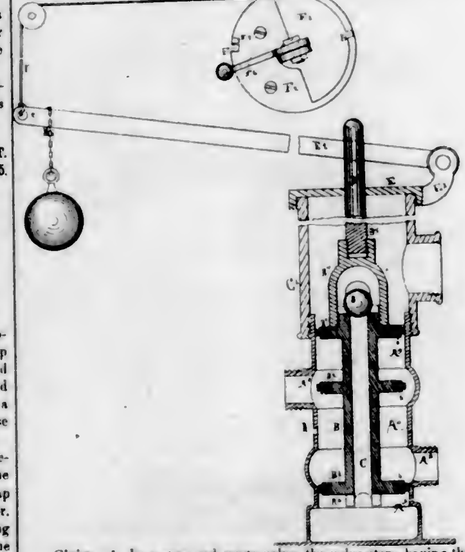


329,735. FEEDING AIR TO FURNACES. EDGAR A. HANNA, Chicago, Ill. Filed Sept. 20, 1884. Renewed Oct. 7, 1885. (No model.)



Claim.—A device for increasing combustion and preventing smoke in furnaces, comprising a shell, A, cast in two parts, *t* and *t'*, each semicircular, or nearly so, at one extremity, and secured together, and having an outlet, *p*, between them, the part *t* having an opening in its body, a tubular extension, *s*, projecting from the end of the shell A, a shell, B, corresponding in shape with the shell A, and supported within the said shell A, and provided with an outlet, *p'*, coinciding with the outlet *p*, and with an opening in its body coinciding with the said opening in the body of the shell A, the whole being constructed and arranged to operate substantially as described.

329,736. STOP AND WASTE VALVE. PATRICK HARVEY, Chicago, Ill. Filed Dec. 1, 1884. (No model.)



Claim.—1. In a stop and waste valve, the valve-stem having the waste-duct located therein, in combination with an automatic check-valve seating inward to close said duct in the stem and opening in the direction of the waste-outflow through said duct, substantially as set forth.

2. In a stop and waste valve, in combination, the valve-shell having induction, eduction, and waste ports, and a cylindrical seat between the induction and eduction ports upon one hand and the waste-port upon the other hand, the valve-stem having a valve to close the induction-port, and another to close the waste-port, and a third valve or piston rigid with it and adapted to said cylindrical seat, and a duct within it opening to its surface beyond said last-named valve or piston in the direction of the waste-port, said piston being located to be in contact with said cylindrical seat throughout the entire stroke of the valve-stem, whereby communication between the induction and eduction ports on one hand and the waste-port on the other hand is restricted to the said duct in the stem, substantially as set forth.

3. In a stop and waste valve, in combination, the valve-shell having induction, eduction, and waste ports, and a cylindrical seat between the induction and eduction ports upon one hand and the waste-port upon the other hand, the valve-stem having a valve to close the induction-port and another to close the waste-port, and a third valve or piston rigid with it, adapted to said cylindrical seat, and a duct opening to its surface beyond said piston in the direction of the waste-port, and a check-valve in said duct and adapted to close the same by seating inward, said piston being located to be in contact with its said cylindrical seat throughout the entire stroke of the valve-stem, substantially as and for the purpose set forth.

4. In a stop and waste valve, in combination, substantially as set forth, the valve-shell having induction, eduction, and waste ports, the valve-seats A^3, A^4, and A^5, of uniform diameter, the valve-stem having the piston-valves B', B^2, and B^3, of uniform diameter, and the central waste-duct, and the automatic check-valve D, seating inwardly to close said duct, substantially as set forth.

5. The valve-shell A, with its ports and valve-seats, the valve-stem B, with its piston-valves and interior waste-duct, the check-valve D, adapted to close said duct by seating inwardly, and the cage B^4, retaining said check-valve and forming the connection between the valve-stem and its actuating-rod, substantially as set forth.

329,737. SCREW-SWAGING MACHINE. HAYWARD A. HARVEY, Orange, N. J. Filed June 8, 1885. (No model.)



Claim.—1. In a machine for rolling threads on screws, the dies between which the blank is rolled having parallel ridges formed thereon at the proper angle of inclination with the plane of motion of the dies, the face of one of the dies parallel throughout with the axis of the blank to be rolled, the face of the corresponding die also substantially parallel with the said axis to an extent equal to the cylindrical portion of the blank to be threaded, thence inclined toward the opposite die, the depth of the said inclination being substantially equal to the length of the pointed portion of the blank, and the inclination substantially equal to one-half the diameter of the blank, substantially as described.

2. In a machine for rolling threads on screws, a rotating die and a stationary curved die, in which the working-faces for impressing the threads upon the body of the blank present parallel ridges at the proper angle of inclination with the plane of motion of the rotating die, the face of one die substantially parallel throughout with the axis of rotation, the face of the other die parallel with the axis of rotation to a depth substantially equal to the threaded portion of the screw to be produced, thence gradually inclined toward the opposite die, the depth of the inclined portion being substantially equal to the pointed portion of the screw to be produced, and the inclination substantially equal to one-half the diameter of the blank, substantially as described.

329,738. SPRING-WASHER. HAYWARD A. HARVEY, Orange, N. J. Filed Sept. 26, 1885. (No model.)

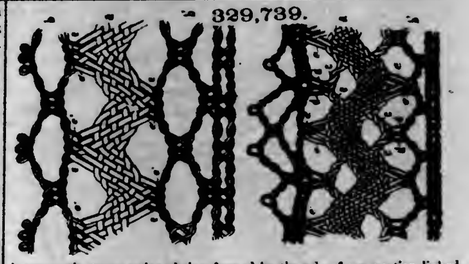


Claim.—A spring-washer for a bolt-nut, formed of a single convolution of a helically-coiled quadrangular bar, and having a dishing shape, substantially as and for the purposes set forth.

329,739. MACHINE-MADE LACE. ERNST HENKELS, Langerfeld, Prussia, Germany. Filed Oct. 2, 1884. (No model.)

Claim.—As a new article of manufacture, the herein-described machine-made lace, consisting in the combination of a multiplicity of threads closely plaited or interwoven to form a zigzag portion (representing rick-rack braid) with an open lace portion constituted by a multiplicity of threads, (representing pillow-lace,) the connection or union

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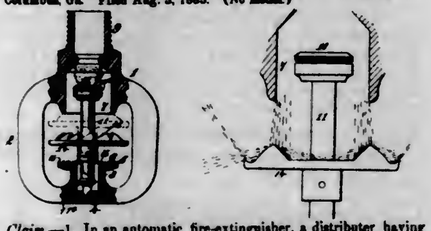


between the two portions being formed by threads of one portion linked with threads of the other, the said threads, subsequent to their re-engagement, passing back to the portion to which they belong, substantially as described.

329,740. PAINT FOR ROOFING, &c. FREDERICK M. HIBBARD, Geneva, Ind. Filed Apr. 2, 1885. (No specimens.)

Claim.—The improved paint consisting of coal-tar, beeswax, resin, litharge, gypsum, and asbestos, in the proportions specified.

329,741. APPARATUS FOR EXTINGUISHING FIRES. JOHN HILL, Columbus, Ga. Filed Aug. 3, 1885. (No model.)



Claim.—1. In an automatic fire-extinguisher, a distributer having a plane central surface surrounded by an annular serrated ridge, the teeth being cut in lines eccentric to the disk, and having their pitch-surfaces inclined in opposite directions, both the pitch-surfaces and the inner surfaces of said teeth being substantially of triangular form, and the diameter of the serrated ridge being equal to the diameter of the discharge, or thereabout, substantially as described.

2. In an automatic fire-extinguisher, a distributer having a plane central surface, surrounded by a serrated ridge arranged beneath the discharge, the teeth in said ridge having each four surfaces—viz., an outwardly-inclined inner surface, a concaved and inclined pitch-surface terminating in a base-line eccentric to the disk and curving upward from its inner end, a vertical face rising from said base-line, and an outer convex surface descending toward and curving upward to a surrounding flange—substantially as described.

3. The combination, in an automatic fire-extinguisher, of a frame having a chamber, 7, provided at its upper side with a valve-seat, 8, a valve-stem, a support upon which the lower end of the stem may turn and oscillate, a deflector and valve secured to the upper end of the stem and oscillating with the latter inside the chamber of the head, and a distributer-disk rigid on the stem beneath the valve and turning and oscillating with the stem, said distributer-disk having a plane central surface and marginal teeth formed in lines eccentric to the disk and having their pitch-surfaces in opposite directions, substantially as described.

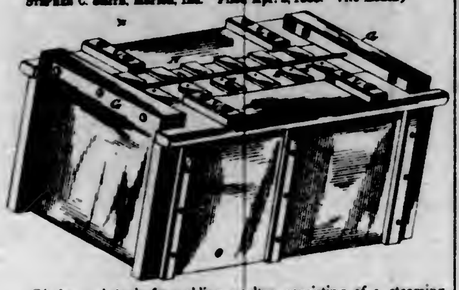
4. The combination, in an automatic fire-extinguisher, of a frame having a discharge-opening and a valve-seat with a valve-stem, a valve constructed with a groove extending transversely into the valve-body to form an elastic face to the valve and a rigid backing thereto, said face and back being rigidly joined at the center to rigidly seat the valve by holding the elastic face under tension against the rigid back, substantially as described.

5. The combination, in an automatic fire-extinguisher, of a frame having a discharge-opening and a valve-seat with a valve-stem, a valve formed with a rigid back and an elastic face rigidly connected at the center, and the face rigidly seated by being held under tension against the rigid back, the soft-metal covering connected with the elastic face, and a solder joint to rigidly hold the elastic valve in tension against its seat, substantially as described.

6. In an automatic fire-extinguisher, an elastic valve attached to an inelastic base-piece, having an annular space between them, the space being adapted to be closed by the elasticity of the valve held by pressure, substantially as described.

7. In an automatic fire-extinguisher, the combination of a valve having a groove cut to produce an elastic face, a rigid back-stop to limit the elastic tension, and a solder joint to hold the elastic valve in tension against its seat, substantially as described.

329,742. BOX FOR SCALDING POULTRY. ROBERT H. HOBBS and STEPHEN C. SMITH, Marion, Ind. Filed Apr. 2, 1885. (No model.)



Claim.—A tank for scalding poultry, consisting of a steaming-chamber provided with inlet and outlet ports and having the top in three sections, the central section being stationary and provided on the sides with a series of openings and on its top with buttons to cover said openings, substantially as described, and for the purpose set forth.

329,743. METHOD OF APPLYING PARAFFINE AND SIMILAR SUBSTANCES TO PAPER AND STRAW-BOARD. WARREN B. HOWE, Chicago, Ill. Filed May 29, 1885. (No specimens.)

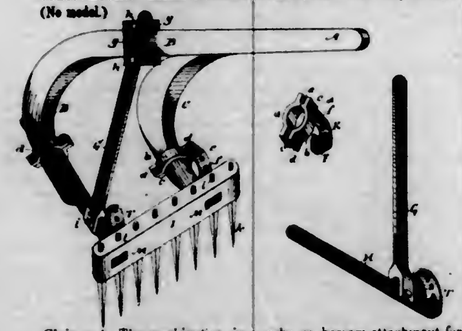
Claim.—The process of treating articles of paper or straw-board, which consists in immersing the article in melted paraffine or other similar substance or substances when said article is at a temperature lower than the melting-point of the said paraffine or other substance or substances, so as to form a film or coating upon its surface, and then subjecting the article thus coated to heat, substantially as described.

329,744. BUTTON-FASTENER. ELLWOOD IVINS, Philadelphia, Pa., assignor to the Patent Button Company, Waterbury, Conn. Filed Dec 15, 1884. (No model.)



Claim.—A button-fastener in which are combined a head, *a*, and two or more downwardly-projecting prongs, *b*, with abruptly-shouldered spear-heads, the whole being made of flexible but inelastic sheet metal, as set forth.

329,745. HARROW AND RAKE ATTACHMENT FOR PLOWS AND CULTIVATORS. ELISHA T. JARRETT, Molino, Tex. Filed May 13, 1885. (No model.)



Claim.—1. The combination, in a rake or harrow attachment for plows, of a clamp provided with a curved perforated shoe, and adapted to be secured to the standard of one beam, a rake or harrow secured at one end to said shoe, a bar, means for connecting the same to a second beam, the lower end of said bar being connected to the other end of the rake or harrow, substantially as and for the purpose set forth.

2. The combination, with a double-beam plow or cultivator, of a clamp secured to the standard of one beam, and provided with a curved perforated shoe, a bar, also provided with a curved perforated shoe and depending from the other beam, a rake or harrow connected to said shoes, and means for securing said bar in a raised or lowered position, substantially as set forth.

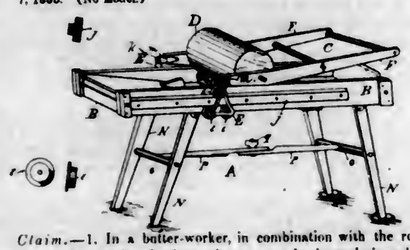
3. The combination, with a plow or cultivator, of a rake or harrow attachment, substantially as described, and a beam, H, provided with a curved perforated shoe, T, connected to said attachment, as specified, said beam being provided with a series of perforations, and a bolt or projection for securing it to the standard, substantially as set forth

4. The combination, with a plow or cultivator, of a clamp connected to the standard, and having a curved perforated shoe portion, a rake or harrow having a pivoted bolt or lug adapted to engage one of the perforations in said shoe portion, and devices for supporting the other end of said rake or harrow, substantially as set forth.

5. The combination, with a plow or cultivator, of a clamp connected to the standard of the plow or cultivator, having a perforated shoe portion, and a cap or shell to fit over the end of said standard, and a rake or harrow attachment connected to said shoe portion, and supported at its outer end, substantially as set forth.

6. The combination, with a plow or cultivator, of a clamp secured to one of the standards, and having a perforated shoe portion, a beam, H, connected to a second standard, extending forward and terminating in a perforated curved shoe, and a rake or cultivator having pivoted bolts adapted for engagement with said shoe portions, substantially as set forth.

329,746. BUTTER-WORKER. HENRY F. KING, Bellows Falls, Vt., assignor to the Vermont Farm Machine Company, same place. Filed May 7, 1885. (No model.)



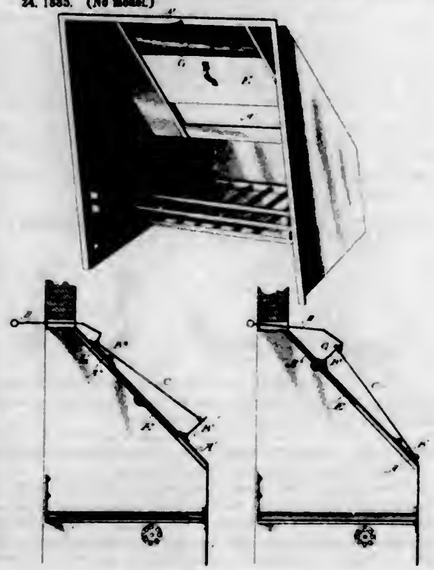
Claim.—1. In a butter-worker, in combination with the roller-frame, a pendent retainer having at its upper end a journal-pin and carrying upper and lower anti-friction rollers adapted to run both on the upper and lower surfaces of a track-bar, as shown and described.

2. In a butter-worker, in combination with the roller-frame, the pendent retainers provided each with the journal-pin *k* at its upper end and with the upper and lower flanged friction-wheels, as shown and described, and the tracks flanged on their upper and lower sides, all substantially as set forth.

3. In a butter-worker, in combination with the retainers provided with the journal-pins *k* at their upper ends and with the upper and lower flanged wheels, the tracks, flanged as set forth, the pressure-roller, and the handles or frame for operating the same.

4. In combination with the tray of a butter-worker, folding legs connected to its under side, and the adjustable bars or reach *p p*, connecting the two sets of legs, and a screw or pin for adjusting and securing these bars one to the other to determine the spread of the legs and firmly hold the tray to its desired position.

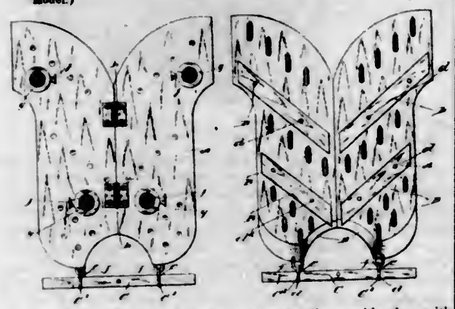
329,747. FIRE-PLACE. MOLESWORTH KING, Chicago, Ill. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with a fire-place having a back provided with openings or vents, of dampers and a rod connecting them, substantially as and for the purpose set forth.

2. The combination, with a fire-place having a back provided with openings or vents, of dampers and a rod connecting them, and the rod D for actuating them, substantially as and for the purpose set forth.

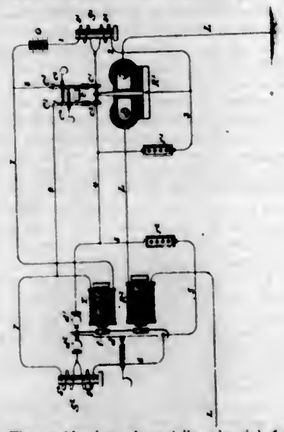
329,748. COMBINED HARROW, CULTIVATOR, AND CLOD-CRUSHER. WILLIAM E. KINNEAR, Fremont, Ohio. Filed July 27, 1885. (No model.)



Claim.—1. In an agricultural implement, the combination, with the hinged platforms and the beveled pieces removably secured thereto, of the clod-bar secured to the forward ends of the platforms, substantially as shown and described.

2. An agricultural implement for use as a cultivator, consisting of the platforms having the teeth secured thereto, the sockets having screws and attached to said platforms, and the removably-secured beveled pieces, substantially as shown and described.

329,749. MEANS FOR PREVENTING FALSE SIGNALS ON REVERSALS IN QUADRUPLEX TELEGRAPHS. JOSEPH W. LAREN, Buffalo, N. Y., assignor to the Baltimore and Ohio Telegraph Company, Baltimore, Md. Filed June 6, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a main line, a neutral and a polar relay, of a local battery, two receiving-instruments included in the circuit of same, a supplementary magnet applied to the armature-lever of the neutral relay and included in the circuit of the local battery, and means for causing the same to be vitalized during the moment of reversal of the main-line currents of the strength employed for actuating the neutral relay.

2. The combination, substantially as hereinbefore set forth, with a polar and a neutral relay and means for operating the same, of a local circuit, two receiving-instruments, respectively controlled by said relays and included in said local circuit, an independent magnet applied to the armature-lever of the neutral relay, and means for causing the same to be vitalized and demagnetized by the operation of said polar relay.

3. The combination, substantially as hereinbefore set forth, with a polar and a neutral relay, of an electro-magnet applied to the armature-lever of said neutral relay, a battery in the circuit of which said electro-magnet is included, a shunt-circuit around said electro-magnet, and means for controlling the connections of said shunt-circuit by said polar relay.

4. The combination, substantially as hereinbefore set forth, with a polar and a neutral relay, of a local battery the connections of which are controlled by said relays, two receiving-instruments included in the circuit of said local battery, means for variously shunting portions of the circuit of said local battery through the instrumentality of said relays, an additional electro-magnet applied to the armature-lever of the neutral relay and included in the circuit of said local battery, a shunt-circuit around said electro-magnet, and means for causing the connections of said shunt circuit to be open at the moments of the reversals of the main-line currents having a given strength.

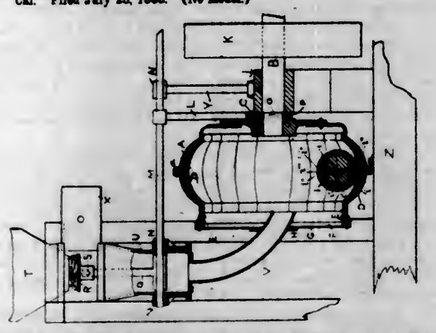
5. The combination, substantially as hereinbefore set forth, of a main line, a neutral and a polar relay included in the same, a second electro-magnet applied to the armature-lever of said neutral relay, a local battery, two receiving-instruments in the circuit of said local battery, means for shunting the coils or a portion of the same of either one or both of said receiving-instruments through the instrumentality of said relays, two yielding contact-arms applied to the armature-lever of said polar relay, a resting-contact for the same, circuit-connections around said second electro-magnet through said levers and contact, and means for moving one or the other of said arms from its contact by the operation of a current of the strength required to operate said neutral relay.

6. The combination, substantially as hereinbefore set forth, with the main line, the neutral and the polar relays included in the same, the battery o, having its connections substantially as described, the additional electro-magnet T, included in the circuit of said battery, the shunt-circuit around said magnet, which is completed while the neutral relay is inactive, but is interrupted when the neutral relay is operated, the arms C' and C², and the stop C for completing and interrupting said shunt-connections, all controlled by the polar relay, substantially as described.

7. The combination, substantially as hereinbefore set forth, of a neutral relay and a polar relay, each having a front and a back contact-stop, a local battery connected with all of said stops, two receiving-instruments operated by currents from said local battery, means for actuating said receiving-instruments by the movements of the levers of said relays between their respective stops and an electro-magnet for holding the lever of the neutral relay in a given position upon the momentary demagnetization of the neutral relay, which electro-magnet is included in the circuit of the local battery.

8. The combination, substantially as hereinbefore set forth, with a telegraphic main line and a relay included therein, of a local battery the connections of which are controlled by said relay, and a supplementary electro-magnet applied to the relay armature-lever and having its coils included in the circuit of said local battery, a shunt-circuit around said electro-magnet, and means for completing and interrupting the connections of said shunt-circuit at will, substantially as described.

329,750. ORE-CRUSHING MACHINE. JOEL B. LOW, San Francisco, Cal. Filed July 25, 1885. (No model.)



Claim.—1. The combination of the casing A, supported on and revolved directly by the shaft B, lining-plates D, shaft B, crushing-ball I, and vertical annular screen G, substantially as and for the purpose described.

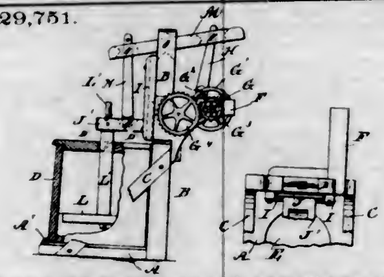
2. The adjustable feeding device consisting of the hopper T, box-housing U, lever Q, plate R, resting directly on top of lever Q, shaft M, forked lever L, adjusting-screws O O, eccentric P, secured on the shaft B, and shaft B, arranged and operating substantially as herein described, and for the purpose set forth.

3. The crushing-ball herein described, consisting, essentially, of the interior perforated ball, outer shell-sections, *i i*, rods *i''*, and wedges *i'''*, substantially as and for the purpose herein set forth.

329,751. DEVICE FOR OPERATING CHURN-DASHERS. JOSIAH P. LUCAS and JOHN M. LUCAS, Cadiz, Ohio. Filed Feb. 26, 1885. (No model.)

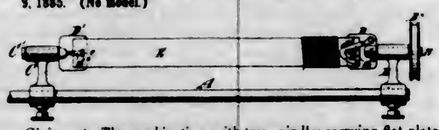
Claim.—The herein shown and described churning device, consisting of the following elements, in combination: the vessel D, base A, cleat A', side braces, C, upright B, the latter mounted on one end of the base, opposite the cleat, guideways I, secured to the face of the upright, arm F, projected rearwardly from the upright, a cross-head held and vertically movable in the guideways, an arm, J', extending from the cross-

329,751.



head, the churn-dasher L', attached to the outer end of the arm J', a lever, M, pivoted on the upright B above the guideways, and arms J' and F, a pitman, N, connecting the forward end of the lever with the arm J', midway of the cross-head and rod L', a second pitman connecting the rear end of said lever with a crank on a shaft journaled to the arm F, and intermeshing gearing G^3 G^4, carried by the arm F and revolving said crank, substantially as and for the purpose specified.

329,752. APPARATUS FOR WINDING STRIPS WITH WORSTED OR OTHER COVERING MATERIAL. CHARLES A. LUDLOW, Bridgeport, Conn., assignor of one-half to Albert R. Lacey, same place. Filed Apr. 9, 1885. (No model.)



Claim.—1. The combination, with two spindles carrying flat plates or chucks provided on their faces with projections for engaging with perforations in the opposite ends of flat strips, one spindle being provided with a driving-pulley, of a bearing for the driving-spindle, and another bearing for the other spindle movable toward and from the driving-spindle to accommodate strips of different lengths, substantially as herein described.

2. The combination, with the two spindles B' C' and bearings therefor, of flat plates or chucks D D', one provided with a hook, d^2, for engagement with a perforation in the end of the pasteboard or other strip, and the other provided with holding devices for grasping the opposite end of said strip, substantially as and for the purpose herein described.

3. The combination, with the two spindles B' C' and bearings therefor, of flat plates or chucks D D', one provided with a hook, d^2, for engagement with a perforation in the end of the pasteboard or other strip, and the other provided with a laterally-projecting pin to enter a hole in the other end of the strip, and a pivoted latch or keeper to be swung over the strip to prevent its detachment from said pin, substantially as herein described.

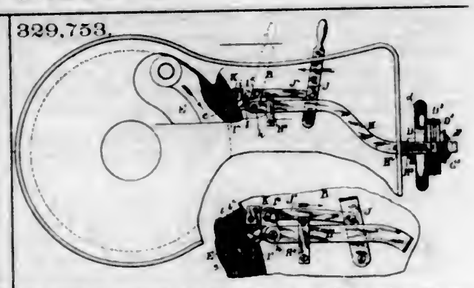
4. The combination, with two spindles, each carrying a flat plate or chuck provided with devices for grasping and holding the ends of pasteboard or other strips, of a driving-pulley on one spindle, and a bearing for that spindle capable of adjustment to move the pulley into and out of frictional engagement with the belt or pulley of a sewing-machine, a base-plate for attachment to the opposite end of a sewing-machine bed, and a bearing for the other spindle adjustable on the base-plate toward and from the driving-spindle to accommodate strips of different lengths, substantially as herein described.

5. The combination, with a spindle provided with a driving pulley and a bearing therefor capable of adjustment to move said pulley into and out of frictional contact with the belt or pulley of the sewing-machine, of a chuck or flat plate with holding devices for grasping one end of a strip of pasteboard or other material and carried by said spindle, a base-plate, C^6, attached to a sewing-machine bed near its opposite end, and provided with a slideway, C^9, and a sliding bar, C^7, adjustable in said slideway and carrying a bearing or stock piece, and a spindle journaled in said bearing or stock piece, and provided with a chuck or flat plate, and holding devices for the other end of the pasteboard or other flat strip, substantially as and for the purpose herein described.

329,753. STOP MECHANISM FOR BUTTON-HOLE SEWING-MACHINES. ERASTUS D. LUDLOW, Chicago, Ill., assignor of one-half to George M. Ludlow, same place. Filed May 12, 1885. (No model.)

Claim.—1. The combination, with a clutch mechanism, a cloth-clamp, and a rotating part of the mechanism for actuating the clamp, provided with a stop or projection, e, of a longitudinally-movable slide-bar connected with the clutch device, a spring applied to move the slide-bar in a direction to disengage the clutch, a dog, I, pivoted to the slide-bar and provided with a notch, *i*, and with an arm, I', adapted for engagement with the stop *e*, a stationary stop, K, engaged with said dog, and means for actuating the said dog, substantially as and for the purpose set forth.

329,753.



2. The combination, with a clutch mechanism, a cloth clamp, and a rotary part of the mechanism for actuating the clamp, provided with a stop or projection, *e*, of a longitudinally-movable slide-bar connected with the clutch mechanism, a spring applied to move the slide-bar in a direction to disengage the clutch, a dog, I, pivoted to the slide-bar and provided with a notch, *i*, an arm, I', adapted to engage the stop *e*, and an arm, I^2, a stationary stop, K, adapted to engage the dog, and a hand-lever, J, connected with the arm I^2 of the dog, substantially as and for the purpose set forth.

3. The combination, with a clutch mechanism, a cloth-clamp, and a rotating part of the mechanism for actuating the cloth-clamp, provided with a stop or projection, *e*, of a longitudinally-movable slide-bar connected with the clutch mechanism, a spring applied to move the slide-bar in a direction to disengage the clutch, a dog, I, pivoted to the slide-bar and provided with an arm, I', adapted to engage the stop *e*, a stationary stop, K, and means for actuating the dog, said dog being provided with a notch, *i*, and a cam-surface, *i'*, adapted to engage the aids stop K, substantially as and for the purpose set forth.

4. The combination, with a clutch mechanism, a cloth-clamp, and a rotating cam-plate provided with a stop or projection, *e*, of a longitudinally-movable slide-bar connected with the clutch device, a spring applied to move the slide-bar in a direction to disengage the clutch, a dog, I, pivoted to the slide-bar and provided with a notch, *i*, and with an arm, I', adapted for engagement with the stop *e*, a stationary stop, K, engaged with said dog, and means for actuating said dog, substantially as and for the purpose set forth.

5. The combination, with a clutch mechanism, a cloth-clamp, and a rotating part of the mechanism for actuating the clamp, provided with a stop or projection, *e*, of a longitudinally-movable slide-bar connected with the clutch device, a spring applied to move the slide-bar in a direction to disengage the clutch, a dog, I, pivoted to the slide-bar and provided with a notch, *i*, and with an arm, I', adapted for engagement with the stop *e*, a stationary stop, K, engaged with said dog, and means for actuating said dog, said arm I' having an angular position with reference to the said slide-bar H, substantially as and for the purpose set forth.

6. The combination, with the balance or driving wheel of a button-hole sewing-machine, a clutch mechanism comprising a disengaging-spring, and a rotating part of the mechanism for actuating the clamp, provided with a stop or projection, *e*, of a slide-bar for holding said clutch mechanism in an engaged or operative position, a dog, I, pivoted to the slide-bar and provided with a notch, *i*, and with an arm, I', adapted for engagement with the stop *e*, and a stationary stop, K, for holding said dog with the arm I' in position for engagement with the stop *e*, substantially as described.

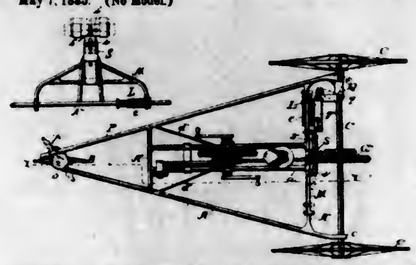
7. The combination, with the driving or balance wheel of a button-hole sewing-machine, a clutch mechanism comprising a disengaging-spring, a brake connected with and actuated by the clutch mechanism and a rotating part of the mechanism for actuating the cloth-clamp, provided with a stop or projection, *e*, of a slide-bar for holding said clutch mechanism in an engaged or operative position, a dog, I, pivoted to the slide-bar and provided with a notch, *i*, and with an arm, I', and a stationary stop, K, constructed to hold the dog in position for the engagement of the arm I' with the stop *e*, whereby, upon completion of a button-hole, the clutch mechanism will be automatically disengaged and the brake applied to the balance-wheel, substantially as described.

329,754. STUD. GEORGE N. MARCH, Watertown, Mass., assignor, by mesne assignments, to the Fiberloid Collar Company, Portland, Me. Filed June 9, 1885. (No model.)



Claim.—The improved collar-stud herein described, the same consisting of the head or body A and arms B C, provided with the enlarged ends *x*, constructed, combined, and arranged to operate substantially as described.

329,755. TRICYCLE. PETER E. MCINTOSH, Auburn, N. Y. Filed May 7, 1885. (No model.)



Claim.—1. In a vehicle impelled by hand and foot power, the combination of a crank-shaft carrying the driving mechanism, and pedals working on vertical guides and suitably connected therewith, with arms extending in opposite directions from the axial line of said crank-shaft and arranged relatively to the pedals to occupy a horizontal position when the pedals relatively are in their highest and lowest positions, substantially as and for the purposes set forth.

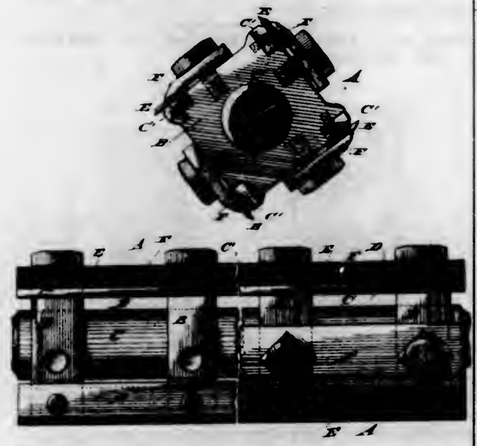
2. In a vehicle, the combination of the steering-wheel, a carriage, as L, and suitable connections, with a lever connected with said carriage and free to oscillate at right angles thereto and engage the same when moved parallel to the carriage, substantially as and for the purposes described.

3. In a vehicle adapted to be steered by the trunk of a person, the combination of a carriage, as L, suitably connected with the steering mechanism, with a lever connected with said carriage and pressed forward by a spring-pressure and provided with a vertically and laterally adjustable head, substantially as and for the purposes specified.

4. The herein-described means for steering a vehicle, consisting of a bar suitably connected at one end to a caster-wheel and at its other end to one arm of a bell-crank lever pivoted to the frame of the vehicle, a link connecting the other arm of the bell-crank to a reciprocating carriage, a yoke connected to said carriage and having a yielding movement at right angles to the motion of the carriage, and a T-head vertically adjustably secured to the yoke and provided with laterally-adjustable plates having projections, the parts being combined, and arranged, and operating substantially as described.

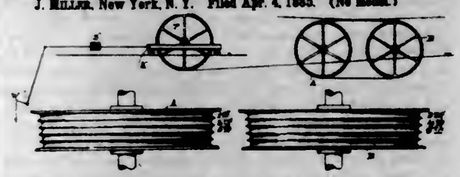
5. In a vehicle driven by an endless band, and as a means for changing the direction of and regulating the tension of the same, an adjustable frame carrying a pair of idlers, in combination with a cross-head to embrace a pair of parallel rods to guide the frame in its movements, and a spring-clamp spanning one of said rods and regulated by a set-screw to hold the frame in its adjusted position.

329,756. CUTTER-HEAD. EDWD. C. MERRION, East Saginaw, Mich. Filed June 17, 1885. (No model.)



Claim.—A planing-machine cylinder comprising a plurality of heads having central transverse apertures and threaded face-recesses, plain longitudinal bars having perforations arranged to coincide with the face-recesses of the said heads, bolts for securing the bars to the heads, blade-clamping caps recessed on their under sides, and bolts for securing the caps to the heads, all combined and arranged for joint operation, substantially as specified.

329,757. DRIVING MECHANISM FOR CABLE RAILWAYS. DANL. J. MILLER, New York, N. Y. Filed Apr. 4, 1885. (No model.)



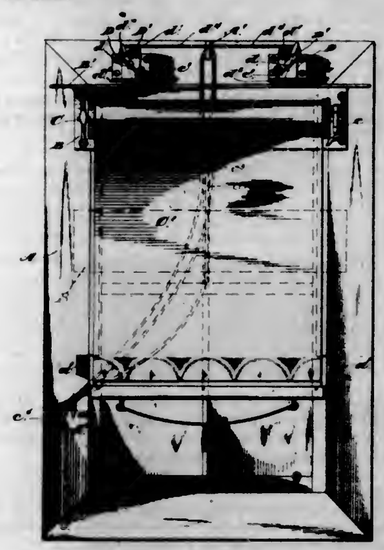
Claim.—1. In a cable railway, a system of driving drums or wheels provided with grooves upon their peripheries, said grooves gradually decreasing in circumferential measurement, as and for the purposes set forth.

2. In a cable railway, the combination of the driving drum or wheel A, having grooves 1 3 5 7 upon its periphery, and the drum B, having grooves 2 4 6 8, as set forth.

3. In a cable railway the combination of the cable with the driving-drums A and B, the said driving-drums being provided with grooves, as described, each successive groove over which the cable travels having a slightly-decreasing circumferential measurement, as set forth.

4. In a cable railway, the combination, with a tension-car, of a counter-balance, connection between said counter-balance and car, and a dynamometer or other weighing device incorporated within said connection, substantially as and for the purposes set forth.

329,758. ADJUSTABLE SHADE FOR WINDOWS. JAMES H. MITCHELL and WILLIAM T. MITCHELL, Wellington, Kans. Filed Sept. 10, 1885. (No model.)



Claim.—1. In an adjustable shade for windows, the combination of the sliding support carrying the curtain and fixtures, cords for raising and lowering said sliding support, and spring-actuated dogs, operated by the supporting-cords, to secure and release the said sliding support, substantially as described.

2. In an adjustable shade for windows, the combination of the sliding support carrying the curtain and fixtures, divided loops secured to the top of the said support, spring-actuated dogs engaging the lower portion of the divided loops, cords secured to the upper portions of the divided loops and passing through loops formed on the upper parts of the said dogs, and a cord attached to the lower portion of the sliding support, said cords operating to raise or lower the said support, substantially as described.

3. In an adjustable shade for windows, the combination of the sliding support carrying the curtain and fixtures, divided loops secured to the top of the supporting-frame, spring-actuated dogs engaging in the lower portion of the divided loops, cords attached to the top portions of the divided loops and passing through loops in the top of the dogs, an eye at or near the center of the window-frame through which the two cords pass, a cord attached to the under side of the curtain-support, and stops on each side of the window-frame to limit the movement of the said sliding support, substantially as described.

4. In an adjustable shade for windows, the combination, with the window-frame, of strips extending partially down each inside portion of the same, metallic straps sliding on said strips, a supporting-frame attached to said strips carrying curtains with suitable fixtures, divided loops attached to the top of the said supporting-frame, strap-metal boxes secured to the window-frame, dogs pivoted therein having loops formed on their upper ends and hooks on their lower ends, said hooks engaging with the divided loops on the sliding support, coiled springs actuating the dogs, cords attached to the top portions of the divided loops and passing through the loops in the upper portions of the dogs, an eye in the center of the window-frame engaging the cords, and a cord attached to the lower portion of the supporting-frame, substantially as described.

5. In an adjustable shade for windows, the combination of suitable strips on each inside of the window-frame engaging metallic slides, a supporting-frame secured to the metallic slides, a curtain-roller having suitable fixtures mounted thereon, divided loops on the uppermost part of said sliding frame engaging with spring-actuated dogs, a support secured to the top of the sliding frame for overhanging curtains, suitable cords attached to and passing through suitable eyes for operating the parts, and stops on the sides of the window-frame to limit the motion of the said sliding frame, all arranged and adapted to serve in the manner substantially as described.

6. In an adjustable shade for windows, the combination, with the window-frame A, of the strips b', secured thereto, metallic slides b, engaging the said strips, a sliding frame, B, attached to said slides, a curtain-roller, C, carrying a curtain, C', divided loops c', secured to the top of the sliding frame, spring-actuated dogs D', mounted in boxes D, engaging the lower parts of said loops c', cords d^4, attached to the upper parts of said loop and passing through the loops d^3 of the said dogs and through an eye, A', secured to the window-frame, a cord, c^4, secured to the lower portion of the sliding frame, said cords acting to secure and release the sliding frame, a support, B', for overhanging curtains mounted on the top of the said sliding frame, and stops a' a' on the side of the window-frame to limit the motion of the sliding support, substantially as described.

329,759. COMPOUND PLASTER AND SHEET-METAL LINING FOR PARTITIONS, &c. Edward C. Morris, Boston, Mass., assignor to Morris & Ireland, same place. Filed Sept. 5, 1885. (No model.)



Claim.—1. A lining for walls, ceilings, partitions, &c., of buildings, composed of metal sheets, substantially smooth-surfaced, and suitably secured in position, and of a plastic compound capable of adhering thereto, substantially as described, for the purpose specified.

2. A lining for walls, ceilings, partitions, &c., of buildings, composed of metal sheets, substantially smooth-surfaced, and suitably secured in position and overlapping at their edges and the seams of the overlapping edges sealed, and of a plastic compound capable of adhering thereto, substantially as described, for the purpose specified.

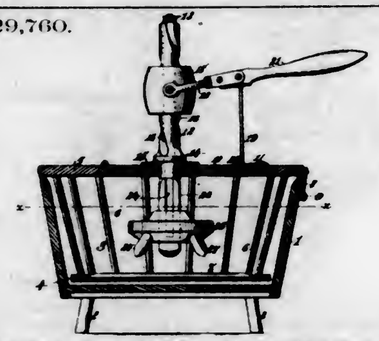
329,760. WASHING-MACHINE. Stephen C. Mortimer, Fort Wayne, Ind. Filed Jan. 29, 1885. (No model.)

Claim.—1. In a washing-machine, the combination, with a vertical shaft carrying an agitator, and having spiral threads formed on its periphery, of a sleeve moving thereon and provided with studs engaging with such threads, and a lever pivoted to said sleeve and fulcrumed upon a support having pivotal bearing upon the machine, substantially as described.

2. In a washing-machine, the combination, with a vertical shaft having spiral threads formed upon its periphery, of a sleeve having studs which engage with said threads, a lever actuating said sleeve, and an agitator mounted upon a rectangular block carried by the shaft, and having automatic vertical adjustment thereon, substantially as described.

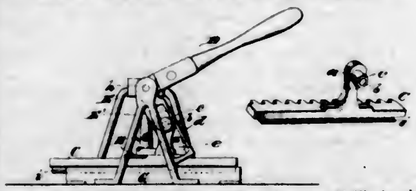
3. In a washing-machine, the combination, with a cage constructed substantially as described, and having a top provided with a hinged lid, of a spirally-threaded shaft having bearing on and passing through said lid, a rectangular block carried by the lower end of said shaft, and having vertical slots which receive spines upon a disk mounted on said block, a sleeve having studs running in the threads of the shaft, a lever pivoted to said sleeve, and a bail upon which said lever is fulcrumed, said bail having pivotal bearings upon the lid of the cage, substantially as described.

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4. In a washing-machine, the combination, with a cage composed of a slatted bottom, open sides, and a top, of a tub or other vessel which receives said cage, a lid hinged in the top of the cage, a vertical shaft passing through the lid, an automatically-adjustable agitator carried by said shaft, a sleeve having studs running in spiral grooves in the shaft, and a lever actuating said sleeve and having its fulcrum pivotally supported upon the lid, substantially as described.

329,761. DEVICE FOR CONVERTING MOTION. Stephen C. Mortimer, Fort Wayne, Ind. Filed Sept. 5, 1885. (No model.)

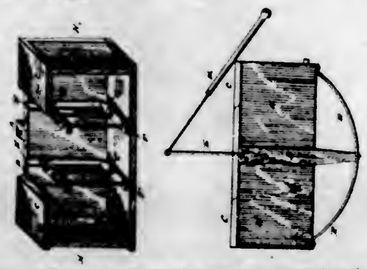


Claim.—1. The combination of the brackets E E', the shaft A, journaled at one end in one of said brackets and carrying a pinion, B, the rack-bar C, having a lug, a, carrying a roller, c, and the lever D, pivotally supported in the brackets E E' and having a slotted extension, d, adapted to engage the roller on the rack-bar, substantially as described.

2. The combination, with the shaft A, having pinion B, and the rack-bar C, provided with a lug, a, and roller c, of the brackets E E' and the lever D, pivotally supported in said brackets and having an extension, d, provided with slot e, substantially as described.

3. The combination of the shaft A, having pinion B, the rack-bar C, carrying a roller, c, the brackets E E', lever D, pivotally supported in said brackets and having a slotted extension, d, and the grooved guide-plate G, substantially as described.

329,762. CHURN. Horace Mott, Carroll, Iowa. Filed Mar. 27, 1884. (No model.)



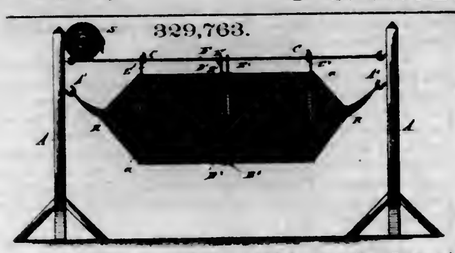
Claim.—The combination, with a churn-box grooved on the sides, of dashers resting in said grooves, posts on the side of the box and extending below it, rockers secured to the ends of the box and also to the posts, and a handle consisting of a frame removably secured to the posts, and an operating portion pivoted to the said frame, the whole operating substantially as and for the purpose specified.

329,763. HAMMOCK. Philip N. Nelkin and Thomas Crawshaw, Taunton, Mass. Filed Apr. 9, 1885. (No model.)

Claim.—1. The combination, with a hammock, of a sectional mosquito-bar entirely surrounding the same, substantially as specified.

2. The combination, with a hammock, of a mosquito-bar entirely surrounding the same and composed of two sliding sections, substantially as specified.

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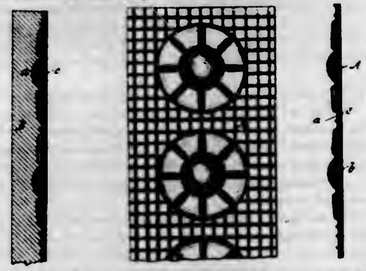


3. The combination, with the rope F, having collars C secured thereto, of the screen-covered hoops a a B' B², eyebolts E' E² E³ E⁴, the rubber rings R R, and the hammock, substantially as specified.

4. The combination, with the rope F, having collars C secured thereto, of the screen-sections provided with the wires D' D², the hoops a a B' B², the eyebolts E' E² E³ E⁴, handles H', and rings R R, substantially as specified.

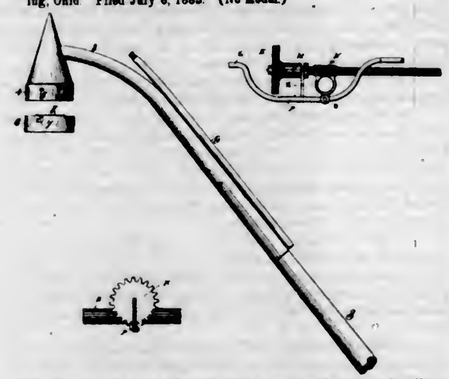
5. The combination, with a hammock, of a sectional sliding enveloping-screen, as set forth.

329,764. FABRIC FOR WALL-DECORATIONS. William Nielson, New York, N. Y. Filed May 23, 1885. (Specimens.)



Claim.—A wall-decoration composed of a facing, a, of muslin or other suitable flexible material, an intermediate continuous layer, b, of a suitable plastic mass, and a backing, c, of muslin or other suitable flexible material, the facing, the backing, and the interposed plastic layer being simultaneously pressed into the desired form, and thereby united, substantially as and for the purpose described.

329,765. CANDLE-EXTINGUISHER. Bernard M. O'Boylan, Corning, Ohio. Filed July 6, 1885. (No model.)

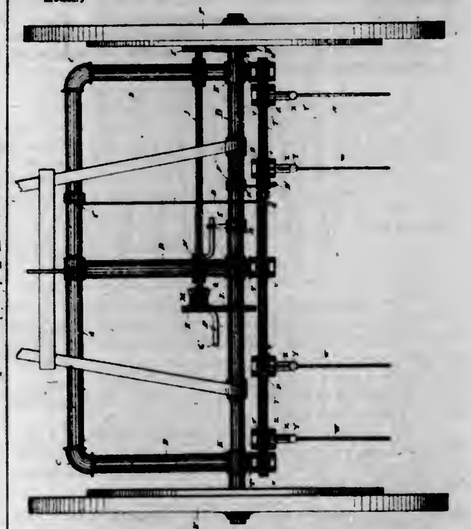


Claim.—1. In an extinguisher, the combination of a handle, a conical cap carried thereby, and a grease-receiving cup connected with the open base of the conical cap, substantially as described.

2. In an extinguisher, the combination, with a conical cap having a cylindrical annulus upon its lower end, of a cup formed of an outer cylinder and an inner frustum, the two being united at the lower edges, the outer piece having slots which engage with studs upon the annulus, substantially as described.

3. As a new article of manufacture, an extinguisher consisting of a conical cap having a cylindrical annulus upon its lower end provided with studs, a cup composed of an outer cylinder and an inner frustum united at their lower edges, and having slots in the outer piece which receive the studs on the annulus, and a support upon which the cap is mounted upon the back of said support, substantially as described.

329,766. HORSE HAY-RAKE. Joseph E. Offutt, Springfield, Ohio, assignor to Joseph W. Thomas, same place. Filed Jan. 19, 1885. (No model.)

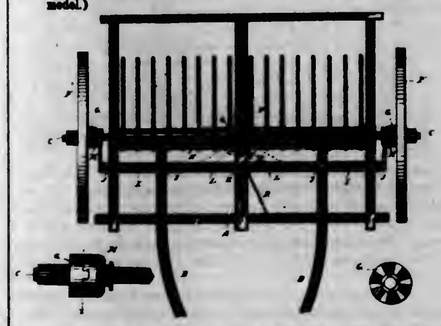


Claim.—1. In a hay-rake, the combination, with the main frame, the supporting-wheels, and the supporting-axle carrying a cog-wheel and a projection, of the dump-shaft adapted to receive rotary motion from one of the wheels, the pinion loosely mounted thereon, the clutch for engaging the same, and the pivoted lever for actuating the clutch when engaged by said projection.

2. In a hay-rake, the combination, with the main frame, the supporting-axle, the rake-shaft pivotally mounted in said frame, and directly connected with the said axle, and carrying a series of tines, of the dump-shaft provided with pinions, one of which receives motion from one of the supporting-wheels, the cog-wheel mounted on the axle, meshing with the other of said pinions, the projection carried by the axle, and the clutch devices actuated thereby, whereby an automatic dump is effected.

3. In a hay-rake, the combination, with the main frame having side and intermediate pieces provided with bearings, the rake-shaft provided with tine-couplings and tines and mounted in said bearings, the axle carrying a cog-wheel and a projection and connected with the rake-shaft, of a dump-shaft having pinions, one of which receives motion from one of the supporting-wheels and the other of which meshes with said cog-wheel, the clutch, and the pivoted lever for actuating the clutch.

329,767. HORSE HAY-RAKE. Joseph E. Offutt, Springfield, Ohio, assignor to Joseph W. Thomas, same place. Filed Feb. 9, 1885. (No model.)

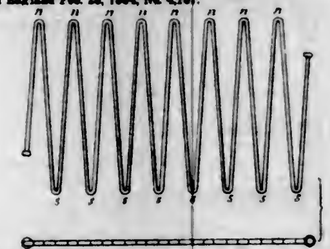


Claim.—1. In a hay-rake, the combination, with the rake-head provided with rake-teeth and connected to the axle-spindles, of the clutches, the bars connected with the clutches, having slots and studs by which they are movably connected with the frame, the pivoted links, the slide, and the chain passing over a sheave and connected with the arm extending from the rake-head, whereby the clutches are automatically disengaged.

2. In a hay-rake, the combination, with the rake-head provided with rake-teeth and connected to the axle-spindles, of the clutches, the bars connected with the clutches and having slots, the studs by which

they are movably connected with the frame, the pivoted links, the slide, and the chain passing over a sheave and connected with an arm extending from the rake-head, and the foot-chain connected with the slide and with the frame.

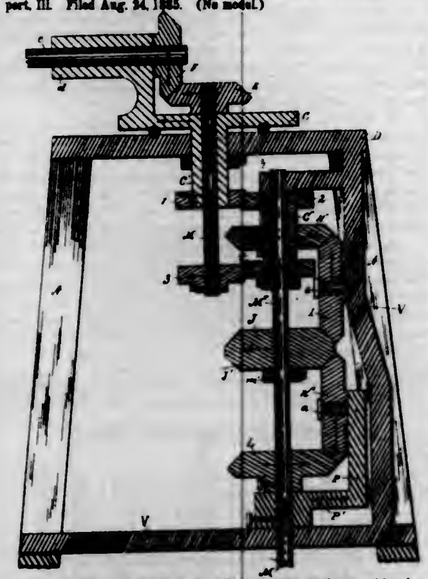
329,768. COMPOUND MAGNET. Samuel H. Parkes, Birmingham, County of Warwick, England. Filed May 19, 1885. (No model.) Patented in England Feb. 28, 1884, No. 4,167.



Claim.—1. The compound magnet herein described, consisting of a steel wire, rod, or bar bent in opposite directions into a series of parallel or slightly divergent sections of substantially the same length, all the adjacent curves or angles of one edge of the series being of one polarity, and all the curves or angles of the other edge of the series being of the opposite polarity, substantially as and for the purpose described.

2. The compound magnet herein described, consisting of a steel wire, rod, or bar bent in opposite directions into a zigzag, the bends being either curved or angular, said wire being magnetized and rolled up into tubular form, substantially as described.

329,769. GEARING FOR WINDMILLS. George H. Pattison, Freeport, Ill. Filed Aug. 24, 1885. (No model.)



Claim.—1. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, a gear rigidly attached to the turn-table, and gearing connecting the wind-wheel shaft and the gear on the turn-table, one element of said train of gearing being a loosely-mounted gear free to rotate about its own axis and to revolve about a vertical axis at one side of the vertical axis of the mill.

2. In a windmill of the class described, the combination of a geared turn-table, a wind-wheel shaft journaled therein, a vertical power-transmitting shaft at one side of the vertical axis of the mill, and a train of gearing connecting said wind-wheel shaft, said geared turn table, and said power-transmitting shaft, one element of said train of gearing being a loosely-mounted gear free to rotate about its own axis and to revolve about the axis of rotation of its movable support.

3. In a windmill of the class described, the combination of a geared turn-table, a wind-wheel shaft journaled therein, a vertical shaft connected by a gear on its upper end with a gear on the wind-wheel shaft, a gear mounted on the lower end of said vertical shaft, and gears engaging, respectively, with the turn-table gear and the gear on the lower end of said vertical shaft, and mounted on shafts journaled in stationary bearings attached to the tower of the mill.

4. In a windmill of the class described, the combination of a rotating geared turn-table, a wind-wheel shaft journaled therein, two independently-journaled vertical shafts adapted to transmit the power of the mill to other machinery, and located at one side of the vertical axis of the mill, a third vertical shaft coincident with the vertical axis of the mill and geared directly to the wind-wheel shaft, and gearing connecting the wind-wheel shaft, the geared turn-table, and said three vertical shafts, one element of said gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of rotation of its movable support.

5. In a windmill of the class described, the combination of a rotating geared turn-table, a wind-wheel shaft journaled therein, a vertical shaft geared directly to the wind-wheel shaft at its upper end, and having a second gear rigidly mounted on its lower end, a gear engaging with the gear on the lower end of said vertical shaft and mounted on a shaft journaled in bearings attached to the tower, and a train of gearing connecting said last-mentioned gear with the gear on the turn-table.

6. In a windmill of the class described, the combination of a rotating geared turn-table, a wind-wheel shaft journaled therein, a vertical power-transmitting shaft at one side of the vertical axis of the mill, and a train of gearing connecting said wind-wheel shaft, said power-transmitting shaft, and said geared turn-table, one element of said train being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of the power-transmitting shaft, whereby during the simultaneous rotation of the wind-wheel shaft in its bearing and of the turn-table about the vertical axis of the mill the motion of the power-transmitting shaft bears a constant ratio to the motion of the wind-wheel shaft.

7. In a windmill of the class described, the combination of a rotating turn-table and a gear rigidly fastened thereto, a second gear engaging the turn-table gear and mounted on a shaft journaled in the tower, a loosely-mounted gear free to rotate on its own axis and to revolve about a vertical axis at one side of the vertical axis of the mill, and a train of gearing connecting said loosely-mounted gear with the gear which engage the turn-table gear.

8. In a windmill of the class described, the combination of a rotating geared turn-table and a wind-wheel shaft journaled therein, a vertical power-transmitting shaft at one side of the vertical axis of the mill, a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of said power-transmitting shaft, and gearing, substantially as shown and described, connecting said loosely-mounted gear, said power-transmitting shaft, said wind-wheel shaft, and said geared turn-table, whereby the rotation of the wind-wheel shaft in its bearing rotates said loosely-mounted gear on its axis and revolves it about the axis of said power-transmitting shaft.

9. The combination of the turn-table C, wind-wheel shaft *c*, journaled therein, gear F on the wind-wheel shaft and gear 1 on the turn-table, the gear E, engaging the gear F, and the gear 3, turning with the gear E, the gears 2 and 4, engaging the gears 1 and 3, respectively, the power-transmitting shaft M′ at one side of the vertical axis of the mill, and gearing connecting the gears 2 and 4 with the shaft M′, one element of said train of gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of the shaft M′

10. In a windmill of the class described, the combination of a rotating geared turn-table and a wind-wheel shaft journaled therein, two independently-journaled vertical power-transmitting shafts in the same straight line and at one side of the vertical axis of the mill, and gearing connecting said wind-wheel shaft, said turn-table gear, and said two vertical shafts, whereby the rotation of the turn-table rotates one of said vertical shafts, but not the other.

11. The combination of the vertical shaft M′ at one side of the vertical axis of the mill, the set of gears L J′ K, concentric with the vertical shaft, the rotating geared turn-table of the mill and the wind-wheel shaft journaled therein, and gearing, substantially as described, connecting said gears L J′ K with said geared turn-table and wind-wheel shaft.

12. The combination of the turn-table C and the gear 1, mounted thereon, the wind-wheel shaft *c* and the gear 3, connected therewith, and the gears 2 4 H I J J′ K L, substantially as shown and described, and for the purpose set forth.

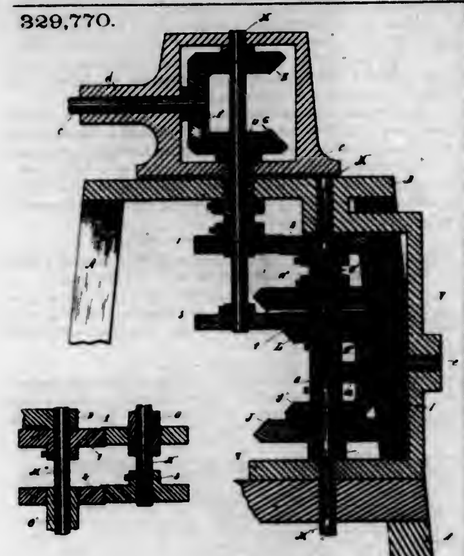
13. The combination of the gears F E 1 3 2 4 H I J J′ K L, substantially as shown and described, and for the purpose set forth.

14. The combination of the turn-table C, wind-wheel shaft *c*, and gears F, E, 1, 2, 3, and 4, substantially as shown and described, and for the purpose set forth.

329,770. WINDMILL-GEARING. George H. Pattison, Freeport, Ill. Filed Sept. 29, 1885. (No model.)

Claim.—1. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, and a gear mounted on said wind-wheel shaft, two gears engaging said gear at opposite points, and gearing connecting the two gears which engage the

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gear on the wind-wheel shaft, one element of said connecting-gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about a vertical axis at one side of the vertical axis of the mill.

2. In a windmill of the class described, the combination of a rotating turn-table and a wind-wheel shaft journaled therein, a gear-wheel mounted rigidly on the wind-wheel shaft, and two gear-wheels engaging said gear-wheel at opposite points, a power-transmitting shaft parallel to the vertical axis of the mill, but at one side thereof, and a train of gearing connecting the power-transmitting shaft and the two gears which engage the wind-wheel-shaft gear, one element of said connecting-train being a loosely-mounted gear free to rotate on its axis and to revolve about the axis of its rotating support.

3. In a windmill of the class described, the combination of a rotating turn-table and a wind-wheel shaft journaled therein, a vertical shaft and a vertical sleeve, and gears mounted on the upper ends of said shaft and sleeve, respectively, gearing mounted on the wind-wheel shaft and engaging both of said gears, gears mounted on the lower ends of said vertical shaft and sleeve, respectively, and gears engaging said last-mentioned gears, respectively, and rotating on an axis at one side of the vertical axis of the mill.

4. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, and a gear mounted on the wind-wheel shaft, a vertical shaft and a vertical sleeve coincident with the vertical axis of the mill, and gears mounted on said shaft and sleeve, respectively, and engaging the wind-wheel-shaft gear at opposite points, two independently-journaled vertical power-transmitting shafts at one side of the vertical axis of the mill, and gearing connecting said power-transmitting shafts with the shaft and sleeve coincident with the vertical axis of the mill, one element of said connecting-train being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of its rotating support.

5. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, and a gear-wheel mounted on said wind-wheel shaft, two gear-wheels engaging the wind-wheel-shaft gear at opposite points, a power-transmitting shaft parallel to the vertical axis of the mill, but at one side thereof, and a train of gearing connecting said power-transmitting shaft with the two gears which engage the wind-wheel-shaft gear, one element of said connecting train of gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of said power-transmitting shaft, whereby during the simultaneous rotation of the wind-wheel shaft in its bearing and of the turn-table about the vertical axis of the mill the motion of the power-transmitting shaft bears a constant ratio to the motion of the wind-wheel shaft.

6. In a windmill of the class described, the combination of a rotating turn-table, C, a wind-wheel shaft, *c*, journaled therein, and a gear, F, on said shaft, the gears E G, engaging the gear F, the gears 3 and 1 rotating with the gears E G, respectively, the gears 2 and 4, one engaging with the gear 1 and the other with the gear 3, the power-transmitting shaft M′, at one side of the vertical axis of the mill, and a train of gearing connecting the shaft M′ with the gears 2 and 4, one element of said train of gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of the shaft M′.

7. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, and a gear-wheel mounted on said shaft, two gears engaging the wind-wheel-shaft gear at opposite points, two independently-journaled vertical shafts at one side of the vertical axis of the mill, and gearing connecting said power-transmitting shafts with the two gears which engage the wind-wheel-shaft gear, whereby the rotation of the turn-table rotates one of said power-transmitting shafts, but not the other.

8. The combination, with the turn-table of a windmill, the wind-wheel shaft journaled therein, the gear F, mounted on said shaft, and the gears E G, engaging the gear F, of the vertical shaft M′, at one side of the vertical axis of the mill, the three gears L J′ K, rotating about the axis of the shaft M′, and gearing, substantially as shown and described, connecting the gears L J′ K with the gears E G.

9. The combination of the turn-table C, wind-wheel shaft *c*, and gears E F G 1 2 3 4 H I J J′ K L, substantially as shown and described, and for the purpose set forth.

10. The combination of the turn-table C, the wind-wheel shaft *c*, and the gear F, mounted on said shaft, the gears E G, engaging the gear F, the gears 1 and 3, rotating with the gears G E, respectively, and the gears 2 and 4, engaging the gears 1 and 3 and communicating the motion thereof to other mechanism, substantially as shown and described.

11. The combination, with the rotating turn-table of a windmill, the wind-wheel shaft journaled therein, and gearing mounted on the wind-wheel shaft, of a vertical shaft and a vertical sleeve coincident with the vertical axis of the mill, gears mounted on said shaft and sleeve and engaging the wind-wheel-shaft gearing, spur-gears mounted on the lower ends of said vertical shaft and sleeve, respectively, and a train of gearing connecting said spur-gears, one element of said train of gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of its rotating support.

12. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, and a gear-wheel mounted on said wind-wheel shaft, a power-transmitting shaft, M′, at one side of the vertical axis of the mill, two gears engaging the wind-wheel-shaft gear at opposite points, and a train of gearing connecting said two gears with the shaft M′, one element of said train being a loosely-mounted gear free to rotate on its own axis and about the axis of its rotating support, whereby the turn-table may rotate without rotating either the wind-wheel shaft or the shaft M′.

13. The combination, with the rotating turn-table of a windmill and a wind-wheel shaft journaled therein, of two independently-journaled and independently-rotating vertical shafts at one side of the vertical axis of the mill, and gearing constructed, substantially as shown and described, of a train of gearing connecting said wind-wheel shaft with said vertical shafts, whereby the rotation of the wind-wheel shaft rotates the vertical shafts in the same direction.

14. The combination, with the rotating turn-table of a windmill and a wind-wheel shaft journaled therein, of two independently-journaled vertical shafts lying in the same straight line at one side of the vertical axis of the mill, and gearing, substantially as shown and described, connecting the wind-wheel shaft and said vertical shafts, whereby the simultaneous rotation of the wind-wheel shaft in its bearing and of the turn-table about the vertical axis of the mill rotates said vertical shafts in the same direction, but at different rates of speed.

15. The combination, with the turn-table and journaled wind-wheel shaft of a windmill of the class described, of a vertical shaft, M′, at one side of the vertical axis of the mill, and adapted to transmit the power of the mill to other mechanism, and a train of gearing constructed substantially as described, and connecting the shaft M′ with the wind-wheel shaft, one element of said train of gearing being a loosely-mounted gear free to rotate about its own axis, but connected to the shaft M′ by means insuring bodily rotation of the gear with said shaft.

16. The combination, with the rotating turn-table of a windmill, a wind-wheel shaft journaled therein, and a gear-wheel mounted on said shaft, of a vertical power-transmitting shaft at one side of the vertical axis of the mill, a gear-wheel, I, mounted on a shaft journaled in a stationary bearing, and two gear-wheels engaging the wind-wheel-shaft gear at opposite points, and gearing engaging the gear I at opposite points and connecting it with the power-transmitting shaft and with the two gears which engage the wind-wheel-shaft gear, substantially as shown and described, and for the purpose set forth.

17. The combination of the shaft *c*, the vertical shafts M M″, and the gears E F G 1 2 3 4 H I J J′ K L, substantially as shown and described, and for the purpose set forth.

18. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, a vertical shaft and a vertical sleeve connected with the wind-wheel shaft by gearing rotating them in opposite directions, a power-transmitting shaft, and a train of gearing connecting said vertical shaft and sleeve with said power-transmitting shaft, one element of said train of gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about a vertical axis at one side of the vertical axis of the mill.

329,771. ORNAMENTAL PANEL. CHAUNCEY D. PEASE, New York, N. Y. Filed May 21, 1885. (No model.)

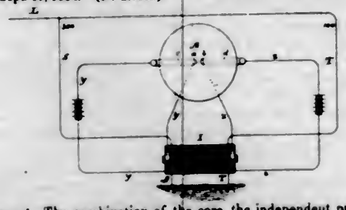


Claim.—1. An ornamental panel consisting of a plate of glass having on its surface a raised design in color and a suitable backing, substantially as described.

2. In combination with the plate of flashed glass upon which a design has been formed by removing portions of the colored surface, a colored backing behind the plate, substantially as and for the purpose described.

3. The panel consisting of a layer of clear glass, an ornamental raised design in colored glass on the front face of this layer, and a colored backing adapted to show through the clear glass between the portions of the colored design, substantially as and for the purpose described.

329,772. INDUCTION-COIL. THOMAS J. PERRIN, New York, N. Y., assignor to the National Improved Telephone Company, New Orleans, La. Filed Sept. 19, 1884. (No model.)



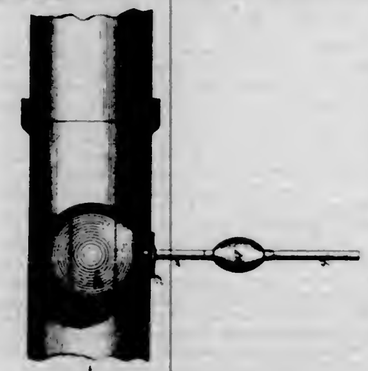
Claim.—1. The combination of the core, the independent primary wires wound on spools placed side by side upon the core, and the secondary wire or wires wound from end to end of the core over the primary coils.

2. The combination of a core, two sections of primary wire wound in spools side by side upon the core, and a secondary wire wound in continuous layers one upon the other, each layer being wound continuously over both spools of primary wire, substantially as set forth.

3. The combination of the core, the primary wires wound on spools placed side by side upon the core, and the secondary wires wound from end to end of the core over said primary coils alternately in opposite directions so as to cross each other at or about the middle of the spool.

4. In an induction-coil, the combination of several primary circuits with several secondary coils of equal resistance and different electrical capacity, substantially as set forth.

329,773. BLADDER-VALVE. EDWARD L. PERRY, Paterson, N. J., assignor to himself, and HENRY S. WINANS, New York, N. Y. Filed July 20, 1885. (No model.)



Claim.—1. A bladder-valve provided with an indicator consisting of a flexible hollow bulb, substantially as and for the purpose set forth.

2. The combination, with a bladder-valve, of an indicator consisting of a flexible hollow bulb and a tube connecting said indicator with the valve, substantially as and for the purpose specified.

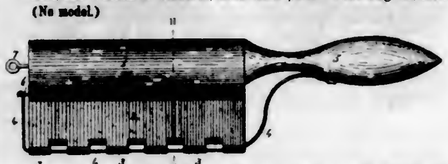
3. A bladder-valve provided with an indicator consisting of a flexible hollow bulb, a tube connecting it with the valve, and an elastic packing disk or washer upon said tube, substantially as and for the purpose set forth.

4. A bladder-valve and an indicator consisting of a flexible hollow bulb, in combination with a flexible tube connecting the valve with the indicator, and provided with an elastic packing disk or washer, substantially as and for the purpose described.

329,774. COMPOSITION FOR CURING MEATS. THEODORE H. RIETMÜLLER, Pittsburg, Pa. Filed Mar. 13, 1884. (No specimens.)

Claim.—A compound for curing meat, consisting of soda-ash, potash, sal-soda, juniper-berries, tartaric acid, bicarbonate of soda, potato farina, cream of tartar, pearlash, and caustic soda, substantially as described.

329,775. MEAT-TENDERER. WILLIAM ROBINSON, Bellefontaine, Ohio, assignor of three-fourths to Robert C. Humphreys, James L. Lockhart, and William H. Chandler, all of same place. Filed Aug. 13, 1884. (No model.)

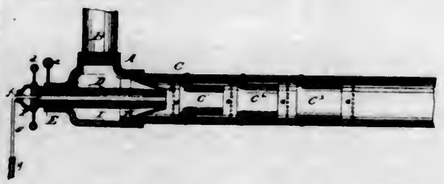


Claim.—1. In a meat-tenderer, the combination, with a blade having teeth beveled on one side only, of a spring bent to follow the contour of the cutting-edges of said teeth, held against the straight side of said blade or the side opposite the bevels of the teeth, as and for the purpose set forth.

2. The blade 2, having the teeth 3, and also the spaces between said teeth, beveled on one side only, in such a manner that all of the cutting-edges thus formed will fall in the same vertical plane at one side of said blade, as described, in combination with the spring 4, located upon the side of the blade opposite the beveled faces, substantially as and for the purposes set forth.

3. In a meat-tenderer, the combination, with the back 1 and the blade 2, of the spring 4, secured at 5 and working at its free extremity within a staple, 6, as and for the purpose set forth.

329,776. GAS-BURNER. RICHARD S. ROBERTSON and LOUIS B. FULTON, Pittsburg, Pa. Filed Sept. 30, 1884. (No model.)



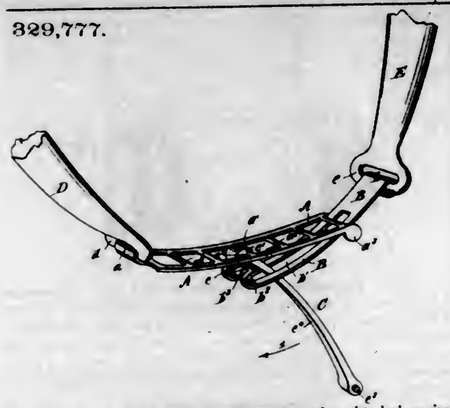
Claim.—1. In a device adapted to burn gas under pressure, the combination of a gas-chamber communicating with the gas-supply and having a conical head with central opening, a central tube therein communicating externally with the atmosphere and internally projecting forward into said conical head, with an annular gas-orifice between the said tube and conical head, and a combining-tube adapted to admit air and consisting of a cylinder containing two or more cylindrical sections of different diameters, said combining-tube being perforated, substantially as described, whereby an annular gas-jet is formed and supplied and mingled with air both from the inside and outside.

2. In a gas-burner having a gas-chamber and an annular outlet leading into a combining-tube, which is provided with ports for the admission of air, the combination therewith of two or more cylindrical sections having flaring mouths, and being of different diameters, fitted into or constructed in said combining-tube, substantially as and for the purpose described.

329,777. HAME-FASTENER. HENRY R. ROBINSON, Golden, Colo. Filed Aug. 15, 1885. (No model.)

Claim.—1. A fastener comprising a plate, A, provided with one or more cross-bars, a^3, and a plate, B, provided with a slot, b', and hook b^3 b^3, and said plates A B adapted to be held to the opposite hame-bars or parts to be secured, and a lever, C, provided with a hook, c', adapted to

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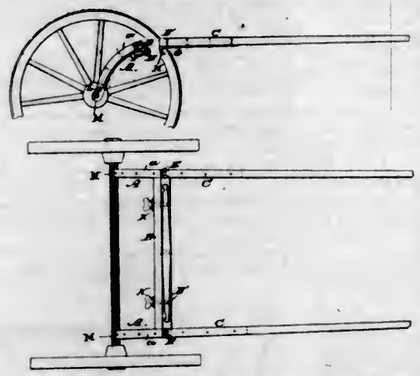
engage a cross-bar, a^3, of plate A, and a hook, c, adapted to lock against the hook b^3 of plate B, substantially as herein set forth.

2. In a fastener comprising a plate, A, provided with one or more cross-bars, a^3, a plate, B, provided with a slot, b', and hook b^3 b^3, and said plates A B adapted to be held to the opposite hame-bars or parts to be secured, and a lever, C, provided with a hook, c', adapted to engage a cross-bar, a^3, of plate A, and a hook, c, adapted to lock against the hook b^3 of plate B, said lever C having retaining pins or lugs c^3 at the ends, substantially as herein set forth.

329,778. CONDENSED MILK. ALVAH H. SABIN, Burlington, Vt., assignor to himself, George H. Morse, William A. Crombie, Otis Shepard, Edward W. Peck, and T. S. Peck, all of same place. Filed Feb. 19, 1885. (No specimens.)

Claim.—The hereinbefore-described condensed milk resulting from the combination of condensed milk and lactose or milk-sugar, substantially as set forth.

329,779. THILL AND POLE COUPLING. EDWARD M. SABIN, New York, N. Y. Filed Aug. 25, 1884. (No model.)



Claim.—1. The combination of an axle-frame and a thill-frame or pole-frame hinged thereto, folding downwardly therefrom, and adapted to be raised therewith for disconnecting the frames, substantially as set forth.

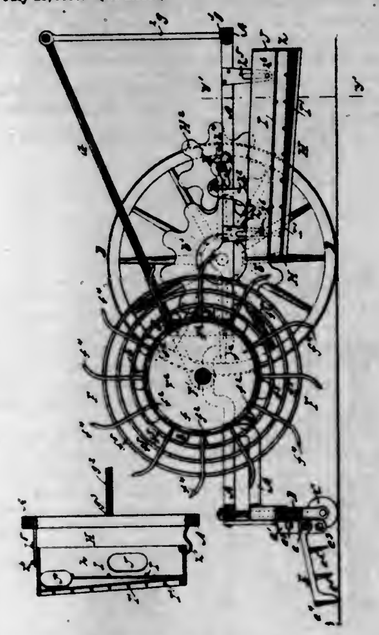
2. The axle-frame formed with side bars, *a a*, straps F F, and cross-bar B, in combination with a thill-frame or pole-frame, each strap having a clip-pin hole, L, and a hook or toe, M, substantially as set forth.

3. The thill-frame or pole-frame formed with a cross-bar, B', and straps G G, in combination with an axle-frame having straps F F, the said straps having hook-and-pin connection and located beneath the frames, substantially as set forth.

4. The combination of an axle-frame having a cross-bar at its outer end, a thill-frame or a pole-frame having a cross-bar abutting against the cross-bar of the axle-frame, hook-and-pin connection between the frames, and fastenings to hold the cross-bars together removably, substantially as set forth.

5. The combination of the axle-frame comprising cross-bar B, side bars, straps having clip-pin holes, hooks or toes, and hinge-pins, and thill-frame or pole-frame comprising cross-bar B', thills or pole having straps G, and hooks H, substantially as set forth.

329,780. POTATO-DIGGER. PHILIP SHERATT, New York, N. Y. Filed July 23, 1885. (No model.)



Claim.—1. The combination, in a potato-digger, of the main frame, the vine-clearing share E, connected with the main frame by a vertically-adjustable hinging bar, *e*, a revolving digger-wheel, F, in rear of said share, composed of gathering-fingers and an open drum for receiving dirt clods therein, and a vibrating screen or sieve, H, behind the digging-wheel, substantially as described.

2. The combination, in a potato-digger, of the main frame, the hangers e' e^2, connected with the front end of the frame and having a series of holes, e^2, a hinging bar, e, vertically adjustable by the said holes, and the vine-clearing share E, hung on said bar, with a revolving digger-wheel, F, and a screen or sieve, H, behind said wheel, substantially as described.

3. The combination, in a potato-digger, of the main frame, the hangers e' e^2, secured to the front end thereof and having a series of holes, e^2, of hinging bar e, vertically adjustable by said holes, and a vine-clearing share, E, hung on said bar, with a digger-wheel, F, comprising the end heads, $f f'$, the separated cross-pieces f^3, and the gathering-fingers f^4, rigidly secured to the cross-pieces, and a vibrating screen or sieve behind the digger-wheel, substantially as described.

4. The combination, in a potato-digger, of the main frame, the front pivoted share, E, and the revolving digger-wheel F, with the front and rear slotted hangers, h^2, the sieve H, suspended by hooks and having pins engaging the hangers and provided with the upwardly-projecting hook h^2, adapted to be operated for vibrating the screen, substantially as described.

5. The combination, with the main frame and the screen or sieve, of the revolving digger-wheel F, comprising the heads $f f'$, the separated cross-pieces f^3, the gathering-fingers f^4, secured to said cross-pieces, and the concentric rings f^5, secured to the outermost gathering-fingers, substantially as described.

6. The combination of the main frame and the revolving digger-wheel F, having gathering-arms f^4, with the vibrating screen H, having the upper screen, I, sloping toward the rear, and the lower screen, I', sloping rearward and transversely, and discharge-openings J J, substantially as described.

7. The combination of the main frame and the revolving digger-wheel F, having gathering-arms f^4, with the screen H, having the rigidly-attached hook h^2, the shaft H', having the cam h^3, and the wheel H^2 on said shaft rotated from the ground-wheels, substantially as described.

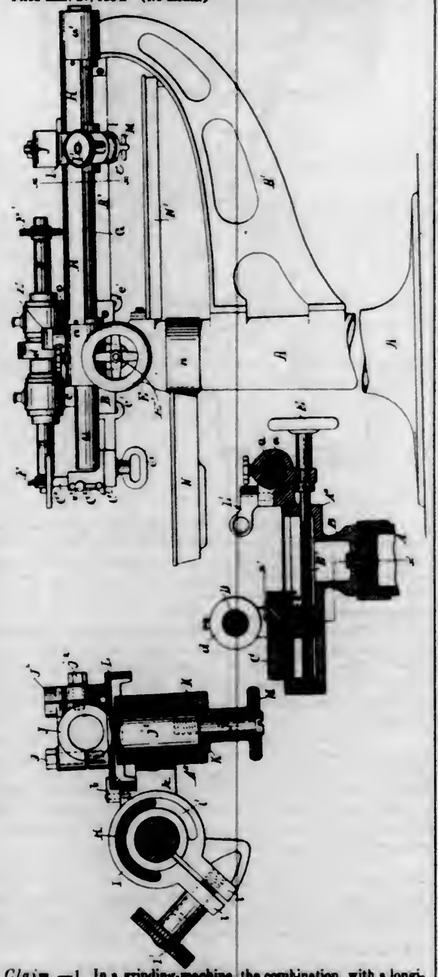
8. The hinged sieve H, the hook h^2 thereof, the rotary shaft H', the cam h^3 thereof adapted to engage the hook, the slotted hangers h^2, and the projections h^4 on the sieve engaging the slots in the hangers, substantially as shown and described.

9. The combination of the main frame and the screen or sieve H with the digger-wheel having gathering-arms f^4, and a series of sepa-

rated rings, *f'*, secured to each outermost set of gathering-fingers, substantially as described.

10. The combination, with the frame A and the wheels B B', of the digger-share E, the digger-wheel F, sieve H, having screens I I' and orifices J J', gear-wheel *b b'*, lever G, shaft H', and cam h^3, adapted to engage a book or projection, h^3, substantially as shown and described.

329,781. **GRINDING-MACHINE.** GEORGE H. SMITH, Providence, R. I., assignor to the Brown & Sharpe Manufacturing Company, same place. Filed Mar. 27, 1884. (No model.)



Claim.—1. In a grinding-machine, the combination, with a longitudinally-moving bar mounted in bearings on the machine-frame, of a work-holder clamped to said bar and arranged to turn pivotally upon said bar toward and away from the grinding-disk, substantially as and for the purpose described.

2. The combination, with the machine-frame and the bar G, of the clamp I, the circular portion L, the clamp J, and the extension *k*, substantially as set forth.

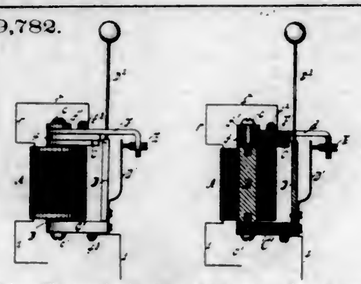
3. The combination, with a longitudinally-movable bar secured in bearings in the frame, of a swiveled work-holder clamped to said bar and arranged to move pivotally thereon, substantially as set forth.

4. The combination, with the movable guide-bar G, carrying thereon double-clamp work-holder J, of the slide C, moving on the plate B, and carrying the shaft D, bearing the grinding-disks, substantially as described.

5. The combination, with the frame and the bar G, of the shield H, and the swiveled clamp J, with its plate L, stem *j'*, and plug M, substantially as set forth.

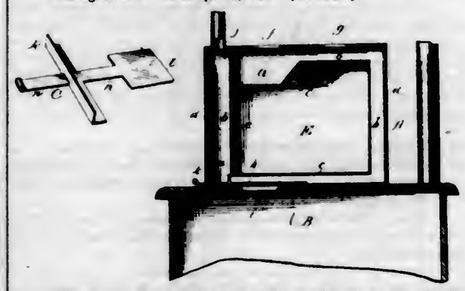
329,782. **ELECTRO-MAGNET ARMATURE.** JOSEF STEINER, Brooklyn, N. Y. Filed Aug. 13, 1885. (No model.)

329,782.



Claim.—The combination of the helix or coil A, the pole-extensions C C', the movable armature D, having one end maintained at all times in direct contact with the pole-extension C', the flat spring D', connecting said armature to said pole-extension, the non-conducting piece *f*, the metallic arm F, the non-conducting bushing securing said arm, and the contact-point E, carried by said arm in the path of the flat spring, substantially as described.

329,783. **PORTABLE STOVE AND OVEN.** ARTHUR P. STEWARD, Washington, D. C. Filed Apr. 29, 1885. (No model.)

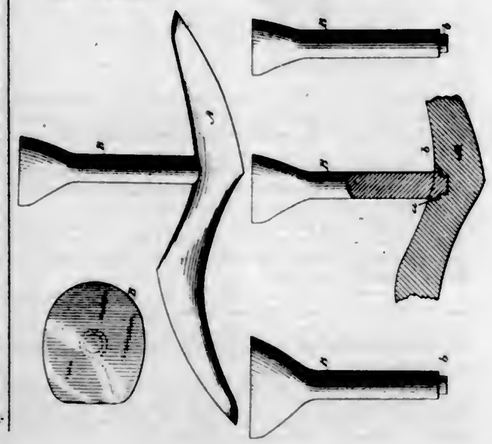


Claim.—1. A portable stove which consists of an oven having double walls which form a flue-space around the same, said flue-space being enlarged or deepened at a point above the oven to form a combustion-chamber, and provided with an escape-orifice through the lower outer wall of the said oven, substantially as described.

2. A portable stove which consists of an oven having double walls which form a flue-space around the same, said flue-space being enlarged or deepened at a point above the oven to form a combustion-chamber, and provided with one escape-orifice through the lower outer wall of the said oven, and with another at the end thereof farthest from the combustion-chamber, substantially as described.

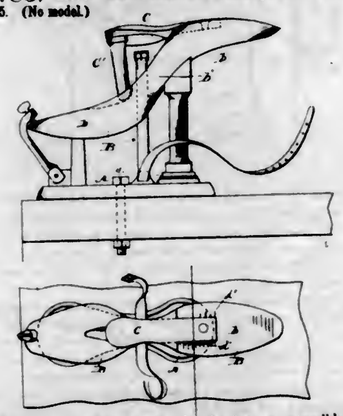
3. The combination of the oven E, having the surrounding flues *b* and the escape-openings *h* and *j*, with the damper C, located in the flue *b* below the oven, and having the plates *k* and *l*, for preventing the escape of the products of combustion through either of said openings, as desired, substantially as described.

329,784. **LAST.** HENRY STOCKMAN, Philadelphia, Pa. Filed July 7, 1885. (No model.)



Claim.—A boot or shoe last having a socket, in combination with a post provided with a tenon on one end adapted to fit the socket, and at the other end with an enlarged portion, substantially the form of a heel, and designed, when inserted in the socket, to be used as a support for the heel of a shoe, as set forth.

329,785. **LAST.** HENRY STOCKMAN, Philadelphia, Pa. Filed Aug. 1, 1885. (No model.)

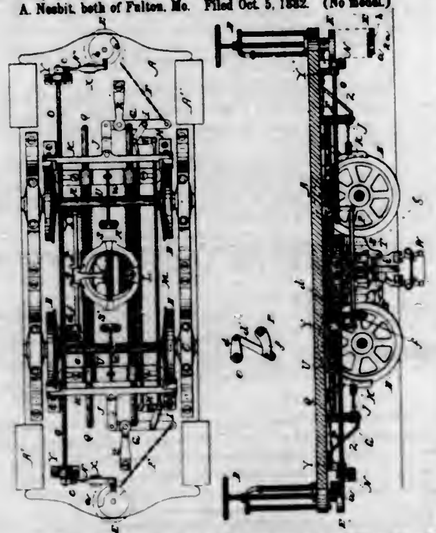


Claim.—1. A boot and shoe last having an extensible sole and heel, the extensible piece having one end supported by a post, the lower end of which rests on the last, at about the instep thereof, as and for the purpose set forth.

2. The boot and shoe last having the sliding partial sole and heel extension of dovetail form in cross-section a portion of its length, fitting in a corresponding groove in the sole of the last, and having a pendent arm or post fitting in a groove of the last-body, substantially as and for the purpose set forth.

3. The boot and shoe last having in its sole a dovetailed groove, and having the extensible partial sole and heel part of a dovetailed form in cross-section a portion of its length, and having a binding-screw in said dovetailed portion, and at its heel end a post or pendent arm entering a groove in the last-body, substantially as and for the purpose set forth.

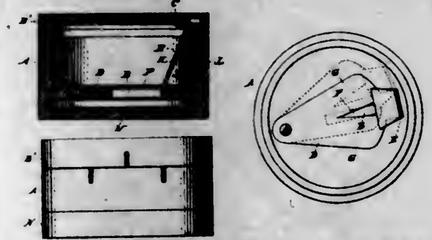
329,786. **CAR FOR CABLE WAYS.** SAMUEL H. TERRY, Chicago, Ill., assignor, by mesne assignments, of one-half to A. Walter Nesbit and Mary A. Nesbit, both of Fulton, Mo. Filed Oct. 5, 1882. (No model.)



Claim.—1. The combination of the hand-wheel shaft D and head E with the chain F and rocking bar or lever N, for combining the brake and gripper systems to be operated together, substantially as specified.

2. The combination of the shafts D D and heads E with the chains F F, pivoted bars or levers N N, brake-levers G, and rock-shaft O, whereby the gripper and the brakes may be operated from either end of the car, substantially as described.

329,787. **POWDER-BOX.** WILLIE C. WALTER, Richmond, Va., assignor of two-thirds to George B. McAdams, same place. Filed Dec. 4, 1884. (No model.)



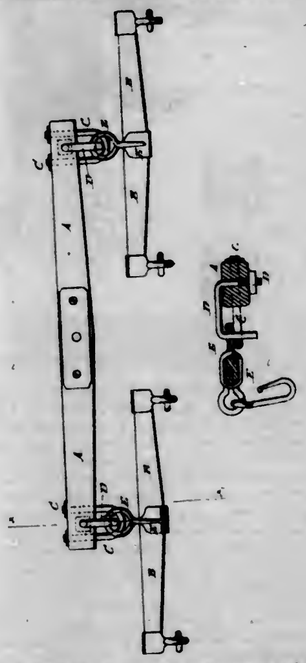
Claim.—1. The combination, with the box having the discharge-opening in its bottom, of the vibratory valve pivoted to the bottom of the box and having an upwardly-extending arm, and the cover having a catch device adapted to engage said arm, substantially as specified.

2. The combination, with a box having a discharge-opening in its bottom and a movable cover, of a vibratory valve pivoted to the box-bottom, engaging the cover and having greater radial length than that of the box, substantially as specified.

3. The combination, with the box having an opening in its bottom and a removable cover, of the valve pivoted to said bottom and having an upwardly-extending arm provided with a transverse passage, substantially as specified.

4. The combination, with a box, having a discharge-opening and a movable cover, of an interior valve entirely closed and hidden in the box and operated by the movable cover, substantially as specified.

329,788. **WHIFFLETREE-COUPLING.** FRANK D. WARNER and WILLIAM J. MATTHEWS, Collinsville, Ill. Filed Sept. 9, 1885. (Model.)

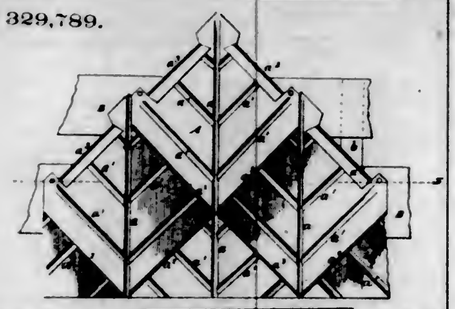


Claim.—The combination, with the double-tree A and the single-trees B, of the staples C and the half-staples D, attached to the double-tree, and the clips E, having a quarter-twist and attached to the single-trees, substantially as herein shown and described, whereby the said double-tree and single-trees will be securely connected, and the single-trees will be held from swinging downward, as set forth.

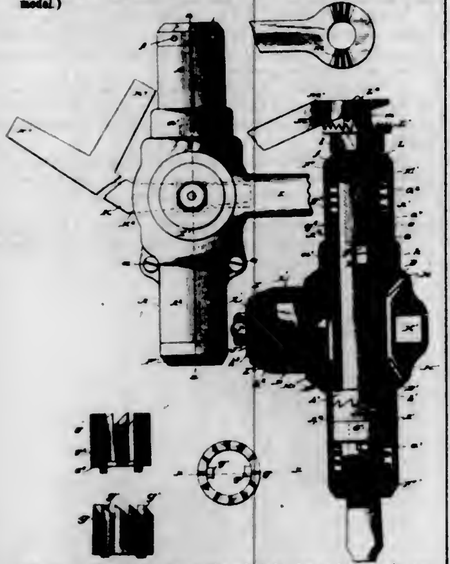
329,789. **SHEET-METAL ROOF.** GEORGE B. WRIGHT, Newville, Pa. Filed Dec. 18, 1884. (No model.)

Claim.—A metallic shingle having the long groove *a* running from top to bottom with the pitch of the roof and all the oblique branches *a'* opening thereinto, as shown and described.

329,789.



329,790. RATCHET-DRILL. ISAAC D. WEAVER, Lebanon, Pa., assignor, by direct and mesne assignments, to himself, Charles Bowman, and Eldridge H. Brooks, all of same place. Filed Aug. 3, 1885. (No model.)



Claim.—1. In combination with a shaft having a slot, *e*, and a gear placed on said shaft and having a ratcheted hub or end, a clutch having a key fitted to said slot *e*, and divided longitudinally into segmental sections, substantially as set forth.

2. The combination, with the drill-shaft having a threaded socket, and the screw threaded into said socket, and having a toothed wheel and a bearing-point, of the feed-lever fitted over said bearing-point, and having teeth adapted to engage the wheel of the feed-screw, said lever being provided with a fulcrum-point, substantially as set forth.

3. The combination of the drill-shaft having slots, the clutch divided longitudinally into segmental sections, each provided with a key fitting into said slot, the spring engaging said clutch, and the gearing connecting the same with the drive-gear, substantially as set forth.

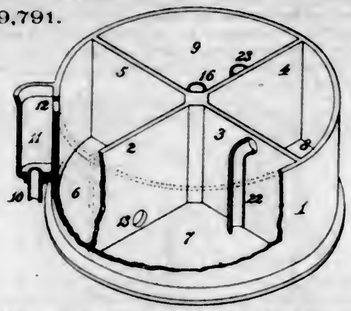
4. In a ratchet-drill, the combination of the casing, the slotted drill-shaft, the clutches made in longitudinal sections, having their outer ends grooved and provided with keys fitting the slots of the shaft, the bearing-sleeves fitting into the grooves of the sections and having flanges fitting over the ends of same, the springs bearing between said sleeves and the casing, the drive-gear, and the gearing between the same and the clutches, substantially as set forth.

5. The combination of the driving-gear with the drill-shaft and the casing, the latter being provided with a socket, K', adapted to receive the stop K, with its plurality of arms arranged at different angles to each other, all operating substantially as described.

6. In a ratchet-drill having its casing provided with a socket, as K', the stop K, having a plurality of arms arranged at different angles and adapted to be inserted in the socket K', substantially as set forth.

329,791. SEPARATOR FOR MINGLED OIL AND WATER. H. HAMMAN WESTINGHOUSE, New York, N. Y., and HENRY H. GARRETT, Pittsburg, Pa., assignors to the Westinghouse Machine Company, Pittsburg, Pa. Filed Sept. 24, 1885. (No model.)

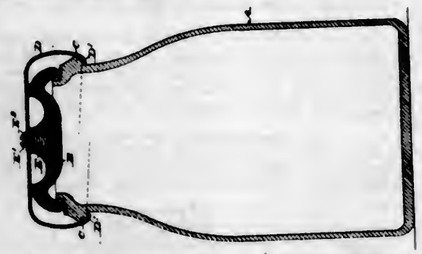
329,791.



Claim.—1. The combination of a case or chest, partitions forming two or more oil-collecting compartments therein, a supply-pipe leading into one of said compartments, a discharge-pipe leading out of another compartment, and a circulating-pipe leading from the lower portion of one compartment to the upper portion of the adjacent compartment, substantially as set forth.

2. The combination of a case or chest, partitions forming a series of oil-collecting compartments therein, a supply-pipe leading into the upper portion of the primary compartment thereof, a lower port or opening establishing communication between the primary compartment and the second compartment, a series of circulating-pipes each establishing communication through a partition between the lower portion of one compartment and the upper portion of the next succeeding compartment, and a discharge-pipe connected to the final or discharge compartment near its bottom and extending upwardly toward the top of said compartment, substantially as set forth.

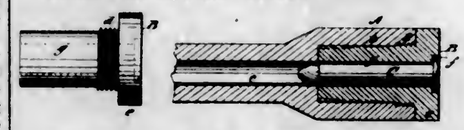
329,792. JAR-FASTENING. GEORGE W. WEYMAN, Clayton, N. J., assignor of one-half to Charles T. Weyman, Philadelphia, Pa. Filed Aug. 27, 1885. (No model.)



Claim.—1. A preserve-jar fastening having a clamp and a screw, which latter is formed with a neck having a shoulder, between which and the head of the screw the clamp is journaled, substantially as and for the purpose set forth.

2. The vessel A, having spiral lugs C, in combination with the lid B, and clamp C, having lips D', and secured to said lid B by screw E, having neck E' and head E², the said clamp being connected to said screw, substantially as described.

329,793. BREECH-LOADING FIRE-ARM. MARSHAL WHEELER, Creston, Iowa. Filed July 8, 1885. (No model.)

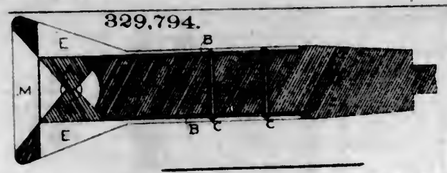


Claim.—The combination, for use in connection with a breech-loading rifle or gun, of a set or series of independent cartridge-carrying thimbles constructed to detachably connect with the breech end of the barrel and of like exterior dimensions, but of different-sized internal bores or calibers, essentially as and for the purposes herein set forth.

329,794. CAR-COUPLING. JOHN WETMORE, Salem, Mass. Filed Mar. 16, 1885. (No model.)

Claim.—The combination, with the draw-bar D, of the yielding wedge-shaped jaws A A, attached to the draw-bar by spring-arms B B, and having continuous vertical meeting edges, whereby said jaws are adapted to support the coupling-pin when not in use and permit the engaged link to have both a vertical and horizontal inclination, substantially as described.

329,794.



329,795. BENCH-STOP. FRANK H. WHITNEY, Friendship, Me. Filed May 5, 1885. (No model.)



Claim.—1. In a bench-stop, the combination of a plug for insertion into a base or bench-top, a metallic plate secured to the plug, and any well-known devices arranged near the free end of the plate for raising and lowering the free end of said plate, substantially as specified.

2. In a bench-stop, and in combination with a bench provided with apertures, a plug adapted to fit one of said apertures, a spring-plate secured to said plug, a bifurcated arm secured to the under side of the free end of said plate, and raising and lowering devices connected with said arm and with the bench, substantially as specified.

3. A bench-stop consisting of a plug, a spring-plate secured to the same, a bifurcated arm secured to the free end of said spring-plate, and a thumb-screw passing upwardly through the bench and engaging with said bifurcated arm, substantially as specified.

4. The combination of the bench A, having the recess A², the apertures A' A², and the plug B, spring-plate C, secured thereto, plate E, and thumb-screw F, substantially as specified.

5. The combination of the bench A, having recess A² and apertures A' A², with the plug B, having recess B', spring-plate C, secured to the plug in said recess, and thumb-screw F, mounted in plate E, substantially as shown and described.

6. The combination of the bench A, having recess A² and apertures A' A², with the plug B, fitted in recess A', and having recess B', spring-plate C, seated in said recess B', and secured therein by the screw C', arm D, having the bifurcations D², thumb-screw F, having the annular groove F', embraced by said bifurcations, and plate E, substantially as shown and described.

329,796. ORGAN-COUPLER. ORSON C. WHITNEY, Cleveland, Ohio. Filed Mar. 31, 1885. (No model.)

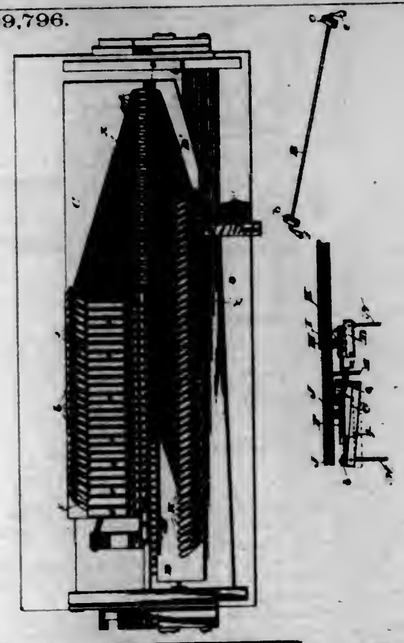
Claim.—1. In a reed-organ or similar instrument, a double-octave-coupler attachment having rollers spanning two octaves, in combination with rollers spanning a single octave, and devices, substantially as described, connecting the keys and rollers, whereby a key when depressed will operate a valve two octaves above simultaneously with that of the octave of the valve under the key.

2. In a reed-organ or similar instrument, the combination, with the rollers B, adapted to span two octaves, and arranged, as shown, on the table C, of the levers F, arranged and operated substantially as described.

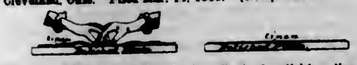
3. In a reed-organ or similar instrument, the combination, with a single-octave attachment arranged in front of the valve-stems in the usual manner, of a double-octave attachment located in the rear of the valve-stems, and provided with suitable levers, by means of which the rollers in the rear are given an equal movement with the rollers in front, and arranged as described, so that the two attachments, single and double octave, may be operated separately or together, substantially as set forth.

4. In a reed-organ or similar instrument, the combination, with a double-octave attachment, of a single-octave attachment, substantially in the manner described, whereby it may be operated by the keys next in succession above the keys that operate the double-octave attachment, substantially as set forth.

329,796.

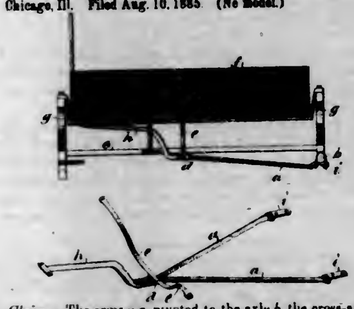


329,797. PROCESS OF IRONING CLOTHES. OWEN B. WEEKAM, Cleveland, Ohio. Filed Mar. 14, 1885. (No specimens.)



Claim.—The process herein described of polishing linen, and consisting of starching and wringing out the garments and applying them directly to plates or other smooth surfaces with the face or side of the linen that is to receive the polish next to such plates, and pressing, rolling, or otherwise applying them to such surface so as to exclude the air, and drying the articles substantially as set forth.

329,798. BRACE FOR SPRING-VEHICLES. NICHOLAS WILLARD, Chicago, Ill. Filed Aug. 10, 1885. (No model.)

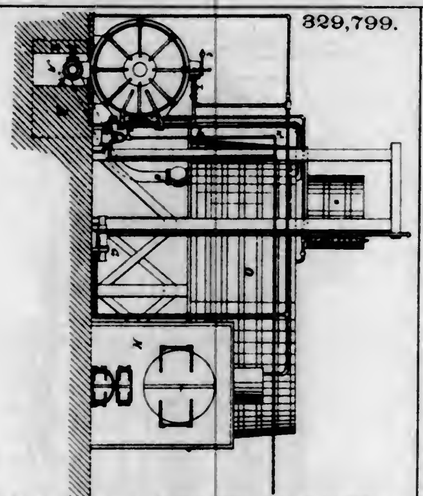


Claim.—The arms *a a*, pivoted to the axle *b*, the cross-arm *e*, affixed at its extremities to the box *f* and centrally pivoted to the front ends of arms *a a*, and the brace-rod *h*, affixed at its front end to the front end of the box *f* and at its rear end attached to the arm *e*, in combination with the axle *b* and box *f*, substantially as described.

329,799. APPARATUS FOR IMPREGNATING WOOD. JAMES H. YOUNG, New York, N. Y. Filed Dec. 29, 1884. (No model.)

Claim.—1. In combination with a wood-steaming cylinder, C C', the two independent steam-entrances L and M, communicating directly with the cavity of the cylinder, in combination with the perforated floor-pipe *h*, communicating, through the perforated floor-pipe, with the cavity of the cylinder at various points along the median line of the bottom of the cylinder, one of said entrances, L, being at the top of said cylinder, and the other of the steam-entrances, M, being at the bottom of the cylinder, for the simultaneous admission of steam to the cavity of the cylinder diametrically, but not necessarily longitudinally, opposite each other above and below the axis of the cylinder, to prevent the unequal heating and warping of the cylinder, substantially as described.

329,799.



2. In combination with the upper dome, L, of the cylinder C C', and with said cylinder and the storage-tanks O and P, the pressure and exhaust air-pump K, substantially as described.

3. In combination with the cylinder C C' and the tank O, the pipe o', and the valves o^2 o^3 and intermediate coupling-cock, n', substantially as and for the purposes described.

4. The combination of the cylinder C C', the perforated pipe h, the steam-pipe s, boiler H, water-pipe i, pump I, and controlling-valves s' s', whereby liquid or steam can be supplied at will to the interior of the cylinder through the perforated floor-pipe either simultaneously or alternately, substantially as and for the purposes described.

5. In combination with the cylinder C C', the locking-bunter F, substantially as and for the purpose described.

6. The combination of the impregnating-cylinder C C', provided with the locking-bunter F, and with a railway-track upon its floor, with a series of timber-carriages, each member of which series is provided with wheels which fit and ride upon rails within the cylinder, and with tongues E at one end and transverse beams s at the opposite end, whereby the forward member of the series is locked down upon the rails by the engagement of the tongues E with the locking-bunter F, and the following members also locked down by the engagement of the tongues E with the transverse bar s of the preceding member, substantially as and for the purposes described.

7. The combination of the cylinder C C', provided with rails upon its floor, and with the locking-bunter F, with a sectional timber-train, by means of the tongues E and transverse beams s, and of the sill-beam E' of the rear of the last section of the train with the rails by S-hooks f, substantially as and for the purposes described.

8. The combination of the tank P, at a greater elevation than the top of the cylinder C C', with a pipe, p', and dome M, whereby the cylinder may be filled with impregnating-fluid by the aid of gravity, and with an independent water supply and pump, I, whereby pressure may be put upon the contents of the cylinder without passing the impregnating-fluid through the pump, all substantially as and for the purposes described.

329,800. MACHINE FOR DRAWING COLD METAL BARS. WINSLOW ALLDERDICE, Akron, Ohio, assignor to the Akron Iron Company, same place. Filed Jan. 26, 1885. (No model.)

Claim.—1. In a machine for drawing, compressing, and polishing cold metal bars, the combination of the two or more dies and an equal number of grippers to hold and draw the bars through the dies with a screw-shaft and draft-block, substantially as described.

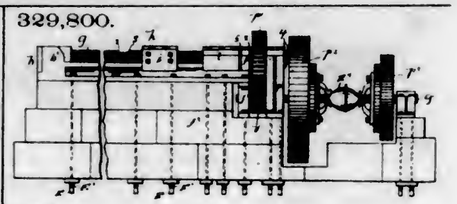
2. In a machine for drawing, compressing, and polishing cold metal bars, the screw-shaft, draft-block, and two or more dies, with an equal number of grippers to hold and draw the bars, all in such relative arrangement that the strain on the screw-shaft will be in line with its axis, substantially as described.

3. The screw-shaft g, reduced to receive bearing s, in combination with said bearing, the diameter of the reduced part and bearing being less than that of the screw-shaft at the bottom of its thread, substantially as described.

4. The screw-threaded draft-block h, open at the bottom sufficiently to pass the shank of a bearing, s, in combination with said bearing and screw-shaft g, substantially as described.

5. The screw-shaft g, in combination with the threaded draft-block h, provided with hinged grippers n, and clamps n^2, substantially as described.

329,800.



6. The thrust-block l, formed with a series of annular projections, c, and the screw-shaft g, formed with a corresponding series of grooves, c', in combination with draft-block h, and dies a, substantially as described.

7. The bed-plate d, formed with abutments b^4, socket b', and recesses d^2 d^3 d^4, substantially as described.

8. The bed-plate d, formed with recesses d^2 d^3, having steps d^4, abutments b^2 b^3, socket b', and recess d^4, substantially as described.

9. The bed-plate d, formed with depression d^5, to receive frame f and pedestal p, socket b', abutments b^2 b^3, recesses d^2 d^3 d^4, and ways h', substantially as described.

10. The screw-shaft g, formed with grooves c', in combination with draft-block h, thrust-block l, formed with projections c, toothed wheel p', pinion v, counter-shaft g', pulleys p^2 p^3, and a clutch device, E^4, substantially as described.

11. The pedestal p, of a single piece of cast metal, provided with boxes for shaft g, and counter-shaft g', and bolted to foundation f^3, in combination with shaft g, thrust-block l, and draft-block h, substantially as described.

12. The frame f, provided with a box for shaft g, and bolted to bed-plate d and frame f' directly beneath frame f, and provided with a box for counter-shaft g', and bolted to the bottom of bed-plate d and to foundation f^3, in combination with screw-shaft g, thrust-block l, and draft-block h, substantially as described.

13. The thrust-block l, formed with sectional rings c, secured by screws c^3, in combination with screw-shaft g, formed with grooves c', substantially as described.

14. The draft-block h, provided with studs n^2, and grippers n, in combination with clamps n^2, substantially as described.

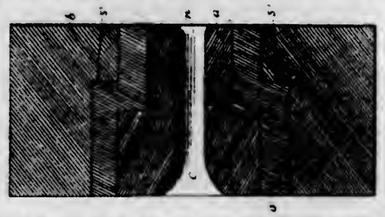
15. The end plate, b, bolted to bed-plate d, and provided with set-screws a^2, in combination with die-holders a', containing dies a, and the bed-plate d, formed with sockets d^2, substantially as described.

16. The draft-block h, provided with gibs i, and anti-friction linings i', in combination with bed-plate d, formed with ways h', and screw-shaft g, substantially as described.

17. The draft-block h, screw-threaded to receive the screw-threaded hollow bolt h^2, formed with a female screw-thread to receive screw-shaft g, in combination with said shaft, substantially as described.

18. The draft-block h, screw-threaded to receive the screw-threaded hollow bolt h^2, formed with a female screw-thread to receive screw-shaft g, in combination with the screw v and screw-shaft g, substantially as described.

329,801. DIE. WINSLOW ALLDERDICE, Akron, Ohio, assignor to the Akron Iron Company, same place. Filed Jan. 26, 1885. (No model.)



Claim.—1. A die for drawing, compressing, and polishing cold metal bars, having an opening the front part of which is of a curved tapering form, and another part is formed with parallel sides tangential to the curved part, substantially as described.

2. A die for drawing, compressing, and polishing cold metal bars, of such form that the intersection of a plane through the axis of the die-opening with the side of the opening will be in part a parabolic curve and in part parallel with the axis of the opening and tangential to said curve, substantially as described.

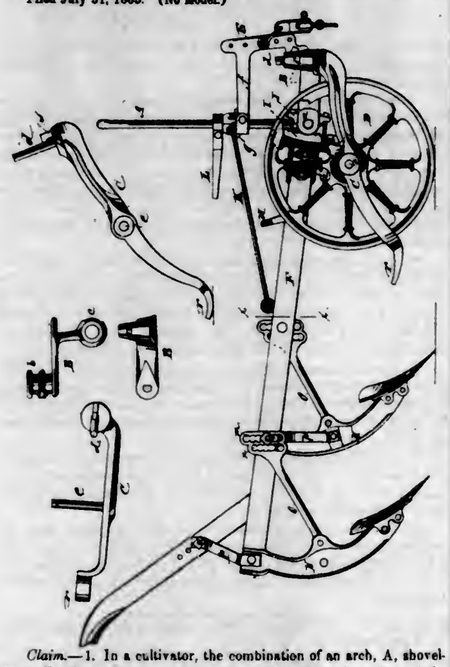
3. A die for drawing, compressing, and polishing cold metal bars, formed with an opening that is flaring at both ends, and has parallel sides intermediate the flaring parts, substantially as described.

4. A die for drawing, compressing, and polishing cold metal bars, formed with an opening, c, having a flaring rear end, n, substantially as described.

5. The die a o, formed of the steel part a and a wrought-iron jacket, o, shrunk thereon, substantially as described.

6. The die a o, having a reduced rear end, forming a shoulder-bearing, s, against the die-holder b, in combination with said holder, formed to receive the die, substantially as described.

329,802. CULTIVATOR. ROBERT H. AVERY and LEONARD B. BERRIEN, Peoria, Ill., assignors to the Avery Planter Company, same place. Filed July 31, 1885. (No model.)



Claim.—1. In a cultivator, the combination of an arch, A, shovel-beams F, wheels D, mounted on axles which are independent of the arch, and are located in a plane a little to the rear of the arch, and also turn on pivots on a support which projects forward from the arch, whereby the wheels operate as caster-wheels, and the weight of the frame in part counterbalances the weight of the beams and shovels, substantially as specified.

2. The combination of an arch, A, a vertical draw-bar, E, a cross-bar, g, connecting the draw-bar with the arch, a shovel-beam, F, and a hooked rod, K, hinged at one end to the beam and having its hooked end engaging the cross-bar when the cultivator is in use to prevent the arch from tipping forward, substantially as described.

3. In a cultivator, the combination of an arch, A, notched bar g, shovel-beams F, and hooks K, for the purpose of preventing the arch from tipping forward, and also to counteract the side pull of the shovels, substantially as specified.

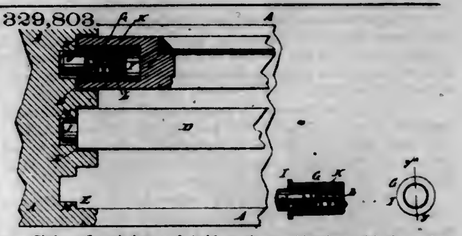
4. The combination, with an arch, A, of a casting, B, connected therewith, a bar, C, having its front end swiveled in said casting, and provided with a spindle, e, carrying a wheel and disconnected from the arch, to permit the bar and wheel to move laterally, said bar extending rearward beyond the periphery of the wheel, substantially as and for the purpose described.

5. The combination of the arch A, the casting B, projecting forward therefrom, and the vertical draw-bar E, connected at one end with the forward end of the casting and at the other end with the arch, to which draw-bar the draft-animals may be attached at different heights, to more or less aid in counterbalancing the weight of the beams and shovels, substantially as described.

6. The combination, with a shovel, of the pivoted brace O, having a head provided with a slot arranged at an angle to the brace and having its edges indented to approximately correspond with the bolt by which the brace is secured to a beam, substantially as described.

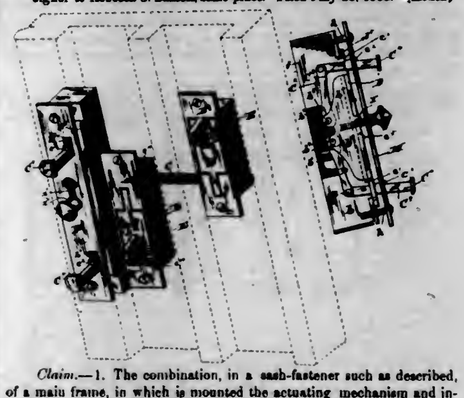
7. The brace O, provided with a head having slots m n, in combination with a beam, F, and standard N, substantially as and for the purposes specified.

329,803. SASH-HOLDER. ALBERT AYERS, Rahway, assignor to himself, and William R. Wilson, Elizabeth, N. J. Filed July 1, 1885. (No model.)



Claim.—In window-sash holders, the combination, with the socket G, the plug J, and the spiral spring K, of the screw L, substantially as herein shown and described, whereby the said plug will be held securely in place and can be readily detached, as set forth.

329,804. SASH-FASTENER. JOHN Y. BASSELL, Leesburg, Va., assignor to Rebecca G. Bassell, same place. Filed July 28, 1885. (Model.)



Claim.—1. The combination, in a sash-fastener such as described, of a main frame, in which is mounted the actuating mechanism and inner dog, and a detachable housing for the outer dog, the latter movably applied to its actuating-spindle, substantially as described.

2. The combination, in a sash-fastener such as described, and with the main frame, the spindles mounted therein, and the independent actuating mechanism applied to each spindle, of the dogs loosely connected to the spindles, and the springs applied to said dogs to hold them projected, whereby the dogs can be independently retracted, as by closing the window-frame, while the actuating mechanism remains stationary, or vice versa, substantially as described

3. The combination, in a sash-fastener, of the main frame supporting the actuating mechanism for the dogs or bolts, with an escutcheon adjustably secured to said frame, as and for the purpose set forth.

4. In a sash-fastener, and in combination with the spindles, the actuating mechanism therefor, and the locking-dogs operated by but capable of an independent movement with relation to said spindles, of the locking-plate, engaging the actuating mechanism to hold the latter from movement while the dogs are free to be retracted by pressure applied to their engaging ends, substantially as described.

5. The combination, in a sash-fastener such as indicated, of the main frame and attached housing for the inner dog, the detachable and adjustable housing carrying the outer dog, the two spindles connected to said dogs, the actuating mechanism mounted in the main frame, and an adjustable escutcheon secured to said frame, substantially as described, whereby the locking mechanism as a whole is adapted for application to window-frames of various dimensions.

6. The combination, in a sash-fastener, and with the notched or shouldered links applied to the levers for operating the dogs, of the sliding plate engaging said links, and the screw-spindle provided with a shoulder for entering the enlarged portion of the slot in the escutcheon, substantially as described.

7. The combination, with the main frame, the spindles for operating the dogs, and the links for actuating the spindles, said links provided with shoulders engaging shoulders on the main frame and co-operating with the sliding plate, of the escutcheon adjustably applied to said frame and provided with slots for the passage of the links, and the adjustable spindle applied to the sliding plate, substantially as described.

8. In combination with the main frame carrying the actuating mechanism for the independently-supported dogs, and adapted to be secured to the window-frame beneath the inner stop, the escutcheon adjustably secured to the main frame for bearing upon the face of the inner stop, substantially as described.

9. In combination with the dog-actuating mechanism and the links thereof provided with heads, as described, the escutcheon for application to the inner stop provided with openings or slots to receive the links, said escutcheon being removably applied to the main frame, substantially as described.

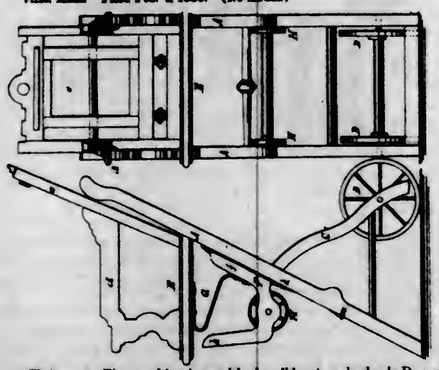
10. In combination with the spring-projected dogs, independently supported in separate housings and provided with the tangential bearing-surface and inclined shoulders, the spindles loosely applied to said dogs, as described, and the separate actuating devices connected to said spindles, substantially as and for the purpose set forth.

11. In a sash-fastener, and in combination with the shouldered links applied to the actuating mechanism for the dogs, the notched locking-plate held in position upon the plate b^4 of the main frame and above the bearings for the spindles, substantially as described.

12. The combination, in a sash-fastening such as described, of the main frame, the housing for the dog applied thereto, the independently-supported and pivoted dog, its spindle and arm, the notched link engaging the main frame, and the movable locking-plate co-operating with the said link, substantially as described.

13. The combination, in a sash-lock such as described, and with the spring-pressed dog, its spindle, lever, and link, the sliding plate engaging notches or projections on the link, and serving both to hold the dog retracted or lock it in position to engage the window-sash, substantially as described.

329,805. CHAIR. WILLIAM BONNAVIER, New York, N. Y., assignor to Daniel L. Thompson, Charles A. Farley, and Gilman Waite, Baldwinsville, Mass. Filed Feb. 4, 1885. (No model.)



Claim.—1. The combination, with the slides A and wheels D, connected therewith, of the seat E, its brackets F, and attached wheels H, substantially as specified.

2. The combination, with the slides and their attached wheels, of the seat provided with a pair of wheels, and adapted to slide on and be secured in different positions upon said slides, substantially as described.

3. The combination, with the slides A, having the grooves B, and stops or catches, of the seat and its supporting-bracket having studs engaging said grooved slides, and adapted to engage said stops or catches, and wheels upon the said slides and brackets, substantially as described.

4. The inclined slides A, combined with the seat adapted to move up or down said slides, means to lock said seat in different altitudes on said slides, and wheels connected with the seat, substantially as described.

5. The slides A, forming the front legs and back support for the seat, and the attached rear legs, C, and wheels D, combined with the chair-seat, its supporting-bracket engaging and movable up and down said slides, and means to retain it in given position thereon, substantially as described.

6. The slides A, having the rear legs, C, and wheels D, combined with the seat E, its bracket F, engaging and movable up and down said slides, and means to retain it in position, and the spring G, connecting the seat and bracket, substantially as described.

7. The slides A, having the rear legs, C, and wheels D, and extended to form push-handles, combined with the seat E, its bracket F, engaging and movable up and down said slides, and means to retain it in position, and the spring G, connecting the seat and bracket, substantially as described.

8. The slides A, having the rear legs, C, and wheels D, combined with the seat E, its bracket F, engaging and movable up and down said slides, and means to retain it in position, the stops A, wheels H, and the spring G, connecting the seat and bracket, substantially as described.

329,806. URINAL. JAMES R. BOYLE, Brooklyn, N. Y. Filed Sept. 26, 1884. (No model.)

Claim.—1. An earthenware urinal-bowl having molded in one piece with it a tubular barrel the bore of which is cylindrical and extends through the barrel from end to end with its axis perpendicular to



the plane rear surface of the urinal-bowl, and formed with a port or passage extending from the bore to the interior of the bowl, substantially as set forth.

2. An earthenware urinal-bowl having molded in one piece with it a tubular barrel the bore of which is cylindrical and extends through the barrel from end to end, with its axis perpendicular to the plane rear surface of the urinal-bowl, and formed with a port or passage extending from the bore to the interior of the bowl, and with a projecting flange formed at the base of the barrel, constituting a continuation of the plane rear surface of the bowl, and adapted to cover and conceal the hole through the slab against which the urinal is to be placed, substantially as set forth.

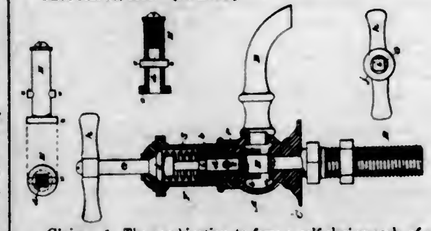
3. An earthenware urinal-bowl formed with an open-ended barrel molded on it, and an opening extending from its interior into the cavity of said barrel, in combination with a pipe-connection entering said barrel, and having flanges drawn toward each other against the ends thereof, and with a faucet or cock arranged in said connection and operating in the cavity of said barrel, substantially as set forth.

4. The earthenware urinal-bowl A, formed with a barrel, B, molded in one piece with it, in combination with flanged tube or spud D, entering said barrel from the back, cap E, closing the front thereof, and faucet or cock F, borne by said cap, entering the barrel and seating itself within the tube D, substantially as set forth.

5. The combination of tube or spud D, having flange *d*, threaded tube *e*, and seat *k*, with cap E, having flange *i* and threaded tube *j*, and faucet F, borne by said cap, and having valve *n*, seating against said seat *k*, substantially as set forth.

6. The combination of urinal-bowl A, having tubular barrel B' formed upon its bottom, with tube or spud D', cap E', and trap H, the tube D' being joined to the belly of said trap, whereby the latter may be cleaned out through said barrel by removing said cap, substantially as set forth.

329,807. SELF-CLOSING COCK. JAMES R. BOYLE, Brooklyn, N. Y. Filed Jan. 31, 1885. (No model.)



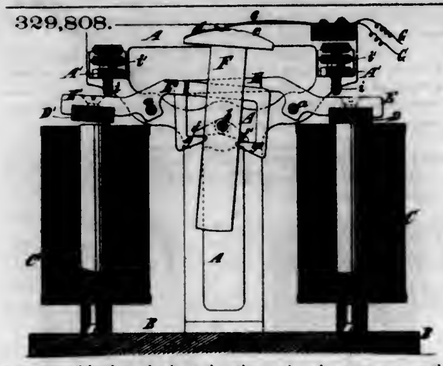
Claim.—1. The combination, to form a self-closing cock, of a shell formed with a seat, a plunger adapted to move toward and from said seat, a rotary stem engaging said plunger and formed with a shoulder ground to a seat against said shell where the stem passes out through the latter, inclined ways upon one or more of the respective parts engaging projections on one of the other parts, substantially as described, whereby the turning of said stem acts to move the plunger from its seat, and a spring arranged to press in opposite directions against said plunger and stem, thereby pressing the said ground shoulder on the stem tight against its seat and preventing leakage, and acting to press the plunger to its seat upon the release of the stem, thereby turning the latter back to its starting-point, substantially as set forth.

2. The combination, to form a self-closing cock, of a shell, A, formed with seat *a* and inclines *g*, plunger E, having projections *e e*, adapted to engage and ride up said inclines upon the turning of the plunger, stem G, having flange *j*, and formed as a key to engage and turn said plunger, cap F, having a ground seat for said flange *j* where the stem passes through it, and the spring S, arranged to press in one direction against said plunger to force it toward the seat, and in the other direction against said stem to press its flange *j* against said cap, substantially as set forth.

329,808. ELECTRIC CIRCUIT-BREAKER. CHRISTOPHER L. BRUSH, Bergen Point, N. J. Filed Aug. 21, 1885. (No model.)

Claim.—1. In a circuit-breaker, the combination, with a rocker and contacts, whereby the electric continuity of the circuit is established or interrupted, of electro-magnets on opposite sides of said rocker, reversely-arranged levers, each carrying at one end an armature for one of said

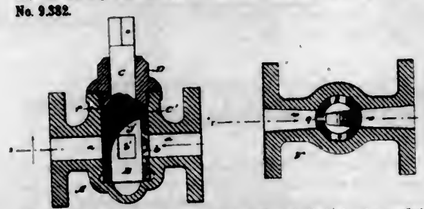
329,808.



magnets, and having a hook at the other end, and toes or cams on the rocker, with which the hooked ends of the armature-levers engage, substantially as herein described.

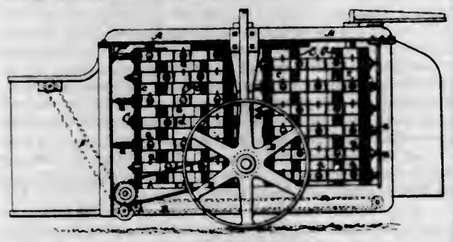
2. The combination, with the rocker F and its contacts, whereby electric continuity is established or interrupted, of the magnets C C', the levers E E', carrying armatures D D' at their one end and hooked at their other end, *g g'*, the toes or cams *f f'* on the rocker, and stops for limiting the upward movement of the armature-levers, substantially as herein described.

329,809. COCK OR VALVE. JULES BUFFET, Paris, France, assignor to Jules Fontenelle, same place. Filed Oct. 27, 1882. (No model.) Patented in France July 20, 1881, No. 144,037; in Belgium Feb. 1, 1882, No. 56,941; in England Feb. 6, 1882, No. 577; in Germany Feb. 7, 1882, No. 19,372; in Italy Mar. 15, 1882, XXVII, 499, and in Austria May 12, 1882, No. 9,382.



Claim.—A cock or valve comprising the shell A, having a fluid-way or passage, *a a*, and a cylindrical chamber arranged at a right angle to said fluidway to receive the plug, a plug comprising the hollow cylinder B, provided with the slit *b* and the ports *b' b'*, respectively, arranged as shown, the stem C, the flange C', and the tie *j* all formed in one piece, the cap-plug D, and the interposed packing, all arranged substantially as shown, whereby the body of the plug, while formed integrally with the stem, is left free to expand, as and for the purposes set forth.

329,810. COTTON-HARVESTER. OWEN T. BUGG, New York, N. Y. Filed July 3, 1885. (No model.)

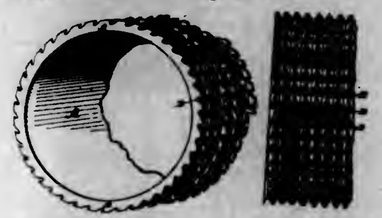


Claim.—1. In a cotton-harvester, the combination of two or more vertical belts, means for moving them in a horizontal plane, and revolving fingers carried by said belts for gathering the cotton, substantially as set forth.

2. In a cotton-harvester, the combination of vertical drums or vertical series of pulleys, a series of belts passing around said drums or pulleys, revolving fingers carried by said belts, and means substantially as shown, for causing the fingers to rotate in one direction to gather the cotton and in the opposite direction to discharge it, substantially as set forth.

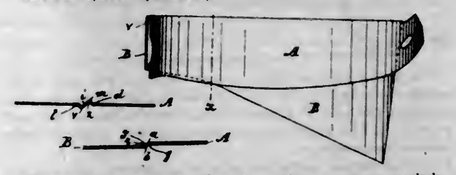
3. In a cotton-harvester, the combination of two or more vertical endless belts placed opposite each other in the frame, means for moving such belts in a horizontal plane, revolving fingers carried by said belts, means, substantially as described, for rotating the fingers in one direction to gather the cotton and in the opposite direction to discharge the cotton, and stationary combs for cleaning the cotton from the fingers, substantially as set forth.

329,811. METHOD OF FORMING TEETH UPON CYLINDERS. OWEN T. BUGG, Newark, N. J. Filed Aug. 31, 1885. (Model.)



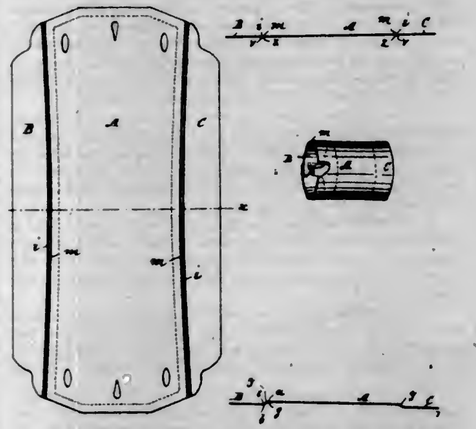
Claim.—The method herein described of forming teeth upon cotton-ginning cylinders, consisting in, first, cutting suitable undercut grooves in the surface of the cylinder; and, second, grooving the cylinder circumferentially at any angle to the longitudinal grooves, substantially as specified.

329,812. COLLAR. ROBERT BUTTERWORTH, Boston, Mass., assignor by mesne assignments, to the Fiberlene Collar Company, Portland, Me. Filed June 9, 1885. (No model.)



Claim.—As an improved article of manufacture, a paper or cloth-faced paper collar provided with a longitudinal indentation or crease on each side, said indentations or creases being arranged in parallelism with each other and disposed at or near the junction of the band and flap of the collar, substantially as described.

329,813. CUFF. ROBERT BUTTERWORTH, Boston, Mass., assignor, by mesne assignments, to the Fiberlene Collar Company, Portland, Me. Filed June 9, 1885. (No model.)

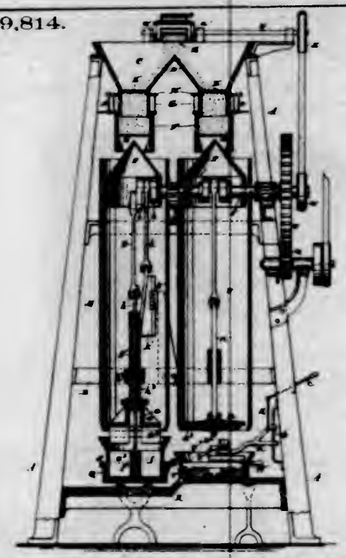


Claim.—As an improved article of manufacture, a paper or cloth-faced paper cuff provided with a longitudinal crease or indentation on each side, said indentations or creases being arranged in parallelism with each other and disposed at or near the junction of the body and flap of the cuff, substantially as described.

329,814. MACHINE FOR MOLDING WHEELS. JOSEPH J. CARR, Wilkes-Barré, Pa. Filed Jan. 29, 1885. (No model.)

Claim.—1. In a molding-machine, the combination, with a table for supporting a whole or a portion of a flask, a hopper provided with two gates for regulating the flow of sand, and a cylinder open at both ends and located between the hopper and table, of a shaft passing through the cylinder, a rod located within the cylinder and connected to a crank on said shaft, and a rammer connected to said rod, substantially as set forth.

329,814.



2. In a molding-machine, the combination, with a table for supporting a cope and drag and two cylinders located side by side above the table, of a shaft and patterns and rammers connected to said shaft, whereby the sand in the drag and cope is operated on simultaneously, substantially as set forth.

3. In a wheel-molding machine, the combination, with a pair of cylinders, of a revolving shaft journaled in the upper end of the cylinders, and patterns and rammers connected with said shaft, whereby they are reciprocated, substantially as set forth.

4. In a wheel-molding machine, the combination, with a pair of cylinders and a table for supporting the drag and cope under the same, of a pattern and rammer adapted to operate below one of said cylinders in conjunction with each other and a rammer or pattern-plate arranged to operate below the other cylinder, substantially as set forth.

5. In a molding-machine, the combination, with a cylinder and a table for supporting a whole or portion of a flask below said cylinder, of a double crank located in said cylinder and a pattern and rammer connected, respectively, to the cranks, whereby the sand is compressed in the portion of the flask immediately under the cylinder, the above parts being constructed to permit the rammer to remain in contact with the sand until the pattern is withdrawn, substantially as set forth.

6. In a molding-machine, the combination, with two cylinders arranged side by side, hoppers located above the cylinders and provided with gates for regulating the flow of sand, and cones secured to the cylinders below the hoppers, of a horizontal shaft located below the cones and rammers and a pattern connected to said shaft and operating below the cylinders, substantially as set forth.

7. In molding-machines, the combination, with a cylinder open at both ends, a table for supporting a whole or a portion of a flask, and a hopper having an extensible section and gates, of a crank-shaft and a rammer connected to said shaft and operating below the cylinder, substantially as set forth.

8. In a molding-machine, the combination, with a table for supporting a portion of a flask, a cylinder located above said table, and a shaft passing through said cylinder, of a reciprocating rod attached to and operated by said shaft and a pattern yieldingly secured to the lower end of the rod.

9. In a molding-machine, the combination, with a table for supporting a portion of a flask, a cylinder having a cone at its upper end, and a hopper located above the cone, of a shaft passing through the cylinder below the cone and provided with a crank and a rammer connected to and operated by said crank-shaft.

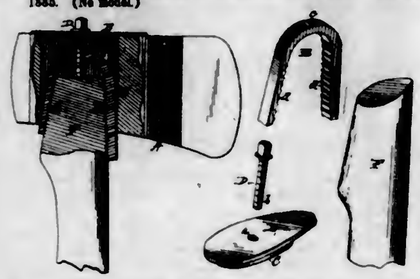
10. In a molding-machine, the combination, with a table, a cylinder, and a shaft having a double crank thereon, the latter being located within the cylinder, of connecting-rods secured on the cranks and a pattern-plate and rammer respectively secured to the lower ends of the rods, substantially as set forth.

11. In a wheel-molding machine, the combination, with the cylinders and a crank-shaft journaled therein, of a connecting-rod secured to a crank in one of the cylinders, and a rammer secured thereto, and connecting-rods secured to cranks in the opposite cylinder, one of the rods carrying a rammer, and the other of said rods carrying a pattern-plate, substantially as set forth.

12. In a molding-machine, the combination, with a cylinder, of a sweep hinged to the frame beneath the cylinder and adapted to be moved laterally, substantially as set forth.

13. In a molding-machine, the combination, with a table, a cylinder located above the same, a hopper provided with gates for regulating the discharge of sand, a crank-shaft passing into the cylinder, and a rammer connected with said crank, of devices for elevating the sand to the hoppers, substantially as set forth.

329,815. TOOL-HANDLE. Milo L. Coats, Starksborough, Vt., assignor of one-half to Eugene W. J. Hawkins, same place. Filed Apr. 27, 1885. (No model.)



Claim.—In combination with an ax and the handle thereof, the head-plate B, formed with a short tenon fitted to the eye of the ax, and a central hole, *a*, provided with a screw-threaded bolt, D, and the U-shaped clamp E, having a screw-threaded connection with the drawing-bolt, and the limbs thereof being formed or provided with serrations on the inner faces and extended below the eye of the tool, substantially as and for the purpose stated.

329,816. AXLE-LUBRICATOR. James H. Coleman, Montrose, Mo. Filed Sept. 12, 1885. (No model.)



Claim.—1. In an axle-lubricating device, the combination, with a spindle having a longitudinal groove and an annular groove or recess located about centrally upon the said spindle and intersecting the said longitudinal groove, of a slide fitted in the said longitudinal groove and removable from the outer end of the spindle, said slide being provided with a longitudinal groove in its upper or outer side, substantially as and for the purpose herein set forth.

2. In an axle-lubricating device, the combination, with a spindle having a longitudinal groove or recess and an annular groove intersecting the same, of a slide fitted in the said longitudinal groove or recess and removable from the outer end of the spindle, said slide being provided in its upper or outer side with a longitudinal groove, and with a transverse groove or recess intersecting the same and registering with the annular groove in the spindle, substantially as and for the purpose herein set forth.

3. In an axle-lubricating device, the combination of a spindle having a longitudinal groove or recess and an annular groove intersecting the same, a slide fitted in the said longitudinal groove or recess and removable from the outer end of the spindle, said slide being provided in its upper or outer side with a longitudinal groove, and with a transverse groove or recess intersecting the same and registering with the annular groove of the spindle, and having a notch in its upper side, near its outer end, and the flanged nut upon the end of the spindle, whereby the said slide is normally retained in position in the groove of the spindle, substantially as and for the purpose herein set forth.

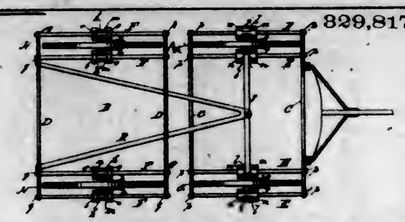
4. The combination, with a longitudinally-grooved axle-spindle, of a longitudinally and transversely grooved slide adapted to fit closely in the groove of the said spindle, and removable from the outer end of the latter, substantially as and for the purpose herein shown and specified.

329,817 RUNNING-GEAR FOR VEHICLES. John T. Corbett, Absecon, N. J. Filed Mar. 14, 1885. (No model.)

Claim.—1. In running-gear for vehicles, the combination, with parallel side bars, of boxes fastened thereto, wheels located between said boxes, and center screws which pass through said boxes and enter the hubs of said wheels, substantially as shown and described.

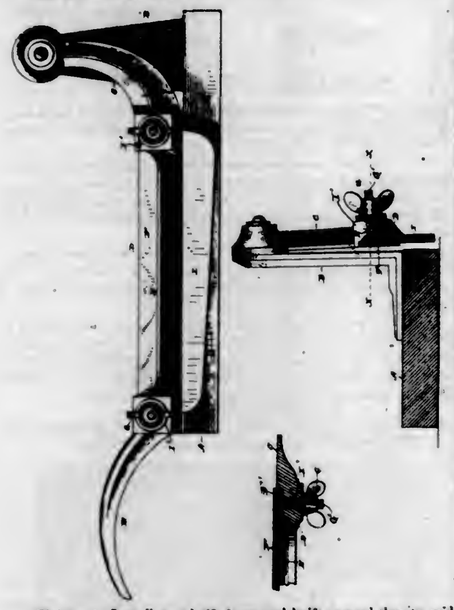
2. In running-gears for vehicles, frames A B, composed of cross-bars C D, and parallel side bars, E F, between which the supporting-wheels are located, said cross and side bars being adjustable relatively to each other to enable the distance between said wheels to be varied, substantially as shown and described.

329,817.



3. In running-gear for vehicles, the combination, with the supporting-wheels and their frames, of boxes for the journals of said wheels, said boxes being adjustable on said frames, substantially as shown and described.

329,818. MEAT-SLICER. E. Covert, Farmer Village, N. Y. Filed Mar. 31, 1885. (No model.)

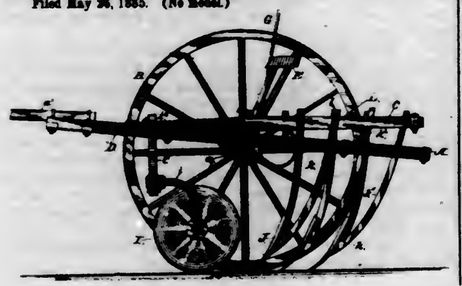


Claim.—1. In a slicer, a knife frame and knife secured thereto, said frame being provided with a flange extending upwardly and outwardly from the knife-edge, and thus forming a throat between the said knife and flange, substantially as specified.

2. In a slicer, a knife-frame and a knife secured thereto, said frame having an integral flange projecting upwardly and outwardly from the knife-edge and a downward integral continuation wider at one end than at the other, substantially as and for the purpose specified.

3. A slicer consisting of a base, a post erected thereon, a knife-frame and knife secured thereto, said frame having an upwardly-extended integral arm pivoted to the upper portion of the post, and upwardly and outwardly inclined integral flange forming a throat between said flange and knife, and a downward continuation of said frame wider at one end than at the other, substantially as specified.

329,819. CULTIVATOR. Thomas H. Crooker, Newberry County, S. C. Filed May 26, 1885. (No model.)



Claim.—The combination, with the cultivator-beams C, cross-beams *c*, uniting the same and forming a frame, which is pivoted at its forward end to the draft-frame A, and the cultivator-standard carried by the beams C, of the curved bar H, notched at its outer edge and fastened to the axle-tree of the draft-frame, hinge-plate F, clamp *f*, securing plate F to the axle-tree, curved lever G, pin *f'*, pivotally connecting the lever to the plate F, and the clamp-fastening *g*, attached to one of the beams C, the parts being constructed, arranged, and operating substantially as shown and described.

329,820. PERMUTATION-LOCK. Milton A. Dalton, Cincinnati, Ohio. Filed Aug. 17, 1885. (No model.)



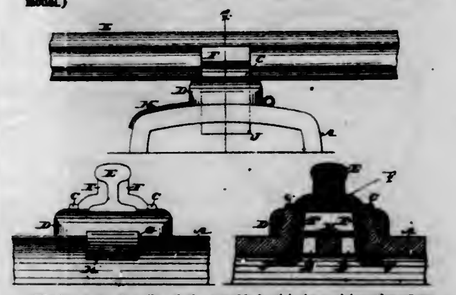
Claim.—1. An unlocker for combination-locks, which consists of a combination-key and a governor, substantially as before set forth, whereby the turns and halts of the lock-arbor, in working out the combination of the lock, are controlled mechanically.

2. In an unlocker of the character described, a combination-key consisting of a stem, one fixed key-bit, and a series of permutable key-bits thereon, and a clamping-nut for holding the permutable key-bits in position, substantially as before set forth.

3. In an unlocker of the character described, a governor, substantially as before set forth, consisting of the following elements, viz: an externally grooved and notched fixed barrel, a trundle mounted to turn on said barrel and having two laterally-projecting pins on one of its heads, a rider mounted upon springs on the bars of the trundle and having a laterally-projecting pin, the inner end of which engages the grooved barrel, and a retractible stop-disk permanently clutched to one of the heads of the trundle, and having a stop-pin adapted to enter a sectoral slot in the end of said barrel.

4. The combination, substantially as before set forth, with a combination-key the stem of which carries one fixed key-bit and a series of permutable key-bits, of a governor composed, essentially, of an externally grooved and notched barrel, a trundle mounted to turn on said barrel and provided with laterally-projecting pins, a rider mounted upon springs on the trundle and having a laterally-projecting pin, the inner end of which engages the grooved barrel, and a retracted check-disk which is permanently clutched to the trundle, and has a stop-pin adapted to enter a sectoral slot in the end of the said barrel.

329,821. RAILROAD TIE AND CHAIR. Peterson Davey, Philadelphia, Pa., assignor to A. Rex, same place. Filed Mar. 23, 1885. (No model.)

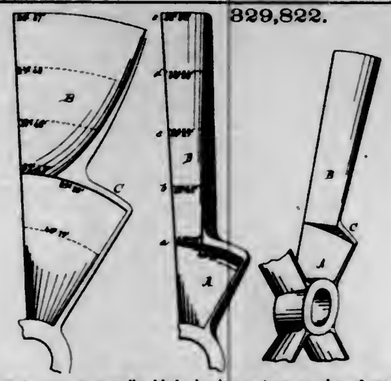


Claim.—1. A railroad-tie provided with lugs rising therefrom, a yoke encircling said lugs, cheeks fitted against said lugs on the inner faces thereof, and a key, said key securing the cheeks and yoke to the tie and clamping the cheeks against the rail, substantially as described.

2. A railroad-tie having openings and lugs rising therefrom, a yoke encircling said lugs, cheeks fitted in said openings bearing against said lugs and embracing the rail, and a key which is passed through the yoke between the lugs, the lower end of the cheeks having lips which engage with the tie, substantially as described.

329,822. SCREW-PROPELLER. Albert Dubot de Bremiac, Versailles, France. Filed Apr. 18, 1884. (Model.) Patented in France Feb. 11, 1884, No. 160,344; in Belgium Mar. 13, 1884, No. 64,481; in Italy Mar. 14, 1884, No. 16,980; in Spain Mar. 19, 1884, No. 4,191; in England Mar. 28, 1884, No. 5,836; in Germany Mar. 29, 1884, No. 30,146, and in Austria-Hungary Apr. 4, 1884, No. 37,433 and No. 56,193.

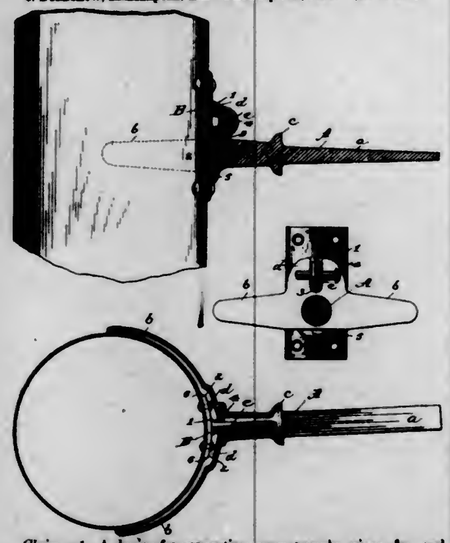
329,822.



Claim.—1. A propeller-blade having an inert portion of constant pitch adjacent to the axis of motion, and having an active portion extending from the inert portion outward and provided with curved helical surfaces determined, as set forth, from an initial line common to both inert and active portions, as specified.

2. A propeller-blade having an inert portion, as A, of constant pitch and without propelling action arranged adjacent to the axis of motion, and an active portion, B, having curved helical surfaces determined, as set forth, from the single initial line, the said active portion extending from the inert portion outward, with their junctions formed into segments C, concentric with the axis of motion, as set forth.

329,823. SUPPORTING-BRACKET FOR SPOUTS, PIPES, &c. HENRY C. DURBROW, Indianapolis, Ind. Filed Apr. 20, 1885. (No model.)



Claim.—1. A device for supporting eaves-troughs, pipes, &c., and in combination, a bracket or supporting-iron having a slotted flange or lip, *d*, a plate secured to the spout and provided with a stud adapted to the said slot, means for holding the stud within the slot, and a groove or rest formed on the bracket, adapted to receive the plate, all substantially as described.

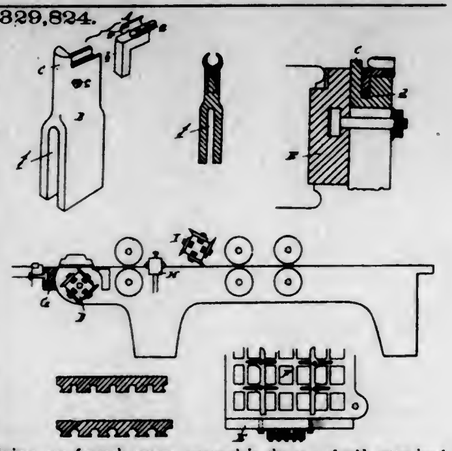
2. In combination with the bracket, adapted to be attached to the wall, the stud *e* and leg 5, secured to the spout and bearing upon the bracket upon either side thereof, and means for holding the spout to the bracket against outward movement, all substantially as described.

329,824. PLANING AND MATCHING MACHINE. WM. H. DWIGHT, Detroit, Mich. Filed Apr. 20, 1885. (No model.)

Claim.—1. In a planing-machine, the combination of a series of rotary knives or rotary saws arranged to cut a series of grooves in a board, and of a series of stationary knives having knife-blades arranged in rear of said rotary knives and constructed to undercut these grooves, substantially as described.

2. In a planing-machine, the combination of the rotary cutter-head D, having a series of grooving-cutters, and of a series of stationary

329,824.



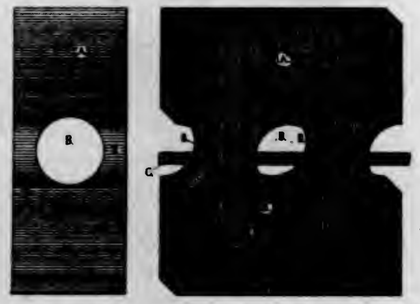
knives, one for each groove, arranged in the rear of said cutter-head, and having cutting-blades arranged to enter the grooves and undercut them, substantially as described.

3. In a planing-machine, the combination of the lower cylinder, D, having a series of grooving-cutters, of a series of stationary knives, A, having undercutting blades *a*, and arranged in rear of said cylinder, and of the chip-breaker G, forming a knife-head to which the knives A are secured, substantially as described.

4. In a planing-machine, the combination of the lower cylinder, D, having a series of grooving-cutters, and of a series of stationary knives, A, arranged in rear of said cylinder and having undercutting-blades *a* and guides C, substantially as described.

5. In a planing-machine, the combination of the matcher-heads H, having suitable cutters for making half-grooves, the lower cylinder, D, arranged in the rear of said heads and having a series of grooving-cutters, and of the undercutting-knives A, stationarily secured to the bed of the machine in rear of said cylinder, substantially as described.

329,825. PAVING-BLOCK. ALFRED T. ELFORD, San Francisco, Cal. Filed Nov. 29, 1884. (No model.)



Claim.—In street-paving blocks, the block A, having the perforations B, with or without the perforations D, constructed and operated substantially as and for the purposes set forth.

329,826. CABLE RAILWAY. ALFRED L. ELDRIDGE, Denver, Colo. Filed Feb. 24, 1885. (No model.)

Claim.—1. The combination of the pivoted grip-levers, the threaded shaft D, adapted to bearings beneath the car, and having a nut controlling one of the grip-levers, and gearing whereby said shaft can be rotated from the body of the car, as specified.

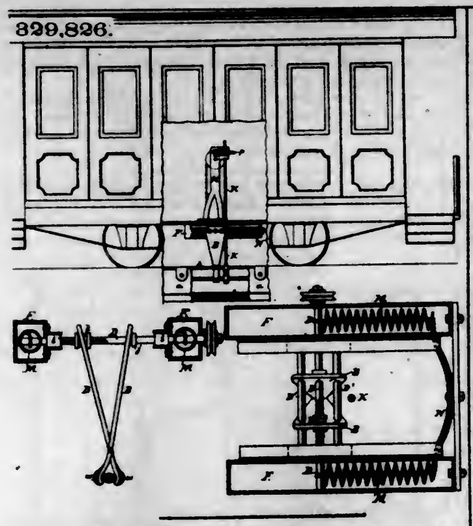
2. The combination of the pivoted grip-levers, the threaded shaft D, controlling the same, and adapted to bearings in which it is free to slide longitudinally, and a spring-connection between said shaft and the body of the car, as set forth.

3. The combination of the pivoted grip-levers, the threaded shaft D, controlling the same, the guided supporting-shafts D', and the spring-connection between the grip mechanism and the car, as set forth.

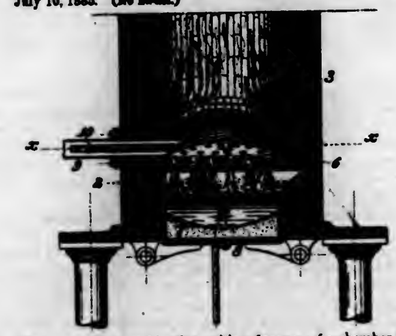
4. The combination of the gripping-levers and their operating-shaft with a spring-connection between said levers and the body of the car, said connection comprising an elliptic spring, N, and coiled springs M, as set forth.

5. The combination of the cable and pulleys of a traction-railway with grip-levers having cushions *w*, as specified.

329,826.



329,827. GAS-FURNACE. HENRY H. GARRETT, Pittsburg, Pa. Filed July 10, 1885. (No model.)



Claim.—1. The combination, with a furnace, of a chamber having a roof or crown adapted to serve as the support of a charge of metal or ore, and a series of burner-passages in its floor or base, a series of piers supporting said chamber above a space or receptacle for molten metal at the bottom of the furnace, and a series of tuyeres or air-blast pipes, each inclosing a gas-supply pipe, which discharges into the chamber adjacent to the discharge end of the tuyeres therein, substantially as set forth.

2. The combination, with a furnace, of a chamber having a roof or crown adapted to serve as the support of a charge of metal or ore, and a series of burner-passages in its floor or base, a series of piers supporting said chamber above a space or receptacle for molten metal at the bottom of the furnace, a series of passages separating the chamber from the inner walls of the furnace, and a series of air-blast pipes and gas-supply pipes passing through the supporting-piers and discharging into the chamber, substantially as set forth.

3. A chamber for supporting a charge of metal or ore in a furnace and effecting the mixture of a supply of gas and air, said chamber being composed of refractory material and having an arched or dome-shaped roof or crown, and a floor or base perforated with a series of burner-passages, substantially as set forth.

329,828. WOODEN FLOORING AND WAINSCOTING. ALBERT GREEN, New York, N. Y., assignor to Warren N. Abbott and Solomon J. Gordon, both of same place. Filed Feb. 25, 1885. (No model.)

Claim.—1. The method herein described of producing wooden blocks for flooring and wainscoting, said method consisting in gluing or attaching wooden strips to the sides of a rectangular or a polygonal log of timber in such position that the course of the grain shall be in different directions on the ends of the several pieces, then cutting off the end of the combined strips and log diagonally, and then cutting off blocks of uniform and suitable thickness by successive cuts made diagonally parallel with the plane first produced, substantially as set forth.

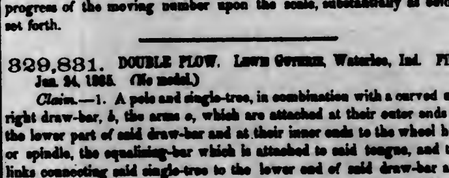
2. A block for flooring and wainscoting having a central portion, *c*, and side pieces or borders, *a a' a² a³*, said central piece and side pieces

329,828.



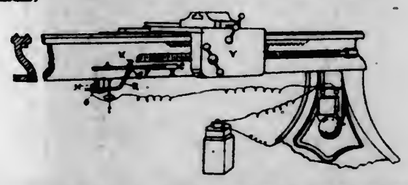
each having its end grain or the lines formed by the successive layers running in a different direction from that of the rest, and the grain of said pieces running about parallel with each other lengthwise at an angle of forty-five degrees (more or less) to the plane of their general surface, said blocks each having two parallel rectangular edges, *d d'*, and two parallel inclined edges, *d² d³*, as shown and described.

329,829. ROLLER-SKATE. WILLIAM H. GREENMAN, Hubbard, Mass., assignor of one-half to Henry M. Dow, same place. Filed July 24, 1885. (No model.)



Claim.—The combination, with the axle-supporting sleeve D, constructed and arranged to vibrate in both a horizontal and vertical plane, and provided with horizontal arm D^2, of the engaging and actuating arm B^4, secured to and depending from the foot-board and made adjustable in the lineal direction thereof to vary its action upon arms D^2, substantially as specified.

329,830. ELECTRIC SIGNALING APPARATUS FOR MACHINERY. MILTON W. GROVENBURG, New York, N. Y. Filed Feb. 10, 1885. (No model.)



Claim.—1. The combination, in an electric circuit, of an electro-magnetic alarm apparatus, the carriage of a lathe or other similar machine, and a conducting-rod located in the path of the carriage and provided with a sleeve for sliding over the rod, whereby the carriage is allowed to advance after the sounding of an alarm, substantially as set forth.

2. The combination, in an electric circuit, of an electro-magnetic alarm apparatus, the carriage of a lathe or other similar machine, and a conducting-rod located in the path of said carriage, the said rod being provided with a sliding sleeve and the rod with a scale, substantially as described.

3. The combination, with an insulated clamp capable of being attached to a lathe or other similar machine, of a compressible conducting and indicating rod, the whole adapted to form a circuit-closer, substantially as before set forth.

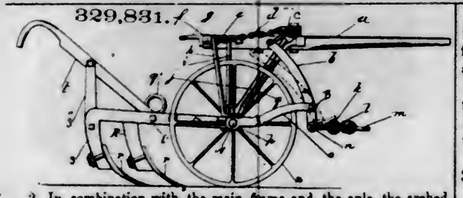
4. The combination, substantially as before set forth, of the insulated clamp, a conducting-rod secured thereto, a sleeve adapted to slide upon said rod, a scale affixed to the bar adjacent to said sleeve, and a spring interposed between the rod and the sleeve.

5. The combination, with a lathe, and an indicator consisting of a stationary number provided with a scale, and a movable number adapted to slide upon said scale, of an alarm to indicate the commencement or progress of the moving number upon the scale, substantially as before set forth.

329,831. DOUBLE PLOW. LEWIS GOTSHER, Waterloo, Ind. Filed Jan. 24, 1885. (No model.)

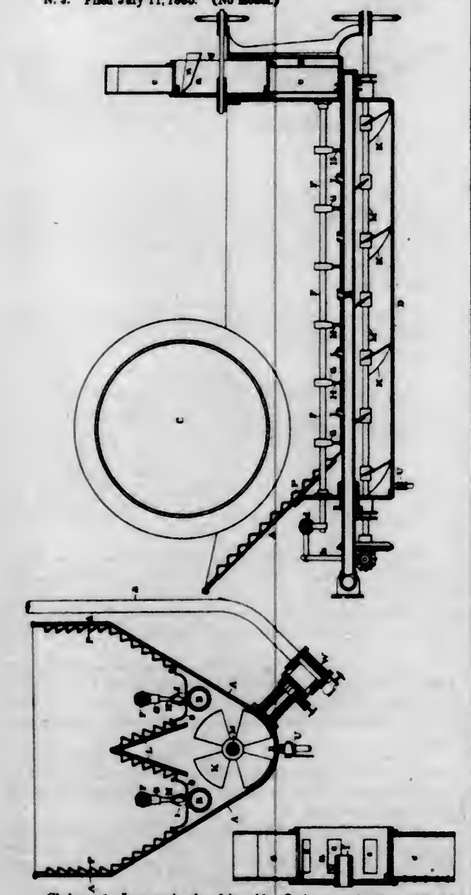
Claim.—1. A pole and single-tree, in combination with a curved upright draw-bar, *b*, the arms *c*, which are attached at their outer ends to the lower part of said draw-bar and at their inner ends to the wheel hub or spindle, the equalizing-bar which is attached to said tongue, and the links connecting said single-tree to the lower end of said draw-bar and said equalizing-bar to the upper end of said draw-bar, substantially as set forth.

329,831.



2. In combination with the main frame and the axle, the arched frame *c'*, made of two pieces having their lower ends attached to said axle, and their upper ends attached to said frame, and the additional bars *h* and *q*, attached in like manner, substantially as set forth.

329,832. MACHINE FOR EXTRACTING GOLD, &c., FROM PULVERIZED ORES. JACOB L. HAYWARD, Framingham, Mass., assignor of two-thirds to Thomas C. Simonton and Thomas C. Simonton, Jr., Paterson, N. J. Filed July 11, 1885. (No model.)



Claim.—1. In a tank, the false sides L, in combination with false bottoms O, arranged to divide the tank into two longitudinal valleys, with a common bottom beneath, provided with shaft M, wings K, stop-cock U, steam-jet pump W, and pipe S, substantially as for the purposes set forth.

2. The common bottom D, in combination with sides L and bottoms O, plates P, provided with slotted openings *o*, shaft M, wings K, stop-cock U, and steam-jet pump W, substantially as and for the purposes set forth.

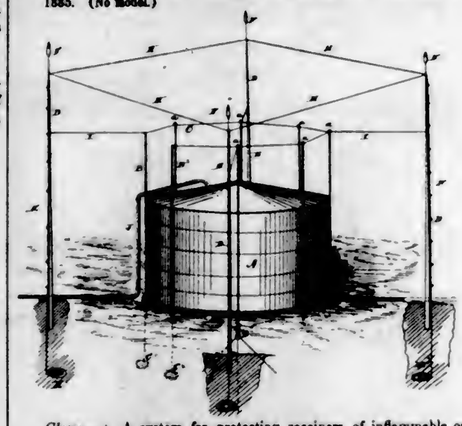
3. Tank A, in combination with false sides K, bottoms O, supply-pipes B, jets I, and common bottom D, substantially as and for the purposes set forth.

4. The combination of tank A, provided with two or more longitudinal valleys, false bottoms O, amalgamated plates P, common bottom D, and revolving cylinder C, substantially as and for the purposes set forth.

5. Tank A, divided into two or more longitudinal valleys and each valley supplied with a supply-pipe having orifices or jets on its upper surface, in combination with rod F, arms G, and fingers H, substantially as and for the purposes hereinbefore set forth.

6. The combination of tank A, cylinder C, amalgamated plates P, false bottoms O, and common bottom D, in combination with supply-pipes B and jets I, and tailing-tank E, provided with tailing-wheel J, substantially as and for the purposes hereinbefore set forth.

329,833. APPARATUS FOR PROTECTING STRUCTURES FROM LIGHTNING. CHARLES J. HUBBELL, Washington, D. C. Filed Mar. 24 1885. (No model.)



Claim.—1. A system for protecting receivers of inflammable or explosive substances from atmospheric electricity, comprising a cordon of poles extended above such receiver, and provided with a circuit-cable supported upon the upper ends of said poles and in metallic contact with the receiver, and having its ends terminating in coils in the subterranean sheet, combined with a distant cordon of cables of a higher altitude, substantially as set forth.

2. A structure to be protected from lightning, combined with a series of tubular metallic poles immediately surrounding it and in metallic contact therewith, a copper cable terminating in a coil arranged in the subterranean sheet, and extending thence up through one of said poles successively through the tops of the others to the last one next the first, and down it to the subterranean sheet, and ending there in an extended coil, and a distant series of vertical copper cables having coiled earth-terminals and sky platinum points connected to each other by a horizontal cable, and to the inner or first cable by individual cables in metallic contact therewith, and also having metallic connection with the structure, whereby the induced electricity of the earth and the electrically-attractive structures thereon is drawn to the points and neutralized, thereby rupturing the storm cloud, and the decomposed or neutralized electricity of the earth and cloud is carried harmless to the subterranean sheet, preventing the stroke or spark, substantially as described.

3. The combination, with the structure to be protected, of a series of poles provided with a cable extended from a coil in the subterranean sheet to the top of such pole, and from said pole to all the others of the series and down the last of the series to the subterranean sheet, where it terminates in a coil, a series of vertical cables, each coiled in the subterranean sheet and terminating in platinum points above the first-named cable, and in electrical connection therewith, and electrical connections with the structure, substantially as described.

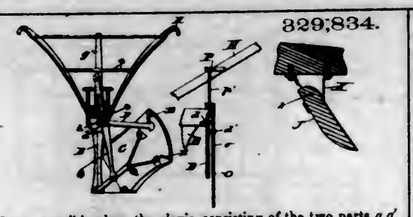
329,834. PLOW. MYRON R. HUSSELL, Wolcott, Vt. Filed Nov. 12, 1881. (No model.)

Claim.—1. In a reversible plow, the combination, with the standard, of the mold-board pivoted thereto and adapted to be swung on either side of the same, the automatic latch or locking device consisting of the locking bar or latch pivoted to the plow-standard and having the pin and the bar connected to the mold-board and provided with the slot with which the pin on the locking-bar co-operates, whereby when the mold-board is reversed the latch is also automatically reversed, substantially as described.

2. The combination, with the mold-board pivoted to the plow-standard and having the lugs or projections E, of the locking-bar D, provided with the pin *d'*, and the bar O, having the slot *o*, with which said pin co-operates, substantially as described.

3. The combination, with the mold-board pivoted to the standard, of the locking bar or latch provided with the pin, and the bar O, sliding on the rod *p*, and having the slot *o*, with which the pin on the locking-bar co-operates, substantially as described.

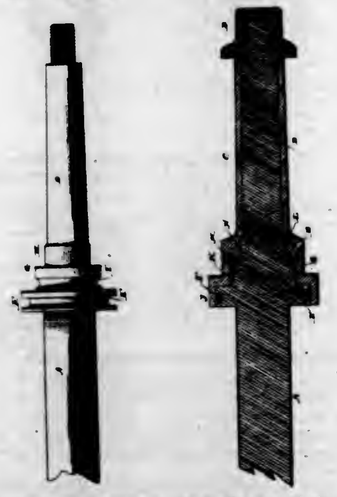
329,834.



4. In a reversible plow, the clevis, consisting of the two parts *g g'*, both said parts being held by the clevis-pin, and the part *g* being riveted or otherwise secured to the part *g'* between the ends of the latter, substantially as described, for the purpose specified.

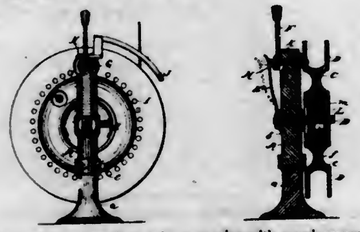
5. The socket K, having the lugs for attaching it to the under side of the plow-beam, the open front, and the cross-bar at the back, against which the back of the cutter rests, in combination with the cutter J, pivoted within the socket by the cross-bolt *k*, substantially as described.

329,835. VEHICLE-AXLE. PATRICK K. HUGHES, Auburn, N. Y. Filed Sept. 7, 1885. (No model.)



Claim.—The combination of an axle-spindle, an angularly-grooved collar at the inner end of the same, steps or shoulders formed upon the inner end of said spindle adjoining the said collar, the innermost one of said steps being provided with an annular groove, and an axle-box having a flange at its inner end to accommodate the collar at the inner end of the spindle, annular recesses to accommodate the shoulders or steps of the same, and an annular groove in the outermost recess registering with the outermost step or shoulder upon the spindle, and a washer between said step and said recess, substantially as and for the purpose herein shown and specified.

329,836. SPRING-ACTUATED DRUM. JOSEPH R. H. HINTON, Baltimore, Md., assignor to the Continental Store Service Company, New York, N. Y. Filed Oct. 5, 1885. (No model.)



Claim.—1. A drum for use in connection with a cash or parcel carrying apparatus of the kind described, provided with a grooved periphery, and a guide for directing the rope to the said periphery.

2. A drum for use in connection with store-service apparatus of the kind described, having a grooved periphery having combined therewith a guide for directing the rope to the said groove, and a locking device, substantially as described, for retaining the said drum at any desired point in its revolution.

3. A drum for use in connection with a store-service apparatus of the kind described, having a grooved periphery, a coil-spring connected at one end to the drum and at the other to the pin on which the drum is mounted, and means, substantially as described, for locking the said drum at any point in its rotation.

4. In combination with the operating-rope of a store-service apparatus of the kind described, the drum provided with the grooved periphery, the standard A, which is made in sections, one turning in the other, and means, substantially as described, for locking the said drum at any desired point in its revolution.

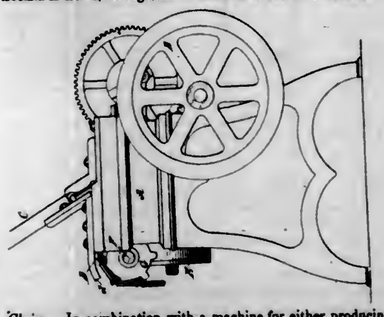
5. The combination of the standard A, the drum C, provided with the grooved periphery, and with a circular series of holes, and the spring-actuated locking-pin entering the said holes for the purpose of locking the said drum against turning.

6. The combination, with the standard A, provided with pin B, and an opening near its upper end for the passage of the locking-pin, said opening having a V-shaped mouth, as described, of the spring-actuated drum provided with openings in the side, and the spring-actuated locking-pin, substantially as described.

7. The combination, with a store-service apparatus of the kind described, of the spring-actuated drum provided with the circular series of holes, the standard A, provided with the pin B, and the opening near the top having the flaring mouth, the locking-pin having the upward extension, and the spring E, secured to the standard and bearing against the pin, substantially as described.

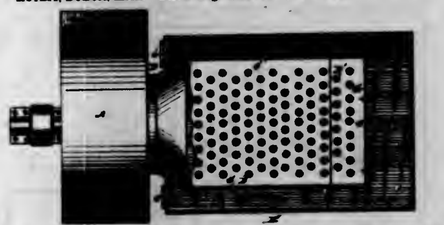
8. The combination, with the standard A, of the spring-actuated drum mounted thereon and provided with the grooved periphery, and having the openings in the periphery and side of the said drum for the reception of the rope, substantially as described.

329,837. LINK-COUNTING ATTACHMENT FOR CHAIN-MACHINES. EUGENE L. HOWE, Chicago, Ill. Filed Oct. 6, 1884. (No model.)



Claim.—In combination with a machine for either producing chain or for assembling the links thereof, a suitable registering mechanism, the operating shaft or spindle of which is provided with a chain-wheel arranged, as specified, in such relationship to the discharge-exit of said machine that the finished chain, in its passage from said machine, will drive said chain-wheel, all substantially as hereinbefore set forth.

329,838. COMBINED HEATER AND FAN-BLOWER. MILES C. HUYETT, Detroit, Mich. Filed Aug. 4, 1885. (No model.)

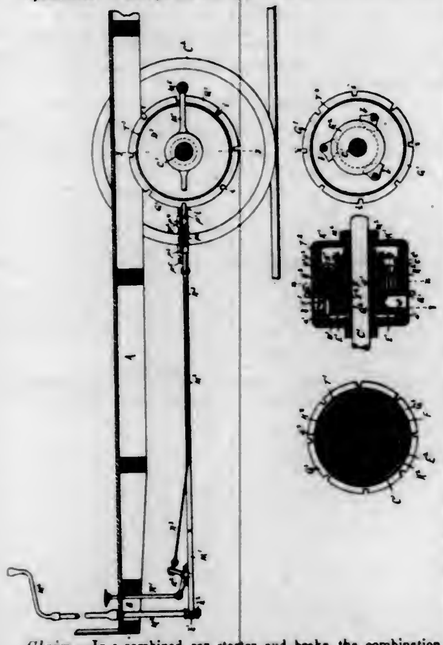


Claim.—1. The combination, with a radiator, of an inclosing-case constructed to admit air to the interior, a fan communicating with the interior of said case, and a housing or wall surrounding said case, leaving an air-space between it and said housing, said housing constructed to admit air into said air-space, and to permit its circulation partially about said case, and give it entrance into the interior of said case, so as to pass through the radiator, substantially as described.

2. The combination, with a radiator having an inclosing-case constructed to admit air to the interior, of an exterior housing or wall forming an air-space between it and said case, air-inlets to said air-space, and a fan for moving the air through the radiator, the construction being such that the air entering the air-space will circulate partially around the exterior of the radiator-case, entering the same and being moved through the radiator by the fan, substantially as described.

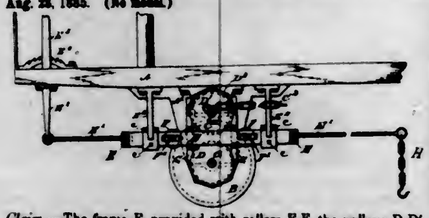
3. The combination, with a radiator having a condensing-chamber in connection therewith and a case constructed to admit air to the interior and to emit it therefrom, of an inclosing-wall or housing forming an air-space between it and said case, air-inlets to said air-space, and a fan to move the air through the condensing-chamber and radiator, substantially as described.

329,839. CAR STARTER AND BRAKE. SANDER JOHNSON, Minneapolis, Minn. Filed Apr. 1, 1885. (No model.)



Claim.—In a combined car starter and brake, the combination with the axle C', of the disk D', adapted to be revolved by said axle and having the angular flange a', disk E', loose upon said axle and having angular flange a^2, hub E^2, and spring F, connected to said hub, disk G', fitting loosely upon said hub E^2 and having channeled hub G^2, adapted to be connected in a fixed relation to the body of said car, cams b', pivoted to said disk E' and adapted to rest in contact with said channeled hub, disk H', having the outer end of said spring connected thereto and provided with angular flange e', disk K', encircling said axle loosely and having angular flange e^2, corresponding to said angular flange e', channeled hub L, fast to said axle, and cams g, pivoted to said disk H' and adapted to rest in contact with said channeled hub L, mechanism for moving said disk D' along said axle, and mechanism for connecting and disconnecting said disk G' with the body of said car.

329,840. CAR-BRAKE. AUSTIN L. KIRKLAND, Pittsburg, Pa. Filed Aug. 28, 1885. (No model.)



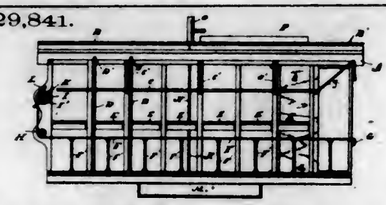
Claim.—The frame E, provided with rollers F F, the pulleys D D', chain G, and chain G^2, arranged to operate the car-brakes, substantially as specified, for the purpose set forth.

329,841. STOCK-CAR. JULIAN J. KOBBE and ARTHUR M. LEE, Peoria, Ill. Filed Aug. 24, 1885. (No model.)

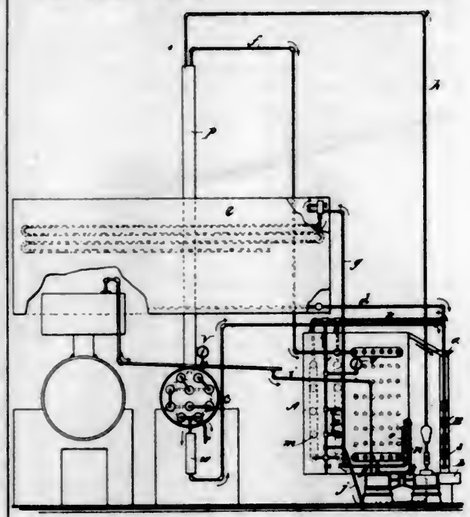
Claim.—1. The belt F, secured at one end to the ratcheted pulley I, at the other end to the stationary cross-bar G, and intermediately to the pivoted saddles F' F', in combination with pulley H, lever K, and pawl L.

2. The tank M, in combination with the pipe N, pump O, food-receptacle P, having water-compartment P', and swinging troughs E E, connected suitably with said compartment.

329,841.



329,842. ICE-MACHINE. SIGMUND LUSCHER, Frankfort, Ky. Filed Nov. 19, 1884. (No model.)



Claim.—1. In an ice-machine, the connection of the weak-ammonia pipe from the still and the return-gas pipe from the refrigerating-tank to the absorber, substantially in the manner described, which consists in the extension of the gas-pipe beyond the point of connection of the ammonia-pipe, so as to compel the more complete absorption of the gas, as set forth.

2. In an ice-machine, the combination, with the ammonia-still pipes, of the ammonia-vapor conduit or pipe connecting with a pump, and the hot ammonia-vapor stand-pipe connecting with the condensing pipe-coils of the cooling-tank, substantially as and for the purpose set forth.

3. In an ice-machine, the combination, with the ammonia-still pipes, of the ammonia conduit or pipe connecting with the still-pipes and a source of supply, the pipe connecting with the ammonia-vapor stand-pipe and the condensing pipe-coils, and a pipe leading from said condensing pipe-coils to a receiver having pipe-connection with the refrigerating-tank, substantially as and for the purpose set forth.

4. In an ice-machine, the combination, with the ammonia-still pipes, of the ammonia conduit or pipe connecting with the still-pipes and a source of supply, the pipe connecting with the ammonia-vapor stand-pipe and the condensing pipe-coils, a pipe leading from condensing pipe-coils to a receiver having pipe-connection with the refrigerating-tank, and the absorber connecting by pipe with the refrigerating-tank, substantially as and for the purpose set forth.

5. In an ice-machine, the combination, with the ammonia-still pipes, of the ammonia pipe or conduit connecting with the still-pipes and a source of supply, the pipe connecting with the ammonia-vapor stand-pipe and the condensing pipe-coils, a pipe leading from the condensing pipe-coils to a receiver having pipe-connection with the refrigerating-tank, the absorber connecting by pipe with the refrigerating-tank, and a pipe connecting the said absorber with a second absorber, said latter pipe having suction-pipe connection with the aforesaid stand-pipe, substantially as set forth.

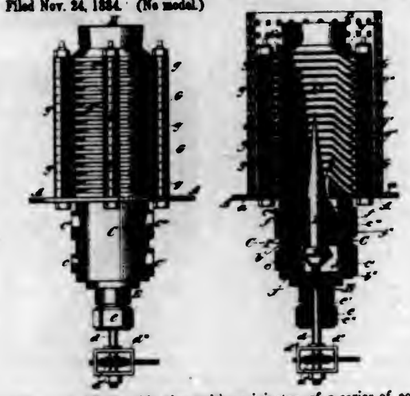
329,843. FIRE-GRATE. FRIEDRICH MÜLLER, New York, N. Y. Filed Jan. 29, 1885. (No model.)

Claim.—The combination, substantially as heretofore described, with the grate A, of the shaker C, which consists of a series of connected bars, a a, &c., each provided with projections b b, &c., which extend up between the grate-bars, the hanger E the ends of which are secured to the grate, the box or boxes D D', secured to said hanger, and the arm F, which is adapted to receive a handle for actuating the shaker.

329,843.



329,844. INJECTOR AND BURNER. JOHN B. MULLOY, Lima, Peru. Filed Nov. 24, 1884. (No model.)



Claim.—1. The combination, with an injector, of a series of equidistant cone-shaped disks having central openings gradually increasing in size and a gradually-decreasing superficial area.

2. The combination, with an injector, of a mixing-chamber constructed of a series of equidistant cone-shaped disks having central openings gradually increasing in size and a gradually-decreasing superficial area, said chamber having direct communication from end to end with the external atmosphere, as and for the purposes set forth.

3. The combination, with an injector, of a series of equidistant cone-shaped disks having central openings and gradually-decreasing superficial area, as set forth.

4. The combination, with an injector, of a series of equidistant cone-shaped disks having central apertures, enlargements, or bosses, resting one upon another, and bolts for securing them together, substantially as set forth.

5. The combination, with an injector, of a mixing-chamber consisting of a series of superposed cone-shaped disks having central openings gradually increasing in size from said injector, and with superficial areas gradually decreasing in the same direction, as set forth.

6. The combination, with an injector, of a series of superposed cone-shaped disks of equal diameter placed at equal distances apart and having central openings gradually increasing in size from said injector, substantially as set forth.

7. The combination, with an injector, of a mixing-chamber consisting of a series of cone-shaped disks having central apertures, a base-flange, and bolts passed through perforations in said disk and base-flange, whereby the whole is secured together, as set forth.

8. The combination, with the injector, of the mixing-chamber, gradually decreasing in diameter from its mouth to the base, formed by a series of cone-shaped disks having central apertures gradually increasing in size, and having direct communication with said injector by a central aperture, and a conical spindle projecting through said aperture and into the mixing-chamber, so as to further reduce it at the base, substantially as set forth.

9. The combination, with the shell or casing, divided into two chambers, I J, of the bore b, and the tube f, opening from the chamber J and discharging in the chamber I, in proximity to the bore b, and a single conical spindle, D, for regulating the outlets b and f of the respective chambers, as set forth.

10. The combination, with the casing having the flange projecting thereinto at an intermediate point, and the bore or outlet at one end, of a tube supported at its base by said flange and terminating in proximity to said bore or outlet, and a spindle made conical at one end for regulating the flow through said bore and tube and having a valve for closing said tube entirely, substantially as set forth.

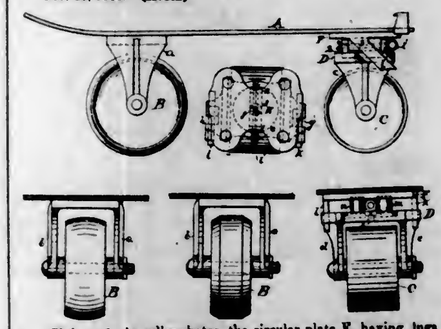
11. The combination, with the casing C, having the two chambers I J, and the bore b, of the tube f, arranged as described, and the spindle D, having the conical portion for regulating the flow through the said bore b, and the valve F, for regulating the flow through the tube f, substantially as set forth.

12. The combination, with an injector and a base-flange, of a series of conical disks, substantially as described, having the bosses g, and the bolts g', passed through said bosses for holding said disks together and to the base-flange, substantially as set forth.

13. In combination with a hydrocarbon-burner, a hood consisting of two shells, each of said shells being provided with inlet-apertures and means whereby the said apertures may be made to admit and regulate air, substantially as shown and described.

14. The upper cone, g''', provided with an upwardly-projecting rim, in combination with the screen h and clamping-ring h', as set forth.

329,845. ROLLER-SKATE. JOHN A. MUNDT, Syracuse, N. Y. Filed Feb. 19, 1885. (Model.)



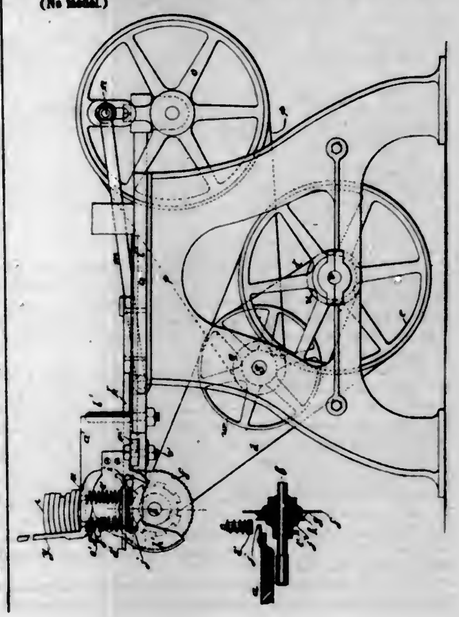
Claim.—1. In roller-skates, the circular plate E, having lugs 1 2, and axle-screw f, in combination with yoke-plate D, having circular mortise e, guide-grooves g h, axle-supports c d, roller C, and with plate F, having guide-arms k l and lug 3, pin i, and the rubber supports m n, to give rotary motion in steering the skate, as and for the purposes specified.

2. In roller-skates, the yoke-plate D, having a circular mortise, e, guide-grooves g h, and axle-supports c d, in combination with roller C, circular plate E, provided with lugs 1 2, plate F, having guide-arms k l and lug 3, pin i, and rubber supports m n, to provide a rocking motion in steering the skate, as shown and specified.

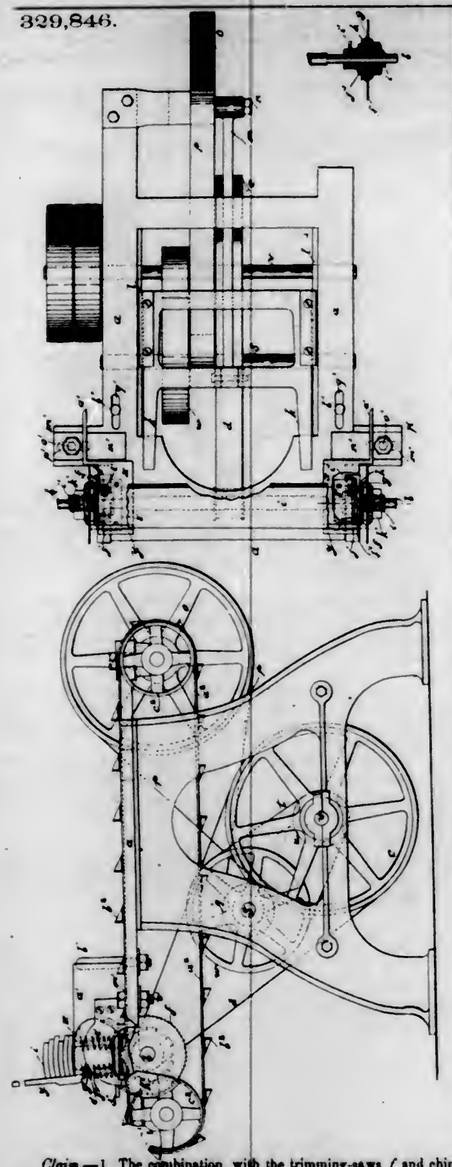
3. In roller-skates, the combination of the circular plate E, yoke-plate D, and plate F, provided with the mechanism described, to simultaneously produce both the rotary and rocking motion in steering the skate, substantially as herein set forth.

4. In roller-skates, the roller B', having lugs a' b', combined with yoke-plate D, having lugs 1' 2', and plate F', having lug 3', with rubber supports m' n' between said plates, in combination with roller C, combined and provided with the adjustable mechanism described, as herein substantially set forth.

329,846. MACHINE FOR TRIMMING, CHAMFERING, AND CROZING STAVES. FREDERICK MYERS, New York, N. Y. Filed Jan. 15, 1884. (No model.)



329,846.



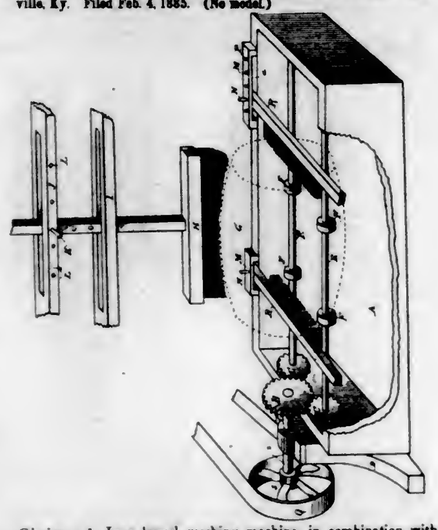
Claim.—1. The combination, with the trimming-saws *f* and chine and croze cutters *g h*, arranged in stationary bearings, and with a horizontal feed-table and feeder, of the convex guides *j*, arranged coincidently with the cutters *g h* for engaging transversely-curved staves to the said chine and croze cutters, and the pressers *d'*, arranged over said guides, substantially as described.

2. In a stave-trimming, chine-cutting, and crozing machine, a saw and chine and croze cutter for each end of the staves, mounted on sleeves *i'*, fitted adjustably along the mandrel for adjusting said saws and cutters for staves of different lengths, in combination with feed-benches having correspondingly-adjustable side guides, *a'*, for the ends of the staves, and with a feeder, substantially as described.

3. The combination of the stave-holding benches *z*, having supporting-backs *y* above the rests for the staves, and also having end guides, *a'*, and the stops *b'*, located in front of the benches, with the feeder *k*, and with the trimming-saws and the chine and croze cutters of a stave-trimming, chine-cutting, and crozing machine, constructed and arranged substantially as described.

4. In a stave-trimming and chine and croze cutting machine having saws and chine and croze cutters fitted adjustably on the mandrel *b*, and also having adjustable feed-benches *z*, the saw-guards *h'*, fitted to the saws *f* and attached to the adjustable feed-benches, substantially as described.

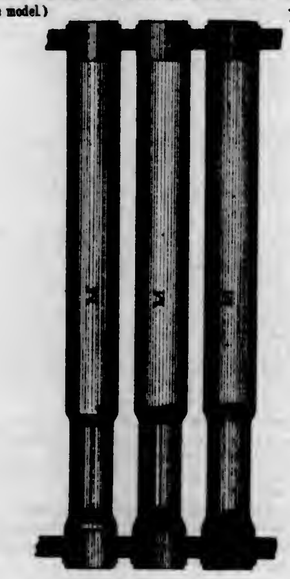
329,847. BARREL-WASHING MACHINE. HENRY NADORFF, Louisville, Ky. Filed Feb. 4, 1885. (No model.)



Claim.—1. In a barrel-washing machine, in combination with means, substantially as set forth, for rotating the barrel and a tank for holding water, a brush extending across said tank near one end and secured removably in fixed bearings, a brush extending across the tank near the other end and adjustable in slotted perforated bearings, and a brush hung from a slotted beam, in which it is vertically and laterally adjustable, and a slotted beam acting as a guide for said brush, substantially as and for the purpose specified.

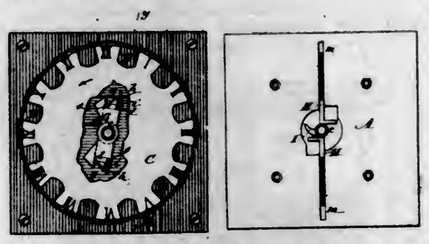
2. A barrel-washing machine consisting of a tank, shafts with barrel-supporting rollers, gear-wheels within the tank on the shafts and below the water-level, a gear-wheel on the power-shaft intermeshing with said gears, lateral brushes on the upper edge of the tank, one secured adjustably in its bearings, and a brush vertically hung and vertically and laterally adjustable in its bearings and guided by a slotted strip, substantially as and for the purpose specified.

329,848. SMOKE-TUBE FOR TUBULAR STEAM-BOILERS. AUGUSTIN NORMAND, Havre, Seine-Inférieure, France. Filed May 11, 1885. (No model.)



Claim.—In a tubular boiler, the smoke-tubes of reduced diameter at and adjacent to the tube-sheet of the fire-box, the portion of smaller diameter commencing as close as practicable to the tube-sheet and extending for a fraction of the length of said tube, always less than one-half said length, and the tubes for the remainder of their length being unreduced or of greater diameter than the part at and adjacent to the tube-sheet, substantially as described.

329,849. DIAL FOR TIME-PIECES. HENRY W. OLIVER, New York, N. Y. Filed Feb. 9, 1885. (Model.)



Claim.—1. A compound dial for time-pieces for indicating standard time, composed of a main inner stationary dial having one set of numerals indicating the hourly divisions for one half of the day, stationary shields arranged to cover the intermediate spaces between said hourly divisions, and *c* forwardly and backwardly shifting or turning outer dial having on it the numerals which indicate the remaining half of the day, and intermediate apertures in the same circle as the first set of numerals, and being fitted to work between the shields and stationary dial, substantially as and for the purpose specified.

2. The combination, with the stationary main dial A, the shields B, and the movable dial C, having apertures *b*, of the device G, connected with the movable dial and having inclines *g* on its opposite ends on opposite sides of the axis of the dial, spring-slides H H, arranged to independently act upon said inclines, and means, substantially as specified, for automatically and successively operating said slides once in twelve hours, as and for the purposes herein set forth.

3. The shifting device G of the movable dial, having inclines *g* on its outer ends, and provided with springs *k*, arranged to project beyond said inclines and to leave outwardly-contracting slots *i* between them and the back of the inclines, in combination with the independent spring-slides H H, having attached studs or projections *s*, for operation together essentially as and for the purpose herein set forth.

4. The locking-springs *l*, in combination with the dial-shifting device G, constructed for operation substantially as described, and the independent spring-slides H H, constructed to engage with said shifting device, substantially as and for the purposes set forth.

5. The combination, with the dial-shifting device G, of the attached springs *k* and *l*, essentially as and for the purposes described.

6. A compound dial for time-pieces for indicating standard time in which is combined a main stationary dial having overlapping shields between its numerals, a concentric backwardly and forwardly moving dial having apertures between its numerals and arranged to work between the shields and the main dial, a shifting device, substantially as described, for intermittently oscillating the movable dial, and means, substantially as described, for automatically operating the dial-shifter in reverse directions each succeeding twelve hours of the day, essentially as specified.

329,850. SEAT FOR VELOCIPEDES. ALBERT H. OVERMAN, Chicopee, Mass. Filed Dec. 19, 1884. (No model.)

Claim.—1. A seat for velocipedes, having an elastic skeleton frame formed from a single piece of wire, and bands forming the seat proper and the back-rest attached to the same, substantially as set forth.

2. A seat for velocipedes, having a frame made from wire and shaped for the attachment of a seat proper and a back-rest, and provided with two parallel arms running from front to rear, and then curving downward and extending straight forward, and a seat proper and a back-rest attached to such frame, substantially as set forth.

3. A seat for velocipedes, having a frame made from a single piece of wire shaped to form two uprights united at their upper ends, two horizontal sides, and two arms running from front to rear under the sides, and then curving downward and extending straight forward, and a seat proper and a back-rest attached to the horizontal sides and uprights of such frame, substantially as set forth.

4. A seat for velocipedes, having a frame made from a single piece of wire shaped to form two uprights united at their upper ends, two horizontal sides, two arms running from front to rear under the sides, and then curving downward and extending straight forward, and two coils respectively located between the said horizontal sides and arms, and a seat proper and a back-rest attached to the sides and uprights of the frame, substantially as set forth.

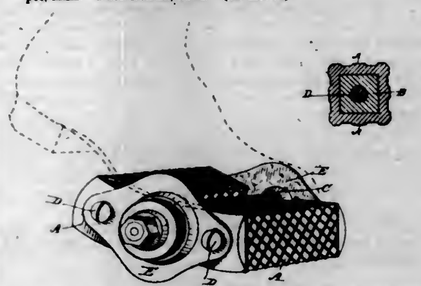
329,850.



5. A seat for velocipedes, having a frame made from wire, and provided with arms having straight ends, and a rigid frame shaped substantially as shown, and provided with a sleeve for its attachment to the vehicle, and with two bearings to receive the straight ends of the arms of the frame, so as to permit the adjustment of the same for pliancy, substantially as set forth.

6. The combination, with the reach of a tricycle, of a clip secured thereto and provided with a stud for the attachment of a seat or a leggage-carrier, substantially as set forth.

329,851. PEDAL FOR VELOCIPEDES. ALBERT H. OVERMAN, Chicopee, Mass. Filed Dec. 22, 1884. (No model.)

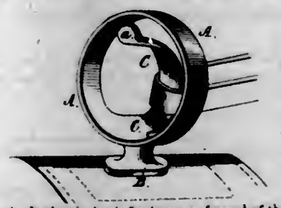


Claim.—1. A pedal for velocipedes, having bars located upon opposite sides of a central working-bearing, and provided with wide working-faces, and arranged to turn to incline the upper or exposed faces toward each other, substantially as set forth.

2. A pedal for velocipedes, having rectangular bars located upon opposite sides of a central working-bearing, and arranged to turn to incline their upper or exposed faces toward each other, substantially as set forth.

3. A pedal for velocipedes, having bars each composed of a light core of wood or equivalent material, and an envelope of rubber inclosing the same, and bearings passing through the core of each bar, substantially as set forth.

329,852. CHECK-REIN HOOK. REHARD W. OWEN, Chicago, Ill. Filed May 8, 1884. Renewed Oct. 10, 1885. (No model.)

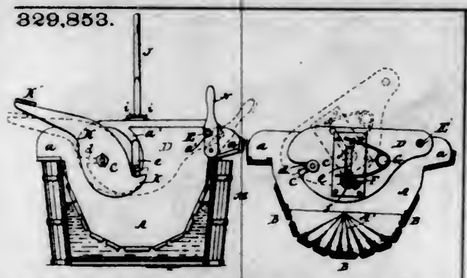


Claim.—A check-rein hook for harness, formed of the band or ring A and hook C, attached at the front lower perimeter of the ring, then passing outward, upward, and rearwardly through the ring, and terminating near the top and beyond the rear edge of the ring, as shown.

329,853. WASHING-MACHINE. LARS PETERSON, Independence, Mo. Filed June 18, 1885. (No model.)

Claim.—1. A washing-machine comprising the following elements in combination: sides A, having arms *a*, corrugated slats B, joining said sides, a tilting rubber-supporting frame, a vibrating rubber supported in

329,853.



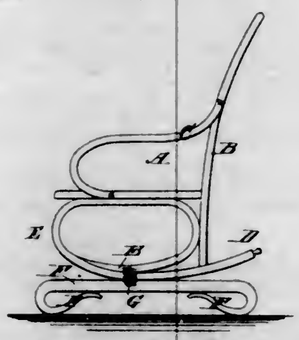
vertical slots in said frame, springs bearing upon the journals of said rubber, and levers for regulating the vertical adjustment of said rubber against the tension of the springs, as and for the purposes described.

2. In a washing-machine, the combination of segment sides having their lower portions enlarged and radially corrugated, the perimeter of said sides being composed of a number of straight edges, and corrugated slats joining said edges, with a rubber moving about a central axis, and composed of sides united by cross-slats, corrugated, substantially as shown and described.

3. In combination with the sides A, united by cross-slats B, and provided with the curved slot *a''*, the tilting rubber-frame D E, slotted at *d*, and mounted upon pins passing through the sides A, and the rubber H I, mounted on a shaft passing through vertical slots in the rubber-frame and through the curved slots in the sides A, substantially as described.

4. A washing-machine consisting of the following elements in combination: sides A, provided with arms *a*, a pair of which is united by cross-boards to form a soap-receptacle, corrugated slats B, connecting side pins, C, passing through the sides A, the latter of which is provided with a curved slot, *a''*, a rubber-supporting frame slotted to fit over the pins, a vibratory rubber working in vertical slots in said frame, and mounted on a shaft passing through the said curved and vertical slots, springs G, levers K, fulcrumed on the pins C, their inner ends being hooked and engaging the projecting ends of the rubber-supporting shaft, and hooks N, to hold the rubber-frame in a working position, the parts being arranged substantially as shown and described.

329,854. PLATFORM-ROCKER. James S. Piper, Gardner, Mass., assignor to Heywood Bros. & Co., New York, N. Y. Filed May 5, 1885. (No model.)



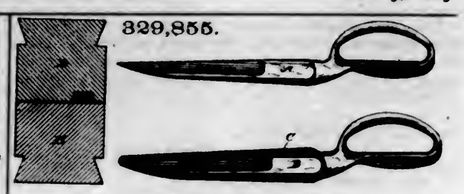
Claim.—The combination, with the seat A and back B, of the runners D, having their front parts bent up against the seat, downward at the rear part of the seat, and the ends E' secured to the runner, substantially as herein shown and described.

329,855. METHOD OF MAKING SCISSORS. Henry T. Russell, Chicago, Ill. Filed Apr. 6, 1885. (No model.)

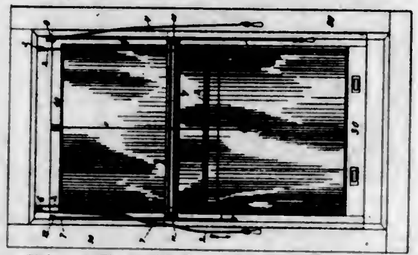
Claim.—1. The method of forming scissor-blades, which consists in first casting cast-steel into the general form which the article is to finally assume; secondly, in compressing this blank between dies, whereby the metal is compressed and refined; and, finally, in finishing by shearing or grinding the surplus metal at the edges.

2. The method of forming scissor-blades from cast-steel, which consists, first, in casting a blank containing an excess of metal over what is required to form the completed blank; second, in compressing the blank between dies for the purpose of condensing and refining the metal and forcing out the surplus material into the form of a projecting flange; and, finally, removing the said flange by grinding or shearing, substantially as described.

329,855.



329,856. SASH-BALANCE. S. Howland Russell, New York, N. Y. Filed Apr. 23, 1885. (No model.)

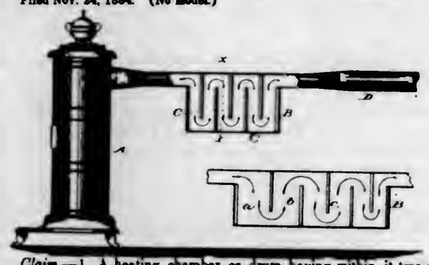


Claim.—1. The combination of the window-frame 50, sashes 40 and 30, pulleys 4 and 5, fixed to the upper sash, as shown, stationary pulley 6, and cord 2, fixed at one end and passing over said pulleys, substantially as shown and described.

2. The combination, with a window frame and sashes, of the pulleys 10 and 11, fixed to the lower sash, the pulley 9, fixed to the upper part of the window-frame, and the cord 7, fixed at one end to the window-frame and passing over said pulleys, substantially as shown and described.

3. The combination, with a window frame and sashes, of the pulleys 10 and 11, fixed to the lower sash and having a double set of sheaves, the pulley 9, fixed to the upper part of the window-frame, the cord 7, fixed at one end to the top of the window-frame, passing over one set of sheaves in pulleys 10 and 11, and thence over pulley 9, and the cord 8, fixed at one end to the lower part of the window-frame and passing over the second set of sheaves in pulleys 10 and 11, substantially as and for the purpose set forth.

329,857. HEATING-DRUM. Matthew Ryan, Washington, D. C. Filed Nov. 24, 1884. (No model.)



Claim.—1. A heating chamber or drum having within it two or more heat-absorbing plates extending across the line of general direction of the heat-current, each alternate plate having an opening on one side, while the intervening plates have openings on the opposite sides, and the ends of all the plates extending outside the drum, whereby the heat-current takes a zigzag course and the heat absorbed by the plates inside the drum is radiated outside, as set forth.

2. A heating-chamber having within it a series of intercepting-plates alternating in height, whereby the heat-current passes over and under them alternately, the distance between the plates gradually decreasing from the ingress to the egress ends of the chamber, and the ends of the plates projecting outside the chamber to radiate the heat, as set forth.

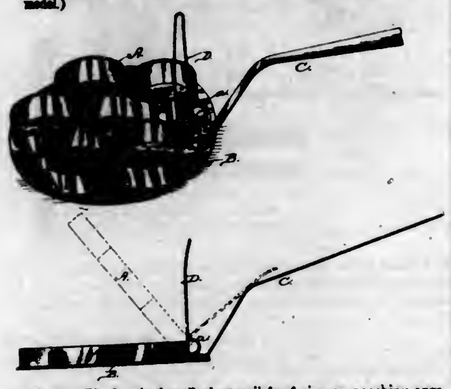
329,858. PROCESS OF MAKING LACTOSE OR MILK-SUGAR. Alvah H. Sabin, Burlington, Vt., assignor to the American Milk-Sugar Company, same place. Filed Oct. 12, 1885. (No specimens.)

Brief.—Improvement on the invention of Patent No. 307,594, dated November 4, 1884.

Claim.—1. The method of purifying whey, consisting in adding to the same rennet or its equivalent, in substantially the proportions stated, and heating and filtering the mixture, substantially as and for the purposes hereinbefore set forth.

2. In the manufacture of milk-sugar from whey, the method of hastening the evaporation of the whey by subjecting the same during the evaporating operation to the action of a current of dried or heated air passed over or through the liquid, substantially as and for the purposes hereinbefore set forth.

329,859. EGG-POACHER. William H. Silvis, New York, assignor of one-half to Jno. H. Ernst, Brooklyn, N. Y. Filed May 28, 1885. (No model.)



Claim.—The herein-described utensil for frying or poaching eggs, consisting of the surface-plate B, having a suitable handle, C, the frame A, provided with handle or projection D, and the spring-hinge *a*, uniting said surface-plate B and frame A, substantially as specified.

329,860. BUCKLE. Joseph Simpson, Isaac M. Hatcher, and Hilorus R. Wildermuth, Columbus, Ohio, assignors to the Economy Halter and Bridle Trimming Company, same place. Filed May 23, 1884. (No model.)



Claim.—The buckle herein described, consisting of the rectangular frame reversely curved longitudinally, said frame having a tongue-bar projecting from the back near one end, and carrying a pivoted tongue, the projecting loop H on the back near the other end, and the cross-bar F, between the tongue-bar and the loop and on the surface or front of the frame, said bar carrying a lug or rigid tongue projecting from said bar toward the back of the buckle, substantially as and for the purpose specified.

329,861. NUT-LOCK. Frank G. Stark, New York, N. Y. Filed Feb. 28, 1885. (No model.)



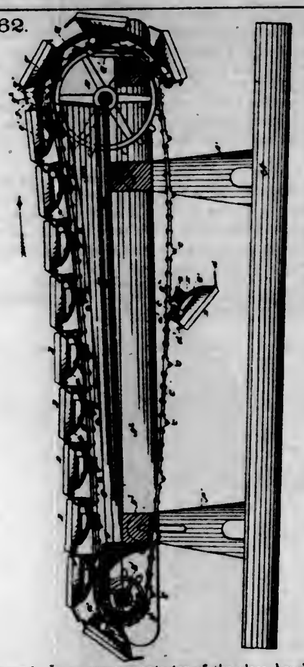
Claim.—1. The combination, with a nut having radial recesses upon its inner faces, arranged at approximate right angles with the bore of the nut, and with a slotted bolt, as shown, of a spring-key having an arm to engage said recesses upon one face of the nut, and an arm to engage the opposite or outer face of the nut and limit the inward movement of the key, as set forth.

2. The combination, with a nut having radial recesses B' upon one face and corresponding marks or recesses, B^2, upon the other face, of a slotted bolt and a key having an arm with opposing inclines, as D^4 D^5, to engage opposite recesses upon both faces of the nut, as set forth.

3. The combination, with the nut B, having recesses B' arranged upon one face at approximate right angles to the plane of the bore of the nut, and with the bolt A, having slot *a*, of the spring-key having arms D' D^3, and the latter provided with arms or inclines D^4 D^5, arranged to engage the nut upon opposite faces simultaneously, as set forth.

329,862. ORE-CONCENTRATOR. Edward W. Stephens, Erie, Pa. Filed July 25, 1884. Renewed Oct. 10, 1885. (No model.)

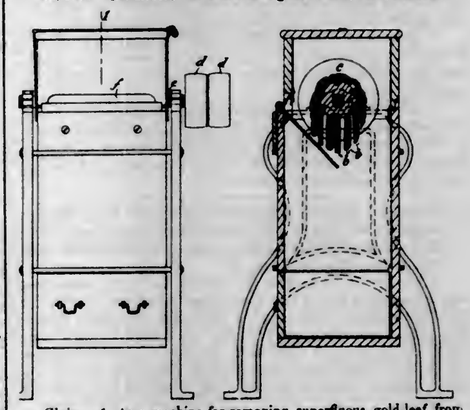
329,862.



Claim.—1. In an ore-concentrator of the class herein named, the combination, substantially as set forth, of a conveyer apparatus and a series of pan-bodies mounted on said conveyer apparatus independently of each other, each of which is provided with lips *d d'*, and is divided into semicircular compartments D D', for the purposes set forth.

2. In an ore-concentrator of the class herein named, the combination of the following elements: the sprocket-wheels B B', conveyer-chains C, tracks *a*, guides F and G, and pans D, frames E, having studs e^2, for connecting said pans with the said chains, shoes *e*, for acting on said guide F, rollers *a'*, for acting on said tracks, and lugs *e'* for acting on said guide G.

329,863. MACHINE FOR REMOVING SUPERFLUOUS GOLD-LEAF FROM BOOK-COVERS. Ernest Straker, London, England. Filed July 22, 1884. (No model.) Patented in England Jan. 7, 1884, No. 882.



Claim.—1. In a machine for removing superfluous gold-leaf from book-covers, a revolving brush for removing the superfluous leaf, composed of a shaft provided with a series of rubber filaments, substantially as described.

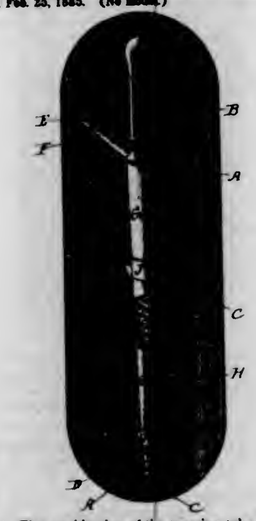
2. In a machine for removing superfluous gold-leaf from book-covers, the combination, with a support for the book, of a revolving shaft carrying a series of rubber filaments, the said support and shaft being so relatively arranged to each other that in the revolution of the shaft the free ends of the extended filaments will strike the book-cover, substantially as described.

3. In a machine for removing superfluous gold-leaf from book-covers, the combination, with a support for holding the book-cover in an inclined position, of a revolving shaft carrying a series of rubber filaments adapted, when extended by the revolution of the shaft, to strike against the said cover, substantially as described.

4. In a machine for removing superfluous gold-leaf from book-covers, the combination, with a revolving brush for removing the leaf, of flexible or yielding disks at the ends of said brush, substantially as described.

5. In a machine for removing superfluous gold-leaf from book-covers, the combination, with an inclosing-case and a shaft passing therethrough and carrying a series of rubber filaments constituting a brush, of flexible or yielding disks at the ends of said brush, and shields around the shaft where it passes through the casing, to close the opening through which it passes, substantially as described.

329,864. LIGHTING DEVICE. Nathan B. Stubblefield, Murray, Ky. Filed Feb. 25, 1885. (No model.)



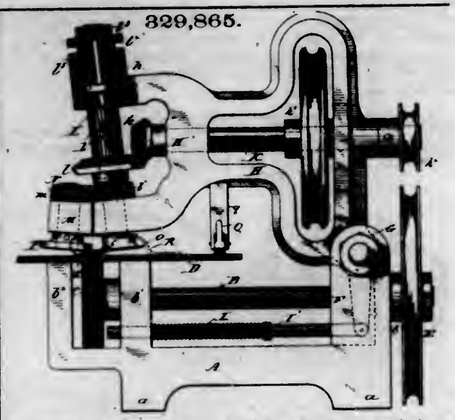
Claim.—1. The combination of the tapering tube A, the handle B, closely screwed therein, the back H, provided with bands J, and the sheath G, fitted to the said tapering tube and to the said bands, substantially as shown and described.

2. A sheath for lamp-lighters, having an open end and provided with a trough extended laterally from and opening into the sheath, and a spur or pick mounted on said trough, substantially as set forth.

3. A lighting device comprising a tube having an open end and a slot adjacent such end, and a sheath fitted to receive such tube, and provided with a lateral arm and a spur or pick mounted on said arm, substantially as set forth.

4. The lighting device herein described, consisting of the hollow tube having an open end and a slot adjacent such end, a sheath fitted to receive said tube, the latter being removable from the sheath, a trough extended from and opening into the sheath, and a spur or pick mounted on said trough, substantially as set forth.

329,865. MACHINE FOR TRIMMING FABRICS. Dennis Sweeney, Amsterdam, N. Y., and George Ramsden, Philadelphia, assignors to the Downes Fabric Trimming Company, (Limited,) Philadelphia, Pa. Filed Aug. 8, 1884. (No model.)



Claim.—1. In a machine for trimming fabrics, the combination, with a supporting-arm, of two vertical shafts sustained thereby, said shafts being inclined with respect to each other and receding apart as they descend, one of said shafts having a disk and the other a roller, against the periphery of which latter the edge of said disk impinges, whereby the superfluous edge of material fed beneath said disk and roller will be removed while standing vertically, substantially as shown and described.

2. In a machine for trimming fabrics, the combination of the following parts, viz: an arm carrying a horizontal shaft and supporting two vertical shafts geared therewith, and carrying, respectively, a disk and roll, said disk having an edge which bears against the periphery of said roll, with a cloth-plate, and a feed-wheel located below said cloth-plate and projecting upwardly through a slot in the latter, substantially as shown and described.

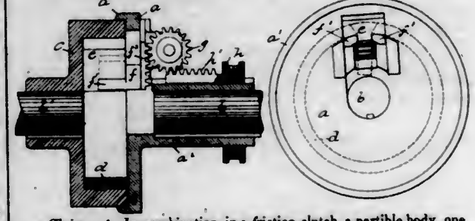
3. In a machine for trimming fabrics, the combination of a disk and a roller, against the periphery of which said disk bears, two vertical-inclined shafts upon which said disk and roller respectively are mounted, said shafts being geared together, a pivoted arm in which said shafts are supported, and a cloth-plate below said shafts and arm, substantially as shown and described.

4. The combination, with the head H', carrying the shaft L, of the hinged adjustable block M, supporting the shaft N, substantially as shown and described.

5. In a machine for trimming fabrics, the combination of the following elements: two vertical-inclined shafts carrying, respectively, at their lower ends a disk and a roller, against the periphery of which latter the edge of said disk bears, an overhanging arm in which said shafts are supported and have their bearings, a cloth-plate below said shafts and arm, a feed-wheel beneath said cloth-plate, the latter having a slot through which the roughened surface of said wheel projects, and a guide secured on the upper surface of said cloth-plate, one of the sections of said guide being prolonged into a point, substantially as shown and described.

6. In a machine for trimming fabrics, the combination, with the trimming-disk and roller and their supporting hinged or pivoted arm H, of the eccentric lever Q and cloth-plate D, substantially as shown and described.

329,866. FRICTION-CLUTCH. William B. Tatro, Hartford, Conn. Filed July 13, 1885. (No model.)



Claim.—1. In combination, in a friction-clutch, a partible body, one part containing a divided ring with the radially-arranged lever held between the ends of the ring, and the other supporting the sliding block bearing the lever-engaging pins, all substantially as described.

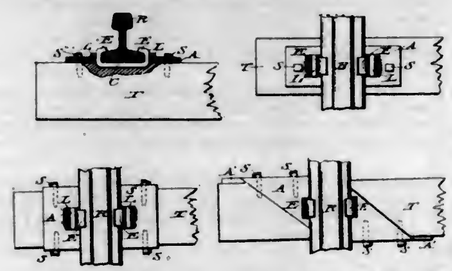
2. In combination in a friction-clutch, the partible body with one part bearing a divided ring and a radial lever, with one end held between the ends of the ring and the other part bearing the sliding block, and having projecting pins or studs that engage the lever, and bearing a rack in mesh with a cog-wheel journaled on the body part, and also in mesh with a rack on the sliding shifter, all substantially as described.

3. In combination with the operating-lever with its ends arranged to spread the divided ring against the wall of the clutch and having the inclined bearing side, the radially-moving block bearing the lever-engaging pins or studs, all substantially as described.

4. In combination, in a friction-clutch of the within-described class, the body part bearing the divided ring and the radially-arranged operating-lever, and the body part bearing the reciprocating block with the lever-engaging pins or studs, and having the cheek-pieces backing up the pins along the extent of their play, all substantially as described.

5. In combination, in a friction-clutch, the partible body with one part having a flange overhanging the periphery of the other part, the divided ring with the radial lever having one end held between the ends of the ring, the reciprocating block bearing the lever-engaging pins or studs, the cog-wheel in mesh with the rack on the block and with the rack on the sliding shifter, and the shifter, all substantially as described.

329,867. RAILROAD-TRACK FASTENING. Arthur M. Trude, Hartford, Conn. Filed Oct. 30, 1884. (No model.)



Claim.—1. An improved article of manufacture consisting of the cross-tie re-enforcing plate herein described, (see Figs. 1, 2, and 3,) the same being a plate having clasp-openings O, and having abutments L formed of the metal removed in making said openings, substantially as set forth.

2. The combination, in a railroad-track, of a flanged rail, a wooden tie underneath and supporting said rail, a metal plate between said rail and said tie having two openings, one on each side of said rail, substantially as described, and having perforated flanges extending down over the sides of said tie, a metallic clasp having its middle portion inclosed in a cavity or recess formed between said tie and said plate, and having its ends extending up through the openings in said plate and closed down on said rail, and spikes passing horizontally through the perforations of said flanges into said tie, all substantially as and for the purpose described.

3. The combination, in a railroad-track, of a railroad-rail, a wooden tie underneath and supporting said rail, a metal plate between said rail and said tie, provided with a rail-holding device, substantially as described, said plate extending diagonally across said tie and having perforated flanges extending down over the sides thereof, and a series of spikes passing horizontally through the perforations of said flanges into said tie, substantially as and for the purpose specified.

4. A railroad-cross-tie re-enforcing plate, as A, Figs. 4, 5, and 6, having flanges adapted to extend down onto the sides of the tie, said plate perforated for spikes situated horizontally, and having openings for a rail-holding device, substantially as described.

5. A railroad-cross-tie re-enforcing plate, as A, Figs. 4, 5, and 6, having flanges adapted to extend down onto the sides of a tie, and perforated for spikes situated horizontally, said plate having openings for a rail-holding clasp, and abutments for supporting said clasp, all constructed and arranged substantially as described.

6. A railroad-cross-tie re-enforcing plate constructed to lie diagonally across said tie, and having flanges one on either side of said rail, said plate being formed by severing it from a strip by a zigzag cut, substantially as shown and described.

7. The combination of the wooden cross-tie F, the plate A, having openings O and abutments L, as shown and described, the holding devices, substantially as described, for holding the plate to the tie, and clasp C, bent over the rail-flanges and supported by said abutments, substantially as set forth.

8. A railroad-cross-tie re-enforcing plate, as A, Figs. 7 and 8, having flanges adapted to extend down onto the side of a tie, and perforated for spikes situated horizontally, said plate being fitted to the tie obliquely, so that said flanges rest on said tie at different points in its length, all substantially as set forth.

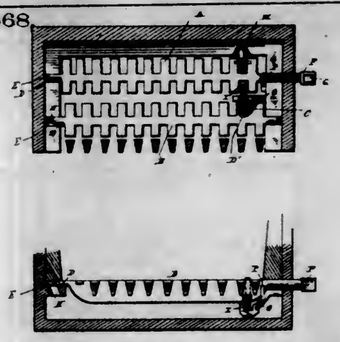
329,868. STOVE-GRATE. Henry H. Wheeler, Tiffin, Ohio, assignor of one-half to Thomas J. Kintz and James F. Leahy, same place. Filed May 31, 1884. (No model.)

Claim.—1. In combination with a series of grate-bars, a yoke pivotally connected therewith and provided with a nose or projection normally resting in a slot in the grate-frame, substantially as and for the purpose specified.

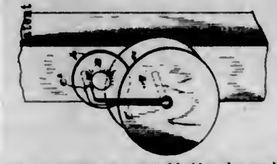
2. The combination, with a series of grate-bars, of a yoke pivotally-connected therewith and provided with an extended central portion having a beveled bearing-surface, and a bracket depending from the grate-frame, substantially as and for the purpose specified.

3. In combination with a series of grate-bars, a frame therefor in which the said bars have extended bearings, the frame having on it lugs, against which the web of the bars normally rests, substantially as and for the purpose specified.

4. The combination, with a series of grate-bars having extended bearings in a frame, of a yoke or yokes pivoted to the bars, provided with a nose or projection at one end, and a bracket depending from the frame, said frame having a slot or rest for the reception of the nose of the yoke and a lug or lugs, which engage with the bars, substantially as and for the purpose specified.



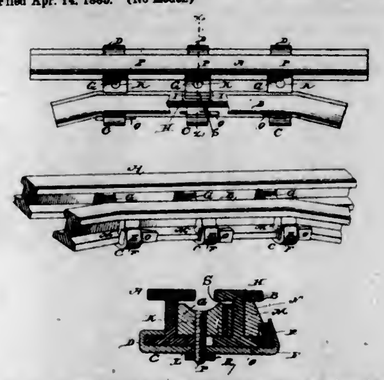
329,869. WIRE SUPPORT AND HOLDER. Charles Willsie, Wellington, Kans. Filed Aug. 17, 1885. (No model.)



Claim.—1. In a wire support and holder, the combination of a pulley-wheel, an eccentric wheel engaging the groove of said pulley-wheel, and a staple for securing the two wheels in the manner substantially as described.

2. As an article of manufacture, the combined wire support and holder comprising the pulley-wheel A, eccentric wheel B, having notches *b*, extending partially around its periphery and engaging the groove *a* of the wheel A, and the staple C, one prong, *c*, thereof passing through the center of the wheel A and acting as its axis, and the other prong, *c'*, passing through the wheel B at one side of its center, substantially as described.

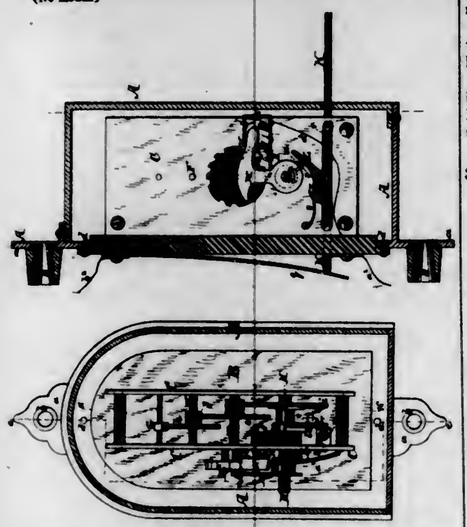
329,870. TRACK-FASTENER. Henry R. Wolfert, Lancaster, Pa. Filed Apr. 14, 1885. (No model.)



Claim.—1. The combination, with the guard and main rails, of the yoke C, having the turned-over end D and the upturned end F, the block G, plate H, having ends I, turned at right angles for embracing the block, plates S, between the block and plate H, said block and plates being inserted between the rails, the block M, having the inclined face N, and the wedge O, between the block M and the upturned and F of the yoke C, substantially as described.

2. The combination, with the guard and main rails, of the yoke C, having the turned-over end D and the upturned end F, the block G, plate H, having ends I, turned at right angles for embracing the block, plates S, between the block and plate H, said block and plates being inserted between the rails, the block M, having the inclined face N, and the wedge O, between the block M and the upturned end F of the yoke C, and the vertical bolt passing through the block G and the yoke C, substantially as described.

329,871. **TELEGRAPH CALL-BOX.** FRANK B. WOOD, New York, N. Y., assignor to the New Haven Clock Company. Filed Jan. 19, 1885. (No model.)



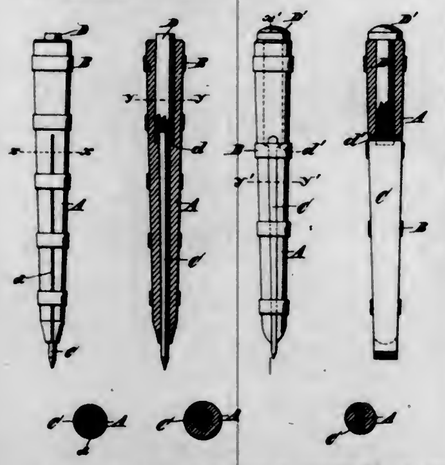
Claim.—1. The combination of the pusher-rod K, having pins *r* and *v*, with the spring *q*, trigger L, click J on the crank *l*, shaft H, and spring I, said shaft H having pin *t*, for the purpose herein shown and described.

2. The combination of the pusher-rod K, having pins *r* and *v*, with the spring *q*, trigger L, click J on the crank *l*, shaft H, spring I, pin *t*, and circuit-breaker M, substantially as herein shown and described.

3. In combination with the circuit-breaking wheel E, the contact-finger N, metallic extension *x* of the same, and outwardly-projecting stop *w* thereon, the parts N *x w* being of one piece, non-conducting block O, and movable circuit-breaker and conductor M, all arranged for operation substantially as described.

4. The metallic signal-box A, having metallic ears *a* and rearwardly-projecting tubes *b* at the back, in combination with the non-conducting back plate, B, which carries the signaling mechanism, substantially as herein shown and described.

329,872. **STONE-CUTTER'S CHISEL.** THOMAS WOODS, Nicholasville, Ky. Filed May 4, 1885. (No model.)



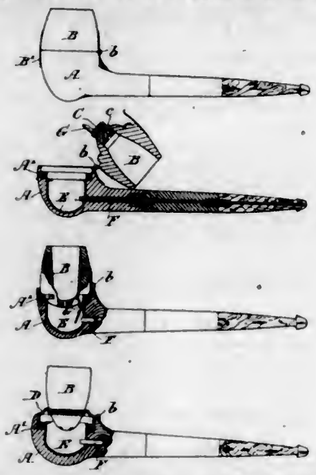
Claim.—1. In a stone-cutter's chisel, the combination, with a cutting-bit or tool, C, of a wooden incasing handle or stock, A, said bit being adapted to be protruded from said stock and successively sharpened by suitably cutting away the lower end of the stock, substantially as herein set forth.

2. In a stone-cutter's chisel, the combination, with bit C and incasing-stock A, made of wood or other similar material, of the battering-pin D, driven into place in the upper part of the bore of said stock immediately above bit C, substantially as herein set forth.

3. In a stone-cutter's chisel, the combination, with bit C and the wooden incasing handle or stock A, of the ferrules B, substantially as herein set forth.

4. The combination, in a stone-cutter's chisel, of the bit C, wooden incasing stock or handle A, battering-pin D, driven into place at the head of said stock, in the bore thereof, immediately above the bit C, and the ferrules B, substantially as herein set forth.

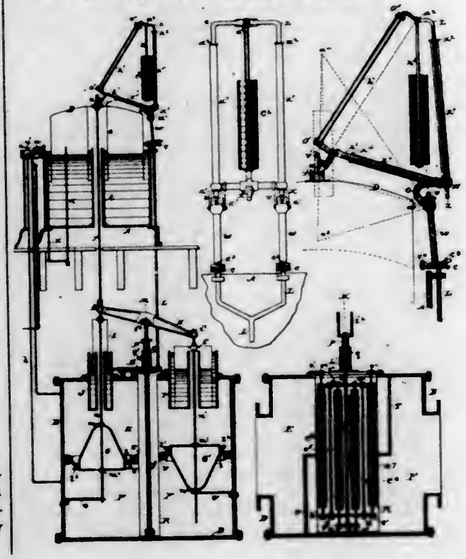
329,873. **TOBACCO-PIPE.** MATTHEW T. WYATT, Quebec, assignor of one-half to William Fullerton Ramsay, Montreal, Canada. Filed Sept. 29, 1884. (No model.) Patented in England Oct. 28, 1884, No. 14,259.



Claim.—The combination of the bowl A, the upper hinged bowl, B, the draft-tube F, extending into bowl A, and the shield carried by the hinged bowl, substantially as described.

REISSUES.

10,656. **GAS-PRESSURE REGULATOR.** GUSTAVUS A. HYDE, Sr., Cleveland, Ohio, and GUSTAVUS A. HYDE, Jr., East Saginaw, Mich. Filed Oct. 5, 1885. Original No. 297,692, dated Apr. 29, 1884.



Claim.—1. A gas-pressure governor or regulator consisting of the balancing valves arranged in the line of travel of the gas, and the float moved by the pressure of gas and operating the valves, substantially as described.

2. In a gas-governor, the combination, with the float, of a regulating device consisting of the triangle and attached weight, substantially as described.

3. A gas-pressure governor or regulator consisting of the balancing valves arranged in the line of travel of the gas, the float moved by the pressure of the gas and operating the valves, and the movable frame carrying the swinging weight, the whole operating substantially as set forth.

4. A gas-pressure regulator or governor consisting of the valves, the operating-float arranged substantially as described, the said valves being supported by a balancing-bar, to which they are connected by suitable rods in such manner as to move simultaneously in opposite directions, the said rods being provided with water-sealing tubes, the one to be forced down into the water to close the valves having a greater bearing-surface than the other, as and for the purposes set forth.

5. A gas-pressure regulator consisting of the two valves connected by the balancing-bar and suitable rod-connections provided with water-seals, the said balancing-bar being sustained by a post which is vertically adjustable, the operating-float, and suitable gas-connections between the gas-supply and the float, substantially as described.

6. In a gas regulator or governor, the combination, with a weight upon the float, of a thermostatic device in the line of travel of the gas, operating to increase and diminish the pressure of the weight upon the float in proportion to the temperature of the gas, substantially as described.

7. In a gas-pressure regulator or governor, the combination, with the casing B, of the balancing valves arranged therein, the casing R, containing the expansion-rods, the operating-float, the triangular frame carrying the swinging weight, and suitable means for respectively connecting the valves and float and the triangle and expansion-rods, the whole operating substantially as and for the purpose set forth.

8. In a gas-pressure governor or regulator, the adjustable weight c^3, together with the vibrating pendent rod h^3, suspended from the triangular adjustable frame O O′ *z z′*, having V-shaped or sharp-pointed supports *a a′ a′*, secured in V-shaped bearings *r′ w w* by stops *v v v′*, in combination with the float D, rods *r′*, *n*, and *n′*, and valves G and G′, substantially as shown, and for the purposes set forth.

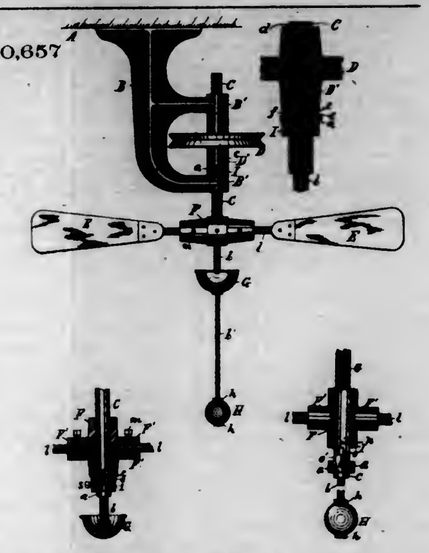
9. The two valves G and G′, having projecting rings l^2 l^2, sharp-edged gage-rings *l l*, and sharp-edged seats *l′ l′*, in combination with rods *n*, *n′*, and *r*, tubings I and C, balancing-bar H, float D, triangular adjustable frame O O′ *z z′*, vibrating pendent rod h^3, and adjustable weight c^3, substantially as shown, and for the purposes set forth.

10. The tubing C and its annular tubing P, having greater diameter than the tubing I and its annular tubing J, in combination with the rods *n*, *n′*, and *r*, balancing-bar H, valves G and G′, with float D, triangular adjustable frame O O′ *z z′*, and vibrating pendent rod h^3, and adjustable weight c^3, substantially as shown, and for the purposes set forth.

11. The balancing-bar H, fulcrumed at its center and connected with rods *n*, *n′*, and *r*, with sharp-edged bearings i^2 i^2 i^2, and having an adjustable fulcrum-pillar, *p*, in combination with tubings I and C, valves G and G′, float D, and triangular adjustable frame O O′ *z z′*, substantially as described.

12. A varying temperature-regulator composed of alternate wood and iron rods c^4 d c^4 f c^4 d c^4, inclosed in casing R and connected to lever L′ and rod L, in combination with triangular adjustable frame O O′ *z z′*, float D, rods *r*, *n*, and *n′*, valves G and G′, tubings I and C, and balance-bar H, substantially as shown, and for the purpose set forth.

10,657. **AUTOMATIC FAN.** JAMES M. SEYMOUR, Newark, N. J. Filed Aug. 17, 1885. Original No. 284,077, dated Aug. 28, 1883; Reissue No. 10,539, dated Dec. 2, 1884.



Claim.—1. The combination, with the hollow fan-shaft, the fan, and suitable clutching mechanism, of a shifting-rod, *b*, depending from the center of the shaft below the fan-blades, as set forth.

2. The combination, with the hollow fan-shaft, the pulley D, and fan-hub F, of the notch in the hub fitted to turn on the shaft, the shifting-rod inside the shaft, and the pin operating through a slot in the shaft to engage the notch, substantially as shown and described.

3. The combination, with the hollow shaft C and hub fitted to rotate loosely thereon, of the supporting-collar I, the shifting-rod inside the shaft, and the clutch-pin *a*, operating through a slot in the shaft to clutch the hub, the collar having recess *e* and set-screw *s*, and constructed to turn on the shaft, as and for the purpose set forth.

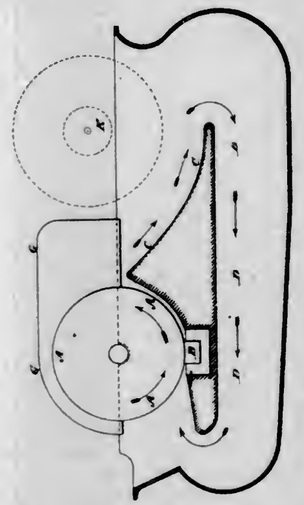
4. The combination, with the fan-shaft, the fan, and their clutching mechanism, of a shifting-rod depending from the center of the shaft, and an oil-cup attached thereto, as and for the purpose set forth.

5. The combination, with the fan-shaft, the fan, and their clutching mechanism, of a shifting-rod depending from the center of the shaft, an oil-cup on the rod to arrest the oil, and a swiveling handle at its lower end, substantially as herein shown and described.

6. The combination, with the fan-shaft, the fan, and their clutching mechanism, of a shifting-rod depending below the fan-hub and revolving therewith when the same is in motion, substantially as and for the purpose set forth.

7. In a suspended fan, the combination, with a suitable hanger, of the vertical fan-shaft rotated by suitable driving mechanism, the fan having its hub applied to the shaft so as to turn loosely, clutching mechanism applied to the said shaft and hub, and the means for actuating such clutching mechanism, consisting in a rod or handle depending below the fan-hub and revolving therewith when the same is in motion, and thereby adapted to operate the clutch without interference from the fan-blades, substantially as and for the purpose set forth.

10,658. **MACHINE FOR PREPARING PULP FOR PAPER-MACHINES.** WILLIAM UNPERSTON, Leith, Scotland. Filed Sept. 17, 1885. Original No. 297,037, dated Apr. 15, 1884. Patented in England Mar. 17, 1880, No. 1,150.



Claim.—A machine for preparing pulp, consisting of the roll A, bottom plate, B, and back-fall C, said parts being arranged to operate within a trough having a passage, D, beneath the back-fall, through which the pulp is returned for repeated treatment, as described.

10,659. **ORE-CRUSHER.** JACOB C. WISWELL, Medford, Mass., assignor to the Wiswell Electric Mining Machinery Company, Portland, Me. Filed Sept. 8, 1885. Original No. 307,513, dated Nov. 4, 1884.

Claim.—A crushing-roller adapted to travel in a circular path, and having the inner crushing-face, 2, a cone-frustum, and the outer crushing-face, 3, in cross-section the arc of a circle, the opposite arcs having different radial centers not coinciding with that of the bed, in combination with the annular bed or trough formed to present in cross-section the exact converse of the cross-section of the roller, whereby an extended bearing between the roller and outer portion of the bed is afforded, and the roller is enabled to travel easily with the minimum of friction, substantially as set forth.

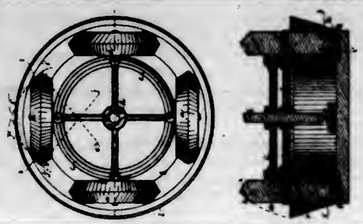


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DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of New Jersey.

DUFFY *v.* REYNOLDS *et al.*

Decided August 11, 1885.

1. EVIDENCE—ORIGINALITY OF INVENTIONS.

When, in a suit for infringement of a patent, it is set up as a defense that complainant derived his idea of the patented invention from some third party who first conceived it, the burden of proof is on defendant, and any doubt respecting the evidence is fatal to the defense.

2. PATENT NO. 184,352—APPARATUS FOR DRYING HIDES.

On examination of the evidence, *Held*, that James N. Duffy must be considered as the original and first inventor of the combined mechanism of the second, third, and fourth claims of Patent No. 184,352, granted to him November 14, 1876, for improvement for apparatus for drying hides.

3. INFRINGEMENT—PUBLIC USE—CONSTRUCTION OR PURCHASE OF MACHINE WITH KNOWLEDGE OF INVENTOR—REVISED STATUTES, SECTIONS 4886, 4899.

Revised Statutes, section 4899, must be construed in connection with section 4886, and it may be said generally that, while section 4886 makes void every patent where it is shown that the invention was in public use or on sale for the period of two years before the application for the patent, section 4899, although allowing the letters patent to stand, excepts from liability to the inventor all persons who have used for less than two years any patented machine or article that has been purchased or constructed with the knowledge and consent of the inventor prior to his application for the patent. Infringement not shown.

Mr. G. E. P. Howard for the complainant.
Mr. G. G. Frelinghuysen for the defendants.

NIXON, *J.*:

This suit charges the defendants with infringing Letters Patent No. 184,352, granted to the complainant November 14, 1876, for improvement for apparatus for drying hides. The patentee states that the object of his invention is to furnish an improved means for drying and stretching hides, * * * being so constructed that the hides may be stretched in any desired direction, and to any desired extent, and thus dried without fold or wrinkle. In the specifications he thus states the nature of his invention:

> The invention consists in the extensible frame to receive the hide, formed of the four bars having their ends slotted, and the clamping-bolts; in the combination of the sliding bars and their pins with the extensible frame and with the table; in the combination of the levers and the pivoted fulcrum-bars, the ropes, the shafts, the ratchet-wheels, the pawls, and the hand-levers with the table and the sliding bars; and in the combination of the swinging blocks and their pivoting-straps with the extensible frame and the clamping-bolts, as hereinafter fully described.

There are four claims, all of which, except the first, are combination claims. The elements of the mechanism are old, but it is claimed that a new and useful result has been secured, to wit, a larger surface area of the hide by stretching it in every direction under a strain equally and simultaneously distributed over the whole surface.

Various defenses have been set up in the answer, but on the final hearing the principal stress seems to have been laid upon the two following: (1) That the complainant was not the original and first inventor of the combined mechanism of the second, third, and fourth claims; (2) not infringement, as the only machine used by the defendants was constructed with the knowledge and consent of the inventor before any application was made for the patent.

1. With regard to the first, it is insisted by the defendants that the mechanism of the second and third claims was the invention of one Levi Dederick, and that the fourth claim was suggested by the defendant Reynolds. It appears from the testimony that during the summer of 1876, and while the complainant was a member of the firm of Reynolds, Duffy & Co., he was engaged in perfecting his devices preparatory to applying for a patent. He caused to be constructed, at the expense of the firm, a completed mechanism, in order to test the practicability and usefulness of his machine for stretching hides. A machinist named Dederick was called upon to do the work. The complainant testifies that he explained the invention to him, and consulted with him as to the best means of accomplishing the desired result.

> I took him up stairs [he says] and showed him a frame of the table with which I had been experimenting and explained their operation to him; and, standing there at the table, I told him: "I now want a table constructed with an outside frame similar to this one, and in it put eight slides or arms, to be operated with levers and a windlass, so connected that when the windlass is turned the levers will cause the slides to move outward all at the same time, just like moving your hands out this way, [stretching apart his hands.] The slides or arms moving out from the sides must be near the ends; those moving out from the ends must be near the sides. In these slides I want holes bored and pegs or stops made to fit them, so they may be moved from one hole to another as may be needed. These pegs must stand high enough from the top of the slides to catch the sides and ends of the table. Then the operation will be this: Put the frame on the table; loosen the corner-bolts; see the size of the hide; adjust the frame and pegs or stops to it; tack the hide on; turn the windlass; that moves the slides; the pegs move with them and extend the frame; when far enough extended, fasten the corner-bolts, loosen the windlass, take the frame off the table, and the slides fall back to the starting point." I then asked him if he understood my description. His answer was: "I do; give me the measurements, and I will make the table just as you have described."

Mr. Dederick gives the whole statement an unequivocal denial. He says he was temporarily residing in Newark from the month of February, 1876, to the spring of 1877, occupying a part of the tannery of Reynolds & Word, endeavoring to develop a new tanning process. While he was there the complainant became a member of the firm. About the month of May, 1876, Mr. Duffy took the witness to an upper room in the building and exhibited to him a stretching table and frame, and explained to him its construction and mode of operation. He also stated to him the result he sought to accomplish, but gave no hint or made any

suggestion of the way of doing it. His plan of spreading the frame so as to stretch the hide was carried out by the use of screws, which, he said, was too slow in operation. He asked him if he could get up anything that would answer that purpose and be better. The witness replied that he thought he could. He then studied upon the matter, and afterward explained to Duffy and Reynolds the plan that he conceived, and they concluded to try the experiment. He expressly claims that, excepting the frame, all the parts and mechanism of the table were made after his own planning, without a suggestion from the complainant of any method or mechanism by which it could be made operative. He first tried a simple lever, to be operated with the foot; but this proved insufficient in power. He then substituted the windlass with a hand-lever and the pawl and ratchet.

It is also claimed that the swinging blocks attached to the clamping-bolts of the stretching-frames (the subject of the fourth claim of the patent) were the invention of the defendant Reynolds, and was communicated by him to the complainant. Reynolds testifies that when the frames were first put in use it was found that there was a looseness at the shoulders of the hide, between the neck and the foreshank, which was objectionable. To remedy this he proposed to Duffy the use of the swinging block, as shown in the model, and made a drawing of the same on an iron door with chalk, which he exhibited to the complainant. The latter thought it was a good device, and said they had better have some made for trial, which was done. Afterward all the frames were provided with these swinging blocks. This statement is explicitly denied by Duffy. He says that after Dederick had completed the frames under his directions, and after the firm of Reynolds, Duffy & Co. had begun to use them, he discovered that the bag-piece hung over, and that there was not sufficient tacking-surface on the face of the frame to accommodate it, and he ordered the pieces to be put on the outside edge of the ends of the frames to increase the tacking-surface, and also the piece on the inside of the neck, where the middle of the neck came, for the same purpose.

After that [he continued] I told Reynolds * * * that I wanted an attachment made for the frames. I said to him: "Please come with me to the drying-loft and I will explain to you just what I want made." He did so, and at the table, standing right over it, I said to him: "I want a piece of board this shape," describing it just as it is here, pointing with my finger, [the witness points to the swinging corner-blocks in complainant's exhibit model,] "fastened with hoop-iron straps to the corner-bolt, light and narrow straps on the board in this shape, and long enough to cross each other, so as to admit of being riveted to one end of a wider and heavier strap, which at the other end I want punched to admit the corner-bolt. These straps on the board must be narrow, so as to interfere as little as possible with the tacking-surface, and the connecting-strap wide enough and heavy enough to leave stock enough, after punching, to insure the necessary strength. Have a few of these made till I see how they will work." * * * The corner-pieces were made in exact accordance with my request, were applied, worked well, and became part of the frame.

Such contradictions, arising, it is hoped, from lapses of the memory, are painful and embarrassing. Looking through the testimony for corroboration of one story or the other, I do not find much in the case to materially strengthen either side. There are some acknowledged facts, however, in the subsequent conduct of the witnesses which add weight and force to the statement of the complainant. For instance, he shortly afterward applied for the patent embracing all these elements of the combination, making oath that he was the original and first inventor, and with the knowledge of Reynolds and Dederick, and without any opposition on their part except, as they allege, a feeble and half-hearted inquiry whether he did not intend to recognize their suggestions as entitling them to some interest in the patent. The firm of which Reynolds was a member, and with his assent, began to pay to the complainant royalties for its use as soon as the letters patent were granted, and Dederick acknowledges that years after the patent was obtained he asked permission of the patentee to construct a single machine for the use of a relative, which was refused unless he would agree to pay the fixed royalty for the same. But, waiving all this, the burden of proving such a defense is upon the defendants. Any doubt respecting the evidence is fatal. This was held to be the law by the circuit justice (Bradley) and the judge of this circuit (McKennan) in *Patterson* v. *Duffy*, (20 Fed. Rep. 641,) in which these learned judges, when considering the allegation that the complainants derived their idea of the patented invention from some third party who first conceived it and communicated it to them, said:

The proofs are conflicting, and while we are of the opinion that the scales incline in favor of the complainants, it can, at least, be said with confidence that the defense is not clearly sustained. That is enough to resolve the case in favor of the complainants.

2. The second point has been more perplexing and troublesome. Section 4899 Revised Statutes declares that every person who purchases of the inventor, or with his knowledge and consent constructs any newly-invented machine prior to the application of the inventor for a patent, or who sells or uses one so constructed, shall have the right to use, and vend to others to be used, the specific thing so made or purchased without liability therefor. The provision is explicit, and has existed in the several patent acts since the enactment of section 7 of the act of March 3, 1839. As was stated by the Supreme Court in *McClurg* v. *Kingsland*, (1 How., 208,) its object was twofold: (1) to protect the person who has used the thing patented, by having purchased, constructed, or made the machine to which the invention is applied, from any liability to the patentee or his assignee; (2) to protect the rights granted to the patentee against infringement by any other persons. For before this section any public use or sale of the thing patented with the consent and allowance of the inventor before his application for a patent was a defense which anybody might set up, and which if successful avoided the patent altogether. (See section 15 of the act of July 4, 1836, 5 St., 123.)

But section 4899 must now be construed in connection with section 4886 of the revision, and it may be said, generally, that while the latter section makes void every patent where it is shown that the invention was in public use or on sale for the period of two years before the application for the patent, the former one, although allowing the letters patent to stand, excepts from liability to the inventor all persons who have used for less than two years any patented machine or articles that have been purchased or constructed with the knowledge and consent of the inventor prior to his application for the patent.

Let us consider the facts of the present case in connection with the statute. The application for the patent was made October 14, 1876. Duffy, the patentee, became a member of the firm of Reynolds, Duffy & Co. in the early spring of the same year. He had been

experimenting upon a stretching-machine a year or two before this time, and had not succeeded in constructing one that worked to his satisfaction. Accepting his statement as true, because, although denied, it has not been overborne by satisfactory preponderating evidence, he exhibited to Reynolds and to Dederick, shortly after his promotion to the partnership, the point to which he had reached in his invention and the mechanism with which he proposed to complete it. At his request, and with the assent of Reynolds that the firm should be responsible for the expenses, Dederick began to construct a machine embracing, in order to make it effective, the mechanism which was afterward patented, and finished the same as early as June or July of that year. When completed, it was set up in the establishment of Reynolds, Duffy & Co., and used by them before and after the application for the patent, the patentee consenting that they should have it without the payment of royalty as long as the firm continued. The partnership was dissolved in the month of February, 1882, and the machine and frames were sold and transferred by Duffy, the retiring partner, to the defendants. It is in evidence, and not disputed, that when the sale took place the complainant asked the defendant Reynolds whether he expected to pay the usual royalty, stating that no use would be allowed without such payment—this was in February, 1882—and Reynolds replied that he would think about it. He thought about it until the month of June following, when he wrote to Duffy, declining to pay anything for the use of the invention, not because he had purchased the machine, and therefore had the right to use it, but because he considered the patent entirely invalid and worthless. What right or privilege of using the machine and frames did the defendants acquire by such construction, purchase, and use prior to the application for a patent? Or, in other words, was this such a public use or sale with the knowledge and consent of the inventor of the thing afterward patented that, under the provisions of section 4899, the patentee is estopped from demanding royalty for its continued use?

I have no difficulty about the first construction by Dederick, under the direction and supervision of Duffy. That was, doubtless, allowable. The facts clearly show that it was by way of experiment, or in order to bring the invention to greater practicability. (Curt. Pat., section 134; *City of Elizabeth* v. *Pavement Co.*, 97 U. S., 134.) He had the right to defer his application for the patent and to hold the completed machine for a reasonable time for experimental purposes. But after it was completed and tried and found to be successful, did he not fly in the face of this section by consenting to and sanctioning its public use by Reynolds, Duffy & Co. before he filed his application for a patent, and can he now complain because the purchasers of the "specific machine" demand the privilege of its further use without compensation to the inventor?

After some hesitation I have reached the conclusion that, while the complainant's patent is valid, there has been no infringement by the defendants, under the provisions of section 4899, by their use of the invention, and will not be as long as they confine themselves to the "specific machine" and frames, the use of which the inventor consented to and allowed before he applied for the patent.

Let the bill be dismissed.

U. S. Circuit Court—Southern District of Ohio, Eastern Division.

ADAMS v. BELLAIRE STAMPING COMPANY. SAME v. BARON *et al.*

Decided October 17, 1885.

1. In suits at law, under section 4919, for infringements of an expired patent, where assignments of the patent do not include claims for past infringements, the owners of the patent at the date of such infringements should be joined as parties plaintiff, because the assignment of a patent does not carry with it claims for past infringements.
2. If such assignments contain claims for past infringements, then the assignee becomes "the party interested" under section 4919 and has the right to sue in his own name for such infringements.
3. State statutes of limitation do not apply in suits at law for the infringement of patents. The question, however, is considered so doubtful that the court indicates a course by which it may be submitted most speedily to the appellate court.

[These were suits at law under section 4919, in the name of the assignee, for infringement of an expired patent during its entire term, the assignee having acquired a complete title to the patent before it expired, and having assignments of past infringements from owners of the patent at different dates.]

Mr. J. H. Raymond and *Messrs. Wood & Boyd* for the plaintiff.

Mr. George W. Dyer and *Mr. Charles H. Grosvenor* for the defendants.

ON defendant's demurrers to declaration.

SAGE, *J.*:

1. It is my opinion that the plaintiff in these actions, by virtue of his title as assignee, has the right to sue in his own name for all infringements, including those of date prior to the assignments under which he claims. This opinion is based upon the provision of section 4919, United States Revised Statutes, that damages for infringement may be recovered in the name of the party interested. In cases where the assignment does not include prior claims for infringement, the holder of the patent at the time of the prior infringement should be joined as a plaintiff, but only for the reason that the assignment of a patent does not carry with it claim for prior infringements. That was the point decided in *Moore* v. *Marsh*, (7 Wallace, 515.) But in the cases at bar the assignments include, in terms, all claim for prior infringements. The plaintiff is therefore the only party interested, and the actions are rightly brought in his name.

2. The State statute of limitations does not apply. The authorities are in conflict, and the question is one of great difficulty. Without entering upon discussion, I have concluded, while deciding this point against the defendants, that the cases in their further progress should be so shaped as, in the event of verdict for the plaintiff, to save the question for decision by the appellate court without putting the parties, whatever that decision may be, to the expense or delay of a new trial.

The demurrers will be overruled, with leave to defendants to plead within thirty days. If they plead the statute of limitations, the plea will be overruled on demurrer, but on the trial the jury will be instructed, if they find for the plaintiff, to find separately, by special verdict, the damages prior and those subsequent to the limitation claimed.

U. S. Circuit Court—Northern District of Illinois.

THE SOUTHERN WHITE LEAD COMPANY *v.* CAREY *et al.*

Decided October 10, 1885.

1. TRADE-MARKS—INFRINGEMENT OF.
The complainant in a trade-mark suit is entitled to relief if the marks or brands used by the defendants sufficiently resemble the complainant's marks or brands to be mistaken for them.
2. SAME.
An injunction should be granted if the defendants adopt their brand for the purpose of selling their goods as and for the goods of the complainant, or for the purpose of enabling others to do so, and the complainant has been injured, or is likely to be injured, thereby. In such case it will not be sufficient for the defendants to show that no deception is in fact practiced on those with whom they deal personally, but an injunction will be granted if consumers to whom the goods are intended to be resold are or may be deceived.
3. SAME.
Where manufacturers at one place falsely mark or brand their goods as manufactured at another for the purpose of inducing trade which would otherwise go to manufacturers at such other place, such false marking will be considered as fraudulent and a "resort to a palpable trick," and, the complainant being injured thereby, the infringing manufacturers will be enjoined from thus using the name of the place where the complainant carries on its business.

Messrs. Banning & Banning solicitors for the complainant.

Messrs. Dent, Black & Cratty Brothers solicitors for the defendants.

GRESHAM, *J.*, (orally:)

The complainant is a large manufacturer of white lead at St. Louis. It stamps or stencils upon the upper end or head of its kegs the words "Southern Company, St. Louis." These words encircle the head of the keg, "St. Louis" forming the lower half of the circle and "Southern Company" the upper half, and they inclose the words "warranted strictly pure white lead in pure linseed oil." The complainant uses another brand or mark, in addition to the one already described, by simply stenciling a red crescent upon the upper half of the head of the keg. St. Louis has an established reputation for the manufacture and sale of pure white lead, and the complainant has had and maintained for years a large trade at that place as a manufacturer of this article. The evidence clearly shows that the complainant's lead is pure.

The defendants are manufacturers of white lead at Chicago. They brand upon the heads of their kegs "Southwestern, St. Louis," surrounding the words "Strictly pure white lead"; and the words "Southwestern, St. Louis" appear in the same form as the words "Southern Company, St. Louis," appear upon the complainant's keg, and the letters are the same in size and appearance. The crescent, however, does not appear on any of defendants' kegs. The defendants also paste upon the sides of their kegs a label containing the words "The white lead in this package is guaranteed strictly pure, ground in bleached oil, and for purity, whiteness and durability, is not excelled by any lead manufactured."

It is shown by analysis, and not denied, that while the complainant's manufacture is unadulterated and free from impurities, the defendants' contains on an average only fifty per cent. of lead. The complainant claims a trade-mark in its two brands—one without the red crescent and the other with it; and this bill is filed to enjoin the defendants from infringing the first of these trade marks.

I shall not stop to inquire whether the complainant's claim to the trade-marks is or is not well founded, as I think it is entitled to an injunction upon another ground. The defendants so brand the heads of their kegs as to naturally mislead, and induce persons purchasing for consumption to suppose they are purchasing the complainant's lead, when they are getting an inferior article. The brand used by the defendants is so like the complainant's as to induce the public to mistake the one for the other. The defendants sell their goods to retail dealers, and it may be that such dealers are not deceived, but they sell to consumers who are or may be deceived.

The complainant is entitled to relief if the brand used by the defendants sufficiently resembles the complainant's brands to be mistaken for them, and the defendants adopted their brand for the purpose of selling their kegs as the kegs of the complainant, or for the purpose of enabling retail dealers to do so, and the complainant has been injured by this fraud, or is likely to be injured by it.

The complainant manufactures its genuine white lead at St. Louis, and its reputation is already established as a manufacturer and dealer of this character. The defendants manufacture their adulterated and greatly inferior lead at Chicago, and stamp upon their kegs a false brand in imitation of the complainant's brand. Why is this done unless it be in the hope of deceiving the public and injuring the complainant? Realizing that they could not engage in open manly competition with the complainant, the defendants resort to a palpable trick. If this resulted in no injury to the complainant, or was likely to result in no injury to it, the bill would have to be dismissed. But the affidavits show that the defendants' kegs can be and have been sold as the complainant's.

A temporary injunction will be granted restraining the defendants from branding upon their kegs the words "Southwestern" and "St. Louis."

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

VOL. 33—No. 6. TUESDAY, NOVEMBER 10, 1885. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

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Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of November 10, 1885.

Patents	489—No.	329,874 to No. 330,362, inclusive.
Designs	11—No.	16,371 to No. 16,381, inclusive.
Trade-Marks	18—No.	12,747 to No. 12,764, inclusive.
Labels	13—No.	4,621 to No. 4,633, inclusive.
Reissue	2—No.	10,660 to No. 10,661, inclusive.
Total issue	533	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	.....	.....	Nebraska	5	.....
Arizona Territory	.....	.....	Nevada	1	.....
Arkansas	.....	.....	New Hampshire	4	.....
California	1	.....	New Jersey	21	.....
Colorado	13	2	New Mexico Territ'y	.....	.....
Connecticut	1	.....	New York	89	3
Dakota Territory	24	2	North Carolina	2	.....
Delaware	.....	.....	Ohio	49	.....
District of Columbia	5	.....	Oregon	.....	.....
Florida	.....	.....	Pennsylvania	54	11
Georgia	4	2	Rhode Island	3	.....
Illinois	62	1	South Carolina	1	.....
Indian Territory	.....	.....	Tennessee	.....	1
Indiana	18	.....	Texas	6	.....
Iowa	9	.....	Utah Territory	.....	.....
Kansas	7	.....	Vermont	3	.....
Kentucky	5	.....	Virginia	3	.....
Louisiana	3	.....	Washington Territ'y	.....	.....
Maine	1	.....	West Virginia	.....	.....
Maryland	6	.....	Wisconsin	6	1
Massachusetts	43	5	Wyoming Territory	.....	.....
Michigan	4	.....	United States Army	.....	.....
Minnesota	1	.....	United States Navy	.....	.....
Mississippi	.....	.....			
Missouri	10	1	Total to citizens of the United States	464	29
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	1	.....	Germany	6	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	.....	.....	Ireland	.....	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	Russia	1	.....
Canada	11	.....	Scotland	.....	.....
Cape of Good Hope	.....	.....	Spain	.....	.....
Colombia, U. S. of	.....	.....	Sweden	1	.....
Cuba	1	.....	Switzerland	.....	1
Denmark	1	.....	Victoria	.....	.....
Egypt	.....	.....			
England	11	.....	Total to citizens of foreign countries	36	2
France	3	1			

DESIGNS.

16,371.—GLASSWARE.—*George Beatty*, *Robert J. Beatty*, and *George W. Davis*, Steubenville, Ohio. Application filed August 13, 1885. Serial No. 174,342. Term of patent 7 years.

16,372.—HEATING-STOVE.—*Arthur O. Bement*, *Marquis D. Keyes*, and *Clarence E. Bement*, Lansing, Mich. Application filed September 16, 1885. Serial No. 177,312. Term of patent 7 years.

16,373.—PANEL FOR CLOCK-FRONT.—*Anna C. Freeland*, Worcester, Mass. Application filed August 10, 1885. Serial No. 174,072. Term of patent 3½ years.

16,374.—FONT OF PRINTING-TYPE.—*John Graham*, Chicago, Ill. Application filed May 19, 1885. Serial No. 166,037. Term of patent 3½ years.

16,375 to 16,377, inclusive.—CARPET.—*Herbert Mitchell*, Worcester, Mass., assignor to *Matthew J. Whittall*, same place. Applications filed September 19, 1885. Serial Nos. 177,611 to 177,613, inclusive. Term of patents 3½ years.

16,378.—SIDE FRAME FOR SEWING-MACHINE STANDS.—*Lebbeus B. Miller*, Elizabeth, N. J., assignor to *The Singer Manufacturing Company of New Jersey*. Application filed October 13, 1885. Serial No. 179,820. Term of patent 14 years.

16,379—TEXTILE FABRIC.—*George Streat*, New York, N. Y. Application filed August 24, 1885. Serial No. 175,156. Term of patent 3½ years.

16,380 and 16,381.—STAND.—*Moritz Eisner* and *Joseph Mendelson*, Philadelphia, Pa. Applications filed August 27, 1885. Serial Nos. 175,514 and 175,519. Term of patents 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,747.—CATARRH CURE.—*Abietine Medical Company*, Oroville, Cal. Application filed September 24, 1885.

"The words 'CALIFORNIA' and 'CURE,' the letter 'R,' and the representation of a cat."

12,748.—PREPARATION FOR LUNG AND THROAT DISEASES.—*Abietine Medical Company*, Oroville, Cal. Application filed September 24, 1885.

"The word-symbols 'LUNG RESTORER' and 'SANTA ABIE.'"

12,749.—BROWN AND BLEACHED COTTON SHEETINGS.—*Boott Cotton Mills*, Lowell, Mass. Application filed October 16, 1885.

"The representation of a boat with a dragon's head and oarsmen."

12,750.—BROWN AND BLEACHED COTTON SHEETINGS.—*Boott Cotton Mills*, Lowell, Mass. Application filed October 16, 1885.

"The representation of a mandarin on horseback."

12,751.—HATS.—*The Coöperative Hat Company of South Norwalk*, South Norwalk, Conn. Application filed October 8, 1885.

"The words 'THE UNITED HATTERS OF NORTH AMERICA, UNION MADE,' and the picture of a globe and flags with crossed staffs."

12,752.—GINGER-ALE AND CERTAIN NAMED DRINKS.—*Hugh Hall*, New York, N. Y. Application filed October 15, 1885.

"A hand and drops, crown or coronet, and the word 'ULSTER.'"

12,753.—PROPRIETARY REMEDIES, MEDICINES COMPOUNDED BY PRESCRIPTION, AND OFFICINAL AND PHARMACEUTICAL PREPARATIONS.—*Roger Keys*, Philadelphia, Pa. Application filed September 5, 1885.

"The arbitrary symbol of two keys."

12,754.—CHAMPAGNE-WINES.—*Kunkelmann & Co.*, Rheims, France. Application filed July 22, 1885.

"The words 'PIPER-HEIDSIECK.'"

12,755.—COTTON GOODS, GRAY, COLORED, AND BLEACHED, PLAIN OR TWILLED.—*Laurus Loomis*, Brooklyn, N. Y. Application filed October 15, 1885.

"The arbitrary word 'KENESAW.'"

12,756.—GARMENTS OR ARTICLES MADE FROM JERSEY-CLOTHS AND STOCKINETS.—*Thomas C. Lore*, Philadelphia, Pa. Application filed May 5, 1885.

"The pictorial representation of a crown."

12,757.—GARMENTS OR ARTICLES MADE FROM JERSEY-CLOTHS AND STOCKINETS.—*Thomas C. Lore*, Philadelphia, Pa. Application filed May 5, 1885.

"The word 'CROWN.'"

12,758.—CAPS OR PRIMERS FOR BLASTING PURPOSES.—*The Metallic Cap Manufacturing Company*, Enfield, Conn., and New York, N. Y. Application filed October 15, 1885.

"The representation of a Maltese cross, the word-symbol 'GOLD CROSS,' the words 'GOLD MEDAL,' and the symbol 'X X X X.'"

12,759.—BAKING-POWDER.—*H. J. Paddock*, St. Louis, Mo. Application filed September 7, 1885.

"The arbitrary word 'MERCHANTS,' arranged in connection with the representation of a box or can of baking-powder inclosed in a circle."

12,760.—MUSIC-BOXES.—*C. Paillard & Co.*, Ste. Croix, Switzerland. Application filed October 15, 1885.

"The figures of a cross and hunting-horn."

12,761.—[Withdrawn.]

12,762.—STATIONERS' HARDWARE SUPPLIES, BUILDERS' HARDWARE, FURNITURE HARDWARE, AND MISCELLANEOUS HARDWARE NAMED.—*Reading Hardware Company*, Reading, Pa. Application filed August 4, 1885.

"The word 'ALBION.'"

12,763.—GENTLEMEN'S DRIVING-WHIPS.—*Westfield Whip Company*, Westfield, Mass. Application filed October 5, 1885.

"The word 'BULLDOG.'"

12,764.—BOXES FOR CIGARS.—*Worms & Cohn*, Milwaukee, Wis. Application filed October 9, 1885.

"The words and figures 'MILWAUKEE SAENGER FEST, 1886,' in connection with a view of the Milwaukee Exposition building and portraits of the president, director, and prize composer of the said saenger fest, with portraits of musical composers grouped about them."

LABELS.

4,621.—Title: "HONEY, RUM AND TAR." (FOR A MEDICINE.)—*James H. Alexander*, Augusta, Ga. Application filed October 12, 1885.

4,622.—Title: "THE NEW DISCOVERY, BATTIS' MODIFIED EXTRACT OF DENICOTIZED TOBACCO."—*James H. Battis*, Salem, Mass. Application filed October 21, 1885.

4,623.—Title: "SEIDLITZ POWDERS."—*Gillam's Sons*, Philadelphia, Pa. Application filed October 16, 1885.

4,624.—Title: "F. CAPUERO EXTRA REFINED PETROLEUM."—*W. R. Grace & Co.*, New York, N. Y. Application filed October 15, 1885.

4,625.—Title: "GENERAL TONIC."—*D. B. Hand*, Scranton, Pa. Application filed October 15, 1885.

4,626.—Title: "WORM ELIXIR."—*D. B. Hand*, Scranton, Pa. Application filed October 15, 1885.

4,627.—Title: "COLIC CURE."—*D. B. Hand*, Scranton, Pa. Application filed October 15, 1885.

4,628.—Title: "PLEASANT PHYSIC."—*D. B. Hand*, Scranton, Pa. Application filed October 15, 1885.

4,629.—Title: "TEETHING LOTION."—*D. B. Hand*, Scranton, Pa. Application filed October 15, 1885.

4,630.—Title: "PENETRATING OIL" (FOR A REMEDY FOR RHEUMATISM.)—*T. L. Macklin*, Philadelphia, Pa. Application filed October 15, 1885.

4,631.—Title: "G. E. M. POWDER OR THE G. E. MITCHELL TOOTH POWDER."—*G. E. Mitchell*, Haverhill, Mass. Application filed October 17, 1885.

4,632.—Title: "PICHEREAU'S UNIVERSAL SALVE."—*Arcene Picherau*, Lacon, Ill. Application filed October 19, 1885.

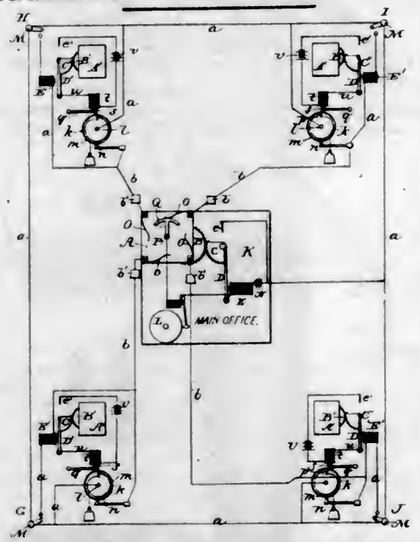
4,633.—Title: "THE GREATEST BLOOD PURIFIER."—*William H. Whitehead*, Way Cross, Ga. Application filed October 9, 1885.

PATENTS

GRANTED NOV. 10, 1885.

329,874. ELECTRIC TIME-DETECTOR. THOMAS AHEARN, Ottawa, Ontario, Canada. Filed Sept. 1, 1884. (No model.)

Brief.—Clock at central station establishes circuit with each substation in a predetermined order and for a definite period. In case of the failure of the watchman to attend to his duty, the circuit is broken and an alarm sounded.



Claim.—1. In a time-detector system, the combination of a number of independent circuits with one or more stations thereon extending to a central office or station, a circuit-closer at each station, a time mechanism, and a traveling circuit-closer carried by said mechanism and adapted to make and preserve contact with each of said circuits in succession for a given period, each of the circuit-closers or signal-alarm stations being constructed to send in a different number to correspond with a prearranged central-office list.

2. In combination with circuits *a*, return-wire or earth-wire *b*, circuit-closer M, time-movement A, provided with wheel B, segment C, meshing with said wheel, swinging armature D, electro-magnet E, and battery N, included in circuit *a*, local battery *d*, alarm L, and finger *e*, and an electrical conductor connecting said finger with line *a*, substantially as shown and described.

3. In a time-detector system such as described, the combination, with a time-movement and with a circuit-closer moved thereby, of spring-finger *e*, included in a local alarm-circuit, and finger *f*, included in a short circuit of the main line, finger *e* being movable and adapted to be pressed by the moving circuit-closer into contact with finger *f*, whereby said circuit-closer is caused to first close the alarm-circuit and insure the sounding of the alarm, and then to close the short circuit of the main line for the purpose of resetting the apparatus and destroying the alarm-circuit.

4. In a time-detector substantially such as described and shown, the combination, with a local-alarm circuit, main lines or circuits, and time mechanism, of a circuit-closer moved by said time mechanism, a movable contact-finger in the path of said circuit-closer and included in the alarm-circuit, and a second contact-finger in the path of movement of the first and included in the main line controlling the circuit-closer, whereby the circuit-closer is caused first to complete the alarm-circuit, and subsequently to complete the circuit over the main line, as and for the purpose set forth.

5. The combination, in a time-detector system such as described and shown, of a time-movement, A, wheel B, segment C, armature D, line *a*, battery N, an electro-magnet in said line, alarm L, a local-battery circuit therefor, yielding finger *e* in said local circuit, and finger *f*, adapted to be touched by finger *e* as the latter is moved by segment C.

6. The herein-described time-detector system, consisting of time mechanism A, wheel B thereof, segment C, movable armature D, electro-magnet E, battery N, line *a*, circuit-closer M, signal-wheel *k*, return-wire *b*, traveling arm Q, detents *q*, and electro-magnets *t*, included in an independent circuit completed by the movement of segment C, all substantially as set forth and shown.

7. In a time-detector system, the combination of a main or outgoing line running from a central station to different outlying stations, an earth-connection or return-wire from each station to the central station, an annunciator in each return-line at the central station, a circuit-closer at each of the outlying stations under control of the watchman, and a circuit-wheel at the central station adapted and arranged to connect the outgoing or main line with each return-line successively, and to destroy connection with all the remaining return-lines while connecting the one.

8. The combination, substantially as herein set forth, of an alarm line or wire, stations on said line, a return-line from each station to a central office, a circuit-closer at each station under control of a watchman, a signal-wheel included in the main line at each station, detents for holding the circuit-wheels at rest, an electro-magnet at each station included in a local or tell-tale circuit, adapted and arranged to withdraw the detent and allow the signal-wheel to operate if the watchman fails to operate the circuit-closer at the station to prevent such withdrawal, and a time mechanism adapted and arranged to close the local circuit at a predetermined time if the watchman fails to perform his duty.

9. The herein-described signal apparatus, consisting of a main or outgoing line, *a*, and return-wire *b*, connecting a main office or central station and an outlying station, an alarm at the main office or central station, a signal-wheel, *k*, at the outlying station, a detent, *q*, for holding the signal-wheel at rest, a local-battery circuit at the outlying station, an electro-magnet, *t*, included in the local circuit and adapted to withdraw the detent, a time mechanism, A', at the outlying station, a local-circuit closer, C', controlled by the time mechanism, a movable support, D', for the circuit-closer C', and electro-magnet E', included in the circuit *a b*, adapted to retract the movable support D' and withdraw the circuit-closer C' from the control of the time mechanism, and a circuit-closer M, under control of a watchman and serving to close the circuit *a b*, said parts being combined and arranged to operate substantially as set forth.

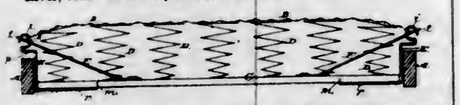
329,875. BOX. EBEN ANDREWS, Kennebunk, Me., assignor to the Leatheroid Manufacturing Company, same place. Filed Apr. 16, 1885. (No model.)



Claim.—1. A box made of thin flexible material, re-enforced at its upper edge by a band or hoop of wood, said band of wood being protected at its corners by metal corner-pieces U-shaped in cross-section, which embrace a portion of three sides of said hoop or band upon two sides of said box.

2. A box made of thin flexible material, re-enforced at its upper edge by a band or hoop of wood, said band of wood being protected at its corners by metal corner-pieces U-shaped in cross-section, which embrace a portion of three sides of said hoop or band upon two sides of said box, and which are provided with suitable ears bent under said re-enforcing bars or band, substantially as and for the purposes described.

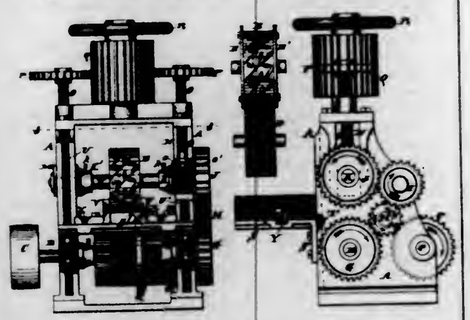
329,876. SPRING BED-BOTTOM. EVERETT E. BAILEY and MILLARD E. BUCKINGHAM, Brooklyn, N. Y., assignors to Henry E. Buckingham, Deep River, Conn. Filed July 2, 1885. (No model.)



Claim.—1. The combination, with the slats C C, woven-wire mattress B, and interposed springs D D, in a spring bed-bottom, of the elastic edge-supports E, constructed each of a bit of wire secured longitudinally under the end of each slat and bent to project upward therefrom, and which terminates in a hook or ring adapted to engage the edge of the mattress, substantially in the manner and for the purpose herein set forth.

2. The combination, with the wire edge-supports E E, projecting from the ends of the slats in a spring bed-bottom to engage and support the edge of the woven-wire mattress, of auxiliary stays F, secured each to the upper face of a slat near its end, to extend thence to the hooked end of the edge-support E and engage the same, substantially in the manner and for the purpose herein set forth.

329,877. MACHINE FOR MAKING PICTURE-FRAME MOLDINGS. CHARLES O. BAXTER, St. Louis, Mo. Filed June 20, 1885. (No model.)



Claim.—1. A roller composed of two parts of different diameters having independent rotary movement.

2. The combination of a bearing-roller made in two parts of different diameters, having independent rotary movement, and an embossing-roller acting in conjunction with the same, for the purpose set forth.

3. The combination, with a vertically-adjustable embossing-roller, of a table, S, made vertically adjustable, substantially as set forth.

4. The combination, with the two wheels P upon the journal-box and lifting screws O, of the elongated gear-wheel Q, for the purpose set forth.

5. The combination of embossing wheel or roller E, a table, S, and guides adjustable upon the table and lapping over the ends of the embossing-wheel, for the purpose set forth.

6. The guides V, having lugs, and screws X, turning in the lugs and screwing in blocks Y, moving in a transverse dovetail slot in the top of table S.

329,878. ARTIFICIAL ARM AND HAND. GEORGE BEACOCK and TERENCE SPARHAM, Brockville, Ontario, Canada. Filed Apr. 3, 1885. (No model.)

Claim.—1. A forearm, wrist, and hand made of one piece of rawhide, substantially as specified.

2. A forearm, wrist, and hand made of one piece of rawhide and provided with a thumb passed through the palm of the hand and pivoted on the edge thereof, substantially as specified

3. In an artificial hand, a thumb held in position by the shrinkage of the material of which the hand portion is made, substantially as specified.

4. The combination of the thumb C, having the notches C' and the head C^2, the forearm B, and the spring curved to fit the head of the thumb, substantially as specified.

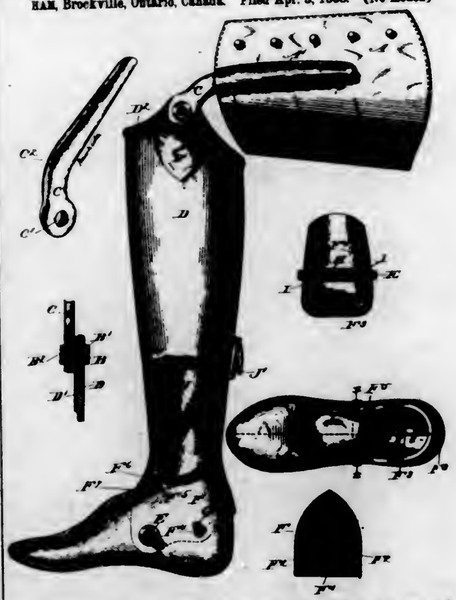
5. The combination of the socket A, pivot A', forearm B, and thumb C, the whole being made of rawhide, substantially as shown and described.

329,878.



6. The thumb C, made of a single piece of rawhide cut away, as at C', and provided with the head C^2, substantially as shown and described.

329,879. ARTIFICIAL LIMB. GEORGE BEACOCK and TERENCE SPARHAM, Brockville, Ontario, Canada. Filed Apr. 3, 1885. (No model.)



Claim.—1. In an artificial limb, the combination of a leg and a foot, a pivot passing through both of these members at a point substantially in a vertical line with the front of the leg, and a bar passing through both of these members and adapted to move in slots formed in the foot, substantially as specified.

2. In an artificial limb, a joint, one member of which is made entirely of rawhide, substantially as specified.

3. The combination, with the leg D and band A, having the pockets A', of the rawhide arm or joint C, adapted to fit the pin B of the leg, and the pockets A' of the band, substantially as specified.

4. The combination of the leg D, the re-enforce D', the pin B, having the flange B', the arm or joint C, and the screw and washer B^3, substantially as shown and described.

5. The combination of the leg D, the foot F, the pivot E, the sleeve H, washers I, the rod G, the spring J, and the cords J', substantially as shown and described.

329,880. ARTIFICIAL LIMB. GEORGE BEACOCK and TERENCE SPARHAM, Brockville, Ontario, Canada. Filed Aug. 3, 1885. (No model.)

329,880.



Claim.—1. In combination with an arm, the cap-piece A, formed to fit the shoulder, and having its rear side broader than its front side, substantially as specified.

2. The combination, with an arm and its supporting-bolt, of a cap-piece formed to fit the shoulder, and slotted at its end, substantially as specified.

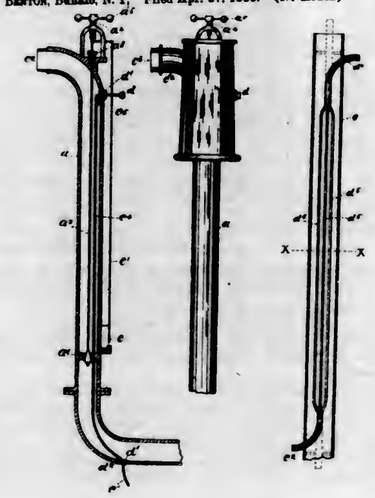
3. A joint comprising a sphere having a projection, as F', with adjacent faces F^2 and F^3, adapted and arranged to come in contact with the opposite and inner surfaces of an adjacent section, substantially as specified.

4. In an artificial limb, a strip, strap, or thong of rawhide arranged as a pivotal member of a joint, substantially as specified.

5. A strip, strap, or thong of rawhide, cylindrical in cross-section at a portion thereof, designed for a pivot, and flattened or thinned at a portion thereof, whereby it is adapted to be wound and fastened, substantially as specified.

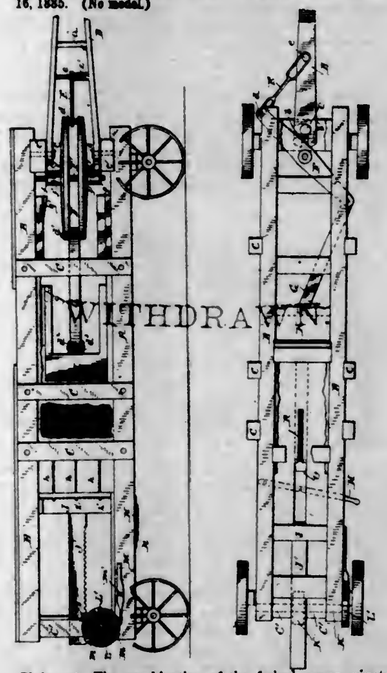
6. In an artificial limb, an air-chamber provided with a valve, substantially as specified.

329,881. THAWING HYDRANTS OR WATER-PIPES. RUSSELL O. BENTON, Buffalo, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—A hydrant or water-pipe having an interior auxiliary tube, in combination with the metallic screw-plugs d', through which the inlet and outlet ends of the auxiliary tube pass, and to which they are secured, as and for the purposes described.

329,882. HAY-PRESS. HENRY F. BLANK, Quincy, Ill. Filed June 16, 1885. (No model.)



WITHDRAWN

Claim.—1. The combination of the forked sweep, pivoted to the top and bottom of the frame outside of the double-knuckle lever and its shaft, with a link connecting the sweep to the forward end of the lever, the said double-knuckle lever, a pitman hinged to the rear side of it and the forward end of the plunger, and the said plunger, as set forth.

2. The sweep pivoted to the frame at both ends of the fork, outside of the double-knuckle lever and its shaft, and having a bolt provided with a collar, combined with the double-looped link, the double-knuckle lever and its central vertical shaft, the doubly-hinged pitman, and the plunger, as set forth.

3. The combination of the plunger having the upper inclined groove, g, with the roof of the frame having the correspondingly-inclined cleat, g', and devices, substantially as shown, for operating said plunger, as set forth.

4. The combination, with the pressure-head J and the geared rack J', of the pinion K and its shaft K', the pulley L, the friction-band L', having ratchets m m and the tension-screw l, and the pivoted clutch M, as set forth.

5. The combination, with the floor of the bale-chamber, slotted at r, of the pivoted hook R, the laterally-moving block O, having a T-head wedge-shaped at o, and the horizontally-moving operating-lever N, as set forth.

329,883. EYEGLASSES. HENRY BORSCH, Chicago, Ill., assignor to the American Optical Company, Southbridge, Mass. Filed May 15, 1885. (No model.)

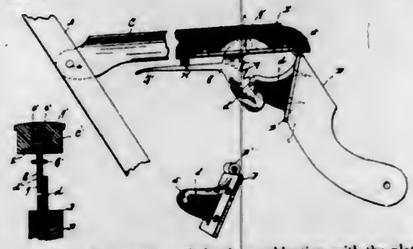


Claim.—1. A nose-piece having two portions, one of which projects upward and is attached to the lens-holder, and the other portion projects downward substantially parallel to the first portion, and is adapted to rest upon the side of the nose, and the two united at their upper ends by a torsion-spring connection, substantially as described.

2. A nose-piece for eyeglasses, having two portions, one of which projects upward and is attached to the lens-holders, and the other portion projects downward substantially parallel to the first portion, and is adapted to rest on the side of the nose, the two portions being united at their upper ends by a torsion-spring connection, and the part resting on the nose having its lower end capable of adjustment toward or from the lens, substantially as described.

3. A nose-piece for eyeglasses, having two portions, one of which projects upward and is attached to the lens-holder, and the other portion projects downward substantially parallel to the first portion, is adapted to rest on side of the nose, and having a cork facing cemented thereto, the two portions being united at their upper ends by a torsion-spring connection, and the part resting on the nose having its lower end capable of adjustment toward or from the lens, substantially as described.

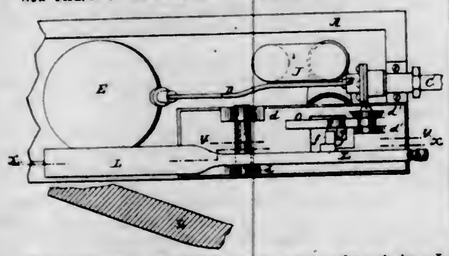
329,884. RECLINING-CHAIR. FREDERICK W. BROOKS, Cleveland, Ohio, assignor to Frank H. Morris, same place. Filed July 23, 1885. (No model.)



Claim.—1. In a reclining-chair, the combination, with the plates D and E, pivoted together, forming a hinge, the former being attached to the arm-post and the latter to the arm, the plate D having the hook *d*, of the dog G, having notches to engage the hook *d*, and an arm, G', for releasing the dog, the dog being pivoted to plate E in such a position that when free it will swing forward and engage the hook and support the chair-back, substantially as set forth.

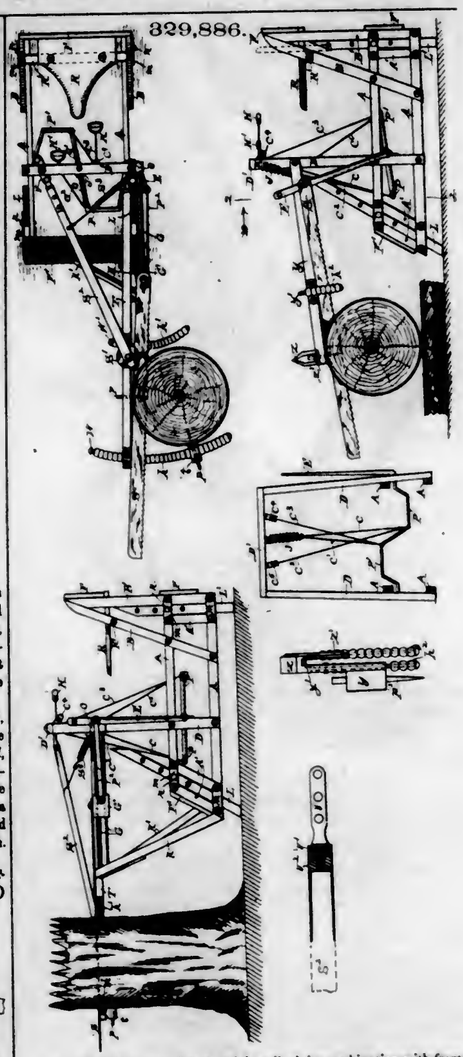
2. In a reclining-chair, the combination, with the plates D and E, pivoted together and forming a hinge, the former being attached to the arm-post and the latter to the arm, the plate D having the hook *d*, of the dog G, having notches to engage the hook *d* on arm G', for releasing the dog, said arm G' provided with the spring H, for forcing the engagement of the dog, the dog being pivoted to the plate E in such a position that when free it will be forced forward by the spring H and engage the hook and support the chair-back, substantially as set forth.

329,885. SUPPLY-TANK FOR WATER-CLOSETS. WILLIAM BUNTING, Jr., Boston, Mass., assignor to the Meyer-Sniffen Company, (Limited.) New York, N. Y. Filed June 9, 1885. (No model.)



Claim.—In combination with the working end of the main lever L and a vibrating valve-lifting lever, O, an eccentrically-pivoted device, *g*, arranged on the valve-lifting lever and a lateral projecting lug or lifting device, *f*, arranged on the operating-lever, the whole constructed and arranged to operate in substantially the manner and for the purpose hereinbefore set forth.

329,886. DRAG-SAW. JAMES BURNS, Chicago, Ill. Filed Mar. 12, 1885. (No model.)



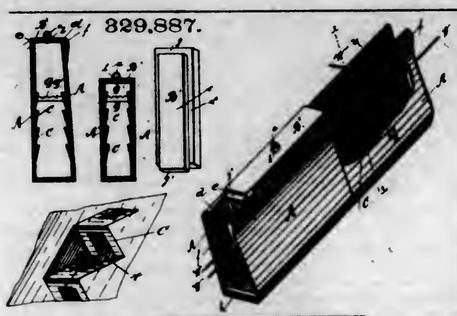
Claim.—1. In the drag-saw shown and described, in combination with frames A and D, the horizontal shaft forming the foot-cranks P P', and having one end turned upward to form the crank-arm E, and journaled in said frame D, cords c^3 c^3, having their lower ends respectively attached to said foot-cranks and their upper ends passing over the pulleys c^4 c^4, and respectively provided with the hand-grasps H H', pulleys c^4 c^4, coil-spring J, cords *c c'*, having their lower ends respectively attached to said cranks and their upper ends to said spring, cross-bar D', saw S, having its inner end pivotally attached to crank-arm E, and arm *y*, pivoted at its inner end to frame D and having the guide-rollers k^3, as and for the purpose set forth.

2. In the drag-saw shown and described, in combination with frames A D, the horizontal shaft forming the foot-cranks P P', and having one end turned upward to form the crank-arm E, and journaled in said frame D, cords c^3 c^3, having their lower ends respectively attached to said foot-cranks and their upper ends passing over the pulleys c^4 c^4, and respectively provided with the hand-grasps H H', pulleys c^4 c^4, coil-spring J, cords *c c'*, having their lower ends respectively attached to said cranks and their upper ends to said spring, cross-bar D', guide rods or ways G, slide G', for traversing said guideways, pitman P^2, for connecting said slide with crank-arm E, saw S, having its inner end pivotally attached to said slide, arm T, having its inner end pivotally attached to frame D, and having the saw guide or support *h* and attaching-pin *p*, arm S^2, having the sheave-wheel S' on its outer end to ride on the saw-back, and pivoted at its inner end to cross-bar D', and coil-spring S^3, for connecting arm S^2 with frame D and cause sheave-wheel S' to bear on the back of the saw-blade S, substantially as set forth.

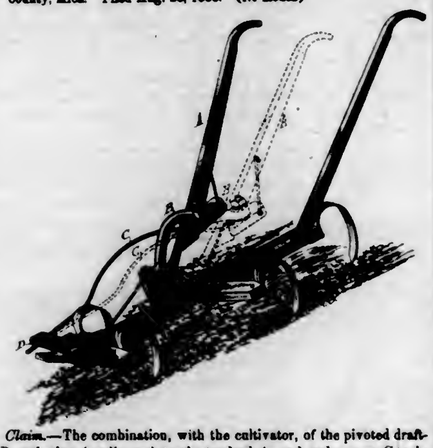
329,887. CONDUIT FOR ELECTRICAL CONDUCTORS. HENRY L. CAPLES and WILBER W. LEWIS, Kansas City, Mo. Filed Jan. 21, 1885. (No model.)

Claim.—The combination, in a conduit for electrical conductors, of a hollow curb provided with a cover united thereto by means of a rabbet in one side and a lap-joint on the other, a series of projections upon the interior of said curb, and removable supports upon such projections, said supports having depressions therein for holding the conductors, substantially as described.

329,887.

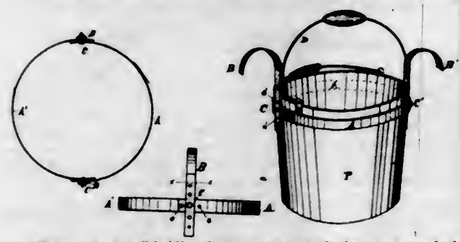


329,888. CULTIVATOR. LUCIUS E. CHAPIN, Jefferson, Hillsdale County, Mich. Filed Aug. 28, 1885. (No model.)



Claim.—The combination, with the cultivator, of the pivoted draft-bar B, swinging handle and tooth-standard A, and rod or arm C, substantially as shown and described.

329,889. PAIL-HOLDING DEVICE FOR MILKING PURPOSES. F. T. COOK, West Springfield, Mass. Filed Mar. 11, 1885. (No model.)



Claim.—1. A pail-holding device consisting of a hoop composed of sections A and A', provided with perforations *o* for circumferential adjustment, and hooks B and B', provided with perforations *o'* for vertical adjustment, the sections and hooks being joined together by means of bolts *c* and *c'*, substantially as described.

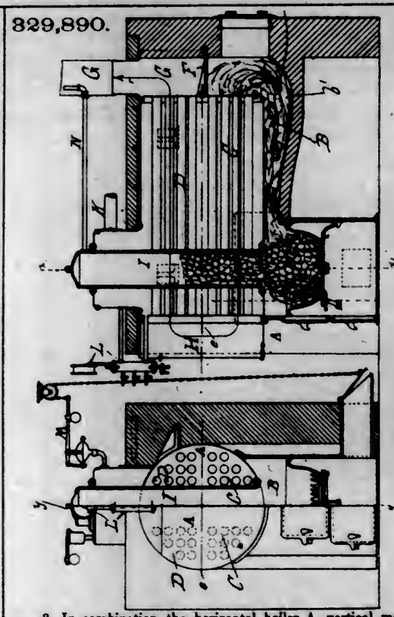
2. A pail-holding device consisting of an adjustable hoop composed of perforated sections A and A', perforated hooks B and B', joined thereto by means of bolts *c* and *c'*, and provided with bail D, hooked to parts B and B', substantially as described.

329,890. MAGAZINE-BOILER. JOHN T. CORBETT, Aurora, Ill. Filed Aug. 3, 1885. (No model.)

Claim.—1. In a horizontal boiler, a fuel-magazine extending vertically directly through that portion of the boiler in which are the boiler-tubes, and near its front, substantially as and for the purposes set forth.

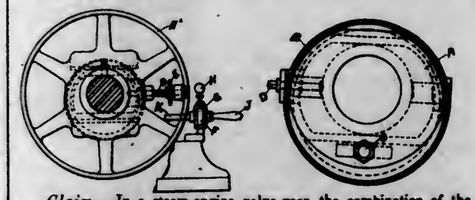
2. In combination with the horizontal boiler having a fuel-magazine extending vertically through the part containing the boiler-tubes, and near its front, the described system of passages, substantially as set forth, whereby the hot air is conveyed, first, beneath the boiler from front to rear, next through the lower boiler-flues from rear to front, and, finally, through the upper boiler-flues from front to rear of the smoke-stack.

329,890.



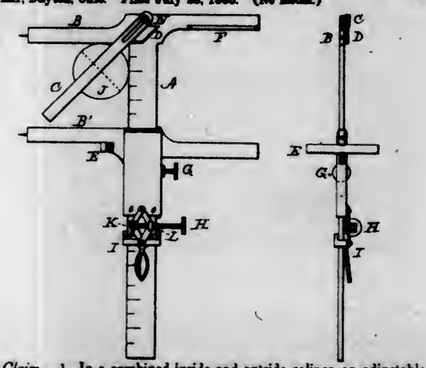
3. In combination, the horizontal boiler A, vertical magazine extending through the boiler-tube part, as set forth, heat-passage B, partition F, lower set, C, of boiler-flues, upper set, D, of boiler-flues, and smoke-stack G, these parts being arranged and operating as set forth.

329,891. VALVE-GEAR. JOHN DEE, Meadville, Pa. Filed May 4, 1885. (No model.)



Claim.—In a steam-engine valve-gear, the combination of the wheel A^2, fastened on the crank-shaft and provided with the dovetailed projections A^3, with the eccentric, the screw D, provided with the star-wheel E, the slide G, pin H, handle J, the pins K, and the arm F, projecting from the engine-frame, substantially as shown and described.

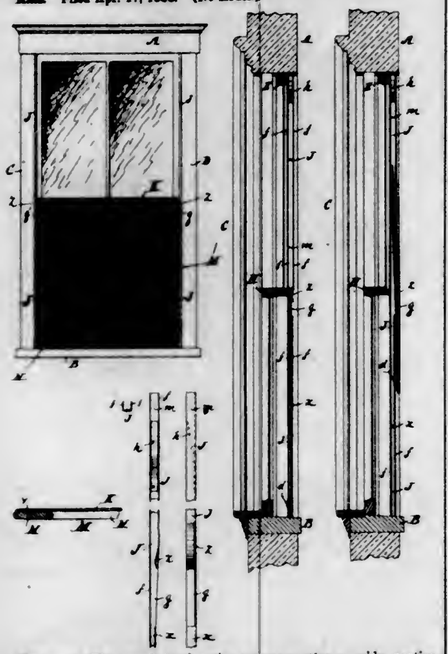
329,892. COMBINED GAGE AND CENTER-SQUARE. JOHN C. HOKE, Dayton, Ohio. Filed July 23, 1885. (No model.)



Claim.—1. In a combined inside and outside caliper, an adjustable device composed of finger-clamp embracing the beam, connecting-plates joining said clamp and movable head, and swivel and nut jointed therewith, and screw to operate the same, substantially as and for the purpose set forth.

2. The bar A, with the heads B and B' mounted thereon, adapting the same to be used as an inside and outside caliper, and the lug D and ledge F on the head B, in combination with the slotted blade C and the thumb-nut N, whereby the said plate may be clamped either against the lug D or the ledge F, substantially as set forth.

329,893. SCREEN. JONATHAN C. ELA and EDGAR W. ELA, Boston, Mass. Filed Apr. 17, 1885. (No model.)

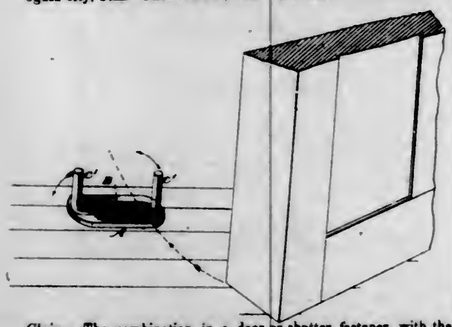


Claim.—1. The run J, having the narrow portion *x*, wide portion *m*, side opening, *g*, and spring *z*, substantially as set forth.

2. The runs J, provided with the narrow portions *x*, wide portions *m*, side openings, *g*, and springs *z*, in combination with a screen adapted to work in said runs and prevent the entrance of flies, insects, &c., through the window, substantially as described.

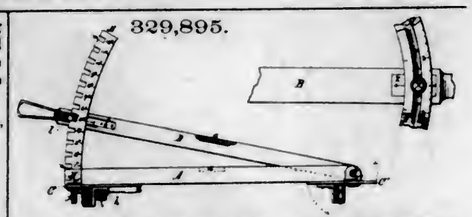
3. In a device for excluding flies, insects, dust, &c., from windows or doors, the runs J, provided with the wide portion *m*, narrow portion *x*, springs *h z*, and opening *g*, and the frame M, and wire-cloth K, in combination with the window-frame A B C D, and sash E H, all constructed, combined, and arranged to operate substantially as and for the purpose specified.

329,894. BLIND, SHUTTER, OR DOOR STOP. JOHN C. EVANS, Denver, Colo., assignor to Thomas C. Chamberlin and Addison J. Chamberlin, Ogden City, Utah. Filed June 29, 1885. (No model.)



Claim.—The combination, in a door or shutter fastener, with the base-plate, of a superposed plate pivoted at its middle to said base-plate and provided with a perpendicular arm, *c'*, at each end, as shown and described.

329,895. RAILWAY-TRACK GAGE, LEVEL, AND GRADIENT. CHARLES M. FERGUSON, Charles City, Iowa. Filed Sept. 8, 1884. (No model.)



Claim.—1. In the engineering apparatus herein described, the combination of the gage-bar, the index-bar, and the gradient bar, respectively furnished with the spirit-levels, the hinging pivots, the scale-standards, and the carrier-plates, the last respectively provided with the spindle-rollers, the curve-gage, and the alternative lugs, all made and adjusted substantially as and for the purposes herein specified.

2. The combination of the gage-bar having spirit-level, scale-standard, and carrier-plates, the last respectively provided with hinging pivot, spindle-rollers, and curve-gage, with the index-bar having counter spirit-level, spring-latch, and set-screw, substantially as and for the purposes herein specified.

3. The combination, with the gage-bar, of the spirit-level, the notched and arc slotted scale-standard, and the carrier-plates respectively provided with the spindle-rollers, curve-gage, and hinging pivot, substantially as and for the purposes herein specified.

4. The combination, with the index-bar, of the counter spirit-level, the spring-latch, the set-screw, the pointer-marked bearing-plate, and the hinging pivot, substantially as and for the purposes herein specified.

5. The combination, with the adjunctive gradient-bar, of the spirit-level, the head-straps, the sight-slot, the standard-slot, the set-screw, the interchangeable hinging pivot, and the scale-standard, the last rigidly fixed upon the carrier-plate having clasping-rollers and travelers, substantially as and for the purposes herein specified.

6. The carrier-plates herein described, respectively furnished with the interchangeable spindle-rollers, and severally attached to the respective gage, index, and gradient bars, substantially as and for the purposes herein specified.

7. The combination of the intermedial curve-gage having its sliding bar provided with the bearing-flange, the hanger, the set-screw, and the regulative indents with the spindle-rollers of the carrier-plates of the gage and index bars, substantially as and for the purposes herein specified.

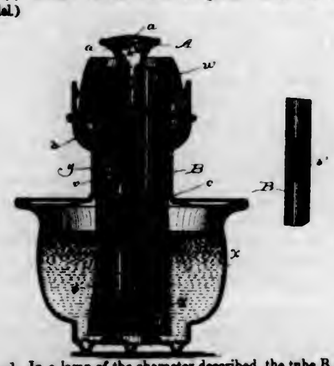
8. The interchangeable spindle-rollers, severally counter-adjusted on and in the respective carrier-plates, the regulative gage, index, and gradient bars, substantially as and for the purposes herein specified.

329,896. PRINTER'S GAGE-CLAMP. JOHN J. FLOYD, Boston, Mass., assignor of one-half to Frank J. Reddican, same place. Filed July 22 1885. (No model.)



Claim.—The above-described spring gage-clamp, consisting of the spring portion A, parallel clamp portions B and D, provided with a screw-bolt, C, and nut E, and having the stop or gage F, and provided with the adjustable finger-piece L, as shown and described.

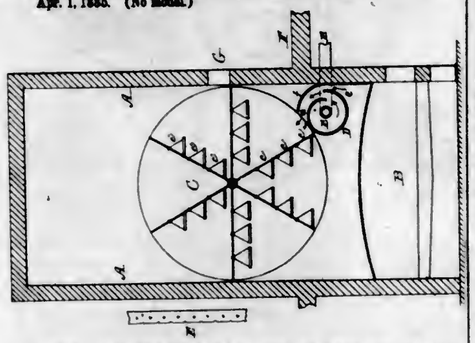
329,897. LAMP. ADOLPH GEHS, Chicago, Ill. Filed June 23, 1884. (No model.)



Claim.—1. In a lamp of the character described, the tube B, placed in the center of the tube forming the inner wall of and supporting the wick, and having openings or holes *b'* in the lower portion thereof, and having openings, holes, or perforations *b* in the upper part thereof, all substantially as described, in combination with the hollow dome or inverted bell-shaped piece A, having top *a'* and holes or perforations *a*, all substantially as described, and for the purpose set forth.

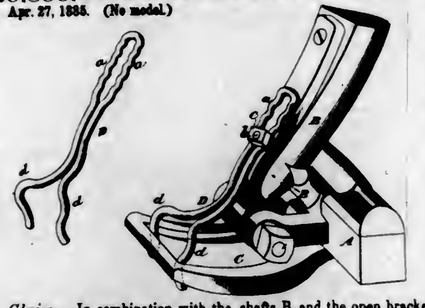
2. In a lamp of the character described, the air-tube B, placed in the center of the tube forming the inner wall of and supporting the wick, and having openings or holes *b'* in the lower portion thereof, in combination with the hollow dome or inverted bell-shaped piece A, having top *a'* and holes or perforations *a a*, all substantially as described, and for the purpose set forth.

329,898. BAKER'S OVEN. DAVID GIROUARD, Spencer, Mass. Filed Apr. 1, 1885. (No model.)



Claim.—The combination of the oven, the steam-pipe, the volute chamber, and the deflector *f*, all constructed and operating substantially as described.

329,899. TONGUE-SUPPORT. JAMES MILO HAAS, Wabash, Ind. Filed Apr. 27, 1885. (No model.)



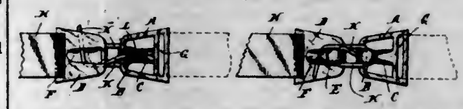
Claim.—In combination with the shafts B and the open bracket C, the adjustable irregular-shaped spring D, operating within the bracket, the open ends *d* of the spring expanding and bearing against the bracket when the shafts are raised, substantially as described

329,900. METHOD OF MAKING ROLLED WOOD-SCREWS. HAYWARD A. HARVEY, Orange, N. J. Filed Jan. 10, 1885. (No model.)



Claim.—The herein-described method of forming the threads upon the body and point of gimlet-pointed screws by means of a die or dies provided with parallel inclined ribs acting to form the convolutions of the thread upon the point and body simultaneously, to wit: first impressing a shallow V-shaped spiral groove upon the body and conical point of the blank, and thereby throwing out from the blank two parallel ridges of metal extending spirally around the body and point between the convolutions of the spiral groove, and then by increasing the pressure of the die upon the blank, deepening the spiral groove and enlarging the diameter of the parallel ridges and folding them together by transverse compression, then by subjecting the blank to the action of a rolling die, the inclined parallel ribs of which are truncated, transforming the V-shaped spiral groove into a flat-bottomed spiral groove, displacing the metal from the bases of the convolutions of the thread and causing it to flow outward from the body of the blank, and thus closely uniting the apices of the parallel ridges, and thereby forming the sharp-edged thread of the finished screw.

329,901. FASTENING FOR SHOES, GLOVES, &c. THEODORE HAWLEY, Fairfield, Conn. Filed Mar. 16, 1885. (No model.)



Claim.—1. In a fastener, the combination of two metallic parts and a cord, one of said parts having a holder for the fixed end of the cord, and a hook or loop at its forward end, the other part having a similar hook or loop, and a spur or spurs under which the free end of the cord may be caught.

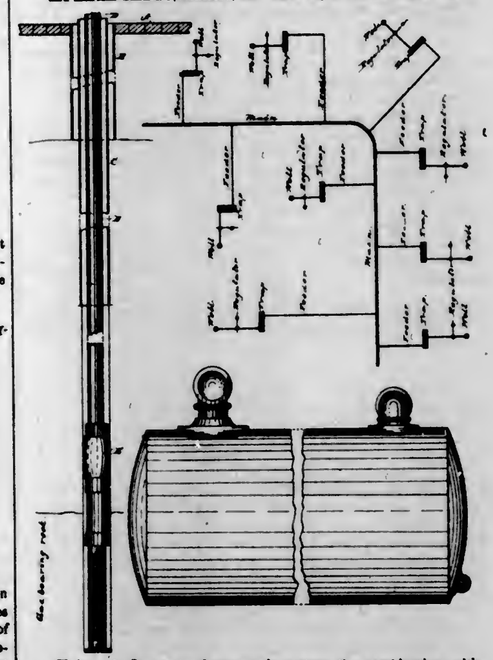
2. In a fastener, part A, adapted for attachment to a shoe, glove, or similar article, and having a hook or loop at its forward end, and a holder for the fixed end of the cord, in combination with an independent hook or loop around which the cord passes.

3. In a fastener, part D, adapted for attachment to a shoe, glove, or similar article, and having a hook or loop around which the cord passes, and a spur or spurs, F, for securing the free end of the cord, in combination with an independent part to which the cord is attached.

4. Cord K, having knot L, and part A, having hook or loop B, and funnel-shaped holder C, in which the fixed end of the cord is detachably held, in combination with part D, having hook or loop E, and spur F, adapted to hold the free end of the cord.

5. In a fastener, cord K, and parts A and D, having prongs for attachment to a shoe, glove, or other article, and hooks or loops for the cord, one of said parts having also a funnel-shaped holder for the fixed end of the cord, the other having a spur or spurs for holding the free end of the cord.

329,902. NATURAL-GAS-SUPPLY SYSTEM. WILLIAM C. HENRY and ALFRED SHEDLEY, Bradford, Pa. Filed Sept. 11, 1885. (No model.)



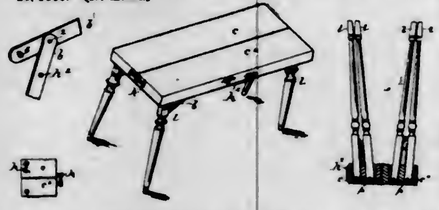
Claim.—1. In a natural-gas-supply system, the combination, with the mains thereof, of a series of gas-wells connected with said mains, each of which is provided with a packer for confining the gas within its native rock, a tube for conveying gas from below said packer to the surface of the earth, and a pressure-regulating valve in the conduit leading from the well to the mains for regulating the discharge of gas from the well in accordance with the consumption from the mains, substantially as described.

2. In a natural-gas-supply system, the combination, with the mains thereof, of a series of gas-wells connected with said mains, each of which is provided with a packer for confining the gas within its native rock, a tube for conveying gas from below said packer to the surface of the earth, a pressure-regulating valve for regulating the discharge of gas from the well in accordance with the consumption from the mains, and a trap for receiving any oil or water which may be discharged from the well, substantially as described.

3. In a natural-gas-supply system, the combination, substantially as herein set forth, of a gas-well, a packer in said well above the gas-producing rock, a tube leading from said packer to the mouth of the well, a pressure-regulating valve for regulating the discharge from said well in accordance with the consumption from the system, a trap for catching any oil or water that may be discharged from the well, a conduit leading from the top of said trap to the mains of the system, and a waste or drain pipe leading from the bottom of said trap.

4. In a natural-gas-supply system, the combination, with the mains or conduits thereof, of a gas-well having therein a gas-eduction tube extending to the gas-producing rock, a packer on said tube located above said gas-producing rock and serving to prevent the escape of gas into the well, and valve on the eduction-tube which regulates the discharge therefrom in accordance with the pressure in the conduits of the system.

329,903. FOLDING CAMP-STOOL. ISRAEL HOGELAND, Indianapolis, Ind., assignor of one-half to George P. Anderson, same place. Filed Feb. 20, 1885. (No model.)



Claim.—1. The case composed of the two halves *c c'*, hinged together, each half provided with a partition-strip, *p*, the legs *l*, pivoted at opposite ends and on alternate sides of said strips, all combined substantially as described.

2. The case composed of the two halves *c c'*, hinged together, each part having the partition-strip *p*, the legs *l*, hinged at opposite ends and on alternate sides of said strips, the brace *b*, connecting such legs and strips, all combined substantially as described.

3. A camp-stool whose seat is composed of two parts adapted to fold together and form a box, and having legs pivoted to partition-strips, which divide each half of the case, the sides of these strips being beveled so that the legs pivoted thereto will spread in opposite directions when opened, in combination with suitable braces for locking the same in place when opened, substantially as described.

4. A folding camp-stool composed of two parts hinged together, each part divided by a partition-strip having beveled sides, in combination with legs pivoted to the beveled sides of such strips, substantially as described.

329,904. CAM. HENRY P. HUMPHREY, Lowell, Mass., assignor to the Lowell Oiler Company, Nashua, N. H. Filed Apr. 8, 1885. (No model.)



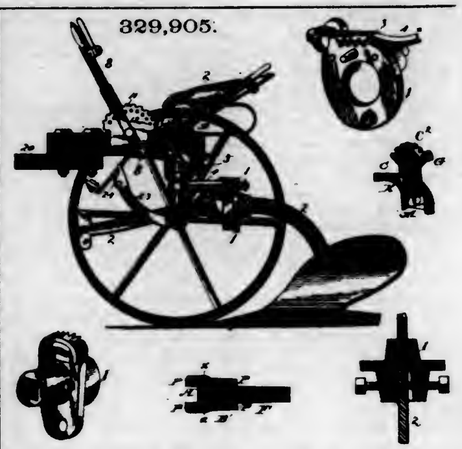
Claim.—A cam formed of elastic material and having a curved inner surface the curvature of which is of a less radius than that of the outer surface of the shaft to which said cam is to be secured, and which inner surface of said cam is longer than half the circumference of said shaft, whereby said cam may be sprung upon said shaft and retained thereon by its own elasticity, substantially as specified.

329,905. SULKY-PLOW. FRANKLIN B. HUNT, Richmond, Ind., assignor to the Richmond Sulky Plow Company, same place. Filed Sept. 5, 1884. (No model.)

Claim.—1. The axle-support B, having recess N and flanges *e e*, in combination with the arch A, and the toggle-lever, and securing-catch, substantially as described.

2. The combination, with the arch, of the bail 4, the collar swiveled thereon, the plow-beam passing through said collar, the hand-lever attached to a rigid arm on the bail, and the foot-lever pivoted on the axle and having one end under the bail, so that the foot-lever may aid the hand-lever in raising said bail and plow, substantially as shown.

329,905.

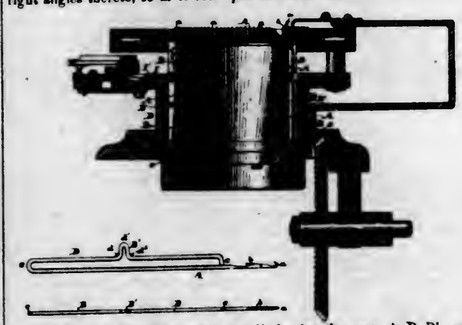


3. In a sulky-plow, the combination, with the arch A, formed of channel-iron, and provided with axle-supports B B', of the quadrant C, having a lug, G, and a flanged support, K, said quadrant, lug, and support being cast integral, substantially as shown and described.

4. In a sulky-plow, the combination, with the channeled arch A, of the furrow-wheel-axle support B, provided with recess N and flanges *e e*, and the land-wheel-axle support B', having bearings on the vertical part of the arch in the direction of the lines P P and *x x*, substantially as described.

329,906. KNITTING-MACHINE NEEDLE. WARREN D. HUSE, Laconia, N. H., assignor to Orison Twombly, Lake Village, N. H., and Thomas S. Nowell, Boston, Mass. Filed July 21, 1884. (No model.)

Brief.—The main body of the needle is composed of two bars parallel with each other for the greater part of their length, and forming a loop, with the lug to be operated upon by the cam projecting outward from the outer one of said bars and the end of said outer bar bent at right angles thereto, so as to rest upon the other bar.



Claim.—A knitting-machine needle having the parts A, B, B', and *c* arranged relative to each other substantially as for the purposes described.

329,907. ROLLER-SKATE. FREDERICK W. JACKSON, Richmond, Ind., assignor to Stephen C. Meadenhall, same place. Filed Feb. 11, 1885. (No model.)

Claim.—1. In combination with a bearing-frame having oscillating connection with the foot-plate, a cushion above said frame, a tension-key above said cushion, and an inclined ratchet or series of notches for engaging said key, substantially as and for the purpose set forth.

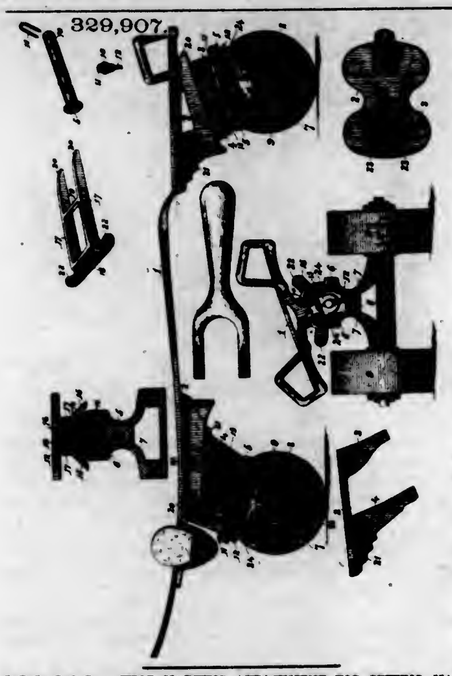
2. In combination with a bearing-frame supported on the floor wheels or rollers and a cushion above the same, a plate arranged over said cushion and having a fin on its upper side, a yoke having a ratchet, and a sliding key engaging said ratchet and having longitudinal bars, between which said fin is held, substantially as and for the purpose set forth.

3. The tension-key having longitudinal bars 17, cross-bars 18 19, and lugs 22, substantially as and for the purpose set forth.

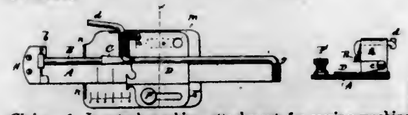
4. In combination with the bearing-frame, cushion, and key, as described, the yoke fixed to the foot-plate and having suitable roughened or milled surface, for the purpose set forth.

5. The combination, with a foot-plate, of a yoke having standards, notched side, and milled surface, substantially as set forth.

329,907.



329,908. TUCK-MARKING ATTACHMENT FOR SEWING-MACHINES. ALBERT W. JOHNSON, New Haven, Conn. Filed Nov. 28, 1884. (No model.)



Claim.—1. In a tuck-marking attachment for sewing-machines, a vertical creasing-blade, H, with a notch, *h*, in its creasing-edge, combined with a creaser, *b*, arranged to be operated by connection with the needle-bar, having a groove, *f*, in its under side adapted to receive and embrace both sides of said creasing-blade and have a bearing upon its creasing-edge both in front and in the rear of said notch, provided with a rib, *e*, adapted to enter and rest in said notch when the creaser and creasing-blade come together, substantially as and for the purpose set forth.

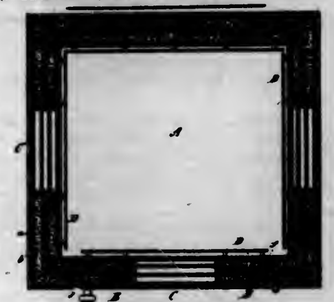
2. The combination of the vertical creasing-blade H, with a notch, *h*, in its creasing-edge, the creaser *b*, grooved to receive and embrace both sides of said creasing-blade, the rib *e* of said creaser adapted to enter and rest in said notch *h* while the creaser bears upon the creasing-edge of said creasing-blade both in front and in the rear of said notch, the vertically-vibrating elastic creaser-bar B, carrying said creaser, the spring *c*, and the auxiliary lever C, pivoted to the fulcrum-arm G, with a heel extending back past the center of its pivot, provided with an arm, *d*, for engagement with the needle-bar of a sewing-machine, the whole constructed and arranged substantially as and for the purpose set forth.

3. In a tuck-marking attachment for sewing-machines, the combination, with the elastic creaser-bar B, hinged at one end to the rear end of the bar A, carrying a creaser, *b*, at its free end, arranged to vibrate in a vertical plane at right angles to the line of stitching, of an auxiliary lever, C, pivoted to an arm, G, of the base D, constructed with a heel extending back past the center of its pivot, arranged to vibrate in the same vertical plane with and above said creaser-bar B, its free end arranged to bear upon said creaser-bar at a point midway between its hinged end and said creaser, and provided with an arm, *d*, for engagement with the needle-bar, substantially as and for the purpose set forth.

4. The combination of the longitudinally-adjustable bar A, carrying at one end a vertical creasing-blade, H, provided with a notch, *h*, and at its other end an elastic creaser-bar, B, hinged thereto, said creaser-bar carrying at its free end a grooved creaser, *b*, provided with a rib, *e*, for engagement with said notch *h*, and the auxiliary lever C, pivoted to the base D, arranged to bear upon said creaser-bar at a point midway between its hinged end and said lever, provided with an arm, *d*, for engagement with the needle-bar, adapted to be thrown out of engagement with the needle-bar by being turned on its pivot, substantially as described.

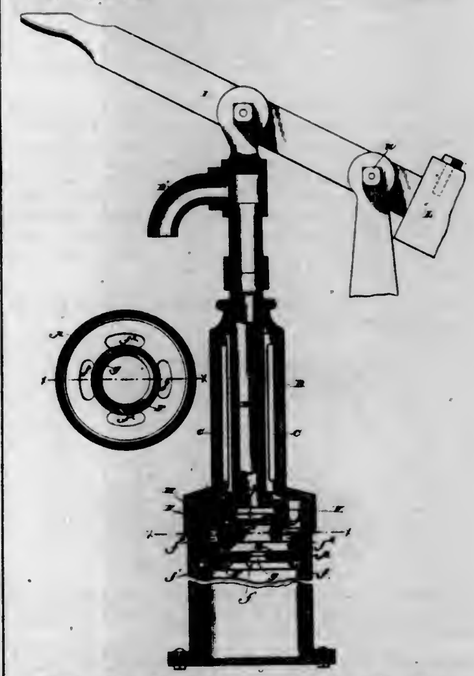
5. The combination of the adjustable bar A, carrying a creasing-blade, H, provided with a notch, *h*, the vibrating bar B, carrying a creaser, *b*, provided with a groove, *f*, and bar *e*, extending across said groove, the vibrating lever C *d*, hung to the base D, spring *c*, guide-plate E, provided with tuck-guides *n n*, and thumb-screw F, when constructed and arranged substantially as described and for the purpose set forth.

329,909. TELEPHONE-CABINET. FRANK G. JOHNSON, New York, N. Y. Filed Feb. 14, 1885. (No model.)



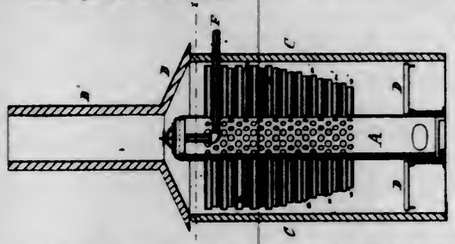
Claim.—In connection with the telephone transmitter and receiver, and for the uses of the telephone, a cabinet consisting of the combination of two or more walls, *a a a*, one surrounding another, having a space between them, the windows C' C C, each consisting of two or more plates of glass, and the sounding-boards D D D, substantially in the manner and for the purposes described.

329,910. PUMP. WILLIAM JOHNSTON, Essex, Iowa. Filed Sept. 8, 1885. (No model.)



Claim.—The combination of the cylinder having the reduced extension B at its upper end, and inlet-openings C in said extension, the hollow tube D, the cap E, secured to the lower end of said tube, the hollow open piston F, having the reduced upper end coupled to the cap E, the ports f^3, communicating with the cylinder, and the ports f^4, communicating with the lower end of the tube, the valve G in the lower part of the piston, having the central opening, *g*, and adapted to rise when the piston is lowered and close the ports f^3, and the valve H in the cap E, adapted to rise when the piston is lowered and open the ports f^4, substantially as described.

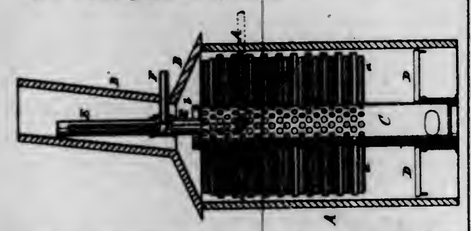
329,911. STEAM-BOILER. EDWARD S. T. KENNEDY, New York, N. Y. Filed Aug. 26, 1885. (No model.)



Claim.—1. A boiler constructed, substantially as herein shown and described, of an upright central cylinder provided with series or groups of tubes radiating therefrom in successive planes, one above another, each of the several lower series or groups of which is longer than the group next below, so that the several lower groups could be inclosed in outlines representing the inverted frustum of a cone, as set forth.

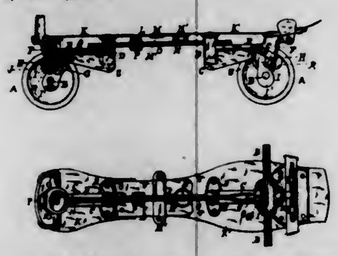
2. The combination, with the vertical boiler-cylinder A, adapted to be supported on the bottom of the ash-pit, of the upper series or groups of radiating tubes, *a*, of equal length, and lower tube groups or series decreasing in diameter downward, as set forth.

329,912. MARINE BOILER. EDWARD S. T. KENNEDY, New York, N. Y. Filed Aug. 26, 1885. (No model.)



Claim.—The combination, with inclosing-shell A, hood B, and smoke-pipe B', of a boiler adapted for marine purposes, constructed and arranged substantially as herein shown and described, consisting of an upright central cylinder, C, provided with series of radial tubes *a*, having in the top of its steam-space an opening over which is fixed a long upright cylinder, E, closed at the top and extending up into the smoke-pipe B' to near the top thereof, and a steam-drying steam-take-off elbow-pipe, F, fixed within the cylinder E, with its vertical leg reaching nearly to the top of said cylinder and its horizontal leg projecting outward for delivery of steam, as and for the purposes set forth.

329,913. ROLLER-SKATE. ROBERT KINDSLADE, Batavia, Ill. Filed Oct. 11, 1884. (Model.)



Claim.—1. The disks H I, recessed out at *a b*, in combination with the annular pivot-plates *c*, and the screws G, for forming joint-connections for deflecting the wheels A, as specified.

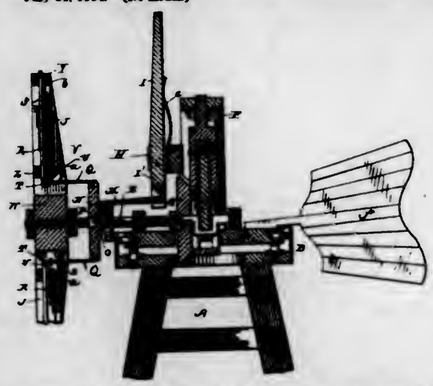
2. The inclined brackets F, inclined disks H I, with the axle-trees B, placed in the truck-frames I' I'' vertically under the center of motion of the disks I I, as specified.

3. In combination with inclined disks H I and lug Q, and the axle-trees B B, hung as specified, the double springs C C, to attain constant tension on the disks I I, as specified.

4. The brackets D, connecting plates E, and brackets F, formed in single castings, in combination with springs C C and disks H I, as specified.

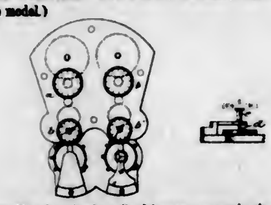
5. The adjustable boot-plate K K', combined with the mortised plate L, countersunk plate M', ears M, screw-bolt N', and nut N, as specified and shown.

329,914. WIND-ENGINE. SHERMAN E. LEHFUH, Olathe, Kans. Filed July 31, 1884. (No model.)



Claim.—The combination, with the derrick and platform, of the turn-table, the vertical frame F, mounted on the latter, the wheel-shaft E, carrying the wheel, which has a series of pivoted sections, S, working between the spokes and rim thereof, braces T at the lower or inner end of the wheel-sections, crank-rods R, passing through the latter and acting as a pivot for the same, the vane I, mounted in bearings H of the frame, a flat spring, *e*, fitted in the bearings and pressing against the vane, and intermediate devices for connecting the vane with the cranked rods R, as set forth.

329,915. METHOD OF TESTING AND GRADING BALANCE-WHEELS OF WATCHES. JOHN LOGAN, Waltham, Mass. Filed June 6, 1883. (No model.)

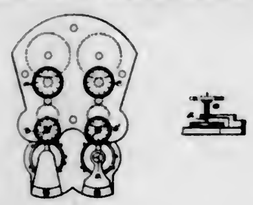


Claim.—1. The herein-described improvement in the art or method of adjusting springs to balances in time-keepers, which consists in testing a series of springs in connection with a standard balance and grading them in accordance with their effect thereon, and in testing the balances to ascertain their vibrational rate when acted upon by forces of standard strength, and grading them in accordance with the said vibrational rate, and in selecting for each balance a spring of proper strength to give the said balance the standard rate of vibration, substantially as described.

2. The herein-described method of testing and grading balances for time-keepers, which consists in vibrating each balance by forces that will produce in a standard balance the standard or normal rate of vibration, and comparing the rate of vibration of the balance being tested with that of a balance vibrating at standard rate and assorting and grading the said tested balances in accordance with their observed rate, substantially as described.

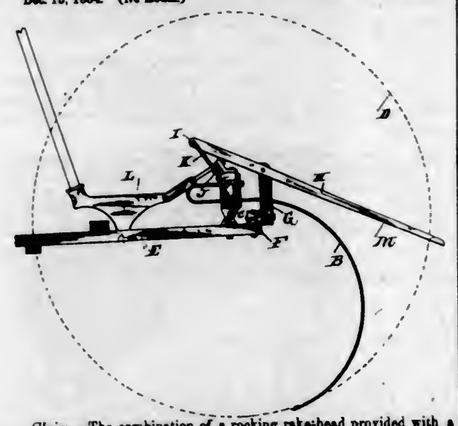
3. The herein-described improvement in the art or method of adjusting springs to balances in time-keepers, which consists in testing a series of springs and grading them in accordance with their elastic force or strength, and in testing the balances to ascertain their vibrational weight when acted upon by forces of standard strength, and grading them in accordance with the said vibrational rate, and in selecting for each balance a spring of proper strength to give the said balance the standard rate of vibration, substantially as described.

329,916. APPARATUS FOR TESTING AND GRADING WATCH-BALANCES. JOHN LOGAN, Waltham, Mass. Filed Sept. 26, 1885. (No model.)



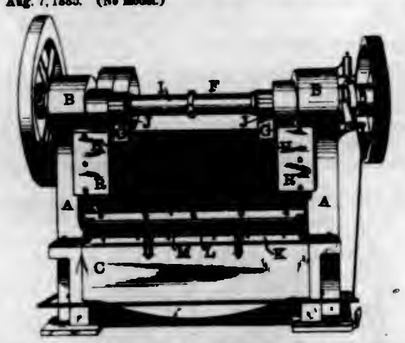
Claim.—In an apparatus for testing balances, a train having an escapement, including a vibrating balance, and its staff provided with a balance-holding device for the balances to be tested, substantially as and for the purpose described.

329,917. HORSE HAY-RAKE. JOHN M. LOWE, Hamilton, Ohio. Filed Dec. 15, 1884. (No model.)



Claim.—The combination of a rocking rake-head provided with a rank of teeth, pivoted cleaning-levers disposed over the teeth and adapted to oscillate so as to enter between the teeth, and mechanism, substantially as set forth, connecting the rake-head with the cleaning-levers and adapted to oscillate them as the rake-head is rocked for dumping the load, substantially as and for the purpose set forth.

329,918. PUNCHING-PRESS. JOHN M. LOWE, Hamilton, Ohio. Filed Aug. 7, 1885. (No model.)



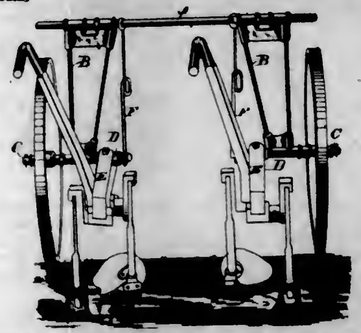
Claim.—1. In a punching or shearing press, the combination, substantially as set forth, of supporting-columns provided with journal-bearings at their upper ends in a plane forward of the faces of the columns, a girder connecting the columns at their bases and disposed perpendicularly below the axis of said journal-bearings, a girder reaching from column to column and disposed with its front face to the rear of the plane of said base-girder and journal-bearings, a ram having its back seating against the face of said last-mentioned girder and guided by end shoes secured to the columns, a cam-shaft journaled in the top of the columns, and means, substantially as set forth, for causing the rotating cam-shaft to reciprocate the ram.

2. In a punching or shearing press, the combination, substantially as set forth, of a sliding ram, a cam-shaft disposed above the ram, a pitman reaching from the cam-shaft downward, and provided with a rounded end and with a bearing for a journal-pin, and a foot-block, H, secured in a pocket in the face of the ram, and provided with a pocket and journal-pin engaged by the foot of the pitman.

3. In a punching or shearing press, the combination, substantially as set forth, of a reciprocating ram, a shaft provided with two eccentrics, a pitman reaching from each of said eccentrics to the ram, a rotatable tube reaching from eccentric to eccentric and armed at each end with an eccentric bushing for the pitman, and a detent at each pitman for preventing the rotation of the bushing in the pitman.

4. In a punching or shearing press, the combination, substantially as set forth, of a reciprocating ram having a rabbet at its foot, a divided clamp bolted to such rabbet, and a punch-holding bar held in rabbets in the clamp.

329,919. CULTIVATOR. JOHN M. W. LOWE, Hamilton, Ohio, assignor to the Long & Allstatter Company, same place. Filed July 10, 1885. (No model.)

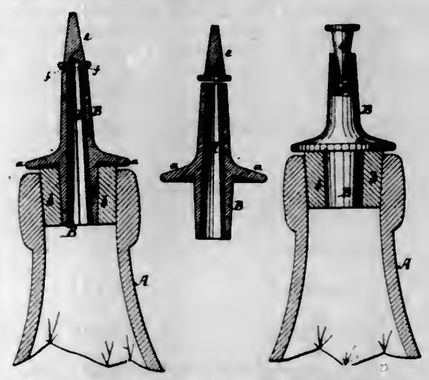


Claim.—1. In a tongueless straddle-row cultivator, the combination of a pair of stub-axles, wheels thereon, beams with their forward ends coupled to the axles, standards having their lower ends journaled upon the stub-axles, and having their upper ends coupled to form an arch, and vertical spring-rods having their lower ends secured to the stub-axles and their upper ends secured to the top of the arch, substantially as and for the purpose set forth.

2. In a tongueless straddle-row cultivator, the combination of axles C, the wheels loose thereon, beams D, coupled thereto, the arch-bar A, the standards B, articulated to the axles and to the arch-bar, and the spring-rods F, connected to the axles and to the arch-bar, substantially as and for the purpose set forth.

3. In a cultivator, the combination of the stub-axles C, the arch connecting them and adapted to oscillate upon them, the wheels loose upon the stub-axles, the coupling-blocks D, secured to the stub-axles and having forward projections, the clevises G, pivoted at their rear ends to the coupling-blocks, the set-screws H in the forward projection of the coupling-blocks, and the beams E, united to the coupling-blocks and stub-axles by vertical coupling-bolt arranged to permit the beams to oscillate sidewise upon such bolt as an axis and to oscillate vertically by the rotation of the stub-axles in the arch-bearings and wheels, substantially as and for the purpose set forth.

329,920. BOTTLE-STOPPER. ALBERT LUDEMANN, New York, N. Y. Filed Sept 18, 1885. (No model.)



Claim.—1. The hollow stopper B, having internal passage, *d*, and upper prolongation, *e*, which closes said passage, and nick *f*, below the upper end of said passage *d*, the prolongation being made in one piece with the body of the stopper, but adapted to be severed along the line of the nick *f*, as specified.

2. The combination of the tubular stopper B, having internal passage, *d*, with the tapering detachable prolongation *e*, which, when inverted, serves as a stopple to the passage *d*, substantially as described.

329,921. WHEEL-CULTIVATOR. EDWARD P. LYNCH, Davenport, Iowa. Filed Aug. 24, 1885. (No model.)

Claim.—1. In a cultivator of the class herein specified, the shovel-carrying block K, in combination with the beam A and rod P, jointed thereto, the axle, the single sustaining-plate jointed to the rod and beam, and the clamping devices, substantially as shown, connecting said block to the axle, and having lateral and vertical adjustment thereon.

329,921.



2. In combination with the swivel-block K, the beam A, and the rod P, the plate D, having both the beam and the rod jointed thereto, the axle, and intermediate devices, substantially as shown, connecting the plate with the axle and permitting its vertical adjustment in relation thereto, whereby the beam and the rod may be raised and lowered simultaneously and without changing their relative positions.

3. The axle, the rotary block or sleeve G thereon, the plate D, secured to and adjustable vertically on the sleeve, the beam A, and rod P, both jointed to said plate, and the block K, jointed to both the beam and the rod and provided with shovel-standards.

4. In combination with the sleeve or bearing G and intermediate fastening-bolts, the vertically-slotted plate D, provided with the side arm, *a*, substantially as and for the purpose described.

5. In combination with the swinging beam, the plate I, having the opening therethrough, the block K, extended through said opening and connected by a vertical pivot to the plate, and the swinging rod jointed to the block.

6. In combination with the block having the shovel-standards attached, the encircling and sustaining plate I, adapted, substantially as described and shown, to receive the beam and the handle.

7. The plate I, provided with the central opening, and the conical step or bearing, in combination with the block K, having conical bearings, the bearing-ring M, and the bolt L.

8. The standard-supporting block K, provided with the detachable plate or clip R, in the form and manner described.

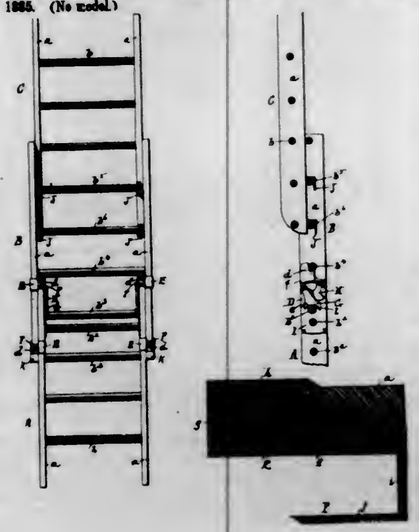
9. The laterally-swinging beam and the block K, to carry the shovel-standards, jointed to the beam, and means, substantially as described, for locking the block rigidly to the beam at will.

10. In combination with the swinging beam, the standard-supporting block K, swiveled to the beam, and the rod P, adjustable, substantially as described, to prevent or to compel the swiveling action of the block with reference to the beam, as circumstances may demand.

11. In combination with the supporting-standard, the pivot, and the hollow shovel-shank provided with the series of holes to receive the pivot, and another series of holes or slots to receive the adjusting-bolt.

12. The hollow shank, in combination with the shovel bearing at one point thereon, the bolt X, acting to draw the shovel toward the standard, the nut Y, seated in the standard, and the bolt Z, passing through said standard and acting to force the shovel from the standard.

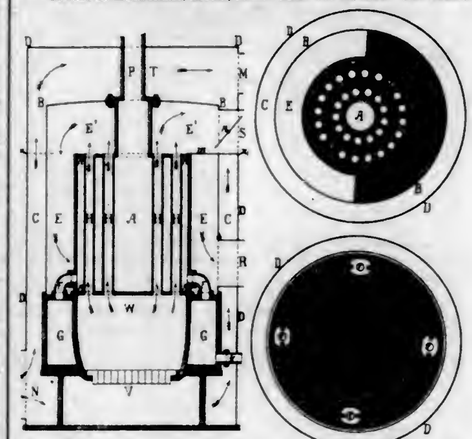
329,922. LADDER. William M. Lyon, Paola, Kans. Filed Aug. 10, 1885. (No model.)



Claim.—1. In a convertible ladder, a section, A, provided with open slots D D in both rails, catches *d d* on its ends, hooks F F below the slots on the exterior of the rails, and stops or projections *k k* below said hooks, in combination with a separate section, B, one round, b^3, of which engages in said open slots, said section being also provided with catches *d d* on its ends, (which engage between the hooks F F and projections *k k* on section A,) and with inwardly-projecting hooks F F, between which and one of the rounds, b^4, the catches *d d* on section A engage, substantially as set forth.

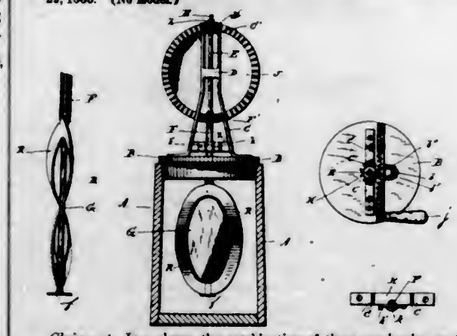
2. A section provided with slots in both rails, and a section one of whose rounds rests in said slots, in combination with brakes pivoted to the first-named section, which engage the round on the second-named section, and pivoted cam-shaped dogs which co-operate with said brakes, as set forth.

329,923. COMBINED WATER AND AIR HEATING APPARATUS. Thomas A. MacDonald, Boston, Mass. Filed Oct. 20, 1884. (No model.)



Claim.—In a combined hot-water and hot-air heating apparatus, the combination of the tubular boiler A, water-chamber G, and casing B, the lower edges of the boiler resting upon the upper inner edge of the water-chamber, the two being connected by the curved fittings F, and the casing B resting upon the outer edge of the water-chamber G and inclosing the space E E', substantially as shown and described.

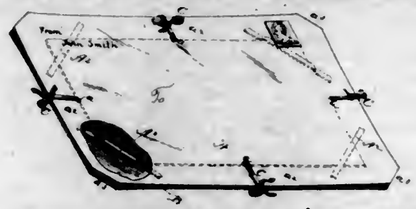
329,924. CHURN. Frank P. Malott, Brownsville, Mo. Filed June 29, 1885. (No model.)



Claim.—1. In a churn, the combination of the cover having an A-shaped frame mounted thereon and provided with an upper, a lower, and a middle cross-piece, the latter having a stud, and the drive-wheel fitted upon said stud, of a shaft having a pinion at one end and a button at the other, and an elliptical dasher, and mounted in the upper and middle cross-pieces, the hollow shaft mounted in the lower cross-piece and in the cover, and having a pinion, and a spiral elliptical band-shaped dasher embracing the other dasher, and having a bearing on the other shaft, substantially as described.

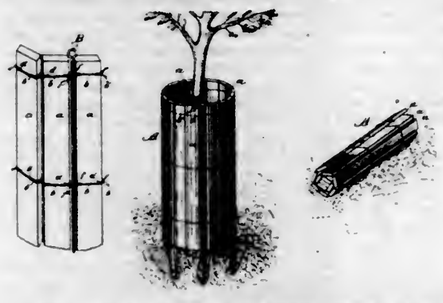
2. In a churn, the combination of the herein-described operating mechanism with an inner dasher consisting of a metal plate of elliptical form attached to an inner vertical shaft, and an outer dasher consisting of an elliptical band-shaped dasher bent spirally in opposite directions and of the contour of said inner dasher, all constructed and operated in the manner herein described.

329,925. ENVELOPE OR PROTECTOR FOR CARDS. John Markinsky, Winnipeg, Manitoba, Canada. Filed Sept. 2, 1884. (No model.)



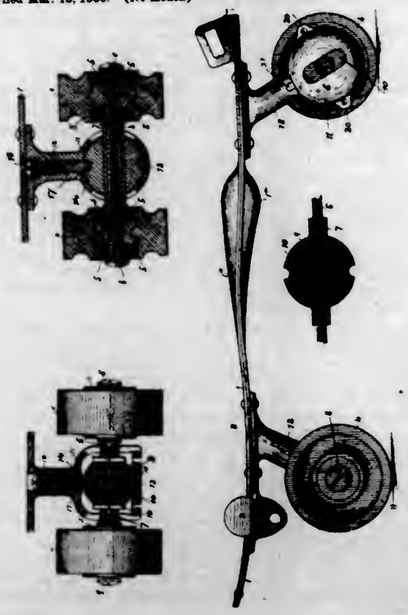
Claim.—As an improvement in envelopes or protectors for cards, photographs, books, and the like, the combination, with the board provided upon its inner face with strips secured at their ends and having perforations near its edge, of the board provided with corresponding perforations, and cord or tape passed through said registering perforations, substantially as and for the purpose set forth.

329,926. TREE-PROTECTOR. Frank McMaster, Cherryvale, Kans. Filed June 11, 1885. (No model.)



Claim.—The herein-described tree-protector, comprising a series of slats having grooves *d* in their side edges, two or more of said slats having extensions *e*, a series of wires crossing each other once at the meeting edges of the slats and extending over the outer and inner faces thereof alternately, eyes formed on the meeting ends of the wires, and a bar for connecting the eyes, for the purpose set forth.

329,927. ROLLER-SKATE. Stephen C. Mendenhall, Richmond, Ind. Filed Mar. 13, 1885. (No model.)



Claim.—1. In combination with a roller-skate axle and housing wherein said axle is supported and guided, a solid globular cushion surrounding said axle and abutments supported in the housing and pressing equatorially on said cushion at each side of the axle.

2. In combination with an integral ball-shaped cushion surrounding the axle of a roller-skate, a housing within which said cushion is contained and equatorial abutments on said cushion, substantially as set forth.

3. In combination with a floor-wheel axle, a screw-threaded sleeve thereon and a rubber cushion secured by said screw-threads on said sleeve, substantially as set forth.

4. In combination with a ball-shaped cushion of rubber surrounding the floor-wheel axle and abutment arranged equatorially over said cushion, the housing, and a set-screw within the same for adjusting said abutment, substantially as set forth.

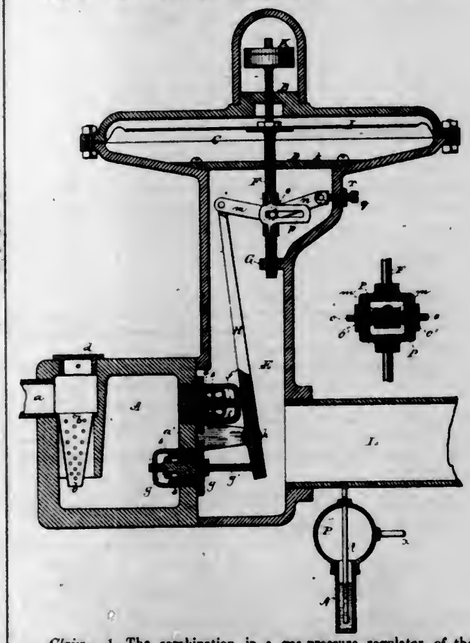
5. In combination with a floor-wheel axle, a cushion surrounding the same and nuts also surrounding said axle and adjustable for varying the tension of the cushion from the sides, substantially as set forth.

6. An axle for roller-skates, hollow throughout, formed in one piece, screw-threaded interiorly at its ends, in combination with a threaded sleeve on said axle, floor-wheels, and screws at each end of the axle for retaining the floor wheels or rollers thereon.

7. A foot-plate having an upwardly and downwardly bulged shank in two parts, 1^a 1^a, secured together.

8. A foot-plate made of two plates riveted together at front, both turned up at rear in the form of lugs, slots in said lugs for the attachment of the foot-straps, and rivets through the lugs for fastening the parts of the foot-plate together at rear, substantially as set forth.

329,928. GAS-PRESSURE REGULATOR. Edwin C. Merrill, Pittsburg, Pa. Filed June 23, 1885. (No model.)



Claim.—1. The combination, in a gas-pressure regulator, of the supply and delivery pipes, the two valves on separate stems, and the lever, the stems of said valves being connected with said lever, substantially as described.

2. The combination, in a gas-regulator, of the diaphragm, the two balanced valves having separate stems, and the connections comprising one or more levers for communicating the movements of said diaphragm to said valves, substantially as described.

3. The combination, with the high-pressure chamber and low-pressure chamber, separated by a partition, of the two balanced valves on opposite sides of said partition, and an operating-lever to which the stems of said valves are connected on opposite sides of its fulcrum, substantially as described.

4. The combination, with the high-pressure and low-pressure chambers, separated by a partition, of the two balanced valves on opposite sides of said partition, and an operating-lever, the stems of said valves being connected to said lever on opposite sides of and at equal distances from its fulcrum, substantially as described.

5. The combination, with the supply and delivery pipes and the diaphragm, of two balanced valves, a lever to which the stems of said valves are connected on opposite sides of and at equal distances from its fulcrum, and the toggle-lever to which said first-named lever is connected, so as to communicate the movements of the diaphragm to the valves, substantially as described.

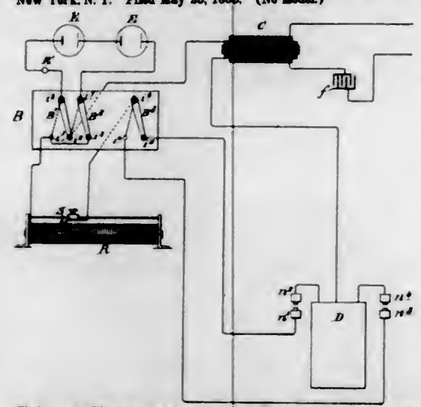
6. The combination of the balanced valves, the lever connected therewith, the toggle-lever, whereof one arm is connected with the aforesaid lever, the rod, and the diaphragm secured thereto, said diaphragm being separated from the valve-chamber by a partition having one or more small openings, substantially as described.

7. The combination, with the balanced valves, of the lever connected to the stems of said valves, one of said valve-stems being adjustable, substantially as described.

8. The combination of the valves, the diaphragm controlling the latter, connections including a toggle-lever between the valves and diaphragm, and means for adjusting said toggle-lever, substantially as described.

9. In combination with the gas-regulating valves and the supply and delivery pipes, of the mercury-vessel and the gas-tube entering said vessel, the latter being provided with an enlargement, substantially as and for the purpose described.

329,929. ELECTRO-MEDICAL APPARATUS. Amandus Metzger, New York, N. Y. Filed May 25, 1885. (No model.)



Claim.—1. The combination, with an electro-medical apparatus, of a primary and secondary circuit, the latter having a condenser interposed therein, substantially as shown and described.

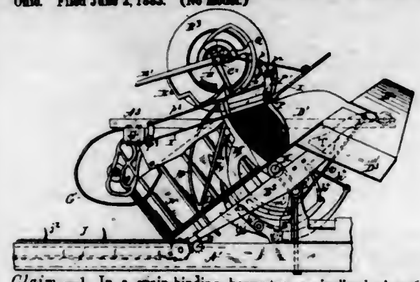
2. The combination consisting of the case 2, batteries E, metallic pins i^7 i^8, switch-board B, induction-coil C, metallic pin i^2, clock mechanism D, resistance-coil R, metallic pins i' i^3, contact-spring S, metallic pin i^6, contact-points n^3 n^4, metallic pin i^5, angular levers l' and l^2, rollers q' q^2, springs g', cam-wheels W' W^2, switch-levers B' B^2 B^3, and condenser f, the whole forming a complete device, substantially as shown and described.

329,930. FENCE. Ernest R. Ehemann, Sycamore, Ohio. Filed July 13, 1885. (No model.)



Claim.—The fence herein described, consisting of the following parts, viz: the panel composed of the longitudinal rails B G, rider C, end cleats, D, secured to the rails by means of wires $f f$, cross-braces A, and diagonal braces F, the latter secured at their lower ends to the lower rails, B, by the bands e, and their upper ends resting between the crotch of the cross-braces A, the fastening-wire d extending over the ends of the riders C and under the diagonal braces, thence around the cross-braces on one side of the fence, thence up and over the braces F, and finally around the cross-braces on the opposite side of the fence, where the two ends of the wire are secured, whereby said rails, cross-braces A, and diagonal braces F are firmly secured together, all constructed as shown and specified.

329,931. GRAIN-BINDING HARVESTER. Lewis Miller, Akron, Ohio. Filed June 2, 1883. (No model.)



Claim.—1. In a grain-binding harvester, an inclined elevating binder-table located on the grain side of the driving-wheel, in combination with packers moving in an elliptical path and operating from beneath said table to move the grain upward thereon, and a platform rake or carrier adapted to deliver the grain directly to said packers without the aid of interposed elevating devices, substantially as described.

2. The combination, with the inclined elevating binder-table, of elliptically-moving packers operating from beneath said table, a platform rake or carrier adapted to deliver the grain directly to said packers, and an oscillating needle also operating from beneath the table and adapted to assist the packers in moving the grain up the incline of the table, and provided with a guard extending to a point below the line of movement of the points of the packers, for causing a separation of the grain near the foot of the incline, substantially as described.

3. In a harvesting-machine, an inclined elevating and binding table arranged on the grain side of the drive-wheel, and a platform-carrier for delivering the grain to said table, in combination with elliptically-moving packers and an oscillating binder-arm operating from beneath to gather, move the grain upward, and pack the same on said table, and a yielding float suspended above said table and overhanging the platform-carrier, substantially as and for the purpose described.

4. The combination of the inclined elevating-table arranged on the grain side of the driving-wheel, the packers operating from beneath said table, the platform rake or carrier for delivering the grain to said packers, and a yielding float suspended above said binder-table and overhanging the platform-carrier, substantially as and for the purpose described.

5. The combination of the inclined elevating binder-table arranged on the grain side of the driving-wheel, the packers operating from beneath said table, the platform rake or carrier, the float, the oscillating needle operating from beneath the table, and provided with a guard extending nearly to the foot of the inclined table, and the continuously-moving butter extending but slightly below the needle-guard, whereby the operation of the butter upon the rising grain is suspended when the needle is raised, substantially as described.

6. The combination of the inclined elevating binder-table, an oscillating needle, and elliptically-moving packers operating from beneath said table, the knotter-actuating-shaft arranged above the table, a compressor suspended from the knotter-support, and means, substantially as described, by which said compressor is operated immediately from the knotter end of the knotter-actuating shaft.

7. The combination of the inclined elevating binder-table, the oscillating needle operating from beneath said table, the compressor pendent from the knotter-support and formed of a rigid and a yielding arm pivoted together, mechanism on the knotter end of the knotter-actuating shaft for positively operating upon said rigid arm, the tripping devices of the knotter-driving mechanism, and connections between said tripping devices and the yielding arm of the compressor, whereby said tripping devices are operated by the pressure of the grain on the pendent compressor, substantially as described.

8. The combination, with the inclined elevating binder-table, of the knotter-actuating shaft arranged above said table, the cam on the knotter-actuating shaft, the compressor suspended from the knotter-support, the connecting-rod, the rock-shaft, the trigger-rod, a spring-clutch, and a pivoted arm operated upon by the trigger-rod to release said clutch and permit the binder mechanism to operate, substantially as described.

9. The combination of the binder-table, the needle-arm, the knotter-shaft, the pendent compressor, and a cam secured to the knotter end of the knotter-actuating shaft, said cam serving to hold the compressor while the bundle is being formed, and permitting it to be raised out of the way for the discharge of the bundle, substantially as described.

10. The combination of the binder-table, the needle-arm, the knotter-actuating shaft, the knotter shield or breast-plate, the rotating discharge-arm, and a guard secured to said arm or knotter-actuating shaft and moving below the breast-plate in advance of the discharging-arm for relieving the breast-plate of the pressure of the bundle, substantially as described.

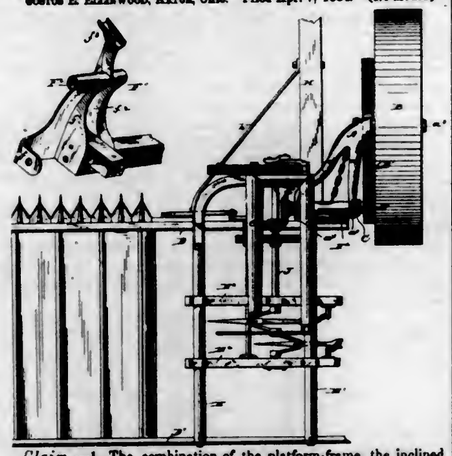
11. The combination of the binder-table, an oscillating needle operating from beneath the table, an ejector or discharge arm pivoted to fall below the table, and mechanism connecting the ejector with the needle, whereby said ejector is actuated by said needle at or near the ends of the throw of the latter, substantially as described.

12. The combination of the binder-table, an oscillating needle operating from beneath said table, the knotter-actuating shaft, the rotating discharge-arm, a secondary discharge-arm, and means connecting the latter with the needle, whereby said secondary discharge-arm is operated during the latter part of the movement of the needle, substantially as and for the purpose described.

13. In a grain-binding harvester, the combination of a horizontal grain-platform, the side-delivery carrier thereof, an inclined elevating binder-table arranged to receive the grain from said carrier, the elliptically-moving packers and vibrating needle operating from beneath said table, and a yielding float carved on its lower face, arranged above said table and overhanging the carrier, substantially as described, whereby it is adapted to engage the grain thereon, and to assist in moving it inward to and upward on the inclined binder-table.

14. In a grain-binding harvester, the combination of a horizontal grain-platform, the side-delivery carrier thereof, an inclined elevating binder-table arranged to receive the grain from the carrier, elliptically-moving packers and a vibrating needle operating from beneath to move the grain upward on said table, and a yielding float arranged above said table and overhanging the platform-carrier sufficiently to engage the moving grain thereon, and to assist in moving it inward to and upward on the inclined binder-table to the packers and needle, substantially as described.

329,932. GRAIN-BINDING HARVESTER. Lewis Miller and Augustus E. Ellinwood, Akron, Ohio. Filed Apr. 7, 1884. (No model.)



Claim.—1. The combination of the platform-frame, the inclined binder-frame on the inner end thereof, the binder-frame standard connecting the forward inner corner of said frames, and the drive-wheel frame hinged to said standard, substantially as described.

2. The combination of the platform-frame, the binder-frame, the interposed binder-frame standard, and the wheel-frame hinged at one end to said standard, and having the drive-wheel axle on its other end, substantially as described.

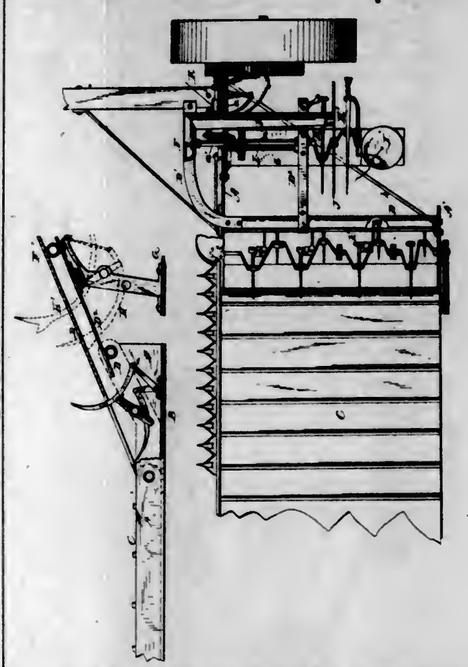
3. The drive-wheel frame provided at one end with the drive-wheel axle, and having its opposite end forked to receive and in combination with the binder-frame standard hinged thereto, substantially as described.

4. The drive-wheel frame having the drive-wheel axle on one end and the binder-frame standard hinged to its opposite swinging end, in combination with the cord or chain for adjusting the platform and binder frames secured to the axle end of the drive-wheel frame, substantially as described.

5. The combination of the platform-frame, the binder-frame, the interposed binder-frame-supporting standard, the wheel-frame, the cord or chain connecting said wheel-frame and platform-frames, and means for adjusting said chain, substantially as described.

6. The combination of the drive-wheel frame, the platform-frame carrying the binder-frame and binder mechanism and hinged to the wheel-frame, the draft attachment acting through the platform-frame to propel the wheel-frame, the worm-wheel shaft and chain connecting the platform-frame and drive-wheel axle, means for actuating said worm-wheel shaft, and the lever and link connecting the pole through the binder-frame with the platform-frame, for the purpose and substantially as described.

329,933. GRAIN-BINDING HARVESTER. Lewis Miller, Akron, Ohio. Filed May 3, 1884. (No model.)



Claim.—1. In a grain-binding harvester in which the grain is bound between the grain platform or carrier and the path of the driving-wheel, a binder-frame standard bracket or chair forming the support of the stubble end of the binder-frame, and having a seat formed on it for the binder-gear standard, adapted to be applied thereto, substantially as described.

2. The binder-frame chair on the forward platform-sill or finger-bar, in combination with the binder-gear standard secured thereto through its lower tubular arm, substantially as described.

3. The binder-frame standard-bracket provided with a tongue-socket, a bearing-sleeve for the secondary or pinion shaft, and a seat for the binder-gear standard, substantially as described.

4. The combination, with the platform front and rear sills, the latter terminating at its inner end in a support for the lower longitudinal binder-frame bar of said lower binder-frame sill, the lower sleeve of the binder-gear standard forming the upper longitudinal sill of the binder-frame, the chair supporting the binder-gear standard, and transverse bars connecting said lower sill and lower gear-standard, substantially as described.

5. The combination, with the front and rear sills of the platform-frame, the latter terminating in a support for the lower longitudinal binder-frame sill, as described, of the braces k and k', converging rearwardly and upwardly for bracing and supporting the inner end of the shortened rear sill, substantially as described.

6. The combination, with the shortened rear platform-sill, of the lower longitudinal binder-frame sill and the brace extending obliquely rearward and upward from the stubble end of the forward platform-sill to the stubble end of said shortened rear sill, substantially as described.

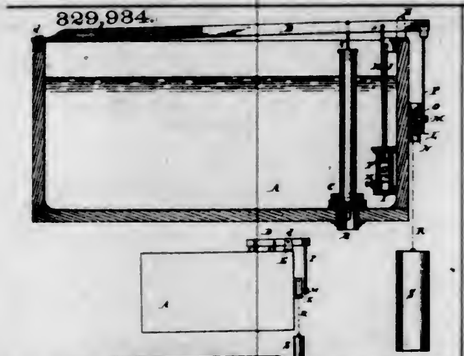
7. The platform-frame front and rear sills formed of angle-iron plates, with the horizontal portions at their lower sides or edges set facing each other, and forming ledges for the support of the platform-frame flooring, substantially as described.

8. The combination, in a grain-binding harvester, of the front and rear platform-sills, the rear sill being shortened, as described, the binder-gear-standard sleeve, and the plank connected to said lower sill and binder-gear-standard sleeve, and forming a support for the cord-box underneath the binder-frame, substantially as described

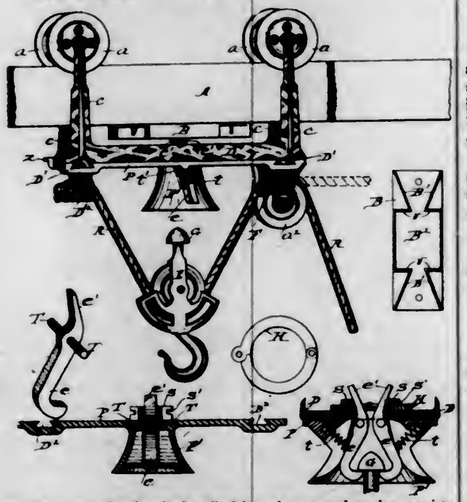
329,934. VALVE MECHANISM FOR WATER-CLOSET CISTERNS. George R. Moore, Jr., Philadelphia, Pa. Filed Aug. 1, 1885. (No model.)

Claim.—In combination, cistern A, the wheel L, with pulley-chain R, weight S, front plate, N, with aperture O, side gudgeon, M, levers P and D, and valve C, substantially as and for the purpose herein set forth.

329,934.



329,935. HAY ELEVATOR AND CARRIER. James F. Morrissey, Joliet, Ill., assignor to the Kinsshiter & Dillman Company, same place. Filed Feb. 23, 1885. (No model.)



Claim.—1. The herein-described hay elevator and carrier, consisting of the combination of the carriage D and reversible plate P, connected detachably at their outer ends by means of the dovetails D′ and dovetail recesses D^2, and pivotally at their center by means of the neck S, having an annular groove and ring, H, therein, sheave-wheel a^2, eye-lug D^{10}, and bell-shaped dome P′, each secured to said reversible plate, spring-hooks *e e*, pulley-block E, having the conical head G, flanged plate B, and draft-rope R, all arranged and constructed substantially as set forth.

2. In the herein-described hay elevator and carrier, the combination of the carriage D, having the traveling wheels *a* and dovetails D′, reversible plate P, having the dovetail recesses D^2, bell-shaped dome P′, and annularly-grooved neck S, ring H, spring-hooks *s e*, having the extended upper ends, *e′ e′*, and flanged plate B, having the enlarged rectangular central chamber, B^2, and diverging end chambers, B′ B′, all arranged to operate as and for the purpose set forth.

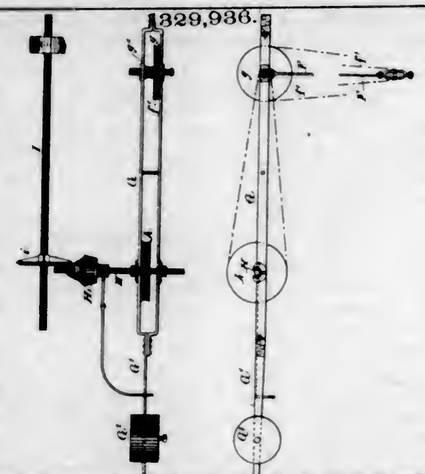
3. In the herein-described hay elevator and carrier, the combination of the plate B, having the flanges *v v*, forming the enlarged central rectangular chamber, B^2, and diverging end chambers, B′ B′, spring-hooks *e e*, having the extended upper ends, *e′ e′*, rope R, and pulley-block E, having the conical head G, as and for the purpose set forth.

4. In the hay elevator and carrier shown and described, the combination of the carriage D, reversible plate P, having the neck S, provided with the annular groove S′, and ring H, as and for the purpose set forth.

329,936. SAW-SHARPENING MACHINE. Emil Mossberg, Eskarleö, Sweden. Filed May 12, 1884. (No model.) Patented in Sweden Apr. 6, 1883, No. 129; in Germany May 6, 1883, No. 24,670; in Finland Sept. 13, 1883, and in Norway Dec. 21, 1883.

Claim.—1. In a machine for sharpening saws, the driving mechanism consisting of a shaft, H, carrying a driven pinion, and a pulley, *h*, a counterbalanced frame fulcrumed on said shaft and carrying an adjustable counter-weight at one end and a belt-pulley, *g*, at the opposite end, and

329,936.



a hanger fulcrumed on the shaft of said pulley, in combination with a stock or handle connected with said hanger, an abrading-body, and driving-gear supported from said stock and connected with and driven from the belt-pulley *g*, to rotate the abrading-body, substantially as and for the purpose specified.

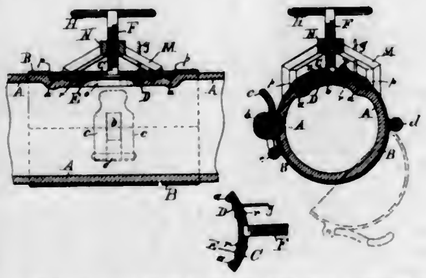
2. In a machine for sharpening saws, the combination, with the counterbalanced frame carrying the driving mechanism, of the stock, spindle, or arbor *a*, having at one end a grinding-body and at the other end a friction-disk, the arbor *c*, carrying the pulley C, and the hanger, all substantially as shown and described.

329,937. JUNCTION OR SEPARATOR LINING FOR OPEN-HEARTH FURNACES. Oscar Murmer, Alexandrowsky, near St. Petersburg, Russia, and Percy C. Gilchrist, Palace Chambers, Westminster, England; said Murmer assignor to said Gilchrist. Filed May 4, 1885. (No specimens.)

Claim.—1. A mixture of chrome ore and tar, compounded, substantially as set forth, for use in separating or forming the junction between the basic and acid portions of the linings of metallurgical furnaces.

2. A furnace-lining composed of a basic bottom, basic sides, and acid roof, and a belt of a mixture of chrome ore and tar interposed between the roof and sides, as set forth.

329,938. STOPPER FOR BURST PIPES. Albert Nicolet, Newark, N. J. Filed Mar. 25, 1885. (No model.)



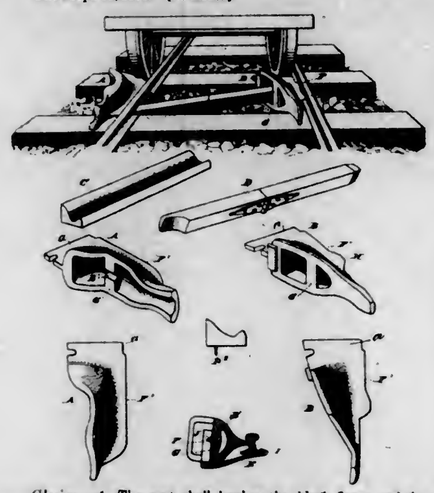
Claim.—1. As a device for stopping burst pipes, a sectional casing provided with means for securing it removably to the pipe, and having a stopper held adjustably in an aperture in one side of the casing, as and for the purpose set forth.

2. The combination, with the hinged sectional casing provided with a fastening and constructed with aperture *p*, as described, of a stopper applied to the aperture, and means for pressing the same upon the burst pipe, substantially as and for the purpose set forth.

3. The combination, with the hinged sectional casing having a fastening and aperture, as described, of the boss N, attached to the casing, as set forth, the stopper constructed to receive the stem F, and the threaded stem provided with the handle or wheel H, and with a collar to fit the stopper, as and for the purpose set forth.

4. The combination, with the means for clamping the stopper on the burst pipe, of the stopper composed of the plate C, having the india-rubber annular ridge secured thereto, as and for the purpose set forth.

329,939. CAR-REPLACER. John E. Norwood, Sykesville, Md. Filed Sept. 18, 1885. (No model.)



Claim.—1. The cast shell having the black flange and the end flange and the transverse bridge across its open face, substantially as specified.

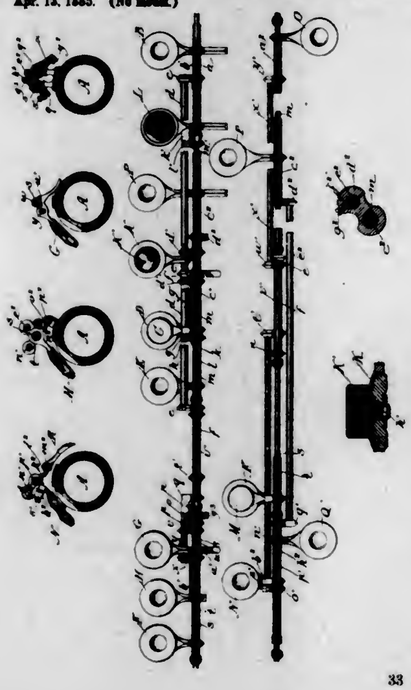
2. The combination, with the track-rail, of the shell having the end flange and the bridge, and of the clamping-hook, substantially as specified.

3. The combination, with the outside replacer having the notched bridge, of the track-rail, the notched clamp, and the key, substantially as specified.

4. The combination, with the track-rails and the inside flanged shell provided with the transverse bridge, of the hinged brace with one rectangular end and one pointed or tapering end, substantially as specified.

5. The combination, with the ties and track-rails, of the outside shell, clamp and clamp-key, the inside shell and hinged brace, and the grooved extension C, with its longitudinal groove having edges of unequal heights, substantially as specified.

329,940. WIND-INSTRUMENT. Louis Ostertag, Chicago, Ill. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a wind-instrument, the combination, with a key thereof, of a second key situated directly over the first and arranged to contact therewith, the two keys moving from the same center, as set forth.

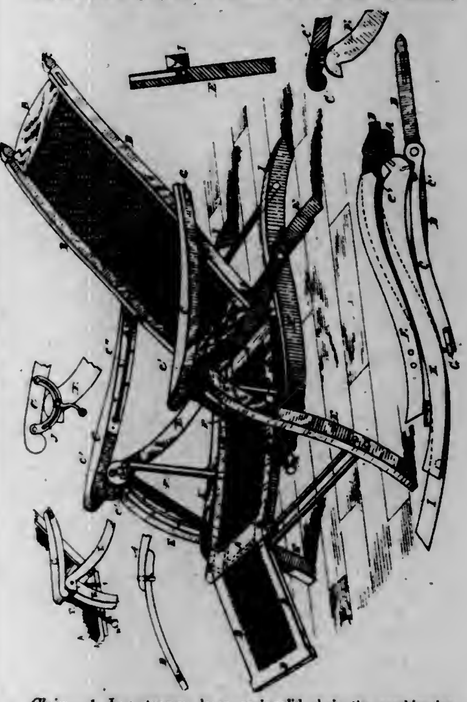
2. In a wind-instrument, the combination, with a key mounted upon a sleeve, with which are formed suitable bearings, of a second key secured upon a shaft mounted in said bearings, and a curved arm encircling the sleeve, as set forth.

3. In a wind-instrument, the combination, with a key thereof, of a shaft provided with a tapered opening, a set-screw inserted into said opening, a second key, and suitable shafts intermediate of the keys, as set forth.

4. The combination, with key H, mounted upon sleeve *w*, said sleeve provided with bearings *x*, of shaft *y* and key G, provided with shank *a′*, as set forth.

5. The combination, with shaft c^2, provided with tapered opening f^2 and set-screw g^2, of keys N P and intermediate connecting-shafts, as set forth.

329,941. STEAMER, LAWN, AND INVALID CHAIR. Dana Parker, Boston, Mass., assignor, by direct and mesne assignments, to the Kensington Chair Company, Portland, Me. Filed Nov. 17, 1884. (No model.)



Claim.—1. In a steamer, lawn, or invalid chair, the combination of the hangers attached as described with their locks, the arms pivoted, slotted, and channeled, the hinged seat and back, the adjustable sliding foot-rest with the hinged frame capable of being folded and opened, all constructed as described, as and for the purpose set forth.

2. In a steamer, lawn, or invalid chair, the combination of the hangers attached as described, with their locks, pivoted arms slotted, the hinged seat, and back, with the hinged frame, all constructed as described, as and for the purpose set forth.

329,942. FOLDING BED. Joseph R. Payson, Jr., Chicago, Ill. Filed June 25, 1885. (No model.)

Claim.—1. A folding bed having yielding or spring extensible supports attached to the bed-box and bearing upon the floor in front of the bed when the same is lowered, substantially as specified.

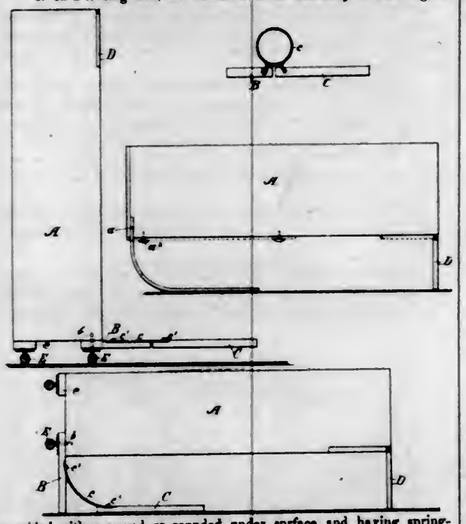
2. A folding bed consisting of a body or box, as A, extensible head-legs, as B, connected to said bed-body rigidly in the vertical direction and having spring-extensions, substantially as specified.

3. In a folding bed, the combination of a bed body or box, as A, with extensible head-legs, as B, and extension-bars, as C, and springs, as *c*, connecting said legs and extension-bars, substantially as specified.

4. In a folding bed, the combination of bed body or box A with legs B, pivoted thereto to fold horizontally and provided with spring-extensions, substantially as specified.

5. In a folding bed, the combination, with bed-body A and legs B, pivoted thereto to fold horizontally, of extension-bars C and flat spring *c*, connecting said legs and extension-bars, substantially as specified.

6. In a folding bed, the combination of bed-body A with legs B,



provided with a curved or rounded under surface and having spring-extensions, substantially as specified.

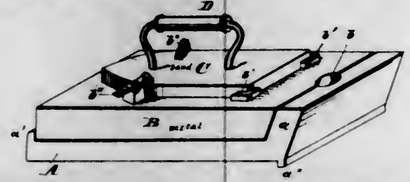
7. In a folding bed, the combination, with bed-body A, of legs B, having a rounded under surface, extension-bars C, and springs *c*, substantially as specified.

8. A folding bed having yielding or spring supports extending from and attached to the bed-box and adapted to bear on the floor in front of the bed, to assist in raising and lowering the bed, substantially as specified.

9. A folding bed provided with one or more spring extensions or arms attached at or nearly at its base for raising and lowering the bed, as described.

10. A folding bed having means for raising and lowering it, consisting of pivoted extensible spring-arms attached to the lower portion of the bed, substantially as described.

329,943. SAD-IRON MOLD. SAMUEL H. PERIN, Jeffersonville, Ind. Filed June 6, 1885. (No model.)



Claim.—1. In a mold for casting sad-irons, the combination of a metallic bed-piece and a metallic body-piece provided with a suitable ingate with a frangible top having apertures for and supporting the handle of the sad-iron, substantially as described.

2. The combination, in a mold for casting sad-irons, of a metallic bed-piece, A, having at one end an upwardly-sloping projection, *a*, the body-piece B, provided with an ingate, *b*, and guides *b'*, and the sand mold C, provided with apertures c c, substantially as and for the purpose set forth.

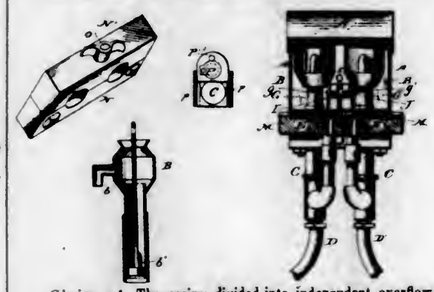
329,944. SKATE-CLAMP. ELWOOD C. PHILLIPS, Richmond, Ind., assignor to the Richmond Roller Skate and Caster Company, same place, and Kitselman Bros., Ridgeville, Ind. Filed Aug. 5, 1885. (No model.)

Claim.—As an improvement in skate-clamps, a hanger secured upon the lower surface of a skate, and comprising parallel side bars having perforated lugs *b b* at each end, and connected by a bridge-plate having a slot or recess to provide a bearing for the adjusting-screw, laterally-sliding clamp-sections arranged between the side bars of the hanger, and having a serrated shoulder, C^2, and a threaded lug, and an adjusting right and left hand bolt having a recessed or reduced portion, d^2, at its middle to fit the recessed bridge or bearing plate of the hanger, and having reduced, squared, or milled portions at each end, as set forth.

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329,945. APPARATUS FOR DRAWING LIQUIDS. HENDERSON M. POWERS, Lancaster, Pa. Filed Sept. 15, 1885. (No model.)



Claim.—1. The casing divided into independent overflow-compartments, in combination with outlet-pipes leading therefrom, valves for closing said outlet-pipes, and mechanism for operating said valves simultaneously, for the purpose set forth.

2. The combination of a pump and its supply-tube with an outlet-tube which discharges into said supply-tube, and a valve for opening and closing the latter, substantially as set forth.

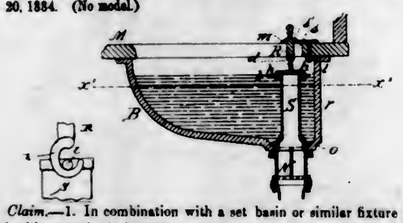
3. The combination of a pump and supply and outlet tubes or pipes with an outlet-valve, and a pitman for raising and lowering the same to open and close said outlet, substantially as set forth.

4. The combination of the outlet valves and the shaft and intervening devices for operating them all simultaneously with the pumps, and the casing which receives and retains the several kinds of liquid in its compartments, substantially as set forth.

5. The removable lower valve, C, and the slide in which it is mounted, in combination with the pump-casing provided with lateral guideways which allow the withdrawal of said slide, substantially as set forth.

6. A casing divided into two or more compartments, in combination with pumps arranged one in each compartment, outlets and outlet-valves governing the discharge of overflow and waste liquid from each compartment, and tubes communicating, respectively, with the several pumps to supply the same with liquid, each tube having connected to it the outlet-tube which returns the waste liquid of its pump, substantially as set forth.

329,946. SET BASIN. JOHN P. PUTNAM, Boston, Mass. Filed Feb. 20, 1884. (No model.)



Claim.—1. In combination with a set basin or similar fixture provided with an outlet in its bottom, and a frame above said fixture, of a stand-pipe valve, and a handle therefor, the said handle having a vertical movement in a slot in said frame, and the said stand-pipe valve fitting said outlet and supported by and detachably connected with said handle in all positions when raised from said outlet, whereby the stand-pipe valve may be readily removed from the basin while the handle is confined in the slot, substantially as described.

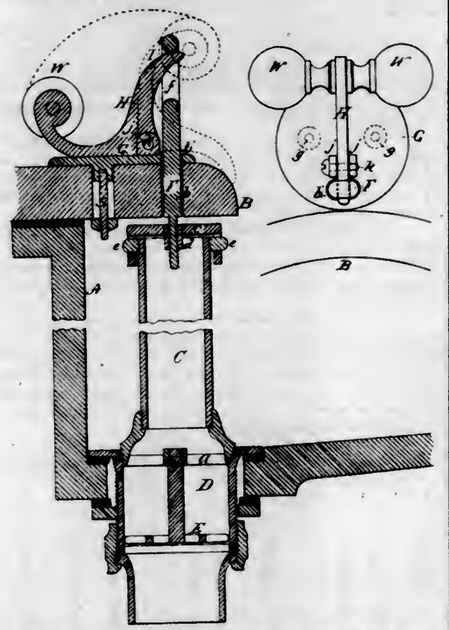
2. The combination, with a set basin or similar article adapted to hold water, and provided with an outlet in its bottom, of an overflow stand-pipe fitting into said outlet and provided with a horizontal strainer depending from said stand-pipe, and serving as a strainer both for said outlet and said stand-pipe and as a guide for the latter, substantially as described.

3. The combination of the basin B, provided with a recess, *r*, an outlet, *o*, the slab M, forming at the same time a rim for the basin and a cover for the recess, and having the slot *s*, the plate *m*, having slots *s'*, the stand-pipe S, and rod R, provided with the shoulder *d*, substantially as described.

4. The combination of the set basin B, provided with a recess, *r*, an outlet, *o*, the slab M, forming a rim for the basin and a cover for the recess, and having the slot *s*, the stand-pipe S, provided with a horizontal strainer, N, serving also as a guide, and rod R, substantially as described.

5. The combination, with a set basin or similar fixture provided with an outlet at its bottom, of an overflow-pipe having a horizontal strainer-guide fitting said outlet, and a handle for said overflow-pipe, the said handle having a shoulder whereby the limit of movement of said strainer-guide in said outlet is determined by the limit of movement of said handle, and the strainer remains in the outlet except when the handle is unhooked from the pipe, substantially as described.

329,947. OVERFLOW-PIPE FOR SET BASINS AND SIMILAR FIXTURES. JOHN P. PUTNAM, Boston, Mass. Filed Oct. 16, 1884. (No model.)



Claim.—1. The combination, with the set basin or similar fixture, and movable overflow-pipe provided with a lifting-rod, of a cam pivoted to said fixture, and having its operating-surface in contact with said lifting-rod, substantially as described, for the purpose specified.

2. The combination, with the set basin or similar fixture, and movable overflow-pipe provided with a lifting-rod, of a weighted cam pivoted to said fixture, and having its operating surface in contact with said lifting-rod, substantially as described, for the purpose specified.

329,948. ELECTRIC-ARC LAMP. GEORGE C. PYLE, Cuyahoga Falls, Ohio, assignor to the American Electric Headlight Company, Indianapolis, Ind. Filed Dec. 4, 1884. (No model.)

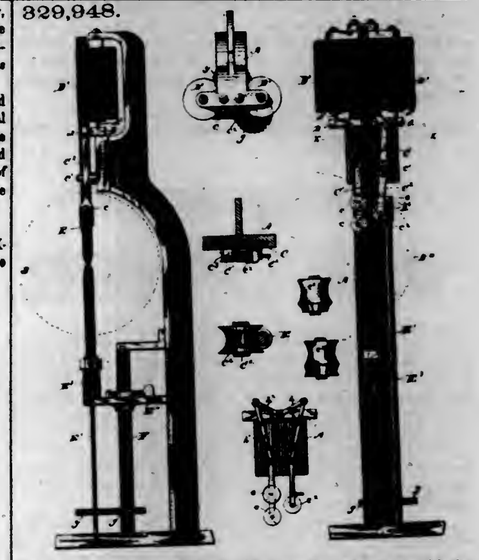
Claim.—1. In an electric-arc lamp and as a means for holding and guiding the carbon thereof, the grooved bearing-rollers and the movable gripping-roller mounted upon a sliding frame or plate and actuated to close the movable roller upon the carbon and elevate the latter by an electro-magnet whose armature is connected to the movable bearing of the gripping-roller, substantially as described.

2. The combination, in an electric-arc lamp and as a means for sustaining, guiding, and elevating the carbon thereof, the grooved bearing-rollers mounted upon a sliding plate or frame, a removable support likewise borne by said sliding plate or frame and carrying a roller, and an electro-magnet whose armature is connected to the said movable support, whereby the roller is first caused to grasp the carbon, and by its contact therewith effect the elevation of the carbon, substantially as described.

3. In combination with the guiding and gripping rollers mounted upon a sliding plate or frame, the movable support for one of said rollers, and the armature connected thereto for pressing the roller against the carbon and raising the plate, substantially as described.

4. In an electric-arc lamp, the sliding plate carrying the bearing-rollers, and the lever with the incline and gripping-roller, in combination with the armature provided with a pin for engagement with the incline on the lever, substantially as and for the purpose set forth.

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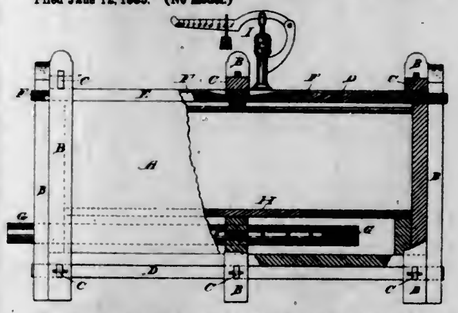
5. The combination, in a focusing electric lamp, of the movable plate, its bearing and gripping rollers, and mechanism, such as indicated, for actuating the gripping-roller to clamp and raise the upper carbon, the worm-shaft applied to the gripping-roller and geared to the adjusting mechanism for actuating the lower carbon, substantially as described.

6. The sliding plate carrying the lower carbon, the pivoted sectional nut and its retaining-spring, in combination with the screw-shaft, substantially as described.

7. In an electric lamp arranged and adapted for use in connection with the reflector of a head-light, and in combination with said reflector, the main frame or standard provided with the laterally-projecting or overhanging portion to sustain the mechanism for holding and feeding the upper carbon and provided with ways below the reflector to guide the lower-carbon holder, substantially as described.

8. In combination with the movable plate or frame and the grooved bearing and pivotally-supported gripping-roller mounted upon said plate or frame, of the vertical worm-shaft supported at one end in a bearing attached to the lever carrying the gripping-roller and meshing with the worm-wheel applied to said movable gripping-roller, substantially as described.

329,949. TANK FOR CURING FLAX. ISAAC T. QUEEN, Morris, Ill., assignor of two-thirds to F. B. Handwork and S. C. Stough, same place. Filed June 12, 1885. (No model.)



Claim.—1. A tank for treating flax, having a perforated steam-injecting pipe and a valve for regulating the pressure of steam in the tank, substantially as described.

2. The tank for treating flax, having the perforated steam-injecting pipe and the hinged false bottom above the pipe to prevent the flax from coming in direct contact with the pipe, substantially as described.

3. The tank for treating flax, having the perforated steam-injecting pipe, the perforated false bottom above the pipe, and the slides to permit access to the flax in the tank, substantially as described.

4. The tank for treating flax, having the perforated steam-injecting pipe, the perforated false bottom above the pipe, the slides to permit access to the flax in the tank, the regulating escape-valve to maintain the steam-pressure in the tank at a suitable point, and the blow-off cock for the water resulting from the condensation of the steam in the tank, substantially as described.

329,950. IRONING-TABLE. GEORGE RACE, Norwich, N. Y. Filed Jan. 2, 1885. (Model.)



Claim.—1. In an ironing-board, the combination of the top, a block or strip, B, secured rigidly thereon near one end, legs B', pivoted thereto, longitudinal guides or ways C C, arranged on the board or top at a short distance from each other, and having inwardly-projecting blocks *c c* at their ends, a recessed block, D, fitted on said ways, and adapted to slide thereon, legs E, pivoted to said sliding block or strip D and the legs B', and a strip, *b*, secured to the sliding block D, and adapted to fit between the inwardly-projecting blocks c c of the guides or ways when the legs E B' are unfolded, substantially as and for the purpose described.

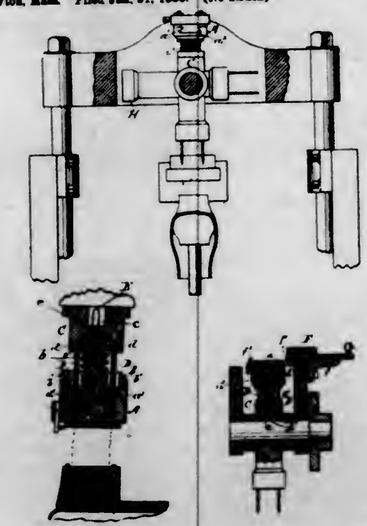
2. The combination, in an ironing-board, with a top having supporting-legs, and provided with slots having enlarged ends, of a bosom-board having headed pins to engage the same, a shoulder or plate on the under side of said top, and a button pivoted to the bosom-board, substantially as set forth.

3. The combination, in an ironing-board, with a top having suitable supporting-legs and elongated slots provided with enlarged ends, of a bosom-board having headed pins to engage the same, a plate or shoulder on the under side of said top, and a pivoted button on the under side of the bosom-board, and a pin on said bosom-board adapted to engage an opening in the top, substantially as set forth.

4. The combination, in an ironing-board, with a top provided with supporting-legs, of a removable ironing-board, a removable bosom-board recessed to receive the end of the top, a pin on said ironing-board to engage a recess in the top, a plate or shoulder on the under side of said top, and an eccentrically-pivoted button pivoted to the bosom-board to engage the same.

5. In an ironing-board, the combination, with a top having slots at its front end, of a removable ironing-board, F, a sliding bosom-board, G, a wedge or bar fitted in an opening between said boards, and adapted to clamp the article being ironed in position, and a pivoted button adapted to lock the bosom-board and top together, substantially as and for the purpose set forth.

329,951. HEEL-NAILING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Jan. 31, 1885. (No model.)



Claim.—1. In a heel nailing or attaching machine, the combination, with the devices for driving the heel-attaching nails, of a spanker-block having holes *a*, and auxiliary awls or drivers vertically movable therein, all substantially as and for the purposes described.

2. In a heel nailing or attaching machine, in combination with devices for driving the heel-attaching nails, a top-lift holder, and a spanker-block having the holes *a*, and auxiliary awls or drivers adapted to be reciprocated in said holes after the attaching-nails have been driven, all substantially as and for the purposes described.

3. In a heel-attaching machine, the combination of devices for driving the heel-attaching nails, a top-lift holder, and spanker-block A, having holes *a*, and vertically movable in relation to its support C against yielding pressure, and supplemental or auxiliary awls or drivers D, adapted to be operated after the attaching-nails have been driven, all substantially as and for the purposes described.

4. The combination of a top-lift holder, a spanker-block having the holes *a*, the block B, post *b*, spring *c'*, arm C, and the awls or drivers D, all substantially as and for the purposes described.

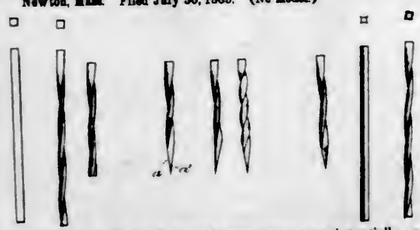
5. In a heel-attaching machine, in combination with a templet and driving devices for driving heel-attaching nails, the spanker-block A, having the holes *a*, and means, substantially as described, for moving it horizontally upon the block B, with the supplemental or auxiliary awls or drivers D, also movable horizontally, all substantially as and for the purposes described.

6. In a heel-attaching machine, the combination of devices for driving the heel-attaching nails with the spanker A, having the holes *a*, and movable, as described, to an inverted position, with a device for feeding nails thereto while in an inverted position, all substantially as and for the purposes described.

7. The combination, in a heel-attaching machine, of devices for driving the heel-attaching nails, a top-lift holder containing supplemental or auxiliary devices for driving an additional or auxiliary group or gang of nails into the attached heel, and the jack or work-support, all substantially as described.

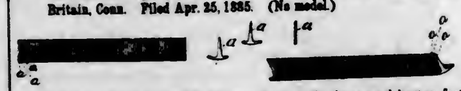
8. In a heel-nailing machine, the combination of a templet and nail-driving devices for driving the heel-attaching nails, additional or supplemental nail-driving devices for driving supplemental or additional nails into the heel, adapted to be operated after the operation of the first-named devices, and a reciprocating spanker, H, adapted to be brought into operation after the driving of the supplemental nails, all substantially as and for the purposes described.

329,952. SOLE OR HEEL FASTENING. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed July 30, 1885. (No model.)



Claim.—A shoe-nail formed from square or substantially square rod or blank, twisted to provide threads of comparatively slow pitch, and provided with a clinching-point, substantially as described.

329,953. BUTTON-FASTENER ROD. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Apr. 25, 1885. (No model.)



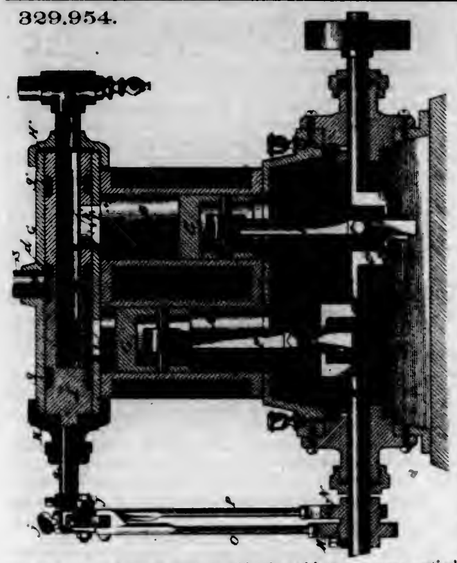
Claim.—As a new article of manufacture, the improved button-fastener rod herein described, it consisting in button-fasteners united by an adhesive substance, substantially as set forth.

329,954. STEAM-ENGINE. JOHN S. ROBBINS and JULIUS T. FOSTER, Racine, Wis. Filed Sept. 1, 1884. (No model.)



Claim.—The hollow oscillating valve I, closed at one end, formed with the annular channel *d*, and with the longitudinal passages *e f* out of line with each other, and having the ports *h h'*, the said parts being

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relatively arranged as shown, in combination with two or more vertical cylinders having ports *i i'*, and the valve-chamber and steam-chest G, secured longitudinally above and to the cylinders and constituting the cylinder-heads, substantially as and for the purposes described.

329,955. RUBBER WATER-BAG FOR MEDICAL TREATMENT. DWIGHT ROBERTS, New York, N. Y. Filed Jan. 17, 1885. (No model.)



Claim.—A rubber bag furnished with funnel-opening and screw-cap adapted for use upon the nose and forehead, and furnished with a rubber strap or band in a single piece and integral therewith, substantially as and for the purpose specified.

329,956. COMBINED TELEGRAPHIC AND TELEPHONIC CIRCUIT. ABNER M. ROSEBRUGH and THOMAS R. ROSEBRUGH, Toronto, Ontario, Canada. Filed Oct. 12, 1883. Renewed Apr. 15, 1885. (No model.)

Claim.—1. The combination, with a single electric circuit, of means, substantially as described, for sending Morse signals, and means, substantially as described, for transmitting signals by induced currents simultaneously in opposite directions, as set forth.

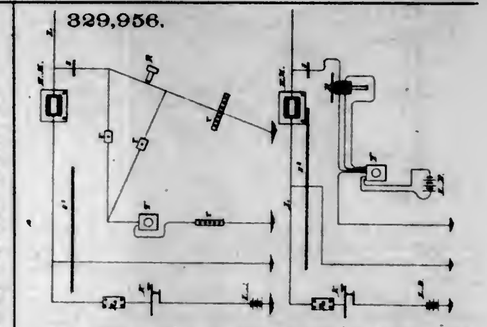
2. The combination, with a primary circuit containing a transmitter, of a secondary circuit going to line and a bridge-circuit containing a receiver arranged to respond to signals from the distant station only, and electrostatic devices arranged in the branches of the bridge-circuit and the ground-connections, as set forth.

3. The combination, with a telegraph-circuit and means for sending Morse signals, of secondary or induced current transmitting and receiving devices connected to said circuit, with condensers arranged between and connecting said circuits, and electro-magnets, as described, arranged in the telegraphic circuit for the purpose of controlling the secondary circuits, substantially as described.

4. The combination, with a telegraphic circuit and means for sending Morse or similar signals, of secondary or induced current transmitter and receiver devices connected to said circuit, a condenser of great capacity in the ground or bridge circuit of the line, and a condenser of small capacity in the line between the induced-current instruments and the main line.

5. The combination, with a telegraphic circuit and means for sending Morse or similar signals, of secondary or induced circuit transmitting and receiving devices connected to such circuit, condensers interposed between said induced-current devices and the line, a condenser in a ground or bridging circuit between the Morse and induced-current instruments, and an electro-magnet of comparatively high resistance, also in the line-circuit, substantially as described.

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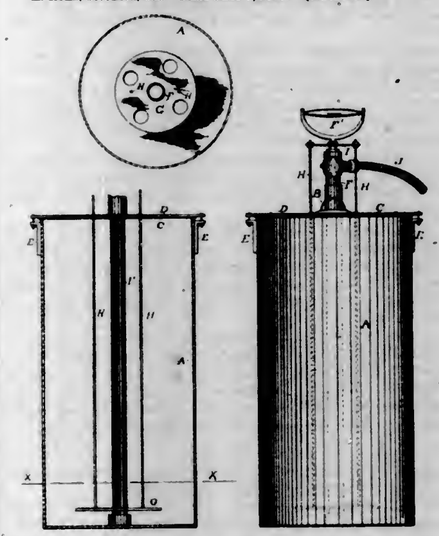


6. The combination, with a telegraphic circuit and means for sending Morse or similar signals, said circuit containing a magnet of comparatively high resistance, of secondary or induced circuit transmitting and receiving devices connected to such circuit, a condenser of comparatively small capacity interposed between said induced-current devices and the line, and a condenser of greater capacity in the ground or bridging circuit of the Morse instruments, substantially as described.

7. The combination, with the telegraphic circuit and means for sending Morse or similar signals, of secondary or induced current transmitter and receiver devices connected to said circuit, a condenser of great capacity in the ground or bridge circuit of the line, and a condenser of small capacity in the line between the induced-current instruments and the main line.

8. The combination, with a telegraphic circuit and means for sending Morse or similar signals, of secondary or induced circuit transmitting and receiving devices connected to said circuit, condensers interposed between said induced-current devices and the line, a condenser in a ground or bridging circuit between the Morse and induced-current instruments, and an electro-magnet of comparatively high resistance, also in the line-circuit, substantially as described.

329,957. DEVICE FOR DESTROYING INSECTS ON PLANTS. F. A. RUHL, Stockton, Cal. Filed June 1, 1885. (No model.)

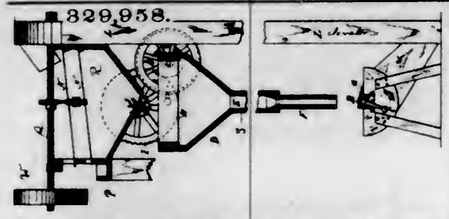


Claim.—1. The combination, with a tank, of a pump contained therein, and an agitator connected to and operated by said pump and contained within said tank, substantially as and for the purpose specified.

2. The combination, with a tank, of a pump resting therein, a removable top through which the said pump projects, a cap-piece on the handle of the pump, a dasher or agitator encircling the pump within the tank, and rods connecting the cap-piece and dasher, the whole operating substantially as and for the purpose specified.

329,958. APPARATUS FOR FORMING CORES OR MOLDS FOR CASTINGS. RICHARD SAVAGE, San Francisco, Cal. Filed Dec. 19, 1884. (No model.)

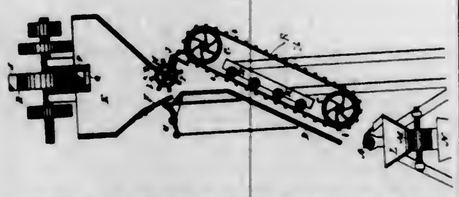
329,958.



Claim.—1. In combination with the rotary core-bar or mandrel, the hopper and the telescoping spout having its discharge-openings equal in length to the mandrel and in the same vertical plane therewith, as set forth.

2. A means for forming cores or molds for castings, consisting of a receiver or hopper, D, having an opening in the bottom, a directing-chute extending downward from said opening, and a supplemental section sliding upon the chute, so that it may be made longer or shorter, substantially as described

329,959. CORE-MAKING MACHINE. RICHARD SAVAGE, San Francisco, Cal. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a machine for forming cores from sand, an inclined directing-chute into which the sand is received, and from which it is delivered upon the core-bar, said chute having a traveling flexible bottom or endless belt with projections or corrugations, by which the sand is caused to move with the same velocity as itself, substantially as herein described.

2. In an apparatus for forming cores from sand, an inclined directing-chute having a traveling flexible bottom or belt with teeth or projections, a hopper from which the sand is delivered upon the traveling bottom or belt, and a toothed drum or feed-roller which revolves within the discharge-opening of the hopper, so as to regulate the flow of sand, substantially as herein described.

3. The revolving toothed drum or roller journaled in the discharge-opening of the sand-hopper, in combination with the stationary or spring-actuated arms J, projecting between the teeth or flanges of the roller, substantially as herein described.

4. A directing-chute having the flexible traveling bottom or belt by which the sand is delivered from a supply-hopper upon the core-bar, and the rotary toothed roller journaled and revolving within the discharge-opening of the hopper, in combination with the gate F, and adjusting-lever G, whereby the flow of sand may be regulated, substantially as herein described.

5. The inclined directing-chute with the flexible traveling bottom or belt, and the supply-hopper situated above, in combination with a horizontal trough, a belt having projections secured to it, so as to travel through said trough, and perforations in the bottom of said trough, through which the sand is delivered by a traveling belt into the supply-hopper above the directing-chute, substantially as herein described.

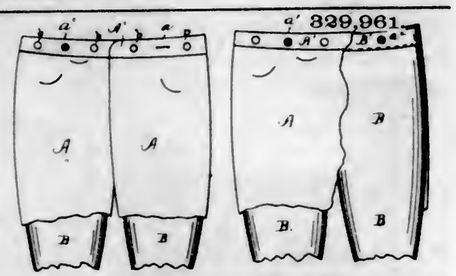
329,960. OIL COMPOUND FOR LEATHER. ADAM SCHMITT, New Orleans, La. Filed July 30, 1885. (No specimens.)

Claim.—A compound consisting of oils known ordinarily as "cotton-seed" and "codfish" oil, in combination with a solution of rubber, (caoutchouc,) cocoanut, pomegranate-rind, and an aromatic, substantially as and for the purpose specified.

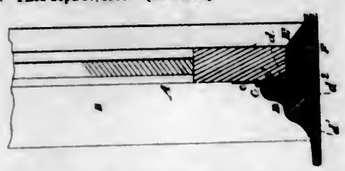
329,961. DRAWER-SUPPORT. THOMAS K. SCOTT, Utica, N. Y. Filed May 6, 1885. (No model.)

Claim.—In an under-drawer support of the character described, the pants having the waistband provided with the buttons for the suspender-straps, and having the button-holes in front and rear between these buttons, in combination with the drawers having the button-holes and buttons in a corresponding position with the button-holes in the waistband of the pants, the latter buttons serving to secure the waistbands of both pants and drawers together, substantially as described.

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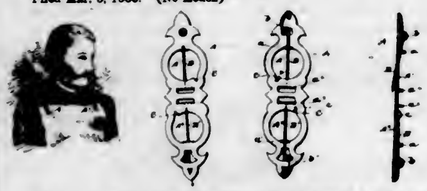


329,962. WEATHER-STRIP. GEORGE W. SHUMAN, Pleasant Hill, Ohio. Filed Sept. 17, 1885. (No model.)



Claim.—A top-hinged weather-strip made in one piece, with subjacent sides $d\,d'$ at a right angle to each other, an intermediate excision, d^2, and a corner incline, d^3, substantially as shown and described.

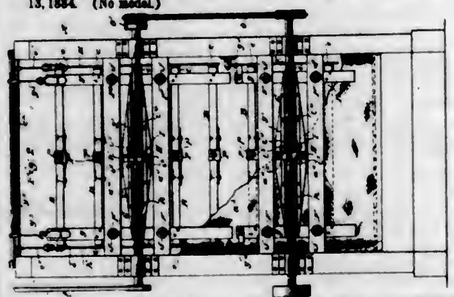
329,963. NAPKIN-SUPPORTER. WILLIAM B. SILVER, Cleveland, Ohio. Filed Mar. 5, 1885. (No model.)



Claim.—1. In a napkin-supporter, a plate provided with an opening for the passage of the finger for manipulating the pin, and a smaller opening for the passage of the point of the pin, the latter opening provided with a guard, substantially as and for the purposes described.

2. In a napkin-supporter, the combination, with a plate, of a guide to the pin, and a protector for the point of the pin, the guide and protector being integral with the plate, substantially as and for the purposes described.

329,964. SEPARATOR. DELOS CAB-SKADEN, Chicago, Ill. Filed Nov. 13, 1884. (No model.)



Claim.—1. As a means for separating the particles of comminuted ore according to their different degrees of fineness, a series of inclined shaking-screens, in combination with a series of endless carrier-belts disposed between and inclined in the same direction as the screens, and operating to carry the material passing through said screens toward the higher ends of the latter, substantially as described.

2. The series of inclined shaking-screens, in combination with a series of endless carrier-belts disposed between the screens and successively occupying from the top to the bottom of the series advanced positions with relation to the higher ends of the screens, whereby space is afforded at points back of the endless carrier-belts for the direct passage of the comminuted ore from one screen to another, substantially as and for the purpose described

3. A series of inclined screens suspended within a casing and disposed with the higher end of the topmost screen below a feed-passage, in combination with a series of endless carrier-belts disposed between the screens and successively occupying from the top to the bottom advanced positions relatively to the point of feed, and means, substantially as described, for causing the endless carrier-belts to travel in a direction toward the feed end of the apparatus, substantially as described.

4. The series of inclined screens successively increasing in length from the top to the bottom of the series, in combination with the series of endless carrier-belts of equal length arranged between the screens and successively occupying from the top to the bottom of the series advanced positions, substantially in the manner shown, the successive advancement in the positions of the endless carrier-belts and the successive increase in the length of the screens at the delivery end of the machine being the same, substantially as set forth.

5. A series of screens, in combination with rotary cam-knockers provided with cam projections set at irregular intervals, whereby during operation a continuous uniformity of vibration in the screens is prevented, substantially as described.

6. A series of shaking-screens, in combination with a rotary cam-knocker for producing an end shake in the screens, and an upright swinging frame attached to the ends of the screen-frames and constructed to receive the impact of the knocker, substantially as described.

7. The combination, with the machine-frame and the shaking-screens, of supports for the screens, consisting of vibratory crank-arms supported upon the frame and provided with rollers upon which the screens rest, the screen-frames being provided with depressions or indentations engaging with the rollers, substantially as and for the purpose set forth.

8. The combination, with the machine frame and casing and the shaking-screens, of supports for the screens, consisting of crank-arms located within the casing and attached to and depending from rock-shafts which pass through the casing, and bearings for the said rock-shafts upon the exterior of the casing, substantially as described.

9. The combination, with the machine-frame and shaking-screens, of crank-arms for supporting the screens, having bearings upon the main frame and provided with rollers upon which the screens rest, the screen-frames being provided with depressions or indentations upon their under surfaces engaged with the frames, and stops applied to limit the vibratory movement of the said crank-arms, substantially as and for the purpose set forth.

10. A screen-frame comprising end bars made in two parts, boxes fitted over the meeting ends of the end bars, and wedges inserted between the said meeting ends of the end bars, substantially as and for the purpose set forth.

11. The combination, with the machine-casing, the shaking-screens, and a rotary cam-knocker, of a flexible sheet interposed between the knocker and the screens and serving to close the casing at one end, substantially as described.

329,965. GRIP APPARATUS FOR TRACTION-CABLES. WILLIAM H. SHELDON and GEORGE JUDGE, Chicago, Ill. Filed Mar. 18, 1885. (No model.)

Claim.—1. In a cable-grip, the combination, with the grip-beam B, of the angular clamping-plates $a\,a'$, the rollers a^3 a^3, the angle-plates a^4 a^5, and the framing-bars A^3 A^4, substantially as described.

2. In a cable-grip, the combination, with the framing-bars A^3 A^4, of the grip-beam B and the latch a^6, substantially as set forth.

3. In a cable-grip, the combination, with the angular clamping-plates $a\,a'$, of the roller A^2, substantially as set forth.

4. In a cable-grip, the combination, with the presser-bar B^4, of the bolts $b\,b'$, the springs b^2 b^2, and the upper or movable grip-jaw B^2, substantially as set forth.

5. In a cable-grip, the combination, with the upper movable jaw, B^2, of the vertically-yielding springs b^2 b^2, substantially as and for the purpose set forth.

6. In a cable-grip, the combination, with the hanger bars or uprights A A', of the base-plate B^6 and the lower grip-jaw, B^5, hinged to said base-plate, substantially as and for the purpose set forth.

7. In a cable-grip, the combination, with the grip-beam B, of the centrally-arranged hanger-bar B^7 and the base-plate B^6, substantially as set forth.

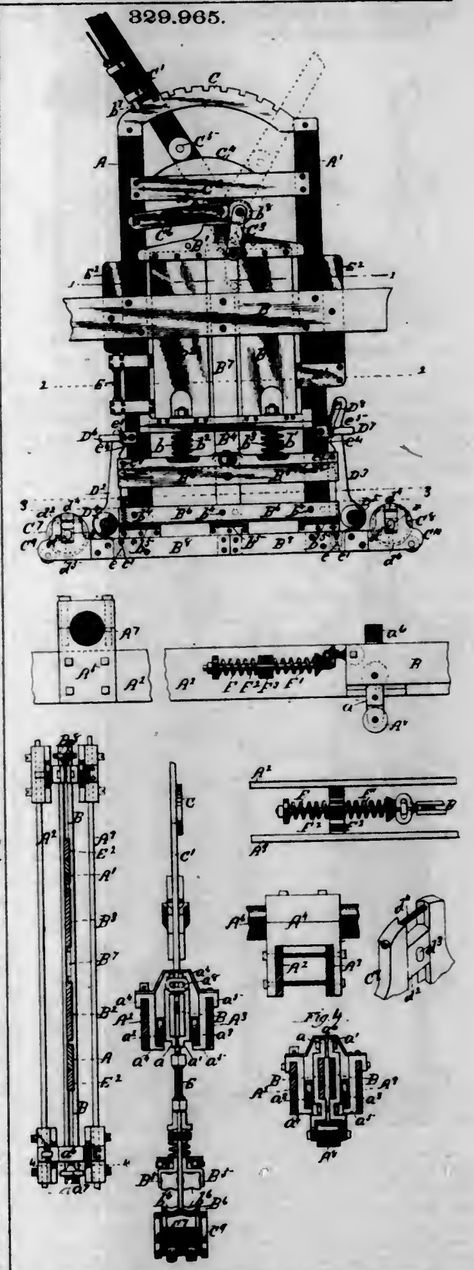
8. In a cable-grip, the combination, with the operating-lever C', of the toe-roller b^3, the cross-head B', the heel-roller d, the bar C^3, and the means described for compressing the upper grip-jaw, substantially as set forth.

9. In a cable-grip, the combination, with the operating-lever C', of the roller C^5, the cam-surface C^4, the lifting-link C^3, the cross-head B', the upper grip-jaw, B^2, and the intermediate means whereby said jaw may be raised from contact with the cable, as set forth.

10. In a cable-grip, the combination, with the upright or hanger A and the operating-lever C', of the fulcrum-link C^4, substantially as set forth.

11. In a cable-grip, the combination, with the cable-drum C^7, of

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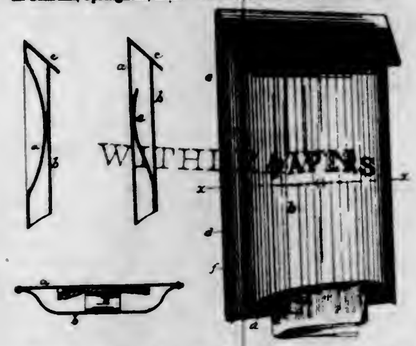
the vertically-adjustable journal-block d^4, the adjusting-screws d^5, and the bracket described for supporting said drum or drums, as set forth.

12. In a cable-grip, the combination, with the drum C^7, provided with the pivotal bearing D, the brackets supporting said drum or drums, and the base-plate B^6, substantially as set forth.

13. In a cable-grip, the combination, with the base-plate B^6, of a tripping lever or levers provided in the lower end with the slot e, the stop-screw e', the conical pulleys D^4 D^4, the hooks e^2, the rollers e^3, the spring D^6, and the supporting arm or arms, substantially as and for the purpose set forth.

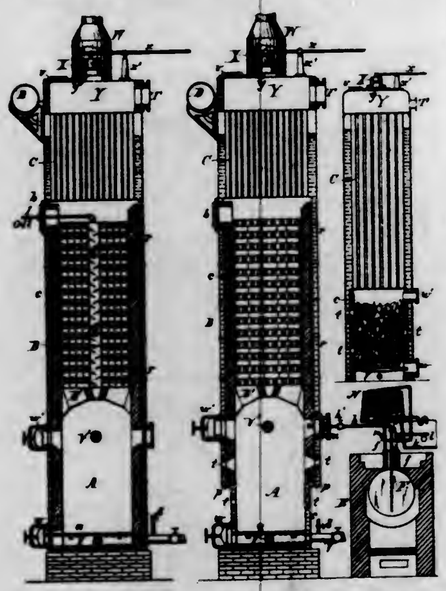
14. In a cable-grip, the combination, with the grip-beam B, of the concussion-springs F F', the rod or bar F^2, the bearing-block F^3, and the framing-bars A^3 A^4, substantially as and for the purpose set forth.

329,966. BOX FOR RECEIVING AND HOLDING PAPERS. Elial M. Staples, Springfield, Mass. Filed Dec. 8, 1883. (No model.)



Claim.—A mail-box for papers, consisting of the shell or box *b*, having a closed upper end and an open lower end, and a holding-spring, *a*, having its lower end secured to the lower inner face of the shell and its free end arranged to project toward the opposite side of the shell, substantially as and for the purpose stated.

329,967. PROCESS OF MANUFACTURING GAS. John L. Stewart, Philadelphia, Pa. Filed Jan. 9, 1885. (No model.)

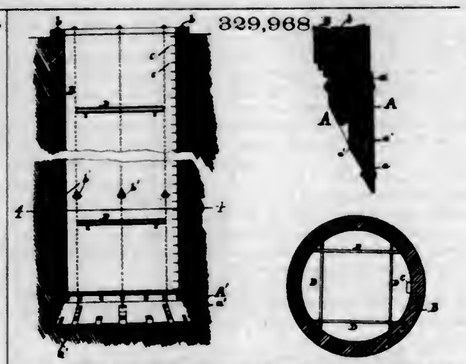


Claim.—The process of manufacturing illuminating-gas which consists in heating a body of fuel to incandescence by admission of an air-blast, and by means of the resulting hot gaseous products heating up a fixing-chamber, and at the same time generating a volume of oil-vapor and storing it under pressure in a separate still or vaporizer; then decomposing steam by passing it into the incandescent fuel, carbureting or enriching the resulting water-gas by admitting to it, above the fuel, the stored hot oil-vapor in regulated quantity to produce a uniform high candle-power gas, and, finally, fixing the carbureted water-gas by passing it through the fixing-chamber previously heated by the hot gaseous products, whereby the loss of oil by burning and the deadening of the fuel by admission of oil directly upon it are prevented, and a better quality of gas is produced.

329,968. APPARATUS FOR SINKING WELLS. Michael Stoffer, Cincinnati, Ohio. Filed Sept. 14, 1885. (No model.)

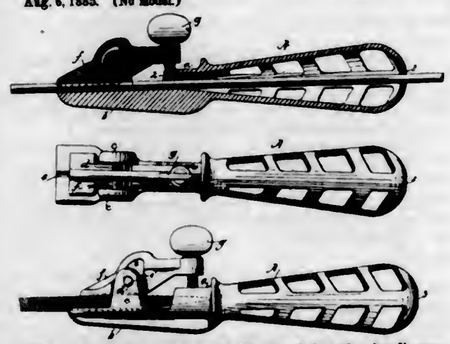
Claim.—1. The herein-described apparatus for sinking wells, consisting of a foundation-shoe constructed substantially as described, in combination with a wall constructed as the excavation proceeds, and anchor-rods therein.

329,968



2. The combination of a foundation-shoe composed of wooden sections A, bands *a*, and shoe-plates *a'*, with the anchor-rods *b*, provided with anchor-plates *b'*, and the walls of a well, substantially as and for the purpose specified.

329,969. TOOL-HOLDER. Horace E. Sweet, Providence, R. I. Filed Aug. 6, 1885. (No model.)

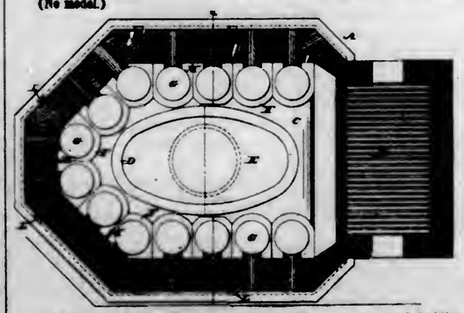


Claim.—1. An improved tool-holder, consisting of a handle provided with the lengthened seat, a rigid jaw having a pivot-pin, and a movable jaw provided with a pivot-slot having two or more steps or seats in different planes, to receive, one at a time, the pivot-pin, as specified, and a set-screw, as and for the purpose set forth.

2. An improved tool-holder, consisting of a handle provided with a rigid jaw, and having an opening through the longitudinal center of said handle for the passage of wire to the jaw, as specified, and a movable jaw pivoted to the rigid jaw, and provided with a set-screw adapted to bear on the handle, as and for the purpose set forth.

3. A hollow handle provided with end openings, the seat *a*, and rigid jaw having a pivot-pin, combined with a movable jaw having a pivot-slot to receive the pin, and a set-screw adapted to bear against the seat, as and for the purpose specified.

329,970. GLASS-FURNACE. Thomas W. Synnott, Wenonah, assignor to Whitney Brothers, Glassboro, N. J. Filed Mar. 31, 1885. (No model.)



Claim.—1. A glass-furnace provided with a floating batch-holding ring, substantially as described.

2. In a glass-furnace, a batch-holding ring and a series of retorts surrounding the same, substantially as described.

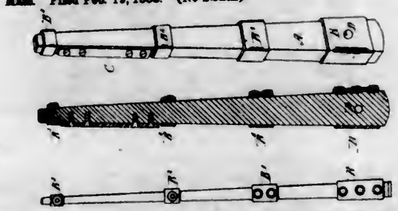
3. In a glass-furnace, a ledge within the glass-chamber, in combination with retorts supported on the said ledge in openings thereof, substantially as and for the purpose set forth.

4. In a glass-furnace, a retort having an opening on the side opposite to the mouth thereof, substantially as and for the purpose set forth.

5. The opening J in the retort, substantially as described.

6. A glass-furnace having an air-space, K, between the outer and inner walls thereof, and provided with ducts L, for conveying the heat to the stack, and ducts M, so located as to draw the heat from the combustion-chamber around the retorts, substantially as described.

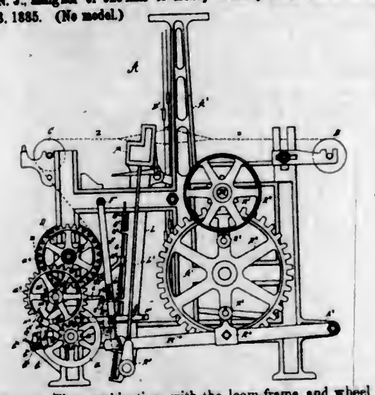
329,971. PICKER-STICK FOR LOOMS. Lafayette Taft, Douglass, Mass. Filed Feb. 19, 1883. (No model.)



Claim.—1. The combination of the picker-stick A with the front plate, C, and rawhide bands B^2 B^3 at each end of said front plate, shrunk on said picker-stick A adjacent to the ends of said plate, substantially as described.

2. The picker-stick A, provided with the rawhide bands B B' B^2 B^3, shrunk onto the same, and the front plate, C, substantially as described.

329,972. TAKE-UP MECHANISM FOR LOOMS. Henry Talks, Patterson, N. J., assignor of one-half to Henry Doherty, same place. Filed May 18, 1885. (No model.)



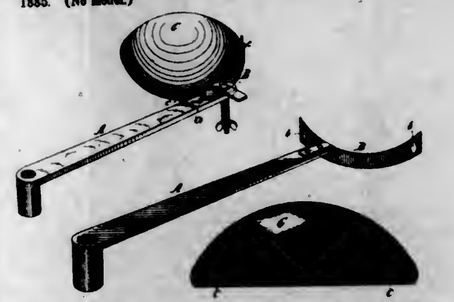
Claim.—1. The combination, with the loom-frame and wheel *a*, having a pinion, *a'*, of the dog H^3, the grip H^{10}, the spring H^9, pivot H^{11}, the bolt H^4, for securing the dog to the bar H, the bar H, lever F, the roller G^3, for vibrating the lever F, pivot F', pivot F^4, the yoke G, the bracket G^4, the arm H^5, arm H^6, the stud S' and spring S, the cloth-beam, the lays, and gearing between the cloth-beam and wheel *a*, substantially as described.

2. The combination, with the lay, the cloth-beam, the wheel *a*, and gearing, substantially as described, between the said wheel and cloth-beam, of the yoke G, bracket G^4, roller G^3, lever F, bar H, a connection, substantially such as described, between the lever F and bar H, a spring, S, connected to the bar H, the clutch-dog H^3, the grip H^{10}, the cord d^4, the dog d^3, the lever d^5, the stop d^7, the grip d^9, the roller E, the brackets E^2, the arms E^3, the shaft E^4, the arm *e*, the draw-cord *e'*, the hooked bracket G^6, and the spring G', substantially as and for the purpose set forth

329,973. FIREPROOFING WOOD. Rudolf Tancsik, Vienna, Austria-Hungary. Filed Aug. 13, 1885. (No specimens.) Patented in Belgium July 4, 1885, No. 69,491, and in Italy Aug. 5, 1885, XIX, 18,626, and XXXVII, 39.

Claim.—The herein-described process of rendering wood or other like fibrous substances incombustible, which consists in impregnating the dried material with a warm aqueous solution of borax and bitter-salt, (magnesium sulphate,) drying the same, coating the same with a mixture of washed clay and water-glass, after which the material is sheathed with paper or a woven fabric previously impregnated with the described solution of borax and bitter-salt, and then applying to the sheathed material a solution of sulphate of ammonia, gypsum, and water.

329,974. TARGET-TRAP. Benjamin Tripp, Covington, Ky., assignor to the Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Filed Aug. 6, 1885. (No model.)

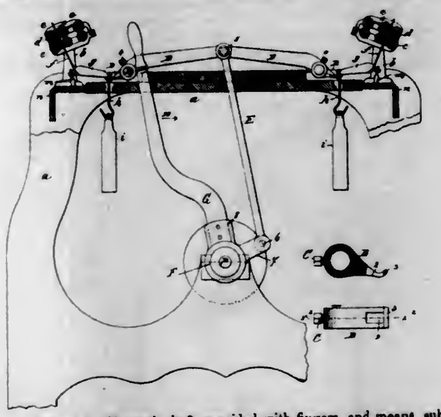


Claim.—1. A target-holder consisting of a spring adapted to embrace a portion of the perimeter of the target and provided with perforations adapted to take over lugs upon the target, substantially as and for the purpose specified.

2. The combination, with the throwing-arm of a target-trap, of a target-holder consisting of a spring adapted to embrace a portion of the perimeter of the target and provided with perforations, and a target provided with lugs to enter into such perforations, substantially as and for the purpose specified.

329,975. DEVICE FOR REMOVING PRESSURE FROM ROLLS OF SPINNING-FRAMES, &c. Edward W. Thomas, Lowell, assignor of one-half to George Draper & Sons, Hopedale, Mass. Filed Dec. 22, 1884. (No model.)

Brief.—There is provided at each side of the machine a rock-shaft having arms adapted to lift the weighted levers of the roller-stands. Both rock-shafts are operated from a crank moved by a hand-lever through the intermediary of arms and connecting-rods.



Claim.—1. The rock-shaft provided with fingers, and means, substantially as described, whereby the rock-shaft and link may be moved, combined with the roller-stands, rolls therein, saddles, links, and levers *g*, and means to support the same, with its attached weights, substantially as described.

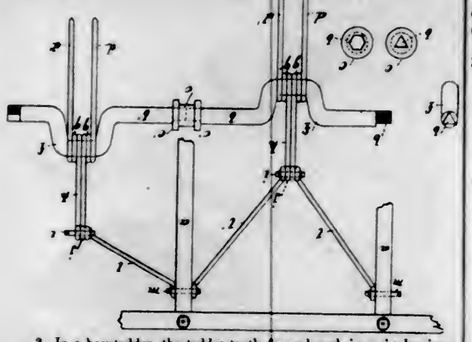
2. The two sets of roller-stands, rolls therein, saddles, stirrups, weighted levers *g*, and two rock-shafts, A, provided with fingers B, combined with the arms D D, link E, and means whereby the latter may be moved to lift the levers *g* at each side of the frame, substantially as described.

329,976. HAY-TEDDER. John H. Thomas, Springfield, Ohio. Filed Sept. 12, 1883. (No model.)

Claim.—1. In a hay-tedder, the crank-shaft for operating the teeth, made in sections, in combination with coupling-sleeves loosely uniting said sections and adapting one section to be driven by another, substantially as described.

2. In a hay-tedder, the crank-shaft made in sections, each having its ends made in polygonal or other suitable form, in combination with couplings having sockets or perforations conforming in shape to the ends of the crank-sections, for loosely uniting said sections and adapting one section to be operated through the coupling by the adjoining section, substantially as described.

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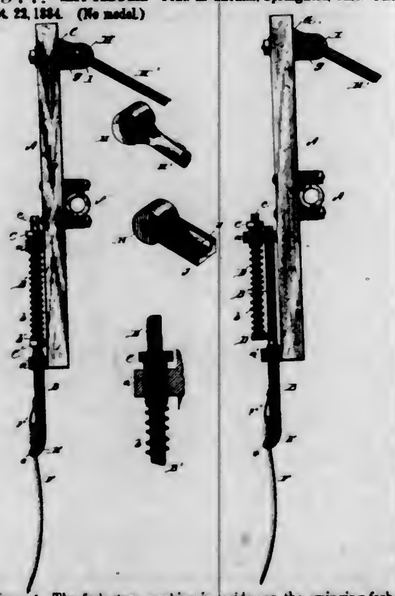
3. In a hay-tedder, the tedder-teeth formed each in a single piece, with the coil forming a bearing for its actuating-crank, and with the eye for attaching it to the swinging link or radius-rod supporting its heel end, substantially as described.

4. The combination, in a hay-tedder, of a crank-shaft constructed of sections, couplings for uniting the contiguous ends of said sections, and tedder-teeth coiled one or more times around the cranks of said crank-shaft and united at their upper ends to radius-rods, substantially as and for the purpose specified.

5. In a hay-tedder, a crank-shaft constructed of sections *b b'*, joined together loosely by couplings *c*, that also form journals for said crank-shaft, in combination with a system of suitable tedder-teeth, substantially as and for the purpose specified.

6. The combination, in a hay-tedder, of a frame, a revolving shaft having cranks between its ends for vibrating the tedder-teeth, and tedder-teeth arranged in pairs, each pair provided with coils between the teeth, arranged directly on the revolving cranks, and having shanks supported at their upper ends by radius-rods connected to the main frame, said coils forming distance-pieces, and also journal-boxes in which the teeth-operating cranks revolve, substantially as described.

329,977. HAY-TEDDER. John H. Thomas, Springfield, Ohio. Filed Sept. 22, 1884. (No model.)

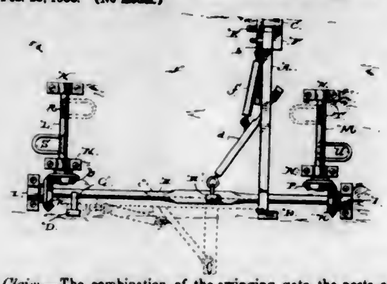


Claim.—1. The fork-stem working in guides on the swinging fork-arm and the spring for adapting said stem to yield, in combination with means, substantially as described, for adjusting the tension of said spring.

2. The combination, with the fork-arm, of the fork-stem held loosely in and sliding through two or more perforated guides on said arm, a spiral spring, means, substantially as described, for adjusting the tension of said spring, for adapting said fork-stem to yield, and the independently-acting tedder-forks pivoted to the lower end of the fork-stem in pendent brackets and held in working position by a flat spring, as described.

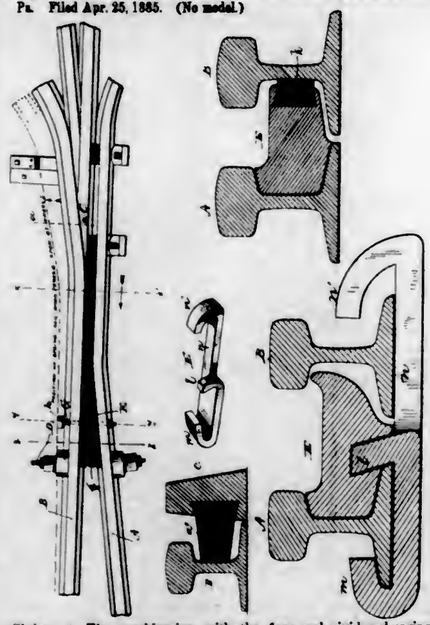
3. The fork-arm provided with the perforated guide-pieces, in combination with the sliding fork-stem provided with the supplemental arm or rod surrounded by the spiral spring, and the independently-acting tedder-forks, substantially as specified.

329,978. SWINGING GATE. Jesse Thompson, Rushville, Ind. Filed Feb. 25, 1885. (No model.)



Claim.—The combination of the swinging gate, the posts against which the gate swings, said posts having keepers, shaft H, having arm H', the shafts L and M, having the arms or loops arranged at right angles to each other, the latch pivoted to the gate and having an upwardly-extending arm, the endwise-moving bar secured to the gate and to the arm H' and connected to the latch-arm, and gears connecting the shafts L and M to the shaft H, substantially as described.

329,979. RAILROAD-FROG. David F. Vaughan, Monongahela City, Pa. Filed Apr. 25, 1885. (No model.)



Claim.—1. The combination, with the frog and rigid and spring rails, of a bar or casting secured at its larger end between said rails and having its lesser end extending in rear of and located between the point of the frog and the stiff rail, substantially as set forth.

2. The combination, with the frog and the rigid and spring rails, of a bar or casting hollowed out on its upper face, and secured at its larger end between the rigid and spring rails, and having its lesser end extending in rear of and located between the point of the frog and the stiff rail.

3. The casting or bar E, secured between the rigid and spring rails, provided with cushions or springs *k*, substantially as described.

4. In a turn-out or crossing frog in which a spring-rail is employed, the point of the frog C, provided on its side adjacent the spring-rail with cushions or spring, for the purpose specified.

5. The casting or bar E, secured between the rigid and spring rails, having the projection H on its upper surface, the said projection having its upper surface formed as an inclined plane, the highest point of which is at the widest end of the casting or bar, substantially as described, and for the purpose set forth.

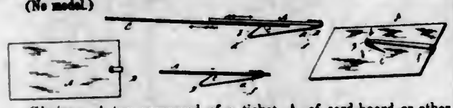
6. The clamp for the casting between the spring and rigid rail, consisting of the flat plate having the projection *l*, to engage the under side of said casting, the hooked end *m*, passing around the flange of the rigid rail, whereby the casting is secured in place, combined with the extension *n* of said plate passing beneath the spring-rail, and provided with the hook to limit the outward movement of said spring-rail, as set forth.

329,980. TAG. Miles Vernon, Brooklyn, N. Y. Filed Dec. 29, 1884. (No model.)



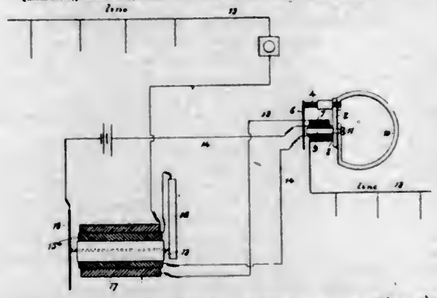
Claim.—A tag composed of the sheets A and A', attached to each other at their rear ends, as described, and a pin, B, attached at its shank to the lower sheet, A, at or near the front edge of said sheet, and extending upward and rearward between said sheets A A', its sharp-pointed end bearing against the under side of the sheet A', as shown and described.

329,981. TAG. Miles Vernon, Brooklyn, N. Y. Filed Apr. 16, 1885. (No model.)



Claim.—A tag composed of a ticket, A, of card-board or other suitable material, and an elastic or spring-pin or pointed hook, B, constructed as described, and rigidly secured at its shank at or near one end of said ticket, the main body of said hook extending underneath the ticket toward the opposite end thereof at an angle to the plane of the under surface of the same, and having a portion, *b*, bent upward so that its sharp-pointed end c bears against the under surface of the ticket, as shown and described.

329,982. RECEIVER FOR TELEPHONIC TELEGRAPHS. William A. Wint, Bellefontaine, Ohio, assignor to the West Telephone Company, (Limited,) Kenosha, Wis. Filed Nov. 20, 1884. (No model.)



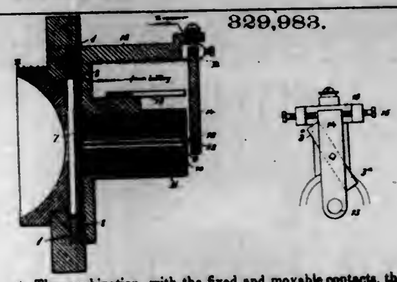
Claim.—1. A receiver having a permanent magnet of horseshoe form, a diaphragm in contact with one pole of said magnet, and a primary helix surrounding the other pole of said magnet, in combination with a transmitter containing a diaphragm, fixed and movable contacts, and an inductorium, substantially as described, and a main-line circuit including the secondary helix of the inductorium, and a local circuit including the fixed and movable contacts and the primary helices of both the receiver and the transmitter, substantially as set forth.

2. A receiver having a permanent magnet of horseshoe form, a diaphragm in contacts with one pole of said magnet, and an inductorium surrounding the other pole of said magnet, in combination with a transmitter containing a diaphragm, fixed and movable contacts, and an inductorium, substantially as described, a main-line circuit including the secondary helices of the two inductoriums, and a local circuit including the fixed and movable contacts and the primary helices of the two inductoriums, substantially as set forth.

329,983. TELEPHONE. William A. Wint, Bellefontaine, Ohio, assignor to the West Telephone Company, (Limited,) Kenosha, Wis. Filed Nov. 20, 1884. (No model.)

Claim.—1. The combination, with the fixed and movable contacts and electro-magnet and circuit in which said contacts and electro-magnet are included, of a controlling-magnet which, when the movable contact during its vibratory movement recedes from the fixed contact, tends, by its attractive force, to draw the said movable contact in the opposite direction, substantially as and for the purposes hereinbefore set forth.

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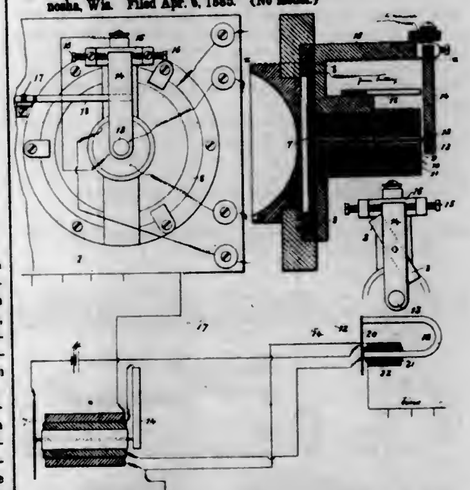
2. The combination, with the fixed and movable contacts, the electro-magnet, and the circuit including said contacts and electro-magnet, of a controlling-magnet arranged and operating, substantially as described, to exercise upon the movable contact repellent or attractive force, according as the circuit is made or broken, substantially as and for the purposes set forth.

3. The combination of the fixed and movable contacts, the electro-magnet having a secondary coil in the main-line circuit and a primary coil in a local circuit including the said contacts, a controlling-magnet arranged and operating to exercise upon the movable contact repellent or attractive force, according as the local circuit is made or broken, and a receiver located also in said local circuit, substantially as and for the purposes hereinbefore set forth.

4. The combination of the transmitting-diaphragm, the fixed and movable contacts, the electro-magnet, the receiver, the primary circuit in which said contacts, electro-magnet, and receiver are included, and the controlling-magnet, substantially as and for the purposes hereinbefore set forth.

5. The combination of the fixed and movable contacts, the electro-magnet having a secondary coil in the main-line circuit and a primary coil in a local circuit, a controlling-magnet for influencing the movable contact, substantially as described, and a receiver provided with an inductorium, consisting of a primary coil included in said local circuit and a secondary coil included in said main-line circuit, substantially as and for the purpose hereinbefore set forth.

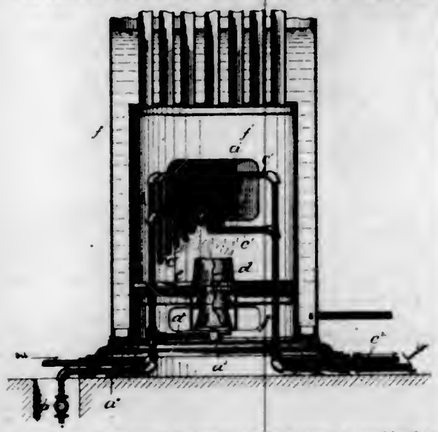
329,984. TELEPHONIC TELEGRAPH. William A. Wint, Bellefontaine, Ohio, assignor to the West Telephone Company, (Limited,) Kenosha, Wis. Filed Apr. 6, 1885. (No model.)



Claim.—1. The described method of controlling the vibratory movement of the movable contact of a telephone, consisting in subjecting the same to an attractive force called into action by the separation of the two contacts, and influencing at that time the movable contact to move in a direction to re-establish the normal condition of the circuit in which it is included, substantially as and for the purposes hereinbefore set forth.

2. The method of controlling the vibratory movement of the movable contact of a telephone, consisting in subjecting it to the action of a magnetic or electro-magnetic force, which is repellent or attractive with respect to said movable contact, according as the circuit in which said contact is included is made or broken, substantially as and for the purposes hereinbefore set forth.

329,985. APPARATUS FOR BURNING HYDROCARBONS. Louis B. Wertz, New York, N. Y., assignor to Wilson L. Potter and E. Hamilton Hills, both of Hartford, Conn. Filed Aug. 13, 1884. (No model.)



Claim.—1. In a device for burning hydrocarbons, in combination, a retort having inlet and outlet pipes, a protecting water-jacket through which a stream of water flows, the supply-pipe to the retort connecting it to a source of fuel-supply, and the outlet-pipe having means for drawing off the residuum, and also a branch pipe through which the gas flows to the jet or burner, all substantially as described.

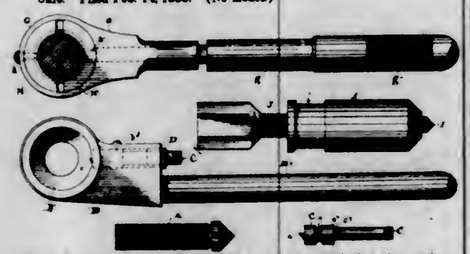
2. In a device for burning hydrocarbons, a retort having an inlet and outlet pipe and a protecting water-jacket, the outlet-pipe of the retort having one branch for the outflow of the residuum and another for the outflow of the vaporized fuel, all substantially as described.

3. The combination of the helical tubular retort with a supply-pipe and an outlet-pipe for the outflow of the residuum, and a branch pipe through which the gas flows to the jet or burner, and the water-jacket surrounding and protecting the retort, all substantially as described.

4. In a device for burning hydrocarbons, a fire-pot, a retort arranged and supported within the fire-pot and having inlet and outlet pipes, a water-jacket covering and protecting the retort in a measure from contact with the flames, means for withdrawing liquid residuum from the outlet-pipe of the retort, and the perforated bed-plate and the damper, whereby the supply of air to the fire-pot is regulated, all substantially as described.

5. In combination, in a steam-generator, a retort for vaporizing hydrocarbons, a water-jacket protecting the retort and having pipes connecting the water-jacket and the boiler of the generator, whereby heated feed-water is supplied to the boiler and the temperature of the hydrocarbon in the retort reduced, all substantially as described.

329,986. RATCHET-DRILL. Pardon A. Whitney, Chagrin Falls, Ohio. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a ratchet-drill, a lever-head inclosing the ratchet-wheel, a lever connected therewith arranged tangentially with the ratchet-wheel, and a spring-dog operating in a socket of the head and arranged radially with the ratchet-wheel, substantially as set forth.

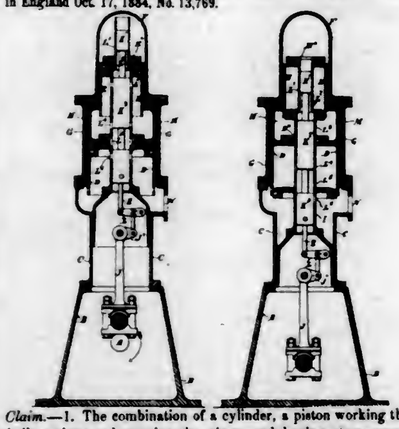
2. In a ratchet-drill, the combination, with a socket or head inclosing the ratchet-wheel, and a lever arranged tangentially with the ratchet-wheel, of a spring-dog set radially with the socket, with an annular groove and longitudinal grooves on the dog, and a point engaging the same, by means of which the dog may be reversed or held from contact with the ratchet-wheel, substantially as set forth.

3. In a ratchet-drill, a friction-feed arranged to feed the drill automatically with greater or less feed, according to the pressure applied to the friction mechanism, substantially as set forth.

4. In a ratchet-drill, the combination, with an annular friction-surface on the feed mechanism, of ring-sections arranged to embrace such friction-surface, and mechanism, preferably as shown, for regulating the pressure on the ring-sections, substantially as set forth.

5. In a ratchet-drill, the combination, with an annular friction-groove on the feed mechanism, and screws or sleeves, as the case may be, of ring-sections to engage such grooves, a strap embracing said sections, and a screw-handle to regulate the pressure on the sections, substantially as set forth.

329,987. STEAM-ENGINE. Peter W. Willans, Thames Ditton, County of Surrey, England. Filed Jan. 5, 1885. (No model.) Patented in England Oct. 17, 1884, No. 13,769.



Claim.—1. The combination of a cylinder, a piston working therein, a hollow piston-rod carrying the piston and having steam-passages in its sides, a crank-shaft to which movement is imparted by the piston-rod, and a piston-valve moving endwise in the hollow piston-rod and opening and closing the steam-passages in its sides, substantially as and for the purpose set forth.

2. The combination of a cylinder, a piston working therein, a tubular piston-rod having ports in its sides, a rocking connecting-rod from the piston to a crank-shaft, a piston-valve moved endwise to and fro within such tubular piston-rod to open and close the ports formed in it, and means of transmitting motion to the piston-valve relatively to the hollow piston-rod by the connecting-rod's rocking motion, substantially as and for the purpose set forth.

3. The combination of a cylinder, a piston working therein, a hollow piston-rod carrying the piston and having ports in its sides, a crank-shaft, a connecting-rod by which movement is imparted from the piston-rod to the crank-shaft, a piston-valve moving endwise in the hollow piston-rod to control the admission of the fluid to the cylinder and its exhaust therefrom, and mechanism connecting the piston-valve and the connecting-rod, and by which this valve is moved endwise in the piston-rod, substantially as and for the purpose set forth.

4. The combination of the tubular rod I with ports in its sides, a piston carried thereby, a cylinder, E, in which the piston works, a connecting-rod, J, a crank-shaft, A, a piston-valve, K' K^2, a connecting-rod by which it is moved to and fro, and exhaust-ports in the side of the cylinder past which the piston moves at the end of its stroke, substantially as and for the purpose set forth.

5. The combination of the tubular rod I with ports in its sides, pistons of different diameters carried by such rod, cylinders in which they work, a rocking connecting-rod, J, a crank-shaft, A, and piston-valves moved to and fro by the rocking of the connecting-rod to open and close the ports in the tubular rod, substantially as and for the purpose set forth.

6. The combination of the tubular rod I with ports in its sides, pistons of different diameters carried by such rod, cylinders in which they work, a rocking connecting-rod, J, a crank-shaft, A, piston-valves moved to and fro by the rocking of the connecting-rod to open and close the ports in the rod, and the steam-jacket G, enveloping the exterior of the cylinders, substantially as and for the purpose set forth.

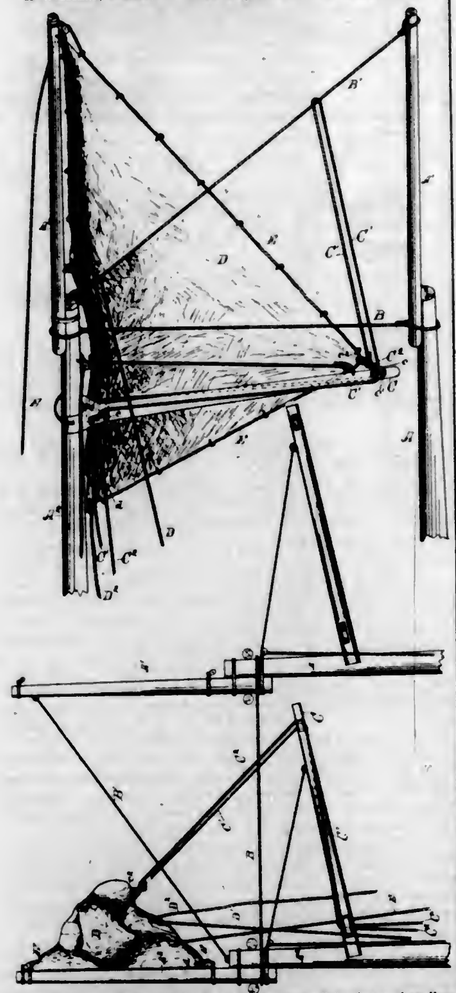
7. The combination of the tubular rod I with ports in its sides, pistons of different diameters carried by such rod, their cylinders, a rocking connecting-rod, J, a crank-shaft, A, piston-valves moved to and fro by the rocking of the connecting-rod to open and close the ports in the rod, and exhaust-passages in the sides of the cylinders past which the pistons move at the end of their stroke, substantially as and for the purpose set forth.

8. The combination of the tubular rod I with ports in its sides, pistons of different diameters carried by said rod, their cylinders, a rocking connecting-rod, J, a crank-shaft, A, piston-valves moved to and fro by the rocking of the connecting-rod to open and close the ports in the rod, and intermediate receivers between the cylinders with or without the exhaust-passages in the sides of the cylinders past which the pistons move at the end of their stroke, substantially as and for the purpose set forth.

9. The combination of a cylinder, E, a piston working therein, a tubular rod, I, carried by the piston, a piston-valve, K' K^2, a crank-shaft, A, a connecting-rod, J, the arm J' extending therefrom, and the interposed lever mechanism for giving increased travel to the piston-valve, substantially as and for the purpose set forth.

10. The combination of a cylinder, E, a piston working therein, a tubular rod, I, with ports in its sides, and a piston-valve, K' K^2, moved to and fro within the rod and formed, substantially as described, to control the admission of steam to the working end of the cylinder, and to allow the steam to pass to the opposite end of the cylinder without expansion at the end of the stroke and on the next forward stroke to allow this steam to pass to the exhaust or to another and larger cylinder, substantially as and for the purpose set forth.

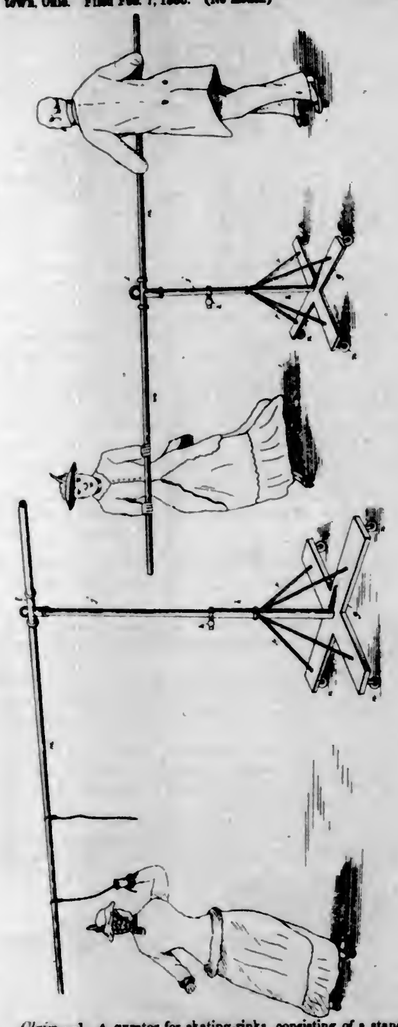
329,988. SHIFTING THE TOP-SAIL SHEET AND TACK. Addison R. Whitstead, Grafton, Va. Filed Aug. 4, 1885. (No model.)



Claim.—1. The combination of a forestop-sail having a clew-line, port and starboard tack-lines, and port and starboard sheets, all passing over the foretop-sail stay, and a foresail-gaff having blocks for the sheets, substantially as described.

2. A forestop-sail having a clew-line, port and starboard tack-lines, and port and starboard sheets, the tack-lines and sheets arranged substantially as described, so that when the sail is in use they will pass over the foretop-sail stay, for the purpose set forth.

329,989. SKATER'S APPLIANCE. Lauren D. Woodworth, Youngstown, Ohio. Filed Feb. 7, 1885. (No model.)



Claim.—1. A gyrator for skating-rinks, consisting of a standard or frame mounted on suitable wheels and having a turning or revolvable head provided with arms for the support of the skaters, as set forth.

2. In roller-skating-rink equipments, the gyrator consisting, in combination, of the base *g*, rollers *n*, braces *i*, cylinder *h*, set-screw *k*, movable or adjustable post or stanchion *j*, cap *l*, and arms *m*, substantially as described.

329,990. GRIP ATTACHMENT FOR CABLE-MOTOR CARS. Thomas Wright, Camden, N. J. Filed Feb. 6, 1885. (No model.)

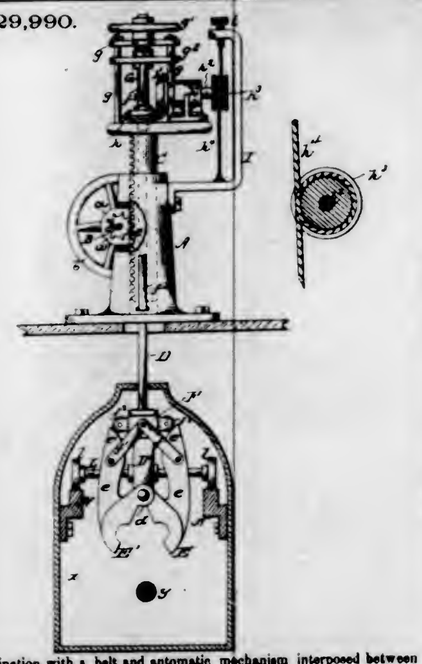
Claim.—1. In combination with a cable-motor car-grip and its actuating mechanism, the belt h^4, pulley h^3, and gearing interposed between the latter and said grip-actuating mechanism, substantially as and for the purpose set forth.

2. The combination, with a cable-motor car-grip having a sliding stem, C, sliding frame F, in gear with the grip-jaws, and actuating mechanism for said frame, of belt h^4, pulley h^3, gearing interposed between said pulley and frame-actuating mechanism, rollers *l l*, and conduit ways or inclines N, substantially as shown and described.

3. In a grip attachment for cable-motor cars, the combination of stem C, mechanism for raising and lowering the stem, jaws E E', in gear with a sliding frame, F, in gear with a traveling nut and screw mechanism secured on stem C, belt h^4, and mechanism interposed between it and said screw, substantially as and for the purpose set forth.

4. In a grip attachment for cable-motor cars, the sliding stem C, having gripping-jaws, operating mechanism therefor, and rollers *l l*, in

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combination with a belt and automatic mechanism interposed between it and the jaw-operating mechanism, substantially as shown and described.

5. In a grip attachment for cable-motor cars, having a traveling nut, g^2, and screw G, the gear h h' h^3, belt h^4, and rollers l l, in combination with the coodnit ways or inclines N, substantially as shown and described.

6. The combination, with the actuating mechanism of a cable-motor car-grip, of a belt, h^4, having a tension device, pulley h^3, and mechanism interposed between said pulley and grip-actuating mechanism, substantially as shown and described.

329,991. RAIL-BRACE. CHARLES ALKINS, Chicago, Ill., assignor to the Ajax Forge Company, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. As a new article of manufacture, a rail-brace constructed substantially as described, out of the fag or refuse ends of T-rails

2. A rail-brace having the re-enforced solid head B so combined with a railroad-rail as to come in contact with the head, web, and flange thereof.

3. A rail-brace in which the foot C is extended to meet the head B, to form a support thereof, substantially as described.

4. A rail-brace constructed from a section of T-rail in which the flange of said section is bent so as to form a support for the bent head of the same.

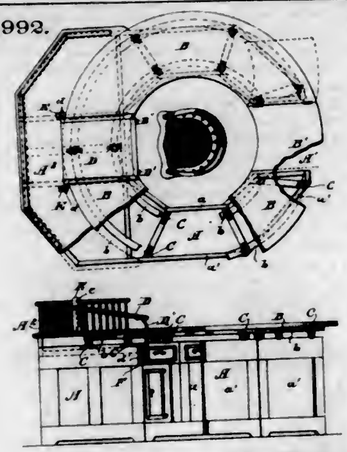
329,992. DESK. JOHN P. APPELL, Chicago, Ill. Filed Oct. 16, 1884. (No model.)

Claim.—1. The combination, with the stationary frame of a desk, of an annular rotatable top and a stationary platform, D, supported from the desk-frame above said top, substantially as and for the purpose set forth.

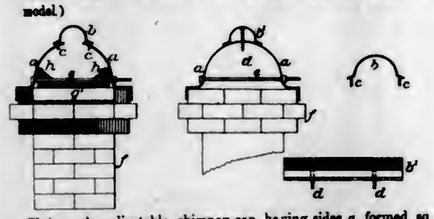
2. The combination, with the stationary frame of a desk, of an annular rotatable top, a stationary platform located above the said top, and adjustable supports for sustaining said platform from the frame.

3. The combination, with the frame of a desk, of an annular rotatable top, a platform, D, provided with pins d and arms D' and notched standards E, and notched plates F upon the frame, adapted for the engagement of the said pins and arms, substantially as and for the purpose set forth.

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329,993. CHIMNEY-TOP. IRVING BARKER, Braidwood, assignor of one-half to James D. Bennett, Wilmington, Ill. Filed June 6, 1884. (No model.)



Claim.—An adjustable chimney-cap having sides a, formed so as to lie upon the walls of the chimney, and provided on their exterior edge with a dependent flange, and rising upward from the interior edge of said part of the side, in combination with bolts c, substantially as specified.

329,994. CORN-PLANTER. JOSEPH C. BARLOW, Quincy, Ill. Filed Sept. 27, 1883. (No model.)

Claim.—1. The combination, in an agricultural implement, of the crank-shaft, the foot-lever connected thereto having the circular series of notches or recesses, and the loose longitudinally-movable hand-lever having the lug for engaging with the notches of the foot-lever, substantially as described.

2. The combination, in an agricultural implement, of the crank-shaft, the plates in which it is journaled, the foot-lever having the series of notches or recesses, the adjustable lever having the lug for engaging the notches of the foot-lever, and the bolt or plunger for engaging the notches of the stationary plate, substantially as described.

3. The combination, in an agricultural implement, of the crank-shaft, the foot-lever connected thereto and having the series of notches, and the longitudinally-movable hand-lever having its fulcrum on the arm of the crank-shaft, and provided with the lug for engaging with the notches of the foot-lever, substantially as described.

4. The combination, in an agricultural implement, of the crank-shaft, the plates in which it is journaled, one of which has the ledges and notch, of the foot-lever having the series of notches, and the longitudinally-movable adjustable hand-lever having the side lug or tooth, and the automatic bolt or plunger substantially as described.

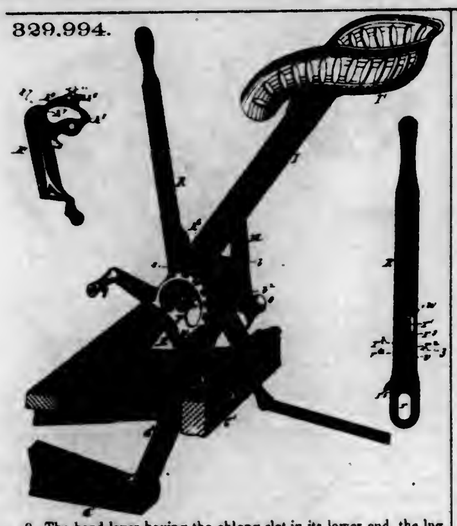
5. The combination, in an agricultural implement, of the crank-shaft, the plates in which it is journaled, one of which has the ledges and notch, the levers on opposite ends of the crank-shaft, one of which has the series of notches or recesses, and the adjustable longitudinally-movable hand-lever provided with the side lug and automatic bolt or plunger, substantially as described.

6. The combination, in an agricultural implement, of the crank-shaft, the plate K', and the adjustable lever adapted to be swung back and locked to the plate K' by its rear hook engaging with the rear stop, substantially as described.

7. The combination, with the notched foot-lever of the corn-planter, of the adjustable hand-lever adapted to be thrown into or out of engagement with the said foot-lever at will, and carrying the automatic bolt or plunger for automatically locking it when swung back from a forward position, substantially as described.

8. The hand-lever having the oblong slot in its lower end, and the automatically-operating bolt, substantially as described.

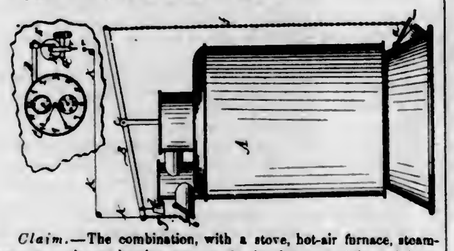
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9. The hand-lever having the oblong slot in its lower end, the lug and the automatically-operating bolt or plunger, substantially as described.

10. In a planter, the hand-lever having the recess or chamber, the bolt or plunger within the chamber having the slot in it, the spring for projecting the bolt, the cap-plate, and the screw for holding the same in place, substantially as described.

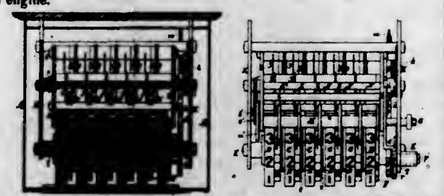
329,995. AUTOMATIC DAMPER-REGULATOR. ROBERT BRACHMAN, Lyons, N. Y. Filed Jan. 10, 1885. (No model.)



Claim.—The combination, with a stove, hot-air furnace, steam-heater, or analogous heating apparatus having dampers, of the rock-lever B, connected with the dampers by suitable connections, the cord or chain K, attached to the rock-lever, the track or way G, the carrier H, resting on the track, the fork E, resting behind the carrier, the sliding-bar D, to which the fork is attached, and the clock and escapement devices inside the clock, as shown and described, and for the purpose specified.

329,996. REGISTER OR COUNTER FOR MACHINES, STEAM-ENGINES, PUMPS, &c. HORACE BEARD, Wilton, N. H. Filed Nov. 28, 1884. (No model.)

Brief.—This register is designed to indicate the number of movements made or articles produced by a machine—as, for example, the impressions of a printing-press or the strokes of the piston of a pump or an engine.



Claim.—1. The combination of the series of counting-wheels, figured and provided with the gears F, G, and H, substantially as described, with the swinging frame L, its series of intermediate gears, N, and setter M, and with the mechanism for intermittingly revolving, as explained, the first one of the series of counting-wheels, said mechanism consisting of the ratchet-wheel I, impelling-pawl f, lever g, its rod n, and cord U, and springs h and k, all being arranged within a frame, K, and said frame disposed within the case A, essentially as set forth.

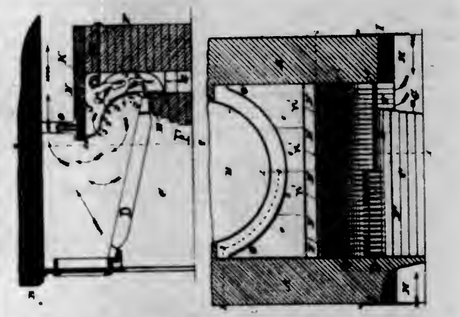
2. The combination of the swinging frame L, provided with the gears N and setter M, to operate, as described, with the gears of the counting-wheels, with the mechanism for moving said frame L, to carry either the setter or the gears N into or out of engagement with the gears F and G of the said counting-wheels, said mechanism for so moving the frame L consisting of the recessed arm s, extending from said frame, the cam q, arranged in the recess of the said arm, the shaft p, and the gate P, all being substantially as set forth.

3. The combination, with the series of counting-wheels, the gears F, G, and H, the setter M, and the swinging frame L, substantially as described, of the studded disk a' and the spring c', secured to the said swinging frame and bearing against the stud b' of the said disk, all being essentially as set forth, such spring and studded disk being to keep the setter in a position to prevent its teeth at their ends from butting against the teeth of the gears of the counting-wheels while the setter is in the act of being moved down to engage with said gears.

4. The combination of the frame L, provided with the recessed arm s, and the setter M, provided with the crank O, having its handle to fold down, as described, with the cam q within said arm, and with the shaft p, and the gate or plate P, for moving the said cam, such handle being to fold upon the body of the crank in order to move it (the said handle) out of the path of movement of the gate or plate P, as explained.

5. The combination of the caster having the tubular shank and grooved wheel, and supported by a stud or projection, as described, with the frame A, and with the register or counting-machine, substantially as set forth, provided with the line or cord U, and rod n, and their lever, pawl-and-ratchet wheel, as represented, and mainly consisting of the series of counting-wheels, their gears and swinging frame with its setter and series of gears, all being arranged and supported so as to operate essentially in the manner and for the purpose described, the first one of the series of counting-wheels having mechanism for intermittently revolving it, as explained.

329,997. FURNACE. ETHRIDGE BOILEAU, St. Louis, Mo. Filed Oct. 18, 1884. (No model.)



Claim.—1. A grate-bar for chambered furnace-walls, formed with a vertical portion for insertion in the chamber, a horizontal portion adapted to extend over the fire-chamber, and a hook at the rear of the upper portion by which the bar is hung in place.

2. A grate-bar for chambered furnace-walls, formed with a vertical portion, a horizontal portion to extend over the fire-chamber, and a double flange extending in front of the vertical portion and beneath the horizontal portion, and having recesses in its edges.

3. A grate-bar for chambered furnace-walls, formed with a broad thin web, J', extending vertically and horizontally over the fire-chamber, double flange j, extending in front of the vertical portion of the web, and beneath the horizontal portion thereof, recesses j^x in the edges of the flanges providing studs j', apertures J^2 in the web, foot j^3, notch j^4, and hook K, having stud k.

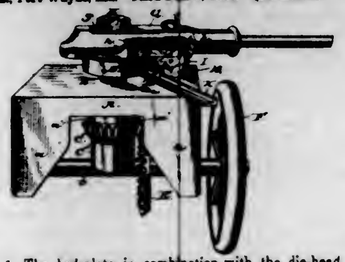
4. The combination, with a furnace-wall having a chamber opening into the fire-chamber, of a series of grate-bars having vertical portions extending down into the chamber, and horizontal portions extending over the fire-chamber, said bars having webs flanged at the edges next the fire-chamber.

5. The combination, with a chambered furnace-wall opening into the fire-chamber, of the grate-bars having vertical portions occupying the chamber and horizontal portions extending over the fire-chamber, and the cap-tiles extending over the furnace-wall and over the horizontal portions of the grate-bars, substantially as set forth.

6. The combination of a furnace-wall having chamber G and bar extending across the chamber, and the grate-bars J, having hooks K and feet j^3, by which they are supported.

7. The combination, with the furnace bridge-wall and boiler, of the supplemental wall formed of removable interlocking upright and horizontal tiles, the upright tiles having their tops conforming in shape to the portion of the boiler above, substantially as set forth.

329,998. MACHINE FOR BENDING HORSESHOE-BLANKS. Geo. W. Bowen, Fort Wayne, Ind. Filed Feb. 7, 1885. (No model.)



Claim.—1. The bed-plate, in combination with the die-head, the spring-pressed eccentric stop for holding the blank against the head, and a pivoted lever for bending the blank, as set forth.

2. The bed-plate, in combination with the die-head, a stop for holding the blank, the pivoted lever, and a guide-plate carried by the lever, and formed with a notch or groove to receive the flanged side of the blank, for the purpose set forth.

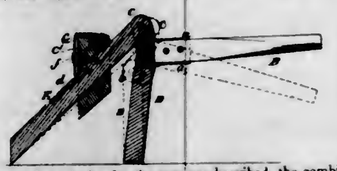
3. The bed-plate, in combination with the die-head grooved on its upper face, the pivoted lever for bending the blank, and pins or studs carried by the lever, to work in the grooves of the die-head, as set forth.

4. The combination of the bed-plate, the grooved die-head, the slotted lever that is pivoted thereto, and that has a stud for entering the groove in the die-head, the bearing-roller, the guiding-plate, and the stop, substantially as described.

5. The combination of the bed-plate, the vertically-movable die-head having a screw-threaded shank, the internally-threaded wheel for raising and lowering the die-head, the pivoted lever for bending the blank, and the stop, substantially as described.

6. The combination of the bed-plate, the die-head having the depending threaded shank, the gear-wheel screwed on the shank, the horizontal shaft having the hand-wheel, and a gear-wheel that meshes with the gear-wheel on the shank, the pivoted lever having the bearing-roller and guiding-plate, and the stop that is secured on the bed-plate adjacent to the die-head, substantially as described.

329,999. WAGON-JACK. Henry G. Cady, Pine Bluff, Ark. Filed Sept. 23, 1885. (No model.)



Claim.—1. In a device for the purpose described, the combination of the lever B, metallic plates C C, arms D E, pivotedly attached, with the adjustable bearing-block F, provided with the spring G, all arranged and operating substantially as described.

2. The combination, with one arm of a lifting-jack, of a movable bearing-block arranged upon the arm, and adapted to engage therewith by means of a spring operated by the weight of the body lifted, substantially as described.

330,000. COMPOSITION FUEL. Leon Cline, Chicago, Ill., assignor of one-fourth to Samuel W. Cline, same place. Filed Sept. 1, 1885. (No specimens.)

Claim.—An article of composition fuel composed of fine charcoal mixed with fine-cut cork in substantially the proportions stated, and for the purposes set forth.

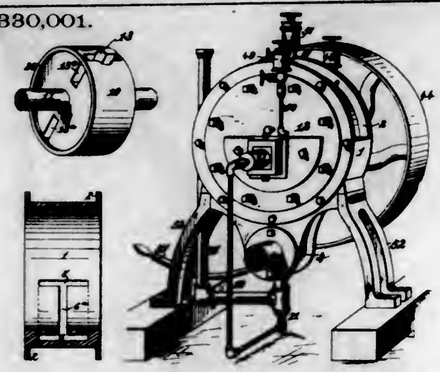
330,001. ROTARY ENGINE. William H. Conver and George M. Shriver, Emleton, Pa. Filed Oct. 2, 1884. (No model.)

Claim.—1. In a rotary engine, the combination, with the piston-casing having continuous peripheral flanges, of packing-plates adjustable upon the power-shaft and having annular grooves which receive said flanges, substantially as described.

2. In a rotary engine, the combination, with the piston-casing, of pistons arranged to slide therein, a spring separating the inner ends of said pistons, and a hollow shaft carrying said piston-casing and communicating with the steam-supply and with the chamber containing said spring, substantially as described.

3. In a rotary engine, the combination, with the piston-casing and the pistons sliding therein, of wings mounted upon each piston and composed of two sections, steam-spaces being left between the sections by which they are driven laterally outward at right angles to the sliding pistons, substantially as described.

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4. In a rotary engine, the combination, with the power-shaft, of a separate pulley-shaft, the two being connected by a crank-arm upon one carrying a pin which journals in a box sliding in a crank-arm upon the other, substantially as described.

5. In a rotary engine, the combination, with the cylinder having steam and exhaust ports, each communicating with said cylinder by an elongated slot formed centrally in the wall thereof and having a transverse slot at the upper extremity, of the piston-casing and sliding pistons having wings, substantially as described.

6. The combination, with the cylinder having steam and exhaust ports 6 and 7, separated by a bridge, 9, of the valve composed of the chambered body 28, having a slot, 30, and the circular eccentric heads 29, substantially as described.

7. The combination, with the pistons 14, having slotted ends, of wings constructed in two separable sections, 39 and 39ª, having slots 41 and steam-spaces 43, and the bolt 42 passing through the slotted end of the piston, substantially as described.

8. The combination, with the power-shaft 11, having a slotted crank-arm, 48, and a journal-box, 47, mounted therein, of a separate pulley-shaft having a crank-arm, 45, and a pin, 46, journaling in the box 47, substantially as described.

9. The combination, with the packing-plates 22, having annular grooves formed in their inner faces, of the piston-casing 13, having peripheral flanges 26, and the cap-plates having adjusting-screws 24 and holding-screws 25, substantially as described.

10. The combination, with the rotary valve having the body 28 and the slot 30, of the eccentric heads 29 and the cylinder having steam and exhaust ports separated by a bridge, 9, substantially as described.

11. The combination, with the power-shaft 11, of the pipe-section 53, having end flange 55, the flanged and exteriorly-threaded collar 53ª, and the steam-inlet pipe 19, having an interiorly-threaded elbow, 56, substantially as described.

330,002. BRICK-MACHINE. Samuel Daly, Metropolis City, Ill., assignor of one-half to William Owen Towle, same place. Filed June 4, 1885. (No model.)

Claim.—1. In a brick-machine, the combination, with the open-ended molds N N, of a series of upper-plungers, E E, supported by an adjustable cross-head, D, connected with pitmen F F, and a series of lower plungers, E' E', supported in an adjustable cross-head, T, said cross-head being actuated by cams arranged and operating in the manner and for the purpose substantially as shown and described.

2. In a brick-machine, the combination, with the frame A A², guides B B, molds N N, and lower plungers, E' E', of the upper plungers, E E, adjustable cross-head D, sides C C, pitman-straps F F, having rollers L M, shaft J, and cams K K, substantially as described.

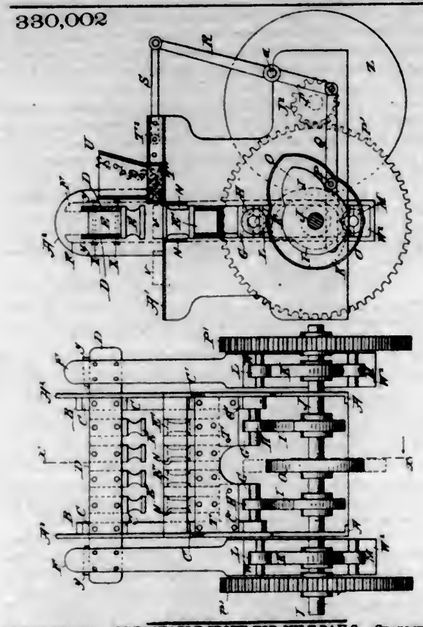
3. In a brick-machine, the combination, with the frame A A², guides B B, molds N N, and upper plungers, E E, of the lower plungers E' E', adjustable cross-head T, having rollers H H, the slides C' C', shaft J, and cams I I, substantially as described.

4. In a brick-machine, the combination, with the frame A, table A', plungers E E', and molds N N, of the box or pusher T', connecting-rods S S, bifurcated lever R, rock-shaft a, arm Q, having roller P, shaft J' and cam O, substantially as described.

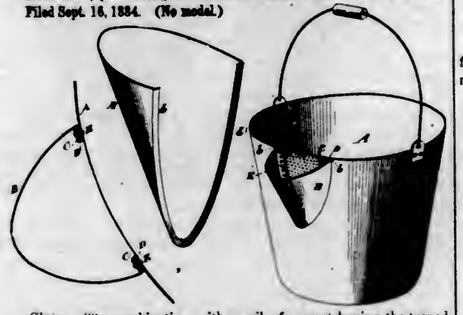
5. In a brick-machine, the combination, with the molds N N, lower plungers, E' E', cross-head T, and roller-boxes G, of the adjustable stops or slide-wedges E² E², levers E⁴ E⁴, and rock-shaft E³, substantially as described.

6. In a brick-machine, the combination, with a reciprocating feed-box having connecting-rods S S and bifurcated lever R, of the feed-arm Q, carrying rollers P P², the guide-track C² for the rollers P², and the grooved cam O, for engaging the rollers P, whereby the feed-box is actuated, substantially as described.

330,002

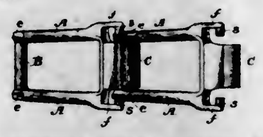


330,003. DETACHABLE SPOUT FOR MILK-PAILS. Charlotte A. Davenport, (remarried,) now Charlotte A. Bacon, Charlton Depot, Mass. Filed Sept. 16, 1884. (No model.)



Claim.—The combination, with a pail, of a spout having the turned edge *b*, the metallic strip C, and the rubber packing D, the parts C D being made fast to the pail, while the spout is detachably held, substantially as described.

330,004. DRIVE-CHAIN. James M. Dodge, Philadelphia, Pa., assignor to the Ewart Manufacturing Company, Chicago, Ill. Filed May 8, 1885. (Model.)

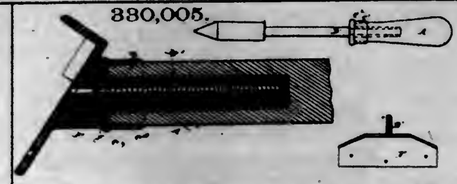


Claim.—A detachable drive-chain of the species shown and described, each of the links of which is formed or provided at one end with pintle-like detaining devices arranged and operating substantially as described, and also with a coupler-hook about equal in length to the width of the central opening of the link, and at the other end with abutting shoulders or stop-like surfaces located wholly within the end portions of the side bars of the link and adapted to co-operate with the said pintle-like devices at the opposite end of a similar link, all substantially as and for the purposes hereinbefore set forth.

330,005. BRUSH-HANDLE. Charles Donaghy, Philadelphia, Pa. Filed Aug. 14, 1884. (No model.)

Claim.—The iron holding-plate F, having a screw-threaded stud, D', and a shoulder, *f*, in combination with a handle, A, having a metallic screw-threaded socket-piece, E', in its end, the same being driven into a hole made to receive it, and adapted to receive the screw-stud D', and a metallic ferrule, C³, having the part C⁴ fitting over the end of the handle, holding the socket-piece E' in place and forming a face to jam against the face *f*, substantially as shown, and for the purpose specified.

330,005.

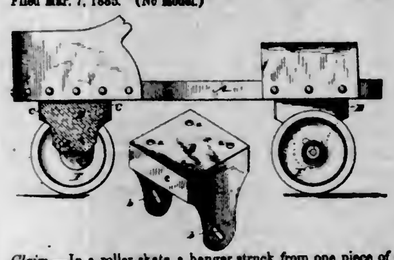


330,006. HORSESHOE. Charles A. Floyd, Eastbourne, County of Sussex, England. Filed Mar. 18, 1885. (No model.) Patented in England Jan. 10, 1884, No. 1,194; in France May 31, 1884, No. 162,502, and in Belgium June 4, 1884, No. 65,382.



Claim.—A horseshoe having in its face V-grooves which in the front part of the shoe are transverse and in the hinder limbs of the shoe more or less inclined to the line of travel.

330,007. ROLLER-SKATE. Charles W. Foote, Youngstown, Ohio. Filed Mar. 7, 1885. (No model.)



Claim.—In a roller-skate, a hanger struck from one piece of metal, having the pocket or cavity C and slots *b* for the reception of the axle, in combination with a rubber spring seated in the pocket of the hanger, the upper side of said spring being adapted to rest against the top of the hanger, while the lower side of said spring is recessed, and adapted to rest directly on the axle of the rollers, as set forth.

330,008. CUTTER-HEAD FOR TRIMMING THE HEELS OF BOOTS OR SHOES. Bernard Gallagher, Lynn, Mass. Filed May 22, 1885. (No model.)

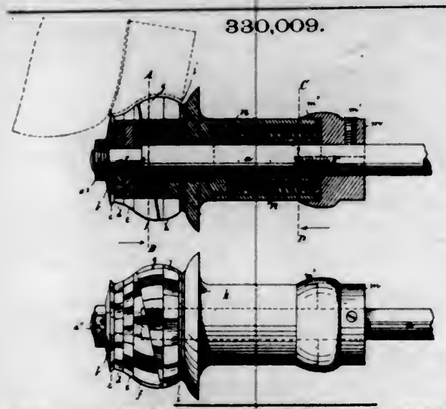
Claim.—1. In a rotary cutter, the expansive cutting-disks *f* and *g*, provided with peripheral cutting-teeth, and having their abutting-faces made inclined or wedge-shaped, as and for the purpose set forth.

2. In a rotary cutter, the shaft *a*, having secured to its outer end a rand-guide, *b*, rand-cutter *c*, one or more molded cutters, *d e*, and wedge-shaped or inclined cutter *f*, combined with the longitudinally-yielding gage-hub *k* and the inclined or wedge-shaped cutter *g* secured to it, as set forth.

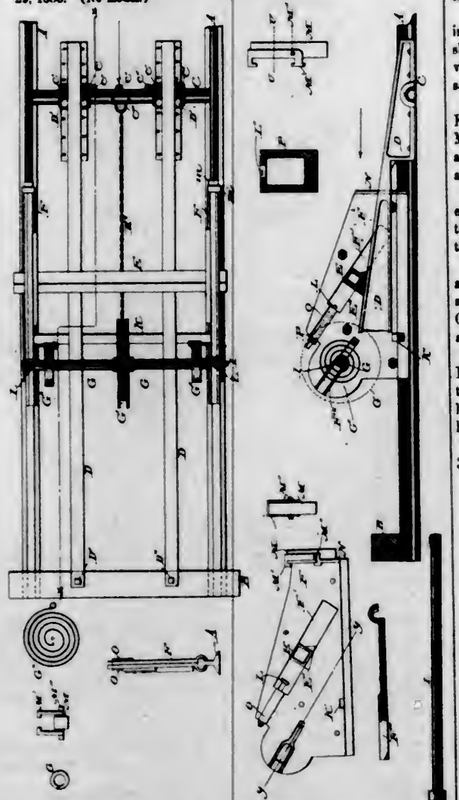
3. In a rotary cutter, the shaft *a*, having secured to it the adjustable collar *m*, combined with the longitudinally-yielding hub *k* and its springs *n n* and guide-pins *k''* *k''*, as and for the purpose set forth.

4. In a rotary cutter, a rand-guide, rand-cutter, one or more molded cutters, and a wedge-shaped or inclined cutter secured firmly to the rotary shaft, in combination with a longitudinally-yielding gage-hub, *k*, inclined cutter *g*, one or more molded cutters, *h*, and cutter *i*, adapted to trim the outer and under portions at the edge of the top lift, as described.

330,009.



330,009. BUFFER. ROBERT P. GARSED, Norristown, Pa. Filed Aug. 29, 1885. (No model.)



Claim.—1. The combination, in a buffer, of the rails A A, the housings F, with bar E, the supporting and gaging beam B, and the bed-bars D, supported and gaged thereon, substantially as and for the purposes set forth.

2. In combination, in a buffer, the rails A A, the supporting and gaging beam B, the bed-bars D, with brackets D'', and the anchoring-bar C, adapted to retain bars D and gage them to position, substantially as and for the purposes set forth.

3. In a buffer, the combination of the housings F, adapted to advance and retreat while supporting shaft G, said shaft G, with coil-springs G'', fastened thereon, and the chain-wheel G', attached to said shaft and carrying chain H', the one end of which being stationary permits the advance of the housings, while being a medium to cause their retreat, substantially as and for the purposes described.

4. In combination, the housings F, adapted to advance and retreat, the hollow shaft G, supported thereon, the coil-springs G'', fastened thereto, the rod I, adapted to pass through shaft G and retain housings in place, and the chain H', adapted to serve as a medium to wind up the springs and cause the retreat of the device, substantially as and for the purposes set forth.

5. In combination, the housings F, adapted to advance and retreat, the shaft G, supported thereon, the coil-springs G'', fastened thereto, the chain H', serving as a medium to operate the device, and the bar C, with the staple C''', adapted to hold the chain in place, substantially as and for the purposes set forth.

6. In a buffer, in combination, the rails A, the housings F, the bars E and D, the latter with openings for engagement with bar C, and one or more gaging-bars, C, having flanges C' for such engagement, and lugs C'' to hold the device in place, substantially as and for the purposes described.

7. In combination, the rails A, the housings F, adapted to slide thereon and having chambers o to receive screw-rod boxes P, said screw-rod boxes and the screw-rods L, the bar E, adapted to raise and lower, and the bars D, substantially as set forth.

8. In combination, in a buffer, the rails A, the housings F, adapted to advance and retreat, and having chambers o to receive screw-rod boxes P, said screw-rod boxes and the screw-rods L, with springs L' attached, the bar E, adapted to raise and lower, and the bars D, substantially as set forth.

9. In a buffer, the combination of housings F, having slots F'' with inwardly-slanting face, the spring-shaft G, adapted to fit within said slots and permitted to revolve upon the advance and retreat of the device, the springs G'', and the chain H', serving as a medium by which said springs are wound up to return the device to its normal position.

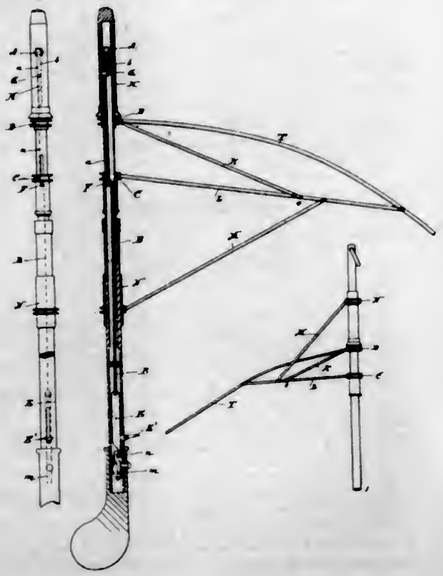
10. In combination, in a buffer, with the rails A A, the housings F, with ribs N and the fenders of wood or rubber, M, the metal frame M', having clamps thereon adapted to fit over ribs N of the housings, and the screw M'', adapted to hold the parts in place, substantially as and for the purposes set forth.

11. In a buffer, in combination, the rails A A, the housings fastened thereto and adapted to support bar E, the bed-bars D, bar E, and the bar K, passing beneath the bars D, through the housings, and over the rails A A, substantially as described, for the purposes set forth.

12. In a buffer, in combination with the rails A, the housings F, adapted to advance and retreat, the shaft G, supported thereby and adapted to revolve, the coil-springs G'', fastened thereto, and the wheel G', attached to said shaft and serving as a medium by which said springs are made available, substantially as and for the purposes set forth.

13. The combination, in a buffer, with the rails A, of the housings F, with ribs N, the fenders M, of wood or other yielding material, and the frame M', having clamps thereon adapted to fit over ribs N of the housings and serving as a medium by which said frame and wood are held in place, substantially as set forth.

330,010. UMBRELLA. ROBERT GEISLER, Leipsic, Germany. Filed Oct. 21, 1884. (No model.)



Claim.—1. The combination of an upper tip-holder, D, and lower tip-holder, C, both sliding upon the handle or stick of an umbrella, cord *a b*, passing over a fixed roller, A, cord B, and slide E, arranged to operate in the manner and for the purpose substantially as described.

2. The combination of ribs T, attached to a sliding tip-holder, D, struts L, attached to a sliding tip-holder, C, braces K, and braces M, and means for operating the sliding tip-holders, as described, arranged to operate in the manner and for the purpose substantially as set forth.

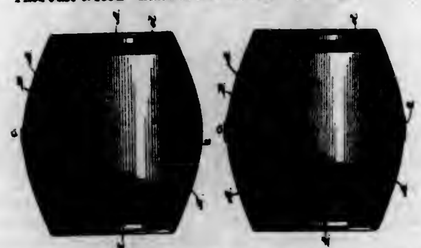
330,011. DENTAL APPLIANCE FOR MIXING AMALGAM. DAVID GREISER, Baltimore, Md. Filed Mar. 10, 1885. (No model.)



Claim.—1. A vessel for dental use, made of soft fine rubber free from metallic ingredients, having a thin elastic bottom oval in shape and a side wall rising therefrom, the bottom and side wall being curved, so as to be elliptical longitudinally to fit or rest securely within the palm of the hand, substantially as described.

2. A dental vessel for mixing amalgam, composed of rubber free from metallic ingredients, and having an elastic bottom and a surrounding side wall, said vessel being constructed to fit the palm of the hand, substantially as described.

330,012. KEG OR BARREL. GEO. H. GILLETT, New York, N. Y. Filed June 6, 1884. Renewed June 23, 1885. (No model.)

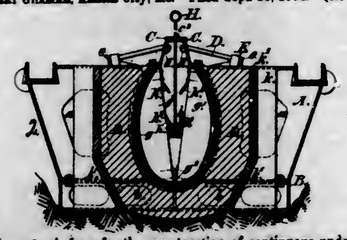


Claim.—1. A metallic covering for a keg or barrel, stamped up in parts, adapted to be placed over such keg or barrel, and joined or united together, whereby such covering is made to conform to the contour of the keg or barrel and completely inclose and protect the same, substantially as described.

2. A keg or barrel the inner part whereof is of wood or other suitable material, having upon its outer surface a covering of metal stamped up or formed as described, and fitted and secured thereon, whereby such keg or barrel is strengthened, and also adapted to be put to the ordinary uses of a wooden keg or barrel, substantially as described.

3. A beer keg or barrel the inner part whereof is of wood or other suitable material, over which is placed a metal covering having holes therein corresponding, to and forming with holes in the wood or inner part openings adapted to receive bushings, substantially as described.

330,013. MOLD FOR CONCRETE TUBES FOR CABLE RAILWAYS. ROBERT GILLHAM, Kansas City, Mo. Filed Sept. 20, 1884. (No model.)



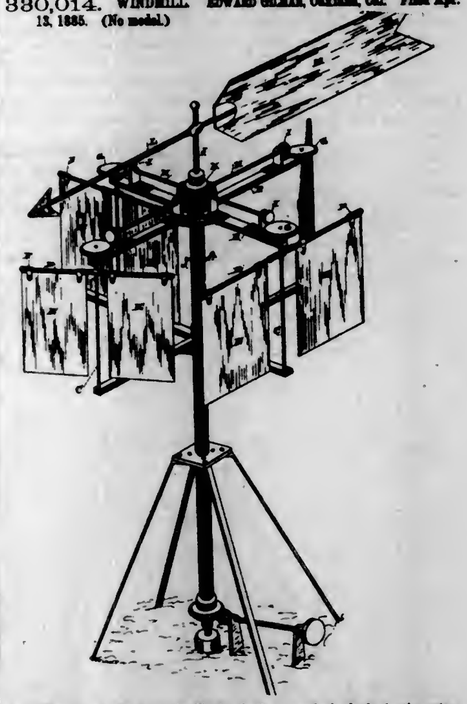
Claim.—1. A form for the construction of continuous underground tubes in cable railways, consisting of longitudinal stripe arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, and adapted to fold together within the limits of the tube, substantially as described.

2. A form for the construction of continuous underground tubes in cable railways, consisting of longitudinal strips arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, hinged together at one end, and adapted to fold together within the limits of the tube, substantially as described.

3. The combination, in a form for continuous underground tubes, of longitudinal strips arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, hinged together at one end, and a wedge interposed between said segments, for the purpose described.

4. The combination, in a form for continuous underground tubes in cable railways, of longitudinal strips arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, hinged together at one end, and wedge-plates on said segments, and a wedge, and a pressure-rod attached to said wedge, for the purpose shown and described.

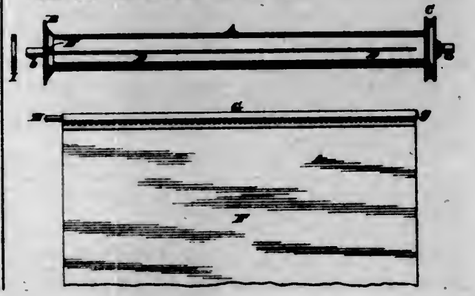
330,014. WINDMILL. EDWARD GILMAN, Oakland, Cal. Filed Apr. 13, 1885. (No model.)



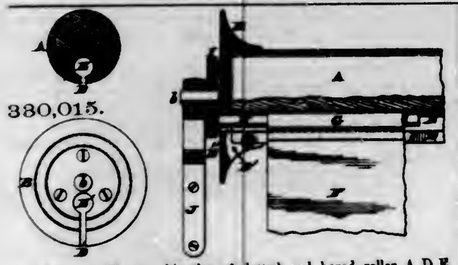
Claim.—1. In a windmill, the hollow vertical shaft A, the wings or sails E, supported on horizontal arms D, said wings connected with vertical revolving shafts supported at the outer ends of arms B, and horizontal shafts journaled upon the upper sides of these arms, with pinions upon their outer ends meshing with gears upon the upper ends of the vertical sail-shafts, and similar pinions upon their inner ends, in combination with a vertical stem fitting telescopically in the vertical shaft, and having the tail-vane fixed to its upper end and a pinion secured to it, so as to engage the pinions I upon the inner ends of the horizontal shafts, substantially as herein described.

2. In a windmill, a vertical central shaft having horizontal arms with vertical shafts at their outer ends, in combination with transverse arms secured to the upper ends of these vertical shafts, and wings or sails journaled or suspended from these arms, so that they may swing upon them in a violent wind while in the wind, substantially as herein described.

330,015. WINDOW-SHADE ROLLER. WILLIAM I. GOODEN, Cincinnati, Ohio. Filed Nov. 17, 1884. (No model.)



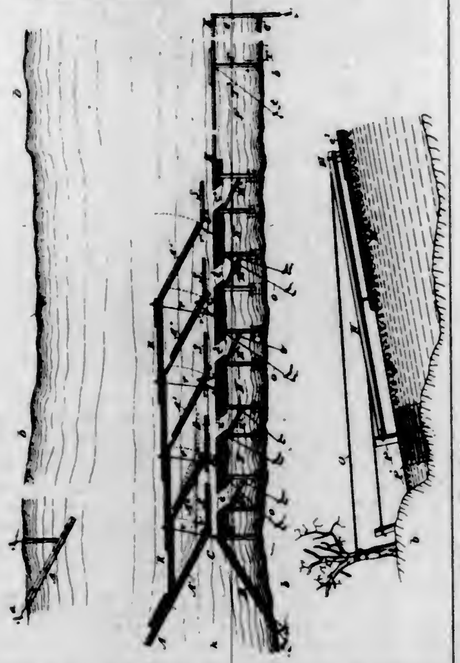
330,015.



Claim.—1. The combination of slotted and bored roller A D E, tacked curtain F G, and rod H, said tack being closed at one end, as at *g*, but being open at its opposite end to admit said rod, for the purpose specified.

2. The combination of slotted and bored roller A D E, slotted and bored cap-plate B *b* D′ F′, tacked shade or curtain F G, rod H, and pierced washer I, which washer is interposed between the supporting-bracket and roller-cap and rides on the journal of the latter, for the purpose described.

330,016. LOG-BOOM. JOHN GUESS, Williamsburg, Ky. Filed Aug. 22, 1885. (No model.)



Claim.—1. In a log-boom, the combination, with the boom-head, of a single retaining-pocket, and devices for directing the descending logs along said pocket, the pocket being provided with a series of boom-sections and working-platforms arranged to leave a plurality of openings along the course of the logs, said sections and working-platforms being held in place independently of each other, by which the openings are left free and the passage of the logs into a single pocket permitted, substantially as hereinbefore set forth.

2. In a log-boom, the series of working-platforms e^3, beveled at their ends, and supported independently of each other by bridge-logs or braces N and ties or braces O, to form a single pocket, substantially as and for the purpose described.

3. In a log-boom, the combination, with the boom-head and retaining-boom E, having a series of openings, of a series of sheers arranged upon the opposite side of the log-channel from and with reference to said openings, substantially as hereinbefore described.

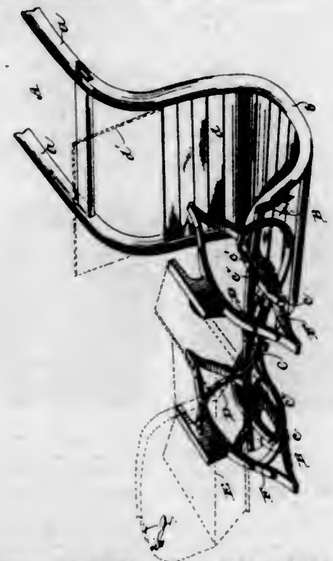
4. In a log-boom, the combination, with the boom-head, and retaining-boom E, having a series of openings, of the opposing boom R, carrying a series of sheers arranged with reference to said openings, substantially as hereinbefore set forth.

5. In a log-boom, the combination, with a platform, e^3, and a pile, P, of the brace-logs N N, arranged between said platforms and pile and above the water, and the tie O, connected with the platform and passing diagonally upstream to a point of attachment, whereby the platform is held at proper distance from the bank and against the force of the current, substantially as hereinbefore set forth.

6. In a log-boom, the combination, with the log collecting and directing devices, of the boom E, forming a retaining-pocket and having a series of openings, and gates E^2 for closing said openings as the pocket becomes filled, substantially as hereinbefore set forth.

7. In a log-boom, the combination, with the retaining-boom E, of the brace T, secured at its outer end to the boom above the water and at its inner end to a fixed object also above the water, and the tie T^2, connected with the boom or outer end of the brace and passing upstream to a point of attachment, substantially as hereinbefore set forth.

330,017. TWO-WHEELED VEHICLE. ELBRIDGE H. GRISWOLD, Brandon, Vt. Filed Sept. 18, 1885. (No model.)



Claim.—1. In a village cart, &c., a continuous thill having a deep oval bend extending below the horizontal plane of the axle, and forming the side sills for the foot-rest of the body, as set forth.

2. The thills having the deep oval bend combined with the body, the axle, and the spring C, engaging with the extension of the thills in the rear of the axle, as set forth.

3. The thills having the portions *a*, *b*, and *c*, combined with the foot-boarding *d*, the axle B, the spring C, the brace D, the seat E, and the springs F, as set forth.

330,018. DRIER. LUDWIG HAGEN, Magdeburg, Prussia, Germany. Filed June 20, 1884. (No model.)

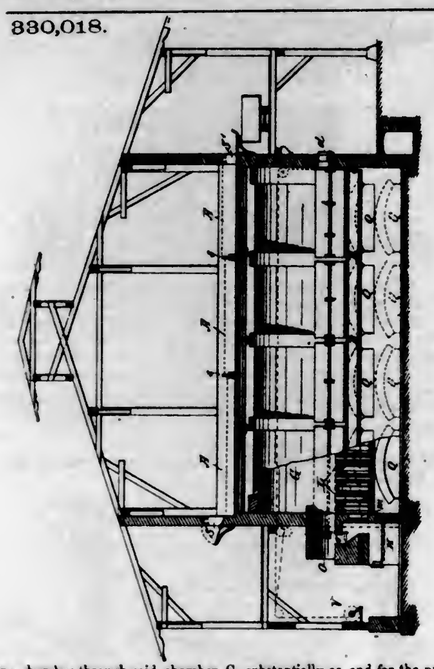
Claim.—1. In a kiln or drier, the combination, with the drying-chamber, its source of heat, and an air-heating apparatus, of the chamber G, surrounding said air-heating apparatus, suitable connections between said source of heat, the drying-chamber and air-heating apparatus, and cut-off devices operating to direct the heat from the source of heat to the drying-chamber or to the air-heater at will, substantially as described, for the purpose specified.

2. The combination, with the drying-chamber of a kiln or drier, and an air-heating apparatus, of the furnace H, and the valved passages *o m*, connecting said furnace with said drying-chamber and air-heater, respectively, substantially as described, for the purpose specified.

3. The combination, with the drying-chamber of a kiln or drier and the source of heat-supply, of an equalizing-chamber, G, in communication with the drying-chamber by means of valved passages *b*, and with the source of heat-supply by means of a passage opening into a cold-air flue, substantially as and for the purpose specified.

4. The combination, with the drying-chamber of a kiln, an air-heating apparatus, a source of heat-supply, and valved connections between the latter and air-heater, of a chamber, G, inclosing the air-heater, and valved connections between the source of heat-supply, the chamber G, and the drying-chamber, whereby hot air from the heater or the heat and products of combustion may be admitted into the drying-chamber through said chamber G, substantially as and for the purpose specified.

330,018.



5. The combination, with the chamber G, the drying-chamber of the kiln, provided with air-inlets *d*, and the source of heat-supply in communication with said chamber G, of the valves D *d*′, substantially as described, for the purpose specified.

6. The combination, with the drying-chamber of the kiln, provided with air-inlets *d*, the source of heat-supply, and an air-heating apparatus, in communication with one another, and means for cutting off said communications, of the chamber G, in communication with the source of heat-supply, and provided with valved passages *b* and the valves D *d*′, said parts being arranged for operation substantially as described, for the purpose specified.

7. The combination, in a kiln or drier, with the drying-chamber and the source of heat-supply, of a multitubular air-heater having its air flues or tubes arranged in series or sections, and the radiating power whereof increases with or in proportion to their distance to said source of heat, and valves operating independently to admit the hot air from any one or more of the series or sections of tubes directly to the drying-chamber, as described, for the purpose specified.

8. In a kiln or drier, the combination, with a series of drying-floors, a source of heat-supply, and a multitubular air-heater extending underneath said floors, the air flues or tubes of which heater are arranged in corresponding series of varying radiating power, which latter increases with or in proportion to the distance of said flues and floors from the source of heat, of an equalizing-chamber inclosing the heater, and valved passages for each series of tubes the valves whereof operate independently to regulate and direct the flow of heated air to the drying-floors, substantially as and for the purpose specified.

9. In a kiln or drier, the combination, with a series of drying-floors, a furnace, and a multitubular air-heater extending underneath said floors, and having its air flues or tubes arranged in series of varying radiating power, which latter increases with or in proportion to the distance of said tubes and their corresponding drying-floor from the furnace, of an equalizing-chamber, G, inclosing the air-heater, and provided with a valved passage for each floor-section above, the valves whereof operate independently to open or close their respective passages, air-ports to admit air into the air-heater and chamber G, and the valved passages M and O, whereby the heat and products of combustion are made to pass through the air-heater or the chamber G, substantially as and for the purpose specified.

10. In a kiln or drier, the combination, with the drying-chamber, of a multitubular air-heater composed of a chamber having its roof formed of a series of arches or ribs, and air-tubes extending between the arches through the floor of the chamber, with their flanges *z* resting on the arches and abutting against one another, whereby said tubes are held in proper position and relation to one another, substantially as described, for the purpose specified.

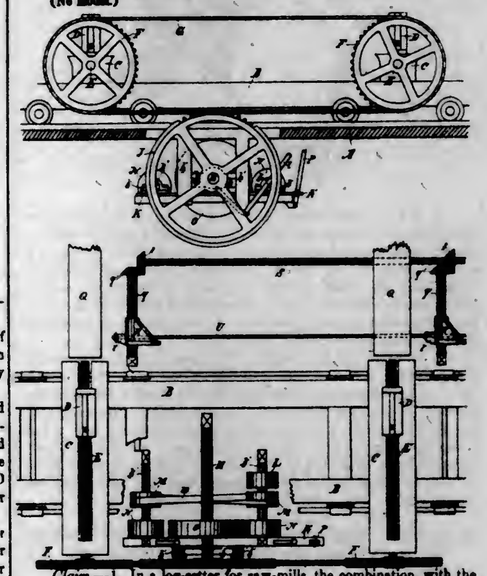
11. In a kiln or drier, a multitubular air-heater composed of a chamber having its roof formed of a series of arches or ribs, air-tubes *y*, extending between the same, with their flanges *z* resting on the arches and abutting against one another, in combination with the short tubes *y*′, secured in the floor of the chamber, onto which the tubes *y* are fitted, substantially as described, for the purpose specified.

330,019. PROCESS OF RENDERING BILLIARD AND WRITING CHALK UNBREAKABLE. ADOLPH HAMANN, Greenmhain, Saxony, Germany. Filed July 27, 1885. (No specimens.)

Claim.—1. As a new article of manufacture, cubes or other pieces of chalk for chalking billiard-cues, writing, and other purposes, which are rendered unbreakable by saturating such said chalk with fluid oil-varnish or boiled linseed or other drying oil, substantially as described.

2. The combination of the chalk prepared as claimed under claim 1, with a coating of shellac or other suitable varnish, substantially as described.

330,020. SAW-MILL SET-WORKS. DANIEL L. HARRACH, San Francisco, Cal., assignor to Tatum & Bowen, same place. Filed July 27, 1885. (No model.)



Claim.—1. In a log-setter for saw-mills, the combination, with the main knees D, of a mechanism by which they are adjusted, consisting of the screws E, the chain-pulleys F on the ends of the screws, the endless chain G over said pulleys, and a vertically-adjustable chain-pulley adapted to be thrown into or out of engagement with the endless chain, substantially as herein described.

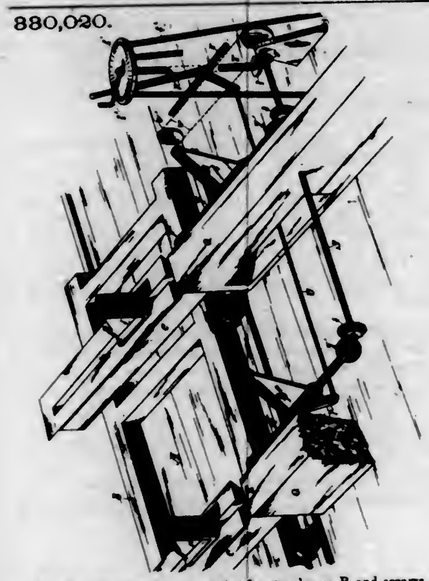
2. In a log-setter for saw-mills, the main knees D, and the screws E, by which they are operated, in combination with the chain-pulleys F on the ends of the screws, the endless chain G on said pulleys, the vertically-adjustable chain-pulley J, engaging the chain G, and suitable driving and adjustable friction gears or pulleys by which the rotation of the chain-pulley J is effected in either direction, substantially as herein described.

3. In a log-setter for saw-mills, the main knees D, having adjusting-screws E, the chain-pulleys F on the screws, and the endless chain G over said pulleys, in combination with the vertically-adjustable shaft H, the chain-pulley J and the friction-pulley O on said shaft, the horizontally-sliding shafts *k*′, the pulleys M on said shafts, and crossed belt *m*, the friction-pulleys N on the shafts *k*′, adapted to impinge alternately on the friction-pulley O, and the driving-pulley L on one of said shafts, all arranged and adapted to operate substantially as herein described.

4. In a log-setter for saw-mills, the combination of the main knees on one side of the log, the vertically-swinging stop-knees on the opposite side, and the screws upon which the stop knees are mounted, said screws having bearings in the main frame and operated by suitable gearing, substantially as herein described.

5. In a log-setter for saw-mills, the combination of the main knees and mechanism for operating the same with the pivoted and adjustable stop-knees R, provided with arms *r*, a lever, V, fulcrumed upon a shaft, *v*, and a rod, U, connecting the lower end of the lever with the short arms of the stop-knees, whereby the latter may be thrown back to allow the log to pass, and be thrown up again, substantially as herein described.

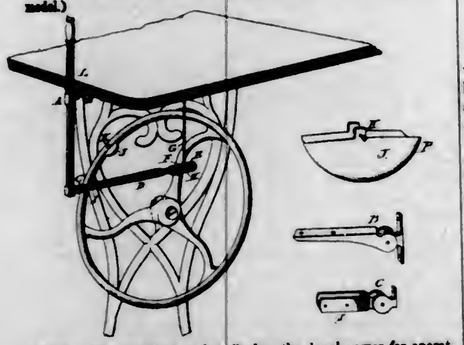
330,020.



6. In a log-setter for saw-mills, the stop-knees R and screws *q*, on which they are mounted and pivoted, in combination with the mechanism by which the screws are operated to adjust the knees, consisting of the shafts S and T, and suitable bevel-gears by which power is transmitted from the shaft T, through the shaft S, to the screws, and the mechanism by which the knees are thrown back and up again, consisting of the connecting-rod U between the two knees and the pivoted lever V, substantially as herein described.

7. In a log-setter for saw-mills, the pivoted knees R and screws *q*, in combination with the adjusting mechanism, consisting of the shafts S and T and suitable intervening power-transmitting gears, the mechanism for throwing back and up again the knees, consisting of the connecting-rod U, and the lever V, pivoted and adapted to slide on a shaft or rod, *v*, and the means by which the rod U and lever V are made to accompany the knees, consisting of the pulley W on the shaft S, the pulley *w'*, and the endless belt or chain *w*, passing over said pulleys and connected with the lever, substantially as herein described.

330,021. HAND-POWER FOR SEWING AND OTHER MACHINES. William C. Harrison, New Orleans, La. Filed Aug. 25, 1885. (No model.)

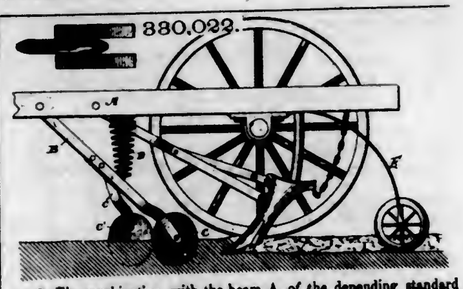


Claim.—The combination described as the hand-power for operating sewing-machines and other light-running machines, consisting of a lever, A, connected to arm D by means of hinges C, said arm D cut and secured by tap-bolt E, and attached directly to or on the crank-pin of the driving-wheel of machine, the spring G, and the weight J, with set-screw K, for fastening weight to wheel at proper point to load same, all as substantially and fully set forth.

330,022. SEED-DRILL ATTACHMENT. Joseph V. Harter, Beaver, Ill. Filed Mar. 26, 1884. Renewed Apr. 23, 1885. (No model.)

Claim.—1. In a seed-drill, two cutting-disks arranged at an angle to the line of draft and to each other, situated in front of each drill-tooth, for the purpose set forth.

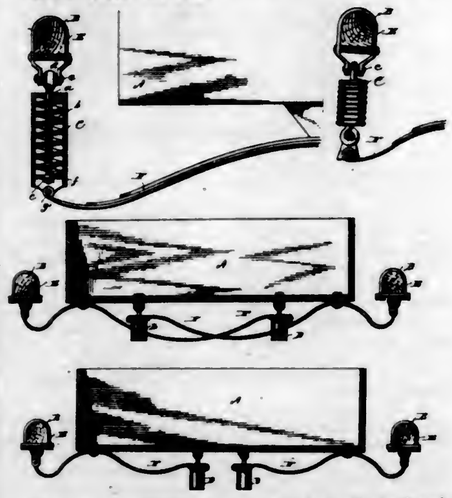
330,022.



2. The combination, with the beam A, of the depending standard B, having secured thereto the cutting-disk C and the arm *c*, carrying the cutting-disk C', the said standard and arm being formed to carry the disks at an angle to the line of draft and to each other, the whole arranged in front of a drill-tooth of a seed-drill, for the purpose set forth.

3. The combination, with the beam A, of the standard B, secured pivotally to the said beam in front of a tooth of a seed-drill, and carrying the wheels C and C', and the spring D, all arranged and operating substantially as described.

330,023. VEHICLE-SPRING. Charles N. Hamlin, Columbus, Ohio. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination, with a side bar and leaf-spring of a vehicle, of an incased spiral spring pivotally connected at one end to the leaf-spring, and a clip pivoted at one end to the opposite end of said spiral spring, and its other end embracing the side bar, substantially as and for the purpose specified.

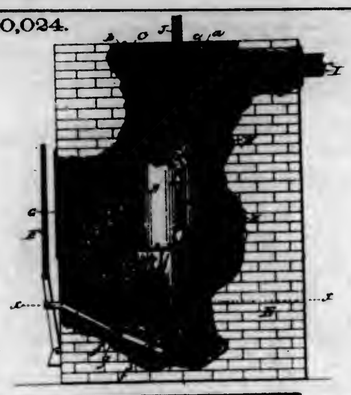
2. A cylindrical case having an open end and an aperture through its closed end, as shown, the rod *b*, inserted through said aperture and having an enlarged head and threaded lower end, the spiral spring C, encircling said rod within the case, the washer *f*, supporting said spring, and the adjusting-nut *c*, all combined, arranged, and operating as set forth.

3. A cylindrical case having an open end and an aperture through its closed end, the rod *b*, inserted through said aperture and having an enlarged head and threaded lower end, the spiral spring C, encircling said rod within said case, and adjusting means, as described, within said case, in combination with a clip pivotally connected with said enlarged head, as and for the purposes specified.

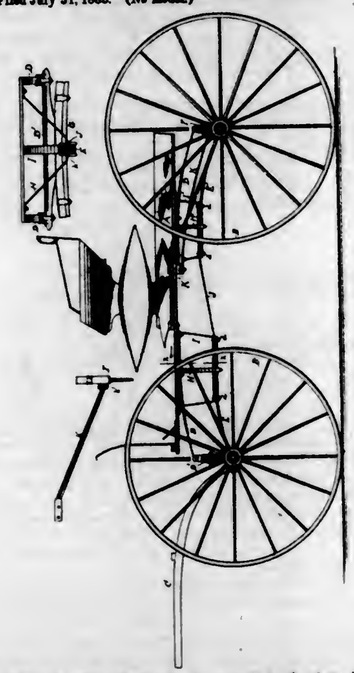
330,024. VERTICAL BOILER. William R. Haxtun, Kewanee, Ill. Filed Jan. 15, 1885. (No model.)

Claim.—The combination of the fire-box having three sides hollow, to constitute a water-chamber, an upright boiler resting upon the fire-box, and formed with a smoke-chamber at its upper end, and having a series of vertical smoke-flues passing through it, a portion of said flues communicating with the fire-box on one side of the rear wall thereof and with the upper smoke-chamber, and the other portion with the same chamber, and a smoke-passage on the opposite side of said rear wall, and pipes connecting the boiler with the upper and lower portions of the water-chamber to the fire-box, substantially as described.

330,024.



330,025. SPRING-VEHICLE. Milton P. Henderson, Stockton, Cal. Filed July 31, 1885. (No model.)



Claim.—1. The vehicle-body A, secured to the front bolster, D', and to the front axle, G, by the side springs, D, and the center spring, E, and to the hind axle, F, by the side springs, D, and center spring, E', the center springs E and E' being attached, respectively, to front braces, H I, and rear braces, H' I', said braces being attached to bottom of body A and being connected together by brace J, all substantially as described and set forth.

2. The combination, with bottom of body A, of blocks K', and with hind axle, F, of the side rear spring-braces, K, the front ends attached to blocks K' and the rear ends to axle F, and having rubber blocks *k* at their connections with axle F, as and for the purposes set forth.

3. The combination, with the body A, having the depending braces H I at the front end thereof, of the spring E, attached at its forward end to the axle G and at its rear end to the braces H I, and the brace J, connected to the braces H I at its front end, and also attached to braces at its rear end, substantially as set forth.

4. The combination, with the body A and the braces H I, depending therefrom, of the spring E, connected to the braces H I at its rear end and to the axle G at its front end.

5. The combination, with the body A, having the depending braces at its rear end, of a spring, E', connecting said braces and the rear axle, substantially as described.

6. In a four-wheel vehicle, the combination of the series of bottom braces, H I and H' I', connected together by brace J and connected to axles G and F, respectively, by springs E and E', the front and rear series of such springs and braces being respectively secured together by bolts *d* and clip *h*, as shown, substantially as and for the purposes set forth.

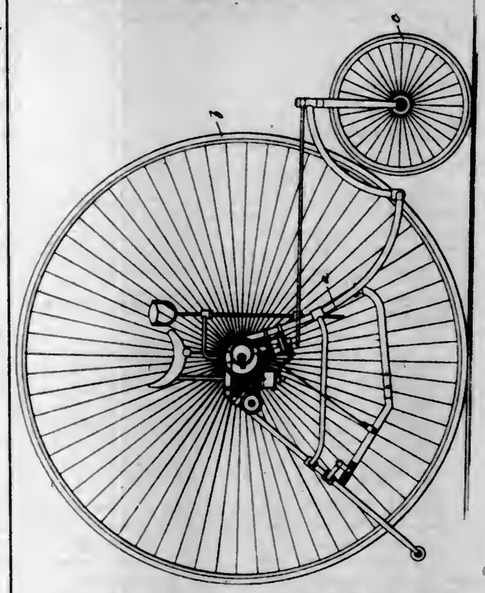
7. The combination, substantially as described, of the body A, the braces H I, the front side springs, D, the front center spring, E, the bolster D', and the front axle, G.

8. The combination, substantially as described, of the body A, the braces H' I', the rear side springs, D, the rear center spring, E', and hind axle, F.

9. The combination, substantially as described, of the bottom of body A, the blocks K', the rear side spring-braces, K, the rubber blocks *k*, and the rear axle, F.

10. The combination, substantially as described, of the body A, the front braces, H I, the rear braces, H' I', and the connecting-brace J.

330,026. BRAKE FOR VELOCIPEDES. Edward P. Howe, Northborough, assignor of five-eighths to Charles R. Rogers and John J. Shaw, Plymouth, Mass. Filed Aug. 31, 1885. (No model.)



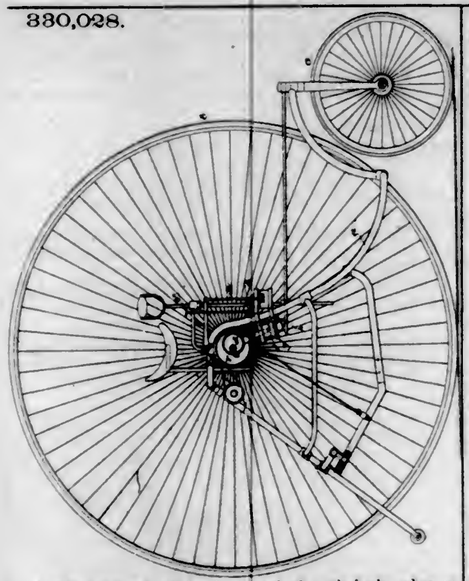
Claim.—In a velocipede, an air-pump consisting of a cylinder and piston, an eccentric rotated substantially as described, and connected with the piston of the air-pump by a pitman, combined with a brake-cylinder connected with the cylinder of the air-pump by a pipe, a cock in said pipe controlling the passage therethrough, and a piston moving in said brake-cylinder by the unbalanced atmospheric pressure thereon when the brake-cylinder is exhausted, and connected with the brake mechanism to operate substantially as set forth.

330,027. AUTOMATIC BRAKE FOR VELOCIPEDES. Edward P. Howe, Northborough, assignor of five-eighths to Charles R. Rogers and John J. Shaw, Plymouth, Mass. Filed May 31, 1884. Renewed Aug. 31, 1885. (No model.)

Claim.—1. In a velocipede, the combination of the following instrumentalities: an eccentric, means, substantially as described, to rotate it, a cylinder, a piston and piston-rod actuated by the said eccentric, a tank or reservoir carried by the velocipede, a pipe to connect the said cylinder with the tank or reservoir, a controlling-cock in said pipe, a brake-actuating device consisting of a cylinder and piston actuated by fluid-pressure caused by the first-mentioned cylinder, its piston and actuating mechanism, a pipe having an air-controlling cock and connecting the cylinder of the brake-actuating device with the tank or reservoir, and a brake connected with and actuated by the piston of the brake-actuating device, all as set forth.

2. The combination of the frame-work and wheel of a velocipede with an air-forcing device actuated by the said wheel and connected with the said frame-work, which constitutes a reservoir for the compressed air, a braking device actuated by the fluid-pressure, and a cock controlling its operation, substantially as described.

330,028.



3. The wheel and tubular frame-work of a velocipede and an eccentric and pitman actuated by said wheel, combined with an air-forcing device delivering compressed air into the said frame-work, and a cylinder and piston thereon actuated by the said compressed air, and braking device actuated by the said piston, substantially as described.

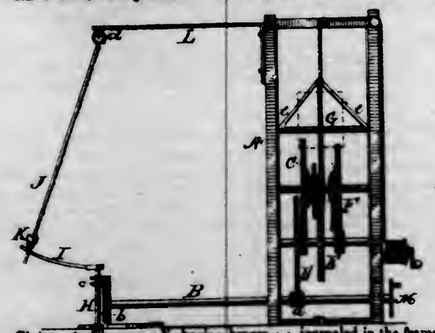
330,028. CALENDAR. BENJAMIN R. JOLLY, Raleigh, N. C. Filed Nov. 13, 1884. (No model.)



Claim.—1. The calendar described, consisting of the ring B, of thin material, and the thin plate A, having pieces *b* and *c* (formed by cuts on lines *a a'* *a''*) surrounding a central disk, the pieces *b* being passed through the ring and flattened against the same, the ring and plate bearing the letters and figures necessary to constitute a calendar, as set forth.

2. The combination, with ring B, bearing seven groups of figures to indicate days of the month, of the plate A, having pieces *b* and *c* (formed by cuts on lines *a a'* *a''*) around a central disk portion, the pieces *b* bearing the names of the days of the week and passed through the ring and flattened against the front of the same, substantially as described.

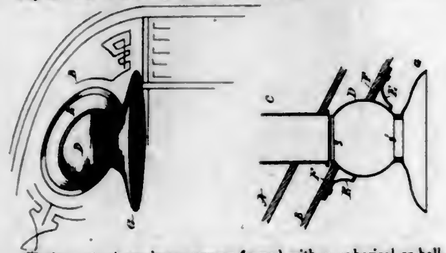
330,029. MECHANICAL MOTOR. FRANKLIN D. JONES and HAMILTON M. HART, Burlington, Kans. Filed Aug. 6, 1885. (No model.)



Claim.—1. The crane N, having braces *e e*, journaled in the frame A, and provided with a stay-rod, *f*, which is attached to the upright *g* of the semicircular wheel G, and carrying the weight O, for imparting motion, for the purpose herein described.

2. The frame A, provided with gear-wheels C, D, E, F, and G, horizontal shaft B, gear-wheel *a*, bevel gear-wheels *b* and *c*, pitman-wheel or cam-roller M, the vertical shaft H, arm I, pendulum J, ball K, crane N, and weight O, all constructed and arranged to operate as herein shown and described.

330,030. CANOPY FOR RAILWAY-CAR LAMPS. JOHN KIRBY, Jr., Dayton, Ohio. Filed July 6, 1885. (No model.)

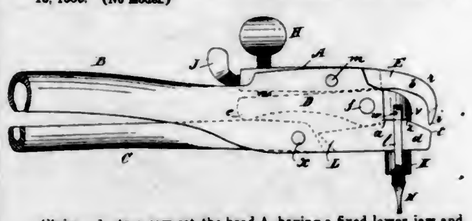


Claim.—1. A car-lamp canopy formed with a spherical or ball-shaped top, in combination with a support having a socket receiving the spherical or ball-shaped top, substantially as set forth.

2. The combination of a lamp-canopy, G, ball D, secured thereto, upper collar, F, and lower collar, E, the collars engaging the ball respectively above and beneath the greatest diameter of the latter, substantially as set forth.

3. The combination of a lamp-canopy, a ball, D, having upper opening, *g*, and lower opening, *g'*, and a socket receiving said ball, substantially as set forth.

330,031. SAW-SET. JOSIAH LAYBOLT, Wakefield, Mass. Filed Aug. 13, 1885. (No model.)



Claim.—1. In a saw-set, the head A, having a fixed lower jaw and provided with a fixed handle, B, in combination with a clamp-lever pivoted in said head and forming a movable upper jaw, a set-lever also pivoted in said head and adapted to engage the body of the saw automatically when the clamping-jaws are closed, the outer end of said set-lever being provided with a slot, a screw for adjusting said set-lever, a pivoted handle for operating said levers simultaneously, and an adjustable gage for determining the distance the tooth may enter the jaws, substantially as described.

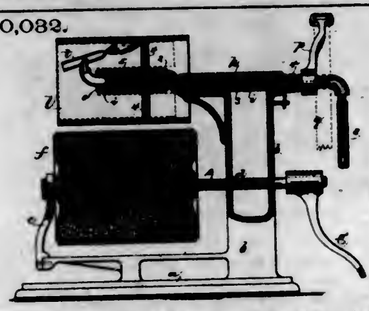
2. In a saw-set, the head A, having a fixed lower jaw and provided with a fixed handle, B, in combination with a clamp-lever pivoted in said head and forming a movable upper jaw, a set-lever also pivoted in said head and adapted to engage the body of the saw automatically when the clamping-jaws are closed, the outer end of said set-lever being provided with a slot, a screw for adjusting the inner end of said set-lever upon the inner end of said clamping-lever, a pivoted handle for operating said levers simultaneously, and an adjustable gage for determining the distance the tooth may enter the jaws, substantially as described.

3. In a saw-set, the head A, having a fixed lower jaw and provided with a fixed handle, B, in combination with a clamp-lever pivoted in said head and forming a movable upper jaw, a set-lever also pivoted in said head and adapted to engage the body of the saw automatically when the clamping-jaws are closed, the outer end of said set-lever being provided with a slot, a screw for adjusting the inner end of said set-lever upon the inner end of said clamping-lever, a set-screw for fastening said adjusting-screw, a pivoted handle for operating said levers simultaneously, and an adjustable gage for determining the distance the tooth may enter the jaws, substantially as described.

4. In a saw-set, the head A, having shoulder L, and provided with fixed handle B, in combination with levers having jaws for clamping and setting the saw-teeth, and pivoted handle C, for operating said levers, the inner end of said handle abutting against said shoulder, whereby it is limited in its outward movement, substantially as described.

330,032. IRONING-MACHINE. CHARLES A. LEE and CHARLES L. HEISE, New York, N. Y., assignors to said Heise and John H. Lee, Norwalk, Conn. Filed Sept. 4, 1884. (No model.)

330,032.

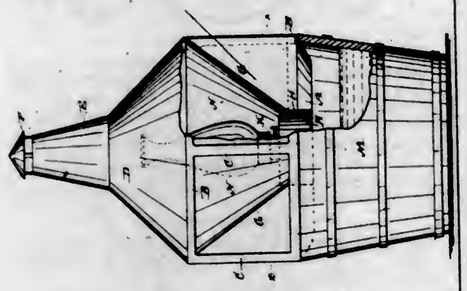


Claim.—1. The combination, with the bed-cylinder, shaft, and means, substantially as described, for rotating the same, of a hollow ironing-cylinder of metal adapted to be heated, a bent shaft upon which such ironing-cylinder may be revolved, a stationary bearing for such shaft, and a lever for pressing the ironing-cylinder toward the bed-cylinder by partially revolving the bent shaft, substantially as set forth.

2. The hollow ironing-cylinder having a central hub and arms, in combination with a tubular shaft, one portion of which is eccentric, or formed as a crank, to the other, a stationary bearing for the said shaft, means, substantially as described, for partially turning said shaft, and a gas-burner within the ironing-cylinder and connected with the tubular shaft, substantially as set forth.

3. The combination, with the bed, roller, and the stationary standard, of the shaft *i*, the hollow ironing-cylinder, the lever *p*, and strap to move the shaft *i* in applying pressure by the ironing-cylinder, and the spring *r* to relieve such pressure by the movement of the shaft, substantially as set forth.

330,033. INSECT-DESTROYER. DUDLEY H. MANNING, Sibley, Iowa. Filed Mar. 16, 1885. (No model.)



Claim.—1. In an insect-destroyer, the combination, with the inverted conical ring A, of the frame B, the lamp-support H, the top D, and the inverted conical transparent shade or casing N, substantially as herein shown and described.

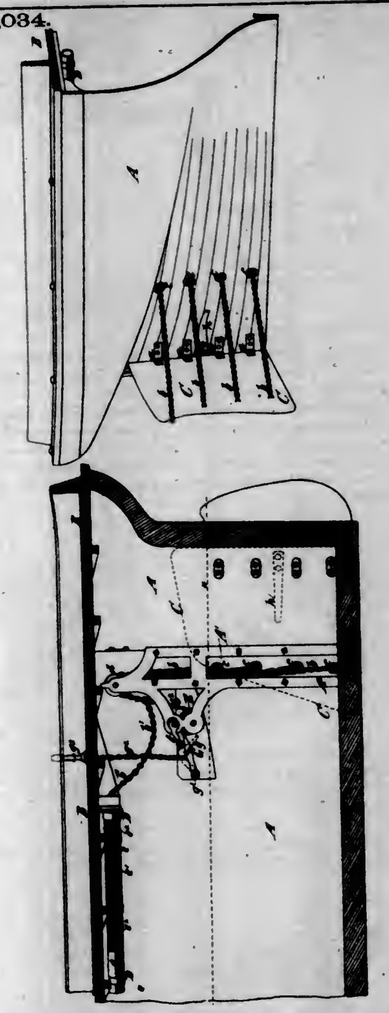
2. In an insect-destroyer, the combination, with the inverted conical ring A, of the frame B, the top D, the lamp-support H, the inverted conical transparent shade or casing N, and the partitions or reflectors G, extending from the uprights of the frame and holding the lamp-support substantially as herein shown and described.

3. In an insect-destroyer, the combination, with the inverted conical ring A, of the frame B, the top D, the partitions G, forming reflectors, the inverted conical transparent shade supported by the inner beveled edges of the partitions G, the lamp-socket H, having perforations, and the lamp K, substantially as herein shown and described.

330,034. MARINE BRAKE. JOHN MCADAMS, Brooklyn, N. Y. Filed Mar. 27, 1885. (No model.)

Claim.—1. The combination, with a vessel and fins or blades hinged at their rear edges to the sides thereof, so as to close against the sides of the vessel in front of their hinges, of chains or flexible connections attached to the free edge of each fin or blade at different points in its height, and passing through holes in the side of the vessel, and a windlass around which the chains or flexible connections are passed, and which may be turned to draw inward simultaneously the chains or connections, and so close the fin or blade against the side of the vessel, or to pay out the chains or connections simultaneously to permit the fin or blade to swing outward, the chains or flexible connections serving to both draw inward the fin or blade and to sustain it in outward or operative position, substantially as herein described.

330,034.



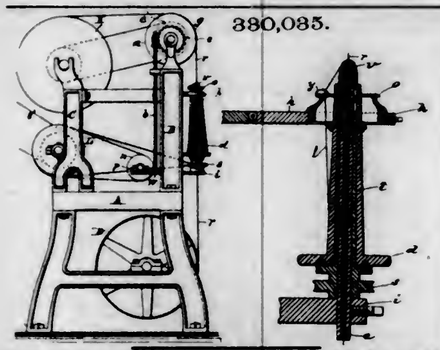
2. The combination, with a vessel and fins or blades hinged thereto and capable of swinging inward and outward, as described, of chains or flexible connections attached to the free edge of each fin or blade at different points in its height, and passing inward through holes in the side of the vessel, a windlass for controlling the chains or flexible connections, and a spring-cushion to which the chains or flexible connections are attached, and which offers a yielding resistance to the outward or opening movement of the fin or blade, substantially as herein described.

330,035. MACHINE FOR COVERING WIRE. JOHN MCCAREY, Providence, R. I., assignor to the New England Butt Company, same place. Filed May 21, 1884. (No model.)

Brief.—The winding devices are held by a plate near the center of the supporting-frame, and which plate extends from one side frame to the other, and also by another plate near the top of the frame to which the ring-holder is hinged. Upon a hollow stationary spindle held by the lower one of the supporting-plates by a set-screw a shell is mounted so as to revolve freely, and has a whirl or pulley on its lower end. A spool is fitted to go tightly on the shell, and has holes in its head-flange to receive the pins in the disk on which it sets. On the top of shell is a head or cap having a hole in in its center for the wire to pass through. A ring and traveler near said cap serves to guide the covering material and give it the required tension.

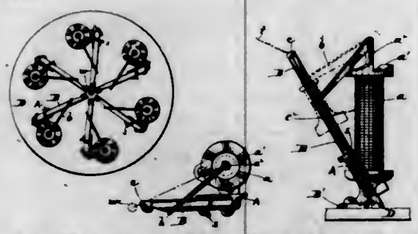
Claim.—The combination of the ring *o*, traveler *y*, shell *t*, and means for rotating the shell and stationary hollow spindle *e*, substantially as and for the purpose herein set forth.

330,035.



330,036. SPOOL-CARRIER FOR WINDING-MACHINES. JOHN MCCARRY, Providence, R. I., assignor to the New England Butt Company same place. Filed Oct. 14, 1884. (No model.)

Brief.—The guide-bar upon which the weight slides to produce the necessary tension on the thread is mounted on the same base-piece with the spool-spindle, and is inclined at its upper end toward the center or axis of rotation of the plate, whereby the centrifugal force of the weight acts in communion with the force of gravitation to take up the slack of the thread.



Claim.—The combination of the bar B, weight A, vertical spool-spindle a^2, base-plate B', and plate D, the bar B being inclined inward toward the axis of rotation of the plate D, substantially as and for the purpose set forth.

330,037. AUTOMATIC CIRCUIT-CLOSER. PATRICK C. F. MCCAMBRIDGE, St. Albans, Vt. Filed Feb. 24, 1885. (No model.)



Claim.—1. The spring-lever D, one extremity of which is rigidly attached to the collar E, having a contact-point, *d*, so placed as to meet a corresponding contact-point, *e*, on the adjacent side of the key A, and so arranged that its free end may be moved horizontally by a lever pivoted to the stem of the finger-button, substantially as described, and for the purpose set forth.

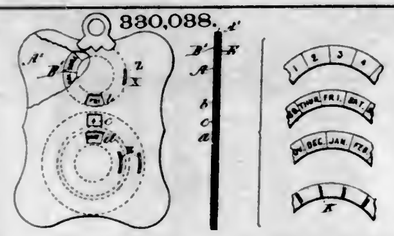
2. The finger-button F, provided with a recess, *h*, in its upper face for the entrance of the upper extremity of the lever G, which is pivoted to its stem, whereby the free end of the spring-lever D may be forced outward, thereby causing the contact-points *d* and *e* to be separated, substantially as and for the purpose specified.

3. The telegraph-key A, having the rigid finger-button F, provided with a recess, *h*, for the entrance of the top of the lever G, pivoted to its stem, in combination with the spring-lever D, one end of which is firmly attached to the insulated collar E, and having the contact-point *d* so placed as to meet a corresponding contact-point, *e*, on the side of the key A, substantially as described, and for the purpose set forth.

4. The combination, with a telegraph-key, A, of the spring-lever D, fastened at E, and the laterally-projecting point *d*, so arranged as to be moved out of contact with the key-point *e* by means of a lever, G, pivoted to the stem of the finger-button F, substantially as herein shown and described.

330,038. CALENDAR. THOMAS MCCARTHY, St. Vincent de Paul Quebec, Canada. Filed Apr. 12, 1885. (No model.) Patented in Canada Mar. 16, 1885, No. 21,278.

330,038.

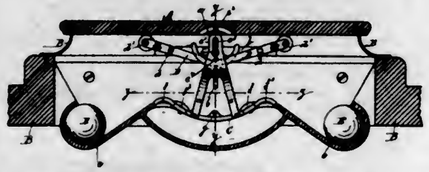


Claim.—1. In a calendar, the combination, with a case composed of a front plate, A, having display-openings, and a back plate, E, of suitably-inscribed revolving rings mounted concentrically in the case and adapted to be moved independently, substantially as described.

2. In a calendar, the combination, with the plate A and back plate, E, forming a case, of concentric rings B C D, mounted in such case and adapted to revolve independently, projections on such rings whereby they are turned, and annular fastening-plates F G, secured to the front plate, substantially as described.

3. The combination, with the case composed of front plate, A, having slots Z and the back plate, E, of the concentric rings B C D, having holes X, adapted to register with the slots Z, substantially as described.

330,039. ESCAPE-HATCH FOR RAILWAY-CARS. JAMES MCIVITTIE and HARRISON LORING, Boston, Mass. Filed Mar. 30, 1885. (No model.)

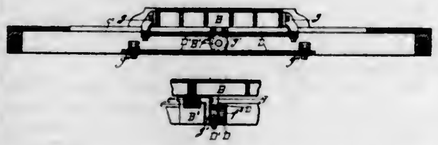


Claim.—1. The hatch A, in combination with levers D, by which it is raised bodily off of the curb B, the ends of the levers forming bearings upon which the hatch is moved, all substantially as described.

2. The hatch A, in combination with levers D and weights by which the levers are made to automatically raise and lower the hatch, substantially as described.

3. The hatch A, in combination with levers D, suspended tray C, and weights E, whereby they may automatically operate the levers and lift the hatch, substantially as described.

330,040. DEVICE FOR GIVING POSITIVE MOTION TO SLIDERS OF PRINTING-PRESSES. ROBERT MIEHLE, Chicago, Ill. Filed Mar. 7, 1885. (No model.)



Claim.—1. In combination with the slider-frame of a printing-press, a belt connected to the press-bed and press-frame, passing around a pulley which is connected to the slider-frame to impart a reduced movement to the slider, substantially as described.

2. In combination with the slider-frame of a printing-press, a belt connected to the press-bed and press-frame, passing around pulleys which are connected to the slider-frame to impart a reduced movement to the slider, substantially as described.

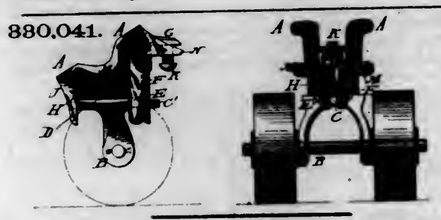
3. In combination with the slider-frame of a printing-press, a belt connected to the press-bed and press-frame, and passing around pulleys which are connected to the slider-frame and cross-bar F to impart a reduced movement to both sliders, substantially as described.

330,041. ROLLER-SKATE. THOMAS MULVIN, Union City, Pa. Filed Oct. 23, 1884. (Model.)

Claim.—1. The combination, in a roller-skate, of the clamp F, rubber H, and screw K, substantially as described.

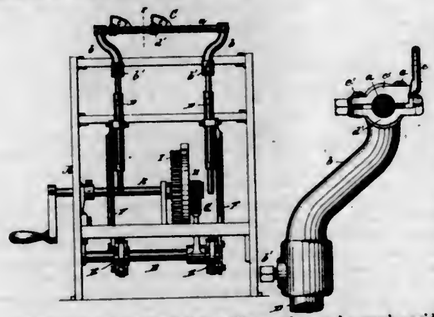
2. The combination of the slotted saddle E E, journals C C', and clamp F, substantially as described, and for the purpose specified.

330,041.



330,042. YARN-GUIDE FOR SPOOLERS. JAMES H. NORTHROP and RUSSELL C. FAY, Hopedale, Mass., assignors to the Hopedale Machine Company, same place. Filed Feb. 24, 1885. (No model.)

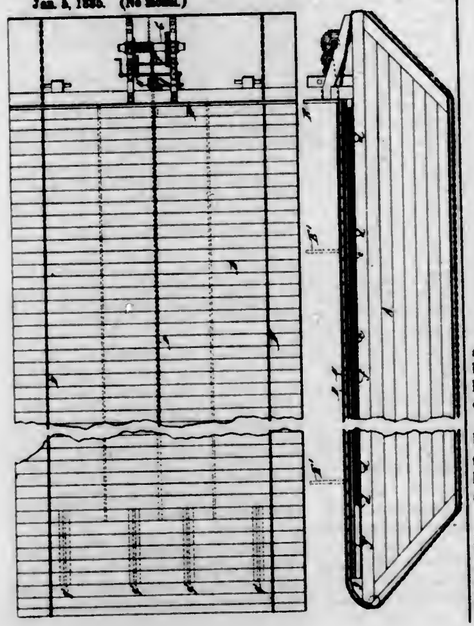
Brief.—The spooler-guide or clearer is made in two parts and adapted to be moved along and clamped to a rod across the front of the machine, the clamp-screws enabling the acting edges or faces of the guides to be adjusted more or less apart.



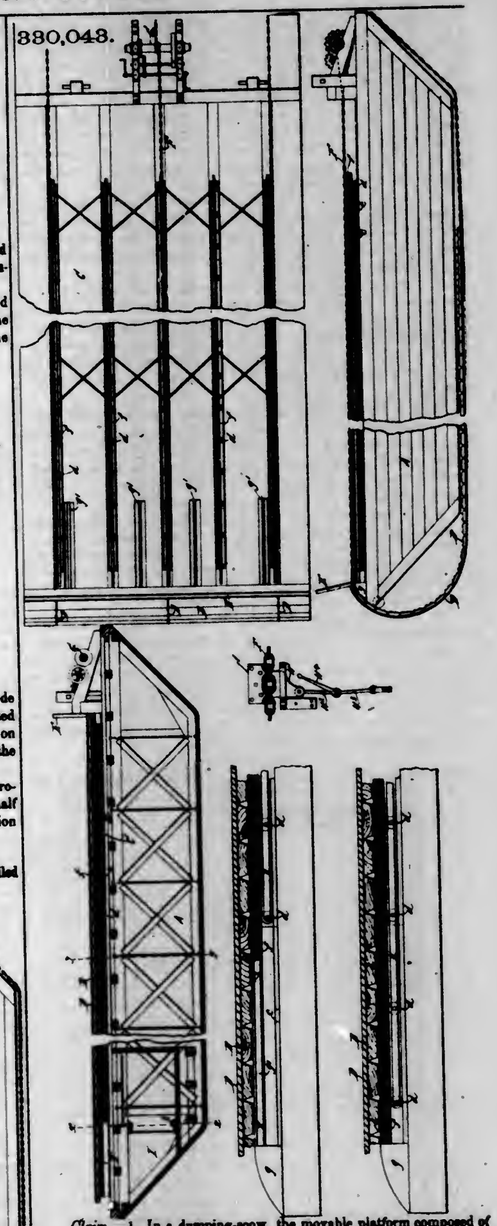
Claim.—1. The rod *a* of the spooling machine and a spooler-guide or clearer composed of two blades or members, each having a connected half box or hub, combined with two screws to adjust the said hubs on the said rod and place the acting edges of the blades or members at the desired distance apart, substantially as described.

2. A spooler-guide or clearer composed of two blades, each provided with a half box or hub, combined with screws to keep the half boxes or hubs in place and the blades in operative position with relation each to the other, substantially as described.

330,043. DUMPING-SCOW. RALPH R. OSGOOD, Albany, N. Y. Filed Jan. 5, 1885. (No model.)



330,048.



Claim.—1. In a dumping-scow, the movable platform composed of a series of strips or planks connected one with the other, said platform being arranged to move over the deck of the scow and to discharge the load over the stern thereof, the platform being combined with the boat or scow, substantially as and for the purposes set forth.

2. In combination with the movable platform mounted upon the boat, and composed of a series of strips or planks connected one with the other, the chain or cable attached to said platform and arranged to hold the same in position or permit or compel it to move, substantially as and for the purposes set forth.

3. The combination of the boat, the movable platform composed of a series of strips connected one with the other and mounted upon the boat, the chain or cable connected with said platform for controlling the movements thereof, and the chain-drum for operating the chain, said drum being mounted upon the boat, substantially as and for the purposes set forth.

4. The combination, with the movable platform composed of a series of strips connected one with the other and mounted upon the boat, of a chain or cable connected with the platform at both ends thereof and arranged to draw the platform off from over the deck or back to its position on the deck, substantially as shown and described.

5. The combination of the boat, the movable platform composed of a series of strips connected together and mounted upon the boat, and the rollers arranged between the boat and the movable platform, for supporting said platform and permitting its easy movement back and forth, substantially as and for the purposes set forth.

6. The combination of the boat, the movable platform composed of a series of strips connected together and mounted upon the boat, the friction-rollers made movable over the deck, and the movable tracks mounted upon said rollers and between them and the platform, substantially as and for the purposes set forth.

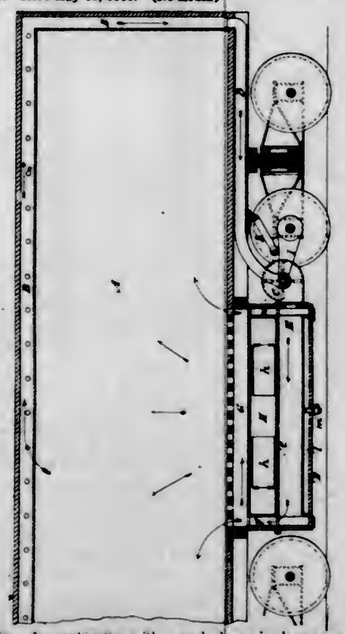
7. In a dumping-scow having a movable platform composed of a series of strips connected together and mounted and made movable on and over the deck, the combination, with the scow or boat, of the water-tank located within the stern, the parts being arranged, as explained, so that when the tank is filled the stern will sink, and thus facilitate the movements of the platform and its load, substantially as and for the purposes set forth.

8. In a dumping-scow, the combination, with the movable platform composed of a series of connected strips or planks and arranged to be moved back and forth over the deck, of the head-piece erected upon the forward end of said platform, projecting above the surface thereof, connected therewith, and arranged to keep the forward part of the load in place, substantially as and for the purposes set forth.

9. In a dumping-scow, the combination, with the movable platform mounted thereon and arranged to move above and beneath the boat, as explained, of one or more partitions erected upon said platform, connected therewith, projecting beyond the surface thereof, and arranged to operate as brakes for the purpose of preventing the platform from moving too rapidly through the water, as shown and described.

10. The herein-described dumping-scow, composed of the boat having a water-compartment in the stern, rails or ways secured to the deck, the friction-rollers movable upon said rails or ways, the sliding tracks resting upon the rollers, the movable platform composed of a series of connected strips or planks, a chain or cable attached to the movable platform, and the chain-drum upon which said chain is wound, said drum being mounted upon the boat, these parts being combined and arranged substantially as and for the purposes set forth.

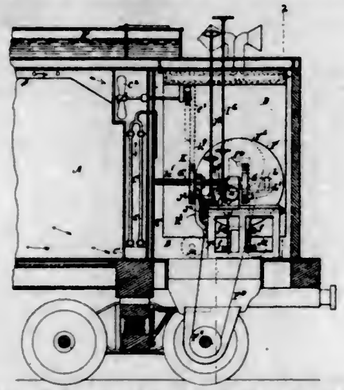
330,044. REFRIGERATOR-CAR. Cassius C. Palmer, New York, N. Y. Filed May 13, 1885. (No model.)



Claim.—In combination with a car-body, an ice-box suspended underneath intermediate the trucks and containing a chamber adapted for ice or a freezing-mixture, with doors *h h* located on each side, through which the ice or freezing-mixture may be introduced above the air-flue without opening the car, and an air-flue crossing said chamber near the bottom thereof and connected at one end with a fan and air-pipes leading into the car, and at the other end with air-pipes leading into the car, all substantially as described.

330,045. MECHANISM FOR TRANSFERRING POWER FROM THE AXLES OF RAILWAY-CARS TO REFRIGERATOR-CARS. Cassius C. Palmer, New York, N. Y. Filed July 6, 1885. (No model.)

Brief.—Improvement on Patent No. 290,600, dated December 18, 1883.



Claim.—1. In a railroad-car, the combination of a pulley located on the car-axle, a pulley located on the car and receiving motion from the pulley located on the car-axle, a friction-disk receiving motion from said pulleys, a second friction-disk bearing against said first-mentioned friction-disk and operated by it, and means whereby the motion of said second friction-disk is transferred to the point of application, substantially as described.

2. In a railroad-car, the combination of a pulley located on the car-axle and a pulley located on the car and receiving motion from the pulley on the car-axle, a friction-disk receiving motion from said pulleys through multiplying gear-wheels, a second friction-disk bearing against said first-mentioned friction-disk and receiving motion from it, and means whereby the motion of said second friction-disk is transferred to the point of application, substantially as described.

3. In a railroad-car, the combination of a pulley located on the car-axle, a pulley located on the car and receiving motion from the pulley on the car-axle, a friction-disk receiving motion from said pulleys, a second friction-disk receiving motion from said first-mentioned friction-disk, and means whereby it will be caused to travel across the face of first-mentioned friction-disk and its speed increased or decreased, and means whereby the power from said second friction-disk is transferred to the point of application, substantially as described.

4. In a railroad-car, the combination of a pulley located on the car-axle, a pulley located on the car and receiving motion from said pulley on the car-axle, a friction-disk receiving motion from said pulleys, a second friction-disk receiving motion from said first-mentioned friction-disk, and means whereby said second friction-disk may be moved to or from the face of the first-mentioned friction-disk for the purpose of starting or stopping the machine, and means whereby said starting and stopping motion may be communicated at the point of application, substantially as described.

5. In a railroad-car, the combination of a pulley located on the car-axle, a pulley located on the car and receiving motion from the pulley on the car-axle, a friction-disk receiving motion from said pulleys, a second friction-disk receiving motion from said first-mentioned friction-disk, a third friction-disk so located with reference to said first-mentioned friction-disk as to counteract the thrust of the second friction-disk upon it, substantially as described.

6. In a railroad-car, the combination of a pulley located on the car-axle, a pulley located on the car and receiving motion from said pulley on the car-axle, a friction-disk receiving motion from said pulley, a second friction-disk receiving motion from said first-mentioned friction-disk, means whereby said second friction-disk may be advanced to and from the first-mentioned friction-disk to start and stop the machine, and means whereby it may be caused to travel across the face of the first-mentioned friction-disk to regulate the speed of rotation at which it travels, and means whereby the commencement, variation, or cessation of motion of said friction-disk may be communicated at the point of application, substantially as described.

7. In a railroad-car, the combination of a pulley located on the car-axle, a belt running from said pulley on the car-axle to a pulley located on the car, said pulley located on the car, a belt-tightening device for preserving the tension of said belt, a friction-disk receiving motions from said pulleys, a second friction-disk bearing against said first-mentioned friction-disk and operated by it, and means whereby the motion of said second friction-disk is transferred to the point of application, substantially as described.

8. In combination, the pulley F^6 on the car-axle, the pulley F^4, receiving motion from pulley F^6, belt F^5, friction-disk F, receiving motion through said pulleys F^6 and F^4, the friction-disk G, mounted upon the sliding carriage I, screw-shaft I^2, worm-wheel I^3, worm I^4, and hand-wheel shaft I^5, connected by a universal joint, I', to worm-shaft I^6, all substantially as and for the purpose set forth.

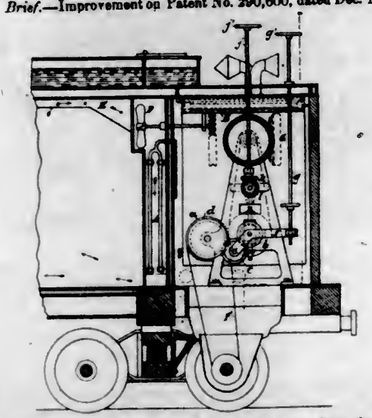
9. In combination, the pulley F^6, receiving motion from a car-axle, the pulley F^6, the friction-disk F, receiving motion through said pulleys F^6 and F^4 from the car-axle, the friction-disk G, the sliding carriage I, forming the bearing for disk G, the sliding carriage J, forming a bearing for carriage I, the carriage J, receiving its sliding motion through screw-shaft J', bevel-wheel J^2 on said screw-shaft J', bevel-wheel J^3, gearing with bevel-wheel J^2, and hand-wheel shaft J^4, connected with bevel-wheel J^5, all substantially as and for the purpose set forth.

10. In combination, the pulley F^6, receiving motion from the axle, the pulley F^6, the friction-disk F, receiving motion from pulleys F^6 and F^6, the friction-disk G, receiving motion from disk F, sliding shaft G', pulley K, mounted on sliding shaft G' in such manner that it will rotate with but not slide with shaft G', substantially as and for the purpose set forth.

11. The combination, in a refrigerator-car employing as a refrigerant a volatile fluid, of the chill-room for containing the articles to be preserved, the gas-compression cylinder, the condenser wherein the compressed gas is cooled, the refrigerator communicating with the condenser wherein the air to be employed is cooled by contact with tubes wherein the volatile fluid from the condenser is expanded in a vacuum, substantially as described, the compression-cylinder being operated by power derived from the car-axle through the medium of pulley F^6, located on the axle-belt F^5, running over said pulley F^6 to a pulley, F^4, located on the car, which latter pulley communicates its motion to friction-disks F and G, substantially as described, the disk G communicates its motion to the pulley e^3, operating the piston *s* of the compression-cylinder through shaft G, pulley K, and belt k^4, all substantially as described.

330,046. CONTROLLING THE SPEED OF MECHANICAL REFRIGERATING APPARATUS ON RAILWAY-CARS FROM THE OUTSIDE. Cassius C. Palmer, New York, N. Y. Filed July 16, 1885. (No model.)

Brief.—Improvement on Patent No. 290,600, dated Dec. 18, 1883.

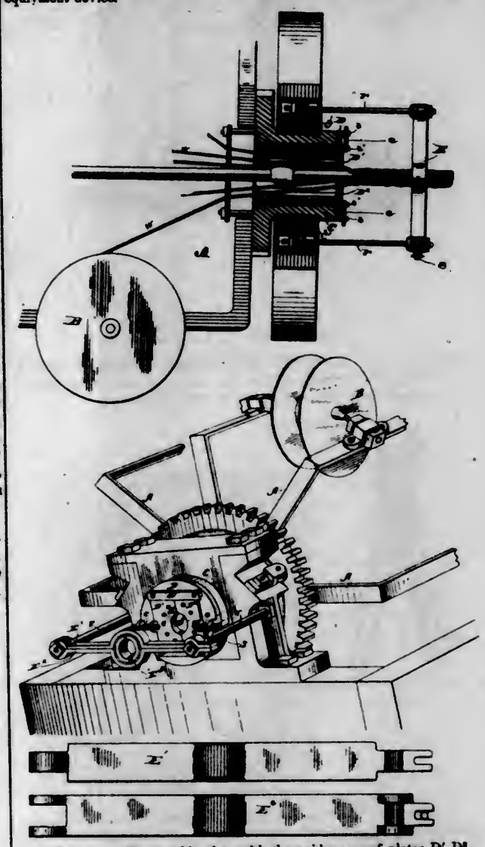


Claim.—1. In combination, a wheel, *d*, driven from the car-axle, a wheel, *b*, from which mechanism located on the car is driven, a wheel, *c*, interposed between the two, a lever, *f*, on which the wheel *c* is mounted, a rod, *g*, connected with *f* and extending outside the car, all substantially as described, whereby an attendant outside the car may make or break the operative connection between the car-axle and apparatus on the car driven thereby.

2. In combination, the conical pulley *e*, driven from the axle of the car, the conical pulley *h*, whereby apparatus located on the car is driven, the shifting-belt *i*, or equivalent, the shifter *n*, operated by the rod *j*, extending outside the car, all substantially as described, whereby an attendant outside the car may vary the speed at which mechanism on the car is run relatively to the speed of the car-axle.

330,047. CABLE-ARMORING MACHINE. William R. Patterson, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Apr. 19, 1883. (No model.)

Brief.—Secured to the revolving head is a plate having a central opening large enough to permit the free passage of the enlarged joints of the pipe and the armoring-wires. This plate is provided with two slideways in which slide two plates, each having a semicircular opening near the adjacent edges, through which the pipe or cable is drawn, said opening being surrounded by small holes, through which the armoring-wires pass. The two slide-plates are adjusted toward or away from each other by means of screws or cams, in order to allow the joints in the pipe to pass. Immediately in front of these plates is a compressor consisting of two parts hinged together so that the upper part may be raised; but the parts are held together by means of a thumb-screw or equivalent device.



Claim.—1. The combination, with the guides *a a*, of plates D' D^2, provided with the holes *d* for the wires, and the screw mechanism for separating said plates, whereby the opening D^2 may be enlarged to allow the joint or enlarged portion of the cable to pass, substantially as described.

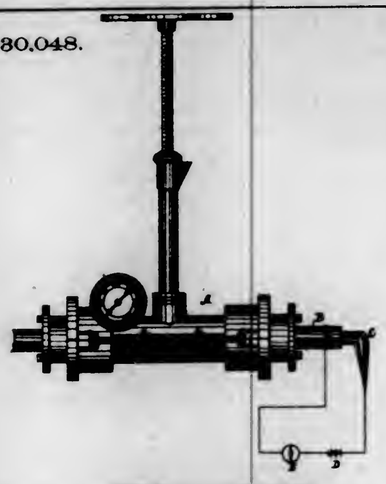
2. The combination, with the reel and means for operating the same, of spools B, the draw-plate consisting of sections D' D^2, provided with holes *d*, the corners of said plates, near opening D^2, being cut away or rounded, the guides *a*, and the mechanism for regulating the size of said opening D^2 by moving the sections D' and D^2 toward or away from each other whereby the cable may be armored over the joints, substantially as and for the purpose specified.

3. The combination, with the sectional draw-plate, and mechanism for separating the sections thereof to enlarge the opening D^2, of the compressor E, placed in front of the draw-plate and at a short distance therefrom, and the revolving reel provided with the spools B, and means for operating said reel, whereby the cable may be armored over the joints thereof and the wires of the armor compressed to form a single layer about the lead pipe of the cable, substantially as and for the purpose specified.

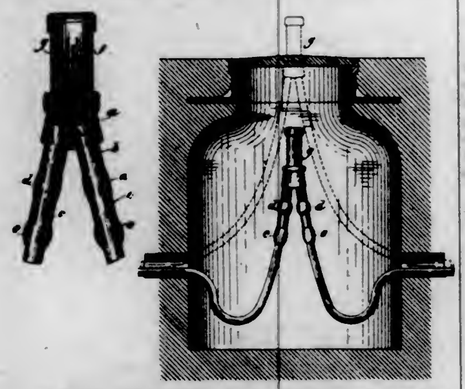
330,048. METHOD OF TESTING ELECTRIC CABLES. William R. Patterson, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Mar. 22, 1884. (No model.)

Claim.—The method of testing the joints of the lead pipe of telegraph-cables, which consists in pressing water about the joint and gradually increasing the temperature of the water, and at the same time observing a galvanometer included in the circuit of the wires of the cable, substantially as and for the purpose specified.

330,048.



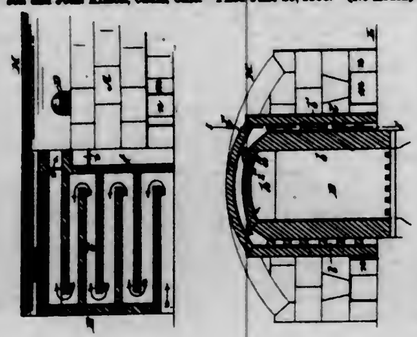
330,049. SPLICE FOR UNDERGROUND TELEGRAPH-CABLES. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 16, 1885. (No model.)



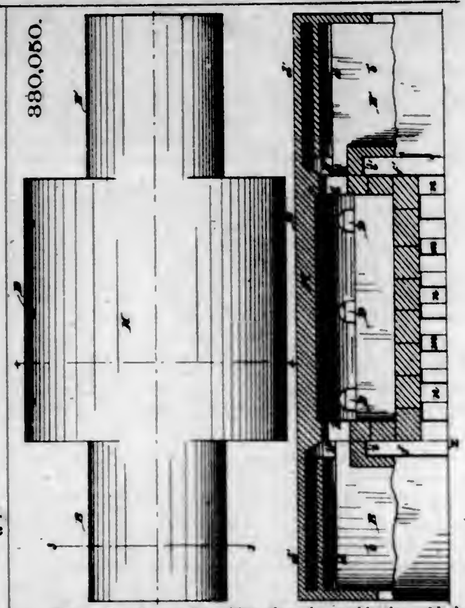
Claim.—1. The combination, in a man-hole of an underground conduit for telegraph-cables, of two sections of cable united by a Y-coupling or splice, said sections being bent or coiled at said man-hole, as described, whereby the joint may be raised to the surface of the ground for repairs and testing, substantially as and for the purpose specified.

2. The combination, with the Y-piece *a*, of the brass sleeve *b*, screwed thereto, the lead sleeves *c*, the wipe-joints, and the cap *g*, whereby the ends of the sections of the lead pipe are united and the conductors protected, substantially as and for the purpose specified.

330,050. FURNACE FOR MELTING GLASS, &c. EDWARD PEARSON and JOHN KERNS, Cadiz, Ohio. Filed June 25, 1885. (No model.)

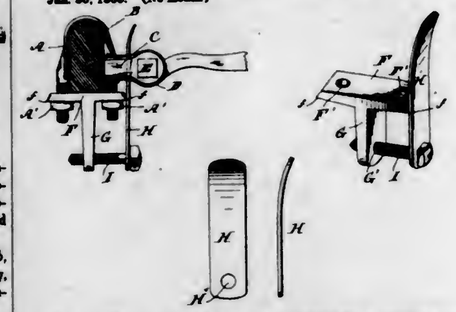


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Claim.—In a furnace for melting glass, the combination, with the tank having openings *h h'*, of the boxes B B' at each end of said tank, connected by necks *i i'*, and having openings h^3 h^3, communicating with the openings *h h'* of the tank, and the said fire-boxes provided with hot-air flues *l l'* in the side walls thereof, communicating with the spaces between the double crown-heads *d d'* of the fire-boxes, whereby said air is driven through the openings h^3 h^3 of said boxes and through the openings *h h'* of the tank, as shown and described.

330,051. THILL-COUPLING. HENRY R. SAUL, Middletown, Pa. Filed Jan. 30, 1885. (No model.)



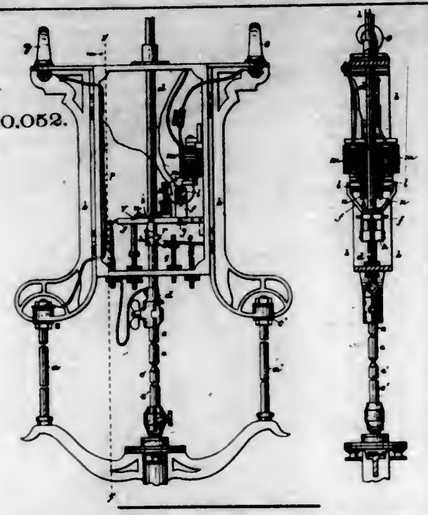
Claim.—The base-plate F, having a depending lug, G, provided with a horizontal threaded bolt-opening, G', near its lower end, a single bolt, I, provided with an angular or nut-shaped head arranged approximately in line below the thill-eye, and having its threaded end turned into the opening G', the straight bar H, provided in its lower end with an opening, H', slipped onto the bolt, and against the head thereof, and wholly supported in position thereby, and having its back or rear side rested against the end of base-bar plate F, and its upper end extended between the jaws of the clip, and behind the thill-eye, substantially as shown and described.

330,052. ELECTRIC-ARC LAMP. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 12, 1883. (No model.)

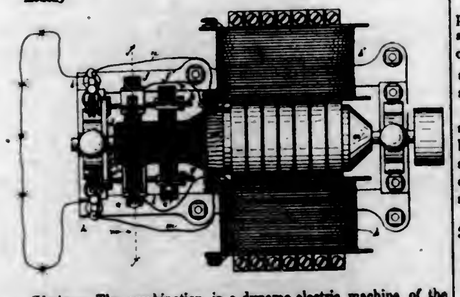
Claim.—1. The feeding-clutch pivoted to the vibrating armature-lever at *u*, in combination with the spring *v* and stop *k*, whereby the carbon may be fed positively, as and for the purpose specified.

2. The combination, with the rod and the lifting-lever pivoted at *g*, of the lifting-clutch and the feeding-clutch, said feeding-clutch being linked to the said lever at a greater distance from pivot *g* than the lifting-clutch, whereby the rod is forced positively through the lifting-clutch by the differential action of the two clutches.

330,052.



330,053. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. CHARLES E. SCRIBNER, Chicago, Ill., assignor, by mesne assignments, to the Western Electric Company, same place. Filed June 2, 1882. (No model.)



Claim.—The combination, in a dynamo-electric machine, of the main electric circuit with shunt-circuits, each shunt-circuit including one of the field-magnets, and means whereby current may be diverted from the commutator and directed through the shunt-circuits, substantially as and for the purpose specified.

330,054. TESTING APPARATUS FOR LIGHTNING-ARRESTERS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Aug. 12, 1882. (No model.)

Claim.—1. The combination of several telephone-lines provided with lightning-arresters and annunciators and terminating in a common line, a line containing a battery branching from said common line, and a switch placed in the ground-line of the strap of the lightning-arresters, whereby the strap may be connected to the battery in the branch line, substantially as and for the purpose specified.

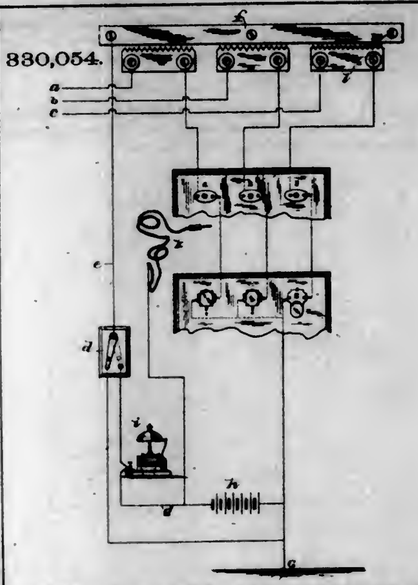
2. The combination of several telephone-lines and their lightning-arresters with a battery and bell, and a switch in the ground-line of the strap and the common line, whereby the common line and strap may be connected together through the bell and battery, substantially as and for the purpose specified.

3. The combination of the bell and battery with the lightning arresters and annunciators in the telephone-lines, the ground-strap and switch, whereby the strap may be connected through the bell and battery to the telephone-lines, substantially as and for the purpose specified.

4. An apparatus for testing the lightning-arresters of a system of electrical lines, consisting of a battery and call-bell placed in a branch line connected at one end to the several lines of the system and at the other to a switch, whereby it may be connected to the ground-strap of the arresters, substantially as set forth.

5. A series of telephone-lines provided with lightning-arresters and annunciators, in combination with a battery one pole of which is connected electrically to the several lines of the series and the other to a switch, whereby a connection from said battery may be made through the annunciators to the different parts of the lightning-arresters for the purpose of testing the same.

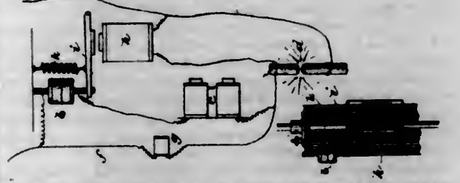
330,054.



6. The combination, with the lightning-arresters of a series of telephone or other lines, of a branch line containing a battery and call-bell and connected at one end to the several lines of the series and at the other adapted to be connected at will to the ground-strap of the said arresters for the purpose of testing the same in the manner substantially as set forth.

7. The combination of telephone-lines with lightning-arresters, the strap of said arresters being connected with a switch, and a ground-circuit branched to said switch, one branch including a battery and signal-instrument, whereby the said battery and signal-instrument may be included in the circuit of said ground-strap or disconnected therefrom, substantially as and for the purpose specified.

330,055. ELECTRIC-ARC LAMP. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 4, 1882. (No model.)



Claim.—1. The combination, with the main circuit of an arc lamp, of a permanent shunt including resistance around the lifting-magnet, and a variable rheostat included in the main circuit with said lifting-magnet, substantially as and for the purpose set forth.

2. The combination, with the circuit of an arc lamp, of the lifting-magnet and a regulating-magnet included in the shunt of the arc, a permanent shunt including resistance around the lifting-magnet, and a variable rheostat, the armature of the regulating-magnet being adapted to operate the variable rheostat automatically as the resistance of the arc varies, substantially as and for the purpose specified.

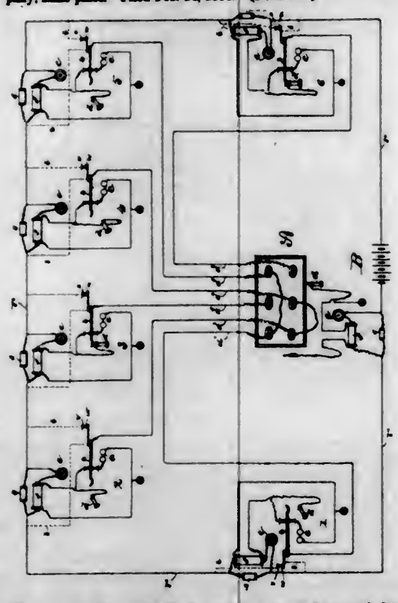
3. In an electric-arc lamp, a circuit consisting of two branches, one branch including a variable rheostat and lifting-magnet, the other branch including resistance and means whereby the resistance of the variable rheostat is varied automatically by the armature of a magnet included in the shunt of the arc.

4. In an electric-arc lamp, a magnet in the main circuit shunted by a resistance-coil, the armature and clutch of said magnet adapted to separate the carbons, to feed one of them and to vary the length of the arc as the current through the magnet varies, in combination with a magnet in the shunt of the arc, and means whereby said magnet in the shunt of the arc varies the resistance of the circuit of the lifting-magnet as the resistance of the arc varies, and thereby regulates the feeding and compensating action of the lamp.

5. In an electric-arc lamp, the combination, with a lifting-magnet and a variable rheostat both included in the main circuit, of a shunt-

circuit around said lifting-magnet and variable rheostat, and a resistance in said shunt-circuit, whereby current may be diverted from the lifting-magnet through the resistance in the shunt or from the resistance of the shunt through said lifting-magnet.

330,056. BATTERY-CIRCUIT FOR TELEPHONE-EXCHANGES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Feb. 14, 1883. (No model.)



Claim.—1. At a subscriber's station, a transmitter, an induction-coil, and a resistance-coil, the primary of said induction-coil and the transmitter being included in a battery-circuit, the secondary of said coil in a telephone-line, and the resistance-coil in a shunt around said induction-coil and transmitter, in combination with a short circuit or shunt around said induction-coil, transmitter, and resistance-coil, said short circuit or shunt being adapted to be opened or closed by a switch-lever, substantially as specified.

2. The combination, at a subscriber's station, with a transmitter, and the primary of an induction-coil included in a battery-circuit, the secondary of said induction-coil being included in a telephone-line, and a resistance-coil in a shunt around said induction-coil and transmitter in the battery-circuit, of a short circuit entirely around the said transmitter, induction-coil, and resistance, said short circuit being adapted to be opened or closed by the telephone-switch which opens or closes the local telephone-circuits, substantially as set forth.

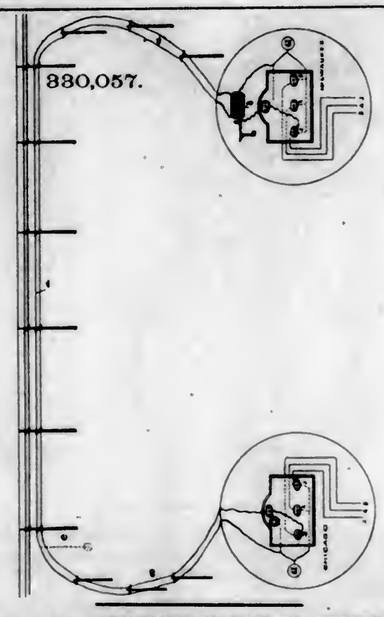
3. In a telephone-exchange, the combination, with a battery in a circuit extending to several subscribers' stations, the transmitter and primary of the induction-coil at the different stations being included in said circuit, of a shunt-circuit at each of said stations around the transmitter and induction-coil and resistance-coils, one in each of said shunt-circuits, whereby circuit from said battery may be directed through the transmitters and their induction-coils, respectively, substantially as and for the purpose specified.

4. A transmitter and induction-coil at subscriber's station, said transmitter and the primary of said induction-coil being connected by circuit r with battery B at the central office, in combination with a telephone-line including the secondary of the induction-coil, and a shunt-circuit around said transmitter and primary of the induction-coil, and a resistance-coil included in said shunt, whereby current is directed from the main battery through the transmitter and primary of the induction-coil, as and for the purpose specified.

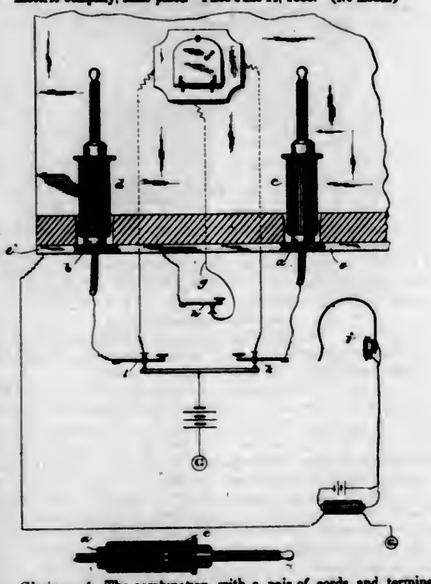
330,057. TELEPHONE-EXCHANGE SIGNAL. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 5, 1883. (No model.)

Claim.—The combination, with the two windings of an induction-coil of telephone-circuits, one through each coil of the induction-coil, of a soft-iron core, an armature, and annunciator-drop, whereby current sent over one line is reproduced by induction in the other, while the soft-iron core is at the same time energized to throw down the shutter.

330,057.



330,058. OPERATOR'S APPARATUS FOR TELEPHONE-EXCHANGES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 11, 1883. (No model.)

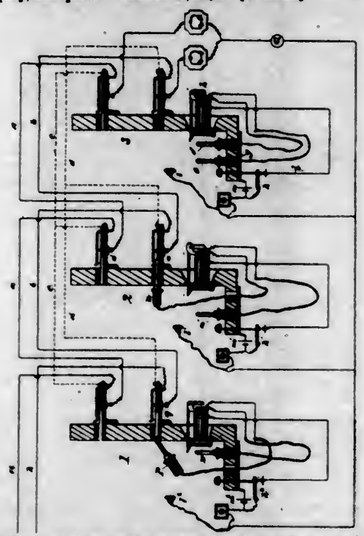


Claim.—1. The combination, with a pair of cords and terminal plugs, of a subscriber's switch, in which one of said plugs is inserted, a telephone in a circuit, extending to a ground-connection from a connecting-piece common to the circuit of said telephone, and to the other of said pair of plugs, whereby connection is maintained from said subscriber's switch with the telephone, said connection being broken when said other plug is lifted from the common connecting-piece.

2. The combination, with the switch-board of a telephone-exchange, of a pair of plugs and flexible cords, one of said plugs being adapted to be inserted in a switch upon the switch-board, while the metallic portion of the other plug remains in contact with the common connecting-piece of the operator's telephone, said telephone being placed in the circuit between said common connecting-piece and the ground at the central office, whereby the circuit is closed through said telephone, substantially as and for the purpose set forth.

3. The combination of pairs of plugs each provided with a metallic portion, said portions being adapted to be held in contact with a common connecting-piece by means of weights, conducting-cords, and the telephone-switches upon the switch-board, whereby when one of a pair of plugs is inserted in a switch the line of said switch will be connected through the operator's telephone, said telephone being disconnected automatically when the other plug of said pair is raised to be inserted in a second switch.

330,059. MULTIPLE-SWITCH-BOARD TESTING APPARATUS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a multiple-switch-board system, a test-circuit consisting of a pair of connecting-cords and their terminal plugs, a common connecting-piece with which the plugs are normally in contact, a ground-connection for said common connecting-piece, and a telephone and test-battery included in said ground-circuit, substantially as and for the purpose specified.

2. The combination, at any one of the multiple switch-boards of a telephone-exchange, of one or more pairs of plugs and cords with a common connecting-piece, to which the different pairs of plugs are normally connected, and a testing-battery and telephone, whereby when either plug of a pair is applied to the switch of a subscriber's line the telephone and testing-battery will be included in the circuit between said plug and the central-office ground.

3. The combination, with the switches of a multiple switch-board, of a circuit including a telephone-receiver, a test-battery, and pairs of cords and plugs normally in connection with said circuit, whereby a test and connection may be made by means of either one of the plugs of any pair.

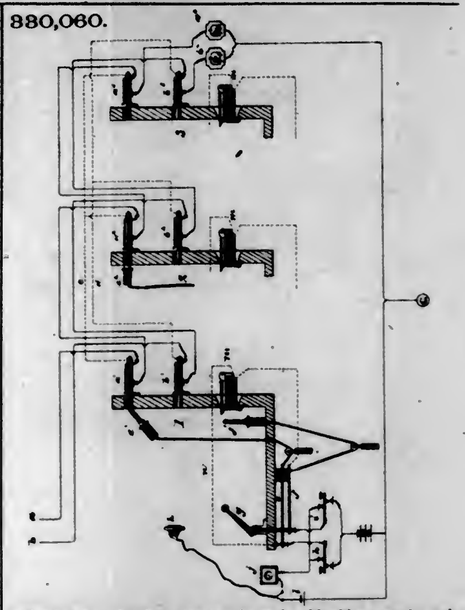
4. The combination, with a pair of connecting plugs and cords and a common connecting-piece with which said plugs are normally in contact, of a branched ground-circuit, one branch of said ground-circuit being connected through a battery to the common connecting-piece and the other branch connected through a normally-open listening-key to the circuit of the connecting-plugs, whereby a connection may be established through the telephone-receiver to the connected lines of two subscribers without including the battery in circuit, substantially as set forth.

5. The combination, with a pair of connecting plugs and cords, a common connecting-piece with which said plugs are normally in contact, and a clearing-out annunciator in circuit between the plugs, of a branched ground-circuit, one branch of said ground-circuit containing a battery and being connected to the common connecting-piece, the other branch containing a listening-key and being connected between the spools of the clearing-out annunciator, substantially as and for the purpose set forth.

330,060. OPERATOR'S TESTING APPARATUS FOR MULTIPLE SWITCH-BOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 22, 1883. (No model.)

Claim.—1. In a multiple switch-board system of telephone-exchange, the combination, with switches, one switch for each telephone-line upon each board, and a normally-open line for each telephone-line, of connecting plugs and cords, and a ground-line branched from the circuit of said connecting-plugs, said ground-line including a telephone and

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testing-battery, whereby a test may be made with either one of a pair of connecting-plugs at any board, substantially as specified.

2. In a multiple switch-board, the combination, with switches having insulated metallic frames, the frames of all the switches of one telephone-line being connected together in a series, of connecting-cords with terminal plugs arranged in pairs, a ground-circuit containing a telephone and a testing-battery, and means for connecting said ground circuit with any pair of connecting-plugs, substantially as and for the purpose specified.

3. In a multiple switch-board, the combination, with spring-jacks having insulated metallic frames, the metallic frames of all the spring-jacks of one telephone-line being connected in a series, as described, of connecting-cords with terminal plugs arranged in pairs, a loop-key for each pair of plugs, and a pair of calling-keys to which a ground-circuit containing a telephone and testing-battery is normally connected, said calling-keys being adapted to be looped into the circuit of any pair of plugs, substantially as and for the purpose set forth.

4. The combination, with the different multiple switch-boards of a telephone-exchange, of pairs of flexible cords provided with terminal plugs, a branch circuit to ground, including a telephone and test-battery, calling-keys, and loop-keys for each pair of cords, and means for normally holding the loop-keys of a given pair of cords in the circuit of the calling-keys of said pair, substantially as and for the purpose set forth.

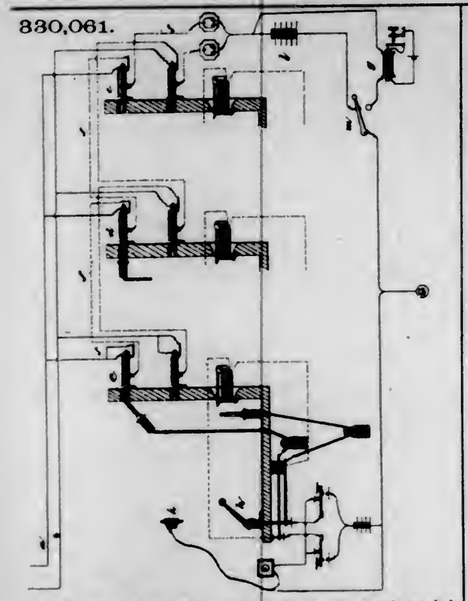
5. In a telephone-exchange, the combination, with a multiple switch-board provided with switches for the different lines, of testing apparatus consisting of a pair of flexible cords provided with terminal plugs, a branch circuit to ground, including a telephone and battery, and switching apparatus for connecting and disconnecting said pair of flexible connecting-cords and the said branch circuit, substantially as specified.

330,061. MULTIPLE SWITCH-BOARD. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Nov. 10, 1883. (No model.)

Claim.—1. The combination, with a multiple switch-board of a telephone-exchange, of telephone lines and switches, one switch for each line on each board, each line being permanently connected to a metallic portion of each of its switches, and also connected through the contact-points of its switches and individual annunciator, a common ground-circuit, including means for producing electric currents, and connecting and testing apparatus at each board, substantially as and for the purpose specified.

2. At a telephone-exchange central office, the combination of multiple switch-boards with telephone-lines, each permanently connected to a metallic portion of its switch upon each board, each telephone-line being also connected through the contact-points of its switches and to ground, and means whereby the circuit of the branch wire of any given line is opened when a connection is made with the line at any board, whereby any two lines may be connected together upon either of the boards without including in their circuits the contact-points of either of their switches.

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3. The combination, with a telephone-line connected with a switch on each of two or more multiple switch-boards and to ground, of the insulated frames of said switches, to which said line is connected by a normally-open branch or derived circuit, and testing apparatus at each board.

4. The combination, with a telephone-line provided at each switch-board of a multiple system with a connecting bolt or switch, of a portion of said line connected through an annunciator to ground, and means for breaking said line when a connection is made with the telephone-line at either one of its bolts or switches, substantially as and for the purpose specified.

5. The combination, with a telephone-line connected directly to a connecting bolt or switch at each of several switch-boards arranged in a multiple system, of a portion of said line being connected through a battery to ground, said portion being adapted to be broken when a connection is made with the telephone-line at either of its switches, and a ground-line, including a telephone, whereby a test may be made at any board to determine whether said branch line is broken.

6. In a multiple-switch-board system, a telephone-line provided with a spring-jack at each switch-board of the system, said spring-jacks being provided with insulated metallic frames, and said telephone-line being connected directly to each of said insulated frames, and also through an annunciator to ground through the springs and contact-points of said spring-jacks, whereby a connection may be made direct to the telephone-line at any board at the same time the portion of said line containing the annunciator is broken, substantially as set forth.

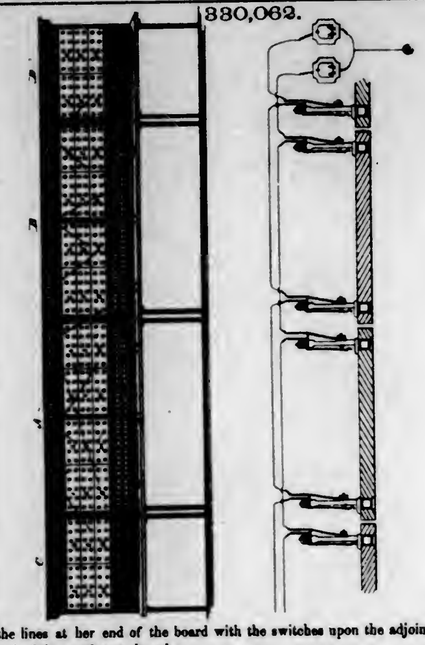
7. The eccentric switch *h*, in combination with the pair of flexible cords and plugs, the branch circuit, including telephone *k*, the multiple switch-boards to which the same telephone-lines are connected, the portion *f* of said circuit from each telephone-line, and the common ground-circuit, including the vibrator *g* or its equivalent, substantially as and for the the purpose specified.

330,062. MULTIPLE SWITCH-BOARD. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Nov. 10, 1883. (No model.)

Claim.—1. The combination, with multiple switch-boards placed one after the other, of telephone-lines each connected with its switch upon each of the boards, the switches of the different lines, respectively, being placed in the same order upon each of the boards, half-sections of switch-boards placed at the extremities of the switch-boards, and connecting apparatus, whereby an operator at any given board may connect the switch of the line of a calling subscriber with the switch of the called subscriber upon an adjacent switch-board.

2. The combination, with the telephone-lines, of switches and contiguous multiple switch-boards, each line being provided with a switch upon each board, and the switches belonging to a given line being indicated by the same numbers and placed each relatively in the same position on the board to which it belongs, and flexible cords and plugs at each board, whereby an operator at either end of a board may connect

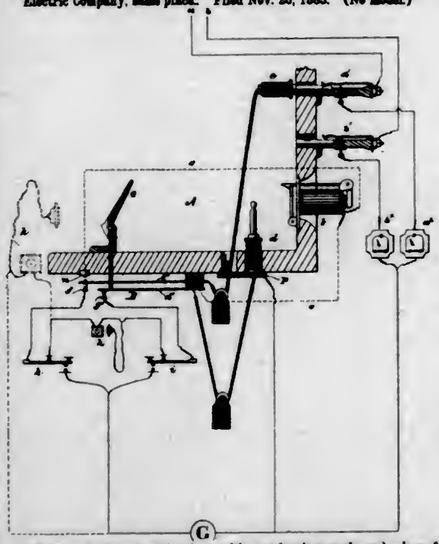
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the lines at her end of the board with the switches upon the adjoining end of the contiguous board.

3. At a telephone-exchange, a continuous switch-board consisting of several adjoining multiple switch-boards and a half-section of a multiple board placed at either end, in combination with flexible connecting-cords and switching apparatus at each board, whereby two operators may work at each board, making the connections between the two switches of any calling and called subscribers without necessarily, in any instance, reaching horizontally more than one-half as far as the whole length of a multiple board.

330,063. OPERATOR'S APPARATUS FOR TELEPHONE SWITCH-BOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Nov. 20, 1883. (No model.)



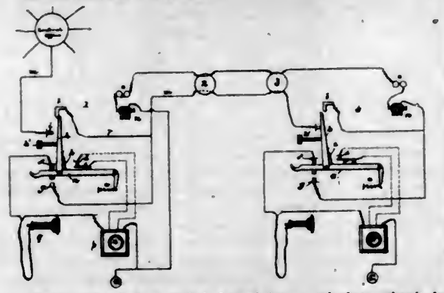
Claim.—1. The combination, with conducting-cords and plugs for connecting two subscribers of a telephone-exchange, of an operator's telephone, and a clearing-out annunciator, and a switching device whereby the telephone may be connected in circuit between said plugs by the same act which disconnects the clearing-out annunciator, substantially as set forth.

2. The combination, with telephone-lines radiating from a central station and a loop provided with means for temporarily connecting it at opposite ends with any two telephone-lines, of a signal device, a telephone, and a switch, said switch being adapted, when placed in one position, to connect the telephone with said loop, and to simultaneously disconnect the signal device therefrom, substantially as set forth.

3. The combination, with two connected telephone-lines, of a telephone, a clearing-out annunciator and switch at the central office, and contact-points with which the said switch may be connected and disconnected to bring the operator's telephone and the clearing-out shutter alternately into circuit.

4. The combination, with the terminal plugs *c d* and their conducting-cords, of a clearing-out annunciator, *l*, a telephone outfit, *k*, calling-keys *h i*, and a loop-switch, B, said loop-switch being adapted to connect the telephone and calling-keys in circuit between the plugs and at the same time to disconnect the clearing-out annunciator from said circuit and adapted to connect said clearing-out annunciator into said circuit at the same time the telephone and calling-keys are disconnected, substantially as set forth.

330,064. GRAVITY TELEPHONE-SWITCH. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 31, 1883. (No model.)



Claim.—A telephone-switch looped into a telephone-circuit, in combination with an auxiliary lever, contact-points with which said auxiliary lever may be alternatively connected, said contact-points being on different sides of said loop, respectively, a telephone, and circuits whereby the telephone may be connected to the telephone-line in either direction at the will of the subscriber, substantially as and for the purpose specified.

2. The combination, with the gravity-switch, of the auxiliary lever pivoted thereto and beveled at its free end, and means whereby the said auxiliary lever may be brought into contact with point *l*, substantially as and for the purpose specified.

3. The combination of a gravity telephone-switch, an auxiliary switch which normally is held in contact with a point on the central-office side of the line, and means for changing the connection of said auxiliary lever to a point on the line on the other side of the subscriber's station when the telephone is removed from the switch, the normal connection being restored automatically when the telephone is replaced upon the switch, as and for the purpose specified.

4. The telephone-switch, the telephone and signal bell and circuits at a subscriber's station, in combination with the auxiliary switch or lever and the contact-points, said auxiliary switch-lever being normally closed automatically to the contact-point in one direction on taking down or hanging up the telephone, and to the contact-point in the other direction by hand at the will of the subscriber when the telephone is not upon its support.

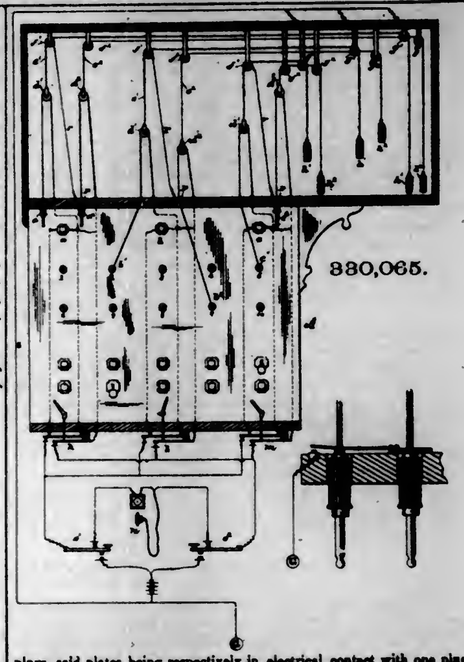
5. A telephone-line looped into a subscriber's station, a branch circuit to ground at said station, including the subscriber's telephone, in combination with a switching device to connect one side of said loop with the said ground branch and an auxiliary switch with its contact-points, connecting, respectively, to the two lines of the loop, whereby the said ground branch may be alternatively connected with either line of said loop while the other line is left open.

330,065. TELEPHONE-EXCHANGE SWITCHING APPARATUS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Feb. 25, 1884. (No model.)

Claim.—1. The combination, with a pair of terminal plugs connecting to flexible cords for connecting telephone-lines, of a metallic plate with which one plug of said pair is normally in electrical contact, and switching devices whereby said plate is automatically grounded when the other plug of the pair is taken up for use, substantially as and for the purpose set forth.

2. The combination, with a series of terminal plugs arranged in pairs, each pair of plugs being normally connected through a common operator's telephone-outfit, of metallic plates, one plate for each pair of

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plugs, said plates being respectively in electrical contact with one plug of each pair, and switching devices whereby the metallic plate of either pair of plugs is grounded when the first plug of said pair is taken up for use, substantially as specified.

3. The combination, with switches or terminal bolts of two or more telephone-lines, of a branch line or loop provided with plugs for temporarily connecting any two telephone-lines together, and switching devices whereby one end of said branch or loop is automatically grounded by the act of making a connection between the other end of said loop and a telephone-line, substantially as described.

4. The combination, with a pair of connecting-cords with terminal plugs and a metallic plate, *p*, with which one plug of the pair is normally in electrical contact, of metallic pulleys *f f'* and the metallic cord *c'*, one of said pulleys being connected with said plates and the other being connected to ground, substantially as described.

330,066. TOLL-LINE APPARATUS FOR TELEPHONE-EXCHANGES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Mar. 1, 1884. (No model.)

Claim.—1. In a telephone-exchange, the combination, with a switch-board to which a number of individual telephone-lines are connected, of a toll-line switch-board to which the toll-lines of the exchange are connected, said toll-line switch-board being also provided with switches for each of the individual telephone-lines, and means whereby a connection may be made at any switch-board between an individual telephone-line and the toll-line operator's apparatus.

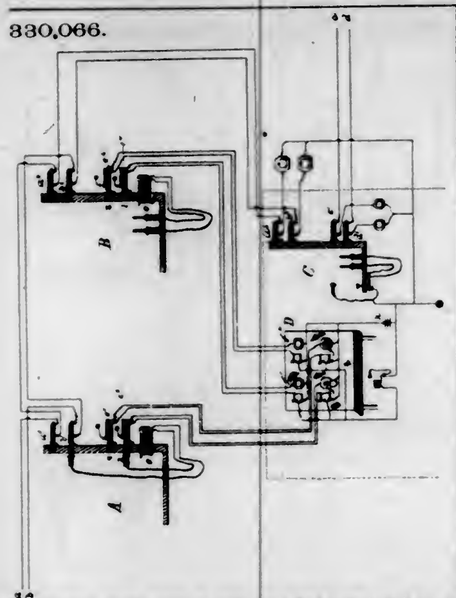
2. In a multiple switch-board telephone-exchange system, the combination of toll-lines connected with one of the boards and local circuits from the other boards to the toll-line operator's apparatus, and means for connecting any subscriber's line from any of said other boards to the toll-line operator's said apparatus or outfit, whereby the calls for the toll-lines may be answered by said toll-line operator, and the connections with the toll-lines made upon the multiple board of the toll-line operator.

3. The combination, with multiple switch-boards to which the same telephone-lines are connected, of toll-lines connected with their switches on one of said multiple boards, and means for switching any subscriber asking for toll-line connection to the toll-line operator's table or outfit, whereby the toll-line operator may receive and answer the calls for toll-line connections, said connections being made upon the board containing the said toll-line switches.

4. In a telephone-exchange system, the combination, with two or more switch-boards to which the same telephone-lines are connected, of receiving and signaling apparatus for the toll-line operator, and means whereby the switchmen at the different boards may connect any telephone-line to said apparatus, and means whereby the toll-line operator may signal any of the switchmen to disconnect a line thus connected with his apparatus, substantially as and for the purpose specified.

5. In a telephone-exchange central office, the combination, with the

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usual multiple switch-boards to which the different telephone-lines are connected, of a special multiple switch-board or toll-line multiple board provided with switches for the different telephone-lines, and with switches for the toll-lines, the toll-line operator's table or outfit for receiving calls for toll-lines, and means at each of the ordinary boards for connecting any line with said toll-line operator's outfit the same as a connection is made with another subscriber, substantially as and for the purpose specified.

6. The combination, with a subscriber's telephone-line, of the spring-jack switch upon the switch-board at the central office, the toll-line operator's outfit connected to a special switch upon the switch-board, and a pair of plugs with a flexible cord, including a clearing-out annunciator for connecting the subscriber's spring-jack switch with the said special switch, and a local-battery circuit which is closed at the special switch when a plug is inserted therein, and an annunciator in said local circuit at the toll-line operator's table or annunciator's board, whereby the subscriber may be connected to the toll-line operator's table and clearing-out signals sent, substantially as and for the purpose specified.

7. In a telephone-exchange central-office system, the combination of multiple switch-boards A B with the toll-line operator's multiple board C, said boards being provided with switches, as described, the toll-line operator's annunciator-board D, and outfit and circuits, substantially as and for the purpose specified.

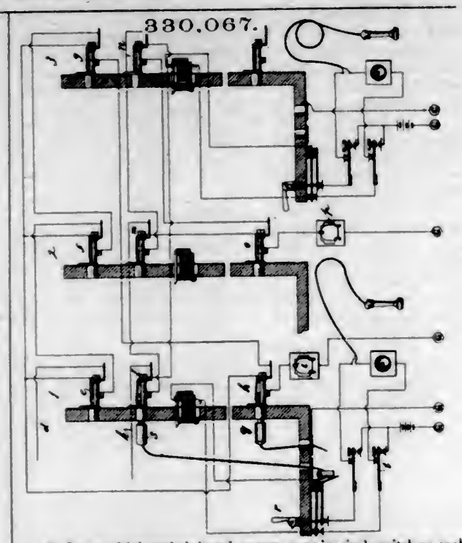
8. In a telephone-exchange central-office system, the combination, with the multiple switch-boards, as A B, of one or more special switches, as *e*, upon each of said boards, each of said special switches being connected to a pair of switches, as *l m*, the battery and local circuit switch including an annunciator, as *f*, and the toll-line operator's telephone-outfit, and means whereby any line may be switched to the toll-line operator's outfit and the connections and disconnections made, substantially as and for the purpose described.

9. In a telephone-exchange central-office system, the combination, with the toll-line multiple switch-board to which the different telephone and toll lines are connected, of the toll-line operator's annunciator board or table and outfit, and means for switching any line from any of the multiple boards to the said operator's outfit, whereby all calls for toll-lines may be answered and the connections made by one or more special operators.

330,067. MULTIPLE SWITCH-BOARD FOR TELEPHONE-EXCHANGES. JOHN A. SEELY, New York, N. Y., assignor to the Western Electric Company, Chicago, Ill. Filed Mar. 28, 1885. (No model.)

Claim.—1. In a multiple-switch-board system in which the individual annunciators are distributed in groups upon the different boards, switches for all the lines on each of the boards, and, in addition thereto, sets or groups of switches on the different boards corresponding to the different groups of individual annunciators, each group of annunciators and its corresponding group of switches being placed relatively to each other in the same position on each of the boards, whereby the manner of answering the subscribers is made uniform upon all the boards.

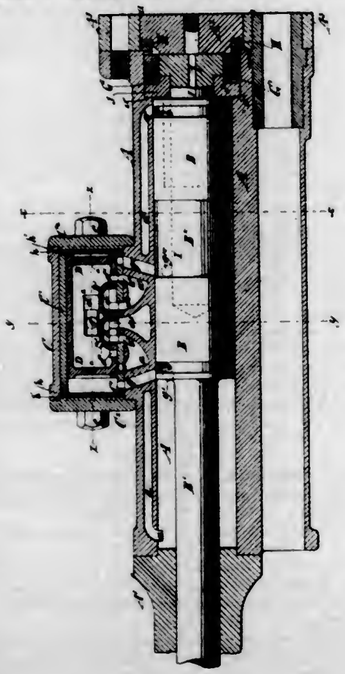
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2. In a multiple-switch-board system, a spring-jack switch on each board for each line, and additional spring-jack switches, one in each line, for the initial connection, said additional spring-jack switches being distributed on the different boards in uniform groups, and the individual annunciators of the different lines arranged in corresponding groups, substantially as and for the purpose specified.

3. In a multiple-switch-board system, a spring-jack switch on each board for each line, and additional spring-jack switches, one in each line, for the initial connection, said additional spring-jack switches being distributed on the different boards in uniform groups arranged in lines across the boards, and the individual annunciators of the different lines arranged in corresponding groups, substantially as and for the purpose specified.

330,068. STEAM-ACTUATED VALVE. HENRY C. SERGEANT, New York, N. Y. Filed Apr. 23, 1885. (No model.)



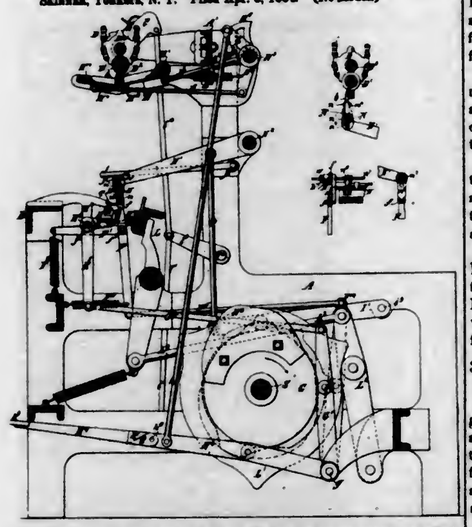
Claim.—1. In a direct-acting engine, the combination, with a main cylinder and an auxiliary cylinder constructed with ports and passages, substantially as herein described, and the auxiliary cylinder having a supply-opening between its ends, of a main piston, whereby the ends of the auxiliary cylinder will alternately be placed in communication with the main exhaust, and the auxiliary piston and main valve comprised in a single hollow structure having a slot in its side which registers with the supply-opening in the auxiliary cylinder, and through which motive fluid is admitted into the interior of the auxiliary piston and main valve, and having apertures in its ends through which the motive fluid may pass from the interior of the auxiliary piston and main valve into the opposite ends of the auxiliary cylinder, in order to move the valve when the pressure upon either end of the auxiliary piston is relieved, substantially as herein set forth.

2. In a direct-acting engine, the combination, with a main cylinder and an auxiliary cylinder constructed with ports and passages, substantially as described, of a lining or bushing fitted to the auxiliary cylinder, and having formed in it ports which correspond with those of the cylinder, a reciprocating main piston serving to place the ends of the auxiliary cylinder alternately in communication with the main exhaust, and an auxiliary piston and main valve consisting of a hollow structure, to the interior of which motive fluid is admitted, and in the ends of which are holes or apertures for the passage of motive fluid to the ends of the auxiliary cylinder for the purpose of moving the auxiliary piston and main valve, substantially as set forth.

3. In a direct-acting engine, the combination, with a main cylinder and auxiliary cylinder constructed with ports and passages, substantially as herein described, and a lining having a supply-slot in its side, of a main piston, B, and auxiliary piston and main valve D D′, forming a single hollow structure, in the side of which is an opening or slot, d^3, through which motive fluid enters its interior, and in the ends of which are openings °, through which motive fluid passes into the ends of the auxiliary cylinder, substantially as herein set forth.

4. The combination, with the main and auxiliary cylinders A C, constructed with supply and exhaust ports and passages, as described, of the passages $g\ g^5$, leading direct from the ends of the auxiliary cylinder C to the main cylinder, and passages $g'\ g'^6$, leading to the exhaust, and arranged in the same planes transversely of the cylinder as the passages $g\ g^5$, the main piston having a portion of reduced diameter, B^5, and the auxiliary piston and main valve D D′, forming a single hollow structure, provided with exhaust coves or cavities *d*, and with ports *d′*, and having in its side a supply-slot, d^3, for motive fluid, and in its ends holes or apertures °, substantially as herein set forth.

330,069. LOOM FOR WEAVING TUFTED FABRICS. ALBERT L. SKINNER, Yonkers, N. Y. Filed Apr. 8, 1884. (No model.)



Claim.—1. The combination, with the taft-yarn spools and their carriages and carrying-chains and cutters for cutting off the yarn from said spools in pieces to produce tufts, of nippers having a positive movement toward and from said chains for taking the taft-yarn from the spools and drawing it off therefrom while said chains are stationary, a rest to hold the said yarn while being cut off by the cutters in pieces to produce the tufts, a turning-over movement, and movements toward and from the plane or planes occupied by the warp for inserting the said pieces into the warp to produce the tufts, and mechanism, substantially as herein described, for operating the said chains and cutters, and producing the said movements of the nippers, all as herein set forth.

2. The combination, with nippers for inserting the taft-pieces into the warp, of mechanism, substantially as herein described, for giving the said nippers a movement through the warp and back for the insertion of the taft-pieces and formation of the tufts, and mechanism, substantially as herein described, for giving them an oscillating movement while in the warp for the purpose of pressing the tufts forward toward the fell of the web, substantially as herein set forth.

3. The combination, with the nipper-carrying arms, the nippers pivoted to said arms and furnished with toothed pinions, and mechanism, substantially as herein described, for giving said arms a to-and-fro motion, of a rack-bar gearing with said pinions and pivoted at a fixed point out of the axis of motion of the said arms, whereby the movement of the nippers on their pivots is obtained by the movement of the said arm, substantially as herein described.

4. The combination, with nippers for inserting the taft-pieces into the warp, and means, substantially as herein described, for actuating said nippers, of a straight-edge, and mechanism, substantially as herein described, for operating the same for holding the tufts during the crossing of the shed, substantially as herein set forth.

5. The combination, with the straight-edge for holding the taft-pieces during the crossing of the shed, and mechanism, substantially as herein described, for operating the same, of taft-inserting nippers having projections on their front fingers for pressing forward the tufts in the warp to a position to be held by said straight-edge, and mechanism, substantially as herein described, for giving the said nippers a forward motion while in the warp, all substantially as herein set forth.

6. The combination, with the nippers, the carrying-arms in which they are pivoted, and mechanism, substantially as herein described, for producing the upward and downward movement of said carrying-arms, of the crank-arm x^3 and crank-wrist *f*, the forked lever F, its supporting-lever F′ and its spring F^2, a cam for operating the said forked lever, and means for connecting the said cam with the said forked lever, substantially as herein described.

7. The combination of the straight-edge E, the arms E^5, which carry it, the rock-shaft E^2, provided with arms E^3, to which said arms E^5 are pivoted, the shaft S, the cam G on said shaft S and its connections with said rock-shaft, and the cam J on said shaft S and its connections with said arms E^5, all substantially as herein described, and for the purpose herein set forth.

8. The combination, with the cutter-stocks H′ H′°, of the rock-shaft H^3, furnished with cams H^6 and with loose arms H^7, the said cams having projections h^4 to actuate said loose arms, the rods h^2 and h^3, between the said loose arms and cams and the cutter-stocks, the springs H^8, connecting said arms H^7 with the cutter-stock H′, a cam for operating the said rock-shaft, and means, substantially as herein described, for connecting said cam with said rock-shaft, substantially as herein set forth.

9. The combination, with the taft-cutter stocks and a shaft and mechanism, substantially as herein described, through which said stocks are operated, of a treadle or lever whereby an attendant may work the cutters when the other parts of the loom are not in operation, substantially as and for the purpose herein set forth.

10. The combination, with the cutters and their stocks H′ H′° and the cam H^2 and lever H^4, and connections, substantially as herein described, between said cutters and lever, of a prolongation or treadle attached to said lever to permit the operation of the cutters by an attendant when the loom is not in operation, as herein set forth.

11. The combination, with the cutter-stocks H′ H′° and the cam H^2 and lever H^4, and connections, substantially as herein described, between said lever and cutter-stocks for operating the same, of the treadle H^9, connected with said lever by a joint, as $h^2\ h^7\ h^8$, which permits upward flexure, but is incapable of downward flexure, substantially as and for the purpose herein described.

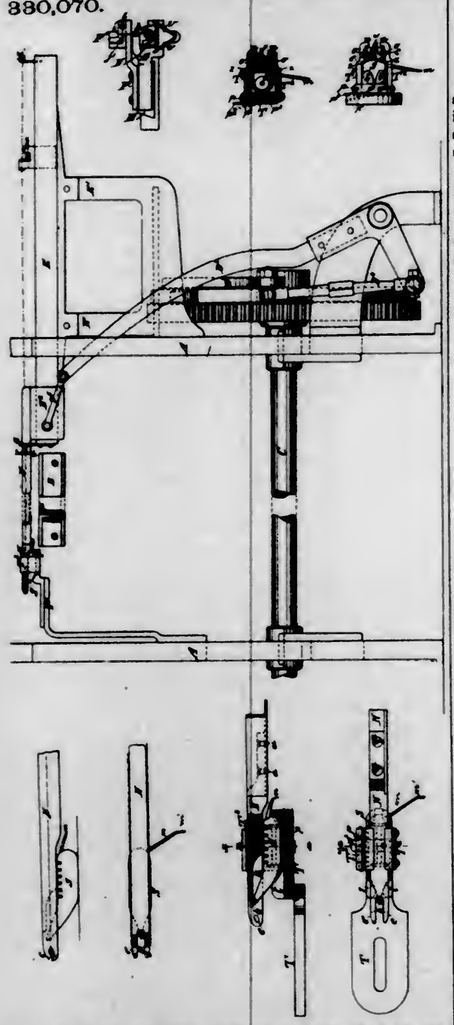
330,070. NEEDLE-LOOM. ALBERT L. SKINNER, Yonkers, N. Y. Filed Mar. 18, 1884. (No model.)

Claim.—1. The combination of a straight weft-carrying needle, guides to confine the said needle to a right line, mechanism, substantially as herein described, for moving the said needle rectilinearly to and fro through the warp, a stationary shuttle-bearing, and a stationary shuttle for containing a selvage-thread arranged in said bearing parallel, or thereabout, with the said needle, substantially as and for the purpose herein specified.

2. A weft-carrying needle for a loom, having its point or end slotted to form a fork, having one prong of the so-formed fork slotted to form a second fork, and having an eye in the other prong, substantially as and for the purpose herein described.

3. The combination, with a forked weft-carrying needle, and means, substantially as herein described, of operating the same, of a stationary selvage-thread shuttle arranged parallel with and close to the path of said needle and having its point arranged to be received within the fork of said needle, substantially as and for the purpose herein described.

330,070.

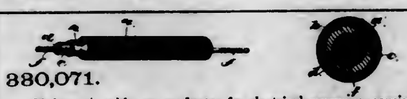


4. The combination, with the weft-carrying needle, and means, substantially as herein described, of operating the same, of a stationary selvage-thread shuttle having a tail, *m m'*, a portion of which is oblique to the direction of the warp in the loom, but the terminal portion of which is parallel with the direction of the warp, for retaining at the same time several of the loops of the weft at the selvage, substantially as herein set forth.

5. The combination, with the straight weft-carrying needle, and means, substantially as herein described, of imparting a rectilinear reciprocating motion thereto, and the stationary selvage-thread shuttle arranged below the path of and parallel with the said needle, of a stationary shuttle-bed, T, for supporting the shuttle and attached guide-plates T^2 T^3, which confine the shuttle laterally and guide the needle, and which are provided with internal shoulders, *z z*, for confining the shuttle vertically, and with internal flanges, *n n*, for confining the needle downward when above the shuttle, substantially as herein specified.

6. The combination, with the weft-carrying needle having a fork, and having an eye in one prong of the said fork, and a second fork in the other prong thereof, and means, substantially as herein described, for operating the said needle, of a stationary V-shaped or forked guide to direct the weft into the said second fork, substantially as herein specified.

330,071. ELECTRICAL CONDUCTOR. Abner C. Tremmon, San Francisco, Cal. Filed Feb. 7, 1885. (No model.)

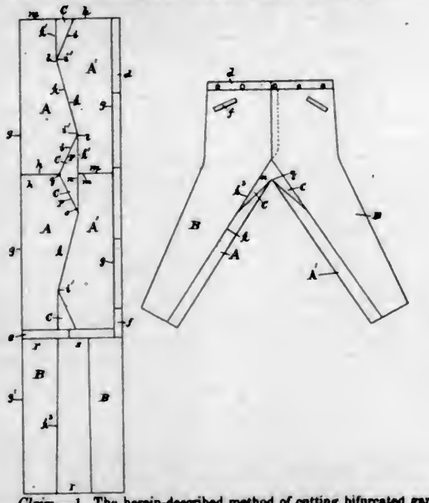


Claim.—A cable or conductor for electrical purposes, consisting of a wire or metallic strip surrounded and enveloped by pulverized carbon incased by one or more flexible wrappings, each of which wrappings is saturated or coated with a protective compound, substantially as described.

330,072. ALLOY. Abner C. Tremmon, San Francisco, Cal. Filed Feb. 27, 1885. (No specimens.)

Claim.—As an article of manufacture, an alloy composed of lead, zinc, iron, and manganese, compounded in substantially the proportions herein described.

330,073. METHOD OF CUTTING BIFURCATED GARMENTS. Jas. C. Tracey, New York, N. Y. Filed Apr. 2, 1885. (No model.)



Claim.—1. The herein-described method of cutting bifurcated garments—such as drawers, pants, and overalls—consisting in cutting the back piece, A, for one leg with a straight edge, *g*, for the outside seam, and the back body-edge, *i*, and inside-seam edge *k* from the knee-angle *l* to its joinder with said body-edge, forming the buttocks-angle *i'*, and continuing the inside-seam edge *k'* below the knee, parallel with the outside-seam edge *g*, cutting the back piece, A', for the second leg so that its waist-edge *h* is even with the bottom edge, *m*, of the first piece and its inside-seam edge *k* in inverted position will adjoin the like edge of the first back piece, and its buttocks-angle *i'* and knee-angle *l* will have position adjoining the knee-angle and buttocks-angle, respectively, of the first back piece, and the one-half of the crotch-piece C, comprising that which is left between the lower part, *k'*, of the inside-seam edge of one piece and the back body of the other piece, as set forth.

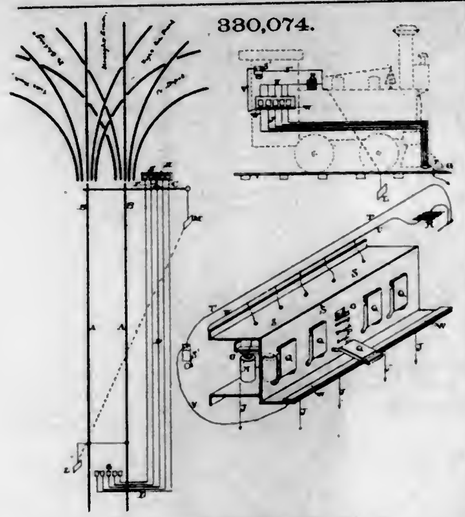
2. The method of cutting bifurcated garments—such as drawers, pants, and overalls—consisting in cutting the back leg-pieces, A, with a straight edge, *g*, for the outside seam, and the back body-edge, *i*, and inside-seam edge *k* both straight to form the buttocks-angle *i'*, cutting the front pieces, B, with two straight longitudinal edges, *g' k^3*, so that the fronts shall have a slight taper from the top to the bottom, and cutting a double-tapered crotch-piece, C, with a straight edge, *n*, between the two extreme points of said double taper, as set forth.

330,074. ELECTRIC ALARM FOR LOCOMOTIVES. William Vogel, Chicago, Ill., assignor to Adolph Zeller, same place. Filed Mar. 30, 1884. Renewed Sept. 1, 1885. (No model.)

Claim.—1. The combination of a battery on the locomotive, electro-magnets and signals connected thereto, wires leading from the magnets, and suitable contact-points on the locomotive with contact-points at a suitable distance from the switch, contact-points at the switch, and wires for connecting the two sets of contact-points together, the switch-lever provided with means of connection with the contact-points at the switch, and the ground-batteries, substantially as shown and described.

2. The combination of the ground-contacts, contacts on the locomotive, wires J, electro-magnets, armatures, drops, frame, support for the drops to fall upon, battery, and connecting-wires, substantially as set forth.

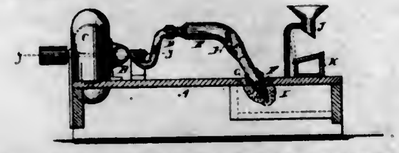
330,074.



330,075. FERTILIZER. Alonzo E. Wemple, Brooklyn, N. Y. Filed May 13, 1882. (No specimens.)

Claim.—The improved fertilizer consisting of a combination of bone-flour, sulphate of ammonia, nitrate of soda, muriate of potash, sulphate of magnesia, and nitrogenous matter, substantially as described.

330,076. APPARATUS FOR SUBDIVIDING MATERIAL IN COMMINUTED FORM. John R. Williams, Newark, N. J. Filed July 31, 1885. (No model.)



Claim.—1. An apparatus for subdividing or apportioning a mass of comminuted or granular material into parts of uniform weight or quantity, which consists of an air-exhaust of predetermined force, a tube in communication with said exhaust, a perforated nozzle connected with said tube, perforations of the nozzle covering a surface of predetermined area and being too small to permit the passage of the material through them, and a receptacle to contain the mass of material, substantially as set forth.

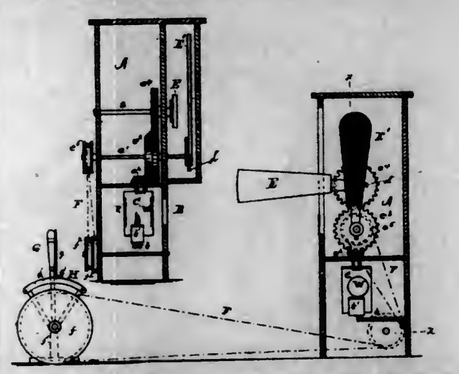
2. An apparatus for subdividing or apportioning a mass of comminuted or granular material into parts of uniform weight or quantity, which consists of an air-exhaust of predetermined force, a flexible tube in communication with said exhaust, a perforated nozzle on the end of said tube, the perforations thereof covering a surface of predetermined area and being too small to permit the passage of the material through them, and a receptacle to contain the mass of material, substantially as set forth.

3. An apparatus for subdividing or apportioning a mass of comminuted or granular material into parts or charges of uniform weight or quantity, which consists of an air-exhaust, a flexible tube in communication therewith, a perforated nozzle in connection with said tube, the perforations thereof covering a surface of predetermined area and being too small to admit the material, a valve for cutting off the exhaust from the perforated surface, a receptacle to contain the mass of material, and a receptacle to receive the separate charges from the end of the nozzle, substantially as set forth.

4. In an apparatus for subdividing material in comminuted form, a pipe attached to an air-exhaust and provided on its ends with a perforated nozzle, and a movable slide adapted to cover and uncover the perforations in the nozzle, substantially as set forth.

5. The apparatus, hereinbefore described, for subdividing comminuted or granular material into uniform charges or quantities, which consists of an air-exhaust, a tube provided with a perforated nozzle, an adjustable slide on the nozzle, and a valve for cutting the air off from the nozzle, substantially as set forth.

330,077. RAILWAY-SIGNAL. Charles M. Wilson, Whitestown, N. Y. Filed Apr. 10, 1885. (No model.)



Claim.—1. In a railway-signal, the casing A, made in sections, two upper sections and one lower section, one of said upper sections containing the shafts *e* and *e'*, the former provided with a cog-wheel, e^4, and a signal-arm, E, the latter provided with a cog-wheel and a bevel-wheel, and also provided on one end with a pulley, and on the other end with a signal-arm, E', in combination with a perforated rotatable lamp-case journaled and rotating in the lower section of the casing, (said section having the opening B,) and provided with a bevel spur-wheel which meshes the bevel-wheel on the shaft *e'*, said rotatable lamp-case encircling a stationary light, and the whole provided with the devices for operating the same, substantially as described.

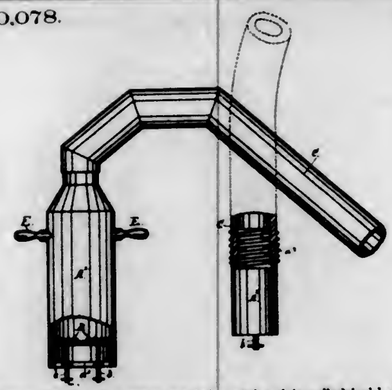
2. In a railway-signal, the casing A, provided with the stationary light *b'*, and made in sections, one of said sections containing the shafts *e* and *e'*, the former provided with a cog-wheel, e^4, and a colored signal-arm, E, the latter provided with a bevel-wheel and a cog-wheel, and also provided with a pulley at one end and a signal-arm, E', at the opposite end, said signal-arm E' being of a color different from the color of the arm E, said signal-arms being secured on the shafts *e* and *e'*, respectively, substantially at right angles to each other, in combination with a perforated lamp-case journaled in the lower perforated part of the casing A, and provided with a bevel spur-wheel, e^5, which meshes with the bevel-wheel on the shaft *e'*, the perforations in said rotatable lamp-casing being provided with colored lights which correspond with the colored signal-arms E and E', respectively, said rotatable casing also inclosing the stationary light *b'*, and the means, substantially as described, which operates the above combination of parts, whereby the signal-arms and their corresponding lights are simultaneously operated and caused to alternately appear and disappear, substantially as described.

3. In a railway-signal, the perforated casing A, provided with the stationary lamp *b'*, the horizontal shafts *e* and *e'*, and the vertical shaft having a bevel gear-wheel and supporting a rotatable lamp, said shaft *e'* provided with a cog-wheel and a bevel-wheel, said cog-wheel meshing with the cog-wheel on the shaft *e*, and said bevel-wheel meshing with the bevel-wheel on the vertical shaft, suitable colored signal-arms, E and E', attached to the shafts *e* and *e'*, respectively, and adjusted at an angle to each other, said rotatable lamp also provided with perforations covered by colored lights, between which is situated the stationary light, in combination with a pulley on the shaft *e'*, a pair of sheaves, f^2 f^3, mounted on a pulley-shaft at the bottom of the case, the wheel *f*, provided with the lever G, having the lever *g* and the dog *g'* secured thereto, and a belt, whereby the signal-arms and their correspondingly-colored lights are instantaneously and simultaneously caused to alternately appear and disappear and are locked positively in either position, substantially as described.

4. In a railway-signal, the housing A, provided with the stationary light *b'*, the perforation B, the shafts *e* and *e'*, having the cogs and bevel-gear, and the signal-arms, and also provided with a vertical shaft having a perforated rotatable lamp-case and a bevel-gear secured thereto, in combination with suitable pulleys and a belt which simultaneously operate the signal-arms and a rotatable perforated light-casing, said pulleys provided with a belt which is rigidly secured to the two pulleys, whereby instantaneous and positive movement of signals and light-casing is secured, and an operating-lever having a locking-lever and dog which simultaneously operates and positively locks the signals in position, substantially as described, and for the purposes explained.

330,078. SIPHON-PUMP. Frederick Wittram, San Francisco, Cal. Filed May 11, 1885. (No model.)

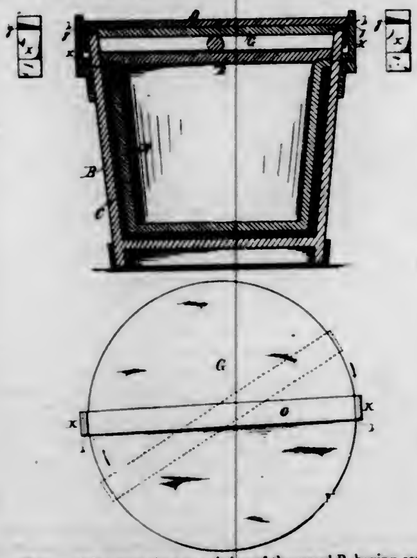
330,078.



Claim.—1. A siphon-pump consisting of the plain cylindrical body A, having a conical top and contracted tube upon the conical top at the upper end, a flexible or curved pipe, C, secured upon said contracted tube, and the removable short tube or length in the bottom of the cylinder, having a plate or disk on top, with valve-seats and guides for the valve-rods at the bottom, and the valves described having the stems extending below the bottom of the cylinder, as set forth.

2. In a siphon-pump, the combination, with the cylinder adapted to be vertically reciprocated, as described, and having automatic valves with stems projecting below its bottom, and provided with side handles or connections near the top thereof, of the fulcrum-block *f*, adapted to rest upon a suitable support, and a bell-crank lever, F, pivoted in the fulcrum *f*, and having bifurcated ends to embrace the side handles on the cylinder, substantially as and for the purpose set forth.

330,079. BUTTER-PACKAGE. BENJAMIN WOOD, New York, N. Y. Filed Apr. 3, 1885. (No model.)



Claim.—A butter-package consisting of the vessel B, having cover G, and the ears K, the inside of each of which is cut away to form the grooves *g*, the upper edges of which are beveled transversely, and the cross-bar O, having its ends *b* beveled in a transverse direction opposite to the bevel of the grooves *g*, in combination with the inner vessel, A, substantially as described and set forth.

330,080. PIANO-ACTION. FREDERICK ZECH, San Francisco, Cal. Filed Sept. 10, 1884. (No model.)

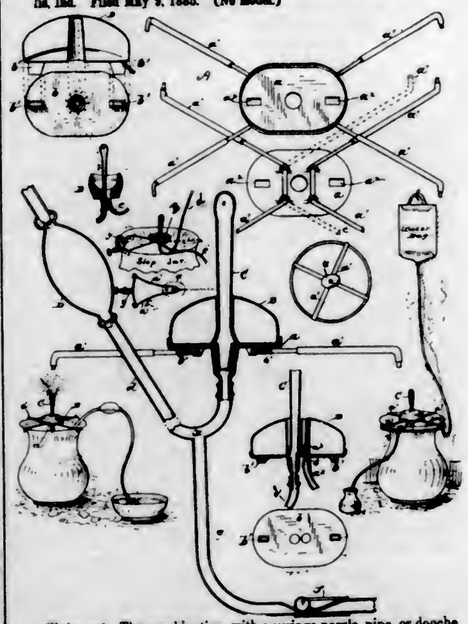
Claim.—1. A piano-forte action consisting of the sections L and M hinged together, one of the sections having a lag, Q, engaged by a lever, S', operated by a bent shank, H, on the end of the hammer-shank, and connected by a cord, V², to a spring-rod, V³, substantially as shown, for the purpose set forth.

330,080.



2. In a piano-forte action, the combination, with a key having check-block J, and a hammer, E, having a pivoted shank, F, provided with tang H, of the hinged sections L M, cleat U, bracket V, having point V', the lever S', cord V², spring V³, cushion T', punches T R S', and regulating-screw S, substantially as described.

330,081. SYRINGE ATTACHMENT. HORACE R. ALLEN, Indianapolis, Ind. Filed May 9, 1885. (No model.)

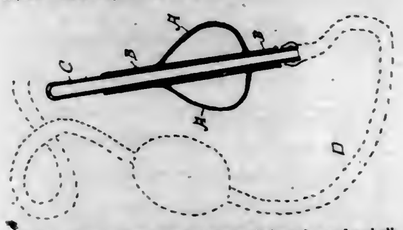


Claim.—1. The combination, with a syringe nozzle, pipe, or douche, of a frame adapted to rest upon a vessel, or a closet-seat to support such nozzle, pipe, or douche, substantially as described.

2. In a syringe attachment, the combination, with a supporting-frame adapted to rest on the top of an open vessel or closet-seat, of a pad, cone, cushion, cap, or shield supported thereon, and a syringe-nozzle or a pipe, substantially as and for the purposes specified.

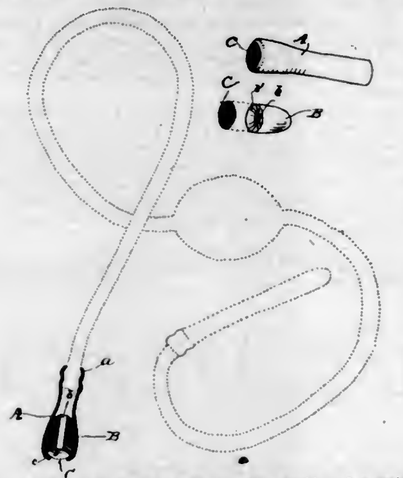
3. A pad adapted to fit the vagina, provided with an induction-tube and with a discharge-conduit adapted to stop, check, or retard the outflow of liquid from the vagina, and combined with a frame, substantially as described.

330,082. SYRINGE ATTACHMENT. HORACE R. ALLEN, Indianapolis, Ind. Filed July 1, 1885. (No model.)



Claim.—The syringe attachment consisting of a pad or bulb and a tube integral or combined therewith and projecting therefrom in use, the pad or bulb being adapted by itself to slip upon a syringe-nozzle or be attached to a syringe, as set forth.

330,083. SYRINGE ATTACHMENT. HORACE R. ALLEN, Indianapolis, Ind. Filed July 11, 1885. (No model.)

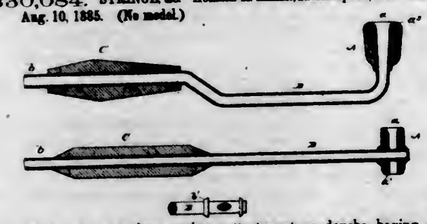


Claim.—1. A tube of rubber or other suitable soft material, in combination with and adapted to fit upon and inclose the metallic or other hard induction end of an appropriate syringe, whereby the noise incident to the striking of the induction end of the syringe against the vessel is obviated, as set forth.

2. The combination of a supplemental tube adapted to be fitted upon the usual induction end of the ordinary syringe and a strainer carried by such tube, as and for the purpose set forth.

3. The combination, with a tube of rubber or other suitable soft material to be fitted upon the induction-tube of a syringe, of a strainer held by such tube and a weight carried by it to keep the end of the tube below the surface of the liquid, substantially as described.

330,084. SYRINGE, &c. HORACE R. ALLEN, Indianapolis, Ind. Filed Aug. 10, 1885. (No model.)

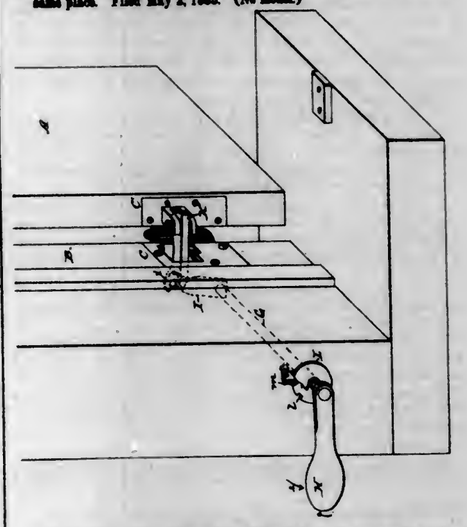


Claim.—1. A syringe, syringe attachment, or douche having an orifice or a conduit adapted to fit the outer portion of an opening—such as the lower end of the rectum, or the anus—substantially as described and for the purpose specified.

2. In combination with a suitable pipe, conduit, shank, or nozzle, a head provided with one or more discharge-orifices adapted to fit the lower or outer portion of the anus, substantially as and for the purpose described.

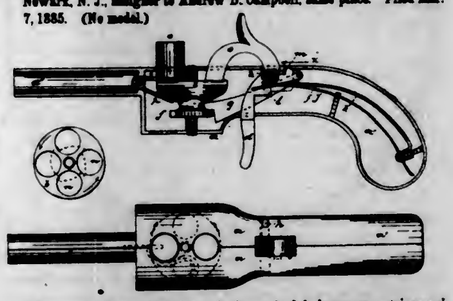
3. In combination with a head, A, a tube or shank, B, and a handle, C, substantially as and for the purpose described.

330,085. SHUTTER-WORKER. JOHN B. ARMSTRONG, Augusta, Ga., assignor of one-half to Frank E. Beane and Rufus Carter & Co., all of same place. Filed May 2, 1885. (No model.)



Claim.—In a shutter-worker, the hinge having a stationary portion or wing provided with an opening and constructed for attachment to the inner surface of the upright of a window-casing, and a swinging portion arranged to be applied to the back edge of a shutter, in combination with a link pivoted at one end to said swinging portion and arranged to pass through the opening in the stationary portion, a pivoted arm loosely attached to the opposite end of said link, and an operating-rod, substantially as described, for vibrating said pivoted arm.

330,086. TOY REVOLVING DETONATOR. SAMUEL ARMSTRONG, Newark, N. J., assignor to Andrew D. Campbell, same place. Filed Mar. 7, 1885. (No model.)



Claim.—1. In combination, a body, *a*, bed *b*, hammer *c*, trigger *d*, an immovable cap-receptacle, *e*, fixed stationary upon the body *a*, and mechanism, substantially as described, adapted to automatically carry the cap from said receptacle to a point upon said bed in a position to receive the blow of the hammer.

2. In a detonator having a receptacle and hammer, a table extending from said receptacle to said hammer, and having a series of shallow depressions or recesses in the face thereof to receive a series of detached caps, said table being movable to carry or convey the said caps from said receptacle to said hammer, substantially as set forth.

3. In combination, the body *a*, tubular receptacle *e*, having an open bottom, a recessed table extending from said receptacle to the hammer, and adapted to receive and hold a series of caps as they drop or are forced automatically through said open bottom from the tubular receptacle, said hammer pivoted on the body, a trigger, springs *j k*, and means for revolving the table automatically when the hammer is raised, substantially as set forth.

4. In a detonator, a tubular receptacle adapted to hold a pile or columnar succession of caps, a flat bed upon which to explode said caps, a hammer for exploding said caps, and mechanism, substantially as described, adapted to transfer caps from the receptacle to the bed automatically when the said hammer is raised.

5. In combination, in a detonator, a body, *a*, having a receptacle for a succession or pile of caps, said receptacle having an open bottom, and mechanism, substantially such as described, for pressing said caps toward said open bottom, substantially as and for the purpose set forth.

6. In a detonator, a body, *a*, a receptacle, *c*, fixed upon said body *a*, to receive a pile or succession of caps, a hammer to explode said caps, a movable bed upon which to explode said caps, and mechanism, substantially such as described, for transferring the caps one by one from the bottom of said pile to a point on said bed in line with the hammer, substantially as and for the purposes set forth.

7. In a detonator, the combination of a body, *a*, a revolving bed having a series of shallow cap-recesses in the face thereof, and a spring-arm, *o*, secured on said body, and extending across one of said recesses to hold the cap therein while a cap in another is being exploded, substantially as shown and described.

8. In a revolving detonator, the combination, with the body, of a tubular cap-receptacle adapted to receive a succession or pile of caps, and having an open bottom to allow the exit of said caps, and a weight or its equivalent to force said caps down through said opening, as set forth.

330,087. ENDLESS BAND OR CORD. LEEDOM EDDY, Philadelphia Pa. Filed Sept. 16, 1884. (No model.)

Brief.—The ends of the plaited tubular band are inserted longitudinally and in reverse directions into the portion of the body of the band next adjacent to the ends, thereby forming an endless band. Any strain on the band thus formed tends to contract the diameter of the same, thereby gripping and holding the ends that have been inserted into the body with greater force.



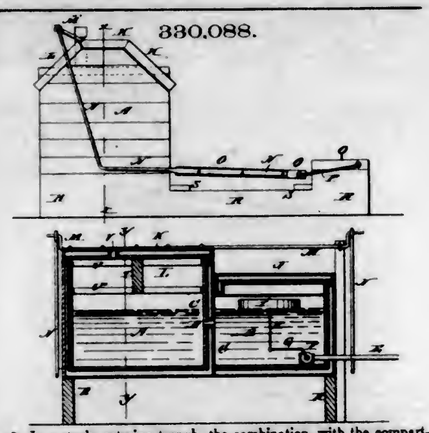
Claim.—An endless tubular plaited band or cord united at its ends by each of the ends thereof being inserted bodily and longitudinally in reverse directions to each other within the portion of the body of the band next adjacent to the other end thereof, substantially as shown and described.

330,088. STOCK-WATERING TROUGH. TRADDEUS W. BOHR, Beloit, Kans. Filed June 17, 1885. (No model.)

Brief.—Animals stepping on platform O cause cover K to open, thus allowing them access to the inside of the trough. T is a removable rack to prevent animals from putting their feet in the trough.

Claim.—1. In a stock-watering trough, the combination, with the trough A B, the hinged cover K, the recessed sills B, and the stationary platform Q, of the crank-rod M, attached to the said hinged cover K, the bent connecting-rod N, pivoted to the arms of the said crank-rod, the platform O, attached to the said connecting-rods, and the pivoted rods P, connecting the movable and stationary platforms, substantially as herein shown and described, whereby the said hinged cover will be raised by the weight of an animal stepping upon the said movable platform, as set forth.

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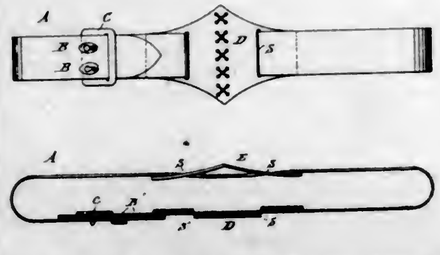


2. In a stock-watering trough, the combination, with the compartment A, having its walls recessed, and provided with the cover K and the recessed partition C, of the removable rack consisting of the plate T and the bars U, the upper one having tenons on its ends, substantially as herein shown and described.

3. In a stock-watering trough, the combination, with a receptacle having a hinged cover, of a vertically-movable platform, and intermediate mechanism for opening and closing the cover of the receptacle by the up-and-down movement of the platform, substantially as and for the purpose set forth.

4. A watering-trough for stock, consisting of two compartments, one of the compartments having a hinged cover, a float in one of the said compartments for automatically opening and closing the supply-pipe projecting into the compartment, a vertically-movable platform, and means for opening and closing the cover of the compartment by the movement of the platform, whereby provision is made for automatically supplying water to the trough and opening and closing the cover of the same, as set forth.

330,089. BODICE-BELT. SAMUEL BRENFIELD, New York, N. Y. Filed June 24, 1885. (No model.)



Claim.—1. The combination, with a belt having a fastening by which the diameter of the belt can be changed, of two bodice-pieces, of which one or both are adjustable on the belt, the top and bottom edges of said bodice-pieces being inclined from the centers of said top and bottom edges toward the ends of said bodice-pieces, substantially as herein shown and described.

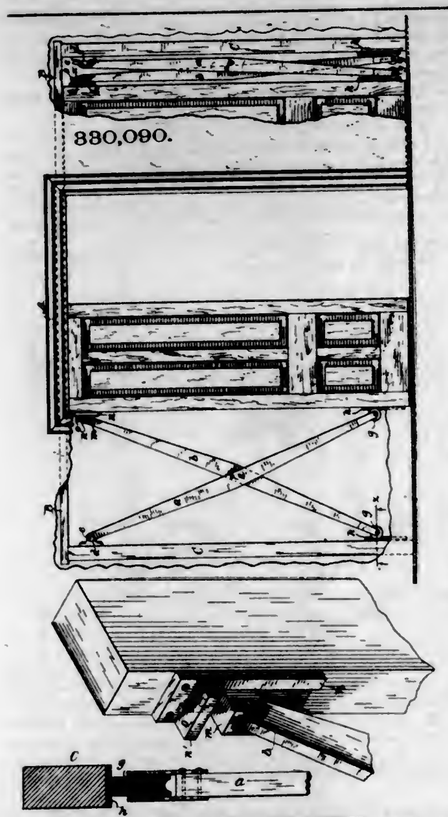
2. As a new and improved article of manufacture, a bodice-piece for belts, having its upper and lower edges sloped in lines converging toward its opposite ends, having a loop or pocket for the passage of the belt, and provided with a double parallel row of perforations to receive lacings, substantially as set forth.

330,090. SLIDING DOOR. WILLIAM S. BERKELL, Olean, N. Y. Filed Sept. 19, 1885. (No model.)

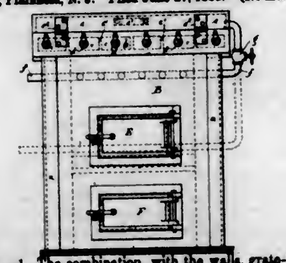
Claim.—1. The combination, with a suitable frame and a door sliding therein, of the bars or rods pivoted together midway their ends, plates *h*, rollers located at the lower ends of the pivoted bars, one of said bars being pivoted at its upper end to the frame, the grooved plate *n*, having the lug *n'*, the plate *m*, and the set-screw *o*, substantially as set forth.

2. The combination, with a sliding door and a suitable frame, of the bars or rods pivoted at their middle points, one of them having an adjustable hinged connection at its upper end to the vertical edge of the door, substantially as set forth.

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330,091. APPARATUS FOR DRYING PAPER MATRICES. JOHN BROOKS, Plainfield, N. J. Filed June 27, 1885. (No model.)



Claim.—1. The combination, with the walls, grate-bars, and doors composing a furnace, of a shell, *b*, having top and bottom plates, and partitions *c'*, that separate the space into chambers within said shell, the covers *d*, over the openings to said chambers, a hinged cover, *e*, and rim connected to and resting upon said shell, the pipe *f*, passing in rear through said furnace for discharging heated air beneath the cover, and a valve in said pipe *f*, substantially as set forth.

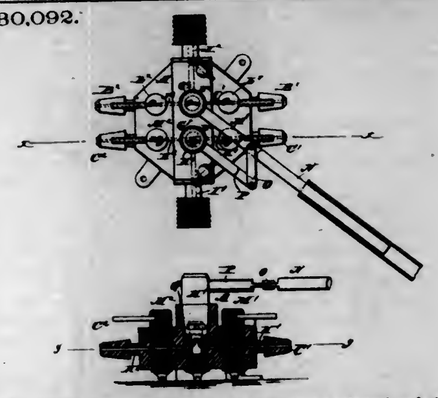
2. The combination, with the furnace, of a shell above said furnace, composed of top and bottom plates, with intermediate plates to form chambers for heated air, a cover to said shell, adapted to inclose the type-form and paper matrix, and a pipe for supplying heated air beneath the cover, substantially as set forth.

330,092. DISSOLVING-KEY FOR OXYHYDROGEN LIGHTS. H. J. BROWN, Brooklyn, N. Y., assignor to Thomas H. McAllister, same place. Filed Mar. 16, 1885. (No model.)

Claim.—1. The combination, with the body of a dissolving cock or key having independently-arranged three-way passages, of the independent plugs, each having apertures to connect with the passages of the three-way passage which it controls, substantially as and for the purpose set forth.

2. The combination, with the body of a dissolving cock or key having separate channels for the oxygen and hydrogen, of a plug in the

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oxygen-channel and a separate plug in the hydrogen-channel, and of levers for connecting the plugs to operate together, substantially as herein shown and described.

3. The combination, with the body of a dissolving cock or key having separate channels for the oxygen and hydrogen, of a plug in the oxygen-channel and a separate plug in the hydrogen-channel, a bar projecting from each plug, and a link connecting the said bars, substantially as herein shown and described.

4. In a dissolving cock or key for oxyhydrogen lights, the combination, with the body A, having the transverse oxygen-channels J' J², the transverse hydrogen-channels K' K², the oxygen-channel I², connected with the channels J' J², and the hydrogen-channel I', connected with the channels K' K², the plugs H² and H' at the junctions of the channels J', J², and I², and K' K² I', respectively, and of levers for connecting the plugs, substantially as herein shown and described.

330,093. ROLLER-SKATE. WILLIAM P. BROWN, Zanesville, Ohio. Filed Apr. 1, 1885. (No model.)



Claim.—1. The improved skate-roll, consisting of the wooden or equivalent body, having metallic wires or rods inserted to form a bushing or bearing for the axle, substantially as described.

2. A roller-skate provided with two swiveling blocks or trucks, each truck provided with two wheels divided into sections adapted to revolve independently, as and for the purpose described.

3. In combination with a skate-roller consisting of two independently-revolving sections arranged in close proximity, an intermediate bearing or bearings located at a distance from the center, whereby the sections are adapted to support each other against lateral strain.

4. In a skate-roller, the combination of two independently-revolving sections with their faces in close proximity, annular grooves in the proximate faces, and intermediate bearings or supports seated in said grooves.

330,094. SHOULDER-BRACE. WILLIAM CARROLL and JOHN MERRISON, Columbus, Ohio. Filed Aug. 3, 1885. (No model.)

Claim.—1. The combination, with a body brace or belt and wires or cords depending from the same, of mechanism, substantially as described, arranged in the heels of the shoes, and connected to said wires or cords for drawing the same downward, whereby provision is made for supporting and holding the body erect by the weight of the same, as set forth.

2. The combination, with a body-brace, of wires connected with the same and passed down through pockets on the backs of the legs of the drawers, and of mechanism, substantially as described, in the heels of the shoes with which said wires can be connected, substantially as herein shown and described.

3. The combination, with a body-brace, of a wire connected with the same and extending down through pockets in the backs of the drawer-legs, sliding rack-bars projecting from the bottoms of the heels of the shoes, pinions engaging with the rack-bars, from which pinions the above-mentioned wires are operated by suitable mechanism, substantially as herein shown and described.

4. The combination, with a body brace or belt, of wires secured to the same and passing down through pockets in the back of the legs of the drawers, catches on the ends of said wires, wires in boots, catches

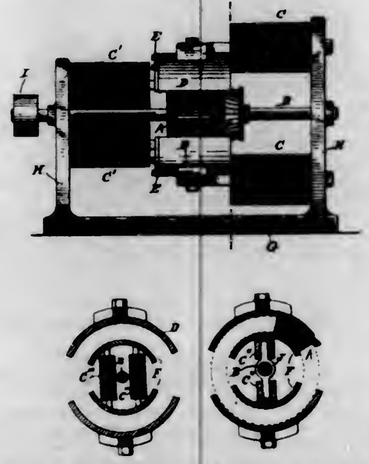
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on the wires in the boots engaging the catches on the wires depending from the body brace or belt, and a mechanism in the heels of the boots for drawing the said wires downward when the weight of the body rests upon the foot, substantially as herein shown and described.

5. The combination, with a body brace or belt and boot or shoe having a hollow heel, of the slide L, the spring O, the pinion P, the arm Q, and the wires E R, substantially as herein shown and described.

330,095. DYNAMO-ELECTRIC MACHINE. ERNEST P. CLARK, Owego, N. Y. Filed June 17, 1885. (No model.)



Claim.—1. In a dynamo-electric machine, an external and an internal pole-piece, each pole-piece being the segment of a cylinder, and the said pole-pieces being connected by a plate of magnetic material, substantially as described.

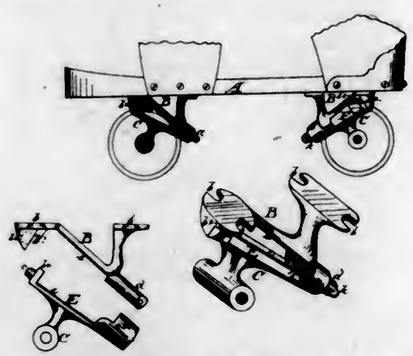
2. In a dynamo-electric machine, a field-magnet the axial lines of whose coils are without the cylindrical surface of a cylindrical or ring armature, a second field-magnet the axial lines of whose coils are within the cylindrical surface of a cylindrical or ring armature, and a third field-magnet the axial lines of whose coils are perpendicular to the cylindrical surface of a cylindrical or ring armature, the first field-magnet having external pole-pieces, and the second and third field-magnets having common internal pole-pieces, substantially as and for the purpose described.

3. In a dynamo-electric machine, the combination of a shaft provided with a ring-armature, internal pole-pieces and magnets connecting them to each other, and two additional field-magnets, one of which has coils whose axial lines are parallel to the said shaft and is connected to the external pole-pieces, and the other of which has coils whose axial lines are parallel to the said shaft and is connected to the internal pole-pieces, substantially as described.

and the said external and internal pole-pieces being connected by plates of magnetic material, substantially as described.

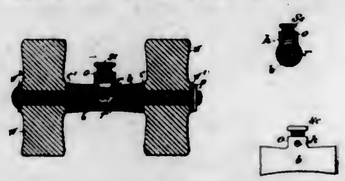
4. In a dynamo-electric machine, the combination of a shaft provided with an armature, internal pole-pieces and magnets connecting them to each other, and two additional field-magnets, one of which has coils whose axial lines are parallel to the said shaft and is connected to the external pole-pieces, and the other of which has coils whose axial lines are parallel to said shaft and is connected to the internal pole-pieces,

330,096. ROLLER-SKATE. FRANK A. COMBS, Cleveland, Ohio. Filed Feb. 24, 1885. (No model.)



Claim.—The combination, with the foot-piece A and the rollers of a roller-skate, of the bracket and axle, consisting of the hanger B, having the slotted ears *b*, for securing it to the foot-piece, and also provided with the socket projection b^2 and the journal *d*, and the axle C, having plate E, provided with the lug *c* on upper end and the journal-bearing c^2, and the rubber spring F, all constructed and operating as described

330,097. CASTER FOR ROLLER-SKATES. WILBUR F. CORNELIUS, Indianapolis, Ind. Filed July 30, 1885. (No model.)



Claim.—1. In a roller-skate, a pair of wheels mounted upon an axle common to both, a boxing, *b*, having a larger bore than the axle, through which boxing such axle passes, flanged collars inserted in each end of such boxing, the bores of the collars being of the same size as the axle, and a series of anti-friction rollers interposed horisontally between the inner ends of these collars and vertically between the boxing and the axle, all combined substantially as described.

2. The axle *a*, having a head at one end and an opening to receive the pin *p* at the other, the wheels *w*, mounted thereon, the hollow boxing *b*, provided with the oil-cap *o*, having hole *h*, the screws *sc* for closing the opening in such oil-cap, the flanged collars *c* and *c'*, and the rollers *r*, all combined substantially as described.

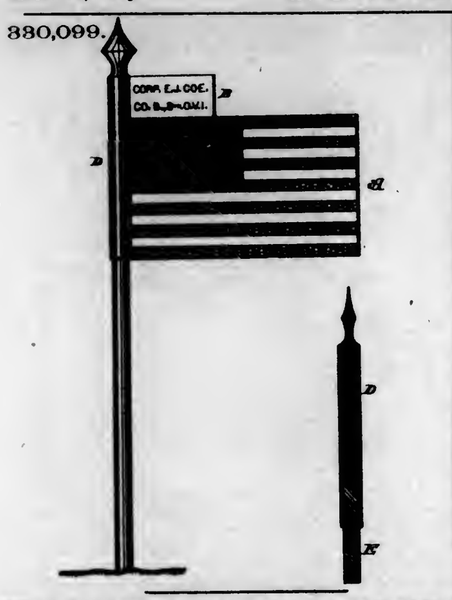
330,098. MANUFACTURE OF SUGAR. MIGUEL DE LA VEGA, New York, assignor of one-half to J. M. COX, Brooklyn, N. Y. Filed Mar. 27 1885. (No specimens.)

Claim.—The method of making sugar herein described, consisting in adding to the saccharine solution in process of solution alcohol and sugar, as above set forth.

330,099. FLAG. JOHN M. EBERSOLE, Canton, Ohio. Filed June 1, 1885. (No model.)

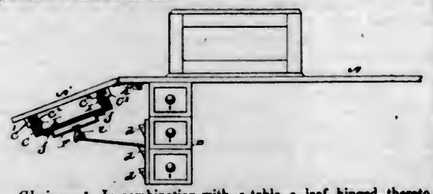
Claim.—As a new article of manufacture, the banner or flag A, provided with any desired characters or symbols, in combination with the card B, adapted to receive the name and rank of a soldier thereon, and the thimble D, all constructed and arranged substantially as described, and for the purpose set forth.

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330,100. MODE OF ATTACHING WRITING-DESKS TO SEWING-MACHINES. ROBERT S. ELLYSON, Danville, Va. Filed May 25, 1885. (No model.)

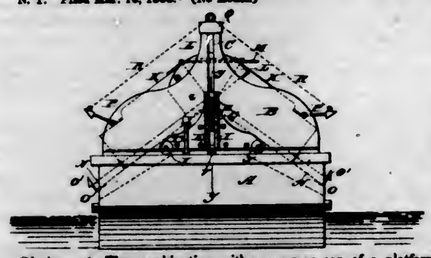
Brief.—The leaf-supporting rod is attached to the bottom of the drawer, so as to permit longitudinal sliding of drawer and also vertical adjustment to different inclines.



Claim.—1. In combination with a table, a leaf hinged thereto, a drawer sliding in cleats secured thereon and carrying a bracket-plate, a socket-plate secured to the machine-frame, and a supporting-arm connected to the drawer to permit of the longitudinal and vertical movement of the drawer, and the supporting-arm adapted to fit one of the sockets of the socket-plate to hold the leaf at any adjustment, as set forth.

2. In a sewing-machine attachment, the combination of a table, a hinged leaf carrying cleats, a sliding drawer secured in said cleats, a bracket, F, connected with the drawer, a plate, D, having a series of sockets, *d*, and a supporting-arm pivoted to the bracket F and having a pivot-stud, *e*, adapted to fit one of the sockets of the plate D, substantially as described.

330,101. DUMPING CAR AND SCOW. WILLIAM FALLON, Newburg, N. Y. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination, with a scow or car, of a platform formed of two wings hinged on a rod passed through vertical slots in uprights on the car or scow, blocks on the said rod, and bolts which engage the said blocks and lock the wings in a horizontal position, substantially as herein shown and described.

2. The combination, with a scow or car, of a platform formed of two wings, a rod passed through vertical slots in uprights on the car or scow, and on which rod the wings are hinged, a lever pivoted on the top of the scow or car, rods extending from the lever to the ends of the car or scow, and of bolts operated from the lever and serving to lock the wings in a horizontal position, substantially as herein shown and described.

3. The combination, with a scow or car, of the vertically-slotted uprights B, the rod D, the wings H, hung on the same, the rollers J, on which the wings rest, and bolts for locking the wings in place when in a horizontal position, substantially as herein set forth.

4. The combination, with a scow or car, of the slotted uprights B, the rod D, the wings H, hung on the same, the apertured blocks E on the ends of the rod D, the guides I for the said blocks, and of bolts to be passed through the apertures in the said blocks, substantially as herein shown and described.

5. The combination, with a scow or car, of the slotted uprights B, the rod D, the guides I, the blocks E, having apertures F, and rollers G, and of bolts to be passed through the apertures in the blocks E, substantially as herein shown and described.

6. The combination, with a scow or car, of the wings H, hinged together at their inner edges, and having end pieces, K, of the latches O on the end pieces, the uprights B, the end pieces, K, the hooks P on the same, and the chains, cords, or wires R, connecting the hooks P with the tops of the standards B, substantially as herein shown and described.

7. The combination, with a scow or car, of the standards B, having vertical slots C, the rod D, passed through the slots, the blocks E, the wings H, hung on the rod D, the lever S, the rods T, the levers U, connected with the rods T, and the bolts V, connected with the levers U, substantially as herein shown and described.

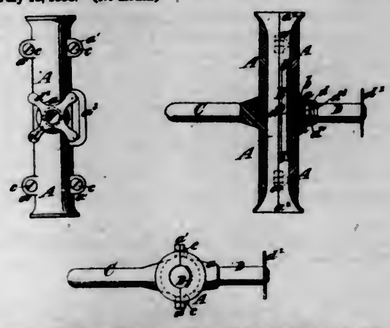
330,102. METHOD OF MAKING LUBRICATING-CARTRIDGES. W. J. FAUL, New York, N. Y. Filed Apr. 12, 1885. (No model.)

Brief.—Improvement on Patent No. 214,640, dated April 22, 1879, to same inventor.



Claim.—The improvement in the method of making lubricating-cartridges, consisting in first producing a stick of grease or other lubricating material, and then applying to the exterior of the stick a sustaining-coating, *a*, capable of joint reduction with the grease or lubricating material, substantially as and for the purpose herein described.

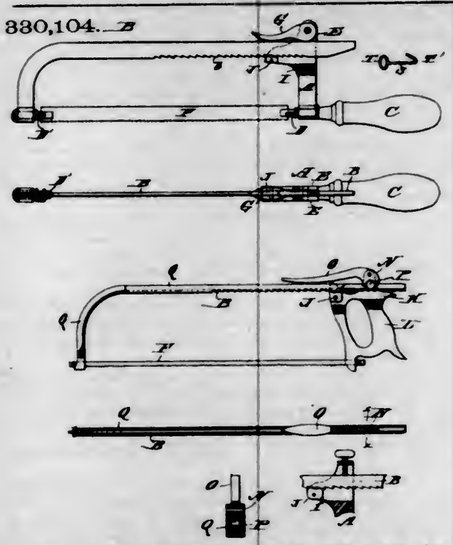
330,103. FIRE-ESCAPE. JOHN FLEMING, Brooklyn, N. Y. Filed July 15, 1885. (No model.)



Claim.—The combination, with the divided tube or sleeve A, composed of semi-cylindric sections provided with lugs or ears *a'* and transverse bolts *c*, inserted through said lugs or ears for securing the sections together, of the tube or sleeve having at one side the hub *a* of the brake-shoe B, having an outwardly-projecting hub, *b*, and a handle, D, journaled and held against lengthwise movement in the hub *a* of the tube or sleeve, and having a screw-thread engaging a nut in the hub *b* of the brake-shoe, substantially as herein described.

330,104. HANDSAW. ALFRED FORHANDER, Brooklyn, N. Y., assignor to the Miller's Falls Company, Miller's Falls, Mass. Filed July 23, 1885. (No model.)

330,104.



Claim.—1. In a saw-frame, the combination, with a stock, of an adjustable straining-bar and a cam-lever for locking said bar in place on the stock, which cam-lever acts on the straining-bar, the edge of the cam-lever resting upon the edge of said straining-bar, substantially as herein shown and described.

2. A saw having a stock provided with a toothed edge and a groove or recess, through which the straining-bar can be passed, a straining-bar having a toothed bottom or inner edge, which engages with the toothed edge of the stock, and a saw-blade having one end secured to the stock and the other end secured to the end of the straining-bar, substantially as herein shown and described.

3. In a saw-frame, the combination, with a stock, A, having the toothed leg or part J and the saw-blade-holding shank D, for holding one end of the saw-blade, of the straining-bar B, having the saw-blade-holding shank D′ at one end, for holding one end of the blade, and of the cam-lever G, pivoted on the stock above the straining-bar at the toothed part of the same, for the purpose of pressing the toothed edge of the straining-bar on the toothed edge of the stock, substantially as herein shown and described.

4. In a saw-frame, the combination, with a handle or stock having a toothed part, of a toothed straining-bar having a longitudinal groove, and of a cam-lever pivoted on the stock or handle, the said cam-lever being passed into the groove in the stock, substantially as herein shown and described.

5. In a saw-frame, the combination, with a stock or handle having a toothed part, of a toothed straining-bar having a longitudinal groove in its top edge, a cam-lever pivoted on the stock or handle and fitting within the groove, and of a disk held loosely in the inner end of the cam-lever, substantially as herein shown and described.

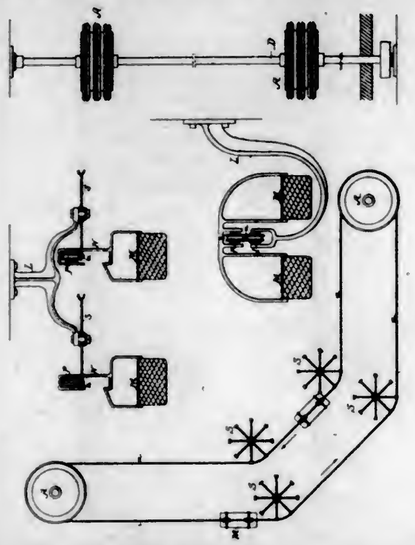
6. The combination, with a saw-frame having split apertured shanks for receiving the ends of the blade, of the pin S, having a ring on one end, which ring can be slipped on the shank, and a bend, T, on the other end, said bend forming a prong which can be passed through the aperture in the shank and an aperture in the end of the saw-blade held in the slot of the shank, substantially as herein shown and described.

330,105. SASH-HOLDER. JOHN G. FOWLER and WALTER H. CREW, Mankato, Minn. Filed June 27, 1885. (No model.)



Claim.—In a sash-holder, the combination of a casing consisting of a slotted face-plate and integral wings projecting from the rear of said plate, a recessed block having passages through it on each side of said recess, spring-surrounded bolts extending through the face-plate and fitting snugly in the passages in the block, and a friction-roller resting partially within the recess and extending through the slot in the face-plate, substantially as and for the purpose specified.

330,106. ROPE RAILWAY. WILLIAM R. FOWLER, Philadelphia, Pa., assignor to Lewis J. Myers, same place. Filed Sept. 7, 1885. (No model.)



Claim.—1. The combination of an endless rope and mechanism for driving the same with a receptacle carrying a supporting wheel or wheels adapted to rest upon said rope, as set forth.

2. The combination of the receptacle having a supporting wheel or wheels with the endless rope, its pulleys, and supporting wheels for said rope, as set forth.

3. The combination of the endless rope and its pulleys with beveled supporting-wheels for the rope and a receptacle having a wheel or wheels grooved for the reception of said supporting-wheels, as set forth.

4. The combination of the endless rope and its pulleys, the rope-supporting wheels having beveled peripheries, and the receptacles having supporting-wheels with grooved peripheries, the peripheries of both sets of wheels being composed of rubber or other elastic material, as set forth.

5. The receptacle having a supporting wheel or wheels and a friction-brake therefor, as specified.

6. The combination of the endless rope, the driving-pulley, the take-up pulley and its yoke, and a tension-rope connected to said yoke and to a windlass, as set forth.

7. The combination of the endless rope, the driving-pulley, the take-up pulley and the yoke, the windlass, the tension-rope, and a spring connected to said rope and to the yoke, as set forth.

8. The combination of the endless rope, the take-up pulley, the supporting-wheels adjacent thereto, and a yoke forming bearings for both the pulley and wheels, as set forth.

9. The combination of the endless rope and its pulleys, the receptacles having supporting-wheels adapted to the rope, and stops for arresting the receptacles before they reach the pulleys, as set forth.

10. The combination of the endless rope, its pulleys, and supporting-wheels, with receptacles having supporting-wheels for resting upon said rope, and stops whereby the supporting-wheels of the receptacles are prevented from jumping when passing the supporting-wheels of the rope, all substantially as specified.

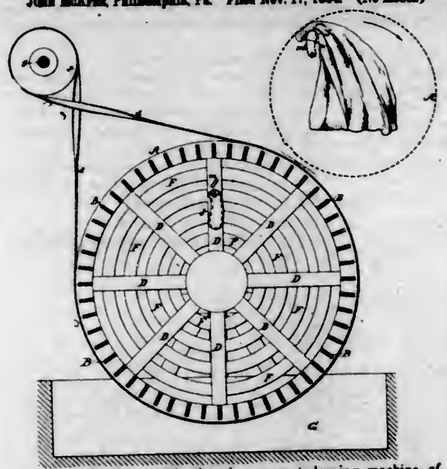
11. The combination of the endless rope, its pulleys, and supporting-wheels, with receptacles having supporting-wheels, and projecting guide-rods serving to center the receptacle as it approaches the rope-supporting wheels, as set forth.

12. The combination of the endless rope, its pulleys, and supporting-wheels, with receptacles having frames constructed to partially embrace the lower portions of the rope-supporting wheels, as specified

13. The combination of a driving-shaft, a multiple-grooved driving-pulley thereon, a series of endless belts, each adapted to one of the grooves of the driving-pulley, and a series of outer carrier-pulleys, one for each rope, all substantially as specified.

14. The combination of the endless rope and pulleys at opposite ends of the line with intermediate reels providing a lateral bearing for the rope, each reel consisting of a hub free to turn at all times upon its axial shaft, and having projecting arms, the ends of which form bearings for the rope, all substantially as specified.

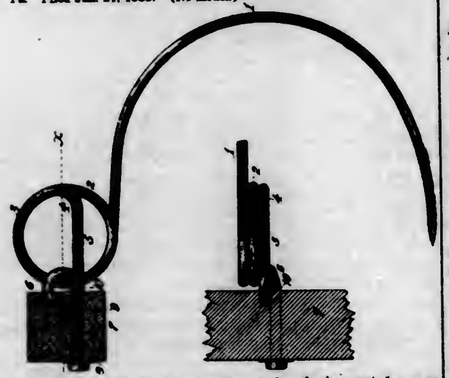
330,107. CARPET-CLEANING MACHINE. JOHN H. GEBELEIN and JOHN MCAFEE, Philadelphia, Pa. Filed Nov. 17, 1884. (No model.)



Claim.—1. The combination, in a carpet-cleaning machine, of a slatted cage, and means, substantially as described, for rotating the same, with a lifter pivoted at its inner end to said cage, and a stop located in the rear of said lifter, whereby the carpet is clamped between the free end of the lifter and the cage and carried to the top of the cage, the weight of the carpet then reversing the lifter, so as to permit the carpet to fall, as set forth.

2. The combination of a slatted cage, and means, substantially as described, for rotating the same, with a slatted box pivoted to said cage at its inner end and combined with a stop in the rear, whereby it serves as a clamp and lifter, as specified.

330,108. RAKE-TOOTH. FREDERICK G. GOETTMANN, Sr., Allegheny, Pa. Filed Jan. 21, 1885. (No model.)

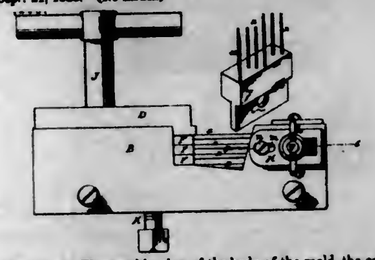


Claim.—1. A rake-tooth having a curved gathering part, 1, one or more spring-coils, 2, a straight portion, 5, a stem portion, 9, and a shoulder or abutment, 6, suitably arranged and shaped with reference to preventing a rotary motion of the rake-tooth, in combination with a rake-head having a transverse hole therethrough, and a recess in its rear side adjacent to the hole or opening for the reception of the abutment 6, and means attached to the stem portion 9 for holding the abutment in place, substantially as set forth.

2. A rake-tooth having in combination, in an integral structure, a curved gathering part, 1, one or more spring-coils, 2, a straight portion, 5, a stem portion, 9, adapted to project through the rake-head, with suitable means for fastening at the forwardly-projecting ends, and a shoulder or abutment, 6, adapted to engage a recess in the rake-head for preventing rotary motion of the rake-tooth on its stem 9, substantially as set forth.

3. A rake-tooth having in combination, in an integral structure, a curved gathering part, 1, one or more spring-coils, 2, a straight portion, 5, a small coil or twist 1 ing wholly or in part beyond the perimeter of the coils 2, and a stem portion, 9, projecting beyond the abutment, and provided with suitable means for fastening at its forwardly-projecting end, substantially as set forth.

330,109. MOLD FOR CASTING. SAMUEL N. GOODMAN, Philadelphia, Pa., assignor to Conyers Button and John Button, Jr., same place. Filed Sept. 21, 1885. (No model.)



Claim.—1. The combination of the body of the mold, the cap-plate, and a series of detachable bars, F, as specified.

2. The combination of the body of the mold, the cap-plate, and the detachable bars F, retained in position by pins and recesses, as specified.

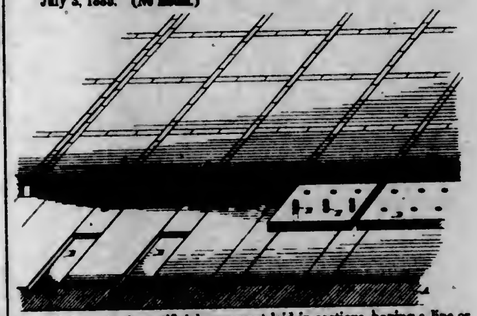
3. The combination of the body of the mold, the cap-plate, and the detachable bars F, notched for the reception of the needles or fingers, and having pins *b* and open-ended recesses *d*, as set forth.

4. The combination of the body of the mold, the cap-plate, and the detachable bars F with a gage-block, G, as specified.

5. The combination of the body of the mold with the gage-block G, the tapered pin *g*, and the thumb-nut A, as specified.

6. The combination of the body of the mold, the cap-plate, the detachable bars F, the adjustable gage-block G, its pin *g*, and the stop-plate H, as specified.

330,110. CONCRETE PAVEMENT. JOHN GRANT, Omaha, Nebr. Filed July 3, 1885. (No model.)



Claim.—1. An artificial pavement laid in sections, having a line or lines of bricks or tile between said sections, substantially as and for the purposes herein set forth.

2. An artificial pavement laid in sections, having a base of coarse material, an intermediate course of fine material, and an upper or wearing surface, the intermediate and wearing surface or course being divided vertically by a line or lines of brick or tile, substantially as described.

3. An artificial pavement the foundation of which is channeled or guttered, said channels or gutters being filled with a suitable concrete, said concrete being arranged centrally below the division-lines of a series of artificial stones and bricks, substantially as described.

4. An artificial pavement having a foundation channeled or guttered of coarse material, an intermediate course of finer material, and an upper or wearing surface, an intermediate and upper course being divided vertically by a line or lines of brick or tile, and also secured together by ties of one course extending into the other, as and for the purposes herein described.

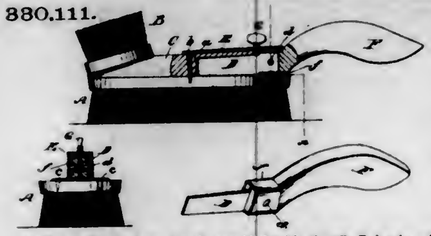
5. An artificial pavement laid in sections, having a line or lines of beveled bricks or tile between each section, said bricks or tile being laid in beveled spaces, substantially as described.

6. An artificial pavement laid in sections, having a line or lines of brick or tile between each section, the bricks or tile being rectangular in cross-section and laid in beveled spaces, the remaining spaces between the sides of the brick or tile and the beveled sides of the spaces being filled with suitable material, substantially as described.

330,111. COMBINED BLACKING-BRUSH AND SCRAPER. CHARLES E. HAHN, Vallejo, Cal. Filed Sept. 5, 1884. (Model.)

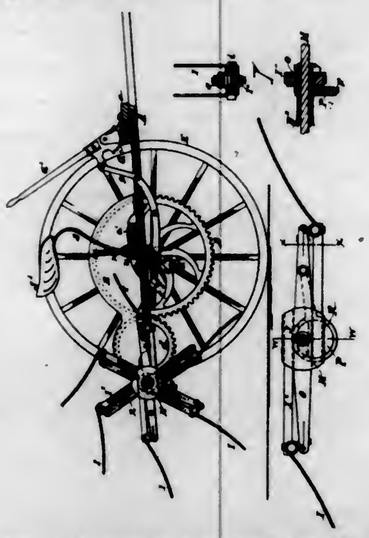
Claim.—1. The combination, with a blacking-brush, of the detachable handle F, provided with a scraper or blade, substantially as and for the purposes set forth.

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2. The body A of the brush provided with the rib C, having slot *a*, and the sheathing E, in combination with the handle F, provided with blade D, the sheathing E being provided with set-screw G, substantially as and for the purposes set forth.

330,112. HAY-TEDDER. LEANDER S. HEALD, Barre, Mass. Filed Aug. 25, 1884. (No model.)



Claim.—1. In a hay-tedder, the combination, substantially as hereinbefore described, of traveling wheels, a reel-supporting frame, a revolving reel mounted on the rear end of said frame, a rocking carrying-axle, the connecting-arms fixed to said axle and pivoted to the frame, as shown, and means for rocking said axle to effect the elevation of said frame and revolving reel, for the purpose set forth.

2. In combination with the axle C, the frame A, the revolvable tedding-reel mounted thereon, and means for elevating and depressing said frame and reel by the rocking action of said axle, substantially as described.

3. The combination of the wheels E, the frame A, supporting the reel or forks I, the axle C, and connecting-arms F, rigidly fixed to said axle and having their opposite ends pivoted to the frame at a position eccentric to the axial line, substantially as and for the purpose set forth.

4. The combination of the wheels E, the frame A, supporting the reel or forks I, the axle C, the connecting-arms F, the lever G, and hand-lever G', with latching devices G^3, substantially as and for the purpose set forth.

5. In combination, substantially as set forth, the frame A, mounted on the supporting axle and wheels, the rearwardly-extended shields B, having at their end, in rear of said wheels, journal-boxes B', that project laterally beyond the plane of said wheels, the eccentrics fixed on the end of said boxes, the reel-shafts H, located back of the wheels, supported in and projecting beyond said journal-boxes, with arms I', eccentric connections O E, and tedding-forks I, supported on the outer ends of said shafts, all as shown and described.

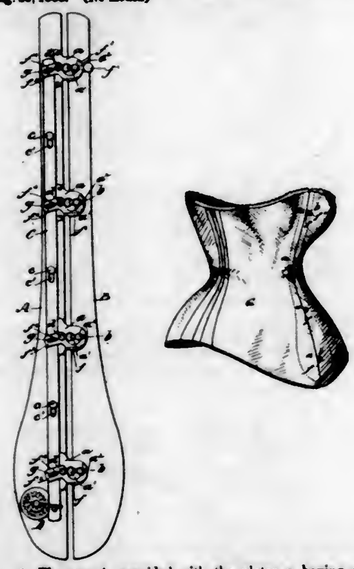
6. The combination, substantially as described, with the ratchets *m*, of the drive-gears having pivot-studs *l*, the radially-disposed laterally-swinging pawls K, pivoted on said studs, and the U-shaped springs arranged within the interior of said pawls, for the purpose set forth.

7. The combination, substantially as hereinbefore described, with the axle C and traveling wheel E, having ratchets *m*, of the drive-gear D, the pawl K, having interior hollow or space, pivoted in said gear, the U-shaped spring M, arranged within the pawl and retained by the pivot-stud *l*, the slide-ring L, running between the ends of said pawl and spring, the shipper-rod L', and rod-actuating devices, for the purpose set forth.

8. In combination with the reel-shaft H, eccentric P, and eccentric-strap E, the flanged hub J, the arms I', disposed in connection with said hub, as shown, and provided at their outer ends with short spools *i*, the wire forks I, mounted to swing on said spools, and the bar O, passing between said arms and having its ends respectively gripped onto the loops of the forks, all as hereinbefore set forth.

9. The seat-springs S and supporting-eyes, in combination with the axle C, frame A, and casting F', provided with the arms *t*, for retaining said springs, substantially as hereinbefore described.

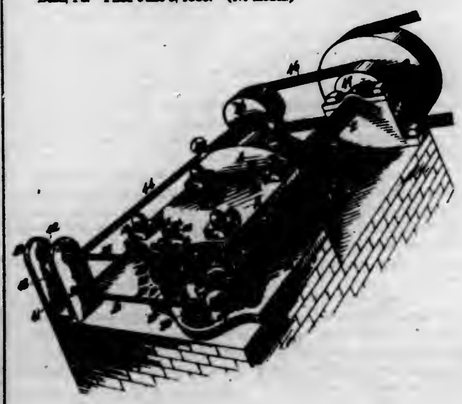
330,113. CORSET-FASTENING. MORRIS HERTZ, New York, N. Y. Filed Aug. 29, 1885. (No model.)



Claim.—1. The stay A, provided with the plates *a*, having open key-hole-shaped slots, in combination with the sliding plate C, hook-shaped keepers *f f'*, and spring D, the keepers being arranged to close the slots in the plates *a*, substantially as described.

2. The stay B, provided with pins *b*, and the stay A, provided with the plates *a*, having open key-hole-shaped slots formed in them, in combination with the sliding plate C, spring D, for forcing plate C downward, and hook-shaped pivoted keepers attached to the plate C and arranged to close over the slots in the plates *a*, for retaining and releasing the pins *b*, substantially as described.

330,114. MACHINE FOR DRAWING WIRE. ISAAC P. HIGGINS, Erie, Pa. Filed June 5, 1885. (No model.)

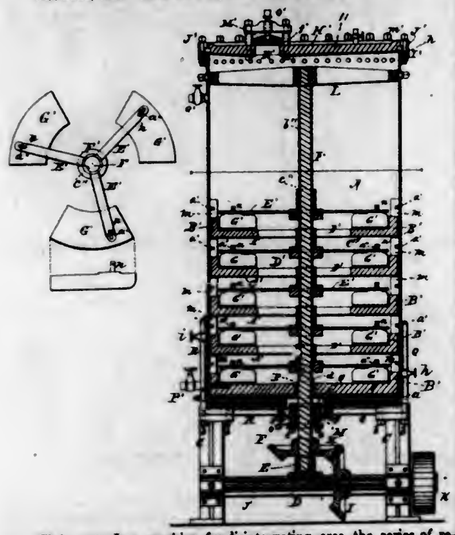


Claim.—1. In a wire-drawing machine, a hollow rotating shaft, in combination with dies and hammer-blocks mounted in said shaft and a series of anvils arranged in the plane of rotation of the dies and hammer-blocks, substantially as set forth.

2. In a wire-drawing machine, a hollow rotating shaft, in combination with dies and hammer-blocks mounted in said shaft and a series of radially-adjustable anvils arranged in the plane of rotation of the dies and hammer-blocks, substantially as set forth.

3. In a wire-drawing machine, a rotating drawing-head, in combination with wire-feeding rolls adapted to feed the wire forward and to impart an axial rotation thereto in a direction opposite to the rotation of the drawing-head, substantially as set forth.

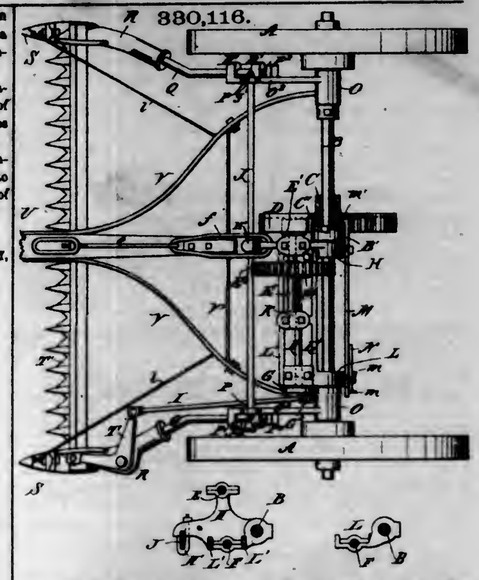
330,115. MACHINE FOR DISINTEGRATING ORES. AARON HIBLEY, Cleveland, Ohio. Filed June 17, 1885. (No model.)



Claim.—1. In a machine for disintegrating ores, the series of removable grinding-beds, each having a circumferential flange and projecting studs, in combination with a central shaft, a series of removable mullers fastened thereon and corresponding with the series of grinding-beds, and an inclosing-cylinder, constructed substantially as and for the purpose described.

2. In a machine for disintegrating ores, a steam-tight cylinder and a central shaft arranged to pass through the bottom thereof, in combination with the packing-box M, the chambered collar P, water-pipe R with water-passage *f*, and the steam-pipe Q with the steam-passage *g*, all constructed substantially as and for the purpose described.

330,116. MOWING-MACHINE. WARREN HILL, Towanda, Pa. Filed Aug. 22, 1884. (No model.)



Claim.—1. In a mowing-machine, the combination, with the sleeves O O, mounted on the axle or driving-shaft and provided with the downwardly-projecting arms O' O' and the forwardly-extending arms O^2 O^2, of the cross-bar J, resting on the arms O^2, and an iron frame carrying the operating mechanism, the said frame resting partly on the axle and partly on the bar J, substantially as herein shown and described.

2. In a mowing-machine, the combination, with the axle or driving-shaft, of the sleeves O O, mounted on the same, and having downwardly-projecting arms O' O' and forwardly-extending arms O^2 O^2, provided with eyes P, the transverse bar J, having hooks J' at the ends, the hooks J' being passed through the eyes P, and an iron frame resting on the axle or driving-shaft and on the bar J, and carrying the operating mechanism, substantially as herein shown and described.

3. In a mowing-machine, the combination, with the axle or driving-shaft B, of the sleeves O O and arms O' O' and O^2 O^2, the cross-bar J, resting on the arms O^2, the standard H, and the hanger L, connected by bars L', the hook-clevis H', holding the base of the standard H on the bar J, and shafts journaled in the standard H, in the standard K, on the bars L', and in the hanger L, substantially as herein shown and described.

4. In a mowing-machine, the combination, with the axle or driving-shaft, of the sleeves O O, having arms O' O' and O^2 O^2, the bar J, a frame supported by the axle and the bar J, the sliding bar M on the said frame, the pins *m* on the said bar, the cam-lever N, and the sliding cog-wheel D, mounted on the axle and provided with a clutch-collar, which sliding cog-wheel is adapted to be shifted by the bar M, substantially as herein shown and described.

5. In a mowing-machine, the combination, with the axle or driving-shaft B, of the sleeves O O, having arms O' O' O^2 O^2, the bar J, a frame supported by the bar J and the axle B, the clutch-collar B', the pinion E', engaging with the cog-wheel D and mounted on the shaft E, the cog-wheel E^2 on the shaft E, the pinion F', mounted on the shaft F and engaging with the cog-wheel E^3, the crank-wheel G on the end of the shaft F, the connecting-rod I, connected with the crank-wheel G, and a cutter-bar operated from the said rod I, substantially as herein shown and described.

6. In a mowing-machine, the combination, with the axle or driving-shaft B, of the sleeves O O, having arms O' O^2, the bars Q, held in lugs P' of the arms O^2, and the shoes held on the lower ends of the bars Q, substantially as herein shown and described.

7. In a mowing-machine, the combination, with the driving-shaft or axle B, of the sleeves O, having arms O' and O^2, the finger-bar attached to the arms O^2 by means of the bars Q, the pole U, and the rear arms, V, of the same, connected with the downwardly-projecting arms O' of the sleeves O, substantially as herein shown and described.

8. In a mowing-machine, the combination, with the driving-shaft or axle B, of the sleeves O, having arms O' and O^2, the pole U, having arms V, and nuts and bolts for holding the rear ends of the arms V adjustably on the downwardly-projecting arms O' of the sleeves O, substantially as herein shown and described.

9. In a mowing-machine, the combination, with the driving-shaft or axle B, of the sleeves O, having the arms O^2 and the downwardly-projecting arms O', provided with vertical slots and with transverse serrations on the outer sides, the pole U, the arms V, the serrated disk *a*, and the bolt W, passed through the slots in the arms O', the arms V, and the disk *a*, substantially as herein shown and described.

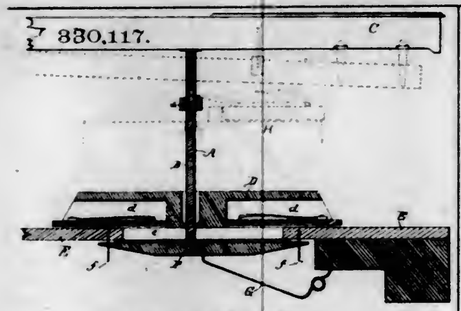
10. In a mowing-machine, the combination, with the shoe R, having the standard R', of the runner S, having the standard S', the bolt *s*, passed through the standards S' and R', and of the adjusting-screw R^2 in the shoe, substantially as herein shown and described.

11. In a mowing-machine, the combination, with the driving-shaft or axle B, of the sleeves O, having arms O' and O^2, cutting devices supported by means of the rods Q on the arm O^2, the pole U, having arms V, connected with the arms O', the bolt *c* on the pole, the double-tree *b*, the hook *d*, the connecting-rod *e*, and the clevis *f*, connected with the standard H, resting on the axle and on the bar J, held at its inner ends in the arms O^2, substantially as herein shown and described.

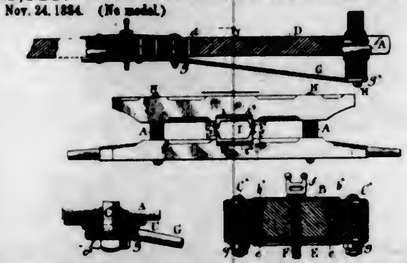
330,117. TRACKER-PIN FOR ORGANS. JOHN L. HENNESS, Pekin, Ill. Filed Jan. 2, 1885. (No model.)

Claim.—In a tracker-pin for reed-organs, the combination of the ordinary wooden pin with a metal jacket fitting closely upon the same, said jacket being flush with the pin at the lower end, and slightly shorter than said pin at the upper end, in the manner and for the purposes herein described.

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330,118. WAGON-GEAR. NATHAN L. HOLMES, Racine, Wis. Filed Nov. 24, 1884. (No model.)



Claim.—1. In the running-gear of a wagon, a socket for the reach, formed in the connection between the reach and the forward ends of the rear hounds, and embracing in the construction of its sides a connecting-plate, C, secured to the hounds and provided with guide-openings c', and a clamp-plate, E, provided with vertical wedge-shaped side flanges, e, extended at their ends beyond the ends of the plate and provided with lugs e^2, and combined with means, substantially as described, for raising and lowering the clamp-plate within the socket, for the purpose specified.

2. In the running-gear of a wagon, a plate bolted to the forward ends of the rear hounds to connect the same together, and provided around one or more of its bolt-holes with a boss, in combination with one or more brace-rods, each connected at its rear end with the rear axle, and at its forward end provided with an eye fitted on one of said bosses, substantially as described.

3. The running-gear of a wagon, provided between the rear axle and the bolster with a two-part metal bearing for the reach, said parts of the bearing being respectively secured to the axle and to the bolster, and provided with mutually-engaging recesses and projections, substantially as and for the purpose set forth.

4. The running-gear of a wagon, provided between the rear axle and the bolster with a metal bearing for the reach, composed of two parts which are respectively secured to the axle and the bolster, each one of these said parts of the bearing being provided with flanges and constituting one-half of a socket, and said two pairs of flanges being respectively provided upon their meeting edges with mutually-engaging recesses and projections, substantially as and for the purpose set forth.

5. The running-gear of a wagon, provided between the rear axle and the bolster with a two-part metal bearing for the reach, said two parts being provided with flanges forming a socket when the two parts of the bearing are brought together, and being also respectively provided with recesses i^3 and i^4, constituting seats for the axle and the bolster, said flanges having mutually-engaging recesses and projections upon their meeting edges, substantially as described.

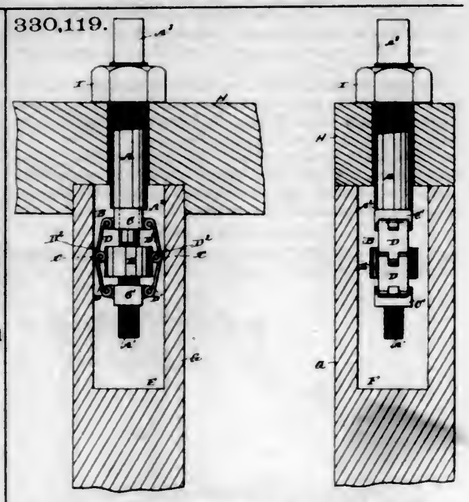
6. As a means for connecting together three wooden parts of the running-gear of a wagon, one or more metal pins passing through the intermediate part and extending above and below the same into both the other parts, and a tie-bolt extending through the said several parts, substantially as described.

330,119. BOLT-FASTENER. EDWARD G. HOLDEN, Oak Ridge, Mo. Filed June 30, 1885. (No model.)

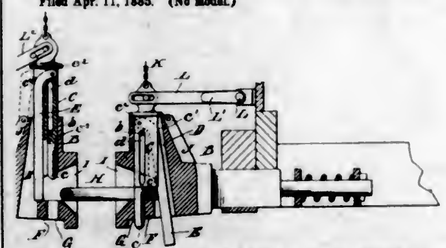
Claim.—1. The bolt A, having the reduced threaded portion A', forming the shoulder A^2, in combination with the end pieces, C and C', and the toggle-levers D and D', substantially as shown and described.

2. The bolt A, provided with the reduced threaded portion A' forming the shoulder A^2, and with the square offset A^3, in combination with the end pieces, C and C', the toggle-levers D and D', having pointed projections, and the rubber piece E, substantially as shown and described.

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330,120. CAR-COUPLING. LORENZO D. HOOVER, Rock Island, Ill. Filed Apr. 11, 1885. (No model.)



Claim.—1. The draw-head B, formed with the chamber D, and bridge F, and aperture G, in combination with the coupling-pin C, formed with the shoulder c^3, and provided with the pivoted leg E, the shoulder c^3 being adjusted to hold the connecting-link upon bridge F, substantially as shown and described.

2. The coupling-pin C, formed with the flanges c' and slot d, in combination with the leg E, pivoted to the pin between the flanges c', substantially as and for the purposes set forth.

3. The coupling-pin C, formed with the flanges c^3, and provided with the pivoted leg E, in combination with the pawl J, pivoted to the draw-head, substantially as described, and for the purposes set forth.

330,121. LIMEKILN. JOSHUA HUNT, Catasauqua, assignor to the Baker Lime Company, (Limited,) Avondale, Pa. Filed Apr. 23, 1885. (No model.)

Claim.—1. A limekiln constructed with an outer iron shell, an inner fire-brick lining, and an interposed layer of yielding material, as set forth.

2. A limekiln constructed with an outer iron shell and an inner fire-brick lining, and provided with openings for the introduction of the flame of hydrocarbon-burners to the interior space of the kiln, as set forth.

3. The combination, with a limekiln having openings for the introduction of the flame of hydrocarbon-burners, of water-backs at the upper inner portions of said openings, as set forth.

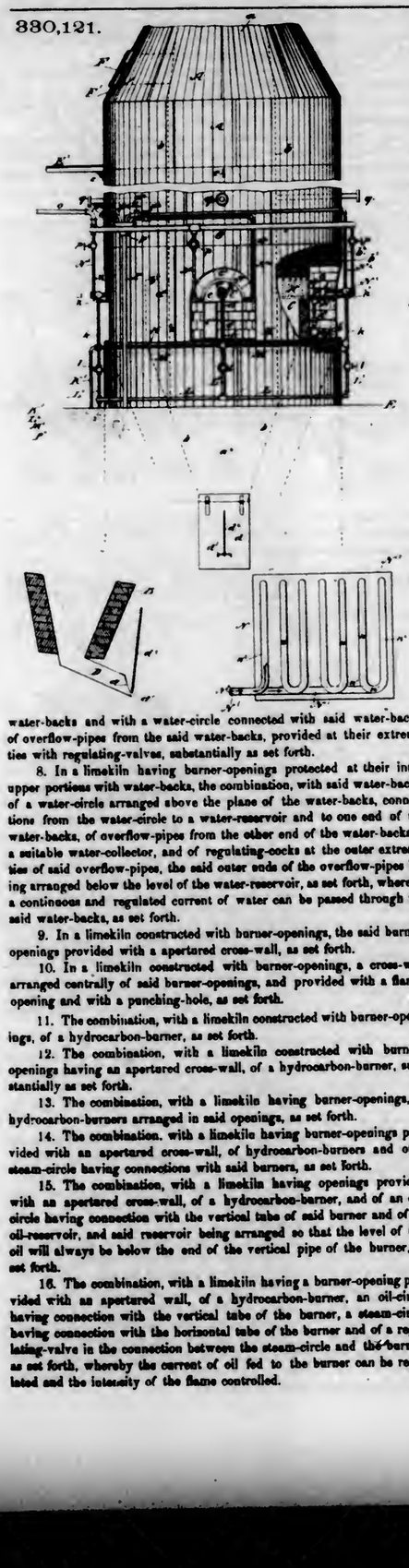
4. The combination, with a limekiln constructed with an outer iron shell, an inner fire-brick lining, and an intervening yielding material, and having burner-openings through said shell, lining, and intervening yielding material, of water-backs arranged at the upper inner portions of said openings adjacent to the fire-brick lining, whereby said lining will be protected from the heat of the flame of hydrocarbon-burners, as set forth.

5. A limekiln constructed with burner-openings having their inner upper portions covered and protected with water-backs, in combination with a water-circle connected with a water-reservoir and with the water-backs.

6. In a limekiln constructed with burner-openings having their inner upper ends protected with water-backs, the combination, with said water-backs, of a water-circle having connections with said water-backs and with a water-reservoir, as set forth.

7. In a limekiln constructed with burner-openings, and said burner-openings being protected with water-backs, the combination, with said

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water-backs and with a water-circle connected with said water-backs of overflow-pipes from the said water-backs, provided at their extremities with regulating-valves, substantially as set forth.

8. In a limekiln having burner-openings protected at their inner upper portions with water-backs, the combination, with said water-backs, of a water-circle arranged above the plane of the water-backs, connections from the water-circle to a water-reservoir and to one end of the water-backs, of overflow-pipes from the other end of the water-backs to a suitable water-collector, and of regulating-cocks at the outer extremities of said overflow-pipes, the said outer ends of the overflow-pipes being arranged below the level of the water-reservoir, as set forth, whereby a continuous and regulated current of water can be passed through the said water-backs, as set forth.

9. In a limekiln constructed with burner-openings, the said burner-openings provided with a apertured cross-wall, as set forth.

10. In a limekiln constructed with burner-openings, a cross-wall arranged centrally of said burner-openings, and provided with a flame-opening and with a punching-hole, as set forth.

11. The combination, with a limekiln constructed with burner-openings, of a hydrocarbon-burner, as set forth.

12. The combination, with a limekiln constructed with burner-openings having an apertured cross-wall, of a hydrocarbon-burner, substantially as set forth.

13. The combination, with a limekiln having burner-openings, of hydrocarbon-burners arranged in said openings, as set forth.

14. The combination, with a limekiln having burner-openings provided with an apertured cross-wall, of hydrocarbon-burners and of a steam-circle having connections with said burners, as set forth.

15. The combination, with a limekiln having openings provided with an apertured cross-wall, of a hydrocarbon-burner, and of an oil-circle having connection with the vertical tube of said burner and of an oil-reservoir, and said reservoir being arranged so that the level of the oil will always be below the end of the vertical pipe of the burner, as set forth.

16. The combination, with a limekiln having a burner-opening provided with an apertured wall, of a hydrocarbon-burner, an oil-circle having connection with the vertical tube of the burner, a steam-circle having connection with the horizontal tube of the burner and of a regulating-valve in the connection between the steam-circle and the burner, as set forth, whereby the current of oil fed to the burner can be regulated and the intensity of the flame controlled.

17. In a limekiln having burner-openings, hydrocarbon-burners in said openings, and an oil and a steam circle for feeding and operating said burners, the combination, with said steam-circle, of a circle having valve-connection with the steam-circle for carrying off the water of condensation, as set forth.

18. The combination, with a limekiln having burner-openings, hydrocarbon-burners in said openings, and devices for supplying oil and steam to said burners, of water-backs in the upper inner portions of said openings, and of means for keeping up a continuous circulation of water through said water-backs, as set forth.

19. A limekiln constructed with central burner-openings centrally divided by an apertured cross-wall, and in the front part of which opening is a hydrocarbon-burner, in combination with said burner an oil-circle receiving oil from an auxiliary oil-tank and having a pipe leading to the vertical tube of each burner, the said oil-tank being at such an elevation that the level of the oil in it will always be below the points of the burners, substantially as herein described and set forth.

20. A limekiln constructed with central burner-openings centrally divided by an apertured cross-wall and provided with water-backs in their upper rear portions, in combination with a hydrocarbon-burner, one tube of which is connected with an oil-circle fed from an oil-reservoir, and the second tube of which is connected with a steam-circle fed with steam from a boiler, substantially as herein described and set forth.

21. A limekiln constructed with an outer iron shell, a fire-brick lining, and an intervening space filled with a yielding material and having a vertically-ranging inner chamber, in combination with a chute or chutes beginning at the bottom of the vertical inner chamber and extending downwardly and outwardly, having a rectangular or circular cross-section and being provided with an outer end door or doors, substantially as herein described and set forth.

22. In a limekiln constructed with an inner fire-brick lining forming a vertical chamber in said kiln, the said chamber having its upper portion in the form of the frustum of a cone, its central portion formed with straight vertical walls recessed near the base of said straight portion, and having its lower portion formed as an inverted frustum of a cone and provided with a delivery-chute, as set forth.

23. In a limekiln having an inner fire-brick lining forming a vertical chamber, the central vertical walls of which are recessed near the base of the straight portion, the said kiln and its lining having burner-openings opening into the said recessed portions of its interior chamber, as set forth.

24. A limekiln constructed with an outer iron shell, a fire-brick lining, and an intervening space filled with a yielding material, and with a vertically-ranging inner chamber with centrally-located burner-openings having their inner upper portions protected by water-backs and having hydrocarbon-burners located in their front portions, in combination with a water-circle receiving water from a reservoir and suitably connected with the water-backs, a steam-circle receiving steam from a boiler and suitably connected with one of the burner-tubes, and an oil-circle receiving oil from a tank and suitably connected with the second burner-tube, as herein described and set forth.

25. A limekiln constructed with an inner fire-brick lining, openings through the kiln and lining into the interior chamber of said kiln, water-backs at the inner upper portions of said openings, hydrocarbon-burners in said openings, a suitably-valved connection from a water-supply to the said water-backs, suitable connections from the burners to an oil-supply, and suitably-valved connections from the burners to a steam-supply, substantially as set forth.

26. A limekiln constructed with an interior vertically-ranging chamber extending from the upper to the lower end, in the upper end of which chamber is an opening for the admission of limestone, and in the lower end an opening through which the lime may be drawn away, and having central openings through which the flame from hydrocarbon-burners enters the interior chamber of the kiln and subjects the limestone to an intense heat as it passes by gravity through the kiln, substantially as herein described and set forth.

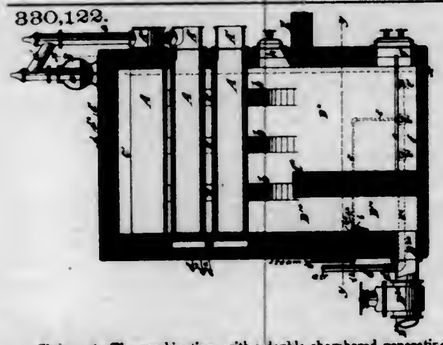
27. The combination, with a kiln, of hydrocarbon-burners arranged to throw their flame into the mass of limestone descending by gravity through the kiln, substantially as herein described and set forth.

28. The combination, with a continuous limekiln provided with burner-openings, of burners arranged in said openings, and of blast devices in connection therewith, substantially as set forth, whereby a powerful heating heating-flame can be forced into the mass of limestone passing through the said kiln.

330,122. APPARATUS FOR MAKING ILLUMINATING-GAS. CHAS. W. ROSELL, New York, N. Y. Filed Jan. 10, 1885. (No model.)

Brief.—Bituminous coal is distilled in closed retorts and the products of distillation are conducted to the hydraulic main. The retorts are heated by a water-gas generator, in the upper part of which they are placed, the fuel being alternately subjected to blasts of air for maintaining combustion and to currents of steam for decomposition, and the products of combustion and of decomposed steam are passed around and in contact with the closed retorts for heating them. The water-gas is conducted away separately.

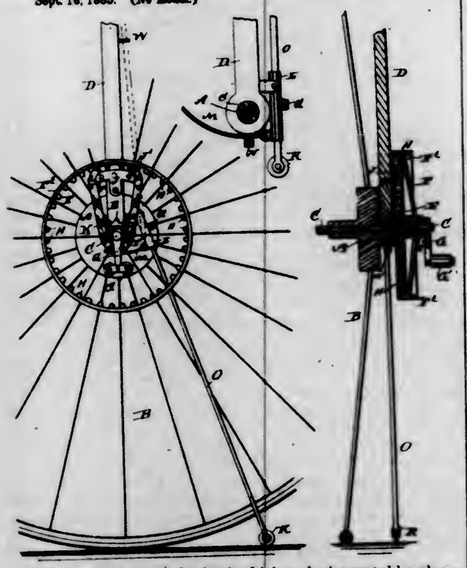
330,122.



Claim.—1. The combination, with a double-chambered generating-furnace having separate grates and a partition-wall, above which the chambers communicate with each other, of a wall extending transversely across the back of each chamber, forming therein a downwardly-extending flue or passage, from which leads an outlet-pipe, and pipes for supplying steam and air alternately to said chambers, substantially as herein described.

2. The combination, with a double-chambered generating-furnace having a central partition-wall, above which the chambers communicate, and a number of retorts arranged in the upper part of said chambers, of a transverse wall at the back of said chambers forming downwardly-extending flues or passages, from which lead outlet-pipes, and pipes for supplying to said chambers air for blowing up and steam for decomposition, substantially as herein described.

330,123. BICYCLE. SELDEN A. JAN GRAW, Nashua, N. H. Filed Sept. 16, 1885. (No model.)



Claim.—1. A bicycle having its driving-wheel mounted loosely on the main shaft, having treadles or devices for operating it, cog-wheels on the hub of the wheel, cog-wheels rigidly mounted on the shaft, and driving-chains passed over the cog-wheels on the hub, and operated by the cog-wheels on the shaft, substantially as herein shown and described.

2. A bicycle having its driving-wheel mounted loosely on the main shaft, having treadles or other devices for revolving it, cog-wheels on the hub of the wheel, internally-cogged wheels mounted rigidly on the shaft, chains passed over the cog-wheels on the hub and engaged with the teeth on the internally-cogged wheels, and projections on the shanks of the fork of the bicycle, over which projections the chains pass, substantially as herein shown and described.

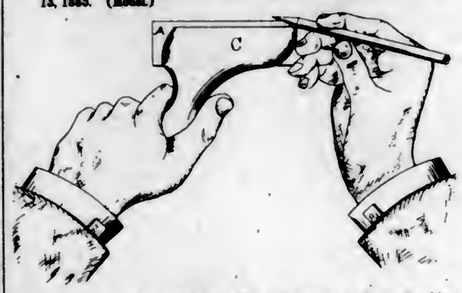
3. In a bicycle, the combination, with the fork D and shaft C, of the wheel B, loosely mounted on the shaft, the cog-wheels E on the hub of the wheel, the internally-cogged wheels F on the shaft, the brackets J on the fork D, having rollers J', and the driving-chains K, substantially as herein shown and described.

4. In a bicycle, the combination, with the fork D and wheels, of the tube L, pivoted on the fork, and the rod O, passed through said tube, substantially as herein shown and described.

5. In a bicycle, the combination, with the fork D and the wheels, of the tube L, pivoted on the fork, the arm M, hinged on the tube, and of the rod O, passed through the tube L, substantially as herein shown and described.

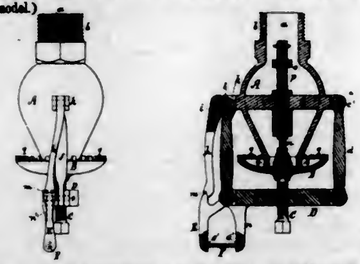
6. In a bicycle, the combination, with the fork D and wheels, of the tube L, pivoted to the fork, the rod O, passed through the said tube, and a roller pivoted on the lower end of said rods, substantially as herein shown and described.

330,124. RULER. HENRY C. JEWELL, Washington, D.C. Filed Aug. 13, 1885. (Model.)



Claim.—A ruler consisting of the ruler-plate A, the soft-rubber cross-pieces B B, and the handle C, all substantially as and for the purpose set forth and illustrated.

330,125. AUTOMATIC SPRINKLER. WILLIAM S. JORDAN, Worcester, assignor to Braman Dow & Co., Boston, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—1. The combination, with the body A, its deflector B, and their three-linked chain D and its screw C, of the projection *n'*, extending down from the median link of such chain, the tri-armed lever E, pivoted to such link, and the notched lever *h*, fulcrumed to the ear *k* and adapted to engage, as described, with the link *f* of the chain and with the said tri-armed lever, there being extended between the said projection *n'* and the lowest arm of the tri-armed lever a rod of fusible metal, to serve, as set forth, to keep the chain and levers in engagement and to admit them on its melting to become disengaged in order to allow the deflector B to drop away from the body A for water to be discharged from the sprinkler, as explained.

2. The combination of the deflector B, provided with the row of teeth extending up from it at its periphery, as described, with the body A, the three-linked chain D, screw C, levers *h* and E, and the projection *n'*, arranged and applied substantially as set forth.

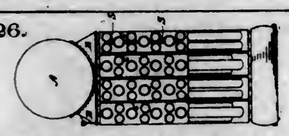
3. The combination, with the body A, the deflector B, and the chain D, of a mechanism for supporting the piece of fusible metal with a crushing or contractile force, such mechanism, as described, being the projection *n'*, the tri-armed lever, and the notched lever, all being applied substantially and to operate as set forth.

330,126. STEAM-BOILER. WILLIAM KENT, Jersey City, N. J. Filed Apr. 13, 1884. (No model.)

Claim.—1. A sectional or water-tube steam-boiler provided with vertical wrought-metal headers having parallel rectangular sides, and perforated, substantially as described, to receive the ends of three rows of water-pipes in three vertical and parallel planes, as set forth.

2. In a water-tube steam-boiler, the combination of the steam and water drum supported in connecting-boxes, a series of inclined water-tubes, headers for the tubes, said headers being of wrought metal and connected to three rows of water-tubes arranged in three vertical rows, as described, and circulating-tubes connecting said headers with the connecting-boxes, substantially as described.

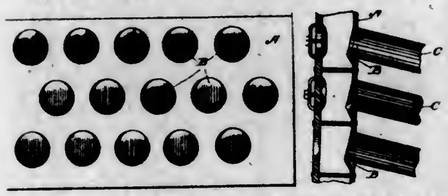
330,126.



3. In a water-tube steam-boiler, the combination of two headers, each provided with perforations for three rows of water-pipes arranged substantially as described, the two horizontal perforations in one header being arranged opposite the single perforations in the other, whereby all the pipes are staggered, as set forth.

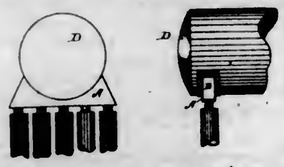
4. A sectional or water-tube steam-boiler composed of a horizontal steam and water drum, A, inclined water-tubes E, and connecting-tubes F G, in combination with headers C, approximately oblong in cross-section, and into which the tubes E are expanded, and connecting-boxes B, substantially as shown and set forth.

330,127. TUBE-SHEET FOR STEAM-BOILERS. WILLIAM KENT, Jersey City, N. J. Filed Mar. 23, 1885. (No model.)



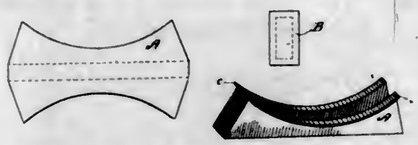
Claim.—A tube-sheet for boilers, constructed with inclined water-tubes, having the tube-holes formed within depressions that are inclined at the same angle with that of the tubes, whereby the latter may project at right angles from that part of the sheet within which they are expanded, substantially as shown and described.

330,128. CONNECTING-BOX FOR WATER-TUBE BOILERS. WILLIAM KENT, Jersey City, N. J. Filed Mar. 23, 1885. (No model.)



Claim.—A connecting-box for a water-tube boiler, having the sides and bottom made from one piece of metal, with flanges projecting laterally from said sides, and end pieces riveted within the sides and to the bottom, the box thus formed being capable of being secured to the boiler by rivets passed through the flanges and said end pieces, substantially as shown and set forth.

330,129. METHOD OF MAKING CONNECTING-BOXES FOR WATER-TUBE BOILERS. WILLIAM KENT, Jersey City, N. J. Filed Apr. 22, 1885. (No model.)

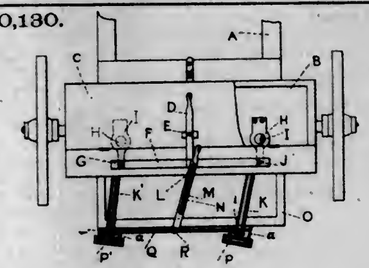


Claim.—The method of making connecting-boxes for water-tube boilers, the same consisting in bending the sides and bottom into the desired form from one piece of metal and riveting said sides, bottom, and ends together and to the drum, as shown and specified.

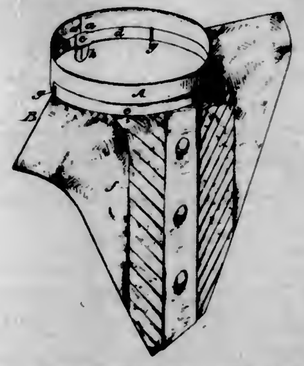
330,130. MACHINE FOR SPRINKLING POTATO-VINES. NORMAN L. KINNEY, Barford, Quebec, Canada, assignor to LYMAN T. KINNEY, Grand Rapids, Mich. Filed June 22, 1884. Renewed July 24, 1885. (No model.) Patented in Canada Oct. 10, 1883, No. 17,856.

Claim.—In a machine for sprinkling plants with liquids, the combination of a reservoir, B, having openings I I, valves H H, rods J and G, connecting-bar F, lever D, elbows T, hose K K', sprinklers P P', having hooks *a a* and cocks 1 1, and frame O, with connecting-bar Q, having slotted lever M, attached to reservoir B by pin L, substantially as described.

330,130.



330,131. STOCK AND COLLAR. BENEDICT J. KOLB, North East, Pa. Filed Oct. 3, 1884. (No model.)



Claim.—1. The combination, with a band-like collar having a pocket at its one end adapted to receive the other end of the collar within it, of an inner longitudinally-divided encircling spring operating to support the collar and to give it elasticity circumferentially, essentially as specified.

2. The stock having a front fall and a longitudinally-divided neck-band portion constructed with an inner collar-holding pocket around it open from above to receive the collar partially down within it, substantially as described.

3. In a combined stock and collar made to open and close in the rear, the band-like collar constructed with a pocket at its one end adapted to receive the other end of the collar within it, in combination with the stock constructed with an inner similarly-fitted elastic neck-band and outer strip arranged to hold and partially receive the collar down within it, essentially as specified.

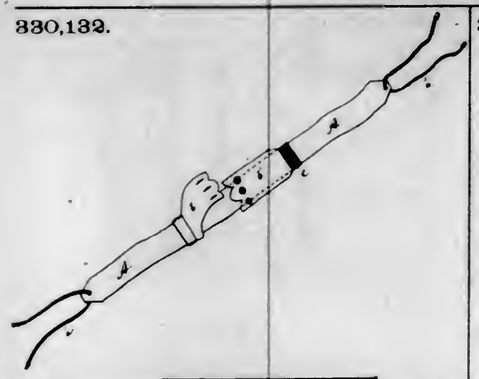
4. In a combined stock and collar, the combination of the band-like collar A, having a pocket, *a*, at its one end in the rear for reception of the other end, *a'*, of the collar within it, the stock B, provided with an inner neck-band-spring, *b*, and rear clasp or socket, *c*, arranged to admit of a sliding adjustment of the spring circumferentially, also provided with a front strip, *e*, arranged to receive the collar partially down within it, and clamps *g*, for holding the stock and collar together, substantially as shown and described.

330,132. SAFETY-BELT. FERDINAND KOOPMANN, Munich, Germany. Filed Mar. 5, 1885. (No model.)

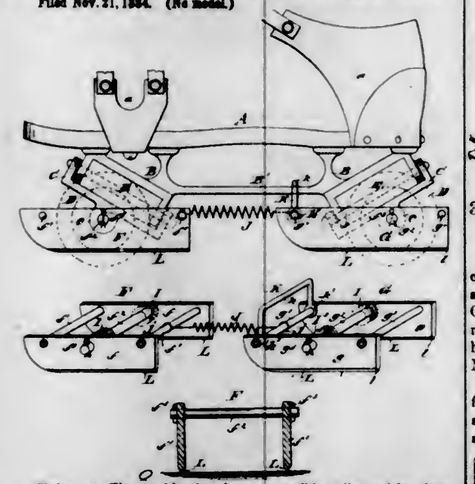
Claim.—1. The combination of belt A with the flaps *b b'*, secured to one of its sides, and adapted to be connected, substantially as herein shown and described.

2. The combination of belt A with fastening devices *a a*, flap *b* and flap *b'*, secured to loop *c*, substantially as specified.

330,132.



330,133. CONVERTIBLE SKATE. JOHN LAPP, Honeoye Falls, N. Y. Filed Nov. 21, 1884. (No model.)



Claim.—1. The combination, in a convertible roller and ice skate, and with the front and rear roller-frames, C, and elastic cushions E, arranged substantially as described, of the runners F G, constructed with connected opposite pairs of runner-blades, *f f g g*, and pivot-rods f^2 g^2, adapted to the lugs *c* of the roller-frame C, and connected by a spring, J, substantially as herein set forth.

2. The skate-runners constructed with front and rear runners, F G, consisting of blades *f f g g*, tied together by rods *f' g'*, and having pivot-pins f^2 g^2, and said runners F G being connected by a spring, J, substantially as herein set forth.

3. The skate-runners constructed with front and rear runners, F G, consisting of blades *f f g g*, tied together by rods *f' g'*, and having angular lower edges, L, and the pivot-pins f^2 g^2, and said runners F G being connected by a spring, J, substantially as herein set forth.

4. The combination, with the pivoted rear runner, G, of a tie connected to the forward end of the runner and passing over a rod or bar held to the skate foot-piece, substantially as herein set forth.

5. The combination, with a bar or rod on the skate foot-piece, and the rear runner, G, of a tie, K, in the ball form extending over the foot-piece bar and connecting with the forward end of the runner, substantially as herein set forth.

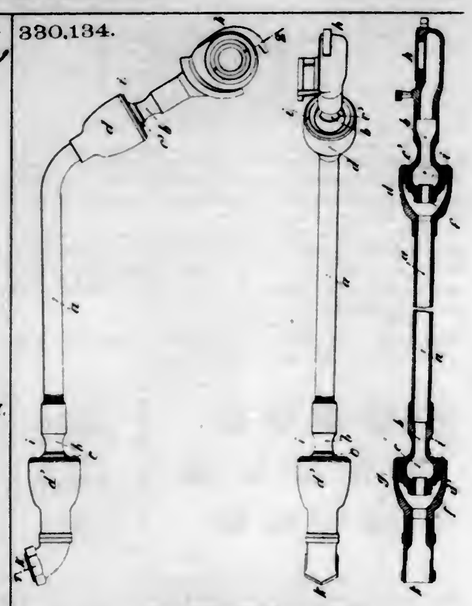
330,134. PIPE-COUPLING. LOUIS LEMOINE, Paris, France. Filed July 8, 1885. (No model.)

Claim.—1. The combination, with a hollow ball-and-socket connection, of a flexible membrane connected at one edge to the interior of the socket and connected at its opposite edge to the exterior of the ball within the socket, substantially as set forth.

2. The combination, with a hollow ball-and-socket connection, of a corrugated flexible membrane secured at its opposite ends to the ball and socket, respectively, substantially as set forth.

3. The combination, with the hollow socket *d*, having the collar *i*, and the hollow ball *c'*, having the tubular screw *f*, of the membrane *g*, connected with the ball and socket by the screw and ring, substantially as set forth.

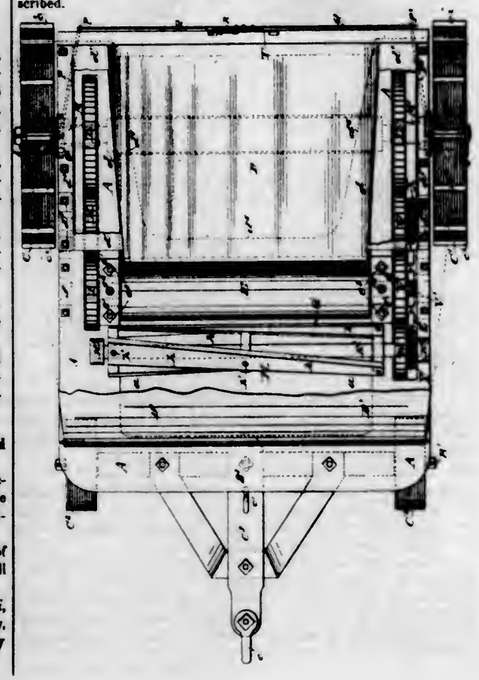
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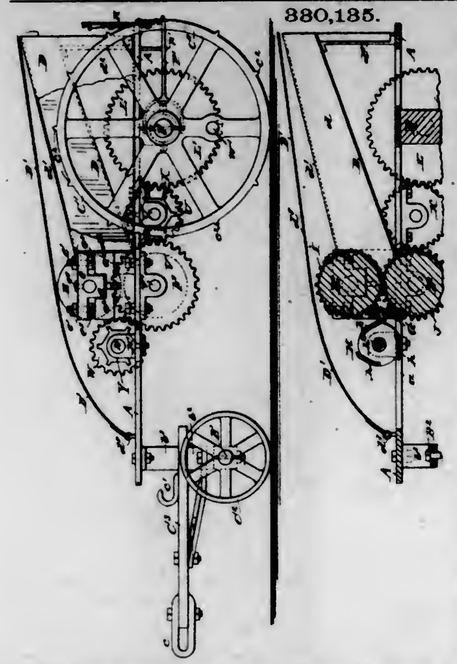
330,135. SUGAR-CANE TOP AND LEAF CUTTER. EMILIO LOSADA, Havana, Cuba. Filed Oct. 10, 1884. (No model.) Patented in Cuba July 22, 1884, No. 107.

Claim.—1. In a machine for cutting the tops and leaves of sugar-cane, the combination, with the feed-rolls E F, gear-wheels I J K L, said gear-wheel L having slots *l* through it, the axle B, and drive-wheel C, of a clutch consisting of a clutch-block, M, having arms *m* on its inner face, that slide through the slots *l* in the gear-wheel L, and a clutch-block, N, fixed to the wheel C, and means for engaging the blocks M N, substantially as shown and described.

2. In a machine for cutting the tops and leaves of sugar-cane, the feed-table D, made with raised portions forming side guards to the table and covers to the rear driving-gearing, substantially as shown and described.



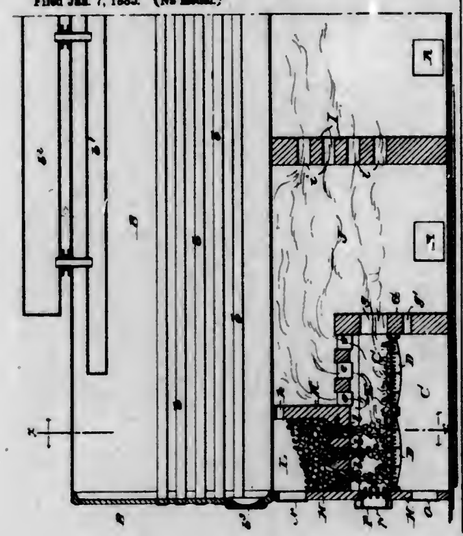
330,135.



3. In a machine for cutting the tops and leaves of sugar-cane, the guard-plate D', hinged at d^1 to the bed A and extending rearward over the feed-rolls, cutters, and their front driving-gearing, in combination with the feed-plate D, having surfaces *d'*, on which the plate D' rests, and said plate D' being cut away, as at d^3, all substantially as shown and described.

4. The machine herein described, comprising the platform A, axles B B', the wheels C C' C^3, the gears L L' on the axle B, clutches for connecting the said gears with the drive-wheels, the upper and lower feed-rollers, E F, the cutter H, journaled in front of said rollers, the throat-piece G, having a slot, *g*, in line with the shaft of the cutter and the space between the rollers, connecting mechanism between the gears L L' and said cutter and rollers, and the forward and downward inclined feed-table D, having raised side portions, *d'*, substantially as set forth.

330,136. BOILER-FURNACE. JOHN MAHER, San Francisco, Cal. Filed Jan. 7, 1885. (No model.)

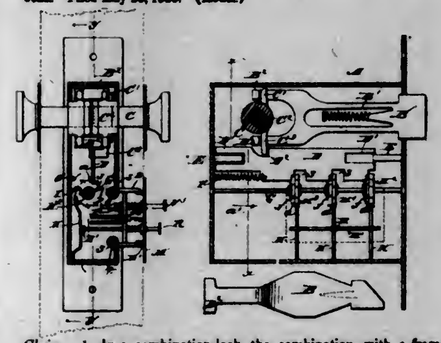


Claim.—1. In a boiler-furnace, the combination, with the fire-box C, of the fuel-magazine L, located above the fire-grates and beneath the boiler-shell, and formed with a back wall, K, supported on the fire-box arch E at about the lengthwise center of said arch, and having openings *l* into the fire-box, and openings *k* into the combustion-chamber I, and said arch E having openings *s* into the chamber J behind the fuel-magazine, substantially as herein set forth.

2. A boiler-furnace constructed with a fuel-magazine, L, located above and opening at *l* into its fire-box C, and opening also at *k* into the combustion-chamber J, and said fire-box having passages *s g*, leading into the chamber J, in combination with air-inlet doors fitted to the fire-box, substantially as herein set forth.

3. The combination, in a boiler-furnace, of the fire-box C, having outlets *s g g'*, the fuel-magazine L, located above and opening at *l* into the fire-box, and having a door, N, and outlets *k*, the combustion-chamber J, and the fire-box and ash-pit doors P O, substantially as herein set forth.

330,137. PERMUTATION-LOCK. WALTER E. MALLEY, New Haven, Conn. Filed May 26, 1885. (Model.)



Claim.—1. In a combination-lock, the combination, with a frame or casing, a sliding bolt, and a sliding tumbler, of a series of ratchet-wheels adapted to engage with the tumbler, a shaft on which said wheels are mounted, springs for turning the several ratchet-wheels, locking-springs for locking the ratchet-wheels in place, push-pins for turning the ratchet-wheels, and a push-pin for disengaging the locking-springs from the ratchet-wheels, substantially as herein shown and described.

2. In a combination-lock, the combination, with a frame or casing, sliding bolt, and sliding tumbler, of a series of ratchet-wheels, a shaft on which said wheels are mounted, an adjustable pin projecting from one side of each ratchet-wheel, a pin or projection on the frame with which the pin on the ratchet-wheel can engage, a spring for turning each separate ratchet-wheel, springs for locking the ratchet-wheels in place, push-pins for turning the ratchet-wheels, and a push-pin for disengaging the locking-springs from the ratchet-wheels, substantially as herein shown and described.

3. In a combination-lock, the combination, with a casing or frame, a sliding bolt, and a sliding tumbler, of ratchet-wheels, a shaft on which said wheels are mounted, the springs K, the push-pin R, having a cross-piece, R', adapted to act on all the springs K, and of push-pins for turning the ratchet-wheels, substantially as herein shown and described.

4. In a combination-lock, the combination, with a casing, of a neck projecting from the same, an extension-piece held on the neck and provided with a face-plate, M, sliding pins in the face-plate, ratchet-wheels adapted to be acted upon by the pins, and a sliding tumbler adapted to engage with the ratchet-wheels, substantially as herein shown and described.

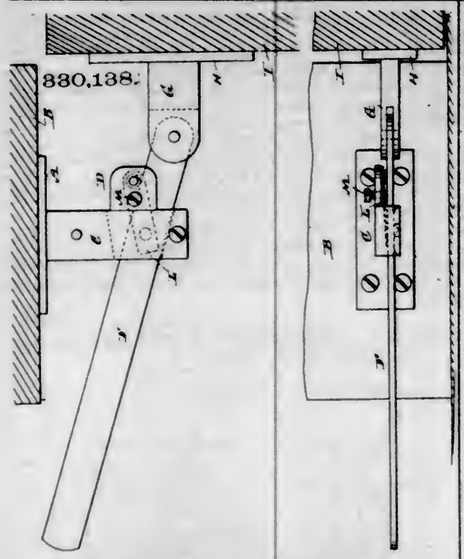
5. In a combination and permutation lock, the combination, with the casing, a sliding bolt, and sliding tumbler, of ratchet-wheels adapted to engage with the tumbler, a shaft on which said wheels are mounted, springs for turning the ratchet-wheels, springs for locking the ratchet-wheels in place, push-pins for turning the ratchet-wheels, and arms connected with said push-pins and adapted to act on the locking-springs of other ratchet-wheels, substantially as herein shown and described.

330,138. DOOR-CHECK. ADAM MAUSER, San Antonio, Tex. Filed Apr. 11, 1885. (Model.)

Claim.—1. In a door-holder, the combination, with the jaw C, having a pocket, E, provided with an aperture, J, of the jaw G and the pivoted bar F, having a nipple or teat, K, substantially as herein shown and described.

2. In a door-holder, the combination, with the jaw C, having a pocket, E, provided with an aperture, J, of the spring L and the pivoted bar F, having a nipple or teat, K, substantially as herein shown and described.

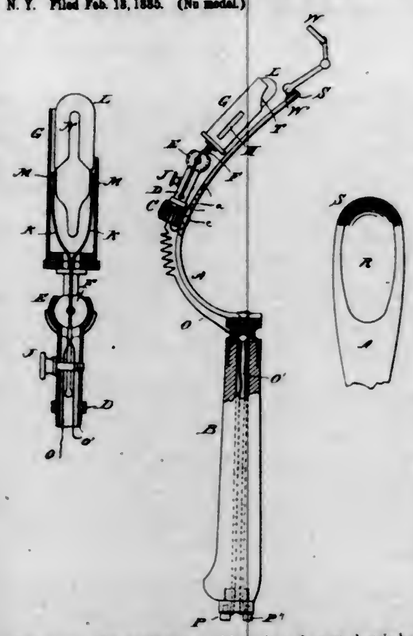
330,138.



3. The combination, with a tongue-holder, A, and its handle B, of the block C, held adjustably on the holder A, the socket D E on the block C, conducting-wires extending through the handle, one of which is connected directly with the block C, and the other connected with the circuit by means of the holder, a ball held in the socket, and lamp terminals secured on the ball, substantially as herein shown and described.

4. The combination, with the tube G, of the springs K, the ball F, formed of two conducting halves separated by an insulating layer, which halves are connected with the springs K, which rest upon the lamp terminals, an incandescent electric lamp held in the tube G, and the socket for receiving the ball F, and a sealing-in wire held in each end of the socket and resting against said ball, substantially as herein shown and described.

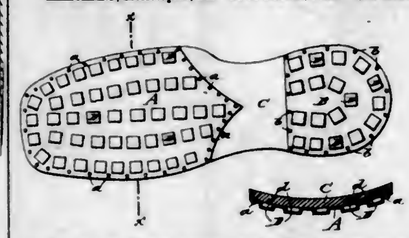
330,139. ELECTRIC LARYNGOSCOPE. CURT W. MEYER, New York, N. Y. Filed Feb. 18, 1885. (No model.)



Claim.—1. The combination, with an incandescent electric-lamp mounting having a ball provided with a transverse insulating-piece, of a socket for receiving said ball and of contact-wires passed through the socket and resting against the surface of the ball, whereby the ball can be turned in such a manner that the ends of the layer of insulating material passed through the ball are in contact with the conducting-wires, thus cutting out the lamp, or the ball may be so turned that the contact parts of the ball are in contact with the conducting-wires, substantially as herein shown and described.

2. The combination, with a tongue-holder, of a socket held adjustably on the same, a mounting therein for holding an incandescent electric lamp, which mounting is provided with a ball having conducting halves divided by an insulating center, the conducting halves being connected to the lamp terminals, and of conducting-wires connected with the socket, substantially as herein shown and described.

330,140. METALLIC SOLE FOR BOOTS OR SHOES. WILLIAM T. MILLOLLAND, McKeesport, Pa. Filed Feb. 25, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a metallic sole-plate for boots and shoes, consisting of a plate provided with closed hollow projections on its outer face, the said projections being struck from the body of the metal of the plate, as set forth.

2. The combination, with the sole C of a boot or shoe, of a metallic sole-plate having imperforate projections D, substantially as described, whereby, when the said plate is secured to the sole by suitable fastening devices, dead-air spaces *d* are formed, as set forth.

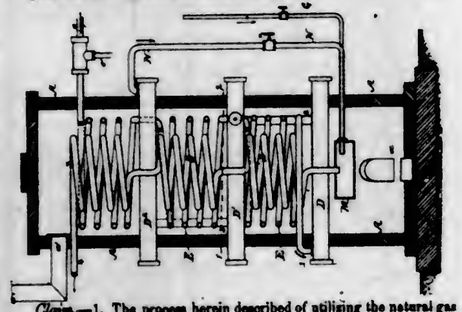
330,141. FLANGING-MACHINE. ROBERT MURRIN, Allegheny, Pa. Filed Sept. 14, 1885. (No model.)



Claim.—1. In a flanging-machine, a flanging-head, in combination with guides located within the lower stationary clamp and constructed to hold the head or mandrel as against any rotary movement, substantially as set forth.

2. In a flanging-machine, a flanging-head, in combination with a lower stationary clamp and guides formed on the inner wall of said clamp, and constructed to hold the head or mandrel as against rotary movement, substantially as set forth.

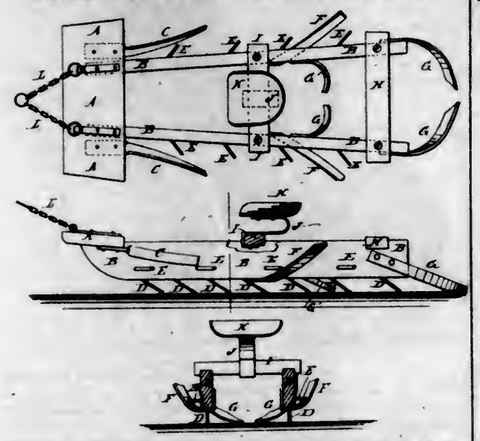
330,142. PROCESS OF MANUFACTURING GAS. WILLIAM F. C. M. MCCARTY, Philadelphia, Pa., assignor to Adolph Ohl, James McC. Creighton, and Bernard C. Lauth, all of Philadelphia, Pa., and Jane Logan, Hagerstown, Md. Filed June 5, 1885. (No model.)



Claim.—1. The process herein described of utilizing the natural gas of the earth for the production of illuminating gas, said process consisting in subjecting the said gas to excessive heat in the presence of free hydrogen, and subsequently introducing a liquid hydrocarbon in a finely-divided condition.

2. The process herein described of utilizing the natural gas of the earth for the production of an illuminating-gas, said process consisting in first subjecting the gas to excessive heat in the presence of steam; second, freeing the hydrogen under excessive heat to combine with the gas, and subsequently introducing liquid hydrocarbon in a finely-divided state.

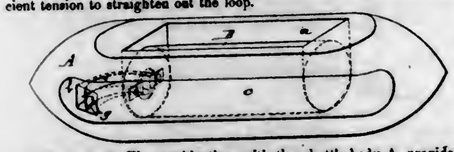
330,143. CULTIVATOR FOR LISTED CORN. JOHN C. MCCANDLESS and ORSON KING, Randolph, Kans. Filed July 15, 1885. (No model.)



Claim.—A cultivator for listed corn, constructed substantially as herein shown and described, and consisting of the runners B, connected at their forward ends by a plank, A, for leveling the tops of the ridges, and provided at their lower edges with inclined pins D, to loosen the soil at the bottom of the furrow, at their sides with pins E, to loosen the soil at the sides of the ridges, the forward knives, C, for destroying the weeds at the tops of the ridges, the middle knives, F, for destroying the weeds at the sides of the ridges, and one or more pairs of knives G, for destroying the weeds at the bottom of the furrow and throwing soil around the stems of the plants, as set forth.

330,144. LOOM-SHUTTLE. CHARLES N. NEWCOMB, Omaha, Nebr. Filed July 22, 1884. (No model.)

Brief.—The can is received within the cavity of the shuttle-body, and is designed to hold strips of rag used as weft in the production of rag-carpets. The forked springs in the shuttle-eye yield to permit a loop in the strip to pass, and then close upon the strip so as to create sufficient tension to straighten out the loop.



Claim.—1. The combination, with the shuttle-body A, provided with the eye *b*, of the springs *g*, having forked outer ends and projecting into the eye of the shuttle-body, substantially as herein shown and described.

2. The combination, with the shuttle-body A, provided with the recess *a* and the eye *b*, and the springs *g*, projecting into the eye of the shuttle-body, of the rag-receiving can B in said recess, having one end open, substantially as herein shown and described.

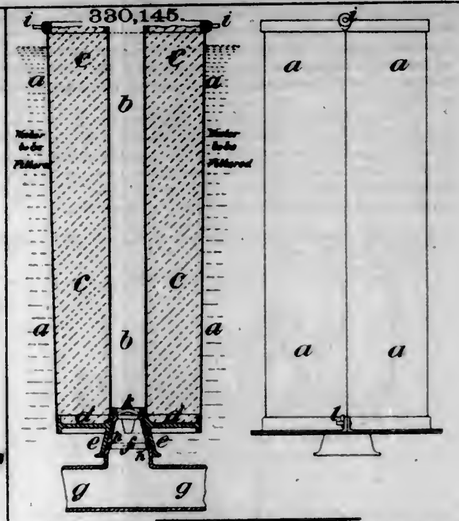
330,145. FILTERING APPARATUS. WALTER OLDHAM, Manchester, County of Lancaster, England. Filed Dec. 26, 1884. (No model.) Patented in England Dec. 12, 1884, No. 16,336.

Claim.—1. A filtering apparatus consisting of a number of detachable unit filters, each composed of a tubular filtering medium with a socket at its lower end, a connecting-pipe, through which the filtered liquid is to be conveyed, and valves for closing any one or more of the connections previously to the removal of the unit filter for cleansing or repairs.

2. The combination of a pipe, *g*, having a hollow plug, *f*, with a tubular filter having a socket, *e*, adapted to said plug, and a valve, *k*, adapted to be introduced and withdrawn through the top of the tubular filter, as set forth.

3. The tubular filter consisting of a bottom plate, pervious tubes *a* and *b*, the former in separable parts, and the intermediate filtering medium, substantially as set forth.

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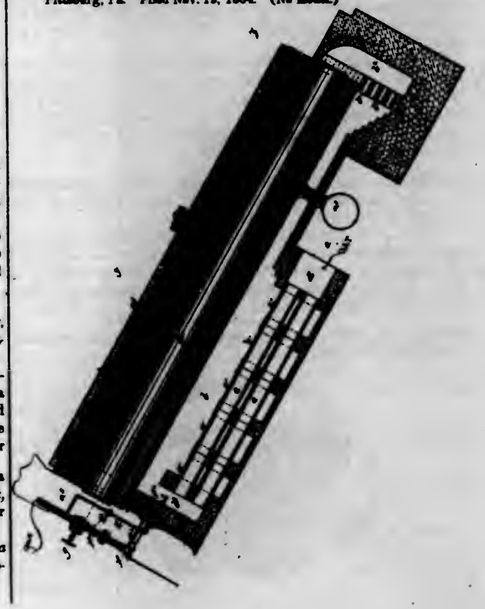


330,146. SHOE-BLACKING BOX. FRANCIS M. OSBORN, Port Chester, N. Y. Filed Sept. 14, 1885. (No model.)



Claim.—As an improved article of manufacture, a blacking-box consisting of the body A, having a spiral groove formed in its sides, the intermediate box, C, fitting in the body A, and having a series of perforations in its bottom and a spiral groove in its sides corresponding to the groove of the body, and the cover B, fitting upon the box C, and having a spiral groove in its sides corresponding to the groove of the said box C, as set forth.

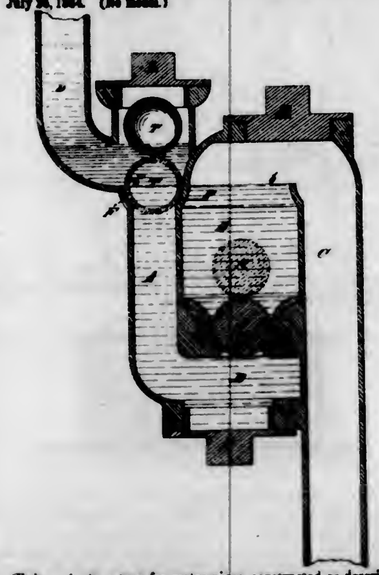
330,147. FURNACE FOR STEAM-BOILERS. SAMUEL T. OWENS, Pittsburg, Pa. Filed Nov. 19, 1884. (No model.)



Claim.—1. In a boiler or similar furnace, the combination of the transverse cave or opening *c*, refractory pipes or tubes *c*, situate in the combustion-chamber *b* and communicating with the cave *c* and extending forward and opening into the vertical passage b^2, the upper end of which opens into the combustion-chamber *b*, substantially as and for the purpose specified.

2. The combination of air-heating refractory pipes situate in the combustion-chamber and communicating at one end with a transverse open air-passage and at the other end with a vertical passage which leads up into the combustion-chamber, with gas-distributing pipes which enter through the front wall and discharge at or near the upper end of the said vertical passage, substantially as and for the purposes described.

330,148. STENCH-TRAP. JOHN A. FABER, Tarrytown, N. Y. Filed July 26, 1884. (No model.)



Claim.—1. In a trap for water-pipes, constructed as described, and having a floating valve with a single valve-seat at the top of the water-chamber, at or near the mouth of the receiving-pipe from the basin, the combination of a second valve and seat, situated at or near the point of discharge into the educt-pipe into the sewer, thereby preventing evaporation into the basin and into the sewer, and the drain of water from the trap by suction or siphonic action into the sewer, and the passage of gas through the trap.

2. In a trap for water-pipes, the combination, with a valve lighter than water, located at the top of the water-chamber, of a valve heavier than water, at or near the entrance to the discharge-pipe into the sewer, whereby the passage of sewer-gas through the trap and the drain of water from the same are rendered impossible, and also evaporation into the basin and into the sewer is prevented.

330,149. PLATING WITH PALLADIUM. GASTON PLANÉ and CLEMENT CARRY, Besançon, France. Filed June 18, 1885. (Specimens.) Patented in France Nov. 11, 1884, No. 160,343.

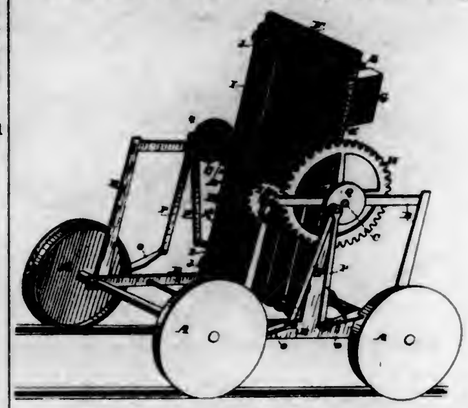
Claim.—The process of electroplating with palladium which consists in introducing the articles to be plated into a bath containing chloride of palladium, phosphate of ammonia, and an alkaline substance—such as phosphate of soda or liquid ammonia—and then exposing them to the action of an electric current.

330,150. BULL-TAMER. JAMES C. POOR, North Andover, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—The above-described improved bull-tamer, consisting of the furcated crank-levers a^3, the fulcrum a', and the sockets *a*, in combination with the connecting-chains a^4 and the bit a^5, all substantially as described.

330,151. MOTOR FOR PROPELLING CARS AND VEHICLES. LEONIDAS C. PEBBLEY, San Francisco, Cal. Filed Aug. 26, 1885. (No model.)

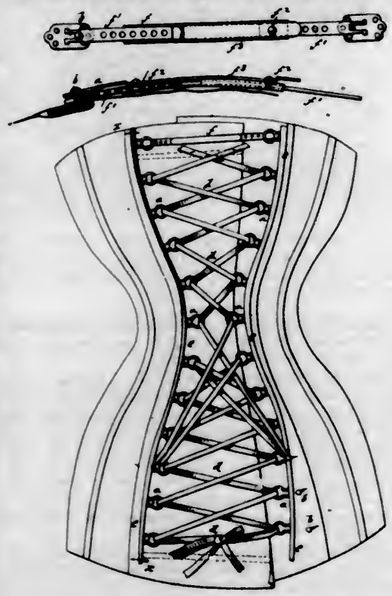


Claim.—1. A frame with guides upon which weights travel from end to end, said frame being journaled upon a shaft so that it may be reversed, in combination with a gear-wheel and pinion and crank-shaft, substantially as herein described.

2. A frame or guides mounted upon a central shaft and reversible about it, weights fitted to slide in said guides, direction-pulleys at each end, and cords or chains connected with the weights passing over the direction-pulleys, and thence to drums upon the central shaft, in combination with the clutches E, by which the drums may be caused to engage with the shaft, substantially as herein described.

3. A frame or guides supported upon a central shaft, and means by which said frame may be reversed, and weights sliding in the guides and connected with drums upon the central shaft by cords or chains which pass over direction-pulleys at each end of the frame, as shown, in combination with levers and clutches by which the weights may be retained in position at either end of the guides while the frame is being reversed, substantially as herein described.

330,152. CORSET-FASTENING. ALBERT RAMBOSEK, Berlin, Germany. Filed July 15, 1885. (No model.) Patented in Germany May 6, 1885, No. 32,530, and in England June 18, 1885, No. 7,449.



Claim.—1. A corset-fastening composed of two rows of headed pins attached to the corset—one row on each side—two rows of eyelets or rings adapted to catch on such pins, strips connecting said eyelets with the corset, and a lacing-string passing through the same, substantially as set forth.

2. A corset-fastening consisting of two rows of headed pins attached to the corset, two rows of eyelets or rings, said eyelets being connected by strips, means, substantially as described, for attaching or detaching said eyelets to the pins of the corset, and a lacing-string passing through the eyelets, substantially as set forth.

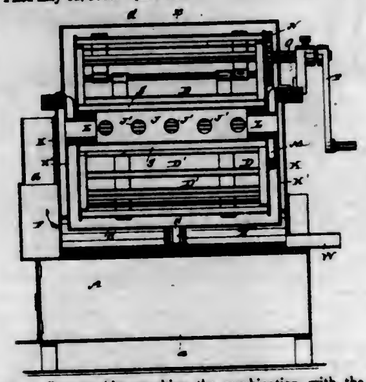
3. A corset-fastening composed of headed pins attached to the corset, two rows of eyelets, strips connecting said eyelets for attaching the same to the edges of the corsets, a lacing-string passing through said eyelets, and a transverse extension-stay at the upper part of the corset, substantially as set forth.

330,153. BARREL STAVE AND HOOP. ISRAEL L. G. REIS, Boston, Mass. Filed June 11, 1885. (No model.)



Claim.—The combination, with a barrel, tub, or pail having grooved staves, of an elastic hoop having corrugations resting in the grooves of the staves, substantially as and for the purpose set forth.

330,154. WASHING-MACHINE. WILLIAM H. RICHARDSON, Mexia, Tex. Filed May 12, 1885. (Model.)



Claim.—1. In a washing-machine, the combination, with the furnace A, of the box B, having the semicircularly-curved top C, of the cylindrical cage D, and the flues E in the box, substantially as herein shown and described.

2. In a washing-machine, the combination, with the furnace A, of the box B, having the curved top C and the double end walls, K K′, the cylindrical cage D, and the hollow shaft J, which is in communication with the compartments between the end walls, K K′, of the box B, substantially as herein shown and described.

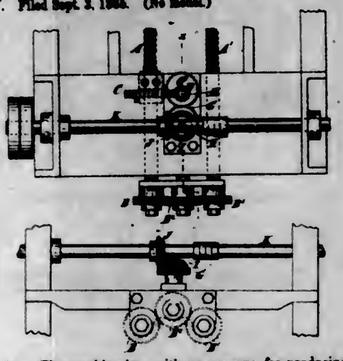
330,155. PROCESS OF MAKING AMMONIUM CHLORIDE. THEODORE SCHMIDTBORN, Jersey City, N. J., assignor to himself, and Hugo H. Harnish, New York, N. Y. Filed Mar. 27, 1885. (No specimens.)

Claim.—1. The within-described process of manufacturing ammonium chloride and potassium sulphate, which consists in bringing together saturated solutions of ammonium sulphate and potassium chloride at the ordinary temperature, and then separating the products of the reaction, substantially as described.

2. The within-described process of manufacturing ammonium chloride and potassium sulphate, which consists in bringing together ammonium sulphate and potassium chloride in the presence of water and heat, and then separating the products of the reaction, substantially as described.

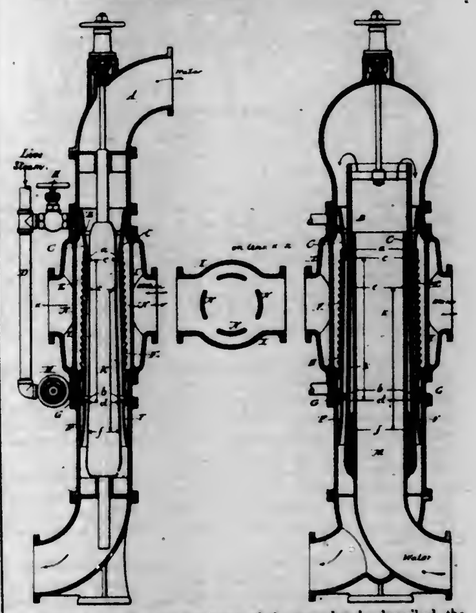
3. The within-described process of manufacturing ammonium chloride and potassium sulphate, which consists in bringing together ammonium sulphate and potassium chloride in the presence of a sufficient quantity of water to form a solution, then heating the solution to about 150° centigrade for about an hour, then allowing the same to cool until needles begin to form therein, then removing the supernatant liquor from the precipitate, and finally evaporating the liquor for the purpose of obtaining the ammonium chloride while the precipitate is freed from the adhering liquor, substantially as described.

330,156. MECHANICAL MOVEMENT. LOUIS SCHULER, New York, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—The combination, with two screws for producing the feed of a carriage or like object, of a driving-shaft for imparting motion thereto, and eccentric gear-wheels arranged intermediate of the driving-shaft and the said screws, substantially as and for the purpose specified.

330,157. STEAM-JET CONDENSER. LOUIS SCHUTTE, Philadelphia, Pa. Filed Jan. 24, 1885. (No model.)



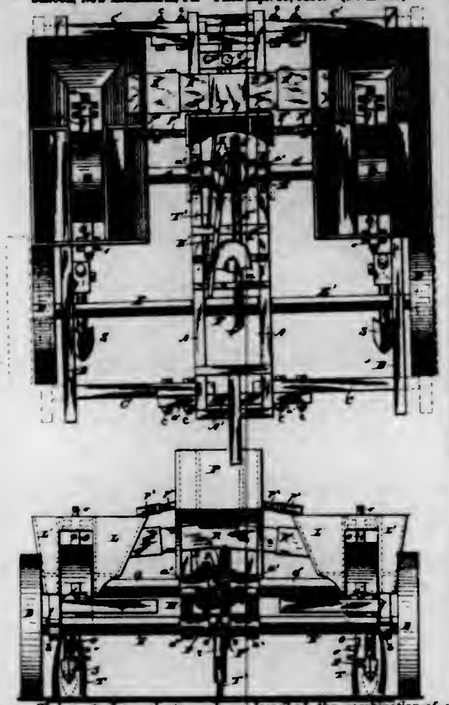
Claim.—1. In a jet-condenser of the type herein described, the usual water-nozzle, condensing-tube, and discharge-tube, in combination with a movable ram or spindle, constructed as described, to change the areas of the water-nozzle and discharge-nozzle, but maintain a constant ratio between them.

2. In a jet-condenser of the type herein described, the central water-inlet extending from the base or delivery end through the discharge-tube and water-nozzle.

3. In a jet-condenser having the central water-inlet tube extending through the discharge-tube, the hollow movable ram or spindle, substantially such as described, surrounding the inlet-tube.

4. In a jet-condenser of the type herein described, the combination, with the water-inlet nozzle, the condensing-tube, and the discharge-tube, of the tapered movable spindle extending through the nozzle and discharge-tube.

330,158. COMBINED POTATO AND CORN PLANTER. FAUST L. SAMOUR, New Alexandria, Pa. Filed Apr. 15, 1885. (No model.)



Claim.—1. In a planter such as described, the combination of a laterally-adjustable frame, a rotating supporting-axle formed in two sections keyed at their inner ends to a connecting-sleeve, and adjustable longitudinally in said sleeve, a shaft carrying the seed-dropping devices, and formed in two sections keyed at their inner ends to and adjustable longitudinally in a connecting-sleeve, said sleeve being connected by intermediate mechanism, as described, with the rotating axle, all arranged and operating substantially as and for the purpose set forth.

2. In a potato-planter, a rotating shaft provided with lifting-arms O, having fingers o on their outer ends, in combination with the hopper N, having slots n in its bottom corresponding to the shape of the fingers o, and through which slots the fingers pass as the arms O revolve, all arranged and operating substantially as and for the purpose shown and described.

3. In a potato-planter having a laterally-adjustable frame, a main supply-hopper provided with chutes R, having adjustable extensions R', the distributing-hoppers N, having slots n in their bottoms, in combination with a rotating shaft, lifting-arms O, secured to the shaft and provided with fingers o on their outer ends, all arranged and operating substantially as and for the purpose set forth.

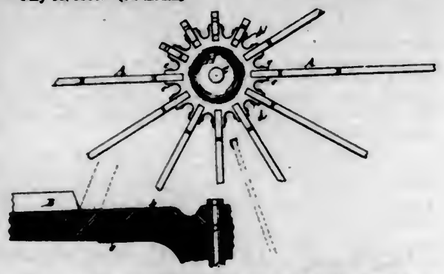
4. In a planter such as described, having a laterally-adjustable frame, supply-hoppers p', provided with pipes p^3, having extensions p^3, and the distributing-hoppers L L', in combination with a rotating distributing-wheel having cups on its side faces, substantially as shown and described.

5. In a planter such as described, the combination of the hoppers L L', rotating seed and fertilizer distributing wheels M, having cups on their side faces, the lifting-arms O, secured to the periphery of the wheels M, and having fingers o on their outer ends, and the hoppers N, having slots n in their bottoms, all arranged and operating substantially as shown and described.

6. In a planter, a vertically-rotating seed-distributing wheel having recesses m on its side, and provided with the removable blocks m', having blank faces m^3, and faces m^3, having a different number of seed-cups m^4 on each face, substantially as and for the purpose shown and described.

7. In a planter, vertically-rotating seed and fertilizer distributing wheel provided on one side with fertilizer recesses or cups, having removable blocks m^2 fitting in and completely filling said recesses, and correspondingly-located recesses on the opposite side of said wheel, provided with removable blocks m', having blank faces m^3, and faces m^3, having a different number of seed-cups on each face, substantially as and for the purpose shown and described.

330,159. CLOTHES-DRIER. DENNIS P. SHARP, Ithaca, N. Y. Filed July 15, 1885. (No model.)



Claim.—1. The combination of the head H, provided with ears e e, and with stops b, the clothes-bars A, provided with the slot c, the pin d, passing through said ears and slot, and the spring s, arranged in the slot back of the pin, substantially as described and shown.

2. The combination of the head H, provided with ears e e and stop b, the clothes-bar A, provided with the cam-face f and slot c, the pin d, passing through said ears and slot, and the spring s, arranged in the slot back of the pin, all constructed and combined to automatically lock said clothes-bar in its horizontal position, substantially in the manner specified and shown.

330,160. LAYING-OUT AND EMBALMING BOARD. NOAH T. SHAW, WILLIAM S. CARLILE, and JESSE W. DAHN, Columbus, Ohio. Filed May 7, 1885. (No model.)



Claim.—1. The hinged frame-sections of a laying-out and embalming board, composed each of a bar L shape in cross-section, bent in yoke shape, united at its ends by a cross-bar, the rims of the bars standing inward to brace and strengthen the frames and receive the woven rattan, substantially as described.

2. The combination, with a laying-out board, of a pivoted-ring head-rest, an adjustable holder therefor, and an adjustable support for said ring-holder, substantially as described, for the purpose specified.

3. The head-rest of a laying-out board, consisting of a pivoted ring, a pivoted semi-ring, a vertically-adjustable-bar, and a fastening device therefor, substantially as described.

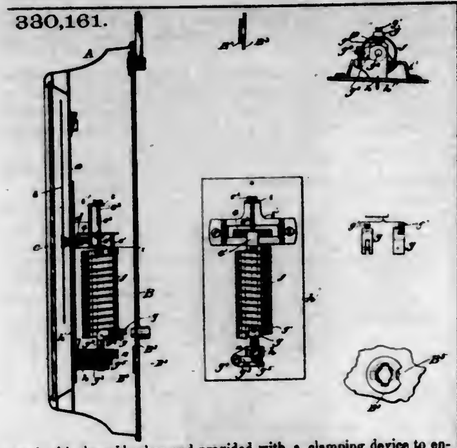
4. The head-rest of a laying-out board, consisting of a pivoted ring and a semi-ring holder therefor having a cylindrical bearing, a vertically-adjustable ratchet-bar having an eye to receive said cylindrical bearing, a clamp-nut for adjustably holding said semi-ring to said bar, and a spring-catch for adjustably holding said ratchet-bar, substantially as described.

330,161. THERMOMETER. THOMAS W. SHEPHERD, Peabody, Mass., assignor to Edgar W. Upton, same place. Filed May 4, 1885. (No model.)

Claim.—1. The pointer and sensitive helical coil and connecting mechanism between the said pointer and one end of the said coil, in combination with a clamping screw or device, g', and arm g adapted to hold the said coil at any desired point near its other end, a shaft, g^2, to which the said arm is attached, and with means, substantially as described, for adjusting the position of the said shaft and its attached clamping device about the axis of the coil, substantially as described.

2. The frame or plate A', having the lug or projection A, the helical coil, the segment provided with the arm e'; and the support for the segment, combined with the arbor g^2, and with the arm g, pivoted thereon, and with screws to hold each end of the coil, to operate substantially as described.

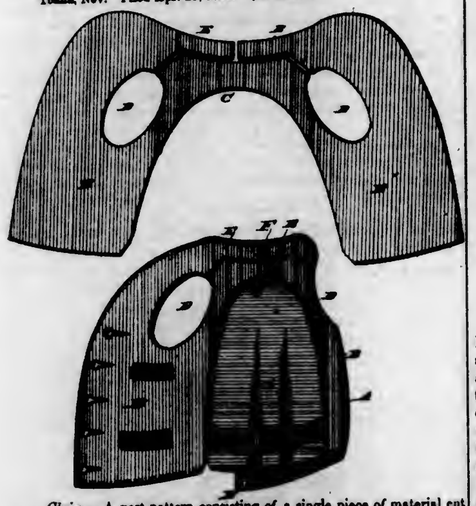
3. A thermometer comprising a pointer and sensitive helical coil and connecting mechanism between the said pointer and one end of the said coil, and a holding and adjusting device for the other end of the said coil, consisting of an arbor and arm connected therewith and an adjusting-screw co-operating with the said arm, and a second arm connected with the said arbor and provided with a clamping device to engage the sensitive helical coil at the proper point near its end, and an inclosing-case for said parts provided with a removable cap, affording access to the adjusting-screw, substantially as described.



4. In a thermometer, the arbor and its attached pivoted clamping-arm and the clamping device, combined with and holding the fixed end of the sensitive helical coil, substantially as described.

5. In a thermometer, the arbor g^2, the arm g^2, and adjusting-screw to move it, and the clamping-arm pivoted upon the said arbor, and the clamping device, in combination with and holding the fixed end of the sensitive helical coil, substantially as described.

330,162. VEST-PATTERN. ELIZABETH SHIVELY and MARY E. CLARK, Toana, Nev. Filed Apr. 29, 1885. (No model.)



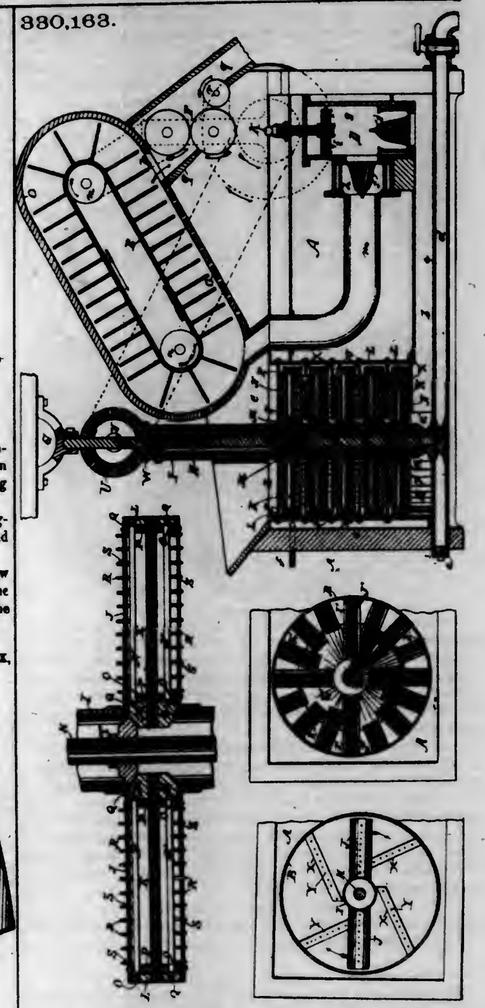
Claim.—A vest-pattern consisting of a single piece of material cut into an irregular inverted-U-shaped form, having an elliptical opening near each curve, an irregular-shaped incision connecting said elliptical openings, and a short incision connecting said irregular incision with the edge of the pattern, whereby the pattern can be made to fit the body of the wearer, substantially as and for the purpose set forth.

330,163. WOOL-WASHING MACHINE. JAS. E. SINCLAIR, Waverly, Md. Filed Apr. 16, 1884. (No model.)

Claim.—1. The combination of the vertical cylinder B, the stationary shaft H, having beveled gears T, rigidly secured thereon, the vertical sleeve I, journaled around the said shaft, and having horizontal hollow cylindrical arms J, the rotary devices arranged within the said arms and geared with said gears T, and the radially-sliding toothed bars N and the toothed bars X, secured to the inner surface of the cylinder and arranged in spiral order, substantially as shown and described.

2. The combination of the fixed vertical shaft H, the beveled gears T, secured thereon, the sleeve I, journaled upon the said shaft, the bel-

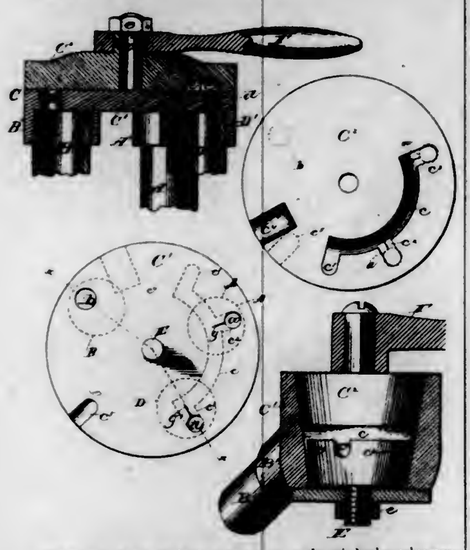
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low cylindrical arms J, fixed radially upon the sleeve, the radially-slotted spiders P, fixed within the said arms, the bars N, provided with teeth adapted to protrude through the said arms and fitted in the spider-slots, the shaft K, journaled centrally in the said arms, the roller L on one end of shaft K, and the gear M on the other end of the shaft provided with eccentric grooves, the wheels M and T, geared together, and the bars N, engaging the said eccentric grooves, substantially as shown and described.

3. The combination, in a machine for treating wool, of a vertical cylinder, B, a vertical hollow shaft or sleeve centrally journaled therein, cylindrical radial arms fixed upon the said sleeve, a series of teeth, and mechanism, substantially as described, for alternately protruding said series of teeth through the arms, and a series of toothed bars fixed to project radially inward from the shell of the cylinder, the said bars being arranged around within the cylinder spirally relative to each other, substantially as set forth, whereby the wool will alternately gather upon and be released from the circumference of the radial arms and will be gradually worked from the top to the bottom end of the cylinder, as set forth.

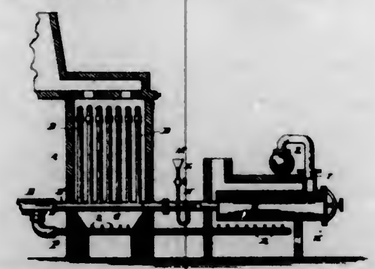
330,164. AIR-BRAKE VALVE. Leander E. Sloan, Milwaukee, Wis., assignor of one-half to Wallace G. Collins, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. In an air-brake system, an engineer's brake-valve consisting of two parts, the lower or outer part having passages *a*, *b*, and *d* and exhaust-port c^3, and the upper or inner part having channel *c*, with branches c' c^2 c^3, and exhaust-ports c^4, in combination with an operating-lever, and pipes connecting with the main air-reservoir and with the auxiliary reservoirs and brake-cylinders of a train, substantially as set forth.

2. The combination, in an air-brake system, of the straight-air, automatic-train, and main-reservoir or drum pipes with the engineer's brake-valve C, consisting of the part C^2, having channel c, with branches c' c^2 c^3, and exhaust-ports c^4, and port C', having passages *a b d* and exhaust-port c^3, main reservoir A^3, and branch pipe A^4, located on the drum-pipe between the engineer's brake-valve and the main-reservoir valve, a cock, G, with graduated scale-lever H, attached to its handle, rod I, piston I', piston-rod i', and weight H', all combined and adapted to operate substantially as set forth.

330,165. GAS-APPARATUS. Roland H. Smith, Pittsburg, Pa. Filed Jan. 31, 1884. (No model.)



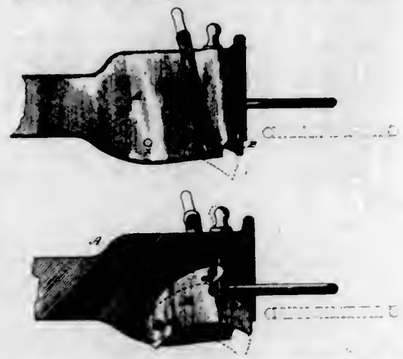
Claim.—1. The combination of the heating-furnace and the continuously-connected pipes located therein, the connecting-pipe leading to the fixing-retort, and the branch pipe provided with burners to heat the respective furnaces, whereby the natural gases and artificial gases and vapors may be converted into a fixed gas, substantially as and for the purposes specified.

2. The combination of a heating-retort, a mixing-retort connected therewith, a means for conveying hydrocarbons to the said mixing-retort, and burners under the heating and mixing retorts, said burners being connected to the gas-conveying pipe, substantially as and for the purpose specified.

3. The combination of a heating-furnace and continuously-connected pipes located therein, a connecting-pipe leading to a fixing-retort, a trap-pipe provided with a funnel and a regulating-cock, and having one end introduced into the connecting-pipe, and a branch pipe leading from a main supply-pipe to the heating-furnace and to the fixing-retort, under both of which the branch pipe is provided with burners for heating purposes.

4. Combined with a gas-conveyer pipe, a hydrocarbon conveyer consisting of a pipe with a receptive portion above said gas-conveyer pipe, and a trap or bend below the line of delivery to the same and entering said gas-pipe in line with the travel of the gas, substantially as specified.

330,166. CAR-COUPLING. Michael Spelman, Shreveport, La. Filed Apr. 23, 1885. (No model.)



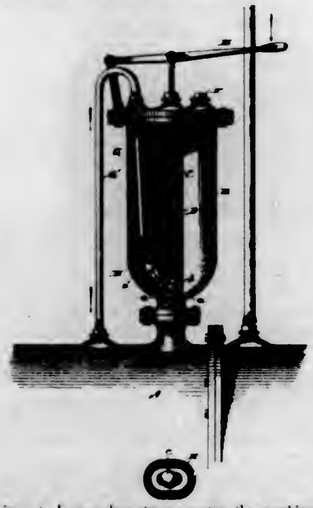
Claim.—1. The combination of the following elements, to wit: the draw-head A, having the cavity specified, the device B, having a bifurcation in its front end, the lower jaw, *c*, of which is extended forward beyond the upper one and curved or inclined downward on its upper side, and means for supporting said device so that the angle of its bifurcation is above the pivot, as shown and described, to operate as specified.

2. The combination, with recessed draw-head, of the block B, pivoted within it and provided with a recess in its front end, arms projecting laterally from the block, and springs arranged for acting on said arms, substantially as shown and described.

3. The springs *g*, having inclines or beveled shoulders, as specified, in combination with the recessed and pivoted block B and the arms *e e*, projecting laterally through slots in the draw-head, as shown and described.

4. The combination of the draw-head, the device B, pivoted and having lateral arms projecting through the sides of the latter, and the springs *g g*, extended above their fulcrum, as and for the purpose specified.

330,167. SODA-WATER APPARATUS. George A. Spring, Covington, Pa. Filed Aug. 6, 1885. (No model.)

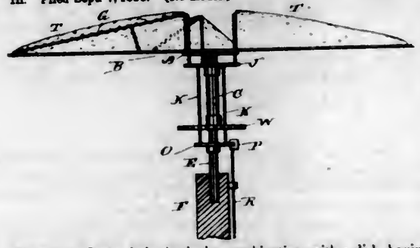


Claim.—1. In a soda-water apparatus, the combination, with the generator A, of an acid-chamber, B, having an imperforate bottom, and means for connecting it with said generator, the pipe G, arranged within said chamber, the independent detachable pipe G', connecting said pipe with said generator, and a piston working within a tube in said chamber for forcing the acid therefrom through said pipes into the generator, as set forth.

2. In soda-water apparatus, the combination of an acid-chamber, a pipe arranged therein and forming a pump-barrel and provided near its bottom with perforations, a pipe connecting directly with said perforated pipe, valves within said pipes, a plunger within said perforated pipe, and means for operating said plunger, all constructed and adapted to serve with a generator, as specified.

3. In soda-water apparatus, an acid-chamber having an imperforate bottom, a pipe arranged therein and communicating therewith near its bottom, a valve within said pipe, a discharge-pipe therefor having an enlargement to form a valve-chamber, and a valve arranged within said valve-chamber and of less area than the discharge-orifice of the same, all constructed and adapted to serve with a generator, as and for the purposes specified.

330,168. WIND-WHEEL. Franklin G. Talleriday, Poplar Grove, Ill. Filed Sept. 7, 1885. (No model.)



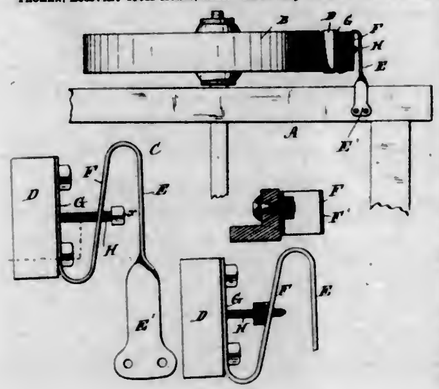
Claim.—1. In a wind-wheel, the combination, with a disk having flat radial arms, of wings on the arms, the wings having their forward edges connected with the forward edges of the arms, and of rods or wires connected with the rear edges of the wings for raising and lowering the said rear edges of said wings, substantially as herein shown and described.

2. In a wind-wheel, the combination, with a disk having radial triangular arms, of triangular wings secured to the arms along the angular sides, and of rods secured to the straight sides of the wings, which rods are vertically movable and serve to raise or lower the wings at their rear edges, substantially as herein shown and described.

3. In a wind-wheel, the combination, with the disk A, having the flat radial arms B, of the wings T, having their forward edges connected to the forward edges of said arms, the rods G, for adjusting the wings, connected at their outer ends to the arms B, and extending downward at their inner ends through the disk A, the ring J, surrounding the spindle on which the wheel revolves, and connected to the ends of said rods G, substantially as set forth.

4. In a wind-wheel, the combination, with the disk A, having the flat radial arms B, of the spindle E, the sleeve C, provided with means for transmitting power, connected to the disk A, and mounted on the said spindle, the wings T, secured to the arms B, as set forth, the rods G, connected with the wings, and the radial arms, as described, bent at their inner ends and passed down through disk A, the sliding ring J, to which the bent ends of the rods G are connected, the sliding ring O below the ring J, and vertical rods K, connecting said rings, and the rod for operating said rings, substantially as set forth.

330,169. SCRAPER FOR WHEELS OF WHEAT-DRILLS. Henry Thoman, Leesville Cross Roads, Ohio. Filed May 12, 1885. (No model.)

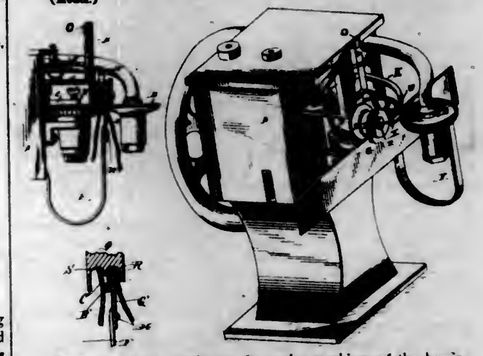


Claim.—1. The combination, with the framing and the wheel, of the scraper, a support for such scraper, having a spring-arm and a bearing-bar intermediate between the scraper and the spring-arm, and an adjusting-screw operating between the scraper and the bearing-bar, substantially as set forth.

2. As an article of manufacture, a scraper consisting of a metal bar bent to form the spring-arm, the scraper-bar, and an intermediate bearing-bar, substantially as set forth.

3. The combination, in a wheel-scraper, of the spring-arm E, the shoe-plate G, and intermediate bearing-bars, F, and a set-screw, H, turned through a threaded opening in the bar F and bearing against the bar G, substantially as set forth.

330,170. SUPPORTING AND GUIDING ATTACHMENT FOR SEWING-MACHINES. Joseph Thomas, New York, N. Y. Filed May 14, 1885. (Model.)



Claim.—1. In an attachment for sewing-machines of the herein-described class, the longitudinal guide bar or plate adapted to support the material to be operated upon, and provided with a slot near its upper edge for the accommodation of the feed mechanism, in combination with the grooved roller arranged as described, substantially as and for the purpose set forth.

2. In an attachment for sewing-machines of the herein-described class, the longitudinal guide bar or plate mounted and vertically adjustable upon suitable curved or U-shaped brackets for the purpose of supporting the material to be operated upon, said bar or plate being provided with a slot near its upper edge for the accommodation of the feed mechanism, in combination with the grooved roller arranged as described, substantially as and for the purpose set forth.

3. In an attachment for sewing-machines of the herein-described class, the combination, with the longitudinal supporting-bar or guide-plate, of a vertically-movable slide carrying a roller having two grooves, the outer one of which registers with and is adapted to ride upon the upper edge of the said guide-plate, substantially as and for the purpose set forth.

4. In an attachment for sewing-machines of the herein-described class, the herein-described roller having a pair of annular grooves, the inner one of which forms a guide for a projecting edge of the material to be operated upon, while the outer groove straddles the material and holds it in contact with the upper edge of a guide-bar, in combination with the longitudinal supporting-bar or guide-plate, substantially as and for the purpose set forth.

5. The combination of the longitudinal guide-bar, the vertically-movable slide, the double-grooved roller at the lower end of the latter, and an elastic arm or spring attached to the said slide and having a sleeve forming a braid or cord guide, substantially as and for the purpose herein set forth.

330,171. TREATING ASBESTUS TO FORM CRUCIBLES, &c. Mark S. Thompson, New York, N. Y., assignor to Robert H. Martin, same place. Filed Oct. 7, 1885. (Specimens.)

Claim.—1. The within-described process for treating asbestus, which consists in mixing asbestus fibers with a suitable liquid—such as water—to form a plastic mass, then placing this plastic mass into a suitable mold, and finally exposing it to a high pressure.

2. As a new article of manufacture, a vessel or melting-pot prepared from fibrous asbestus.

330,172. GLASS-FLATTENING FURNACE. Cleon Tondeur, Canastota, N. Y. Filed Mar. 19, 1885. (No model.)

Claim.—1. A series of stationary bars, *d*, fixed in the tunnel, in combination with a movable set of bars, d', also in the tunnel or leer, as and for the purposes set forth.

2. The partition-walls d^2, placed beneath, and with or without the cross bars or beams d^3, and extending up to a close proximity to the bars *d* d', thus producing a limited passage or throat beneath the sheets on

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the bars *d d'*, and aiding the annealing of the glass by making annealing-spaces over which the sheets rest at intervals.

3. The partition-walls d^3, provided with the cross stationary bars d^3 on their tops, and supporting the same, whereby the bars *d*, clamped to the bars d^3, are kept at a uniform level in the tunnel or leer.

4. The partition-walls d^3, combined with the piping f^4, next to or near the throat whence comes the heat, whereby cool air is admitted to the annealing or resting spaces for the sheets of glass.

5. The transverse arches *v*, supported on transverse beams *v'*, which beams are placed in close proximity to the sheets of glass and to the tops of the transverse walls d^3, whereby division chambers or spaces are made in the leer suited to and in which the sheets of glass rest at intervals in their progress through the leer, diverse somewhat in temperature from each other.

6. The arches *v*, supported on transverse beams *v'*, which beams are placed in close proximity to the bars *d d'*, the hollow of which arches successively receive the heated air in a regulated series of cooling-temperatures, and hold or keep the heat on the sheets of glass on the bars as they progress through the leer.

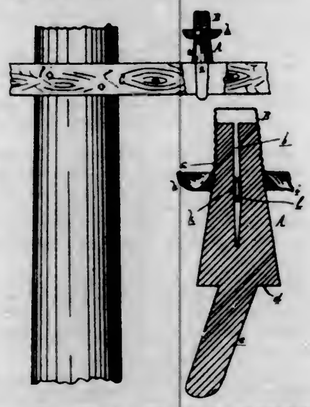
7. The narrow heat-admission throat, made by the flattening-chamber wall next to the flattening-wheel, and the cross-beam over it supporting the flattening hanging wall at that place, whereby a narrow-throat entrance is made between the flattening-wheel chamber and the leer for the admission of a limited amount of heat to the leer.

8. The outside piping, f^4, incasing the shaft *f*, and slotted to allow the arm *e'* to operate.

9. The combination of the inside hollow shafts with the outside piping, with or without perforations in the same.

10. A leer and a flattening-wheel chamber, with a straight continuous wall in one uniform line from the partition A^3, between the operating-holes, and thence onward to the end A^2 of the leer-wall, thereby uniting the chamber and leer for the direct approach of the glass-moving mechanism to and over the beds or stones, whence the glass is removed.

330,173. MEANS FOR SUPPORTING ELECTRICAL WIRES. John W. Trimmer, Windsor, Ontario, Canada. Filed Nov. 5, 1884. Renewed Sept. 10, 1885. (No model.)

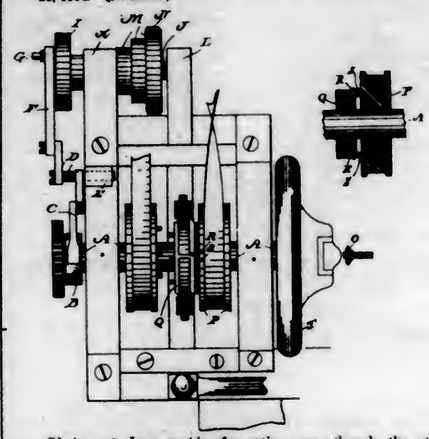


Claim.—1. In combination with a pole or other suitable support, the means for securing the wire to such support, which consists of a conically-shaped and bifurcated pin, the arms of which are constructed to approach each other, in combination with a cap made to fit over said pin and clamp the wire in a fixed position between the arms thereof, which cap is provided with a gutter to carry the water from said wire, substantially as described.

2. A support for electric wires, consisting of a conically-shaped, bifurcated, and exteriorly-threaded pin having a shank, in combination with a conical screw-cap constructed to screw on said pin and force the arms of the pin toward each other, substantially as and for the purposes specified.

3. The combination, with the pin A, of the cap B, terminating in an annular trough, A, the edge of which is provided with a spout, *i*, substantially as and for the purpose specified.

330,174. SCREW-CUTTING MACHINE. Nathaniel W. Vandegrift, Bridgeport, Conn., assignor to Frank Armstrong, same place. Filed Dec. 29, 1884. (No model.)



Claim.—1. In a machine for cutting screw-threads, the ratchet-wheel connected with the main shaft, in combination with a pivoted pawl adapted to be reciprocated upon the periphery of said wheel by the rock-arm, disk, and counter-shaft, substantially as set forth.

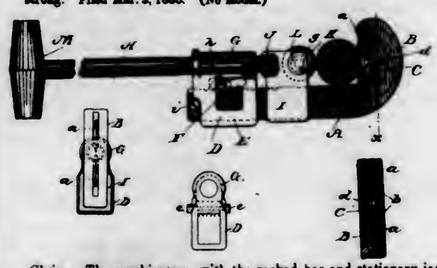
2. In a machine for cutting screw-threads, a ratchet and pawl clutch on the main shaft, and the ratchet-wheel also on said shaft, in combination with the reciprocating pawl and the operating mechanism thereof, substantially as described.

3. The combination, in a machine of the character described, of the shaft carrying the work and actuating the feeding mechanism with the feed-wheel connected thereto by a ratchet and spring-pawl connection, substantially as set forth.

4. In combination with the main shaft, connected to the feed-wheel as described, the ratchet-wheel mounted on said shaft, the reciprocating pawl, its connections, and the counter-shaft giving motion thereto, as set forth and shown.

5. The combination of shaft A, carrying the work and feed, and having ratchet S, with ratchet-wheel B, reciprocating pawl C, rock-arm D, connection F, disk I, carrying shoe G, and the counter-shaft J, all operating as described, and for the purpose set forth.

330,175. PIPE-CUTTER. Nathaniel W. Vandegrift and Frank Armstrong, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Filed Mar. 3, 1885. (No model.)



Claim.—The combination, with the racked bar and stationary jaw having cutters journaled therein, of the movable jaw and its cutter, the frame sliding on the bar behind the movable jaw, the rod threaded in and extending through the top of the frame and swiveled to the movable jaw, and the spring-actuated pawl pivoted within the frame and adapted to engage with the rack, all arranged as described, and for the purpose set forth.

330,176. BOOT OR SHOE. Marcellus Walker, Boston, Mass. Filed Aug. 10, 1885. (No model.)

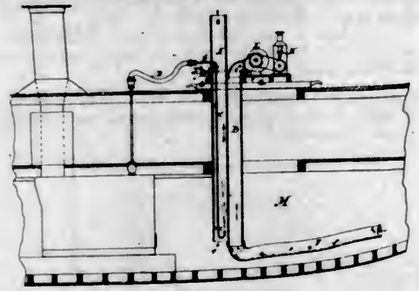
Claim.—1. A gaiter boot or shoe having an elastic goring, F, shaped, as shown, to cover the small of the leg at its back from the counter upward and also at each side, but back of the ankle-bones, and thence to project at each side, with an extension, H, under and to the front of the ankle-bones and below and in line with the instep, in combination with an upper of an inelastic material—such as leather—shaped and constructed to cover the remaining portions of the foot, and the whole secured together substantially as described, for the purpose specified.

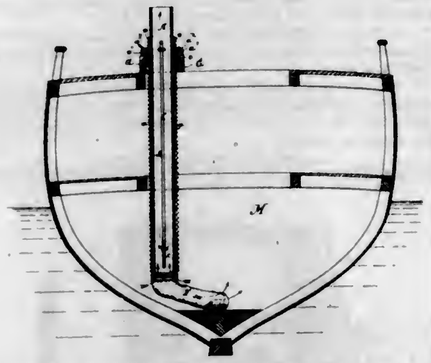
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2. A gaiter boot or shoe having an elastic goring, F, shaped, as shown, to cover the small of the leg at its back from the counter upward, and with an extension, H, at each side, but back of and crossing under the ankle-bones, and made wider on one side than on the other of the gaiter, in combination with an upper having a rear upward extension of inelastic material—such as leather—shaped and constructed to cover the remaining portions of the foot, and the whole attached together substantially as described, for the purposes specified.

330,177. PORTABLE VENTILATING APPARATUS. Robert E. Walsh, New York, N.Y. Filed Aug. 21, 1885. (No model.)





Claim.—In a portable ventilating apparatus, the combination of the box A and the box B, having the racks *a* upon their sides, with the frame G, carrying the pinions *a'*, shaft a^3, ratchet a^3, and pawl *o*, whereby the boxes A and B and their connections may be raised or lowered at will, substantially as herein shown and described.

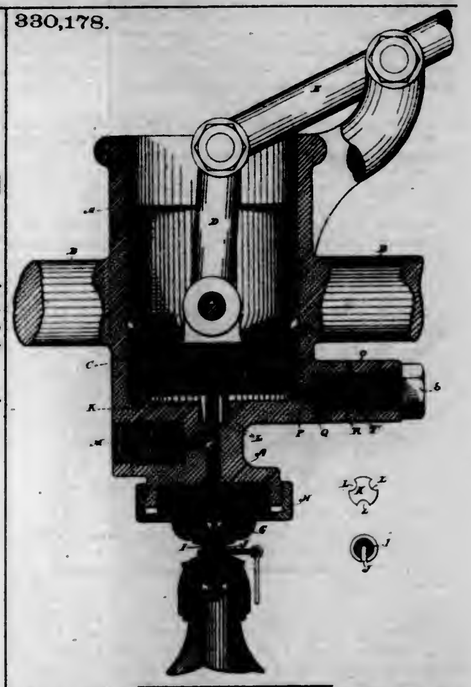
330,178. BOTTLING-MACHINE. Henry C. Walter, Bridgeport, Conn. Filed Dec. 3, 1884. (No model.)

Claim.—1. In a machine for filling bottles under pressure, the head A, containing an air-pump for exhausting the air from the bottle before filling the same, in combination with the slotted stem I, adapted to open and retain open the valve of said bottle while the air is being exhausted therefrom, as specified.

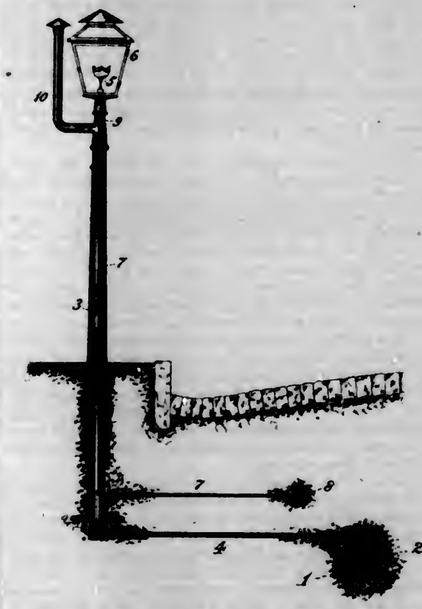
2. In a machine for bottling liquids under pressure, the head A, supported by the arms B, and containing an air-pump for exhausting the air from the bottle to be filled, in combination with the stem I, having the slot J, through which the air is exhausted and the bottle filled, the duct N, channel, and packing-ring G, substantially as described.

3. In a machine for bottling liquids under pressure, the air-pump, in combination with the valve K, duct N, channel F, slotted stem J, the upper end of which is threaded, the packing-ring G, and nut H, substantially as and for the purpose set forth.

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330,179. MEANS FOR DETECTING AND CARRYING OFF LEAKAGE FROM GAS-MAINS. Geo. Westinghouse, Jr., Pittsburg, Pa. Filed Oct. 8, 1885. (No model.)

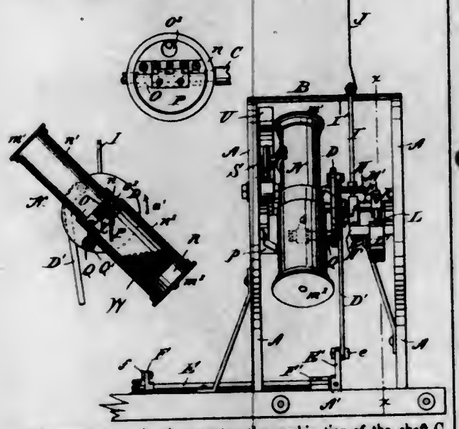


Claim.—1. The combination of an underground gas-main, a detector and escape pipe leading from a point adjacent thereto to the inside of a lamp-post, and a discharge-opening in said lamp-post external to the lamp thereof, substantially as set forth.

2. The combination of an underground gas-main, a detector and escape pipe leading from a point adjacent thereto to the inside of a lamp-post, and a discharge-pipe leading out of said lamp-post exterior to the lamp thereof, substantially as set forth.

3. The combination of an underground gas-main, a detector and escape pipe leading from a point adjacent thereto to the inside of a lamp-post, a partition interposed in said lamp-post between the delivery end of the detector and escape pipe and the lamp, and a discharge-pipe leading out of the lamp-post below said partition, substantially as set forth.

330,180. **AUTOMATIC BLOCK-SIGNAL FOR RAILWAYS.** Lewis B. White, New York, N. Y., assignor to the American Trades Agency Company, same place. Filed May 27, 1884. (No model.)



Claim.—1. In a signal apparatus, the combination of the shaft C, a disk, D, secured on the shaft and having a mutilated gear, G, and a pin, Q, secured to it, with a rod, D', connecting the disk with a lever adapted to be operated from a passing train, a cylinder, N, mounted to rotate on the shaft C, and resting below its axis on the pin Q, the signal-shaft I, and gear H thereon, adapted to be operated by the gear G, the cylinder N, consisting of two communicating compartments and having a counterbalancing material.

2. In a signal apparatus, the combination, with the shaft C, the disk D, rigidly mounted thereon and having the mutilated gear-wheel G, and the pin Q, connecting-rod D', adapted to rotate the disk, and the signal-shaft I, having gear-wheel H, operated by said gear G, of the divided cylinder N, loosely mounted on the shaft C and resting below its axis on pin Q, a counterbalancing material within the cylinder, a pin, S, on the outer surface of the cylinder, the pivoted counterbalanced arm T, resting on the pin S, and a stop to limit the movement of said arm, substantially as set forth.

3. In a signal, the combination, with the shaft C, the disk D, secured thereon and having the pin Q, and segmental gear G, of the signal-shaft I, having the gear H, adapted to be rotated by the said segmental gear, the reversible divided cylinder N, having a counterbalancing material therein mounted loosely on the shaft C and resting below its center on the pin Q, the hub K, mounted to partially rotate on the shaft C, the weighted arm L, secured to said hub, and a stop to limit the movement of said arm L, whereby in reversing the cylinder the weighted arm L will operate the signal-shaft through the medium of the disk, its gear, and the gear H, substantially as set forth.

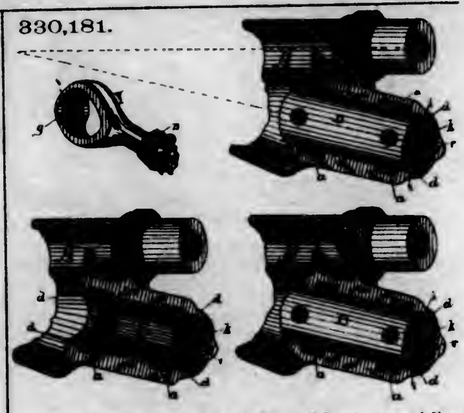
4. In a railway block-signal, the combination, with the cylinder N, formed of the sections n, n', and n^2, and the caps n' and n^2, of the weight R, held in one end of the cylinder, a transverse partition arranged in the middle of the cylinder and provided with two apertures of different sizes, a signal connected with the cylinder and adapted to be operated by the same, and connecting-rods and shafts for operating or throwing the cylinder by the action of a passing locomotive or train, substantially as herein shown and described.

5. In a railway block-signal, the combination, with the standard A, of the shaft C, the cylinder N, mounted loosely on the shaft and containing shot or other suitable material, the disk D, rigidly mounted on the shaft, the rod D', the shaft E, provided with the cranks F and E', the beveled cog-wheels G and H, the shaft I, the signal J on the top of the shaft I, the hub K, provided with a quadrant-slot, M, the screw M', passed through the quadrant-slot into the shaft, the arm L, formed on the hub K, and the weight L', held on the outer end of the said arm, substantially as herein shown and described.

330,181. **BEARING FOR HARVESTER-FRAMES.** William N. Whiteley, Springfield, Ohio. Filed Sept. 17, 1885. (No model.)

Claim.—1. A half-cylindrical or open seat for a cylindrical box or bush-bearing, constructed, first, as a cylindrical case, then bored out true and in proper line, and then the top or cap of said case broken away, as set forth.

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2. A frame, A, made with the hollow shell D and grooves *d d* longitudinally along the opposite side of the same, whereby the removal of the top or cap of said shell is facilitated.

3. A frame, A, made with the hollow shell D, and recesses *a a*, and grooves *d d*, whereby the seat for the bushing may be bored and the bushing secured by yokes, as set forth.

330,182. **PHOTOGRAPHIC-PLATE BOX.** Vincent M. Wilcox, New York, N. Y., assignor to E. & H. T. Anthony & Co., same place. Filed May 27, 1885. (No model.)

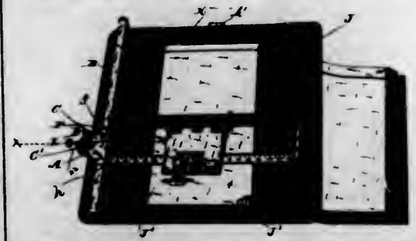


Claim.—1. In photographic-plate boxes, the adjustable and removable corrugated or notched spring-partitions, and adjustable and removable block or wedge G, substantially as described.

2. In photographic-plate boxes, the adjustable and removable corrugated spring-partitions having extended or widened sides E, as and for the purpose described.

3. In photographic-plate boxes, the adjustable and removable corrugated or notched spring-partitions normally longer than the interior dimensions of the box A, so as to adjust and retain themselves in position therein, as described.

330,183. **TYPE-WRITING MACHINE.** Timothy Wilkins, Sigourney, Iowa. Filed Nov. 14, 1884. (Model.)



Claim.—1. The combination of the fixed rack and the pinion connected with the type-writer carrying-frame, and fitted upon a loose spindle or shaft having a fixed collar entering a recess of said pinion, with the lever having a yoke or slot receiving and connecting with said spindle, substantially as shown, and for the purpose described.

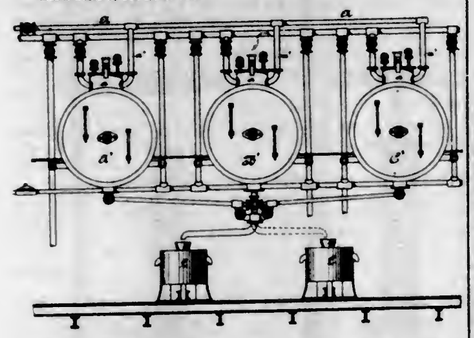
2. The fixed rack and the pinion engaging the rack mounted upon a loose spindle or shaft, and connected, substantially as described, with the type-writer carrying-frame, in combination with the frictional clutches fitted within a recess of said pinion and a knob to turn said spindle or shaft having pins engaging the clutches, substantially as shown, and for the purpose described.

3. The fixed rack, the pinion mounted upon a loose spindle or shaft carrying a knob or hub provided with pins or studs, and connected, substantially as described, with the type-writer carrying-frame, in combination with the frictional clutches disposed within a recess of said pinion, and having slots obliquely arranged to radii of the circle described by the outer edges of said clutches and receiving pins on the knob, substantially as shown, and for the purpose described.

4. The fixed rack, the pinion together with its loose spindle, and the frictional clutches having oblique slots, in combination with the knob or hub having pins or studs engaging said slots of the clutches, the holding and adjusting screw engaging a straight or flattened surface of the shank of said knob or hub, and the type-writer carrying-frame connected, substantially as described, to the spindle of the pinion, substantially as and for the purpose set forth.

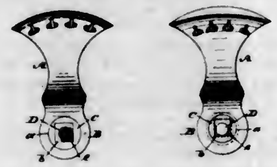
5. The combination, with the type-writer carrying-frame comprising rods and end bars, one having an overhanging hook, of the adjusting mechanism with its inclosing-case provided with a ledge having slots or notches in its ends, and the eccentric lever acted upon by a spring disposed in one of said end bars, substantially as and for the purpose specified.

330,184. **PROCESS OF BREWING BEER.** Conrad Zoeller, Frankfort-on-the-Main, assignor to the Actien Gesellschaft zur Einführung Technischer Neuheiten, Berlin, Germany. Filed Oct. 27, 1883. (No model.) Patented in Germany Nov. 15, 1882, No. 23,412; in France Feb. 9, 1883, No. 153,616; in Belgium Feb. 22, 1883, No. 60,536; in Italy Mar. 31, 1883, XXX, 437; in Austria-Hungary Apr. 21, 1883, No. 738; and No. 759; in Spain Nov. 7, 1883, No. 4,781; in England Apr. 15, 1884, No. 6,393; in Sweden July 15, 1884; in Norway Aug. 12, 1884, and in Denmark Sept. 1, 1884, No. 755.



Claim.—The improved process of brewing beer, which consists in depriving malt of its hulls and germs, then subjecting it with water to the saccharification temperature, then boiling the mash a sufficient length of time to coagulate the albuminous substances and render the same insoluble, then directly conducting the mash into a centrifugal machine for separating the clear wort from the insoluble substances, and finally passing the clear wort to a hop-kettle and boiling the same therein, substantially as herein set forth.

330,185. **TAIL-PIECE FOR VIOLINS.** Eugene J. Albert, Philadelphia, Pa. Filed Jan. 31, 1885. (No model.)



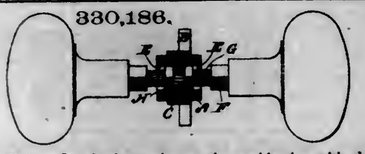
Claim.—1. A tail-piece for a violin or other similar musical instrument, having means, substantially as described, securing said tail-piece to the violin, said means being so arranged and combined as to permit both a lateral and vertical motion of said tail-piece, as stated.

2. A tail-piece for a violin or other similar musical instrument, provided with a circular opening, in combination with a rotary washer fitted in said opening, and a pin adapted to operate said washer, substantially as described.

3. A tail-piece for a violin or other similar musical instrument, provided with a circular opening, in combination with a rotary washer having an angular opening fitted in said circular opening, pin D, having a head, *c*, and a portion, *e*, of angular form, the said pin projecting eccentrically from said head, and the said angular portion *e* fitting in said angular opening of the washer, substantially as and for the purpose set forth.

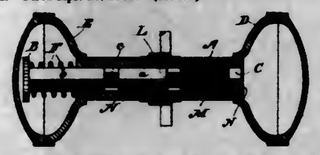
330,186. **KNOB ATTACHMENT.** Willston I. Alvord, Bridgeport, Conn. Filed Apr. 16, 1885. (Model.)

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Claim.—In a knob attachment, the combination, with the shanks provided with heads, as described, of a hub whose central longitudinal opening is as follows: in the center a recess within which one of the heads may turn, upon either side thereof a second recess formed by cavities in the walls and corresponding with said heads, and upon either side of the last-named recesses openings out through the ends of the hub, also corresponding in shape to the heads and having angles or corners coinciding with each alternate angle or corner of the recess next within, substantially as set forth.

330,187. **KNOB ATTACHMENT.** Willston I. Alvord, Bridgeport, Conn. Filed Apr. 16, 1885. (Model.)



Claim.—1. In combination with the latch-hub of a lock, the spindle having a shoulder at one extremity and a head at the other and extending, when the parts are in assembled position, through the knobs and hub, coil-spring between said shoulder and the inner knob-shank, and recess formed within the outer knob-shank, adapted to permit of the withdrawal of the spindle and at the same time affording an abutment for the head of the spindle, whereby the latter may be held against retraction, said spindle being adapted near its center to sustain the abutment of the inner knob-shank against the resiliency of the spring, all arranged and operating substantially as and for the purposes hereinbefore set forth.

2. The combination of the hub L, spindle A having at its extremities shoulder B and square head C, knob E, spring F, placed between said knob and shoulder, stop *a* on the spindle, against which the inner knob-shank may abut, and knob D, having through its shank an opening, H, square in cross-section, and at the outer mouth of said opening recess G, shaped like an eight-pointed star, four alternate angles of which are coincident with the angles of the opening, substantially as set forth.

330,188. **KNOB ATTACHMENT.** Willston I. Alvord, Bridgeport, Conn. Filed Apr. 16, 1885. (Model.)

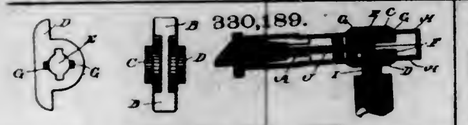


Claim.—1. In a knob attachment, the combination, with the knobs having recesses in their inner shank ends, of independent spring-actuated spindles having collars and heads, as described, the latch-hub having opening corresponding at the sides to the shape of the heads and enlarged at the central portion, and recesses formed in the inner end walls of said opening at the lateral edges of same, and adapted to contain said heads, substantially as described.

2. The combination of the knobs A, having in their shanks openings F and rectangular recesses E, extending from the outer lateral edges of said openings, spindles B, having shoulders D and heads H at their extremities, coil-springs C around said spindles and confined between the knob-shanks and the shoulder, collars G, formed integral with said spindles, bush J, provided with opening K, enlarged at the center and corresponding at its ends to said heads, and recesses formed in the end walls of the openings K, substantially as shown and described.

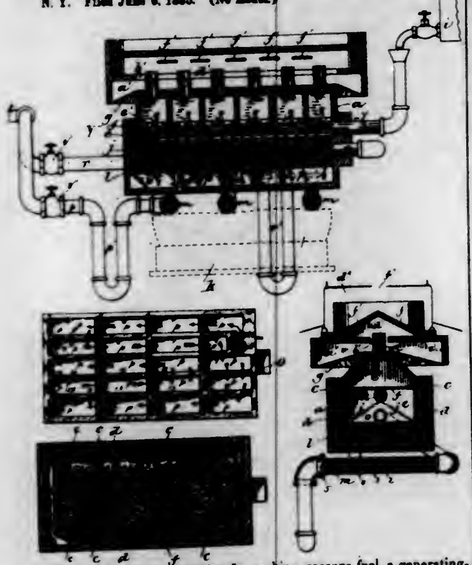
330,189. **KNOB ATTACHMENT.** Willston I. Alvord, Bridgeport, Conn. Filed Sept. 3, 1885. (No model.)

Claim.—The combination, with independent hubs located on opposite sides of the latch-shank and recessed, as described, and knob-shanks having heads adapted to be attached to said hubs within said recesses, of the latch, the body of the shank of which is interposed between said heads when the parts are in their assembled position, whereby the knob-shanks are secured in their positions against retraction, substantially as and for the purposes specified.



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330,190. APPARATUS FOR MAKING AND BURNING GASEOUS FUEL. RUSSELL P. ANDREWS, Medford, Mass., and HENRY DEYE, Albany, N. Y. Filed June 6, 1885. (No model.)



Claim.—1. In an apparatus for making gaseous fuel, a generating-chamber having oil-spreading devices therein, an oil-pipe above the spreader, and a pipe (for air or steam) entering the chamber below the spreader, and a mixing-chamber above said generating-chamber having apertures communicating with and for the ingress of external air, all combined substantially as stated.

2. In an apparatus for making and burning gaseous fuel, the combination, with the vaporizing-chamber having the oil-spreading devices, the steam-superheating devices, and the mixing-compartment for the steam and vaporized oil, of means, substantially as described, for supplying steam independently to the superheating devices and to the chamber below the oil-spreading devices, and a chamber in which air is mixed with the steam and vaporized oil, as set forth.

3. The steam-generating cylinder or casing having a central metallic core and surrounding layers of material pervious to water or steam, substantially as described.

4. The steam-generating cylinder or casing having a central metal core, and water-subdividing layers of asbestos cloth and wire-gauze around said core and within the water-containing space, as set forth.

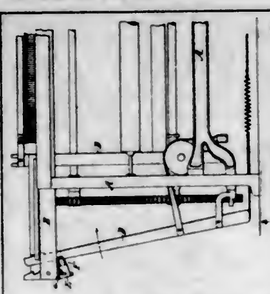
5. The combination of the casing in which vaporized oil and steam are mingled, said casing having delivery-tubes c', an external heater below said casing, a chamber over said casing formed to receive heated air which is caused to ascend by the heater, and having an opening for receiving the delivery-tubes, but larger than the latter, so as to permit air to pass around them, and a mixing-chamber which receives the gases, vapors, and air, and is provided with burners or openings in its top, as set forth.

330,191. PICKER-STAFF CHECK FOR LOOMS. THOMAS A. ANDERSON, Lancaster, Pa., assignor of one-half to John Adam Burger, same place. Filed Oct. 31, 1884. (No model.)

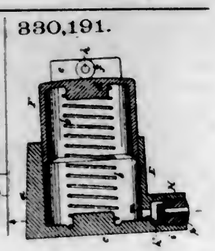
Claim.—1. The combination of the lathe and picker-staff of a loom with a cushioning device consisting of a piston, F, a cylinder, E, secured to the lathe and having an opening or openings for the admission of air to and its expulsion from the cylinder, and a retractor for returning the piston to its normal position, substantially as set forth.

2. The within-described cushioning device, the same consisting of the cylinder E, constructed for attachment to the lathe of a loom, and having a regulating-valve, G, the piston F, and spring *b*, all being combined substantially as described.

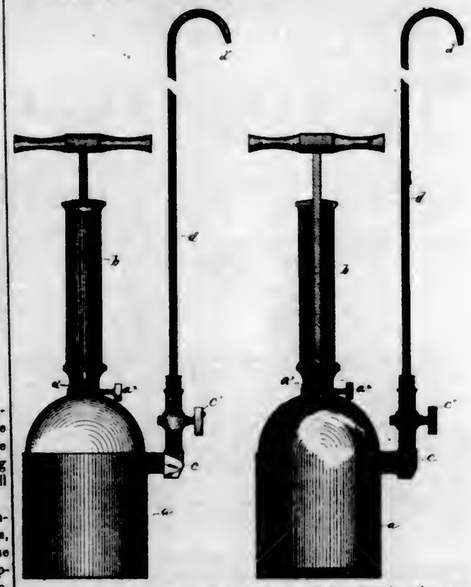
3. The within-described cushioning device, the same consisting of the cylinder E, constructed for attachment to the lathe of a loom, and having a regulating-valve, G, and inlet-valve H, the piston F, and spring *b*, all being combined substantially as specified.



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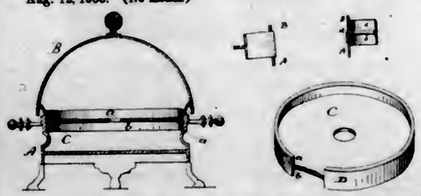


330,192. LUBRICATOR. HARRISON A. ANDREWS, Conneaut, Ohio. Filed July 2, 1885. (No model.)



Claim.—A lubricating device consisting of the following elements, in combination: a reservoir having a dome-shaped top terminating in a nipple, a plug-valve located in said nipple, a pump-valve registering with and secured directly to the mouth of the nipple, an outlet-pipe projecting laterally from and forming an integral part of the reservoir, a discharge-pipe connected with said outlet-pipe, and a stop-cock located in the base of the discharge-pipe, the parts being arranged and operating substantially as shown and described.

330,193. BUTTER-DISH. S. WILLIAM BARNETT, Meriden, Conn. Filed Aug. 12, 1885. (No model.)

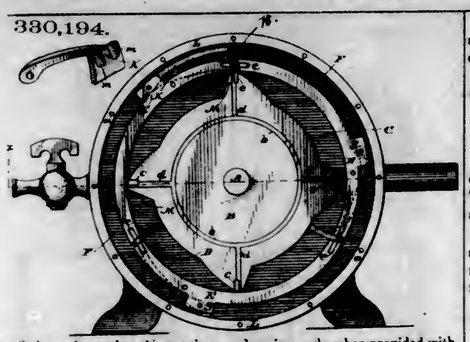


Claim.—A butter-dish consisting of a body and a cover, combined with a removable reversible metal plate, the said plate constructed with an annular cylindrical rim around its edge, projecting alike on both sides, the plate adapted to be supported in the dish, substantially as described.

330,194. ROTARY MOTOR. EBEN R. BALDWIN, Cortland, N. Y. Filed May 9, 1885. (No model.)

Claim.—1. A rotary motor consisting of an outer casing having a motive-fluid-entrance port, an inner hollow cylinder provided with equidistant openings, recessed cut-off gates pivoted between the casing and

330,194.



cylinder and entering the openings, and an inner chamber provided with a revolving cylinder having lug projections, and with escape-ports, substantially as described.

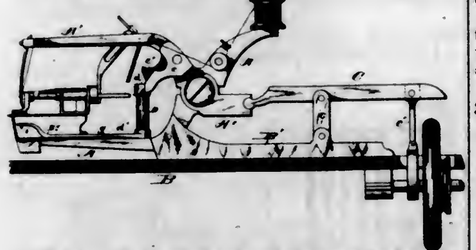
2. A rotary motor having a cut-off gate provided with depressed ports extending part way of its length, and a smooth surface for the remaining portion, substantially as described.

3. A rotary motor having recessed cut-off gates, as K *m*, in combination with the subdivided cylinder E, and the spring-seated packing-plates *c*, arranged and adapted to serve with the rotating cylinder and shell, as set forth.

4. The cylinder B, having eccentric lugs M, with spring-seated plates *c*, combined with the subdivided cylinder E, having spring-seated plates *c*, the gates K, having concaves or recesses *m*, and the exterior shell, as set forth.

5. The combination, with the shell A, having inlet G, cylinders E, subdivided as shown, and having lugs *g*, of the pivoted gates K, having recesses *m*, the revolving cylinder B, having eccentric lugs M, of greater number than the gates, and carrying spring-seated plates *c*, and the exhaust provisions D H, all arranged and serving as and for the purposes set forth.

330,195. SEWING-MACHINE. ADDI M. BARBER, Bridgeport, Conn. assignor to the American Hand Sewing Machine Company, New York, N. Y. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination of a pair of levers of the first order, stitch-forming mechanism, means for clamping one lever to a support or table, a vibrating arm for operating the other lever, and a treadle for operating the vibrating arm, substantially as described.

2. The combination of a pair of levers of the first order pivoted together, stitch-forming mechanism, means for clamping one lever to a support or table, a vibrating arm for operating the other lever, and a treadle-driven shaft for operating the vibrating arm, substantially as described.

3. The combination, in a sewing-machine whose stitch-forming mechanism is mounted upon and operated by two levers of the first order pivoted together, of a holder for clamping one lever to the table, a vibrating arm for operating the other lever, and a link for supporting the vibrating arm, substantially as described.

4. The combination, in a sewing-machine, of a pair of levers of the first order pivoted together, and a vibrating looper driven by an oscillating lever which is operated by the relative movement of the levers, substantially as described.

330,196. ASPHALTIC MASTIC. ADDI L. BARBER, Washington, D. C., assignor to the Barber Asphalt Paving Company, same place. Filed Dec. 23, 1883. Renewed Oct. 3, 1885. (No specimens.)

Claim.—1. As a new article of manufacture, a block composed of pulverized limestone, refined Trinidad asphaltum, and residuum of petroleum or its described equivalent, as set forth.

2. An asphaltum mastic composed of refined Trinidad asphaltum, residuum of petroleum or heavy petroleum-oil, and pulverized and ground limestone, combined in the manner and in the proportions set forth.

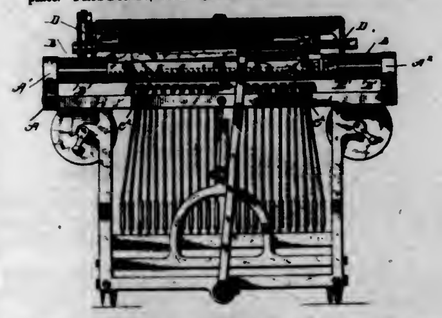
3. A paving composition consisting of an asphaltic cement, such as described, pulverized and ground limestone, and small gravel or grit, combined in the manner and in substantially the proportions set forth.

330,197. ASPHALTIC CEMENT FOR PAVING, ROOFING, &c. ADDI L. BARBER, Washington, D. C., assignor to the Barber Asphalt Paving Company, same place. Filed July 21, 1884. Renewed Oct. 3, 1885. (No specimens.)

Claim.—1. A cement or compound for paving and roofing purposes, composed of Trinidad or similar hard asphalt reduced and combined with Trinidad, Mexican, Venezuelan, or other naturally liquid or soft asphalt, as set forth.

2. A paving or roofing composition consisting of Trinidad or other similar asphalt combined with Trinidad, Mexican, Venezuelan, or other naturally soft or liquid asphalt, sand, and pulverized limestone, as set forth.

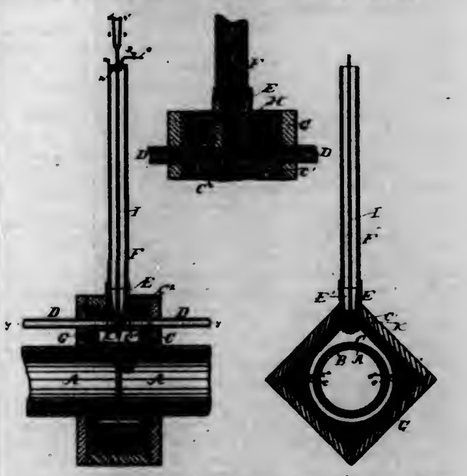
330,198. TYPE-WRITING MACHINE. WALTER J. BALDWIN, New York, N. Y., assignor to the American Writing Machine Company, same place. Filed Dec. 13, 1884. (No model.)



Claim.—1. The yoke C, provided with forked lugs C^1 on the under side and adjoining the ends thereof, in combination with two parallel guide-rods, B and B', rigidly attached to standards upon the main frame of a type-writing machine, and a paper-carriage, substantially as and for the purpose described.

2. Two parallel guide-rods, B and B', rigidly connected to the main frame of a type-writing machine, in combination with a sliding yoke provided with perforations a' and a^2, and grooved lugs C^2 at each end, and a paper-carriage, substantially as and for the purpose described.

330,199. MEANS FOR DETECTING LEAKAGE IN GAS-MAINS. HARVEY BARTLEY, Pittsburg, Pa. Filed Sept. 21, 1885. (No model.)

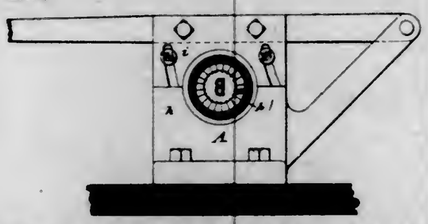


Claim.—1. In a device for detecting leakage at the joints of gas-mains, the combination, with a joint of the main line and a casing surrounding said joint having a ridge on top, a horizontal opening running through said ridge and adapted to receive the ends of escape-pipe sections, of a tapering vertical opening running through from the interior of the casing to the exterior of the ridge, and a tapered plug adapted to close said vertical opening, substantially as described.

2. In a device for detecting leaks at the joints of gas-mains, the combination, with a casing surrounding the joint of the main and having horizontal passage in its wall communicating with the ends of escape-pipe sections, and a vertical passage leading from the interior of the casing through the horizontal passage, of a plug having grooves or openings from its top to its bottom, and adapted to fit said vertical passage and cut off communication between it and the horizontal passage and between the sections of the escape-pipe, while allowing communication between the vertical passage and the casing, substantially as described.

3. The combination, with the casing C, having the horizontal passage C^3 and the tapering socket E, of the tapering plug-valve K, adapted to fit said socket, and having vertical grooves or openings *k k*, substantially as described.

330,200. APPARATUS FOR SHAPING AND FINISHING CANDLES. Anton F. Bauer, Syracuse, N. Y. Filed July 10, 1885. (No model.)



Claim.—1. An apparatus for shaping candles, comprising a tubular holder for embracing the body of the candle, a die at one end of said holder, and a plunger in the opposite end of the same, substantially as set forth and shown.

2. The combination of the tubular candle-holder, dies at opposite ends of said holder, and a plunger carrying one of said dies, as and for the purpose specified.

3. The combination of the tubular candle-holder, a conical die at one end of said holder, a die at the end of the conical die, and a plunger in the opposite end of the bolder.

4. The combination of the tubular candle-holder, a conical die at one end of said holder and corrugated longitudinally to taper and corrugate the foot of the candle, a concaved die in the opposite end of the holder to taper the top of the candle, and a plunger carrying one of said dies, substantially as set forth and shown.

5. The combination, with the tubular candle-holder, of plungers at opposite ends thereof, as set forth and shown.

6. The combination of the stationary die *a*, the tubular holder *b*, removably applied to the end of said die, the die *c* at the opposite end of the die *a*, the plunger *d* in the holder, and the die *s* on the inner end of the plunger, substantially as described and shown.

7. The combination of the stationary die *a*, the tubular holder *b*, the die *c* at one end of said holder, plunger *f*, attached to said die, the spring *g*, for holding said plunger in its normal position, the die *a* in the opposite end of the holder, and the plunger *d*, carrying said die, substantially as set forth and shown.

8. The combination of the frame A, the die *a*, seated in said frame, the guide *h* and gate *i* on one side of said frame, the die *c* on the opposite side of the same, the tubular holder *b*, having one end seated removably between the guide *h* and gate *i*, and the plunger *d* in the opposite end of the holder, substantially as described and shown.

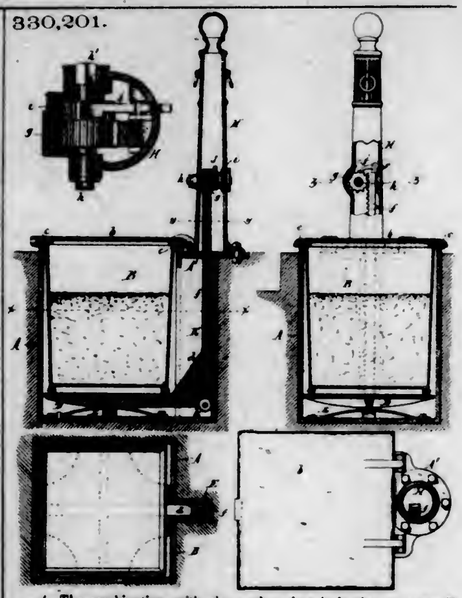
330,201. ASH OR GARBAGE RECEPTACLE. William Rayner and A. Ralph Clark, Buffalo, N. Y. Filed Dec. 15, 1884. (No model.)

Claim.—1. The combination, with the sunk casing A, of a vertically-movable support, D, arranged in said casing, a removable receptacle, B, resting on said support, a vertical lifting-bar connected at its lower end with the support D and projecting upwardly through and above the sunk casing, and a column, H, inclosing the upper portion of the lifting-bar and arranged above the ground, and secured with its lower end to the top of the sunk casing, substantially as set forth.

2. The combination, with the sunk casing A, of a vertically-movable support, D, arranged in said casing, a removable receptacle, B, resting on said support, a vertical rack-bar, *f*, connected at its lower end with the support D and projecting upwardly through and above the sunk casing, a column, H, inclosing the upper portion of the rack-bar and arranged above the ground, and secured with its lower end to the top of the sunk casing, a gear-pinion, *g*, and ratchet and pawl *i j*, mounted in the column H, substantially as set forth.

3. The combination, with the sunk casing A, of the removable receptacle B, movable platform D, the lifting mechanism connected therewith, and an elastic cushion, I, arranged between the bottom of the casing and the movable platform to receive the impact of the latter, substantially as set forth.

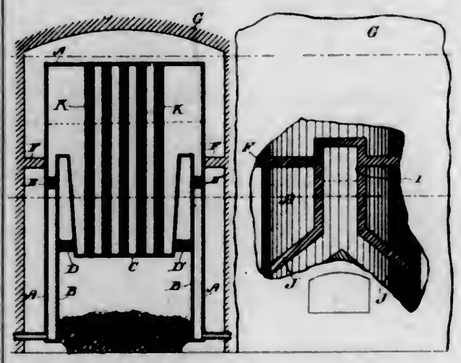
330,201.



4. The combination, with the sunk casing A, having a recess, E, on one side, and the removable receptacle B, of the movable support D, and mechanism, substantially as described, for raising and lowering said support, and arranged in the recess E and extending upwardly above the sunk casing, substantially as set forth.

5. The combination, with a sunk casing, A, having a recess, E, provided on its inner side with vertical grooves *n*, of the removable receptacle B, movable support D, column H, provided with ribs *m*, entering the grooves *n*, and mechanism, substantially as described, whereby the support D is raised and lowered, substantially as set forth.

330,202. TUBULAR BOILER. John C. Benjamin, Bridgeport, Conn. Filed Apr. 16, 1885. (No model.)

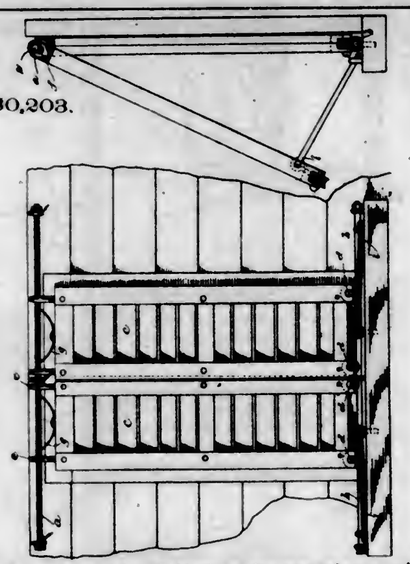


Claim.—1. In a tubular boiler, the combination, with an outer inclosing-shell, of an inner shell extending upward within the former and then downward and forming the bottom of the boiler, a wall inclosing the boiler, horizontal partition between the outer shell and said wall, vent in said partition, and wings at the bottom of the boiler and extending directly to the chimney, substantially as set forth.

2. The combination of the outer shell, A, inner shell, B, extending upward and then downward within the former, conduits D D′ between the two portions of the inner shell, conduits E E′, communicating from the inner shell to the space without the outer shell, wall G, inclosing the said space, partition F between the said wall and the shell A, vent H in said partition, and wings J, arranged between the wall and said shell, and underneath which the smoke and gas may escape to the chimney, substantially as specified.

330,203. WINDOW-BLIND. Samuel R. Benner, Dedham, Mass. Filed Sept. 10, 1885. (No model.)

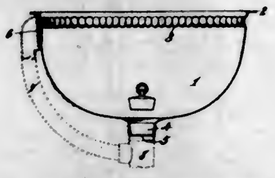
330,203.



Claim.—1. A window-blind having at its upper end eyes *e*, with elongated slots *f* and springs *g g*, adapted to exert upward pressure, and at its lower end grooved rollers *d d*, as set forth.

2. The combination of the rods or tracks *a b*, affixed to the side of a building, the blinds having at their lower ends grooved rollers adapted to run on the lower track and at their upper ends the slotted eyes adapted to run on the upper track, and the springs *g g*, pressing upwardly against the upper track, whereby the blinds are adapted to be raised to disengage their rollers from the lower track, and means, substantially as described, for holding the blinds in inclined position, as set forth.

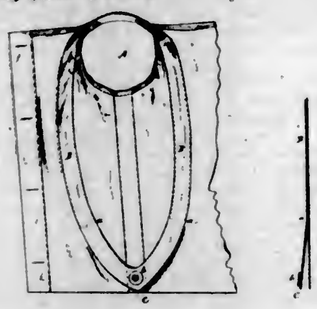
330,204. BASIN OR TUB. Charles A. Burrows, Philadelphia, Pa. Filed June 15, 1885. (No model.)



Claim.—1. A metallic basin or tub in which the outlet is provided with a strainer formed integral with a depending tubular neck and with the bottom wall of the basin or tub, said neck being adapted to enter and be secured in an outlet-pipe, substantially as described.

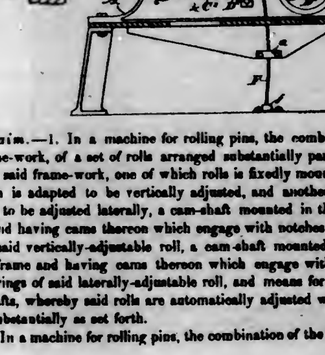
2. A metallic basin or tub in which the outlet is provided with a strainer formed integral with a depending tubular neck and with the bottom wall of the basin or tub, the latter being also formed integral with an outwardly-drawn perforated overflow, substantially as shown and described.

330,205. UNDERWAIST. Charles N. Chadwick, Brooklyn, N. Y. Filed July 1, 1885. (No model.)



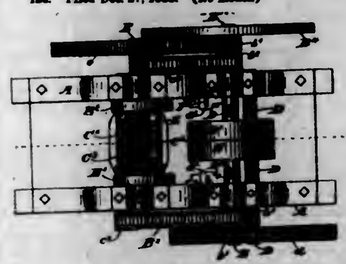
Claim.—A waist having a band, B, extending from front to rear over the shoulders, down, and terminating in substantially V shape at the bottom, provided at the apex with a fastening device, and attached to the waist from points at the front and rear up over the shoulder, but disconnected from the waist from said points downward, and substantially as described.

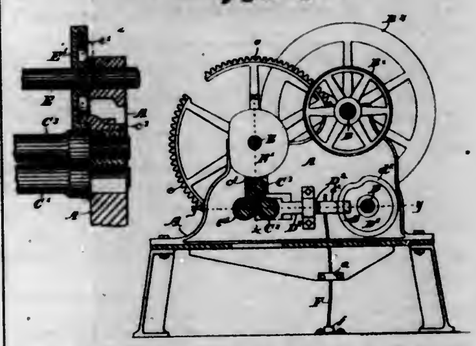
330,206. CHAIR. Lemuel A. Chichester, Phœnicia, N. Y., assignor to the Chichester Chair Company, same place. Filed June 27, 1885. (No model.)



Claim.—A chair with the end of one of its arms provided with a slot, E, a notch, *b*, and combined with a table, B, constructed with a projection, D, on one side of the same, so that said projection may enter within said slot, and a spring, F, beneath said projection, as and for the purpose described.

330,207. MACHINE FOR MAKING CAR-COUPLING PINS. Major Collins, Brazil, assignor of one-half to Dolson W. Minshall, Terre Haute, Ind. Filed Dec. 27, 1883. (No model.)





Claim.—1. In a machine for rolling pins, the combination, with the frame-work, of a set of rolls arranged substantially parallel to each other in said frame-work, one of which rolls is fixedly mounted, another of which is adapted to be vertically adjusted, and another of which is adapted to be adjusted laterally, a cam-shaft mounted in the top of the frame and having cams thereon which engage with notches in the bearings of said vertically-adjustable roll, a cam-shaft mounted at one end of said frame and having cams thereon which engage with notches in the bearings of said laterally-adjustable roll, and means for driving said cam-shafts, whereby said rolls are automatically adjusted when in operation, substantially as set forth.

2. In a machine for rolling pins, the combination of the frame-work,

a set of rolls, C' C² C³, a shaft, D, cams D' thereon, connecting-bars D², and means for driving the machine, one of said rolls, C³, being journaled in bearings in the end of said bars D², and said bars D² being adapted to be operated by said cams D' on the shaft D, substantially as described, and for the purposes specified.

3. The combination, in a machine for rolling pins, of the driving-shaft B, the rolls C' C² C³, the shaft D, mounted in the frame A and driven from the shaft B, and the cams D', mounted on said shaft D, which are connected with the shaft of the roll C² by means of the bars D², said bars D² having bearings in which said roll C² is journaled, whereby said roll is adapted to be moved toward and from the other rolls at each revolution of said cams and the pin allowed to drop from between said rolls upon the carrier beneath, substantially as set forth.

4. The combination, in a machine for rolling pins, of the frame-work, the rolls C' C² C³, the shaft E, having cams E' mounted thereon, said cams E' being provided with annular flanges e', which engage with sliding bearings c^3, in which the roll C³ is mounted, and said sliding bearings c^3, whereby said roll C³ is drawn up from the other rolls at each revolution of the cams E' and a pin-blank allowed to be introduced between the rolls, substantially as set forth.

5. In a machine for rolling pins, the combination of the roll C', the shaft E, having cams E' mounted thereon, and provided with annular flanges e', which engage with the sliding bearings c^3, in which said roll C³ is journaled, one side of said cams being formed flat and the remaining portion being a circle, the center of which is to one side of the center of the shaft, and appropriate mechanism for driving the machine, substantially as described, and for the purposes specified.

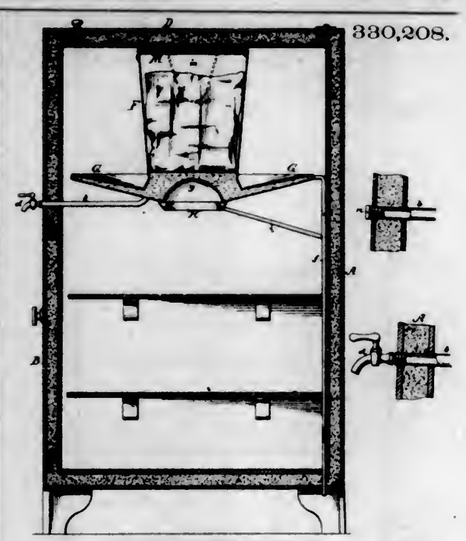
6. The combination of the roll C³, mounted in vertically-adjustable bearings, the shaft E, and cams E', mounted thereon, each of said cams having a rim, e', which engages with a notch in the corresponding adjustable bearing, said cams being also formed with a gradually-increasing radius, whereby after they have raised said roll they force it down gradually, substantially as described, and for the purposes specified.

7. The combination, in a machine for rolling pins, with the roll C³, journaled in bearings in one end of the bars D², of the shaft D, having cams D' mounted thereon which engage with the other end of the bars D², and the springs F, which engage with the bars D², and are adapted to force them against the cams D', substantially as described, and for the purposes specified.

8. The combination, in a machine for rolling pins, with the roll C³, journaled in bearings in one end of the bars D², of the shaft D, having cams D' mounted thereon, said cams being provided with annular flanges d' on one side which fit into notches in the other end of said bars D², whereby the roll C³ is adapted to be operated back and forth at each revolution of the cams, substantially as described, said for the purposes specified.

9. In a machine for rolling pins, the combination of the frame A, driving-shaft B, carrying the belt-pulleys B', by which the machine is driven, and the chain-wheels b' b^2, by which through chain-belts the rolls C' and C² are driven, the rolls C' C² C³, the shaft D, carrying the cams D', which engage with the bars D², in which the roll C³ is journaled, and the shaft E, carrying cams E', which engage with the sliding bearings c^3, in which the roll C³ is journaled, with appropriate gear for connecting said shafts with the main or driving shaft, substantially as set forth.

330,208. REFRIGERATOR. JOSIAH D. COLONY, Philadelphia, Pa. Filed July 2, 1885. (No model.)



330,208.

Claim.—1. The combination of the ice-receptacle of a refrigerator, having an ice-supporting shelf above the bottom, with an overflow-pipe, whereby the water in the bottom of the receptacle is prevented from rising onto the ice upon the shelf, as set forth.

2. The combination of the ice-receptacle having a supporting-shelf above the bottom, an overflow-pipe for preventing the rise of the water onto the ice, and a drain-pipe and spigot for drawing off the water from the lower portion of the receptacle, as specified.

3. The combination of the ice-receptacle with a projecting hollow base, G, forming an extended water-chamber at the bottom of the receptacle, as set forth.

4. The combination of the ice-receptacle having a central recess, *g*, in the bottom with the projecting hollow base G, as specified.

5. The combination of the ice-receptacle and its supporting-shelf, the overflow-pipe, and the drip-catcher H, communicating with said pipe, as specified.

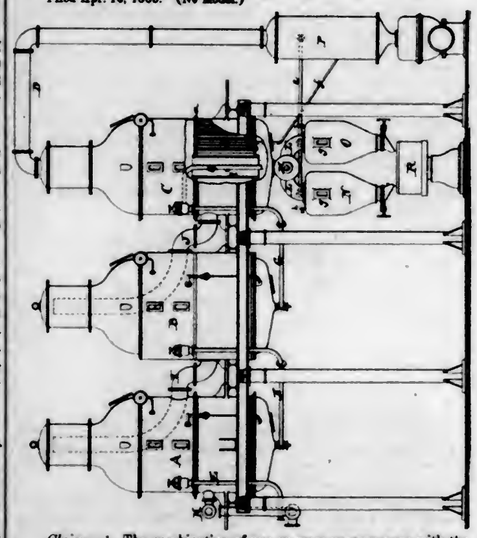
6. The combination of the ice-receptacle of the refrigerator with the drain-pipe having its outer end threaded internally for the reception of a spigot or stop-plug, as set forth.

7. The ice-receptacle F, having recesses in its opposite sides for the reception of the ice-carrying tongs, as set forth.

8. The combination of the ice-receptacle having recesses in its opposite sides, with the lid having side wings for closing said recesses, as specified.

9. The combination of the ice-receptacle F, having recesses for the reception of the ice-tongs, with an overflow-pipe, whereby the water is prevented from rising in the receptacle to said recesses, as set forth.

330,209. VACUUM-PAN. AUGUSTUS W. COLWELL, New York, N. Y. Filed Apr. 10, 1885. (No model.)



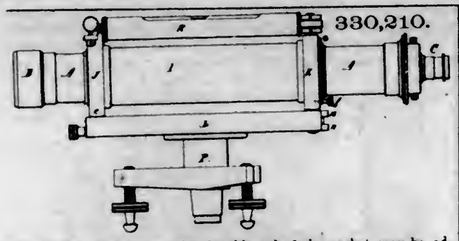
Claim.—1. The combination of one or more vacuum-pans with the forked discharge-pipe L, cock M, and receiving-vessels N O, all arranged to allow either one of the receiving-vessels to be brought in communication with the pan, as specified.

2. The combination of the vacuum-pan C with the vapor-inlet pipe J, diaphragms *a b*, and circulating-pipes *d* d^2, with the brine-inlet pipe G, forked brine-discharge pipe L, having cock M, receivers N O, air-cocks h h, pipes *e f*, vacuum-pipe D, and condenser P, substantially as herein shown and described.

330,210. ENGINEER'S REVERSIBLE LEVEL. CHARLES F. COOKE and THOMAS COOKE, York, England. Filed June 8, 1885. (No model.) Patented in England Sept. 9, 1884, No. 12,175.

Claim.—1. The combination, in an engineer's level, of the base-piece, the telescope, and the elongated tubular socket, made to fit and receive the telescope and mounted at its ends upon the base-piece, and provided also with means, substantially as described, whereby one end of said socket may be adjusted vertically on the bed-piece, and clamped fast thereto when adjusted, substantially as set forth.

2. The combination, in an engineer's level, of the base-piece and the socket for the telescope, comprising two collars, J and K, rigidly connected by a tube, I, one of said collars being pivotally connected to the base-piece, and the other being adjustably connected to the base-



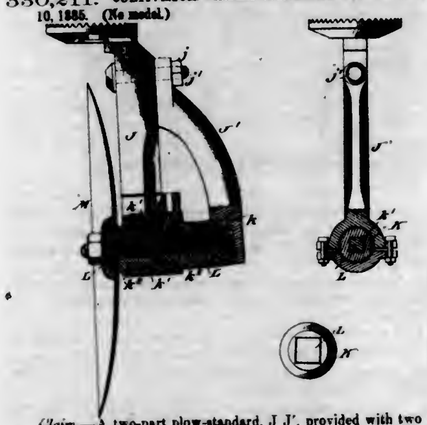
330,210.

piece by a nut and screw, whereby this end of the socket may be adjusted vertically and clamped fast, substantially as set forth.

3. The combination of the telescope provided with the base-piece L, the tubular socket for the telescope, comprising the collars J and K and the tube I, the nuts and screws for connecting the collar K to the base-piece and for effecting its vertical adjustment, and the screw *d*, for securing the rounded or convex base c of collar J to the base-piece, substantially as set forth.

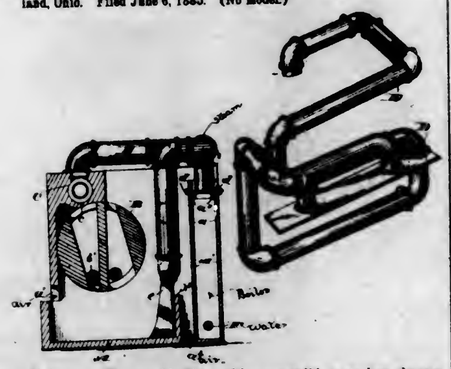
4. The combination, with the base-piece, of the tubular socket for the telescope, constructed substantially as described, and mounted adjustably on the base-piece, and the sensitive-bubble tube R, mounted on the top of the said socket, substantially as and for the purposes set forth.

330,211. CULTIVATOR. ALFRED COX, Jamestown, N. J. Filed Jan. 10, 1885. (No model.)



Claim.—A two-part plow-standard, J J', provided with two bearings, of which one has a detachable part, in combination with a hollow two-collared axle, K, and a square end-threaded bolt, L, whereby a disk-plow may be clamped to and made to turn with its axle, as described.

330,212. PETROLEUM-BURNER. ELIAS B. DE LA MATYR, Cleveland, Ohio. Filed June 6, 1885. (No model.)



Claim.—1. The combination, with a reversible petroleum-burner, substantially as indicated, of a steam-generator and superheating-coil connected with the generator arranged to supply superheated steam to the burner, substantially as set forth.

2. The combination, with a reversible petroleum-burner, substantially as indicated, of a distributing-chamber located above the burner for discharging the contents of the chamber at different points into the burner, substantially as set forth.

3. The combination, with a casing, a steam-generator located within the casing, and a cover removably secured to said steam-generator, of a petroleum-burner located within the casing, and a pipe connected with the removable cover for conveying steam to the burner, substantially as set forth.

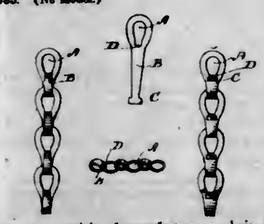
4. The combination, with a casing, the steam-generator located within the casing, a water-inlet pipe connected with the steam-generator, a cover loosely mounted on the steam-generator, and the removable keys for holding the cover in position, of a petroleum-burner and a steam-pipe connected with the steam-generator through the removable cover, for conveying steam to the burner, substantially as set forth.

330,213. HITCHING-STRAP CLAMP. LEVI L. DEWEESE, Canton, Ohio. Filed Sept. 15, 1884. (No model.)



Claim.—The herein-described hitching-strap clamp, comprising the side pieces, A A, cross-bars B, C, D, E, F, and H, located as described, and the cam-lever G, pivoted on cross-bar H and operating to hold the strap in the manner set forth.

330,214. METAL CHAIN. FREDERICK EGGE, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed Apr. 16, 1885. (No model.)



Claim.—As a new article of manufacture, a chain formed of a series of elongated links having eyes at one end and terminating in a shank at the other end, the shank of each link being passed through the eye of the adjacent link and bent back and secured within the opening in its own stock.

330,215. PROCESS OF COLORING, EMBELLISHING, AND DISCHARGING COLOR IN THE MANUFACTURE OF PAPER. ISAAC ELLIS and MELVIN I. ELLIS, Norwood, Mass. Filed July 31, 1885. (No model.)

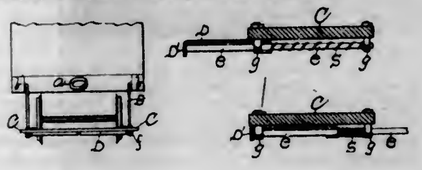


Claim.—1. The herein-described process of imparting a design to paper after it passes from the coucher and before it arrives at the calender-rolls in the process of manufacture, substantially as described.

2. In a paper-making machine, the roller F, engraved with any desired design and running in a tank, H, in which coloring fluid is kept at a proper level, the same being placed between the coucher and calender-rolls, substantially as shown and described.

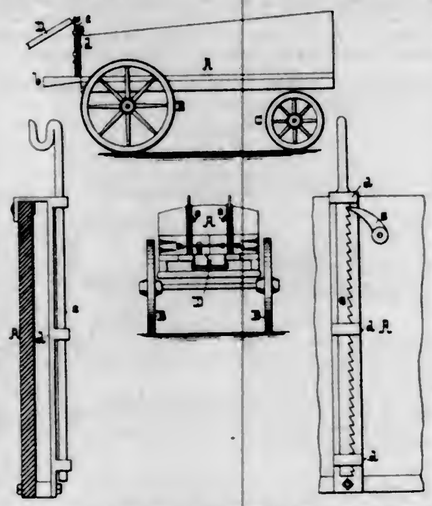
3. The combination of the roller F, tank H, reservoir I, supply-pipe J, and a ball-cock, K, in a paper-making machine, for imparting designs to the paper as it passes from the coucher B to the calender-rolls E in the process of manufacture, substantially as described and shown.

330,216. FREIGHT-CAR PLATFORM. ARTHUR C. FERGUSON, Saratoga Springs, N. Y., assignor to the Ferguson Platform and Life-Bridge Company, same place. Filed Aug. 13, 1885. (No model.)



Claim.—A freight-car platform formed of a fixed part, C, and a sliding part, D, in combination with rod *e*, eyebolts *g*, and springs S, whereby the platforms of two coupled cars will automatically adapt themselves to any distance apart of the two cars, as described.

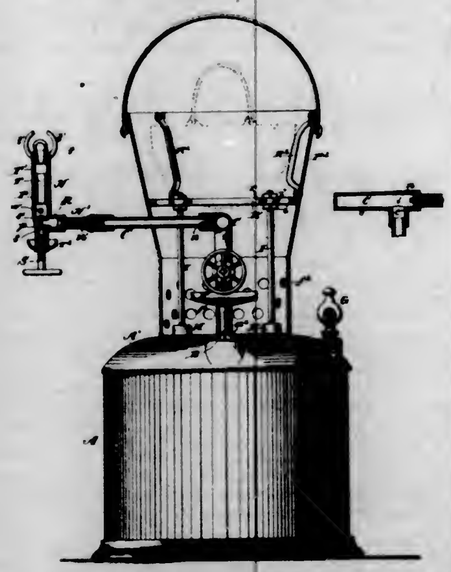
330,217. COAL-CART. THOMAS FINNERTY, Baltimore, Md. Filed July 6, 1885. (No model.)



Claim.—1. In combination with the body of a coal-cart, a pair of hooked rods attached thereto and adapted for adjustment in height, substantially as and for the purpose specified.

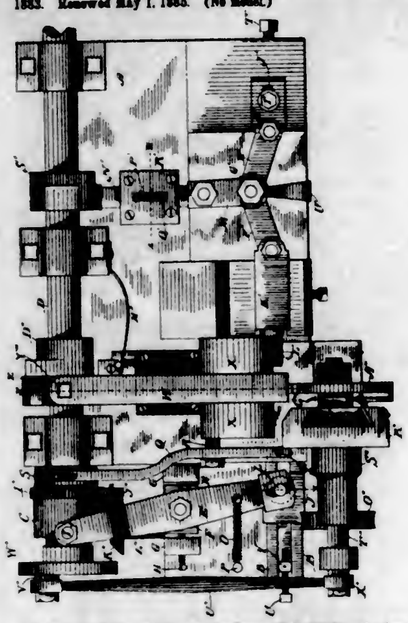
2. In combination with the body of a coal-cart, the stands *d*, removable hooked and notched bars *c*, and pawls *e*, substantially as and for the purpose specified.

330,218. PORTABLE FURNACE FOR TINNERS. PETER J. FITZGERALD, Philadelphia, Pa. Filed Aug. 17, 1883. (No model.)



Claim.—A portable furnace for plumbers' and tinners' use, composed of an oil reservoir or cistern, A, having cover A', an oil-supply pipe, B, having retort C and burner, the uprights I I I, detachable hood I^4, having an inner ring with lugs which engage with said uprights, and vertical ribs R^2, arranged upon said ring to support a melting-kettle, substantially as described.

330,219. WIRE-NAIL MACHINE. JOHN S. FOLLANSBEE, Bridgeport, Conn., assignor to the New York City Wire Nail Company. Filed Sept. 6, 1883. Renewed May 1, 1885. (No model.)



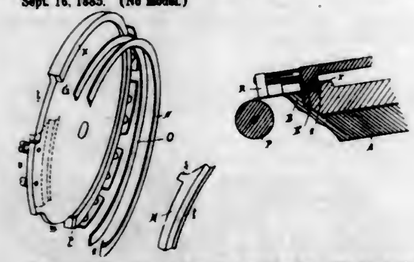
Claim.—1. The shaft D, carrying cams C Z D'' S' and wheel W'', in combination with the feeding, clamping, cutting, and push-out and heading mechanisms, rod U'', and means for pointing the nails, substantially as described.

2. The die-box arranged to slide vertically within supporting-posts, in combination with shaft T'', rod U'', crank-pin V'', and shaft D, substantially as set forth.

3. The die-box and pointing-dies, in combination with the shaft T'', rod U'', crank-pin V'', shaft D, carrying cams C, S, D'', and S', and the feeding, clamping, heading, and cutting mechanisms, substantially as hereinbefore set forth and described.

4. The carrier-wheel recessed in its periphery, in combination with the wheel O'', wheel M'', having worm N'', band A''', and pointing-dies Z'', substantially as described.

330,220. PIN-MACHINE. LOUIS A. FONTAINE, Toledo, Ohio. Filed Sept. 16, 1885. (No model.)



Claim.—1. In a pin-machine, the combination, with the devices for rotating the pins, of two friction-rails, one of which is elastic, substantially as and for the purposes specified.

2. In a pin-machine, the combination, with the devices for rotating the pins, of two continuous friction-rails, one of which is elastic its whole length, substantially as specified.

3. In a pin-machine, the combination, with the devices for rotating the pins, of an elastic upper friction-rail attached to the stationary part thereof, and consisting of a thin flat elastic metal ring and of an elastic and pliable fabric, substantially as described.

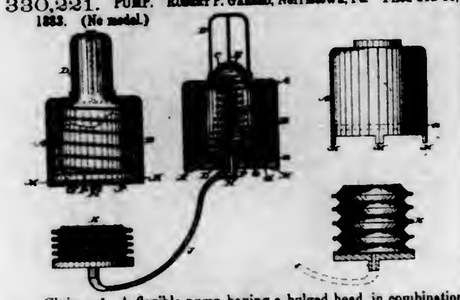
4. In a pin-machine for the purpose described, the combination of the stationary disk G, segmental ring N, and elastic bearing O, interposed between, substantially as specified.

5. The combination of the stationary disk G, having segmental bearing-flange K and recess *p*, of the segmental ring N, having hook *o*, and of the elastic bearing O, all arranged substantially as specified.

6. In a pin-machine, the combination of a solid stationary disk, G, an elastic friction-rail, and the guards R, secured to said solid disks, substantially as specified.

7. In a pin-machine, the detached scraper M, arranged to rest upon the lower friction-rail, and held in position by the stationary disk G, substantially as described.

330,221. PUMP. ROBERT P. GARSED, Norristown, Pa. Filed Oct. 10, 1883. (No model.)



Claim.—1. A flexible pump having a bulged head, in combination with a casing, a tapering spiral spring contained in said pump, a button inserted within the barrel of said pump and retaining said pump in place, and a plunger working toward said button, said plunger and button being adapted to fit one within the other, substantially as set forth.

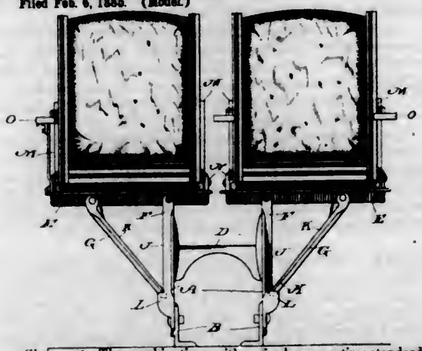
2. A pump-casing having a perforate button inserted in the bottom thereof, in combination with a pump-barrel, the said perforate button being also inserted in the bottom of the said pump-barrel, a plunger having a bulged head, the base of the said head being of greater diameter than the said button, and a pipe connected to said button, substantially as and for the purpose set forth.

3. The pipe J and bellows K, in combination with a button, L, provided with a passage communicating with said pipe J, a casing, a pump-barrel within which said button extends, a plunger, and a spring contained within said barrel, substantially as described.

4. A pump-casing having an opening in its top, in combination with a barrel having a bulged head fitting said opening, a handle attached to said barrel, and a rounded button securing said barrel to said casing, substantially as described.

5. A flexible pump-barrel having a rounded or bulged head, a plunger constructed to fit said head, a spring contained within said barrel, a casing inclosing said barrel, and an outlet and inlet pipe communicating with the interior of said casing, substantially as set forth.

330,222. FOLDING CHAIR. EDWARD L. GAYLORD, Bridgeport, Conn. Filed Feb. 6, 1885. (Model.)



Claim.—1. The combination, with a single supporting-standard, of a pair of chair-seat frames pivoted at their inner ends to said standard and thereby adapted to swing vertically toward each other, and the chair-backs pivoted to said frames and adapted to be thrown forward down against the seats, substantially as set forth.

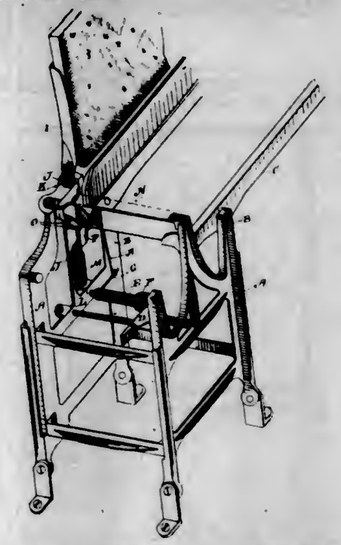
2. The combination, with a single supporting-standard, of a pair of chair-seat frames pivoted at their inner ends between pairs of uprights extending from said standard to the front and rear of said frames, braces pivoted to the frames near the outer extremities of the latter, spring mechanism adapted to force the free ends of said braces against tracks on the standard, and a stop formed on said standard at the base of the track, substantially as shown and described.

3. In a pair of chairs supported on a single standard, the combination, with the seat-frames capable of being swung from their normal position vertically toward each other, of the chair-backs pivoted to the frames and adapted to be thrown forward against the seats, substantially as specified.

4. The combination of the body D, having tracks J and stops L, frames E, braces G, spring H, and the back-supports M, pivoted between ears N, projecting from the frames, substantially as set forth.

5. The coil-springs H, arranged around short shafts P, journaled between the sides of the frames, and lugs Q, projecting from the frames, in combination with the braces G, against the under sides of which the free ends of the springs bear, the ratchet-wheel R, secured to or formed with the shaft and to which the inner end of the spring is secured, and detent S, pivoted to the frame, substantially as set forth.

330,223. FOLDING CHAIR. EDWARD L. GAYLORD, Bridgeport, Conn. Filed Feb. 6, 1885. (Model.)



Claim.—1. In a pair of folding chairs, the seat-frames pivoted to a single standard between uprights extending to the front and rear of said frames, in combination with spring mechanism adapted to throw said frames upward toward each other, back frames swiveled to the standard, spring mechanism adapted to swing the back frames outward and away from each other, the toe projecting from the inner rear portion of said back frame and adapted to control the movements of both the seat and back frames, and lugs projecting from the standard and the seat-frames and adapted to abut against each other when the said frames are in a horizontal position, substantially as and for the purpose set forth.

2. The combination, with the standard having lugs O, forked rod D, and cross-pieces L, of the chair-seat frames pivoted to the standard and provided with lugs N, coil-springs E, arranged, as described, around said rod, links H, attached to the free ends of said springs and to the said frames, back frames I, having spindle-extensions J, swiveled to the standard, spring M, arranged around said spindle and screwed to the latter at one extremity and at the other to the standard, and toe P, projecting laterally from said spindle, substantially as set forth.

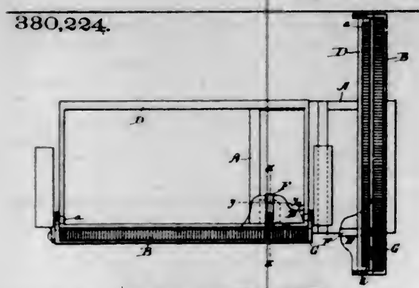
3. In a pair of folding chairs supported upon a single standard, the combination, with the swiveled back frames adapted to swing forward toward each other against the action of a spring, of the pivoted seat-frames adapted to be swung in a vertical plane toward each other by a spring action, means attached to the back frames for controlling and timing the automatic movements of both frames, and suitable stops projecting from the standard and the seat-frames adapted to abut and thereby hold said frames in a horizontal position, all substantially as shown and described.

330,224. FOLDING CHAIR. EDWARD L. GAYLORD, Bridgeport, Conn. Filed Feb. 7, 1885. (No model.)

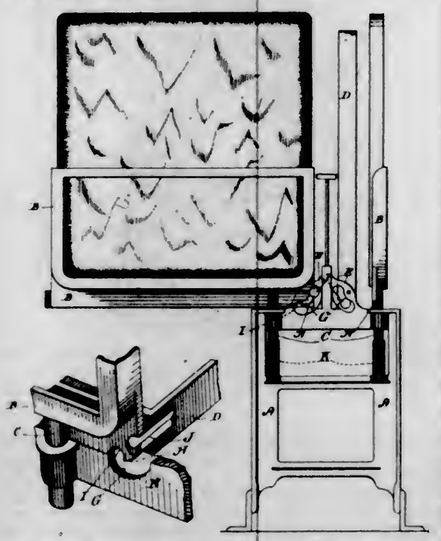
Claim.—1. In a pair of folding chairs mounted on a single standard, the back frame having a downwardly-extending spindle swiveled to the standard, and provided with a spring-latch adapted to interlock with the standard, and the seat-frame pivoted between the ends of the back frame and adapted when thrown upward to withdraw the latch, whereby the back frame may be swung forward in its folded position, substantially as set forth.

2. The combination of the frame B, having spindle C swiveled to the standard, latch F, adapted to slide in dovetailed bearings within the platform E, extending from the said frame, spring G, engaging with said latch, extension H of the standard, having recess I, and the seat-frame D, pivoted within the back frame, substantially as specified.

330,224.



330,225. FOLDING CHAIR. EDWARD L. GAYLORD, Bridgeport, Conn. Filed Feb. 7, 1885. (Model.)

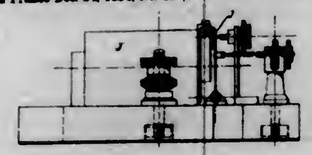


Claim.—1. In a pair of folding chairs mounted upon a single standard, the back frames swiveled to the standard, and with the rear inner corners rounded and recessed, as described, in combination with the seat-frames pivoted at the front and rear of their inner ends to the standard, and having hooks projecting backward within curved slots formed within ears projecting upward at the back of the standard, substantially as set forth.

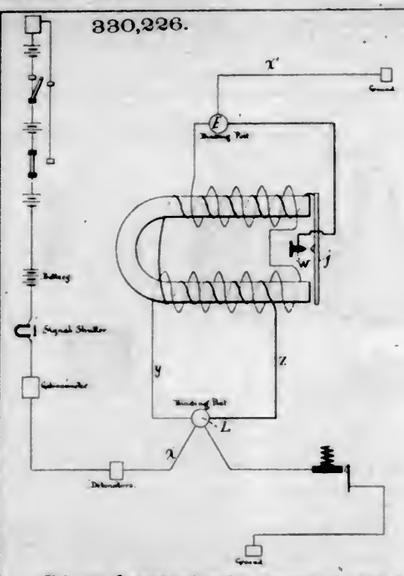
2. The combination, with the standard constructed with ears projecting upward from the rear thereof, and having curved slots, of the back frames swiveled to the standard and having their inner rear corners rounded, and with recesses cut therein, and the seat-frames pivoted to the standard, and having hook projections extending through said slots and adapted to overlap the back frames in their normal or open position, substantially as and for the purposes set forth.

3. The combination of the standard A, having ears E F, the former of which have curved slots G, back frames, B, swiveled to said standard and rounded at their rear inner corners, and provided with recesses I, and seat-frames D, pivoted between said ears and provided with hooks J, projecting through said slots and overlapping the back frames, substantially as described.

330,226. TESTING AND FIRING APPARATUS FOR SUBMARINE MINES. JOSEPH P. GIBBONS, 4 Osborne Terrace, Coombe Farm Lane, Westcombe Park, County of Kent, assignor to Latimer Clark Muirhead & Company, (Limited,) 23 Regency Street, Westminster, England. Filed Jan. 3, 1885. (No model.) Patented in England Sept. 2, 1884, No. 11,296, and in France Dec. 24, 1884, No. 166,106.



330,226.



Claim.—1. In a submarine mine, in combination with fixed contacts, a weighted movable contact suspended by a helical spring in proximity to said fixed contacts, and a circuit including both contacts, the detonators, and the source of electricity, substantially as and for the purpose set forth.

2. In a submarine mine, in combination with a series of fixed contacts having earth-connection, a heavy movable contact in circuit with the detonators and the source of electricity, a helical spring suspending said movable contact between the fixed contacts and insulated from said movable contact, substantially as and for the purpose set forth.

3. In a submarine mine, in combination with a suitable source of electricity and means for varying the current sent therefrom to line, a testing device consisting of an electro-magnet wound with a helix of high resistance, contacts adapted to be operated by said magnet on the varying of the current sent to line, and a low-resistance shunt in circuit with such contacts, the two ends of both high and low resistance circuits being respectively connected with the source of electricity and earth, substantially as and for the purpose set forth.

4. In a submarine mine, in combination with a coil of high resistance in closed circuit with the source of electricity, a galvanometer, the detonators, and an electro-magnet, a coil of low resistance, also in circuit with the source of electricity, galvanometer, and detonators, and with a make and break controlled by the magnet in the high-resistance circuit, substantially as set forth.

5. In a submarine mine, the combination of a coil of high resistance in closed circuit with the source of electricity, a galvanometer, the detonators, and an electro-magnet with a low-resistance shunt-circuit controlled by the said electro-magnet, and a short circuit around said magnet and shunt having a make and break adapted to be operated by a shock imparted to the mine, substantially as set forth.

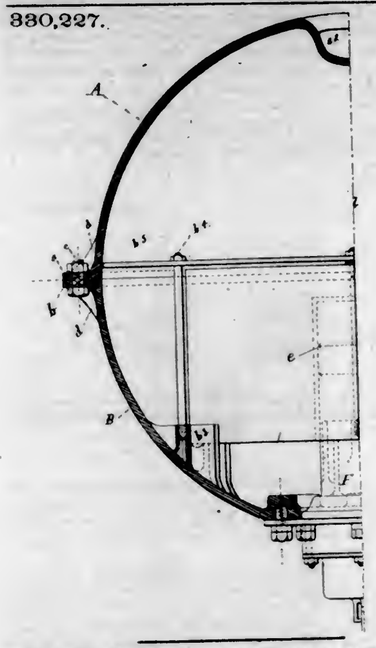
330,227. CASE FOR SUBMARINE MINES. JOSEPH P. GIBBONS, 4 Osborne Terrace, Coombe Farm Lane, Westcombe Park, County of Kent, assignor to Latimer Clark Muirhead & Company, (Limited,) 23 Regency Street, Westminster, England. Filed June 18, 1885. (No model.) Patented in England Sept. 2, 1884, No. 11,296, and in France Dec. 24, 1884, No. 166,105.

Claim.—1. In a submarine mine, in combination with two hemispheres forming the shell or casing, a box for containing the explosive charge, and means for holding said box within one of said hemispheres, an opening in the same hemisphere, and a case for the detonating-fuses adapted to be applied to said opening and close the same, substantially as set forth.

2. In combination with a case for submarine mines, consisting of two hemispherical parts fixed together, interior corner-brackets on one hemisphere, and an inner rectangular case or shell containing the explosive charge and resting on said brackets, substantially as set forth.

3. In combination with a case for submarine mines, consisting of two hemispherical parts fixed together, corner-bracket or angle-pieces b^3 in one of the hemispheres, a box, E, containing the exploding-charge and resting on the said brackets, cross-bars b^5 over said box, and bolts b^4, for securing said cross-bars, and consequently said box, in the lower hemisphere, substantially as set forth.

330,227.



330,228. WATCH-CASE. CHARLES K. GILES, Chicago, Ill. Filed July 28, 1884. (No model.)



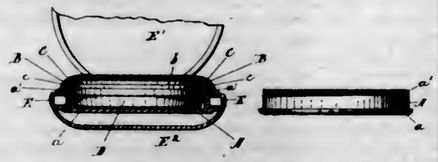
Claim.—1. In a watch-case, a movement-band threaded across its entire periphery, in combination with an internally-threaded ring-center, substantially as and for the purposes specified.

2. In a watch-case, the externally-threaded inner band adapted to receive the movement, in combination with the internally-threaded center clamped thereon between the bezel and back plate or cap, substantially as and for the purposes specified.

3. In a watch-case, the combination, with the inner ring, adapted to receive the movement and screw-threaded to receive the bezel and back plate, of the center having the front plate hinged thereto and clamped between the said bezel and back plate, substantially as and for the purposes specified.

4. In a watch-case, the combination, with the externally-threaded inner ring, adapted to receive the movement, of the internally-threaded center having the front plate secured thereto and clamped between the bezel and back plate, substantially as and for the purposes specified.

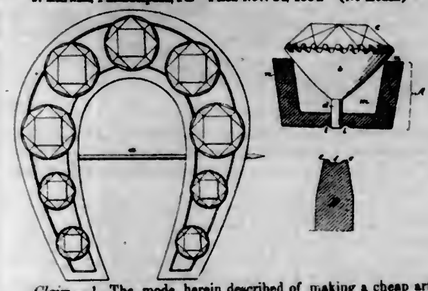
330,229. WATCH-CASE. CHARLES K. GILES, Chicago, Ill. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination, with the watch-case proper, of a removable case-lining applied within the same and having an outswinging ring to which the movement-holding ring is attached, substantially as and for the purposes described.

2. The combination, with the case-lining A, having flange a and screw-threaded portion a', and the bezel B, screw-threaded to fit upon the screw-threaded portion of the lining of the hunter-case, composed of the center E, and front and back plates, E' E^2, hinged thereto, the said center being adapted to be clamped between the flange a and the lower edge of the bezel B, substantially as and for the purposes described.

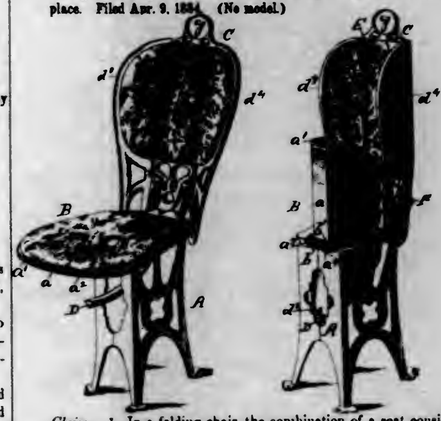
330,230. MANUFACTURE OF IMITATION JEWELRY. FREDERIK J. HAFNER, Philadelphia, Pa. Filed Nov. 24, 1884. (No model.)



Claim.—1. The mode herein described of making a cheap article of imitation jewelry, the said mode consisting in first making a cast-metal socket for jewels by casting the same in a mold, and uniting the pin to the socket during the process of casting the same, and then fitting the imitation jewel into the socket and turning the lips of the socket over against the said jewel, all substantially as set forth.

2. The mode herein described of making a cheap article of imitation jewelry, the said mode consisting in first casting a recessed base, drilling holes therein, passing the pins of jewel-holders through the holes of the base, and securing the pins thereto by crowding the metal of the base against and around each pin, substantially as specified.

330,231. FOLDING CHAIR. CHARLES H. HALL and JAY E. TRIPP, Chicago, Ill., assignors to the Chicago Sewing Machine Company, same place. Filed Apr. 9, 1884. (No model.)



Claim.—1. In a folding chair, the combination of a seat consisting of a center piece having wings hinged to each side and forming part of the seat, and a supporting-pedestal having pivotal connections for said seat, substantially as described.

2. In a folding chair, the combination of a pedestal, a seat having a center piece, and folding wings forming part of the seat, and a weight, b^2, attached to the back part of said center piece, substantially as described.

3. In a folding chair, the combination, with a supporting box-pedestal having an open top, of a seat pivoted to the pedestal at or near its front end, and having wings or sides folding inward at right angles to the center of the seat, substantially as described, when the seat is turned up, as set forth.

4. In a folding chair, the combination, with a supporting-pedestal having extensions above the seat, of a back hinged to the extension, and consisting of a center piece, and folding wings hinged to the center piece, substantially as described.

5. In a folding chair, the combination of a pedestal having projecting sides e and e', provided with lateral lugs F F', and a back pivoted thereto and having wings d^3 and d^4, substantially as described.

6. In a folding chair, the combination of the pedestal, a back having a downward-projecting curved bar, and the seat formed of a center piece, and folding wings hinged to the center piece and having friction-roller d^3 and hook ends which engage with said curved bar, substantially as described.

330,232. BUCKLE. MOSES L. HALL, Leon, Iowa. Filed July 24, 1885. (No model.)

Claim.—1. In a buckle, the combination of the base-plate, having two lips at its side edges connected by a rod, a cam pivoted upon the rod and having a lever at a right angle to its thickest portion, a wedge-

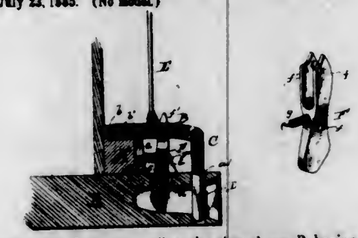
330,232.



shaped piece sliding under the cam and provided with a horizontal perforation through the larger end, and a bail secured in the said perforation in said wedge and to the straps of the harness, as and for the purpose shown and set forth.

2. In a buckle, the combination, with a billet and buckle end of a strap, of a base-plate having flat wide bails at its ends for the passage of the billet, and having upright lips at its side edges connected at their ends by a rod, a wide cam pivoted upon the rod and having a lever-plate at a right angle to its thickest portion, a wedge-shaped piece perforated at its thicker end, and a rectangular bail secured therein and to the straps of the harness, as and for the purpose shown and set forth.

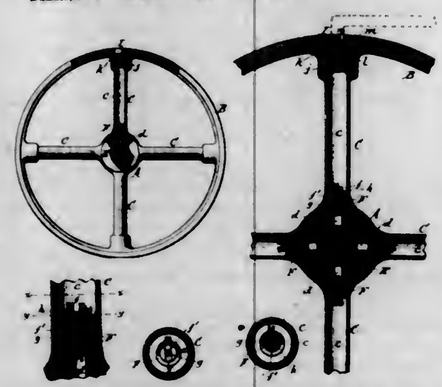
330,233. CAR-COUPLING. WALTER F. HALL, Clinton, Mo. Filed July 23, 1885. (No model.)



Claim.—1. In a car-coupling, the pivoted arm B, having a pin attached to the outer end thereof, in combination with the pivoted supporting-arm which is drawn rearwardly by a spring attached thereto and to a block above the draw-head, substantially as shown and described.

2. In a car-coupling, the draw-head A, having perforations *a a'* and block A', with recesses *b c*, in combination with the arm B, pivoted to the block, as shown, and having attached thereto the lifting-rod E, link C, and pin D, the arm F, the lower portion of which extends within the draw-head, a retracting-spring, and bifurcated end notched, as shown, for the purpose specified.

330,234. SELF-LUBRICATING PULLEY. CHARLES HANNELMANN, Buffalo, N. Y. Filed Oct. 9, 1885. (No model.)

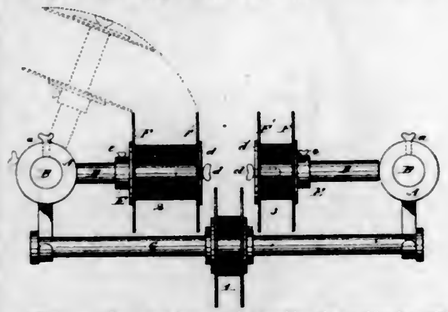


Claim.—1. In a self-lubricating pulley, the combination, with the hub A and rim B, of the hollow arms C, connecting the rim with the hub and forming oil-chambers *c*, openings *d*, formed in the hub and communicating with the oil-chambers *c*, threaded openings *j*, formed in the outer ends of the arms C, washers *h*, and screw-caps I, secured in the threaded openings *j*, and closing the oil-chambers, substantially as set forth.

2. In a self-lubricating pulley, the combination, with the hub A and rim B, of the hollow arms C, forming oil-chambers *c*, openings *d*, formed in the hub and communicating with the chambers *c*, screw-plugs F, secured in the openings *d*, and screw-caps I, secured in threaded openings formed in the outer ends of the hollow arms, and closing the chambers *c*, substantially as set forth.

3. In a self-lubricating pulley, the combination, with the hub A and rim B, of the hollow arms C, forming oil-chambers *c*, openings *d*, formed in the hub in line with the oil-chambers, and provided with screw-plugs F, passages *f'*, formed in said plugs, and provided with wicking *g*, and screw-caps I, secured in the outer ends of the hollow arms and closing the oil-chambers *c*, substantially as set forth.

330,235. PAPER-BOX-COVERING MACHINE. PHILIP HADUK, Philadelphia, Pa. Filed Sept. 12, 1883. (No model.)

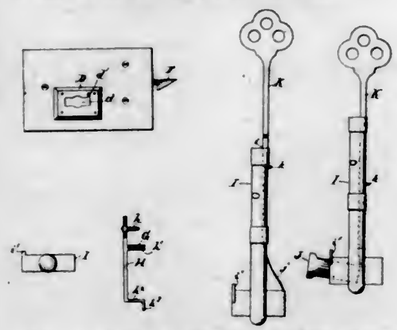


Claim.—1. In a paper-box-covering machine, the combination, with the frame of the machine, of a rod secured at one end to a concentrically-movable ring surrounding a portion of the frame, and carrying a loose or swiveled sleeve having on it a laterally-adjustable collar, substantially as described.

2. In a paper-box-covering machine, the combination, with the sides thereof, of three shafts for supporting the rolls of paper, one of said shafts having supports at both its ends, and the other two shafts being adjustably supported by one end only on the side of the machine, said latter two shafts having each a loose or swiveled sleeve, and a collar laterally adjustable on said sleeve and secured thereto by a set-screw, substantially as shown and described.

3. The combination of ring A, rod C, sleeve D, collar E, screw *d*, washer *d'*, and disks F F', substantially as shown and described.

330,236. LOCK FOR SLIDING DOORS. MILES HAYDEN and WILLIAM C. DIXON, Gay Hill, Tex. Filed May 21, 1885. (Model.)



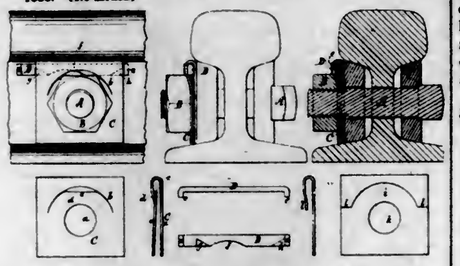
Claim.—1. In a lock, the combination of the latch, the spring pressing upon it, and the trip-lever provided with upper and lower arms, h' and h^2, the former serving as a seat for the spring and the latter having a projection, h^2, for the key to act upon, substantially as shown and described, and for the purpose set forth.

2. In a lock, the combination of the trip-lever provided with upper and lower arms, h' and h^2, the former serving as a seat for the spring and the latter having a projection, h^2, for the key to act upon, the slot a^2, covered by the said trip-lever, the latch F, pivoted in the door and passing through the said slot, and the spring for holding down the said latch and trip-lever, substantially as described and shown, and for the purpose set forth.

3. In a lock, the combination of the key I, the sliding bolt J, located therein and provided with a spring, the handle K, for working said sliding bolt, the trip-lever H, adapted to be operated by said key, and spring-latch F, substantially as shown and described, and for the purpose set forth.

4. The combination of the key I, the sliding bolt J, located therein and provided with spring *j*, the handle K, for working said sliding bolt, with the lock provided with projection *a*, shoulder *a'*, and the slot a^2, into which the sliding bolt projects to raise the latch, substantially as shown and described.

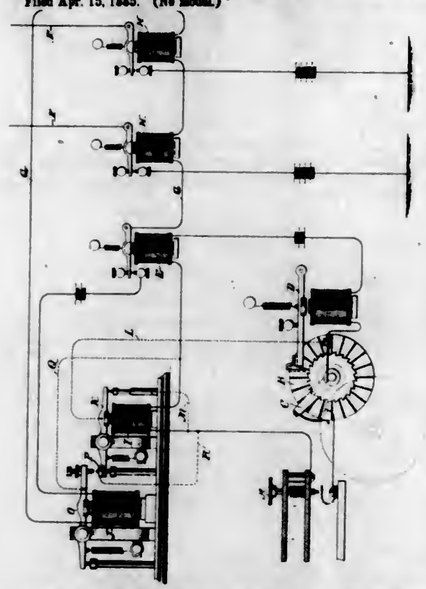
330,237. NUT-LOCK. JOSEPH HAYES, Dover, N. H., assignor, by mesne assignments, to himself and George S. Frost, same place. Filed Sept. 19, 1885. (No model.)



Claim.—1. The nut-lock, substantially as described, consisting of the key provided with the end flanges and segmental and beveled notches, arranged as set forth, and of the clasp folded and notched, and having the bolt-receiving hole or holes, as represented, such key being arranged in the clasp and to operate with the nut, essentially as set forth.

2. The clasp folded and having the bolt-holes, arcal slit, and truncated segment, arranged as set forth.

330,238. TRANSMITTER FOR PRINTING-TELEGRAPHS. CLARENCE L. HEALY, Brooklyn, assignor to Stephen D. Field, Yonkers, N. Y. Filed Apr. 15, 1885. (No model.)



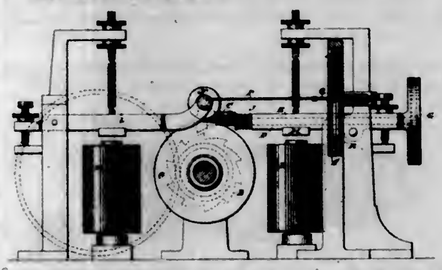
Claim.—1. In combination, in a printing-telegraph, a transmitter for operating the lines containing the repeating instruments, a key-board for controlling the transmitter and establishing press-currents, an electro-magnet connected with the press-circuits and brought into action by establishing the press-currents, and mechanism operated by said magnet, which independently of said key-board holds the transmitter and maintains the press-currents.

2. In combination, in a printing-telegraph, a transmitter for operating the lines, a key-board for arresting the transmitter and closing the press-circuits, an electro-magnet connected with the press-circuits and brought into action by establishing the press-currents, mechanism operated by said magnet, which independently of said key-board holds the transmitter and maintains the press-currents, and an electro-magnet connected with the press-circuits and operating to release the transmitter and break the press-circuits when the printing has been effected.

3. In combination, in a printing-telegraph, a transmitter for operating the lines, a key-board for arresting the transmitter and closing the press-circuits, and an electro-magnet arranged in circuit with the keys of the key-board and with the transmitter, and mechanism operated by said magnet, which cuts out or disconnects said key-board and maintains the press-currents and holds the transmitter independently of the key-board.

4. In combination, in a printing-telegraph, a system of local circuits operated by a key-board and a transmitter, press-lines connected by relays with said local circuits, an electro-magnet connected with the local circuits, and operating mechanism which short-circuits or disconnects the key-board upon a local circuit being closed, and a second electro-magnet connected with the local circuits, and operating mechanism which opens the closed local circuit after the press mechanism has been operated.

330,239. TRANSMITTER FOR PRINTING-TELEGRAPHS. CLARENCE L. HEALY, Brooklyn, assignor to Stephen D. Field, Yonkers, N. Y. Filed June 12, 1885. (No model.)



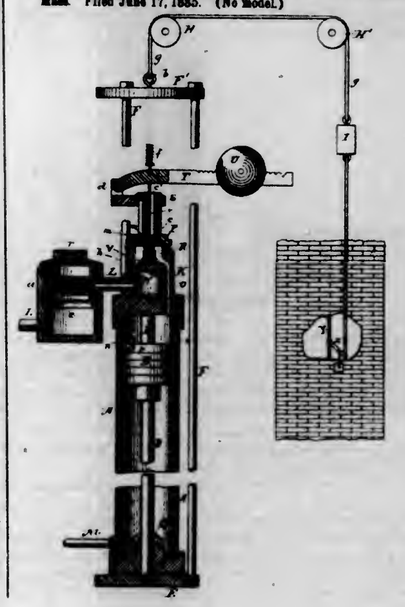
Claim.—1. In combination, in the transmitting mechanism of a printing-telegraph, a revolving commutator-shaft, a device for arresting said shaft, and an electro-magnet for bringing such device into action, and a dash-pot-cushioning device for relieving the mechanism from shock.

2. In combination, in the transmitting mechanism of a printing-telegraph, a friction device arranged to gradually reduce the speed of the commutator-shaft, an electro-magnet for bringing such friction device into action so as to operate upon said shaft, and a detent for arresting said shaft when its speed has been reduced by the friction device.

3. In combination, in the transmitting mechanism of a printing-telegraph, the commutator-shaft A, provided with teeth or stops B, the yielding detent mechanism C D F G, mounted upon the armature-arm E, and the electro-magnet I, for operating said detent, as and for the purpose set forth.

4. In combination, in the transmitting mechanism of a printing-telegraph, the commutator-shaft H, the pulley N, attached to the armature of an electro-magnet, a cushioning device arranged to resist the revolution of said pulley, and a detent for positively arresting the shaft by engaging with teeth or stops thereon, as and for the purpose set forth.

330,240. PRESSURE-REGULATOR. FLORENTINE A. JONES, Malden, Mass. Filed June 17, 1885. (No model.)



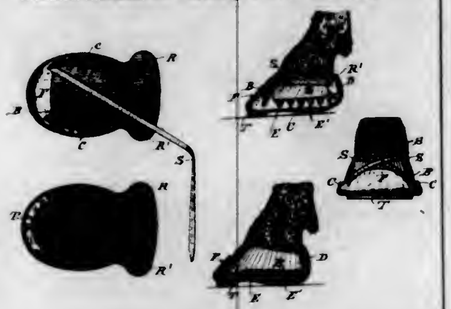
Claim.—1. In a pressure-regulator, the combination of the following parts, viz: the pressure-cylinder A, piston B, piston-rod D, plates E F', rods F, valve V, and means whereby pressure is applied to the piston, for the purpose described.

2. The combination of the cap K, provided with the chamber R, passages O and A, and cap P, the inlet-pipe L, and valve V, said valve being placed at a point higher than said inlet-pipe and above the piston, substantially as set forth.

3. In a pressure-regulator, the valve V, chambered out vertically, as shown, the lower end of said chamber being substantially on a line with the valve-seat, for the purpose set forth.

4. The combination, with the cap F', lever T, rod v, and valve V, of the spring or buffer f, extending upward from said lever, and operating substantially as set forth.

330,241. MEDICAMENT-RETAINER FOR HORSES' FEET. EDWARD T. KEAGLE, Marseilles, Ill. Filed Aug. 28, 1885. (No model.)

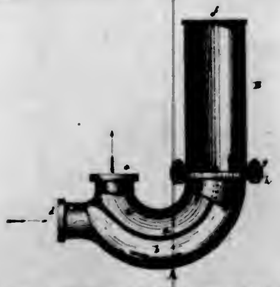


Claim.—1. A medicament-retainer for horses' feet, constructed and arranged to be secured to a horse's foot, substantially as shown and described, and having a toe-pocket, upturned sides, and heel-piece adapted to retain a medicament in contact with the bottom of the horse's foot and to leave the shell of the hoof exposed to the air, as specified.

2. A medicament-retainer for horses' feet, substantially as shown and described, consisting of the sole E, having the toe-plate T, secured thereto, front piece, F, having the strap S and buckle B, heel-piece D, having slits R R', and corrugated crimped upturned sides C C, as and for the purpose set forth.

3. In an india-rubber medicament-retainer for horses' feet, having a sole, a pocketed toe-piece, and a heel-protecting piece, the corrugated or crimped upturned sides C C, substantially as and for the purpose set forth.

330,242. EXHAUST-MUFFLE. CHARLES L. KIDDER, New Brunswick, N. J., assignor to Bergmann & Co., New York, N. Y. Filed May 8, 1885. (No model.)



Claim.—In an exhaust-muffle for steam-engines, the combination of the chamber divided by a partition into two passages, one of said passages being connected with the exhaust-port of the engine and the other with the exhaust pipe or stack, and the compression-chamber connected with both said passages, substantially as set forth.

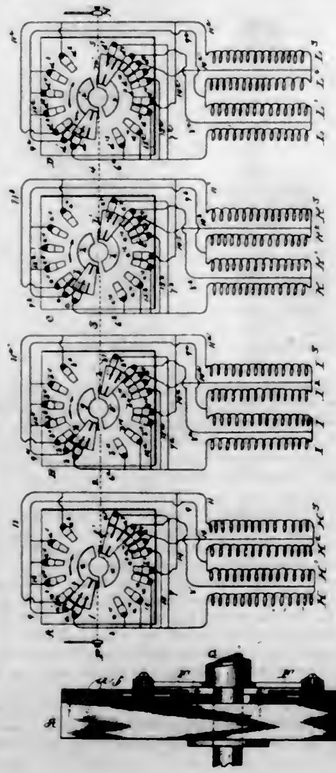
330,243. PRESS FOR PRINTING ON BOARDS. VIRGIL M. LAMB, Racine, Wis. Filed Nov. 11, 1884. (No model.)

Claim.—The herein-described device for printing on boards, consisting of the rectangular frame having the way or track, the carriage thereon, the swinging frame connected to the carriage by wires, as described, and provided with the cushion, and separate flexible letters consisting of separate pieces of flexible material having but one available letter on each piece, and attached to the curved face of the swinging frame, operating as described, and for the purpose set forth.

330,243.



330,244. REGULATOR FOR ELECTRIC LIGHTS. PHILIPP LANGE, New York, N. Y., assignor to Bergmann & Co., same place. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with an electric circuit, of two or more sets of resistance-coils in series therein, a commutator for each set, and a common shaft for operating all the commutators, substantially as set forth.

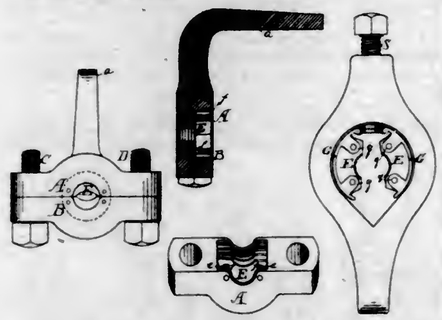
2. The combination, with an electric circuit, of two or more sets of resistance-coils therefor and a commutator for each set, said commutators being operated successively by a common shaft, substantially as set forth.

3. The combination, with an electric circuit, of two or more sets of resistance-coils therefor and a commutator for each set consisting of fixed and moving contacts, the moving contacts of the commutators being arranged to make and break the successive fixed contacts one after another, as described, substantially as set forth.

4. The combination of two or more switch-boards, contacts on each switch-board connected with resistance-coils, and moving contacts for each switch-board, all carried by a common shaft, the moving contacts of the different switch-boards being set on the shaft behind one another, as described, substantially as set forth.

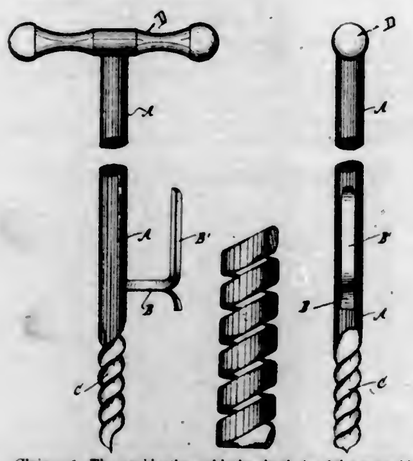
5. The combination, with the two or more commutators whose moving contacts reach corresponding fixed contacts successively, as described, of fixed contacts on each commutator, having the same electrical connections as preceding fixed contacts, whereby the electrical connections of one commutator are unchanged while changes are proceeding in the other commutators, substantially as set forth.

330,245. LATHE-DOG. SETH A. LEONARD, Ashtabula, Ohio. Filed Apr. 24, 1885. (No model.)



Claim.—A lathe-dog provided with the leaves or fillers E, loosely fixed in the chambers of the dogs, and adapted for self-adjustment to clamp screw-threaded bolts, substantially in the manner and for the purpose specified.

330,246. VEGETABLE-CUTTER. ADAM LEONHARDT, New York, N. Y. Filed Aug. 27, 1885. (No model.)



Claim.—1. The combination, with the shank A, of the cutter-blade B and the clearing-blade B', substantially as shown and described.

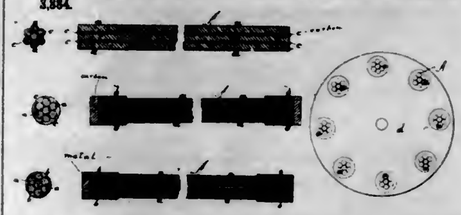
2. The combination, with the shank A and the auger C, of the cutter-blade B and the clearing-blade B', substantially as shown and described.

3. An implement for cutting fruits and vegetables into coils, consisting of a shank having between its ends an attached outwardly-projecting cutting-blade, B, constructed at its outer end with a curved cutting-extension, substantially as described.

4. An implement for cutting fruits and vegetables into coils, consisting of a shank having at one end a feeding-screw or auger and at the opposite end a detachable handle and a horizontal cutting-blade extending outwardly from the shank adjacent to the screw or auger, and having its outer end constructed with a curved cutting-extension, substantially as described.

5. As a new article of manufacture, a device for cutting coils, consisting of a shank, A, having thereon a blade, B, a clearing-blade, B', extending upward from the cutter, the auger C, and the removable handle D, substantially as shown and described.

330,247. CARBON ELECTRODE FOR ELECTROLYTICAL PURPOSES. HENRY LEHMANN, London, County of Middlesex, England. Filed July 21, 1885. (No model.) Patented in England Feb. 25, 1884, No. 3,884.



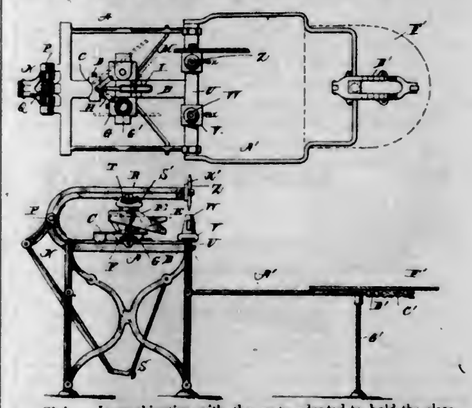
Claim.—1. An electrode composed of a number of carbon rods or pieces and a filling between them of carbon material baked therein, the ends of said rods being insulated, substantially as described.

2. An electrode consisting of a number of single carbon rods arranged in the form of a bundle, the interstices of which are filled wholly or partly with binding and conductive carbon material, as described, and for the purpose specified.

3. An electrode composed of a number of carbon rods or pieces, and a filling between them of carbon material baked therein, the ends of said rods being insulated and coppered, substantially as described.

4. An electrode consisting of a number of carbon rods bundled together, with interstices filled with carbon material, and the ends of which are coppered, as described, and for the purpose specified.

330,248. SLATE-DRESSING MACHINE. FRANCIS R. MARKS, Ashland, Ohio. Filed Jan. 23, 1885. (No model.)

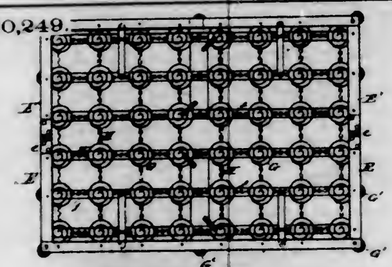


Claim.—In combination with the rests adapted to hold the slate, the adjusting-slides connected to the adjustable gage by means of pivoted rods, the ratcheted or serrated seats whereby the rests may be held, and the clamping-bolts whereby the parts may be securely clamped together, substantially as specified.

330,249. SPRING BED-BOTTOM. ELMER E. MCINTYRE, Pittsburg, assignor, by mesne assignments, to John Baily, Economy, Pa. Filed Jan. 29, 1885. (No model.)

Claim.—In a spring bed-bottom formed of two skeleton metallic frames with interposed spiral springs, the combination, with the upper frame, of the rubber cushions G', secured between the end and side bars of said frame, and fastened by means of the rivets which unite said bars together, substantially as described.

330,249.



330,250. SHOW-CARD. DANIEL M. MCLELLAN, Brooklyn, N. Y. Filed Aug. 30, 1884. (No model.) Patented in England Dec. 5, 1884, No. 16,033.



Claim.—1. A show-card or sign consisting of an imprinted sheet of relatively thin paper or equivalent material, constituting the face, united to a plate of thin metal and embossed to correspond with or as indicated by the printed matter on said face, substantially as described.

2. A show-card or sign consisting of an imprinted sheet of relatively thin paper or equivalent material, constituting the face, united to a plate of thin metal, and the imprinted margin or border embossed in the form of a frame, the whole constituting a combined show-card, mount, and frame, substantially as described.

3. A show-card or sign consisting of an imprinted sheet of relatively thin paper or equivalent material, constituting the face, united to a plate of thin metal, the imprinted margin or border embossed in the form of a frame, and the design within the frame embossed on lines indicated by the same, the whole constituting a combined show-card, mount, and frame, substantially as described.

4. A show-card or sign consisting of a sheet of paper or equivalent material, carrying a design or illustration, united to a plate of thin metal, the margin or border embossed in the form of a frame and the hollow parts of the back filled with wood pulp or equivalent material, substantially as described.

5. A show-card or sign consisting of a sheet of paper or equivalent material, carrying a design or illustration, united to a plate of thin metal covered by a suitable backing and embossed, substantially as described.

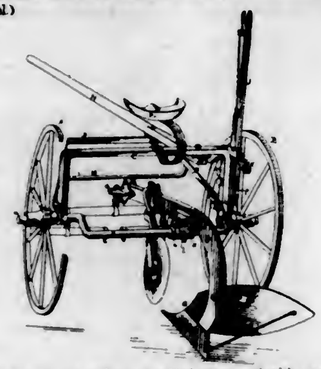
330,251. SLACK-ADJUSTER FOR CAR-BRAKES. DANIEL MCLEOD, Watertown, N. Y. Filed Sept. 17, 1885. (No model.)



Claim.—1. In a car-brake, the combination, with the wheels, the brake-levers, the threaded rod connecting the lower ends of said levers, and the brake-shoes connected to said levers and to the truck, of the sleeve-nut traveling on the threaded connecting-rod, the ratchet-wheel screwed in the sleeve-nut, the sleeve surrounding the sleeve-nut, the angle-lever pivoted in the sleeve, the pawl pivoted to the angle-lever and engaging the ratchet-wheel, and the link-bar connecting the angle-lever and brake-lever, substantially as specified.

2. In a car-brake, the combination, with the wheels, the brake-levers, the threaded rod connecting the brake-levers, and the brake-shoes connected to the brake-levers and to the truck, of the sleeve-nut G, provided with the groove *g*, and with a square end to move it by a wrench on the threaded rod, the ratchet-wheel H, secured to the sleeve-nut, the sleeve I, secured in position on the sleeve-nut by the screw *i*, the angle-lever J, pivoted in the sleeve, the supporting-bar M, the pawl K, pivoted to the shorter arm of the angle-lever, and the extensible link-bar L, connecting the angle-lever and brake-lever, and composed of the parts *l l* and nut *l'*, all substantially as shown and described.

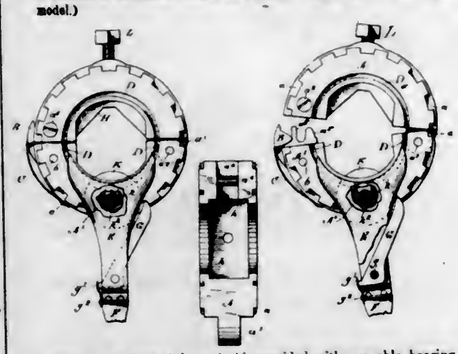
330,252. WHEEL-PLOW. THOMAS MEIKLE, Louisville, Ky., assignor to the Thomas Meikle Company, same place. Filed Feb. 7, 1885. (No model.)



Claim.—1. An arch, U, provided at one end with a permanently-fixed spindle, and at the other end provided with an eye above the axial line of said spindle, combined with the bail E, pivoted at one end to said arch, above said spindle, and at its other end provided with the portion *a*, projected through said eye to constitute a wheel-spindle close to the arch, and with its axis coincident with the axis of the bail.

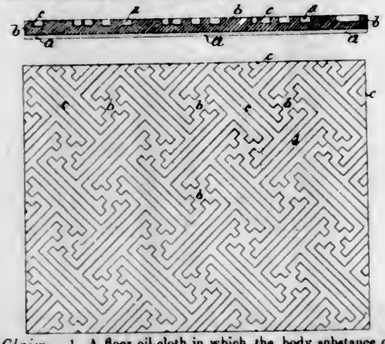
2. In a sulky-plow, an arch, C, wheels A B, whose spindles are permanently set at different levels, a plow-bail, and mounted thereon an L-shaped coupler with an inclined face, *w*, to hold the plow-bottom inclined to the axis of the bail, to be level while in action, as set forth.

330,253. PIPE-CUTTER. WILLIAM E. MELHORN, Erie, Pa., assignor of one-half to Andrew T. Marsh, same place. Filed July 18, 1885. (No model.)



Claim.—The hinged jaws A A', provided with movable bearing-piece E, cutter K, and latch mechanism B C, and the operating-handle E E F, provided with pawl G G, and arranged to operate substantially as specified, for the purpose set forth.

330,254. MANUFACTURE OF FLOOR OIL-CLOTHS. DAVID N. MELVIN, Lincolnville, N. Y. Filed Apr. 6, 1885. (Specimens.)



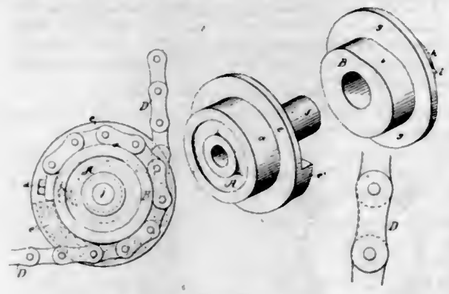
Claim.—1. A floor oil-cloth in which the body substance of the cloth is level with or slightly raised above the surface of the printed design, substantially as described.

2. A floor oil-cloth with indentations on the surface filled with paint and constituting the pattern or design, as described.

3. A linoleum or other floor-covering of the same class having the colors of the pattern or design inlaid in an indented surface, substantially as and for the purpose described.

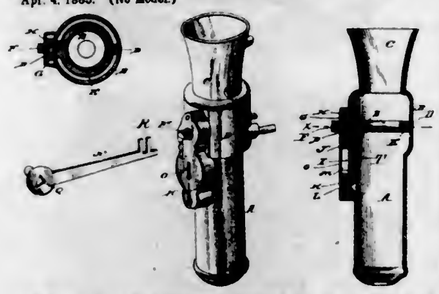
4. The process of indenting the pattern or design into floor oil-cloths before printing, and then filling the indentations with paint, as described.

330,255. MECHANICAL MOVEMENT. BENJAMIN F. MEYER, Camden, N. J., assignor to Merrill A. Furbush and Charles A. Furbush, Philadelphia, Pa. Filed June 19, 1885. (No model.)



Claim.—The compensating device consisting of a sheave and a cam and chains passing over the same, the said cam being adjustable with reference to the sheave, as and for the purpose set forth.

330,256. WHIP-SOCKET. BENJAMIN F. D. MILLER, Wooster, Ohio, assignor to Isaac N. Kinney and William P. Kinzer, same place. Filed Apr. 4, 1885. (No model.)



Claim.—1. In a whip-socket, the combination, with a tubular cylinder or socket, of a horizontal ring or collar having projecting lugs upon its opposite sides and arranged to vibrate or revolve upon said lugs in said sockets, and means for retaining the same in any position to which it may be adjusted, substantially as and for the purpose set forth.

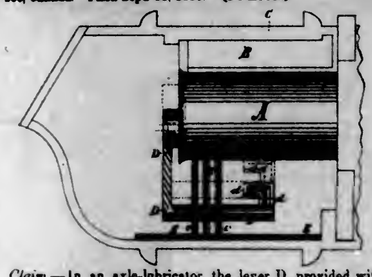
2. In a whip-socket, the combination of a tubular socket, a vibrating or revolving ring or collar having projecting lugs upon its opposite sides arranged in bearings in the same, a spring arranged to retain the said collar normally in a horizontal position, and means for retaining it in any position out of the horizontal to which it may be adjusted, substantially as and for the purpose herein set forth.

3. In a lock whip-socket, the combination of a tubular socket having an annular enlargement or chamber, and a funnel-shaped flange extending upwardly from the same, with a revolving ring or collar having projecting lugs upon its opposite sides arranged horizontally in said enlargement or chamber, and mechanism for adjusting and retaining the said collar, substantially as and for the purpose set forth.

4. In a lock whip-socket, the combination of a tubular socket, a ring or collar having projecting lugs upon its opposite sides arranged horizontally in the same, one of said lugs being provided with a wrench-seat and with a ratchet-collar, a vertically-sliding ring having a stud engaging the said ratchet-collar, and an interior eccentric flange, a spring arranged to force the said ring in an upward direction, and a spring arranged to hold the horizontal holding-collar normally in a horizontal position, substantially as and for the purpose herein set forth.

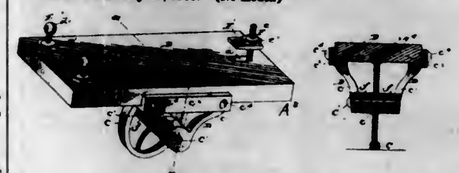
5. In a lock whip-socket, the combination of a tubular socket, a revolving holding-ring having projecting lugs upon its opposite sides and arranged horizontally within the same, one of said lugs extending from the said ring forwardly through the socket or casing, operating mechanism attached to and connected with the said trunnion, and a frame or casing attached to the socket and inclosing the said operating mechanism, substantially as and for the purpose set forth.

330,257. CAR-AXLE LUBRICATOR. JOHN C. NELSON, Montreal, Quebec, Canada. Filed Sept. 10, 1885. (No model.)



Claim.—In an axle-lubricator, the lever D, provided with one or more scoops, *d d*, and pivoted to the axle A, as described, combined with the movable frame E, having the slotted guides E' E' and the finger E², substantially as and for the purpose specified.

330,258. TRUCK FOR HARVESTERS. WILLIAM A. OSER, Nine Mile, Ind. Filed July 27, 1885. (No model.)



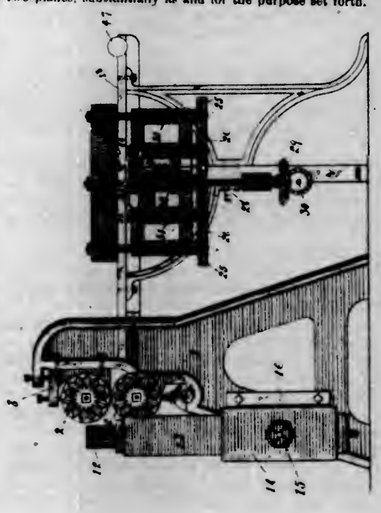
Claim.—1. In a harvester-truck, and in combination with the harvester-platform, a truck arranged beneath the same, and comprising a platform having adjustable securing-bolts at its ends, a bearing-wheel arranged below the truck-platform, and supporting-bangers depending from the platform, substantially as described.

2. In a harvester-truck, the combination of a platform, B, having slots *a a'*, hangers D D, depending from the platform, bearing-wheel C, mounted in the hangers, and bolts E F, substantially as described.

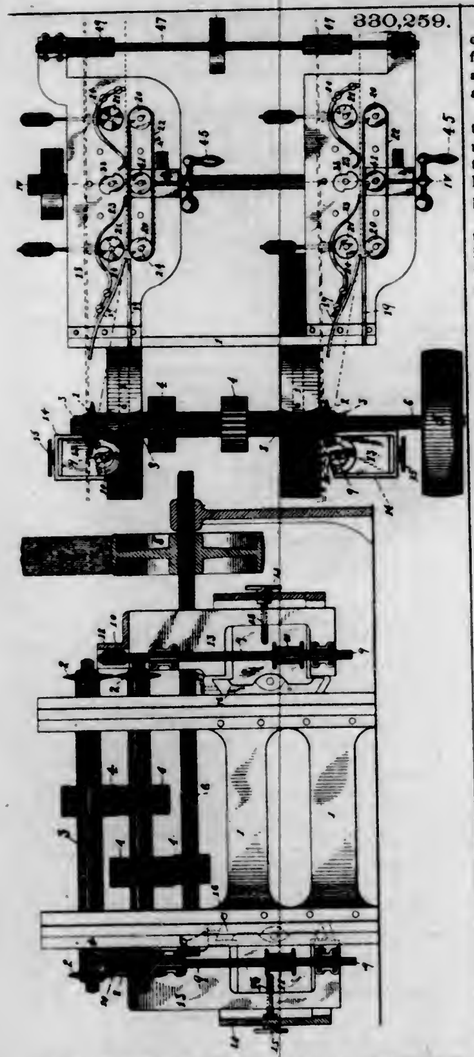
3. In a harvester-truck, the combination of a platform having transverse and longitudinal slots *a a'*, hangers D D, bolted to the platform and provided with hubs *f f*, a bearing-wheel, C, supported in the hangers, an axle, C', bolts E, having eyes *d*, and nuts *d' d'*, bolt F, having a nut, *e*, and a corrugated plate, E', arranged below the nut *e* of the bolt E, and adapted to bear on the rear end of the harvester-platform, substantially as and for the purpose described.

330,259. BARREL-HOOP MACHINE. EMIL OLUND, Hudson, Wis. Filed June 18, 1885. (No model.)

Claim.—1. In a machine for making half-round hoops, the combination of a pair of splitters mounted in the same vertical plane, said splitters being beveled and provided on one side with radial ribs formed in two planes, substantially as and for the purpose set forth.



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2. In a machine for making half-round hoops, the combination of a pair of splitters mounted in the same vertical plane, said splitters being beveled, provided on one side with radial ribs formed in two planes and having continuous peripheries, substantially as and for the purpose set forth.

3. In a machine for making half-round hoops, the combination, with a pair of splitters arranged in the same vertical plane, one above and one below the level of the table, of a dresser-knife and guide-rollers for feeding the hoop with its split side to the action of said dresser-knife, as set forth.

4. In a machine for making half-round hoops, the combination of a pair of beveled splitters mounted in the same vertical plane, the bevel on one side being in two planes, that nearer the periphery being the more abrupt, for the purpose set forth.

5. In a hoop splitting and dressing machine, the combination, with a pair of vertically-adjustable splitters placed in a vertical plane one above the other, of a vertically-adjustable knot-removing cutter rotating upon a vertical axis to one side of the vertical plane of the splitters, as and for the purposes set forth.

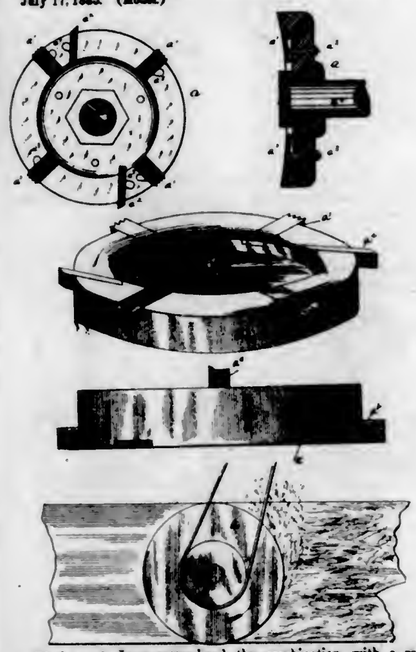
6. In a machine for making half-round hoops, the combination of the knife partially surrounded by a guard for removing the knots from the pole, a pair of rotary splitters mounted in the same vertical plane, one above and one below the level of the work-table, a dresser-knife, and guiding and feeding rollers for presenting the split side of said hoop to the action of said dresser-knife, substantially as set forth.

7. The combination, with the rotary knife 38 and the idle roller 41 opposite thereto fixed against lateral movement, of the two pairs of feed-rollers 20 21 20 21, arranged on the respective sides of said cutters, and the springs 23, for pressing the hoop against said fixed idle roller, as and for the purpose set forth.

8. In a hoop splitting and dressing machine, the combination, with the feed-rollers 21 21, and the swinging frames 31 31 in which they are respectively journaled, of the weighted rectangular levers 34, pivoted to the under side of the frame, and the links 36, for connecting said levers with the respective frames 31, substantially as and for the purposes set forth.

9. In a hoop splitting and dressing machine, the combination, with the dresser-knife 38, of the idle roller 41, the sliding block 43 on which it is mounted, the dovetail guides in which said block works, the adjusting hand-screw 45, and the jam-screw 46, all constructed and arranged substantially as set forth.

330,260. CUTTER-HEAD. EDWARD K. PATTEN, Utica, N. Y. Filed July 17, 1885. (Model.)



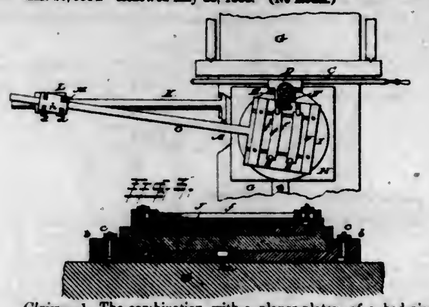
Claim.—1. In a cutter-head, the combination, with a rotating planer-head, its periphery extending beyond the plane of the face of the head, of one or more clearers attached to the face of the head at right angles to the shaft and projecting beyond the periphery of the head, and one or more cutters mounted in or attached to the head with their cutting-edges substantially at right angles to the cutting-edges of the clearers, constructed to move simultaneously for cutting and cross-cutting and clearing the material and adapted to plane a width equal to the diameter of the head and cutters, substantially as described.

2. In a cutter-head, the combination, with the rotating planer-head mounted on a shaft and beveled inwardly from its periphery, of one or more cutters and one or more clearers, each having beveled edges, as shown, projecting beyond the head, whereby a space is formed between the face of the head and the surface of the article to be planed, and adapted to plane a width equal to the diameter of the head and cutters, substantially as described.

3. In a cutter-head, the combination of the head beveled from its periphery toward the center on its face, which is flat and provided with grooves to receive and accommodate the cutters and clearers, the former being placed at an angle to the radius of the cutter-head and the clearers placed in the radial line, substantially as described, whereby the cutter-head may be used as a planer, as set forth and described.

4. A cutter-head provided with cutters and clearers, as described, in combination with the shaft a^4 and means for operating the same, said head being secured to the end of the shaft and said shaft's free end extending with the head only far enough to leave the face of the head clear and free to operate on the plane surface of a board and to plane the board a width equal to the diameter of the cutter-head, substantially as described.

330,261. PLANER-CHUCK. THOMAS H. PAUL, Frostburg, Md. Filed Mar. 26, 1884. Renewed May 23, 1885. (No model.)

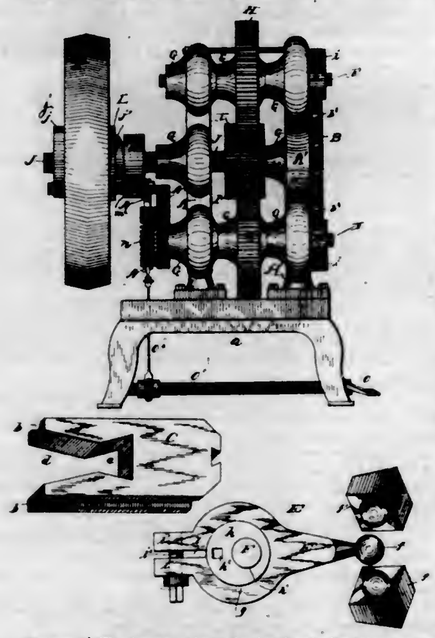


Claim.—1. The combination, with a planer-platen, of a bed-piece pivoted to oscillate thereon, a chuck-body fitted to slide transversely on the said bed-piece, and a radial bar fixed to the chuck-body and pivoted to a stationary portion of the planer to one side of the platen, substantially as and for the purpose specified.

2. The combination, with a planer-platen, a bed-piece pivoted thereon, a chuck-body fitted to slide transversely on the said bed-piece, and a radial arm fixed to the said chuck-body, of an arm laterally fixed to a stationary portion of the planer and a pivot connecting the said arms, substantially as shown and described.

3. The combination, with a planer-platen, a bed-piece pivoted thereon, a chuck-body fitted to slide transversely on the said bed-piece, a radial arm fixed to the said chuck-body, and an arm laterally fixed to a stationary portion of the planer, of a block and means for adjusting it longitudinally on the said fixed arm, another block and means for adjusting it longitudinally on the said radial arm, and a pivot connecting the two blocks, substantially as and for the purpose specified.

330,262. RADIAL FORGING-MACHINE. JULIUS C. RICHARDSON, Ilion, N. Y. Filed Apr. 19, 1884. (No model.)



Claim.—1. The hammer-blocks having longitudinal grooves and dovetailed sockets with outwardly or oppositely flared recesses, in combination with the tongued guide-blocks adjustable upon the supporting-frame or casting, and in the radial compartments eccentric shafts, the eccentric, and the eccentric-arms having at the ends of their portions spherical extremities embraced by bisected or two-part dovetailed boxes having ball-sockets, substantially as and for the purpose set forth.

2. The pitmen E, having their tapering portions provided with spherical extremities fitted in bisected socketed boxes *f'* and held in sockets *e*, substantially as shown and described.

3. The hammer-block-actuating shaft, in combination with a loose pulley with a spring applied thereto, one end of said spring being isolated from the point where the resistance is received on the pulley and engaged by a bolt connected to the shaft, said bolt engaging said spring and moving it to said point of resistance, substantially as and for the purpose set forth.

4. The hammer-block-actuating shaft having its sleeve encompassed by the partial coil of a spring, with an arm or extension keyed to the pulley-hub arranged upon said shaft, and its other end provided with a lateral projection isolated from a key upon which the resistance is received, in combination with the fixed collar of said shaft, having a spring-bolt with one end engaging the lateral projection of said spring and its other end engaged by a clutch-bar actuated by a treadle, substantially as and for the purpose set forth.

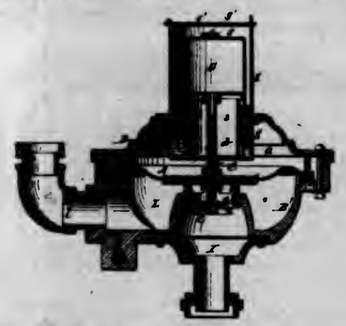
5. In a forging-machine, the four tenoned dies D^3, D^3, D^4, and D^4, having the contour shown, for forming thrasher-teeth, substantially as shown and described.

6. The combination of the tenoned dies D^3, D^3, D^4, and D^4, having the contour shown, for forging in the intermediate space formed by their approximate junction a thrasher-tooth, substantially as shown and described.

7. The combination of the hammer-block C, having dovetailed grooves C', and the tenoned dies D^3, D^3, D^4, and D^4, substantially as shown, and for the purpose described.

8. In a forging-machine, the lateral dies D^3 and D^3 and the face-dies D^4 and D^4, having cavities extending from side to side, for acting upon the metal presented throughout their entire widths in the same plane to produce a finless tooth with its narrow portion toughened, substantially as shown and described.

330,263. GAS-REGULATOR. JAMES ROBERTSON, Brooklyn, N. Y. Filed Mar. 16, 1885. (No model.)



Claim.—1. In an automatic gas-regulator, the combination, with a regulator-valve and a low-pressure diaphragm, of an auxiliary gas-chamber or float communicating with the inlet or high-pressure chamber below the regulator-valve, attached to the said parts and arranged so as to exert an upward pressure which tends to close the regulator-valve, substantially in the manner and for the purpose described.

2. In an automatic gas-regulator, substantially such as designated, the combination and arrangement, with the regulator-valve and low-pressure diaphragm, of the common hollow stem formed with an enlarged gas-chamber or float at its upper end and connecting such inclosed gas-chamber or float with the inlet or high-pressure-chamber below the regulator-valve, for the purpose and substantially in the manner described.

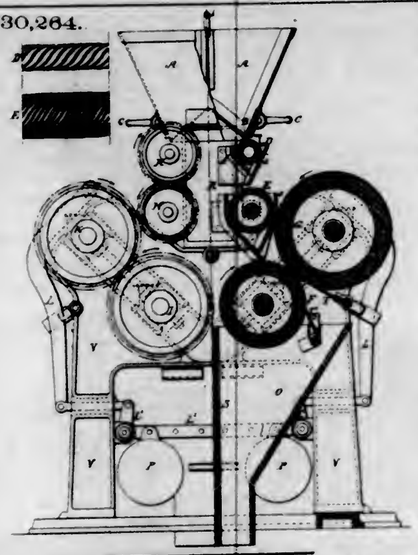
330,264. ROLLER-MILL. HENRY F. SAINT REQUIER, Paris, France, assignor to La Société Anonyme pour les Procédés Brevetés de Farinerie Saint Requier, same place. Filed June 23, 1884. (No model.) Patented in France July 20, 1882, No. 150,207; in Belgium Apr. 5, 1884, No. 64,747; in England Apr. 8, 1884, No. 6,134; in Italy Apr. 12, 1884, No. 16,715; in Spain July 23, 1884, No. 6,063, and in Austria Aug. 29, 1884, No. 13,846.

Claim.—1. The combination of a pair of crushing-rolls, feed-hopper, and plates, with two grooved distributing-rolls, D and E, one over the other, the upper roll having larger grooves than the lower one, substantially as described.

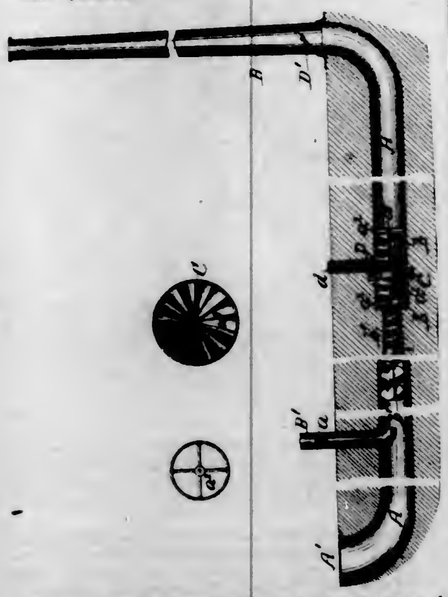
2. The combination of a pair of crushing-rolls and feed-hopper A, with grooved distributing rolls D and E, between the hopper and crushing-rolls, and the hopper-plates *d* and *e*, the lower roll, E, being about twice the diameter of the upper roll, D, substantially as and for the purpose set forth.

3. The combination of a pair of crushing-rolls, F G, and the feed-hopper A, with distributing-rolls D and E, and hopper-plates, within which the distributing-rolls may revolve, the said roll E being about half the diameter of the crushing-roll F, and the roll D being about half the diameter of the roll E, substantially as and for the purpose set forth.

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330,265. PNEUMATIC MOTOR. George W. Scovill, Chicago, Ill., assignor of one-half to Charles Woodrich, Jr., same place. Filed Aug. 14, 1885. (No model.)



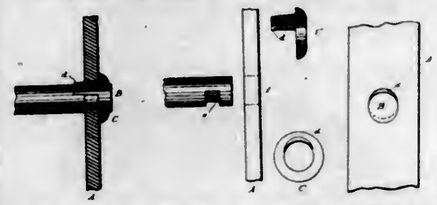
Claim.—1. The combination, with a conduit or air-passage, of a motor-wheel located therein and an auxiliary air pipe or pipes located at a point between said motor-wheel and the main inlet, and communicating with said conduit, whereby atmospheric air is introduced at different points, substantially as and for the purpose set forth.

2. The combination, with a conduit or air-passage communicating with an air-shaft or chimney, of a motor-wheel located in said conduit and a screw-spiral located on one or both sides of said motor-wheel and adapted to rotate therewith, as set forth.

3. The combination, with a conduit or air-passage, of a motor-wheel located therein and a stationary screw-spiral arranged in said passage at a point between said motor-wheel and the inlet-opening to said conduit, substantially as and for the purpose set forth.

4. The combination, with a conduit or passage communicating with an air-shaft or chimney, of a motor-wheel located in said passage and adapted to be put in motion by the force of the air rushing through, a screw-spiral arranged to rotate with said motor-wheel, and a stationary spiral placed in said conduit or passage at a point between said rotating spiral and the inlet opening into said conduit, substantially as herein set forth.

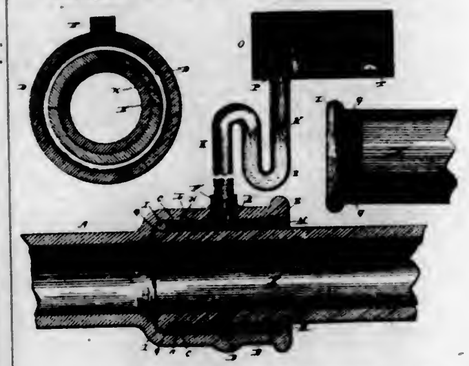
330,266. DEVICE FOR LOCKING BARS. Thomas Sheehan, Cleveland, assignor of one-third to James T. Brady, Columbus, Ohio. Filed Sept. 21, 1885. (No model.)



Claim.—1. The combination of the recessed bar, the support formed with a hole or socket to receive the recessed portion of the bar and the filling-tongue, as and for the purposes hereinbefore set forth.

2. The combination of the recessed bar, the support provided with a hole or socket to receive the recessed portion of the bar, the ring or sleeve fitting and movable upon the bar, and the filling-tongue carried by said sleeve or ring, as and for the purposes hereinbefore set forth.

330,267. MEANS FOR GAS-DISTRIBUTION. Roland H. Smith, Pittsburg, Pa. Filed Sept. 17, 1885. (No model.)



Claim.—1. A spigot joint having the bowl provided with packing-gaskets at its base and mouth, and the intermediate space occupied by a filling with unbroken contact surfaces and solid in cross-section, substantially as specified.

2. A spigot-joint having the bowl provided with a packing-gasket at its base and at its mouth, and an intermediate filling completely occupying the intervening space between the gaskets, said filling being solid in cross-section and having a wedge-shaped edge, substantially as specified.

3. A spigot-joint having the bowl provided with an interior groove, and a pipe cast in said bowl and communicating with said groove, substantially as and for the purpose specified.

4. A spigot-joint having the bowl and spigot end corrugated, also having the bowl provided with an interior annular groove, and a pipe leading from said groove and cast in said bowl, gaskets contained within said bowl, and an intermediate filling with one end or edge wedge shape, substantially as and for the purpose specified.

5. A spigot-joint having a bowl provided with an interior annular groove, and a pipe cast therein and connected with said groove, and a trap-pipe leading to an alarm mechanism, substantially as and for the purpose specified.

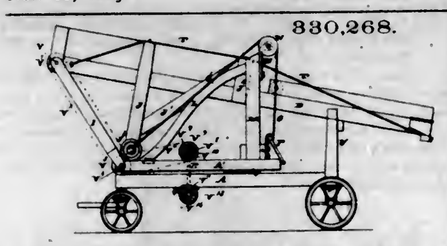
6. A pipe-joint having the interior thereof connected to an audible alarm, substantially as and for the purpose specified.

7. A pipe-joint having a bowl with an interior annular groove, and a pipe leading therefrom to an alarm, substantially as and for the purpose specified.

330,268. STRAW-ELEVATOR FOR THRASHING-MACHINES. Dudley D. Sprague, California, and Pearley J. Sprague, Higbee, Mo.; said Dudley D. Sprague assignor to said Pearley J. Sprague. Filed Mar. 23, 1885. (No model.)

Claim.—1. In an elevator, in combination with a base or truck and turn-table, the inclined track secured to the turn-table, the carrier-frame, suitable arms connecting the frame and table, and bearings which move on the inclined track, whereby the carrier-frame is moved vertically and longitudinally.

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2. In an elevator, in combination with a base or truck and turn-table, the arched inclined track secured to the turn-table, and the carrier-frame connected to the table by suitable arms and provided with bearings that move on the arched inclined track, whereby it is moved vertically and longitudinally.

3. In an elevator, in combination with a table and an inclined track secured to the table, the carrier-frame pivoted to the table and provided with bearings that move on the inclined track to cause the carrier-frame to move in vertical and longitudinal planes.

4. In an elevator, in combination with a truck and a turn-table pivoted to the truck, the inclined track secured to the table, the carrier-frame connected to the table by suitable arms, a frame secured to the carrier-frame, and wheels or rollers on said frame which move upon the inclined track as the carrier-frame is raised and lowered to cause it to move vertically and longitudinally.

5. In an elevator, in combination with the truck and a turn-table pivoted to the truck, the inclined track secured to the table, the carrier-frame pivoted to the table by suitable arms, frames secured to and extending above and below the carrier-frame, truss-rods connecting said frames to the carrier-frame, and rollers or wheels on the lower ends of said frames that bear upon said inclined track to cause the carrier-frame to move vertically and longitudinally.

6. In an elevator, the combination of the truck, the turn-table pivoted to the truck, the inclined track secured to the table, posts to which the track is made fast at its upper end, the carrier-frame, arms connecting the carrier-frame to the table, the frames secured to the carrier-frame, wheels or rollers on the lower ends of said frames which bear upon the incline track, pulleys journaled to the upper parts of said posts, windlass located at the foot of said posts, and ropes connecting the said frames to the windlass, the whole being so arranged that the carrier-frame is moved laterally, vertically, and longitudinally, as specified.

7. In an elevator, the combination of the truck, the turn-table pivoted to the truck, an inclined track secured to the table, the carrier frame, arms pivoted to the table and to the carrier-frame, the saddle-shaft, a pulley and belt running parallel with said arms, a shaft journaled on the turn-table, a horizontal second shaft journaled on the turn-table, a bevel-wheel at the inner end of said shaft, a vertical shaft pivoting the turn-table to the truck, bevel-wheels on the upper and lower ends of said shaft, and a horizontal driving-shaft journaled to the truck and provided with a bevel gear-wheel at its inner end, the whole so arranged that the carrier-frame can be moved vertically, horizontally, and longitudinally without interfering with the operation of the saddle, as set forth.

8. In an elevator, the combination of carrier-frame A', truss-rod T, frame J J' J², rollers J², and inclined track L, substantially as shown and described.

9. In an elevator, the combination of carrier-frame A, truss-rods T, frames J J' J², rollers J², incline track L, arms M, pulleys N, windlass P, and ropes O, arranged and operating substantially as described.

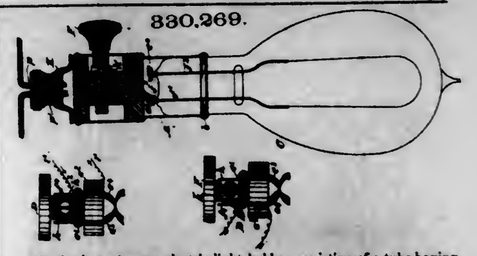
10. In an elevator, the combination of truck A, turn-table A', carrier-frame D, truss-rods T, frame J J' J², rollers J², arms I, inclined track L, posts M, pulleys N, windlass P, and ropes O, all arranged and operating substantially as and for the purpose set forth.

330,269. HOLDER FOR INCANDESCENT ELECTRIC LAMPS. Wm. Stanley, Jr., Pittsburg, Pa. Filed Aug. 22, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with a holder for incandescent electric lights, having resilient arms in which there is formed an annular groove, of a globe having an annular bead or fillet fitting within said groove formed upon its neck.

2. The combination, substantially as hereinbefore set forth, with the globe of an incandescent electric light, having an annular bead or fillet formed upon its neck, of a tubular holder having resilient arms and a corresponding annular recess formed therein, contact-points against which the leading-in conductors of the lamp are pressed when said lamp is held in said holder, and a circuit-controller for making and interrupting the circuit of the conductors through said contact-points.

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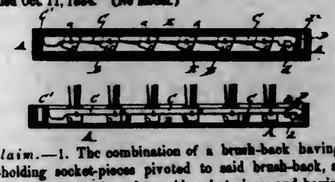


3. An incandescent electric-light holder consisting of a tube having resilient arms formed at each end, a non-conducting support inserted within the same, a yielding contact point or spring carried upon said support, a circuit-controlling device for making and severing the connections therewith, and a metallic plate held in one end of said tube by the resilience of the arms of the corresponding end, substantially as described.

4. A holder for incandescent electric lights, consisting of a tube constructed with resilient fingers or arms at one end, two spiral-shaped contact-springs, one of which is in permanent connection with a supply-conductor, a circuit-controlling key, a contact-spring for governing the position of said key, and a contact-point placed in electrical connection with the other spring or separated therefrom, according to the position of said key.

5. The combination, substantially as hereinbefore set forth, of the tube A, having the resilient arms a', the key F, the yielding springs c' and c², the support for said springs fitting within an enlarged portion of said tube, and the plate P, all organized substantially as described.

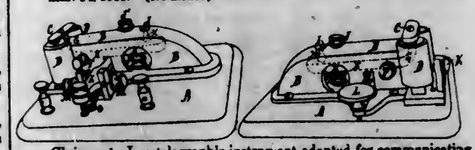
330,270. CLOTHES-BRUSH. Joseph Stehlik, New York, N. Y. Filed Oct. 11, 1884. (No model.)



Claim.—1. The combination of a brush-back having transverse bristle-holding socket-pieces pivoted to said brush-back, a spring-actuated connecting-rod pivoted to said socket-pieces and having a recessed end, and a spring locking device having a projecting lug for engaging the recessed end of the connecting-rod, substantially as set forth.

2. The combination of a brush-back having bristle-holding socket-pieces pivoted to said brush-back, a connecting-rod pivoted to said socket-pieces, a spring pressing on one end of said connecting-rod, a spring locking device engaging the other end of the connecting-rod, and an inclosing-case adapted to engage or release the locking device, substantially as set forth

330,271. TELEGRAPH-INSTRUMENT. George W. Stewart, New York, N. Y., assignor of one-half to Stephen J. Cox, same place. Filed Mar. 14, 1885. (No model.)



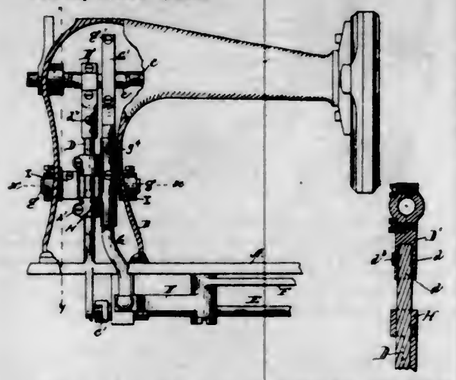
Claim.—1. In a telegraphic instrument adapted for communicating messages by alphabetical signs or symbols, provided with magnet and key, the sounder or lever-indicator E, connected at its one end to the armature above the magnet, provided centrally with a fulcrum upon which it may swing, and having at its other end a touch point or pin, H, arranged essentially as shown and described.

2. In combination with the sounder or lever-indicator E of a telegraphic instrument adapted for communicating messages by alphabetical signs or symbols, as herein set forth, and the sounder or indicator therein being provided with the touch point or pin H, a hollow arched casing, B, provided with aperture I, substantially as and for the purposes set forth.

3. In combination with the sounder E, provided with the touch point or pin H, the device K, for regulating the amount of freedom with which the sounder may work, according to the strength of the electric current, substantially as herein set forth.

4. The telegraphic instrument comprising casing B, provided with the aperture I, magnets D, armature C, sounder E, inclosed within the casing B and provided with the touch point or pin H, arranged to work through aperture I of casing B, also regulating device K, all arranged and combined substantially as shown and described.

330,272. SEWING-MACHINE. WILLIAM J. STEWART, Belleville, Ill. Filed July 14, 1884. (Model.)



Claim.—1. In a sewing-machine, the combination, with the main shaft and feed-shaft and a pitman connecting the two, of a vibrating lever mounted on trunnions arranged below the main shaft, and parallel thereto, its upper end embracing the crank on the main shaft, its lower end connected with the shuttle-lever, and its body portion intermediately between the said ends being provided with a suitable guide in which the pitman reciprocates, substantially as and for the purposes specified.

2. In a sewing-machine, the combination, with the pitman which operates the feed-shaft, of an independently-operated vibrating lever operating the shuttle-lever and having a guide through which the pitman reciprocates, the axis of vibration of the said lever being at right angles to the axis of the said guide, substantially as and for the purposes specified.

3. In a sewing-machine, the combination, with the shaft C, having crank c, feed-shaft E, having crank c', and pitman D, connecting the two, of lever G, mounted on an axis parallel with and between the said shafts, its upper end embracing the crank c, and its lower end connected with and operating the shuttle-lever, and the guide H, secured thereon, to receive the pitman D, substantially as and for the purposes specified.

4. The combination, with the main shaft C, having crank c, of the pitman D and vibrating lever G, the latter mounted on an axis parallel with the said shaft and being provided with a guide through which the former reciprocates, and both said lever and pitman being provided with axially-adjustable upper ends embracing the said crank, substantially as and for the purposes specified.

5. The combination, with the pitman D, of the independently-actuated vibrating lever G, provided with a guide, H, adjustably mounted thereon, to receive the pitman, substantially as and for the purposes specified.

330,273. STEM WINDING AND SETTING WATCH. RYLAND L. TAFT, Springfield, Ill., assignor to the Illinois Watch Company, same place. Filed Apr. 7, 1885. (Model.)

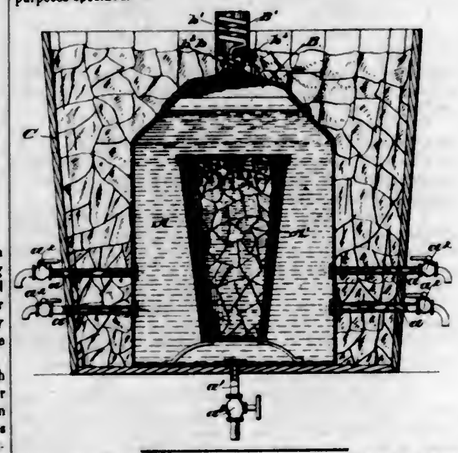


Claim.—1. In a stem winding and setting movement, the spring B, pivoted at or near one end and forked near the pivot, in combination with a setting lever or device adapted to move the spring, for the purposes described, substantially as specified.

2. The combination of the yoke D, having the recess L, the pivoted spring-lever B, the vibrating lever C, and a setting-lever, all arranged and adapted to operate substantially as specified.

330,274. PROCESS OF OBTAINING MENTHOL. ALBERT M. TODD, Nottawa, Mich. Filed Sept. 3, 1884. Renewed Oct. 21, 1885. (Specimens.)

Claim.—The process of obtaining a crystalline product from the oil of *Mentha piperita* by first congealing it, or rendering it in a semi-solid or jelly-like form, then separating or isolating it by gradually draining off the oil therefrom, and, thirdly, perfecting or hardening the crystalline mass by fusing the crystals and subjecting to a second congealing and a gradual raising in temperature, substantially as and for the purposes specified.

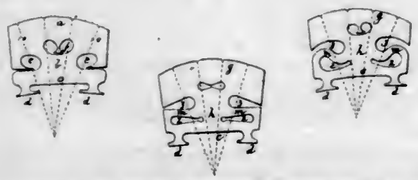


330,275. COMPOSITION OF MATTER TO BE USED IN DYEING. MARTIN E. WALDSTEIN, and ARMAND MÜLLER, New York, N. Y. Filed Feb. 14, 1885. (No specimens.)

Claim.—1. A composition of matter to be used in dyeing, containing a sulpho compound of the fatty acids, aniline or its homologues, and a neutralizing alkali, substantially as described.

2. A composition of matter to be used in dyeing, containing a sulpho compound of the fatty acid—such as sulphoricinoleic acid and sulpholeic acid and aniline-oil—having a large proportion of aniline and almost free of toluidine and the higher homologues, in substantially the proportions named, and ammonia, substantially as described.

330,276. VIOLIN-BRIDGE. MAURICE W. WHITE, Boston, Mass., assignor of one-half to George W. Ross, same place. Filed Feb. 2, 1885. (No model.)



Claim.—1. A bridge for stringed musical instruments, it having a head and feet and two horizontal bars interposed between the feet and head, substantially as and for the purpose described.

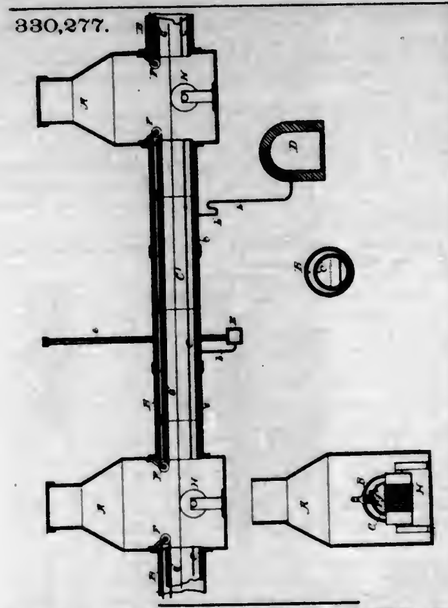
2. The bridge slotted from its edges in toward its center, as at 3, to form a waist, A, and provided with openings 2 2 below the slots 3, the said openings being extended in toward the vertical center of the bridge farther than the slots 3 3, thus contracting the waist of the bridge, substantially as described.

330,277. UNDERGROUND CONDUIT FOR ELECTRIC WIRES. THOS. D. WILLIAMS, Bellevue, assignor of one-fourth to John M. Boggs and William R. Kirkpatrick, both of Pittsburg, Pa. Filed July 3, 1885. (No model.)

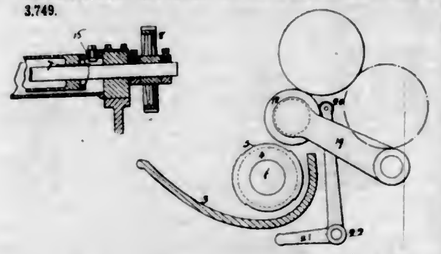
Claim.—1. In underground conduits, the man-holes A, outer pipes, B, having their ends surrounding side holes in said man-holes, and interior pipes, C, having their ends in said holes, all combined and arranged to form a water-passage between the pipes, and emptying into said man-holes, as described.

2. The combination, with the pipes B C and pulleys F, of the belt G, the upper half of said belt lying between the two pipes, substantially as described, whereby the wire and the oppositely-moving half of the belt are prevented from conflicting, as set forth.

330,277.



330,278. INKING APPARATUS FOR PRINTING-MACHINES. GEO. A. WILSON, Broad Green, near Liverpool, County of Lancaster, England. Filed Jan. 8, 1885. (No model.) Patented in England Feb. 22, 1884, No. 3,749.

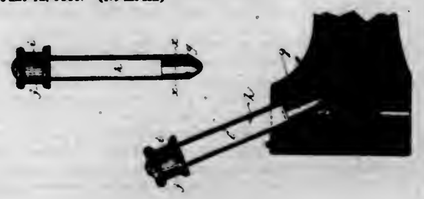


Claim.—1. In inking apparatus for rotary web-printing machines, the combination, with a fountain-cylinder, of toothed wheel and cam to impart rotary and reciprocating motion thereto.

2. In the inking apparatus of rotary web-printing machines, the fountain-cylinder having recesses formed in the face thereof, substantially as and for the purpose specified.

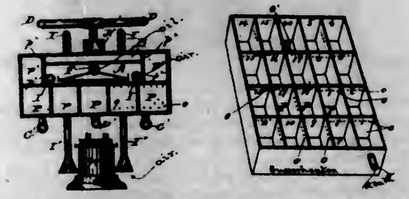
3. In the inking apparatus of rotary web-printing machines, the combination of a fountain-cylinder, a take-off roller, a small spreading-roller bearing on the take-off roller, and a pivoted spring-lever for retaining the spreading-roller in contact with the take-off roller, substantially as and for the purposes described.

330,279. CAR-COUPLING. WILLIAM WILSON, Bloomington, Ill. Filed June 12, 1885. (No model.)



Claim.—The draw-head having the part m of its pin-hole interiorly contracted at its top end to form the inwardly-projecting shoulders n, in combination with the coupling-pin C, having its body A conforming to the interiorly-contracted part of the pin-hole, and its lower end, g, enlarged and conforming to the part m of said pin-hole, substantially as described.

330,280. APPARATUS FOR MAKING AND BURNING GASEOUS FUEL. RUSSELL P. ANDREWS, Hartford, Conn., assignor of one-half to Henry Deitz, Albany, N. Y. Filed Feb. 16, 1885. (No model.)



Claim.—1. In a machine for making and burning gaseous fuel, the combination of an external heater, whereby uniform and continuous heat is supplied, connected water and steam receptacles over said heater, constituting with the heater a steam generating and superheating apparatus, a chamber continuously heated by said heater and receiving the superheated steam, a diaphragm in said heated chamber, whereby oil is divided and held thinly spread until vaporized by the heat in said chamber and mingled with the superheated steam, and a burner or burners communicating with said chamber where the mingled elements are consumed, as set forth.

2. In a machine for making and burning gaseous fuel, the combination of an external heater whereby uniform and continuous heat is supplied, connected water and steam receptacles over said heater, constituting with the heater a steam generating and superheating apparatus, a chamber continuously heated by said heater and receiving the superheated steam, a diaphragm in said heated chamber, whereby oil is divided and held thinly spread until vaporized by the heat in said chamber and mingled with the superheated steam, an independent water-receptacle arranged to be heated by said heater, a pipe or pipes extending from said water-receptacle over and into said heated chamber, and having air-receiving branches, whereby air is permitted to mingle with the hydrogen from the water in the tank and pass in a hydrogenated form into said chamber, where it is mingled with the superheated steam and vaporized oil, and a burner or burners communicating with said chamber where the mingled elements are consumed, as set forth.

3. The steam-superheating device composed of the series of compartments connected by orifices in their lower portions in such manner as to cause the steam to pass through each in succession, combined with a pipe for the admission of steam, and a heater under said compartments, as set forth.

4. The combination of the chamber A, having the perforated oil-supplying pipe, and the oil-subdividing diaphragm, the combining-chamber B, separated from chamber A by a perforated partition, and the side spaces, P' P', which receive superheated steam and communicate with the chambers A and B, as set forth.

5. The combination, with an external heater, of the oil supplying and subdividing apparatus composed of the pipe F, connected with an oil-reservoir, and having numerous perforations which deliver the oil in drops, and the gauze diaphragms under the perforations of said pipe, whereby the oil is held thinly spread for the action of the heat, as set forth.

6. In an apparatus for making gaseous fuel, the oil-supplying pipe F, containing the rod F', whereby the oil is caused to flow in a thin annular stream, and provided with numerous perforations communicating with the annular oil-containing space in the pipe, said rod and perforations causing the oil to escape in drops along the entire length of the perforated portion, as set forth.

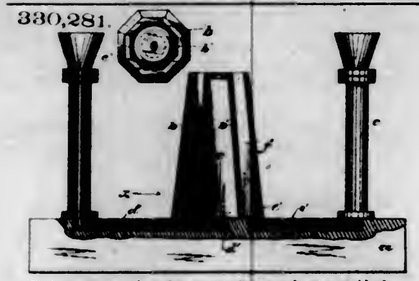
7. The steam-generating apparatus composed of the heater W, the water-pipes C' C', located over the heater and communicating with a suitable water-reservoir, the vertical tubes C^2 C^2, containing water and steam, and the steam-pipes D D, communicating with the tubes C^2 and with the superheating device, as set forth.

8. The air-hydrogenating apparatus consisting of the externally-heated water-tank H, the air-induction pipe I', and the pipes I, receiving air from the pipes I' and steam from the tank H, combined with the vaporizing-chamber and the heater, as set forth.

330,281. INGOT-MOLD. BENJAMIN ATHA, Newark, N. J. Filed May 5, 1885. (No model.)

Brief.—Casts one grade of metal in the inner mold, strips that mold, and casts for armor-plates a harder grade and for gun-ingots a softer grade of metal into the space between the ingot and the outer mold. Both molds may be oblong in cross-section.

330,281.



Claim.—1. A series of separable inner and outer molds for casting compound ingots, having independent chambers therein, in combination with a bed having ducts leading to said chambers, substantially as and for the purposes set forth.

2. In combination with a bed, *a*, having independent ducts, the inner and outer molds removable from the bed and separable from one another, and the funnels or receptacles for the poured metal, substantially as and for the purposes set forth.

3. In combination with a bed, a mold having walls of one degree of inclination, and a larger mold with a wall of a differing degree of inclination, said molds being removable from the bed and from one another, substantially as and for the purposes set forth.

4. In combination, a bed, *a*, having independent ducts therein, inner and outer molds arranged thereon, separable from one another and from the bed, and having separated chambers and independent funnels, said parts being arranged and combined substantially as set forth.

5. In combination with a bed having independent ducts, removable molds *b b'*, one of which is seated over the mouth or exit of one of said ducts and the other of which molds is seated over the mouth or exit of one of said ducts, and the other of which is larger than the first, to form a chamber with the ingot cast in the first said mold, the other of said ducts leading into said chamber, substantially as set forth.

6. In combination, a bottom, base, or bed, *a*, having ducts *d d'* and funnels *c c'*, and removable inner and outer molds, substantially as and for the purposes set forth.

7. In combination with a suitable bed or base, inner and outer molds, the inner of which is provided with tapering sides and is of one integral piece from the base upward, and free from joints, to prevent said mold from warping and the liquid from passing into said joints, whereby said inner mold may be quickly withdrawn from the core-casting and a second casting or layer be cast against the first under the best conditions, as set forth.

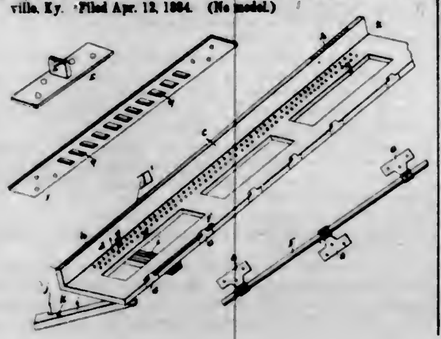
330,282. CUFF-HOLDER. SAMUEL T. ATKIN and WALTER L. STEELE, Georgetown, Tex., assignors of one-third to Oliver Steele, same place. Filed Mar. 27, 1885. (No model.)



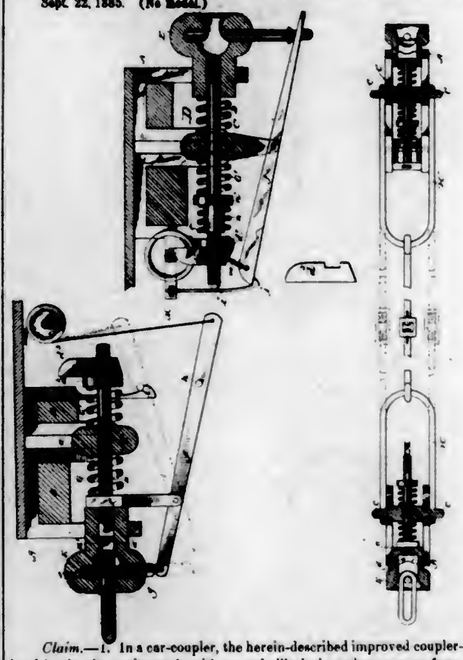
Claim.—1. A cuff-holder having the button A, twisted shank B'', and the spring B^2, for actuating the pin C, all made of one continuous piece of wire, substantially as shown and described.

2. A cuff-holder consisting of button A, having twisted shank B'', and safety-pin C, substantially as shown, and for the purpose described.

330,283. TRANSPOSITION KEY-BOARD. PAUL AUSTHAN, Louisville, Ky. Filed Apr. 12, 1884. (No model.)



330,284. CAR-COUPLING. JAMES R. AVERY, Louisville, Ky. Filed Sept. 22, 1885. (No model.)



Claim.—1. In a car-coupler, the herein-described improved coupler-head having its cavity made with a semi-elliptical or other concave form, of the rear wall joined by cylindrically-circular walls blending therewith and forming the front opening to the said cavity, substantially as described, and for the purpose set forth.

2. In a car-coupler, the herein-described coupler-head having its cavity made with a semi-elliptical or concave rear wall joined by cylindrically-circular walls blending therewith and forming the front opening to the cavity, the said rear wall provided with an additional rearward-extending cavity for the reception of the inner end of the link to hold its outer end elevated for coupling with a higher car, substantially as set forth.

3. The coupler-head having its cavity made with a concave or semi-elliptical rear wall joined by circular walls blending therewith and forming the front opening of the cavity, the said rear wall provided with an additional rearward-extending cavity for the reception of the inner end of the link, combined with a draw-bar having its end constructed to fit in said rearward-extending cavity to permit the longitudinal movement of the coupler-head, substantially as and for the purpose set forth.

4. In a car-coupler, a coupler-head having a pin-hole entering its under side, passing vertically into its upper side, preferably not quite through, and with the contour of said upper side convex, a link-cavity having a concave rear wall and reverse cylindrically-circular walls thereto, and link-rest and draw-bar cavity, all substantially as and for the purpose specified.

5. In a car-coupler, the pivoted cross-bar having the draw-bar passing therethrough, the said draw-bar carrying the coupler-head, constructed and operating substantially as set forth.

6. The combination, with the coupler-frame, of a cross-bar pivoted therein, a draw-bar supported by said cross-bar, and a coupler-head supported on the end of said draw-bar, substantially as described.

7. The combination, with the coupler-frame, of a cross-bar pivoted therein, a draw-bar supported by said cross-bar, a coupler-head supported on the end of said draw-bar, and springs interposed between the ends of the draw-bar and the cross-bar to cushion thrust in both directions, as set forth.

8. In a car-coupler, the combination, with a pivoted cross-bar and a draw-bar supported therein, of springs interposed between the ends of the draw-bar and the pivoted cross-bar, as set forth.

9. In a car-coupler, the combination, with a pivoted cross-bar and a draw-bar supported therein having a coupler-head connected with and adapted to slide upon the front end thereof, of a spring or springs interposed between the sliding coupler-head and the cross-bar, and a spring or springs interposed between the rear end of the draw-bar and the cross-bar by which it is supported, as set forth.

10. In a car-coupler, the combination of a pivoted cross-bar having a draw-bar passing therethrough, a coupler-head connected with and sliding longitudinally upon the front end, and a nut or other abutment upon the rear end of said draw-bar, and springs interposed between the sliding coupler-head and cross-bar and between the nut or other abutment and the cross-bar, substantially as and for the purpose set forth.

11. In a car-coupler, the combination, with a coupler-frame, of a pivoted cross-bar having a draw-bar passing therethrough, a coupler-head connected with and sliding longitudinally upon the front end, and a nut or other abutment upon the rear end of said draw-bar, and springs interposed between the sliding coupler-head and cross-bar and between the nut or other abutment and the cross-bar, substantially as and for the purpose set forth.

12. In a car-coupler, the combination, with a coupler-frame, of a pivoted cross-bar having a draw-bar passing therethrough, a coupler-head connected with and sliding longitudinally upon the front end, and a nut or other abutment upon the rear end of said bar, and springs interposed between the sliding coupler-head and cross-bar and between the nut or other abutment and the cross-bar, substantially as and for the purpose set forth.

13. In a car-coupler, the combination, with a cross-bar supporting the sliding draw-bar and coupler-head, of a rod or rods, chain or chains extending the entire length of the car and rigidly connecting with the cross-bar at the other end of the car, substantially as set forth.

14. In a car-coupler, the combination, with a cross-bar supporting the sliding draw-bar and coupler-head, of a rod or rods, chain or chains extending the entire length of the car and rigidly connected with the cross-bar at the other end of the car, and means for adjusting and tightening the said rods, as set forth.

15. In a car-coupler, a cross-bar having a draw-bar passing therethrough, a coupler-head connected with and sliding longitudinally upon the front end, and a nut or other abutment upon the rear end of said draw-bar, springs interposed between the sliding coupler-head and cross-bar and between the nut or other abutment and the cross-bar, combined with rods, bars, or chains connecting the couplers of the same car rigidly, as shown and described.

16. A car-coupler comprising the coupler-frame, a cross-bar pivoted in said frame, a draw-bar passing through said cross-bar, a coupler-head connected with and sliding longitudinally upon the front end, and a nut or other abutment upon the rear end of said bar, springs interposed between the sliding coupler-head and cross-bar and between the nut or other abutment, and the cross-bar and rods or their described equivalents connected with the cross-bar and extending the entire length of the car, and connected with the coupler at the other end of the car in a similar manner, as set forth.

17. In a car-coupler, the combination, with the cross-bar, a draw-bar passing through said cross-bar, and a coupler-head connected with and sliding longitudinally upon the front or outer end of said draw-bar, of a sliding hanger supporting the link-operating lever, a spring arranged to press against said hanger to hold the lever in a locked position, and means to lock said lever, the said hanger arranged to be operated by the coupler-head upon the inner movement thereof on the draw-bar to release the said locked lever to operate the coupling-pin, substantially in the manner and for the purpose set forth.

18. In a car-coupler, the coupler-frame, a cross-bar pivoted therein, a draw-bar passing through said cross-bar, a coupler-head connected with and sliding longitudinally upon the front or outer end of said draw-bar, a sliding hanger supporting the link-operating lever, a spring arranged to press against said hanger to hold the lever in locked position, and means to lock said lever, combined with means, substantially as described, for operating said lever to withdraw the coupling-pin from the link-cavity, all arranged and operating substantially as set forth.

19. The cross-bar and the draw-bar supported to slide therein and having upon its outer end a coupler-head, combined with a flanged sleeve supported upon the rear portion of the draw-rod, and springs supported between the cross-bar and the flanged sleeve and between the said sleeve and the end, substantially as described.

20. The cross-bar and the draw-bar supported to slide therein and having upon its outer end a spring or springs interposed between said coupler-head and the cross-bar, combined with a flanged sleeve supported upon the rear portion of the draw-bar, and a spring interposed between the collar and the cross-bar and between the cross-bar and the rear end of the draw-bar, all constructed and operating substantially as set forth.

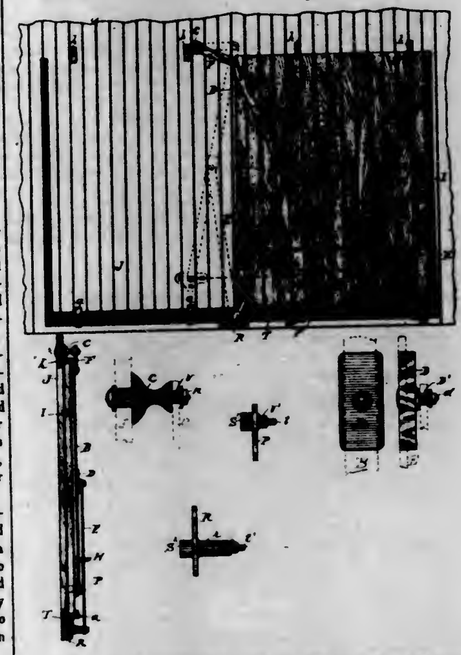
21. In a car-coupler, the sliding draw-bar made with its rear end provided with a screw-thread, combined with a notched pin in a slot and a screw-nut bearing against said pin to hold the notch portion thereof against a wall of the slot, substantially as described.

330,285. INDEX. GEORGE T. BARTON, Englewood, assignor to Shaw Smith, Chicago, Ill. Filed Dec. 16, 1884. (No model.)



Claim.—The combination, with a book, of an index having letters along its edge, and provided with a flexible folding extension, D, said extension being secured at one end to the cover at a point, substantially as shown, within its edges, to bring the index-letters along the front edge of the cover when the book is closed and retain the greater portion of said extension inside the limits of the book-cover when the index is outside of the book, substantially as described.

330,286. DOOR-HANGER. ALBERT J. BATES, Joliet, Ill., assignor of one-half to Henry C. Knowlton and Benjamin H. King, both of same place. Filed Sept. 21, 1885. (No model.)



Claim.—1. In combination with the door I, the lever B, having its lower end pivoted to the lower central portion of said door, the link F, for pivotally connecting the upper end of said lever with the building J, above and near the inner upper corner of the door, the supporting-bar E, for pivotally connecting the said lever with the building, below and near the inner lower corner of said door, and the studs and studded plates C, P, R, and D, as and for the purpose set forth.

2. In combination with the building J and door I, the lever B, link F, rail T, supporting-bar E, and studs and studded plates C, P, R, and D, as and for the purpose set forth.

3. In combination with the building J and door I, and the means shown and described for supporting and operating said door, the hand-rail H, base-rail T, and guards *a* and *h*, substantially as and for the purpose set forth.

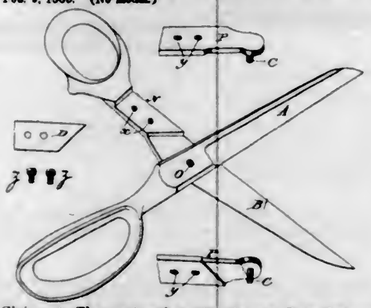
4. In combination with the building J and door I, the lever B, link F, base-rail T, guards *a* and *h*, supporting-bar E, and studs and studded plates C, P, R, and D, as and for the purpose set forth.

5. In combination with the lever B, bar E, and link F, the stud C, having the rear shank, S, and face-stud V, and adapted to be secured to the building J by means of a bolt and nut, N, the plate P, having the

rear shank, S', and face-stud V', and screw-threaded stem t and plate R, having the rear shank, S², the face-stud r, and screw-threaded stem t', and the channeled plate D, having the face-stud D', and securing nut and bolt d, as and for the purpose set forth.

6. In the door-hanger shown and described, the plate D, channeled on its rear side for the reception of lever B, and having the face-stud D', for pivotally connecting said lever with supporting-bar E, and arranged to be secured in place on said lever by means of a bolt passing through said parts, and a nut, d, turned on said bolt, as and for the purpose set forth.

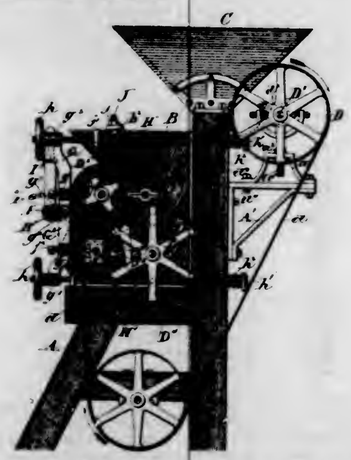
330,287. SCISSORS. THEODORE BATHROFFER, Shelby, Nebr. Filed Feb. 9, 1885. (No model.)



Claim.—1. The combination, with the arm B, having a recess or depression, N, of the arm A and the plate P, secured at one end in said depression N, and having its other end projected forward over the arm A, and provided with a pin, C, substantially as set forth.

2. The combination, with the arm B, of the plate P, having its rear end removably secured to the arm B and its forward end projected forward over arm A, and having a pin, C, and a spacing-strip interposed between the rear end of the plate P and the arm B, substantially as set forth.

330,288. ROLLER-MILL. FRANK H. BOLTE and HERMAN G. THEDE, Milwaukee, Wis., assignors of one-third to John W. Thede, same place. Filed May 31, 1884. (No model.)

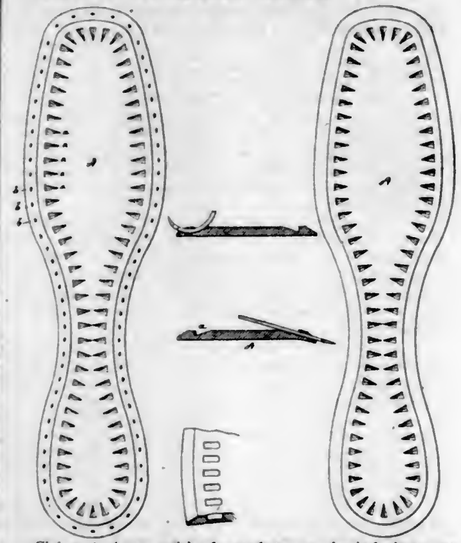


Claim.—1. In roller-mill, the combination of an adjustable cracking-roller and an adjustable grinding-roller, movable sliding bearings wherein said adjustable rollers are mounted, fixed cracking and grinding rollers, an articulated spring-frame consisting of jointed bars, spring-rods passing through the extreme outer ends of said bars, and carrying coiled springs upon their rear ends, a horizontally-moving rod on which said bars are pivoted, the mill-frame having horizontally-projecting slotted studs for the reception of the ends of the said horizontally-moving rod, adjusting-screws carried by the jointed bars of the spring-frame, and a cammed shaft and a lever to regulate the movements of the horizontal rod, substantially as set forth.

2. In a roller-mill, the combination of the adjustable and fixed cracking and grinding rollers, articulated spring-frame consisting of jointed bars, spring-rods passing through the extreme outer ends of said bars, and carrying coiled springs upon their rear ends, a horizontally-moving rod on which said bars are pivoted, wedge-shaped bars and set-screw stops the slotted casing provided with bearings, a suitably-cammed shaft, and an actuating-lever, substantially as and for the purpose set forth.

3. In a roller-mill, the combination of the rollers E E' F F', fixed boxes e f, sliding boxes e' f', and the spring-frames consisting of articulated bars G G', provided with sleeves g^3 g^3, rods H H', having hand-wheel nuts h h, heads h' h', and coiled springs h^2 h^2, and the adjusting-screws e^2 f^2, substantially as shown and described, and for the purpose set forth.

330,289. INSOLE FOR BOOTS OR SHOES. CHARLES F. BOSWORTH, Milford, Conn. Filed Aug. 26, 1885. (No model.)

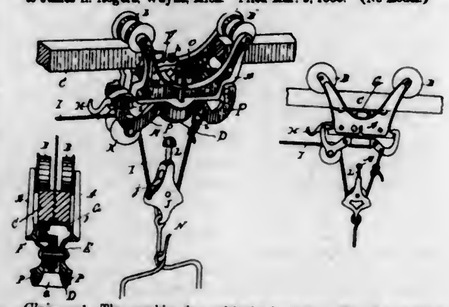


Claim.—1. As an article of manufacture, an insole for boots and shoes, having grooves radial to the edge formed on one of its surfaces, the said grooves terminating near the edge, but so as to leave the stock of the sole between the end of the grooves and the extreme edge in substantially its normal condition, substantially as described.

2. As an article of manufacture, an insole for boots and shoes, having radial grooves formed on one side, starting from the surface, deepening toward the edge, but stopping short of the edge, substantially as described.

3. An insole for boots and shoes, having radial grooves formed on one side, starting from the surface, deepening toward the edge, but stopping short of the edge, the sole pierced from the outer end of the grooves through the edge of the sole, substantially as described.

330,290. HAY-CARRIER. WILLIAM W. BOWER, Romulus, assignor to James H. Rogers, Wayne, Mich. Filed Mar. 5, 1885. (No model.)

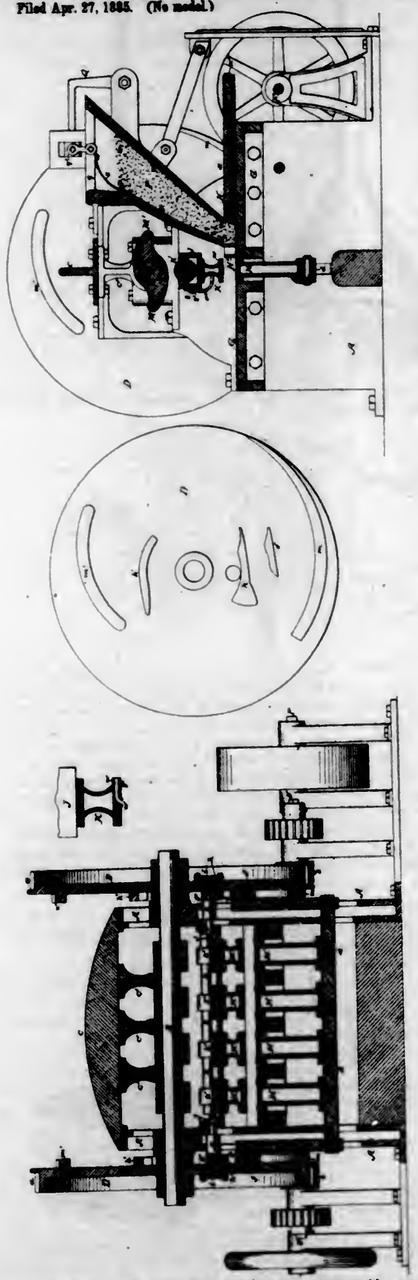


Claim.—1. The combination, with the hook-lever E and trip-lever F, of the cam-plate G, having groove with inclined portions n n and straight portion m, as and for the purposes set forth.

2. In a carrier, substantially as described, the weighted lever H, having hook, as shown, combined and adapted to serve with the pulley-block H', as and for the purposes set forth.

3. The combination, with the weighted hook-lever E, having projection c and hook b, of the cam-plate G, having groove m n, the trip-lever F, having lugs h and h', and the fork-carriers, having head M, as and for the purposes set forth.

330,291. MACHINE FOR MOLDING PLASTIC MATERIALS INTO BRICKS, &c. SAMUEL BRIGHTMORE and ALLEN DIXON, Philadelphia, Pa. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination of the table and its molds, upper and lower transverse plunger-carriers guided in the frame, and a transverse shaft having at its opposite end cam-disks for acting upon both sets of plunger-carriers, as set forth.

2. The combination of the table and its molds, the upper transverse plunger-carrier guided in the frame, and a transverse shaft having at the opposite ends cam-disks acting upon the projecting opposite ends of the plunger-carrier, said shaft being also provided with tappets, whereby a molding-pressure is imparted to the plunger-carriers, as specified.

3. The combination of the guided plunger-frame J, having a shaft, k, with collars thereon, cams acting upon the opposite ends of the frame to raise the same, and tappets for acting on the collars of the shaft to depress the frame, as specified.

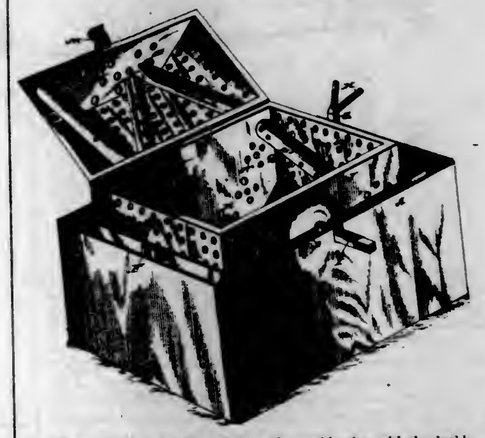
4. The combination of the guided plunger-frame having projecting studs with anti-friction rollers g' thereon, and the cam-disks D, having removable plugs i, for permitting access to said rollers, as specified.

5. The combination of the molds, the upper plunger-carrier, and the tappet-shaft B, with a frame having a transverse brace, C, with bearings which serve to prevent springing of the shaft, as set forth.

6. The combination of a series of plungers and a plunger-carrier, with steam supply and discharge pipes secured to said carrier, and having branches whereby each plunger is caused to communicate with each of the pipes, as specified.

7. The combination of the feed-hopper having inclined sides, the internal agitating-plates having a bearing against the sides of the hopper, and means for reciprocating said plates, as specified.

330,292. WASHING-MACHINE. DUDLEY L. BURGESS and JOHN F. BROXTON, Dallas, Tex. Filed Apr. 1, 1885. (No model.)



Claim.—1. In a washing-machine, the combination, with the double casing or boiler, of the revolving perforated casing having a hinged cover, and provided with interior transverse diagonal tubes extending alternately in opposite directions, and having open ends and perforations in their inner sides, substantially as herein described, for the purpose set forth.

2. In a washing-machine, the combination, with the double casing or boiler, of the revolving perforated casing having interior transverse diagonal tubes extending alternately in opposite directions, and having rows of perforations in their inner sides, and provided at their ends with openings extending through the ends of the casing, said openings being of less diameter than the said tubes, substantially as herein described, for the purpose set forth.

330,293. SPRING BED-BOTTOM. SANFORD S. BURR, Winnetka, assignor to the Burr Bed Company, Chicago, Ill. Filed Oct. 10, 1883. (No model.)

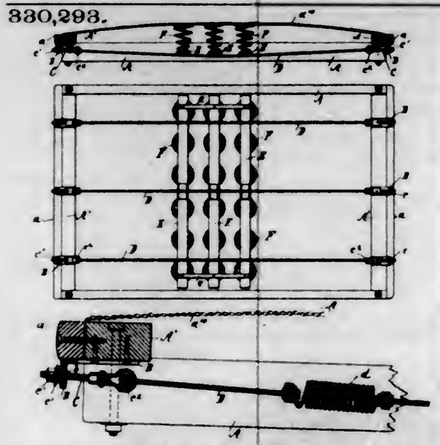
Claim.—1. In a spring bed-bottom, the combination, with the main frame and the cover connected to the ends of said frame, of the several rows of spiral springs located beneath said cover, the transverse slats whereon said springs rest, the tie-slats connecting said transverse slats, the sustaining rods or wires, and means, substantially as described, for adjusting said rods, substantially as set forth.

2. In a spring bed-bottom, the combination, with the main frame and the cover, of the springs beneath said cover, the sustaining-rods provided with screw-threaded connections and adjusting-nuts, and the angle-irons for supporting said rods located and arranged substantially as described, whereby the adjusting-nuts of the rods can be operated from the end of the bed-bottom, substantially as described.

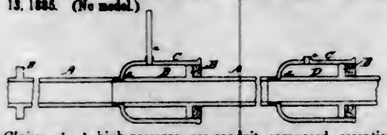
3. In a spring bed-bottom, the combination, with the main frame and with the cover connected at its ends to said frame, of the freely-movable supplemental platform, consisting of a series of slats held at proper distances apart, the spiral springs mounted in series thereon and bearing against the cover, and the adjustable suspension-cables which support said supplemental platform and regulate the tension of the spiral springs and of the cover, substantially as described.

4. In a spring bed-bottom, the combination, with a woven-wire mattress and a series of spiral springs supported against the under side of the same on top of movable transverse bars, of a series of cords adjustably fastened to the end bars of the frame supporting the said transverse bars, substantially as shown and described.

330,293.



330,294. MAIN FOR CONVEYING GAS UNDER PRESSURE. THOS. A. CONNOLLY and ANTHONY A. CONNOLLY, Washington, D. C. Filed Oct. 13, 1885. (No model.)



Claim.—1. A high-pressure gas-conduit composed, essentially, of tubular sections A A, coupled together and formed with chambered casings encircling the coupled joints and adapted for the reception of leakage gas, said casings being made integral with the main sections A A.

2. In gas-conveying systems, the combination, with the conduit-sections A A, connected together at their adjacent ends by couplings, of the bowls C, formed integral with the respective main sections, and provided with means, substantially as described, for conveying off the leakage gas, and having annular cavities between their inner surfaces and the body of the sections formed and adapted for the reception of said gas.

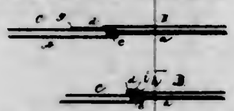
3. A gas-conveying conduit consisting of sections of pipe coupled together and having chambered boxes or collars encircling their joints, said boxes or collars being made integral with the main section and adapted for the reception of leakage gas, and being provided with means for the escape of said gas.

4. A gas-conduit section formed with a bowl, C, at one end and a flange or collar at or near the other end, said collar and bowl being made integral with the main conduit-sections, and means for coupling, all so constructed and arranged that when the sections are coupled together said bowl will form a chamber around the joint for the reception of leakage gas.

5. The combination of the sections A A, one of said sections having a bowl, C, formed at one end with the flange or collar B, encircling the other section and adapted to enter and close the mouth of said bowl.

6. In a gas-conveying system, the combination of the pipes A A, each having at one end a bowl, C, and at the other end a flange, B, formed integral therewith, said pipes being threaded at or near either end to form screw-connections, substantially as described.

330,295. SHIRT. EDWARD T. CRAVEN, Easton, Pa., assignor of one-half to Edwin R. Burke, same place. Filed Sept. 24, 1884. (No model.)

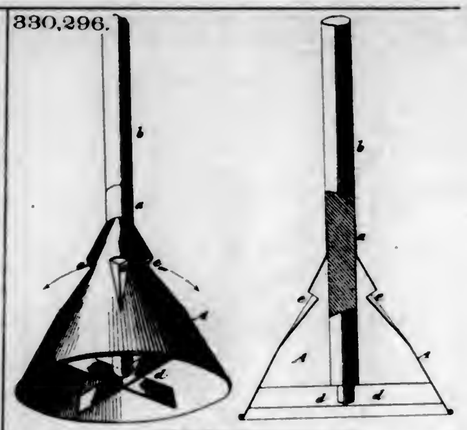


Claim.—The method of securing a shirt-bosom to the front opening of a shirt-body, the same consisting in stitching the lining to the edge of the opening with an interposed strip and the re-enforce, and in folding and turning the strip over the edge of the bosom, and securing the whole by a line of stitches, substantially as specified.

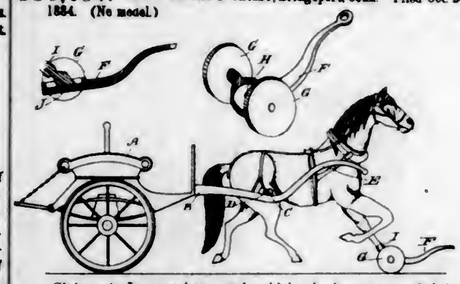
330,296. POUNDER OR WASHING-MACHINE. CALVIN CRITCHFIELD, Shields, Ind. Filed Mar. 7, 1885. (No model.)

Claim.—In pounder washing-machines, a single cone having holes *e* opening into channels on the outside, open at bottom and provided with cross-bars above said bottom, whereby it may be operated in the manner described.

330,296.



330,297. TOY. GEORGE S. CROSBY, Bridgeport, Conn. Filed Oct. 20, 1884. (No model.)



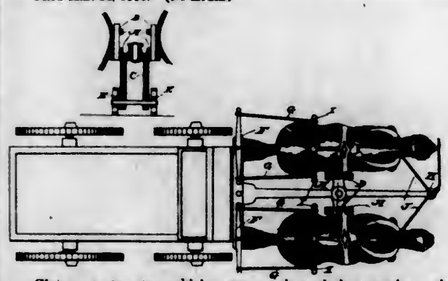
Claim.—1. In a toy horse and vehicle, the horse suspended from the shafts and with one of the front hoofs swiveled to a rolling truck, substantially as shown and described.

2. The horse having pin projections D E, in combination with the shafts having U-shaped lugs C, substantially as set forth.

3. In a toy horse and vehicle, one of the front hoofs of the horse having a downward projection, and adapted to extend within a perforation in a rolling truck, substantially as shown and set forth.

4. The combination of the horse provided with lateral pin projections D E, and with projection extending downward from one of the front hoofs, with the shafts provided with U-shaped lugs and the rolling truck having central perforation, substantially as shown and described.

330,298. TOY-VEHICLE TEAM. GEORGE S. CROSBY, Brooklyn, N. Y. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a toy-vehicle team, a pole made in two pieces, the forward part secured to a truck and pivoted to the rear portion, as specified.

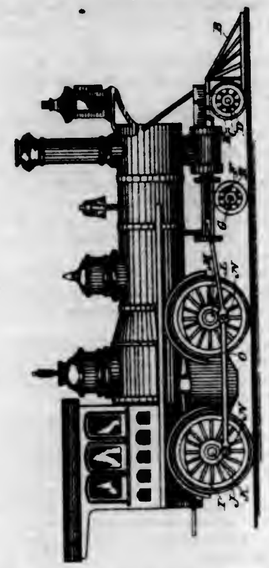
2. In a toy-vehicle team, a pole made in two pieces, the forward part being secured to the truck which supports the animals and pivoted to the rear portion, as shown.

3. A toy-vehicle team consisting of a pair of animals pivotally attached to a truck swiveled to the pole, said animals being attached to the whiffletrees by elastic traces, substantially as described.

4. In a toy-vehicle team, the combination, with a truck swiveled to the pole and provided with wheels and upwardly-projecting pins, of the animals having lugs extending from their sides, substantially as set forth.

5. The combination of the truck, swiveled to the pole and having upwardly-projecting pins, animals having laterally-projecting lugs, and whiffletrees provided with elastic traces, substantially as shown and described.

330,299. TOY LOCOMOTIVE. GEORGE S. CROSBY, Bridgeport, Conn. Filed Apr. 23, 1884. Renewed Mar. 14, 1885. (No model.)



Claim.—1. A toy locomotive having two or more driving-wheels and two or more small wheels on each side, the rear driving-wheels and the forward small wheels having flanged rims, and the intermediate wheels being free from contact with the floor or other surface, substantially as described.

2. In combination with the wheels I, having flanges J, the pivoted truck A, cast integral with the cow-catcher B, and supporting the axle C, having mounted thereon the flanged wheels D, substantially as set forth.

3. The driving-wheels L, raised out of contact with the floor, and the flanged driving-wheel I, in combination with the lever O and crank-pins N, substantially as set forth.

330,300. LOW-PRESSURE STEAM-BOILER. JOHN CURRY, Peoria, Ill. Filed Jan. 19, 1885. (No model.)

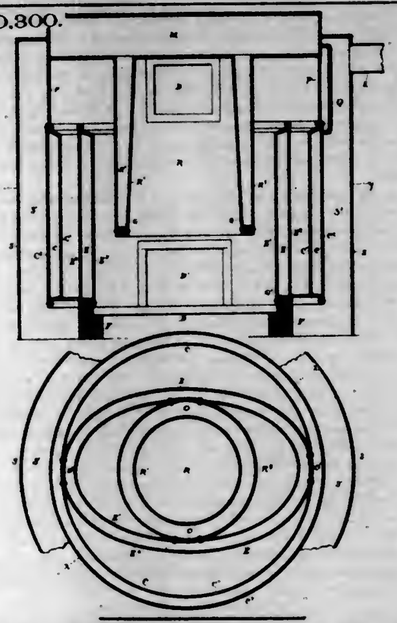
Claim.—1. The combination, in a boiler, of the double-walled cylinder and the double-walled elliptical partition, riveted or otherwise secured together at their lines of contact, and having openings through the touching walls at said lines of contact, substantially as and for the purpose specified.

2. In a boiler, the dome M, the double-walled reservoir R, and the door D, opening radially through said reservoir just beneath said dome, in combination with the elliptical double-walled partition E, surrounding said reservoir, and secured thereto at their lines of contact, and having openings through the touching walls at said lines of contact, substantially as and for the purpose set forth.

3. In a boiler, the cylindrical dome M, the double-walled reservoir R, and the door D, in combination with the elliptical double-walled partition E, surrounding said reservoir and secured thereto at the lines of contact, and having openings through the touching shells at said lines of contact, substantially as described, and the double-walled cylinder C, surrounding said elliptical partition and secured thereto at the lines of contact, and having openings through the touching shells at said lines of contact.

4. In a boiler, the dome M, the double-walled reservoir R, and the door D, giving access to said reservoir, in combination with the elliptical double-walled partition E, surrounding said reservoir and riveted thereto, and having openings through the touching shells at their lines of contact, the double-walled cylinder C, surrounding said partition E and riveted thereto, and having openings through the touching shells at the lines of contact, the partition P, closing the space between the upper edge of said cylinder C and the dome M, one or more pipes, Q, for conveying steam from the said cylinder C to said dome, and the inclosing-shell S, as set forth, for the purposes specified.

330,300.

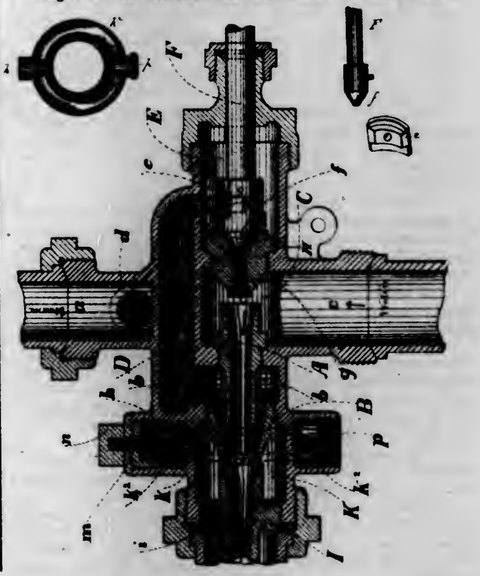


330,301. FABRIC-TURFING IMPLEMENT. JOSIAH J. DEAL, Wilmot, assignor to Ebenezer Rose and Joseph L. Parks, Toledo, Ohio. Filed May 8, 1885. (No model.)



Claim.—In an implement for turfing fabrics, the needle formed with the angular bend *b*, to give the proper and regular motion of the needle transversely of its to-and-fro movement, in combination with the slotted plate *a*, and handle A, substantially as and for the purpose described.

330,302. STEAM-BOILER INJECTOR. JOHN DESMOND, Cleveland, assignor to Alonzo Notoman, Toledo, Ohio. Filed Oct. 24, 1884. (Model.)

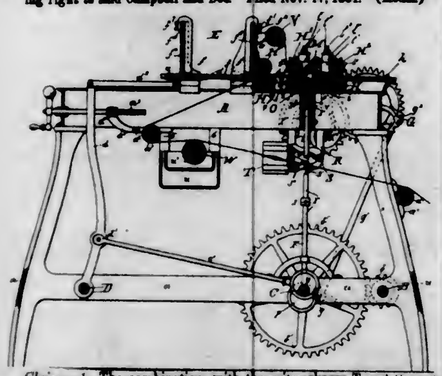


Claim.—1. In a steam-boiler injector, the combination, with a combining-tube and two concentric nozzles adapted to throw two concentric jets toward the receiving-mouth of said pipe, of an overflow-chamber lying between the opposite and contiguous extremities of said nozzles and said pipe, a receiving-chamber communicating with said overflow-chamber, an automatically-actuated valve controlling the passage-way between the two chambers, and overflow-ports branching from the receiving-chamber and extending around the overflow-chamber, and united by a common discharge-pipe, substantially as shown and described.

2. The combination, in an injector, of a combining-tube, concentric nozzles, the discharge end of the latter being in nearly the same plane and terminating a short distance from the receiving end of the combining-tube, an overflow-chamber surrounding the contiguous ends of said pipe and nozzles, a steam-chamber surrounding the inner nozzle and communicating with the outer nozzle, a water-chamber surrounding the receiving end of the inner nozzle and leading to the interior thereof, a steam-supply compartment in line with and adapted to discharge steam into the receiving end of the inner nozzle, whereby water is drawn from the surrounding water-chamber and forced through said inner nozzle, a passage communicating with the steam-chamber surrounding the inner nozzle and with said steam-supply chamber, and a valve located in said latter chamber and arranged to control the admission of steam to either the inner or outer nozzle singly or simultaneously, substantially as shown, and for the purposes specified.

3. In an injector having concentric nozzles, the combination of a steam-supplied chamber provided with a discharge-port in axial line with the inner nozzle and terminating at a short distance therefrom, a steam-port leading from the side of said chamber and communicating with the outer nozzle, a plunger-rod provided with a valve to close said discharge-port, and a slide-valve loosely connected with said rod and adapted to close the steam-port leading to the outer nozzle, substantially as and for the purposes set forth.

330,303. BOOKBINDING-MACHINE. George B. Durkee, Chicago, Ill., and Angus Campbell, Hamilton, Ontario, Canada, assignors of one third to Albin K. Dea, Chicago, Ill.; said Durkee assignor of his remaining right to said Campbell and Dea. Filed Nov. 17, 1881. (Model.)



Claim.—1. The combination, with the miter-shears T and the cutting-off knife O, of the gage-roller a^3, arranged so as to reverse the course of the cloth and adapted to regulate the length of cloth traveling between said miter-shears and knife into a number of whole pieces corresponding to the size of book-covers desired.

2. The hopper E, consisting of four corner-pieces, the two rear ones of which are adjustable longitudinally, the front and rear boards, the former of which is adjustable vertically, the adjustable gage-fingers riding on said boards, as described, and the bed-plate forming the bottom of said hopper, substantially as set forth.

3. The combination of the gage-slides provided with fingers and thumb-screws, and the hopper E, substantially as and for the purposes set forth.

4. The combination of the bearings f', supported above the frame of the machine, the studs l^3, projecting vertically therefrom and passing through said bearings, the springs l^4 on the studs above the bearing, nuts l^5, and nuts l^6, for regulating the pressure thereof on said bearings, with the rollers H^3 and H^2 and H^4 and H^5, whereby the pressure of the said rollers on the passing raw cases is controlled.

5. The connecting-rods r, operated by the cams p, and provided with heads s, to which are pivoted the rods s', in combination with the miter-shears T and cutting-off knife O, as hereinbefore specified.

6. The miter-shears T, consisting of two arms pivoted, as shown, on the transverse rod S, and provided with laterally-projecting studs t, adapted to pass through eccentric slots f in the wings or arms t^2, arranged diametrically opposite each other on a boss, t^3, keyed fast to the rock-shaft s^2

7. The cutting-off knife embedded in the bed-block, to which are hinged the pressure or folding blocks of specified shape and form having recesses in their inner surfaces, in which are inserted springs, all as and for the purposes stated.

8. The cam L, connecting-rod m, and arm m', in combination with the folding-roller o and pressure-bar o', substantially as and for the purpose set forth.

9. The combination of the end-folding roller and pressure-bar with the cutting-off knife and folding or pressure blocks, substantially as described.

10. In a machine for making book-covers, the combination of the gluing-roller with the hopper E, feed-slide e, and feed-rollers H^4 and H^5, substantially as described.

11. In a machine for making book-covers, the combination of the side hemmers, 1 and 2, and the bars on which said hemmers are adjustable laterally, with the rollers H and H' H^2 and H^3, end-folding rollers, holding-bar, cutting-off knife, and folding-blocks attached thereto.

12. The combination, with the paper-reel V, projecting longitudinally and centrally from the end board, f^5, adapted to supply a narrow strip of suitable material to strengthen the backs of the raw cases of the rollers H' and H^2, a ferrule on said roll H', and cutting-off knife O, as herein described.

13. The combination of the feed-rollers, hemmers, folding-roller, pressure-bar, and cutting-off knife and blocks, substantially as described.

14. The combination of the guide-roller a^2, miter-shears T, and gage-roller, substantially as described.

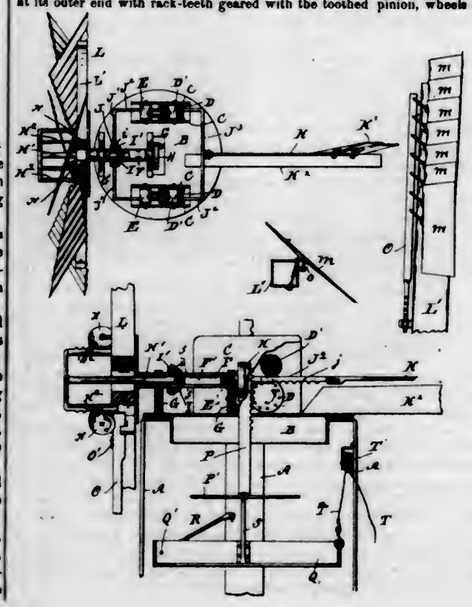
15. The combination, in a machine for making book-covers, of the miter-shears, gluing-roller, gage-roller, and hopper provided with the feed-slide, feed-rollers H' and H^2 H^4 and H^5, hemmer, folding device, and cutting-off knife, substantially as described.

16. The combination of the friction-clutch, the series of gear-wheels arranged to convey the intermittent movement of the clutch to the feed and pressure rollers, and said feed and pressure rollers, with the cam p, connecting-rods r and s', cam C, rod m, the miter-shears, and cutting-off knife, whereby said shears, knife, and end-folding devices are operated alternately while the feed mechanism is at rest, and vice versa.

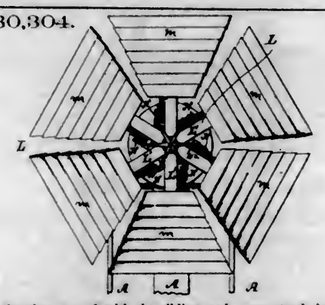
330,304. WIND-WHEEL. John T. Eden, Odell, Nebr. Filed Mar. 5, 1885. (No model.)

Claim.—1. The combination, in a windmill, of the sails pivoted between their ends, and having one end or arm heavier than the other, the vane-plates pivoted to the vane-rod, a counter-balance, and connections between the counter-balance, the sails and vane-plates, whereby an outward movement of the heavy arm by centrifugal force will effect an elevation of the counter-balance, substantially as set forth.

2. The combination of the hollow shaft, the wheel secured on the shaft, and having its sails pivoted between their ends, and made heavier at one end than the other, a toothed pinion journaled to the wind-wheel, bars secured to the sails and having rack-teeth geared with the toothed pinion, a sliding rod operating through the hollow shaft, and provided at its outer end with rack-teeth geared with the toothed pinion, wheels



330,304.



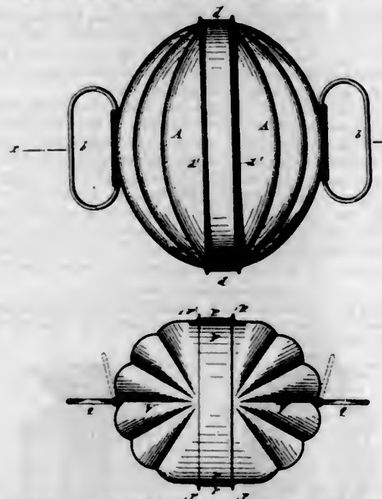
on the framing geared with the sliding rod, a counter-balance, and the wheels on the framing, substantially as set forth.

3. The combination of the pivoted sails having one arm heavier than the other, the bar secured to such sails, and having rack-teeth on its inner portion, a pinion journaled on the wheel and meshed by the rack-bar, the sliding rod, a toothed wheel on the framing geared with said rod, a counter-balance, and a rack bar or bars secured to the counter-balance and geared with the toothed wheel on the framing, substantially as set forth.

4. The combination of the wind-wheel having the pivoted sails, the toothed pinion journaled on the wheel, the bar secured to the sails and having rack-teeth geared with the toothed pinion, the sliding bar having racks geared with the toothed pinion, the wheels D, journaled on the framing of the mill and connected with the inner end of the sliding rod, the bars P, connected with the wheels D, and having the plate P' on their lower ends, and the counter-balance having uprights S, provided near their upper ends with slots S', fitted over the edge of the plate P', substantially as set forth.

5. The combination of the wind-wheel, the wheel D, the rods J^3, connected with the sails of the wind-wheel and geared with such wheels D, the bars P, connected with the wheels D and having a plate, P', the counter-balance Q, having uprights S, formed with slots S', fitted over the plate P', and the cord T, substantially as set forth.

330,305. ICE-CREAM AND PUDDING MOLD. Henry Eppelsheimer, New York, N. Y. Filed Jan. 20, 1885. (No model.)



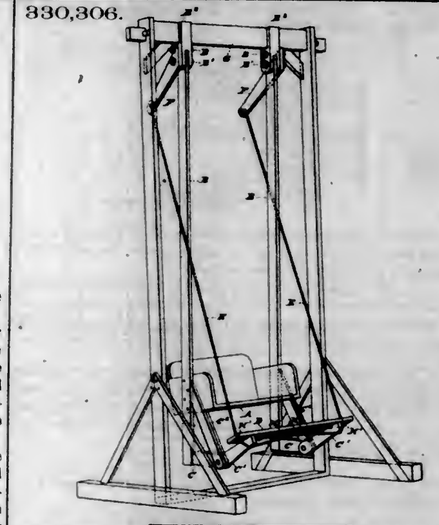
Claim.—1. An ice-cream or pudding mold consisting of two convexo-concave shells having overlapping rims and stop-flanges at their meeting edges, substantially as set forth.

2. An ice-cream or pudding mold consisting of two convexo-concave shells having hinged handles and overlapping rims and stop-flanges at their meeting edges, substantially as set forth.

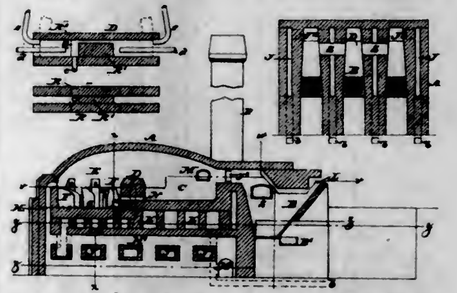
330,306. SWING. Henry Fellows, Wichita, Kans. Filed July 3, 1885. (No model.)

Claim.—The combination, with the support and the suspenders, of the inclined arms F F, the seat having the hinged pedal-arms connected by the foot-board having staples on its under face, and the ropes E E, connected at their upper ends to the inclined arms F F, and provided at their lower ends with snap-hooks, as set forth.

330,306.



330,307. GLASS-FURNACE. Andrew Ferrari, Glassborough, N. J., assignor to Whitney Brothers, same place. Filed Mar. 31, 1885. (No model.)



Claim.—1. A glass-furnace having retorts and chambers for warming the tools, said retorts and chambers being grouped in pairs, substantially as described.

2. A glass-furnace having in the glass-receiving chamber a series of flues having openings above the retorts, and being in communication with a series of flues beneath said chamber, the former series of flues being in communication with the fire-chamber, and the latter series of flues in communication, by means of a transverse flue, with the smoke-stack, whereby the products of combustion are placed above and below the bed or floor of said chamber, substantially as described.

3. A glass-furnace having a fire-chamber, a batch-holding tank, and a glass-receiving chamber, the latter chamber having flues for directing the products of combustion from said chamber or flues below the floor or bed thereof, and below the floor or bed of said tank, and thence to the smoke-stack, substantially as described.

4. A glass-furnace having below its bed or floor flues for the products of combustion, and flues for the admission of air or steam, or both, which is or are directed into the flame in or near the fire-chamber, substantially as described.

5. A glass-furnace having beneath the batch-holding tank and the glass receiving or retort chamber a net-work of flues for the passage of the products of combustion and admission of air or steam, or both, to the fire-chamber, whereby the beds or floors of said tank and chamber and the flues for air and steam are heated by the products of combustion as they are directed to the smoke-stack, substantially as described.

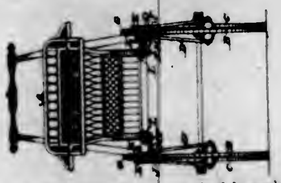
6. The bridge D, formed of partitions R R' R^2, with the passage N therein, substantially as and for the purpose set forth.

7. The bridge D, having an air-conveying tube, c, substantially as and for the purpose set forth.

8. The bridge D, having air-conveying tubes d, for passing air to the stone R' on one side, and the box Q on the other side, substantially as and for the purpose set forth.

9. The bridge D, with tubes c d, for the inlet of fresh air to the bridge, and tube e, for discharge of hot air therefrom, substantially as and for the purpose set forth.

330,308. CHILD'S CARRIAGE. ISAAC N. FORRESTER, Camden, N. J.
Filed Feb. 10, 1885. (No model.)

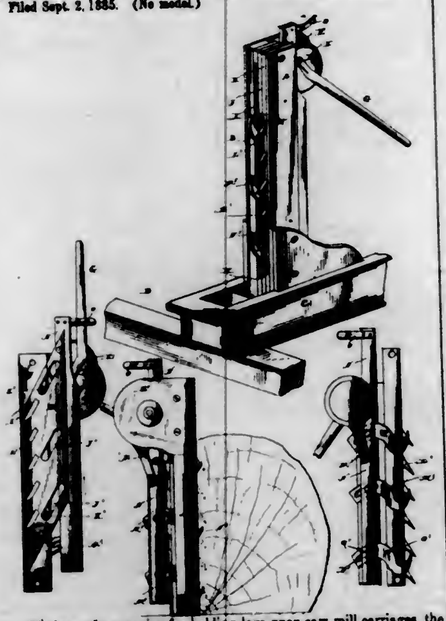


Claim.—1. In a child's carriage, a caster-wheel, in combination with a spring bearing on said wheel and an adjusting-screw for said spring, substantially as and for the purpose set forth.

2. In a child's carriage, the caster-wheel B, having a conical shank provided with a threaded end and a nut, in combination with supports F and springs I, and H, the spring H having one end pressing on the shoulder J of the caster-wheel, substantially as and for the purpose set forth.

3. In a child's carriage, a caster-wheel having arms D' and shoulder J, in combination with the supports of the body of the carriage, springs J and H, and screw K, the said screw passing through the said supports and pressing the said spring H against the said shoulder J, substantially as and for the purpose set forth.

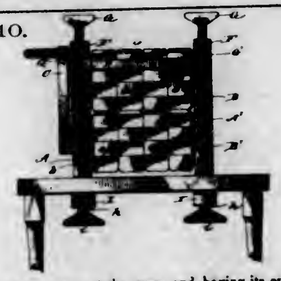
330,309. SAW-MILL DOG. WILLIAM H. FRASIER, Oswego, N. Y.
Filed Sept. 2, 1885. (No model.)



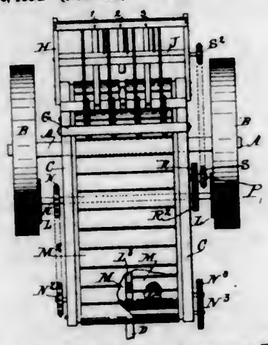
Claim.—In a device for holding logs upon saw-mill carriages, the combination of two upright side plates and a partition-plate, forming two vertical slots, one of which is formed with forwardly and downwardly inclined end pieces, a plate having downwardly-inclined teeth upon its forward edge and sliding with its inclined ends upon the inclined end pieces of the slot, and having forwardly and downwardly inclined slots sliding upon bolts traversing the vertical slot, a bar secured to the rear edge of the slotted plate and having bolts projecting from its side securing a bar to it a distance from it, elbow-shaped dogs pivoted in the other vertical slot between one side plate and the partition-plate at their bends and having upwardly-curved points at their forward ends and longitudinal slots at their rear ends in which slide the bolts upon the vertical bar, and an eccentric disk pivoted upon a projecting lip of one of the side plates having a lever and a strap formed with a rod pivoted to the vertical bar, as and for the purpose shown and set forth.

330,310. MEAT CRUSHER OR TENDERER. WILLIAM L. PERRIN, Mohawk Village, Ohio. Filed Nov. 5, 1884. (No model.)

Claim.—As an improvement in meat-tenderers, the combination, with the uprights A A', having dovetail slots G G' at their upper ends, and the rollers or crushers B B', having their trunnions fitted in bearings of the said uprights, of a cross-bar, H, dovetailed at its ends, extending across so as to connect the same, and having its ends seated in the slots, and angle irons or brackets I, secured to each upright and carrying set-screws to engage with the under side of the table, whereby, when the rollers are being detached from the uprights, the latter are supported in position by the angle-irons, and thus the attachment is facilitated, as set forth.



330,311. HAY RAKE AND LOADER. JOHN FUNK, Meeks, Iowa.
Filed May 26, 1884. (No model.)



Claim.—1. A carriage having internal spur-gears, F, on its wheels, an elevator-frame having a shaft, K, carrying gear-wheels L, the rollers L^2 and L^4, the endless carriers M and M^2, and the chain-wheels N and N^2, arranged and combined, substantially as shown and described, to operate in the manner set forth, for the purposes stated.

2. The combination of the stud-bearing P, the wheel R, and chain-wheel S, the shaft K, having a fixed wheel, R^1, and the rotating fork J, having a chain-wheel, S^2, on its end, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

3. The improved hay rake and loader composed of the carriage A B B, the elevator-frame C, C, D, and L, the three endless carriers M M^2, the rake G, the frame H, having a series of fenders, 1 2 3, the rotating fork J, the internal gear-wheels, F, the shaft K, carrying wheels L, the chain-wheels N and N^2, the gear-wheels N^2, and the fork-operating mechanism P, R, R^1, S, and S^2, substantially as shown and described.

330,312. SLATE-CLEANER. ALFRED B. GATES, Worcester, Mass., assignor of one-half to Samuel Hawkinney, same place. Filed Mar. 25, 1885. (No model.)

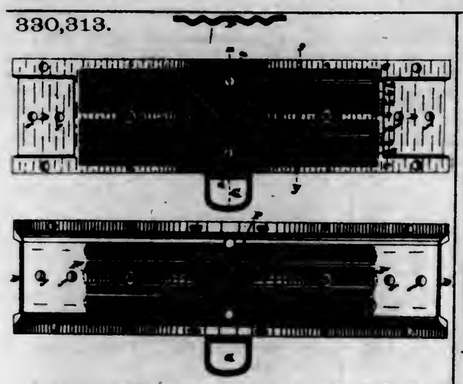


Claim.—As a new article of manufacture, the hereinbefore-described slate-cleaner, consisting of the casing A, provided with the central chamber, a, filled with sponge B, and the surrounding annular chamber a', adapted for the reception of water, and having communication through openings a^2 with said sponge-chamber, substantially as and for the purpose specified.

330,313. HARNESS-SADDLE TREE. ALGERNON GILLIAM, Canton, Ohio. Filed Aug. 22, 1885. (No model.)

Claim.—1. A harness-saddle tree having a central longitudinal groove adapted to receive the terret-nuts, and a series of parallel elevations and grooves on opposite sides of the central longitudinal groove

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2. A harness-saddle tree having skirt-sockets, as described, a central longitudinal groove for the terret-nuts, and a series of longitudinal grooves and elevations extending from one socket to the other.

3. A harness-saddle tree having skirt-sockets, as described, and a series of longitudinal grooves and elevations extending from one socket to the other, substantially as described, and for the purpose set forth.

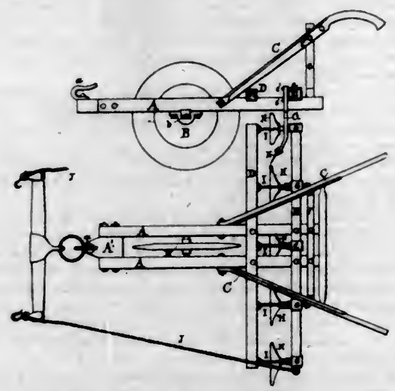
4. A harness-saddle tree leg formed of a series of grooves alternate with parallel elevations, forming a corrugated web between the skirt-socket D and the check-hook seat.

5. A harness-saddle tree having the shoulders H, and check-hook seat between said shoulders, the said seat having a corrugated face, and openings *a a*.

6. A harness-saddle tree having the shoulders H, raised check-hook seat, skirt-sockets, and grooves for the terret-nuts extending from the shoulders to the skirt-sockets, substantially as set forth.

7. A harness-saddle tree having a central groove closed at its lower end by connection with a socket formed for the reception of the skirt, and open at its upper end for the reception of the terret-nut, and also provided with a series of longitudinal grooves and elevations on opposite sides of the central groove, substantially as described, and for the purpose set forth.

330,314. COTTON CHOPPER AND CULTIVATOR. THOMAS B. GOLDSMITH, Simpsonville, S. C. Filed July 18, 1885. (No model.)

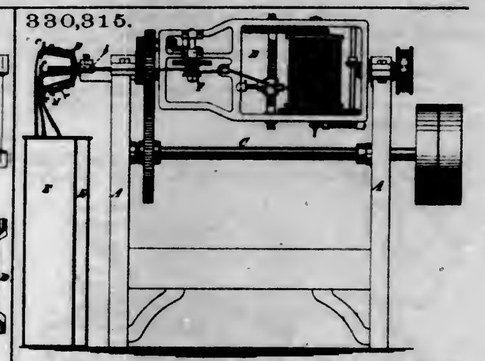


Claim.—The combination of the double beams A A, wheel B, having a thin edge, the spring-beam D, springs I I I, the jointed hoe or chopper shanks G, the hoe-beam E, and the chains or cords J J, connected thereto and to the whiffletree-bar, all substantially as and for the purpose described.

330,315. ART OF MANUFACTURING CORDAGE. JOHN GOOD, Brooklyn, N. Y. Filed Jan. 29, 1884. (No model.) Patented in England Feb. 21, 1884, No. 3,706; in Germany Mar. 2, 1884, No. 28,710; in France Oct. 24, 1884, No. 152,306, and in Canada Jan. 31, 1885, No. 21,038.

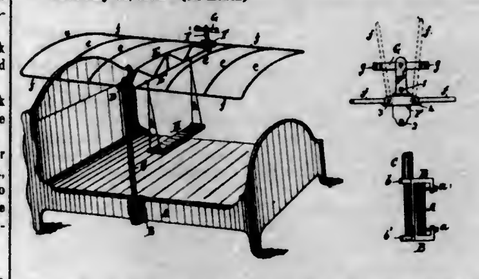
Brief.—A simple rotary movement is given to the slivers or primary collections of fibers which have been previously without any twist, to produce at the same time their separate twistings for producing the yarn and the twisting of the yarns together to form the strands, whereby one flier is made to produce the two operations of spinning the yarn and forming the strand.

330,315.



Claim.—The improvement in the art of manufacturing cordage, consisting in subjecting collectively several separate primary collections of fibers which have been previously without twist to a simple rotary motion, whereby they are separately twisted into yarns and twisted together into a strand or twine, substantially as herein described.

330,316. MOSQUITO-NET FRAME. JAMES GOODWIN, Lynn, Mass.
Filed July 14, 1884. (No model.)



Claim.—1. A mosquito-net frame consisting of a central girder, E E', a swiveled standard, C, secured to one side of the bedstead A and supporting the girder at one end, and the two wire frames hinged to the girder, substantially as described.

2. In a mosquito-net frame, the combination of the central brace or girder, E E', provided at one end with a socket, D, and at the other end with a bracket, F, and the frames *e e f f*, the socket D being made to fit upon the post or standard C, and the bracket F provided with an extension, F', to which a spring, G, with catches *g g*, is secured for holding up the frames *e e f f*, as set forth.

3. In a mosquito-net frame, the combination, with the post or standard C, of a bracket, B, attached to the side of the bedstead A, and consisting of two frames, one overlapping the other and capable of adjustment to bedstead-rails of different widths, and provided with legs *b b*, for supporting the post C, and the frames *e e f f*, as shown and described.

330,317. GAS-ENGINE. WILLIAM A. GRAHAM, Carlisle, Pa. Filed Aug. 18, 1885. (No model.)



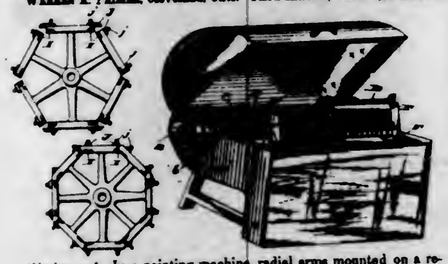
Claim.—1. The combination, in a gas-engine, of the partially-rotating valve having a series of apertures extending through it, the valve-seat having a series of similar apertures, the spiral spring mounted on the valve-rod and the arm and pitman, and operating-cam mounted on the longitudinal shaft deriving its motion from the driving-shaft, substantially as and for the purpose specified.

2. The combination, with the cylinder of the engine, of the partially-rotating rod and spring by which it is held normally, the conductor secured to said rod, the tumbler adapted to operate in connection with said conductor and the transverse arm, and trip-pin mounted on the cam-

wheel of the exhaust-valve, whereby an electric spark is produced to ignite the charge in the cylinder, substantially as specified.

3. The combination, with the cylinder, of the lateral tube having an exhaust-opening, the plunger and spring by which it is pressed normally outward, and the cam mounted on the longitudinal shaft deriving its motion from the driving-shaft, whereby the exhaust from the cylinder is effected, substantially as specified.

330,318. PAINTING-MACHINE. ELMER GREEN, North East, Pa., and WARREN K. PALMER, Cleveland, Ohio. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a painting-machine, radial arms mounted on a revolving shaft operating in a suitable casing, lateral arms secured to the radial arms, and suitable devices on the lateral arms for holding the work, and the parts so arranged that the work is held in a plane tangentially with the shaft, substantially as set forth.

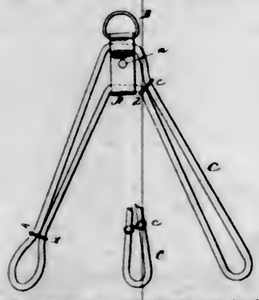
2. In a painting-machine, radial arms mounted on a revolving shaft operating in a suitable box or casing, holding-arms adjustably secured to the radial arms and extending crosswise of the shaft, and suitable devices connecting with the lateral arms for holding the work, and so arranged that the work is held between ends of the opposing lateral arms and in a plane tangentially with the shaft, substantially as set forth.

3. In a painting-machine, the combination, with a shaft, radial arms, and lateral arms, arranged substantially as described, of the adjustable blocks H, the pivoted fingers F, and spring-catches G, substantially as set forth.

4. In a painting-machine, the combination, with the arms C and D, arranged as described, of the pivoted lever E, spring e', and pin e^2, the latter arranged to engage holes c, of the arm C, substantially as set forth.

5. In a painting-machine, the combination, with a revolving shaft operating in a suitable box or casing, of suitable devices mounted on the shaft for holding the work, and so arranged that each article is held and rotated around the shaft tangentially with the shaft, substantially as set forth.

330,319. SUSPENDERS. WORDEN H. GURNEY, Mansfield, Ohio, assignor of one-half to Joseph P. Rummel, same place. Filed Apr. 9, 1885. (No model.)



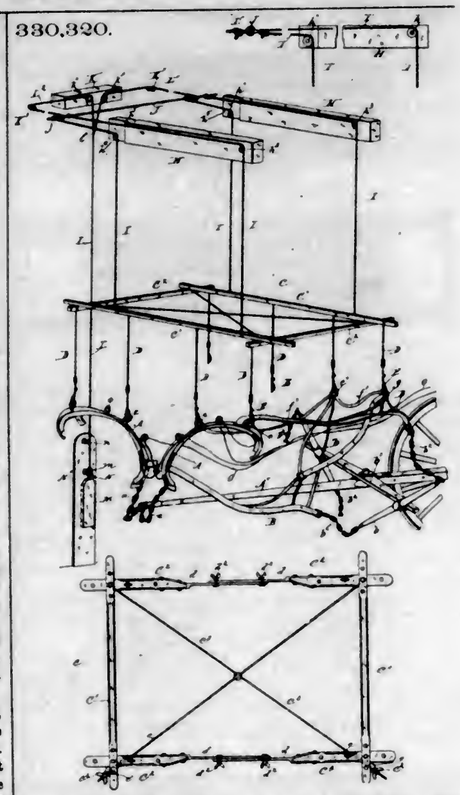
Claim.—The combination, with the plate A, having at its upper and lower ends loops, of the cord C, adapted to pass through said loops, and the sliding loops c, adapted to be adjusted so as to bind against the plate A and adjust and hold the cords in the event of a button breaking from the garment, substantially as specified.

330,320. DEVICE FOR SUSPENDING HARNESS. GEORGE C. HALE, Kansas City, Mo. Filed Feb. 2, 1885. (No model.)

Claim.—1. The combination, with a swinging harness, of a frame, harness suspended from said frame, cords or chains adapted to suspend the frame, and an equalizing-bar, substantially as and for the purpose specified.

2. The combination, with the swinging harness, of a rectangular suspended frame extending over the harness from front to rear and side to side, substantially as shown, and a series of hooks or clamps secured to the frame by means of cords or chains depending therefrom, all arranged and operating as and for the purpose set forth.

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3. The combination, with a swinging harness, of a frame, harness suspended from said frame, cords or ropes connected with and adapted to suspend said frame, a hoisting-rope to which the frame-suspending cords are connected, a counter-weight, and a hook, as N, with which the counter-weight is adapted to engage, substantially as described, and for the purpose specified.

4. The combination, with a swinging harness, of a suspended frame, a set of harness detachably suspended therefrom, bars or cleats secured to the ceiling and arranged over the frame, cords or chains connected to the frame and adapted to suspend the same, an equalizing-bar, to which the frame-suspending cords are connected, and a rope, also connected to said bar and provided with a counter-weight, substantially as described, and for the purpose specified.

5. The combination, with a swinging harness, of a suspended frame, a set of harness detachably suspended therefrom, bars or cleats secured to the ceiling and arranged over the frame, cords or chains connected with and adapted to suspend the frame, an equalizing-bar, to which the frame-suspending cords are connected, and a rope, also connected to said bar and provided with a counter-weight adapted to engage a hook, as N, whereby when the harness is detached the weight will become disengaged from the hook and the frame be carried upwardly out of the way of the apparatus, substantially as described.

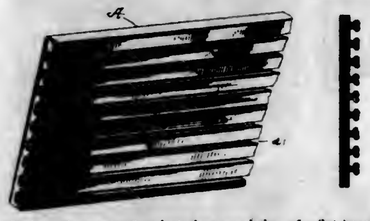
6. The combination, with a swinging harness, of a frame, a set of harness suspended therefrom by suitable means, as D, cleats or bars H, arranged over said frame and provided with rollers, frame-suspending cords I, bar J, having the ends of the cords I connected thereto, a cleat secured to the wall of the room and provided with pulleys, ropes, or chains L L', connected to the equalizing-bar and provided with a counter-weight, and a hook, as N, all arranged as shown and described, and for the purpose specified.

7. The combination, with a swinging harness, of a suspended frame having cords or chains provided with hooks depending therefrom, and its end bars adjustably connected together, substantially as described.

8. The combination, with a swinging harness, of a suspended counterweighted frame, composed of cross and side bars, the latter being made in two sections, each section provided with slotted straps and bolts for adjustably securing the same together, cords or chains connected to said frame and provided with hooks or clamps, and a set of harness with which the hooks are adapted to engage, substantially as and for the purpose set forth.

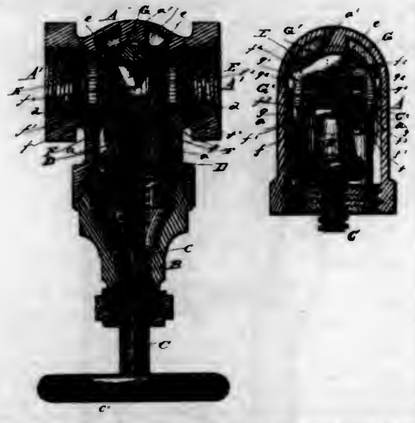
9. The combination, with a swinging harness, a suspended frame, ropes or cords, as D, connected thereto and provided at their free ends with hooks or clamps, as E, consisting of a bar provided with a hook at its lower end, a spring riveted to said bar, and a sliding sleeve provided with a thumb-screw, as and for the purpose described.

330,321. PLASTERING DEVICE. HARVEY B. HALL, Homer, Ill., and FRANCIS G. POWERS, South Bend, Ind. Filed June 10, 1885. (No model.)



Claim.—A support for plastering, consisting of a flat board of suitable dimensions having longitudinal grooves twofoil in cross-section and adapted to be secured to the studs of a building, substantially as specified.

330,322. STRAIGHT-WAY STOP-VALVE. HENRY HALL, Lansingburg, N. Y., assignor to the Rensselaer Manufacturing Company, same place. Filed Sept. 9, 1885. (No model.)

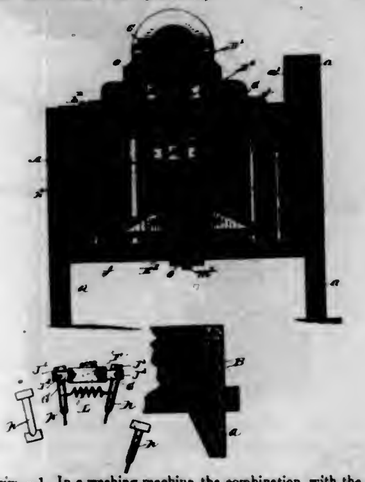


Claim.—1. In a straight-way stop-valve, the combination of the T-shaped casing A, provided with the ports A' and stop a', the stem rotating but not moving longitudinally therein, and situated below the ports A', the sleeve-nut traveling on the threaded upper end of said stem and provided with the flange d, the gates having the recesses f' to engage said flange, and the projections F, provided with the grooves f, inclined surfaces f^2, and shoulders f^3, and the piece G, having the transverse bar G', adapted to bring up against the stop a' when the valve is closed, the wedge-shaped lugs g' to engage between the inclined surfaces f^2, and the flanges g on the ends of its arms to engage with the shoulders f^3, all substantially as specified.

2. In a straight-way stop-valve, the combination of the T-shaped casing A, provided with the ports A' and stop a', the stem C, rotating therein and situated below the ports A', the sleeve-nut traveling upon the thread of said stem and provided with the flange d, the gates having the recesses f' to engage said flange, the cutting-edges e, to shear against the edges of the ports when the gates ascend, and the projections F, provided with the grooves f, inclined surfaces f^2, and shoulders f^3, and the piece G, having the transverse bar G', adapted to bring up against the stop a' when the valve is closed, the wedge-shaped lugs g', and the flanges g on the ends of its arms G^2, all substantially as and for the purpose set forth.

3. As an article of manufacture, the herein-described valve, composed of the T-shaped casing A, provided with the ports A', ways a, and stop a', the stem-casing B, provided with the chamber b, the valve-stem C, provided with the collar c, the sleeve-nut D, provided with the flange d, the gates E, each having a cutting-edge, e, and provided with the groove f, recess f', inclined surfaces f^2, and shoulders f^3, and the piece G, provided with the transverse bar G', flanges g, and wedge-shaped lugs g', all constructed and arranged as shown and described, and for the purpose specified.

330,323. WASHING-MACHINE. GEORGE C. HARLIN, Hayesville, Iowa. Filed Feb. 5, 1885. (No model.)

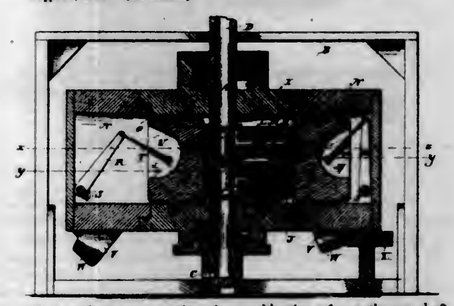


Claim.—1. In a washing-machine, the combination, with the cover having the bracket, the wheels having segmental portions, and the shaft having a pinion, of the prong-holder and the clothes-clamps connected by a spring, substantially as shown and described.

2. In a washing-machine, the prong-holder connected to a shaft having a pinion gearing with the segmental pinions, and having the clamps connected by a spring, in combination with the receptacle having a cone-shaped clothes-carriage, substantially as shown and described.

3. In a washing-machine, the combination of the cover having the bracket, the wheels having segmental portions, the shaft having a pinion, and a prong-holder, the receptacle having the cone-shaped clothes-carriage, and the semi-round bars secured to the inner sides of the said receptacle, substantially as shown and described.

330,324. ROTARY ENGINE. AUGUSTUS HERRATH, Zehner, Pa. Filed Sept. 28, 1885. (No model.)

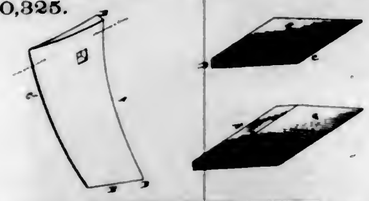


Claim.—In a rotary engine, the combination of a stationary shaft provided with a laterally-projecting radiating wing, and with tubular portions opening with a live-steam port forward of the wing, and with an exhaust-port to the rear of the wing, a cylinder journaled with its heads upon the shaft, and having equidistant radiating grooves in its heads and corresponding radiating vertical chambers in its sides, plates sliding in the chambers with their ends in the grooves, and having grooves in their outer edges, rocking shafts journaled in the lower outer corners of the chambers and having arms provided with heads sliding in the grooves of the plates, arms secured to the outer ends of the rocking shafts and having their lower ends weighted and cut off obliquely and connected by plates or bars, and a bar secured upon the stand of the engine, forming a slightly-acute angle with the rear side of the wing, and engaging and raising the inclined ends of the weighted arms, as and for the purpose shown and set forth.

330,325. PLOW. MARTIN HENDRIX, Jackson, Ga. Filed Apr. 8, 1885. (No model.)

Claim.—A turn-shovel for plows, having one side or edge of an equal thickness throughout, except at the point where it is sharpened, a thin side or edge opposite the same, and a beveled entering-edge extending from one side to the other, substantially as and for the purpose specified.

330,325.



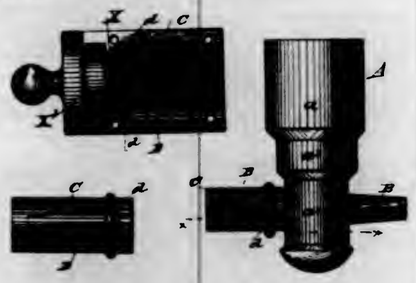
330,326. RAILROAD-SPIKE. James D. Hess, Lawrence, Tex. Filed Mar. 13, 1885. (No model.)



Claim.—1. The spike having the arm or extension B, constructed as shown, and the shoulder *b*, substantially as shown, and for the purpose specified.

2. A spike for securing a railroad-rail, having a lower portion, A, having a shoulder, *b*, and a right-angular arm, *a'*, for resting against the base-flange of a rail, and the arm or extension B, substantially as shown and described.

330,327. CORE FOR STRAIGHT-WAY STOP-VALVES. George Hilderts, Troy, assignor to the Rensselaer Manufacturing Company, Lansingburg, N. Y. Filed July 8, 1885. (No model.)



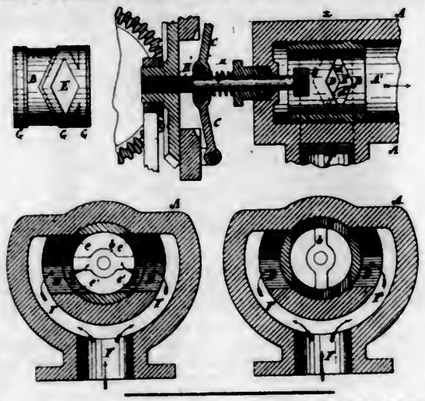
Claim.—1. A core adapted to form the interior of a T-shaped casing for a straight-way valve, and composed of a stem portion flattened on opposite sides near the end that forms the bottom of the interior of the casing, and having opposite lateral outwardly-tapered arms standing from its flattened surfaces, and arm portions, each provided with a longitudinal recess, tapered from one end, and fitted and cemented upon one of the arms of the stem portion, with the open end of the arm portion abutting against the flattened portion of the stem portion to form a valve-seat, substantially as specified.

2. In a core for the interior of the T-shaped casing of a straight-way stop-valve, the combination of the stem-core A, provided with the opposite tapering arms, B, rising from its flattened portions, and having a recess, *b'*, on the center of its lower end to form a stop-leg for the valve-gates, and the arm-cores C, each provided with the longitudinal recess D, tapering inwardly to correspond with the taper of the arms B, and longer than the arm upon which it fits, and is cemented to prevent the end of the arm binding against its bottom when the end of the arm-core abuts against the stem-core, substantially as specified.

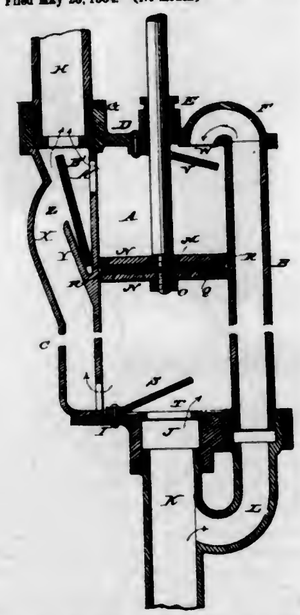
330,328. ROTARY AUTOMATIC CUT-OFF VALVE. Horace F. Hodges, Boston, assignor to Charles F. Payne, Groveland, and George H. Spencer and Charles T. Crocker, Fitchburg, Mass. Filed June 26, 1884. (No model.)

Claim.—1. A hollow rotary valve having two or more ports of diamond, ellipsoidal, or triangular shape arranged in line around the valve, and whose circumferential length is equal to the spaces between them, said valve being adapted to have a longitudinal movement, all in combination with a valve well or seat having ports of similar dimensions and arrangement, substantially as specified.

2. The tubular valve B, open from end to end and having ports E E, arranged at equal distances apart on the circumference and of a length equal to the spaces between them, the said valve being provided with a bar, *b*, in combination with the valve-spindle H and the valve-well A, the latter having ports shaped and arranged similarly to those in the valve B, substantially as shown and described



330,329. DOUBLE-ACTING PUMP. Andrew J. Hopkins, Rochester, N. Y. Filed May 28, 1884. (No model.)



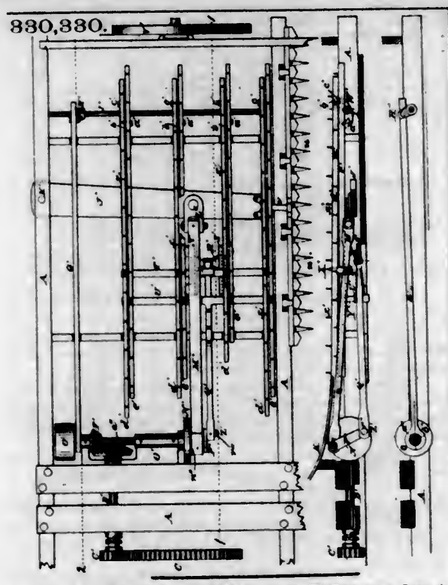
Claim.—In a double-acting pump, the pump-barrel having an integral projection, Y, projecting into the discharge-chamber on one side of the pump-barrel and dividing the same into an upper and a lower compartment connected by an opening, Z, at the end of the partition, said partition forming also a means of attachment for the valve which plays in the discharge-chamber, substantially as and for the purpose set forth.

330,330. HARVESTING-MACHINE. George H. Howe, Hoosick Falls, N. Y., assignor to the Walter A. Wood Mowing and Reaping Machine Company, same place. Filed Apr. 7, 1883. (No model.)

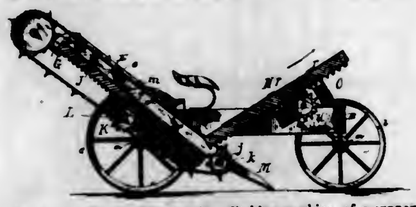
Claim.—1. The combination, with the crank-shaft, of the sway-bar J', the pitmen M' and Q', the cross-bars U' and T', the sticks or bars *d'* and *e'*, and mechanism connecting said bars *d'* and *e'* to the cross-bars U' and T', substantially as and for the purpose described.

2. The combination of a rock-shaft, the double connections W', and the reciprocating sticks or bars, substantially as and for the purpose described.

330,330.



330,331. DITCHING-MACHINE. James W. Humphreys, Iroquois, Ill. Filed June 14, 1884. (No model.)



Claim.—1. The combination, in a ditching-machine, of a supporting-frame mounted upon carrying-wheels, a block suitably pivoted, an elevator-frame supported and sliding on said block and carrying the ditching plow or shovel at its forward end, devices for effecting the movement of said elevator-frame with respect to said block, a second block suitably pivoted on said carrying-frame, a bar supported and sliding upon said block and connected at one end to the forward end of the elevator-frame, and means for effecting the movement of said bar with respect to its block, substantially as set forth.

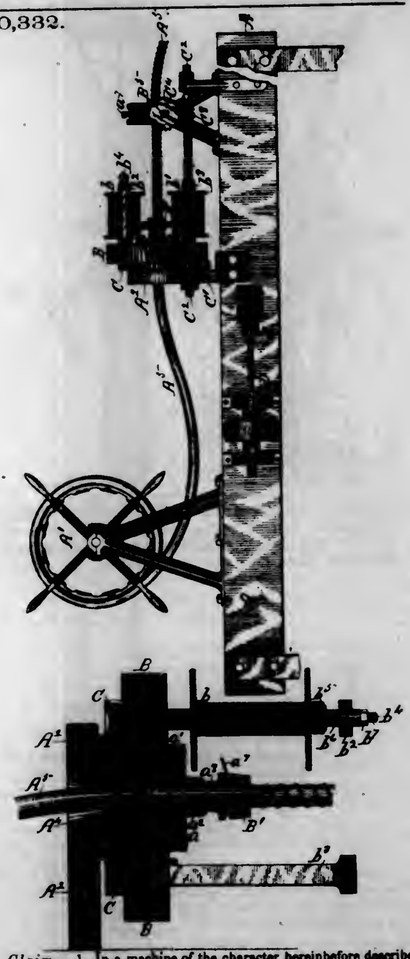
2. The combination, in a ditching-machine, of a supporting-frame mounted upon carrying-wheels, a block suitably pivoted on one of the axles of the said frame, an elevator-frame supported and sliding on said block and carrying the ditching plow or shovel at its forward end, and devices for effecting the movement of said elevator-frame with respect to said block, and means for moving said frame and block on the said pivotal bearing, substantially as set forth.

3. The combination, in a ditching-machine, of a supporting-frame mounted upon carrying-wheels, a block suitably pivoted thereon and provided with guide loops or straps, an elevator-frame supported upon said block and sliding through said loops or straps and carrying the ditching plow or shovel at its forward end, and devices located on said supporting-frame for effecting the movement of said elevator-frame with respect to said block, and means for conjointly moving said frame and block on their pivotal bearing, substantially as set forth.

4. The combination, in a ditching-machine, of a supporting-frame, a block suitably pivoted on the rear axle thereof and carrying a shaft, K, provided with a pinion, L, a beam supported on said block and having a rack longitudinally located on its under side, with which meshes said pinion L, side plates, *e*, secured to said beam and supporting the endless carrier or elevating belt, devices for driving said belt from the rear axle of the machine, a ditching plow or shovel secured on the forward portions of the plates *e*, and devices for effecting the movement of said beam with respect to said block, and means for conjointly moving said beam and block on their pivotal bearing, substantially as set forth.

330,332. MACHINE FOR COVERING HOSE WITH WIRE. Chas. W. Kimball, Chicago, Ill., assignor of one-half to Richard Y. Whelpley same place. Filed July 21, 1885. (No model.)

330,332.



Claim.—1. In a machine of the character hereinbefore described, the combination, with a face-plate, of a standard provided with a hub having an opening or passage through the same, and forming a journal-bearing for said face-plate, an annular plate provided with an interiorly-threaded projection, and a sleeve adapted to have a threaded engagement with said projection, and provided with a passage for the hose during the process of covering the same with wire, substantially as herein set forth.

2. In a machine of the character hereinbefore described, the combination, with the sleeve a^3, of the guide or thimble B', provided with one or more openings for the passage of the wire, as set forth.

330,333. FERTILIZER-DISTRIBUTER. Joseph Kittle, East Bend, N. C. Filed Sept. 8, 1884. (No model.)

Claim.—1. The combination, with the fertilizer-distributer, as described, of the adjustable inclined steady-bar Q, with wheels at its lower end, as shown and described.

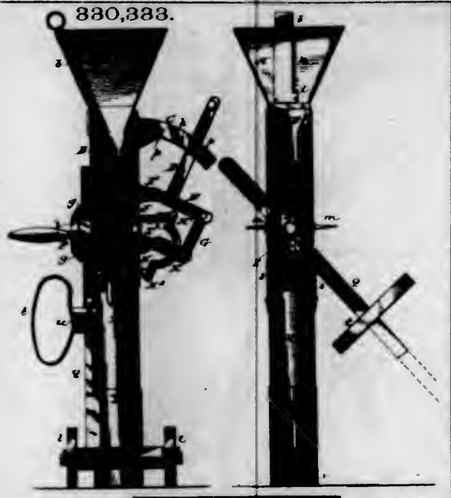
2. The combination, with the throat B, of the cross-grooved socket P, screw *r*, and inclined steady-bar with wheels at its lower end, substantially as described.

3. The combination, with the fertilizer-distributer, of the inclined steady-bar with wheels at its lower end, and an adjustable block and strap arranged to slide on said bar, as and for the purpose described.

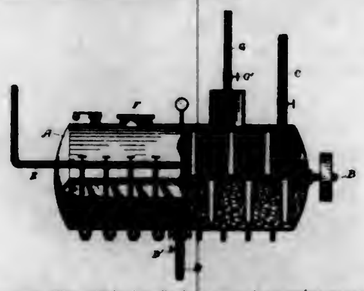
4. The combination, with the hopper A, of the parallel double-branched gage-bar having one section inside the hopper and the other outside the hopper, and provided with an index-hand and graduated scale, as shown and described.

5. The stop-gate L, having slotted clamp-arms *s*, extending transversely around the throat and upon opposite sides of the same, and set-screws *m*, in combination with the slotted throat B, as and for the purpose described.

330,333.



330,334. PROCESS OF PREPARING WHOLE GRAIN FOR FERMENTATION. JULIUS W. EITTLER, Peoria, Ill., assignor of four-fifths to Charles J. Zipprich, Herc Jacobs, Jacob Uhl, and Henry Meyer, all of same place. Filed June 19, 1885. (No model.)



Claim.—1. The within-described process of preparing vegetable substances for vinous fermentation, which process consists in first cooking and digesting the unpulverized vegetable substances in an open vessel at a temperature of 212° Fahrenheit, then in a vessel having but a slight vapor-escape and at a temperature of 312°, and in continuing the cooking and digesting in a closed vessel at a temperature of 316° Fahrenheit, substantially as and for the purpose specified.

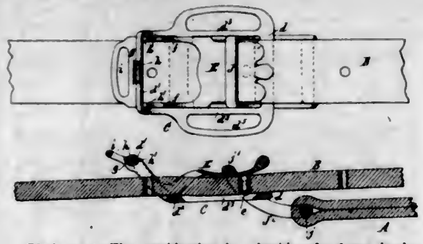
2. The within-described process of preparing vegetable substances for vinous fermentation, which process consists in first cooking and digesting the vegetable substances for one hour under a normal atmospheric pressure and at a temperature of 212° Fahrenheit, continuing for another hour the cooking and digesting under a pressure of sixty pounds and at a temperature of 312°, and, finally, cooking for fifteen minutes under a pressure of sixty-five pounds and at a temperature of 316°, as set forth.

330,335. BOTTLE AND CAN WASHER. HENRY KOSTER, St. Louis, Mo. Filed June 7, 1884. (No model.)



Claim.—A bottle or can washer, comprising a rod, C, formed with perforations D entirely through the rod, hole D' in the end of the rod, and grooves G in the surface of the rod, the bristles E, inserted in the perforations and forming wings H and H', set angularly to each other, tuft E' in the end hole, and wires F, threaded through the folds of the bristles and tuft, and occupying the grooves in the surface, substantially as set forth.

330,336. TRACE-BUCKLE. ERNST G. LATTA, Friendship, N. Y. Filed Feb. 2, 1883. (No model.)

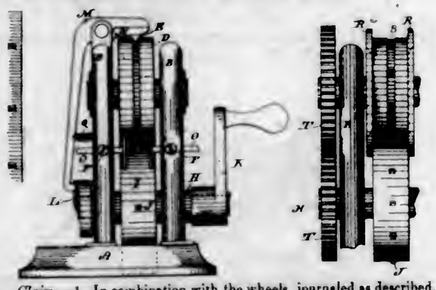


Claim.—1. The combination, in a buckle, of a frame having an elevated rear cross-bar, *d'*, a tongue-plate, E, constructed with side bars *f f* on both sides of the trace and a rear cross-bar, *g*, pivoted to the cross-bar *d'*, and a tug-bail, J, adapted to bear upon the tongue-plate E, substantially as set forth.

2. The combination, in a buckle, of a main frame, a tongue-frame pivoted thereto and constructed at its rear end with a loop or stop, *i*, which limits the opening movement of the tongue-frame, and a tug-bail adapted to bear upon the tongue-plate, substantially as set forth.

3. In a buckle, a tongue-frame composed of a tongue-plate, E, side bars *f f*, cross-bar *g*, and curved lips *h h'*, substantially as set forth.

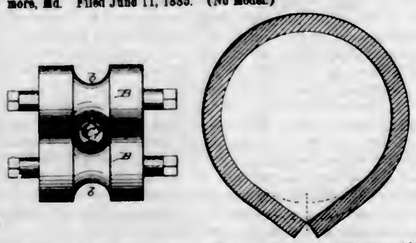
330,337. MACHINE FOR PUNCHING METALLIC STRAP-BANDS. ALBERT D. LAWS, Bridgeport, Conn., assignor of one-half to George Doolittle, same place. Filed Feb. 6, 1885. (No model.)



Claim.—1. In combination with the wheels, journaled as described, the adjustable guides secured to the uprights and controlled by means of screws P, substantially as described.

2. The combination of the upper wheel, D, journaled in the standards and having groove E, lower wheel, I, mounted on axle H, and having spurs J, blocks F, supported by springs G, and in which axle H is journaled, and guides O, adjustably secured in the standards, substantially as described.

330,338. MANUFACTURE OF TUBING. JOHN LIPPINCOTT, Baltimore, Md. Filed June 11, 1885. (No model.)



Claim.—In the manufacture of butt-welded wrought-iron tubing, the method of forming a butt-weld, which consists in first bringing the edges together at their inner angles on a line corresponding with or approximating the outer circumference of the tube and then welding by radial pressure, substantially as described.

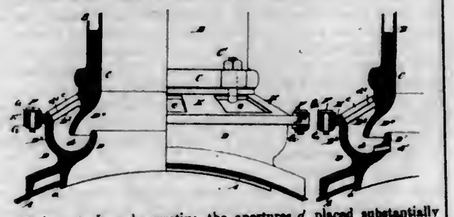
330,339. ROLLER FOR SLIDING DOORS. NOAH LUCAS, Norwich, Conn. Filed Feb. 3, 1885. (No model.)

Claim.—The combination of a suitably-pivoted roller for sliding doors, having its periphery grooved, as shown, with an encircling tire or rubber adapted to fill said grooved roller, and a guide-track of such size and shape that said roller may travel in and be guided by said track, but is held from contact with the pivoted metallic roller, for the objects hereinbefore set forth.

330,339.



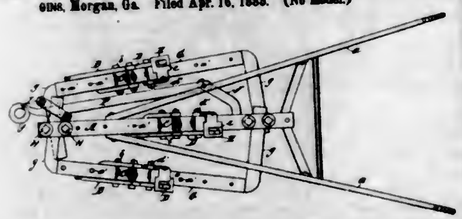
330,340. LOCOMOTIVE. HENRY A. LUTTGENS, Paterson, N. J. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a locomotive, the apertures *d*, placed substantially in the position as shown, and provided with means for closing and opening the same, in combination with lips D' D^3 D^4, arranged for joint operation relatively to each other and to the smoke-box A and stack B, as herein specified.

2. In a locomotive, the operating-lever I, turning on its center J, and two links, G, in combination with the damper-plate E, having apertures e, seat D^2, having apertures d^2, and lips D' D^3 D^4, arranged for joint operation relatively to each other and to the smoke-box A and stack B, as herein specified.

330,341. CULTIVATOR. LORENZO D. MONROE and GEORGE W. WIGGINS, Morgan, Ga. Filed Apr. 16, 1885. (No model.)



Claim.—1. The combination, with the main beam and the side beams, adjustably and removably secured thereto, of an arm extended laterally from the main beam, and a draft-bar pivoted at one end to said lateral bar, and having its other end projected in advance of the forward point of connection of the main and side beams and adjustable laterally, and a clamp whereby said draft-bar may be held at any desired point of adjustment, substantially as set forth.

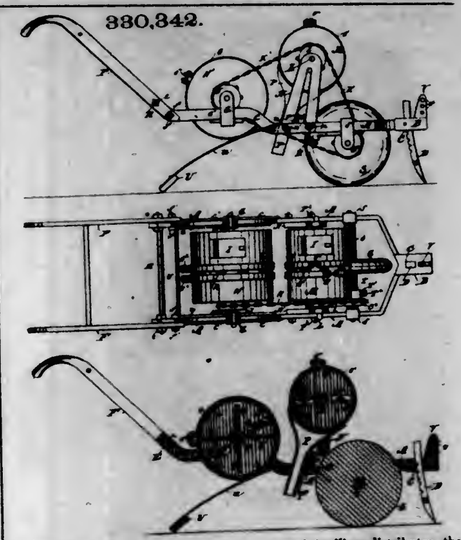
2. The combination of the beam, the standard having arms lapped on opposite sides of the beam, a foot-block pivoted between said arms and having its under side provided with projections or studs adapted to engage the beam, a bolt connecting the arms of the standard close to the beam and on the side thereof opposite the foot-block, a brace pivoted at one end to the standard, and a fastening whereby the other end of the brace may be held adjustably to the beam, substantially as and for the purposes specified.

3. The combination of the main beam, the side-beam arms rigidly connected at one end to the side beams and extended inwardly and lapping one upon the other against the main beam, and clips secured to the center beam and embracing the lapped portion of the arms of the opposite side beams, substantially as set forth.

4. The combination of the beam, the branched standard, a foot-block pivoted between its ends and having studs or projections, a bolt, *b*, the brace D, an angle-clip having one arm lapped alongside the beam and the other extended across the same, and provided with an opening fitted over the end of the brace D, and a bolt extending under the beam connecting the side arm of the clip and the brace, substantially as set forth.

330,342. COMBINED COTTON-SEED PLANTER AND FERTILIZER-DISTRIBUTER. LORENZO D. MONROE and GEORGE W. WIGGINS, Morgan, Ga. Filed Apr. 30, 1885. (No model.)

330,342.



Claim.—1. In a cotton-seed planter and fertilizer-distributer, the combination of the revolving drums H' and M, the latter being mounted upon the upright hangers N, the adjustable seed-tube, constructed as described, the driving or colter wheel S, adjustable furrow-opener D, and coverer U, all being arranged and operating substantially as herein set forth.

2. In a cotton-seed planter and fertilizer-distributer, the combination of the revolving drums or cylinders H' and M, seed-tube P, provided with the adjustable slotted plate Q, the adjustable bands encircling the drums H' and M, hangers N, and metallic frame A, all constructed and operating as herein described, and for the purpose set forth.

3. In a cotton-seed planter and fertilizer-distributer, the combination of the drums H' and M, the shafts thereof being provided at one end with sprocket or cog wheels, vertically-adjustable seed-tube P, driving-wheel S, mounted upon the driving-shaft, said shaft being provided at its end with an adjustable flanged sprocket-wheel, and sprocket-chain connecting the drums and colter or driving wheel S, whereby motion is communicated to the drums by said driving-wheel, substantially as described, and for the purpose set forth.

4. In a cotton-seed planter and fertilizer-distributer, the combination of the revolving drums H' and M, seed-tube P, driving or colter wheel S, adjustable boxes G G, hangers N, double crank-bar P^2, scraper R, and adjustable bar connecting the rear of the metallic frame A, and metallic frame A, constructed as described, and coverer U, all operating as herein specified.

330,343. ADJUSTABLE FOOT-REST. OLIVER M. MOORE, Carroll, assignor of one-half to Charles A. McCune, Boone, Iowa. Filed Aug. 4, 1885. (No model.)



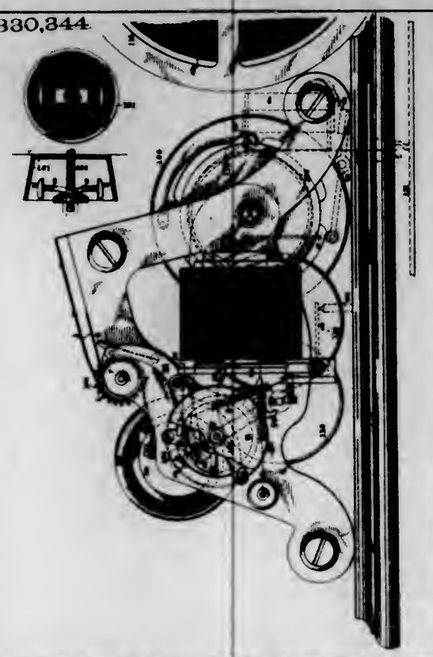
Claim.—1. The foot-rest herein described, comprising the frame provided with a seat at one end and a foot-rest hinged to the other end, a horizontal lever pivoted in said frame having one end provided with a pivoted bar extending vertically through the frame and hinged at its upper end to the under side of the foot-rest, the other end of said lever provided with a notched bar, and means, substantially as shown and described, for adjusting and securing in adjusted position the said bar, as and for the purpose specified.

2. In combination with the foot-rest B, the upright C, lever D, the slide F, provided with notches or rack *f'* and a handle, *f*, and the spring-bolt G, substantially as described.

330,344. AUTOMATIC PERFORATING-TELEGRAPH. JAMES E. MUNSON, New York, N. Y. Filed Jan. 18, 1883. (No model.)

Claim.—1. The combination, in an electric circuit, of a transmitting-instrument adapted, in connection with a perforated ribbon, to trans-

330,344.



mit to the receiving-station electric impulses corresponding to the perforations in said ribbon, a reproducing-instrument adapted to receive such electric impulses, and thereby automatically reproduce said ribbon, and an automatic correcting mechanism, by which each instrument controls the operation of the other, all substantially as described.

2. The combination, in an electric circuit, of an automatic transmitting-instrument and an automatic reproducing-instrument, each provided with a brush, as 11, a series of contact-plates, as *a b c*, &c., means whereby the brushes of the two instruments are periodically brought into unison, and connections and operating mechanism, all substantially as described.

3. The combination, in an electric circuit, of an automatic transmitting-instrument and an automatic reproducing-instrument, each provided with a brush, as 11, a series of contact-plates, as *a b c*, &c., means whereby the brush of each instrument controls the movements of the brush of the other, and connections and operating mechanism, all substantially as described.

4. The combination, in an electric circuit, of an automatic transmitting-instrument and an automatic reproducing-instrument, each provided with a contact-plate, as 56, a brush, as 11, and operating mechanism independent of the circuit, and means whereby the breaking of the circuit automatically arrests the operating mechanism of both instruments, all substantially as described.

5. The combination, in an electric circuit, of an automatic transmitting-instrument and an automatic reproducing-instrument, each provided with a contact-plate, as 56, a brush, as 11, and operating mechanism independent of the circuit, and means whereby the arresting of the brush of either instrument out of contact with its plate 56 automatically arrests the operating mechanism of both instruments, all substantially as described.

6. The combination, in an electric circuit, of an automatic transmitting-instrument and an automatic reproducing-instrument, each provided with a brush or contact-spring, as 11, a series of contact-plates, as *a b c*, &c., a contact-plate, as 56, and an electro-magnet, as 102, and connections, substantially such as described, whereby the brush of either instrument is not permitted to pass its plate 56 until the brush of the other instrument arrives at the same position.

7. The combination, in an electric circuit, of a transmitting and a reproducing instrument, each provided with a brush, as 11, a series of contact-plates as *a b c*, &c., and a contact-plate, 56, the two being separated by a space, as 55, an electro-magnet, as 102, and operating mechanism and connections, substantially as described.

8. The combination, with a series of feelers, as *a b c*, &c., of two series of contact-plates, as *a b c*, &c., and 56, two brushes, as 11, two magnets, as 102, a series of magnets, as *a b c*, &c., and connections and operating mechanism, substantially as described.

9. The combination, with a series of feelers, as *a b c*, &c., of two series of contact-plates, as *a b c*, &c., and 56, two brushes, as 11, two magnets, as 102, a series of magnets, as *a b c*, &c., and connections and operating mechanism, substantially as described.

10. The combination, with a series of feelers, as *a b c*, &c., two series of contact-plates, as *a b c*, &c., and 56, two brushes, as 11, two magnets, as 102, a series of magnets, as *a b c*, &c., a like series of punches, a magnet, as 112, and connections and operating mechanism, substantially as described.

11. The combination, with the shaft 107, carrying the ratchet 100, of the sleeve 96, carrying the arm 95, provided with pawl 3 and arm 13, and magnet 102, having armature 115 and lug 12, all substantially as described.

12. The combination, with the shaft 107, having ratchet 100, of the sleeve 96, carrying brush 11, pawl 3 and arm 13, magnet 102, having armature 115 and lug 12, and the series of contact-plates *a b c*, &c., and 56, all being arranged and operating substantially as described.

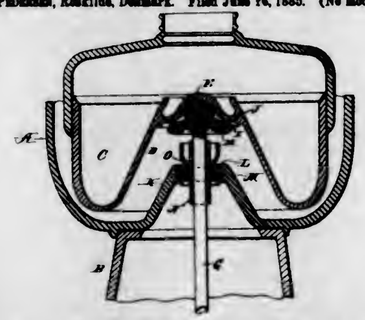
13. The combination, with the shaft 107, carrying ratchet 100, of the sleeve 96, carrying-band 47, provided with contact-spring 50 and pawl 3, and the contact-springs 48 and 51, substantially as described.

14. The combination, with the series of magnets *a b c*, &c., and their armature, of the corresponding series of punches provided with pivoted arms, as 21, and connections, substantially as described.

15. The combination, with the series of magnets *a b c*, &c., and their armature, of the corresponding series of punches provided with pivoted arms, as 21, the magnet 112, and its armature and connections, all substantially as described.

16. The combination, with the series of magnets *a b c*, &c., and their armatures, of the punches *a b c*, &c., and their pivoted arms 21, the series of rock-arms 27, provided with springs, as 29 and 31, and connections, substantially as described.

330,345. CENTRIFUGAL MACHINE. JENS NIELSEN and MIKAEL PEDERSEN, Roskilde, Denmark. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with the vertical shaft or axis of a centrifugal machine, of the container or receptacle mounted loosely upon the upper end of such shaft or axis, an interposed ring, washer, or sleeve of rubber or other suitable elastic material, and a sleeve or bearing for the upper end of the said vertical shaft supported in or surrounded by an elastic or yielding ring or washer, substantially as and for the purpose herein shown and specified.

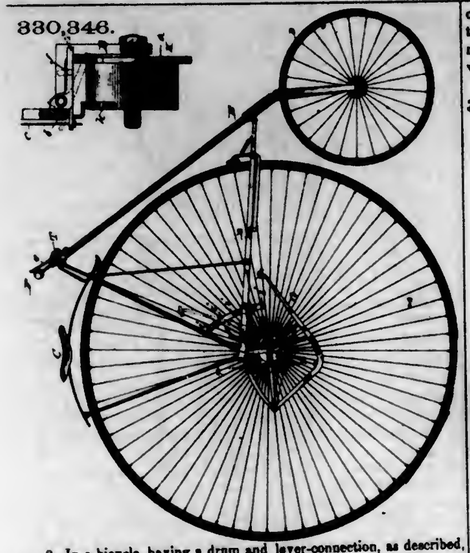
2. In a centrifugal machine, the combination of an outer casing having a conical sleeve, the vertical shaft extending through the said sleeve and having a suitable box or bearing, an elastic washer interposed between the said box or bearing and the conical sleeve, and the container or receptacle mounted loosely upon the upper end of the said shaft, substantially in the manner and for the purpose herein shown and specified.

3. As an improvement in centrifugal machines, the combination of an outer box or casing, the bottom of which is provided with a conical sleeve or flange, the upper end of which is provided on its inner side with an annular groove or recess, a vertical shaft or axis extending through the said conical flange and having a sleeve or bearing provided with an annular groove registering with the annular groove in the upper end of the said flange, an elastic ring or washer seated in the said annular grooves and surrounding the said sleeve or bearing, a receptacle or container having a conical bottom provided with a bearing for the upper end of the vertical shaft, and an interposed ring, washer, or sleeve of rubber or other suitable elastic material, all arranged and operating substantially as and for the purpose herein shown and specified.

330,346. VELOCIPEDE. HERBERT S. OWEN, Washington, D. C. Filed Mar. 6, 1885. (No model.)

Claim.—1. In a bicycle or similar machine having a propelling-wheel with a driving-drum, strap, and foot-lever connection, a dog to stop the forward rotation of the drum, and a spring acting to automatically disengage the dog and hold the same normally out of action.

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2. In a bicycle having a drum and lever-connection, as described, to drive the propelling-wheel, a rider's seat above the wheel and a steering-bar adjacent to the seat, a stop device to limit the rotation of the drum, and an operating device, substantially such as described, extending from said stop upward to a point adjacent to the steering-bar, whereby the rider is enabled to throw the stop into action without losing control of the machine.

3. In a bicycle of the type herein described, the combination of the driving-drum, the stop device to limit its rotation, the spring acting to hold the stop device out of action, and the stop-operating device, substantially as described, extending thence upward to a point at or near the top of the wheel, whereby the rider, seated above the wheel, may throw the stop into action at will.

4. In a bicycle or similar machine, the combination of the propelling-wheel, drum, strap, and lever with the dog to limit the rotation of the drum, the spring acting to hold the dog normally out of action, and the rod extending from the dog upward, as described.

5. In a bicycle of the type herein described, having a seat above the wheel, the combination of the wheel-driving drum, the dog to limit its rotation, and the spring to throw the dog out of engagement, the dog being constructed and arranged, as described, to be actuated by the foot of the mounted rider.

6. In a bicycle or similar machine, the combination of the propelling-wheel, drum, strap, and foot-lever with a dog or stop to arrest the descent of the lever located adjacent thereto, as described, so that the stop may be actuated by the foot without removing the latter from the lever.

7. In a bicycle or similar machine having the drums, straps, and levers to actuate the wheel, a stop device to limit the motion of the drum, combined with a cam or projection on the drum to cause the automatic engagement of the dog.

8. In a bicycle or similar machine having the drums, straps, and levers to actuate the wheel, a stop device to limit the rotation of the drum, combined with a cam or projection adjustable circumferentially upon the drum to cause the automatic action of the stop device sooner or later, as may be demanded.

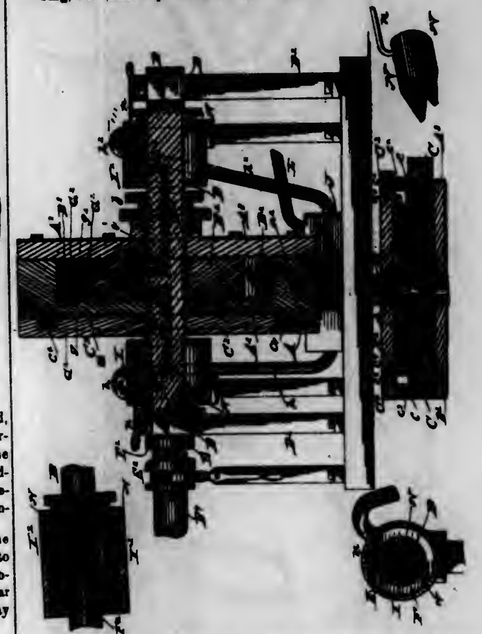
9. The propelling-wheel and the drum connected therewith by the clutch mechanism and urged backward by a spring, in combination with the stop, the lever, the dog to limit the descent of the lever, adapted, as described, to be retained in engagement by the upward pressure of the lever, and the spring to disengage the dog when the lever is depressed, whereb the lever may be locked down as a means of mounting the machine, and automatically released by the pressure of the foot thereon.

10. The propelling-wheel, its drum having notches undercut at the front and rear, the spring to turn the drum backward, the strap, the lever, the dog to engage the drum and limit its rotation, and the spring to disengage the dog, said parts combined for joint operation, substantially as described, whereby the lever may be secured in its depressed position and automatically released by the pressure of the foot thereon.

11. In combination with the steering-wheel hung in the inclined rod or shaft, the clamping-screw acting to prevent the rotation of the rod at will.

12. In a bicycle, and in combination with a swiveling shaft or fork provided with a steering-wheel and a steering-handle, a locking device, substantially as described, adapted to confine the fork against rotation or to be thrown wholly and permanently out of action at will, whereby the steering-wheel may be fastened in position when the rider is dismounted, but left wholly and constantly free from the locking device when the machine is in use.

330,347. ROTARY STEAM-ENGINE. WILLIAM O. OWEN, Jr., Lynchburg, Va. Filed Sept. 10, 1885. (No model.)



Claim.—1. In a rotary steam-engine, the combination of the main shaft having the steam and exhaust channels made longitudinally therein, and the cut-off tubes surrounding the main shaft and adapted to be adjusted at different positions upon the openings of the steam and exhaust channels of the main shaft, substantially as specified.

2. In a rotary steam-engine, the combination of the shaft having the steam and exhaust channels made therein, the steam-cases surrounding the openings of said channels, and the cut-off tubes having the ends beveled, as described.

3. In a rotary steam-engine, the combination of the shaft having the steam-exhaust channels made therein, the steam-cases surrounding the port of said channels, the cut-off tubes with beveled ends, the steam-pipes running from the steam-cases to the valve-chest, and the valve-chest adapted to reverse the engine, substantially as specified.

4. In a rotary steam-engine, the combination of the casing having the steam-chamber formed therein, the shaft provided with steam and exhaust channels, the disk secured to and rotating with the shaft, and the piston-block secured to the disk and provided with steam and exhaust ports, substantially as specified.

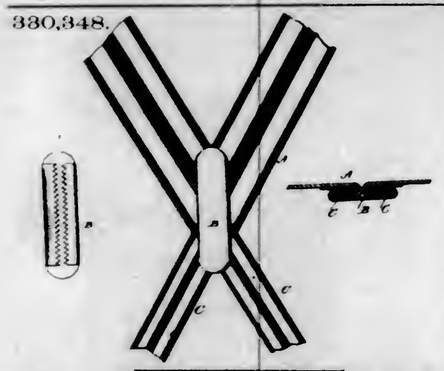
5. In a rotary steam-engine, the combination of the main casing having the steam-space formed therein, the shaft, the disk and piston-block rotating with the shaft, the abutment-blocks provided with the steel pins, which pass through radial slots in the casing, and the cam-grooved disk, which is secured to the shaft and actuates the abutment blocks, substantially as specified.

6. In a rotary steam-engine, the combination of the cylindrical main casing, the shaft receiving steam and exhausting through its axis, the disk and piston-block rotating with the shaft, the abutment-blocks provided with steel pins passing through radial slots in the main casing, and the cam-grooved disk secured to the shaft and actuating the abutment-blocks, substantially as specified.

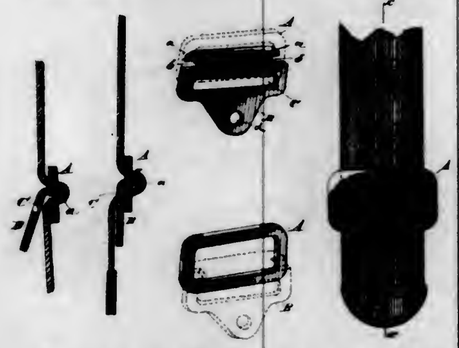
330,348. SUSPENDERS. JAS. R. POLLOCK, Mansfield, Ohio, assignor of one-half to Joseph P. Rummel, same place. Filed Apr. 14, 1885. (No model.)

Claim.—The combination, with the webs A and the button-straps C, having their respective adjacent ends turned outwardly and in juxtaposition with each other, of the metallic clip B, having its edges turned inwardly, so as to embrace the said outwardly-turned edges of the web and button-straps and hold the same securely together, substantially as and for the purposes specified.

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330,349. SUSPENDER-BUCKLE. JAS. R. POLLOCK, Mansfield, Ohio, assignor of one-half to Joseph P. Rummel, same place. Filed June 19 1885. (No model.)

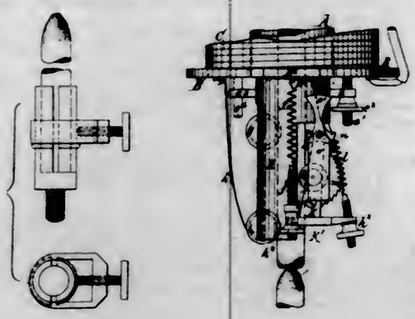


Claim.—A buckle consisting of a rectangular open or slotted frame, A, and an interlocking frame, B, provided with recesses at its ends, which engage the side bars of said frame A, and a rib at its upper edge adapted to pass through the opening or slot and to set against and bind the web when tension is applied to the parts, substantially as specified.

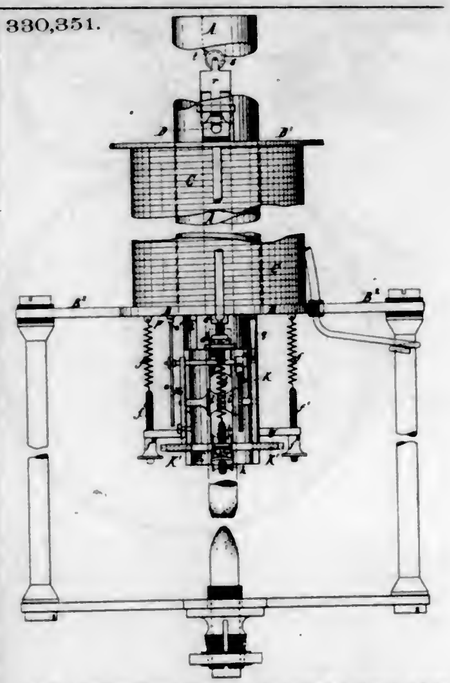
330,350. WITHDRAWN.

330,351. ELECTRIC-ARC LAMP. OTTO ROMANER, Townley Hill, Wandsworth, County of Surrey, assignor to Messrs. Thornton & Romaner, No. 9 North Street, Wandsworth, London, England. Filed Sept. 12, 1885. (No model.)

Claim.—1. In an electric lamp, the combination, with a solenoid in the lamp-circuit, of a tubular soft-iron core, through which the upper carbon passes, provided with guide-rollers to hold the carbon, and of automatic feed mechanism consisting of a pressing-roller mounted in a frame pivoted to the core and pressed against the carbon by springs, and of an escapement and pendulum controlling the revolution of the said roller, and a spring-detent for arresting its motion, whereby the feeding of the upper carbon is effected and governed, substantially as described, and shown in the drawings.

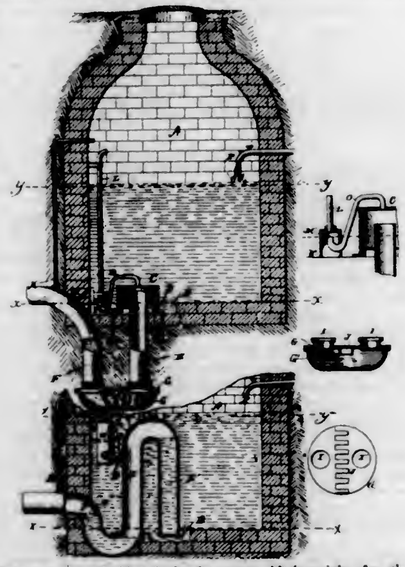


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2. In an electric lamp, the combination, with the solenoid, tubular core, guide-rollers, rocking frame, escapement mechanism, pendulum, and detent, combined for operation as described, of a pawl engaging with ratchet-teeth on one of the guide-rollers not controlled by the escapement mechanism for the purpose of causing an initial motion to be imparted to the carbon independently of the core and by the descent of the latter, substantially as described.

330,352. AUTOMATIC FLUSH-TANK. ANDREW ROSEWATER, Omaha, Nebr. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a flushing device for sewers, kitchen-sinks, &c., the combination, with a receiving-tank provided with an inlet-pipe, of an air-compressing chamber secured within said tank, and suitable means for admitting air into said air-compressing chamber at any desired water-level, a pipe leading from within said air-chamber downward and connecting with the shorter arm of a siphon, said shorter arm being provided with an opening into the receiving-tank, and the longer arm of said siphon leading to a sewer or wasteway, substantially as and for the purpose set forth.

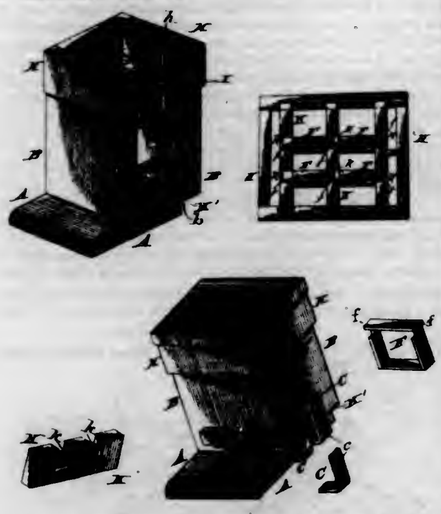
2. In a flushing device for sewers, sinks, &c., the combination, with a receiving-tank provided with an inflow-pipe, of an air-compressing chamber secured within said tank, a pipe within said tank the top of which is above the water in the tank at its highest level and extending nearly to the bottom of the tank and terminating in an inverted-cup-shaped vessel, a pipe the lower end of which is below the top of the air-compressing chamber and turned upward and extends into this cup-shaped vessel, and the other end leads into the upper part of the air-compressing chamber, a pipe extending downward from within the air-compressing chamber, and is connected to the shorter arm of a siphon, the longer arm of which leads to a sewer or wasteway, said shorter arm being provided with an opening into the interior of the tank higher than low-water level, and the longer arm leads to a sewer or wasteway, substantially as and for the purpose set forth.

3. In a flushing device for sewers, sinks, &c., the combination, with the lower end of the escape-pipe and the lower end of the shorter arm of a siphon, of a trap the under side of the top of which is wider than said pipes and provided with a downwardly-projecting seal the lower edge of which is level, said seal extending entirely across the trap between the openings for said pipes, substantially as and for the purpose set forth.

4. In a flushing device for sewers, sinks, &c., the combination, with the lower end of the escape-pipe and the lower end of the shorter arm of a siphon, of a trap the under side of the top of which is provided with a downwardly-projecting corrugated seal the lower edge of which is level and extends across the top between the openings for said escape-pipe and end of the siphon-arm, substantially as and for the purpose set forth.

5. In a flushing device for sewers, sinks, &c., the combination, with a tank provided with an inflow-pipe and the described air-compressing chamber, and suitable means for admitting air into the same at any desired water-level of the described trap G G' J, of a pipe connecting said air-compressing chamber and said trap, and a siphon connecting said trap with a sewer or wasteway, substantially as and for the purpose set forth.

330,353. BEE-HIVE. GEORGE H. STOVER, South Bend, Ind. Filed Jan. 15, 1885. (No model.)

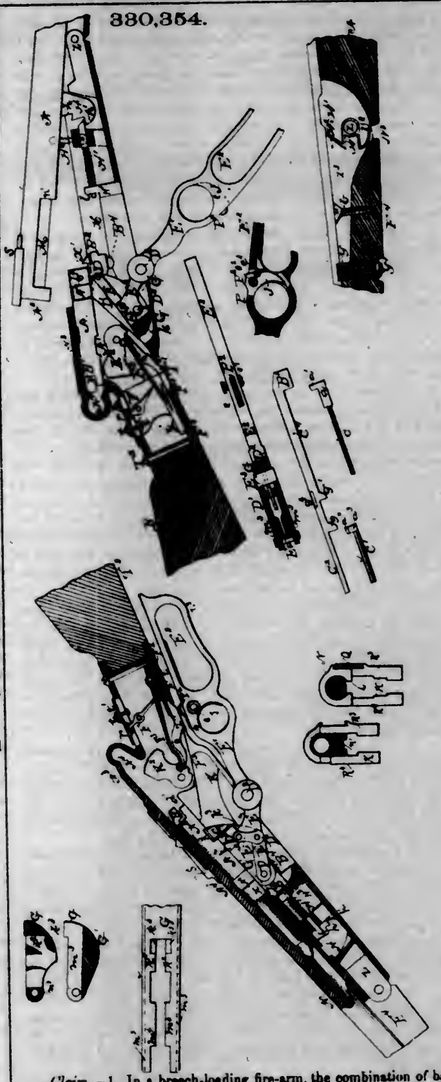


Claim.—1. The base-plate A, in combination with the chamber B, having the wire-gauze K' secured to its rear edge and lying upon the upper surface of the base-plate, and the angle-pieces C, secured to the outer surface of the chamber B, substantially as specified.

2. The combination of the base-plate A, lower section, B, having the wire-gauze K' attached, and the angle-pieces C, with the upper section, H, partition-frames K, and comb-frames F, substantially as specified.

330,354. BREECH-LOADING FIRE-ARM. SAML. A. SULLENBERGER, Harrisburg, Pa., assignor of two-thirds to Theophilus Weaver and Elias Z. Wallower, both of same place. Filed May 8, 1884. (Model.)

330,354.



Claim.—1. In a breech-loading fire-arm, the combination of barrel normally untilted provided with tubular extension normally closed on top and open below and on right side, constituting with cut-away portion of breech-chamber wall the receiver, with the ring-section on rear end of said extension of the same bore as said receiver, a tubular fixed guide on breech-chamber having corresponding bore and arranged axially in line with said receiver and ring-section, and the longitudinally-movable breech-bolt sleeved in said tubular parts and adapted by its rear end in said ring-section and guide to lock down gun-barrel, while by its front end it is held abutted to breech said barrel by means co-operating therewith, substantially as set forth.

2. In a breech-loading fire-arm, the combination, with the longitudinally-movable breech-bolt adapted both for breeching arm and for securing barrel locked down at the instant of breeching arm, of tubular rear extension massed on open butt of tilting barrel, of ring-section integral with said extension, of rear fixed guide on breech-chamber, said extension, ring-section, and guide all having corresponding bore and said bolt being snugly sleeved therein, of notched portion of said bolt adapted when the same is retracted fully to pass freely through vertical slot in said ring-section below, but when said bolt is not fully retracted to be embraced by said ring-section and thereby lock barrel down, the rear end of bolt being held in said guide, and of the breech-brace hinged to said bolt and operated by lever mechanism to sustain it in position for breeching by purchase against said ring-section, substantially as set forth.

3. In a breech-loading fire-arm adapted for charging the same without tilting barrel, the combination, with tubular extension in rear of and in line with top of barrel N, of sectional receiver M, covered above by the body of said extension and accessible through opening on right side of gun, of longitudinally-movable breech-bolt A, guided in ring-section N^2 as the rear portion of said extension of butt, and in the permanent tubular guide N^3 as rear portion of the breech-chamber wall, of the slide Q Q', provided near its front end, inside, with lug L^4, arranged to abut against the projection L^3 on said bolt for automatically pushing the slide back when the said bolt is retracted for extracting shell and charging, and of mechanism adapted, substantially as described, for producing the reciprocatory movements of said bolt, as set forth.

4. In a breech-loading fire-arm, the combination of tilting barrel N, tubular receiver M, cut away below and on right side, and ring-section N^2, having longitudinal slot L in its lower portion, both said parts constructed as integral with butt-end of said barrel, with cylindrical breech-bolt A, guided in fixed tubular extension N^3 on breech-chamber to keep axially in line with bore of barrel, and with mechanism adapted to move said bolt up to butt of barrel and back therefrom sufficiently to clear the space for dropping out the shells vertically beneath the receiver, substantially as set forth.

5. In a breech-loading fire-arm, the combination of the tilting barrel N, provided with tubular rear extension M N^2, having bore axially in line with that of barrel and adapted with ring-section N^2 to be normally locked down during service, the breech-chamber constructed with permanent tubular guide N^3, set aligned with said bore interiorly, with vertical walls of chamber constantly open below, reciprocatory breech-bolt A, traversing said guide, breech-brace G G', hinged to said bolt and adapted to embrace it and said ring-section for stopping retreat of bolt in breeching gun, breech-chamber having receptacle *k* for admitting said brace into it, and of mechanism adapted for swinging said brace from its embrace with said bolt and retiring both completely behind the receiver-space, substantially as and for the purposes set forth.

6. In a breech-loading fire-arm, the combination of tilting barrel N, having top extension M N^2 integral therewith, breech-bolt A, having longitudinal movement in fixed guide N^3 axially in line with barrel, slider-abutment B^4 on front end of said bolt adapted to ride on guiding-ledges K K' on inner sides of breech-chamber, and the stem *l* of plunger H', adapted to bear in portion B^3 of said bolt and thereby keep it on said ledges when barrel is tilted and arm inverted, substantially as and for the purposes set forth.

7. In a breech-loading fire-arm, the combination of reciprocatory breech-bolt A, provided with abutment B^4 thereon arranged beneath its front end, with swinging breech-brace G G', hinged to said abutment and provided with tenon or foot G, adapted to engage said bolt in a notch, A', thereon and at the same time to set against the abutment N^2 by said foot, substantially as and for the purposes set forth.

9. In a breech-loading fire-arm, the combination, with tilting barrel having on its butt extension terminated in rear by ring-section, and with breech-bolt having rectilinear movement axially in line with barrel to and from its rear end through said ring-section and into a fixed tubular guide on breech-chamber, whereby barrel is secured down by said bolt at firing, of breech-brace hinged to under side of said bolt at its front end and adapted with foot thereon to clutch in a notch in rear portion of said bolt and abut at the same time by said foot against said ring-section, thereby interlocking said barrel, bolt, brace, and guide, and of an operating-lever fulcrumed in breech-chamber linked to hinge of said pieces and connected by studs on lever-arm with cams within said brace, adapted to control its initial and final movements, substantially as and for the purposes set forth.

9. In a breech-loading fire-arm, the combination of the reciprocatory breech-bolt A and the breech-brace G G', hinged thereto, both being adapted to engage each other, as set forth, with link or connector E, pivoted to abutment B^4 and to arm E^3 of the operating-lever E' E^2 E^3, and the studs D^3 on said arm arranged to come in contact with the cams k^2 and k^3, arranged upon the insides of said breech-brace and adapted to be in communication with said studs alternately, substantially as and for the purposes set forth.

10. In a breech-loading fire-arm, the combination, with the pivoted operating-lever E' E^2 E^3, connected with the breech-bolt A and with the breech-brace G G', substantially as set forth, and adapted to fold against the stock B and the sear T', pivoted therein, of the trigger J, pivoted in recess in said lever and having the nose P^2 adapted to bear against said sear when trigger is set advanced or is operated distinctly from lever when not set advanced, of spring d^3, adapted to retract said trigger when not set advanced, and of rotary stop-piece *e*, having its shank *e'* provided with notch e^2 and applied to set the trigger or release the same, substantially as and for the purposes set forth.

11. In a breech-loading fire-arm, the combination of the reciprocatory bolt or part having attached thereto the extractor with set-screw made with point beveled or cut off obliquely to correspond with the strike of said extractor's catch and inserted through it for supplementing said catch to adapt it to seize shells of less caliber than that the regular catch takes, substantially as set forth.

12. In a breech-loading fire-arm, the combination, with breech-piece A, provided with receptacles A^2 L in path of groove L^2, of top rim-fire pin, C^2, provided with catches *g g'*, and guided in said groove, of mid-range rim-fire pin, C', having bead a^2, arranged to couple with catch *g'* by position directly in front of it or to be idle in position behind said catch, and of center-fire pin C, for all ranges or calibers, provided with head *a*, arranged to couple with catch *g'* by position in front of it or to be idle in position with its bead behind said catch, all adapted to be arranged for use substantially as set forth.

13. In a breech-loading fire-arm, the combination, with a breech-bolt, A, having rectilinear movement in line with bore of barrel N, of main rim-fire pin C^2, loosely inserted in longitudinal groove L^2 in top of said bolt that it may be lifted off when barrel is tilted and said bolt is fully advanced, of other fire-pins, C C', inserted in receptacles in said bolt and having their heads arranged that either may be adjusted to be in coupled position before a detent on under side of said main fire-pin C^2, and be struck thereby, and of hammer K^2, adapted to strike head on main fire-pin and thereby either of said other fire-pins, substantially as and for the purposes set forth.

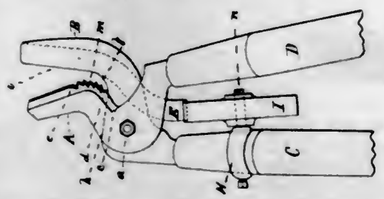
14. In a breech-loading fire-arm having tilting barrel and breech-chamber vertically open throughout when barrel is tilted, in combination with longitudinally-movable breech-bolt, of swinging breech-brace pivoted to said bolt, of link pivoted in the hinge joining said bolt and brace and of operating-lever pivoted to said link, whereby its arm, by stud on wrist thereof, works against cams in said brace, the lever being fulcrumed in said open space between the breech-chamber walls by a bolt or screw as the only retainer of said pivoted works that they, as a whole, may be removed by a vertical lift when said bolt or screw is removed, substantially as and for the purposes set forth.

15. In a breech-loading fire-arm, substantially as described, in combination, the essentially united works, consisting of operating-lever E' E^2 E^3, link E, pivoted thereto, breech-bolt A, provided with a slider abutment, B^4, pivoted to said link, fire-pins C C^2 C^3, inserted in breech-bolt, breech-brace G G', hinged to said abutment by same pintle joining said link thereto, studs D^3 on wrist of said lever's arm, the same being adapted to engage the eccentric cams k^2 k^3 in said breech-brace, and screw or bolt D^4, by removing which said works may be removed intact, substantially as set forth.

16. In a breech-loading fire-arm, substantially as described, the combination of the longitudinally-moving breech-bolt guided axially in line with the barrel in normally locked-down position, the breech-chamber wall on right side constructed with aperture or cut-away part opposite to and the whole length of the receiver directly in rear of barrel, the butt of the latter extended rearward over and composing part of said receiver, closed above and on left side thereof, the said bolt provided with pin or lug near its front end and projecting into said opening on right side of receiver, the longitudinally-moving slide adapted and guided to close said opening and having on its inner side a lug or pin arranged to come against the rear side of said projection on said bolt and be thereby moved automatically when bolt is retracted and stopped by its pin or lug when at opposite end of said opening against displacement from its guiding-ledges, and mechanism, substantially as described, for actuating said bolt, the co-operating breech-brace, and the firing-pins, substantially as set forth.

17. In a breech-loading fire-arm in which the breech-piece and its brace are conjointly moved to and sustained in position for breeching the gun by the operating-lever fulcrumed in the breech-chamber, the combination, with said lever, of an adjustable trigger having when adjusted part thereof projecting from the edge of said lever and in communication with the arm of the sear, and of a stop or means for securing said trigger in adjusted position, substantially as and for the purposes set forth.

330,355. PLANT-CUTTING SHEARS. Alvah Sweetland, Syracuse, N.Y. Filed Oct. 15, 1884. (No model.)

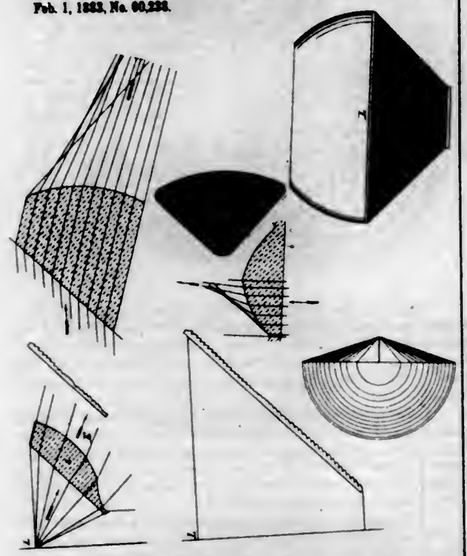


Claim.—1. A plant-cutter provided with a shoe connected with the point of a blade and extended rearwardly under said blade, and curved laterally to project rearwardly between the handles, substantially as shown and described.

2. In a plant-cutter, the combination of the handles C D, collar H, adjustable longitudinally upon the handle and having leg *n* and wheel I, substantially as shown and described.

3. In a plant-cutter, the combination of the blades A B, the former having the convex serrated portion, and the latter the concave portion *l*, and both curved laterally, and the pivot of the blades being in line with one of the handles of said blades, and one of said blades having a shoe projecting rearwardly between the handles, substantially as shown and described.

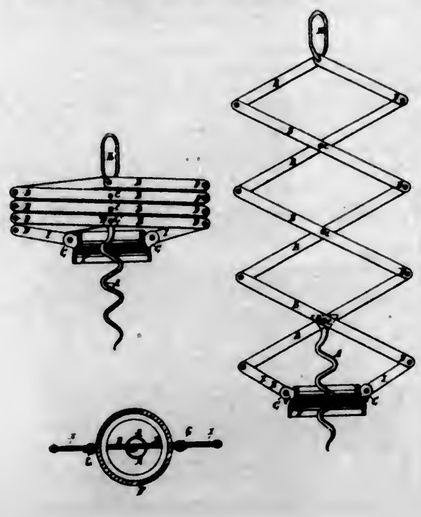
330,356. APPARATUS FOR DISTRIBUTING AND DIFFUSING LIGHT. Alexander P. Trotter, Furnivals Inn, County of Middlesex, England. Filed Mar. 17, 1883. (No model.) Patented in England Jan. 15, 1883, No. 223; in France Jan. 24, 1883, No. 153,303, and in Belgium Feb. 1, 1883, No. 60,238.



Claim.—1. A lantern glass or refractor provided with a number of horizontal steps or prisms, the surfaces of said steps or prisms being distribution-curves, determined as set forth, to distribute the light uniformly over a considerable area, substantially as described.

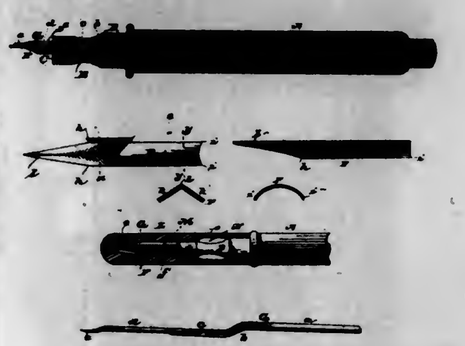
2. A lantern-glass having on one surface horizontal steps or prisms with curved refracting-surfaces for uniformly distributing the light passing through them, and on the other vertical curved flutings, substantially as and for the purpose set forth.

330,357. CORKSCREW. Marshall A. Weir, Upper Norwood, County of Surrey, England. Filed Nov. 12, 1884. Renewed Oct. 1, 1885. (No model.) Patented in England Sept. 25, 1884, No. 12,804.



Claim.—In a corkscrew, the combination of the worm and the compound levers arranged in criss-cross manner, substantially as described.

330,358. FOUNTAIN-PEN. Paul R. Weir, Bloomsburg, Pa. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a fountain-pen, the combination, with the barrel or reservoir and the nozzle carrying the pen, of the ink-conducting shaft arranged above the pen and having its front end adapted to leave a space or chamber between it and the pen for ink to accumulate in, for the purpose set forth.

2. In a fountain-pen, the combination, with the barrel or reservoir and the pen section or nozzle, of the ink-conducting shaft held at an intermediate point of its length within the pen section or nozzle, the rear end extending into the ink reservoir or barrel and the front end arranged above the pen so as to leave a space or chamber between the parts arranged and operating, whereby when the pen is pressed upward in writing the action of the nibs causes the said space or chamber to be increased or decreased, according to the stroke given thereto, for the purpose set forth.

3. In a fountain-pen, the combination, with the barrel or reservoir and the pen section or nozzle, of the ink-conducting shaft extending through the nozzle and having its front portion arranged to leave a space or chamber between it and the pen, the extreme front end resting on the nibs thereof, so that the shaft will be operated to increase the width of the space or chamber, according to the degree of stroke, as set forth.

4. In a fountain-pen, the combination, with the barrel or reservoir and the pen section or nozzle, of the ink-conducting shaft extending through the latter and resting at an intermediate point on the rear end of the pen, the front portion being arranged to leave a space or chamber between it and the pen, and the extreme point or front end resting upon the nibs thereof, arranged and operating so that the space between the intermediate point and the extreme front end may be increased in width, according to the stroke given to the pen, as set forth.

5. In a fountain-pen, the combination, with the reservoir or barrel and the pen section or nozzle, of the ink-conducting shaft comprising the main portion *a*, the depressed portion *b*, the chambered portion *d*, and the front bearing-edge, *e*, the latter resting on the nibs of the pen, for the purpose set forth.

6. In a fountain-pen, the combination, with the barrel or reservoir and the pen section or nozzle, of the ink-conducting shaft passing through the latter, and the pen fitted in the nozzle below the shaft and comprising the two flat nibs set at an angle to each other, and a rounding shank or body, as set forth.

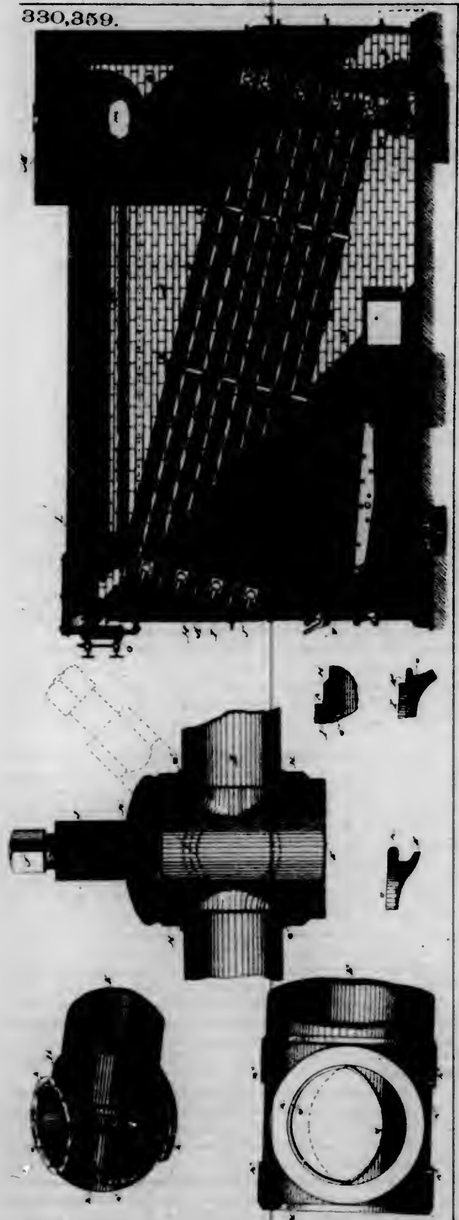
7. In a fountain-pen, the combination, with the barrel or reservoir and the pen section or nozzle, of the ink-conducting shaft and the pen comprising the rectangular shank or body, the flat nibs set at an angle to each other and extending back and forming part of the body, the latter commencing to assume a rounding shape from the point where the nibs terminate, for the purpose set forth.

8. In a fountain-pen, the combination, with the ink reservoir or barrel and the pen section or nozzle, of the ink-conducting shaft and the pen comprising the shank or body, and two flat nibs set at an angle to each other and extending back and forming part of the body, as set forth.

9. In a fountain-pen, the combination, with the nozzle, of the herein-described cap having an interior passage therein, the front or closed end of the passage being reduced while the rear or open end is enlarged, for the purpose set forth.

330,359. SECTIONAL STEAM-BOILER. Amasa Worthington, Chicago, Ill. Filed Jan. 30, 1885. (No model.)

330,359.



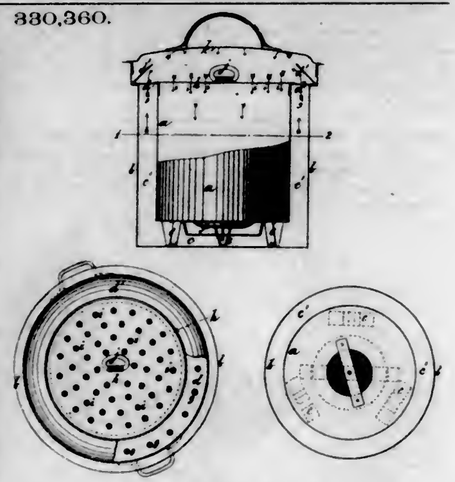
Claim.—1. A water-tube boiler in which the main and connecting pipes are directly united by means of necks formed upon the respective ends of the former, into which the connecting-pipes are expanded, said necks being surrounded by re-enforcing jackets, substantially as described, and for the purposes specified.

2. The combination, with the tubes E, having necks or flanges *e'* formed thereon, of the connecting-pipes I, jackets H, and caps K, with means for detachably securing the latter to the ends of said tubes, substantially as and for the purposes specified.

3. In combination with the main pipes of a water-tube boiler, the jackets H, constructed substantially as and for the purposes set forth.

330,360. WASHING-MACHINE. GEORGE WOSTENHOLM, Jonesville, Ill., assignor of one-half to John J. Fischer, St. Louis, Mo. Filed Aug. 15, 1885. (No model.)

330,360.

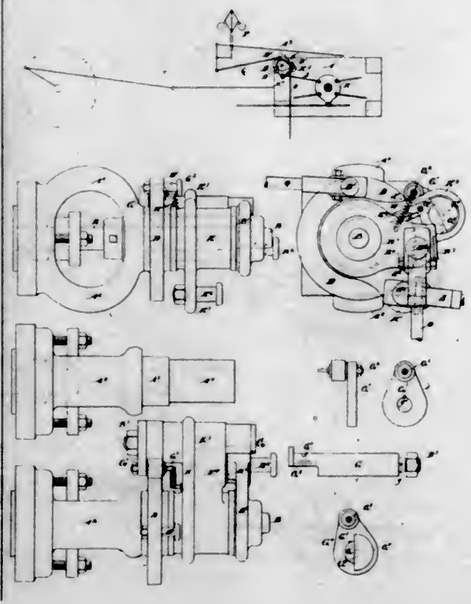


Claim.—1. The combination of the clothes-chamber *a*, having a bottom outlet-valve, *f*, with outer vessel, *b*, between which and the clothes-chamber *a* is a bottom space, *c*, communicating with a narrow annular space, *c'*, extending all round the clothes-chamber *a*, and with cover *k*, and deflecting-flange *d'*, substantially as shown, and for the purpose described.

2. The combination of the clothes-chamber *a*, having a bottom outlet-valve, *f*, with outer vessel, *b*, between which and the clothes-chamber *a* is a bottom space, *c*, communicating with a narrow annular space, *c'*, extending all round the clothes-chamber *a*, and with cover *k*, deflecting-flange *d'*, and perforated plate or cover *h*, substantially as shown, and for the purpose specified.

3. The combination of the clothes-chamber *a*, having outlet-valve *f*, with outer chamber or vessel, *b*, between which and the clothes-chamber *a* is a bottom space, *c*, communicating with a narrow annular space, *c'*, extending all round the clothes-chamber *a*, and with cover *k*, and perforated plate or cover *h*, substantially as shown, and for the purpose specified.

330,361. CUT-OFF GEAR FOR STEAM-ENGINES. JOHN YOUNG, Newark, N. J., assignor to the Watts, Campbell Company, same place. Filed July 31, 1885. (No model.)

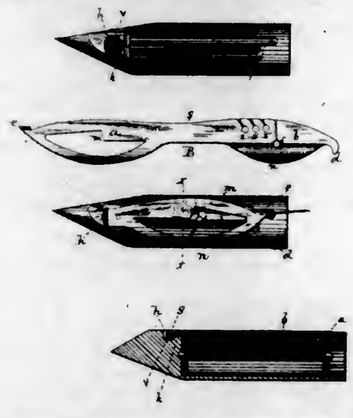


Claim.—1. In a valve-gear, the combination, with the arm E^2, rocked by the engine, of the partially-rolling shaft G, having the operating-arm G', pin G^2, and contact-piece G^3, adapted to serve with a suitable contact-piece carried on an arm of the valve-stem and with the disk D, having the offsets d' d^2, controlled by the governor, substantially as herein specified.

2. The operating-arm G', reliably engaging means *g g'* and holding-nut B^2, in combination with the partially-turning shaft G, carried in the arm E^2, worked by the engine, and with the arm B', fixed on the rocking valve-stem B, and with means, as shown, for effecting the liberation of B' at varying periods, as herein specified.

3. In a valve-gear, the yokes A^3, formed each with an extension, A^3 A^4, adapted to form a bearing for the disk D, rocked by the governor, and sleeve E, rocked by the engine, in combination therewith and with the partially-rotating valve-stem B, and with the short shaft G^2, having the arm G', pin G^3, and roller W, all substantially as herein specified.

330,362. SHUTTLE. FREDERICK P. CHENEY, Glover, Vt. Filed July 9, 1885. (No model.)



Claim.—1. The combination, in a cylindrical shuttle provided with the chamber *h*, of the double spring B, and the fulcrum *k*, substantially as described.

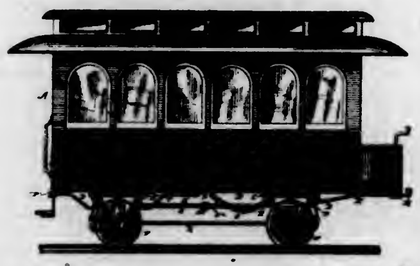
2. The combination, with the shuttle-case, of the leaf *b*, provided with the thread-distributing curved edge *n*, projection *d*, central guide-opening, *f*, and the tension-openings *s s' s''*, with the leaf *a*, whereby the tension-pressure is applied after the angles are passed, substantially as described.

3. The covering-plate B, composed of the leaves *a* and *b*, the leaf *b* having a portion longitudinally depressed or sunk below the leaf *a* to the cylindrical line of the inner surface of the shuttle-case, and having a curved edge, *s*, in combination with the shuttle-case having an elliptical opening therein.

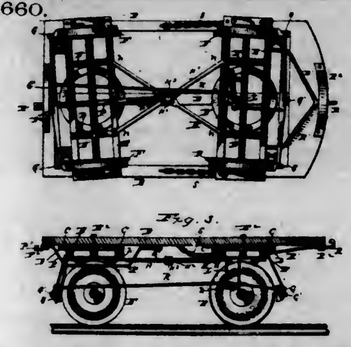
4. The open-ended cylindrical shuttle-case provided with an elliptical opening in its side adapted to admit of the removal and insertion of the bobbin therethrough, in combination with a double tension-spring arranged to serve as a cover for the said opening, as set forth.

REISSUES.

10,660. CAR-TRUCK. FRANCIS A. GRAFF, New Albany, Ind. Filed Oct. 8, 1885. Original No. 325,532, dated Sept. 1, 1885.



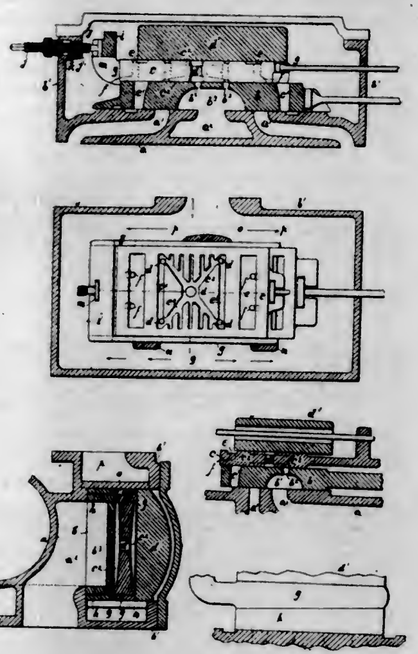
10,660.



Claim.—1. Combined with car-trucks, centrally-slotted diagonal bars connecting the relatively-opposite ends of said trucks, and a bolt retaining the central portions of the bars together and traveling in said slots, substantially as and for the purpose specified.

2. A running-gear for cars, consisting of pivoted trucks, centrally-slotted diagonal bars connecting the relatively-opposite ends of said trucks, a bolt passing through said slots and traveling in them, a draw-bar with diverging ends connected to one of the trucks, and an independent pivoted draw-bar at the other end of the car, substantially as and for the purpose specified.

10,661. BALANCED SLIDE-VALVE. DANIEL A. WOODBURY, Rochester, N. Y. Filed June 1, 1885. Original No. 303,477, dated Aug. 12, 1884.



Claim.—1. The combination of the relief-plate *d'* and cut-off valve *c* with the main distributing-valve *b*, and suitable communicating openings and passages, whereby the exhaust cavity or cavities of the distributing-valve will be counterbalanced by the distribution of the exhaust-steam over areas at the inside of the relief-plate, and at each side of the cut-off valve, corresponding in extent, or nearly so, with the area of the exhaust cavity or cavities in the main distributing-valve, substantially as shown and described.

2. The cut-off valve *c*, having recesses *e* and passages *f*, in combination with the relief-plate *d'*, and with the distributing-valve *b*, having passages *c'*, substantially as described.

3. In a balanced slide-valve, the combination of the valve and relief-plate with the wedges *g*, placed longitudinally, and connecting-bar *i*, so arranged that the valve can pass under the bar, substantially as shown and described.

4. In a balanced slide-valve, the combination of the valve with the relief-plate and the wedges, the said wedges being placed longitudinally and so arranged that their outer surfaces will at some point in their adjusting movement be flush with the back of the valve, substantially as set forth, and for the purpose described.

5. In a balanced slide-valve, the combination, with the relief-plate *p'* and adjusting-wedges *g*, of the independent supports *h*, substantially as described.

6. In a balanced slide-valve, with the valve or valves set upon edge and arranged on the side of the cylinder, the combination, with the relief-plate *d'*, wedges *g*, and supports *h*, of the passage or space *q*, arranged and operating substantially as described, and for the purpose set forth.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the District of Columbia.

HILL *et. al. v.* THE COMMISSIONER OF PATENTS.

Decided October 12, 1885.

1. The claim of a specific device or combination in a patent and the omission to claim other devices or combinations apparent on its face are in law a dedication to the public of that which is not claimed.

2. When such omission arose from inadvertence, accident, or mistake, the appropriate remedy is by reissue, and a second patent may not be granted for the devices or combinations so omitted.

STATEMENT OF THE CASE.

[Letters Patent No. 207,738 were granted to the appellants on September 3, 1878, which contained but a single combination claim. On March 30, 1880, they filed an application for a patent for certain matter shown and described, but not claimed, in said Letters Patent, and embracing the claims involved in this appeal. On November 10, 1880, they filed an application for a reissue of said letters patent embracing substantially the same claims. The former application was rejected under Rule 91 of the Rules of Practice of the Patent Office, which provides that matter shown and described, but by mistake not claimed, in a patent may be claimed by the patentee in a reissue of the patent, but not in a separate patent. On April 26, 1883, said rejection was affirmed by the Commissioner of Patents.]

Mr. William Edgar Simonds for the appellants.

Mr. D. A. McKnight for the Commissioner.

CARTER, *C. J.:*

In the case of Samuel Hill, Benjamin B. Prentice, and the Vermont Farm Machine Company against the Commissioner of Patents, the Court has unanimously concluded to affirm the decision of the Commissioner.

The case is here on appeal from the Commissioner of Patents, who has rejected the appellants' application for patent. The patent sought is for certain devices pertaining to a milk-cooler, an ingenious contrivance by which skimmed milk can be obtained without disturbing the cream. The claims are set forth fully, and it is conceded that their subject-matter is patentable; but the ground of their rejection and the whole issue here are to be found in the decision of the Commissioner of Patents, which says, in substance:

> The applicants really ask that Rule 91 of the Rules of Practice may be striken out, or so changed as to accommodate it to their and similar cases. This cannot be done. In this case it should not be done even if it could be. Applicants described the invention now sought to be patented in their former patent, but they did not claim it. By a lapse of time they are unable to reissue that patent. They now desire to include in a patent that which they might have claimed in the former patent. This they cannot do, not only under the rules of this Office, but under the decisions of the courts.

The Commissioner then quotes the case of *Campbell* v. *James*, (104 U. S., 382,) decided by the Supreme Court of the United States, to the effect that a patentee cannot include in a subsequent patent any invention embraced or described in a prior one granted to himself any more than he could an invention embraced or described in a prior patent granted to a third person.

It is conceded in this case that every feature of the invention sought to be patented was shown and described, but was not claimed, in a patent which had already been granted to the appellants. After that patent had been issued to them, and when they had unduly delayed in applying for a reissue of it, which would have been the appropropriate process to perfect it, they applied to the Patent Office to grant them a new patent for these devices. The Commissioner has refused it, and this Court is asked to reverse that decision.

It is unnecessary to consider all the cases decided in the Supreme Court of the United States bearing on this question, and which have been cited and discussed by counsel, for their doctrine is well summed up in the case of *Miller* v. *Brass Company*, as reported in 104 United States Reports, page 350, in which the Court say:

> But it must be remembered that the claim of a specific device or combination, and an omission to claim other devices or combinations apparent on the face of the patent, are, in law, a dedication to the public of that which is not claimed.

And in the same opinion, on page 352, they use this langnage:

> This legal effect of the patent cannot be revoked unless the patentee surrenders it and proves that the specification was framed by real inadvertance, accident, or mistake, without any fraudulent or deceptive intention on his part, and this should be done with all due diligence and speed.

The same doctrine is reiterated and applied in the case of *Campbell* v. *James*, (104 U. S. Reports, 332.) In that case the Court says:

> It is hardly necessary to remark that the patentee could not include in a subsequent patent any invention embraced or described in a prior one granted to himself any more than he could an invention embraced or described in a prior patent granted to a third person. Indeed, not so well, because he might get a patent for an invention before patented to a third person in this country if he could show that he was the first and original inventor, and if he should have an interference declared.

These cases are conclusive of the issue here. That issue is not whether the invention has been abandoned by a failure for two years to apply for a patent for it, or until the statutory limitation of two years' public use had run against the appellants, but whether, by manifesting these features of their invention in their prior patent, without covering them by claims, they have dedicated them to the public. It is the judgment of this Court that they have dedicated them to the public, and we therefore affirm the decision of the Commissioner of Patents.

U. S. Circuit Court—Eastern District of Pennsylvania.

GRAHAM v. TETER.

Decided October 6, 1885.

1. To a bill in equity filed under section 4915 of the Revised Statutes by an applicant for a patent the Commissioner of Patents is not a necessary party where there is an opposing party to the bill.
2. Where the opposing patentee has transferred his interest in the invention, the assignee of that interest should be made a co-defendant.

Mr. Walter J. Budd for the complainant.

Mr. Charles Howson and *Mr. Hubert Howson* for the defendant.

BRADLEY, C. J.:

The bill in this case, filed under section 4915 of the Revised Statutes, sets out, *inter alia*:

Edward H. Graham, of the city of Philadelphia, in the State of Pennsylvania, and a citizen of said State, being the original, first, and true inventor of the hereinafter-described improved process for cleaning and drying grain, and having made application for letters patent therefor, which application has been rejected by the Commissioner of Patents and priority of invention of the subject-matter thereof adjudged in favor of William L. Teter, also of the city of Philadelphia and State of Pennsylvania, and a citizen of said State, after duly contested proceedings had in interference between the application of your orator and the first claim of the Reissued Letters Patent No. 10,275, of the said William L. Teter, granted January 23, 1883, for process of and apparatus for cleaning grain, the original Letters Patent No. 262,505, bearing date of August 8, 1882, brings this his bill in accordance with the statute in such case made and provided for the purpose of obtaining a decree from your honorable court, that he is the first, true, and original inventor of the said improved process, and as such entitled to receive a patent therefor, and he joins herein as defendant the said William L. Teter, he being, so far as your orator is informed and believes, the only party having any interest adverse to your orator in the matter of his said application.

The answer sets out, *inter alia*:

2. This respondent * * * says that he is not the only party having an interest adverse to said complainant in the matter of his said application for patent in said bill of complaint mentioned, but that all the right, title, and interest of this respondent in and to the invention for which it is issued Letters Patent No. 10,275 were granted and issued to this respondent, and which said complainant claims in his said application for letters patent, was, long before the bringing of said complainant's said bill of complaint, assigned by this respondent by proper instruments of writing, duly recorded in the Patent Office of the United States, to the Eclipse Improved Wheat Cleaning Machine Company, a corporation organized under the laws of the State of New Jersey, and was, at and before the time of the filing of said complainant's said bill, and is now owned by said company; and respondent submits that the said Eclipse Improved Wheat Cleaning Machine Company is a necessary party to this suit, but is not by said complainant's said bill of complaint made a party thereto.

3. This respondent * * * says * * * that it appears by said bill of complaint that said complainant has been refused a patent upon his application in said bill mentioned by the Commissioner of Patents, within whose cognizance and jurisdiction such matters properly are, and that complainant's said bill of complaint is exhibited for the purpose of obtaining the judgment and decree of this honorable court, that he is entitled by law to receive a patent for the invention claimed in his said application in said bill mentioned: wherefore, it appears from complainant's said bill of complaint that the said Commissioner of Patents is a necessary party to this suit, but he is not by said bill made a party thereto.

The case was set down by complainant for argument under Equity Rule 52, on these objections for want of parties.

The court sustained the first objection but overruled the second one, holding (orally) that the Eclipse Improved Wheat Cleaning Machine Company should be made a party defendant, but that the Commissioner of Patents was not a necessary party to the bill so long as there was an opposing party, and the following order was entered:

And now, October 6, 1885, this cause came on to be heard upon the "defendant's objection for want of parties," and was argued by counsel.

Whereupon it is ordered that complainant have leave to amend his bill of complaint by adding the Eclipse Improved Wheat Cleaning Machine Company, a corporation created by the laws of the State of New Jersey, as a party defendant, without costs to be taxed against him.

It is further ordered that the objection that the Commissioner of Patents is not made a party be overruled.

U. S. Circuit Court—District of Massachusetts.

TOMPKINS v. BUTTERFIELD *et al.*

Decided October 1, 1885.

The superintendent of the Suffolk Iron Company, a corporation, marked upon certain saddle-trees manufactured by said company the words "Patented June 9, 1874." In an action against them to recover the penalty provided for in section 4901 Revised Statutes the company set up that said saddle-trees were manufactured under a patent issued to one George Theobald on June 9, 1874. The court instructed the jury as follows:

1. That, as matter of law, the said saddle-trees were not manufactured under said patent.
2. That the corporation is responsible for the conduct of its superintendent in affixing said marks to them.
3. That the action is criminal, and that they must be satisfied beyond a reasonable doubt that there was an intent to deceive the public in affixing said marks.
4. That if the marks were affixed by the superintendent with the knowledge and belief that in point of fact and law the saddle-trees were not manufactured under said patent, or without knowing whether they were manufactured under this or any other patent, the corporation is liable; but that if he honestly believed, though his belief may have been mistaken, that the saddle-trees were covered by said patent, the corporation is not liable.

[The jury found for plaintiff on three counts, and assessed the damages at three hundred dollars, against the Suffolk Iron Works.]

Mr. J. C. Clayton for the plaintiff.

Mr. A. D. McClellan and *Mr. P. Cummings* for the defendants.

NELSON, J.:

CHARGE TO JURY.

Mr. Foreman and gentlemen of the jury:

This is an action brought by the plaintiff against the defendants to recover a penalty, under a statute of the United States, which provides that—

Every person who in any manner marks upon or affixes upon any unpatented article the word "patented," or any word importing that the same is patented, for the purpose of deceiving the public, shall be liable for every such offence to a penalty of not less than one hundred dollars and costs.

This suit was brought originally against the Suffolk Iron Company and three other individuals joining them as defendants. As to Mr. Butterfield, one of the original defendants, he is already disposed of by the verdict which you have rendered, under the instruction of the court, upon the plea in abatement, and the learned counsel for the plaintiff does not claim that upon the evidence in the case and the facts proved the plaintiff is entitled to recover against either of the other individual defendants, Mr. Drew and Mr. Burgess; and whatever your verdict may be in respect to the Suffolk Iron Company, you will return a verdict for the other two defendants. The controversy as it now stands is solely between the plaintiff and the Suffolk Iron Company.

The purpose of this statute is very plain and evident. Its purpose is to prevent the public from being deceived by persons marking upon an article upon which no patent has ever been granted by the United States words which purport that a patent has been granted—the words which another provision of the statute requires shall be placed upon all patented articles, and of course it is of the utmost importance that the public should not be imposed upon by any person who sees fit to stamp his goods as having been secured by a patent of the United States. This statute is intended to protect both the public and honest inventors against fraud in this matter, and the meaning is so perfectly clear, the law is so eminently just, and the purpose which it is designed to accomplish so plain, that it is not necessary I should dwell longer upon that.

The statute, I say, imposes a penalty for this unlawful act, and it therefore becomes in its nature a criminal proceeding. It is not a proceeding which may be prosecuted by indictment. The statute upon which the case depends provides for its enforcement and for a remedy against its violation, and it authorizes any person to bring a suit in his own name to enforce this penalty against any person charged with having incurred it, with a provision that one-half of the penalty shall go to the person by whom the suit is brought and by whom the prosecution is carried on and the other half to the United States.

The purpose of the law is to provide a remedy which may be availed of by any person; but taking it for granted that those parties who are especially interested in the particular article that may be unlawfully stamped will see that the proper action is brought to enforce the penalty, leaving it to the public at large to enforce it in this way, of course expecting that in all probability the suits will be brought by those who are interested pecuniarily in the article in respect to which the penalty has been incurred; and in this case, as I suppose in all cases of this nature, the party suing is a person interested in the article manufactured, and who desires for some reason, good or bad, to enforce the penalty against a rival manufacturer who interferes with the business of the plaintiff.

Now, another consequence flowing from this being, as I have said, in the nature of a criminal proceeding, is this: that the offense must be proved by evidence that leaves upon the minds of the jury no reasonable doubt that the penalty has been incurred. In an ordinary criminal prosecution it is not sufficient to go only so far as to establish a preponderance of the evidence in favor of the Government. Every person charged with an offense is to be considered innocent unless his guilt is proved so clearly that the jury can conscientiously say that no reasonable doubt remains upon their minds as to his guilt. The term "reasonable doubt" of course does not signify a mere sceptical condition of the mind. It does not require that the proof should be so clear that no possibility of error can exist, for if that were the case no criminal prosecution would ever prevail. It means simply that the evidence must be so conclusive and complete that all reasonable doubt of the facts is removed from the mind. That is a rule which you will apply to this case, and you will keep it in mind through the entire case.

It appears that some time before this suit was commenced the Suffolk Iron Company sold fifty saddle-trees, on each of which was stamped the words and figures "Patented June 9, 1874." The parties agree that this stamp is sufficient to satisfy that provision of the law which prohibits any person from putting the word "patented," or any word importing that the thing is patented, upon any article for the purpose of deceiving the public. Thus it has been admitted in this case that these fifty articles sold by the defendants were all stamped within the meaning of this statute. There is no controversy about that.

I think it may also be stated here that the plaintiff has proved by sufficient evidence to justify you in finding a verdict in his favor that this article is wholly unpatented unless it is covered by a patent granted to one Theobald on the date borne on this label, the 9th of June, 1874. This also is agreed to in substance by the parties. Therefore, one question to be determined is whether any one of these articles (for they are all alike) was manufactured in accordance with the specification and claim of this patent to George Theobald. I must confess that I have found some difficulty in construing this patent, as a matter of law; but I have given it the best consideration that I have been able to, and I have come to the conclusion to instruct you in regard to this patent as matter of law, so that you will not have to consider the question whether or not, upon the evidence in this case, these articles are covered by the Theobald patent. I think upon scrutinizing this instrument carefully that neither the ridge, the chamber or orifice, the square opening at the end of the wing or side of the tree, or the space beneath is covered by the patent. I think neither of these is covered within the meaning of this patent. I think that it also fails in not having upon it the sockets, which are an essential part of the article described in the Theobald patent, and in not having any concave or convex surface, such as is described in the specification or claim of the letters patent.

We are fortunate in having before us a saddle-tree which the parties agree is made in accordance with the Theobald patent, and I have come to the conclusion to take the view which was taken by the learned gentleman who appeared here, Mr. Faber du Faur, as an expert for the plaintiff, and to hold that what the claim of the patent actually covers is the convex surface on the under side of the bearing portion of the tree, the depressed upper surface, which constitutes the corresponding part to the convex under surface, the air-chamber formed by its corrugated upper surface, and the sockets by which the contrivance is attached to the saddle; and therefore you will take it for granted in determining this case that these fifty articles were not manufactured in conformity with this patent. If I err in this respect, the defendant has his remedy by taking the case to a higher court. That is the conclusion to which I have come upon a careful examination of this claim and specification; but that of course is by no means the whole of this case. Although this may be an article which is not patented within the meaning of the statute, still the defendant is not necessarily guilty of this offence. The plaintiff must go further, and prove that these marks were affixed to these articles for the purpose of deceiving the public. Now, this suit is against a corporation which can have no purpose whatever, can have no mind or volition. The evidence is that these marks were affixed after the corporation became the proprietor of the Theobald patent and the owner of the stock purchased of Hayes. It appears that the labels were affixed by the superintendent personally, or by persons under his direction, and that the other officers of the corporation had nothing whatever to do with it, gave no directions in regard to it, and that the act of fixing or causing these marks to be fixed was that of the superintendent. I instruct you that the corporation is responsible for the conduct of its superintendent; that as he was the person who had charge of this work, and the person who conducted the manufacturing part of the business of the corporation, his acts bound the defendant, and that the corporation

is bound by the purpose of the superintendent in the performance of the acts and by his knowledge with reference to the performance of the acts.

Now comes the question, what does the statute mean when it uses the term "for the purpose of deceiving the public?" It means the purpose of making the public believe, by affixing a stamp or mark upon the article, that it is covered by a patent. If that was the purpose of the superintendent, with the knowledge or belief that in point of fact and law the article was not covered by a patent, then the corporation is liable to the penalty for the act of the superintendent. So it is important for you to find out from all this evidence what was the state of mind of this superintendent. There is no claim that the other officers of the corporation had any knowledge of these acts, and the suit has been discontinued as against them. It all rests upon the knowledge and purpose of Hayes, the superintendent. Now, if you think, upon all this evidence, that Mr. Hayes knew or ought to have known that these articles were not fairly within the terms of the Theobold patent, then it is your duty to find a verdict for the plaintiff; but if, on the other hand, you find from all this testimony that he honestly believed, though his belief may have been mistaken, that these articles were covered by the Theobald patent, then, although he may not have had a lawful right to have so affixed these marks, yet it cannot be said that he did it with the fraudulent and unlawful purpose which the statute makes essential to the offence, therefore you will of course weigh very carefully his testimony and compare it with all the facts in the case. You have heard his own statement as to the efforts which he made to ascertain his own rights while he himself was the holder of the patent and the manufacturer of the trees, and affixed these stamps to the articles manufactured, and you have heard his testimony as to his consultation with a patent solicitor. Of course it is important that all this should be carefully considered by you, and you are to say whether he honestly believed that the articles were fairly within the terms of the patent, and that he had a right to affix these stamps upon that ground.

Now, I think I ought to go a step further and say to you that if he affixed the stamps without knowing whether the articles were patented or not, and not having had in his mind clearly the question whether the article was within the patent or not, and without any reference to this patent or any other patent, then it was an act which, under the statute, fairly constitutes a case of criminal conduct on the part of the defendant. If he proceeded without any knowledge one way or the other to stamp the article, neither he nor the corporation can have the right to say that they had no purpose, that they never gave it a thought, that they did it under some mistaken idea of duty, did it honestly, but without reference to any patent and without any reference to the patent of Theobald. If they did so act, that was a case of fraud upon the public which comes within the meaning of the statute. If you find that condition of mind on the part of Hayes in reference to affixing these stamps, then you must find a verdict for the plaintiff.

The declaration contains fifty distinct counts, one upon each of the fifty articles sold by the defendant corporation. The result would be, if you found for the plaintiff upon either one of them, you must necessarily find for him upon all, or a verdict of five thousand dollars, one-half of which would go to the plainliff and the other half to the United States. But the plaintiff asks for your verdict only upon three of the counts, and that you shall find the defendant guilty only as to three of the articles. If, therefore, you find for the plaintiff, you will return a verdict for three hundred dollars, and not for the five thousand dollars, which you would otherwise be obliged to return if you found on either one of the counts for the plaintiff.

I think, gentlemen, I have covered all the points which have been raised in the case. So far as my rulings are contrary to what has been requested by either party, their right of exception, of course, exists.

Mr. CLAYTON. As at present advised, the rulings are entirely satisfactory to the counsel for the plaintiff; but I will inquire, by way of greater caution, if he will have an opportunity, should it be needful, to except after he shall have seen the written charge.

NELSON, Judge. No, I think you must except now. I do not think you have the right to except at any subsequent time. Have you anything to say, Mr. Cummings?

Mr. CUMMINGS. I do not care to call the attention of the court to anything further; but I should like to save the defendants' exception, supposing that there should ever be any occasion for it, as to the ruling of the court upon the construction of the Theobold patent, and likewise upon the ruling as to the liability of the corporation with respect to Mr. Hayes's acts.

NELSON, Judge. You are entitled to exceptions upon both those points.

Therefore, gentlemen, I think everything has been covered, and it only remains for you to take the case and pass upon the facts. I want to caution you in one particular. There has been a great deal of testimony here, called expert testimony—opinions given by persons skilled in this art, who have come before you and given their opinions. Now, it is very difficult in such testimony to separate the mechanical opinion from the opinion on questions of law in a case of this kind. The law and fact are so mixed up in a case of this kind that it is very difficult to separate the opinion of the witnesses upon a mechanical question from their opinion upon a question of law. You must remember that you must take all the law from the court. You are yourselves to be the sole judges upon all questions of fact; but you are not to take any opinion upon any question of law from the mouth of the expert witness. Gentlemen, you will now retire to your room in charge of an officer of the court and consider your verdict, and when you have agreed upon it, you will notify the officer in attendance, and you will be brought into court, and your verdict will be received and recorded.

THE
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OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth $10 00

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Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of November 17, 1885.

Patents	501	No. 330,363 to No. 330,863, inclusive.
Designs	6	No. 16,382 to No. 16,387, inclusive.
Trade-Marks	24	No. 12,765 to No. 12,788, inclusive.
Labels	6	No. 4,634 to No. 4,639, inclusive.
Reissues	1	No. 10,662.
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	5	
Arizona Territory	2		Nevada		
Arkansas	1		New Hampshire	2	
California	10		New Jersey	26	
Colorado	1		New Mexico Territ'y	1	
Connecticut	22	3	New York	97	11
Dakota Territory	3		North Carolina	1	
Delaware			Ohio	55	2
District of Columbia	2		Oregon	2	
Florida	1		Pennsylvania	61	3
Georgia	3		Rhode Island	9	
Idaho Territory			South Carolina	2	1
Illinois	33	1	Tennessee	6	
Indiana	11		Texas	7	
Indian Territory			Utah Territory		
Iowa	7		Vermont	4	
Kansas	5		Virginia	1	3
Kentucky	4		Washington Territ'y		
Louisiana	1		West Virginia	1	
Maine	2	1	Wisconsin	9	
Maryland	10	1	Wyoming Territory		
Massachusetts	40		United States Army		
Michigan	13		United States Navy		
Minnesota	8				
Mississippi			Total to citizens of the United States	493	27
Missouri	25	1			
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic			Germany	2	
Austria-Hungary			Holland		
Barbadoes			Italy		
Belginm			Norway	1	
Bermuda			Peru		
British Columbia			Russia	1	
Canada	3		Spain	1	
Chili			Sweden	1	
China			Switzerland		
Colombia, U. S. of			West Indies		
Denmark					
Ecuador			Total to citizens of foreign countries	14	3
England	3	3			
France	2				

DESIGNS.

16,382.—JEWEL SETTING.—*George Becker*, Providence, R. I. Application filed September 9, 1885. Serial No. 176,636. Term of patent 7 years.

16,383.—GIMP.—*John Graham*, New York, N. Y. Application filed March 25, 1885. Serial No. 160,139. Term of patent 7 years.

16,384.—CARPET.—*James Lyall*, New York, N. Y. Application filed June 25, 1885. Serial No. 169,775. Term of patent 7 years.

16,385.—SURFACE ORNAMENTATION.—*Frederick Mankey*, Williamsport, Pa. Application filed October 1, 1885. Serial No. 178,776. Term of patent 7 years.

16,386.—BACK FOR PAPER-CLIPS.—*Abram E. Seltzer*, Lebanon, Pa. Application filed October 12, 1885. Serial No. 179,737. Term of patent 7 years.

16,387.—ORNAMENTATION OF BURIAL-CASKETS.—*John H. Mowen*, Brooklyn, N. Y. Application filed September 26, 1885. Serial No. 178,311. Term of patent 3½ years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,765.—AGRICULTURAL IMPLEMENTS NAMED.—*S. L. Allen & Co.*, Philadelphia, Pa. Application filed October 5, 1885.

"The words 'PLANET JR.'"

12,766.—COD-LIVER OIL.—*Anstar, Hayford & Co.*, London, county of Middlesex, England. Application filed January 3, 1882.

"A relief figure representing the head of His Majesty William II, King of the Netherlands, and a wreath or circle of leaves and flowers."

12,767.—LAGER-BEER.—*George Bechtel*, Edgewater, N. Y. Application filed October 19, 1885.

"The word 'EXCELSIOR.'"

12,768.—PAINTING, WRITING, AND WRAPPING PAPER.—*J. W. Butler Paper Company*, Chicago, Ill. Application filed October 8, 1885.

"The words 'FLORENCE MILLS.'"

12,769.—REMEDY FOR HORSE-COLIC.—*Philip Orist*, Baltimore, Md. Application filed October 26, 1885.

"The word-symbol 'EQUOCOLICINE,' used separately or in connection with the words 'CHRIST'S COLIC CURE.'"

12,770.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed October 10, 1885.

"The word-symbol 'JUST RIPE.'"

12,771.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed October 10, 1885.

"The word-symbol 'CRUISER.'"

12,772.—SCHOOL-SHOES.—*Fearey Manufacturing Company*, Albany, N. Y. Application filed October 8, 1885.

"The pictorial illustration of a school-building and the words 'FEAREY'S SCHOOL.'"

12,773.—FLOUR OR MEAL MADE OF THE ENTIRE WHEAT.—*Franklin Mill Company*, Lockport, N. Y. Application filed October 24, 1885.

"The word-symbol 'WHEATLET.'"

12,774.—BAKING-POWDER.—*George F. Gilman*, near Bridgeport, Conn. Application filed October 24, 1885.

"The arbitrarily-selected letters and character 'A & P.'"

12,775.—MEDICINE FOR THE TREATMENT OF THRUSH OR NURSING SORE MOUTH.—*Howard Bros.*, Fredonia, N. Y. Application filed October 22, 1885.

"The figure of a female dancing and holding in her right hand above her head a wreath and in her left a banner."

12,776.—TONICS AND STIMULANTS.—*Martin Kalbfleisch's Sons*, New York, N. Y. Application filed September 24, 1885.

"The arbitrarily-selected word-symbol 'PHOSACID.'"

12,777.—TOILET AND LAUNDRY SOAP.—*Kansas City Soap Company*, Kansas City, Mo. Application filed September 29, 1885.

"The representation of a water-queen drawn in a boat by swans."

12,778.—LINIMENT.—*Rebecca J. Keen*, Leesburg, Ohio. Application filed October 22, 1885.

"A shield and a band with the words 'KEEN'S GERMAN EMBROCATION' printed upon the band."

12,779.—CAPS OR PRIMERS FOR BLASTING PURPOSES.—*The Metallic Cap Manufacturing Company*, Enfield, Conn., and New York, N. Y. Application filed October 26, 1885.

"The representation of a Maltese cross, the word-symbol 'SILVER CROSS,' the words 'SILVER MEDAL,' and the symbol 'XXXX.'"

12,780.—PEANUTS.—*Norfolk Storage Company*, Norfolk, Va. Application filed October 21, 1885.

"An arbitrarily-selected symbol having lines radiating substantially from a central space, more or less in the manner in which lines are arranged when conventionally representing a light."

12,781.—BALSAM FOR THE CURE OF GOUT, RHEUMATISM, &c.—*Charles Pingel*, Rochester, N. Y. Application filed April 7, 1885.

"The word 'BENEDICTINE.'"

12,782.—SIRUP FOR COUGHS, COLDS, &c.—*Charles Pingel*, Rochester, N. Y. Application filed April 10, 1885.

"The word 'CONVENT.'"

12,783.—HAT-POLISH.—*Charles W. Pratt*, New York, N. Y. Application filed October 20, 1885.

"The word 'LIGHTNING.'"

12,784.—WOOD-ALCOHOL AND ITS COMPOUNDS.—*L. A. Salomon & Bro.*, New York, N. Y. Application filed October 23, 1885.

"The word 'INODORINE.'"

12,785.—OIL-DRESSED AND WATERPROOFED FLAT LEATHER BELTING.—*Charles A. Schieren & Co.*, New York, N. Y. Application filed October 17, 1885.

"The designation or word-symbol 'ELECTRIC.'"

12,786.—ANTISEPTIC DRESSING.—*Stanley T. Stephenson*, Liverpool, England. Application filed October 22, 1885.

"The word 'STYPIUM.'"

12,787.—FOOD FOR CURING AND FATTENING CATTLE.—*The Estate of Joseph Thorley*, by *Thomas Massam*, *Harry Clark*, and *Seth Phillips*, trustees, London, England. Application filed October 12, 1885.

"The word 'THORLEY'S.'"

12,788.—SMOKING-TOBACCO.—*B. Frank Weyman*, Pittsburg, Pa. Application filed October 19, 1885.

"The arbitrarily-selected letters and symbol 'C & D,' forming a monogram with the '&' character in the center."

LABELS.

4,634.—Title: "BRACKETT'S RHEUMATIC LINIMENT."—*David Brackett*, Brooks, Me. Application filed October 23, 1885.

4,635.—Title: "CLEANSING CREAM." (FOR A CLOTHING RENOVATOR.) *Edwin S. Burnham*, Charleston, S. C. Application filed October 24, 1885.

4,636.—Title: "HALL'S ULSTER GINGER ALE."—*Hugh Hall*, New York, N. Y. Application filed June 4, 1884. (Trade-Mark Registered.)

4,637.—Title: "KINO" (FOR A TOOTH WASH.)—*John A. Martin*, Philadelphia, Pa. Application filed October 26, 1885.

4,638.—Title: "MAGNETIC TABLETS" (FOR A MEDICINE.)—*Mrs. Joy Post*, Essex, Conn. Application filed October 24, 1885.

4,639.—Title: "GOLDEN'S FEMALE ELIXIR."—*Sarah Steenrod*, Columbus, Ohio. Application filed September 28, 1885.

DISCLAIMER.

283,845.—*Samuel B. Archer*, Pittsburg, Pa., assignor to the *Archer Automatic Car Coupling Company*, Saratoga Springs, N. Y. IMPROVEMENT IN CAR-COUPLINGS. Patent dated August 28, 1883. Disclaimer filed November 11, 1885, by the assignee.

Enters his disclaimer to that part of the specification and claims which is in the following words, to wit:

The words "upon which it oscillates and forms a toggle-joint," on the twentieth and twenty-first lines of the second page of the printed specification; the words "The draw-bar will at the same time raise the rear end of the buffer-head, its front end will be thrown down, and the upper end part a little forward," on the forty-second to forty-fifth lines, both inclusive, of same page; the words "besides its own weight is assisted by the weight of the draw-head, as well as by the other car, which strikes the top of the projecting part of the draw-head, and," on the forty-seventh to fiftieth lines, both inclusive, of same page; the words "During the operation of coupling or uncoupling, when the cars are backing or in such a position as to prevent the raising of the rear end of the buffer-head, the draw-bar B then operates independently of the buffer-head by the contraction of the spring c, which allows the draw-bar to be raised above the link without moving the buffer-head. It will be thus seen that the draw-bar and buffer-head can act independently of each other. When the draft is applied to the draw-bar, the strain is first applied to the key or nut in the part B, thence through the sliding plate G to the spring H, through the plate F to the floor-beams of the car, the strain on the draw-bar being constantly a pulling strain tending to keep said draw-bar straight and relieving it of any tendency to bend or buckle, while at the same time relieving the buffer-head from any pulling strain and placing it upon the buffer-spring," on the fifty-third to seventy-second lines, both inclusive; of same page; and they also hereby enter their disclaimer to the first, third, fourth, and sixth claims of said patent, which are in the following words, to wit:

"1. In car-couplings, the combination of the spring and rivet or bolt *f* with the buffer-head and draw-bar connected together by a loose toggle-joint, substantially as described.

"3. The combination of the draw-bar, provided with lugs *a*, moving in guides *d* in the buffer-head, with the spring *c* and rivet or bolt *f*, arranged substantially as and for the purpose specified.

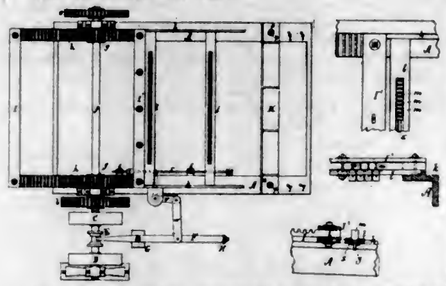
"4. In car-couplings, the combination of a hooked draw-bar, B, and buffer-head A, attached together by a toggle-joint, with a spring, *c*, arranged within the draw-head, as and for the purpose specified.

"6. A car-coupling consisting of a hollow buffer-head, A, having an opening, D, in its upper side, and guides *d*, and a hooked draw-bar, B, provided with lugs *a*, and connected together to form a toggle-joint, in combination with the follower-plates F G, spring H, key N, spring *c*, and rivet *f*, all constructed and arranged for operation substantially as shown and specified."

PATENTS

GRANTED NOV. 17, 1885.

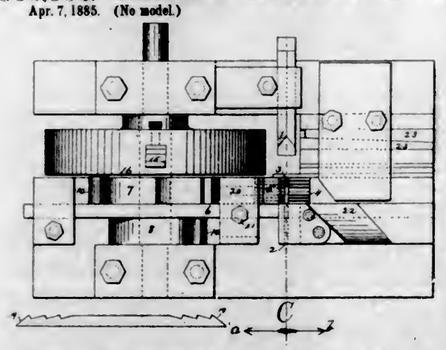
330,363. **PRESSER-CLAMP.** FRED N. ABBOTT, LAWRENCE, MASS. Filed Sept. 19, 1885. (No model.)



Claim.—1. The machine, substantially as described, consisting of the frame A, the abutment K, extending up therefrom, the two dented bars *l*, arranged on and also extending up and from such frame in manner as represented, and the impeller I, having the open abutment I' and mechanism for moving it, (the said impeller,) as described, toward and from the said dented bars, all being essentially and for use as set forth.

2. The combination of the bars *l* and their dents adjustable in them lengthwise of each, as described, with the frame A, the abutment K thereon, and the impeller I, having the open abutment I' and mechanism for moving it, (the said impeller,) as represented, toward and from the said dented bars, all being essentially and for use as set forth.

330,364. **STAPLE-MACHINE.** JOHN ADT, New Haven, Conn. Filed Apr. 7, 1885. (No model.)



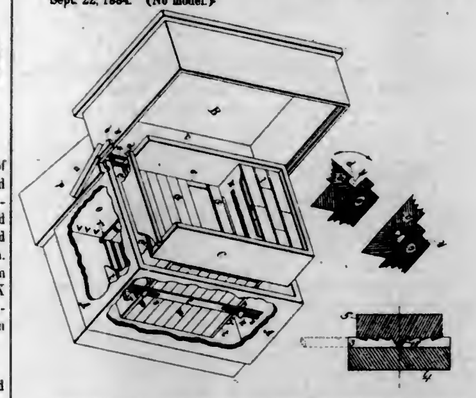
Claim.—1. In a staple-forming machine, the combination, substantially as herein set forth, of a fixed female die and a reciprocating male die, the form of the dies being such that the wire is severed and barbs are simultaneously formed in one end of the blank and the contiguous end of the wire.

2. In a staple-forming machine, the combination, substantially as herein set forth, of a fixed grooved female die, a reciprocating male die, the form of the dies being such that the wire is severed and barbs are simultaneously formed in one end of the blank and the contiguous end of the wire, and a rotary former arranged to impinge upon the blank immediately after it is severed from the wire.

3. In a staple-forming machine, the combination, substantially as herein set forth, with a fixed die, of the reciprocating beam, cams on the main shaft for propelling the same, block 20, secured to the beam, and the die secured to the block by the wedge-piece.

4. In a staple-forming machine, the combination of a fixed female die and a reciprocating male die, the latter being provided with a long central tooth to sever the wire and form the bevels, and having shorter teeth on each side thereof to form the barbs, substantially as herein set forth.

330,365. **BEE-HIVE.** ELVIN ARMSTRONG, Jerseyville, Ill. Filed Sept. 22, 1884. (No model.)



Claim.—1. The combination, with the removable cover B, having the cleats *b* and rabbet *d*, of the hive-body provided with cleats *a*, and metallic flange, as and for the purpose set forth.

2. The honey-rack C, having grooved lower edges, *c'*, and a bottom composed of narrow slats *a'*, the ends of which are adapted to slide in grooves, in combination with the honey-boxes, which are of the same width as the slats, as and for the purpose set forth.

3. The comb-frame clamp, consisting of the flexible bar *e*, provided with slots *s*, thumb-screws *n*, and the inclined plates *r*, in combination with the followers *t*, as set forth.

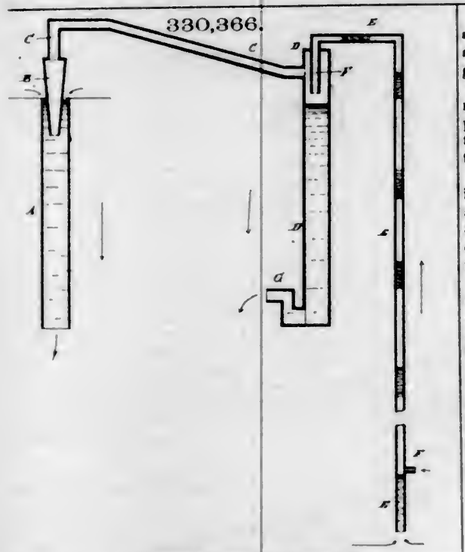
4. The adjustable entrance, consisting of the wall having the groove *g*, the metallic guide *i*, adapted to slide in said groove, the block *s'*, secured to the guide *i*, and the block *s''*, free to slide in the guide, as set forth.

330,366. **COMBINED AIR-EXHAUSTER AND WATER-ELEVATOR.** THOMAS ARTHUR, Bangor, Pa., assignor to himself and Robert J. Nagle, same place. Filed Mar. 31, 1885. (No model.)

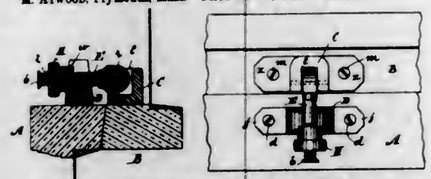
Claim.—1. A combined air-exhauster and water-elevator constructed substantially as herein shown and described, and consisting of the conical tube B, inserted in the water-pipe A and connected by the air-pipe C with the upper part of the pipe D, the lower end of the said pipe being provided with a water-seal, and the upper end of the tube E being extended downward past the air-pipe C, and its lower part being provided with an air-inlet, F, as set forth.

2. In a combined air-exhauster and water-elevator, the combination, with the upper part of the pipe D, having its lower end provided with a water-seal, and having the upper end of the tube E extended into the upper part of the said pipe, and provided near its lower end with an air-inlet, F, of the pipe C, the conical tube B, and the water-pipe A, substantially as herein shown and described, whereby water and air can be readily withdrawn from mines and other places, as set forth.

330,366.

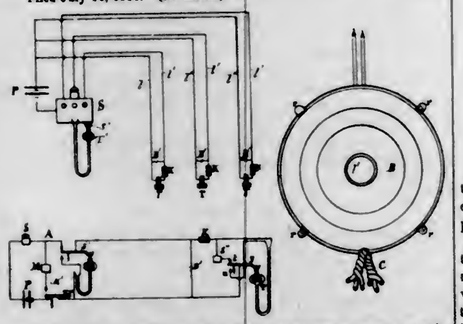


330,367. FASTENER FOR MEETING-RAILS OF SASHES. James M. Atwood, Plymouth, Mass. Filed Mar. 2, 1885. (Model.)



Claim.—The combination of a plate or body, C, for attachment to the upper sash, a screw-threaded lever pivoted thereto and adapted to swing in a vertical plane, an adjustable screw-threaded head on said lever, and a catch for attachment to the lower sash provided with an upright flange having a transverse slot adapted to receive the said lever, and with a socket-hole in its outer face adapted to receive the inner end of said adjustable head, substantially as described.

330,368. TELEPHONE SYSTEM. Robert P. Barnier, Paris, France. Filed July 16, 1885. (No model.)



Claim.—1. The combination, with a push-button system comprising a battery and signal apparatus at a central station, circuits extending from the battery to one or more sub-stations, and push-buttons at said stations, of a telephone at the sub-station in a branch derived from the push-button circuit, substantially as described.

2. The combination, with the push-button circuit and the telephone in a branch derived from said circuit, of a current-obstructor in the telephone branch, substantially as described.

3. The combination, with an apparatus such as a telephone or signal-bell for use with high-tension currents, of a secondary or other galvanic battery included in circuit with said apparatus, so as to obstruct low-tension battery-currents, but permit the passage of the high-tension currents for operating said apparatus, substantially as described.

4. The combination, with the push-button circuit, of an apparatus such as a telephone or signal-bell operated by high-tension currents and arranged in a branch derived from said circuit, and a secondary or other galvanic battery arranged in said branch, substantially as described.

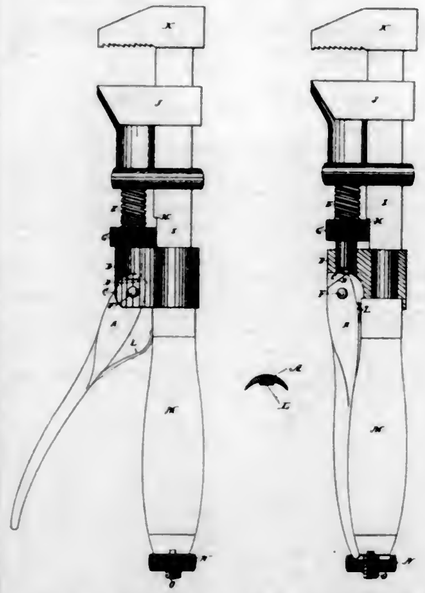
5. A combined push-button and telephone, the telephone being arranged in the interior of the box of the push-button, in combination with parallel branches of an electrical circuit, one including the telephone and the other connected with the front contact of the push-button, substantially as described.

6. A combined push-button and telephone having the parts placed in a common box or support and attached to a flexible conducting-cord and provided with conductors in or on said box or support, which conductors form parallel branches of the electrical circuit, one branch including the telephone and the other connected with the front contact of the push-button, substantially as described.

7. A combined push-button and telephone comprising a spring and contacts for opening and closing a circuit, and a telephone arranged in a common box, in combination with a battery, a signal apparatus operated thereby, and circuit-connections, the telephone and push-button being included in parallel branches of a circuit which includes the said battery and signal apparatus, substantially as described.

8. The combination, with a box or support, of a push-button and telephone in the interior thereof, the knob of the push-button and the telephone-diaphragm being on opposite sides of said box or support with the telephone-magnet between them, substantially as described.

330,369. WRENCH. George A. Barnes, New Haven, Conn. Filed Mar. 23, 1885. (No model.)



Claim.—1. A wrench having a sliding jaw, a lever for operating the same, and a chambered nut located upon a stud projecting from the end of the handle of the tool for positively locking the lever in its closed position, substantially as set forth.

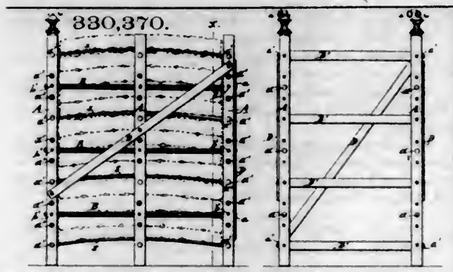
2. A wrench having a sliding jaw, an adjusting-screw for operating the same, a cam-faced lever engaging with the screw for longitudinally moving it, a threaded stud projecting from the end of the handle of the wrench, and a nut located upon the said stud and chambered to receive the end of the lever for locking the same in its closed position upon the handle of the tool, substantially as set forth.

330,370. MATTRESS-RACK. George E. Bedell, Herkimer, N. Y. Filed Oct. 2, 1885. (No model.)

Claim.—1. A knockdown rack for mattresses, consisting of the posts A A, having mortises *a a'*, extending at right angles to each other through the posts, rails B B and B' B', removably inserted in the aforesaid mortises, holes *b b*, extending through the rails, coinciding holes *b' b'*, extending through the posts, pins or bolts removably inserted in the holes *b b'*, and slats *s s*, removably supported on the rails, substantially as set forth and shown.

2. The improved mattress-rack consisting of the posts A A, side rails, B B, tied to the end posts, end rails, B' B', provided with the longitudinal grooves *c*, and the slats *s s*, seated at their ends in the said grooves and arched at their central portion, substantially in the manner specified and shown.

330,370.



330,371. SASH-BALANCE. Oscar Beebe, Hornellsville, N. Y., assignor of one-third to Samuel Mitchell, same place. Filed Sept. 23, 1885. (No model.)



Claim.—1. In a sash-balance, the combination of the following elements: a window-casing having a weight-chamber at its side, a pulley mounted in the window-jamb near the top of the sash, a casing for said pulley provided on its rear with a guide, a vertically-movable weight guided by the latter, and a chain or cord attached to the lower end of the sash and to the weight and passing over the pulley in the jamb.

2. In a sash-balance, the combination of a window-framing, a sash, a cord therefor, and a weight grooved on its front face to receive the sash-cord.

3. In a sash-balance, the combination of a window-framing, a sash, a cord therefor, a grooved weight, and a cord-guide-pulley casing having the cord-pulley and the weight-guide.

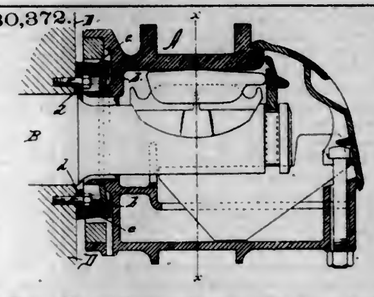
4. In combination with a window-sash and its grooved weight, the herein-described sash-cord guide, consisting of sheath F, pulley E, mounted therein, rearwardly-extending arms *d*, and wheels *e*, carried by said arms.

5. In a sash-balance, the combination, with a window-casing, of a sash, a suspending-cord therefor, a weight attached to said cord and grooved longitudinally on its front and rear faces, and a guide secured to the casing and bearing against the rear face of the grooved weight.

6. In a sash-balance, the combination, with a window-casing, of a sash sliding therein, a cord attached to the latter, a cord-pulley casing mounted in the window-casing and carrying at its rear a guide for the weight, and a grooved weight secured at its lower end to the sash-cord and moving in contact with said guide.

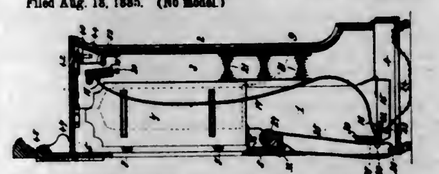
330,372. CAR-WHEEL AND AXLE-BOX. Sumner A. Bemis, Springfield, Mass., assignor to the Bemis Car Box Company, same place. Filed Mar. 9, 1885. (No model.)

330,372.



Claim.—The combination, with external axle-box, A, having a recess at its rear end containing an elastic packing-ring, of the axle, the flat-faced car-wheel on said axle, and a tubular piece, *c*, detachably secured to the flat face of the car-wheel and extending against the elastic ring, substantially as described.

330,373. FOLDING BEDSTEAD. Levi C. Boynton, Chicago, Ill. Filed Aug. 18, 1885. (No model.)



Claim.—1. In a folding bedstead, the combination of a stationary casing or head section, a pivoted bed-section, swinging panels, a roller journaled transversely in front of the lower edge of the head-board, a belt passed over said roller and over a pulley in the lower part of the bed-casing and connected to the pivoted bed-section, and levers for connecting said belt and swinging panels, substantially as described.

2. In a folding bedstead, the combination, with a stationary casing or head-section having hinged panels adapted to close the sides of the folded bedstead and forming part of the head-board in the unfolded bedstead, of a bed-section pivoted in the base of said section and connected to said hinged panels by a belt passed over a roller above and a pulley below, and levers pivoted to said belt and connected with the swinging panel, substantially as described.

3. In a folding bedstead, the combination, with a casing, a headboard, and swinging panels hinged thereto and adapted to swing outward and close the sides of the casing when the bedstead is folded, and to swing back and form part of the head-board in the unfolded bedstead, of a bed-section pivoted in the base of the casing and having a hinged extension, a roller journaled at the lower edge of the head-board, a belt connected to said hinged extension of the bed-section and passed over said roller, and means for connecting said belt and swinging panels, substantially as described.

4. In a folding bedstead, the combination, with a casing, a bedstead pivoted therein, and hinged panels adapted to swing back against the head-board when the bedstead is unfolded, and swing outward to each side when the bedstead is closed, of a roller journaled transversely in said casing, a belt connected to the bed-section and passed over said roller above and a pulley below, angle-irons attached to the swinging panels, and levers and slide-bars for connecting said belt and angle-irons, whereby the swinging panels are actuated automatically in both directions, substantially as described.

5. In a folding bedstead, the combination, with a stationary casing or head-section and catches fixed to its upper part, of a bed-section pivoted in the base of said casing and provided with a foot-board, legs pivoted to the inner side of said foot-board, and locking levers or latches also pivoted to the inner side of the foot-board, and adapted to be engaged with the catches on the stationary casing when the bedstead is folded and its legs turned inward, and to become disengaged when the legs are turned outward, substantially as described.

6. In a folding bedstead, the combination, with a stationary casing having catches fixed to its upper part beneath an overhanging top, of a bed-section pivoted in the base of said casing and provided with a foot-board, and with legs pivoted to the inner side thereof, said legs being provided at their pivoted ends with cam-surfaces, locking-catches pivoted to the inner side of the foot-board, at the outer side of the pivoted legs and in proximity thereto, and springs connected to said locking-latches, whereby the folded bedstead will be locked by turning its pivoted legs inward to allow the locking-latches to engage their catches, substantially as described.

7. In a folding bedstead, the combination, with a stationary casing

or head-section and a bed-section pivoted in the base of said casing, of a roller journaled transversely in front of the lower edge of the head-board and above the inner end of the bed-section, and adapted to close the space between the head-board and extended bed and form a yielding support to prevent the bedding and bed-clothing from coming in binding contact with the head-board in the act of folding or unfolding the bed, substantially as described.

8. In a folding bedstead, the combination of the casing 1, having base 4 and head-board 5, the swinging panels 7, provided with angle-irons 35, having arms 37, the bed-section 9, having side rails, 3, pivoted in the base of the casing, and provided with hinged extension-strips 15 and cross-bar 16, having button 29, the roller 27, pulley 26, belt 25, having elongated slot 28, the levers 32, slide-bars 33, and levers 38, substantially as described.

9. In a folding bedstead, the combination of the upright casing 1, having top 47 and catches 49, the pivoted bed-section 9, having foot-board 42, the legs 40, and locking-latches 50, pivoted on the inner side of said foot-board, and the springs 52, attached to said locking-latches, whereby said latches are operated by turning the legs in or out, substantially as described.

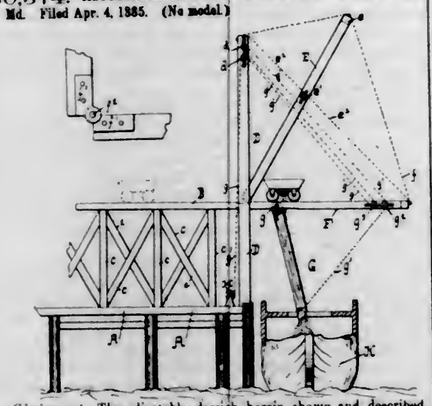
10. In a folding bedstead, the combination of the upright casing 1, having head-board 5, the pivoted bed-section 9, and the transverse roller 27, journaled in front of the lower edge of the head-board, substantially as described.

11. The combination, in a folding bed, of a casing, a bed-section comprising side rails having slots open at one end and closed and enlarged at the other end, and plates attached to the case and provided with inclined rectangular gudgeons, substantially as described.

12. In a folding bedstead, the combination of the upright casing 1, the bed-section 9, detachably pivoted in said casing, and having a short hinged extension, 15 16, the roller 27, hinged panels 7, belt 25, for connecting said bed-section and roller, and means for connecting the belt and hinged panels, substantially as described.

13. In a folding bedstead, the combination of the casing 1, bed-section 9, detachably pivoted in said casing, and having a short hinged extension, 15 16, the roller 27, hinged panels 7, belt 25, passed around said roller and beneath a pulley, 26, said belt being detachably buttoned to the hinged extension of the bed-section, means for connecting said belt and hinged panels, and the detachable chains 24, substantially as described.

330,374. ADJUSTABLE DERRICK. Anthony P. Cadden, Baltimore, Md. Filed Apr. 4, 1885. (No model.)



Claim.—1. The adjustable derrick herein shown and described, composed of standards D D, swinging arms E E and F' F', and swinging chute G', substantially in the manner as and for the purposes set forth.

2. In an adjustable derrick, standards D D, having cross-beams D' and D², with their intermediate uprights, *d d*, and rollers *d' d'*, substantially as set forth.

3. In an adjustable derrick, swinging arms E E, hinged at their lower ends to frames B B by means of hinges *e*², having rigidly attached at their upper ends a cross-beam, *e*, substantially as set forth.

4. In an adjustable derrick, swinging arms F' F', hinged at their inner ends to the center frames, B B, by means of hinges *f' f'*, the said inner ends resting partially on the front sill, B, and having at their ends and rigidly attached thereto cross-beam F, substantially as set forth.

5. In an adjustable derrick, the swinging chute G, its rear end located and working loosely between the arms F' F' and held in place by rod *g*, passing entirely through said arms and the rear part of the chute G, and having cross-beam G', rigidly attached to the under side of the front end of the chute and protruding beyond the sides of said chute, substantially as set forth.

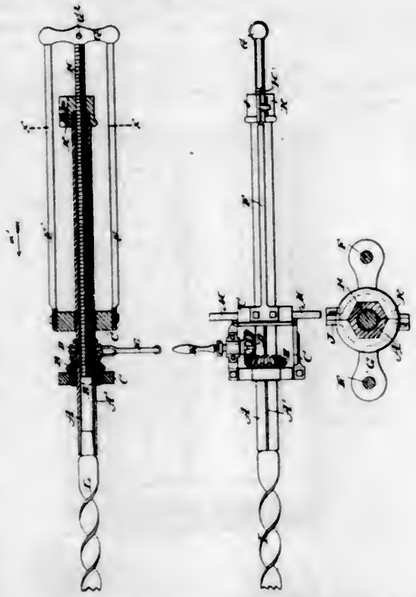
330,375. BLACKBOARD COMPOSITION. Loren Chadwick, Battle Creek, Mich. Filed Sept. 23, 1885. (No specimens.)

Claim.—1. A blackboard composition which contains hydraulic cement as an essential ingredient.

2. A finishing blackboard composition composed of hydraulic cement, calcined sulphate of lime, lime, black sand, and lamp-black, substantially as set forth.

3. A blackboard-dressing consisting of a foundation-coat of hydraulic cement, sand, calcined sulphate of lime, and lime, and a finishing-coat composed of hydraulic cement, calcined sulphate of lime, lime, black sand, and lamp-black, substantially as set forth.

330,376. ROCK-DRILLING MACHINE. William H. Clark, What Cheer, Iowa. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a drilling-machine, the combination, with a frame, of cog-wheels mounted on the same, a tube passed through one cog-wheel and revolved by the same, rods secured to the frame, a cross-piece uniting the rods, a screw-spindle secured to the cross-piece, and a nut on the end of the tube, through which nut the spindle passes, substantially as herein shown and described.

2. In a drilling-machine, the combination, with the frame C, of the bevel cog-wheels B D, the tube A, the nut J, formed of two sections and held on the end of the tube, the rods F, the cross-piece G, and the spindle H, projecting from the cross-piece through the nut J and into the tube, substantially as herein shown and described.

330,377. HYDRANT. Zebulon E. Coffin, Boston, Mass. Filed Feb. 2, 1885. (No model.)

Claim.—1. The hydrant as constructed, having the main and supplemental slide-valves *a b*, parts A C, and adjustable seats, as described, in combination with the wedge-backs, as arranged for accessibility and adjustment by means described, all substantially as and for the purposes set forth.

2. The slide-valve *a*, seated against the inlet and provided with incline *f* and adjustable wedge *e*, operated by the adjusting-screw rod *e'*, in combination with the hydrant-barrel C A, substantially as described.

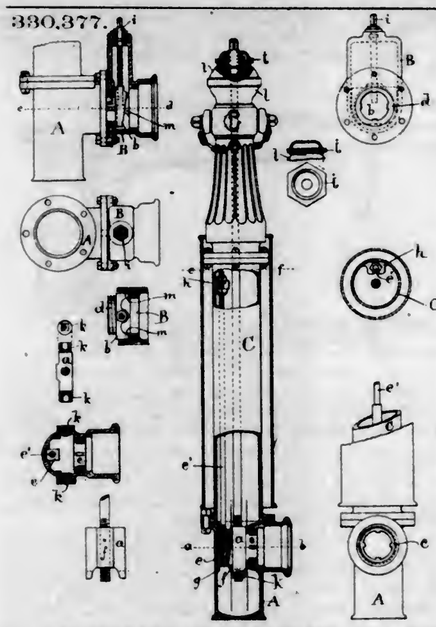
3. The hydrant as constructed—viz., having the adjustable screw-seat *c* in the inlet, the valve *a*, having the incline *f* upon its back and fitted to the wedge *e*, connected to the adjusting-screw rod *e'*, and the lug *h*, substantially as described.

4. The adjusting-screw rod *e'*, wedge *e*, and lug *h*, in combination with valve *a* and its seat, substantially as described.

5. The described waste-nipple constructed and applied as an adjusting-screw and guide for valve *a* and as a valve-seat for the wasteway and its valve *a*, substantially as described.

6. The adjusting-screw waste K, in combination with the valve *a* and the adjusting-screw rod *e'*, and wedge *e* and independent parts, substantially as described.

330,377.

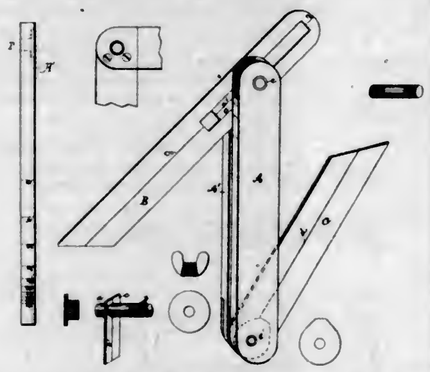


7. The combination of the adjustable screw-seat *c*, the valve *a*, and wedge *e*, with their inclines, the adjusting-screw rod *e'*, lug *h*, and adjusting-screw waste K, substantially as described.

8. The combination of valve *a* and the wasteway K, as constructed and relatively adjusted by means of seat *c*, and wedge *e*, substantially as described.

9. The valve *a*, in combination with the three adjusting devices—viz., seat *c*, wedge *e*, and screw K—substantially as described.

330,378. COMBINED BEVEL, MITER, AND TRY-SQUARE. Saml. S. Colt, Orange, N. J. Filed Aug. 15, 1885. (No model.)



Claim.—A bevel composed of the body or handle A and A', slotted blade B, miter-blade C, indexes *c'* and *d* of blades B and C, the scales formed on edge of body or handle A and A', the guide *c*, with pivot and clamping device for securing blade B, the clamping device for securing blade C, and the device for holding blade C stationary for use as a try-square, all substantially as set forth.

330,379. HEAT-REGULATING MECHANISM FOR INCUBATORS. Jason L. Cousins, Kane, Pa. Filed Apr. 29, 1884. (No model.)

Claim.—1. In a heat-regulator for incubators, the combination, with the box A, having a longitudinal flue, E, of the valve E', pivoted in the same and forming an armature, the electro-magnet G', held above said valve, and a thermostat connected with the magnet, and a battery for automatically operating the valve, substantially as set forth.

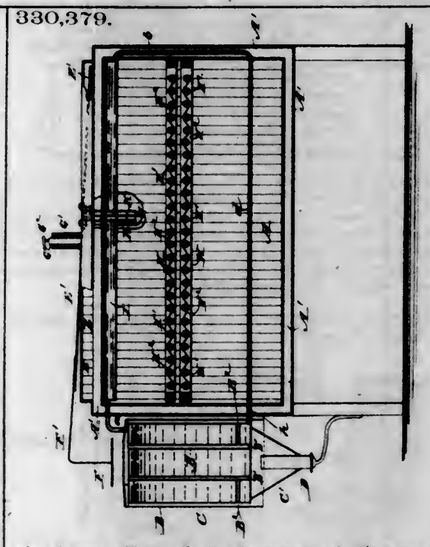
2. The combination, with the box A, having the longitudinal flue E, of the valve E', forming an armature, the magnet G', held above the valve, the screw G², for adjusting the magnet, and a thermostat connected to the said magnet, and a battery, substantially as set forth.

3. The combination, with a valve forming an armature, of the magnet G', held above the same, a thermostat-bar, and a battery, and the thermostat, substantially as set forth.

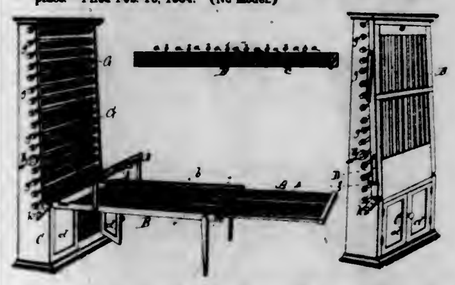
4. The combination, with the box A and a heating device, as B, of the longitudinal flue E, the valve E', pivoted to close the same, forming an armature, and provided with a damper, F, to simultaneously open or close an opening in the heating device, the electro-magnet G', held above the valve, and a thermostat, and a battery, substantially as set forth.

5. The combination, with the valve E, of the magnet G', the bars K K, the insulating-piece K³, the insulating-pieces J', the thermostat-bar J, provided with a spring, *k'*, held between the said pieces J', the screws L, N, and W, the batteries M O, the electric bell O', and the circuit-wires, substantially as set forth.

330,379.



330,380. EXTENSION-DOOR FOR HOLLAND-CASES. Crittenden Cregmile, Delaware, Ohio, assignor of one-half to Edward E. Neff, same place. Filed Feb. 15, 1884. (No model.)



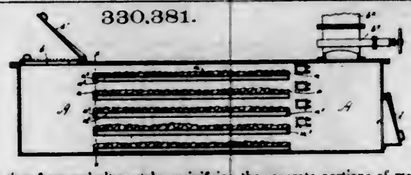
Claim.—1. In a holland-case, a door, B, adapted to be turned down into a horizontal position for supporting the material to be cut off, in combination with a frame, D, hinged thereto, and bearing a cutting-off knife, and with an extension, A, adapted to be drawn out for lengthening the support formed by the door, and to be slid into the door when the said door is to be closed, substantially as herein specified.

2. The combination of the holland-case, a door, B, adapted to be turned down into a horizontal position for cutting off the material, a knife-holding frame, D, pivoted to the door, and an extension-slide, A, formed of parallel slats *a a*, sliding between parallel slats *b b* of the door, substantially as herein specified.

330,381. PROCESS OF DRYING AIR FOR METALLURGIC OPERATIONS. John H. Cresser, Braddocks, Pa. Filed Jan. 17, 1885. (No model.)

Claim.—1. The method of drying air continuously for use in smelting-furnaces or the like, which consists in exposing the air-supply alternately to separate portions of desiccating materials to abstract the moist-

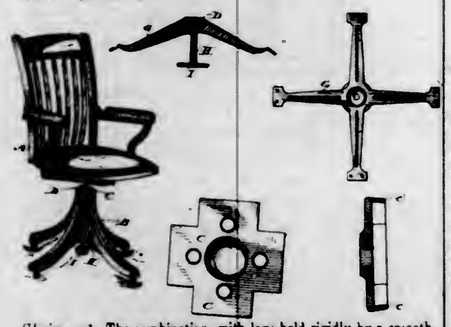
330,381.



ure therefrom and alternately revivifying the separate portions of waste desiccants *in situ*, substantially as described.

2. The method of operating smelting and like furnaces continuously by means of a dry-air blast, which consists in exposing the furnace air-supply alternately to separate portions of desiccating materials to abstract the moisture therefrom and alternately revivifying the separate portions of waste desiccants *in situ*, substantially as described.

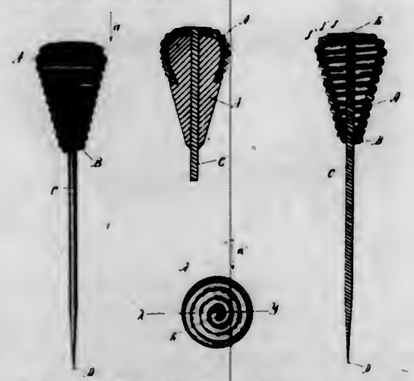
330,382. DESK-CHAIR. ABNER CUTLER, Buffalo, N. Y. Filed Dec. 1, 1884. (No model.)



Claim.—1. The combination, with legs held rigidly by a smooth-apertured cap, C, and a spider-brace, G, with threaded aperture, of a revolving chair having a smooth pivot-shank, and an adjustable support, as H, operating through the spider-brace as a bearing for said shank, as set forth.

2. The combination, with the legs B, the cap C, having flanges c and smooth central aperture, and the spider-brace G, secured to the legs, as shown, and having threaded central aperture, of the chair A, having smooth pivot D, operating loosely in the supporting-frame, and the threaded rod operating through the spider to support the chair adjustably, as set forth.

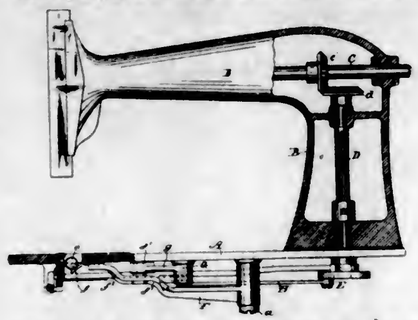
330,383. TOOL-HANDLE. LEVI M. DEVORE, Freeport, Ill. Filed May 29, 1885. (No model.)



Claim.—1. A shank and handle formed of a single continuous rod or wire, the top or outer end of the handle being a series of approximately flat coils increasing in diameter from the shank outward, and the lower part of the handle being approximately conical, and consisting of a series of coils decreasing in diameter from the last of said flat coils downward and inward toward the shank.

2. The tool shown and described, consisting of the shank C, the approximately flat coils *f f f'*, the coils A, decreasing in diameter from the top downward, and the coil B, wrapped closely about the shank, all formed integrally with the shank, substantially as shown and described, and for the purpose set forth.

330,384. SHUTTLE-OPERATING MECHANISM FOR SEWING-MACHINES. PHILIP DIEHL, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed June 19, 1885. (No model.)



Claim.—1. In a sewing-machine, the combination, with the bed-plate, bracket-arm, horizontal and vertical shafts, and their gearing, of a shuttle-lever pivoted at its rear end to the said bed-plate between the said vertical shaft and the shuttle-race, a driving-lever having its fulcrum between the fulcrum of the shuttle-lever and the said shuttle-race and loosely connected with said shuttle-lever between the fulcrum of the latter and the shuttle-carrier, and connections between said vertical shaft and driving-lever, substantially as set forth.

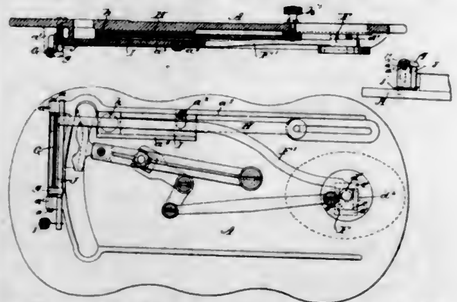
2. In a sewing-machine, the combination, with the bed-plate, bracket-arm, horizontal and vertical shafts and their gearing, of a shuttle-lever pivoted at its rear end to said bed-plate between said vertical shaft and the shuttle-race, a bell-crank lever loosely connected with said shuttle-lever, a crank on said vertical shaft, and a link or pitman connecting the said crank and the bell-crank lever, substantially as set forth.

3. In a sewing-machine, the combination, with the bed-plate thereof, of a shuttle-lever pivoted thereto and having a stud on its upper side and inclines or bends, a driving-lever loosely connected to said shuttle-lever and having its pivotal point forward of the pivotal point of the shuttle-lever, and mechanism for operating said driving-lever, substantially as set forth.

4. In a sewing-machine, the combination, with the bed-plate, bracket-arm, horizontal and vertical shafts, and their gearing, of a shuttle-lever pivoted at its rear end to said bed-plate and having a stud on its upper side and inclines or bends, a bell-crank driving-lever forked to embrace said stud and pivoted forward of the pivotal point of the shuttle-lever, a crank on said vertical shaft, and a link or pitman connecting the said crank and the said bell-crank lever, substantially as set forth.

5. In a sewing-machine, the combination, with the bed-plate, of a shuttle-lever pivoted at its rear end to said bed-plate, a bell-crank driving-lever loosely connected with said shuttle-lever between the pivotal point of the latter and the shuttle-carrier, and mechanism for operating said bell-crank lever, substantially as set forth.

330,385. FEEDING MECHANISM FOR SEWING-MACHINES. PHILIP DIEHL, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed June 20, 1885. (No model.)

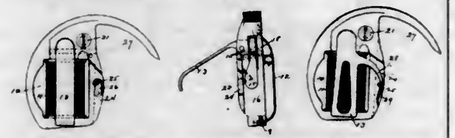


Claim.—1. In a sewing-machine, the combination, with a two-armed rock-shaft, of a feed-bar resting on one of the arms of said shaft, a feed-lever engaging the other of said arms, and mechanism for reciprocating and vibrating said feed-lever, substantially as set forth.

2. In a sewing-machine, the combination, with a rock-shaft having horizontal and vertical arms, of a feed-bar engaging said horizontal arm, a feed-lever engaging said vertical arm and having at its rear end a yoke, two cams working within said yoke, and means for operating said cams, substantially as set forth.

3. In a sewing-machine, the combination, with the bed-plate, bracket-arm, and horizontal and vertical shafts and their gearing, of a rock-shaft having horizontal and vertical arms, a feed-bar resting on said horizontal arm, a feed-lever engaging said vertical arm and having at its rear end a yoke with two offset portions, and two cams on said vertical shaft working within said yoke, substantially as set forth.

330,386. SEWING-MACHINE SHUTTLE. PHILIP DIEHL, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed July 13, 1885. (Model.)



Claim.—1. A sewing-machine shuttle having a rigid metallic body, an independent outwardly-projecting frame or cradle secured to one side of said body, and an outwardly-projecting latch pivoted to the opposite side thereof and provided with an angular portion at its pivoted end, combined with a spring bearing against said angular portion and thus adapted to retain the said latch in two positions, substantially as set forth.

2. A sewing-machine shuttle having a rigid body, an independent outwardly-projecting frame or cradle secured to one side of said body, and an outwardly-projecting latch pivoted to the opposite side thereof, combined with a spring pressing against said latch, substantially as set forth.

3. A sewing-machine shuttle having a rigid body, an independent outwardly-projecting frame or cradle secured to one side of said body, and an outwardly-projecting spring-pressed latch pivoted to the opposite side thereof, combined with a non-journaled or pivotless bobbin held loosely between said frame or cradle and latch, substantially as set forth.

4. A segmental shuttle for sewing-machines having a rigid body, a bobbin-retaining latch pivoted to one side of said body, a frame or cradle secured to the opposite side thereof, and a spring integral with said frame or cradle projecting inwardly and bearing against said latch, substantially as set forth.

5. A segmental shuttle for sewing-machines having on its inner or straight side a wall provided with a flattened outer face and a recess, combined with a bent tension-spring pivoted in said recess and bearing against said face, and an adjusting-screw having a tapering or conical portion against which the end of said spring impinges, substantially as set forth.

6. A sewing-machine shuttle having a pivoted tension-spring provided with a beveled rear end, combined with an adjusting-screw having a tapering or conical portion against which said beveled end impinges, substantially as set forth.

7. A segmental sewing-machine shuttle having a forwardly-projecting beak, and rearward of said beak a wall having a flattened outer face and a recess, combined with a bent tension-spring projecting within said recess and bearing against said face, and a pivot-pin passing through said recess outside of the bend in said spring, substantially as set forth.

8. A segmental sewing-machine shuttle having on its inner or straight side a wall provided with a flattened outer face, and an open or slotted thread-delivery eye, combined with a hook or guard placed at the side of said shuttle and extending across the slot of the said delivery-eye, substantially as set forth.

9. A segmental shuttle for sewing-machines having on its inner or straight side a wall provided with an open thread-delivery eye, combined with a latch pivoted to one side of the shuttle-body, and having a guard-arm bearing against the side of said wall and extending across the slot leading into said delivery-eye when said latch is closed, substantially as set forth.

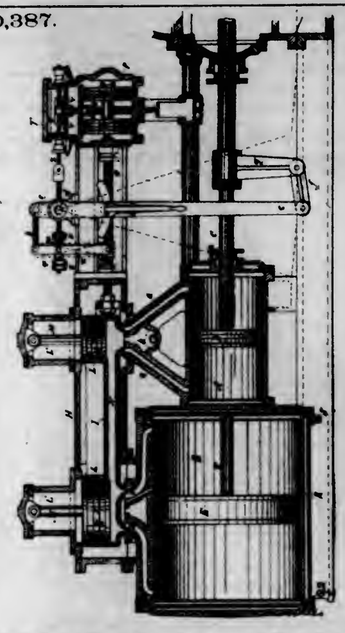
10. A segmental shuttle for sewing-machines having a forwardly-projecting beak, and rearward of said beak a wall provided with an open thread-delivery eye, combined with a latch pivoted to one side of the shuttle-body, said latch having an integral guard-arm bearing against the side of said wall and extending across the slot leading into said delivery-eye when the said latch is closed, substantially as set forth.

330,387. VALVE-GEAR FOR COMPOUND ENGINES. GEORGE E. DOW, San Francisco, Cal. Filed May 16, 1884. (No model.)

Claim.—1. In a compound engine, high and low pressure cylinders with controlling-valves, and a valve-stem connected to the piston of an auxiliary engine, receiving pressure from the water of condensation in the jacket surrounding the low-pressure cylinder, said water being under boiler-pressure, substantially as and for the purpose described.

2. In a compound engine, the cylinders having their axes in line, the piston-rods, the main valve with its valve-rod, and the auxiliary engine connected thereto and to the intermediate receiver, as shown, together with the auxiliary valve-rod connected with a link, one end of which is united to the main valve-stem and the other with the main piston-rod by an intermediate lever, substantially as herein described.

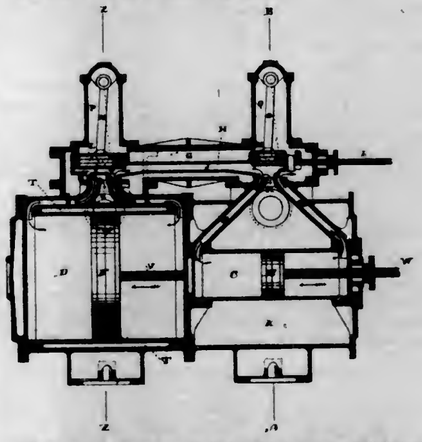
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3. In a compound engine, the cylinders having their axes in line, the main valve and valve-rod, the cylinder P, with the auxiliary pistons Q, and the intermediate diaphragm with the passage and regulating-valves, and the receiver intermediate between the high and low pressure cylinders with which the auxiliary engine is connected, substantially as herein described.

4. In an engine, the main cylinder with pistons, rods, valves, and valve-stem connected with an auxiliary engine, which is actuated by a medium under direct pressure from the boiler, and a receiver intermediate between the high and the low pressure cylinders into which the exhaust from the auxiliary engine is allowed to expand, as herein described.

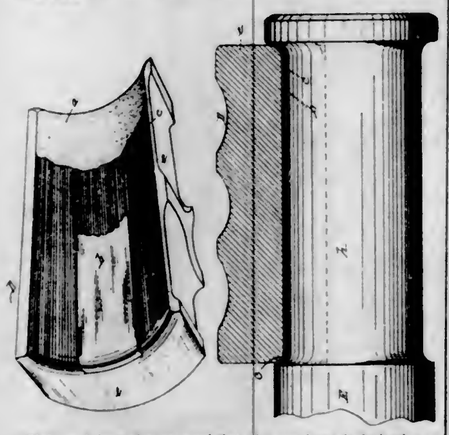
330,388. COMPOUND STEAM-ENGINE. GEORGE E. DOW, San Francisco, Cal. Filed Aug. 7, 1885. (No model.)



Claim.—1. In an engine, the high and low pressure cylinders with pistons, piston-rods, common valve-chamber having ports in its ends corresponding with those in the cylinders, and the double-ended valve, as shown, in combination with the balance-pistons fitting vertical chambers in each end of the valve, above the ports, and links by which the pistons are suspended from points above the valve, substantially as herein described.

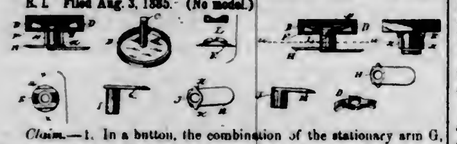
2. In an engine, high and low pressure cylinders with pistons, piston-rods, common valve chamber having ports in its ends corresponding with those in the cylinders, and the double-ended valve, as shown, in combination with the balance-pistons fitting vertical chambers in each end of the valve, above the ports, and links by which the pistons are suspended from points above the valve, substantially as herein described.

330,389. JOURNAL-BRASS. Percival P. Emory, Springfield, Mass., assignor of one-half to Sumner A. Bemis, same place. Filed July 20, 1885. (No model.)



Claim.—A journal-brass consisting of a cast-brass body having on the cast surface of its journal-seat a coating of tin, and having attached to said tinned surface a strip of lead extending centrally thereon from end to end of the brass, substantially as set forth.

330,390. BUTTON OR STUD. Theodore W. Foster, Providence, R. I. Filed Aug. 3, 1885. (No model.)



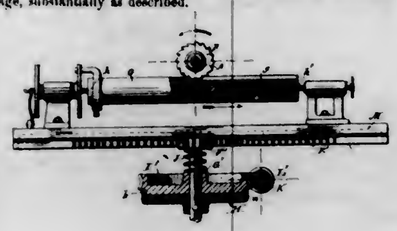
Claim.—1. In a button, the combination of the stationary arm G, attached to the post C, the movable arm H, having wings K K, and the spring-actuated locking device E, the whole constructed and operating in the manner substantially as described, for the purposes specified.

2. In a button or stud, the combination, with the middle plate, B, having the post C, of the spring-actuated locking device E, an arm, as G, fixed to the post C, and a movable arm, as H, having means, substantially as described, for engagement with the spring-actuated locking device, as set forth.

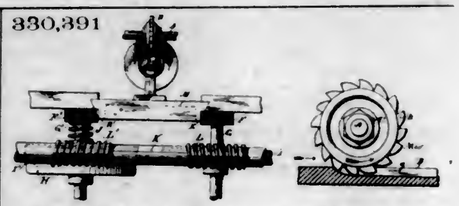
3. In a button or stud, the combination of part B, having post C, and part F, having central opening, the fixed arm G, and the movable arm H, having means, substantially as described, for being held in a set position, with the spring-actuated locking device E, having means, substantially as described, for engaging the arm H, and parallel flanges *a a*, for holding part E in part F, substantially as and for the purpose set forth.

330,391. MILLING-MACHINE. Alonza T. Gifford, Hopedale, Mass. Filed May 23, 1885. (No model.)

Claim.—1. In a milling-machine, the combination of the revolving cutter and the feeding-carriage, arranged for forward movement, as set forth, with a frictional driving means and a positively-driven checking means for controlling the forward movement of the frictionally-driven carriage, substantially as described.

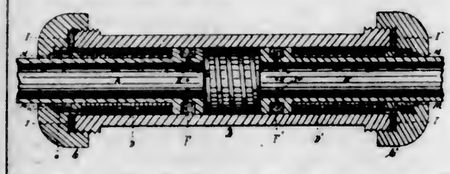


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2. In a milling-machine, the combination of the revolving cutter B, sliding carriage M, racks E E', shafts G G', pinions F F', worm-gear I, firmly secured to the shaft G, worm-gear I', made loose upon the shaft G', and adapted for frictional engagement with the plate H, the friction-plate H, secured to the shaft G', spring J, adapted to hold the gear I' in frictional engagement with the plate H, and the driving-worms L L', adapted to revolve the gears I I', substantially as and for the purpose specified.

330,392. EXPANSION-JOINT. Matthew H. Gray, Pittsburg, Pa. Filed Sept. 11, 1885. (No model.)



Claim.—1. The combination, with the barrel having the caps, of the pipes having the collars, the spring E, arranged between the pipes, and the springs D D' on the pipes, said springs bearing against the caps at one end and against the collars at their other ends, as set forth.

2. A pipe-joint which consists in a pipe having a groove in one end, the groove being filled with lead or other suitable material, and having openings from the base of the lead gasket to the inside of the pipe, in combination with the bowl end of another pipe, constructed and arranged so that the internal pressure shall force the gasket against the bowl, substantially as and for the purpose set forth.

3. The combination, with the barrel and the pipes A A', having the gaskets F, of the caps C C', having the gaskets M M, and the ports *n* and *o*, substantially as set forth.

4. The combination, with the barrel, the caps having the gaskets, and the pipes A A', having the gaskets F, of the springs D, D', and E, substantially as set forth.

5. The caps C and C', having gaskets M M', in combination with ports *o* and *n n n*.

6. The combination of pipes A and A', barrel B, caps C and C', with springs D, D', and E.

7. The combination, with the barrel having the caps at its ends, and the gaskets M, of the pipes having the collars at their inner ends, said collars being formed with circumferential grooves and gaskets therein, the springs on the pipes, said springs bearing against the caps at one end and against the collars at their other ends, and the spring between the inner ends of the pipes, as set forth.

8. The combination, with the barrel having the caps and the gaskets I, I', and M, of the pipes A A', having the collars formed with grooves and gaskets therein, and having the ports H, the spring E between the pipes, and the springs D D', substantially as set forth.

9. The combination, with the barrel and the pipes having the collars formed with grooves, and gaskets fitted therein, and also having the ports H, of the caps C C', the gaskets I, I', and M, and the ports *n o*, as set forth.

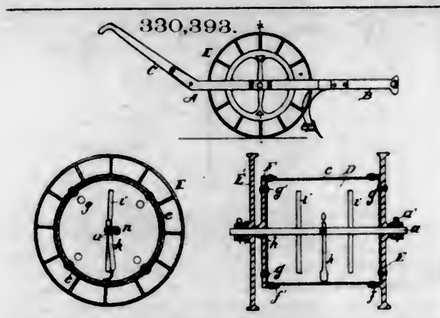
330,393. COTTON-PLANTER. William H. Hackett, Atlanta, Ga., assignor to William S. Thomson, same place. Filed Dec. 24, 1884. (No model.)

Claim.—1. In a cotton-planter, the seed-drum constructed as shown and described, being securely attached to the wheel E at one end and to the stiffening-plate F at the other, and revolving upon a fixed axle, as set forth.

2. In a cotton-planter, a seed-drum constructed as described, being securely fastened at one end to the wheel E, at the other to the stiffening-plate F, in combination with a fixed axle provided with agitators upon which axle said drum revolves, as shown and described.

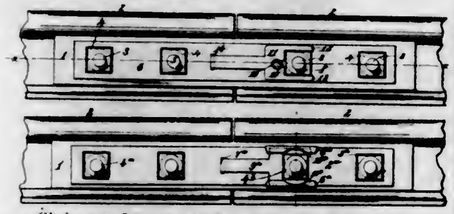
3. In a cotton-planter, the seed-drum constructed as shown and described, attached to the wheel E and stiffening-plate F, in combination with a fixed axle provided with an adjustable rod for ejecting the seed through the orifices in the drum, upon which fixed axle said drum revolves, as shown and described.

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4. In a cotton-planter, a seed-drum constructed as shown and described, rotating upon a fixed axle which is provided with agitators and an adjustable ejector-rod, all arranged for joint operation, as shown and described.

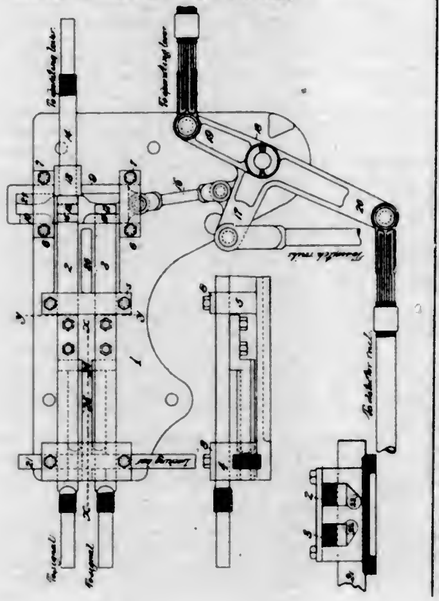
330,394. NUT-LOCK. Henry H. Ham, Jr., Portsmouth, N. H. Filed Jan. 22, 1885. (No model.)



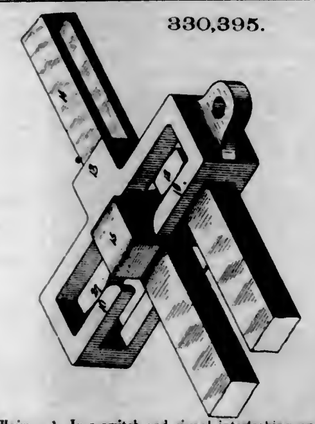
Claim.—1. In a nut-lock, the combination, with a locking-plate having rectangular openings which receive the nuts of all the bolts save one, of a washer carried by said bolt beneath the locking-plate, a forked plate laid upon the locking-plate and embracing the nut turned on said bolt, a headed pin mounted on the locking-plate and engaging with a slot in the forked plate, and a slot in the locking-plate receiving a tang or angular end of the forked plate, substantially as described.

2. In a nut-lock, the combination, with a locking-plate having rectangular apertures, which receive the nuts of less than the entire number of bolts, of a detachable fork engaging with the remaining nut or nuts, said fork being held in place by lugs upon the plate, and by its bent end, which engages a slot in the latter, substantially as described.

330,395. SWITCH AND SIGNAL APPARATUS. James T. Hanbay, Pittsburg, Pa. Filed June 1, 1885. (No model.)



330,395.

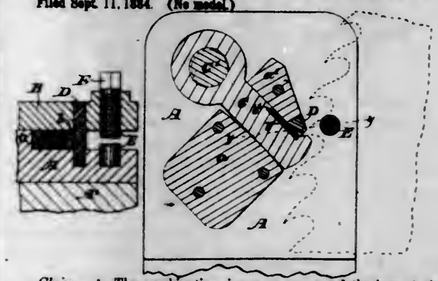


Claim.—1. In a switch and signal interlocking apparatus, two or more longitudinally-movable signal-rods alternately operative, and provided with locking-pins 24 and 25, in combination with a locking-bar connected to the switch-rails, and provided with holes properly located for the reception of the locking-pins in the different positions of the switch-rails, substantially as set forth.

2. In a switch and signal interlocking apparatus, two or more longitudinally-movable signal-rods alternately operative, and provided with locking-pins 24 and 25, arranged in different horizontal planes, in combination with a locking-bar connected to the switch-rails, and provided with holes arranged in corresponding planes with the locking-pins, and adapted for the reception of said pins in the different positions of the switch-rails, substantially as set forth.

3. In a switch and signal interlocking apparatus, the longitudinally-movable signal-rods 2 and 3, in combination with the reciprocating clutch 9, provided with hooks 10, adapted to alternately engage the signal-rods, and the operating-rod 14, connected to the reciprocating clutch and provided with suitable means for engagement with the signal-rods, substantially as set forth.

330,396. SAW-SWAGE. Dempsy R. Hanson, Indianapolis, Ind. Filed Sept. 11, 1884. (No model.)



Claim.—1. The combination, in a saw-swage, of the base A, having projecting portions *a a'*, the cap-plate B, the movable die C, running between said projecting portions, a cam-shaft, C', and its lever for operating said movable die, an anvil, D, and a clamp for securing the saw in position while being operated upon, substantially as set forth.

2. The combination, in a saw-swage, of a base provided with bearings *a* and *a'*, an anvil, D, mounted alongside and against one of said bearings, a movable die, C, reciprocating between said bearings, and a clamp, E, consisting of two portions having serrated faces adjacent to each other, one of said portions being fixed and the other being movable toward and from said fixed portion, and thus adapted to hold the saw in position while being operated upon by the swage, substantially as set forth.

3. The combination, in a saw-swage, of the base, projections or bearings thereon for the movable die, an anvil, means for operating said movable die, and a saw-clamp, said movable die being cut away at one side in front of the face which comes against the saw-tooth, and a movable piece, *b*, inserted in place of said cut-away portion, substantially as described, and for the purposes specified.

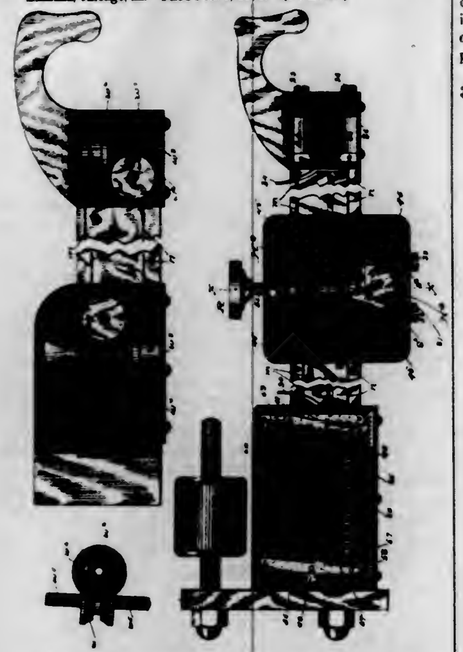
4. The combination of the base A, projecting portions or bearings *a a'*, cap-plate B, movable die C, cam-shaft and lever for operating the same, the anvil D, and the clamp E, said several portions being arranged and operating substantially as set forth.

5. In a saw-swage, in combination with the base, anvil, cap-plate, and operating mechanism, the movable die C, having a face adapted to

operate upon the saw-tooth, and a cut-away portion just above said face, and provided with a piece, *b*, which fills said cut-away portion, and is adapted to be removed therefrom when it is desired to put said face in order, substantially as shown and specified.

6. The combination, with the stock or frame of a saw-swaging device, of a saw-swaging tool movable in a right line, a fixed anvil against which the tooth is swaged, a lever for reciprocating said swaging-tool, and a screw-clamp for holding the saw in position during the operation of swaging a tooth.

330,397. SCALE-BEAM WITH INDICATING-POISE. RICHARD L. HASKELL, Chicago, Ill. Filed Feb. 6, 1885. (No model.)



Claim.—1. The combination of a scale-beam, a movable poise, revolving indicating mechanism, and a tense flexible connection for giving motion to the indicating mechanism, substantially as set forth.

2. The combination of a scale-beam carrying revolving indicating mechanism, a movable poise, and a tense flexible connection for giving motion to the indicating mechanism, substantially as set forth.

3. The combination of a scale-beam carrying revolving indicating mechanism, a movable poise, and a flexible connection so arranged that the indicating mechanism and the poise move simultaneously, or nearly so, by means of the flexible connection.

4. The combination of a scale-beam carrying revolving indicating mechanism, a movable poise, and a flexible connection by means of which the poise can be moved along the beam, substantially as set forth.

5. In combination with a scale-beam, revolving indicating mechanism deriving its motion from the movement of the poise by means of a flexible connection, substantially as set forth.

6. The combination of a scale-beam, an indicating mechanism, a tense flexible connection, and a tension device, substantially as set forth.

7. The combination of a scale-beam, a flexible connection, a handle or knob, and means for connecting the handle or knob with the flexible connection, substantially as set forth, and all for the purpose of conveniently moving the poise any desired distance on the beam.

8. The combination of a scale-beam, a movable poise, a flexible connection by means of which the poise can be moved along the beam, an indicating mechanism, and a flexible connection for giving motion to the indicating mechanism.

330,398. CORSET-STAY. MAX W. HINTON, Bridgeport, Conn. Filed June 16, 1885. (No model.)

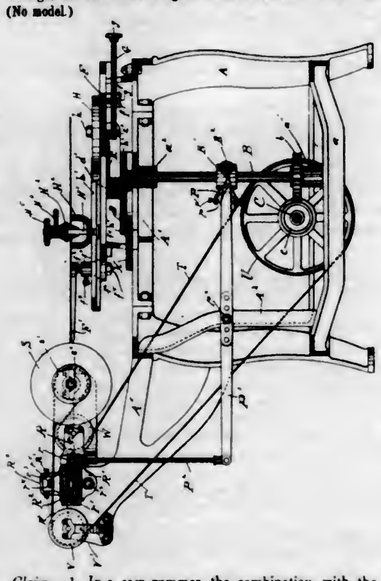
Claim.—1. The combination, with the plies of a corset, of stays having one or more openings through them, tapes or strips passing through said openings, and lines of stitching passing through the tapes or strips and the corset-plies, whereby the stays are firmly held against endwise movement.



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2. The combination, with the plies of a corset, of stays having one or more openings, tapes or strips which pass through said openings, leaving their ends to extend in opposite directions, and lines of stitching on opposite sides of the stays, which pass through the tapes and the corset-plies, substantially as described.

330,399. SAW-GUMMER. FRIEDRICH HERBOLD and JOHAN E. MILLS, Chicago, Ill.; said Mills assignor to said Herbold. Filed May 2, 1884. (No model.)



Claim.—1. In a saw-gummer, the combination, with the upright shaft B, of a single eccentric, D, mounted thereon, the saw-supporting arm in suitable connection with said eccentric, and a saw-turning arm, also in suitable connection with the same eccentric, D, substantially as described.

2. In a saw-gummer, the combination, with the upright shaft B and the single eccentric D thereon, of the plate E, the table F, and the arm H, for supporting the saw, and the yoke-bar K, the swinging arm L, and an arm for turning the saw, all substantially as described.

3. In a saw-gummer, the combination, with the slotted adjustable table F, of the brace-arm F', having a journal adjustably held within the slot of the table, substantially as described.

4. In a saw-gummer, the combination of the upright shaft B, the eccentric D, the plate E, mounted on the eccentric, the table F, the arm H, the yoke-bar K, the swinging arm L, and an arm for turning the saw, substantially as described.

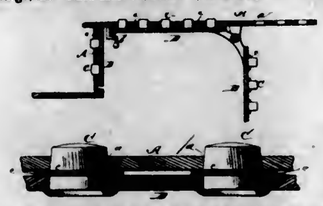
5. In a saw-gummer, the combination, with a suitable arm-rest and a screw-rod for adjusting the same, of the saw-turning arm adjustably mounted in the arm-rest, substantially as described.

6. The combination, with the standard M, of the slide-plate N, adjustably mounted thereon, the arm-rest N', pivotally held upon the slide-plate and having a seat, n^3, therein, the slotted turning-arm O, adjustably held in the seat of the arm-rest, and a set-screw, *o'*, substantially as described.

7. The combination, with the upright shaft having the cam B^2 thereon, of the lever P', the pivoted cam-block P, the arm for rocking the grinding-disk, and suitable connecting mechanism, substantially as described.

8. The combination, with the main frame, of the adjustable bearings R' R^3, and the devices for adjusting the same, the wheel-sustaining casting R, the wrist-pin *r'*, extending in the radial direction of the grinding-wheel, the grinding-wheel, the driving-pulleys, and mechanism for oscillating the wheel-sustaining castings, substantially as described.

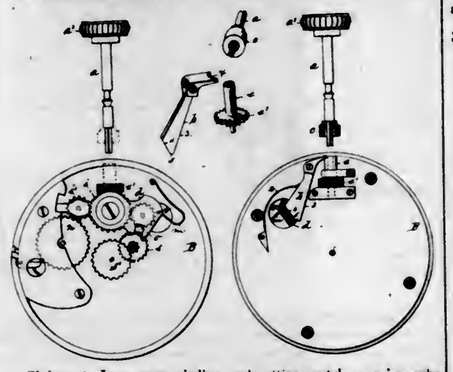
330,400. VAULT COVER AND VENTILATOR. AUGUST W. HERR, Chicago, Ill. Filed Mar. 30, 1885. (No model.)



Claim.—1. In a vault cover or ventilator, a main plate or grating formed with a series of openings, in combination with one or more auxiliary plates hinged beneath the first, and provided with a series of glass ball's-eyes fitting into the openings in the main plate when closed, substantially as and for the purpose set forth.

2. In a vault cover or ventilator, a main plate formed with a series of openings, in combination with one or more auxiliary plates hinged to the first, and provided with a series of glasses fitting the openings in the main plate, and each having an elastic packing-ring around its base to exclude moisture when closed, substantially as and for the purpose set forth.

330,401. STEM WINDING AND SETTING WATCH. CHARLES T HINGHOTHAM, Springfield, Mass., assignor to the Hampden Watch Company, same place. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a stem winding and setting watch, a swing-yoke having pinions thereon for alternate engagement with the winding and hand-setting wheels, said yoke-pinions being held by a yielding force normally in engagement with the winding-wheel, and having a stud on one side thereof, and a lever, *b*, pivoted to swing in the plane of said yoke, having a portion, 4, of the end of one arm adjoining said yoke-stud inclined to the edge 3 of the lever, and a portion thereof, 5, at right angles to said edge, and having the end of its other arm engaging with the endwise-moving winding-stem of the watch, combined and operating substantially as set forth.

2. In a stem winding and setting watch, an end-moving winding-stem, substantially as described, provided with a collar near its squared end, a pinion having a hollow journal to receive the square end of the winding-stem, a swing-yoke having a stud on one side and pinions thereon for engagement with said stem-connected pinion, and for alternate engagement with the winding and hand-setting wheels of the watch, a spring holding said yoke-pinions normally in engagement with the winding-wheel, and a lever having the end of its long arm formed with the surfaces thereof, 4 and 5, respectively, at an incline and at right angles to the edge 3 of said arm, and its other arm engaging with the winding-stem, combined and operating substantially as set forth.

3. In a stem winding and setting watch, the stem *a*, the pinion *e'*, having the hollow journal *e*, the swing-yoke *d*, having stud *v* thereon, and its winding and hand-setting pinions, substantially as described, spring *m*, holding said yoke normally in engagement with the winding-wheel *n*, the lever *b*, having the end of its long arm formed with the surfaces thereof, 4 and 5, respectively, at an incline and at right angles to the edge 3 of said arm, and its other arm engaging with the winding-stem, and spring 2, combined and operating substantially as set forth.

4. The combination, with the yoke *d*, having stud *v* thereon, of spring *m*, lever *b*, having the end of its long arm formed with the surfaces thereof, 4 and 5, respectively, at an incline and at right angles to the edge 3 of said arm, and its other arm adapted to engage with the winding-stem, and spring 2, combined and operating substantially as set forth.

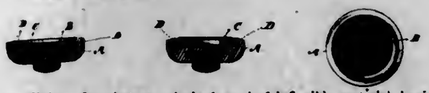
330,402. BOOK AND MUSIC CLAMP. JOHN E. HUSBAKER, Vienna, Ill. Filed July 21, 1884. (No model.)



Claim.—1. The book-clamp consisting of two arms bent to cross each other and united by a spring-coil, the upper arm carrying a cross-bar, substantially as described.

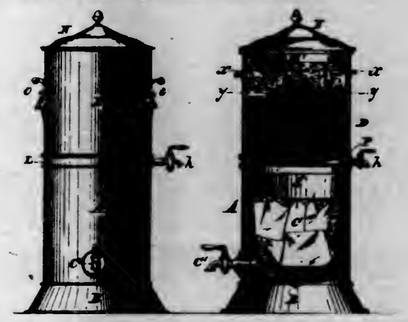
2. The book-clamp composed of a spring-wire coiled at 1, extended into arms 2 3, bent to pass each other at 10 11, and further extended into parts 4 5, the part 4 having attached to it a cross-bar, 6 7, all substantially as described.

330,403. BUTTON. ROBERT H. ISBELL, New York, N. Y. Filed Feb. 9, 1885. (No model.)



Claim.—In a button, a body formed of inflexible material, having a front opening provided with an undercut recess, a metallic disk of larger diameter than the outer opening of said recess and inclosed in the same, and a cloth face held tightly stretched over the face of the disk and inside the recess by the inflexible edges of the expanded disk which binds the cloth face against the sides or walls of the recess, substantially as described.

330,404. COMBINED FILTER AND COOLER. JOHN C. JEWETT, Buffalo, N. Y. Filed Aug. 14, 1885. (No model.)



Claim.—1. In a combined filter and cooler, an independent shell for said filter, in combination with the filtering-vessel and a narrow band permanently affixed to said filtering-vessel, said band forming a continuation of the independent shell, as and for the object stated.

2. In a combined filter and cooler, an oblong gravel-cup, H, having perforated partition I', a perforated receiving-cup, J, and a sponge-cup, I, said sponge-cup being located with reference to the gravel-cup, substantially as and for the purpose indicated.

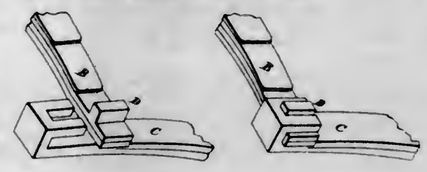
3. In a filter, the combination, with the gravel-cup, of a sediment-apartment, P, having draw-off faucet *h*, as and for the purpose specified.

4. The combination, with the vessel E, having the perforated bottom G and the diaphragm F, of the oblong gravel-cup H, having the perforated partition I', the perforated bottom *i*, apartment P, and faucet *h*, and the filter-strata, substantially as and for the object mentioned.

5. The combination, with the gravel-cup H, having the perforated bottom, of a filling consisting of a layer of cheese-cloth and a sponge, as and for the purpose indicated.

6. The combination, in a filter, of the shell E, having perforated bottom G and diaphragm F, the gravel-cup H, with perforations *d*, and the laterally-projecting collar K, as specified.

330,405. PLATFORM-SPRING FOR VEHICLES. ANDY B. JOHNSON, Decatur, Mich. Filed Sept. 19, 1884. (No model.)

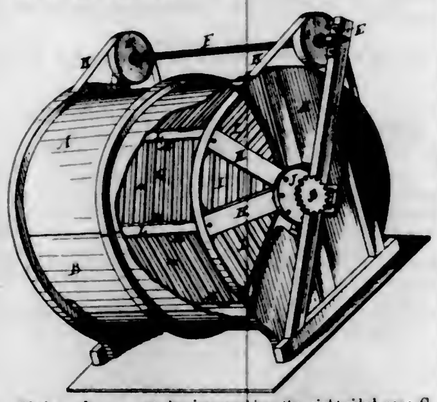


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Claim.—The raised piece D on side spring, B, working in connection with the slotted end of cross-spring C, which is bent around side spring, B, all for the purpose described.

330,406. **CARPET-CLEANING MACHINE.** Samuel T. Juli, Cleveland, assignor of one-half to D. J. C. Arnold, New London, Ohio. Filed Apr. 13, 1885. (No model.)



Claim.—In a carpet-cleaning machine, the eight-sided cage G, consisting of the heads having radial spokes H, joined to disks J, provided with the journals *j*, and having the slatted panels I, the eight sides containing hinged panels M, and provided with the tapering shelves N, alternately arranged, as shown, and the cylindrical case A, provided with door B in one side, and also having opening *a* at the bottom, for discharge of the dust, in combination with the driving-shaft F, having pulleys *k k*, connected by belts K to the cage, the boxes for the journals of said cage, and shaft supported on the posts C C, all constructed and operating substantially as described, and for the purpose specified.

330,407. **METHOD OF CONNECTING BUTTONS TO CLOTH OR OTHER MATERIAL.** Jeremiah Keyes, Florence, Mass. Filed Oct. 21, 1884. (No model.)

Brief.—The two loops of thread are drawn in the same direction through the eye of button-shank and then cast over the button in the same direction.



Claim.—The improved method, substantially as hereinbefore described, of securing a button to cloth or other material, the same consisting in drawing or forcing two or more loops of a thread in one and the same direction through the cloth or material and the button-eye and casting such loops successively in one and the same direction over the head of the button, the thread of each loop immediately after being cast over the head of the button being tightened in around or below the eye or between it and the material.

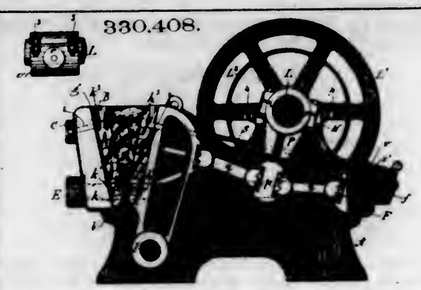
330,408. **ORE-CRUSHER.** Stephen R. Knox, Plainfield, N. J. Filed Feb. 9, 1885. (No model.)

Claim.—1. The combination, with the side frames, A, the toggle-abutment, and the moving and stationary jaws, of the short bolts C, passing through the stationary jaw and through lugs C', cast in the upper part of each frame at one end, and the long bolts E, passing through the stationary jaw, the toggle-abutment, and lugs on the frames A, substantially as set forth.

2. The combination, with the moving and stationary jaws in an ore-crusher, of the side frames, the separate filling-plates between the ends of the frames and the end portions at each side of the stationary jaw, and the tie-bolts passing through lugs cast on the frames A, substantially as set forth.

3. The combination, with the stationary and movable jaws, the toggle-bars *q*, link P, and bearing-block *p*, in an ore-crusher, of the driving eccentric-shaft L, the two-part journal-boxes *o*, having trunnions *r* at opposite sides of said boxes, and the side frames having the bearings N, recessed to receive the journal-boxes *o* and trunnions *r*, substantially as specified.

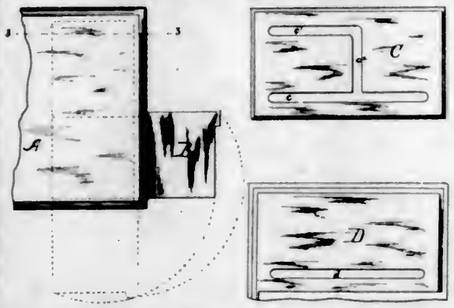
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4. The combination, with the stationary and moving jaws, the side frames and side bolts, of the toggle-abutment formed with recesses, the wrought-metal washers resting at their edges around the recesses, the nuts, toggle-bars, eccentric-shaft, and link, substantially as set forth.

5. The combination, with the stationary and movable jaws having ledges at their lower portions, of the movable faces made of narrow horizontal bars and plates, and the devices, substantially as set forth, for securing such bars and plates in place, substantially as set forth.

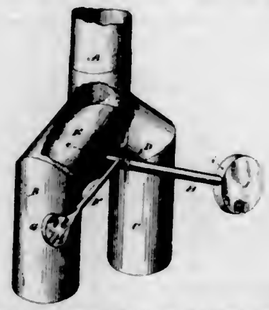
330,409. **DESK.** Lars Larson, Chicago, Ill., assignor to himself and John C. S. Miller, same place. Filed July 16, 1885. (No model.)



Claim.—1. In a desk, the combination of the movable cabinet-section having two supporting-casters, and the floor C, having the straight parallel grooves *c c'* and connecting-groove c^2, receiving said casters, substantially as specified.

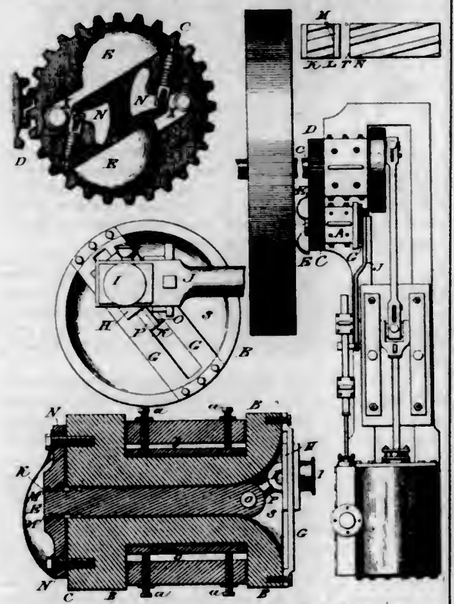
2. In a desk, the combination, with a movable cabinet having two supporting-casters and one upper caster, of the floor having straight parallel grooves *c c'* and connecting-groove c^2, for the supporting-casters, and the top D, having a groove, *d*, for said upper caster, substantially as specified.

330,410. **CISTERN CUT-OFF.** George W. Lawhon and William Lawhon, Knoxville, Tenn. Filed Sept. 18, 1885. (No model.)



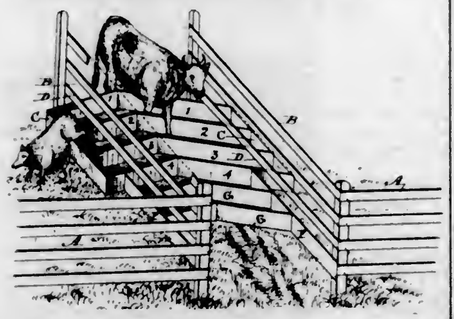
Claim.—The combination of the pipe A and the discharge-pipe and cistern-supply pipe communicating therewith, the hollow rock-shaft, the cut-off valve secured to said shaft, and having the central bottom opening communicating therewith, the weighted arm F, attached to the rock-shaft, to tilt the valve and cause it to cut off the supply-pipe normally, and the hollow arm H, connected to the hollow rock-shaft, and the water-chamber I on the arm H and having the leak-openings *i*, substantially as described.

330,411. **STEAM-ENGINE GOVERNOR.** A. Irwin Loop, North East, Pa., assignor of one-half to William H. Stetson and Charles Loop, both of same place. Filed Aug. 13, 1885. (No model.)



Claim.—The combination of the hollow shaft B with the inner shaft, K, shaft B having on one end a gear meshing with a similar gear on the engine-shaft, also carrying on one end a set of balls and springs, on the other end a slide carrying a sliding block, to be connected by a pin to the valve-rod, shaft K passing through shaft B lengthwise and having one end fitted by lugs to grooves of ends of ball-arms, the other end being connected to the sliding block by means of the knuckle-joints and short arm, all substantially as set forth.

330,412. **HOG AND CATTLE SEPARATING DEVICE.** Daniel L. Monroe, Drakeville, Iowa. Filed July 6, 1885. (No model.)

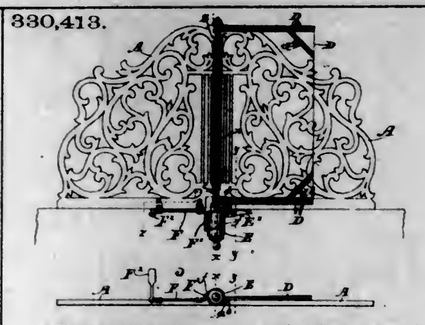


Claim.—A hog and cattle separating device composed of a wall or fence having an open cattle-passage, and wings or panels extending parallel with each other at the sides of said passage, a series of boards, 1 2 3 4, set on edge and extending under said panels, and boards C fixed to the outer ends of said series of boards set on edge, substantially as shown and described, for the purposes specified.

330,413. **MUSIC-LEAF TURNER.** Robert E. Moorman, Chicago, Ill., and George W. Moorman, Edinburg, Ind. Filed Jan. 13, 1885. (No model.)

Claim.—1. The combination, with a music-rack, of the music-turner consisting of frames mounted on a vertical shaft adapted to be thrown from one side to the other, and a device upon the end of said shaft, secured thereto by a spring which operates to hold it in position, or return it thereto, and also operates to press it along said shaft toward the frames, and provided with a catch adapted to successively engage with said frames, substantially as set forth.

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2. The combination of a music-rack, a shaft thereon, frames loosely mounted on said shaft, a device, E, also mounted on said shaft, a spring, E', connecting said shaft and said device, whereby said device is held and returned to position after operating said frames, said device being also provided with a catch adapted to engage successively with said frames, substantially as set forth.

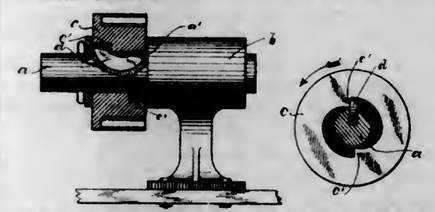
3. The combination of a music-holder, a shaft thereon, a series of frames loosely mounted on said shaft, a partially-revoluble device also mounted on said shaft and adapted to engage successively with said frames, and a rock-shaft provided at one end with an arm connected to said device and at the other with a projecting arm, whereby it may be operated, substantially as set forth.

4. The combination, with the music rack and turner, of a clamp for securing the music in the center, consisting of a stationary part, a movable part mounted upon and adapted to move partially around said stationary part, and springs arranged to operate upon said movable part and hold it toward or against said stationary part, whereby the music may be readily clamped between them and secured in position, substantially as set forth.

5. The combination, with a music holder and turner, of a music-clamp consisting of a stationary and a spring-mounted movable part, said movable part being provided with a spring-catch, whereby it may be held open, substantially as set forth.

6. The combination, with a music holder and turner, of a music-clamp consisting of a stationary part, C, rigidly secured to the shaft B of the music-turner, a spring-mounted movable part, C', springs *c* therefor, a spring-catch, C^2, and the projection *b* therefor, substantially as set forth.

330,414. **CLUTCH.** Aaron J. Moyer, Springfield, Ohio. Filed Oct. 7, 1885. (No model.)



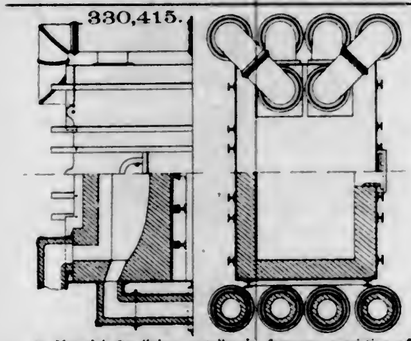
Claim.—1. The combination, with a shaft having a slot therein, of a pawl adapted to oscillate in said slot, and a hub or sleeve on said shaft having two series of ratchet-teeth therein immediately around the shaft, with which the ends of said pawl are adapted to engage, substantially as set forth.

2. The combination of a shaft, a pawl seated in a concave bearing in said shaft, a hub or sleeve journaled on said shaft, two alternating series of teeth in said hub or sleeve, with which the respective ends of the pawl are adapted to engage when turned in one direction, the said pawl being adapted to oscillate, so as to alternately raise and depress the respective ends thereof when turned in the opposite direction, substantially as and for the purpose set forth.

330,415. **OPEN-HEARTH FURNACE FOR IRON AND STEEL.** Oscar Murmer, Alexandrowsky, St. Petersburg, Russia, and Percy C. Gilchrist, Palace Chambers, Westminster, England; said Murmer assignor to said Gilchrist. Filed Mar. 24, 1884. Renewed Oct. 19, 1885. (No model.)

Claim.—1. The improvement in the art of constructing metallurgic furnaces, the same consisting in forming the hearth, sides, roof, and ports of basic material composed of calcined, shrunk, and fritted lime mixed with tar and subjected to pressure in molds, and to heat to volatilize the tar, and then to a coking-heat, all while in the molds, and finally annealing the same, in the manner and for the purpose set forth.

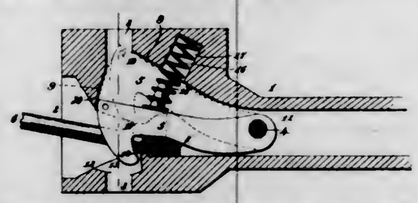
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2. Material for lining metallurgic furnaces, consisting of compressed and molded calcined, shrunk, and fritted lime mixed with tar, and afterward coked, and thereby rendered hard and black, substantially as described.

3. The process of forming lining-bricks for furnaces, the same consisting in pressing calcined, shrunk, and fritted lime mixed with tar into iron molds, then driving off the volatile matter of the tar and coking the bricks with the molds covered, as described.

330,416. CAR-COUPLING. ADRAIN NUTTING, Greenville, Tex., assignor of nineteen-twentieths to Benjamin D. Martin, John C. O'Neal, Robt. C. Dial, John M. Ellis, Henry Wagner, Frank L. Gazetta, and Thomas E Byrd, all of same place. Filed June 11, 1885. (No model.)



Claim.—1. In a car-coupling, the combination, with a recessed draw-head having rear lower abutments to limit the backward movement of the link, a forward upper abutment to take the pressure of the coupling-hook, and a transverse ridge or projection for the link to rock upon, of a vertically-movable coupling-hook pivoted in a narrow recessed portion of said draw-head, and a spring located in a diagonal recess formed in the upper part of the draw-head and bearing on the upper side of the hook near its forward end, substantially as described.

2. In a car-coupling, the combination, with a draw-head having a narrow longitudinal recess for receiving the pivoted end of a coupling-hook, a narrow triangular recess for permitting an upward swinging movement of the hook, an abutment or bearing for the forward end of the hook, rear abutment to limit the backward movement of the link, and a transverse ridge on which said link can rock, of a pivoted coupling-dog having a vertically-swinging movement in the narrow triangular recess at the rear of the forward abutment, a spiral spring located in a diagonal recess in the upper part of the draw-head and bearing on said coupling-dog near its forward end, and a guide-pin for said spring, substantially as described.

3. In a car-coupling, the combination of the draw-head 1, having lower rear abutments, 8, upper forward abutment, 20, triangular recess 9, and a recess, 13, for receiving the lower hooked end of a coupling-dog, the link 6, the pivoted dog 5, carrying a guide-pin, 18, near its forward end, and a spiral spring, 16, surrounding said guide-pin, substantially as described.

4. In a car-coupling, the combination of a recessed draw-head having abutments 8 and 20, and a transverse ridge, 15, of a link, 6, adapted to rock on said ridge, a pivoted coupling-hook, 5, carrying a diagonally-projecting pin near its forward end, and a spiral spring, 16, arranged diagonally above the coupling-hook and surrounding said pin, substantially as described.

5. In a car-coupling, the combination of the draw-head 1, having a narrow longitudinal recess, 11, the upper recess, 9, lower recess, 13, transverse ridge 15, rear abutments, 8, and forward abutment, 20, the coupling-hook 5, pivoted in the narrow recess 11 and adapted to swing vertically in the recess 9, and with a hooked end for engaging the recess 13 and abutment 20, the link 6, and the spring 16 in recess 17, substantially as described.

330,417. ROTARY ENGINE. EDWD S. PAMBLA, Chicago, Ill. Filed Dec. 20, 1884. (No model.)

330,417.



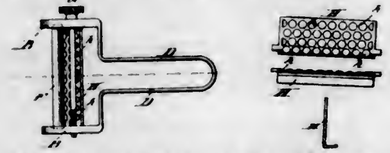
Claim.—1. In a rotary engine, a rocking valve located in the supply-passage and having a stem provided with an arm carrying a friction-roller, in combination with a disk upon the main shaft provided with a cam engaging this arm to throw the valve in one direction to open the passage, and a second cam to throw it in the other direction to close the passage, substantially as and for the purpose set forth.

2. In a rotary engine, the combination, with a rock-valve in the supply-passage, having a stem and an operating arm thereon, of a cam secured upon the main shaft and contacting with this arm at a stated point in its revolution to open the valve, and a second cam adjustably secured upon the shaft to close the valve, whereby the steam is cut off for expansion at any desired point, substantially as and for the purpose set forth.

3. In a rotary engine, the combination, with a rocking valve located in the supply-passage and provided with a stem carrying a projecting arm, of a cam fixed upon and revolving with the driving-shaft to open the valve and a second cam for closing the valve loose upon said driving-shaft and connected to a weighted arm hinged upon the shaft and thrown out by centrifugal force, whereby the revolutions of the shaft alter the position of the cut-off cam to regulate the speed and keep it uniform, substantially as and for the purpose set forth.

4. In a rotary engine, the casing A, formed with the ports a' a^2, the shaft A', piston-head A^2, the valve B, having stem B' and arm B^2, and the rocking steam-head C, having a stem or shaft, C', and arm C^2, in combination with the fly-wheel D upon the main shaft, weighted arms D', the segments E, gear E', with its arm disk e e', and the disk G, having the cam-flange g g' and cam-groove g^2, all constructed and arranged to operate substantially as and for the purpose set forth.

330,418. RAZOR-GUARD. ANDREW PARTRIDGE and DENNIS F. BWRNET, Springfield, Mass. Filed Sept. 25, 1885. (No model.)



Claim.—The within-described improved guard for shaving apparatus, consisting of a plate, H, provided with perforations A, arranged in series, as shown, with those in one row parallel to the edge of the blade coming opposite the intervals between the perforations of the adjacent row, and said plate being relatively arranged to a blade, F, substantially as shown.

330,419. SEWING-MACHINE. ALBERT D. PRATT, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed Feb. 7, 1884. (Model.)

Brief.—The object of the device is to move a fabric in a circular path to work eyelets therein. A feeding-ring or annular feed-dog having a roughened or serrated surface is pivotally connected to a feed-bar in such a manner that said feeding-ring may partake of the vertical movements of the feed-bar to engage the work and to be disengaged therefrom, and may have short oscillating or reciprocating rotary feeding movements to move the work in a circular path.

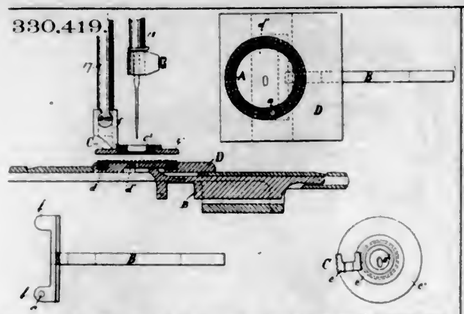
Claim.—1. The combination, with a work-plate and a presser-foot, of a feeding-ring or annular feed-dog adapted to oscillate and to move vertically in said work-plate, and a horizontally and vertically reciprocating feed-bar pivotally connected with said feeding-ring, substantially as set forth.

2. The combination, with the presser-foot and work-plate, of a feeding-ring adapted to operate in the latter, a bifurcated feed-bar, one of the arms of which is pivotally connected with said feeding-ring, and mechanism for operating said feed-bar, substantially as set forth.

3. The combination, with the stitch-forming mechanism of a sewing-machine, comprising a horizontally-reciprocating needle-bar, of a work-plate, a feeding-ring adapted to oscillate and to move vertically therein, and a presser-foot, substantially as set forth.

4. The combination, with a work-plate, of a feeding-ring adapted to oscillate and to move vertically therein, a feed-bar pivotally connected

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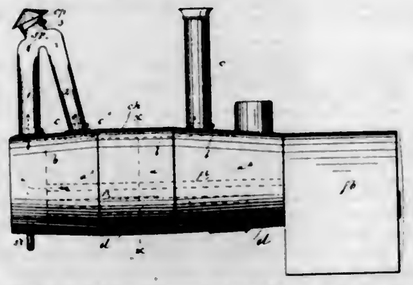
with said feeding-ring, and a presser-foot having an annular rotary portion, substantially as set forth.

5. The combination, with a work-plate, feeding-ring, and mechanism for operating the latter, of a presser-foot consisting of a ring, a flanged button on which said ring is adapted to rotate, and a stock having a horizontal portion to which said button is secured, substantially as set forth.

6. The combination, with the work-plate, the vertically reciprocating and oscillating feeding-ring, and the feed-bar to which said ring is pivotally connected, of a presser-foot having an annular rotary portion arranged concentrically with said feeding-ring, substantially as set forth.

7. The combination, with a vertically-reciprocating and horizontally-oscillating feeding-ring, of an opposing surface between which and the said ring the work to be moved may be held and intermittingly rotated by the feeding action of the said ring, substantially as set forth.

330,420. SPARK-ARRESTER. JOHN M. PITCHER, Sugar Creek, Ind. Filed Mar. 31, 1885. (No model.)

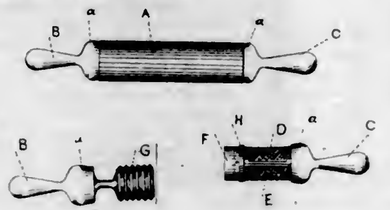


Claim.—1. In a spark-arrester where exhaust-steam is employed for creating a draft, a drum or jacket so arranged as to form a chamber around boilers, in combination with any device for conducting smoke and cinders from fire-places with steam or atmosphere, substantially in the manner and for the purpose set forth.

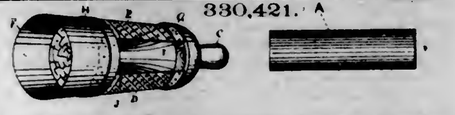
2. In a spark-arrester for steam-boilers, the combination of the drum or jacket d, made in three sections, the central section of which is cylindrical and the two end sections conical-shaped, with steam-pipe st, smoke-stack c, and spark-arrester sp, substantially in the manner and for the purpose set forth.

3. A spark-arrester consisting of drum or jacket d, with its collars C' and C, a spark-arrester, sp, consisting of three sections, 1, 2, and 3, and a hinged cap, cp, to form a conductor from chamber bb to chamber ch, and steam-injecting pipe st, all constructed and combined as illustrated in the drawings and described in the specification, substantially in the manner and for the purpose set forth.

330,421. ROLLING-PIN. FRANK PRENTIS, Grand Rapids, Mich., assignor of two-thirds to James Tallman and Herman Prentis, same place. Filed July 16, 1885. (No model.)

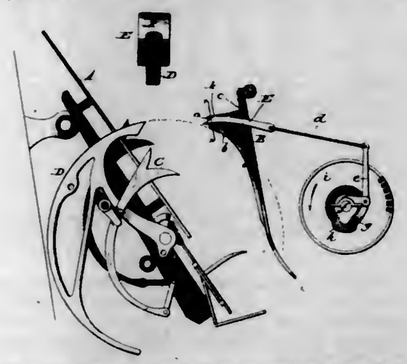


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Claim.—In a rolling-pin, the combination of the hollow cylinder A, with the handles B and C prolonged and extended, provided with the shoulders a to fit in said cylinder, one of said handles having the corrugated surface G, with flat bottom, and the other the graters D and E, the supporting-shoulder H, and the cutter F, substantially as shown and described.

330,422. GRAIN-BINDING HARVESTER. DAVID R. PRESTON, Whitewater, Wis., assignor to the Esterly Harvesting Machine Company. Filed Dec. 17, 1884. (No model.)



Claim.—1. In combination with the breast-plate and the vibratory binding-needle of the type herein shown, arranged to divide the gavel from the inflowing grain, the stripper overlying the path of the needle, and mechanism, substantially as described, for advancing said stripper longitudinally over the outer edge of the needle.

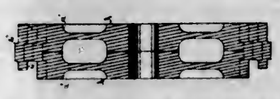
2. The combination of the breast-plate, the vibratory needle having the substantially concentric outer edge, the reciprocating stripper grooved or flanged to receive the needle-point in its under edge, and mechanism, substantially as described, for advancing said stripper through and beyond the breast-plate along the outer edge of the needle.

3. In combination with the vibratory binding-needle of the type herein shown, the grooved stripping device having the beveled forward end, and operating mechanism, substantially as described, for causing said device to override the point of the needle on the outer side in the opposite direction from that in which the point advances.

4. In combination with the vibratory binding-needle of the type herein shown, and the reciprocating stripper overriding its point on the outer side, the cam-wheel i, lever e, and connection, substantially as shown, from the lever to the stripper.

5. In combination with the vibrating needle of the type herein shown, the reciprocating stripper to act on the outer edge of the needle, and the spring acting to depress said stripper, substantially as shown.

330,423. CAR-WHEEL. DAVID H. RICE, Lowell, assignor to James Ferguson, Bridgewater, Mass. Filed Jan. 3, 1885. (No model.)



Claim.—1. The hollow wrought-iron car-wheel body, formed of the blanks A A and a wrought-iron rim coiled and welded together and upon the edges thereof from a strip of metal, S, in successive layers, substantially as described.

2. The hollow wrought-iron car-wheel body, formed of the blanks A A and a wrought-iron rim coiled and welded upon the edges thereof from a strip, S, provided with a groove, s, which embraces a portion of said blanks during the welding process, substantially as described.

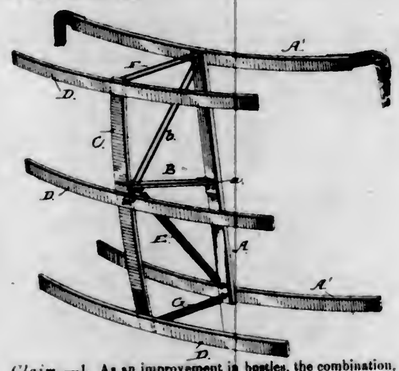
3. The combination of the blanks A A, provided upon their edges with the lips a a, and the strip S, provided with the groove s, embracing said lips and coiled and welded thereon, the whole forming a car-wheel body, substantially as described.

4. The combination of the blanks A A, provided upon their edges with the lips a a, and the strip S, provided with the groove s and rib s', and coiled and welded upon said lips and upon itself, substantially as described.

5. The combination, with the blanks A A, of the strip S, having a portion between s^2 and s^3 cut away from its side to a greater depth than the metal on either side of it, and coiled and welded upon said blanks and itself, forming the rim of the wheel-body and the groove c therein in the same operation, substantially as described.

6. The combination, with the wheel-blanks A A, of the strip S, having a portion between s^2 and s^3 cut away from its side upon one end and coiled and welded upon said blanks and itself, forming a shouldered or offset part at the outer edge of the rim, substantially as described.

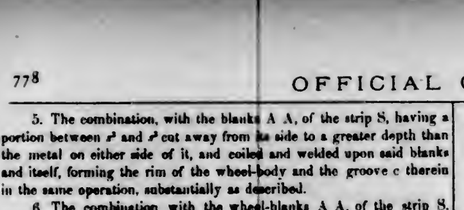
330,424. **BUSTLE.** ABRAHAM L. RICH, Allegheny, Pa. Filed Jan. 28, 1885. (No model.)



Claim.—1. As an improvement in bustles, the combination, with the base A and transverse strips A', of the frame, and cross-strips C and D, connected to the base, and a pivotally-secured standard, B, adapted to fold the two sections when pressure is applied to the bustle, substantially as herein described.

2. In a bustle, the combination, with the base A and transverse strips A', of the frame-strip C, the cross-strips D, secured thereto, a standard, B, pivotally secured to the frame-strip and base, a spring, E, and the adjusting-cords *b*, F, and G, substantially as herein described.

330,425. **STREET-RAILWAY SWITCH.** JOSEPH RIDGWAY, Minneapolis, Minn. Filed June 29, 1885. (No model.)



Claim.—1. In a street-railway switch, the combination, with the movable tongue-rail A and the frog S, of the self-locking apparatus consisting of the post D, the crank-shaft E, the arm H, the post x', the catch L, with its mortise V, and the springs P and Q.

2. In a street-railway switch, the combination, with the movable tongue-rail A and the frog S, of the unlocking apparatus consisting of the post B, the arm H, the catch L, with its mortise V, the springs P and Q, and the movable wheel *b'*, attached to the platform of the car.

3. In a street-railway switch, the combination, with the movable tongue-rail A and the frog S, of the plate O', in combination with the post x', the arm H, the catch L, with its mortise V, and the springs P and Q, all substantially as herein illustrated and described.

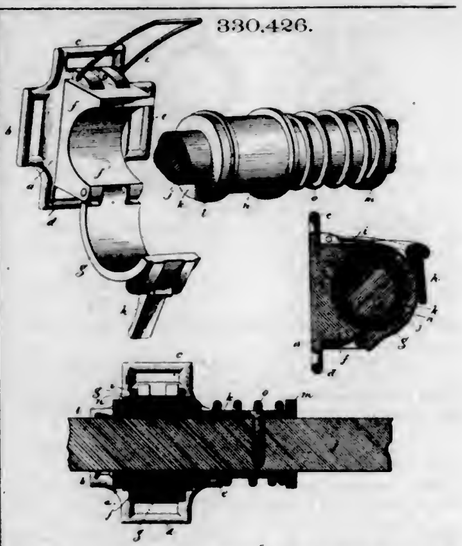
330,426. **TUG.** MICHAEL W. ROHRER, Jr., and DAYTON H. BOYER, Diller, Nebr., assignors of one-third to William W. Rohrer, Creston, Ohio. Filed Apr. 1, 1885. (No model.)

Claim.—1. A tug-attaching device comprising a clasp secured to the harness, a sleeve fast to the thill, a collar movable on said sleeve and engaged by the clasp, and a spring acting against said collar, substantially as described.

2. A clasp provided with loops to engage the saddle or back-strap of a harness, the breast or hame strap, and the girth, and to receive the breeching-strap, combined with a movable collar secured in a fixed position on the thill, substantially as described.

3. A thill-tug, a clasp provided with a base having loops for engaging the harness, a projection having a semicircular cavity, a semicircular member hinged to said projection and adapted to complete the circle of its cavity, and a locking device to secure said member in such

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position, combined with a sleeve on the thill and a movable or yielding collar on said sleeve, substantially as described.

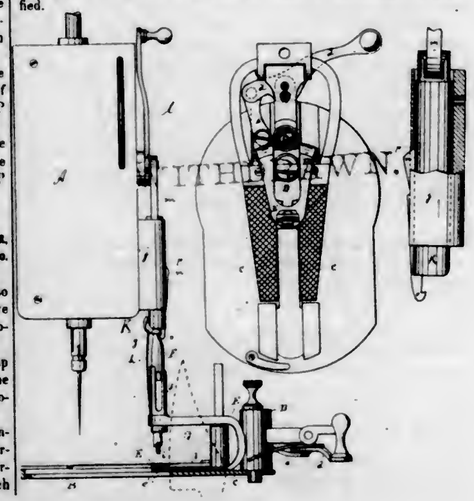
4. In a tug-attaching device, a sleeve affixed to the thill and provided with end flanges, a flanged collar encircling such sleeve, and a spring acting against the foremost flange of said sleeve, combined with a clasp adapted to be attached to the harness to engage said collar and be readily disengaged therefrom, substantially as described.

330,427. **CUTTING ATTACHMENT FOR BUTTON-HOLE SEWING-MACHINES.** FRIEDRICH E. SCHMIDT, Brooklyn, N. Y. Filed Mar. 31, 1885. (No model.)

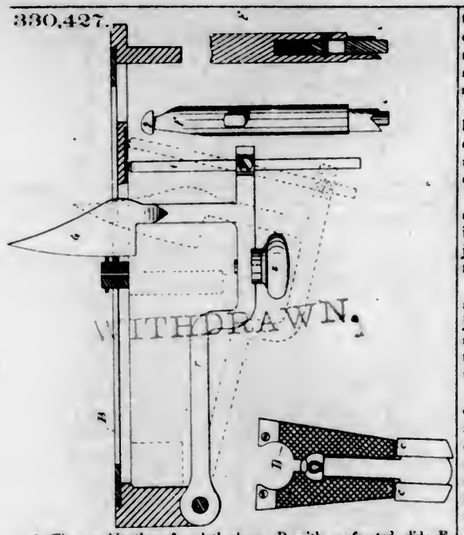
Brief.—The object of the device is to punch the eye and cut the slit in cloth or fabric which, when stitched around the edges, make the button-hole. The punch is provided with a head upon which the mechanism (the plunger) bears when forcing it down. Beneath the head engages a hook for drawing up the punch. The lower edge of the punch is provided with V-shaped cutting-edges. The lower end of the punch is hollowed out to receive a pin, with coiled spring superposed to force the pin in pushing out the small piece of severed cloth.

Claim.—1. The combination of a cloth-clamp with a slide adapted to reciprocate within the cloth-clamp, and carrying a punch, and with a plunger adapted to force down the punch, substantially as specified.

2. The combination of cloth-clamp D, having perforated slide E, with punch F, having head *g*, and with head A, having a plunger for forcing down the punch and a hook for raising it, substantially as specified.



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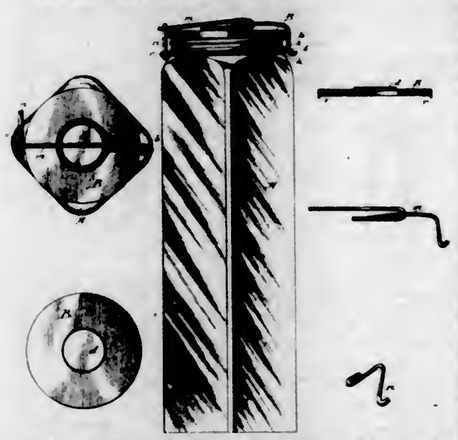
3. The combination of a cloth-clamp, D, with perforated slide E, having punch F, and with plunger K, the punch having a double-V-shaped cutting-edge, substantially as specified.

4. The combination of cloth-clamp D, having perforated slide E, with punch F, having recessed top, and with head A, casing *j*, plunger K, hook *o*, and spring *q*, substantially as specified.

5. The combination of the cloth-clamp D, with perforated slide E, cutting-blade G, pivoted shank *r*, button *s*, and stop *t*, and with an abutment for stop *t*, substantially as specified.

6. The combination of clamp D and perforated slide E, with punch F, for forming the eye of a button-hole, and operated by plunger K, and with blade G, for cutting the slit of a button-hole, and operated by shank *r*, substantially as specified.

330,428. **CLOSURE FOR BOTTLES, CANS, &c.** ERNST SCHMITZ, Chicago, Ill., assignor to George B. Schoonmaker and Robert H. Dalzell, same place. Filed May 13, 1885. (No model.)



Claim.—1. The combination, with a cap for a jar, bucket, or other receptacle having a raised central portion of the shape of a short cylinder or truncated cone, of a wire spring pivotally attached to the neck of the receptacle and provided with a loop, formed by turning the wire spring once upon itself, of the same shape as and slightly larger than the said raised portion of the cap, and adapted to receive the same, and having arms extending outwardly from the loop as means for securement of the spring to the vessel, whereby lateral displacement of the spring during its adjustment is prevented and the detachment of the spring and cover is facilitated, substantially as described and shown.

2. The combination, with a wire, *h*, passed about the head of a can or jar and held in place by projections thereon, and in which wire are formed two opposite loops, *b* and *c*, of a spring, *m*, for holding the cap of the jar in place, provided with a half-loop at one end for engaging with one of the said loops in wire *h*, and a catch or trigger, *n*, engaging by means of a half-loop with the other of said loops in wire *h*, and having at its other end a hook for engagement with the other end of spring *m*, substantially as described.

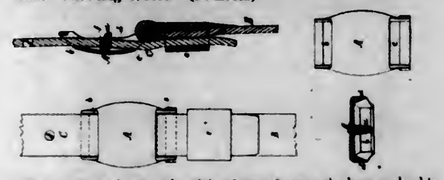
3. A wire spring for holding down the cap of a jar, having a half-loop at one end, in combination with a wire loop attached to the neck of the jar for receiving said half-loop, and a trigger or swinging catch attached to the other side of the neck of the jar for holding the other end of the spring, substantially as shown and described.

4. In combination with a spring for holding down the cap of a jar, a wire loop attached to the neck of the jar, a wire trigger or catch having a half-loop in one end for engagement with the loop attached to the jar, and a hook at the other for engagement with the spring, substantially as shown and described.

5. The combination of a wire spring for jar or bucket caps, having a half-loop at one end, a wire loop attached to one side of the neck of said jar for receiving said half-loop, a catch for holding the other end of said spring, provided at one end with a half-loop, and a second loop attached to the opposite side of the neck of the jar from the first for receiving the half-loop of the catch, substantially as shown and described.

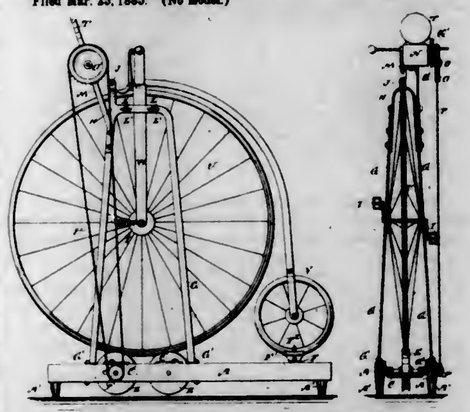
6. The combination of a bottle or bucket cover provided with a central raised portion of the shape of a short cylinder or truncated cone, a spring for retaining the cover in position, pivotally connected at one end to wire *h*, passing about the neck of the bottle or bucket, and provided with an opening at its middle of the same shape as but a little larger than the said raised portion of the cap, and adapted to receive the same, and a catch provided at one end with a half-loop for engaging with loop *c* in said wire *h*, and at the other end with a hook for catching over the free end of said spring and holding the same in place, substantially as described and shown.

330,429. **HARNESS-BUCKLE SHIELD.** JOHN P. SCOLLAY, Lawrence, Mass. Filed Aug. 3, 1885. (No model.)



Claim.—As an improved article of manufacture, the harness-buckle shield substantially as described, consisting of the arched plate A, having the transverse slots *b* and *c*, and the side flanges, *d*, arranged as represented, and the tongue *a*, extending down from such plate at its middle and hooked or inclined relatively thereto, as set forth.

330,430. **BICYCLE-HOLDER.** ALBERT P. SEILER, Mansfield, Ohio. Filed Mar. 25, 1885. (No model.)



Claim.—1. The combination, with a base, of rollers held on the same and of upwardly-projecting frames hinged on the base and serving to hold a bicycle, substantially as herein shown and described.

2. The combination, with a base, of rollers held on the same, upwardly-projecting frames hinged on the base, a distance-recording device on one frame, and an endless chain passing from the base to a pulley on the indicator, substantially as herein shown and described.

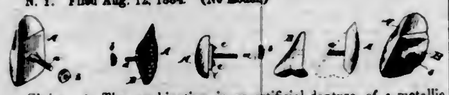
3. The combination, with the base-bars A, of the rollers or pulleys E, the hinged upwardly-projecting frames G, and the rubber blocks K on the same, substantially as herein shown and described.

4. The combination, with the base-bars A, of the rollers or pulleys E, the frames G, the arms H on the same, and the screw J, substantially as herein shown and described.

5. The combination, with the base-bars A, of the rollers or pulleys E, the cross-piece F, the support F', and the frames G, substantially as herein shown and described.

6. The combination, with the base-bars A, of the adjustable yokes C, the rollers in the same, and of the frames G, substantially as herein shown and described.

330,431. ARTIFICIAL TOOTH. LUCIUS T. SHEFFIELD, New York, N. Y. Filed Aug. 12, 1884. (No model.)

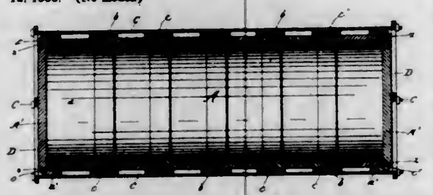


Claim.—1. The combination, in an artificial denture, of a metallic support or backing, a porcelain facing-piece, a threaded pin projecting from the porcelain piece through an opening in the backing, and a nut adapted to the said pin and securing the porcelain to the backing, substantially as described.

2. An artificial tooth provided with a threaded pin, *a*, connected to the tooth through the medium of the platina pins *e*, substantially as set forth.

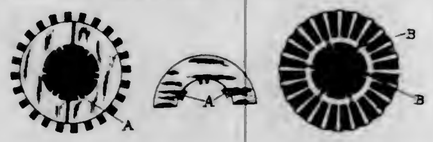
3. An artificial tooth-crown of porcelain, provided with a threaded pin permanently attached to it and projecting substantially at right angles from its inner surface, and with a nut adapted to fit the screw-threads, substantially as described.

330,432. COFFIN. ISAAC C. SHULER, Amsterdam, N. Y. Filed Sept. 12, 1885. (No model.)



Claim.—In a preserving-case for coffins or caskets, the combination, with a series of cylinders, *a a*, having inclines *z z*, internal flange, *e*, cement *c*, rings *b b*, and end closing-pieces, A' A', draw-bolts C C, and tie-pieces D D, all substantially as and for the purposes set forth.

330,433. ARMATURE-CORE FOR DYNAMO-ELECTRIC MACHINES. MARMADUKE M. M. SLATTERY, New York, N. Y., assignor, by direct and mesne assignments, to the Sun Electric and Illuminating Company, Manchester, N. H. Filed Nov. 4, 1884. (No model.)



Claim.—In an armature-core, a series of plates or sheets of metal substantially of the form of a half-disk, as herein shown, arranged and secured in pairs along a shaft or hub, each of such plates or half-disks being coated with a suitable insulating material.

330,434. HAT-HOLDER AND COAT RACK. GEORGE D. SPIELMAN, Cincinnati, Ohio. Filed May 23, 1885. (No model.)

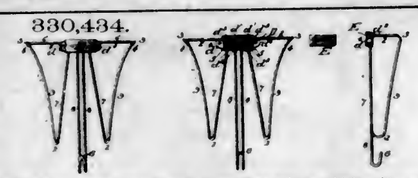
Claim.—1. A wire hat-holder which consists of a tapering skeleton pocket formed by two opposite loops, and clip D, to unite the loops, as a new article of manufacture.

2. The combination, substantially as specified in a hat-holder, of the two loops, each formed of the parts 2, 7, and 9, bent at 1, 3, and 4, as described, with a central fastening-clip, as D, having notches d^3 d^3, to secure the parts together and the holder in place.

3. The combination, substantially as specified, of two opposite loops, together forming a tapering skeleton pocket for holding a hat, and the coat-hook consisting of the arms 8, extending down between the said loops and bent into a hook at the lower end, with a clip to secure the parts together and to the support to which they are to be attached.

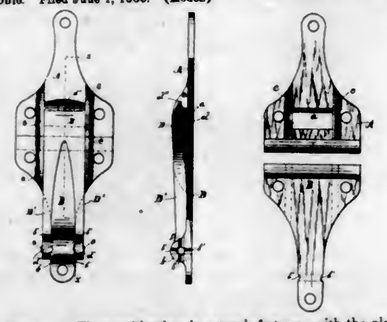
4. In a wire hat and coat rack, the combination of a series of pockets, each consisting of two tapering loops, coat-hooks 6 8 8, extending down between said loops, and additional coat-hooks between each of

330,434.



said pockets, with clips D, and a molding-strip to which said pockets and hooks are secured by the said clips, the whole constructed and arranged substantially in the manner and for the purpose specified.

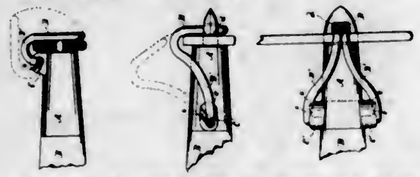
330,435. TRUNK-FASTENER. GEORGE D. SPIELMAN, Cincinnati, Ohio. Filed June 1, 1885. (Model.)



Claim.—1. The combination, in a trunk-fastener, with the plate A, having opening *a* and side flanges, *c*, and the plate B, having similar flanges, the flanges on both plates being in the same plane when the parts are in a position to be locked, and forming together a continuous groove or recess, and the said plate B having boss *b* and radial grooves *b'* at its lower end, of the latch D, having detent *d* and spring-legs D', which legs have projections *d'*, counter to the grooves in plate B, the said latch being pivoted to plate B, so as to form a spring-snap when the parts are united, substantially as described.

2. The combination, substantially as specified, with the plate A, having its lower edge beveled and provided with flanges *c*, and opening *a*, of the plate B, having its upper edge beveled to match with the bevel on plate A, and provided with flanges *c*, and having pivoted to it a spring-snap latch to pass into the groove formed by the flanges *c*, and a detent on said latch to pass into the opening in plate A.

330,436. TRACE-FASTENER. GEORGE D. SPIELMAN, Cincinnati, Ohio. Filed June 1, 1885. (No model.)



Claim.—1. In a trace-fastening, the combination of the lugs C, having grooves *c*, and transversely perforated to receive the latch-pivot, with the latch D, having spring-legs D' to engage the grooves in the lugs and retain the latch in position over the trace, substantially as specified.

2. The combination, substantially as specified, of the ferrule A, having two grooved lugs, C, projecting from it, with a spring-wire latch formed in the shape of an open loop, and having its legs bent outwardly to form pivots, said latch being held in place and against the grooved sides of the lugs by the spring of its metal, for the purpose set forth.

330,437. SNAP-HOOK. GEORGE D. SPIELMAN, Cincinnati, Ohio. Filed June 1, 1885. (No model.)

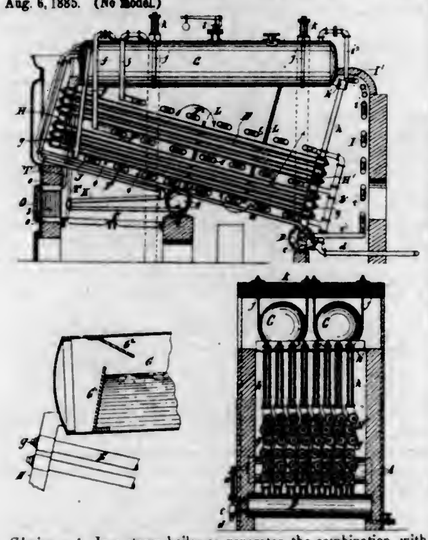
Claim.—1. The combination, substantially as specified, in a snap-hook, of the body A and latch C, united by pivot *b*, one of the said parts—either the body or latch—having grooves radial to the pivot-bearing, said grooves being the counterpart of the abutting surfaces of the other part, for the purpose set forth.

2. The combination, substantially as specified, of the body having the radial grooved lugs a^3, and the latch formed of spring-wire and having its ends bent at a right-angle to the shaft of the latch to enter perforations or depressions in said lugs, thereby pivoting the latch to the body.

330,437.



330,438. STEAM-BOILER. JAMES C. STEAD, Brooklyn, N. Y. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a steam boiler or generator, the combination, with longitudinally-extending circulating-pipes having an upward inclination from one part of the boiler toward an opposite part, of a coil of other circulating-pipes arranged at approximate right angles thereto and extending crosswise of the same, substantially as specified.

2. In a steam boiler or generator, the combination, with the longitudinally-inclined circulating-pipes, of a separator or separators with which said pipes are connected at both ends, a mud-drum also connected with said pipes, and coils of circulating-pipes arranged at approximate right angles to the pipes first named and crosswise of the same, said coils being connected with the mud-drum and the separator, substantially as specified.

3. In a steam boiler or generator, the combination, with longitudinally-inclined circulating-pipes, of two or more coils of other circulating-pipes arranged at approximate right angles thereto and extending crosswise of the same, and a common pipe from which each of said coils is supplied.

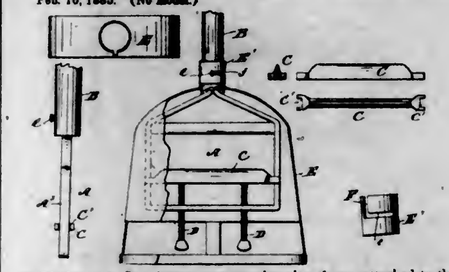
4. In a steam boiler or generator, the combination, with longitudinally-inclined circulating-pipes, of a separator or separators with which said pipes are connected at both ends, a mud-drum also connected with said pipes, a coil of circulating-pipes arranged at approximate right angles to the pipes first named and extending crosswise of the same, a feed-water pipe connected with said coils, a connection between said feed-water pipe and the mud-drum, and a valve in said connection for preventing feed-water from entering the mud-drum, substantially as specified.

5. In a steam-boiler or generator, the combination, with longitudinally-inclined circulating-pipes, of two or more coils of other circulating-pipes arranged at approximate right angles thereto and extending crosswise of the same, a separator, and a pipe connecting each of said coils with the steam-space in said separator, substantially as specified.

6. In a steam-boiler, the combination, with circulating-pipes, of a separator arranged approximately parallel with said circulating-pipes, a partition arranged in one end of said separator higher than the water-level in the main portion of the separator, dividing from such main portion a compartment into which steam from the circulating-pipes is discharged, and an apron above said partition extending downwardly at an incline, by which steam entering the separator from the circulating-pipes is deflected toward the opposite end of the boiler, substantially as specified.

7. In a steam boiler or generator, the combination of the pipes E, the coils of circulating pipes F F' F², the separator or separators G, the drums A D, the coil I, the coils K, and the pipes J, substantially as specified.

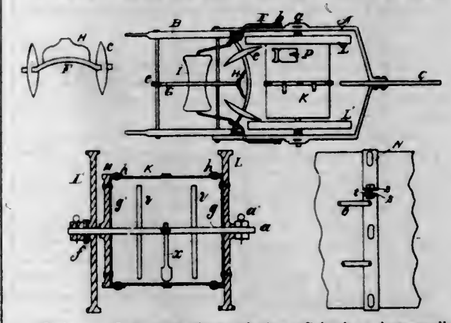
330,439. BROOM. GEORGE A. THOMPSON, Washington, Me. Filed Feb. 10, 1885. (No model.)



Claim.—1. In a broom, a straw-clamping frame attached to the handle and composed of side bars, a base-bar having threaded openings, a stop cross-bar, a follower-bar sliding at each end on the side bars, and clamping-screws turned through the openings in the base-bar and against the follower-bar, substantially as set forth.

2. The combination of the handle having the clamp attached to its lower end and provided with a radial pin or stud near such end, and the cap movable along the handle, and the locking-sleeve having a double-winged slot, whereby it may be adjusted into engagement with the pin or stud and lock the cap in position, substantially as set forth.

330,440. COTTON-PLANTER. RUSH THOMSON, Atlanta, Ga., assignor to William S. Thomson, same place. Filed Dec. 27, 1884. (No model.)



Claim.—1. In a cotton-planter, the beam C, having a downwardly-curved rear end provided with an elongated slot to receive the bolt which secures the adjustable plow D, and a transverse opening at its forward end to serve as a clevis, in combination with side bars, A, fixed axle-wheel L, attached to and carrying drum K, and wheel L', revolving independently on the axle, all arranged and operating as set forth.

2. In a cotton-planter, the side bars, A, and arms E, provided with slots *b*, sliding upon studs secured to the side bars, in combination with the curved bar or axle F, covering-disk, adjusting-rod, and movable weight H, arranged and operating substantially as shown and described.

3. In a cotton-planter, the wheel L, attached to and carrying the seed-drum K, in combination with the independently-revolving wheel L', and fixed axle *a*, all constructed and arranged as and for the purpose shown and described.

4. In a cotton-planter, the combination of the stationary axle secured to the side bars by pins *a'*, with the wheels L and L', the latter secured to the seed-drum and revolving therewith, all arranged and operating in the manner and for the purpose set forth.

5. The seed-drum, in combination with the adjustable band and the bars pivoted to said band and to the drum, which cause the band to move upon the drum in parallel lines, substantially as set forth.

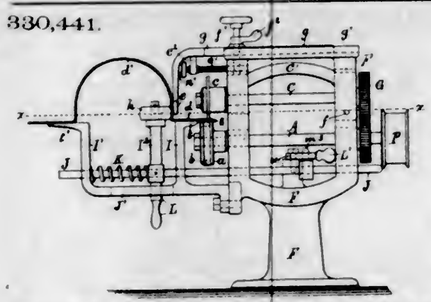
6. The revolving seed-drum K, pierced with holes *i*, in combination with the band N, having ears *s* and tightening-bolt *t* and the pivoted bars *o*, all arranged to enlarge or diminish the area of said openings *i*, substantially as specified.

330,441. HAT-ROUNDING MACHINE. EDMUND TWEEDY, Danbury, Conn., and GEORGE YULE, Newark, N. J. Filed Mar. 30, 1885. (No model.)

Claim.—1. In a hat-rounding machine, the combination, with a pair of rotary cutters, of a rubber collar affixed directly to one of the cutters and adapted to press the hat-brim adjacent to the cutter during the cutting operation.

2. In a hat-rounding machine, the combination, with means for supporting the hat-brim, of the cutter *a*, the yielding collar, and the cutter *c*, arranged to press the brim against the collar while cutting against the face of the cutter *a*.

330,441.



3. In a hat-rounding machine, the combination, with the cutters *a* and *c*, operated as described, of the frame in the rear of the cutters, the hat-brim support at the front of the cutters, and the crown-gage attached adjustably to the frame, as and for the purpose set forth.

4. In a hat-rounding machine, the combination, with the cutters *a* and *c*, arranged and operated as described, of the frame arranged in the rear of the cutters, the hat-brim support at the front of the cutters, a crown-gage, arranged and operated as described, and a presser applied within the crown of the hat to press it toward the gage, as and for the purpose set forth.

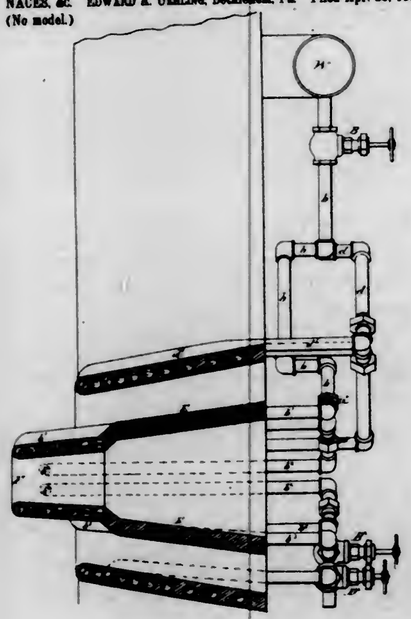
5. In a hat-rounding machine, the combination, with rotary cutters and a crown-gage, operated as described, of a presser arranged inside the crown, as set forth, and means, substantially as described, for retracting the presser to insert the hat beneath the crown-gage, substantially as herein set forth.

6. In a hat-rounding machine, the combination, with rotary cutters and a crown-gage, operated as described, of a presser mounted upon a sliding bar, as described, a spring to actuate the presser, as set forth, and a hand-lever to retract the bar and presser, as and for the purpose set forth.

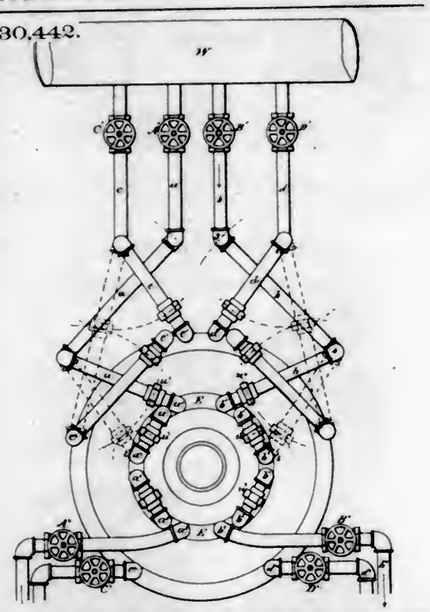
7. The combination, with the rotary cutters and the frame arranged in the rear of the cutters, of the crown-gage provided with a foot extended over the upper cutter and fitted to a guide in the top of the frame, as described, and provided with an index corresponding with the width of the brim, substantially as and for the purpose set forth.

8. The combination, with the rotary cutters and the frame arranged in the rear of the cutters, of the crown-gage constructed with a foot fitted to a guide in the frame, and provided with an adjusting-screw having a thread adapted in one rotation to move the gage the required amount for a variation of half a size in the hat-crown, substantially as shown and described.

330,442. WATER-CIRCULATION FOR TUYERES, BLAST-FURNACES, &c. EDWARD A. UEHLING, Bethlehem, Pa. Filed Apr. 28, 1885. (No model.)



330,442.



Claim.—1. The combination of a tuyere stock or breast composed of two or more independent fixed coils or circulating-tubes with fixed inlets and outlets and intermediate movable sections communicating with the fixed coils and with the fixed inlets, whereby to change the flow through the independent coils from the same inlet.

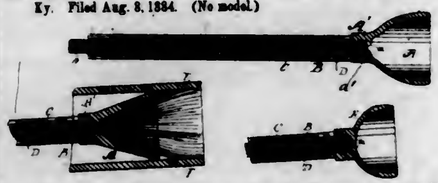
2. The combination of a tuyere stock or breast composed of two or more independent fixed coils or circulating-tubes with fixed inlets and outlets, intermediate movable sections, and union-joints arranged and connected to change the supply from one fixed coil to another, substantially as described, for the purpose specified.

3. A system of water-circulating tubes or coils arranged in separate and distinct fixed sections in which the circulation is in opposite directions, in combination with fixed supply and outlet pipes and intermediate movable communicating sections, substantially as described, for the purpose specified.

4. The combination, with a tuyere stock or breast, of a water cooling and protecting system for the part exposed to the heat, having a water-flow in fixed contiguous separate coils or pipes in opposite directions, fixed supply and outlet connections, intermediate movable communicating sections, and inlet and outlet valves, substantially as described, for the purpose specified.

5. The combination, with a tuyere or appliance for metallurgical furnaces, of a water cooling and protecting system for the part exposed to the greatest heat, having a water-flow in contiguous coils or pipes in opposite directions, and provision for changing the inlet to the system from one coil or part to another, and thereby excluding from the system of opposite currents a leaky or burned-out part, substantially as herein set forth.

330,443. BOILER-TUBE CLEANER. EZRA W. VANDUZEN, Newport, Ky. Filed Aug. 8, 1884. (No model.)



Claim.—1. The cleaner having thin flat diaphragm *a'*, provided with contracted opening *a*, substantially as and for the purposes specified.

2. The cleaner having thin flat diaphragm *a'*, one side of which is flat and the other flaring, about the edge of the opening *a*, substantially as and for the purposes specified.

3. The cleaner having thin flat diaphragm *a'*, provided with opening *a*, and rigid extension B, containing conduit D, the extension being covered with a substance which is a non-conductor of heat, substantially as and for the purposes specified.

4. The cleaner provided with thin flat diaphragm *a'*, opening *a*, and extended annular flange A, substantially as and for the purposes specified.

5. The cleaner provided with thin flat diaphragm *a'*, orifice *a*, and annular flange A, having teeth E, substantially as and for the purposes specified.

6. The cleaner provided with thin flat diaphragm *a'*, orifice *a*, and annular flange A, provided with annular teeth E, having one abrupt side facing forward, substantially as and for the purposes specified.

7. The cleaner having thin flat diaphragm *a'*, opening *a*, flange A with flaring sides, and rigid extension B covered with a non-conductor of heat, and provided with internal conduit, D, substantially as and for the purposes specified.

8. The combination of flange A, having flaring sides, thin flat diaphragm *a'*, opening *a*, rigid extension B, covered with a non-conductor of heat, internal conduit, D, and teeth E, substantially as and for the purposes specified.

9. The cleaner having thin flat diaphragm *a'*, orifice *a*, and annular flange A, provided in front of orifice *a* with a chamber having flaring sides, and also provided with rows of teeth, the center rows projecting out farther from the longitudinal axis of the cleaner, substantially as and for the purposes specified.

10. The cleaner provided with thin flat diaphragm *a'*, orifice *a*, and flange A, provided with rows of teeth, the center rows projecting out farther from the longitudinal axis of the cleaner, and having open chamber provided with surface flaring outward from orifice *a*, and having teeth E, and rigid extension connected to the cleaner and covered as described, and provided with conduit B, substantially as and for the purposes specified.

11. A cylinder-cleaner provided exteriorly with annular rows of teeth, the rows diminishing gradually in diameter toward each end of the cleaner, substantially as and for the purposes specified.

330,444. GLAZIER'S POINT. EDWIN J. VAN REYPER, Jersey City, N. J. Filed Oct. 1, 1885. (No model.)



Claim.—1. A stop or point comprising, essentially, a securing device and a stop-arm, as *c'*, as set forth.

2. A stop or point consisting of a body having a securing device arranged to be engaged with a frame and a stop-arm, as *c'*, arranged upon a plane at right angles to the body, as and for the purposes specified.

3. A stop or point consisting of a securing device, a body, and a stop-arm made integral, each part being arranged at right angles to the others, as set forth.

4. A stop or point having tangs arranged to engage adjacent parts upon different planes, and to hold two plates or panes to their seats, as set forth.

5. A glazier's point having two tangs arranged to hold two separate panes to their seats, and having an arm, as *c'*, arranged to engage the edge of the upper pane, as set forth.

6. The glazier's point described, consisting of the body C', having tang *c*, and the arm *c'*, bent at right angles to the body C' and having tang c^2, the whole constructed and arranged to serve as and for the purpose set forth.

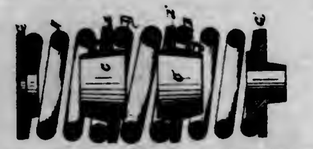
330,445. CAR-SPRING. RICHARD VOSE, New York, N. Y. Filed May 16, 1885. (No model.)



Claim.—1. In a car-spring, the combination of rubber core or cores formed in one piece, of equal or unequal lengths, with holders D and D', with exterior spiral springs, A and A', substantially as described, and for the purpose specified.

2. In a car-spring, the combination of a rubber core formed by placing two cylindrical or conical cores of rubber base to base, of unequal length, with holders D and D', said holders arranged between the spiral springs A and A', substantially as described, and for the purpose specified.

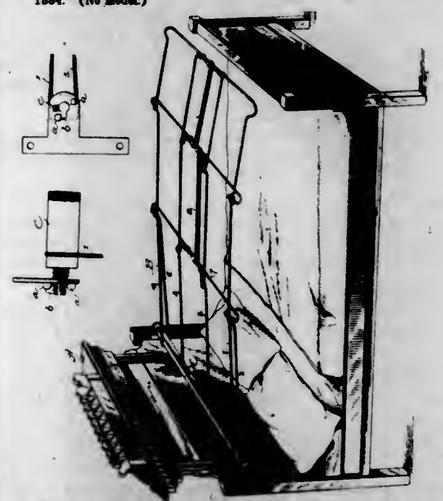
330,446. CAR-SPRING. RICHARD VOSE, New York, N. Y. Filed May 23, 1885. (No model.)



Claim.—A car-spring composed of two conical spiral springs, in combination with a cylindrical spring placed between the two, substantially as described, and for the purpose specified.

2. A car-spring composed of two conically-shaped spiral springs, the bases of which rest on a holder which rests on a central cylindrical spring, said cups holding said spirals in position, substantially as described, and for the purpose specified.

330,447. BED. WILLIAM WALL, New York, N. Y. Filed Dec. 2, 1884. (No model.)

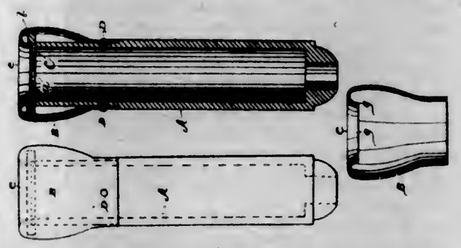


Claim.—1. A frame for mosquito-netting or other canopy, consisting of a bar, C, having its bearings in brackets secured to the head-board or posts of the bed, a section of the frame secured to said bar-sections hinged to the first section, and elastic straps between the latter sections, for putting a tension upon such sections, substantially as described.

2. In a frame for supporting mosquito-netting, the combination, with the rod C, having bearings in the post of a bedstead, and movable therein, of the wire section rigidly secured thereto, and supporting or brace rods, also rigidly secured to the said rod C' and extending nearly to the end of the section, substantially as described.

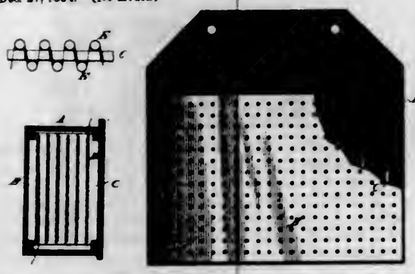
3. In combination, a rod, C, and a series of sections, one of which is secured to said bar or rod C, the others being hinged to each other back of the outer line of the frame, substantially as described.

330,448. WHIP-SOCKET. CARLOS N. WEBB, Lansingburg, N. Y., assignor to Parry D. Randall, same place. Filed Feb. 7, 1885. (No model.)



Claim.—The combination, with barrel and introverted ferrule, of a rubber disk having a raised flange, *b*, that extends beyond the barrel, and a depression, *b'*, into which extends the ferrule end *g*, as shown and described.

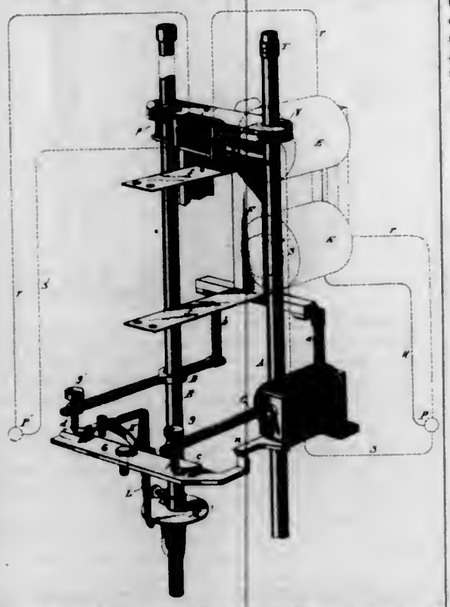
330,449. **RHEOSTAT.** EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 27, 1884. (No model.)



Claim.—1. A rheostat or artificial resistance consisting of insulating boards or plates supported by cross-bars, in combination with a spiral wire wound around said boards or plates in the manner specified.

2. An insulating-frame consisting of boards or plates supported in parallel planes by cross-bars secured to their corners and carrying a resistance-wire which, in the form of a spiral, is wound upon opposite sides of each plate, in combination with a box or receptacle with perforations in one or more of its sides, as set forth.

330,450. **ELECTRIC LAMP.** EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Feb. 12, 1885. (No model.)



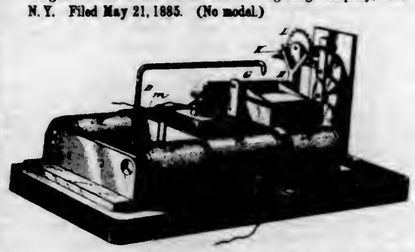
Claim.—1. In an electric lamp, the combination, with a single magnet or set of magnets and two sets of carbons and feed mechanism therefor, of devices for bringing into operation the two sets of carbons successively, and an electro-magnet in a constantly-closed derived circuit around the lamp, adapted to operate the said devices upon the attainment of an attractive force caused by a given diversion of current through the derived circuit, as set forth.

2. In an electric lamp, the combination, with a single magnet or set of magnets and two sets of carbons and feed mechanism therefor, of devices for operating the two sets of carbons successively, a shifting-magnet for operating said devices, and a magnet and armature in a constantly-closed derived circuit around the lamp, for closing the circuit of the shifting-magnet, as set forth.

3. In an electric lamp, the combination, with a single magnet or set of magnets and two sets of carbons and feed mechanism therefor, of devices for bringing into operation the two sets of carbons successively, a shifting-magnet in an open derived circuit, for operating said devices, and a relay-magnet and armature in a constantly-closed derived circuit, for closing the circuit of the shifting-magnet, as set forth.

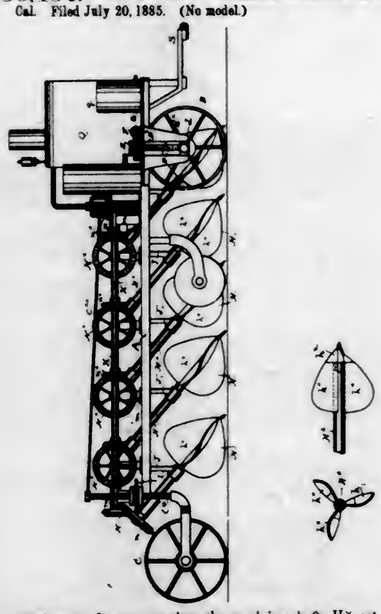
4. In an electric lamp, the combination, with a single feed-magnet or set of magnets and armature, two sets of carbons, and clamps or clutches for controlling the feed of the same, and connected with the armature of the feed-magnets, and a pivoted floor of varying height for tripping said clutches, of an electro-magnet in an open derived circuit, for shifting the floor, a magnet in a constantly-closed derived circuit, for closing the circuit through the shifting-magnet upon a given lengthening of the arc, and a stop for arresting the feed of the carbons first to be consumed, and thereby producing the elongation of the arc at the proper time, as set forth.

330,451. **ELECTRICAL METER.** EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed May 21, 1885. (No model.)



Claim.—The combination, with a multiple-arc system or circuit, of a mercury-receptacle and connections for passing the main current through the same, tubes connected to the opposite sides of the receptacle, arranged in the manner described, for the transfer of mercury from one to the other, means for measuring the amount of mercury transferred, and an electro-magnet or magnets included in a branch or cross circuit, and between the poles of which the mercury-receptacle is placed, as set forth.

330,452. **ROTARY PLOW.** FREDERICK WITTRAM, San Francisco, Cal. Filed July 20, 1885. (No model.)

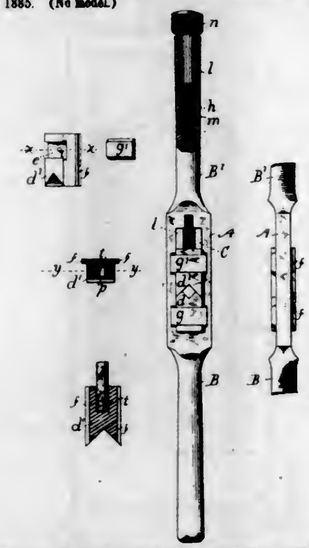


Claim.—1. In a rotary plow, the revolving shafts $H^{\times}$, set obliquely to the line of progression, and having the spiral blades $h^{\times}$ and the separate detachable points h^{3}, substantially as shown and described.

2. In a rotary plow, the combination of the wheeled frame A, having connections for draft-power at the front, the engine P, engine shaft K, extending to the rear, the obliquely-set plow-shafts $H^{\times}$ in line diagonally across the frame and geared into the engine-shaft, and the spiral shares H, secured to the oblique shaft, for operation as described.

3. The frame mounted at the front on wheels B B, which are set in vertically-adjustable boxes, and means for moving them, consisting of the screw-shafts D D and shaft G, with hand-wheel *g*, and supported at the rear end by steering-wheel C, the spindle C^{4}, tiller or crank $C^{\times}$, rod $C^{\times\times}$, and handle C^{5}, substantially as shown and described.

330,453. **WRENCH.** ROBERT WOLFE, Waterbury, Conn. Filed July 21, 1885. (No model.)



Claim.—1. In a tap-wrench, the combination, with a handle perforated through its entire length and threaded internally, of a screw-rod fitted within the threaded perforation in the handle and adapted to operate the adjustable jaw, substantially in the manner described.

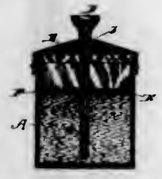
2. In a tap-wrench, a jaw having opposite lateral flanges adjacent to one side and a dovetailed slot on the opposite side, which receives a corresponding dovetailed key, as and for the purpose specified.

3. In an adjustable tap-wrench, the combination of the perforated handle B', the screw-rod *l*, and the movable jaw *d'*, all arranged substantially in the manner and for the purpose specified.

330,454. **PROCESS OF PRECIPITATING NICKEL AND COBALT FROM SOLUTIONS CONTAINING THE SAME.** CHARLES H. AARON, Nogales, Ariz. Filed Feb. 26, 1885. (No specimens.)

Claim.—The metallurgical process consisting in precipitating nickel or cobalt, or both together, from their solutions in the form of methyl-sulpho-carbonates, substantially as described.

330,455. **INKSTAND.** JAMES O. ANDERSON, Ogdawka, Ill. Filed June 11, 1885. (No model.)



Claim.—The inkstand A, having the piston-head E, having the threaded perforation *e*, and the tube consisting of the dip-hole D, outside of the stand, and the hollow stem C, externally threaded and passing through the piston-head, said tube having all its threads within the stand, as set forth.

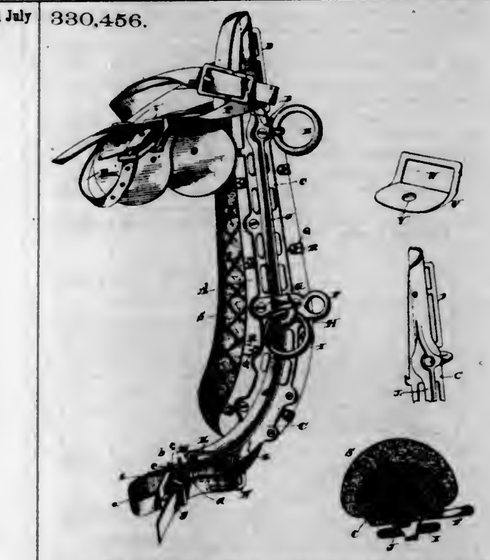
330,456. **COMBINED COLLAR AND HAME.** VINCENT S. BARBER and SAMUEL D. REYNOLDS, Rochelle, Ill. Filed May 29, 1885. (No model.)

Claim.—1. The combination, with the collar-sections and metallic hames rigidly secured thereto, of the sweat-pads, constructed substantially as described, and loops and buttons for removably securing the pads to the collar-sections.

2. The combination, with the collar-sections and the metallic hames rigidly secured thereto, the latter being provided with strap-keepers and rings, of the sweat-pads and buttons and loops for removably securing the pads to the collar-sections.

3. The combination, with the collar-sections and metallic hames secured thereto, each hame being provided with a rib, J, of the draft-irons F, each having a recess corresponding with the rib on its respective hame and removably secured against the face of its hame, substantially as set forth.

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4. The combination, with the wooden collar-sections, of the metallic hames having the bent or turned upper ends, as shown, and the strap-keepers secured to said turned upper ends, the said collar-sections and hames being arranged substantially as described, whereby the upper ends of the hames are supported by the wooden collar-sections.

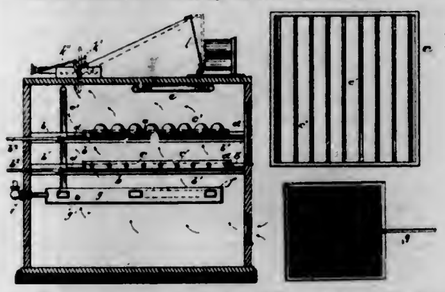
5. The combination, with the collar-sections and the metallic hames, the latter having the outwardly and upwardly curved lugs H, of a tug or draft iron secured to each hame and resting on the lug, substantially as and for the purpose set forth.

6. The combination, with the collar-sections, of the metallic hames secured thereto and projecting below the sections, each of said hames being provided at its lower end with an end bar and a cross-bar, substantially as and for the purpose set forth.

7. The combination, with the collar-sections having strap-keepers thereon, and a strap, P, connecting the collar-sections, of the top pad secured to the strap P, and consisting, essentially, of two or more thicknesses of material secured together at each end, as described, the side edges of the material composing the pad being left free or open for the insertion and removal of padding, substantially as set forth.

8. In a horse-collar, the combination, with the collar-sections and hames secured thereto, of the strap connecting the lower ends of the hames, and the metallic loop having flat end bars and a flat intermediate bar and loosely secured on said strap, substantially as set forth.

330,457. **INCUBATOR.** CHARLES RASSINI, Irvington, and ADOLF HEYDEN, Newark, N. J. Filed Apr. 16, 1885. (No model.)



Claim.—1. In an incubator, the combination of a horizontally-reciprocating slide and a stationary frame supported above said slide, provided with transverse slats or bars, between and upon which bars the eggs are received and supported, substantially as described.

2. In an incubator, the combination of the incubator-box provided with air-inlets, an egg-receptacle therein supported upon a perforated reciprocating slide, a boiler or heater, heating-coils in said box above and below said egg-receptacle, connecting-pipes *e'*, damper *j*, and means for automatically opening said damper.

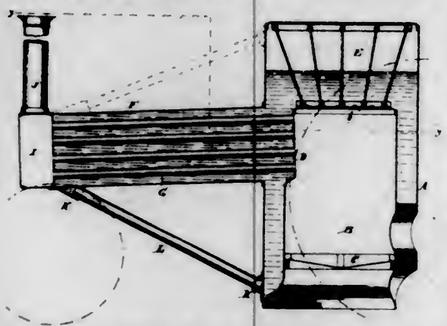
3. In an incubator, the combination, with the incubator-box provided with air-inlet *a* and damper *j*, of the upper and lower heating-

coils, *e f*, connecting-pipes *e'*, and an open water-vessel, *g*, through which the lower coils, *f*, pass, substantially as described.

4. In an incubator, the combination of an incubating-box, egg-receptacles therein supported upon reciprocating perforated slides, an open water-vessel, and heating coils or pipes passing through said vessel, substantially as described.

5. An incubator consisting of an incubating-box provided with air-inlet *a*, and damper *j*, egg-receptacles on said box supported above reciprocating perforated slides, a boiler or heater, upper coils, *e*, lower coils, *f*, connecting-pipes *e'*, and open water-vessels through which the lower coils pass, the parts being combined substantially as described.

330,458. STEAM-BOILER. JOHN H. BELL, Mount Ephraim, N. J. Filed July 14, 1885. (No model.)



Claim.—1. A boiler of the locomotive type having its waist, of comparatively small diameter, located below the water-level, and set at an incline to the main body or fire-box portion, substantially as and for the purpose specified.

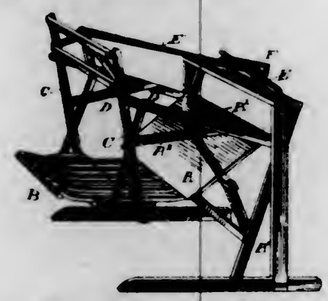
2. A boiler of the locomotive type having its waist, of comparatively small diameter, located below the water-level, and set an incline to the main body or fire-box portion, and having the water-space in the lowermost parts of said waist and fire-box portion connected by a circulating-pipe, substantially as and for the purpose specified.

3. In a boiler, the body-shell A, made cylindrical and set on end, and its fire-box B, in combination with the cylindrical waist F, having tubes G, but located wholly below the water-level in the shell A, substantially as and for the purpose specified.

4. In a boiler, the body-shell A and its fire-box B, having the flattened part D, in combination with the waist F, having tubes G, but located wholly below the water-level in the shell A, substantially as and for the purpose specified.

5. In a boiler, the body-shell A and its fire-box B, in combination with the inclined waist F, having tubes G, but located wholly below the water-level in the shell A, and pipe L, substantially as and for the purpose specified.

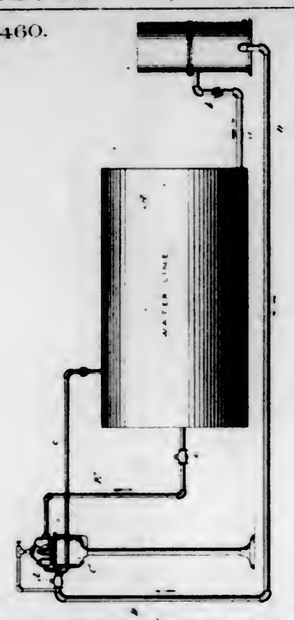
330,459. BUNDLE-CARRIER FOR HARVESTERS. WILLIAM BELTZ, Denver, Dak. Filed Oct. 29, 1884. (No model.)



Claim.—The combination of the supporting-frame, the inclined discharging-platform, the tilting bundle-carrier platform, the swinging and tilting arms, the former projected beyond its pivotal point, a rod connecting said projected end with a lever, a frame having teeth projecting upward from its under bar to lock said lever at either end of its throw, whereby the tilting platform may be held in a position to carry or dump the bundles, substantially as shown and described.

330,460. DEVICE FOR PREVENTING INCRUSTATION. JAMES H. BLEECKER, Albany, N. Y. Filed Sept. 8, 1885. (No model.)

330,460.



Claim.—1. The combination, with a boiler, of a filter connected therewith, and a return-steam trap connected with both the boiler and filter, and adapted to positively force the water in a continuous passage through said boiler and filter, substantially as set forth.

2. The combination, with a boiler, of a filter connected therewith by means of the pipe *a*, and the return-steam trap C, connected with the filter by the pipe D, and with the boiler by means of pipes E *c*, substantially as set forth.

330,461. CAR-STRAP. EDMUND Q. BOWMAN, Philadelphia, Pa. Filed Sept. 9, 1885. (No model.)

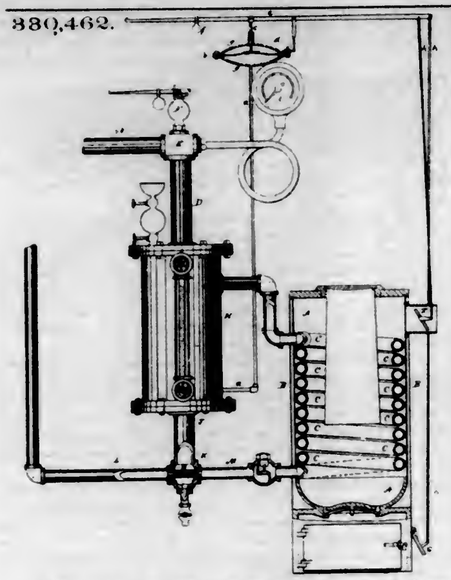


Claim.—The extensible car strap or hold consisting of the combination of the body or part A, the spring, the cord or strap C, and the hold E, all constructed and adapted to operate substantially as and for the purpose set forth.

330,462. HEATING APPARATUS FOR BUILDINGS. STEPHEN BRADLEY, New Haven, Conn. Filed Oct. 22, 1884. (No model.)

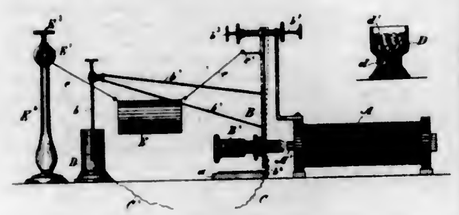
Claim.—1. The perforated pipe O, the pipe-sections L M, connected thereby, and the reservoir H and pipe J, which supply water to said pipe O, in combination with coil C, which connects with section M, heating devices for said coil, a pipe which connects the upper end of said coil to the upper part of said reservoir, and a pipe extending from the upper part of said reservoir to pipe-section L aforesaid, substantially as set forth.

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2. The reservoir H, coil C, a heating device for said coil, the supply-pipe for said coil, and a heating-pipe which extends from the upper end of said reservoir to the said supply-pipe, in combination with a pipe whereby the water passes from said reservoir to said supply-pipe, a check-valve located in said supply-pipe between the coil and the water-supply, and a pipe extending from the upper end of said coil to the upper part of said reservoir, substantially as set forth.

330,463. ELECTRO-MAGNET. HAROLD P. BROWN, Chicago, Ill. Filed Mar. 14, 1885. (No model.)



Claim.—1. The combination, with electro-magnet A and its movable armature-lever B, of a weight suspended from said armature-lever and from another divergent or distant point, substantially as specified.

2. The means of balancing the force of an electro-magnet, consisting of a weighted line connected at one end with the movable armature or core of said magnet, and at its other end to a distant support, so that the movement of the armature or core of the magnet will vary the retractile force of said weighted line, substantially as specified.

3. The combination of electro-magnet A, armature-lever B, suspended weight E, cord *e*, and adjusting-screw E', substantially as specified.

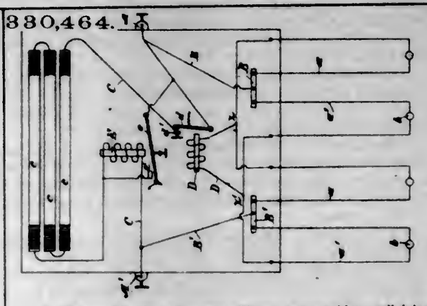
4. The combination of electro-magnet A, armature-lever B, suspended weight E, cord *e*, adjusting-screw E', and set-screw E², substantially as specified.

330,464. INCANDESCENT ELECTRIC LIGHTING. HAROLD P. BROWN, Chicago, Ill. Filed June 5, 1885. (No model.)

Claim.—1. The combination of a main circuit, A, with a lamp-circuit, B, cross-wires *a*, having two or more lamps each thereon in a series, a shunt or resistance circuit, C, having resistance *c* therein, a circuit, D, connecting said wires *a* at points between the lamps thereon, and an electro-magnet, D', in said circuit D, for closing said circuit C in case of the failure of one of the lamps, substantially as specified.

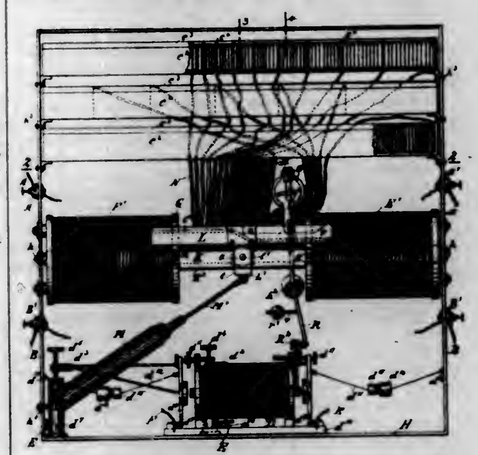
2. The combination of a group of lamps arranged in multiple series, with two or more lamps on each cross conductor or wire, with a shunt or resistance circuit and a relay-circuit extending between said cross-conductors having an electro-magnet therein for closing said shunt or resistance circuit in case of the failure of one of the lamps, substantially as specified.

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3. The combination of a group of lamps arranged in parallel, but with two lamps on each cross-conductor, with a shunt or resistance circuit, a relay-circuit extending between said cross-conductors having therein an electro-magnet for closing said shunt or resistance circuit, a short circuit, and an electro-magnet in said shunt or resistance circuit for closing said short circuit when the amount of current on said shunt reaches a certain limit, substantially as specified.

330,465. SYSTEM OF ELECTRIC LIGHTING. HAROLD P. BROWN, Chicago, Ill. Filed June 8, 1885. (No model.)



Claim.—1. The combination, with a main circuit, of a local or incandescent-lamp circuit having included therein on suitable branch wires a number of incandescent lamps in multiple arc, a shunt around said lamps having therein a variable resistance, a relay, an electro-motive device set in operation by said relay for varying the resistance of said shunt, and a dash-pot for regulating the movement of said electro-motive device, substantially as specified.

2. The combination of a main circuit with a lamp-circuit having included therein a number of incandescent lamps in multiple arc, a variable-resistance shunt around said lamps, a double solenoid having a sliding core for varying the resistance of said shunt, a dash-pot for regulating the movement of said core, and a relay to control the circuit through one or the other coil of said solenoid, as may be required, substantially as specified.

3. The combination, with a group or number of incandescent lamps in multiple arc, of a shunt around such group of lamps, a variable resistance in said shunt, a series of movable contact-pieces connected with different parts of said resistance, a mercury-contact, and an electro-motive device for moving said contact-pieces in and out of the mercury to vary said resistance, substantially as specified.

4. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a mercury-contact, a series of movable contacts leading to different parts of said variable resistance, and a slide having a cam or groove for moving said movable contacts in and out of the mercury, substantially as specified.

5. The combination of a variable-resistance shunt around a group of incandescent lamps with a mercury-contact, a series of movable contact-pieces, a slide having a cam or groove, and an electro-motive device for operating said slide, substantially as specified.

6. The combination of a variable-resistance shunt around a group of incandescent lamps with a mercury-contact, a number of movable

contact-pieces, a slide having a cam or groove, and a double solenoid having a movable core connected to said slide for operating the same, substantially as specified.

7. The combination of a variable-resistance shunt around a group of incandescent lamps with a mercury-contact, a number of movable contact-pieces, a slide having a cam or groove, a double solenoid having a movable core, and a dash-pot, substantially as specified.

8. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a mercury-contact and a series of movable contact-pieces, N, consisting of wires lying in the same plane, each provided with a projecting knee or fold, *n*, and a depending end, *n'*, substantially as specified.

9. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a mercury-contact, a number of movable contact-pieces, N, a slide, L, having a groove or cam, l^3, a double solenoid having a sliding core, G', a dash-pot, and a friction-wheel, and a track therefor, substantially as specified.

10. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a mercury-contact vessel, K, provided with flanges or tracks k^2, a number of movable contact-pieces, N, slide L, having groove l^3, double solenoid G, having sliding core G', arm L', connecting said core and slide, friction-wheel l^2, and dash-pot M, substantially as specified.

11. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a fixed contact, a series of movable contact-pieces leading to different parts of said resistance, a double solenoid having a movable core, and a slide having a cam or groove, substantially as specified.

12. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a double solenoid having a movable core, a dash-pot, a slide having a cam or groove, and a number of movable contact-pieces operated thereby, substantially as specified.

13. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a movable core of a solenoid, a grooved slide or cam, and a number of movable contact-pieces operated thereby, substantially as specified.

14. The combination of a variable-resistance shunt around a group of incandescent lamps with a number of movable contact-pieces, N, and a grooved slide, L, substantially as specified.

15. The combination, with a group of incandescent lamps in multiple arc, of a shunt around such group, having included therein a variable resistance, consisting of a carbon pile with metallic plates inserted at intervals, said plates being connected with a series of contact-pieces, substantially as described.

16. The combination, with a group of incandescent lamps in multiple arc, of a shunt around such group, having included therein a series of carbon plates or blocks, *c'*, and a series of contact-pieces connected with said series of carbon blocks at different points, substantially as described.

17. The combination, with a group of incandescent lamps in multiple arc, of a shunt around such group, having included therein a series of carbon plates or blocks, *c'*, and a series of contact-pieces, as N, connected with said series of blocks at different points, the blocks in the first part of said series being of larger area than those in the latter part thereof, substantially as specified.

18. The combination, with a group of incandescent lamps in multiple arc, of a shunt around such group having a variable resistance included therein, a number of movable contact-pieces connected with different parts of said resistance, a mercury-contact, a slide having a groove or cam, a double solenoid having a movable core for operating said slide, a relay having two movable armatures, two contact-pieces operated thereby, and two mercury-contacts, substantially as specified

19. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a solenoid and mechanism operated thereby for varying said resistance, and a relay having two movable switch-levers and mercury-contacts, substantially as specified

20. The combination, with a variable-resistance shunt around a group of incandescent lamps in multiple arc, of a double solenoid and mechanism operated thereby for varying said resistance, and a relay having two movable switch or armature levers and weighted lines for retracting said levers, substantially as specified.

21. The combination, with a variable-resistance shunt around a group of incandescent lamps in multiple arc, of a double solenoid and mechanism operated thereby for varying the resistance of said shunt, and a relay having two armature-levers and carrying contact-points, weighted lines for retracting said levers, and two mercury-contacts, substantially as specified.

22. The combination, with a main circuit, of a local or lamp circuit having a number of incandescent lamps therein in multiple arc, a variable-resistance shunt around said lamps, a double solenoid, the coils of which are normally short-circuited for varying the resistance of said shunt, a relay to open and close the short circuits around the coils of said solenoid, a short circuit for cutting out both the lamps and the shunt-resistance, and means for closing said short circuit in case the current through the lamps and the relay increases a certain prescribed extent above its normal amount—as, for example, the extent due to the extinction of two or three lamps—without corresponding change being made in the resistance of the shunt, substantially as specified.

23. The electric lighting system consisting in a main circuit, as A, a lamp-circuit, as B, incandescent lamps in multiple arc, as *b'*, a shunt-circuit, as C, a variable resistance therein, as *c*, an electro-motive device for varying the resistance of said shunt, a relay to set said electro-motive device in operation, a short circuit, as P', and means for closing the same in case said resistance-varying device fails to act, substantially as specified.

24. The electric lighting system consisting in a main circuit, as A, a lamp-circuit, as B, incandescent lamps, as *b'*, in multiple arc, a shunt, as C, having included therein a variable resistance, as *c*, a double solenoid, as E' F', short circuits, as E F, around the coils of said solenoid, a relay, as D, having a coil, as D', included in a branch, as *b*, and having a second coil, as D^2, included in a short circuit, as P', and an electro-magnet, as O, for holding said short circuit P' open, substantially as specified.

25. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a series of contact-pieces, N, leading to different parts of said resistance, a contact-piece, P, for opening and closing a short circuit, as P', and a slide, L, having a cam or groove, l^3, for operating said contact-pieces N, and also a cam, as *p*, for operating said contact-piece P, said cam *p* being so located or arranged in relation to said cam l^3 that the short circuit P' will not be opened until the resistance of the shunt is reduced to its minimum, substantially as specified.

26. The combination, with a variable-resistance shunt around a group of incandescent lamps, of an electro-motive device for varying the resistance of said shunt, a short circuit, P', and an electro-magnet for closing said short circuit in case said resistance-varying device fails to act, substantially as specified.

27. The combination, with a variable-resistance shunt around a group of incandescent lamps, of an electro-motive device for varying the resistance of said shunt, a short circuit, as P', and an electro-maguet to close said short circuit in case the resistance-varying mechanism fails to act, and to keep the same closed until the resistance of the shunt is reduced to its minimum.

28. The combination, with a variable-resistance shunt around a group of incandescent lamps, of an electro-motive device for varying the resistance of said shunt, a short circuit, as P', an electro-magnet, D, for closing the same, having a coil, D', in circuit with the lamps, and a second coil, D^2, included in said short circuit P', substantially as specified.

29. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a mercury-contact, a number of movable contact-pieces, N, a movable contact-piece, P, and a slide, L, provided with cams l^3 and *p*, substantially as specified.

30. The combination of a mercury-contact with movable contact-pieces N, movable contact-piece P, and an electro-magnet, as O, to hold said contact P out of the mercury, substantially as specified.

31. The combination of movable contact-piece P with electro-magnet O, having armature-lever o, provided with catch or shoulder o', electro-magnet D, and lever R, to release said contact-piece P, substantially as specified.

32. The combination, with a double solenoid, of a relay-magnet, short circuits around the two coils of said solenoid, the movable core of said solenoid, and a dash-pot, substantially as specified.

33. The combination, with a variable resistance, a series of contact-pieces leading to different parts of said resistance, a double solenoid having a movable core, a relay-magnet, short circuits around the two coils of said solenoid, a dash-pot, and mechanism for operating said contact-pieces, substantially as specified.

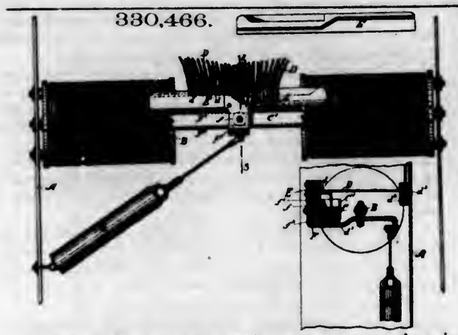
34. The combination, with an electro-magnet, of its movable armature, and a weighted line for retracting the same, said weight consisting of two extensible parts, whereby the same may be adjusted.

35. The combination, with a group of incandescent lamps in multiple arc, of a shunt around such group, having included therein a variable resistance having a greater number of parts or divisions than there are lamps in the group, substantially as specified

36. The combination, with a group of incandescent lamps in multiple arc, of a variable-resistance shunt around said group, an electro-motive device for varying the resistance of said shunt, and a short circuit, as P', in which said electro-motive device is included, for causing said electro-motive device to go through its work or motion and reduce the resistance of said shunt to its minimum when the current is first turned on and before it reaches the lamps, and means for opening said short circuit after the resistance of said shunt-circuit is thus reduced to its minimum, so that in case the resistance-changing mechanism should not happen to be in working order no injury can result to the lamps, substantially as specified.

330,466. DEVICE FOR MAKING AND BREAKING ELECTRIC CIRCUITS. HAROLD P. BROWN, Chicago, Ill. Filed Aug. 7, 1885. (No model.)

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Claim.—1. The combination, with a mercury-contact, of a series of movable contact-pieces and a slide or cam, substantially as specified.

2. The combination, with a mercury-contact, of a series of spring contact-pieces, each provided with a projection, as *d*, and a depending end, as *d'*, and a grooved slide or cam, substantially as specified.

3. The combination, with a mercury-contact, of a number of movable contact-pieces consisting of spring-wires lying in the same plane and a slide having a cam or groove the median point or line of which is in the plane of said wires, so that the friction of said wires against the walls of said groove will remain approximately the same whatever the position of said slide, substantially as specified.

4. The combination of a mercury-contact with a number of movable contact-pieces, a slide having a groove or cam, a double solenoid having a sliding core, a dash-pot, and a friction-wheel and a track therefor, substantially as specified.

5. The combination of a mercury-contact vessel provided with flanges or tracks with a number of movable contact-pieces, a slide having a groove, double solenoid having sliding core, arm connecting said core and slide, friction-wheel, and dash-pot, subst antially as specified.

6. The combination of a double solenoid having a movable core, a dash-pot, a slide having a cam or groove, and a number of movable contact-pieces operated thereby, substantially as specified.

7. The combination, with the movable core of a solenoid, of a grooved slide or cam and a number of movable contact-pieces operated thereby, substantially as specified.

8. The combination, with a number of movable contact-pieces, of a grooved slide, substantially as specified.

9. The combination, with a slide having a cam or groove, of contact-pieces having knees or folds and depending ends, substantially as specified.

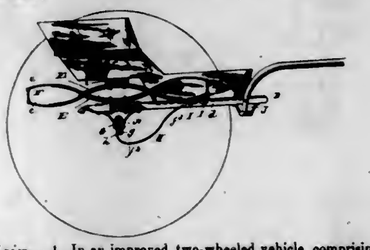
330,467. CULTIVATOR. PETER C. BROWN and THOMAS P. BRAGG, Ennis, Tex. Filed Aug. 19, 1885. (No model.)



Claim.—1. The combination, with the bent axle and the wheels mounted thereon, of the loosely-connected hounds, the strap at the forward ends of the same, the tongue passing through said strap and pivoted to the axle, and the spring-bolt and lever, whereby the parts of the cultivator may be elevated or lowered, substantially as and for the purposes specified.

2. The combination, with the bent axle and the wheels upon which it is mounted, of the pivoted hounds, the strap and locking devices, the tongue pivoted to the bent axle, and the adjustable seat secured to the tongue, whereby the parts may be adjusted to enable the driver or plowman to operate the cultivator, substantially as and for the purposes specified.

330,468. TWO-WHEELED VEHICLE. LEVI S. CLARK, Doylestown, Ohio, assignor to himself, ORRIN G. FRANKS, and GEORGE T. BAUGHMAN, all of same place, and JOHN H. WARREN, Lodi, Ohio. Filed Sept. 11, 1884. (No model.)



Claim.—1. In an improved two-wheeled vehicle comprising the axle and body mounted upon the springs, the herein-described improved reach-plate having the pivotal connection with the under side of the axle, and curved upwardly and forwardly directly from its pivot to its straight front end portion, and secured to the body at its foremost end, substantially as and for the purpose set forth.

2. As an improvement in two-wheeled vehicles, the combination of the axle having clips secured near its ends, the body, and the springs supporting the same, and the curved spring-plates jointed at their rear end to the clips and curved forwardly, the front end of these reach-plates being secured to the under side of the body, substantially as set forth.

3. The combination of the axle having the clips secured near its ends, and provided with the extensions at the under side of the axle, the body, the two-part semi-elliptical springs supporting the body, and having their sections respectively secured to the side bars and to the body, and connected at their ends by pivoted links, and the curved spring-reach plates having their rear ends pivoted between the extensions of the clips and secured at their front ends to the under side of the body, substantially as and for the purpose set forth.

330,469. OVERSEAMING-MACHINE. CHARLES H. CRAWFORD, New York, N. Y. Filed Nov. 14, 1884. (No model.)

Brief.—The machine forms a series of chain-stitches laid more or less closely over the edge of the fabric in proportion to the extent of the feed. An oscillating double-pointed loop-catcher is provided to operate in connection with a reciprocating and vibrating eye-pointed needle and two stationary loop-holders. Devices are provided for automatically increasing or decreasing the rate of feed as required for the different parts of a button-hole.

Claim.—1. The combination, in an overseaming sewing-machine, of a reciprocating needle, two stationary loop-holders, and a curved loop-catcher having two horns and two shoulders, and means for imparting a reciprocating rotary motion to the same in unison with the reciprocations of the needle to cause the horns to successively carry the loops from the needle to the holders, substantially as set forth.

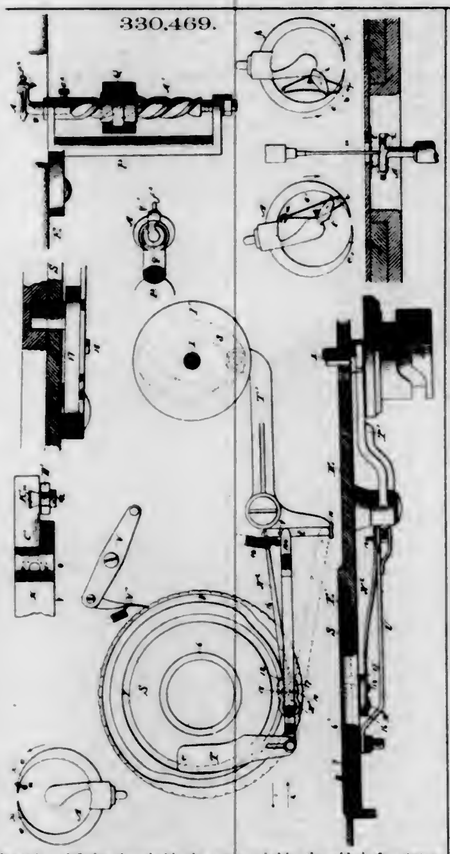
2. The combination of the reciprocating shaft carrying a double-pointed loop-catcher provided with a shoulder near each point, as described, an eye-pointed needle, a plate having two fixed loop-holders, mechanism for reciprocating the needle vertically and horizontally, and mechanism for imparting a rotary reciprocating motion to the loop-catcher, substantially as set forth.

3. The combination of the vertically and horizontally reciprocating needle having an eye in its point, the shaft carrying a loop-catcher, having two fixed horns and two shoulders, mechanism for imparting a reciprocating rotary motion to the loop-catcher, and two stationary loop-holders, all arranged to operate substantially as set forth.

4. The combination of the eye-pointed needle and means for reciprocating the same horizontally and vertically, and double horned and shouldered loop-catcher, and a vertical shaft supporting the said loop-catcher, and two fixed loop-holders, and means for reciprocating the said shaft, substantially as described.

5. The combination, with the supporting-shaft A', of a laterally-extended arm, and a loop-catcher consisting of a curved bar extending

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through and fitting detachably the arm carried by the said shaft, substantially as set forth.

6. The combination, with the shaft A', carrying a lateral arm, of the curved loop-catching bar fitting a recess in the said arm, and a set-screw, f^3, substantially as set forth.

7. The combination, with the recessed shaft A' and set-screw e^3, of a rod, q, having a lateral arm, and a loop-catcher consisting of a curved bar extending through said arm, substantially as set forth.

8. The combination of the shaft A', provided with a socket and set-screw, e^3, the rod q, fitting said socket and provided with an arm, q', having a transverse opening, and set-screw f^3, and a curved loop-catcher bar adapted to said opening, substantially as described.

9. The combination, in an overseaming sewing-machine, of a curved loop-catcher having two horns and two shoulders and carried by and vertically adjustable in respect to a shaft, A', and two loop-holders, i i', substantially as set forth.

10. The combination, with the block G, bar K, lever D', and slide C, of a cam-disk, B', upon the driving-shaft I, provided with a cam-groove receiving a stud upon the slide, substantially as set forth.

11. The combination, with the block G, carrying the needle-bar, bar K, driving-shaft I, cam-disk B', and lever D', of a slide, C, having a slot through which the driving-shaft passes connected to the lever D' and provided with a stud adapted to a groove in the cam-disk, substantially as described.

12. The combination, with the bar K, block G, needle bar and lever D', and operating-cam, of a stud, m, adapted to the forked end of the lever and secured to a slide connected adjustably to the bar K, substantially as set forth.

13. The combination, with the block G, needle-bar, and bar K, having a dovetailed recess, of a slide adapted to said recess, and a screw-stud, m, extending through said slide, substantially as and for the purpose set forth.

14. The combination, with the disk S, constructed to carry the clamp of an overseaming-machine, and provided with an annular groove, 7, of a feed-lever, T, provided with a rib fitted to said groove and constituting the fulcrum of the lever, and reciprocating rod U, connected to the end of the lever, substantially as described.

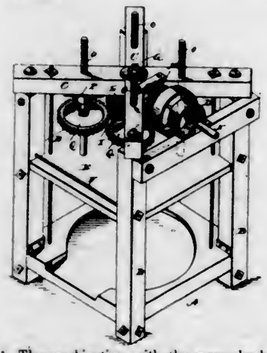
15. The combination of the grooved disk S, feed-lever T, crank-lever T', and rod U, connected to the lever T, sliding at the opposite end upon the bearing of the lever T', substantially as described.

16. The combination of the disk S, having grooves 7 and 8, feed-lever T, crank-lever T', rod U, connected at one end to the lever T, and adjustable at the other on the lever T', and lever N^2, adapted to bear upon the rod U, and provided with a stud adapted to the groove 8 of the disk, substantially as set forth.

17. The combination, with the disk S, feed-lever T, crank-lever T', and rod U, of a lever, N^2, consisting of two parts adjustably connected, one of said parts carrying a stud adapted to a groove, 8, in the disk S, substantially as set forth.

18. The combination, with the loop-catcher, screw shaft and nut, operating-lever Q', and crank-lever T', connected to the feed devices, of a cam-cylinder, I', having a cam-groove, 3, at the periphery, and a cam-groove, s, at the top, substantially as set forth.

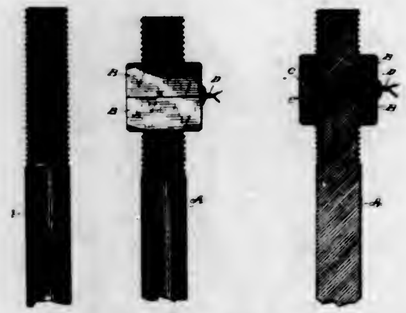
330,470. CIDER-PRESS. PARKER R. CROSS, Lowell, Ind. Filed Sept. 17, 1885. (No model.)



Claim.—1. The combination, with the gear-wheels secured upon the upright screw-threaded shafts of a press, of a movable pinion sliding upon the driving-shaft, said pinion being provided with flanges extending over the interdental spaces, substantially as and for the purpose set forth.

2. The combination, with the gear-wheels secured upon the upright shafts of a press, of a pinion sliding upon the driving-shaft, said pinion being provided with flanges extending over the interdental spaces, except two, substantially as and for the purpose set forth.

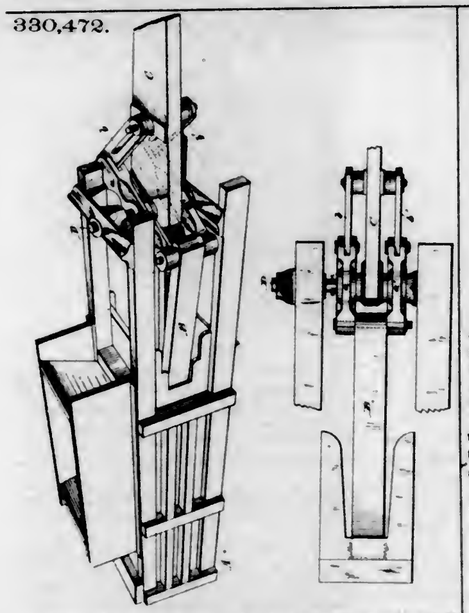
330,471. NUT-LOCK. GEORGE W. DESMOND, Venice, N. Y. Filed July 18, 1885. (No model.)



Claim.—The combination, with the bolt A, having a right and left screw-thread cut on its outer end, of two nuts, the one provided with a right and the other with a left hand screw-thread, to correspond with the threaded end of the bolt, each nut having an opening or passage-way extending from its side and curving inwardly and outwardly through the body of the nut and terminating at its face, the opening in each nut coinciding to form one continuous curved passage-way when the nuts are screwed home, and a wire inserted through said passage, and having its ends twisted together, substantially as and for the purposes set forth.

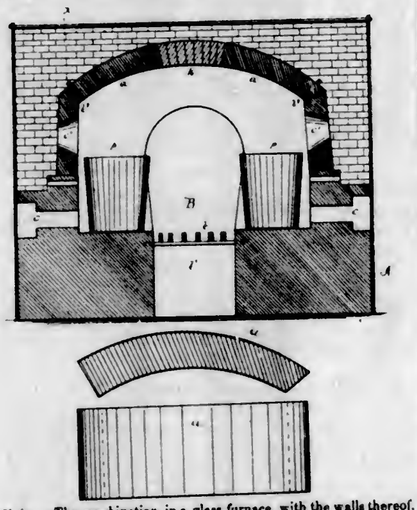
330,472. POWER HAY-PRESS. ARTHUR B. FARQUHAR, York, Pa. Filed Oct. 5, 1885. (No model.)

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Claim.—The combination, with the plunger-rod, the lever and shaft or axle on which it is hung, of the two arms hung on the same axis or shaft with the lever, and embracing the latter between them, connected on the one hand to the plunger-rod and on the other hand to the opposite sides or faces of the lever, as and for the purposes hereinbefore set forth.

330,473. GLASS-FURNACE STONE. HENRY FELKER, Verona, assignor to Munroe & Co., Dunbarton, N. Y. Filed July 8, 1885. (No model.)

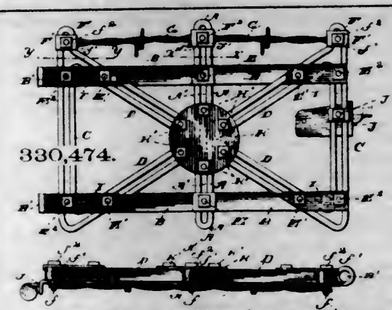


Claim.—The combination, in a glass-furnace, with the walls thereof, of an arch constructed of stones, which spans the glass-pots, substantially as described, for the purposes stated.

330,474. GATE. EMIL FISCHER, Calliope, Iowa. Filed Dec. 20, 1884. (No model.)

Claim.—1. In a metallic gate, the combination of the center post, the strut-braces centering against the center post between the ends of the latter, and provided with openings fitted to receive bolts, the securing-plates placed one on each side of the center post, and fastening-bolts passed through the securing-plates and the openings in the strut-braces, substantially as set forth.

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2. A metallic gate comprising end posts, cross-bars, a center post slotted longitudinally, strut-braces slotted longitudinally and centering against the center post, the securing-plates placed one on each side of the juncture of the center post and strut-braces, and bolts fastening said securing-plates to the brace and center post and the braces to the cross-bars, substantially as set forth.

3. The combination, with the triangular side frames bent to form the end posts and strut-braces, and the cross-bars B, of the bolts E' E^2, the central securing-plates, H, and the clamping-plates I, all arranged and operating substantially as and for the purposes specified.

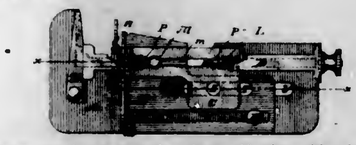
330,475. PLOW. ASA M. FITCH, Seymour, Ind. Filed Sept. 12, 1885. (No model.)



Claim.—In a plow, the combination of the beam, the frame-pieces pivoted to the sides of the latter by their upwardly-extending rear ends, and having upwardly-extending transversely-perforated front ends, whereby they are adjustably connected with the said beam by a transverse pin or bolt, a pair of yokes pivoted between the said frame-pieces and having wheels or rollers journaled between their ends, and a sleeve mounted upon the pivoting-bolt of the said yokes, substantially as and for the purpose herein set forth.

330,476. TUCK-MARKER. JULIUS C. GOODWIN, Philadelphia, Pa. Filed Sept. 12, 1884. (Model.)

Brief.—The bearings for the shaft at each end of the spring are secured to the plate that may be adjusted lengthwise of the base-plate. The operation of the lever actuated by the needle-bar is to rock the upper frame or yoke, that carries the notched part that co-operates with the projection on the base-plate to crease the material. The cloth-gage may be adjusted as desired.



Claim.—1. In a tuck-marker, the combination, with a bed-plate having a creasing projection and a fixed end support, of a rocking shaft mounted in said support and provided with a creasing-arm, an adjustable bearing or frame adapted to slide upon the bed-plate and to support the outer end of the shaft, and a lever connected to the creasing-arm shaft and extending into the path of the actuating mechanism, substantially as set forth.

2. In a tuck-marker, the combination, with a bed-plate having a creasing projection and a fixed end support, of a shaft mounted in said support and provided with a creasing-arm at its outer or free end, an adjustable gage, an adjustable bearing adapted to slide upon said gage and to support the outer end of the shaft, and a lever for engaging the needle-bar mounted within the adjustable bearing and connected to the creasing-arm shaft, substantially as described.

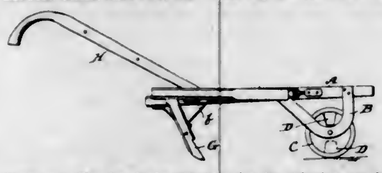
3. In a tuck-marker, the combination, with a bed-plate having a creasing projection and a fixed end support, of a shaft and rock-arm mounted in said support provided at their opposite extremity with a

creasing-arm, an adjustable gage mounted upon the bed-plate, an adjustable bearing or frame sliding upon said gage and provided with standards at each end for supporting the creaser-arm shaft, and a lever extending into the path of the needle-bar and mounted upon said shaft between said standards and engaging the rock-arm and provided with a spring whereby the rock-arm and creaser are retracted after each downward movement, substantially as described.

4. The combination of the shaft P, the rocking frame D, the spring L, the operating-lever H, with its notch N, carrying the rocking frame D, with the creaser-arm E, having the notch J, the base-plate A, provided with projection K, and the sliding frame C, substantially as shown and described.

5. The combination of the base-plate A, the gage B, the frame C, the studs F and M, the shaft P, the rocking frame D, the spring L, the operating-lever H, the creaser-arm E, formed with the notch J, and the projection K on the base-plate A, constructed and combined substantially as described, for the purposes specified.

330,477. COTTON-CHOPPER. John I. Greer, Wiley M. Harper and John Greer, Headsville, Tex. Filed May 13, 1885. (No model.)

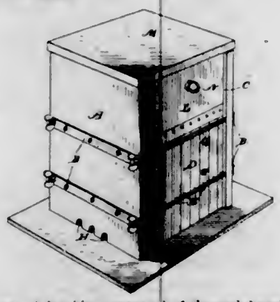


Claim.—1. The herein-described device for thinning out drills of cotton, consisting of a roller-disk having a series of openings extending across its periphery, and provided with cutting-rims on either side of the openings, having their cutting-edge flush with the periphery of the roller-disk, and removable plugs for said openings, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

2. In a cotton thinner and cultivator, a crushing-roller having openings in its periphery, in combination with a pair of cultivator-beams adapted to be laterally adjusted to regulate their sweep, torsionally adjusted to give the proper inclination to the cultivator-shovels, substantially as described.

3. The herein shown and described cotton thinner and cultivator, consisting of a single beam, a crushing-roller having openings in its periphery, with cutters on either side of said openings supported in brackets attached to said beam, a pair of beams hinged to the main beam and provided with cultivator-standards, braces to adjust the sweep of the cultivator-beams, and a second pair of braces connected with the cultivator-standards to adjust their inclination, the parts being combined, arranged, and operating substantially as shown and described.

330,478. BEE-HIVE. William P. Hamlin, Rogers, Ark. Filed July 15, 1885. (No model.)

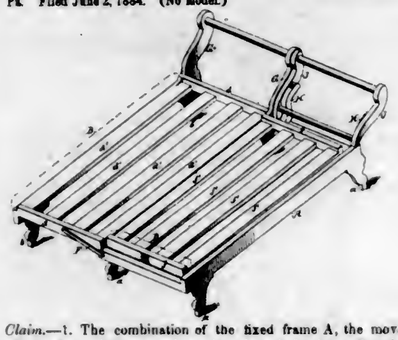


Claim.—1. A bee-hive composed of the end boards, A, having flanges C, the frames D, forming the brood-chamber and clamped between the end boards, the frames K above frames D and forming the surplus-honey chamber, slides L between the ends of the frames K and the flanges C, and the cap or cover, the parts being combined substantially as described.

2. The combination, in a bee-hive, of the frames D, having the keepers E on their outer sides, the end boards, A, and the screw-rods passed through the end boards, and the keepers for clamping the frames and end boards together, substantially as described.

3. The combination, in a bee-hive, of the end boards, the frames D, clamped between them to form the brood-chamber, the frames K above the brood-chamber and communicating therewith, to form the surplus-honey chamber, and the slides L between the end boards on the ends of the surplus-honey chamber, to permit access to the latter, substantially as described.

330,479. FOLDING COUCH-BED. Robert E. Hammer, Philadelphia, Pa. Filed June 2, 1884. (No model.)



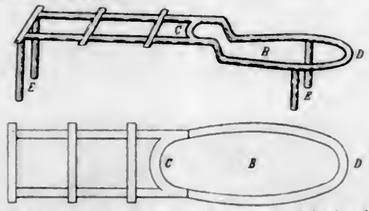
Claim.—1. The combination of the fixed frame A, the movable frame B, the frame D, connected to the edge of the frame B, and the link *m*, carrying said frame D and hung to the frame A, as set forth.

2. The combination of the fixed frame A, the movable frame B, links F, whereby said frame is hung to the frame A, and the frame D, centrally pivoted to the frame A, and connected to the edge of the frame B, as set forth.

3. The combination of the frames A and D with the pivotal connection, comprising the slotted plate *g*, pin *i*, and connecting-link *m*, as set forth.

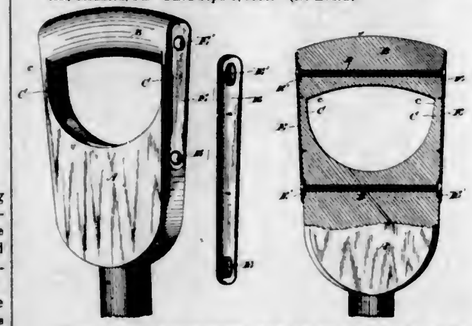
4. The combination of the fixed frame A, having at its end projections H, the movable frame B, having at the end a projecting head-frame, G, and the head-frame J, hung to the projections H, whereby it can be folded beneath the head-frame G when the frame B is moved over the frame A, or can be turned up so as to form an extension of said frame G when the frame B is drawn out, as set forth.

330,480. BOOT-JACK. Elijah Harris, Princeton, Ill. Filed June 1, 1885. (No model.)



Claim.—A boot-jack constructed as represented, having the hole B to pass the foot or boot through, provided with the rear elevated portion, C, to come up on the counter of the boot, and the front part, D, to hold the toe of the boot while the foot is drawn out, all substantially as described.

330,481. HANDLE FOR SHOVELS AND SPADES. Adolph T. Heiser, Scranton, Pa. Filed Sept. 3, 1885. (No model.)

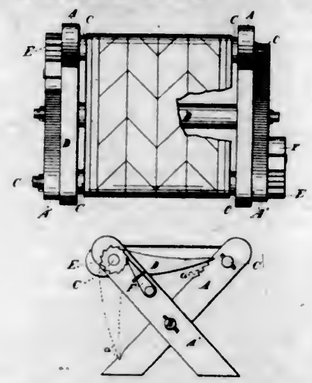


Claim.—1. The combination, with the wooden D-handle, of the two independent metal plates, one secured on each side of the same, substantially as described.

2. The herein-described strengthening-plate for wooden D-handles, having the perforations and the spurs or projections, substantially as described.

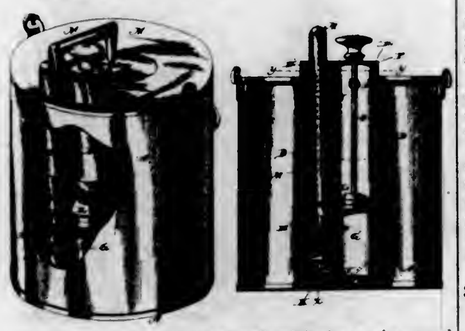
3. The combination, with the wooden D-handle, of the plates E, having the perforations and the rods D D, as set forth.

330,482. QUILTING-FRAME. Jacob H. Helms, Monroe, assignor of one-half to J. S. Grier, Matthews, and Joseph Stearnes, Adams' Mills, N. C. Filed Aug. 6, 1884. (No model.)



Claim.—The herein shown and described combined quilting frame and stand, consisting of legs A A', pivoted on the ends of rod B, rollers C, journaled in their upper ends, ratchets E, secured to the outer ends of the journals and serving as a keeper for the legs, and pawls F, pivoted to the outer face of the legs and engaging said ratchets, in combination with lever-pawls D, pivotally mounted on the journals of the rollers C, on the inner side of the outermost legs, A', to engage notches *a a'*, cut in the body of the legs A, substantially as and for the purposes described.

330,483. OIL TANK OR CAN. William Heston, Mount Union, Ohio. Filed July 29, 1885. (No model.)



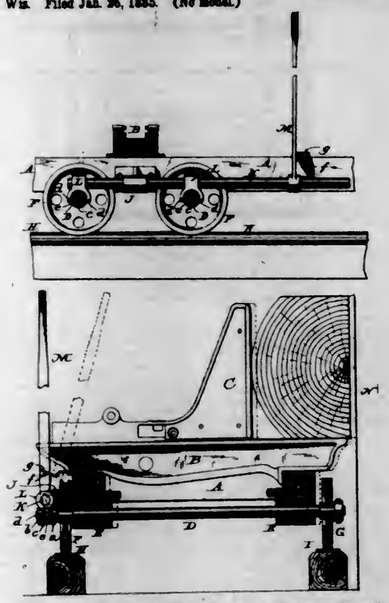
Claim.—1. The combination of an oil-tank having a casing secured in its top, formed substantially in the shape of two contiguous cylinders projecting slightly above the top of the tank, with a pumping and a delivery cylinder secured lengthwise together and fitting in the casing, as and for the purpose shown and set forth.

2. The combination of an oil-tank having a casing secured in its top, formed substantially in the shape of two contiguous cylinders projecting slightly above the top of the tank, a pumping and a delivery cylinder secured together lengthwise and fitting in the casing, and a cap fitting over the upwardly-projecting end of the casing, as and for the purpose shown and set forth.

3. In an oil-tank, the combination of a casing secured in the top of the tank, formed substantially in the shape of two contiguous cylinders, and having two perforations immediately below the top, with a pumping-cylinder and a delivery-cylinder secured together lengthwise, and having perforations registering with the perforations in the casing, as and for the purpose shown and set forth.

4. In an oil-tank, the combination of a casing secured in the top of the tank, having its upper end projecting slightly above the said top, formed substantially in the shape of two contiguous cylinders, and having two perforations immediately below the top of the tank, a pumping-cylinder having an upwardly-opening valve in its lower end and a perforation at its upper end registering with the perforation in the casing, and provided with a piston, a delivery-cylinder having a perforation registering with the other perforation in the casing, secured lengthwise to the pumping-cylinder, and having a valve opening from the pumping-cylinder into it, a delivery-tube sliding within the delivery-cylinder, and having a packing at its lower end, and a cap fitting over the upper end of the casing, as and for the purpose shown and set forth.

330,484. SAW-MILL CARRIAGE. George M. Hinkley, Milwaukee, Wis. Filed Jan. 26, 1885. (No model.)

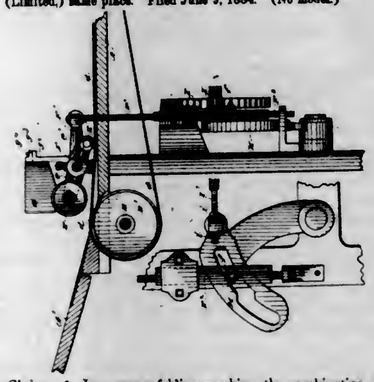


Claim.—1. In combination with axles D, boxes E, and wheels F G, said boxes being secured to the frame and mounted upon the axles, brackets J, secured to said frame, shaft K, provided with forked arm L, fulcrumed in a block secured to axle D, and lever M, secured to the shaft, substantially as shown and described.

2. In combination with a saw-mill carriage and a guiding-track therefor, a collar secured to an axle of the carriage, and a lever journaled on the log frame of the carriage and fulcrumed in the collar, substantially as set forth, whereby it is adapted to shift the carriage upon the axles.

3. In combination with frame A and boxes E, secured to the frame, axles D, wheels F G, adapted to run on tracks H I, collars *a b*, rigidly secured upon the axle, collar *c*, loosely mounted between said collars *a b*, bracket J, secured to the frame A, shaft K, journaled in the bracket and provided with clutch-arms L and hand-lever M, the arms L, engaging with the collar c, stud *f* upon the lever, and spring *g* upon the carriage, all arranged and operating as set forth.

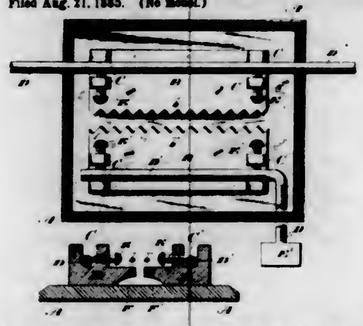
330,485. PAPER-FOLDING MACHINE. Charles F. Hirt and Jacob L. Hirt, Erie, Pa., assignors to the Brown Folding Machine Company, (Limited,) same place. Filed June 9, 1884. (No model.)



Claim.—1. In a paper-folding machine, the combination, with the feed-rollers and feeding-tapes, of a rock-shaft having thereon two sets of drop-rollers, arranged as described, to be brought into action alternately on the same sheet as the rock-shaft is tilted.

2. In a paper-folding machine, the combination, substantially as shown, of the following elements: the feed-rollers and tapes D' *d*, the rock-shaft F, the arms *e e'* on the same shaft and carrying the rollers E E', the arm F', connecting-rod F², and cam H.

330,486. LIGHTNING-ARRESTER. ARTHUR J. HOLT, Cleveland, Ohio. Filed Aug. 21, 1885. (No model.)



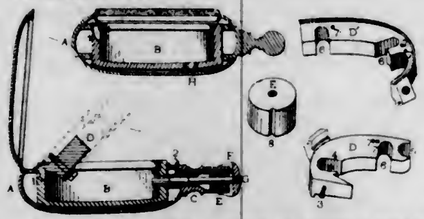
Claim —1. The combination, with a conducting-plate provided with means for electrically connecting it with a continuous line-wire, of a conducting-plate constructed to be electrically connected with the ground, the adjacent edges of said plates being located in such proximity to each other that an abnormal charge of electricity on the line-wire will effect a discharge to the ground-plate, substantially as set forth.

2. In a lightning-arrester, the combination, with an insulating base or support, of a conducting-plate adapted to be secured to the base or support and provided with one or more two-branch lugs and means for clamping the line-wire thereto without cutting it, and a second conducting-plate located a short space away from the first-named plate and electrically connected with the ground, substantially as set forth.

3. In a lightning-arrester, the combination, with an insulating base or support, of a line-wire plate and a ground-plate adapted to be secured to the base or support at a short distance apart, the adjacent edges of the two plates being serrated, and the portions of the plates beneath the serrated edges being cut away, substantially as set forth.

4. In a lightning-arrester, the combination, with an insulating base or support and a conducting-plate adapted to be secured to the base or support and provided with bifurcated lugs and clamp-screws for connecting the arrester electrically with the line-wire, of a second conducting-plate adapted to be secured to the base or support with its edge near the edge of the first-named plate, and provided with one or more bifurcated lugs and clamp-screws for connecting the ground-wire electrically therewith, substantially as set forth.

330,487. WATCH-CASE. BENJ. F. HOPE, Sag Harbor, N. Y. Filed Oct. 7, 1884. (No model.)



Claim.—1. In a watch-case, a separate and detachable hinge pivoted to the inside rim of the movement box or case and fitting detachably and interchangeably between the plates of the movement and fastened there, all substantially as herein shown and described.

2. In a watch-case, the combination of a case-center, a locking-spring for securing the lid, a hollow stem, a winding-key, a cap for the stem, and an auxiliary pin having its inner end controlling the lid-locking spring and passing entirely through the pendant, so as to be operated on directly by the stem-cap, substantially as described.

3. The combination of a watch-case, a cup-shaped box open upon one side for the reception of the movement secured therein, a hinge or joint formed in said box, a watch-movement, and a hinge detachably and interchangeably fastened between the parts thereof and securing the movement to the hinge or pivot on the box, substantially as described.

4. In a watch-case, the combination of a chambered or hollow stem, a key passing therethrough, an auxiliary pin for operation upon the locking-spring, and a rubber disk or washer secured in the outer hollow of the stem, provided with a central aperture for the passage of the key and a recess on its periphery for the passage of the auxiliary pin, substantially as described.

330,488. SUSPENDER-END ATTACHMENT. HOY HOWARD, Mansfield, Ohio. Filed July 29, 1885. (No model.)

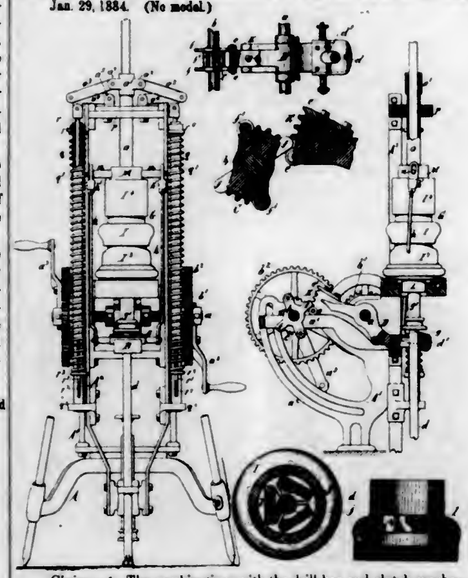


330,488.

Claim.—1. As an improved article of manufacture, a suspender-end attachment, substantially as described, formed from sheet metal, and provided with a round shank, with or without a head integrally connected at its upper end to the plate from which it is formed, and open at the lower side, as set forth.

2. The combination, with a suspender attachment, substantially as described, provided with a stud, *a*, formed out of sheet metal, with or without a head, and integrally connected at its upper side with the plate from which it is formed, and open at its lower side, of a ring, C, having a loop and neck, and a spring, S, having its upper end firmly fixed to said attachment, and its lower end loosely bearing on the stud to prevent wearing of the garment, as set forth.

330,489. ROCK-DRILL. SYLVANUS HUSSEY, Silver Creek, N. Y. Filed Jan. 29, 1884. (No model.)



Claim.—1. The combination, with the drill-bar and clutch mechanism, of the lifting-lever D, having a gear-segment, E, provided with starting-rollers *e*, and an actuating gear-segment, C, having starting-arms *f*, substantially as set forth.

2. The combination, with the drill-bar and clutch mechanism, of the lifting-lever D, having a gear-segment, E, and an actuating gear-segment, C, having a releasing-roller, *f'*, substantially as set forth.

3. The combination, with the drill-bar and clutch-head, of the lifting-lever D, having a gear-segment, E, provided with starting-rollers *e*, and an actuating gear-segment, C, having starting-arms *f*, and a releasing-roller, *f'*, substantially as set forth.

4. The combination with the drill-bar and clutch-head, of an actuating gear-segment, C, and a lifting-lever, D, having a gear-segment, E, provided with a detachable rear tooth, *e'*, substantially as set forth.

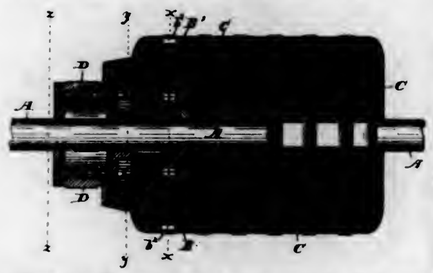
5. The combination, with the drill-bar, drill-frame, and clutch-head, of the links o^3, pivoted to the clutch-head, the links o^4, pivoted to the drill-frame and the links o^3, the rods *r*, attached to the links o^4, and the springs *q*, applied to the rods *r*, substantially as set forth.

6. The combination, with the drill-bar, drill-frame, and clutch-head, of the links o^3, pivoted to the clutch-head, the links o^4, pivoted to the drill-frame and the links o^3, tubular supports *q'*, secured to the drill-frame, and provided with slots r^3, rods *r*, attached to the links o^4, and provided within the supports *q'* with projections *r'*, and springs *q*, substantially as set forth.

7. The combination, with the drill-bar, drill-frame, and the clutch-head having an upper movable head, M, of the sleeve *o*, resting on the head M, links o^3, pivoted to the sleeve *o*, links o^4, pivoted to the drill-frame and the links o^3, tubular supports *q'*, rods *r*, attached to the links o^4, springs *q*, and screw-nuts r^4, substantially as set forth.

8. The combination, with the clutch-casing, of the clamping-jaws J, pivoted to said casing, an upper head, M, adapted to tighten the jaws by its downward movement and to raise the casing by its upward movement, a cone, L, adapted to tighten the jaws by its upward movement, and a single actuating-lever connected with the upper head, M, by slotted rods A and the lower cone, L, by a sleeve, *g'*, whose point of contact with the actuating-lever is farther from the fulcrum of said lever than the point at which the rods A are attached thereto, to raise the upper head, the casing, and jaws in advance of the cone at the beginning of the upward stroke, to give the feed and to cause the cone to tighten the jaws on the drill-bar after the feed has been given, substantially as set forth.

330,490. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. C. D. JENNET, Indianapolis, Ind. Filed July 20, 1885. (No model.)



Claim.—1. The combination, in an armature, of a shaft, spiders mounted thereon having lugs upon the outer ends of their arms, holes in said lugs, the armature-body, bolts passing through said body and said holes in said lugs on the arms of said spiders, and insulating material placed around said lugs and between them and said bolts, substantially as set forth.

2. The combination, in an armature, of a shaft, spiders upon said shaft, the armature-body, bolts passing through said body and engaging with the arms of said spiders, and a non-conducting covering for the heads of said bolts, substantially as set forth.

3. The combination, in an armature, of the shafts, spiders upon said shaft, the body of said armature, bolts passing through said body and connecting with the arms of said spiders, insulating material between said spiders and said bolts, and non-conducting material over the heads of said bolts, substantially as set forth.

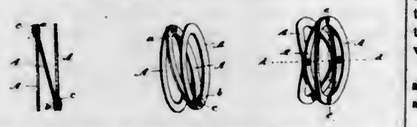
4. The combination, in an armature, of a shaft, spiders, the armature-body, and bolts passing through said body from the outside and engaging with the arms of said spiders, nuts on the inner ends of said bolts, a non-conducting covering for the heads of said bolts, and bands passing around the body and over said covering for the heads of the bolts.

330,491. CAPSULE FOR MEDICINES, WINES, &c. CARL L. JENSEN, Philadelphia, Pa. Filed May 1, 1885. (No model.)



Claim.—As a new article of manufacture, a series of filled and sealed-up capsules formed of translucent rubber distended into globular form and connected together so as to form a cluster, in imitation of a bunch of grapes or similar fruit, substantially as and for the purpose specified.

330,492. SPRING-WASHER. DANIEL A. JOHNSON, Boston, Mass. Filed Oct. 5, 1885. (No model.)



Claim.—A compound spring-metal washer consisting of a series of spring-metal annular disks riveted or fastened together at alternately opposite sides or edges, with their unriveted portions bent or inclined outwardly or away from one another in such manner as to form a series of connected spring-leaves, substantially as and for the purposes hereinbefore set forth.

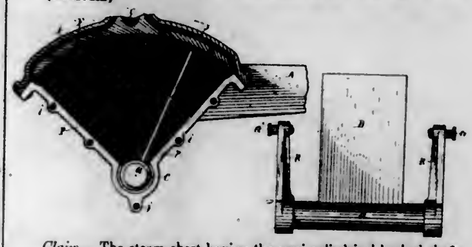
330,493. MEANS FOR INSTRUCTING BEGINNERS IN ROLLER-SKATING. ROBERT A. JOHNSTON, Allegheny, Pa. Filed Mar. 19, 1885. (No model.)



Claim.—1. The cylinder D, with spiral spring *h*, plate *f*, cord *n*, and rod *d* of the frame C, combined.

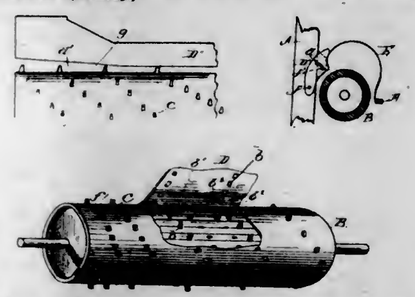
2. As a support for skaters on rollers, a device consisting of the frame C, wheels B, cylinder D, with spring *h*, and cord *n*, combined and arranged substantially as described.

330,494. STEAM-ENGINE. JAMES E. KIMBLE, Vicksburg, Mich., assignor of one-third to Ransom E. Kimble, same place. Filed Feb. 27, 1885. (No model.)



Claim.—The steam-chest having the semi-cylindrical bushed shaft-bearings at the juncture of the radial side inclosures of the chest, the rock-shaft, and its radial plate, said shaft being passed through the chest and in said bearings, and having no other bearings, each end of the rock-shaft without the chest being provided with a connecting-rod crank, all combined substantially as set forth.

330,495. CORN-SHELLER. SOLOMON E. KING and JOHN H. GILMAN, Ottawa, Ill., assignor to King & Hamilton Co., same place. Filed Aug. 20, 1884. (No model.)



Claim.—1. In combination with a revolving cylinder having spiral rows of teeth of varying lengths, a shelling-bar having a face cut away to correspond with the length of such teeth, and means for adjusting the bar without disturbing the cylinder, as set forth.

2. The combination, with the cylinder and the frame A, as described, of the shelling-bar D', having recessed face *d'* and slots *d*, the bolts *f*, and set-screws *f'*, as and for the purpose set forth.

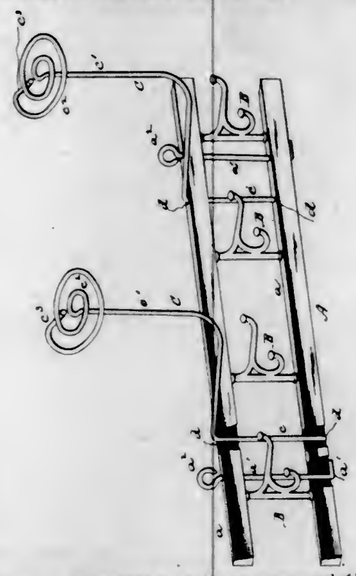
3. A cylinder for corn-shellers, consisting of the body B, having a set of holes, *b*, arranged spirally, and containing a full complement of teeth, C, and having other sets of holes, b' b^2, adapted to receive similar teeth, combined with a shell, D, having holes formed therein to register with the holes *b*, and imperforate over the additional holes, as set forth.

4. A cylinder, as described, consisting of a body, a covering-shell, and teeth, the body having additional teeth-holes arranged, as shown, at predetermined and known intervals, as and for the purpose set forth.

330,496. BITTERS. DANIEL J. KYTE, Philadelphia, Pa. Filed Oct. 5, 1885. (No specimens.)

Claim.—The herein-described compound, consisting of the following ingredients, in about the proportions specified, to wit: calamus-root, coriander-seed, juniper-berries, ginger, cinnamon, aloes, alcohol, and water, as and for the purpose described.

330,497. COMBINED CLOTHES AND HAT RACK. JOHN S. LAMB, Philadelphia, Pa. Filed May 15, 1885. (No model.)

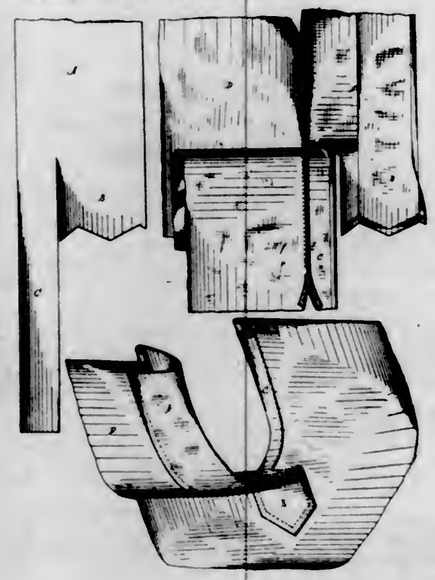


Claim.—1. A combined hat and clothes rack composed of longitudinal or parallel bars *a*, having openings *d* and suitably secured together, swiveled clothes-hooks B, and hat-hooks C, having a bracket, *c'*, and a stem, *c*, adapted to said openings *d*, substantially as shown and described.

2. A combined hat and clothes rack composed of longitudinal or parallel bars *a*, having openings *d* and suitably secured together, and of wire hat-hooks C, having pintle *c*, adapted to opening *d*, and bracket *c'*, and spirally-coiled plate c^2, with end c^3 bent backward toward and turned down under one of the coils of said plate, substantially as shown and described.

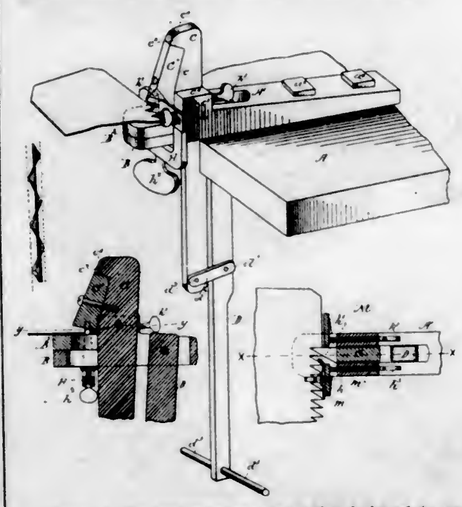
3. In a hat and clothes rack, the combination of longitudinal or parallel bars *a a*, swiveled clothes-hooks B, and swiveled hat-hooks C, composed of a pintle, bracket, and top plate, and interposed between hooks B, substantially as shown and described.

330,498. SHIRT OR DRESS PLACKET. VICTORIA E. LAVALLEE, St. Albans, Vt. Filed Mar. 20, 1885. (No model.)



Claim.—The method of attaching to a shirt-opening a placket-blank comprising the portions A, B, and C, which consists, first, in single-seaming the long side of the blank to the slit-opening, then folding over and stitching to the cloth body of the portion C, to form the narrow inner facing, next folding over and double-stitching to the cloth body the portions A and B, to form the wide outer facing and a shield below, whereby a placket is produced whose bottom and tearing edges are of whole, folded, and seamless cloth, and whose outer facing laps by the inner sufficiently to ordinarily conceal it and dispense with the second button, substantially as set forth.

330,499. MACHINE FOR PUNCHING AND SETTING SAWS. JOSIAH LAYBOLT, Wakefield, Mass. Filed May 15, 1885. (No model.)



Claim.—1. The combination, in a saw-setting device, of the arm A', having the bed B, adapted to support the die-block or a set-block, the lever C, adapted to support the punch or set, and the operating-lever D, all substantially as and for the purposes described.

2. The combination of the block A, the set-block B', having the surface shaped as described and supported by the bed B, the set C^2, adapted to have an oscillating movement to and from the bed imparted to it, the jaw E, and the lever c^3 and its contact-point G, for regulating the extent or degree of the set governed or controlled by the thickness of the saw-blade, all substantially as and for the purposes described.

3. The combination of the lever C, adapted to support a set or punch, with the jaw E, the lever c^3, and the movable fulcrum G, substantially as described.

4. The combination of the set-block B' and the oscillating saw-set C^2 with the jaw E, pivoted, as described, the lever c^3, and movable fulcrum-point G, all substantially as and for the purposes set forth.

5. In a saw-setting machine, the jaw E, pivoted, as described, and having the two arms *e e'*, with the lever c^3, operated as described, all substantially as and for the purposes set forth.

6. The combination of the set-block B' and the oscillating set C^2 with the jaw E, the lever c^3, and the adjusting screw or stud F, all substantially as and for the purposes described.

7. The combination of the set-block B' and the oscillating set C^2, the jaw E, lever c^3, and the adjustable fulcrum point or support G, all substantially as and for the purposes described.

8. The combination of the set-block B' and the oscillating set C^2, the jaw E, the lever c^3, and the stop *g*, all substantially as and for the purposes described.

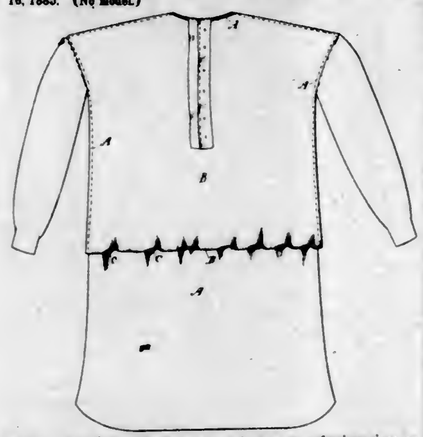
9. The combination of the lever C, having the inclined surface *c* and shoulder c^2, with the punch or set having the inclined surface, as described, with its upper edge in contact with the shoulder c^2, all substantially as and for the purposes set forth.

10. The combination of the lever C, carrying the set or punch, with the operating-lever D, pivoted at D', all substantially as and for the purposes described.

11. The combination of the support A', carrying the bed for the support of the set-block, the lever C, supporting the set, the jaw E, lever c^3, and the operating-lever D, all substantially as and for the purposes described.

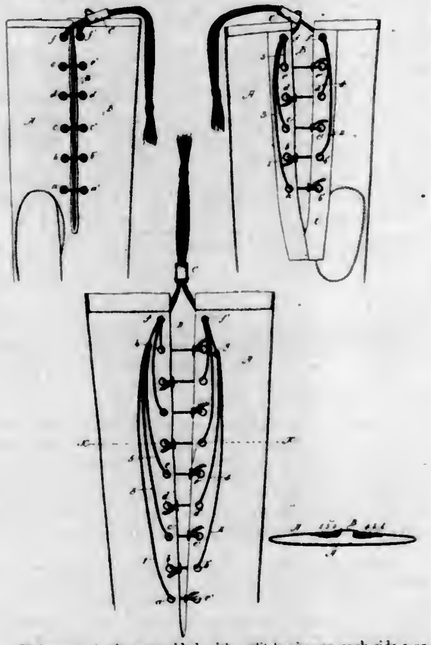
12. In a saw-setting machine, the saw-set governing or regulating jaw E, the lever c^3, and the contacting point or surface G, in combination with the saw-set C^2, supported as described, and mechanism for operating the same, whereby the jaw is caused by the thickness of the saw-blade to adjust or regulate the degree or extent of the set of each tooth, all substantially as and for the purposes described.

330,500. KNIT SHIRT. JOHN LEE, San Francisco, Cal. Filed Mar. 16, 1885. (No model.)



Claim.—A knit shirt having a secondary or re-enforcing piece entirely surrounding or encircling the body, the two parts being united at the upper edges and having openings or spaces or open intervals around the lower edges, substantially as herein described.

330,501. GLOVE-FASTENING. ALONZO C. MATHER, Chicago, Ill. Filed July 24, 1885. (No model.)



Claim.—1. A glove provided with a slit having on each side a series of opposing eyelets, in combination with lacing-cords, each cord rigidly attached at one end respectively in and next an eyelet, and laced through the eyelet directly opposite the eyelets of attachment, said cord being passed out the glove through the upper eyelet on the same side of the slit as the eyelet through which they are respectively laced, substantially as described.

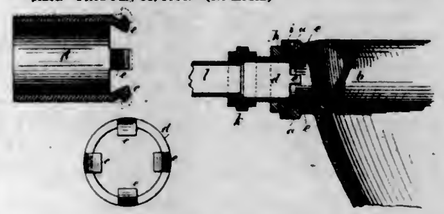
2. A glove provided with a slit having on each side a series of opposing eyelets, in combination with lacing-cords, each cord secured at one end respectively in and next alternate eyelets diagonally opposite each other and laced through the eyelet directly opposite the one next which they are secured, and passed out the glove through the upper eyelet on the same side of the slit as the eyelets through which they are laced, substantially as described.

3. A glove provided with a slit having on each side a series of opposing eyelets, in combination with lacing-cords secured at one end respectively in and next eyelets, said cords being laced through the eyelet directly opposite the ones in which they are next secured, and two or more of said cords being knotted together, and one only of the cords so knotted passed out the glove through the upper eyelet of the slit, substantially as described.

4. A glove provided with a slit having on each side a series of opposing eyelets, in combination with lacing-cords secured at one end respectively in and next an eyelet, said cords being laced through the eyelet directly opposite the one in which they are next secured, and passed out the glove through the upper eyelet and secured together by a knot common to all their projecting ends, substantially as described.

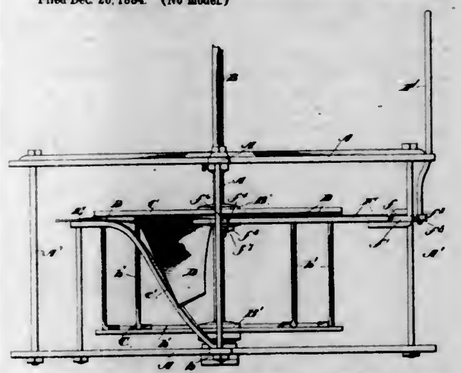
5. A glove provided with a slit having on each side a series of opposing eyelets, in combination with lacing-cords secured at one end respectively in and next an eyelet, said cords being laced through the eyelet directly opposite the one to which they are secured and passed out the glove through the upper eyelet, and a sliding clasp for gripping said cords, substantially as described.

330,502. CONNECTION FOR PIPES TO CLOSETS, &c. SAMUEL G. MCFARLAND, New York, N. Y., assignor to Myers Sanitary Depot, same place. Filed July 31, 1885. (No model.)



Claim.—The combination, with the inward flange *a*, of the screw-threaded thimble *d*, having the hooks *e*, formed with and projecting at one end from the thimble, so as to be introduced within the flange *a* and spread outwardly, and the nut *h*, and washer *i*, upon the outside of the thimble, substantially as set forth.

330,503. CURRENT-WHEEL. WILLIAM J. MCGAVOCK, Memphis, Tenn. Filed Dec. 26, 1884. (No model.)

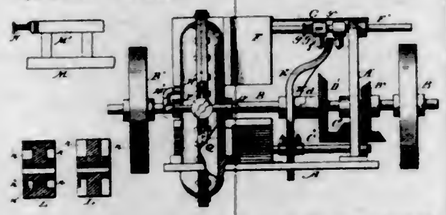


Claim.—1. In a current-wheel, the combination of the frame-work, the circular binding-bars, the continuous bearing-rods mounted therein, the semicircular rest-bar having one end inclined, the swinging vanes riding up said incline and traveling on the rest-bar, the shaft mounted centrally in said wheel, and a brake bar and lever for throwing the wheel in or out of action, substantially as described.

2. In a current-wheel, the combination of the frame-work, the circular binding-rings at the top and bottom, the continuous bearing-rods acting as braces, the swinging vanes mounted upon said rods, the rest-bar inclined at one end, up which incline the vanes ride and rest, the pivoted brake-bar with its hinged parts, the lever for operating said brake-bar, and the bearing-lug projections and links for the brake-bar, substantially as described.

3. The combination of the frame-work A, standard A', shaft B with the hubs B' B', swinging vanes D, rest-bar E, inclined at one end, the hinged and linked brake-bar F, brake-lever F', and the means for holding the brake-bar while in operation, substantially as described.

330,504. ROTARY ENGINE. FERREE L. McILVAINE, Gap, Pa. Filed Apr. 15, 1885. (No model.)



Claim.—1. In a rotary engine, the combination of the steam-cylinder with two pistons rotating therein, three slides movable in and out of said cylinder to afford foothold for the steam in actuating said pistons, two inlets acting alternately, but affording a practically continuous supply, an independent outlet, and mechanism for reciprocating said slides successively, substantially as set forth.

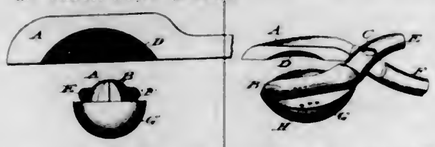
2. The combination of the cam-disk for actuating the slides with a slide-stem having a fixed stud and a yielding stud attached thereto and operating with said cam-disk, substantially as set forth.

3. In combination with the rotating piston-hub having groove *n'* and bridges *n²*, the two inlet-pipes M M', one of which is provided with a valve for opening or closing it at will, to make the flow of steam continuous or intermittent, as desired.

4. In a rotary engine, a rotary piston-hub provided on one side with an open annular groove and on the other with an annular groove covered at certain intervals by bridges, substantially as set forth.

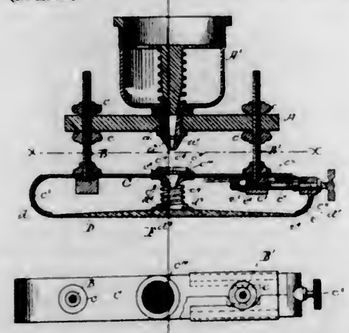
5. In a rotary engine, two inlets in combination with a revolving piston-hub having an annular groove on its inlet side, said groove being covered at certain intervals, and the arrangement of the parts being such that whenever one inlet is covered the other is open in order that the supply of steam or its equivalent may be continuous, substantially as set forth.

330,505. LEMON-SQUEEZER. TAYLOR MCKEETHEN, New Orleans, La. Filed Feb. 2, 1885. (No model.)



Claim.—The combination, with the horizontally-pivoted jaws A B, each having a cavity, D, and an operating-handle, of the straining-cup G, attached to one of said jaws, substantially as described.

330,506. OIL-CUP. ISAAC R. MCNARY, New York, N. Y., assignor to the Seibert Cylinder Oil Cup Company, Hartford, Conn. Filed July 13, 1885. (No model.)

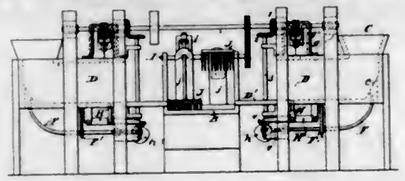


Claim.—1. The combination of the belt-support C, the strap, band, or belt D, the movable plate e, the screw-spindle e', and nut c^3, all substantially as and for the purposes described.

2. The combination of the belt or band support or plate C, the spring F, the belt or band D, and the movable belt or band regulating device, all substantially as and for the purposes described.

3. In a lubricating device, a lubricating belt, band, or strap and devices adapted to regulate or vary its tension, whereby its oil or lubricant delivery surface may be adjusted vertically in relation to the part lubricated.

330,507. BAND-CUTTING AND FEEDING MECHANISM FOR THRASHING-MACHINES. ALEXANDER MCVETY, Howard, assignor of one-half to John Keys, Houston County, Minn. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination, in a machine of the class described, with the slotted feed-board D', of the crank-shaft E, arranged below said feed-board, the guides F', secured beneath the feed-board, and the curved feed-arms F, passing through the guides F' and having their curved ends arranged to pass through the slotted feed-board and their opposite ends mounted on the cranks of shaft E, as and for the purpose set forth.

2. The combination, with the hopper, having the inclined slotted bottom *c'*, and the slotted feed-board D', of the crank-shaft E, located beneath said feed-board, guides F', curved arms E, attached to the crank-shaft and passing through said guides, knife G', and means for operating the knife, all substantially as described.

3. The combination, with the hopper, the crank-shaft E, feed-arms F, and guides F', of the crank-shaft G, knife G', and guide g^3, substantially as described.

4. The combination, with the box D, having the slotted bottom and slotted top, of the crank-shaft E, feed-arms F, crank-shaft G, and knife G', all substantially as described.

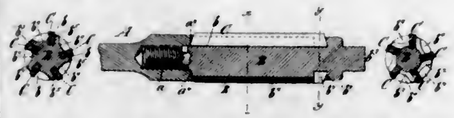
5. The combination, with the crank-shaft E and feed-arms F, of the reciprocating plungers H, the crank-shaft G, and knife G', all substantially as described.

6. The combination, in a band-cutting machine, with the feed-box D, having the slotted top and means for feeding the bundles of grain therein, of the crank-shaft G, the guide g^3, and knife G', substantially as described.

7. The combination, with the feed-table B and means for moving the grain to the thrashing-cylinder, of the slotted feed-board D', the crank-shaft E, guides F', arms F, and means, as described, for cutting the bands, as and for the purpose set forth.

8. The combination, with the feed-table and thrashing-cylinder, of the shaft I, located over the cylinder and having the oppositely-set cranks *i i*, the slotted guides *j j*, located between said cranks and the feed-table, and the rods J' J', carrying rakes J J, said rods being attached to the cranks *i i* and passing through the slotted guides, all substantially as described.

330,508. REAMER. JAMES NEALE, Bridgeport, Conn. Filed Apr. 18, 1885. (No model.)

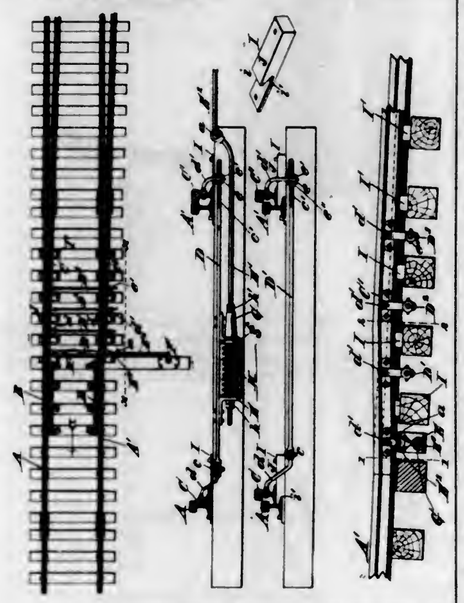


Claim.—1. The combination of a reamer shell or body provided with longitudinal grooves or cutter-seats having parallel sides, a shank portion having at its junction with one end of the shell or body an inclined or beveled shoulder, a^*, a collar at the other end of the shell or body forming an inclined or beveled shoulder, b^*, and cutters C, fitted to the said grooves or cutter-seats and having their ends inclined or beveled to fit the inclined or beveled shoulders a^* b^*, substantially as herein described.

2. The combination of a reamer shell or body provided with longitudinal grooves or cutter-seats having parallel sides and grooved at b^4 between the cutter-seats to afford clearance for chips, a shank portion having at its junction with one end of the shell or body an inclined or beveled shoulder, a^*, a collar at the other end of the shell or body forming an inclined or beveled shoulder, b^*, and cutter C, fitted to the said grooves or cutter-seats and having their ends inclined or beveled to fit the inclined or beveled shoulders a^* b^*, substantially as herein described.

3. The combination, with the shank portion A, having an inclined or beveled shoulder, a^*, of the shell or body B, screwed into said shank portion A, having near its outer end a circumferential recess or groove, b^2, forming beyond the recess or groove a fixed collar, the inner side, b^*, of which is beveled or inclined, and having the grooves or cutter-seats *b* with parallel sides, and the cutters C, fitting the seats *b* and having their ends inclined or beveled to fit under and against the shoulders a^* b^*, substantially as and for the purpose herein described.

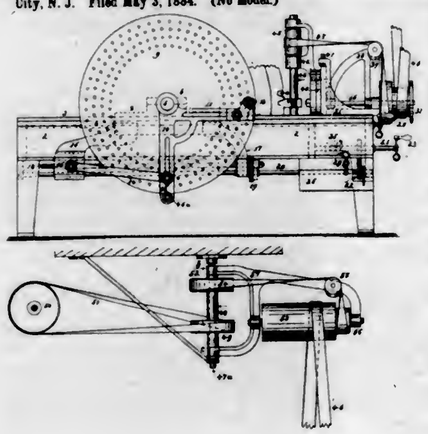
330,509. RAILROAD-SWITCH. PATRICK NOLAN, Chattanooga, Tenn. Filed May 9, 1885. (No model.)



Claim.—1. A railway-switch composed of two continuous permanent main-track rails, A A', and two movable tongue or switch-rails, C C', both sets of rails, at the opening leading into the siding, being mounted upon combined bracing and slide chairs, I I' i i' J, of gradually-ascending heights, with one of said switch-rails inside the main track and the other outside thereof, and both connected by means of rods or bars D D' D^2 D^3, each formed of one piece of metal, and suitably attached at one end to rail C and screw-threaded and slotted at the opposite end for receiving perforated nuts *e e'* and pins or keys *e''*, and connected with the outer tongue-rail by arms *d'*, whereby said switch-rails can be readily arranged or set at a greater or less distance apart to suit different gages of track, and all the said parts being constructed, arranged, and adapted to operate substantially as and for the purpose specified.

2. In a railway-switch, the combination, with the movable switch-rails C C', provided with arms *d d'*, of rods or straps D D' D^2 D^3, each formed of one continuous piece of metal forked at one end to engage said arms *d* on rail C, and screw-threaded and slotted at their opposite ends to receive perforated nuts *e e'* and pins or keys *e''*, whereby both said rails are connected together and adapted to be set at a greater or less distance apart to suit different gages of track, substantially as herein set forth.

330,510. GEAR-CUTTING MACHINE. MICHAEL O'GORMAN, Jersey City, N. J. Filed May 3, 1884. (No model.)



Claim.—1. The bell-crank 10, with arms 11 and 12, the stop-pin 13, connecting-rod 14, sliding block 15, adjusting-screw 18, supporting-arms 16 and 17, in combination with carriage 4, substantially as for the purpose described.

2. The combination of the shaft 21, gears 22, shaft 20, gears 19 screw 18, and bed 2, substantially as for the purpose specified.

3. The carriage 27, with movable slide 30, pivoted thereto, the carriage 31, screws 32, bevel-gears 33, in combination with shaft 34, bevel-gears 35, shaft 21, and bed 26 and 2, substantially as for the purpose described.

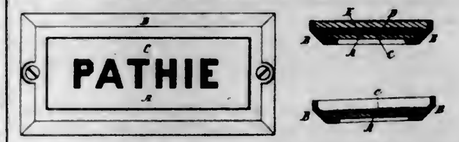
4. The carriage 31, with arm 38, idle-pulleys 39, and driving-pulleys 37, substantially as for the purpose specified.

5. The cutter spindle-frame 42, pivoted to carriage 31, sliding head 40, adjusting-screw 41, spindle 43, cutter 44, and pulley 45, substantially as described, for the purpose specified.

6. The vertical shaft 47*, with sleeve 48, and swinging frame 57, attached thereto, substantially as for the purpose specified.

7. The swinging frame 57, with idle-pulleys 55, and drum 53, attached thereto, substantially as for the purpose specified.

330,511. SIGN AND DOOR-PLATE. WILLIAM PATHIE, Worcester, Mass. Filed Dec. 5, 1883. (Specimens.)

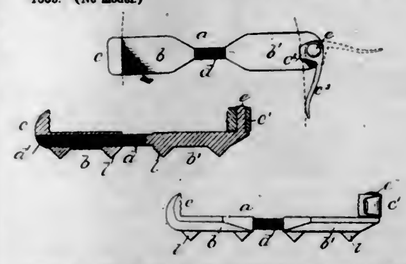


Claim.—1. The improvement in the art of manufacturing articles in which luminous or phosphorescent material is employed, which consists in mixing the luminous material with a substance that hardens, sets, or becomes solid by hydration or absorption of moisture, forming therewith the desired surface or body upon the glass or article, and solidifying or fixing said mass by moisture or wetting, substantially as hereinbefore set forth.

2. The improvement in the art of manufacturing luminous signs and similar articles, which consists in combining luminous material in fine powdered form with calcined gypsum (plaster-of-paris) in proportion of about two parts of the former to one part of the latter, and applying the same to the glass or article with moistnre sufficient to render the mass into a compact solid body, surface, or coating by the hydration or setting action, substantially as hereinbefore described.

3. The method of confining and fixing luminous material in connection with a glass article or protecting-plate by a dehydrated substance, as calcined plaster, intimately associated with the luminous material, and caused to set, harden, or solidify in contact therewith by application of moisture or wetting during the process of manufacture, as set forth.

330,512. ICE-CREEPER. HERBERT S. PULLMAN, Rockville, Conn., assignor of one-half to Joseph C. Hammond, Jr., same place. Filed July 6, 1885. (No model.)

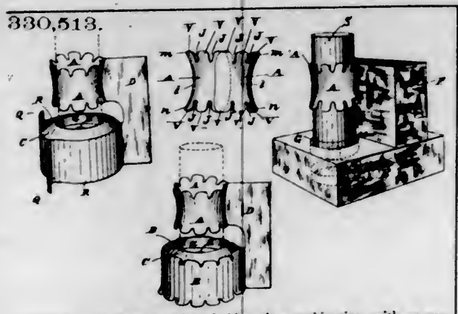


Claim.—1. In an adjustable ice-creeper, in combination, the extensible base-plate joined in the direction of its length by the threaded stem on the one part fitted into the threaded socket in the other part, one body part, *b*, bearing the fixed clamp *c*, and the other part, *b'*, bearing the cam-clamp *c'*, with the lever-handle, and swinging on a pivot, *e*, on the base-plate, all substantially as described.

2. In combination, the base-plate formed in parts *b b'*, with calks *l* on the under surface, and bearing on the outer ends, respectively, the fixed clamp *c*, and the cam-clamp *c'*, the parts of the base-plate being joined by the threaded stem *d*, that fits within the threaded socket *d'* in the opposite part, whereby the several clamps may be set at varying distances, all substantially as described.

330,513. CARTRIDGE-SHELL HOLDER. JULIUS RAABE and WILLIAM HUBBELL FISHER, Cincinnati, Ohio, said Julius Raabe assignor to said William Hubbell Fisher. Filed Mar. 23, 1885. (No model.)

330,513.



Claim.—1. In a cartridge-holder, the combination, with an upright supporting-standard, of a horizontally-projecting thimble composed of two spring-arms flared outwardly at their extreme lower edges, substantially as described.

2. In a cartridge-holder, the combination, with an upright supporting-standard, of a horizontally-projecting thimble composed of spring-arms flared at the bottom and overlapping at their ends, as set forth.

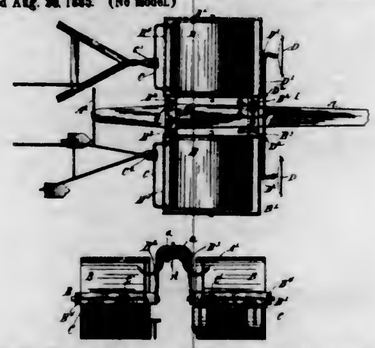
3. The combination, with the upright standard of a cartridge-holder, of a horizontally-projecting thimble composed of spring-arms perpendicularly slotted near their edges and the portions between the slots flared, substantially as described.

4. The combination, in a cartridge-holder, of an upright standard, composed of a thin plate, and two spring-thimbles extending horizontally from one edge of said plate, one above the other, the lower edge of each spring-thimble being flared outwardly, as set forth.

5. In a cartridge holder, the combination, with an upright standard composed of thin plate, of an upper thimble composed of spring-arms flared outwardly at the bottom and a lower thimble or socket flared outwardly at the bottom and bent inward at the top, substantially as described.

6. In a cartridge-holder, the combination, with an upright standard, of a horizontally-projecting upper thimble composed of spring-arms flared outwardly at bottom, a lower thimble or socket turned in at top, and a loading-block inclosed in said lower thimble or socket, as set forth.

330,514. COMBINED ROLLER AND CULTIVATOR. ROBERT B. RALLS, Montrose, Mo., assignor of one-half to James D. Ralls, same place. Filed Aug. 30, 1885. (No model.)

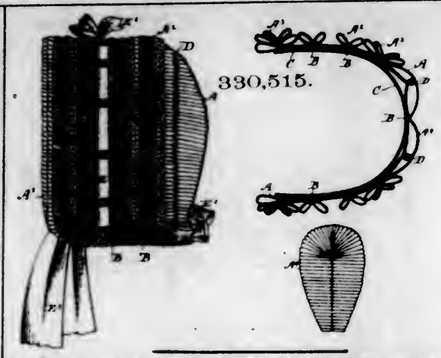


Claim.—The combination, with the tongue, of a pair of rectangular frames provided with rollers located one on either side of the tongue, hangers rigidly attached to the adjacent sides of the frames, and having their upper ends slotted and bent, the one beneath, the other above, the tongue, and bolts passed through the slotted ends of the hangers and tongue, substantially as shown, whereby the frames may be adjusted to and from each other and remain at right angles to the line of draft.

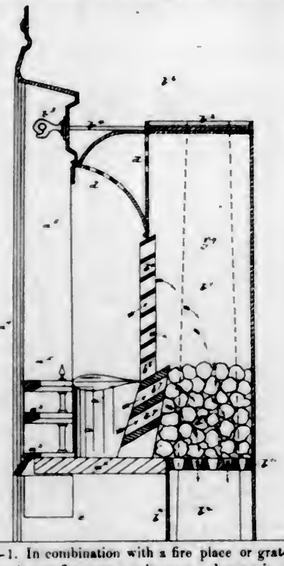
330,515. HOOD AND OTHER GARMENTS. WILLIAM RANDEL, Glens Falls, N. Y. Filed June 19, 1885. (No model.)

Claim.—1. The method of making hoods or garments herein described, the same consisting in placing a series of loops of yarn upon a textile foundation alongside of parallel series of similar loops and interlooking the said loops, substantially as and for the purpose set forth.

2. The method of making hoods or garments herein described, the same consisting in placing a series of loops of yarn upon a foundation alongside a series of similar loops and interlocking the said loops by inserting a binding cord or thread, and afterward superposing upon one or more of the said series an additional series of loops, substantially as set forth.



330,516. FIRE-PLACE AND HEATING-STOVE. SAMUEL REEVE, Little Marylebone Street, County of Middlesex, England. Filed Nov. 13, 1884. (No model.) Patented in England Jan. 7, 1884, No. 887; in France Oct. 6, 1884, No. 164,627, and in Belgium Oct. 6, 1884, No. 66,513.



Claim.—1. In combination with a fire place or grate closed at its bottom, a chamber or flue-space at its rear, a damper in said flue-space at a point or line above the grate, and the flue having an open-work bottom to support asbestus or equivalent material, and one or more passages or flues communicating with the space beneath such bottom, the combination serving to draw downward the products of combustion through the heated asbestus or eqoivalent and to filter them, substantially as set forth.

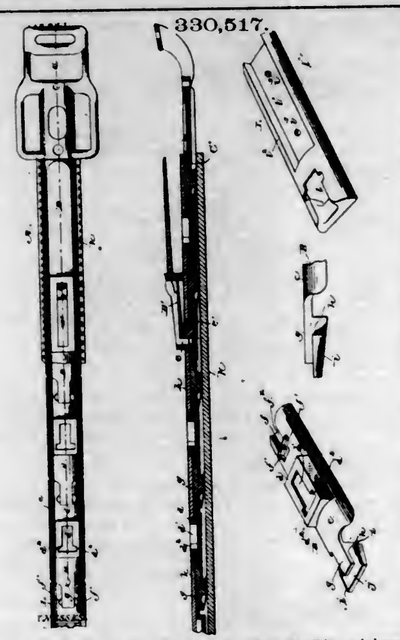
2. In combination with the fire-place or stove and with the described siphon-like arrangement of passages b' b^2 and b^2 b^{10}, as set forth, and with the grating or open-work support, a mass of asbestus or equivalent material upon the support, the adjustable hood or closing-plate serving to close or open at will the passage b', as and for the purposes described.

3. The combination, in a fire-place or stove having a grate or fire-pot open at its front, top, and back, of an open-work support at its rear, a mass of asbestus or equivalent material upon the support, the passages b' and b^9, b' b^2 and b^{10}, the latter communicating with the outlet-flue, the adjustable hood or plate b^3, and the perforated walls in the dome, substantially as and for the purposes set forth.

330,517. HAME-TUG. THOMAS L. RIVERS, Montclair, N. J. Filed Aug. 11, 1885. (No model.)

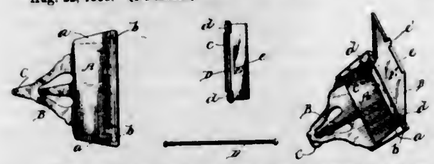
Claim.—1. A hame-tug comprising a series of sections flexibly and detachably connected together, each section having a socket provided with lateral seats f' at one end, and a projecting tongue, g, at its opposite end, and provided with lateral tapering flanges, the tongue and flanges of one section engaging the socket and seats, respectively, of the adjacent section and lying flush with exterior faces thereof, substantially as described.

330,517.



2. A hame-tug comprising a series of sections flexibly and detachably connected together, a trace-carrier, and a hame-plate detachably connected to the sections, and the whole inclosed within a sheath, each plate or section of the tug having at one end a socket with lateral seats f', and a lower brace or cross-bar, f^2, at its extremity, and at its opposite end a contracted projecting tongue, g, having a lug, h, and forwardly-inclined lateral lugs i j, the tongue and its lugs of one section engaging the socket and seats of the adjacent section and lying flush with the exterior faces thereof, substantially as described.

330,518. BUCKLE. CHRISTOPHER C. SHELBY, New York, N. Y. Filed Aug. 22, 1885. (No model.)



Claim.—1. The buckle-frame having ears b punched therefrom, as explained, in combination with the lever-plate having secured thereto the double-headed pin D, which pin is held in position by the ears b, bearing upon the inner surfaces of its heads, substantially as set forth.

2. A buckle consisting of the frame A, having ears b, lever-plate E, having its front edge formed at right angles to its body, and double-headed pin D, the whole constructed and operating substantially as set forth.

3. A buckle consisting of the frame A, having ears b, lever-plate E, having its front and rear edges formed at right angles to its body, and double-headed pin D, the whole constructed and operating as and for the purpose described.

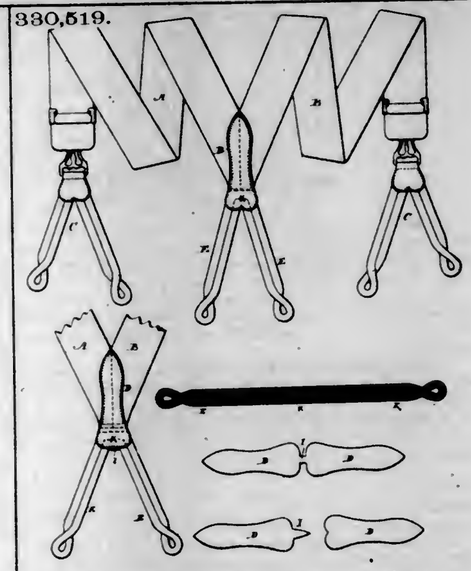
4. A buckle having a lever-plate whose front edge is formed at right angles to its body, said front edge being provided with a thumb-notch, substantially as set forth.

330,519. SUSPENDERS. ABRAHAM SHENFIELD, New York, N. Y. Filed Sept. 11, 1885. (No model.)

Claim.—1. The combination, with the suspender-straps A B, of the compound clip-pieces D D, between which the ends of the straps A B are secured by sewing, and the suspender-ends E E, inserted between said clip-pieces D D and secured by sewing, substantially as set forth.

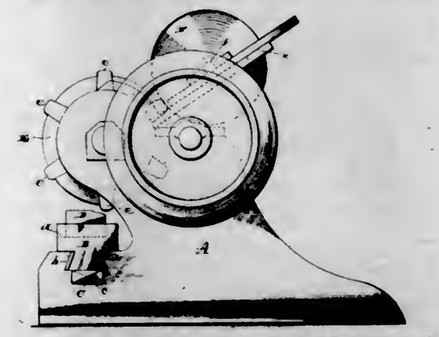
2. The combination, with the suspender-straps A B and the suspender-ends E E, of the clip-pieces D D, between which the straps and suspender-ends are inserted and secured by sewing and a web or tongue passing across from one clip-piece to the other and between the suspender ends E E, substantially as specified.

330,519.



3. The combination, with the suspender-straps A B, of two suspender-ends formed of one piece of flat braid and a clip-piece of flexible material for receiving and holding the suspender-ends and inclosing the ends of the piece of braid, the parts being sewed together, substantially as set forth.

330,520. MACHINE FOR SWAGING BEVELS. JOE T. SPEER, Pittsburg, Pa. Filed Sept. 23, 1885. (No model.)



Claim.—1. The combination, with a vertically-adjustable lower die, of a series of bevel-faced dies rigidly secured in the rim of a roller, and adapted to engage work laid on the lower anvil and reduce the same to an edge by gradual elongation, substantially as set forth.

2. The combination, with a vertically and horizontally adjustable lower die, of a series of bevel-faced upper dies secured in the face of a roller, and adapted to engage successively a piece of work resting on the lower die, substantially as set forth.

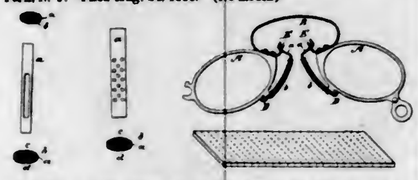
3. The combination, with a lower die and an upper die secured in the face of a roller, of a grinding-wheel adapted to engage the face of the upper die as the roller revolves, and thereby keep the face true, substantially as set forth.

4. The combination, with a lower die and a series of dies secured in the face of a roller, of an emery-wheel adapted to form a true bevel on the faces of the several dies, substantially as set forth.

5. The combination, with a lower die and a series of dies secured in the face of a roller, of an emery-wheel journaled in longitudinal adjustment in bearings having a lateral adjustment, for the purpose substantially as set forth.

6. The combination, with the die-block adapted to be vertically adjusted by a wedge, and the lower die having a horizontal adjustment in the die-block, of a series of upper dies secured to the face of a roller, and a wheel adapted to grind the faces of the upper dies, for the purpose substantially as set forth.

330,521. NOSE-PAD FOR EYEGLASSES. John S. Spencer, New York, N. Y. Filed Aug. 24, 1885. (No model.)



Claim.—1. A nose-piece for eyeglasses, consisting of a strip of metal having on each side thereof a cushion of cork, the parts of the cushion on opposite sides of the spring being connected, whereby each aids in securing the other in position, substantially as set forth.

2. A nose-piece for eyeglasses, consisting of a strip of metal having cushions of cork secured on opposite sides, the strip permitting parts of the cushions to come in contact with each other, substantially as set forth.

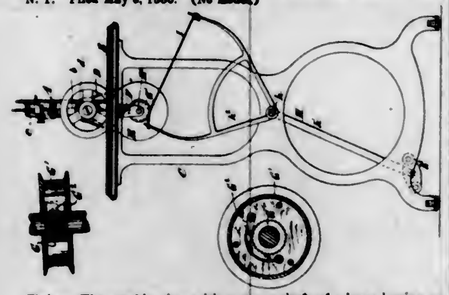
3. A nose piece for eyeglasses, consisting of a metal strip having cushions of cork on opposite sides, the strip being cut to permit the connection of the cushions, substantially as set forth.

4. A nose-piece for eyeglasses, consisting of a metal strip having cushions of cork on opposite sides, the strip permitting an adhesive connection of the cushions between its edges, substantially as set forth.

5. A nose-piece for eyeglasses, consisting of a metal strip, and a cushion applied to each side thereof, the strip being cut to receive the cushions, both of the latter being a single piece of material connected between the edges of the strip, substantially as set forth.

6. A nose-piece for eyeglasses, consisting of a metal strip, and a cushion of cork secured on each side thereof, the cushions being partly in contact with each other and with the strip and connected together, substantially as set forth.

330,522. MECHANISM FOR DRIVING SEWING-MACHINES. Christian G. Spengler, Hoboken, N. J., assignor, by mesne assignments, to Christiana R. Spengler, same place, and Oscar E. A. Weimmer, New York, N. Y. Filed May 8, 1885. (No model.)



Claim.—The combination, with a rotary shaft, of a lever having an arm adapted to receive motion from the foot, and an arm connected to a strap, cord, or like device, a pulley arranged loosely on the said rotary shaft and receiving the strap, cord, or like device around it, and a wheel affixed to the said rotary shaft and deriving motion from the said pulley when the pulley runs in one direction, and running free of the pulley when the pulley runs in the reverse direction.

330,523. CHECK-ROW ATTACHMENT FOR CORN-PLANTERS. William H. Stewart, Beesville, Mo., assignor to Charles J. Barger, same place. Filed Apr. 9, 1885. (No model.)

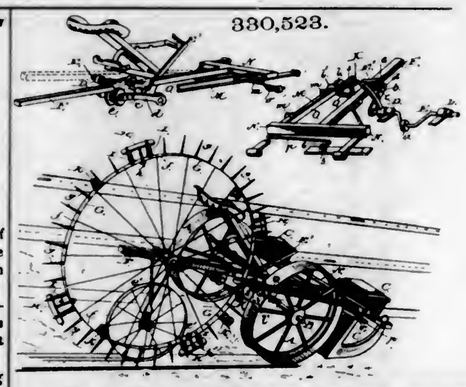
Claim.—1. The combination, with a planter, a frame, and clips whereby the frame is pivotally secured to the frame of the planter, of a crank-shaft, suitable clips in which the shaft is journaled, a foot-lever upon the shaft, an arm, *b*, and the rollers *a* and *c*, substantially as herein described.

2. The combination, with a frame hinged to the frame of the planter, of a crank-shaft, a roller, *a*, an arm, *b*, provided with a series of perforations, and a flanged roller adapted to be adjusted upon said arm, substantially as and for the purpose specified.

3. In a planter, the combination, with a beam, F, of a wheel mounted upon said beam, and adapted to travel in a path made by the supporting-wheels, said wheel having a flange with a series of spikes projecting therefrom, and a series of perforations adapted to receive the shanks of yielding plates, substantially as and for the purpose set forth.

4. The combination, with a planter, of a wheel, G, having a flange, *f*, spikes projecting from the flange, suitable rollers on said flange, and a cam by the movements of which and suitable gearing the seed-slide is operated, substantially as herein described.

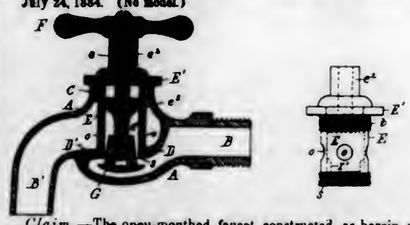
330,523.



5. The wheel G, provided with a flange, *f*, and spikes projecting therefrom, in combination with perforated plates H, provided with shanks *h*, passing through perforations in the flange, nuts for securing the shanks, and springs I, interposed between the plates and flange, substantially as herein described.

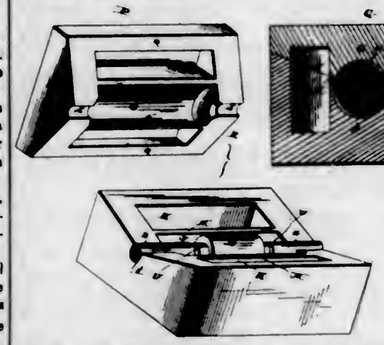
6. The combination, with the swinging frame and a wheel provided with rollers, of a bent bar, O, a cam mounted in the bar, bevel-gears *l' l''* and a rod provided with a crank for operating the seed-slide, substantially as herein described.

330,524. WATER-FAUCET. Atkins Stover, Brooklyn, N. Y. Filed July 24, 1884. (No model.)



Claim.—The open-mouthed faucet constructed, as herein shown and described, with the shell A, having socket C and partition D, arranged as described, the tubular seat E, extended within the shell and through the partition D, and secured in the partition by a screw-thread, as set forth, the same having the holes o and guides *r'*, and being provided at its inner end with the seat *s*, and constructed in one piece with the bearing e^3, projected outside of the socket C, the valve G, provided with internal thread and external ribs, *r*, and arranged within the inlet-passage and seated upon the lower end, *s*, of the removable tubular valve-seat E, and the valve-stem *e*, provided with thread *s'*, fitted loosely to the valve, and secured in the bearing e^3 by the handle F and shoulder e^3, the whole arranged and operated substantially as and for the purpose set forth.

330,525. LUBRICATOR. Francis A. Strong, Colebrook, Wis. Filed Sept. 5, 1885. (No model.)



Claim.—1. The combination, with a lubricating bearing-box, of a shaft having grooves around its periphery, so as to form annular shoulders facing said bearing-box, substantially as and for the purpose set forth.

2. The combination, with a shaft, of a box having longitudinal bearings projecting from its bottom and from the under side of its cap, having downwardly and divergingly beveled edges, and having upwardly-diverging beveled or inclined edges at the upper edges of the box and the lower edges of the cap, as and for the purpose shown and set forth.

3. The combination, with a shaft, of a box having a longitudinal bearing projecting from its bottom, having spaces formed in the bottom at both sides of the bearing, and having transverse channels through the ends of the bearing at the bottom of the box, connecting the said spaces, as and for the purpose shown and set forth.

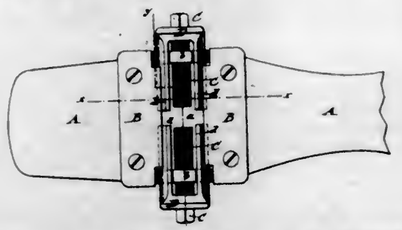
4. The combination of the box having the upper edges of its sides upwardly and divergingly beveled, and having its end pieces cut inclined toward axial recesses, and provided with a longitudinal bearing projecting from the middle of its bottom, and having channels cut transversely through the ends of the bearing connecting the spaces at the sides of the bearing, a cover having its side edges beveled to fit upon the edges of the box, and having its end pieces cut off inclined to fit upon the ends of the box, and provided with a longitudinal half-bearing projecting from its under side, and a shaft having reduced portions passing through the ends of the box, and having an enlargement fitting between the bearings and formed with grooves around the reduced portions of the shaft, beveled to form inwardly-facing annular shoulders, as and for the purpose shown and set forth.

330,526. PENCIL-HOLDER. Karl Strödenreuther, Nuremberg, Bavaria, Germany. Filed Apr. 22, 1885. (No model.) Patented in Germany June 29, 1884, No. 30,130.



Claim.—The detachable and adjustable split point *b*, internally screw-threaded in its solid portion, in combination with casing *a*, which is externally screw-threaded to receive the same, and the pusher *h*, having a head, *g*, for opening said point, substantially as set forth.

330,527. SKATE. William A. Sutton, New York, N. Y. Filed Dec. 8, 1884. (No model.)

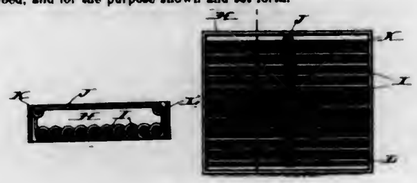


Claim.—1. In an ice or roller skate, the combination of a wooden sole-plate having a transverse recess, a re-enforcing top plate having screw-nuts located in the recess and made integral with the top plate, transverse screw-bolts turning in the screw-nuts, and sole-clamps supported on the screw-bolts and provided with shanks guided by said re-enforcing plate and adjusted by said screw-bolts, substantially as set forth.

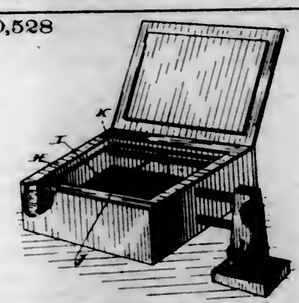
2. The combination, in an ice or roller skate, of a sole plate or block having a transverse recess, a re-enforcing top plate having screw-nuts made integral therewith and located in said recess, transverse screw-bolts having collars near their square outer ends, and sole-clamps supported on said screw-bolts and provided with shanks guided in ways of the top plate and block, substantially as set forth.

330,528. EGG-TRAY FOR INCUBATORS. George W. Thornburgh, and John J. Thornburgh, Alliance, Ohio. Filed Apr. 1, 1885. (No model.)

Claim.—The herein-described egg tray or receptacle for incubators, the same consisting of the rectangular frame having the series of rollers journaled in the lower portion of the sides of said frame, and the two upper rollers arranged as described, and the endless operating-cord encircling the said upper and lower rollers in the manner shown and described, and for the purpose shown and set forth.



330,528

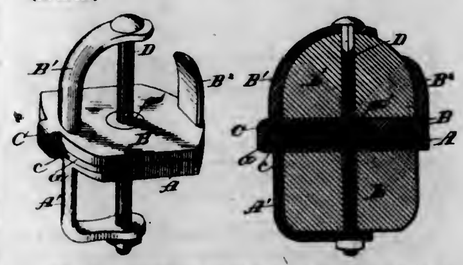


330,529. SEWER-GAS TRAP. William G. Thompson, New York, N. Y. Filed Mar. 31, 1885. (No model.)



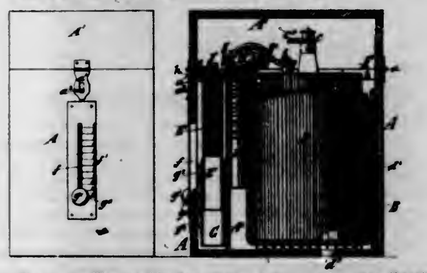
Claim.—The combination, with the casing C, having the opening c and lugs located upon the upper side of the casing, of a weighted arm, E, pivoted between said lugs by a ring, *e*, and having a valve, F, located on its bent end within the casing.

330,530. WHIFFLETREE-IRON. Oliver Vanorman, Racine, Wis., assignor of one-half to Has. Clark, same place. Filed Aug. 17, 1885. (No model.)



Claim.—A whiffletree-iron consisting of the double-tree casting A, having central perforated hub, *a'*, flange *a*, and downward and inward projecting curved arm A', in combination with the single-tree casting B, having two upward and inward projecting curved arms, B' B^2, central perforation, and downward-depending flange C, with lip *c*, and king-bolt D, substantially as set forth.

330,531. INDUCTION-COIL FOR MEDICAL USE. Joseph C. Vetter, New York, N. Y. Filed May 16, 1885. (No model.)



Claim.—1. The combination, with a battery and a case therefor having in it a slot, of an induction-coil and sleeve or tube movable one relatively to the other and both contained within the case, and a hand-piece attached to the movable part and projecting through and movable in said slot, substantially as herein described.

2. The combination, with a battery and the case therefor having in it the slot *f* and adjacent scale, of the depending induction-coil E and the sliding sleeve or tube G, with its pin and knob *g g'*, movable in said slot, substantially as herein described.

3. The combination, with an induction-coil and sleeve, one being movable lengthwise relatively to the other, of a non-conducting guide-tube projecting beyond the end of coil and into the sleeve, substantially as herein described.

4. The combination, with the top piece, D, and the coil E, secured thereto, of the non-conducting guide-tube E', having the flange h at one end and projecting beyond the coil at the other end, and the adjustable sleeve G, substantially as herein described.

5. The combination, with the jar B and case A, of the top piece, D, having semicircular recesses *i*, the induction-coil and sleeve E G, depending from and below the top piece, and the electrodes H, arranged between the jar and top piece and confined by said recesses *i*, substantially as herein described.

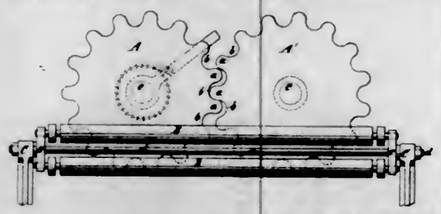
6. The combination of the case A, the battery-jar B, with its elements and conductors b^2 c^2, and corner-pieces *k* at the back of the case, forming stays thereto, and provided with sockets b^3 c^3 for the conductors when not in use, substantially as herein described.

7. The combination of the case A, the jar B, confined in place between the strips or pieces C and the back of the case, the top piece, D, with its depending induction-coil E, and the adjustable sleeve G therefor, and the electrodes H, arranged between the top piece, D, and the jar, all substantially as described.

330,532. LAXATIVE COMPOUND. CHARLES N. WAITE, Medford, Mass., assignor to the Avery Lactate Company, Portsmouth, N. H. Filed Apr. 17, 1885. (No specimens.)

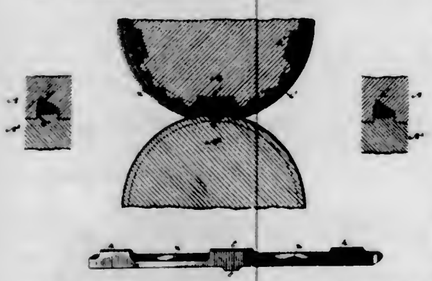
Claim.—A laxative compound consisting of a mixture of one ounce of lactic acid, sixty grains of magnesia, and seven ounces of water.

330,533. INK-TABLE FOR PRINTING-MACHINES. EDMOND A WARREN, Brooklyn, N. Y. Filed May 14, 1884. (No model.)



Claim.—An ink-table for a printing machine or press, consisting of a combination of two rotary disks arranged side by side and having in their peripheries matching projections and recesses which engage with each other, substantially as herein described.

330,534. ART OF MAKING HORSESHOES. JOHN B. WHITE, Buffalo, N. Y. Filed Apr. 7, 1885. (No model.)

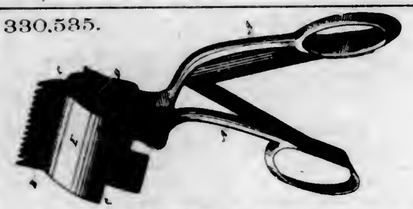


Claim.—The within-described process of making horseshoes having sharp toe and heel calks integral with the body or web of the shoe, perpendicular to its sole, and of substantially uniform thickness from top to bottom, consisting in hot-rolling a blank with calk projections that are thick at their union with the body or web and taper outward, hot-bending said blank edgewise, drop-swaging the bent blank in dies having matrical calk recesses conformed to the finished calks, trimming the forging, and cold-punching the trimmed forging, substantially as herein-before set forth.

330,535. HAIR-CLIPPING MACHINE. CULLEN K. WHITTIER and JOHN H. DOWLOM, San Francisco, Cal. Filed Mar. 20, 1885. (Model.)

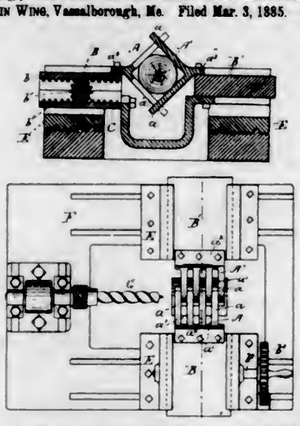
Claim.—1. A hair-clipping machine having a curved plate with unbroken front edge rigidly secured to the under surface of the comb-plate, said curved plate extending only to the base of the teeth on the comb-plate, and forming a bearing upon which the head of the machine rocks as the machine is operated, substantially as set forth.

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2. In a hair-clipping machine, and in combination with the comb-plate B, the independent curved bearing-plate E, the front edge of which is smooth and unbroken under the comb-plate, said plate having bent or curved legs *e*, and feet *e'*, by which it is adapted to be secured to the comb-plate, substantially as herein described.

330,536. DEVICE FOR CENTERING HUBS AND OTHER BLOCKS. BENJAMIN WING, Vassalborough, Me. Filed Mar. 3, 1885. (No model.)



Claim.—1. The combination, in a hub-block-centering machine, of a jaw, A, having two sets of oppositely-diverging fingers, *a*, having spaces or recesses *a'* between them, arranged so that the fingers of one jaw come opposite and in operation enter the recesses of the other, all substantially as and for the purposes described.

2. The combination, in a hub-block-centering machine, of the jaw A, having the diverging fingers *a* and the spaces or recesses *a'* between them, and the jaw A', having the diverging fingers *a* and the spaces or recesses *a'* between them, the block B, supporting the jaw A, and the block B', supporting the jaw A', and devices for imparting horizontal movements to said blocks toward and from each other, all substantially as and for the purposes described.

3. The combination, in a block-centering machine, of the jaws A A', having the diverging fingers *a* and spaces or recesses *a'*, shaped and arranged in relation to each other as specified, the block B, having a rack, *b*, the pinion *b'*, and the sliding block C, connected with the block D, whereby upon the movement of the pinion *b'* the blocks B B' are moved simultaneously toward or away from each other, substantially as described.

4. The combination of the jaws A A', having recessed diverging centering-surfaces of the character specified, their supporting-blocks B B', having horizontal sliding movements toward and away from each other, and a locking device for locking the two blocks in any desired position, all substantially as and for the purposes described.

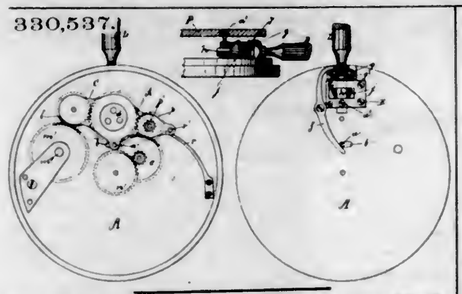
5. The combination of the bed F, having the sliding carriage E and supporting the blocks C B B', and the jaws A A', having centering-surfaces oppositely arranged to each other, and provided with recesses whereby they may overlap, and a pinion for providing the said jaws, through the said blocks C B B', with opening and closing movements in relation to each other upon the carriage E, all substantially as described.

330,537. STEM WINDING AND SETTING MECHANISM FOR WATCHES. CHARLES V. WORRD, Waltham, Mass. Filed Aug. 13, 1885. (No model.)

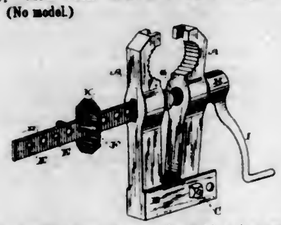
Claim.—1. The combination, in a watch provided with winding and hand-setting mechanism which is shifted by the outward or inward movement of the crown-stem, of a boss, *g*, and the crown-stem D, screwed thereto, substantially as shown and described.

2. The combination, with the lever operating boss *g* and its shaft *h*, of the key D, screwed to said boss, and the set-screw *a'*, whereby by setting in the screw *a'* the shaft and boss may be held rigid and the key D removed, substantially as shown and described.

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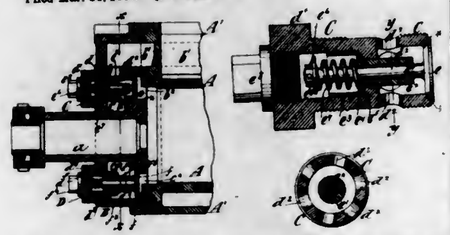
330,538. PIPE-VISE. JOHN S. WOOLSEY, Gilroy, Cal. Filed Mar 16, 1885 (No model.)



Claim.—1. A vise having the two jaws hinged or separably connected at the bottom, holes made through the jaws below the grasping portion and in line with each other, and a bar extending through the two jaws, having screw-threads upon its outer end, and a pin for securing its rear end to a post or other structure, substantially as herein described.

2. In a vise, the hinged adjustable jaws, in combination with a bar passing through the two, having its rear end or extension perforated with holes E, to receive the pin F, and its front end screw-threaded to receive a nut, substantially as herein described.

330,539. VALVE FOR AIR AND GAS COMPRESSORS. WILLIAM H. WORTHEN, Brooklyn, N. Y., assignor to Guild & Garrison, same place. Filed Mar. 31, 1884. (No model.)



Claim.—1. The combination, with the head of a compression-cylinder having an air-chest formed therein, of a valve-box inserted into the head, and extending from the outer side of said head inward, and having two portions of different internal diameter joined by an annular conical seat, a valve and its stem, a sleeve and guide receiving the valve-stem through it and having portions of different external diameter, and a conical shoulder whereby it is made to fit the valve-box, a spring whereby said sleeve and guide is held in place and centered by its conical shoulder bearing against said conical seat, and a plug or bonnet closing the outer end of the valve-box, substantially as herein described.

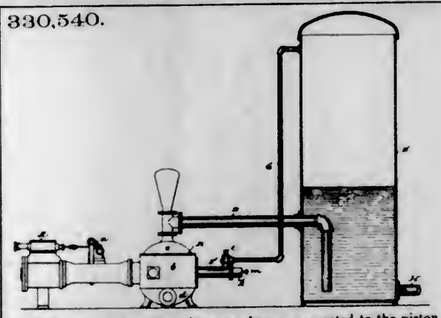
2. The combination, with the inlet-valve box C, having the conical annular seat c^4 and the portions of different internal diameter joined by said seat, of the sleeve and guide consisting of the portion c^2 and the cup-shaped portion c^3, of larger diameter, joined by the conical shoulder c^4, the valve *c*, and stem *c'*, having at the outer end a head, c^6, and a spring, c^7, surrounding the stem and bearing at one end on the stem-head and at the other end in the cup-shaped portion c^3 of said sleeve and guide, substantially as herein described.

330,540. COMBINED WATER-PUMP AND AIR-COMPRESSOR. C. C. WORTHINGTON, Irvington, N. Y. Filed July 25, 1885. (No model.)

Claim.—1. A combined water-pump and air-compressor consisting of a water-cylinder and its piston or plunger and an air-cylinder and its piston or plunger, the two cylinders being so arranged that one end of the latter communicates with one end of the former, substantially as described.

2. The combination, with a water-cylinder and its piston or plunger, of an air-cylinder arranged at the end of and opening into the water-cylinder and having its piston or plunger connected to the piston or plunger or piston or plunger rod of the water-cylinder, substantially as described.

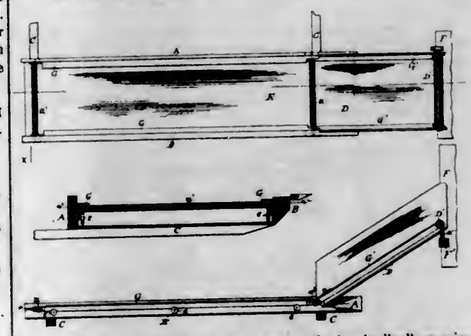
330,540.



3. The combination, with a duplex pump, as A B, of an air-cylinder, as F, arranged at the end of an opening into one of the water-cylinders, and having its piston or plunger connected to one of the pistons or plungers or piston or plunger rods of the water-cylinders, substantially as described.

4. A combined water-pump and air-compressor consisting of water-cylinder having a moving piston or plunger, and an air-cylinder and its piston or plunger, the two being so arranged that the water-pressure in the pump is communicated to one side of the piston or plunger of the air-cylinder, substantially as described.

330,541. HARVESTER. DAVID YOUNG, Stockton, Cal. Filed Dec. 29, 1884. (No model.)



Claim.—1. The carrier-platform having the longitudinally-moving carrier-belt frame-pieces, with carrier-belt rollers mounted in and moving with said pieces, in combination with an elevator pivoted at its upper end and connected at its lower end to the inner ends of said frame-pieces, substantially as and for the purpose specified.

2. The carrier-platform having the sliding carrier-belt frame-pieces seated on grooved rollers, in combination with the elevator pivoted at its upper end, and having stationary plates which are pivotally connected to the said frame-pieces, a roller-drum at the upper end of the elevator, a roller connecting the frame-pieces and the plates, and having elongated bearings, and a roller mounted in slots in one end of the said frame-pieces, substantially as set forth.

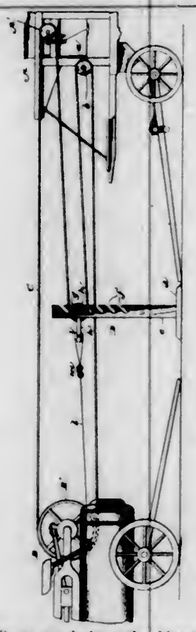
330,542. BELT SHORTENER AND TIGHTENER FOR THRASHING-MACHINES. SEWARD B. ALDRICH, Thurston, N. Y. Filed Oct. 1, 1885. (No model.)

Claim.—1. The combination of the pulleys B' and A', the idle-pulley *a*, the endless belt connecting said pulleys and looped between pulleys A' and *a*, and the idle-pulley *h* in the loop, journaled in a movable support, for tightening or shortening the belt, substantially as described

2. The combination, with the pulleys B' and A', the idle-pulley *a*, the endless belt connecting said pulleys and looped between pulleys A' and *a*, and the idle-pulley *h* in the loop, of the jack having the series of open inclined slots to receive the spindles or shaft of pulley *h*, to support the latter, substantially as described.

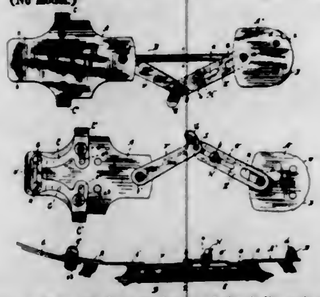
3. The combination of the pulleys B' and A', the idle-pulley *a*, the endless belt connecting said pulleys and looped between pulleys A' and *a*, the idle-pulley *h* in the loop and the snatch-block attached thereto, the movable jacks in which pulley *h* is mounted, and the rope secured at one end to a fixed point and the other end passed through the snatch-block and secured to a take-up, whereby the endless belt may be shortened or tightened, substantially as described.

330,542.



4. The idle-pulley *a*, attached to a thrashing-machine, and adapted for use as a reel for the endless driving-belt when the machine is not in operation, substantially as described.

330,543. SKATE. George W. Baker, Cleveland, Ohio. Filed Aug. 12, 1885. (No model.)



Claim.—1. In skate attachments, levers of the bell-crank variety pivoted to and underneath the foot-rest, said levers terminating in jaws extending above the foot-rest, for engaging the sole of the shoe, the lateral arms of the levers made male and female for engaging each other, and so arranged that the foot-rest is kept in a central position between the jaws, said levers having elongated holes and set-screws for securing the jaws in the desired position, substantially as set forth.

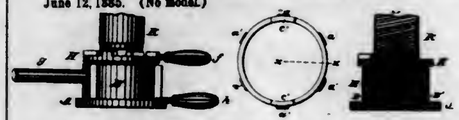
2. In skate attachments, the combination, with dogs connected with the rear of the heel-rest for engaging the heel, of a dog adjustably secured to the arm of a toggle-joint, said toggle-joint having stops, the one to ride over and the other to abut against the skate-iron, to hold the toggle-joint in a straight line and in position, causing the dogs to grasp the heel, substantially as set forth.

330,544. THREAD-GUIDE AND TENSION-REGULATOR FOR LOOM-SHUTTLES. George Baldwin, Willimantic, Conn. Filed Apr. 21, 1885. (No model.)



Claim.—The combination, with the shuttle-body A, of strip C, having the aperture E' and the slit F at one end and the slot H at the other end of the screw K, and the forked plate L, held on the strip C, substantially as herein shown and described.

330,545. MOLD FOR FORMING SCREW-CAPS. David Barker, Canton, Ohio, assignor to the Canton Glass Company, same place. Filed June 12, 1885. (No model.)

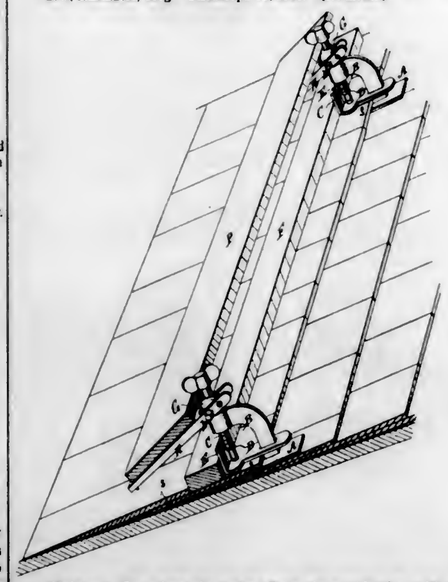


Claim.—1. In a mold for making glass screw-caps, the combination, with a supporting-plate provided with a screw-threaded hub, a central stem-die, screw-threaded as described, and a shoulder between the stem and hub, of the open mold having a female screw corresponding in pitch to the screw-threads on the hub, and an annular shoulder, G, substantially as set forth.

2. In a mold for making glass screw-caps, the combination of a supporting-plate, A, the screw-threaded hub B, the shoulder C, the stem-die, threaded as described, the open mold E, provided with a female screw adapted to the hub B, the annular rib G, having a groove, F, and the loose open ring, as described and shown, and for the purpose set forth.

3. In a mold for making glass screw-caps, the open mold E, provided with a female screw, the annular rib, as described, and the diverging wall or side of the mold, as described, and for the purpose set forth.

330,546. CLAMP FOR ROOF-SCAFFOLDS, &c. Aurelius T. Sarlow, Marshfield, Oreg. Filed Sept. 18, 1885. (No model.)

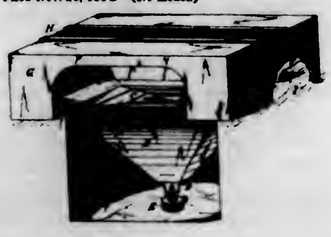


Claim.—1. In a clamp for roof-scaffolds, the combination, with the plate A, arm B, and screw C, of the slotted bearing-plate D, as shown and described.

2. The plate D, with the attached upright plate E, in combination with plate A, arm B, and screw C, substantially as and for the purpose described.

3. The ball G and lever-spike H, hinged to the ball, in combination with the screw C, arm B, and plate A, substantially as shown and described.

330,547. BROODER FOR CHICKENS. George B. Bayley, Oakland, Cal. Filed Nov. 20, 1884. (No model.)



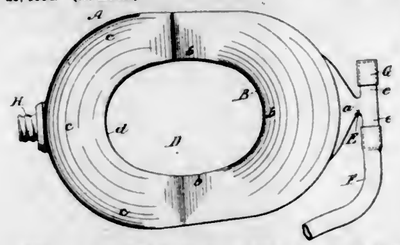
Claim.—1. A heating device for brooders for chickens, consisting of a pyramidal-shaped chamber having its base upward, and supported so as to be approximately level with the surrounding surface, and an opening in the apex through which heat is introduced, in combination with a distributer or plate above the heat-opening, substantially as herein described.

2. A heating device for brooders for chickens, consisting of an inverted pyramidal-shaped chamber, B, the base or top of which is a conductor of heat, means by which its base or upper side is supported, an intermediate water or air space beneath the upper surface or table, in combination with a heater, substantially as herein described.

3. A heating device for brooders for chickens, consisting of an inverted pyramidal-shaped chamber heated from below, and having an enlarged base or table with indented lines or corrugations, substantially as herein described.

4. A brooder for chickens, consisting of an inverted pyramidal-shaped chamber, with the base made of heat-conducting material having an opening in the apex below into which heat passes from a heater, in combination with an inclosure or chamber surrounding the upper surface, substantially as herein described.

330,548. BED-PAN. Sarah V. Beal, Ann Arbor, Mich. Filed May 23, 1884. (No model.)

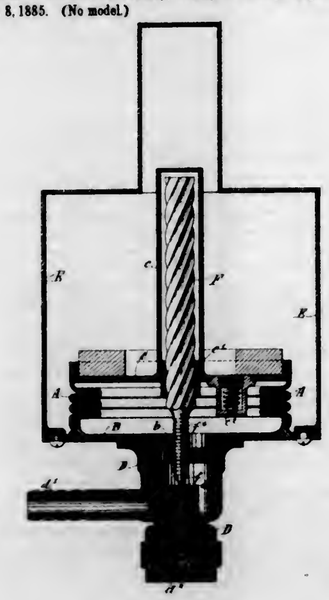


Claim.—1. A bed-pan having its top plate or seat inclined downward toward the opening B at its inner end, and curved outwardly and downwardly at its outer end, substantially as shown and described.

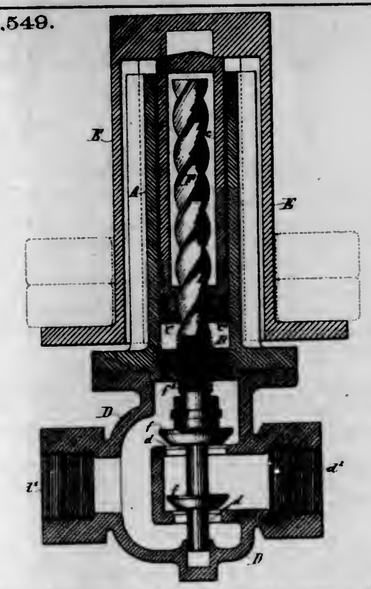
2. A bed-pan provided with an outer bottom or base, C, a true bottom, D, and a discharge-pipe, E, fitted about at the level of said bottom D, substantially as shown and described.

3. As a new article of manufacture, a bed-pan having its top plate inclined downward toward the opening B at its inner end, and curved downwardly at its outer end, and said pan having an outer bottom or base, C, a true bottom, D, and a discharge-pipe, E, having branch pipes *c c*, substantially as shown and described.

330,549. FLUID-PRESSURE REGULATOR. Robert R. Beard and Walter H. Oakley, Bermondsey, County of Surrey, England. Filed Sept. 8, 1885. (No model.)

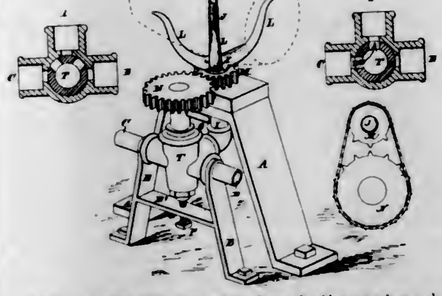


330,549.



Claim.—In combination with a bellows-head, piston, or float so fitted as to rise and fall through the variations in pressure of the fluid to be controlled, a valve carried by a screwed spindle, which spindle is free to turn in a fixed screwed nick, and which also takes into a threaded neck carried by the bellows-head, piston, or float, for the purpose of receiving therefrom an axial motion, and thereby causing the valve to approach to or recede from its seat and control or regulate the flow of fluid past the said valve, substantially as above described.

330,550. KEG-WASHING MACHINE. Hermann Binder, St. Louis, Mo. Filed Apr. 26, 1884. (No model.)



Claim.—1. The combination of the hot and cold water pipes, valve controlling both pipes, oscillating holder, and connection between the valve and the holder, the whole being so arranged that by turning the holder the hot or cold water can be turned on at will and both shut off when desired.

2. The combination of the hot and cold water pipes, three-way valve controlling both pipes, oscillating or turning holder, and connection between the valve and holder, arranged and operating substantially as shown and described, whereby the turning of the holder operates the valve to permit the flow of either hot or cold water or shut off the flow of both, as set forth.

3. The combination of the three-way valve, pipes, nozzle, holder, and gear-wheels, arranged and operating substantially as shown and described.

330,551. PIVOTING-CHUCK. Frederick Boardman, Mansfield, Mass. Filed July 23, 1884. (No model.)

Claim.—1. A chuck having three or more clamping-jaws pivoted in radial slots in the body of the chuck, and independent adjusting-screws, substantially as described.

330,551.



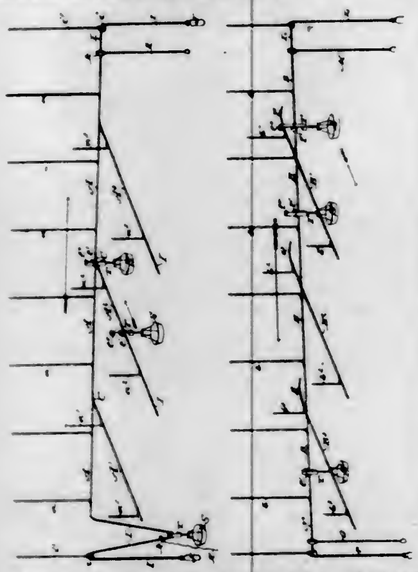
2. In a chuck, the clamping-jaws *a*, pivoted in radial slots, one end of the arbor *g* being screwed into the yielding part *p*, constructed as described, all substantially as set forth.

3. A chuck having three or more clamping-jaws pivoted in radial slots in the body of the chuck, sliding sleeve B, and adjusting-screws *b b b*, substantially as described.

4. In a chuck, the combination of jaws *a a a*, sliding sleeve B, and following-nut C, substantially as set forth.

5. In a chuck, the combination of jaws *a a a*, adjusting-screws *b b b*, sliding sleeve B, pump-center *l*, spring S, and binding-screw *h*, substantially as described.

330,552. **STORE-SERVICE APPARATUS.** LOUIS G. BOSTEDO, Atlantic, Iowa. Filed Mar. 21, 1885. (No model.)



Claim.—1. A store-service apparatus comprising overhead tracks A B, with branch tracks going to and returning from the various departments of the store, and said track A having hinged gates C, allowing passage into it of carriers from its side or branch tracks, and adapted to be opened by carriers passing along the main track from behind the gates, and the branches of return-track B having a series of fixed switches, as at P Q R, arranged successively lower from the package-counter backward, and the carriers having head or switch wheels adapted to take their respective switches from track B, substantially as herein set forth.

2. In combination with the main track and the branch track, the gate C, pivoted at one end to the branch track and having its other end movable to and against the main track, substantially as set forth.

3. In a store-service apparatus, the gate C, hinged to the branch of the main track A, and provided with a spring closing it against track A, in combination with the interlocking tongue and groove D E, substantially as herein set forth.

4. In a store-service apparatus, the gate C, hinged to the branch of the main track A, and provided with a spring closing it against track A, in combination with the interlocking tongue and groove D E, and the chamfered cleat G, substantially as herein set forth.

5. In a store-service apparatus, the track-cords I, connected at the ends of the tracks or their branches, and suspended from hangers to line normally with the tracks, in combination with pull-cords K, said pull-cords being connected with the cord I between the tracks and the hangers supporting such cord, substantially as herein set forth.

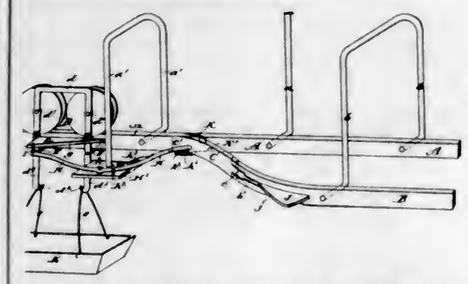
6. In a store-service apparatus, the carrier herein described, comprising the frame having arms f^3, extended in opposite directions, the main wheel, the pilot-wheels journaled one to each arm f^3, and the switch-wheel, substantially as set forth.

7. The combination of the main track having a diagonal groove, H, the switch-track, and a gate, C, connected at one end to the switch-track and having its other end movable to and against the main track adjacent the groove H, substantially as set forth.

8. In a store-service apparatus, the combination, of the main track having a block, G, formed with a guide-bevel, *g*, and having a groove, E, of the switch-track, and the gate hinged at one end to the switch-track and having its other end provided with a tongue, D, arranged to engage the groove E, and a spring, F, substantially as set forth.

9. The combination, with the carrier-frame provided with hooks f^2, projected in opposite directions, of the basket having bails *s s*, each of which is supported on a hook, f^2, substantially as set forth.

330,553. **STORE-SERVICE APPARATUS.** LOUIS G. BOSTEDO, Atlantic, Iowa. Filed Aug. 29, 1885. (No model.)



Claim.—1. In store-service apparatus, the combination, with a main track, A, and branch track B, of a switch, C, pivoted to the track B, and adapted to close against the track A, a lever, as at H, pivoted adjacent the switch and adapted by its one end to close the switch to track A, and provided at its other end with a pin, I, and a trip-plate, as at G, on the car positioned to strike the pin I to automatically close the switch, substantially as herein set forth.

2. In store-service apparatus, the combination, with a main track, A, and branch track B, of a switch, C, pivoted to the branch track B, and adapted to close against the track A, and said switch having a connected tail-piece, as at J, which, when the switch is closed, projects by its inclined edge into the path of the car taking the switch, substantially as specified, whereby the switch will be opened automatically by the passage of the car onto the branch track, substantially as herein set forth.

3. In store-service apparatus, the combination, with a main track, A, and branch track B, of a switch, C, pivoted to the track B and adapted to close against the track A, and said switch C having a connected tail-piece, as at J, which, when the switch is closed, projects by its inclined edge into the path of the car taking the switch, a lever, as at H, pivoted adjacent the switch and adapted by its one end to close the switch to track A, and provided at its other end with a pin, I, and an inclined trip plate, G, on the car positioned to strike the pin I, substantially as specified, whereby the proper switch C will automatically be closed to the main track by the passing car, and will automatically be opened by the car as it runs onto the branch track, substantially as herein set forth.

4. In store-service apparatus wherein a branch track leads from a main track on the side next the hangers of the main track, and a switch adapted to connect the branch track with the main track is employed, substantially as specified, the said main track cut clear through, as at L, to allow the passage of the car-frame as the car switches from the main track onto the branch track, substantially as herein set forth.

5. In store-service apparatus comprising main and branch tracks, as at A B, and a switch, as at C, connected to the branch track and adapted to close against the main track, and cars, as at D, adapted to the tracks, the combination, with the car-frame, of an arm, F, projecting from the frame below the track, and provided with an upturned end, *f* and said main track next the switch being provided with a diagonal slot, as at K', allowing passage of the end *f* of arm F as the car takes the switch, substantially as herein set forth.

6. In store-service apparatus comprising main and branch tracks, as at A B, and a switch, as at C, connected to the branch track and adapted to close against the main track, and cars, as at D, having flanged wheels *d'*, and also having arms F projecting from the frame below the track, the said main track provided with an upper diagonal slot, K, allowing passage of the car-wheel flanges, and with a lower diagonal slot, K', allowing passage of the ends *f* of arms F as the car takes the switch, substantially as herein set forth.

7. In store-service apparatus, the car-receiving elevator M, constructed with a track-bar, M', adapted to receive the car from the end of the adjacent track, and provided with a yielding buffer-bar, P, against which the car strikes as it passes onto the elevator, substantially as herein set forth.

8. In store-service apparatus, the combination, with the car-receiving elevator M and its yielding buffer-bar P, of the spring-hook P^2, substantially as herein set forth.

9. In store-service apparatus, the combination, with the car-receiving elevator M, constructed with a track-bar, M', adapted to receive the car from the end of the adjacent track, and provided with a yielding buffer-bar, P, of a gravity-latch, R, between which buffer and latch the car is locked onto the elevator, said car having an arm, as at F, adapted to lift the latch R, substantially as herein set forth.

10. In store-service apparatus, the combination, with the end of a track, as at A', at a receiving-elevator station, of a bar, S, pivoted to track A' at one end, a stop-block, T, on the bar S, a stop-pin, *t'*, on track A', adapted to support the block T in the path of an arm, F, fixed to the car, when the receiving-elevator is lowered, and a pin, *t*, on the elevator adapted to raise the bar S and block T when the elevator is raised, to allow the car to pass onto the elevator, substantially as herein set forth.

11. In store-service apparatus, the combination, with the end of a track, as at A', at a receiving-elevator station, of a bar, S, pivoted to the track, a stop-block, T, placed loosely on bar S, a spring, as at S', tending to draw the stop-block backward, a stop-pin, *t'*, on track A', adapted to support the block T in the path of an arm, as at F, fixed to the car, when the receiving-elevator is lowered, and a gravity-latch, as at R', pivoted to the track A', and adapted to be lifted by the car-arm F, and to lock behind the car as it passes it, substantially as herein set forth.

12. In store-service apparatus, the combination, with the end of a track, as at A', at a receiving-station, of a bar, S, pivoted to the track, a stop-block, T, placed loosely on bar S, a spring, as at S', tending to draw the stop-block backward, a stop-pin, *t'*, on track A', adapted to support the block T in the path of an arm, F, fixed to the car, a gravity-latch, as at R', pivoted to track A', and adapted to be lifted by the arm F as it passes it, and a spring, U, fixed to the end of latch R', and acting, when the bar S is lifted, to force the car forward onto the elevator, substantially as herein set forth.

13. In store-service apparatus, the combination, with the end of a track adjacent the car-receiving elevator, and provided with a stop to retain a car when the elevator is lowered, substantially as specified, of a gravity-latch, as at R', adapted to be lifted by the passing car, and a spring on the latch, which is adapted to be put in tension by the recoil of the car, whereby the car will be forced onto the elevator when the elevator is raised to the track and the car-retaining stop is shifted out of the path of the car, substantially as herein set forth.

14. In store-service apparatus, the combination, with a car-track, as at A^3, and a forwarding-elevator, V, having an inclined track-bar, V', adapted to line with the track A^3 when the elevator is raised, of a stop-lever, as at X, pivoted to the track-bar V', and a pin, *y*, on the track A^3, adapted to shift lever X to release the car D when the elevator is raised, substantially as herein set forth.

15. In store-service apparatus, the combination, with a car-track, as at A^3, and a forwarding-elevator, V, having an inclined track-bar, V', and a stop-lever, X, pivoted to bar V', and adapted to retain car D on the track-bar, substantially as specified, of a gravity-latch, as at R^3, adapted to be lifted by and to drop behind the car-frame when the car is run onto the elevator, substantially as herein set forth.

16. In store-service apparatus, the combination, with the inclined car-tracks and elevators, adapted to be raised into line with the tracks at their termini, substantially as specified, of cords connected to the elevators, and pulleys arranged to pass the cords horizontally to one side of the track, so as to hang in reach of the salesman or operator, substantially as herein set forth.

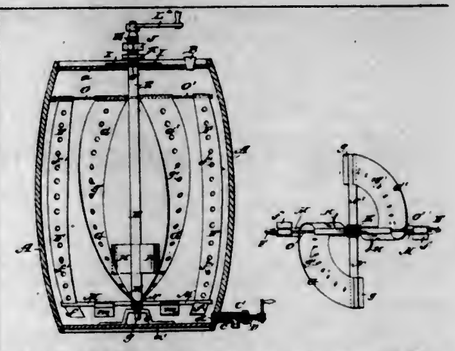
330,554. **ROLLER-SKATE WHEEL.** GEORGE O. BOYNTON, Boston assignor to Stephen Moore, trustee, Newton, Mass. Filed Nov. 24, 1884. (Model.)



Claim.—A roller-skate wheel having secured upon its periphery an endless hoop or tire of leatheroid or other parchmentized paper solidified into a homogeneous mass without glue, cement, or other adhesive paste, substantially as described.

330,555. **PAINT-MIXER.** FREDERICK BRANDENBERGER, Danville, Ill.; Fredericka Brandenberger executrix of said Frederick Brandenberger, deceased. Filed Apr. 4, 1885. (No model.)

Claim.—1. A paint-mixer comprising a vessel, A, a shaft, E, provided with arms M M N N' O O', blades F F, fixed to arms O O' M M so as to rotate next the sides of the vessel, and the inner spirally-arranged blades, G G', fixed, respectively, to arms O N and O' N', substantially as herein set forth.



2. A paint-mixer comprising a vessel, A, a shaft, E, provided with arms M M N N' O O', outer blades, F F, inner spirally-arranged blades, G G', and the auxiliary lower blades, *f g m*, substantially as herein set forth.

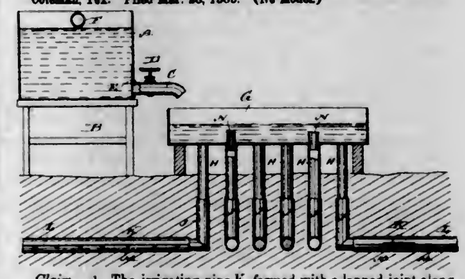
3. A paint-mixer comprising a vessel, A, a shaft, E, provided with arms M M N N' O O', outer blades, F F, inner spirally-arranged blades, G G', lower blades, *f g m*, and blades H, substantially as herein set forth.

4. A mixing or stirring device for mixing-machines, comprising a shaft, E, having arms M M N N' O O', outer blades, F F, and inner spirally-arranged blades, G G', fixed to said arms, substantially as herein set forth.

5. A mixing or stirring device for mixing-machines, comprising a shaft, E, having arms M M N N' O O', outer blades, F F, and inner spirally-arranged blades, G G', fixed to said arms, and lower blades, *f g m*, and either with or without blades H, substantially as herein set forth.

6. The combination, with the vessel A and shaft E, of the nut J and washer K, substantially as herein set forth.

330,556. **APPARATUS FOR IRRIGATING LAND.** ELIAS BRIGGS, Coleman, Tex. Filed Mar. 28, 1885. (No model.)

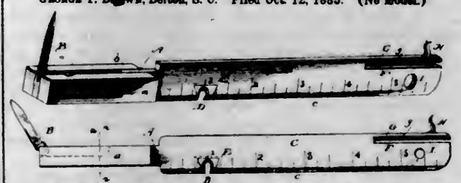


Claim.—1. The irrigating-pipe K, formed with a lapped joint along its side to form a slot, L, substantially as set forth.

2. The irrigating-pipes K, having lapped joints at the sides and notches in the inner edge of the lapped joint, substantially as herein shown and described.

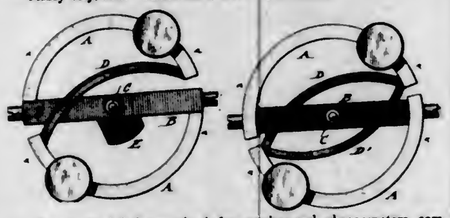
3. The combination, with the delivery-trough G, tubes H, extending downward from the bottom thereof, and means for closing said tubes, of the irrigating-pipes K, provided with a lap-joint at one side, and connected with the tubes H below the bottom of the trough, substantially as set forth.

330,557. **COMBINED ENVELOPE-OPENER AND PAPER-KNIFE.** GEORGE T. BROWN, Belton, S. C. Filed Oct. 12, 1885. (No model.)



Claim.—The herein-described implement or utensil, consisting of the paper-knife C, having a suitable handle, and constructed with the envelope-opener G, having an S-shaped wrapper ripper or projection at its free end, with sharpened edges, substantially as and for the purpose set forth.

330,558. BALANCE-WHEEL FOR WATCHES. Abel S. Buckelew, Jersey City, N. J. Filed Jan. 7, 1885. (No model.)



Claim.—1. A balance-wheel for watches and chronometers, comprising two rim-sections, a supporting-bar extending between the rim-sections, and a compensating-bar extending between the rim-sections independent of the supporting-bar, substantially as described.

2. A balance-wheel for watches and chronometers, comprising two rim-sections, a supporting-bar connecting the end of one rim-section with the opposite end of the other rim-section, and an arc-shaped compensating-bar independent of the supporting-bar connecting the other ends of the rim-sections, substantially as described.

3. A balance-wheel for watches and chronometers, comprising two rim-sections, a supporting-bar connecting said rim-sections, an arc-shaped compensating-bar independent of the supporting-bar, also connecting the rim-sections, and a second arc-shaped compensating-bar symmetrical with the first, substantially as described.

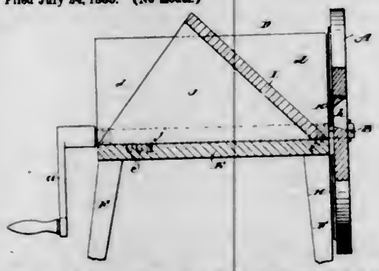
330,559. SEAT FOR TWO-WHEELED VEHICLES. Charles W. Burstorf, Petaluma, Cal. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a two-wheeled vehicle or cart, the divided seat arranged for longitudinal adjustment, consisting of the rods to which the seats are hinged, and the seats provided with lower projecting pins which enter holes upon either side and in the center of the vehicle in such a manner that when the seat or seats are in position they will be immovable, as set forth and specified.

2. In a two-wheeled vehicle having a divided seat or seats in sections hinged to the sides of the vehicle with downwardly-projecting pins, the brackets or bolsters at the rear end of the shafts or body provided with a series of holes, and a center plate supported upon a suitable standard or bracket also provided with a series of holes made parallel with each other, the said holes upon both the bolsters or brackets and center plate arranged to receive the pins upon the lower face of the seats and prevent them from moving when in position, constructed, arranged, and operating substantially in the manner as herein set forth and specified.

330,560. VEGETABLE-CUTTER. Alfred Cannon, High Spire, Pa. Filed July 24, 1885. (No model.)

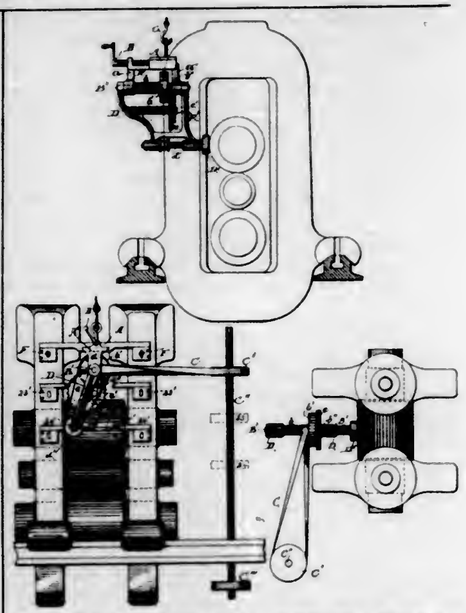


Claim.—In a vegetable-cutter, the combination of the feed-box, open at its top and forward end and provided with a series of holes in its bottom, the inclined feed-board having a support on its under side, and a pin on the under side of the support adapted to enter any one of said holes, and a cutter operating across the open forward end of the feed-box, in front of the feed-board, substantially as set forth.

330,561. APPARATUS FOR GRINDING ROLLS. Harvey B. Chess, Pittsburg, Pa. Filed May 6, 1885. (No model.)

Claim.—1. The grinding-wheel D′ and spindle *d*′, in combination with the swinging frame D, shaft B′, drum *b*, pulley *b*′, pinion *b*″, arms *a a*′, and carriage or head A′, all constructed to operate substantially as and for the purpose set forth.

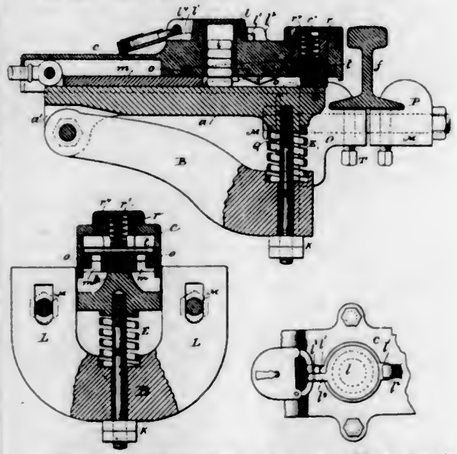
2. The shelf A, carriage or head A′, provided with the arms *a a*′, screw B, and shaft B′, carrying the drum *b*, pulley *b*′, and pinion *b*″, in



combination with the swinging frame D, the spur-wheel *e*, provided with wrist *e*′, slotted arm E′, and grinding-wheel D′, all constructed to operate substantially as and for the purpose set forth.

3. The shelf A, adjustable head or carriage A′, swinging frame D, and grinding-wheel D′, in combination with the shaft B′, carrying the drum *b*, pulley *b*′, the belt C, vertical shaft C″, and wheels C′ C‴, substantially as herein set forth.

330,562. TORPEDO-SIGNAL. Henry F. Clark, Poughkeepsie, N. Y. Filed June 1, 1885. (No model.)



Claim.—1. The combination, with the levers o, slide *m*, cross-pin *t*, and exploder *r* in a torpedo railway-signal, of the spring *r*′, within the exploder and acting against the cross-pin *t*, to sustain the weight of the exploder and to allow the yielding movement, substantially as set forth.

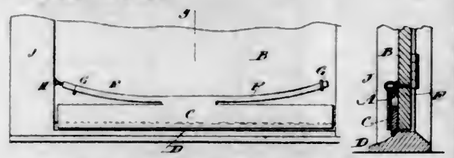
2. The combination, with the torpedo railway-signal, of a frame to which the rear end of the base of the torpedo-signal is hinged, a spring between the said frame and the anvil of the torpedo-signal, and clip-pieces and bolts for connecting the parts to the rail, substantially as set forth.

3. The frame B, having a U-shaped bearing-piece, L, at one end thereof, in combination with the base *a* of the torpedo-signal, the spring E, between the frame and the under side of the anvil, the bolt H, passing through the frame and into the anvil, and the nuts upon the said bolt for adjusting the part, substantially as set forth.

4. The combination, with the torpedo-signal and the frame to which it is hinged, of a spring between the frame and the anvil of the torpedo-signal, the clip-pieces O P, and the bolts M, substantially as set forth.

5. In combination with the magazine, the cover *l*, having the projections l^2 and flange l^4, and the lugs l^3 and l^3 upon the cap *c*, substantially as set forth.

330,563. DOOR-STRIP. William Clark, Lincoln, Nebr. Filed Aug 18, 1885. (No model.)

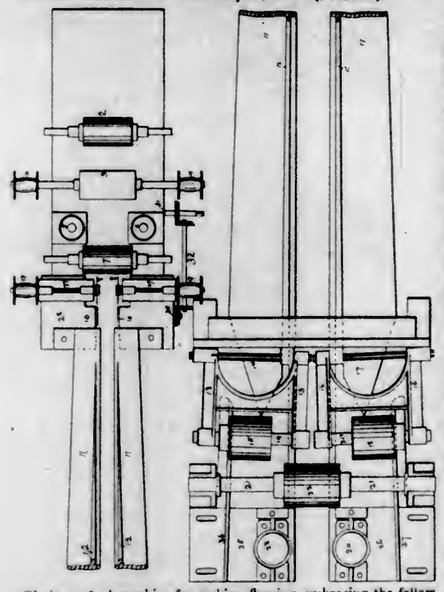


Claim.—1. The combination, with a door, of a strip held vertically movable on the bottom of the door, which strip is provided at its top with two spring-arms formed out of the top part of the said strip, substantially as herein shown and described.

2. The combination, with the door B, of the strip C, having spring-arms F formed on its top, and of the staple G, holding the end of the arm F at the free edge of the door, substantially as herein shown and described.

3. The combination, with the door B, of the strip C, having spring-arms F formed on the top of the strip, the staple G, and of the screw H, substantially as herein shown and described.

330,564. PLANING AND MATCHING MACHINE. Edward H. N. Clarkson, Baltimore, Md. Filed July 31, 1884. (No model.)



Claim.—1. A machine for making flooring, embracing the following mechanisms, consecutively arranged in the order in which they are enumerated, viz: planing-knives, heads mounted on each side of the passage-way to tongue or groove the outer sides of a board, saws to rip the board longitudinally, separators located in line with the saws to enter the kerfs and laterally separate the pieces into which the board has been ripped, and heads arranged and located at or beyond the ends of the separators, whereby the inner edges of the separate pieces are tongued or grooved, parts being combined as and for the purpose set forth.

2. In a machine for making flooring, the combination of planing-knives located centrally in the path of a board, heads located at the sides of the board to tongue or groove its outer edges, and saws located in the path of the board to rip it longitudinally, as set forth.

3. In a machine for making flooring, the combination of planing-knives, heads located on the sides of the machine for tonguing or grooving the sides of the board, a saw located in the path of the board to rip it longitudinally, a separator located in the line of the saw-kerf to separate the pieces ripped apart by the saw, and a head located beyond and in line with the separator to tongue or groove the two inner sides of the separated pieces, as set forth.

4. In a machine for making flooring, the combination of heads located at the sides of the machine for tonguing or grooving the sides of a board, saws located in the path of the board to rip it as it is propelled forward, separators in line with the saws to laterally part the ribbed pieces, heads located in line with the saws, and separators to tongue or groove the inner sides of the boards, and mechanism, substantially as described, for simultaneously adjusting the lateral position of the different devices, as set forth.

5. In a machine for making flooring, the combination of heads located at the sides of the machine for tonguing or grooving the sides of a board, saws located in the path of the board to rip it as it is propelled forward, separators in line with the saws to laterally part the ripped pieces, heads located in line with the saws and separators to tongue or groove the inner sides of the boards, and mechanism, substantially as described, for independently adjusting the lateral position of the various devices, as set forth.

6. In a machine for making flooring, the combination of feed mechanism for propelling the stock through the machine, heads located at the sides of the machine for tonguing or grooving the sides of a board as it is fed forward, saws located in the path of the board to rip it longitudinally, and a separator located in line with and beyond each saw to enter the kerf and laterally part the ripped pieces, whereby their intermediate adjacent edges are brought into position to be operated upon, as set forth.

7. In a machine for making flooring, the combination, with mechanism for propelling the stock through the machine, of heads for tonguing or grooving the sides of a board, saws for ripping the board into two or more pieces, and a separator for laterally parting the ripped pieces, whereby their intermediate adjacent edges are brought into position to be simultaneously operated upon, as set forth.

8. In a machine for making flooring, the combination, with mechanism for propelling the board through the machine, of saws for ripping the board, separators for laterally parting the pieces, and heads for tonguing or grooving the edges of the ripped pieces, as set forth.

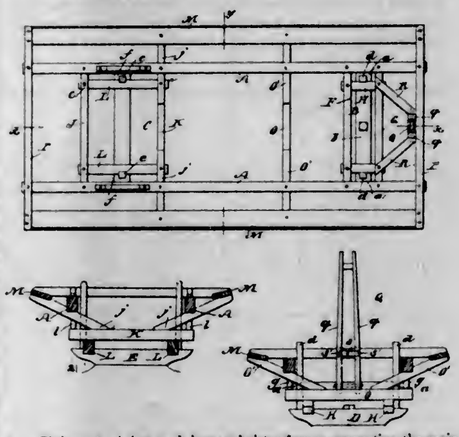
9. In combination, the saws 8, guide-flange 12, inclined and beveled, as described, the feed-rolls 15 and 18, set at a slight angle, and the feed-roll 22, set at right angles to the line of feed, as set forth.

10. In combination, the mechanism, the cutter-heads 5 and 6, saws 8, guides 12, cutter-heads 23 and 24, and suitable mechanism, substantially as described, whereby all the mechanism on one side of the machine may be adjusted toward and from that of the other side, as set forth.

11. In combination, the inclined guide-flanges 12, the separators 10, and the saws 8, the forward edges of said saws being slightly nearer to each other, as and for the purpose set forth.

12. In combination, the series consisting of cutter-heads, saw, and guide-flange on one side of the machine, the similar series on the opposite side, the adjusting-screws 29, 30, and 31, and the longitudinal shaft 32, substantially as described.

330,565. HAY-RACK. Hugh Connelly, Colton, N. Y. Filed Aug. 12, 1885. (No model.)

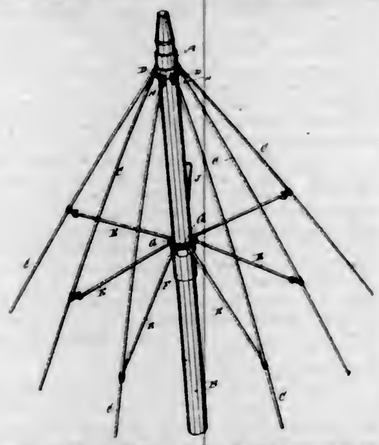


Claim.—1. A hay-rack having bolster-frames supporting the main timbers A above the bolsters and outside of the sill-blocks L H, so the main timbers come outside of the bolster-stakes, substantially as and for the purposes described.

2. The hay-rack formed with the front and rear bolster frames or supports, B C, main timbers A A, inclined arms or braces, side-boards M, and the bars P P, the main timbers A being elevated and supported outside of the blocks H L to form spaces *a f* for the bolster-stakes, substantially as described.

3. The cross-piece G, having the diagonal timbers R R secured to it, in combination with the line-holder Q, pivoted in the timbers R and adapted to be secured in vertical position by the button *s*, attached to the front tie-bar P, as and for the purposes set forth.

330,566. UMBRELLA AND PARASOL FRAME. WILLIAM P. CONNER, Bloomsburg, Pa. Filed Apr. 21, 1885. (No model.)



Claim.—1. An umbrella-frame having its ribs arranged in pairs, the ribs of each pair being connected at their pivoted ends, substantially as herein shown and described.

2. An umbrella-frame having its braces arranged in pairs, and the braces of each pair being connected at the pivoted ends, substantially as herein shown and described.

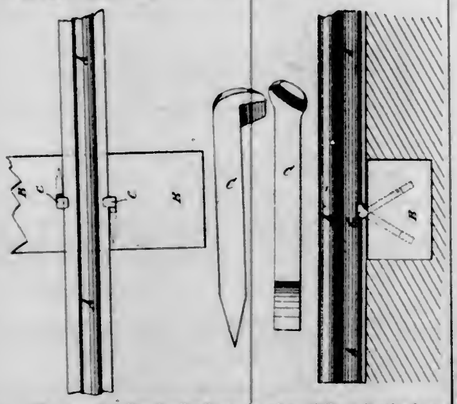
3. An umbrella-frame having two of its ribs or two of its braces made from continuous pieces of wire, substantially as herein shown and described.

4. An umbrella-frame having its ribs and braces arranged in pairs, the ribs of each pair and the braces of each pair being connected and the outer ends of the braces of each pair being connected with adjacent ribs of two different pairs of ribs, substantially as herein shown and described.

5. An umbrella-frame having its ribs arranged in pairs, each pair being formed of a single piece of wire, and each rib having a bend, H, at its pivoted end, substantially as herein shown and described.

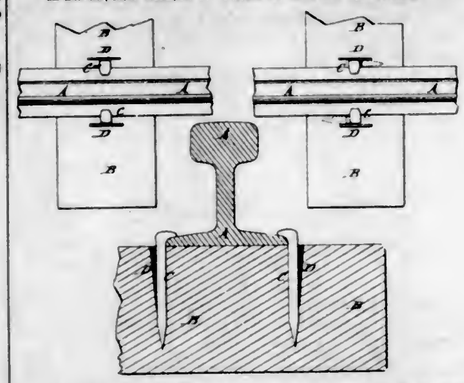
6. In an umbrella, the combination, with the sleeve A, fixed on the stick B, of the hinge-loops D on the sleeve A, and of the ribs C, of which two are formed of a single piece of wire, the cross-pieces uniting the ribs being passed through the hinge-loops D, substantially as herein shown and described.

330,567. SPIKE. THOMAS A. DAVIES, New York, N. Y. Filed June 11, 1885. (No model.)



Claim.—A railroad-rail spike made substantially as herein shown and described, with heads laterally inclined upon their lower sides, to give the said heads a substantial bearing upon the flanges of the rails when the spikes are driven into the ties in an inclined direction, as set forth.

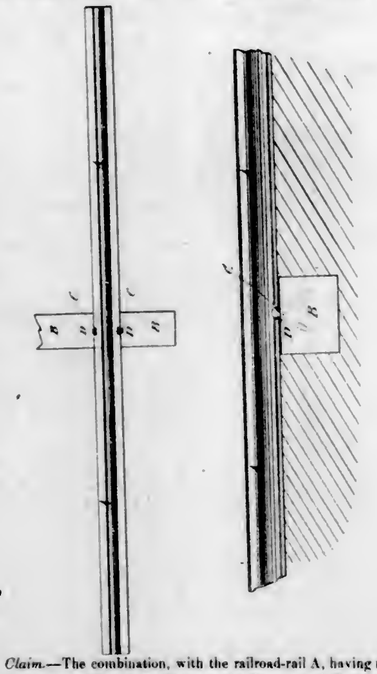
330,568. STAY-PLATE FOR RAILROAD-RAIL SPIKES. THOMAS A. DAVIES, New York, N. Y. Filed June 11, 1885. (No model.)



Claim.—1. A re-enforce for railroad-ties, consisting of a metal plate adapted to be driven into the tie transversely to the grain of the wood, the said plate being in the rear of the spike and of greater width than the same, substantially as described.

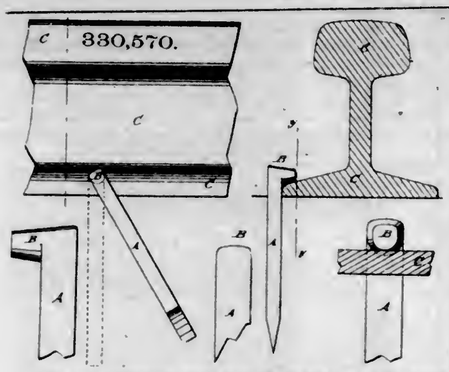
2. The combination, with the rails A, the ties B, and the spikes C, of the wedge-shaped plates D, driven into the ties at the outer sides of the spikes and transversely to the grain of the wood, the said plates being of a greater width than the spikes, substantially as shown and described, whereby provision is made for metal lining or re-enforcing the fiber of the wood to prevent lateral crushing of the same, as set forth.

330,569. CENTER FASTENING FOR RAILROAD-RAILS. THOMAS A. DAVIES, New York, N. Y. Filed June 11, 1885. (No model.)



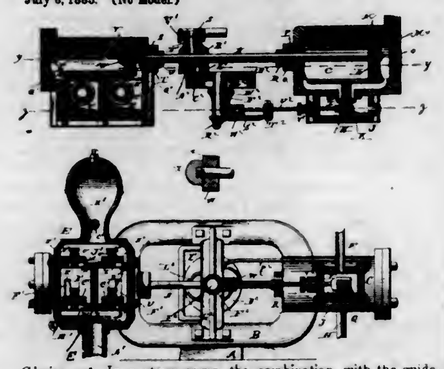
Claim.—The combination, with the railroad-rail A, having recesses C in the centers of the edges of its opposite flanges, and the central tie, B, of the inclined fastening-spikes D, driven into the ties at opposite inclinations, substantially as herein shown and described, whereby the center of the rail will be held securely in place while the ends will be allowed a free longitudinal movement as the said rail expands and contracts, and the rail will be held securely against creeping, as set forth.

330,570. RAILROAD-RAIL SPIKE. THOMAS A. DAVIES, New York, N. Y. Filed July 3, 1885. (No model.)



Claim.—A railroad-rail spike made, substantially as herein shown and described, with the lower part of its head, in the form of the frustum of a cone, having its axis at right angles with the axis of the spike-body, whereby the said spike-head will have a firm bearing on the rail-flange whether driven vertically or at an inclination toward either side, as set forth.

330,571. STEAM-PUMP. WALTON E. EBY, Franklin, Ohio. Filed July 6, 1885. (No model.)



Claim.—1. In a steam-pump, the combination, with the guide-frame, of a yoke having a recess in one side, a slide-valve rod, one end of which works in said recess, and a shaft journaled in the yoke and having an eccentric pin at one end for operating said slide-valve rod, substantially as and for the purpose set forth.

2. In a steam-pump, the combination, with a cross-head provided with a flanged box, of a roller sliding vertically therein and having a central aperture, and a pin, of less diameter than the aperture in said roller, moving therein and operated thereby, substantially as and for the purpose set forth.

3. In a steam-pump, the combination, with a cross-head having a vertically-extending box, of an apertured roller sliding therein, a shaft journaled at right angles to said cross-head and having a fly-wheel secured thereon, and a pin, of less diameter than the aperture in said roller, projecting from one side of said fly-wheel and engaging therewith, substantially as and for the purpose set forth.

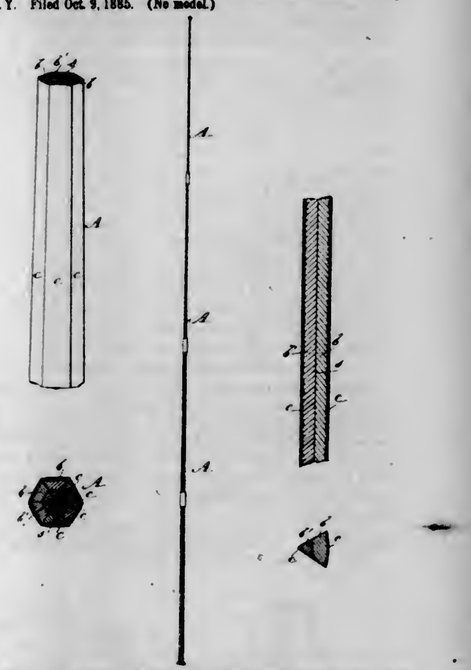
4. In a steam-pump, the combination, with the cylinders and guide-frame, of a common piston-rod having a piston on each end, a cross-head near its middle, a yoke secured upon said guide-frame, a shaft journaled in said yoke and having a fly-wheel secured upon one end and an eccentric at the other, said fly-wheel having a wrist-pin upon one side, which engages with the said cross-head, and a cam-flange upon the other, said cam-flange having two diametrically-opposite sharp points at right angles to the wrist-pin, and having two sharp steep recesses to the rear of said points, and a spring bearing with its free end against the said cam-flange, substantially as and for the purpose set forth.

5. In a steam-pump, the combination, with the cylinders and guide-frame, of a common piston-rod having a piston on each end, a cross-head near its middle, one face of said cross-head being formed into a flanged vertically-extending box, a roller sliding vertically therein and having a central aperture, a yoke secured upon said guide-frame, a shaft journaled therein and having a fly-wheel at one end and an eccentric at the other, said fly-wheel having a wrist-pin upon one side and a cam-flange upon the other, said wrist-pin being of a smaller diameter than the aperture in said roller and engaging therewith, and a spring bearing against said cam for forcing the fly-wheel slightly forward at the ends of the stroke of the cross-head, substantially as and for the purpose set forth.

6. In a steam-pump, the combination, with the cylinders and guide-frame, of a piston provided with a cross-head working in the same, a yoke secured to said guide-frame and having a shaft journaled therein, said shaft having a fly-wheel secured to one end, said fly-wheel engaging with the piston-rod and provided with a flanged cam, as described, and a spring bearing with its free end upon said cam, the other end of said shaft having a pin turned thereon to one side of the center, a valve-rod, the outer end of which works in a recess in said yoke, and an eccentric connecting said pin and said valve-rod, substantially as and for the purpose set forth.

7. In a steam-pump, the combination, with the cylinders and guide-frame, the inner facing sides of which guide-frame are provided with V-shaped guide-ribs, of a common piston-rod provided with pistons and a cross-head, slotted blocks having V-shaped grooves in their ends, screw-bolts passing through said slots into said cross-head, and means for admitting and discharging steam to and from one cylinder and water to and from the other, substantially as and for the purpose set forth.

330,572. BAMBOO FISHING-ROD. EUGENE M. EDWARDS, Hancock, N. Y. Filed Oct. 9, 1885. (No model.)

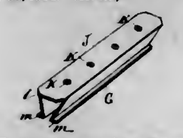


Claim.—1. A bamboo fishing-rod built up of series of compound bamboo splints having their enamel on their opposite sides or faces, and each composed of two splints glued or cemented together on their sides or faces which are free from the enamel, substantially as specified.

2. The within-described compound bamboo splint having the enamel on its opposite sides or faces, and composed of two splints glued or cemented together on their sides or faces which are free from the enamel, essentially as described.

3. A rod built up of compound bamboo splints having their enamel on their opposite sides or faces, substantially as specified.

330,573. WASHING-MACHINE. GEORGE I. FERRER, Mexico, Mo. Filed July 15, 1884. (Model.)



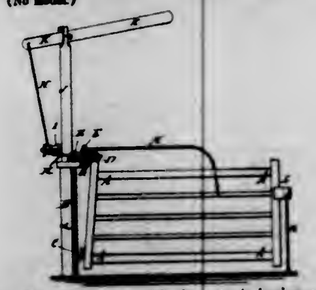
Claim.—In a washing-machine, the combination, with the drum, of the hollow ribs G, having the flanges *m* on the longitudinal edges, tongues *l* on the ends of the bottoms J, and apertures K in the said bottoms, substantially as herein shown and described.

330,574. SINGLE-PIECE PORCELAIN WASHOUT WATER-CLOSET. ALFRED POWERS, Philadelphia, Pa., and THOMAS CORNELLY, Trenton, N. J. Filed Aug. 10, 1886. (No model.)



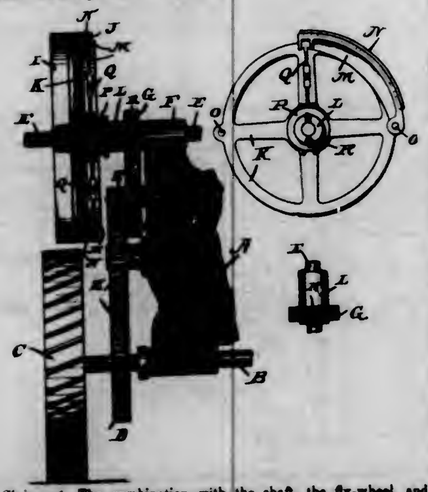
Claim.—An improved one-piece porcelain washout water-closet bowl having a single solid wall, rounded to the inside and squared on the outside at the top, and having the walls re-enforced and graduated at the top corners, substantially as described.

330,575. GATE. JOSHUA D. FOX, Frankfort, Ind. Filed June 18, 1885. (No model.)



Claim.—The combination, with the gate A, having a downward inclined rear end and a pivot, D, the rear post, B, to which the lower end of the gate is hinged, as at C, the horizontal pulley E on top of the post, having a pin, F, and connected to the pivot D, the side posts, J, having levers K and rollers I, and the rope H, connected to the levers and to the pulley E and passed around the rollers, of the spring N, secured to the gate at one end and connected to the pin F at the other end, substantially as set forth.

330,576. TRACTION-ENGINE. CHARLES M. GIDDINGS, Massillon, Ohio. Filed Sept. 22, 1884. (No model.)

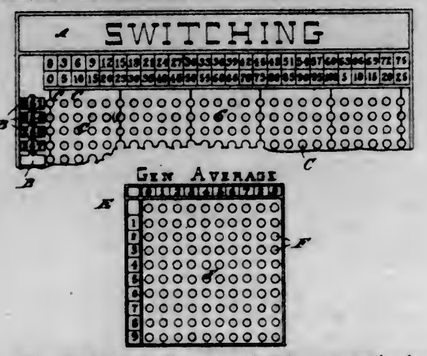


Claim.—1. The combination, with the shaft, the fly-wheel, and hub, of the collar P, the shoe-supports, the shoes, and rods Q, all of the above parts combined and adapted to operate as described.

2. The combination, with a traction-axle, intermediate gearing, the motor-shaft E, and fly-wheel I, fast thereon, of the hub L and pinion G, united by the projections R upon the hub, babbitted into recesses in the pinion, substantially as and for the purpose set forth.

3. In a traction-engine, the combination of fly-wheel I with bored portion J, hub L, collar P, fitted to slide and to shift transversely on said hub, shoes J, and rods Q, substantially as and for the purpose set forth.

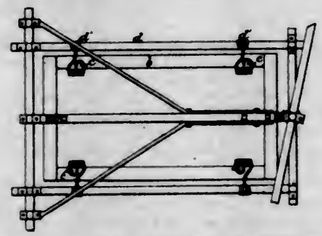
330,577. CHART FOR RAILROAD ROLLING-STOCK. JOSEPH S. GRAHAM, Buffalo, N. Y., assignor to himself and George W. Stevens, Cleveland, Ohio. Filed Feb. 19, 1885. (No model.)



Claim.—1. A chart having a row of numbers representing locomotives, cars, or other rolling-stock, a row of apertures for each rolling-stock number or name, and two rows of numerals adjacent to or above the uppermost row of apertures, the numerals of one of the said rows of numerals expressing the percentage of the mileage and the numerals of the other row expressing the number of miles or thousands of miles traversed for each percentage-numeral, substantially as herein shown and described.

2. A chart having the horizontal row of apertures C, also forming vertical rows, the numbers B at the left-hand ends of the horizontal rows, and two numbers, one above the other, at the top of each vertical row, substantially as herein shown and described, in combination with an average-chart, E, which consists of nine horizontal rows of apertures, F, which also form nine vertical rows, the said vertical and horizontal rows being numbered from 0 to 9, all as and for the purpose specified.

330,578. VEHICLE-SPRING. WILLIAM W. GRIER, Hulton, Pa. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a side-bar vehicle, the combination, with the body and side bar, of a spring having a coiled body and laterally-diverging torsion-arms, which curve inward and are secured by their extremities, the one to the side bar and the other to the sill of the body, substantially as and for the purposes specified.

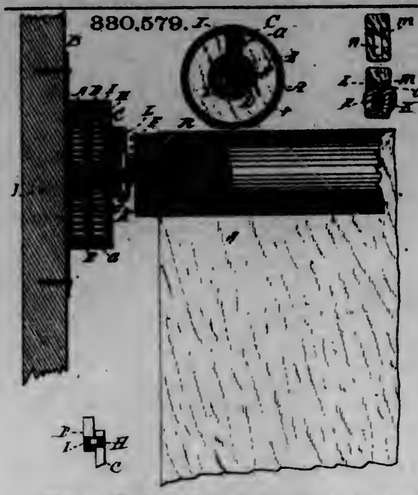
2. In a side-bar vehicle, the combination, with the body and side bar, of a spring having the coiled body a', the horizontally-projecting inwardly-curved body-arm a^2, and the downwardly-projecting inwardly-curved side-bar arm a^3, said arms connected at or near their extremities to the bed and side bar, substantially as and for the purposes specified.

330,579. CURTAIN-FIXTURE. ALBERT C. F. GRIER, New York, N. Y. Filed July 31, 1885. (Model.)

Claim.—1. The case A, adapted to be secured to a window-frame and carrying the double springs C D, united at their outer ends by the coupling I, and separated by the disk E, provided with the notch A, and said springs in their inner ends united, respectively, one by means of the hub J to the case and the other to the arbor, said arbor also forming a connection with a curtain-roller, R, substantially as and for the purpose specified.

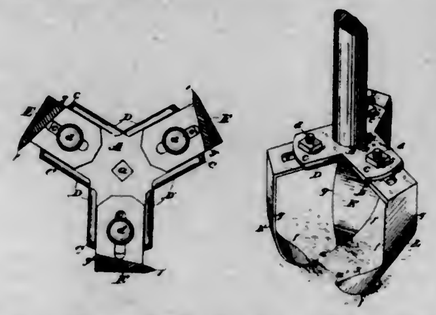
2. The spring C D, coiled in the case A, substantially as set forth, in combination with the ring r, as set forth.

330,579.



3. The cam K, provided with the shoulder *b* and secured to the case A, said case carrying the double spring C D, substantially as specified, and secured to the window-frame, and the drop-catch L, having the point M, and adapted, by means of the slot N, to vertical movement on the arbor F and to engage the shoulder *a* of the cam, said arbor being fixed in the roller and having the free end to pass through the case, where one end of the spring is secured to said arbor and the other to a hub, J, of the case, in which said arbor has its bearing, all substantially as and for the purpose specified.

330,580. POST-HOLE AUGER. FRED. GRIMM, Comanche, Tex. Filed June 17, 1885. (No model.)



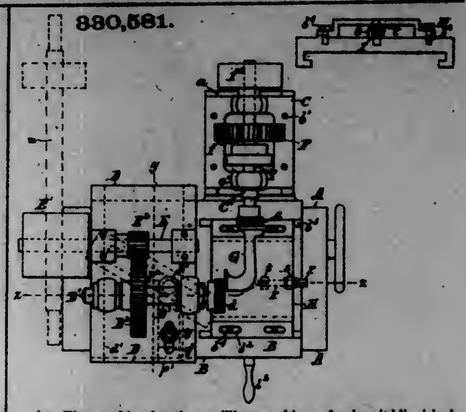
Claim.—The herein-described improvement in earth-augers, comprising an operating-handle having a series of radial horizontal wings provided on their lower faces with downwardly-projecting flanges D, cutting-blades E, having horizontal slotted arms at their upper ends adapted to fit between the flanges of the wings, said cutting-blades having their lower ends pointed and bent or curved inwardly and transversely, to bring the cutting-edge of one blade out of the plane of rotation of the rear bland edge of the preceding blade, and adjusting bolts and nuts working through the slotted arms of the blades and the radial wings, as set forth.

330,581. COMPOUND MILLING-MACHINE. CHARLES E. HADLEY, New York, N. Y., assignor to E. E. Garvin & Co., same place. Filed Oct. 3, 1885. (No model.)

Claim.—1. The combination, in a milling-machine, of a longitudinal bed, a fixed cutter-head supporting a fixed spindle and cutter at right angles to the bed, a table movable longitudinally upon said bed, and a movable carriage fitted transversely to said table and carrying a cutter-spindle and cutter at right angles to the fixed spindle, substantially as and for the purpose set forth.

2. The combination, in a milling-machine, of a longitudinal bed, a fixed cutter-head supporting a fixed spindle and cutter adjustably at right angles to the bed, a table movable longitudinally upon said bed, a movable carriage fitted transversely to said table and carrying a cutter-spindle and cutter at right angles to the fixed spindle, and means, as screw *b*, for adjusting the fixed cutter-head transversely to the movable table, as and for the purpose set forth.

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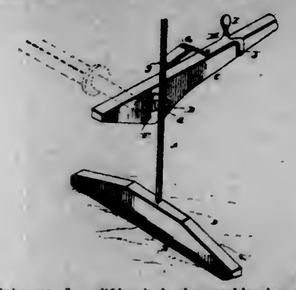


3. The combination, in a milling-machine, of a longitudinal bed, a fixed cutter-head supporting a fixed spindle and cutter adjustably at right angles to the bed, a table movable longitudinally upon said bed, a movable carriage fitted transversely to said table and carrying a cutter-spindle and cutter at right angles to the fixed spindle, means, as screw *b*, for adjusting the fixed spindle transversely to the movable table, and a work-holder adjustable longitudinally upon the movable table adjacent to the two cutters, as and for the purpose set forth.

4. In a milling-machine having a bed, and a table provided with means for feeding it longitudinally, and with a spindle-carriage fitted transversely thereto, as described, the combination, with the bed beneath the table, of an inclined guide and a projection upon the transverse carriage fitted to said guide and adapted to move the carriage transversely by the longitudinal movement of the table, substantially as shown and described.

5. In a milling-machine, the combination, with the bed A, provided with recess B, and the adjustable guide O, pivoted therein, of the table B, movable longitudinally upon the bed and formed with the transverse slot B', the carriage D, fitted transversely to the bed, and the slide p', having the pin p projected through the slot into the inclined guide, and provided with the swiveled block p^2, the whole arranged and operated substantially as shown and described.

330,582. LIFTING-JACK. AARON W. HANAWER and JOHN E. PIKE, Moundsville, W. Va. Filed Oct. 5, 1885. (No model.)



Claim.—1. In a lifting-jack, the combination of the upright, the eyebolt sliding upon said upright, and the lever having its fulcrum upon the shank of the bolt to one side of the upright, substantially as and for the purpose shown and set forth.

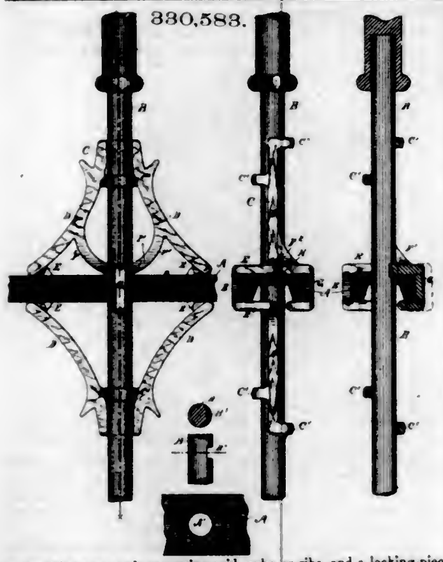
2. In a lifting-jack, the combination of the upright, the eyebolt sliding upon the said upright and having its eye bent at an angle to the shank, and the lever having its fulcrum upon the shank to one side of and at right angles with the upright, substantially as and for the purpose shown and set forth.

3. In a lifting-jack, the combination of the upright, the eyebolt sliding upon said upright, the lever having its fulcrum upon the shank of said eyebolt to one side of the upright, and the latch pivoted upon the lever and adapted to lock the same in its adjusted position upon the upright, substantially as and for the purpose shown and set forth.

330,583. METALLIC FENCE. CHRISTIAN HAENKA, Springfield, Ohio. Filed Sept. 1, 1884. (No model.)

Claim.—1. The punched rail A, and picket B, having a notch, B', combined with a scroll for locking the two together, comprising eyes C' C', webs or ribs D, flaring outwardly in opposite directions from said eyes and having bearings E, engaging the same side of said rail and in-

330,583.



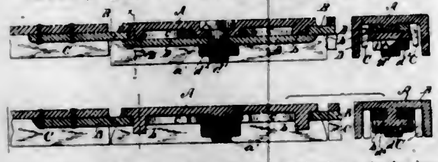
terposed between and connecting said webs or ribs, and a locking-piece engaging said rail upon the opposite side and co-operating with the notch of the picket, substantially as and for the purpose described.

2. The combination, in a metallic fence, of a picket-holding rail provided with picket-openings, a picket with a notch in its periphery, substantially in the plane of the upper surface of the rail, and a locking device or scroll having eyes at opposite ends encircling the picket, webs extending from end to end of the scroll and having side bearings engaging the rail on one side and a bearing for the rail on the opposite side bent about and under the rail, and provided with a locking-piece engaging the notch in the picket, substantially as described.

3. A scroll or plate, C, provided with bearings C' C' at opposite ends, side webs or ribs, D, provided with bearings E E at right angles to the webs or ribs, a locking-piece, F, having a bearing, G, and locking projection H therefrom, combined with a rail and notched picket, substantially as described.

4. In a metallic fence, the combination, with the supporting-rail A, provided with the picket-opening, and the picket B, notched peripherally, as described, of the locking-scroll C, having bearings E, adapted to engage and support the rail at one side, as shown, and the locking-piece F, integral with said scroll, and having bearing G, adapted to engage and support the opposite side of the rail A, and having a free end adapted to be pressed into the notch of the picket to hold the parts firmly, all constructed and arranged substantially as shown and described.

330,584. CONNECTION FOR METALLIC FENCING. CHRISTIAN HANIKA, Springfield, Ohio. Filed June 5, 1885. (No model.)



Claim.—1. The combination, with a boxing having projecting lugs, as described, and a metallic rail, of a connecting-link secured at one end to the rail, and having a slotted free end adapted to engage a lug of the boxing, and means to secure the link and boxing adjustably together to permit expansion and contraction, substantially as described.

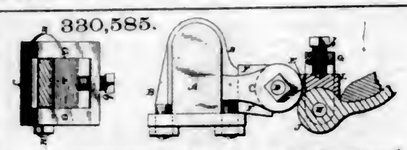
2. A connection for metallic rails, consisting of the channel-shaped boxing A, provided with the downwardly-projecting lugs *b*, of any desired shape, and collar *a'*, the links B, to engage the rails, as described, and having elongated openings to engage the lugs of the boxing, and the washer D and bolt *d'*, to hold the parts in place, all constructed and arranged substantially as shown and described.

330,585. THILL-COUPLING. EDWIN J. HART, Columbiana, Ohio. Filed July 13, 1885. (No model.)

Claim.—1. The yoke or link G, in combination with the short bar L, the jaws C, eye E, and thill-iron J, substantially as described.

2. The combination of the yoke G, set-screw *b*, bar L, and thill-iron, with a suitable support, which is attached to clip, substantially as described.

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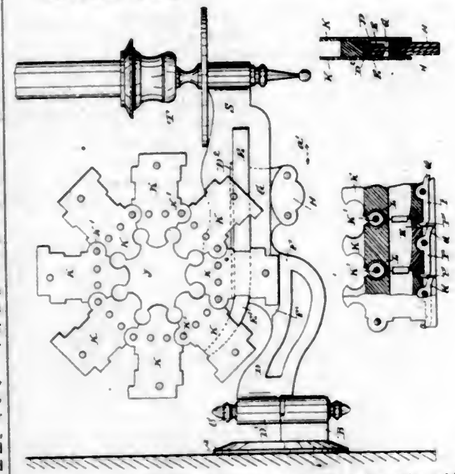


330,586. INCANDESCENT ELECTRIC LAMP. CHARLES HEISLER, St. Louis, Mo. Filed Mar. 30, 1885. (No model.)



Claim.—A light-giving conductor for incandescent lamps, consisting of a carbonized flat strip, braid, or ribbon made up of threads of textile material, the said strip, braid, or ribbon having spaces or openings between the threads or groups of threads, substantially as and for the purpose set forth.

330,587. BRACKET-ARM. CARL HOLLWEG, Barmen, Germany. Filed July 20, 1885. (Model.)



Claim.—1. A bracket-arm formed of links jointed together with their sides in the same plane, to swing in a plane parallel with said sides, the links being pivoted at their upper ends, to permit the lower ends to swing from each other, substantially as herein shown and described.

2. A bracket-arm formed of links pivoted to each other, and having springs on their pivots, the ends of the springs acting on the links, substantially as herein shown and described.

3. A bracket-arm formed of the links K, having the shoulders I, the pivots K', uniting the links, and the springs L on the pivots and having their ends rested against the links, substantially as herein shown and described.

4. The combination, with a series of links pivoted together, of latches pivoted to the links for the purpose of locking the links together, substantially as herein shown and described.

5. The combination, with a series of links pivoted together, of springs acting on the links, and of latches pivoted to the links for the purpose of locking them together, substantially as herein shown and described.

6. The combination, with a bracket having tracks, of an arm formed of a series of links pivoted together, which arm can slide on the bracket, substantially as herein shown and described.

7. The combination, with a bracket having tracks and cams, of an arm formed of a series of links pivoted together, and of latches pivoted to the links, substantially as herein shown and described.

8. The combination, with a bracket having tracks and cams, of an arm formed of a series of links pivoted together, each link having notches, springs on the pivots of the links, and latches pivoted to the links, substantially as herein shown and described.

330,588. BUTTON-FASTENER. ALBERT G. IRVINE, Gloucester City, N. J. Filed Aug. 25, 1885. (No model.)

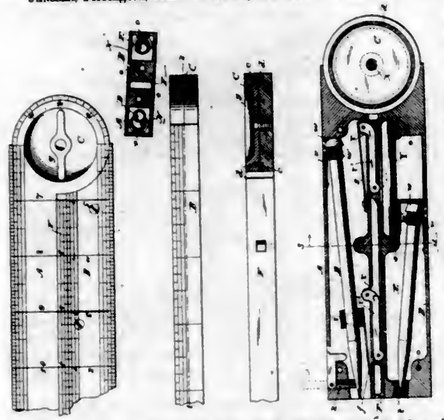
330,588.



Claim.—1. A button-fastener consisting of a V-shaped wire having the end of one shank pointed, and a hook formed on the end of the other shank, the shank having the hook being provided with a covering, substantially as herein shown and described.

2. The combination, with a button, of the strip E, having tongues F, and held on the button, and of the V-shaped fastening device A, having the end of one shank pointed, and a hook formed on the other shank, substantially as herein shown and described.

330,589. COMBINED RULE, CALIPERS, AND LEVEL. C. DIEDRICH JANSSEN, Torrington, Conn. Filed May 22, 1885. (No model.)



Claim.—1. A rule consisting of sections pivotally connected, each section being provided on its inner face with an annular groove encircling the pivot of the sections, and a ring fitting said grooves, substantially as set forth.

2. The combination, with a rule consisting of hollow arms or sections, joined as described, of compass-points adapted to bearings in the ends of said sections, and springs for retaining the points entirely within the hollow sections, substantially as set forth.

3. The combination, with a rule consisting of hollow sections, joined as described, of adjustable compass-points, one of which is adapted to a fixed bearing in the end of one said sections, while the other point is adapted to a yielding bearing within the other section, and a jointed set-screw carried by the latter section, substantially as and for the purpose set forth.

4. The combination, with a rule consisting of sections joined by a graduated joint, of a locking device for securing the sections after adjustment, compass-points longitudinally adjustable within said sections, one of said points fitting a fixed bearing when outwardly adjusted, and the other being carried by a swivel-bearing, and means, substantially as described, for laterally adjusting said second point within its inclosing section, as and for the purpose set forth.

5. The combination, with a sectional rule, joined as described, of a parallel ruler linked to the inner edge of one of said sections, and a spring for retaining the parallel ruler in different positions, substantially as described.

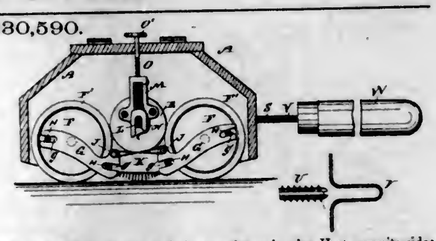
6. The combination, with a rule consisting of hollow sections variously graduated, as described, of a hinge-joint graduated into degrees and connecting said sections, a locking device, as described, for retaining the sections in place after adjustment, a parallel ruler, adjustable compass-points, and a spirit-level, substantially as and for the purpose set forth.

330,590. CARPET-SWEEPER. GEORGE W. KELLEY, Goshen, Ind., assignor to Lewis H. Noble and Joseph M. Noble, both of same place. Filed May 31, 1884. (Model.)

Claim.—1. In a carpet-sweeper, the combination, with the box A and the revolving brush D, of the fork M, fastened on the inner end of said box and having a long and short prong, the spring N, secured to the short prong and having a curved end extending inward across the open end of the fork, and the screw O, passed through the top of the box and down to the brush-pivot held in the fork, substantially as set forth.

2. In a carpet-sweeper, the combination, with the box and the brush-roller journaled therein, and provided at one end with a friction-roller, of plates G, slotted at their opposite ends, pins H at opposite sides of the friction-roller and extending into the slotted ends of the plates, a friction-roller journaled in each of said plates, and a spring for forcing said plates G toward each other, substantially as set forth.

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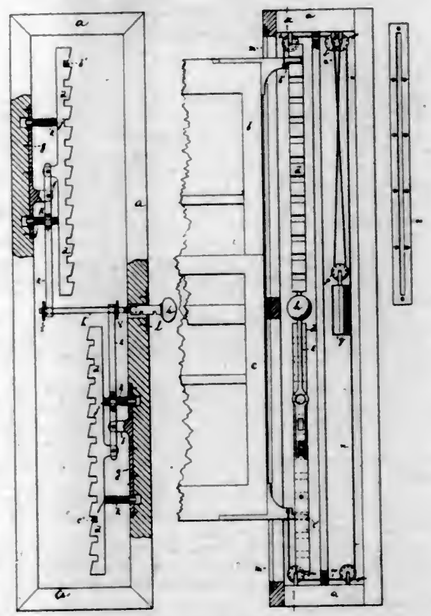


3. In a carpet-sweeper, the combination, with the box having a groove, P, in one end piece and a fork, M, on the other end piece, of the staple P' in the bottom of the groove P, the spring N on the fork, and the brush D, provided with pivot L at each end, substantially as herein shown and described.

4. In a carpet-sweeper, the combination, with the box and the brushing mechanism therein, of the bail bent at its middle to form a prong, V, the screw U within the prong, and provided with longitudinal grooves for receiving the two arms of the prong, and handle W, substantially as set forth.

5. The combination, with the bent prong V of a handle, of a screw having longitudinal grooves for receiving the two arms of the prong, substantially as set forth.

330,591. SASH-LOCK. WILLIAM LANG, New York, N. Y. Filed Aug. 7, 1885. (No model.)



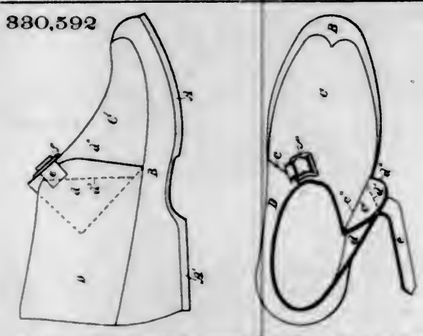
Claim.—1. The combination of frame *a* and sash *b*, having pin *b'*, with rack *d*, pivotally connected to lever *e*, and with rod *h* for operating such lever, substantially as specified.

2. The combination of frame *a* and sashes *b c*, having pins *b' c'*, with rope *n*, running over upper fast pulleys and secured to pins *b' c'*, and with the loose pulley *p* and weight *q*, suspended from rope *n*, substantially as specified.

330,592. ARCTIC OVERSHOE. THOMAS B. LAVEY, Bristol, R. I. Filed Jan. 17, 1884. (No model.)

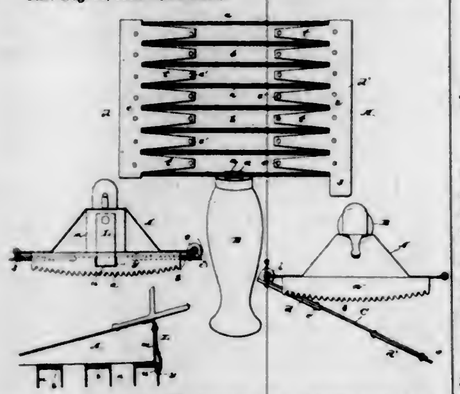
Claim.—1. An improved overshoe having a quarter with a forward extension on one side thereof, and having a vamp with a rearward extension on one side thereof, the said extensions of quarter and vamp pieces jointly forming a fullness or fold to one side of the instep, the opposite side having a smooth or unbroken connection, for the purpose specified.

330,592



2. The combination, with the quarter D, having an extension, *d*, and strap *e*, of the vamp C, having the extension *c'* on one side only, and the buckle *f* on the opposite side, and of the part B, the rubber sole A, and heel A', substantially as set forth.

330,593. CURRY-COMB. WILLIAM E. LAWRENCE, New York, N. Y. Filed Aug. 10, 1885. (No model.)



Claim.—1. A curry-comb provided with a cleaning-piece, C, consisting of strips or plates *b* and end plates, *d d'*, secured to said strips, substantially as set forth.

2. The combination, with the curry-comb having a cross-bar, *t*, of a cleaning-piece consisting of strips *b* and end pieces, *d d'*, the former carrying perforated ears *c c*, adapted to receive said pins, substantially as set forth

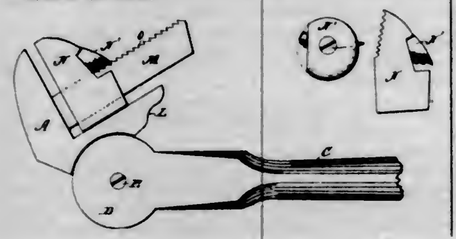
3. The combination of the comb and hinged cleaning-piece consisting of the strips *b* and terminal cross-plates *d d'*, secured to said strips, one of the cross-plates having a projection, *s*, for the purpose set forth.

4. The combination, with the scraper-blades *b*, of end plates, *d d'*, secured thereto and having inward-projecting fingers *t*, substantially as set forth.

5. The combination of the comb-body, hinged cleaning-piece C, and spring secured to the body and extending through one of the comb-bars to engage with the scraper, as set forth.

6. The comb provided with an inner bar having a slot, *y*, in combination with a hinged scraper-piece and with a spring secured to the body and provided with a lip or rib extending through the slot, substantially as set forth.

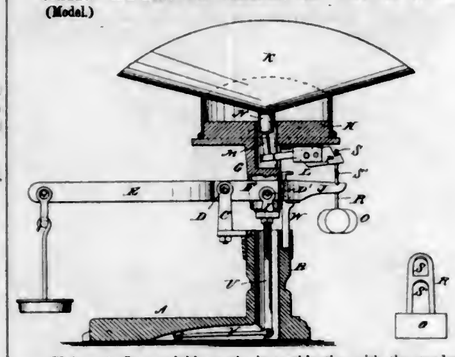
330,594. WRENCH. SAMUEL J. LEA, Chattanooga, Tenn. Filed June 26, 1885. (No model.)



Claim.—1. In a wrench, the combination, with a jaw fixed at a right angle to and upon a bar transversely notched in its outer face, of a jaw fitted to slide on the said bar, and provided with a stud on its back inclining forward toward the bar, and a conical screw journaled on the said stud, the threads of the screw adapted to engage the said notches in the bar, substantially as shown and described.

2. The combination of a transversely-notched wrench-bar, a jaw fitted to slide thereon, and having a stud projecting from its back at an angle diverging from the said bar, and a conical segmental screw journaled upon the stud and adapted to engage the said notches in the bar, substantially as shown and described.

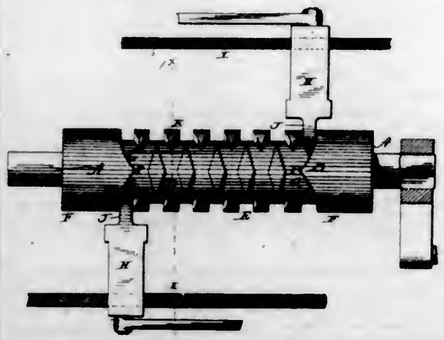
330,595. SCOOP BALANCE ATTACHMENT FOR WEIGHING-SCALES. ASA LEAS, West Manchester, Ohio. Filed June 20, 1885. (Model.)



Claim.—1. In a weighing-scale, in combination with the standard B, beam E, platform H, scoop K, and pivots D D', the hinged lever L, and balancing-weight O, provided with a double loop, R, constructed and operating so as to automatically balance the scale with or without the scoop, substantially as described.

2. In a weighing-scale, in combination with the beam E, platform H, scoop K, and standard B, the extended yoke F, and lever L, constructed so that the notches J P, respectively, therein may be in such relative position one above the other as to engage alternately with the loops S S' of the balancing-weight O to automatically balance the scale either with or without the scoop, as described.

330,596. MECHANISM FOR CONVERTING ROTARY INTO RECIPROCATING MOTION. ANDREW LEWIS, Cannon Falls, Minn. Filed Sept. 28, 1885. (No model.)

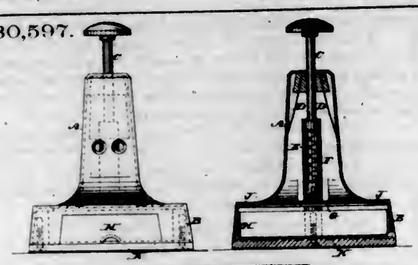


Claim.—In mechanism for converting motion, constructed substantially as described, the operating-shaft having oppositely-cut screw-threads of different pitch intersecting each other, substantially as and for the purpose herein set forth.

330,597. CIGAR-TIP CUTTER. WILLIAM H. LILLY, Reading, assignor to Henry B. Greasley, Philadelphia, Pa. Filed June 13, 1885. (No model.)

Claim.—In a cigar-tip cutter, a hollow stand with openings in its sides, in combination with a plunger having a spring-guide supported by a cross-bar removably connected with the lower end of the stand, leaving passages at its sides below the opening of the stand, a bottom board removably connected with the bottom of the base, and a hollow base provided with a drawer, all substantially as and for the purpose set forth.

330,597.

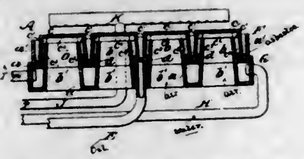


330,598. PULLEY-COVERING. GEORGE M. LINDSEY, Baltimore, Md., assignor to Henry S. Dulaney, same place. Filed Mar. 16, 1885. (No model.)



Claim.—A covering for pulleys, having in combination a backing of loosely-woven material, a facing of ground cork and boiled oil, substantially as described, spread and dried on one side of said backing, and a coating of water-soluble cement on the other side of the backing, as set forth.

330,599. HYDROCARBON-BURNER. JOSEPH MARION, Brooklyn, N. Y., assignor to himself and Joseph Calverley, same place, and Benedict Fischer and James Sasman Valk, New York, N. Y. Filed Apr. 30, 1885. (No model.)



Claim.—1. The combination, with the receiver F, having air-passages *b*, of the water-box G, having corresponding passages, *b'*, substantially as described.

2. The water-box G, fitted to the bottom of the receiver F, and connected with the boiler C by pipe I, and with a water-supply by a pipe, H, substantially as and for the purposes set forth.

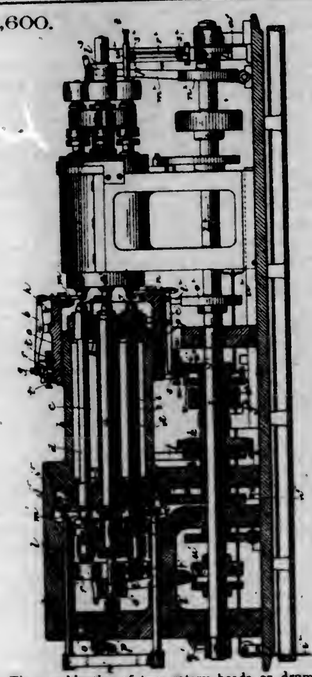
330,600. MACHINE FOR ROUGHING OUT PINIONS. EDWARD A. MARSH, Newton, Mass. Filed July 17, 1885. (No model.)

Claim.—1. The combination of a rotary head or drum, a series of spindles mounted thereon and adapted to hold wire rods to be converted into blanks, mechanism for rotating said head step by step to cause each spindle to assume a series of working positions, devices for locking the head in each working position, and rod-feeding mechanism, substantially as described, operating independently of the head or the spindles therein, and cutting devices and operating mechanism therefor arranged in series, to which the wire rods are presented by the step-by-step rotations of the head, the arrangement being such that each spindle is presented successively to the several devices of said series, and said devices operate simultaneously on the several rods held by the series of spindles, as set forth.

2. The combination of a rotary head having a series of running spindles, mechanism for rotating said head step by step, and devices for locking it after each step to cause each spindle to occupy a series of working positions, a plurality of cutting or reducing tools and mechanism to operate them, said tools being arranged to act simultaneously on wire rods held by two or more of the spindles when the latter are in their working positions, and a plurality of rod-feeding devices and mechanism to operate them, said feeding devices alternating in position with the cutting-tools and operating simultaneously therewith to prepare two or more rods for the action of the tools to which they are next presented, as set forth.

3. The combination of a rotary head having a series of running spindles, mechanism for rotating said head step by step, and devices for locking it after each step to cause each spindle to occupy a series of working positions, a plurality of cutting or reducing tools and mechanism to operate them, said tools being arranged to act simultaneously on wire rods held by two or more of the spindles when the latter are in their working positions, mechanism, substantially as described, whereby the spindles are rotated when presented to said tools, and a plurality of feeding devices and mechanism to operate them, said feeding devices alternating in position with the cutting-tools and operating simultaneously therewith, as set forth.

330,600.



4. The combination of two rotary heads or drums, relatively arranged as described, two series of spindles mounted in said drums, one series being adapted to hold wire rods and the other series to hold the partially-formed articles, mechanism for rotating said heads step by step, locking devices for locking said heads in each position to which they are rotated, rod feeding and cutting devices and operating mechanism therefor, co-operating with the spindles in the first head, mechanism, substantially as described, whereby the spindles of the second head are caused to take the partially-completed articles from the spindles of the first head, a finishing-cutter to which said articles are presented by the step-by-step rotations of the second head, and means for ejecting the completed articles from the spindles holding them, as set forth.

5. The combination of a head-stock, a rotary head, c, journaled therein, a series of spindles mounted in the head, a plurality of cutters and a plurality of feeding devices alternating in position with the cutters, mechanism for simultaneously operating said cutters and feeding devices, mechanism for rotating the head step by step, devices for locking the head in a working position after each step, a tail-stock, a head, w', journaled therein and located with its axis out of line with the axis of the head c, mechanism for rotating said head w' step by step, and devices for locking it in a working position after each step, a series of spindles journaled in the head w', one of said spindles being in line with a spindle of the head c when both heads are in their working positions, means, substantially as described, whereby the spindle of the head w' is caused to grasp a blank held by the coinciding spindle of the head c, and a cutter to which the blanks grasped by the spindles of the head w' are presented by the partial rotation of the latter, as set forth.

6. The combination of a rotary head having a series of running spindles, mechanism for rotating said head step by step and devices for locking it after each step to cause each spindle to occupy a series of working positions, a plurality of cutters and mechanism to operate them, said cutters being arranged to act simultaneously on wire rods held by two or more of the spindles when the latter are in their working positions, a plurality of rod-feeding devices and mechanism to operate them, said feeding devices alternating in position with the cutting-tools and operating simultaneously therewith, a second rotary and longitudinally-movable head having a series of spindles and arranged as described relatively to the other head, mechanism for rotating the second head step by step and for locking it in a working position after each step, mechanism for moving the second head toward and from the other head while in each of its working positions, and thereby causing it to advance toward and recede from the other head, means for opening the jaws of one of the spindles of the second head while it is moving forward, and thereby causing said spindle to grasp a blank held by a spindle of the other head, a cutter to which the blanks held by the spindles of the second head are successively presented by the partial rotation of the latter, mechanism to operate said cutter, means for rotating each spindle presented to

said cutter, and ejecting devices, substantially as described, whereby the completed blanks are removed from the spindles of the second head, as set forth.

7. The combination of a rotary head, a series of running spindles mounted therein, each having a pulley at its rear end, mechanism for rotating said head step by step and devices for locking it after each step, one or more loose pulleys on fixed bearings arranged to coincide with one or more of the spindle-pulleys when the head is locked in working position, one or more driving-belts, and mechanism, substantially as described, whereby said belts are alternately moved, first, onto the spindle pulley or pulleys coinciding with the loose pulley or pulleys when the head is locked, and, secondly, onto the loose pulley or pulleys to permit the rotary movement of the head, as set forth.

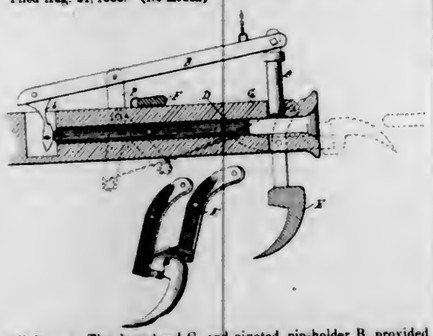
8. The combination of a rotary head, a series of running spindles mounted therein, mechanism for rotating said head step by step and devices for locking it after each step, the cutters *e f* and their operating mechanism, means for rotating the spindles presented to said cutters, the feeding-jaws *m m* and *n n*, alternating in position with said cutters, the jaws *m m* being nearer the head than the jaws *n n*, mechanism, substantially as described, whereby said jaws are simultaneously closed upon the wire rods, moved forward, opened to release the rods, moved additionally forward, and then returned to their starting position, and mechanism, substantially as described, whereby the jaws of the spindles are opened while the rods are being moved forward by the feeding-jaws, as set forth.

9. The combination of the head-stock, the rotary head and its operating and locking mechanism, the running spindles mounted in the head, the cutters and their operating mechanism, the feeding-jaws *m m* and *n n*, provided with springs *a' a'*, the slides *o p* upon the head-stock, to which said jaws are pivoted, the levers *b' c'*, pivoted to standards on the slides, and the mechanism whereby said slides are reciprocated and the levers *b' c'* oscillated, as set forth.

10. The combination of the reducing-cutter, the head having a series of spindles, mechanism for presenting said spindles successively to said cutter, and mechanism for giving said cutter an inward and outward and a traversing movement, as set forth.

11. The combination of the reducing-cutter, the head having a series of spindles, mechanism for presenting said spindles successively to the cutter, mechanism for giving said cutter an inward and outward and a traversing motion, and adjustable devices for guiding the cutter in its traversing motion, as set forth.

330,601. CAR-COUPLING. Samuel G. Marsh, Battle Creek, Mich. Filed Aug. 21, 1885. (No model.)



Claim.—1. The draw-head G, and pivoted pin-holder B, provided with spring shank and catch *b a*, in combination with rod D, all constructed and operated substantially as and for the purpose described.

2. The draw-head G, and pivoted pin-holder B, provided with spring shank and catch *b a*, in combination with the sliding rod D and hinged link-guide E, constructed, combined, and operated substantially as and for the purposes set forth.

3. The draw-head G, and pivoted pin-holder B, provided with spring and catch *b a*, in combination with the rod D and hinged guide E, provided with the recurved guard E', constructed, combined, and used substantially in the manner and for the purpose specified.

4. The draw-head G, and pivoted pin-holder B, provided with spring and catch *b a*, in combination with the sliding rod D, hinged guide and guard E, and lock-plate F, the same being constructed, combined, and used in substantially the manner and for the purposes set forth.

330,602. MANUFACTURE OF CEMENT. Henry Mathey, New York, N. Y., assignor to H. G. Bond, same place. Filed June 29, 1885. (No specimens.)

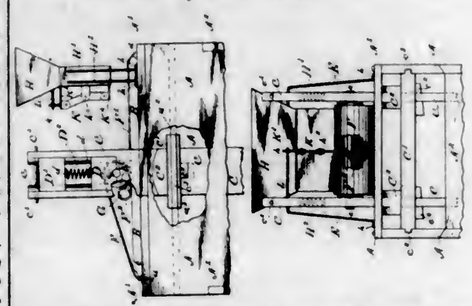
Claim.—The process of making hydraulic cement, which consists in first grinding the cement rock or material to a fine powder and then calcining this powder, substantially as and for the purpose set forth.

330,603. MANUFACTURE OF LIME. Henry Mathey, New York, N. Y. Filed Sept. 22, 1885. (No specimens.)

Claim.—1. The process for making lime which consists in first crushing the stone to a suitable degree of fineness, then burning the crushed or pulverized stone in a revolving cylinder, whereby the particles of the stone are subjected to a constant and uniform heat.

2. As a new article of manufacture, lime obtained by first crushing the limestone, and then burning under agitation the crushed particles.

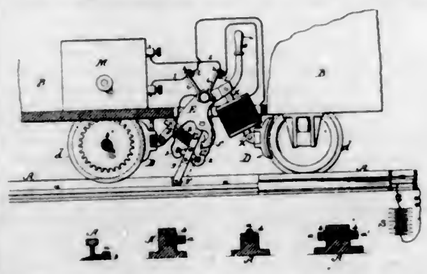
330,604. CIGAR-BUNCHING MACHINE. Joseph A. McConnell, Pittsburg, Pa. Filed June 13, 1885. (Model.)



Claim.—1. In a cigar-bunching machine, the combination, with the sliding uprights C C, of the blocks D D', the roller E, journaled in the uprights under the blocks D, the coiled spring D^2, intermediate of and bearing upon blocks D D', the bearing-board B, and the hand F, secured at each end to the bearing-board and passing around roller E, substantially as described.

2. In a cigar-bunching machine, the combination of the frame composed of the sides A, top A', and transverse pieces A^2, the bearing-board B, secured to top A', and having the slots *a' a'*, the uprights C C, passing through said slots and carrying roller E, journaled in the uprights under the blocks D D, the belt F, secured at each end to the bearing-board, and the transverse bar C', having rabbeted ends C^2, fitting and working in grooves a^2 a^2 in the sides A A, substantially as and for the purpose described.

330,605. ELECTRIC RAILWAY. James F. McLaughlin, Philadelphia, Pa., assignor, by mesne assignments, to the National Electric Railway System, (Limited,) same place. Filed Dec. 26, 1884. (No model.)



Claim.—1. The motor-car of an electrical railway, provided with a motor and car-brakes, and a single lever having connection with both the motor and brakes, to throw one out of action when the other is thrown into action.

2. The combination of the motor-car of an electrical railway with a motor and car-brakes and a lever controlling the brakes, and also carrying a switch to throw the motor into and out of circuit.

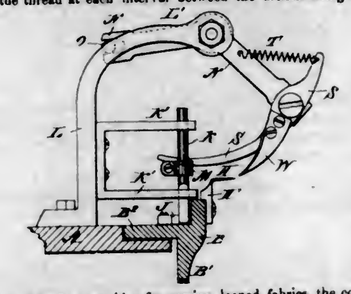
3. The combination of the motor-car of an electrical railway and a motor with an electric car-brake and a lever carrying a switch for both motor and brake, to throw the brake into circuit as the motor is thrown out.

4. The combination of the motor-car of an electrical railway and a motor with car-brakes and a lever carrying a switch to throw the motor into and out of circuit and mechanically connected to the brakes, substantially as set forth.

5. The combination of a car and its wheels and brakes D, suspended from the body of the car, with solenoid-coils having cores movable within the coils and connected to the said suspended brakes, substantially as set forth.

330,606. MACHINE FOR SEWING LOOPED FABRICS. Joseph M. Merrow, Merrow, Conn. Filed Oct. 14, 1884. (No model.)

Brief.—The invention relates to machines used for uniting parts of stockings or other knit-work or fabric, and is designed to automatically cut the chain of thread that unites the several articles that have been sewed. Said articles are suspended on the pins projecting from the periphery of the revolving ring in the proper order for being sewed, the cutting-knife in its oscillations passing entirely over the edges of the material, but at certain times moving in its oscillation at a lower point to sever the thread at each interval between the articles being sewed



Claim.—1. In a machine for sewing looped fabrics, the combination, with a revolving ring having points on its periphery, of a continuously-reciprocating cutter and means for lowering the said cutter during its reciprocation, to cause it to sever the chain of thread uniting the several pieces on the machine, substantially as herein shown and described.

2. In a machine for sewing looped fabrics, the combination, with a revolving ring having points on its periphery, of a cutter, means for continuously reciprocating the same over the points, and means for lowering the said cutter during its reciprocation, to sever the chain of threads uniting the several pieces on the machine, substantially as herein shown and described.

3. In a machine for sewing looped fabrics, the combination, with a bed and a revolving ring having points on its periphery, of a rocking lever carried by a support on the bed, a cutter on the end of the lever, and means for rocking the said lever and lowering the cutter, substantially as herein shown and described.

4. The combination, with a bed, a revolving ring having points on its periphery, a driving-shaft, a seaming device operated thereby, and means for operating the said ring from the driving-shaft, of a rocking lever pivoted in a support on the bed, a cutter on the end of said lever, and means for operating said rocking lever from the drive-shaft, substantially as herein shown and described.

5. The combination, with a revolving ring carrying a series of points on which loops of pieces of knit fabric to be united can be placed, of a looping or seaming device, a shaft for operating the looping or seaming device, a ratchet, pawl, and pinion for revolving the ring, and operated from the shaft, a knife or cutter operated from the above-mentioned shaft and serving to sever the chain of thread uniting the several pieces of knit fabric held on the points, pattern-lags on the ring, and of a piece operated by the pattern-lags, on part of which piece the arm carrying the knife rests, substantially as herein shown and described.

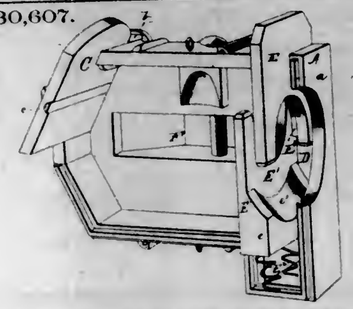
6. The combination, with a revolving ring carrying a series of points on which the loops of pieces of knit fabric to be united can be placed, of a looping or seaming device, a shaft for operating the looping or seaming device, a ratchet, pawl, and pinion for revolving the ring, and operated from the shaft, a swinging arm pivoted on a suitable fixed standard, a lever acted upon by a cam on the shaft and operating the said rocking lever, an arm pivoted on the lever and carrying a knife, a spring connected with the said lever and the rocking arm, pattern-lags on the revolving ring, a piece operated by the pattern-lags, on part of which piece one end of the arm to which the blade is secured rests, substantially as herein shown and described.

330,607. CAR-AXLE BOX. William C. Miller, Parsons, Kans., assignor, by direct and mesne assignments, of three-fourths to George W. Maser and Robert H. C. Dodd, both of same place. Filed May 31, 1884. (No model.)

Claim.—1. A car-axle box divided vertically into sections, each section being provided with lateral collars and with grooves *b*, and a lid, C, having lateral projections fitted to enter grooves *b*, substantially as set forth.

2. The combination of the box having ways D and the collar-section E', provided at its lower end with an inwardly-projected portion, *e*, and supported substantially as set forth.

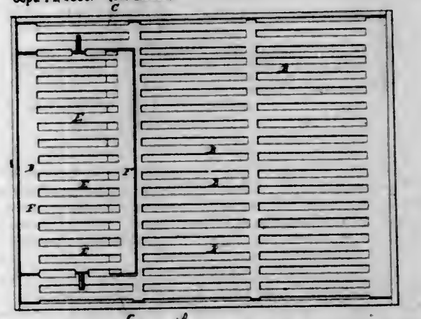
3. The combination, with a car-axle box made in sections movable laterally together and apart, and provided in their inner faces with grooves *b*, of the lid C, having lateral projections fitted to and extended into grooves *b*, substantially as set forth.



4. The combination of the axle-box having ways D and the collar-sections arranged and operating in different planes, the lower section being provided with an inwardly-projected portion, *e*, at its lower end, substantially as set forth.

5. The improved car-axle box herein described, consisting of sections A B, divided vertically and provided at their meeting edges with, respectively, tongues and grooves, and having ways D and grooves *b*, as described, the lid C, having lateral projections *e*, fitted to and extended into grooves *b*, the collar-section E, and the section E', having an inwardly-extended portion, *e*, at its lower end and supported by springs, substantially as set forth.

330,608. FURNACE-GRATE. Fred Minier, St. Joseph, Mich. Filed Sept. 14, 1885. (No model.)



Claim.—1. A grate formed of longitudinal bars with extended side bars, and a dumping-section resting between said extended bars and pivotally supported thereby, substantially as and for the purpose specified.

2. A grate formed of longitudinal bars with beveled front ends, and extended side bars with webs in the extensions centrally recessed, and a dumping-section with one side beveled and the other provided with an eye, said section being formed of a series of connected webs and supported by pivots which rest in the said recesses, substantially as and for the purpose specified.

330,609. INCUBATOR. Charles S. Newhof, Gallipolis, assignor to himself and Jed A. Wolfe, Athens, Ohio. Filed May 19, 1885. (No model.)

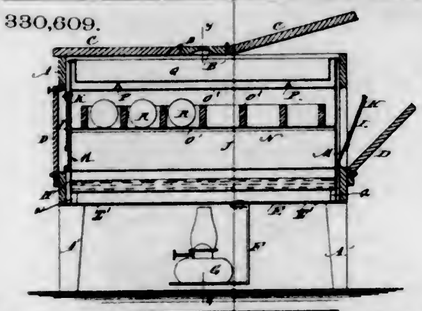
Claim.—1. In an incubator, the combination, with the metal box H, of the metal box J within the same, the cleats P on the top of the box J, and the pan Q on the said cleats, the box J being united at each end, at the bottom edge, to the box H, substantially as herein shown and described.

2. In an incubator, the combination, with the metal box H, having the end doors, K, provided with glass lights and with ventilating-apertures below said lights, of the box J in the box H, a tray in the box J, and a lamp for heating water in the box, which lamp is held below the box H, the box J being united at each end, at the bottom edge, to the box H, substantially as and for the purpose set forth.

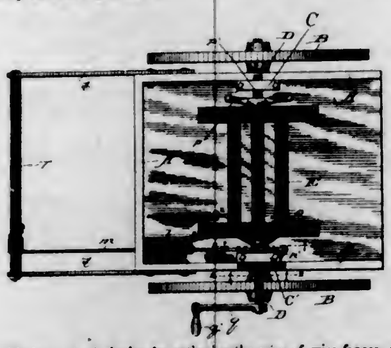
3. The combination, with the wooden box A, having a perforated metal bottom, E, of the bracket-arm F, the metal box H in the box A, the metal box J in the box H, and of an egg-tray in the box J, the box J being united at each end, at the bottom edge, to the box H, substantially as herein shown and described.

4. The combination, with the wooden box A, having the grooved cross-piece B, of the hinged doors C, the metal box H in the box A, the metal box J in the box H, the egg-tray O in the box J, and of a bracket-arm on the under side of the box A, substantially as herein shown and described.

330,609.



330,610. **REEL DEVICE FOR FENCE-WIRE.** WALTER S. NEWTH, De Kalb, Ill., assignor of one-half to R. H. Roberts, same place. Filed May 26, 1885. (No model.)



Claim.—1. A device for gathering the wire of wire fences, comprising a vehicle provided with two or more wheels and having mounted upon it independent of the wheels and in suitable bearings a rotary shaft operated by a crank, and a spool detachably secured upon the shaft to revolve with it, whereby rotation of the said shaft in reeling the wire moves the vehicle, substantially as described.

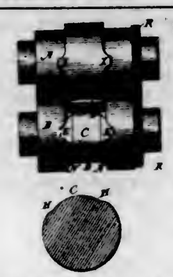
2. A device for stringing fence-wire, comprising, in combination, a rotary shaft carrying a spool and mounted upon a wheeled vehicle, a rotary handle, *r*, upon the vehicle, and brake mechanism, substantially as described, upon the shaft and connected with the handle *r*, to permit, by the oscillation of the handle *r*, the speed of rotation of the shaft to be controlled, all substantially as described.

3. A device for stringing fence-wire, comprising, in combination, a rotary shaft, D, carrying a spool, E, and mounted upon vertical supports C and C′ upon a wheeled vehicle, a rotatory handle, *r*, journaled upon extensions *t* on the vehicle, a lever, *n*, pivoted to the vertical support C′, and constructed to bear against the rotary shaft D, a pulley, *l*, and a rope or chain, *m*, passing over the pulley and fastened at one end to the extremity of the lever *n* and at the other end to the rotatory handle *r*, as and for the purpose set forth.

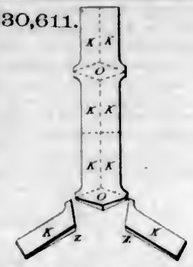
4. In a device for gathering and stringing fence-wire, a shaft, D, to be mounted in bearings upon a wheeled vehicle and carry a spool, E, provided toward one end with an adjustable clamp, *o*, having projections *o′*, and screw-threaded toward its opposite end, and provided with a nut, *p*, a rotatory handle, *r*, mounted upon projections *t* upon the vehicle, and brake mechanism, substantially as described, upon the shaft and connected with the handle *r*, to permit, by the oscillation of the handle *r*, the speed of the rotation of the shaft to be controlled, substantially as described, and for the purpose set forth.

5. A device for gathering and stringing fence-wire, comprising, in combination, a rotary shaft, D, carrying a spool, E, and mounted upon vertical supports C and C′ upon a wheeled vehicle, and provided toward one end with an adjustable clamp, *o*, having projections *o′*, and screw-threaded toward its opposite end, and provided with a nut, *p*, a ratchet, *k*, upon the shaft D, a dog, *k′*, upon the vertical support C′, a rotatory handle, *r*, journaled within extensions *t* upon the vehicle, a lever, *n*, pivoted to the vertical support C′, and constructed to bear against the shaft D, and means, substantially as described, for connecting the lever *n* with the rotatory handle *r*, to permit, by the oscillation of the handle *r*, the speed of rotation of the shaft to be controlled, all substantially as described, and for the purpose set forth.

330,611. **ROLL FOR ROLLING PLOWSHARES.** SYLVESTER OAR, Kansas, Ill. Filed May 25, 1885. (No model.)

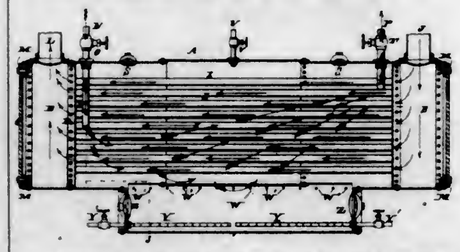


330,611.



Claim.—In a machine for rolling plowshares, the combination, with roll B, grooved as shown, and having the space C and extended spaces E E, of the roll A, having projections X X, said rolls being geared together, as and for the purpose described.

330,612. **FEED-WATER HEATER.** JOHN O'BRIEN and SAMUEL J WEAVER, St. Louis, Mo. Filed May 29, 1885. (No model.)



Claim.—1. In a feed-water heater, the combination of the horizontal receiver, steam-chamber at each end of the receiver, longitudinal steam-tubes connecting the chambers, supply and exhaust steam pipes communicating with the chambers, water-pipes communicating with the chambers, water-pipes connected to the receiver, mud-drum located at the bottom of the receiver, and blow-off pipes extending into the drum, substantially as set forth.

2. The combination, with a horizontal receiver, of a mud-drum located beneath it and parallel therewith, the top of said drum being cut away and the bottom of said receiver correspondingly cut away for forming direct communication between them, substantially as set forth.

3. The combination, with a horizontal receiver, of a mud-drum located beneath it and parallel therewith, the said drum having its top part cut away throughout its length and the said receiver its bottom part correspondingly cut away, and the angle-irons and rivets for uniting the receiver and drum, substantially as set forth.

4. In a feed-water heater, the combination of the horizontal receiver, steam-chamber at each end of the receiver, longitudinal steam-tubes connecting the chambers, supply and exhaust steam pipes communicating with the chambers, water-pipes connected to the receiver, mud-drum located at the bottom of the receiver, and perforated blow-off pipes extending into the drum, substantially as set forth.

5. In a feed-water heater, the combination of the horizontal receiver, steam-chamber at each end of the receiver, longitudinal steam-tubes connecting the chambers, supply and exhaust steam pipes communicating with the chambers, water-pipes communicating with the receiver, mud-drum located at the bottom of the receiver, and angle-plates connecting the drum to the receiver, substantially as set forth.

6. In a feed-water heater, the combination of the horizontal receiver, steam-chamber at each end of the receiver, longitudinal steam-tubes connecting the chambers, supply and exhaust pipes communicating with the steam-chambers, water-pipes communicating with the receiver, mud-drum located at the bottom of the receiver, angle-plates connecting the drum to the receiver, and the stay-bolts passing through the upper part of the drum connecting the angle-plates, substantially as shown and described.

7. In a feed-water heater, the combination of a horizontal receiver, a mud-drum located beneath it and parallel therewith, and having direct communication therewith throughout its length, as described, and a blow-off pipe penetrating the drum, substantially as set forth.

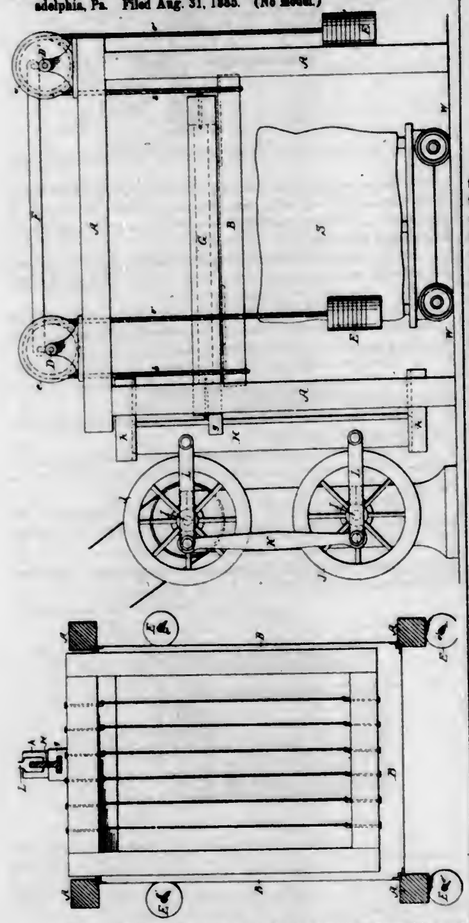
330,613. **MANUFACTURE OF ROSIN COMPOUNDS.** DAVID J. OGILVY, Cincinnati, Ohio. Filed Feb. 24, 1885. (No specimens.)

Claim.—1. The method of treating rosin to form a vehicle for paints, printing-inks, &c., consisting in first saponifying the rosin with an alkaline salt, and then dissolving and liquefying the combined mass by the addition of a solvent, preferably a mineral oil, as set forth.

2. The herein-described liquid compound of rosin, an alkaline salt, and a solvent oil, substantially as and for the purpose set forth.

3. A paint or printing-ink composed of a suitable pigment, rosin, an alkaline salt, and a solvent oil combined, substantially as set forth, as a new article of manufacture.

330,614. **MACHINE FOR SAWING STONE.** JAMES PECKOVER, Philadelphia, Pa. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination of the fixed frame of the machine and vertically-adjustable carriage-bed with a reciprocating bar, H, and the saw-frame G, guided on the said carriage and connected to the reciprocating bar to move therewith, but free to slide lengthwise on the bar.

2. The combination of the fixed frame and adjustable carriage-bed with a reciprocating bar, H, operating crank-shafts and links, and the saw-frame mounted on the carriage and connected to the reciprocating bar to move therewith, but free to slide lengthwise thereon, substantially as set forth.

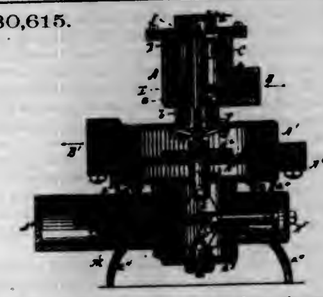
3. The combination of the fixed frame and carriage-bed carrying the traversing saw-frame with suspending chains or ropes, crank-shafts carrying pulleys, over which the said chains or ropes pass, counter-weights, and a rod connecting the two crank-shafts, substantially as specified.

4. The combination of the fixed frame and an adjustable carriage-bed with a saw-frame mounted on said carriage-bed, and having a T-slot and an upright reciprocating T-bar attached to the slot, substantially as specified.

5. The combination of the traversing saw-frame having a T-slot with a guided T-bar adapted thereto, two crank-shafts, and links connecting the cranks with the said bar, all substantially as set forth.

330,615. **AUTOMATIC SAFETY REGULATOR-VALVE.** JOHN W. PEETS, Pittsburg, Pa., assignor of one-half to George E. Williams, same place. Filed Feb. 6, 1885. (No model.)

330,615.



Claim.—1. In a safety pressure-regulator, the combination, with the diaphragms or pistons, of a counter-balance so arranged with relation thereto that when the apparatus is set for the flow of gas or fluid the counter-balance will supplement the piston or diaphragm having the least area, but when the flow or pressure of the fluid intermits or ceases the force of the counter-balance will be shifted so as to act with the piston or diaphragm having the greatest area, substantially as and for the purposes specified.

2. In an automatic or safety pressure-regulator, the combination, with the stem of the pistons or diaphragms, of a spring, spring-rod, and toggle-connection between the stem and spring-rod, substantially as and for the purposes specified.

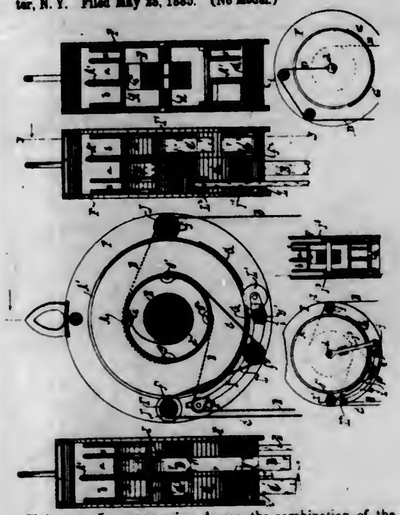
3. In a pressure-regulator, the combination of two diaphragms or pistons, the lesser having a port around or through the same, and a fluted valve-stem movable through the lesser piston or diaphragm, and provided with a button-valve, substantially as and for the purposes specified.

4. In a regulator, the combination of a diaphragm or piston, a piston of lesser area having a port therethrough, and a valve which controls the port between the two piston-chambers, and a valve-stem movable through the small piston and provided with a button-valve, substantially as and for the purposes specified.

5. In a pressure-regulator, the combination of the diaphragm K, the piston C, having the port D and valve E, the fluted valve-stem F, having button-valve *f*, and a shifting counter-balance, substantially as and for the purposes specified.

6. In a pressure-regulator, the combination of the diaphragm K, the piston C, having port D and valve E, the fluted stem F, provided with the button-valve *f*, and the shifting counter-balance composed of the springs M, spring-rod L, and link *g*, substantially as and for the purposes specified.

330,616. **SUSPENSION DEVICE.** CHARLES J. PETERSEN, Port Chester, N. Y. Filed May 23, 1885. (No model.)



Claim.—1. In a suspension device, the combination of the frame or support, the stationary brake-shoe secured to said frame, the gravitating spring-impelled drum mounted loosely in the frame above the brake-shoe, the suspension-cord wound upon the gravitating drum and passing therefrom to the article to be supported, a clearing device, a clearing-cord engaging both the gravitating drum and the clearing device, and a guide for said clearing-cord, substantially as described.

2. In a suspension device, the combination of the frame or support, the stationary brake-shoe secured to said frame, the gravitating spring-impelled drum mounted loosely in the frame above the brake-shoe, the suspension-cord wound upon the gravitating drum and passing therefrom to the article to be supported, the clearing-cord engaging the gravitating drum, and a guide for said clearing-cord located above the point at which the clearing-cord engages the drum, substantially as described.

3. In a suspension device, the combination of the frame or support, the stationary brake-shoe secured to said frame, the gravitating spring-impelled drum mounted loosely in the frame above the brake-shoe, the suspension-cord wound upon the gravitating drum and passing therefrom to the article to be supported, the clearing-lever mounted on the frame and provided with a roller engaging the gravitating drum, and the clearing-cord engaging said lever, substantially as described.

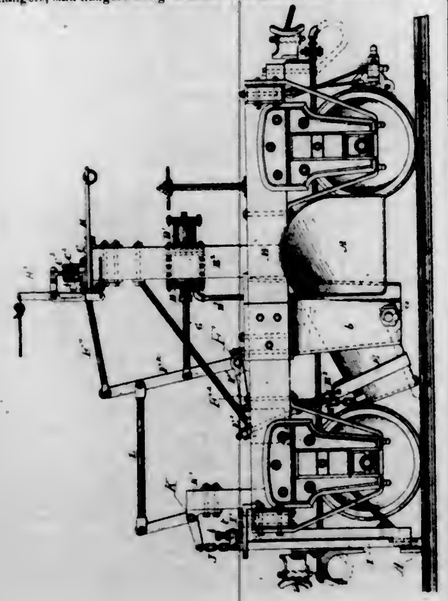
4. In a suspension device, the combination of the frame or support, the stationary brake-shoe secured to said frame, the gravitating spring-impelled drum mounted loosely in the frame above the brake-shoe, the suspension-cord wound upon the gravitating drum and passing therefrom to the article to be supported, the clearing-lever mounted on the frame and provided with a roller engaging the gravitating drum, the guide on said lever, and the clearing-cord wound upon the gravitating drum and passing outward therefrom over the guide on the clearing-lever, substantially as described.

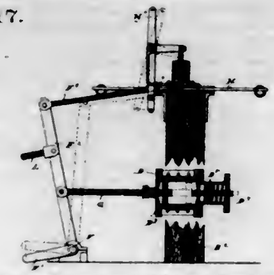
5. In a suspension device, the combination of the frame or support, the stationary brake-shoe secured to said frame, the gravitating spring-impelled drum mounted loosely in the frame above the brake-shoe, the bracket H, the suspension-cords wound upon the gravitating drum and passing therefrom to the supporting-bracket H, the clearing-lever mounted on the frame and provided with a roller engaging the gravitating drum, the clearing-cord wound upon the gravitating drum and passing outward therefrom over a guide on the clearing-lever, and the lever *l*, mounted on the bracket H and connected to the clearing-cord, substantially as described.

6. In a suspension device, the combination of the frame or support, the stationary brake-shoe secured to said frame, the gravitating spring-impelled drum mounted loosely in the frame above the brake-shoe, the supporting-bracket H, the suspension-cords wound upon the gravitating drum and passing therefrom to the supporting-bracket H, the clearing-lever mounted on the frame and provided with a roller engaging the gravitating drum, the clearing-cord wound upon the gravitating drum and passing outward therefrom over a guide on the clearing-lever, the lever *l*, mounted on the bracket H and connected to the clearing-cord, and the handle l^3, fixed on the bracket H, substantially as described.

330,617. TUNNEL EXCAVATOR. Charles C. Quinn, Fargo, Dak. Filed Aug. 11, 1885. (No model.)

Claim.—1. The combination of the main frame, the tunnel excavators secured diagonally across the frame at an angle to the line of the rails, and pivoted on bolts *a a*, which are secured to the diagonal drop-hangers, said hangers being secured to the main frame, with safety-straps





secured to the tunnel excavators and the main frame, substantially as described.

2. In combination with the perpendicular flange-cutters, the elbows I' I' on the upper ends of the square bars, set-screws and set-nuts, lifting-chains, tumbling-shaft, vertical timbers, and the connection-rod, substantially as described.

3. In combination with the automatic locking-plate, the stop-bolt, the stop-bolt spring, and the stop-bolt-spring box, substantially as described.

4. In combination with the governor-cylinder D, the steam or air cylinder D', the steam or air pipes, the follower-stem, the regulating diaphragm-stem, and the regulating-spring, substantially as described.

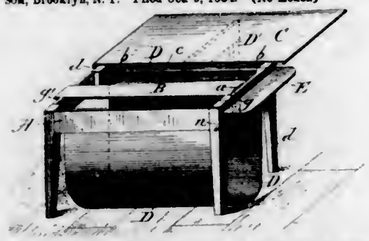
5. The tunnel excavators and flange-cutters, in combination with a common lever which simultaneously operates both excavators and flange-cutters, substantially as described.

6. The main frame and the tunnel excavators, in combination with the safety-straps E E, as set forth.

7. The combination, with the perpendicular flange-cutters and the excavators, of the levers which connect them and the locking device, substantially as described.

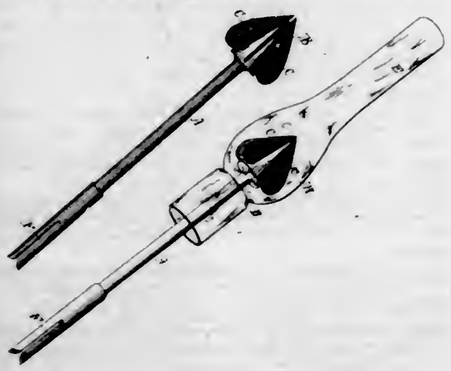
8. In combination with the excavators and the flange-cutters, the locking device consisting of the plate H, bolt C^2, spring C^3, and spring-box C^4, as set forth.

330,618. COMBINED IRONING-BOARD AND TABLE. Mary Ransom, Brooklyn, N. Y. Filed Oct. 9, 1884. (No model.)



Claim.—An ironing-table consisting of the frame A, provided with an auxiliary leaf, E, swinging top C, and leaf-supports D' *n*, adjustable guard D, and hinged ironing-board B, resting in recesses in the top of the frame, all the parts being constructed and arranged in the manner shown and described.

330,619. LAMP-CHIMNEY CLEANER. William H. Reed, Chicago, Ill. Filed Feb. 20, 1885. (No model.)



Claim.—A lamp-chimney cleaner consisting of a wooden shaft, one end of which is provided with longitudinal slots arranged at right angles, in combination with a series of elastic blades or wings curved, as shown, and adapted to fold laterally around the shaft when contracted, and to expand, when released, into a figure the cross-section of which is substantially heart-shaped, as and for the purpose set forth.

330,620. CRATE FOR FRUIT, &c. William F. Reddon, Tangerine, Fla. Filed Sept. 18, 1885. (No model.)



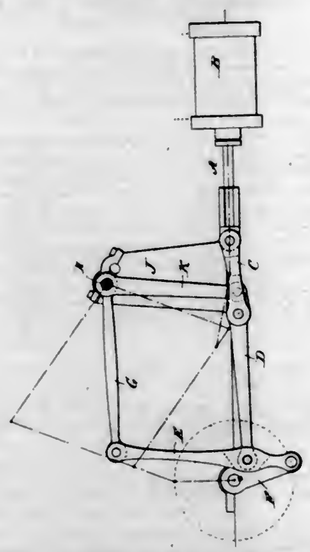
Claim.—The crate A, provided with the partition-board B, having in it the saw-kerf F and the uncut portion C, and the slats E, nailed in the center to the two sections of the partition, so that the said slats may be cut in two between these two rows of nails D, and the portion C also be cut, dividing the crate into two perfect parts, substantially as and for the purpose specified.

330,621. SYRINGE FOR HYPODERMIC INJECTIONS. Ferdinand A. Reichardt, Elizabeth, N. J. Filed Dec. 12, 1884. (No model.)



Claim.—As a new article of manufacture, a transparent syringe having lines of graduation and figures thereon placed at the back of the syringe, an outer casing, *b*, with an opening through which these graduating lines and figures may be seen, and the piston-head *d*, as and for the purposes herein set forth.

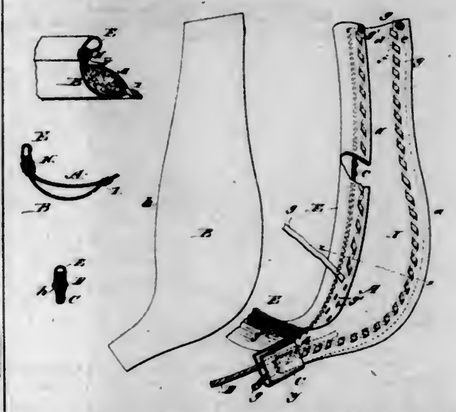
330,622. MECHANISM FOR CONVERTING MOTION. Solomon C. Rhodes, Bradford, Pa. Filed May 7, 1885. (No model.)



Claim.—1. The combination, with a piston, a cylinder, and a shaft having a crank, of a link pivoted to the piston-rod, a pitman pivoted to the link and to a lever pivoted to the crank, and having its upper end pivotally connected with a standard, and of a rocking bar on the standard, the lower end of the said rocking bar being connected with the rear end of the pitman, substantially as herein shown and described.

2. The combination, with the cylinder, piston, piston-rod, and the crank F, of the standard J, having several bearings, the pivot H, the rocking bars G K on the same, the lever E, connecting the end of the bar G with the crank, the pitman D, pivoted to the lever E a short distance from the crank-pin, the rear end of the pitman being connected with the lower end of the bar K, and the link C, connecting the piston-rod with the pitman, substantially as herein shown and described.

330,623. HORSE-COLLAR. Martin P. Sauer, Somonauk, Ill. Filed July 21, 1885. (No model.)



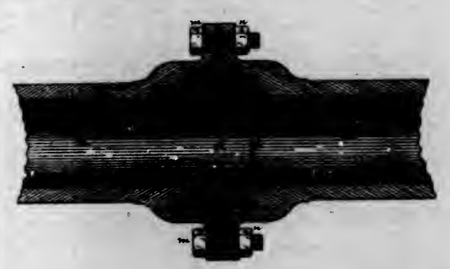
Claim.—1. In a horse-collar, the combination of the parts A B, having coincident alternately-arranged openings formed in them in approximately parallel lines, and the securing-strip C, passed spirally through said openings on different longitudinal lines, substantially as set forth.

2. A horse-collar in which the two side halves of the collar are united by a binding-piece, C, and cord D, through which and the parts A and B there is passed a heavy thread to form a seam, *h*, substantially as described.

3. A horse-collar in which the parts A and B are united by seams, as c and I, to constitute one unfinished side of the collar, said sides being united at the throat by a binding-piece, C, and a cord or strip, D, through which and the two side parts there is passed a seam, *h*, the inner edge of the collar being bound with a strip, E, united thereto by seam H, substantially as described.

4. In a horse-collar, the combination, with the parts A B, and binding-piece E, lapped over the edges of the parts A B, of the strip *g*, passed through and through the double line of perforations *g'*, substantially as described.

330,624. TUBE-JOINT FOR GAS-CONDUITS. W. Lucien Scaife, Allegheny, Pa. Filed May 2, 1885. (No model.)



Claim.—1. In combination with wrought-metal tubing, cast-metal flanges cast thereon at or near the ends, and suitable devices for connecting the pipes, substantially as set forth.

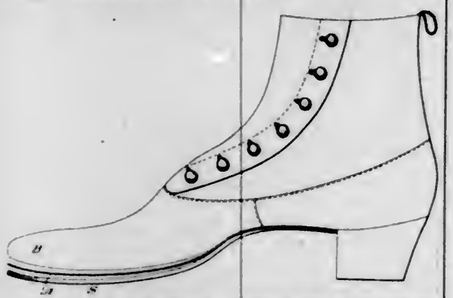
2. In tube-joints, the combination, with wrought-metal tubing having depressions *c* at or near the ends thereof, of cast-metal flanges *b*, cast to said tubing around the portion where these depressions are formed, substantially as and for the purposes set forth.

3. In tube-joints, the combination of sleeves formed at the ends of the tube-section, and fitting the one within the other, said sleeves having tapering turned coinciding faces, and suitable means for connecting the ends of the tubing.

4. In tube-joints, the combination of sleeves at the ends of the tube-sections, fitting one within the other, said sleeves having tapering turned coinciding faces and shoulders, forming slots at the bases of the sleeves, packing-rings confined between said seats and the ends of the sleeves, and suitable means for connecting the ends of the tubing.

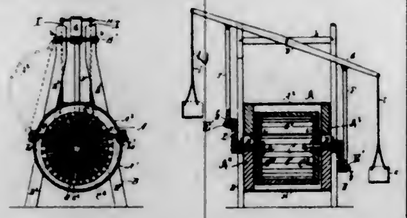
5. In tube-joints, in combination with the tube-sections having the sleeves at the ends thereof fitting one within the other, the flanges *b* around the sleeves having annular depressions forming the annular filling-space *l* between the body of the tube-sections and the flanges, substantially as and for the purposes set forth.

330,625. BOOT OR SHOE SOLE. George B. Siegenthaler, Wooster, Ohio. Filed Mar. 25, 1885. (No model.)



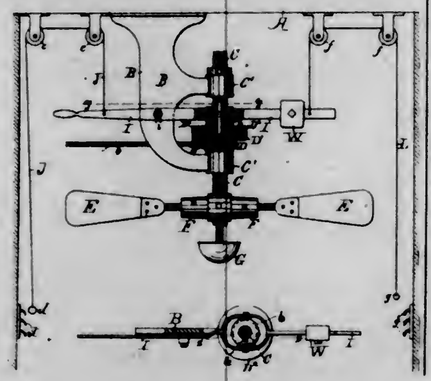
Claim.—In a boot or shoe, the combination, with the upper-leather and the outsole, of a sheet of oiled silk or paper coated with paraffine, wax, or like material, and laid in the seam of the sole, for the purpose of preventing discoloration of the sole-bottom by absorption of oil from the upper-leather, substantially as described.

330,626. COMBINED WASHING-MACHINE AND TEETER OR SEESAW. Sarah Sewell, Mark Centre, Ohio. Filed Feb. 9, 1883. (No model.)



Claim.—The combination of the frame, the suds-box mounted therein and provided with a cylinder, and the seesaw mounted in the upwardly-extended portions of the frame, said seesaw being connected to the cranks of the cylinder by pitman, substantially as shown and described, whereby the movement of said seesaw operates said cylinder.

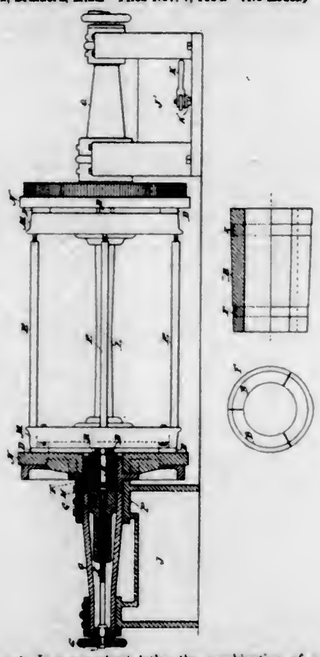
330,627. FAN. James M. Seymour, Newark, N. J. Filed June 20, 1884. (No model.)



Claim.—1. The combination, with a rotary fan sustained by a vertical shaft, of a continuously-rotating frictional driving-disk, and a friction-plate adapted to rotate with the fan and receiving, by mere contact with the driving-disk, a continuous gentle motion for rotating the fan slowly, substantially as herein shown and described.

2. The combination, with a rotary fan supported on a vertical shaft, of a friction-clutch constructed and operated to impart a gentle motion to the fan in the manner described, and means for pressing the frictional driving-surfaces together positively, as and for the purpose set forth.

330,628. CAR-WHEEL LATHE. Henry J. Small and James McNaughton, Brainerd, Minn. Filed Nov. 7, 1884. (No model.)



Claim.—1. In a car-wheel lathe, the combination of a conical sleeve made in separate sections and with its central hole straight throughout, with a center spindle having a conically-tapering recess adapted to receive said sleeve and draw together its separate sections, substantially as shown and described, and for the purpose set forth.

2. In a car-wheel lathe, the combination of the conical sleeve B, made in separate sections and with its central hole straight throughout, the center spindle, C, having a conically-tapering recess adapted to receive said sleeve, and the screw I, provided with hand-wheel G, substantially as shown and described, and for the purpose set forth.

3. In a lathe, the combination of a hollow spindle provided with a face-plate, an elastic annular wedge-shaped centering device, a follower, and a hand-wheel for operating said follower, all substantially as described.

330,629. STORE-SERVICE APPARATUS. Charles W. Smith, Woburn, Mass. Filed Apr. 20, 1885. (No model.)



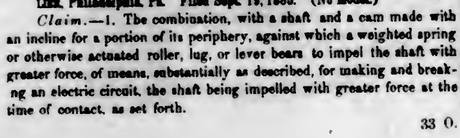
Claim.—1. In a store-service apparatus, the combination, with the wireway, of a primary and a secondary spring-motor at one end of the way, each capable of independent operation, a carrier constructed to run upon the way, devices, substantially as described, whereby a car in approaching said motors is automatically engaged with the secondary motor, a pull-down cord extending from the secondary motor to the operator's station, and disengaging devices operated by a backward movement of the motors, whereby the car is released, the arrangement being such that a single pull on said cord adapts the two motors for action and releases the primary motor and car, while the release of the cord enables the secondary motor to return to position to be again engaged with an approaching car, as set forth.

2. In a store-service apparatus, the combination of the wireway, a carrier constructed to run thereon and having a lug or arm, as *p*, a primary spring-motor arranged near one end of the way as a stop for a car approaching said end, a secondary motor located behind the primary motor and having spring-jaws, as *n n*, which engage automatically with the projection on the car, a pull-down cord attached to the secondary motor, and fixed studs, as *u u*, at the end of the track, which displace the jaws of the secondary motor when the motors and car are moved by the cord, and release the car and the primary motor, as set forth.

3. The combination of the inclined track, the frame having parallel guide-rods at the lower end of the track, the two springs affixed at their ends to fixed supports and engaged with independent slides on said guide-rods, each spring and its slide constituting a motor, the pivoted levers on the lower slide having jaws adapted to engage automatically with a car on the track, the pull-down cord attached to the lower slide, and devices whereby when the slides and car are pulled to the lower extremity of the track the car and the upper slide are released, as set forth.

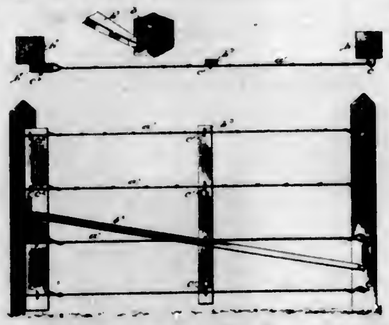
4. The car composed of a body and suitable wheels above the same, formed to run upon a wire track, combined with the ring located below the car-body and rigidly attached thereto, and the cup having spring-catches adapted to engage with said ring, and thus detachably connect the cup to the car, as set forth.

330,630. ROLLER-SKATE WHEEL. Isaac Smith, New Haven, Conn. Filed Aug. 4, 1884. (Model.)



Claim.—The herein-described wheel, consisting of the spool-shaped metal center A, the rim C, made from a strip of leather, the two ends chamfered, overlapped, and secured together, the space between the rim and the hub filled with an adhesive plastic composition, which hardens after its introduction to the wheel, and so as to become non-elastic, the said adhesive plastic composition adapted to adhere to the inner surface of the rim C and make a firm union therewith, substantially as described.

330,631. FARM-GATE. Seth W. Smith, Paris, N. Y. Filed Aug. 30, 1884. (No model.)

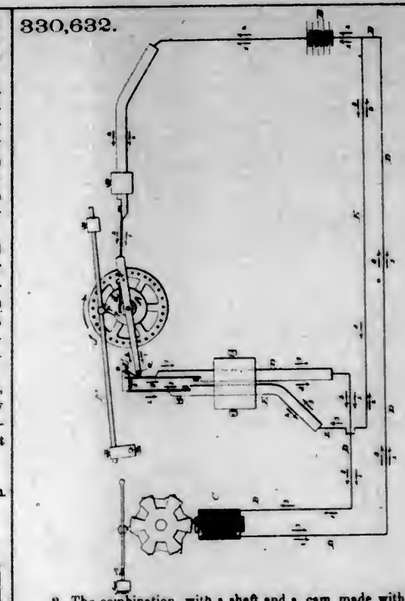


Claim.—The farm-gate above described, consisting of the vertical end post, b^4, having the wires *a' a' a'*, rigidly secured thereto at their outer ends, and pivotally secured at their opposite ends to the fixed post *b*, in combination with the single rigid brace b^2, secured at its outer end midway between the top and bottom of the post b^4, and extending diagonally across the wires, and pivoted at its opposite end above the pivotal point of the bottom wire on the post *b*, whereby the gate is made rigid and practically incapable of being raised or lowered, substantially as described, and for the purposes explained.

330,632. CONTACT-MAKER FOR ELECTRIC CLOCKS. Louis H. Spellier, Philadelphia, Pa. Filed Sept. 19, 1885. (No model.)

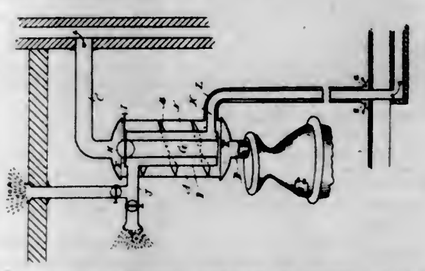
Claim.—1. The combination, with a shaft and a cam made with an incline for a portion of its periphery, against which a weighted spring or otherwise actuated roller, lug, or lever bears to impel the shaft with greater force, of means, substantially as described, for making and breaking an electric circuit, the shaft being impelled with greater force at the time of contact, as set forth.

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2. The combination, with a shaft and a cam made with an incline for a portion of its periphery, against which a weighted or otherwise actuated roller, lug, or lever bears to impel the shaft with greater force at a particular time, of an arm adapted to make electrical contact, the said contact being made at the moment the shaft is impelled with greater force, as set forth.

330,633. HEATING-DRUM AND VENTILATOR. John Spencer, Clinton, Wis. Filed Apr. 29, 1885. (No model.)



Claim.—1. In a combined heater-drum and ventilator, the combination, with the drums A D and flue G, arranged within the drum D, of the flue L, communicating with the drum A, and the flue K, arranged within the flue L and communicating with the drum D, substantially in the manner and for the purposes specified.

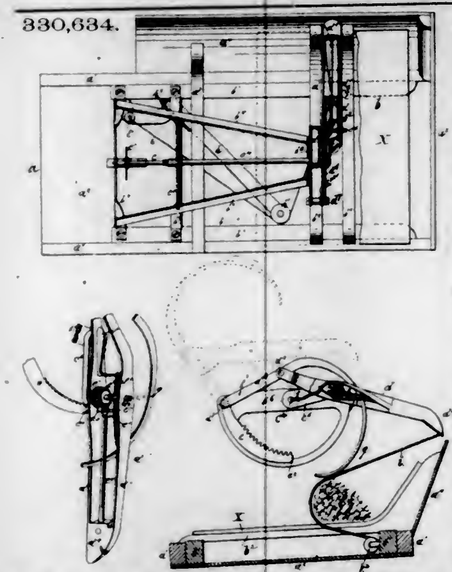
2. In a combined heater-drum and ventilator, the combination of the drums A D, smoke-flues B, C, and G, air-flues J, K, and L, damper H, and spiral flue-strip M, when constructed, arranged, and operating substantially in the manner and for the purposes specified.

330,634. GRAIN-BINDER. Andrew Stark, Topeka, Kans. Filed Sept. 27, 1878.

Claim.—1. The combination, in a grain-binding machine, of the binder-arm supported upon and operated by a crank, and provided with a hollow shell at its point, slotted to receive the band, a band twisting and cutting device placed within the hollow shell, a rotating shaft supported in bearings in the binder-arm, and having one end geared to the twisting mechanism and the other end provided with a pinion meshing with a bevel-gear placed on the pin of the operating-crank, a pinion journaled on the crank-pin and fixed to and rotating with the said bevel-gear, a concave segment-rack having one end free and the other end made fast to the binder-frame and arranged to engage the pinion on the crank-pin, and a controlling-arm pivoted at one end to the binder-frame and pivoted at a proper point to the binder-arm, substantially as specified.

2. In a grain-binding machine, a frame for supporting the binding mechanism, composed of the sills *b' b'*, bars b^3, yokes or supports b^3 b^4,

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having bearings in their upper portions for the driving-shafts, two side bars, b^4 b^4, having their rear ends secured to the lower ends or feet of the support b^3, and inclined upward and forward across the sides of the support b^2, to which they are secured, and reaching over the grain-receptacle, and the cross-head fixed to the ends of the bars b^4 b^4, and provided with bearings for the actuating crank-shaft and the controlling mechanism of the binder-arm in proper relative position to the binder-platform, substantially as set forth.

3. In a grain-binding machine, the combination, with the binder-arm and the controlling arm d^6, pivoted to the binder-frame and to the upper end of the binder-arm, of the compressor g, fixed to the end or being an extension of the controlling-arm and passing between the side bars of the binder-arm below the crank-pin, substantially as specified.

4. In a grain-binding machine, the combination of the pinion e', journaled loosely on the crank-pin of the binder-arm shaft, and the segment-rack bar having one of its ends fixed to the cross-head b^4 and the other end arranged to engage the pinion e', substantially as specified.

5. In a grain-binding machine, the combination of the segment-rack bar s, having one of its ends secured rigidly to the frame and the other end provided with a lateral lip or projection, s^3, and the pinion e', journaled on the crank-pin c^6 of the binder-arm shaft, and provided with a projection, e^3, placed at its side and projecting radially, substantially as set forth.

6. The combination, in a grain-binding machine, of the binder-arm d, carrying in the shell d^3 the twisting and cutting mechanism, the controlling-arm d^6, having the pin f', the lever f, pivoted to the binder-arm, and the spring f^2, substantially as and for the purpose specified.

7. In a grain-binding machine, the combination of the overhanging frame-work b^2 b^3, crank-shaft c^4, crank c^5, binder-arm d, the controlling-arm d^6, the compressor g, extending from said arm and curved downward between the side bars of the binder-arm, the pinions e' e^4, placed on the crank-pin and connected by intermediate gearing with the band-securing mechanism in the end of the binding-arm, and the segment-rack s, arranged to engage with and give motion to the pinion e', substantially as specified.

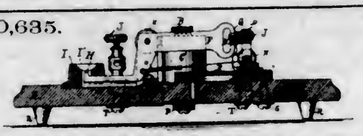
330,635. TELEGRAPH-SOUNDER. George W. Stewart, New York, N. Y., assignor of one-half to Stephen J. Cox, same place. Filed May 11, 1885. (No model.)

Claim.—1. The telegraph-sounder comprising magnet C, sunk beneath the base-board A, and there fastened by a fixed yoke, P, the sounding-post D, having a projection, D', the sounding bar or lever F, operating with armature B, and having C-shaped jaws G at one end and the touch point or pin H at its other end, arranged to operate through aperture I' of the casing or covering I, and the regulating device, all arranged substantially as shown and described.

2. The sounding bar or lever F, attached to armature B, and having C-shaped jaws G at one end, and at its other end the pin or touch-point H, substantially as shown and described.

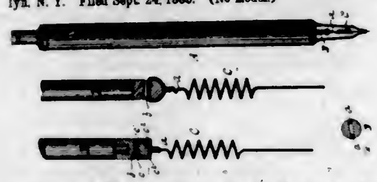
3. The combination consisting of the sounding bar or lever F, attached to the under side of armature B, and having C-shaped jaws G, magnets C, sunk into the bed-plate A and supported by fixed yoke P,

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sounding-post D, provided with projection D', and spring O, extending from post D to a knee formed in the sounding-bar F, substantially as shown and described.

330,636. STYLOGRAPHIC PEN. Christopher Stockmann, Brooklyn, N. Y. Filed Sept. 24, 1885. (No model.)



Claim.—1. The combination, with the air tube or stem having therein a transverse hole, b, of a spindle, one end of which extends through said hole in the air-tube, substantially as described.

2. The combination, with the air tube or stem, of a spindle, the upper end of which is passed transversely through the lower end of the air tube or stem, then bent back upon itself and twisted, substantially as shown and described.

3. The combination, with the air tube or stem having a transverse hole and a groove in its lower end, of the spindle C, one end of which is passed through the hole, then bent back upon itself and twisted, the loop thus formed lying in the groove and hole, substantially as shown and described.

330,637. PROCESS OF PURIFYING PETROLEUM. Julius H. Tiemann, Brooklyn, N. Y. Filed Oct. 6, 1885. (No specimens.)

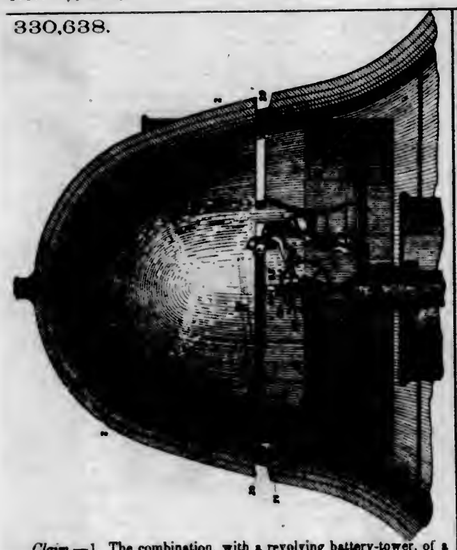
Claim.—1. In refining petroleum, the method of effecting more immediate and intimate contact of the acid, which consists in diffusing or spreading the acid by mixing with the petroleum and acid a powdered silicious or other inorganic substance of greater specific gravity than the oil, and which is insoluble in or unaffected chemically by the acid, as set forth.

2. In refining petroleum, the method of effecting more immediate and intimate contact of the acid therewith, which consists in mixing with the petroleum a powdered silicious or similar inorganic substance of greater specific gravity than the oil, and which is insoluble in or unaffected chemically by the acid, and then adding the acid and agitating the mixture, substantially as set forth.

330,638. REVOLVING-TOWER SYSTEM OF FORTIFICATIONS. Theodore R. Timby, Nyack, N. Y. Filed Apr. 21, 1885. (No model.)



330,638.



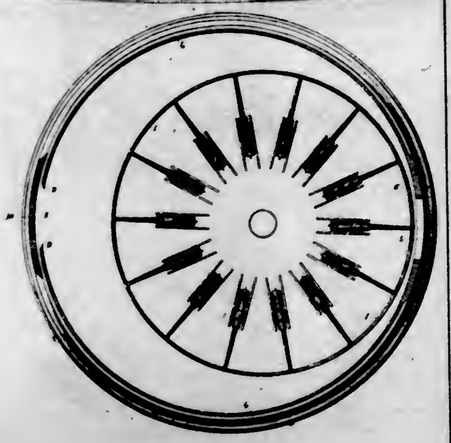
Claim.—1. The combination, with a revolving battery-tower, of a sighting-platform revolving concentrically and independently therein, and a sight carried by said platform hinged or pivoted at its outer end in close proximity to the tower wall or dome and capable of elevation and depression at its inner end for the purpose of sighting an object near by or far off through a vertically-narrow opening, as explained.

2. The combination, with a revolving battery-tower, of a platform, 19, mounted concentrically therein and capable of independent movement, rotating mechanism 25 26, telescope 27, pivoted close to the opening in the wall, and elevating mechanism 41 of said telescope, as and for the purpose set forth.

330,639. SHIELD AND TOWER SYSTEM OF FORTIFICATIONS. Theodore R. Timby, Nyack, N. Y. Filed May 9, 1885. (No model.)

Claim.—1. The combination of the movable shield 4, having slots or openings in the front portion for firing through, and a revolving bat-





tery-tower located entirely within the circle of the shield, so that its front may be completely masked thereby, and having a sighting-dome, 2, projecting above the shield 4, as and for the purposes explained.

2. The combination of the revolving battery-tower 1, a shield, 4, completely surrounding said tower, having horizontal loop-holes 5, and the re-enforcing plates 6, applied to the front portion of the shield around the loop-holes 5, as and for the purposes set forth.

3. The combination of a revolving battery-tower, a shield surrounding said tower pierced for firing through, and a re-enforcing band extending around the tower in line with the firing-openings in the shield, substantially as herein set forth.

4. The combination of a revolving battery-tower, a protecting-shield surrounding said tower, pierced for firing through and having an opening in the rear for the escape of missiles, and deflecting-plates to direct the escape of missiles outward through said rear opening, substantially as set forth.

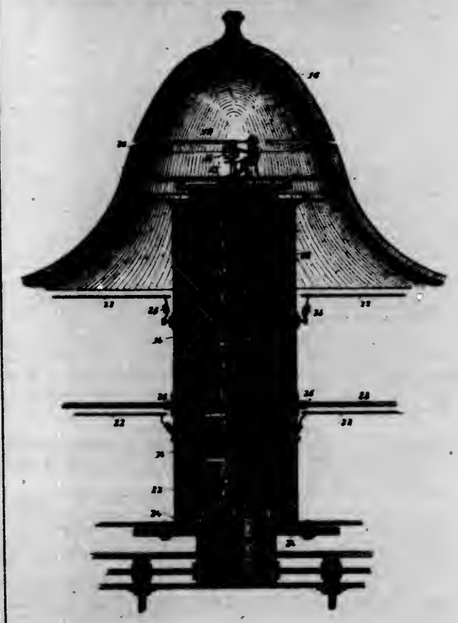
5. The combination of the revolving tower 1, the shield 4, surrounding the same, the opening 8 at the rear of the shield, and the mask 10, placed opposite the said opening to prevent the entrance of missiles, as explained.

6. The combination of a revolving battery-tower, a shield surrounding said tower, pierced for firing through and having a rear opening, a mask protecting said rear opening, and deflecting-plates for causing the discharge of missiles through the said rear opening, substantially as herein set forth.

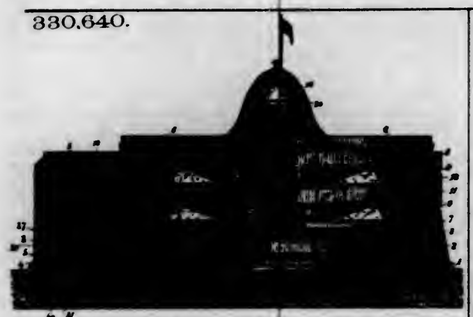
330,640. REVOLVING-TOWER FORTIFICATION. Theodore R. Timby, Nyack, N. Y. Filed June 6, 1885. (No model.)

Claim.—1. A revolving battery-tower constructed with external walls and floors on which the guns are supported, in combination with a central well disconnected from the said gun-floors, and with firing





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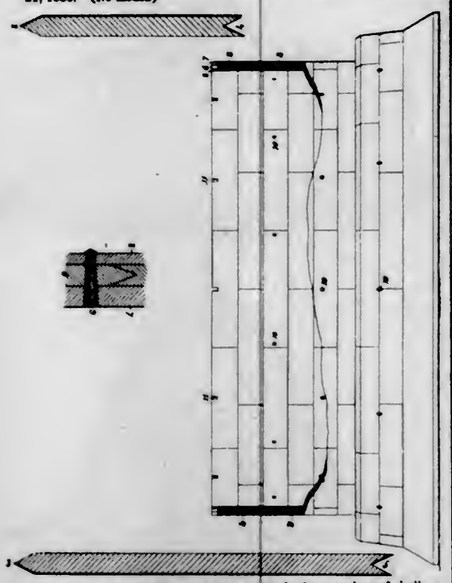


mechanism contained in said well brought into electrical connection with the successive guns by the revolution of said tower, as explained.

2. In a revolving battery-tower, the combination of two or more concentric cylinders forming a central well, the outer cylinder connected to the gun-room floors and the inner one disconnected therefrom and containing automatic mechanism for firing the guns on said floors, as explained.

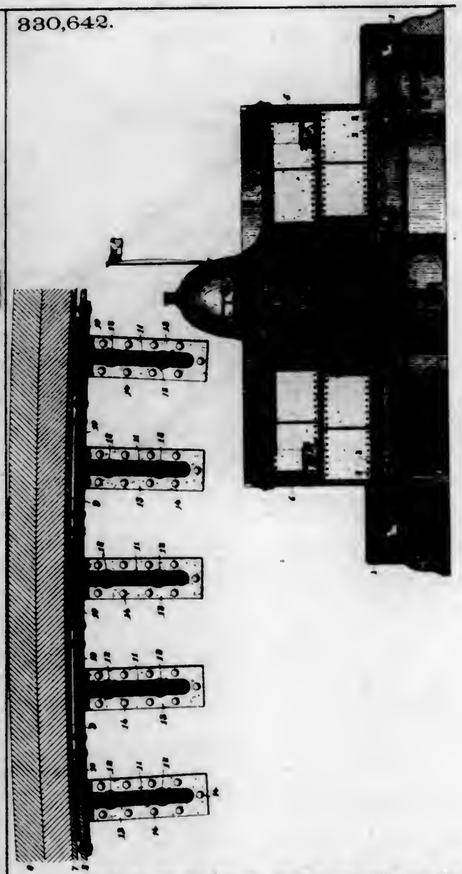
3. In a revolving battery-tower, the combination of external walls, floors secured thereto on which the guns are supported, two or more concentric cylinders forming a central well within the tower, the outer one connected to the gun-floors and the other inner one disconnected therefrom, and automatic firing mechanism contained in the inner cylinder brought into electrical connection at the proper moment with the successive guns on said gun-room floors, as explained.

330,641. REVOLVING-TOWER SYSTEM OF FORTIFICATIONS. Theodore R. Thest, Nyack, N. Y. Filed Feb. 5, 1885. Renewed Sept 21, 1885. (No model.)



Claim.—A fortification-wall constructed of a number of shells or series of plates formed with counterpart V-shaped ridges and grooves, respectively, on their meeting edges, so as to interlock, the whole secured together by horizontal conical bolts inserted from the exterior, as herein shown and described.

330,642. REVOLVING-TOWER SYSTEM OF FORTIFICATIONS. Theodore R. Thest, Nyack, N. Y. Filed Mar. 9, 1885. Renewed Oct. 5, 1885. (No model.)

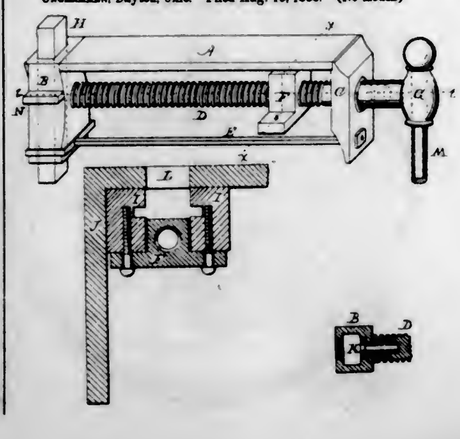


Claim.—1. The combination, with the tower-wall, of the T-shaped ribs 10, secured to the face of said wall, and the superimposed U-shaped plates 11, fastened to the ribs 10 and having flanges by which they are secured to the floor and ceiling, whereby the tower-walls are better enabled to withstand shock and strain, as explained.

2. In a revolving battery-tower, the combination of the external walls, 6, the central well, 18, the radial partitions 17, securely fastened to the outer wall, the internal well, and the floor and ceiling to stiffen and strengthen the entire structure, and the interposed radial partitions 15, extending part way inward from the outer wall and securely fastened to the outer wall, the floor, and the ceiling, and serving as buttresses to strengthen the wall against external shocks.

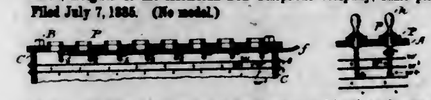
3. The combination of the outer wall, 6, the central well, 18, the radial partitions 15 17, and the facing-plates 7 and 8, forming ventilating-spaces within the wall, substantially as shown and described, for carrying off smoke from the spaces between the said radial partitions.

330,643. TAIL-SCREW FOR CARPENTERS' BENCHES. Conrad Ungermann, Dayton, Ohio. Filed Aug. 15, 1885. (No model.)



Claim.—In a carpenter's bench-clamp, the clamp-head B, with slides N, for the grooved blocks, central orifice for the adjustable clamp, and circular recess for the bearing-pin K, for attachment to the screw, in combination with braces A E and nut F, fixedly attached to said bench, substantially as set forth.

330,644. ELECTRIC SWITCH-BOARD. Theodore N. Vail, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed July 7, 1885. (No model.)



Claim.—1. In an electric switch-board, the combination of connecting-wires stretched taut and arranged in layers, as described, each alternate layer being transversely disposed with respect to the layers immediately above or below the same, the line-plates fixed to a non-conducting covering-plate, each of the said line-plates being perforated for the reception of a plug-connector, and placed over an intersection-point of the several wire layers, and a series of plug-connectors provided in pairs of varying length, the said plugs being adapted for insertion through the line-plates and to connect the said line-plate with any desired one of the connecting-wires, in the manner described.

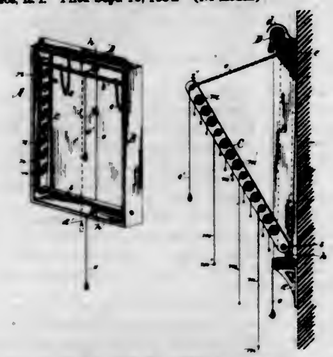
2. An electric switch-board consisting of a non-conducting frame, a series of superposed layers of horizontally-arranged connecting-wires stretched taut therein, to serve as connecting-links between any two main lines, the said layers being each in different horizontal planes and insulated from one another by air only, a non-conducting plate surrounding the whole, a series of perforated line-plates, each representing a main line, mounted on the said non-conducting-plate, and a series of pairs of plug-connectors, each pair being adapted to extend through the line-plates and to make contact with one of the layers of connecting-wires, as and for the purposes described.

3. The combination, in a horizontal electric switch-board, of the connecting-wires, arranged as herein described, and fastening devices—such as screws and nuts—as indicated, for detachably securing said wires to the frame of the switch-board, so that they can be tightened when necessary.

4. The combination, in a horizontal electric switch-board, of the connecting-wires arranged in horizontal layers of different planes, each alternate layer being transverse to the adjacent layers, and the several wires being provided with booked ends, and the fastening devices detachably securing the ends of said wires to the frame of the switch-board, so that they can be tightened when necessary, substantially as described.

5. The combination, in a switch-board of the character hereinbefore described, of the inclosing case or frame, the non-conducting covering-plate thereof, the line-plates, each perforated for the reception of a plug-connector, affixed to and supported by the said plate, and the stretched wires arranged in transversely-disposed horizontal layers in the dry-air space within the inclosing-case, so that one wire of each layer crosses an arc of the circle of each of the line-plates, and plug-holes, as described, whereby each layer of wires is caused to serve as a connecting-plate and may by suitable plug-connectors be united with any of the said line-plates, substantially as hereinbefore described.

330,645. CABINET FOR CURTAINS. Bartholomew Vallett, Providence, R. I. Filed Sept. 10, 1884. (No model.)

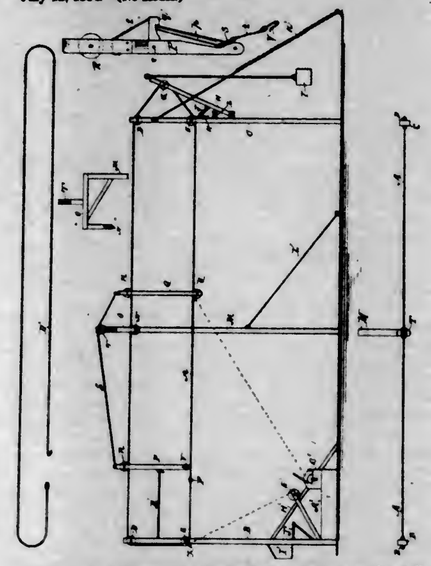


Claim.—1. In a cabinet for exhibiting curtains, &c., the frame or holder C, in combination with the case B, having said frame pivoted thereto, flexible connections *e*, uniting said frame and case, and means, substantially as described, for operating the holder, as and for the purpose hereinbefore set forth.

2. The cabinet A, for exhibiting curtains, &c., herein described, consisting of the casing B, having the exterior guard or screen, D, connected therewith, the holder or frame C, pivoted to said casing, means, substantially as shown, for operating the frame, consisting of the flexible connections *e* and cords *o' o*, the latter mounted in suitable sheaves or pulleys, the whole combined, arranged, and adapted for use, substantially as shown and set forth.

3. The combination, with casing B, provided with a screen, D, of the pivoted frame C, provided with upper and lower operating-cords, *o' o*, and suitable sheaves or pulleys for the same, whereby said frame is adapted to be swung or lowered to any desired position, all substantially as shown and set forth.

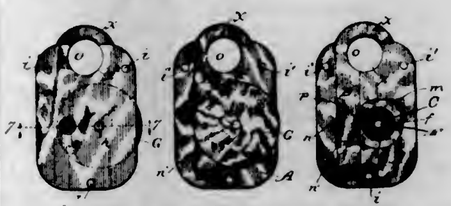
330,646. CLOTHES-LINE. Josiah S. Walker, Florence, Kans. Filed July 12, 1884. (No model.)



Claim.—1. The combination of the following parts: the endless clothes-line, two sets of pulleys for supporting the same at the ends, a post or support having a laterally-projecting arm carrying a pulley and placed intermediately of but out of line with said sets of (end) pulleys, as and for the purpose specified.

2. The combination, with the endless clothes-line and intermediate post for supporting the same, of a carriage for supporting the lower strand of the line, consisting of two pendent bars supported by pulleys on the upper strand, and having a hook for engaging the lower strand, and a wire or cord for connecting said bars together at their upper ends, and a pulley for said cord or wire, which is supported on said intermediate post, and a cord for holding said carriage in any desired position on the line, substantially as shown and described.

330,647. PERMUTATION-PADLOCK. Charles F. Walker, Oak Park, and Martin Ramson, Chicago, Ill.; said Ramson assignor to said Walker. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a combination-lock, the combination, with a bolt recessed on one side, of one or more tumblers, each comprising a disk having a segment removed from its edge, and means, substantially as described, for turning the tumbler or tumblers.

2. In a combination-lock, the combination, with the covered receptacle A, of a bolt, B, concaved on one edge, a well, *t*, opening laterally into the concaved portion of the said bolt and rendered thereby cylindrical, and provided laterally with a longitudinal notch, *r*, independently-movable tumblers within the said well, comprising annular disks provided with suitable stops and having each a segment removed from its

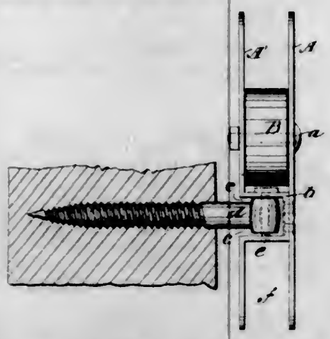
edge, stationary washers F, interposed between the said tumblers, and means, substantially as described, within the receptacle A, for turning the said tumblers.

3. A combination-lock comprising, in combination, a bed-plate, A, having a well, *t*, a recess, *q*, into which the said well opens laterally, a sliding bolt, B, within the recess *q*, and concaved on one edge to complete, when inserted, the necessary distance within the said recess, the cylindrical cavity forming the said well, tumblers C D E within the said well, comprising annular disks having each a segment removed from its edge and producing a straight portion upon the said edge to permit, when such straight portions are in vertical line adjacent to the said bolt, movement of the latter, the said tumblers operating to prevent such movement when one or more of the straight portions shall be turned from such vertical line, a suitable covering for the said parts, and means, substantially as described, for turning the said tumblers.

4. A combination-lock comprising, in combination, a bed-plate, A, provided with a well, *t*, and a recess, *q*, into which the said well opens laterally, a sliding bolt, B, within the recess *q* and concaved on its inner edge to complete, when inserted, the necessary distance within the said recess, the cylindrical cavity forming the said well, independently-movable tumblers C D E within the said well, comprising annular disks having each a segment removed from its edge to permit movement of the bolt when the straight edges are in vertical line adjacent to the said bolt, the said tumblers operating to prevent such movement when one or more of the straight edges shall be turned from such vertical line, a key comprising a dial-plate, G, and pin K, extending from the under side of the said dial-plate through the said annular disks and operating to move the said annular disks by abutment against stops provided therein, and a suitable cover for the entire operative mechanism, substantially as described.

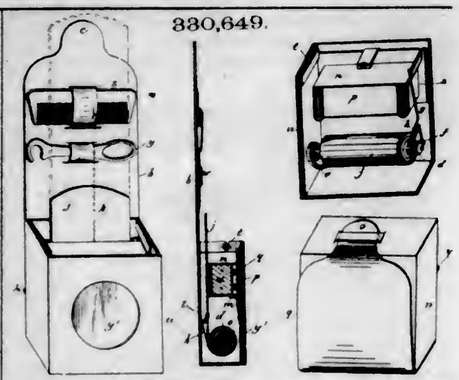
5. A combination-lock comprising, in combination, the following elements: a bed-plate, A, having a well, *t*, a longitudinal recess, *q*, into which the said well opens laterally, a sliding bolt, B, within the recess *q* and concaved on its inner edge to complete, when inserted, the necessary distance within the said recess, the cylindrical cavity forming the said well, and provided with a recess, *n'*, on its opposite edge abutting against a suitable stop, *n*, and bent at one extremity to form a ring with the concave portion of the plate A, tumblers within the said well, comprising an annular disk, C, having a recess, *c'*, leading from its central opening and forming a stop, an annular disk, D, having stops *d* and *d'* formed within its central opening, and an annular disk, E, having a projection, *e*, extending inward from its central opening and forming a stop, each annular disk having a segment removed from its edge, a key comprising a dial-plate, G, and a pin, K, extending from the under side of the said dial-plate through the said annular disks and operating to move the said disks by abutment against the said stops therein, a covering-plate, H, secured upon the said bed-plate A, and concaved at one end and recessed on its under side to receive the dial-plate G, and provided with an opening, *g*, underneath which the numbers on the said dial-plate shall pass in moving the same, and a shaft, *f*, passing centrally through the said well and secured at opposite extremities to the said bed-plate A and covering-plate H, the whole being constructed and arranged to operate substantially as described.

330,648. COMBINED GATE ROLLER AND HINGE. Edwin C. Washburn, Nevada, Mo. Filed Sept. 6, 1884. (Model.)



Claim.—The herein-described gate roller and hinge, consisting of the plates A A', riveted together, (the plate A' being bent to form the socket *c*,) the roller B, and the bolt *d*, pivoted in the socket of plate A', as set forth.

330,649. POCKET TOILET-CASE. William W. Watts, Louisville, Ky. Filed May 14, 1885. (No model.)



Claim.—1. The combination, with the box, of the spring-cylinder mounted therein, the flexible strip upon said cylinder, and the powder-box having the spring-follower arranged to press the powder-tablet against said strip, substantially as described.

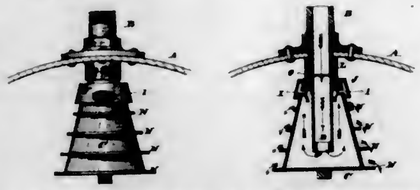
2. The combination, with the box *a*, of the cylinder, the spiral spring, the flexible strip *j*, the powder-box and spring-follower, and the devices for holding the cylinder against the action of the spiral spring, substantially as described.

3. The powder-tablet provided with the re-enforcing wires, substantially as described.

4. The toilet-case having the flap-cover provided with loops for supporting toilet implements, the mirror let into its front wall, the spring-cylinder, the flexible strip mounted upon said cylinder, and the powder-box provided with the spring-follower, substantially as described.

5. The combination, with the spring-cylinder, the flexible strip mounted thereon, and the cord *k*, having its opposite ends attached to said strip, of the eye through which said cord passes, substantially as and for the purpose set forth.

330,650. FEED-WATER HEATER. Samuel J. Weaver, St. Louis, Mo., assignor of one-half to John O'Brien, same place. Filed Dec. 9, 1884. (No model.)



Claim.—1. In a boiler feeder and purifier, the combination of the feed-pipe and tank, the latter having flanges on its outside increasing in size downward, substantially as and for the purpose set forth.

2. In a boiler feeder and purifier, the combination of the feed pipe and tank, the former being submerged in the latter, and the latter having flanges increasing in size downward, substantially as and for the purpose specified.

3. In a boiler feeder and purifier, the combination of the feed-pipe and a tank having openings for the escape of the water, and external flanges or ribs projecting into the steam-space, substantially as set forth.

4. In a boiler feeder and purifier, the combination of the feed-pipe, tank, and hood, the tank having openings beneath the hood for the escape of water, and having flanges or ribs increasing in size downward, substantially as and for the purpose set forth.

5. In a boiler feeder and purifier, the combination of the feed-pipe and tapering tank having discharge-openings, substantially as set forth.

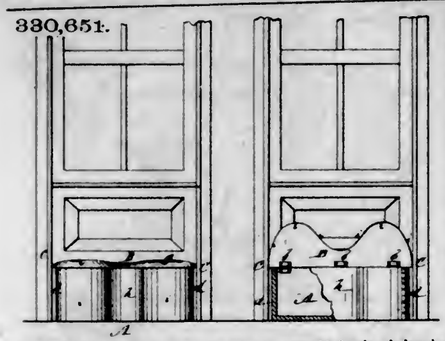
6. In a boiler feeder and purifier, the combination of the feed-pipe and tapering tank, the latter cast with a neck and openings beneath the neck, substantially as set forth.

7. In a boiler feeder and purifier, the combination of the feed-pipe, a tapering or frusto-conical tank, openings in said tank near its upper or smaller end, and a hood projecting over said openings, as set forth.

330,651. WINDOW-SEAT BOX. William H. Wetherill, Philadelphia, Pa. Filed Aug. 22, 1885. (No model.)

Claim.—1. The within-described window-seat box, the same consisting of a hollow lower body or box part, A, having an intermediate recess, *h*, down its front, exposing six distinct sides, *i i*, in advance of its back *k*, and of a lid, B, of corresponding configuration on its front and

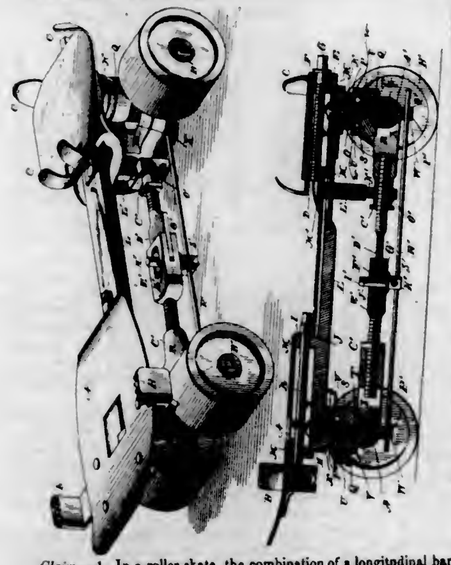
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side marginal portions, the whole forming a many-sided twin window-box seat adapted to be used as a vis-à-vis seat when desired, substantially as shown and described.

2. In a combined window seat and box, the hollow body or box part A and its lid B, constructed to form a vis-a-vis or twin seat, *g g*, having an intermediate recess, *h*, and adapted to accommodate two persons either with their backs to the window or in different sidewise positions relatively thereto and facing each other, essentially as shown and described.

330,652. ROLLER-SKATE. Edwin V. Whitaker, Gloversville, N.Y. Filed Sept. 12, 1885. (Model.)



Claim.—1. In a roller-skate, the combination of a longitudinal bar, roller-bearing frames pivoted to turn horizontally upon the under sides of the ends of the same, and having inwardly-projecting reaches pivotally and extensibly connected to each other, and a foot-board having a post projecting downward and movably attached to one of the reaches, as and for the purpose shown and set forth.

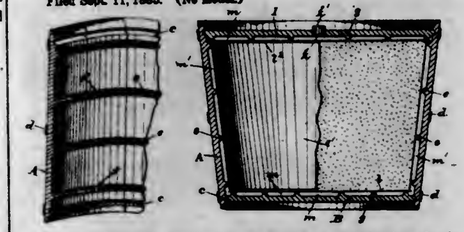
2. In a roller-skate, the combination of a longitudinal bar having downwardly-projecting cylindrical lugs at its ends, roller-bearing frames having cylindrical sockets receiving the lugs, bolts passing axially through the cylindrical lugs and sockets, reaches projecting inwardly from the roller-bearing frames and having their ends pivotally and extensibly connected, a spring-bar attached to the roller-bearing frames and to the uniting-bolt for the reaches, and a foot-board rocking upon the longitudinal bar and having a downwardly-projecting telescoping post movably attached at its lower end to one of the reaches, as and for the purpose shown and set forth.

3. In a roller-skate, the combination of a longitudinal bar having the rocking foot-board attached to its upper side, and having two downwardly-projecting cylindrical lugs at its ends formed with axial perforations and with annular grooves in their lower ends, with roller-bearing frames connected by pivotally and extensibly united reaches, and provided with sockets for the lugs having axial perforations, and annular grooves in their bottoms, anti-friction balls placed in the grooves, and bolts passing up through the axial perforations and secured to the longitudinal bar, as and for the purpose shown and set forth.

4. In a roller-skate, the combination of the roller-bearing frames pivoted to swing horizontally, and having the inwardly-projecting threaded sockets and the downwardly-projecting perforated lugs, the reach having the perforated flat head and fitting in the socket of one roller-frame, the reach having the longitudinally-slotted lips and fitting in the other socket, the bolt passing through the slots and the perforated head, and having a transversely-perforated head provided with a set-screw, and the spring-rod passing through the perforated lugs and through the perforated head of the bolt, being retained by the bolt, as and for the purpose shown and set forth.

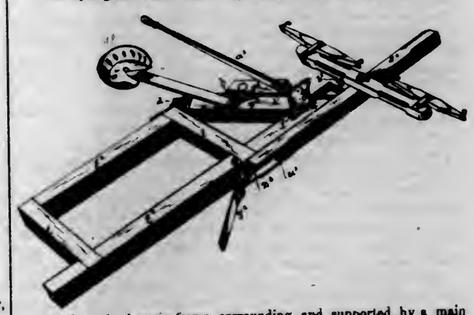
5. In a roller-skate, the combination of a longitudinal bar having downwardly-projecting cylindrical lugs at its ends, roller-bearing frames having cylindrical lugs projecting upward, washers interposed between the said lugs, bolts passing axially through the cylindrical lugs, reaches projecting inwardly from the roller-bearing frames and having their ends pivotally and extensibly connected, a spring-bar attached to the roller-bearing frames and to the uniting-bolt for the reaches, and a foot-board rocking upon the longitudinal bar and having a downwardly-projecting telescoping post movably attached at its lower end to one of the reaches, as and for the purpose shown and set forth.

330,653. BUTTER-PACKAGE. Welcome White, Baltimore, Md. Filed Sept. 11, 1885. (No model.)



Claim.—A wood butter-package having, in combination, circular ribs or beads on the inner surface of the package and integral with the material composing the said surface, and having notches or cut-aways, and a lining resting against the said ribs or beads, as set forth.

330,654. HARVESTER. William N. Whiteley and William Bayley, Springfield, Ohio. Filed July 25, 1884. (No model.)

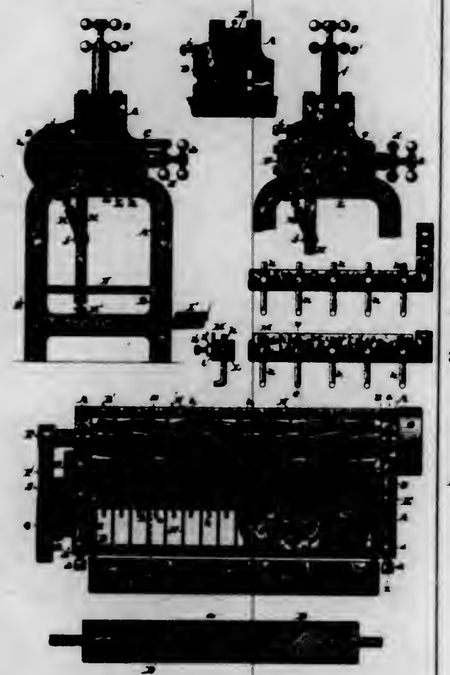


Claim.—1. A main frame surrounding and supported by a main wheel, a platform, cutting and binding apparatus attached to and supported by said frame in rear of the main wheel, and a forward extension of the inner side bar, f^2, substantially as described, combined with a tongue, s^2, pivoted to said forwardly-extended side bar, a diagonal brace, *b*, and a driver's seat and foot-board mounted on said diagonal brace, whereby the weight of the driver is supported by the tongue in advance of its joint-connection to the main frame, substantially as set forth.

2. The main frame $t\ f^2$, surrounding and supported by the master-wheel a^2, a cutting apparatus, platform, and binding apparatus attached to and supported by said frame in rear of the main wheel, combined with the tongue s^2, jointed to a forward extension of the side bar, f^2, the diagonal brace y^2, and strap z^2, whereby the outer end of the bolt u^2 is supported.

3. A main frame surrounding and supported by the main wheel a^2, and the forward extension of the inner side bar, f^2, and the tongue s^2, jointed to the main frame, the diagonal brace *b*, rigidly secured to the tongue just in advance of the end of the extended side bar, f^2, and the lever c^3, mounted upon the extended side bar, f^2, at its extremity, and the link b^2, whereby said lever is jointed to said tongue, substantially as set forth.

330,655. MACHINE FOR UNHAIRING, WORKING, AND SCOURING HIDES. ARTHUR E. WHITNEY, Winchester, Mass. Filed July 29, 1885. (No model.)



Claim.—1. In combination with the bed and work rolls of an unhairing-machine, the bed-roll D, having a rubber covering, *a*, which gradually increases in thickness toward the middle of the length of said roll, substantially as described.

2. In combination with the bed-roll of a hide working and scouring machine, the pressure or feed roll E, having its periphery grooved both longitudinally and circumferentially, to form thereon a series of blunt-ended projections, the outer ends of which form sections of a cylindrical surface, substantially as described.

3. In combination with the bed-roll D, the clearer-bar L, provided with the series of adjustable pins *k*, substantially as described.

4. The combination of the roll D, boxes *b b*, the bar L, secured to said boxes, and the adjustable pins *k*, all arranged and adapted to operate substantially as described.

5. The combination of the roll D, the bar L, and the series of short plates M, adjustably secured to said bar, substantially as described.

6. The combination of the roll D, the boxes *b b*, the stop-levers G G, the springs *c c*, and set-screws *d d* and *i i*, all arranged and adapted to operate substantially as described.

7. The combination of the rolls D and E, the boxes *b b* and *e e*, the stop-levers G G, the set-screws *i i*, the treadle I I I', the struts H H, the pivoted arms K, made in two parts and adjustable in length, and the elbow-levers J J, all arranged and adapted to operate substantially as described.

8. In combination with the unhairing and scouring mechanism, the series of transverse knife-edged bars N N, forming a grating, to receive the skin as it falls from the machine after being operated upon, substantially as described.

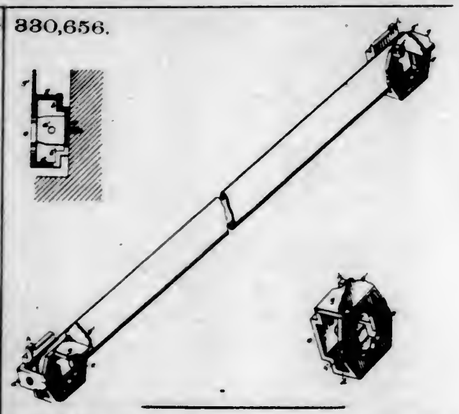
330,656. STAIR-ROD SECURER. LOUIS M. WILES, Philadelphia, Pa. Filed Sept. 9, 1885. (No model.)

Claim.—1. The herein-described stair-rod fastening or bracket, consisting of the front and rear walls, the connecting end wall, *a'*, and a pivoted top cover.

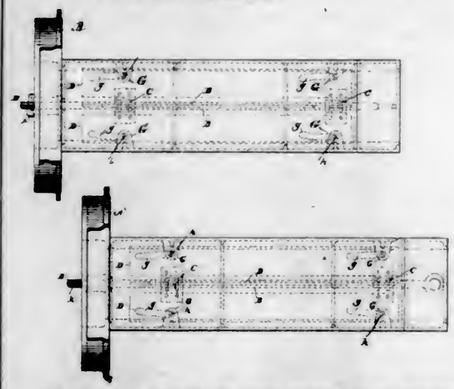
2. The herein-described stair-rod fastening or bracket, consisting of the front and rear walls, the front wall being provided with a pivoted top cover, *g*, recessed at one corner, and the rear wall being provided with a projecting stop-pin, *h*, substantially as described.

3. The herein-described stair-rod fastening or bracket, consisting of front and rear walls, with a top cover, *g*, pivoted to the front wall, and having an upwardly-projecting flange, *g'*, as and for the purpose set forth.

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330,657. COLLAPSIBLE CORE-BARREL. PETER WILKIE, Trenton, N. J. Filed June 9, 1885. (No model.)



Claim.—1. A collapsible core-barrel consisting of the mutilated cylinder composed of the larger sections, E, and the smaller sections, F, the said sections being connected to a common operating-rod by means of slotted plates and pins entering the same, the said slots operating to move the smaller section inward first, and then to move the whole number of sections inward simultaneously.

2. A collapsible core-barrel consisting of the mutilated cylinder made up of the sections of different widths, the central operating-rod, and the slotted plates entered by pins upon the sections, the slots in the plates which operate the shorter sections being inclined throughout their entire length from top to bottom, and those in the plates operating the larger section being straight a short distance from the bottom and then inclined inward, substantially as described.

3. A collapsible core-barrel consisting of the mutilated cylinder made up of the sections of different widths, the wider sections being provided upon their faces which are adjacent to the narrower sections with notches or indentations, the operating-rod, and slotted plates, the slots in the plates which operate the shorter sections being inclined throughout their entire length from top to bottom, and those in the plates operating the large sections being straight a short distance from the bottom and then inclined upward, whereby when the operating-rod is raised the narrower sections are first drawn in to occupy the indentations in the wider sections, and then the whole number of sections moved inward simultaneously.

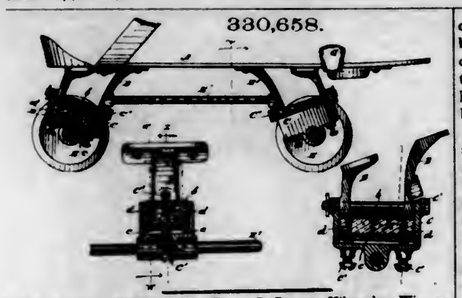
330,658. ROLLER-SKATE. CHARLES G. WINFIELD, Conneaut, Ohio, assignor to R. A. Palmer, same place. Filed Mar. 31, 1885. (No model.)

Claim.—1. In a roller-skate, the combination, substantially as set forth, of the socketed truck-frame C, convex seat-plate *c*, hanger B, having convex foot *b*, pivoted to said truck-frame, and the spring D, having its upper and lower faces concaved and inserted between the parts *c* and *b*.

2. In a roller-skate, the combination, with the truck-frame and the hanger, of a spring consisting of a block of rubber having metallic springs embedded therein, substantially as and for the purposes mentioned.

3. In a roller-skate, the combination, with the foot-plate, of toe-clamping jaws G G, mounted on spring-arms *g g*, substantially as and for the purposes set forth.

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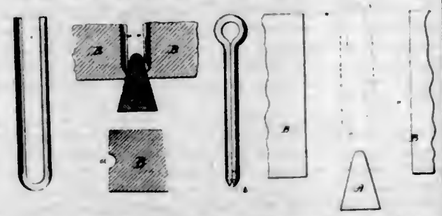
330,659. CONFECTION. FRANK P. ZIEGLER, Milwaukee, Wis., assignor to George Ziegler, same place. Filed Sept. 10, 1885. (No specimens.)



Claim.—1. The process of treating candy, consisting in subjecting it to a bath of melted paraffine and draining it.

2. As a new article of manufacture, candy coated with paraffine.

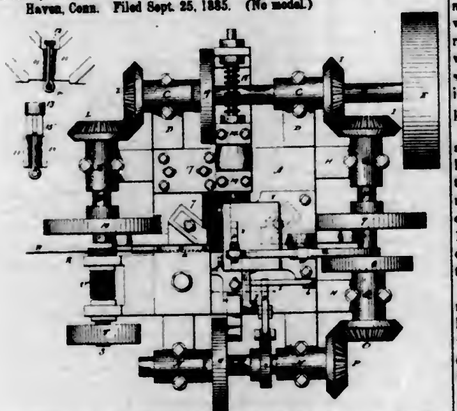
330,660. METHOD OF MAKING COTTER-PINS. JOHN ADT, New Haven, Conn. Filed Sept. 25, 1885. (No model.)



Claim.—1. The herein-described improvement in the manufacture of cotter-pins, consisting in swaging the extreme ends of the legs to form a bevel upon the inside of both, the bevel of the two forming a V-shaped recess between the two legs and without bending the legs, substantially as described.

2. The herein-described improvement in the manufacture of cotter-pins, consisting in swaging the extreme ends of the legs to form a bevel upon the inside of both, the bevel of the two forming a V-shaped recess between the two legs, and at the same time swaging the outer surface of the points of the legs into conical shape, substantially as described.

330,661. MACHINE FOR MAKING COTTER-PINS. JOHN ADT, New Haven, Conn. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a machine for making cotter-pins, the combination of a feed adapted to present the wire into the machine in position for bending, a bender, *d*, constructed with a semicircular recess, *g*, in its face, and with a longitudinal groove, *h*, extending through said semicircular recess, a former, *n*, in line with the said recess in the face of the bender and arranged for vertical movement at right angles to the plane of said bender, and the cylindrical stud *r* at the end of the former next the bender, the said former and stud adapted to be successively brought into the plane of the groove in said bender, and the reciprocating side benders, 11 11, substantially as described.

2. In a machine for making cotter-pins, the combination of a feed adapted to present the wire into the machine in position for bending, a bender, *d*, constructed with a semicircular recess, *g*, in its face, with a longitudinal groove, *h*, extending through said semicircular recess, a former, *n*, in line with the said recess in the face of the bender and arranged for vertical movement at right angles to the plane of said bender, the said former constructed with a cylindrical downwardly-projecting stud, *r*, at its end next said bender *d*, the said former and stud adapted to be successively brought into the plane of the groove in the said bender *d*, and the reciprocating side benders, 11 11, substantially as described.

3. In a machine for making cotter-pins, the combination of a feeding device adapted to present the wire into the machine in position for bending, a reciprocating bender, *d*, constructed with a recess, *g*, in its face, and with a longitudinal groove, *h*, in its face extending through the said recess, fingers *m*, having an up-and-down movement imparted thereto and adapted to cover or uncover the said groove in the bender, a former, *n*, in line with the said central recess in the bender and arranged in a slide, whereby up-and-down movement may be imparted to said former, the said former also constructed with a downwardly-projecting cylindrical stud, *r*, at its end next the said bender *d*, the said former and stud adapted to be successively presented in the plane of the said groove in the said bender, and the reciprocating side benders, 11 11, substantially as described.

4. The combination of the bender *d*, constructed with a longitudinal groove, *h*, on its face, and with a semicircular bend in said groove at its center, the said groove adapted to receive a blank from which a pin is to be formed, a former, *n*, in line with said central recess in the bender and provided with a downwardly-projecting cylindrical stud, *r*, at its end next said bender *d*, the said former and stud arranged in a vertical movable slide, whereby the said bender and stud may be successively presented in the plane of said groove, the said former also provided with a downward projection, 12, at its end opposite said stud, the said projection having its edge toward the said stud wedge-shaped, with the apex toward the said stud, and the side-benders, 11 11, substantially as described.

5. The combination of the reciprocating bender *d*, fingers *m m*, former *n*, provided at one end with the stud *r*, and at its opposite end with the downward wedge-shaped projection 12, and the reciprocating side benders, 11 11, substantially as described.

6. The combination of the reciprocating bender *d*, its front face adapted to receive a blank from which the pin is to be formed, and constructed with a semicircular recess at its center, the former *n*, forward of said bender and in line with said recess, the said former constructed with a downward cylindrical projection, *r*, the said former and projection arranged for vertical movement, and whereby the said former and stud are successively presented into the plane of said bender, side benders, 11 11, and the longitudinal reciprocating revolving spindle 13, carrying a mill at its inner end adapted to point the legs of the pin after bending, substantially as described.

7. The combination of the reciprocating bender *d*, its front face adapted to receive a blank from which the pin is to be formed, and with a semicircular recess in the center of its face, fingers *m m*, arranged to work up and down in front of the face of said bender, the former *n*, arranged in line with the said recess in the bender, and having the downwardly-projecting stud *r* at its end next said bender, the reciprocating side benders, 11 11, and the reciprocating revolving spindle 13, carrying a mill at its inner end adapted to point the ends of the legs of the pin after it is bent, substantially as described.

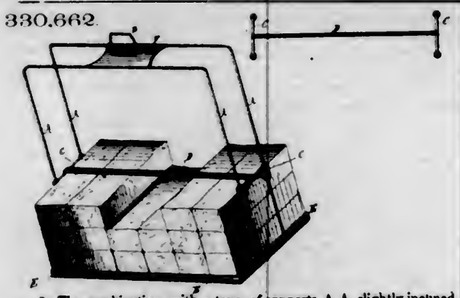
8. The combination of the reciprocating bender *d*, its front face adapted to receive a blank from which the pin is to be formed, and also having a central semicircular recess in its face, the former *n* in line with the said central recess in the bender, provided with the stud *r* at its end next said former, and with a downward projection, 12, at its opposite end, the inner edge of said projection 12 wedge-shaped, the side benders, 11 11, and the reciprocating revolving spindle 13, arranged in the plane of said bender, and carrying at its inner end the mill adapted to cut away the ends of the pin after bending, substantially as described.

9. In a machine for making cotter-pins, the combination of the mechanism, substantially such as described, for bending the pin, with a longitudinal reciprocating and revolving spindle arranged in axial line with the pin after it is bent, and carrying at its inner end a mill, substantially as described, and whereby the point of the bent pin will be cut into conical shape.

330,662. CARRYING-TRAY. CHARLES A. ANDREWS, Lynn, Mass. Filed Sept. 2, 1885. (No model.)

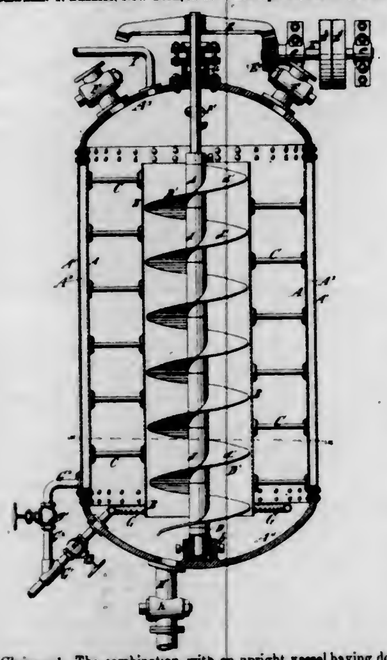
Claim.—1. The combination of tray E, supports A A, having cross-plate F and handle B, slides C C, and horizontal bar D, substantially as set forth.

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2. The combination, with a tray, of supports A A, slightly inclined from each other at the top transversely, and joined by a cross-plate, as shown and described, slides C C, and horizontal bar or plate D, substantially as set forth and described.

330,663. APPARATUS FOR BOILING SOAP UNDER PRESSURE. BENJAMIN T. BARRETT, New York, N. Y. Filed Apr. 22, 1885. (No model.)



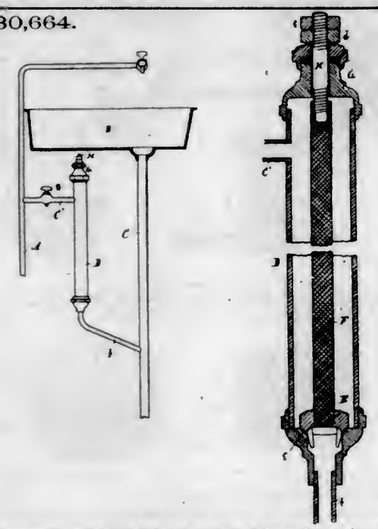
Claim.—1. The combination, with an upright vessel having double walls and an interposed annular space or jacket, and provided at its top with an inlet for fatty matters and at its bottom with an outlet, of an open-ended cylinder smaller in diameter than the vessel, and arranged within the same, a worm or screw extending through the cylinder and serving by its rotation to produce a circulation in reverse directions within and without the cylinder, and steam-pipes for heating the contents of the vessel, substantially as herein described.

2. The combination, with a closed vessel provided with an inlet at the top and with an outlet at the bottom, of an open-ended cylinder smaller in diameter than the vessel, and arranged within the same, a worm or screw arranged within the cylinder and serving by its rotation to produce a circulation in reverse directions within and without the cylinder, and a steam-supply pipe and a perforated distributing-pipe arranged within the vessel and serving to discharge free steam directly into the contents thereof for the purpose of heating the contents and producing a pressure within the vessel, substantially as herein described.

330,664. AUTOMATIC WASTE-VALVE. JOSEPH H. BACON, EBENEZER S. BACON, and VAN CORTLAND SECORD, Detroit, Mich. Filed Sept. 10, 1885. (No model.)

Claim.—1. In combination with a water service-pipe and a waste-water pipe, a conduit connected with both, and a valve arranged within said conduit and provided with a rod for operating the same, the expansion

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and contraction of which differs from that of the said conduit, said valve being actuated by the changes of temperature of the water in said conduit, as set forth.

2. In combination with a water service-pipe and a waste-water pipe, a conduit connected with both, and a valve arranged within said conduit and provided with a stem or rod of metal the expansion and contraction of which is greater than that of the said conduit, said rod being actuated by the changes of temperature of the water in said conduit, as set forth.

3. In combination, the service-pipe A, communicating with any suitable water-supply, the conduit D, having a connection with such service-pipe, a valve, E, seated in such conduit D and controlling the outflow through the connection with the waste-pipe, and provided with a valve-stem, F, of metal the expansion and contraction of which is greater than that of said conduit, substantially as and for the purpose specified.

4. In combination with a water service and a waste-water pipe, a conduit connecting near its upper end with the former and at its lower with the latter, and having a valve seated therein to control the passage of water to such waste-pipe, such valve having within said conduit a stem adjustably secured at its upper end and made of metal the expansion and contraction of which is greater than that of the said conduit, substantially as set forth.

5. In combination, the service-pipe A, communicating with any suitable water-supply, the conduit D, having a connection, C', with such service-pipe, a valve, E, seated in such conduit D, and controlling the outflow through the connection *b* with the waste-pipe C, a valve-stem, F, actuating such valve E, a cap, G, on the top of such conduit, a rod, H, tapped into the top of such valve-stem, and adjusting-nut *d* upon such rod H, the parts being constructed and operating substantially as and for the purposes described.

330,665. MILLSTONE-DRESS. ALLEN S. BAKER, Evansville, Wis. Filed Mar. 25, 1885. (No model.)

Claim.—1. A grinding burr or plate with curved tangential feeding-teeth having contact-surfaces from end to end arranged a little higher than the horizontal plane of the skirt, substantially as and for the purposes set forth.

2. A grinding burr or plate with curved tangential feeding-teeth having one side smooth and the other serrated in direct lines from the eye to the skirt, substantially as described.

3. A grinding burr or plate with curved tangential feeding-teeth having contact-surfaces from end to end, and serrated, inclined, or concave fronts, substantially as described.

4. A grinding burr or plate with curved tangential feeding-teeth having contact-surfaces from end to end, and straight tangential teeth on their fronts, substantially as described.

5. A grinding burr or plate with curved tangential feeding-teeth having straight tangential teeth extending in direct lines, sloping downwardly, and with slight downward curves from the skirt to the fronts of said teeth, substantially as described and shown.

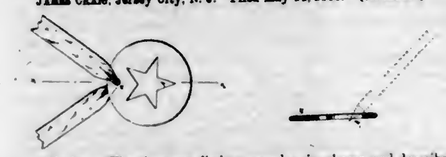
6. A grinding burr or plate with curved tangential feeding-teeth, combined with a series of straight tangential teeth extending from their fronts to the skirt, and a series of intermediate fine teeth having tapering and sloping inner ends, substantially as described and shown.

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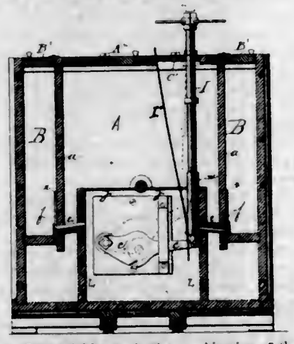
7. A grinding burr or plate having an annular series of curved tangential feeding-teeth with contact-surfaces from end to end, and with inclined or concave fronts having a series of straight tangential teeth extending in direct lines to the skirt, where they combine with a series of intermediate fine teeth, substantially as described and shown.

330,666. SLATE-PENCIL SHARPENER. JACKSON R. BAKER and JAMES CRAIG, Jersey City, N. J. Filed May 11, 1885. (No model.)



Claim.—The slate-pencil sharpener herein shown and described, the same consisting of a disk or round flat plate of steel or other hard metal having the star-shaped opening A, forming cutting or scraping edges, and means for suspending it about the person.

330,667. AUTOMATIC STOCK WATER-TANK. RICHARD H. BARBER, Galena, Kans. Filed Dec. 16, 1884. (No model.)



Claim.—1. In a drinking-tank, the combination of the main tank or reservoir, a trough, a pipe extended between and opening into such parts, a valve controlling said pipe and movable, substantially as described, and a graduated plate connected and movable with said valve, substantially as set forth.

2. In a stock-tank, the combination of the main reservoir, a trough, B, a casing, L, within the reservoir, a trough, G, pipes E *h*, extended between the casing and the troughs G and B, a valve arranged within the casing L and movable over the open end of the pipe *h*, a barrel, *m*, connected with said valve and having a threaded socket, and a shaft having its end threaded into said socket, substantially as set forth.

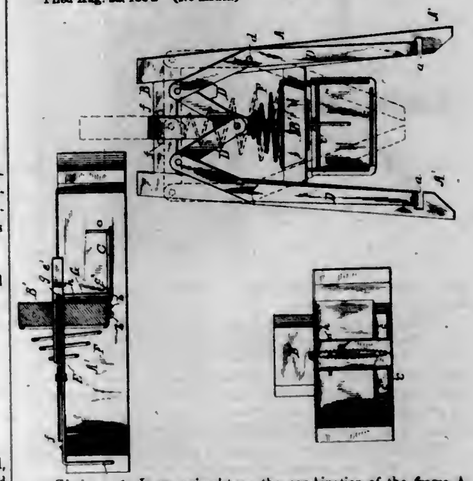
3. In a stock-tank, the combination of a trough, G, a pipe, *h*, opening at one end into said trough, a valve movable over the opposite end of the pipe, a barrel, *m*, connected with said valve and having a threaded socket, a shaft, I, threaded into said socket, and a graduated plate connected with said valve, substantially as set forth.

4. In a stock-tank, a trough having guides or supports *g* fitted to receive a rack, G', and a perforated cover, G², substantially as set forth.

5. The improved stock-tank herein described, consisting of the main reservoir, the troughs B B G G, the casing L, located within the tank, pipes E and *h*, extending from said casing to the troughs B and G, valves C, movable within the casing L over the ends of pipes *h*, threaded barrels connected with said valves and provided with threaded sockets, shafts I, threaded into said sockets, and plates I', connected at one end with the valves, substantially as and for the purposes specified.

6. The combination, in a stock-tank, with a main reservoir, a trough, and a pipe extended between and opening into said trough and reservoir, of a valve controlling said pipe and provided with a socket or barrel, and a shaft threaded into said barrel, substantially as set forth.

330,668. ANIMAL-TRAP. CHARLES W. BARKLEY, Seward, Nebr. Filed Aug. 22, 1884. (No model.)



Claim.—1. In an animal-trap, the combination of the frame A, constructed as described, jaws pivoted centrally thereon, a spring-bar located adjacent to the rear portion of said jaws and connected thereto by links, a pivoted platform, as specified, and a catch located on said bar for engaging said platform, substantially as set forth.

2. In an animal-trap, the frame A, having jaws with inwardly-inclined rear portion pivoted thereto and connected to each other by a toggle-joint, a central sliding bar attached to said toggle-joint and provided with a spring, and a catch for engaging with the pivoted bait-carrying platform, substantially as shown.

3. In an animal-trap, the diverging side pieces having a central and rear cross-bar rigidly attached thereto, the spring-jaws centrally pivoted on said side pieces and attached to a sliding rod which passes through and over the cross-bars, said sliding bar having at its front portion a pivoted catch adapted to engage with a catch attached to the rear portion of a bait-carrying platform, substantially as shown, and for the purpose set forth.

4. In an animal-trap of the class described, a bait-carrying platform pivoted to a cross-bar, and provided with a bail or staple, *b'*, for the purpose of limiting the play of said platform, substantially as shown, and for the purpose set forth.

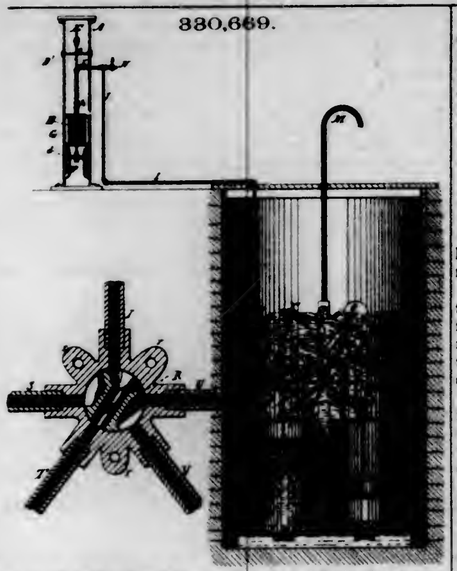
5. In an animal-trap having spring-actuated jaws, a tilting platform, and retaining-catch, the sliding bar E, pivoted to links operating the jaws, having a central rounded portion and flattened ends, the rear portion of said bar having a downwardly-bent thumb-piece, *e*, said bar operating within guides, substantially as shown, and for the purpose set forth.

6. In an animal-trap, a frame consisting of diverging side pieces, A' A', cross-bars B B', the jaws D, connected at their rear ends to each other by links D', and pivoted on the side pieces, A', a sliding bar, E, attached to the links D', said sliding bar passing through a perforation in the front cross bar and guided at its rear portion by pins *f f*, the spring F, catch G, and pivoted platform C, the parts being combined and organized substantially as shown, and for the purpose set forth.

330,669. PUMP. GEORGE H. BENNETT, Cincinnati, Ohio. Filed Aug. 15, 1885. (No model.)

Claim.—1. The chambers P Q, situated beneath the surface of the water and connected with an air-pump, in combination with the yoke X, carrying the weighted balance O and having its arms X' X'' attached to floats in the chambers, and at its lower end a cross-bar provided with

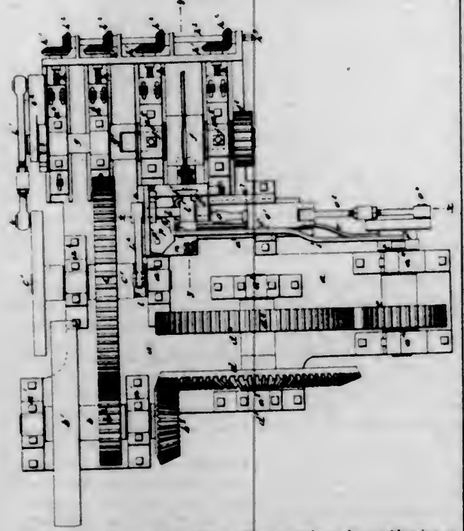
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lugs at each end to operate the valve R, substantially in the manner and for the purpose described.

2. The arm O and yoke X, swinging on the same pivot, the arms of the yoke X being attached to floats Z Z, and having at one end a weight and at the other a cross-arm provided with lugs to catch and turn the valve-arm R'', which is attached to and operates the two-way valve R' to open and close the connection between the chambers P Q and air-pump, substantially as described.

330,670. HORSESHOE-MACHINE. JOHN D. BILLINGS and DAVID MUELLER, New York, N. Y., assignors of one-half to Frank Fuller, same place. Filed Apr. 3, 1885. (No model.)



Claim.—1. In a machine for making horseshoes, in combination, a horizontal folding or bending device, a cutter for forming the ends of the blanks and separating them from the bar adjustable to and from the folding device, and a pair of feeding and blank-forming rollers and adjustable bearing-standards, whereby horseshoes of any shape or size may be made at one operation, substantially as set forth.

2. In a machine for making horseshoes, in combination, a pair of feeding and forming rollers, their bearing-standards, a driving-shaft provided with a coupling in line with one of the rollers, sliding bearing-standards for said shaft, and connected gearing and screws for moving all the standards simultaneously, substantially as set forth.

3. In a machine for making horseshoes, in combination, two main shafts placed at right angles to each other, a driving-shaft connected thereto by means of gear-wheels, a pair of rollers intermittently driven from one of the main shafts by means of a crank, connecting-rod, and crank-arm, a cutter also operated from this main shaft by means of a cam thereon, and a folding or bending device operating at right angles to the direction of movement of the bar fed by the rollers and actuated by means of a mutilated gear on the second main shaft, substantially in the manner set forth.

4. In a machine for making horseshoes, in combination, a pair of feeding and blank-forming rollers arranged to feed the blank-bar horizontally, a vertically-arranged cutter for separating the blanks and forming their ends, and a folding-plunger and folders arranged to operate horizontally at right angles to the direction of motion of the blank-bar fed by the rollers, substantially as set forth.

5. In a machine for making horseshoes, in combination, a pair of feeding and blank-forming rollers, standards provided with sliding boxes for the same, a shaft having an open coupling in line with the lower roller, standards and sliding boxes for said shaft, and screws and gearing for raising or lowering the roller and driving-shaft simultaneously, substantially as set forth.

6. In a machine for making horseshoes, in combination, a pair of feeding and blank-forming rollers, a driving-shaft in line with the lower roller and coupled thereto, horizontally-sliding standards provided with vertically-sliding boxes, adjusting-screws and gears connecting all the standards together, whereby they may be simultaneously horizontally adjusted, and adjusting-screws and gears connecting the lower sliding boxes, whereby the shaft and rollers may be simultaneously vertically adjusted, substantially as set forth.

7. In a machine for making horseshoes, in combination, a pair of feeding and blank-forming rollers, a driving-shaft in line with the lower roller and coupled thereto, horizontally-sliding standards provided with vertically-sliding boxes, adjusting-screws and gears connecting all the standards together, whereby they may be simultaneously horizontally adjusted, and adjusting-screws and gears connecting the lower sliding boxes, whereby the shaft and rollers may be simultaneously vertically adjusted, a ratchet-wheel secured to the shaft, a pawl-arm, a rotating crank, and adjustable connecting-rod connecting the end of the pawl-arm to the rotating crank, substantially as set forth.

8. In a machine for making horseshoes, a folding device consisting of a horizontally-moving former, a pair of folding-rollers, a pair of pivoted folders behind the rollers, a horizontal table, and trap-door formed therein, through which the formed shoes are discharged, and a stripping device for forcing the formed shoes off the former, in combination, substantially as set forth.

9. In a machine for making horseshoes, in combination, the rollers $f\,f'$, sliding boxes $f^2\,f^4$, coupling-shaft g, boxes $g^2\,g^3$, screws $f^6\,f^8$ $g^2\,g^3$, miter-wheels $f^7\,f^7\,g^4\,g^4$, the standards $a^2\,a^3\,a^3\,a^2$, and shaft g^3, provided with the miter-wheels $g^3\,g^3$, substantially as set forth.

10. In combination, the bed a, the standards $a^2\,a^3$, carrying the rollers $f\,f'$, the standards $a^3\,a^3$, carrying the coupling-shaft g, the screws $h\,h$, provided with bevel-wheels $h'\,h'$, and the shaft h^2, provided with bevel-wheels $h^2\,h^3$, substantially as and for the purpose set forth.

11. In combination, the bed a, the standards $a^2\,a^3$, carrying the rollers $f\,f'$, the standards $a^3\,a^4$, carrying the coupling-shaft g, the screws $h\,h$, provided with bevel-wheels $h'\,h'$, the shaft h^2, provided with bevel-wheels $h^2\,h^3$, the sliding boxes $f^3\,f^4\,g^2\,g^3$, having screws $f^6\,f^8\,g^2\,g^3$, the miter-wheels $f^7\,g^4$, and the shaft g^3, provided with miter-wheels $g^4\,g^5$, substantially as and for the purpose set forth.

12. In combination, the rollers f and f', the coupling-shaft g, the notched disk secured thereto, the pawl-arm i^2, the connecting-rod i', and the crank i, substantially as and for the purpose set forth.

13. In combination, the rollers f and f', the coupling-shaft g, the notched disk secured thereto, the pawl-arm i^2, the connecting-rod i', the crank i, the shaft c', the cam l^2, the arm l^3, the plunger j', punch j, and die m, substantially as and for the purpose set forth.

14. In a machine for making horseshoes, the combination, with a folding or bending device, of the adjustable punch and die $j\,m$, and adjustable forming and feeding rollers f and f', substantially as and for the purpose set forth.

15. In combination, the horizontal plunger o, the folding-rollers n' n', the punch and die $j\,m$, the adjustable stop n^2, and the feeding-rollers $f\,f'$, substantially as and for the purpose set forth.

16. In combination, the horizontal plunger o, the folding-rollers n' n', the punch and die $j\,m$, the adjustable stop n^2, the feeding-rollers $f\,f'$, the horizontal table n, and folding-dies $p\,p$, substantially as and for the purpose set forth.

17. In combination, the horizontal plunger o, the folding-rollers n' n', the punch and die $j\,m$, the adjustable stop n^2, the feeding-rollers $f\,f'$, the folding-dies $p\,p$, the trap-door q, and the stripper s, substantially as and for the purpose set forth.

18. In combination, the plunger o, carried by slide o', the adjustable connecting-rod o^2, the crank o^3 on the shaft of the pinion e, the rollers n' n', the stop n^2, punch and plunger $j\,j'$, tappet and arm $l'\,l^2$, and cam l^3 on the shaft c', substantially as and for the purpose set forth.

19. In combination, the plunger o, connecting-rod o^2, crank o^3, folding-dies $p\,p$, horizontal table n, trap-door q, lever r, and cam r^2, substantially as and for the purpose set forth.

20. In combination, the plunger o, connecting-rod o^2, crank o^3, folding-dies $p\,p$, horizontal table n, trap-door q, lever r, cam r^2, stripper s, lever s', and cam l, substantially as and for the purpose set forth.

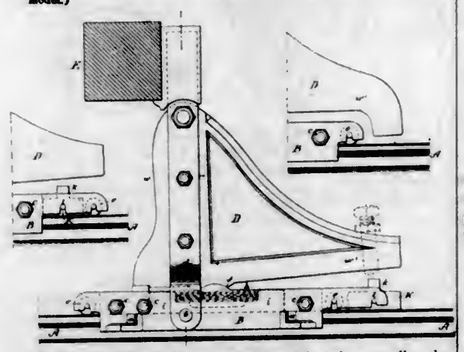
21. The mutilated wheel $d^2\,d^3\,d^4\,d^5$, in combination with the pinion e, provided with horned projection e', having a concave face, substantially as and for the purpose set forth.

22. The plunger o, the folding-dies $p\,p$, the horizontal table n, the trap-door q, the stripper s, and the chute v, substantially as and for the purpose set forth.

23. In combination, the plunger o, connecting-rod o^2, crank o^3, folding-dies $p\,p$, horizontal table n, trap-door q, lever r, cam r^2, the punch and die $j\,m$, and the feeding-rollers $f\,f'$, substantially as and for the purpose set forth.

24. In a machine for making horseshoes, in combination, the mutilated wheel $d^2\,d^3\,d^4\,d^5$, the pinion e, connected by its shaft to the folding or bending mechanism, the wheel c, rotating in a plane at right angles to d^2 and e, and connected by its shaft to the feeding-rollers and cutting-off punch by means substantially as described, whereby the feeding-rollers and punch and folding device are alternately operated, and the driving-shaft b and connecting-gear $b^2\,b^3\,d$, substantially as set forth.

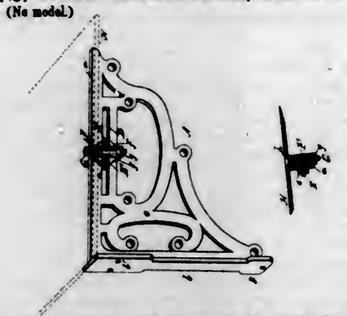
330,671. DEVICE FOR ARRESTING LOCOMOTIVES AND CARS. MAXIMILIAN F. BOMZANO, Philadelphia, Pa. Filed Sept. 8, 1885. (No model.)



Claim.—1. The combination of a shoe adapted to a rail, and a lever pivoted to the shoe, with a block to bear on the rail, and a spring interposed between the said lever and block, the said lever having an arm, w', adapted to bear on the rail, substantially as described.

2. The combination of a shoe adapted to a rail, and a lever pivoted to the shoe, with a block to bear on the rail, a spring interposed between the lever and block, and a supplemental block, K, the said lever having an arm, w', substantially as set forth.

330,672. BRACKET. LEWIS BRIDGE, Philadelphia, Pa. Filed Jan. 27, 1885. (No model.)

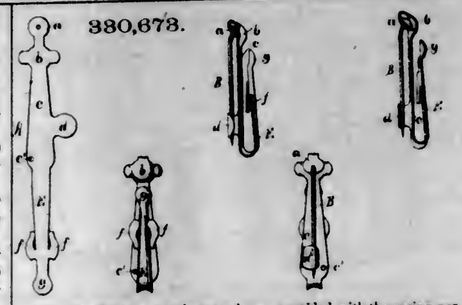


Claim.—The combination, with a supporting-bracket having a slot, D, of a sliding adjustable bolt-holder sustained on and fastened to said bracket by bolts E E, substantially as shown and described.

330,673. EYEGLASS-HOOK. GEORGE D. BIXBY, Providence, R. I. Filed Aug. 21, 1885. (No model.)

Claim.—1. The combination, with the shank c and hook E, adapted to be secured to a garment, of the barbs $f\,f$, constructed to retain the eyeglasses against accidental displacement, as described.

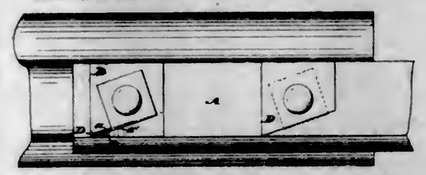
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2. A hook for supporting eyeglasses, provided with the spring perforated pin-piece a, the head b, shank c, with the hook d, the hook E, and hook end g, bent and corrugated as described.

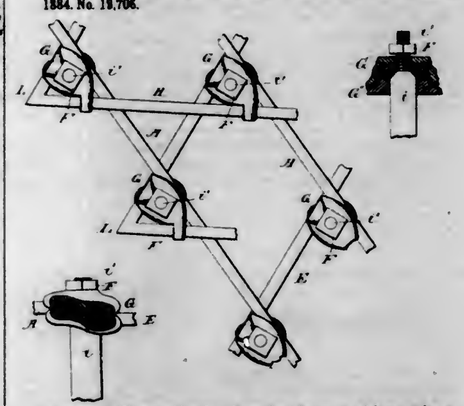
3. The combination, with the shank c, provided with the head b, having the spring pin-piece a, the hook d, the hook E, provided with the barbs $f\,f$, and end piece, g, of the pin B, secured to the spring-piece a, substantially as and for the purpose described.

330,674. NUT-LOCK. ISAAC BROOKE, Pottstown, Pa. Filed Sept. 18, 1884. (No model.)



Claim.—A nut-fastener consisting of the two connected plates, B D, the outer plate having a spring-lip which extends tangentially to a circle whose diameter is equal to the smaller diameter of the nut, and the rear plate being entirely removed from said lip and re-enforcing the body of the front plate, substantially as described.

330,675. IRON HARROW. AUSTIN CALLANDER, Clinton, Ontario, Canada. Filed Sept. 8, 1884. (No model.) Patented in Canada June 28, 1884. No. 19,706.

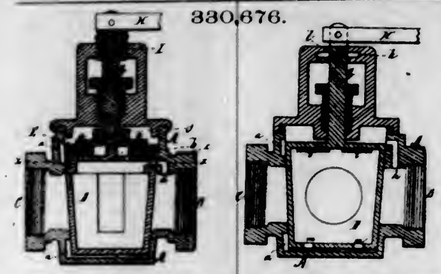


Claim.—1. The combination, in an iron harrow, of bars or braces A E H, clamps G, recessed to receive the bars or braces, having holes running at right angles to the bars or braces, the teeth i, having screw-threaded shanks i' and nuts F, and having in lower clamps sockets for receiving and holding the shoulder portion of the teeth i, and having in upper clamps sockets for receiving an upward projection on lower clamps, as shown in Fig. 2, G' G'', substantially as and for the purpose set forth and described.

2. The combination, in an iron harrow, of bars or braces A E H, having locks L, clamps G, having recesses to receive the bars, and their return ends forming the locks L, as shown in Fig. 1, and having holes through the upper and lower clamps at right angles to the bars and braces, and the teeth i, having screw-threaded shanks i', and nuts F, substantially as and for the purpose set forth and described.

330,676. VALVE. WILLIAM J. CAMBRIDGE, Boston, Mass., assignor to John C. Chapman, same place. Filed Jan. 12, 1885. (No model.)

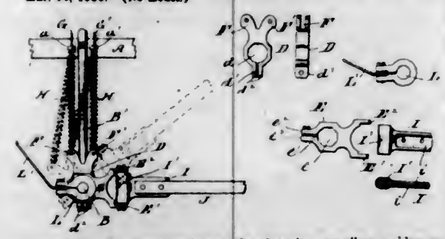
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Claim.—1. The shell or casing A, with its chamber *a*, in combination with a valve provided with suitable ports, substantially as and for the purpose set forth.

2. The shell or casing A, with its chamber *a*, the valve D, and auxiliary valve E, with its port *c*, in combination with the stem G, for operating the valves, substantially as and for the purpose described.

330,677. CULTIVATOR. GEO. CARROTHERS, Piedmont, Ohio. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination of the drag-bar coupling, guides arranged above and on opposite sides of a vertical line drawn through the axis of said coupling, the crank-bearing collar, rods secured at one end to said collar on opposite sides of the vertical line and extended upward each through its respective guide, and springs placed one on each of said rods and bearing between the coupling and the guides, substantially as set forth.

2. The combination of the spindle, the guides *a a'*, arranged above and on opposite sides of a vertical line drawn through such spindle, the sleeve C, fitted on the spindle, the collar D, clamped on the sleeve C and provided with cranks F and F', the rods G G', pivotally connected at one end with the cranks F F' and having their other ends extended, respectively, through guides *a a'*, and springs placed on rods G G', and bearing between parts F G and F' G', substantially as set forth.

330,678. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. FRANKLIN H. CHILTON, New Rochelle, assignor to the Empress Embroiderer Company, New York, N. Y. Filed July 25, 1885. (Model.)

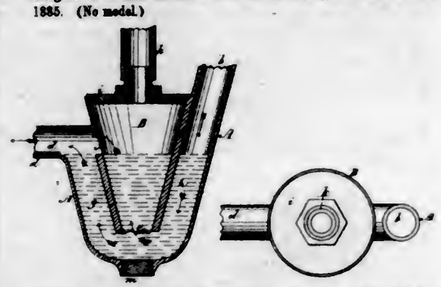


Claim.—1. In an embroidering attachment for sewing-machines, the supporting-bracket having upon its lower edges the plate B and foot C, and the operating-lever adapted for connection with the needle-bar of the sewing-machine, combined with the lever Q, pivotally secured to said plate and constituting at its front end the thread-carrying arm and at its rear end the guide projection with the transverse arms T, the slide V, connected with the operating-lever and arranged over a portion of the lever Q in line with the length of plate B, the arm X, pivoted to the under surface of the slide V in line with its length, and having its front end in suitable relation to alternately engage the opposite arms T during the upstroke of the operating-lever, and the spring for returning the arm X to its normal position during the downstroke of said lever, substantially as set forth.

2. In an embroidering attachment for sewing-machines, the supporting-bracket having upon its lower edges the plate B and foot C, and the operating-lever adapted for connection with the needle-bar of the sewing-machine, combined with the lever Q, pivotally secured to said plate, and having at its front end the hook-shaped thread-carrying arm and at its rear end the guide projection S and transverse arms T, the slide V, in connection with the operating-lever, and arranged over a portion of the lever Q, the transverse slot *e* in the slide, the arm X, pivoted to the under surface of the slide and having its front end in suitable relation to alternately engage the respective arms T during the upstroke of the operating-lever, and the spring Y, whose rear end is held by the pivot *d*, while its front end passes through the slot *e* and is connected with the arm X, substantially as set forth.

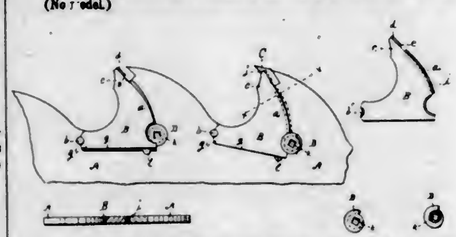
3. In an embroidering attachment for sewing-machines, the supporting-bracket, operating-lever, and foot, combined with the pivotally-secured lever constituting the thread-carrying arm, guide projection, and transverse arms, the longitudinally-reciprocating slide, the arm pivotally secured to said slide and adapted to engage alternate sides of said cam during the upstroke of said lever, the spring for returning said arm into position during the downstroke of the lever, and the tension-spring beneath the thread-carrier, substantially as set forth.

330,679. PLUMBER'S TRAP. PATRICK J. CLANCY, Danvers, Mass., assignor to himself and John J. Kanavan, same place. Filed May 22, 1885. (No model.)



Claim.—In a trap, the combination, with the U-shaped pipe A, having the inlet *b* and discharge-pipe *d*, of the casing or receptacle B, made of conical or tapering form and arranged within the bend of the pipe A with its smaller end downward and communicating with the said pipe at the bottom of its bend through a passage or opening, *e*, and having the passage or opening *f* on the side next to the discharge-pipe *d* and on a level with the upper end of the same, all constructed to operate substantially as and for the purpose described.

330,680. SAW-TOOTH. JOHN A. DEAN, Worcester, Mass., assignor of one-half to Christopher Richardson, Newark, N. J. Filed Nov. 28, 1884. (No model.)



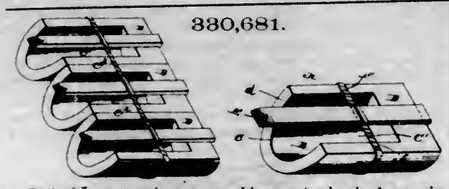
Claim.—1. The combination, with the saw-plate A, of a locking-plate, B, fitting a corresponding recess in the saw-plate, rivet *b*, attaching the toe *g'* of the locking-plate to the saw-plate, curved side *a*, held from lateral motion by a spline, *i*, arm *c*, having a projecting rib, and a shoulder, *e*, adapted to engage the bit, and a cam, D, recessed in the saw-plate and acting against the side *a* to bring the locking-plate B downward and carry the arm *c* against the bit, substantially as described.

2. The combination, with a saw-plate, A, having a recess to receive a locking-plate and a bit or tooth, of a locking-plate, B, having its toe *g'* held from lateral motion and its side *a* curved so the plate may be moved about the toe *g'* as a fulcrum, and an arm, *c*, adapted to engage the bit or tooth, and a cam, D, held in the saw-plate and acting against the side *a* of the locking-plate, so as to bring the arm *c* firmly against the bit or tooth, substantially as described, and for the purpose set forth.

330,681. TOY. WILLIAM E. DEPP, Brookville, Pa. Filed Aug. 14, 1885. (No model.)

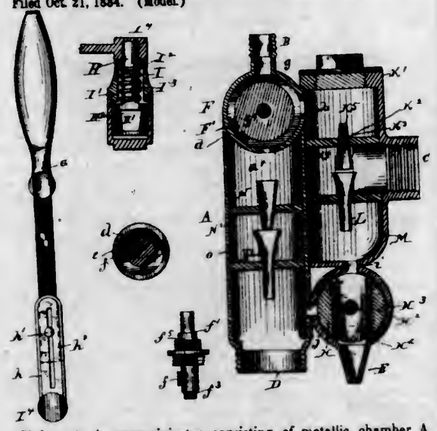
Claim.—1. A toy comprising a body-piece having a semi-cylindrical hollowed-out body, with an inwardly-flared outer end and a sounding block or board, and elastic bearing inclosing said body-piece, and a vibrating key mounted in said elastic bearing and normally maintained in contact with the sounding-board thereby, the outer end of said key being beveled and projecting beyond the flared edge of the body-piece, whereby the key is brought under direct control of the operator's fingers and the free play of said fingers permitted, as set forth.

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2. An improved rattler-toy, comprising a body-piece having a series of sounding blocks or boards and a series of sounding-chambers separated from each other by intervening partitions C^2, an elastic bearing encompassing said chambers, and a series of vibrating keys mounted in said bearing and of varying thicknesses, as set forth.

330,682. STEAM-INJECTOR. JOHN DESMOND, Toledo, assignor of two-thirds, by mesne assignments, to John V. Kennedy, Cleveland, Ohio. Filed Oct. 21, 1884. (Model.)



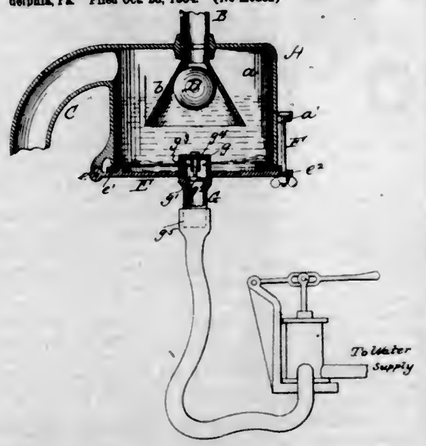
Claim.—1. A steam-injector consisting of metallic chamber A, comprising inclosed compartments connected by tubes, valves *d* and H', and slide-lever G, substantially as shown and described.

2. The combination of chamber A, having compartments, connecting-tubes, nozzles, and an overflow-pipe, with valves F and H', operated by a slide-lever, G, substantially as shown, and for the purpose described.

3. The combination of the valve H', spiral spring I^3, and slide-lever G, having cap I^4, for making a tight joint, substantially as shown and described.

4. A steam-injector operated by a slide-lever in connection with valves and compartments connected by tubes, said lever consisting of two sections, one of said sections carrying a pin entering a slot of the other section, substantially as shown, and for the purpose described.

330,683. TRAP FOR WASH-BASINS, &c. ROBERT B. DEE, Philadelphia, Pa. Filed Oct. 23, 1884. (No model.)



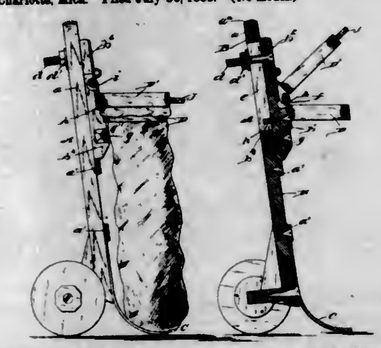
Claim.—1. A trap for wash-stands and other like fixtures, having a permanently-attached pipe, G, terminating in a nozzle, *g*, and having a check-valve, g^2, substantially as and for the purpose set forth.

2. The combination, with a trap, of a permanently-attached pipe, G, having nozzle *g*, valve g^2, and branch G', having cock *h*, substantially as and for the purpose set forth.

3. The combination, with a trap, of pipe G, having nozzle *g*, valve g^2, and branch G', having swiveled ends, and cock *h*, substantially as shown and described.

4. A trap having pipe G, provided with a nozzle, *g*, and valve g^2, a branch, G', having cock *h*, and branch L, having stopple *l*, as and for the purpose specified.

330,684. COMBINED TRUCK AND BAG-HOLDER. ALFRED C. DODGE, Charlotte, Mich. Filed July 30, 1885. (No model.)



Claim.—1. The combination, with the truck having its sides formed in a single piece, the said piece being bent into U shape and having the apertured or skeleton form of base or plate secured to the axle end thereof, and the slotted longitudinal central bar, of the adjustable slide carrying a nutted screw passed through the said longitudinal bar, the hinged or pivoted bar, and the clasps or frames secured to said hinged or pivoted bar, substantially as shown and described.

2. In a combined truck and bag-holder, the combination, with the truck having the slotted longitudinal central bar, of the adjustable slide having a nutted screw, the bar hinged or pivoted to said slide, and the relatively fixed and pivoted clasps or frames, substantially as shown and described.

3. The combination, with the adjustable slide having a nutted screw, the bar hinged or pivoted to said slide, and the fixed and pivoted clasps or frames secured to said bar, of the truck having the central longitudinal slotted bar and the apertured or skeleton form of base or plate secured to the sides of the truck and to the said central bar, substantially as shown and described.

4. The combination, with the slotted central bar of the truck, of the frames or clasps, one being pivoted and the other relatively fixed, the hinged bar carrying said frames or clasps, the slide adjustably connected to said slotted central bar of the truck, said hinged bar also having a guide-pin or projection entering the slot of said central bar, substantially as specified.

330,685. HARNESS-TERRET. GEORGE F. EBERHARD, Cleveland, Ohio. Filed Mar. 30, 1885. (No model.)



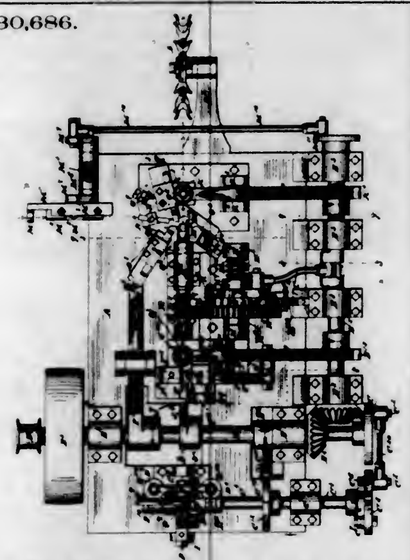
Claim.—1. A drop-terret consisting of a ring formed with a stem having projecting side bearings, and a base formed with a recess to receive said bearings and adapted to be bent to allow the latter to enter the recess in connecting the base and ring, substantially as described.

2. A drop-terret consisting of a ring formed with a stem having projecting side bearings, and a base formed with a recess to receive said bearings, and a slot across said recess adapted, with said stem, to allow the latter to enter it and be turned in connecting the base and ring, substantially as described.

330,686. BARB-WIRE MACHINE. WILLIAM EDMONDS, St. Louis, Mo. Filed July 27, 1885. (No model.)

Brief.—The main wire is fed intermittingly through the machine. Before it reaches the coiler it is bent, by dies, at fixed intervals into al-

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ternate vertical and horizontal crimps or bends. As the coiler wraps the barb about the wire it is moved backward in order to coil the barb properly. After the barb is coiled and cut off it is straightened by means of a hammer and anvil.

Claim.—1. The combination of the standard F^2, having die F, projection F', bell-crank lever F^3, pivoted to said projection, and having a die, F', in its upper end, lever F^9, and a link, F^8, connecting the levers, substantially as set forth.

2. In a barb-wire machine, in combination with a pair of horizontal and a pair of vertical dies for making kinks in the main wire, a separate mechanism for forming the barbs upon the main wire at the kinks, and a mechanism for cutting the barbs off, substantially as set forth.

3. In a barb-wire machine, in combination with horizontal and vertical fixed dies and horizontal and vertical movable dies for forming kinks in the main wire, a separate mechanism for forming the barbs on the main wire at the kinks, and mechanism for cutting the barbs off, substantially as set forth.

4. In a barb-wire machine, the horizontal and vertical fixed dies and horizontal and vertical movable dies secured to pivoted levers connected by a link and operated by a cam, in combination with a separate mechanism for forming the barbs upon the main wire at the kinks, and a mechanism for cutting the barbs off, substantially as set forth.

5. In a barb-wire machine, the reciprocating spindle provided with a coiling-finger, in combination with the elongated pinion H^2, cog-wheel H^3 on shaft H^4, notched disk H^6, arm H^5, pawl H^7, rod C^{14}, and counter-shaft B^2, provided with a crank, C^{13}, substantially as and for the purpose set forth.

6. In a barb-wire machine, in combination with the reciprocating spindle provided with a coiling-finger and a grooved pinion, the rock-lever J, pin J^3, fitting in the hollow upper end of the lever, a spring, J^5, beneath the pin, and cam J^4 on the main shaft, substantially as and for the purpose set forth.

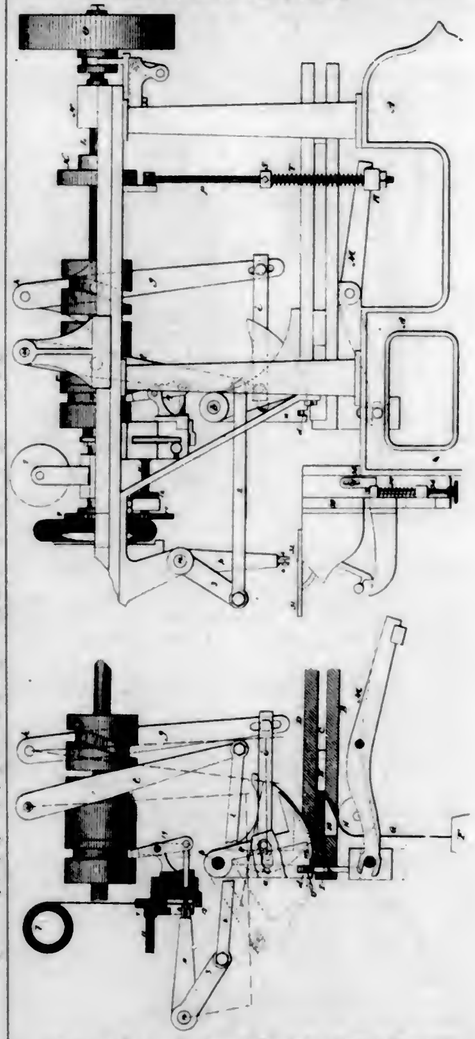
330,687. CULTIVATOR. JOHN J. FRAHM, Fort Wayne, Ind. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a wheel-cultivator, the arched axle provided with journals or spindles at either side, scraper-beams pivotally secured thereto and provided at their upper ends with the fingers described, in combination with the rearwardly-extending plow or shovel beams, adapted to be seated in the fingers of the scraper-beams and thus raise both from the ground, substantially as shown and described.

2. In a wheel-cultivator, the arched axle provided with journals or spindles at either side, scraper-beams pivotally secured thereto and provided at their upper ends with the fingers described, and guide-arms for said pivoted scraper-beams, in combination with the rearwardly-extending plow or shovel beams, having a swivel or universal-joint connection with the axle and adapted to be seated in the fingers of the scraper-beams and thus raise both from the ground, substantially as shown and described.

330,688. MACHINE FOR MAKING BRUSHES. ALEXANDER FRASER, West Haven, Conn., assignor of one-half to Charles B. Delapierre, Brooklyn, N. Y. Filed June 23, 1884. (No model.)



Claim.—1. In a machine for setting the tufts in brushes, the combination of a bed having a channel thereon arranged to receive a mass of fiber, a vibrating arm arranged to swing in a plane at right angles to the fiber lying in the channel, and constructed with a recess to receive a quantity of fibers from the channel, a slide arranged to deliver the said quantity of fiber from the channel to the recess in the arm, a separator arranged to move in a path at right angles to the fiber in said recess and pass between the fiber in the recess and the channel, whereby a predetermined quantity of fiber will be held in said recess, and mechanism, substantially such as described, to turn said arm and separator from their position over the channel into a position to meet the tuft-setting jaws, substantially as described.

2. In a machine for setting the tufts in brushes, the combination of a device, substantially such as described, to gather a predetermined quantity of fibers, a vibrating arm, a pair of jaws hung in said arm arranged to receive said predetermined quantity of fiber, a slide within said arm to close said jaws upon the fiber, and mechanism, substantially such as described, to actuate said slide and impart vibratory movement to said arm, substantially as specified.

3. In a machine for setting the tufts in brushes, the combination of a feed to present a predetermined quantity of fiber, a vibrating arm arranged to swing in a plane at right angles to the fibers so presented by the feed, a pair of jaws hinged in said arm, a slide movable in said arm and arranged to close or permit the opening of said jaws, a wire feeding and cutting-off mechanism, substantially such as described, arranged to deliver a staple-blank to the mouth of said jaws when presented thereto, a bender arranged to move at right angles to the blank and in line with the mouth of the jaws, and which by its movement doubles said blank, forms the staples, and forces it into said jaws, mechanism, substantially such as described, to impart swinging movement to said arm, to present said jaws and staple to the gathered fiber, and to close said jaws and staple thereon, and the slide within the arm provided with a punch to force said staple and fibers into the block when said arm is turned into position over the hole in the block, substantially as described.

4. In a machine for setting the tufts in brushes, the combination of a bed having a channel thereon arranged to receive a mass of fiber, the slide J, arranged to move across said channel at right angles to the fiber, the vibrating arm *a*, constructed with a recess, *d*, and which at one extreme of its movement stands over the slide J, and so as to receive the fiber delivered by the slide J, the vibrating arm *e*, hung upon the same center as the arm *a*, and provided with the separator *m*, and mechanism, substantially such as described, to impart vibratory movement to said arm *e*, whereby the separator first passes through the fiber in said recess and then engages the arm *a* to transfer the gathered fiber to the setting mechanism, substantially as described.

5. In a machine for setting the tufts in brushes, the combination of a bed having a channel thereon arranged to receive a mass of fiber, a follower within said channel to force the mass of fiber forward, the vertical slide J, arranged to work up and down through said channel, a vibrating arm, *a*, hung above the channel and so as to swing in a plane at right angles to the fiber in the channel, constructed with a recess, *d*, into which the said slide J will force a quantity of fiber from the channel, a vibrating arm, *e*, hung upon the same center as the arm *a*, and so as to swing in the same plane, constructed with a separator, *m*, arranged to pass through the fiber in the said recess *d*, inclined upon its under side to force the fibers below its point from the recess as it passes through it, mechanism, substantially such as described, to impart vibratory movement first to the arm *e* to introduce the separator and then turn the two arms together, and a mechanism, substantially such as described, to receive and take the fibers from said recess *d* to form the tuft, substantially as described.

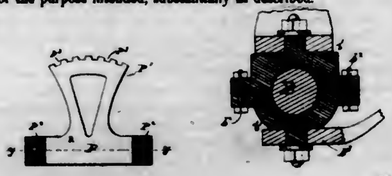
6. In a machine for setting the tufts in brushes, the combination of the bed having the channel C thereon, follower E, vertical slide J, vibrating arm *a*, constructed with a recess, *d*, the arm *e*, provided with the separator *m*, the arm *p*, jaws 4 4, hung in said arm, slide 20, carrying the cam-piece 25 and punch 29, the staple-bender 17, and mechanism to present a wire blank to said bender, and mechanism, substantially such as described, to impart a vibratory movement to said arms *e a* and to said arm *p* and to the slide 20, substantially as specified.

330,689. COMBINED PULVERIZER, HARROW, AND CULTIVATOR. JOHN R. GIBBONS and MARTIN L. FLOWERS, Rome, Ga. Filed June 22, 1885. (No model.)

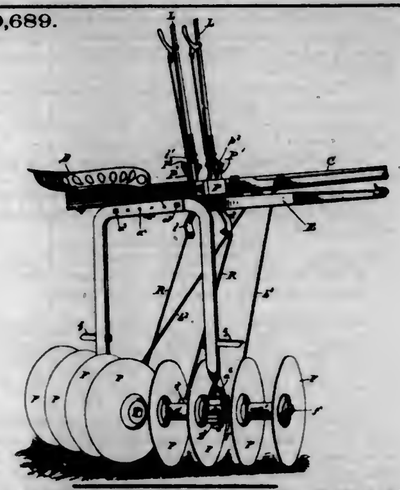
Claim.—1. In an earth-pulverizer and cultivator, the combination of a laterally-extensible arch-bar having downwardly-extending legs and gangs of rotatable disks connected thereto by universal joints with the shaft upon which said disks are journaled, said shaft being connected by rods to operative levers, substantially as described.

2. In a harrow, earth-pulverizer, and cultivator, an arch-bar having a bridge-piece, 1, provided with laterally-sliding legs 2, said legs provided with detachable feet 7, having terminal balls 6, in combination with split boxes B', having upward-socketed extension b^2, and the disk-gang shafts, as and for the purpose described.

3. In a harrow, earth-pulverizer, and cultivator, the operating-levers L L, in combination with gangs of rotatable disks mounted upon an axle, B, said axle being connected by a ball-and-socket joint to the feet of downwardly-extending legs of a laterally-extensible arch-bar, as and for the purpose intended, substantially as described.

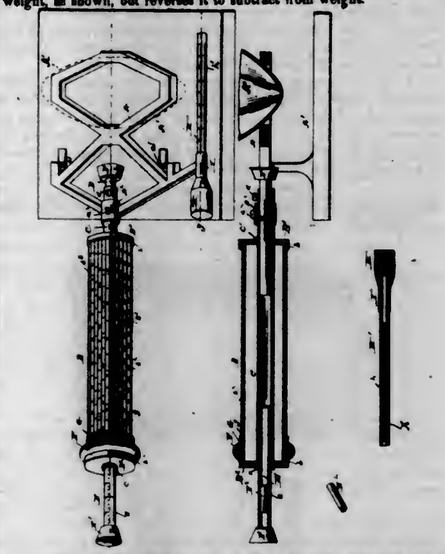


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330,690. WEIGHING AND PRICE SCALE. LYMAN B. GIBSON, Addison, assignor of one-half to Flynn Evans, Campbell, N. Y. Filed June 2, 1885. (No model.)

Brief.—To take out tare or assist in weighing, uses the auxiliary weight, as shown, but reverses it to subtract from weight.



Claim.—1. The combination, with the pivoted supporting-frame, of the graduated cylinder having the core adapted to be secured adjustably in the said supporting-frame, as and for the purpose shown and set forth.

2. The combination, with the pivoted supporting-frame, of the graduated cylinder having the core adapted to be adjusted longitudinally in a suitable bearing in the said supporting-frame, as shown, for the purpose set forth.

3. The combination, with the pivoted supporting-frame, of the core supporting the graduated cylinder carrying the main weight and adjustably secured in the forward portion of the said supporting-frame, and the rod having the end weight and adapted to be secured adjustably in the inner end of the said core, as shown, for the purpose set forth.

4. The combination, with the pivoted supporting-frame and the central core, of the graduated metallic tube having the weight on its outer end and adapted to slide in the outer end of the said core, substantially as set forth.

5. The combination, with the pivoted supporting-frame and central core, of the graduated metallic tube having the weight on its outer end and provided with the adjustable interior spring-weight, for the purpose set forth.

6. The combination, with the pivoted supporting-frame and weighing apparatus, of the adjustable and reversible auxiliary graduated tube having the end weight, and adapted to operate in the manner and for the purpose set forth.

7. The combination, with the pivoted supporting-frame and weighing apparatus, of the adjustable and reversible auxiliary graduated tube arranged to operate in the manner and for the purpose set forth and having the adjustable interior spring-weight, as set forth.

8. The combination, with the pivoted supporting-frame and the adjustable core carrying the graduated cylinder having the adjustable weight and price-list, of the graduated adjustable tube having the weight on its outer end and provided with the adjustable spring-weight, for the purpose set forth.

330,691. CLAY CUTTER AND PULVERIZER. WILLIS N. GRAVES, St. Louis, Mo., assignor of one-half to the Hydraulic Press Brick Company, same place. Filed June 22, 1885. (No model.)

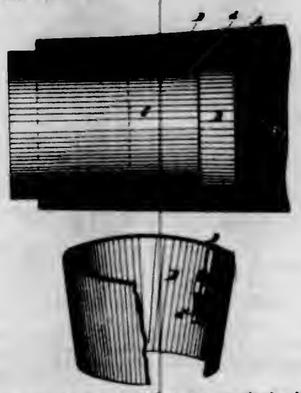


Claim.—1. In a clay cutter and pulverizer, the combination of a frame, A, of Y shape, brace A', two series of plows, B, arranged as shown, central dividing-plow, C, cutter D in advance of the dividing-plow, strap I, having journal-plates J, pin J', having central wheel, L, in advance of the cutter, and arbors N', having the wheels N and secured at the rear ends of the frame, the plows turning toward the center, substantially as shown and described.

2. In a clay cutter and pulverizer, the combination of a frame, wheels for supporting the frame, extending above the latter, plows secured to the frame and turning toward the center, yoke secured to the front end of the frame, having draft-chain, and plates depending from the yoke, pin journaled in the plates and carrying the front wheel, and a runner over the latter, substantially as set forth.

3. In a clay cutter and pulverizer, the combination of a frame, wheels for supporting the frame, extending above the latter, plows secured to the frame and turning toward the center, yoke secured to the front end of the frame and supporting the latter on the front wheel, runner over the front wheel secured to the frame and yoke, and shoe secured to the runner, substantially as set forth.

330,692. CUFF-HOLDER. DAVID GREENHOOT, Cincinnati, Ohio. Filed Aug. 22, 1885. (No model.)



Claim.—A cuff-supporter consisting of an annular band within the coat-sleeve, and larger than the lower end of the sleeve, and provided with an adjustable catch for attaching the cuff, substantially as described.

330,693. FOLDING BED. ROBERT S. HALE, Philadelphia, Pa. Filed May 20, 1885. (No model.)

Claim.—1. In a bed the side rails of which are formed in sections, of which one has a sliding movement relatively to the other, the combination therewith of a flexible and elastic mattress-support attached at its ends to a substantially rectangular frame, the side bars of which are divided between their ends and are adapted to fold upon said dividing-line, substantially as set forth.

2. In a bed the side rails of which are formed in two sections, of which one has a sliding movement relatively to the other, the combination therewith of a mattress-support having at one end a cross-bar, the bars B^2 B^2 connected with the cross-rail and supported at their opposite

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3. In a bed the side rails of which are formed in sections, of which one has a sliding movement relatively to the other, the combination therewith of a mattress-support having side bars which are divided between their ends and are adapted to fold upon said dividing-line, and a cross-bar at one end connecting the said side bars, it being situated below the line around which the parts of the mattress-support fold, whereby the ends thereof are held down when the bed is in use, substantially as set forth.

4. In a bed the side rails of which are formed in sections, of which one has a sliding movement relatively to the other, the combination therewith of a flexible and elastic mattress-support having side bars which are divided between their ends and are adapted to fold relatively to the side rails upon said dividing-line, and a cross-rail at one end connecting the side bars, it being situated, when in position to receive the mattress, below the line around which the parts of the mattress-support fold, whereby the elasticity of the mattress-support assists in holding down its ends when the bed is in use, substantially as set forth.

5. In a bed the side rails of which are formed in sections, of which one has a sliding movement relatively to the other, the combination therewith of a mattress-support having side bars which are divided between their ends and are hinged together, they being adapted to fold about said hinge, and a cross-rail at one end connecting said side bars, it being situated below the hinging-line of said side bars, whereby it is held down when the bed is in use, substantially as set forth.

6. In a bed the side rails of which are formed in sections, one of which has a sliding movement relatively to the other, the combination therewith of a mattress-support having side bars, B' B^2 B' B^2, the parts B^2 B^2 being adapted to fold relatively to the side rails, and being connected by a cross-rail, said bars B' B' being connected rigidly with the non-sliding parts of the side rails, and the parts B^2 B^2, when the bed is extended, being situated between said parts B' B' and the end of the sliding section of the side rails, whereby said bars B' B^2 prevent movement of the parts of the side rails toward each other, substantially as set forth.

7. In a bed the side rails of which are formed in sections, of which one has a sliding movement relatively to the other, the combination therewith of a mattress-support having the side bars adapted to fold, and an end bar, D', connecting the opposite side bars, the cleat G, and the bar H, which two latter form a stop to limit the outward movement of the sliding sections of the bed, substantially as set forth.

8. In a bed the side rails of which are formed in sections, of which one has a sliding movement relatively to the other, the combination therewith of a cleat, G, connecting the outer ends of the non-sliding section of the side rails, the bar H, connecting the inner ends of the sliding section of the side rails, a foot-board rigidly connecting the other ends of the sliding section, a mattress-support having side bars B' B', carried by the non-sliding section of the bed, the side bars B^2 B^2, carried by the sliding section of the bed, and the end bar, D', connecting the ends of bars B^2 B^2, said parts being arranged substantially as set forth, whereby when the bed is extended the bar D' bears against the foot-board and the inner ends of the bars B^2 B^2 bear against the outer ends of the bars B' B', and thus insure that bar H shall be held in close contact with cleat G to brace the bed and relieve it of twisting strain, substantially as set forth.

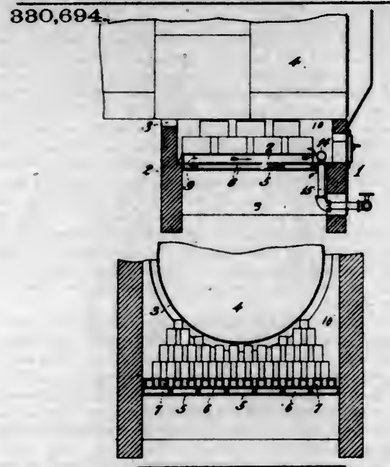
330,694. GRATE-BAR. JAMES T. HANRAY, Pittsburg, Pa. Filed Aug. 13, 1885. (No model.)

Claim.—1. A grate-bar for furnaces, &c., having direct and return air-passages therethrough, substantially as set forth.

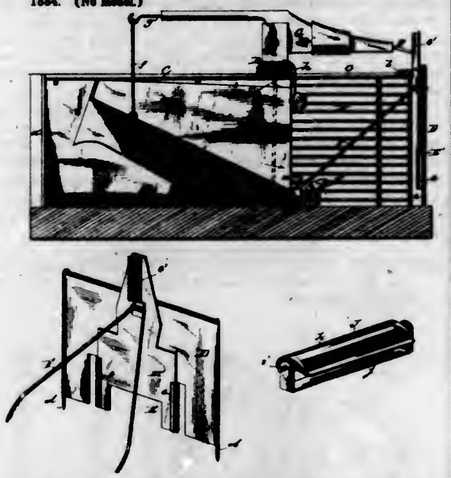
2. A grate-bar for furnaces, &c., having a direct and one or more return air-passages therethrough, substantially as set forth.

3. In a boiler-furnace, the combination of a grate-bar having direct and return air-passages on opposite sides of the grate-bar, and a gas-burner located in suitable proximity to the outlets, substantially as set forth.

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330,695. ANIMAL-TRAP. WILLIAM R. HAMPTON, Bowling Green, Ky., assignor of one-half to T. J. Sullivan, same place. Filed Nov. 1, 1884. (No model.)



Claim.—1. In a self-setting animal-trap, a sliding door having a bar with serrated ends, pivotally attached thereto so as to engage with slotted brackets, a pivoted tripping-platform secured under the ends of said bar so as to engage therewith and release the same, a pivoted platform located in passage-way between the front and rear compartments, and connected to a pivoted lever which engages with the sliding door, the parts being combined and organized substantially as shown.

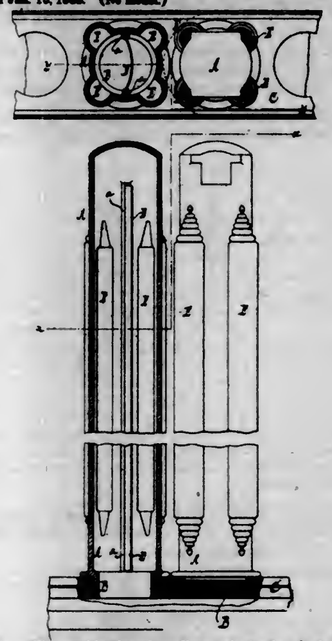
2. In an animal-trap, a sliding door having pivoted thereto a bar with serrated ends, said serrated ends passing through slotted brackets, and a tripping-platform pivotally secured under the ends of said arm so as to release the same when weight is placed upon the front portion thereof, substantially as shown, and for the purpose set forth.

3. In an animal-trap constructed substantially as described, the front D, having a central opening, E, adjacent to which the material of which the portion D is made is slitted and turned upon itself so as to provide guideways for a sliding door, substantially as shown, and for the purpose set forth.

4. In an animal-trap constructed substantially as described, the bait-hooks depending into the front compartment, said front compartment being closed by a removable section, D, having at its lower portion projecting pins *d*, the upper portion being retained in position by a hook, *d'*, substantially as shown, and for the purpose set forth.

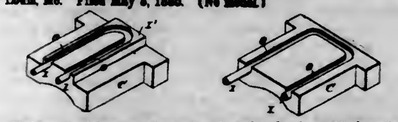
5. In an animal-trap consisting of a front and rear compartment which are connected to each other by a passage-way, a sliding door, E', having a pivoted bar, F, attached thereto, the serrated ends of which engage with slotted brackets, a tripping-platform constructed as shown, and located under the ends of said bar, a lever, G, engaging with the sliding door E' at its front end, its rear end being connected to the rear portion of the tripping-platform H, the front portion of said lever being weighted, for the purpose set forth.

330,696. STEAM-RADIATOR. THOMAS P. HARDY, New York, N. Y. Filed Jan. 15, 1885. (No model.)



Claim.—The combination of a radiator-tube having the inside diameter of its body larger than that of its foot, and the body provided with grooved projections extending inwardly beyond the inner surface of the foot, and slidable elastic diaphragm held in the grooved projections by its inherent elasticity, the distance between the grooved projections being less than the width of the diaphragm, substantially as described.

330,697. BRASS FOR ROLLING-MILLS. WILLIAM R. HARRIS, St. Louis, Mo. Filed May 8, 1885. (No model.)



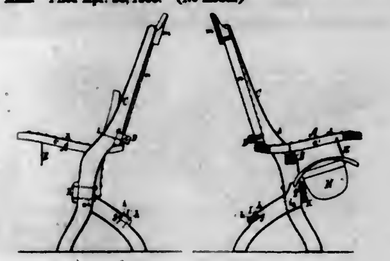
Claim.—1. A brass section or bearing-plate having a U-shaped pipe embedded therein, and extending in line with the journal-recess through one side of the brass section or bearing-plate, substantially as set forth.

2. A brass section cast with a groove or recess, O, and provided with a pipe, I, occupying said groove, the pipe and section being separable, substantially as set forth.

3. A brass section cast with a projection, I', having a groove or recess, O, and a pipe, I, occupying said groove, substantially as set forth.

4. A brass section, C, cast with a U-shaped groove or recess, O, and a U-shaped pipe, I, occupying the groove and separable therefrom, substantially as set forth.

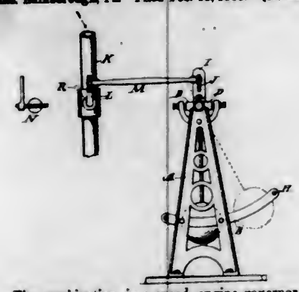
330,698. FOLDING CHAIR OR SETTEE. HERBERT J. HARWOOD, Littleton, assignor to the Harwood Manufacturing Company, Leominster, Mass. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination of the front legs having the bar K, and the rear legs pivoted to the front legs, with the seat A, pivoted to the front legs above the pivots of the rear legs, the front end, *g'*, of the latter abutting directly against the rear side of bar K when the chair is open, and the seat A bearing on the said end *g'* when the chair is folded, as set forth.

2. In a chair provided with a "turn-up" seat, the combination of such seat and its supporting rock-shaft with the bar K, and the bail E, arranged transverse the seat and pivoted thereto, as set forth.

330,699. PENDULUM ENGINE-GOVERNOR FOR VESSELS. Moses C. Hawkins, Edinburgh, Pa. Filed Feb. 18, 1885. (No model.)



Claim.—The combination, in a speed engine-governor for vessels of the elastic cushions, the governor-ball suspended from a gimbal connected to a throttle-valve, the main frame, and the curved guides B, substantially as described.

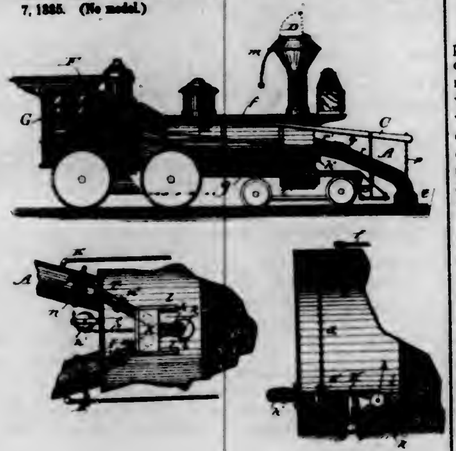
330,700. METHOD OF DESTROYING GRASS, WEEDS, &c., ON RAILWAY-TRACKS. David Hawkworth, Plattsmouth, Nebr. Filed May 7, 1885. (No model.)



Claim.—1. The method of destroying grass, weeds, and similar vegetation along railways, which consists in directing and impelling downward upon the vegetation to be destroyed hot products of combustion from a furnace commingled with steam, substantially as described.

2. The method of destroying grass, weeds, and similar vegetation along railways, which consists in directing and impelling downward upon the vegetation to be destroyed hot products of combustion from a furnace commingled with live steam from a boiler, and with exhaust-steam from an engine, substantially as described.

330,701. DEVICE FOR DESTROYING VEGETATION ALONG RAILROAD-TRACKS. David Hawkworth, Plattsmouth, Nebr. Filed May 7, 1885. (No model.)



Claim.—1. In combination with a railway-locomotive, one or more tubes, A, leading from the interior of the smoke-arch nearly to the ground, and provided with dampers for opening and closing them at will, a damper for opening and closing the smoke-stack at will, and one or more pipes leading from the steam-dome into the upper parts of the tubes A, and provided with means for shutting off and regulating the flow of steam through them from the dome, substantially as described.

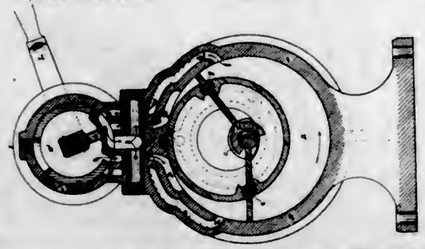
2. In combination with a railway-locomotive, one or more tubes, A, leading from the interior of the smoke-arch nearly to the ground, and provided with dampers for opening and closing them, a damper for opening and closing the smoke-stack, one or more pipes leading from the steam-dome to the upper portions of the tubes A, means for shutting off and regulating the flow of steam from the dome through these pipes, an exhaust-nozzle within the smoke-arch, provided with branches leading into the tubes A, and valve mechanism, substantially as described, for directing the exhaust-steam either into the smoke-arch or the tubes A, as shall be required.

3. The device for directing the exhaust-steam either into the smoke-arch or the tubes A, as shall be required, comprising, in combination, the double nozzle H, having the branch nozzles I, provided with valves *n'*, and means, substantially as described, for regulating the valves from the exterior of the locomotive, a valve for shutting off and regulating the direct flow of exhaust-steam to the smoke-arch, and means, substantially as described, for operating the same from the exterior of the locomotive, as set forth.

4. The device for directing the exhaust-steam either into the smoke-arch or the tubes A, as shall be required, comprising, in combination, the double nozzle H, having the branch nozzles I, provided with valves *n'*, and means, substantially as described, for regulating the valves from the exterior of the locomotive, a sliding valve, K, within guides *l* upon the nozzle, weight *k*, connected to the valve K by a chain passing over a pulley, *h*, whereby the valve is held normally open, and means, substantially as described, for closing the valve at will from the exterior of the locomotive, as set forth.

5. In combination with a railway-locomotive, the tubes A, leading from the smoke-arch, and provided at their lower ends with flaring outlets *t*, and formed in sections *r r'*, hinged together, and connected toward their lower ends by a bar, *s*, a frame, B, fixed to the front of the locomotive, and having bearings *o* to support the tubes when down, and a lever, C, pivoted to the frame B above the tubes, and connected to the bar *s* by a chain, *p*, whereby the outer sections of the tubes may be raised and lowered on their hinges, substantially as described.

330,702. ROTARY ENGINE AND PUMP. James Henderson, Lima, Ohio, assignor of one-half to Jonathan K. Brice, same place. Filed June 11, 1885. (No model.)

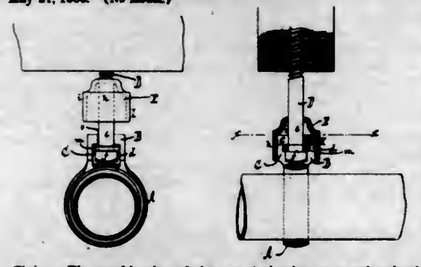


Claim.—1. The combination, in a rotary engine, of the casement, providing a cylindrical steam-chamber and a smaller cylindrical valve-chamber, a shaft passing centrally through said steam-chamber and carrying vanes, a cylinder located eccentrically in said chamber, through which said vanes extend, induction and eduction ports communicating with said steam and valve chamber, supplemental ports X X', communicating with steam and valve chamber, a valve located in said valve-chamber for reversing the supply and exhaust of said induction and eduction ports, and alternately throwing either of said supplemental ports into communication with the exhaust, and hand appliances for operating said valve, substantially as set forth.

2. The combination, in a rotary engine, of the casement, providing circular steam-chamber, and a smaller valve-chamber communicating therewith through induction and eduction ports, a shaft passing centrally through said steam-chamber and provided with vanes, a cylinder located eccentrically in said steam-chamber and having said vanes passing through the same, spindles G G, located in cylindrical bearings in said eccentric cylinder, embracing the vanes and flush with the outer surface of said cylinder, the latter being internally enlarged and cut away at the points of location of the vanes, and a valve device located in said valve-chamber for reversing the supply and exhaust, and hand appliances for operating said lever, substantially as set forth.

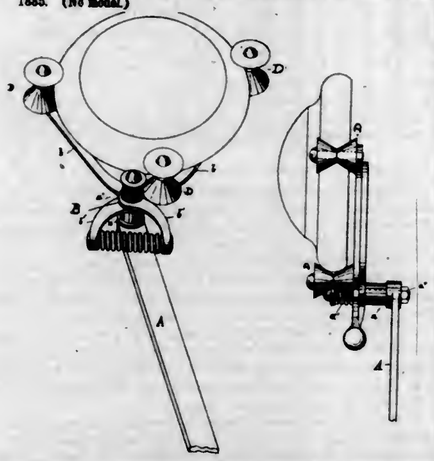
3. The combination of the larger and smaller circular chambers S S, communicating by ports P P', shaft D, carrying vanes, eccentric cylinder pierced by said vanes, a cylinder or ring, I, located in said smaller chamber and cut away, as described, and an oscillating valve extending into said cut-away portion to shift the cylinder or ring, substantially as set forth.

330,703. HANGER FOR PIPES. James Hoey, Brooklyn, N. Y. Filed May 21, 1885. (No model.)



Claim.—The combination of the eye A, having an angular shank, B, provided with an open socket, C, having a slot, c, the bolt D, having a head, and fitting said socket and slot, and a lock, E, sliding on the bolt, and composed of a cap having the opening *g*, and the opposite sides, *h* and *k*, engaging the shank and closing the open side of the socket therein, substantially as described.

330,704. TARGET-TRAP. Fred Hole, Anderson's Ferry, assignor to the Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Filed Apr. 1, 1885. (No model.)



Claim.—1. In combination with the holder-jaws of a target-holder, rotatable spools attached to said holder-jaws.

2. In combination with the holder-jaws of a target-holder, spools flaring toward each end and mounted upon said jaws, substantially as and for the purpose specified.

3. In combination with the holder-jaws of a target-trap, spools flaring toward each end and adjustably attached to said holder-jaws, substantially as and for the purpose specified.

4. The combination, with the holder-jaws of a target-trap, of spools attached to said holder-jaws by means of axial screws, whereby they may be clamped and adjusted.

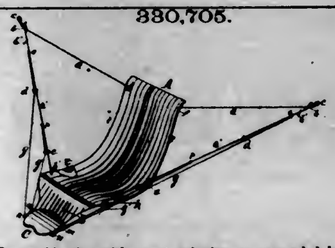
5. The combination, with the throwing-arm of a target-trap, of the target-holder B, consisting of the holder-jaws *b*, having reversely-flaring heel-pieces *b'*, spring *a* upon the pivot-bolt, and spring C, acting to close the jaws, and the spools D, adjustably attached to said holder-jaws, said holder-arm being pivotally attached to the throwing-arm.

330,705. HAMMOCK-CHAIR. George R. Hook, Brewer, Me. Filed Aug. 25, 1885. (No model.)

Claim.—1. The herein-described seat, formed of two pieces of any strong textile or pliable substance, each shaped with a convexity on its inner edge and a concavity on the outer edge, the same being secured together lengthwise at their inner edges and secured at their outer edges to curved arms.

2. The herein-described device for suspending a swinging seat or hammock, consisting of the suspension-lines *a a' a a'*, furnished at convenient points near their centers with a sufficient number of eyes adapted to engage with hooks attached to rigid supports.

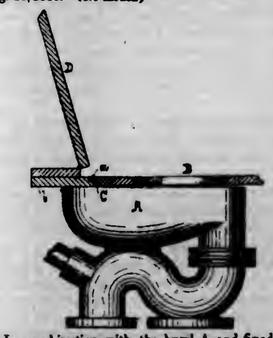
330,705.



3. In combination with a seat swinging or suspended by the suspension-lines *a a' a a'* or in any equivalent manner, the foot-rest C, supported and adjustable longitudinally by lines *g g' g g'*, attached at their upper ends to convenient points, *o o*, upon the parts *a' a'* of the suspension-lines and running through grommets *d d'*, encircling said lines and the parts *a' a'* of the suspension-lines, through apertures *n n* in said foot-rest, under the bottom of said foot-rest, and thence upward through apertures *m m* in said foot-rest and through grommets *e e*, encircling said lines and the parts *a' a'* of the suspension-lines, to convenient points, *p p*, upon said parts *a' a'* of the suspension-lines.

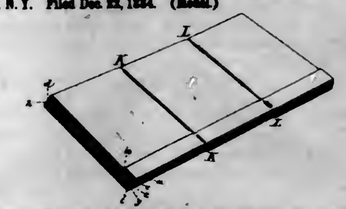
4. The herein-described swinging seat or hammock, consisting of the combination of the seat A, suspension-lines *a a' a a'*, provided with eyes *b b' b b'*, foot-rest C, and lines *g g' g g'*, attached at their upper ends to convenient points, *o o*, upon the parts *a' a'* of the suspension-lines, and running through grommets *d d*, encircling said lines, and the parts *a' a'* of the suspension-lines, through apertures *n n* in the foot-rest C, under the bottom of said foot-rest, and thence upward through apertures *m m* in said foot-rest, and through grommets *e e*, encircling said lines, and the parts *a' a'* of the suspension-lines, to convenient points, *p p*, upon said parts *a' a'* of the suspension-lines, the whole with or without the apron B, all as shown and described, and substantially as and for the purpose specified.

330,706. WATER-CLOSET. James L. Hutchinson, Baltimore, Md. Filed Aug. 29, 1885. (No model.)



Claim.—In combination with the bowl A and fixed rear piece, *b*, the hinged seat B, and springs C C, situated in recesses between the said seat and rear piece, substantially as and for the purpose specified.

330,707. ART OF FOLDING LININGS. John Irvine, New Brighton, N. Y. Filed Dec. 22, 1884. (Model.)

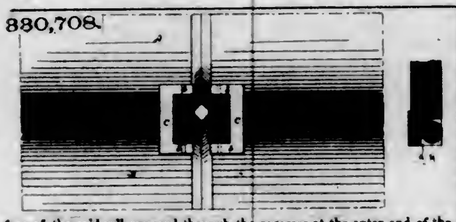


Claim.—The art of folding linings for dresses, &c., consisting in folding the same back and forth in folds *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, and *i*, transverse to the length of the cloth, and then folding the same in folds K L longitudinally, or in the direction of the length of the cloth, as set forth.

330,708. GUIDE FOR ROLLING-MILLS. William H. Jarvis, Ansonia, Conn., assignor to Wallace & Sons, same place. Filed Sept. 25, 1885. (No model.)

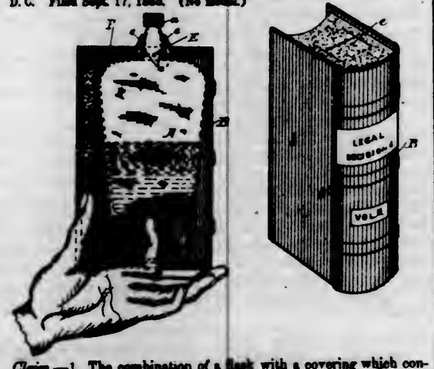
Claim.—The guide C for rolling-mills, each constructed with a recess, D, upon their face and at their outer end, combined with a vertical roll, E, arranged in each of said recesses upon a vertical axis, the cur-

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face of the said roll exposed through the recesses at the outer end of the guides, substantially as described, and so that said rolls form the entrance between the said guides.

330,709. LIQUOR-FLASK. HERBERT W. T. JENNER, Washington, D. C. Filed Sept. 17, 1885. (No model.)



Claim.—1. The combination of a flask with a covering which conceals it from observation, provided with a hole at the lower end of it beneath the bottom of the flask, and with a hole in the top registering with the flask-stopper, so that the said stopper and the neck of the flask may be made to protrude through the said hole while the body of the flask is retained within by the top of the said covering, substantially as and for the purpose set forth.

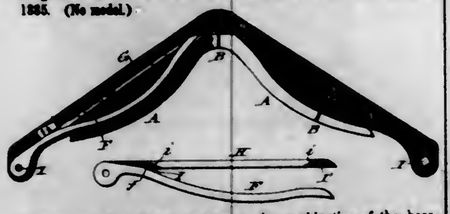
2. The combination of a flask, a covering concealing the said flask and having the hole D in the bottom and the hole E in the top of it, and a movable cover-plate for hiding the top of the flask-stopper, substantially as and for the purpose set forth.

3. The combination of a liquor-flask, the book-shaped covering B, provided with the hinged side *b*, and having the holes D and E in it, a catch for holding the hinged side, and the movable cover *a*, substantially as and for the purpose set forth.

4. The combination of a liquor-flask, the book-shaped covering B, having the holes D and E therein, a movable cover, and an elastic spring for holding the said cover over the top of the flask-stopper, substantially as and for the purpose set forth.

5. As an article of manufacture, a flask-covering having a hole in the top of it through which the stopper and neck of the flask may protrude when raised, while the body of the flask is retained within by the top of the covering, a movable cover for the said hole, and means for permitting the flask to be raised, substantially as and for the purpose set forth.

330,710. HARNESS-PAD PRESS. JOSEPH W. JOHNSON, Lathrop, Wis., assignor to himself and Michael Gilley, same place. Filed June 13, 1885. (No model.)



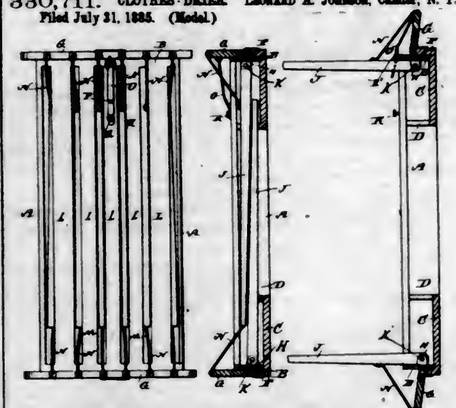
Claim.—1. In a harness-pad press, the combination of the base-plate, the side plates, the slotted lugs secured to the side plates, and the bolts passed through said slots into the base-plate, all arranged substantially as described, whereby the side plates may be adjusted to and held in any suitable position, substantially as set forth.

2. In a harness-pad press, the combination of the main frame, a bolt or shaft, the form-bars pivoted to said bolt, and the clinch-bars pivoted on the bolt between the form-bars and having their main portions or bodies extended laterally flush with the outer edges of the form-bars, substantially as set forth.

3. A harness-pad press comprising the framing having base and side plates, the form-bars, and the clinch-bars placed on the form-bars and having their outer edges extended flush with those of the form-bars, and provided at their inner edges with depending portions, substantially as set forth.

4. The improved harness-pad press herein described, consisting of the base-plate, the side plates having lateral slotted lugs, the bolts whereby such side plates are adjustably secured, the form-bars pivoted between side plates, and the clinch-bars pivoted at one end between the form-bars, and having their opposite ends provided with depending portions fitting between the form-bars, the body or main portion of the clinch-bars being extended laterally flush with the outer edges of the form-bars, substantially as set forth.

330,711. CLOTHES-DRIER. LEONARD A. JOHNSON, Candor, N. Y. Filed July 31, 1885. (Model.)



Claim.—1. In a clothes-drier, the combination, with a frame, of arms pivoted in the same, a bar pivoted to the frame at the pivoted ends of the arms, and of rods connecting the said bar and the arms, substantially as herein shown and described.

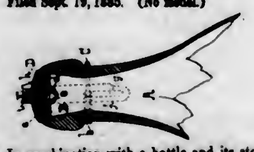
2. In a clothes-drier, the combination, with a frame, of arms pivoted in the same, a cross-bar having diverging slots for guiding the arms, and of a bar hinged on the end of the frame and connected by rods with the arms, substantially as herein shown and described.

3. In a clothes-drier, the combination, with a frame having slats secured on its front, of arms pivoted in the frame and adapted to swing through the slots between the slats, and of locking-bars for holding the arms when the same are swung out through the slots between the slats, substantially as herein shown and described.

4. In a clothes-drier, the combination, with a frame, of the slats L, the arms J, hung in the frame at the top and bottom, bars hinged on the ends of the frame, arms pivoted at the ends of the frame, and rods connecting said arms with the hinged boards, substantially as herein shown and described.

5. In a clothes-drier, the combination, with a frame, of the arms J, pivoted in the same, the bars G, hinged on the ends of the frame, rods connecting the hinged bars and the arms, a notched brace on one of the swinging bars, and pins on the front of the frame, substantially as herein shown and described.

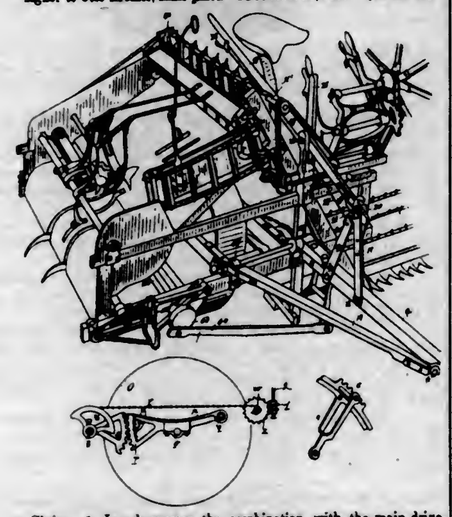
330,712. BOTTLE-STOPPER FASTENING. LEWIS KALLING, Jr., Baltimore, Md. Filed Sept. 19, 1885. (No model.)



Claim.—1. In combination with a bottle and its stopper, a cap attached to the said stopper, slotted straps extending from the cap, trunnions which project from the neck of the bottle and through the slotted straps, and a clamp pivoted to the said trunnions and adapted to be forced over the said cap, substantially as specified.

2. In combination with a bottle and its stopper, the cap D, having the slotted straps *f*, arranged diametrically opposite to each other and provided with the stops *h*, the trunnions *a*, which project radially from the neck of the bottle and through the slotted straps, and the swinging clamp E, pivoted to the said trunnions and arranged to be moved over the said cap and in contact with the said stops, substantially as specified.

330,713. HARVESTER. JEREMIAH KELLER, Sandusky, Ohio, assignor to Otis Kramer, same place. Filed Nov. 28, 1883. (No model.)



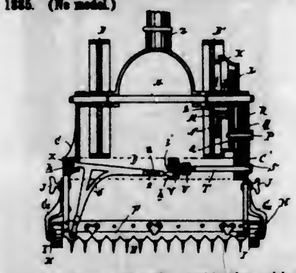
Claim.—1. In a harvester, the combination, with the main drive-wheel, the levers *p*, having boxes *o*, and pivoted to the frame of the machine, one upon either side of said wheel, and each carrying a geared segment, *r*, of the shaft *t*, journaled in the frame adjacent to said wheel, geared segments *s*, secured upon said shaft and meshing one with each of the segments *r* upon either side of said wheel within the circumference thereof, and means for operating said shaft, substantially as and for the purposes specified.

2. In a harvester, the combination, with the drive-wheel O and independent pivoted levers *p*, carrying boxes *o*, in which said wheel is journaled, and the geared segments *r r*, also carried by said levers, of the shaft *t*, journaled in the frame of the machine forward of the drive-wheel, geared segments *s s*, secured upon said shaft and meshing with the segments *r*, one upon either side of said wheel, grooved quadrant *u*, also secured to said shaft, chain *v*, shaft *w*, gear-wheel *x*, carried thereby, worm *l*, and its shaft, all combined and operating substantially as and for the purposes described.

3. The device for adjusting the grain-wheel, consisting of the pivoted forked lever 4, carrying the gear-segment 6, in combination with the hand-lever 8, having the gear-segment and locking devices secured to the frame, all combined and operating substantially as and for the purposes described.

4. In combination with the main frame and hinged pole of the harvester, the bar 17, lever 19, notch-brace 22, pin 21, and pull-rod 27, all combined and operating substantially as and for the purposes described.

330,714. LAWN-MOWER. JEREMIAH KELLER, Sandusky, Ohio. Filed Mar. 5, 1885. (No model.)



Claim.—1. In a lawn-mower, the combination, with the frame and knife-bar and revolving disk V, of the bell-crank lever W, having pivotal connection with said knife-bar, and a ball-bearing in said frame, and provided with a removable arm, *m*, having eccentric bearing in said disk, as and for the purposes specified.

2. In a lawn-mower, the combination, with the frame, knife-bar, and revolving disk V, of the bell-crank lever W, having pivotal connection with said knife-bar, and a ball-bearing in said disk, and provided at its elbow with a ball formed integral therewith, and working in an open socket in said frame, substantially as described.

3. In a lawn-mower, the combination, with the frame, knife-bar, and revolving disk V, of the elbow-lever W, having pivotal connection with said knife-bar, a ball at the elbow formed integral therewith and working in a socket in the frame, and a removable adjustable arm, *m*, carrying a ball working in a socket in the disk V, substantially as and for the purpose specified.

4. In a lawn-mower, the combination, with the frame and knife-bar, of the bell-crank lever W, having connection with said knife-bar, and a ball-bearing in said frame, and an adjustable arm, *m*, for said lever, having a ball-bearing in a revolving disk, as and for the purposes specified.

5. In a lawn-mower, the combination, with the frame and knife-bar and revolving disk V, of the bell-crank lever W, having one arm pivotally secured to the knife-bar, a ball-arm, X, formed at the elbow of said lever, and working in a socket in said frame, the arm *m*, adjustably secured to the horizontal arm of said lever, and carrying a ball, *i*, eccentrically secured in said disk, and mechanism for revolving said disk, substantially as described.

6. In a lawn-mower, the combination, with the frame and knife-bar, of the bell-crank lever W, having pivotal connection with said knife-bar, and a ball-bearing at its elbow in said frame, the shaft T, journaled in bearings in one side of said frame in line with the bearing of said lever, the disk V, carried by said shaft, gearing, as described, driven by one of the traction-wheels for revolving said disk, and the horizontal arm of said lever provided with an adjustable and removable arm, having an eccentric ball-bearing in said disk, substantially as and for the purpose specified.

330,715. COMPOSITION FOR REMOVING HAIR. SAMUEL R. KENNEDY, Philadelphia, Pa., assignor to the S. R. Kennedy Manufacturing Company, Camden, N. J. Filed June 24, 1885. (Specimens.)

Claim.—1. The composition containing a substance for protecting the skin, substantially such as described, and polysulphide of barium, substantially as set forth.

2. The composition containing one or more emollients, substantially such as described, and polysulphide of barium for acting on the hair, substantially as set forth.

3. The composition for use in removing hair, which contains barium polysulphide, substantially as and for the purposes described.

4. The composition for use in removing hair, containing barium polysulphide and a carbonate, substantially as and for the purpose described.

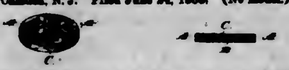
5. The composition for use in removing the hair, containing barium polysulphide, a carbonate, and one or more emollient substances, substantially as and for the purpose described.

6. The composition for use in removing the hair, containing barium polysulphide, a carbonate, one or more emollient substances, and an inert substance or matter for diluting the composition, substantially as and for the purpose described.

7. The composition for use in removing the hair, containing barium polysulphide, a carbonate, one or more emollient substances adapted to protect the skin from the action of the active part of the composition, an inert substance or matter for diluting the composition, and suitable perfume, substantially as and for the purpose described.

8. The composition for removing the hair, consisting of barium polysulphide, sodium carbonate, zinc oleate, albumen, starch, and suitable perfume, substantially in the proportions specified.

330,716. TABLET FOR USE IN REMOVING HAIR. SAMUEL R. KENNEDY, Philadelphia, Pa., assignor to the S. R. Kennedy Manufacturing Company, Camden, N. J. Filed June 24, 1885. (No model.)



Claim.—1. A tablet composed of a quantity of sulphide of an alkaline base mixed with starch, and covered with a protective coating, substantially as and for the purpose described.

2. A tablet consisting of sulphide of barium mixed with starch or other dilutant and coated with a protective covering, substantially as and for the purpose described.

330,717. WATCH-CASE. JAMES LARBEY, Sag Harbor, N. Y., assignor to the Fahys Watch Case Company, same place. Filed Aug. 25, 1885. (No model.)



Claim.—1. A watch-case consisting of the case-center, the back, the hinged cap or cover, the detachable dust-band having parallel inner and outer faces and an inner beveled edge bearing against the back of the case, the movement-holding ring hinged to the dust-band and removable therewith, and the sliding stem for locking the movement-ring and dust-band, substantially as described.

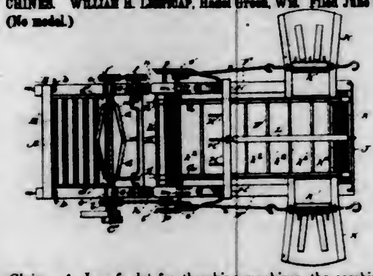
2. A watch-case consisting of the cap or cover, the back, the case-center having a vertical rim formed as a snap, the detachable dust-band having its outer edge terminated below the top edge of the said rim and provided with the annular beveled edge bearing directly against the case-back, the movement-ring having an annular flange seated on the band and provided with an attached crystal-holding bezel, said ring hinged to the band and closely fitting the inner surface of the latter, substantially as described.

3. A watch-case consisting of the cap or cover, the case-center, the back, the dust-band having its annular inner edge bearing directly against the case-back, and the movement-holding ring hinged to the dust-band and having a lateral lug which is acted on by the edge of the hinged cap or cover to prevent movement of the ring in the case-center, substantially as described.

4. The combination, in a hunting-case watch, of the recessed case-center and the movement-ring having a lug entering the recess in the case-center and acted on by the cap or cover when closed to prevent movement of the ring in the case-center, substantially as described.

5. The combination, in a hunting-case watch, of the recessed case-center having a pendant, a recessed dust-band having its inner end bearing directly against the case-back, the movement-ring hinged to said band and having a lug entering the recesses in the case-center and dust-band and acted on by the hinged cover of the case, and the sliding stem in the pendant extending through the band and ring, substantially as described

330,718. BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES. William H. Lemstrap, Hazel Green, Wis. Filed June 25, 1884. (No model.)



Claim.—1. In a feeder for thrashing-machines, the combination of the feeding-chute, a spreading or distributing reel, its frame or support, and clasps whereby the latter is removably attached upon said chute or feeding end of the machine, substantially as described.

2. In a band-cutter and feeder for thrashing-machines, the combination, with the feeding-chute, of the bundle-carrier and band-cutter, their supporting-frame, and the hinged staples, whereby the latter is removably attached to said chute and may be raised or lowered, substantially as and for the purposes set forth.

3. In a feeder for thrashing-machines, the combination of a feeding-conduit, an expansible spreading or distributing reel, and changeable speed-gearing consisting of a cone-pulley and the driving-belt, substantially as described.

4. In a feeder for thrashing-machines, an expansible spreading or distributing reel comprising a shaft, a pair of spiders adjustably mounted thereon, and several toothed arms, each made in two sections, pivotally connected together and supported at their ends by said spiders, substantially as described.

5. In a feeder for thrashing-machines, the combination of the feeding-chute, a spreading or distributing reel and its shaft, a fluted metallic apron arranged within the chute, a double crank-shaft to which said apron is attached, and intermediate gearing connecting said crank-shaft with the shaft of the spreading or distributing reel, substantially as and for the purposes set forth.

6. In a band-cutter and feeder for thrashing-machines, the combination of the supporting frame-work, the feeding-chute, an endless apron or rake arranged upon a pair of rolls, and expansible spreading or distributing reel mounted over the feeding-chute, and intermediate gearing connecting the shaft of said reel with the shaft of the inner roll of the endless apron, substantially as described.

7. In a band-cutter and feeder for thrashing-machines, the combination of the supporting frame-work, an endless apron or rake, two adjustable guide-strips, the band-cutting knives, a receiving-chute attached the carrier-frame, a rotative rake therein, and intermediate gearing connecting the same with the shaft of the inner roll of the endless apron, substantially as described.

330,719. DEVICE FOR CHROMATIC PRINTING. Thomas H. Leidley and Frank H. Robinson, Lyons, Iowa. Filed July 29, 1884. (No model.)



Claim.—1. A device for printing in colors, consisting of a rectangular main frame adapted to be locked in a case with ordinary type, a type-form secured to a transverse oscillating shaft, and levers pivoted to the main frame and adapted to turn the said form flush with the ordinary type when acted on by the impression-cylinder, substantially as specified.

2. The combination, with the main frame, of the rock-shaft flattened on one side to form a seat for the type-form, and journaled in bearings in the main frame, the curved levers fulcrumed to the sides of the frame and engaging suitable crank-pins on the ends of the rock-shaft, and the springs, whereby said levers are turned to shift the type frame or form, substantially as specified.

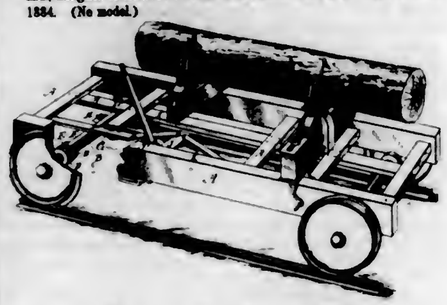
3. The combination, with the main frame, partitions N, and stop-screw P, of the oscillating shaft B, provided with the crank-pins F, and actuating-levers H, substantially as specified.

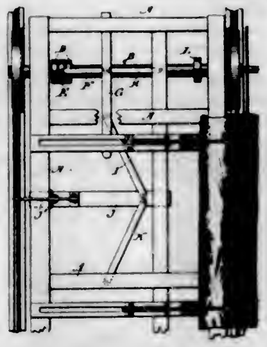
4. The combination, with the frame and the rock-shaft provided with crank-pins at its ends, of the curved levers slotted as described, so as to yield to the impression-cylinder, substantially as specified.

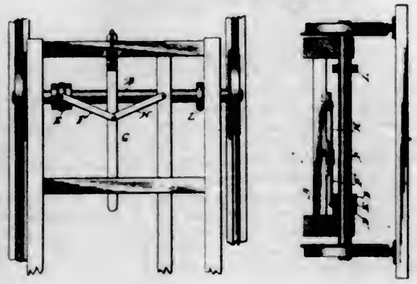
5. The combination, with the main frame and tumblers V, provided with spring-bearings U, made by boring said tumblers and partially splitting the tumblers from the lower portions of said bores, with the inking-cylinder R, the springs W, and screws X, adapted to regulate the pressure of the springs against the inking-cylinder.

6. The combination, with the main frame, the form D, secured to the oscillating shaft B, the pivoted levers H, and springs L, of the tumblers V, the inking-cylinders R, springs W, and set-screws X, substantially as specified.

330,720. SAW-MILL CARRIAGE. Samuel W. Little, Evansville, Ind., assignor to Edward P. Allis & Co., Milwaukee, Wis. Filed Nov. 19, 1884. (No model.)







Claim.—1. The movable frame, the axle and a sliding bar, in combination with levers pivoted to the bar, axle, and frame, with the pivots of said levers normally in alignment with each other and on a dead-center, whereby the frame is locked when in its forward position, substantially as described.

2. The frame, the axle, and a sliding connection between said frame and axle whereby the frame may be moved laterally, in combination with a transverse bar, a pair of levers pivoted thereto and to the frame and connected with the axle, the pivots of said levers being on a dead-center when the frame is at the limit of its backward stroke and thereby serving to lock the frame in that position, substantially as described.

3. The movable frame, the axle, a sliding connection between said frame and axle, and a lever-connection for actuating and locking the frame in its forward position, in combination with a transverse bar, and a pair of pivoted levers connected therewith and indirectly with the axle and a rear end portion of the frame, and having their pivots all on a dead-center when the frame is at the limit of its backward stroke, substantially as and for the purpose described.

4. The frame, the axle, the collar thereon, and the bar, longitudinal bar G, in combination with a pair of levers, both of which are pivoted to the bar and one of them to the axle and the other to a fixed part of the frame, substantially as described.

5. The axle and the sliding collar, in combination with the frame, the bar G, the levers F H, pivoted thereto and to the collar and frame, the bar J, and the levers I and K, pivoted to said bar and with the bar G and the frame, substantially as and for the purpose described.

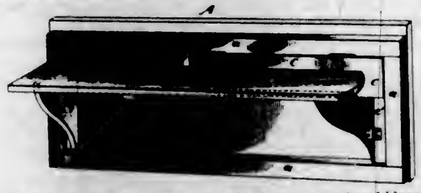
6. The axle, the frame, and the levers I K, connected therewith, and the bar J, pivotally connected therewith, in combination with levers and between and connecting the lever I with axle and frame, substantially as described.

7. The combination, with a guiding-track, of a saw-mill carriage, its axles and trucks, and a hand-lever wholly disconnected from the feed mechanism, connecting the carriage and its axles, and adapted to move the carriage lengthwise of the axles, as set forth.

8. In a saw-mill, the combination of a saw, a fixed track by the side thereof, and a series of trucks or their equivalents movable along the track and occupying a fixed position transversely thereon, of a log-supporting frame mounted on said trucks, and a hand-lever pivotally connected with the frame and connected with the trucks, whereby the frame may be moved upon the trucks transversely to the line of travel of the carriage.

9. In combination with a track and a saw at the side thereof, a saw-mill carriage having its trucks mounted upon said track, and a log-frame movable upon said trucks transversely to the line of travel of the carriage, and a lever connecting the movable frame and trucks and adapted to be controlled by the operator or attendant, substantially as explained, whereby the log-frame may be shifted upon the trucks independently of the feed mechanism.

330,721. IRONING-TABLE. Augusta McBlair, Washington, D. C. Filed Dec. 9, 1884. (No model.)



Claim.—1. As an improvement in ironing-boards, a board hinged to a suitable support and having a portion of its area removed, combined with a hinged board of a shape equal to the removed portion, and hinged supporting-brackets, substantially as set forth.

2. As an improvement in ironing-boards, the hinged boards B C, hinged supporting-brackets c, strips a and c', and board A, all combined substantially as and for the purpose set forth.

330,722. DEVICE FOR COUPLING ROPE. James Milne and Joseph J. Milne, Scotch Grove, Iowa. Filed Aug. 27, 1885. (No model.)

Claim.—1. In a fastening device for ropes, a disk having side flanges so as to provide a circumferential recess, one of said flanges having a tangential recess through which the end of the rope may pass, substantially as shown, and for the purpose set forth.

2. In a rope-fastening device, a disk having a circumferential recess or groove, a notch, b, formed in one of the flanges, and a hook formed on the opposite flange, substantially as shown.

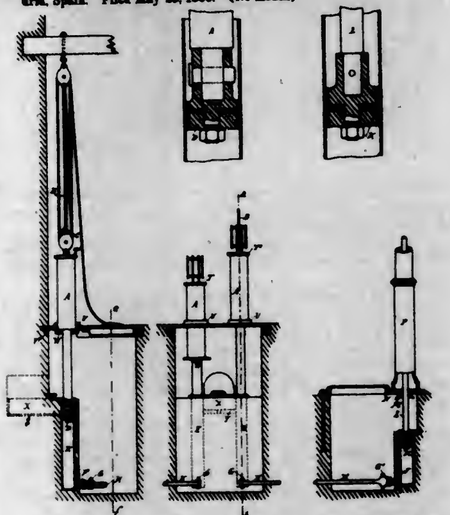
3. In a rope-fastening device, a disk having a chain or connecting device attached thereto, a circumferential recess with a spiral base, said disk being provided at the beginning or commencement of said spiral base with a tangential notch, b, substantially as shown, and for the purpose set forth.

4. A disk, A, having side flanges, a a, braces c, and a circumferential recess having a notch, b, in one of the said flanges, the opposite flange being provided with a hook which overlaps the circumferential recess, and a fastening device located between the hook D and notch b, the parts being combined and organized substantially as shown, and for the purpose set forth.

330,722.



330,723. SIGNALING APPARATUS. Antonio Montesinos, Madrid, Spain. Filed May 28, 1885. (No model.)



Claim.—In an apparatus for hydraulic transmission, a manipulator, Figs. 1, 2, and 4, consisting of one or more balance-weights, A, held up by lines and pulleys, or by any other means of suspension, and those balance-weights terminating at their lower end in a piston, D, having a single packing, and provided for the purpose of forcing the liquid into the pipes, this piston D being inclosed in a pump-barrel, E, the upper part of which communicates with a reservoir, X, filled with liquid intended to fill the pipes automatically in case of leakages, as described.

330,724. MOLE-DITCHING, TILE-FORMING, AND WIRE-LAYING MACHINE. Samuel Montgomery, West Toledo, Ohio. Filed Mar. 23, 1885. (No model.)

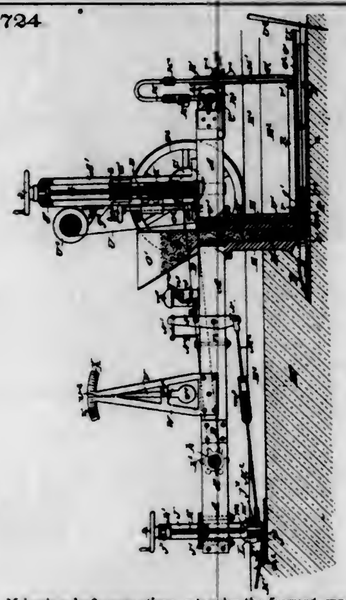
Claim.—1. In a mole-ditching machine, the beam A, provided with the standard A' and mole-plow standard E, and the rear wheel-supporting frame B, fitted to slide in standard A', and connected with the rear ends of arms D D, which are pivoted at their front ends to the beam A, in combination with a screw, G, and nut for raising and lowering frame B, and a forward yoke or frame, J, provided with screw K, working in a nut attached to the beam, for vertically adjusting its forward end, substantially as herein set forth.

2. The combination, with the beam A, the standard A', sliding frame B, pivoted arms D D, and a forward support to the beam, of a rear wheel, B', journaled to frame B, and the opposite wheel, B^2, journaled on an eccentrically-placed stud fixed to a worm-wheel, C, journaled to frame B, and the worm C', substantially as herein set forth.

3. The combination, with the beam A and wheel-supporting frame B, of the frame I, fitted to slide on frame B, and cords and weights i' i^2, to give lateral support to beam A, substantially as herein set forth.

4. The draft-bar M^3, connected at the under side of beam A near the mole-standard E, in combination with the forward yoke, J, having wheels L, and a removable bottom plate, j^3, and the shoe M, having a stud, m, passing through plate j^3 and the forward end of bar M^3, and

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said shoe M having draft-connections, whereby the forward supports of the machine may be adjusted to sustain the beam either on the wheels L or shoe M, substantially as herein set forth.

5. The combination, with the beam A, mole-standard E, and draft-bar M^3, of the lever N, link N', spring N^3, and connections, substantially as herein set forth.

6. The mole-standard E, made with a recess, *e'*, behind the mole, a cement-passage, E', opening into the forward part of recess *e'*, and a tile-forming head, P, secured to the standard behind the passage E', and having a horizontal portion centered in the mole-ditch, said standard having the aforesaid passage and recess, and to which the head is connected, constituting also the standard or shank of the mole, substantially as herein set forth.

7. The combination, with the beam A, mole-standard E, having the recess *e'*, the cement-passage E', and the tile-forming head P, of an auxiliary gradually-enlarging forming-head arranged intermediately of the tube S and head P, as at S^2, for compressing the walls of the tile and finishing its interior bore or face, substantially as herein set forth.

8. The combination, with the beam A, the mole-standard E, having a recess, *e'*, cement-passage E', and the tile-forming head P, of an arm, R, pivoted to the standard, substantially as herein set forth.

9. The combination, with the beam A, the mole-standard E, having recess *e'*, cement-passage E', and tile-forming head P, and a gradually-enlarging finishing-head, S^2, arranged intermediately of the tube S and head P, of the arm R, pivoted to the lower end of the mole-standard, substantially as herein set forth.

10. The combination, with the beam A, the mole-standard E, having recess *e'*, cement-passage E', and a tile-forming head fixed to the standard behind passage E', of a tube or flexible finisher connected to the head, so as to trail in the tile, substantially as herein set forth.

11. The combination, with the beam A, the mole-standard E, having recess *e'*, cement-passage E', and the tile-forming heads P S^2, of the tube S, secured to head S^2, so as to trail in the tile, substantially as herein set forth.

12. The combination, with the beam A, mole-standard E, having recess *e'*, cement-passage E', and attached tile-forming head, substantially as specified, of the trailing tube S, held to the tile-forming head, and the arm R, extending over the said head and tube, substantially as herein set forth.

13. The combination, with the beam A, the mole-standard E, having recess *e'*, cement-passage E', and a connected tile-forming head and trailing tube, substantially as specified, of the arm R, and a standard, R', supporting its rear end from the beam A, substantially as herein set forth.

14. The combination, with the mole-standard E, its tile-forming head P, and the trailing pipe S, of the screw-plug S', head S^2, and the tapering nut S^3, substantially as herein set forth.

15. In a mole-ditching and tile-laying machine, a perforator arranged behind the mole-plow and tile-forming devices, and adapted to pierce the top wall of the finished tile, substantially as herein set forth.

16. The combination, with the beam A, mole-standard E, having recess *e'*, cement-passage E', and a connected tile-forming head or heads, of a perforator acting to pierce the top wall of the finished tile, substantially as herein set forth.

17. The combination, with the beam A, mole-standard E, having recess *e'*, cement-passage E', and a connected tile-forming head or heads provided with an elastic or yielding tube, which trails in the tile, of a perforator piercing the tile over the yielding tube, substantially as herein set forth.

18. The combination, with the beam A, and mole-standard E, recessed at *e'*, and having a tile-forming head provided with a trailing tube, S, of the arm R, tube R', and the tool H' of the perforator H, working in tube R', and said perforator connected to a crank-shaft for driving it by gearing connected to the wheel of the machine, substantially as herein set forth.

19. The combination, with the beam A, mole-standard E, recessed at *e'*, and having a tile-forming head, and the arm R, tube R', and perforating-tool H', guided by tube R', of a collar, R^2, and a plate, R^3, having a slot, r^3, allowing lateral play of the perforator and arm R, substantially as herein set forth.

20. The combination, with the beam A and the perforator crank-shaft *i*, of the chain-wheel A^3, chain A^4, chain-wheels A^5 A', chain A^6, and the chain-wheel A^8, carried by the axle of wheel B', substantially as herein set forth.

21. The combination, with the beam A, of mole-standard E, having cement-passage E' and wire-passage U', and provided with a cement tile-forming head behind passage E', substantially as specified, and the tile-forming head having passages connecting passage U' with the interior of the cement tile, whereby the wires U may be laid within the continuous cement tile as the machine moves forward, substantially as herein set forth.

22. The combination, with the beam A, draft-bar M^3, lever N, and spring N^3, of the alarm mechanism n^3 n^6, and the connections, substantially as shown and described, whereby an alarm will be given when the mole strikes an obstruction, as set forth.

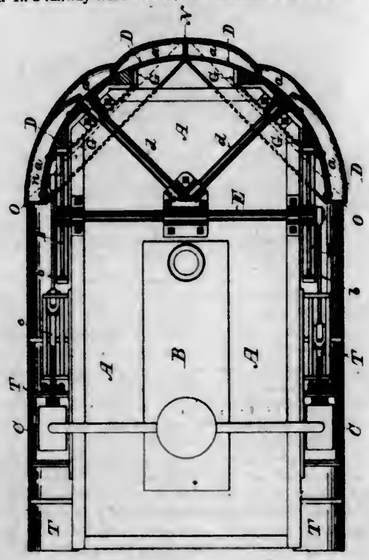
330,725. TRACK-CLEARER. LYMAN MORGAN, Port Washington, Wis. Filed Jan. 12, 1885. (No model.)

Claim.—1. In a railway-track clearer, the combination of the disks D D, provided with wings *a a*, scrolls O O, and discharging-chutes H I, substantially as and for the purposes set forth.

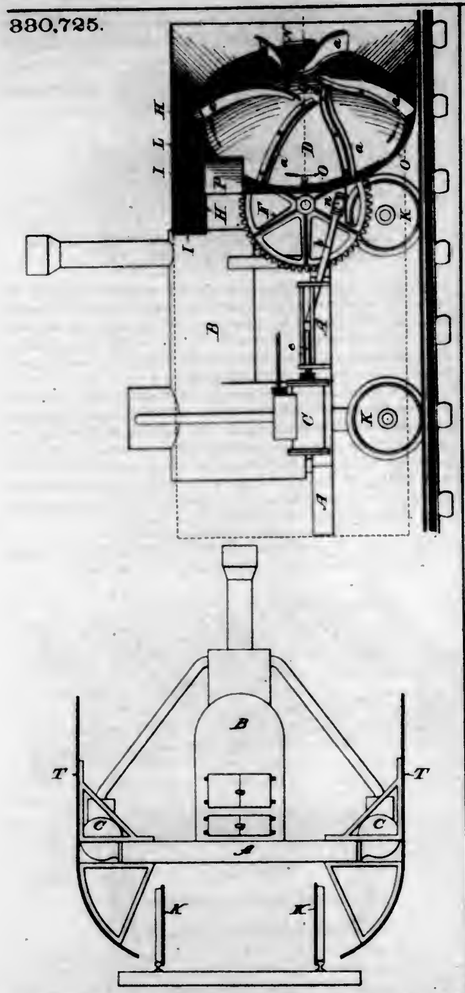
2. In a railway-track clearer, the combination of the beak N and a pair of convex rotary disks having wings or cutters *a a* on their convex faces, and set with their peripheries in planes which diverge rearwardly from said beak N, substantially as and for the purposes set forth.

3. In a railway-track clearer, the combination of convex rotary disks D D, having wings *a a* on their front convex faces, means, substantially as described, for retaining the snow, &c., upon the faces of said disks until the same is carried by said wings to a convenient point of discharge, and means, substantially as described, for receiving the snow, &c., from said disks and discharging the same at the sides of the machine, substantially as and for the purposes set forth.

4. In a railway-track clearer, the combination of the convex disks



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D D, having wings *a a* on their convex faces, gears G G, and gears F F meshing therewith, and mounted upon the ends of shaft E and connected with steam-cylinders C C, substantially as and for the purposes set forth.

5. In a railway-track clearer, the combination of the convex rotary disks D D, having wings *a a* secured to their convex faces, beak N, scrolls O O, closing the space between the ends of the wings about the lower portion of said disks, and discharging-chutes composed of scrolls H H and backs I I, diverging from the forward end of the machine rearwardly toward the sides, substantially as and for the purposes set forth.

6. In a railway-track clearer, the combination of the convex rotary disks D D, having wings *a a* attached to their convex faces, retaining-scrolls O O, discharging-chutes H I H I, and cutters P P, substantially as and for the purposes set forth.

7. In a railway-track clearer, the combination of the rotary disks D D, provided with wings *a a*, and the side guards, T T, substantially as and for the purposes set forth.

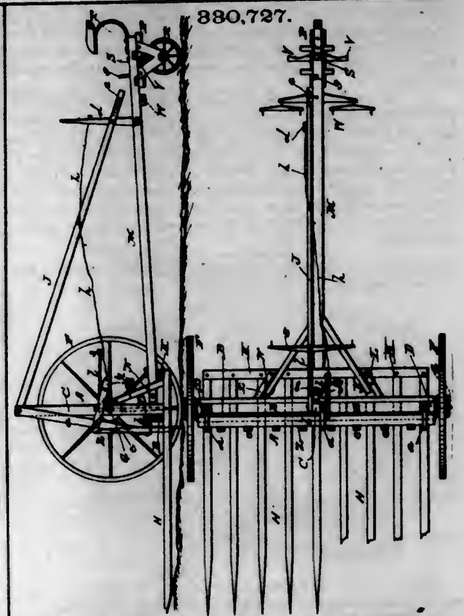
330,726. TONIC BASE FOR AERATED BEVERAGES. THOMAS S. NOWELL, Boston, Mass., assignor to the Avery Lactate Company, Portsmouth, N. H. Filed May 14, 1885. (No specimens.)

Claim.—An acid base for aerated and other beverages and tonics, consisting of lactic acid containing one to two per centum of lactate of lime and traces of vegetables gluten, vegetable coloring-matter, gum, and sulphate of lime with water and sugar or syrups, substantially as set forth.

WITHDRAWN.

330,727. HAY-RAKE. DOCTOR F. OLIVER, Huntsville, Mo. Filed Dec. 31, 1883. (No model.)

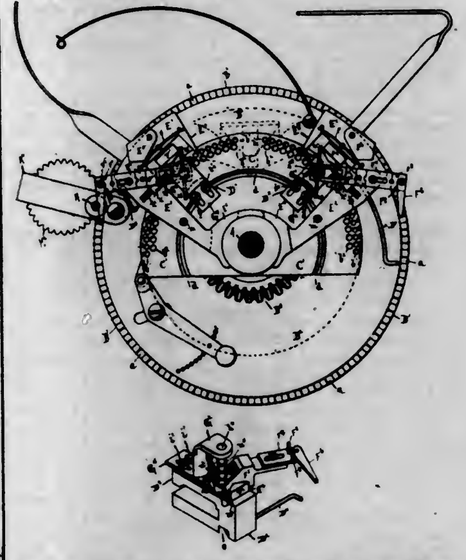
330,727.



Claim.—1. The rake-head, consisting of the horizontal teeth, the transverse bars B and K, the oblique braces L, and lateral uprights D D, to which the swinging discharging-frame Z is pivoted, substantially as specified.

2. The combination, with a rake-head carried upon wheels, and a pivoted push-pole in rear thereof, of the swinging discharging-frame Z, its catch-bar *k*, the lever *d*, and connecting-bar J, extending to the rake-head, the detaching-cord *h*, and the cord *l*, extending to the breast-yoke, substantially as specified.

330,728. KNITTING-MACHINE. GUSTAV A. OLSON, Albert Lea, Minn. Filed June 5, 1885. (No model.)

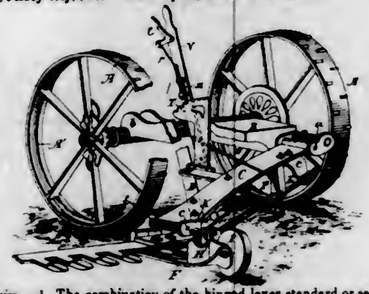


Claim.—1. The combination of the stationary needle-plate B', cam-plate B^2, provided with pins D^2 H, means for revolving the cam-plate, stationary segmental plate C', provided with the perforations b' b^2, trip-plates D' D^2, pins h' h^2, cam-levers F' F^2, and devices, substantially such as described, connected with said pins and intermediate of the same and the levers F' F^2, whereby when said levers are moved said pins may

be lifted upward from said perforations in the segmental plate to release the trip-plates, and the latter may be moved upon said segmental plate the distance from one of said perforations to the one next adjacent once during each stroke of said cam-plate, substantially as and for the purpose set forth.

2. The combination of the stationary needle-plate B', cam-plate B^3, provided with pins D^5 H, means for revolving the cam-plate, stationary segmental plate C', provided with perforations b' b^2, trip-plates D' D^2, pins A' A^2, standards G' G^2, springs u^3 u^4, cross-pins u' u^2, cam-levers F' F^2, provided with the pivoted levers F^5 F^6 on their outer ends, guide-plates E' E^2, provided with laterally-extended and inwardly-turned portions encompassing the outer ends of said trip-plates, set-screws n^2, springs E^3 E^{10}, and cam-levers E^5 E^6, substantially as and for the purpose set forth.

330,729. HARVESTER AND MOWING-MACHINE. George M. Patten, Jersey City, N. J. Filed July 21, 1881. (No model.)



Claim.—1. The combination of the hinged lever-standard or sector-rack with the lever-arm pivoted thereto, substantially as described.

2. The combination of the vibrating cutter-frame with a lever-standard or sector-rack hinged thereto, and a lever-arm pivoted to said lever-standard, substantially as described.

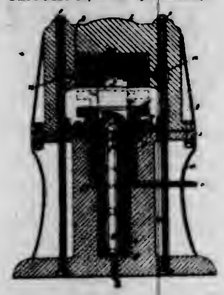
3. The combination of the hinged lever-standard, the lever pivoted thereto, the connecting mechanism, and the finger-bar socket, all arranged and combined as specified.

4. The combination of an intermediate coupling device provided with a lead-wheel, and hinged to the cutter-frame in an axis at about right angles to the main axle of the machine, with a finger-bar-socket hinged to the said coupling device by pivots arranged below and at right angles to the axis on which the intermediate coupling device is hinged to the cutter-frame, substantially as described.

5. The intermediate coupling-piece supported by a lead-wheel and provided with two sets of ears or lugs to form portions of longitudinal hinges, by which it is attached to the vibrating cutter-frame, and with another set of ears or lugs to form portions of a transverse hinge, by which the finger-bar socket is attached thereto.

6. The combination of a cutter-frame free to vibrate on hinges located on the main or gear frame, with an intermediate coupling-piece supported by a lead-wheel and longitudinally hinged to the said cutter-frame, said intermediate coupling-piece being provided with lugs or ears which are adapted to form portions of another and transverse hinge, by which the finger-bar socket is attached to said intermediate coupling-piece, substantially as described.

330,730. HYDRAULIC STAMPING-PRESS. John S. Pennover, Brooklyn, N. Y. Filed June 27, 1885. (No model.)



Claim.—In a hydraulic stamping-press, the combination of the cylinder *a*, having the differential bore-sections *b a*, the annular holding-ram *d*, arranged in the enlarged section *a* of the cylinder, the forming-ram *c*, extending through the annular ram *d*, and arranged in the smaller bore-section *b* of said cylinder, packing-joints *f g*, and the separate inlet-pipes *h i*, constructed in the described arrangement, in which the power is applied to ram *c* independently of ram *d*, and so as to force the rams upward in taking effect and to enable them to descend by gravity when the water escapes.

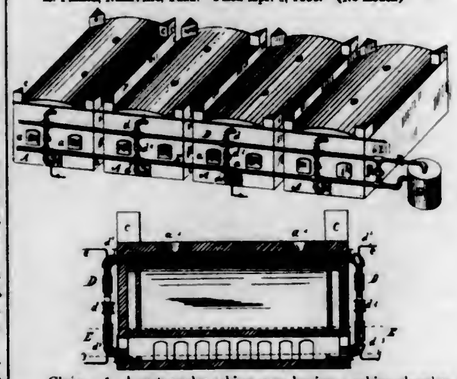
330,731. PROCESS OF MANUFACTURING COKE. Henry M. Pierce, Nashville, Tenn. Filed July 31, 1884. (No model.)



Claim.—1. As an improvement in the manufacture of coke, the method of conducting the furnace operation which consists in first carrying on the coking process by radiated heat until a stage near the completion of the process, and then firing the evolved gas in the chamber above the charge and completing the coking by the heat therefrom, substantially as and for the purposes set forth.

2. As an improvement in the art of manufacturing coke, the method of conducting the furnace operation which consists in heating the charge by radiation until inflammable gases are given off, then leading said gases beneath the floor of the coking-chamber and burning them therein, thereby coking the under layers of the charge by radiated heat, and finally shutting off the flow of gases to the under combustion-chamber and burning them in the top of the kiln, thereby coking the top layers of the charge by direct heat, substantially as described.

330,732. FURNACE FOR THE MANUFACTURE OF COKE. Henry M. Pierce, Nashville, Tenn. Filed Apr. 1, 1885. (No model.)

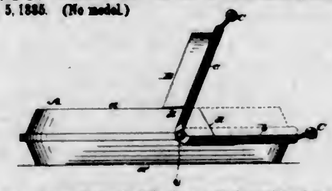


Claim.—1. A rectangular coking-oven having a coking-chamber, a combustion-chamber, and a series of flues arranged below the floor, and chimneys arranged in the corners of the coking-chamber within the oven-walls, and communicating with the combustion-chamber, substantially as and for the purposes specified.

2. A rectangular coking-oven having a coking-chamber, a series of combustion-chambers, B *b b*, arranged below the floor thereof, and a series of chimneys, *c*, and chambers *c'*, triangular in cross-section, and arranged within the coking-chamber, substantially as and for the purposes specified.

3. A battery of coke-ovens having each a closed coking-chamber and basal combustion-chamber, in combination with a receiving-main extending along and common to all the ovens, valved branch pipes joining said main with each of the closed chambers, a delivery-main parallel to the receiving main, valved cross-pipes connecting the two mains, and valved branch pipes connecting the delivery-main with each of the combustion-chambers, substantially as and for the purposes specified.

330,733. CIGAR-CASE. Henry W. Pfeil, Philadelphia, Pa. Filed Feb. 5, 1885. (No model.)



Claim.—A case formed of the long and short side pieces, *a a'*, jaw *b*, fixed to piece *a'*, a movable jaw pivoted to the fixed jaw, catches C,

and a piece, B, which is secured to the movable jaw and forms a continuation of the short side piece *a*, said piece B, when opening, abutting against said side piece *a*, substantially as described.

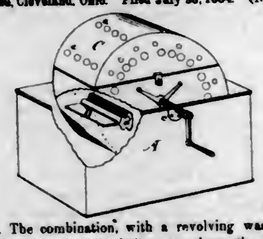
330,734. MACHINE FOR TREATING LEAF-TOBACCO. John A Post, McSherrystown, Pa. Filed July 30, 1885. (No model.)



Claim.—1. In a machine for the purposes specified, the combination, with the upper roller provided with two circular knives, of lower rollers and a sliding slitted table adapted to reciprocate between the rollers, substantially as set forth.

2. The combination of the rollers C C', knives D, collar *c'*, and slitted table E, for the purposes specified.

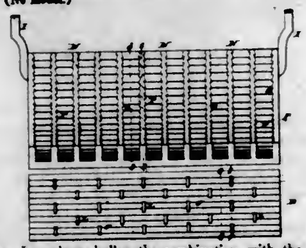
330,735. BOILER WASHING-MACHINE. John Porter and Henry B. Kepperling, Cleveland, Ohio. Filed July 28, 1884. (No model.)



Claim.—1. The combination, with a revolving washing-machine cylinder, of stationary transverse shelves or wings, the inner ends of which are enlarged and corrugated, substantially as set forth.

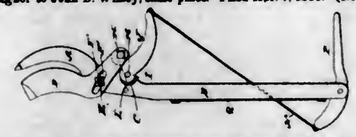
2. The combination, with the boiler, of a cylinder supported to revolve therein, and perforated as described, and a series of stationary wings or shelves arranged within the cylinder substantially opposite each other in pairs, the inner ends or edges of said wings or shelves being enlarged and corrugated, substantially as and for the purpose set forth.

330,736. CLOVER-HULLING ATTACHMENT FOR THRASHING-MACHINES. William S. Reeder, St. Louis, Mo., assignor to the Kingsland & Ferguson Manufacturing Company, same place. Filed Apr. 6, 1885. (No model.)



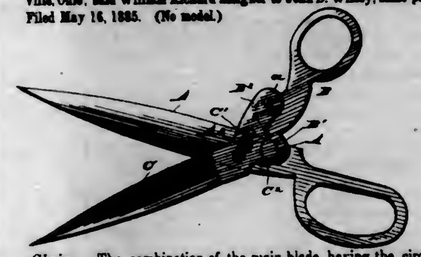
Claim.—In a clover-huller, the combination, with the cylinder A, having the teeth projecting therefrom, of the concave consisting of the section C, having the longitudinal teeth P, and the transverse ribs N, having the angular serrations O, and the section D, having the longitudinal teeth J and the roughened teeth L, said teeth P and J and serrations O having their sharp edges presented in a forward direction, as set forth.

330,737. PRUNING-SHEARS. William Reinhard, Bloomville, Ohio, assignor to John D. Wilsey, same place. Filed Apr. 7, 1885. (No model.)



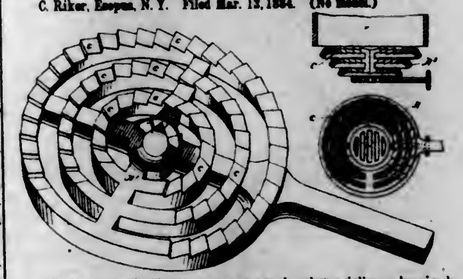
Claim.—In a pair of pruning-shears, the combination of a stationary blade or jaw having a rounded recess, C, in its shank at the rear side of the same, a curved lever, J, having rounded lugs I and L upon the forward and rear sides of its upper end, a short bar or link, M, pivoted upon the side of the shank of the stationary blade and pivoted at its outer end to the forwardly-projecting lip L of the curved lever, and a movable jaw or blade pivoted to the stationary blade and to the rearwardly-projecting lug of the curved lever, and having an oblique slot in its shank, in which the pivotal bolt having a friction roller or washer slides, as and for the purpose shown and set forth.

330,738. SHEARS. William Reinard and Oscar M. Holcomb, Bloomville, Ohio; said William Reinard assignor to John D. Wilsey, same place. Filed May 16, 1885. (No model.)



Claim.—The combination of the main blade having the circular recess open at one side for about one-fourth of its circumference, the operating-lever having the nearly-circular lower projection adapted to fit and turn within the said recess and provided with the upper projection, and the auxiliary sliding blade having the pivot-slot and the inner ear or projection and pivotally connected at its upper end above the said slot to the upper projection of the operating-lever, all constructed and arranged to operate in the manner and for the purposes shown and set forth.

330,739. GRATE. Carroll L. Riker, Brooklyn, assignor to Lizzie C. Riker, Esopus, N. Y. Filed Mar. 12, 1884. (No model.)



Claim.—A circular grate constructed, substantially as herein described, of a series of concentric circular bars adapted to rotate upon a central pivot, and provided with a series of beveled teeth or angular projections upon its upper surface inclining toward a common section having a plane face and at which the cinders are discharged from the grate by its reciprocation.

330,740. HOSE-NOZZLE. Frederick W. Robertshaw, Pittsburg, Pa. Filed May 6, 1885. (No model.)



Claim.—1. In a hose-nozzle, the combination, with the body A, having its interior contracted toward the outlet, of the pivoted gate *d*, consisting of a thin plate of metal having notches in its edge, and the stem *c*, to which said gate is secured and by which it is turned, whereby when the said gate is in one position the water is sprayed through the mouth of the nozzle, and when in another position a comparatively free outlet for the water is provided, substantially as described.

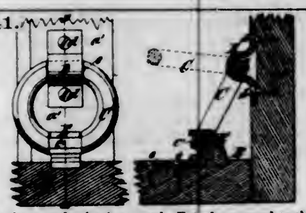
2. In a hose-nozzle, the combination, with body A and revolving stem *c*, of the disk *d*, secured to said stem and provided with inclined openings or notches at its edges, substantially as and for the purpose described.

3. In a hose-nozzle, the combination, with body A and stem *c*, passing through said body, of the disk *d*, passing through said stem, and the screw *e*, for securing said disk in position in the stem, substantially as described.

330,741. SHUTTER-FASTENER. Fred. C. Robinson, New York, N. Y. Filed Sept. 25, 1885. (No model.)

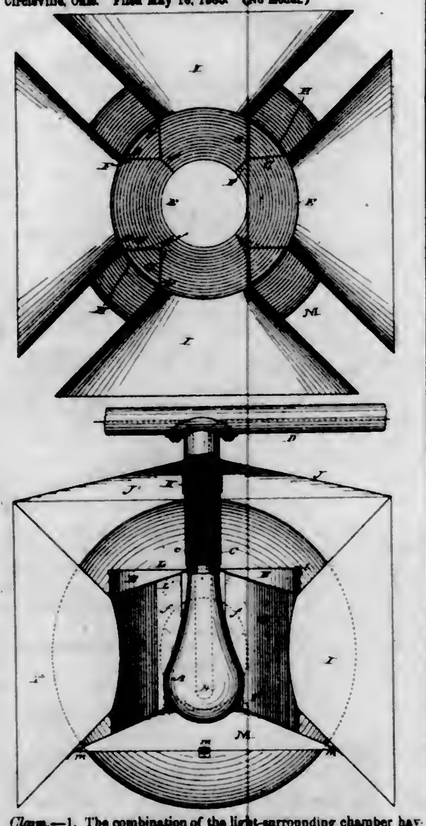
Claim.—The blind pull and catch herein described, consisting in the combination of a ring or loop, C, a keeper or strap, D, for attaching the ring or loop to a blind, arranged transversely to and embracing one side

330,741.



of the ring or loop, and a hook or catch, E, to be secured to the window-frame, and with which the portion of the ring or loop diametrically opposite the keeper or strap may be engaged, substantially as herein described.

330,742. REFLECTOR. GEORGE W. SCOVIL and LYMAN A. SCOVIL, Circleville, Ohio. Filed May 16, 1885. (No model.)



Claim.—1. The combination of the light-surrounding chamber having openings in its walls, the internal reflectors, F, between the openings in the walls of the light-surrounding chamber, and constructed, as described, with the opposite reflecting-surfaces, and the external reflectors I, secured at their inner ends around the openings in the walls of the light-surrounding chamber, substantially as and for the purpose set forth.

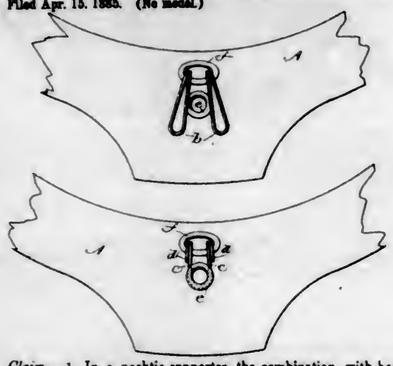
2. The combination of the light-surrounding chamber having openings in its walls, the internal reflectors, F, having supporting connection with the light-surrounding chamber between said openings, and provided with the opposite reflecting-surfaces, the external reflectors, I, secured at their inner ends around said openings and the bottom reflector, M, substantially as and for the purpose set forth.

3. The combination of the light-surrounding chamber having openings in its walls, the internal reflectors, F, having supporting connection with the light-surrounding chamber between said openings, and provided with the opposite reflecting-surfaces, the external reflectors, I, secured at their inner ends around said openings and a top reflector, substantially as and for the purpose set forth.

4. The combination of the light-surrounding chamber having openings in its walls, the internal reflectors, F, having supporting connection with the light-surrounding chamber between said openings, and provided with the opposite reflecting-surfaces, the external reflectors, I, secured at their inner ends around said openings, the bottom reflector, M, and a top reflector, substantially as and for the purpose set forth.

5. The combination of the light-surrounding chamber, the internal reflectors, and the guideways by which they are removably secured to the chamber, substantially as set forth.

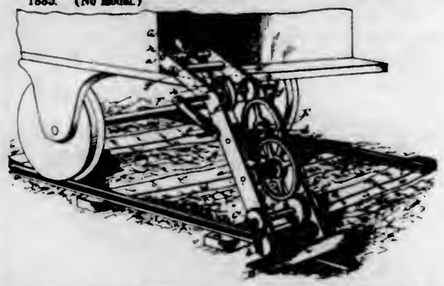
330,743. NECKTIE-SUPPORTER. BENJAMIN B. SCULLY, Lynn, Mass. Filed Apr. 15, 1885. (No model.)



Claim.—1. In a necktie-supporter, the combination, with body A and the securing-loop, of oval eyelet *f*, secured in said body, to serve as the opening in which the securing-loop rests, substantially as specified.

2. In a necktie-supporter, the combination, with body A and the securing-loop, of oval eyelet *f*, secured in said body, to serve as the opening in which the loop is inserted, and eyelet *e*, arranged to secure the central portion of the loop to the body, substantially as specified.

330,744. CAR-MOVER. SAMUEL SHACKELFORD, Bellaire, Ohio, assignor to himself and Isaac N. Anderson, same place. Filed Sept. 24, 1885. (No model.)



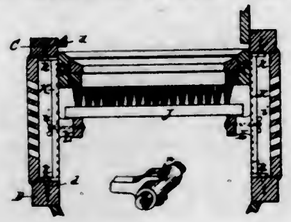
Claim.—1. In a car mover or pusher, the combination of a fluted or corrugated friction-roller and gearing for operating the same, substantially as and for the purpose set forth.

2. The combination, with a car mover or pusher, of a detachable and adjustable grappling-hook for securing the same to the car, substantially as described.

3. In a car mover or pusher, the combination, with the driving-shaft, of a wheel mounted upon the same, substantially as and for the purposes set forth.

4. A car mover or pusher consisting of the frame A, provided with platform B and grappling-hook G, the fluted or corrugated friction-roller C, the driving-shaft F, and intermediate connecting-gearing, substantially as described, and for the purposes set forth.

330,745. MIDDLINGS-PURIFIER. GEORGE F. SEAMWOOD, Jackson, Mich., assignor to the George T. Smith Middlings Purifier Company, same place. Filed July 2, 1884. Renewed July 16, 1885. (No model.)



Claim.—1. In a middlings-purifier, the combination of the brushways, the vertical posts or standards by the sides of the brushways, and devices for supporting and adjusting the brushways upon the vertical standards, substantially as set forth.

2. In a middlings-purifier, the combination of the brushways, the slotted vertical posts or standards by the sides of the brushways, the carriers interposed between the brushways and the vertical standards, and devices adjustably supporting the brushways upon the vertical standards, substantially as set forth.

3. In a middlings-purifier, the combination of the brushways, the slotted vertical standards, and the carriers interposed between the brushways and the vertical posts and engaging with the outer and inner faces of the slotted posts, substantially as set forth.

4. In a middlings-purifier, the combination, with the brushways, of the vertical posts, the carriers, and the screw-threaded bolts and nuts connecting the brushways and the carriers with the vertical standards, substantially as set forth.

5. In a middlings-purifier, the combination, with the brushways, of the shaft P, the forked hangers, and the bearings surrounding the shafts and pivoted in the forked ends of the hangers, substantially as set forth.

6. In a middlings-purifier, the combination of the brushways, the shaft, the forked hangers, the bearings surrounding the shaft and pivoted in the hangers, and adjusting devices connecting the hangers with the brushways, substantially as set forth.

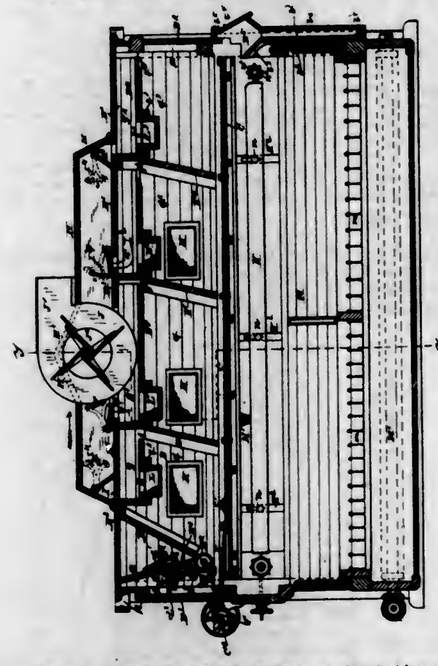
7. In a middlings-purifier, the combination, with the brushways and belts, of the shaft o, the sleeves surrounding the shaft and provided with party-spherical bearings, and the arm T, having rings *t*, adapted to receive the party-spherical bearings, substantially as set forth.

8. In a middlings-purifier, the combination, with the brushways and belts or chains, of the shaft o, the sleeves provided with party-spherical bearings, the arms T, having the rings *t*, adapted to receive the sleeve-bearings, and adjustable connections between the arms and the frame of the machine, substantially as set forth.

9. In a middlings-purifier, the combination, with the brushways and belts or chains, of the brush-shaft P, the hangers, and the yielding bearings interposed between the brush-shaft and the hangers, substantially as set forth.

10. In a middlings-purifier, the combination, with the main frame, of the brushways, the belts or chains, the shaft o, and yielding bearings supported upon the main frame, substantially as set forth.

330,746. MIDDLINGS-PURIFIER. CHAS. A. SMITH, Jackson, Mich. Filed May 9, 1885. (No model.)



Claim.—1. The combination, with the front wall of the feed-hopper, the roller E^2, and the pressure-board D^2, of the vibrating gate having the upward-projecting arm E^2, the link d^3, connecting the lower end of the pressure-board with the arm, and a spring arranged between the arm and the feed-hopper and adapted to pull the arm toward the feed-hopper, substantially as set forth.

2. The combination, with the front wall, D, of the hopper, the roller E, and the pressure-board D^2, of the vibrating gate having the upward-projecting arm E^2, the link d^3, connecting the lower end of the pressure-board with the lower end of the arm, the spring d^7 and link d^8, arranged between the upper end of the arm and the front wall of the hopper, and the thumb-nut d^9 on the end of the link d^8 and engaging with the outer face of the arm, substantially as set forth.

3. In a middlings-purifier, the combination, with the casing above the shaker, of the partition B^4 and the transverse partitions which divide the space between partition B^4 and the shaker into main air-chambers, the transverse partitions which divide the space between the partition B^4 and the deck into supplemental air-chambers, the throats between the main air-chambers and the supplemental air-chambers, the wind-trunk and the throats between the supplemental air-chambers and the wind-trunk, the fan, and the dampers extending substantially the entire width of the air-trunk, substantially as set forth.

4. In a middlings-purifier, the combination, with the shaker, an air-chamber above the shaker, and a fan for producing an air-current upward through the bolt-cloth and the air-chamber, of a removable dust-box adapted to collect material taken from the middlings by the air-current, substantially as set forth.

5. In a middlings-purifier, the combination, with the shaker, an air-chamber above the shaker, and a fan adapted to produce an air-current upward through the shaker and the air-chamber, of a dust-box adapted to be removed through an opening in the casing of the machine, the sides of the opening fitting closely the sides of the dust-box, substantially as set forth.

6. In a middlings-purifier, the combination, with the shaker, of an air-chamber above the shaker, a fan adapted to produce an air-current upward through the shaker and the air-chamber, of a series of dust-boxes adapted to be removed through openings upon opposite sides of the casing of the machine, substantially as set forth.

7. In a middlings-purifier, the combination, with the shaker, an air-chamber above the shaker, and a fan adapted to produce an air-current upward through the shaker and the air-chamber, of a dust box arranged transversely of the shaker, and cleats connecting the dust-box with a partition of the air-chamber, whereby the dust-box is adapted to slide through the casing of a machine in a path transverse to the shaker, substantially as set forth.

8. In a middlings-purifier, the combination, with the bolt-cloth, a series of air-chambers above the bolt-cloth, and a series of supplemental air-chambers, of the dust-boxes supported below the partition B^4 and made removable through the openings in the side wall of the machine, substantially as set forth.

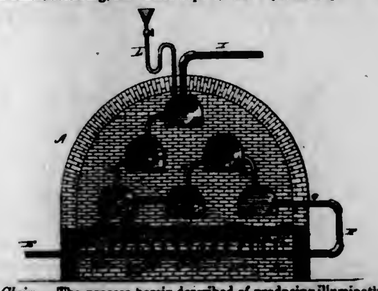
9. In a middlings-purifier, the combination, with the brushways and the brush-shafts and their bearings, of the plate O, provided with the inward-projecting shelf O', substantially as set forth.

10. In a middlings-purifier, the combination, with the brushways and the brush-shaft, of the plate O, provided with the inward-projecting shelf O', and the bearing P P', adapted to slide on the shelf, substantially as set forth.

11. In a middlings-purifier, the combination, with the brushways and the brush-shaft, of the plate O and the inward-projecting shelf, the bearing sliding on the shelf, and means for adjusting the bearings, substantially as set forth.

12. In a middlings-purifier, the combination, with the brushways and the brush-shaft, of the plate O, provided with the inward-projecting shaft, the bearing provided on its front side with a socket, and the adjusting-bolt having its rear end seated in the socket, substantially as set forth.

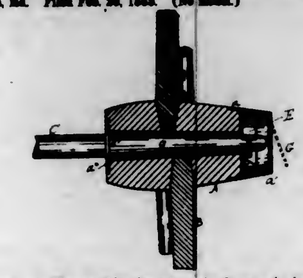
330,747. PROCESS OF PRODUCING ILLUMINATING-GAS. ROLAND H. SMITH, Pittsburg, Pa. Filed Sept. 4, 1885. (No model.)



Claim.—The process herein described of producing illuminating-gas by heating natural gas to a sufficient temperature to decompose and convert a fluid hydrocarbon into a fixed gas, and then bringing such hydrocarbon into contact with the heated natural gas, whereby a fixed com-

pound gas of suitable illuminating properties is produced, substantially as specified.

330,748. WHEEL-SECURING DEVICE. GEORGE P. STERRAGE, Baltimore, Md. Filed Feb. 20, 1885. (No model.)

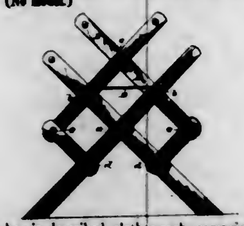


Claim.—1. The combination of a wheel, an axle having its end vertically slotted, and a slotted linchpin pivoted through its slot, the rear or inner end of the axle-slot being beveled or inclined from its top downward and inward, and the linchpin being correspondingly beveled, whereby the inner end of the linchpin, when said pin is in its horizontal position, coincides with the beveled end of the axle-slot, for the purpose set forth.

2. In combination, the axle having slot in end, the wheel, a slotted linchpin pivoted in said slot, and a spring in the linchpin-slot, bearing against its pivot, for the purpose set forth.

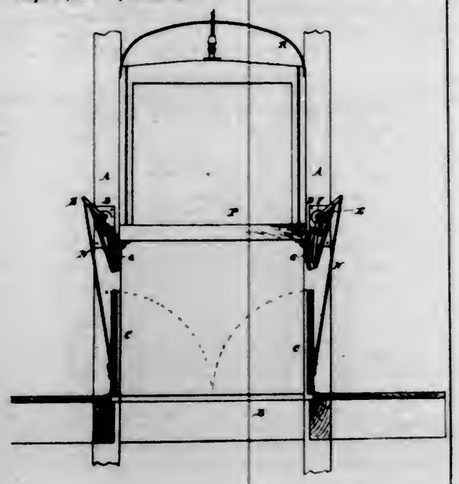
3. The hub-cap having plate H, provided with slot *h*, in combination with slotted axle and slotted linchpin pivoted thereto, as and for the purpose set forth.

330,749. CLOTHES-DRIER. ZADOK STEPHENSON, Verona, Ky. Filed July 9, 1885. (No model.)



Claim.—The herein-described clothes-rack, comprising the slats A and B, risers C, and drying rails or rods extending between the intersecting points or pivots of said rails and risers, the slats B being extended above the highest intersecting points, as shown, and provided with drying rails or rods extending between and secured to the upper ends thereof, as set forth.

330,750. ELEVATOR. WILLIAM STEVENS, Philadelphia, Pa. Filed Sept. 18, 1885. (No model.)



Claim.—1. The combination of the cage with the hatch-door and a pivoted guide-lever, consisting of two arms adjustably hinged together, one of which has a cam or curved plate secured thereto, and which can be replaced when worn, and the other of which is connected to the hatch-door, and which levers are united by an adjustable connection, substantially as and for the purpose specified.

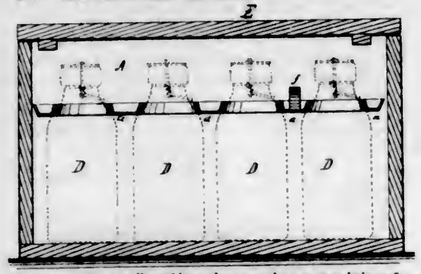
2. The combination of the cage, the hatch-door, and the bell-crank lever, one arm of which is provided with replaceable cam-piece adapted to be depressed by the descending cage, and the other arm of which is connected to the hatchway-door and a straight connection between said arms, by which they are made adjustable, which straight connection consists of two bars, one of which carries bolts and the other of which is provided with a slotted end, through which the bolts pass, substantially as and for the purpose specified.

3. A lever for a hatch-door-operating device, which consists of the hub F, arms H and I, connected by slotted bar J and bars K, the bolts M, and the cam guide-plate G, carried by the arm H, substantially as and for the purpose specified.

4. A lever for a hatch-door-operating device, which consists of the hub F, arms H and I, each formed of two parallel bars connected by slotted bar J and bars K, the bolts M, and the cam guide-plate G, carried by the arm H and between the two parallel bars thereof, substantially as and for the purpose specified.

5. The combination of the cage and hinged trap-door and bell-crank lever, the arms of which are adjustable in respect to each other, and one of which is adapted to be acted on by the cage, link N, connecting the door with one arm of the bell-crank, and spring Q, arranged substantially as shown.

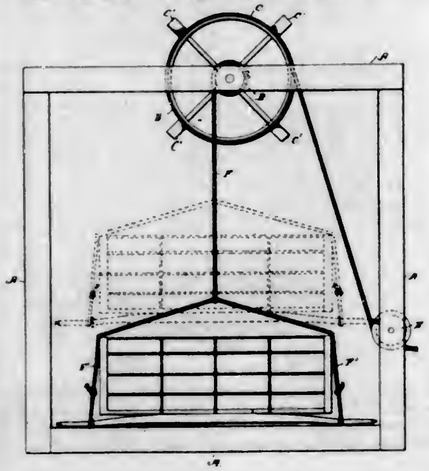
330,751. MILK-REFRIGERATOR. REUBEN R. STONE, New York, N. Y. Filed Mar. 17, 1885. (No model.)



Claim.—1. A milk-refrigerating contrivance consisting of a receptacle, A, containing bottles D and a diaphragm, B, with perforations C and curbs *b*, surrounding the same, whereby said diaphragm may be placed within the receptacle A and be supported on the shoulders *a* of the bottles D, as and for the purpose described.

2. In a refrigerating contrivance, a receptacle for containing bottles and a removable diaphragm suitably supported within said receptacle, and with perforations to admit the necks of the bottles, as and for the purpose described.

330,752. DEVICE FOR REMOVING WAGON-BODIES. JOHN B. TAYLOR, La Monte, Mo. Filed Aug. 15, 1885. (No model.)

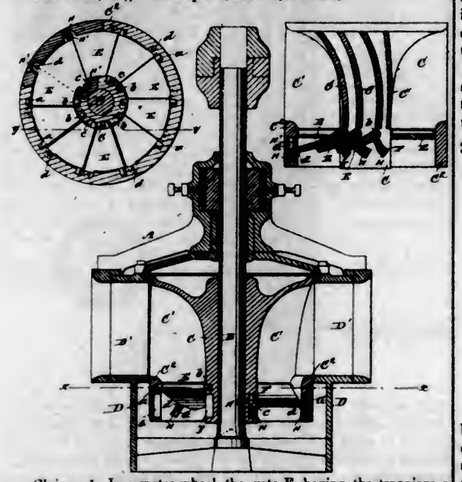


Claim.—1. An apparatus for hoisting heavy bodies, consisting of the journaled shaft B, having the drop-ropes attached near each end thereof, and the power-wheel C, mounted upon it, and the draw-rope D, secured to said power-wheel.

2. The combination of the shaft B, journaled in frame A, having drop rope or ropes F, and a power-wheel, C, with curved horns or guides c' c' on it, and a draw-rope, D, attached to said power-wheel.

3. The combination of the journaled shaft B, having drop rope or ropes, a power-wheel mounted upon said shaft, a draw-rope secured to said power-wheel, and a pulley, E, secured to the frame at a lower point for the rope D to pass under, as set forth.

330,753. GATE FOR WATER-WHEELS. DELANOY L. TRULLINGER, Union Mills, Oreg. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a water-wheel, the gate E, having the trunnions *a* and *b*, and provided with lugs *c* and *d*, and springs H, substantially as shown and described.

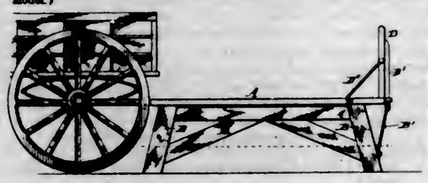
2. In a water-wheel, the gate E, hung on trunnions *a* and *b* in bearings of the rim C^2 and hub C, and provided with lugs *c* and *d*, in combination with the springs H, and the rod H', placed in the segmental grooves F and G formed in the hub C and the rim C^2 of a water-wheel, substantially as shown and described.

3. In a water-wheel, the gate E, hung on trunnions *a* and *b* placed in bearings directly under the lower edge of the buckets C', in combination with the spring H, substantially as shown and described.

4. In a water-wheel, the hub C, having segmental groove F, the rim C^2, having a segmental groove G, the gate E, the spring H, and the rod H', substantially as shown and described.

5. In a water-wheel, the hub C, provided with the segmental groove F, the rim C^2, having groove G, the gate E, the spring H, and the rod H', substantially as shown and described.

330,754. LOADING AND UNLOADING PLATFORM FOR STREET USE. JONAH H. L. TUCK, San Francisco, Cal. Filed Sept. 11, 1885. (No model.)



Claim.—1. A portable platform adapted to extend out from a curbstone and receive goods from a wagon, truck, or dray driven parallel with the curbstone.

2. A portable platform for use as described, consisting of a flat upper surface and folding legs or supports, as described.

3. A portable platform for use as described, having the folding legs and incline on one end, as set forth.

4. A portable platform for use as described, having an adjustable or hinged incline, as set forth.

5. A portable platform for use as described, having folding legs, an incline on the front end, and removable side boards, substantially as described.

6. A portable platform for use as described, consisting of the surface A, hinged legs B B^*, having braces B' B^{**}, the front incline, C, and the removable board or boards D, substantially as described.

330,755. IRRIGATING ATTACHMENT FOR BOTTLES. ANANIAS R. TUTTON, Sioux Falls, Dak. Filed Aug. 11, 1885. (No model.)



Claim.—1. An irrigating attachment for prescription-bottles, consisting of a soft-rubber cap, A, adapted to be distended over the neck of the bottle, the long tube B, having a nozzle at its outer end with an inclosing-cap, and the short tube C, having a stopper in its end, both of said tubes being arranged in the cap A, and adapted to be forced into the bottle or pulled out from the same, as described.

2. An irrigating attachment for prescription-bottles, consisting of a stopper for the bottle and a long and short tube, B and C, passing through the same, the short tube being provided with a closing-plug and the long tube with a nozzle and an inclosing-cap, as and for the purpose described.

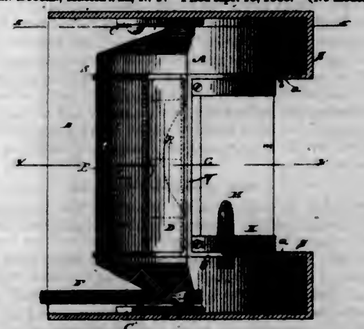
330,756. CALL-BELL. WALDO L. UPHAM, Meriden, Conn. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination of the base A, the post B thereon, the bell D, supported on said post, the arbor *b*, supported in bearings, and carrying a pinion, *g*, and escapement-wheel *e*, the vertically-guided spindle E, extending upward through the bell, its lower end provided with a toothed rack corresponding to said pinion, and so as to work therein, a second arbor, *m*, carrying a verge and hammer, with a spring adapted to raise the spindle and support it in its up position, substantially as described.

2. The combination of the base A, the post B thereon, the plate C, fixed to said post, and with the post forming a frame, the bell D, secured to said post, the vertically-guided spindle extending upward through the post and bell, constructed at its lower end with a toothed rack, the arbor *b*, arranged in said frame, and carrying the pinion *g* and toothed ratchet *d*, both fixed to the arbor, the escapement-wheel *e*, loose upon said arbor, with a pawl on said escapement-wheel adapted to be engaged by the said ratchet-wheel in one direction, but escape therefrom in the opposite direction, the second arbor, *m*, carrying the verge and hammer, and a spring in connection with said spindle adapted to raise and hold it in its up position, substantially as described.

330,757. REFLECTOR-LIGHT FOR BAKERS' OVENS. FRANK H. VAN HOUTEN, Matteawan, N. Y. Filed Apr. 15, 1885. (No model.)

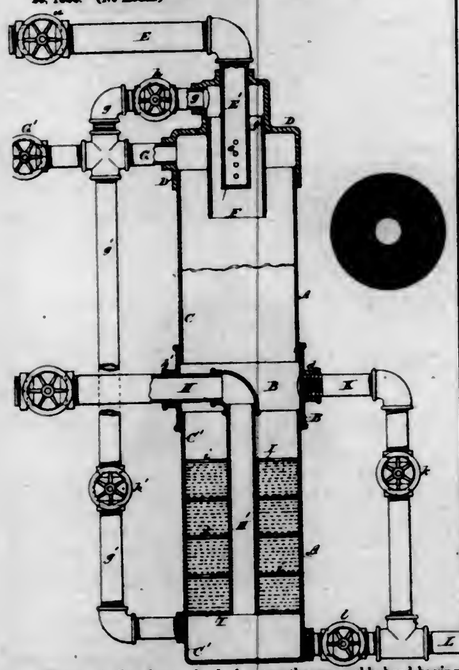


Claim.—1. The combination, with an oven, of a case, and a cylindrical lantern having opaque and transparent portions, and pivoted centrally at top and bottom within said case, substantially as specified.

2. The case A, having the front flanges formed with inwardly-turned marginal portions *a*, in combination with the revolving door or cut-off centrally pivoted to said case at top and bottom, and the lantern connected to said revolving door or cut-off, substantially as specified.

3. An oven-illuminator consisting of a main or outer case, a lantern-case journaled therein centrally at the top and bottom, and having a closed back and a front provided with mica or other transparent material, a reflector secured to the said back on the inner side, and a burner arranged in the base thereof, the parts being arranged for joint operation so as to avoid opening the oven-door to throw the light therein.

330,758. PURIFIER AND HEATER FOR FEED-WATER. JOHN P. WARNER, Philadelphia, Pa., assignor of five-eighths to Edward L. Lamb, Washington, D. C., and John F. Dusendorf, Norfolk, Va. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a heater for feed-water, the removable head having jet-nozzle surrounded by a closed shield, F, secured to said head, as shown, in combination with a vessel, A, containing diaphragms and filtering material, with steam-pipes and feed-pipes, all arranged substantially as specified.

2. In a feed-water heater and purifier, the vessel A, consisting of a T-piece, B, the cylindrical pieces C C', and removable head D, with connections for steam and water pipes, substantially as set forth.

3. The combination of the vessel A, constructed as shown, with jet-nozzle E', shield F, steam-pipe G, with its branches, and feed-pipe H, all arranged substantially as and for the purpose specified.

4. The combination of a vessel, A, constructed as shown, the perforated jet-nozzle E', the shield F, steam-pipe G, and branches *g g'*, and the feed-pipe H, arranged to pass upward through the diaphragms I, with the surface and bottom blow-off pipes, all substantially as specified.

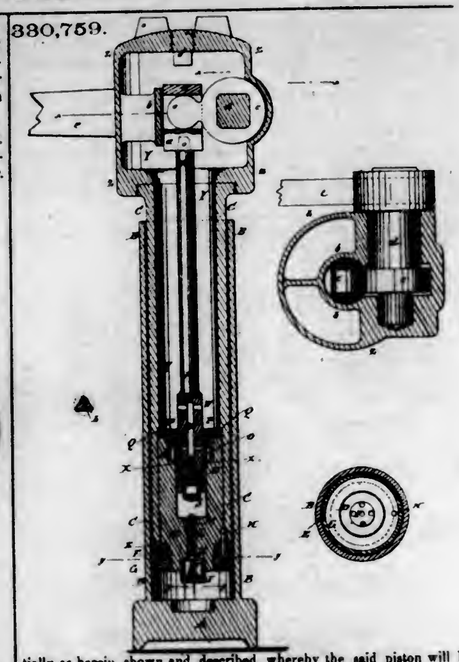
5. In a feed-water heater and purifier, the combination of water and steam supply pipes, the feed-pipe, and the surface and bottom blow-off pipes connected to a vessel having T-piece B, cylindrical parts C C', and removable head D, all constructed and arranged substantially as and for the purpose set forth.

330,759. HYDRAULIC JACK. JOHN WEBER, New York, and HARRISON TRAVER, Brooklyn, assignors to Richard Dudgeon, New York, N. Y. Filed Sept. 26, 1884. (No model.)

Claim.—1. In a hydraulic jack, the piston R, having a longitudinal perforation or channel, U, closed at its lower end by a valve, T, and the transverse perforations V W, connected with said longitudinal perforation, in combination with the ram C, the pump-barrel D, having the enlarged piston-receiving chamber, and provided at the upper end of said enlarged chamber with the shoulders X X, the enlargement of said chamber having packing disposed to coincide with the perforations V of the piston, and gland P, arranged in the ram intermediately of the perforations V W, substantially as and for the purpose set forth.

2. In a hydraulic jack, the combination, with the countersunk upper end of the pump-barrel D, the piston R, and the ram C, having shoulder Q, of the U-shaped ring-packing O and the gland P, substantially as herein shown and described, whereby the said piston will be securely packed and the packing can be readily renewed, as set forth.

330,759.



3. In a hydraulic jack, the combination of a bearing for supporting and guiding the upper end of the piston-rod, said bearing being located within the head of the jack and open at its upper and lower sides, so that the end of the piston may pass freely through it, a pistou, R, the upper end whereof is received within and supported and guided by the said bearing, and a lever, *e*, provided with a fulcrum-pin, *d*, and arm *c*, substantially as shown and described, whereby the piston will be made to move in lines coincident with the axis of the pump, substantially as and for the purposes set forth.

4. In a hydraulic jack, the combination of a piston having a longitudinal liquid-passage therein, closed at its lower end by a valve, and transverse liquid-passages in the piston connecting the longitudinal passage with the exterior of the piston above the valve, and a pump, the chamber whereof is of greater diameter than that of the piston, and a packing for the piston, the transverse passages being located in the piston at such points that when the ram is being pumped up neither of the passages connects with the chamber of the pump, but when the piston is depressed to the end of its downstroke then the lower transverse passage will connect with the chamber of the pump and the upper transverse passage with the reservoir of the jack, substantially as and for the purposes set forth.

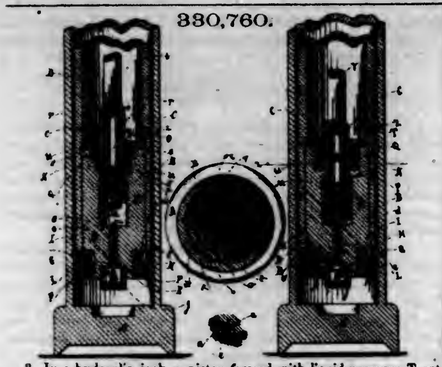
5. In a hydraulic jack, a plunger provided with a longitudinal liquid-passage closed at its lower end by a valve, and transverse liquid-passages connecting with the longitudinal passage, said transverse passages not connecting with the pump-chamber during the pumping-up operation, an enlarged pump-chamber, so that the liquid can pass upwardly between the lower end of the piston and the sides of the enlarged pump-chamber, and a lower downwardly-opening valve located in the base of the pump-chamber provided with a stem which projects upwardly into the pump-chamber, as and for the purposes set forth.

330,760. HYDRAULIC JACK. JOHN WEBER, New York, N. Y., assignor to Richard Dudgeon, same place. Filed June 15, 1885. (No model.)

Claim.—1. In a hydraulic jack, the combination of a piston formed with liquid-passages T, cut in the wall thereof, and a longitudinal liquid-passage through the piston, closed with a valve at its lower end, and a pump, D, formed with an enlarged chamber, and a packing for the piston, said packing being attached to the pump and bearing against the piston, substantially as and for the purposes set forth.

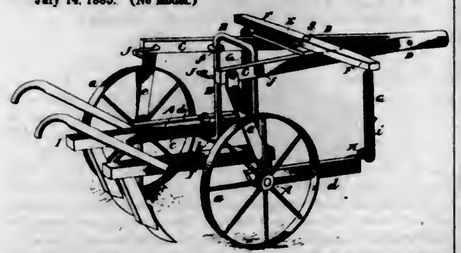
2. In a hydraulic jack, the combination of a packing, Q, resting against a shoulder formed on the pump and confined between the said shoulder and a gland, R, placed above it, the pump and the ram being provided with a thread, *d*, and a piston having water-passages T cut in its outer wall, and a longitudinal water-passage through the piston, closed with a valve at its lower end, substantially as and for the purposes set forth.

330,760.



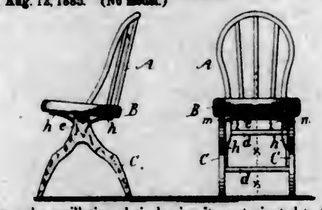
3. In a hydraulic jack, a piston formed with liquid-passages T cut in its outer wall and a longitudinal liquid-passage through the piston, closed by a valve at the lower end, and a pump, D, formed with an enlarged chamber, and a packing for the piston attached to the pump and bearing against the piston, in combination with a downwardly-opening valve located at the base of the pump-chamber, the stem whereof extends into the pump-chamber and provided with liquid passages formed in the stem, substantially as and for the purposes set forth.

330,761. CULTIVATOR. CURTIS WHITEHALL, Newtown, Ind. Filed July 14, 1885. (No model.)



Claim.—In a cultivator, the axles and arch A B, formed of one piece of metal, combined with the braces e, forked tongue C D, and the compound evener consisting of the blocks *d*, bar F, rods G, and hooks H, substantially as set forth.

330,762. OSCILLATING CHAIR. CHARLES E. WHITTLESEY, New Haven, Conn., assignor of one-half to Samuel A. Stevens, same place. Filed Aug. 12, 1885. (No model.)

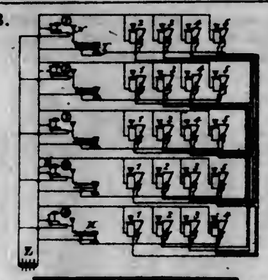


Claim.—An oscillating chair having its seat pivoted to the arched supports C by means of the pivot-rod *e* passed through the pivot-holes *f* and bearings i, and provided with the flat springs *h*, twisted through a quarter-turn, one attached to the forward leg of one of the supports, with its other end acting against the rear part of the seat, and the other fastened to the rear leg of the opposite support, and bearing against the forward part of the seat, substantially in the manner and for the purpose specified.

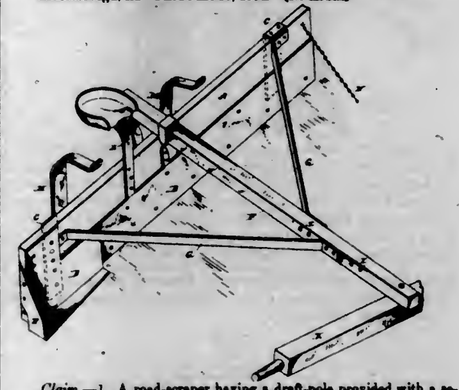
330,763. TELEPHONIC CIRCUIT AND APPARATUS. JOHN R. WOOD, Montreal, Quebec, Canada. Filed Sept. 2, 1885. (No model.)

Claim.—A system of telephonic intercommunication consisting of a number of stations each connected to each one of the others by separate wires, (without the intervention of a central office,) and at each station, a call-bell and telephonic apparatus normally out of circuit, and a number of magnets, armatures, drop-levers, and push-buttons to correspond with the number of stations, each of said push-buttons operating to cause one of said drop-levers to fall, and thereby connect the calling station with any of the others at the will of the operator, substantially in the manner specified.

330,763.



330,764. ROAD SCRAPER AND LEVELER. WILLIAM S. WORLEY, Hiusborough, Ill. Filed June 18, 1884. (No model.)



Claim.—1. A road-scraper having a draft-pole provided with a series of holes and braced on each side, and also passing through a socket on the scraper or leveler board and projecting to the rear, where it is also braced, substantially as and for the purpose specified.

2. A road-scraper having a seat, the standard supporting the same being divided and passing on each side the scraper-board to brace it.

3. A road-scraper having a lever pivoted to the lower side of the leveler-board, said lever rounding upward to the rear, so that when forced backward it will raise the said scraper from the ground.

4. A road scraper and leveler having an adjustable tongue secured to and supported by a truck, a ditcher-scoop secured adjustably to one end, a spring-seat with a divided bracing-standard and an elevating lever or levers pivoted to the lower part of a scraper, the said scraper being braced, and having secured to its lower edge a metallic scraping-knife, and having a chain connecting one end of the scraper with the axle to prevent sagging.

330,765. HOEING-MACHINE. DANL. G. ZIMMER, Orangeburg County, assignor of one-half to Robert Copes, Orangeburg, S. C. Filed Mar. 12, 1885. (No model.)

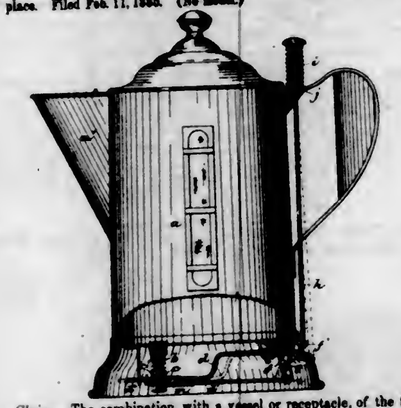


Claim.—1. The combination of the drive-shaft, the drive-wheel thereon, a main gear secured on the drive-shaft laterally to the drive-wheel, the hoe-shaft arranged at an angle to the line of draft, and provided with a pinion meshed with the drive-gear, and the hoe-bar secured on said shaft in line between the drive-wheel and main gear, substantially as set forth.

2. The combination of the drive-shaft, a drive-wheel thereon, a main gear secured on the drive-shaft laterally to the drive-wheel, and a hoe-shaft provided at its forward end with a pinion meshed with the drive-gear, and having its rear end journaled to the framing approximately in line with the drive-wheel, substantially as set forth.

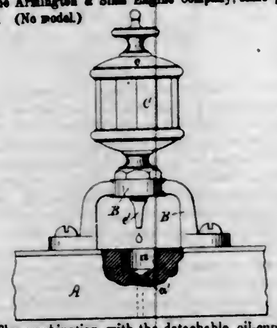
3. The combination, with the main frame and the driving mechanism, of the hoe-shaft arranged at an angle to the line of draft, the hoes secured to the said shaft, the adjustable bifurcated standard T, arranged in rear of the hoes, and the scrapers U, secured upon the arms of the said standard, substantially as and for the purposes set forth.

330,766. VALVE OR COCK FOR LIQUID-RECEPTACLES. LEVI ABBOTT, Boston, Mass., assignor of one-half to George C. Barney, same place. Filed Feb. 11, 1885. (No model.)



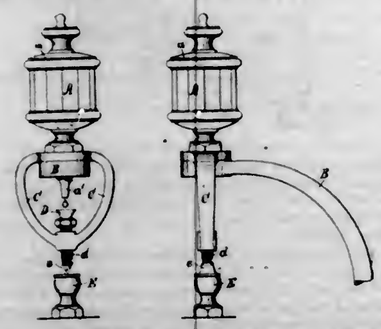
Claim.—The combination, with a vessel or receptacle, of the flexible nozzle or discharge-tube in the lower portion of the vessel, the jaws *c c'*, bearing on opposite sides of said tube, the arms *d d'*, to which said jaws are affixed, the lever *f*, pivoted to a fixed support and to the arms *d d'*, the rod or handle *h*, connected to an arm on said lever, and the spring *i*, whereby said rod, lever, arms, and jaws are normally held in position to cause the jaws to compress the tube, as set forth.

330,767. LUBRICATOR. PARDON ARMINGTON, Providence, R. I., assignor to the Armington & Sims Engine Company, same place. Filed Dec. 9, 1884. (No model.)



Claim.—The combination, with the detachable oil-cup C, provided with a pendent drip-nozzle, *c'*, of the cup-bearing bracket B, secured to a moving part of the engine, said part having the cavity *a* and outlet-duct *a'*, for the purpose described.

330,768. LUBRICATOR. PARDON ARMINGTON, Providence, R. I., assignor to the Armington & Sims Engine Company, same place. Filed Dec. 9, 1884. (No model.)



Claim.—The combination, with the detachable oil-cup A, having the pending drip-nozzle *a'*, of the arm B, secured to a fixed portion of the engine and bearing the frame C, which carries on its lower part the wick-tube D, adjustable thereon in the field of the wiper-cup E, for the purpose described.

330,769. WEATHER-STRIP. JOHN Y. BASSELL, Leesburg, Va., assignor to Rebecca G. Bassell, same place. Filed Oct. 6, 1885. (No model.)



Claim.—1. In a weather-strip, the combination of a single or double thickness of sheet-rubber with a metal body having the turned-up portion B, between which and the body of the metal the rubber is clamped, the said turned-up portion being provided with prongs struck up from its surface after the rubber has been clamped, so as to cause the prongs to penetrate the rubber and prevent it from being withdrawn, substantially as described.

2. In a weather-strip, the combination, with one or more thicknesses of sheet-rubber, of the metal body formed substantially concave in cross-section and having the turned-in and rounded inner edge, *a*, and the turned-in outer portion, *b*, between which and the body of the metal the thickness or thicknesses of rubber are clamped, said portion *b* being provided with prongs struck up from the metal and caused to penetrate the rubber and prevent its withdrawal, substantially as described.

3. In a weather-strip, the metal body having the prongs on its turned-in outer portion, *b*, and having also the prongs formed at the openings for the passage of the securing-nails, substantially as described.

4. The combination, with the rubber, of the metal body having the turned-in portion *b*, provided with the securing-prongs arranged in pairs, and having also prongs formed at the openings through which the securing-nails pass, the said last-named prongs co-operating each with a pair of the first-mentioned prongs, substantially as described.

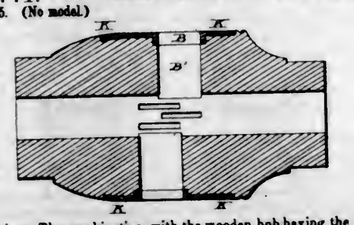
330,770. SHEET-METAL STOVE-PIPE. JOHN S. BROOKS, Brooklyn, N. Y., assignor to Frances A. Estabrook, same place, and W. T. Mersereau & Co., New York, N. Y. Filed May 27, 1884. (No model.)



Claim.—1. As a new article of manufacture, a stove-pipe section made of sheet metal embossed with any desired design, and coated and polished in any suitable manner, whereby increased strength and ornamental appearance are obtained, substantially as hereinbefore set forth.

2. As a new article of manufacture, a stove-pipe section made of sheet metal embossed with any desired design, and coated and polished in any suitable manner, the said embossing and polishing extending over the whole surface of the pipe, excepting only that part which enters the next section to form a joint.

330,771. HUB. ARTEMAS M. BROWN, Ottawa, Ohio. Filed Aug. 17, 1885. (No model.)



Claim.—The combination, with the wooden hub having the peripheral groove and the recesses therein, of the spoke-securing band having concentrating-wards on its inner surface to enter the said recesses and arranged in the groove, and the narrow bands also arranged in the groove, and overlapping each edge of the spoke-securing band, substantially as specified.

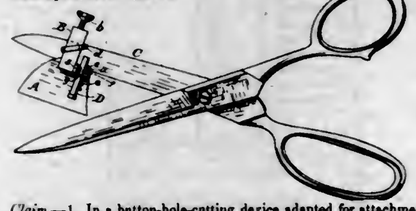
330,772. SWEAT-PAD FASTENER FOR HARNESS. RALPH BROWNSON, St. Paul, Minn., assignor of one-half to Peter R. L. Hardenbergh, same place. Filed Aug. 14, 1885. (No model.)



Claim.—A sweat-pad fastener consisting of the straps a' a^3 a^4, united by overlapped joints a^3 a^4, said strap a^3 being attached by one

end to a sweat-pad, C, and said straps a' and a^3 adapted to be clamped to the collar A' A^2 by the pressure of the hames B, substantially as and for the purpose set forth.

330,773. BUTTON-HOLE CUTTER. GEORGE E. CORBIN, Utica, N. Y. Filed Apr. 6, 1885. (Model.)



Claim.—1. In a button-hole-cutting device adapted for attachment to shears, in combination with a cutter-blade, a clamping device having a vertical screw, *b*, a groove for receiving the edge of the shear-blade, and an adjusting-screw to press against the side of the shear-blade, substantially as and for the purpose described.

2. In combination with the cutter-blade provided with a clamping device, substantially as shown, a sliding gage provided with projections *c*, and the holder *s*, having a notch, *f*, substantially as shown and described.

330,774. TOOL-HANDLE. FRANK CROWIN, Deming, N. Mex. Filed Aug. 9, 1884. (Model.)



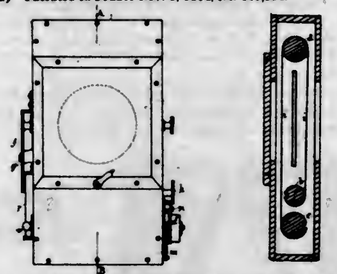
Claim.—1. In a tool-handle, the combination, with the plate B and the ratchet-wheel E, socketed to receive the head of a tool, of the pawls D, hinged to plate B, the spring F, and the two-armed slide C, substantially as described.

2. In a tool-holder, the slide-plate B, constructed with slots *b b*, to hold the edges of the pawls D and permit them to swing thereon, in combination with the spring-pins G, held centrally to said plate and having their end projecting through holes in the pawls, substantially as shown and described.

3. In a tool-holder, the spring F, attached by its extremities to the pawls D, for drawing the pawls against the opposite sides of the ratchet-wheel, in combination with the slide C, having inclined forks *c c*, and the ratchet-wheel E, substantially as shown and described.

4. In a tool-handle, the plate B B', bent at a right angle, and having its part B slotted for the slide C, and grooved at *b*, and its part B' apertured for the tool-head, as set forth, whereby all the working parts can be assembled on said plates before attaching the same to the stock of the handle.

330,775. INSTANTANEOUS SHUTTER FOR PHOTOGRAPHY. WALTER DANRY and ALFRED LEDUC, Lille, France. Filed Apr. 22, 1885. (No model.) Patented in France Nov. 8, 1884, No. 165,194.

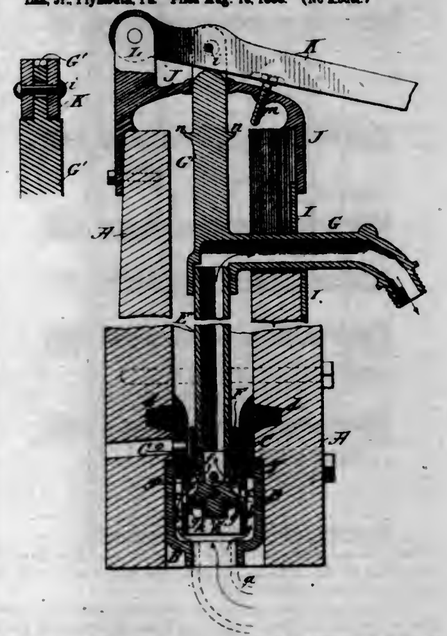


Claim.—1. The combination of the rollers *a*, *b*, and *c* with the curtain *i*, said curtain being passed from roller *b*, over roller *a*, and down to roller *c*, forming a double fold, each fold having a circular opening, with mechanism for winding the curtain on or off the rollers *b c*, whereby the openings pass each other in front of the lens, for the purpose set forth.

2. The combination, with the rollers and curtain, of the barrel *d*, the spring, the pin *d'*, and the graduated disk *m*, for the purpose set forth.

3. An instantaneous shutter for use in photography, consisting of a box or casing containing a double curtain, *i*, mounted on three rollers, *a b c*, the roller *b* being provided with a handle, A, by which to operate the curtain, and the roller *c*, having a spring-barrel, *d*, and pawl *n*, as set forth.

330,776. SELF-CLOSING HYDRANT. JOHN DOWLING and JAMES LEE, Jr., Plymouth, Pa. Filed Aug. 18, 1885. (No model.)



Claim.—1. In a hydrant, the combination of the stock A, cap J provided with adjustable set-screw *m* and projection L, lever K, pivoted into said projection, spout G, having extension G', fashioned with lugs *n*, passing through a perforation in cap J and secured pivotally to the lever K, the pipe E, and the valve D, all constructed, arranged, and operating substantially as shown and described.

2. As an improvement in hydrants, the automatically-closing valve herein described, in combination with devices consisting of a hand-lever and adjusting-screw adapted to so regulate the valve as to relieve it of all or any desired portion of the closing-pressure and remain stationary, as hereinbefore specified.

3. In a hydrant, the nozzle G, having extension G', provided with projection *n*, in combination with the hand-lever K, cap J, and adjusting-screw *m*, all arranged and operating as specified.

330,777. PAPER-FOLDING MACHINE. WELLINGTON DOWNING, Erie, Pa., assignor to the Brown Folding Machine Company, (Limited,) same place. Filed Nov. 28, 1884. (No model.)

Claim.—1. In a paper-folding machine, the combination, substantially as set forth, of a stop for limiting the forward movement of an incoming sheet, and a stop for preventing the said sheet from rebounding from the said front stop.

2. In a paper-folding machine, the combination, substantially as set forth, of an adjustable stop for limiting the forward movement of an incoming sheet, an adjustable stop for preventing the said sheet from rebounding from the said front stop, and adjustable side guides which control the position of the sheet relative to the folding-rollers.

3. In a paper-folding machine, the combination, substantially as set forth, of an adjustable front stop, an adjustable back stop, and means, substantially as shown, for actuating both of said stops simultaneously.

4. In a paper-folding machine, the combination, substantially as set forth, of an adjustable front stop, an adjustable back stop, adjustable side guides, and means, substantially as shown, for actuating all of said stops and guides simultaneously.

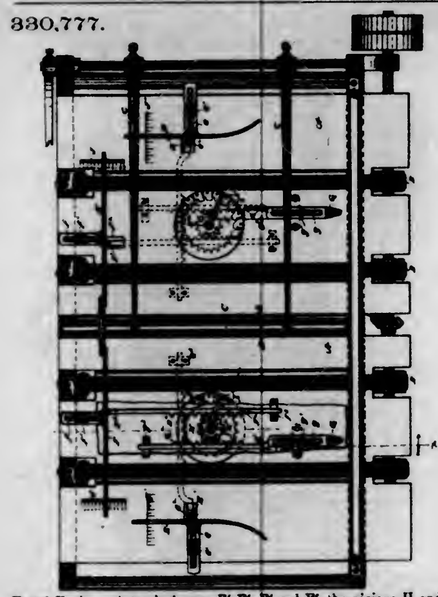
5. In a paper-folding machine, the combination, substantially as set forth, of adjustable front stops, adjustable side guides, and means, substantially as shown, for actuating said guides and stops simultaneously.

6. In a paper-folding machine, the combination, substantially as set forth, of the adjustable stops F and G, the rack-toothed arms F' and G', the pinion H', the crank-arm I', and the dial I.

7. In a paper-folding machine, the combination, substantially as set forth, of the adjustable front stops F and F, the adjustable side guides, E and E, the rack-toothed arms F' F', E' and E', and the pinions H and H' and H and H'.

8. In a paper-folding machine, the combination, substantially as set forth, of the adjustable front stops, F and F, the adjustable side guides

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E and E, the rack-toothed arms F' F', E' and E', the pinions H and H' and H and H', the crank-arms I' and I', the dials I and I with the equally spaced and numbered stops *i i*.

9. In a paper-folding machine, the combination, substantially as set forth, of the adjustable front stops, F and F, the adjustable side guides E and E, the rack-toothed arms F' F', E' and E', the pinions H and H' and H and H', the crank-arm I, and the indicating-scales J and J or J' and J.

330,778. APPARATUS FOR MAKING GAS. WALTER P. ELLIOTT, New Brunswick, N. J. Filed Mar. 6, 1885. (No model.)

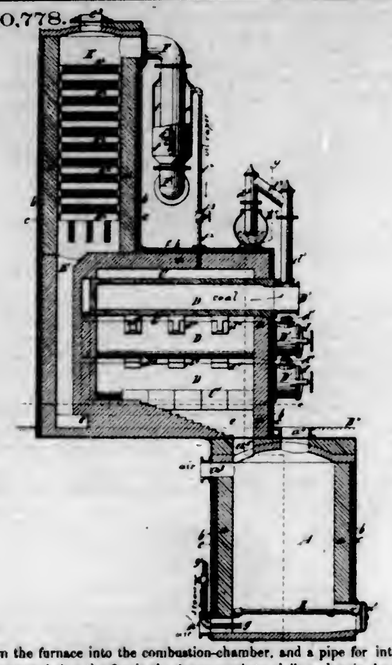
Brief.—Coal is distilled in closed retorts and the resulting gas is passed separately to the main. Water-gas is generated in the fuel chamber or furnace below the retort-chamber, is carbureted with oil-vapor in the retort-chamber, and the mixed gas and vapor is converted into a fixed gas in the fixing-chamber. The retorts are heated by products of combustion from the fuel and by the hot water-gas circulated around them.

Claim.—1. In a gas-making apparatus, the combination, with a generating-furnace, and a retort-chamber separate therefrom but communicating at one end therewith, of a number of closed retorts arranged in said chamber with their mouths presented outside the chamber, and pipes for conducting from said retorts gas produced by the distillation of coal therein, pipes for introducing air-blast both above and below the fire in the furnace, a pipe for introducing steam below the fire in the furnace, and a fixing-chamber containing refractory material and communicating with the farther end of said retort-chamber, and through which the products of combustion and decomposition are caused to pass from the retort or combustion chamber, substantially as herein described.

2. In a gas-making apparatus, the combination, with a generating-furnace and a combustion-chamber separate therefrom but communicating at one end therewith, and a fixing-chamber containing refractory material, and which extends upward from the other end of the combustion-chamber, and from the upper end of which leads a smoke-stack and an outlet-pipe for gas, of a number of closed retorts arranged in the combustion-chamber, and pipes for conducting away the gas produced by the distillation of coal therein, pipes for introducing air-blast in the furnace below the fire, for adding air-blast to the non-consumed gaseous products as they pass from the furnace into the combustion-chamber, and a pipe for introducing steam below the fire in the furnace, substantially as herein described.

3. In a gas-making apparatus, the combination, with a generating-furnace and a combustion-chamber separate therefrom, but communicating at one end therewith, and a fixing-chamber containing refractory material and extending upward from the other end of said combustion-chamber, of a number of closed retorts arranged in the combustion-chamber, and pipes for conducting away the gas produced by the distillation of coal in said retorts, a pipe for introducing liquid hydrocarbon or vapor directly into said combustion-chamber around the heated retorts, pipes for introducing air-blast below the fire in the furnace and for introducing air-blast to mingle with the non-consumed gaseous products as they pass from the furnace into the combustion-chamber, and a pipe for introducing steam below the fire in the furnace, substantially as herein described.

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4. In a gas-making apparatus, the combination, with the generating-furnace A and the combustion-chamber C, communicating at one end with the furnace by a throat or passage, a^3, and arranged above the same, of the closed retorts D, arranged in the combustion-chamber, flues *e*, extending rearward at the bottom of the combustion-chamber below the said retorts, a fixing-chamber, E, extending upward from the farther end of the combustion-chamber, inlet-pipes a^2 a^3, for admitting air-blast above and below the fire in the furnace, and a pipe for admitting steam below the fire in the furnace, substantially as herein described.

5. In a gas-making apparatus, the combination, with the furnace A and its inlets a^2 a^3, of the combustion-chamber C, communicating at one end with the furnace by a throat or passage, a^3, a fixing-chamber, E, containing refractory material and extending upward from the other end of the combustion-chamber, closed retorts D, arranged in the combustion-chamber, flues *e*, extending rearward at the bottom of the combustion-chamber below the retorts and communicating with the fixing-chamber E, a smoke-pipe and a gas-outlet pipe, F, at the top of the fixing-chamber, a jacket, *f*, surrounding the pipe F, and the pipe f^3, for conducting hydrocarbon vapor from said jacket and delivering it directly into the combustion-chamber C, around the retorts therein, substantially as herein described.

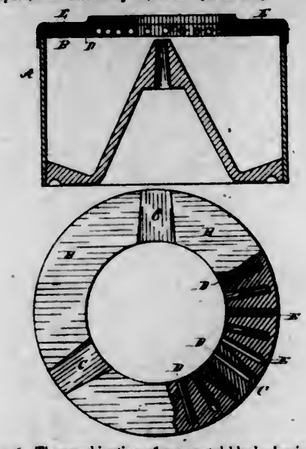
330,779. CENTRIFUGAL MACHINE FOR TESTING MILK AND CREAM. JOHN D. FREDERIKSEN, Little Falls, N. Y., and PETER RASCH, Philadelphia, Pa. Filed July 19, 1884. (No model.)



Claim.—1. The combination of the cylinder of a centrifugal creamer provided at its upper end with an annular inwardly-projecting flange, an annular frame composed of blocks having radiating recesses for the reception of test-tubes, and doubled clamping-springs secured to the upper inner edges of the blocks and clamping the flange of the cylinder, as and for the purpose shown and set forth.

2. The combination, in an apparatus for testing milk, of the described annular frame having radiating recesses or bores opening in the inner side of the frame, the said frame fitting within the cylinder of a centrifugal creamer, a number of metallic casings fitting in the bores or recesses, a number of test tubes or bottles of a diameter somewhat smaller than the diameter of the casings, and flanged stoppers fitting over the mouths of the casings and having soft packings closing the mouths of the bottles, as and for the purpose shown and set forth.

330,780. CENTRIFUGAL MACHINE FOR TESTING MILK AND CREAM. JOHN D. FREDERIKSEN, Little Falls, N. Y., and PETER RASCH, Philadelphia, Pa. Filed July 19, 1884. (No model.)

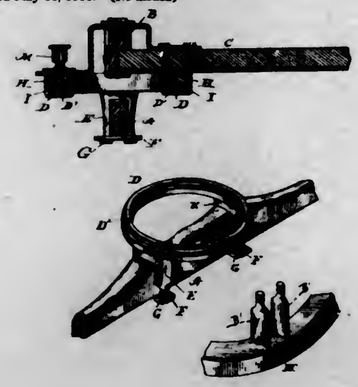


Claim.—1. The combination of segmental blocks having a number of radiating cylindrical bores or recesses for the reception of test-tubes, and having their ends cut off obliquely, the said blocks adapted to fit within the sides of the cylinder of a centrifugal creamer, with wedge-shaped blocks having radiating cylindrical bores or recesses for the reception of test-tubes, and adapted to fit between the oblique ends of the segmental blocks, as and for the purpose shown and set forth.

2. The combination, with the cylinder of a centrifugal creamer, of an annular frame fitting within it and provided with a number of radiating recesses, and a number of test-tubes fitting in the said recesses, as and for the purpose shown and set forth.

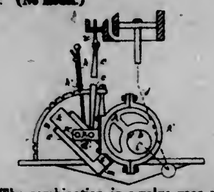
3. The combination of the cylinder of a centrifugal creamer, a number of segmental blocks adapted to fit within the cylinder, having a number of radiating bores or recesses opening at their inner faces for the reception of test-tubes, and having their ends cut off diverging toward their outer peripheries, wedge-shaped blocks having bores or recesses radiating from their inner sides, and test bottles or tubes fitting within the bores or recesses, as and for the purpose shown and set forth.

330,781. FIFTH-WHEEL. BENJAMIN F. GOSHORN, Martinsburg, Pa. Filed July 11, 1885. (No model.)



Claim.—The improved fifth-wheel herein described, consisting, essentially, of the lower ring, D, having the inner vertical annular flange, D', and the depending arms E, formed integral, the cap-ring H, having the depending annular flanges to receive the said vertical flange of the ring D, and integral securing-arms B' on its opposite side, the plates to receive the integral branches of the respective rings, and nuts for securing the same, all arranged and adapted to serve in the manner substantially as described.

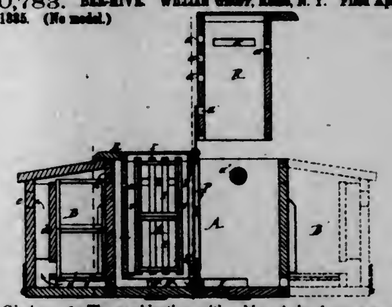
330,782. VALVE-GEAR FOR ENGINES. JOHN GEBE, Minneapolis, Minn., assignor of one-half to George H. Eastman, same place. Filed Aug. 15, 1885. (No model.)



Claim.—1. The combination, in a valve-gear, with an eccentric and rock-shaft, of a guide having a slide-channel widened interiorly and extending to the ends of said guide, removable covers for the ends of said channel, a slide-block in said channel, and a sliding plate on said guide, carried by said slide-block, substantially as set forth.

2. In a valve-gear, the combination of the following elements: a rock-shaft, a guide carried thereon having the channel *i*, the caps *m*, the slide-block *f*, the sliding plate *k*, and the eccentric arm *a*, pivoted to said slide-block and plate, and having the slot *a'* and the cap a^3, substantially as set forth.

330,783. BEE-HIVE. WILLIAM GROFF, Rome, N. Y. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, with a hive, A, having a removable central partition, P, of the removable cases R, having comb-frames I and ventilators *a*, and the surplus-honey boxes or supplemental hives B, upon the sides of the main hive and communicating therewith at the bottom in proximity to the entrances, as set forth.

2. The combination, with a hive having removable partition P, removable cases R, hoods H, and supplemental hives B, of the hinged double bottom C C, substantially as set forth.

330,784. BOBBIN. THOMAS HALL, Lawrence, Mass. Filed Oct. 9, 1884. (No model.)

Brief.—To protect the end of the bobbin, its end is slitted, and a circumferential groove is formed around the slitted portion and provided with a ring into which the slitted portion is sprung.



Claim.—The combination, with the bobbin A, slitted longitudinally at its upper end and provided with a circumferential groove, B, around such slitted portion, of the ring C, into which the said slitted portion is sprung, and in which it is held by spring-pressure, as set forth.

330,785. WASH-BOARD. ISAAC HUSSEY, Columbus, Ohio, assignor to himself and Frank W. Hussey, same place. Filed June 2, 1885. (No model.)

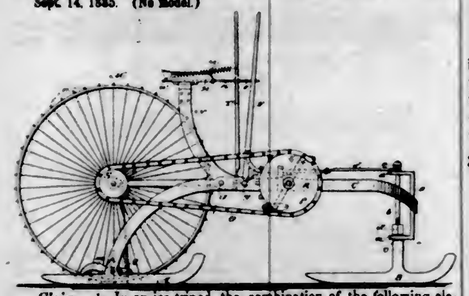


Claim.—1. The combination, with a wash-board having ribs or beads formed on its surface and grooves between said ribs or beads, of brushes

or tufts held in the grooves between the ribs formed on the face of the board, substantially as herein shown and described.

2. The combination, with a wash-board having ribs or beads formed on its surface, of tufts or brushes held in the grooves between the ribs by wires, the wires being in grooves in the back of the wash-board, substantially as herein shown and described.

330,786. ICE-VELOCIPEDE. JOSEPH HUMONG, Camden, N. J. Filed Sept. 14, 1885. (No model.)



Claim.—1. In an ice-triped, the combination of the following elements: main-frame runners A, A', and B, drive-wheel frame K, drive-wheel M, sprockets S and P, chain O, crank-shaft R, lever T, and spring *u*, connected to a folding arm, *u'*, substantially as described.

2. In an ice-triped, the combination of the following elements: main-frame runners A, A', and B, frame K, drive-wheel M, sprockets S and P, chain O, crank-shaft R, lever T, spring *u*, and arm *n*, notched at *o*, substantially as described.

3. In an ice-triped, the combination of the following elements: main-frame runners A, A', and B, frame K, drive-wheel M, sprockets S and P, chain O, crank-shaft R, lever T, spring *u*, arm *n*, notched at *o*, and brakes *m m*, connected to the frame K by rods *q q*, substantially as described.

4. In an ice-triped, the combination of the following elements: main-frame runners A, A', and B, frame K, lever T, brakes *m m*, and rods *q q*, substantially as described.

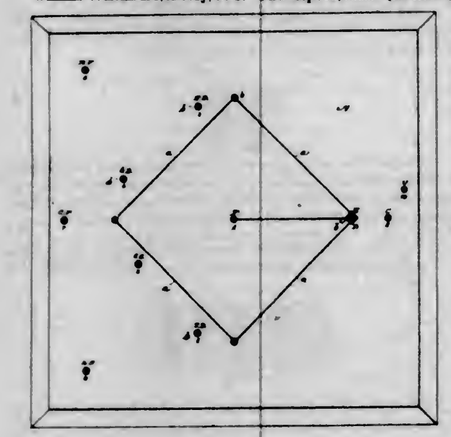
330,787. FABRIC. THOMAS ISHERWOOD, Westerly, R. I. Filed Feb. 8, 1884. (No model.) Patented in Canada June 19, 1882, No. 14,979.

Brief.—Strips are woven on the cloth during the process of weaving the cloth itself, and are connected to the cloth by springing the extra warp-threads for these strips from one surface of the cloth to the other, so as to tie the weft and warp of the strip directly to the cloth, whereby the strength and durability are much increased.

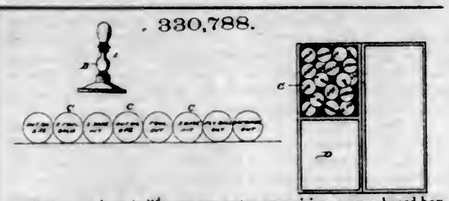


Claim.—A re-enforced cloth made with the main and auxiliary warps and the main and auxiliary wefts, said auxiliary warps forming binders interweaving the re-enforcement and the body of the cloth and common to both surfaces, the said re-enforcements having double the number of warps and double number of fillings as the body of the cloth, substantially as described.

330,788. PARLOR BASE-BALL GAME. FRANCIS B. JACOBUS and WILLIAM V. MCKINLEY, Albany, N. Y. Filed Sept. 25, 1885. (No model.)

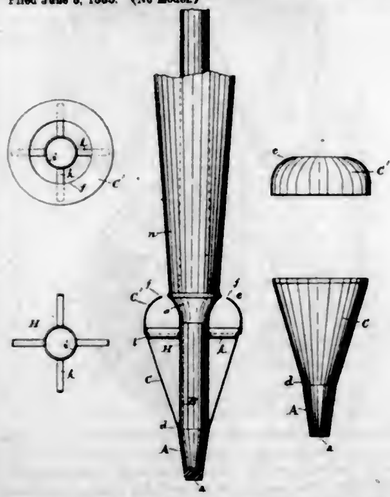


330,788.



Claim.—A base-ball game apparatus comprising a game-board having a diamond-shaped diagram thereon and indicating-characters at proper points to denote the positions of the various players, two sets of figures of different colors, and a number of balls or spheres to be withdrawn from a receptacle, and having words or characters which decide the fate of the player, as set forth.

330,789. UMBRELLA DRIP-CUP. LEVIN T. JONES, Baltimore, Md. Filed June 8, 1885. (No model.)



Claim.—1. An umbrella having in combination a drip-cup and ferrule, both water-tight and rigidly attached together, and a handle-stick, B, having its end entered in the said ferrule and rigidly fastened thereto, as set forth.

2. A metal drip-cup for umbrellas, having its lower end permanently attached to a metal cap-ferrule, and provided with a top part, which is rounded or contracted inward to a rim or opening, as set forth.

3. A metal drip-cup, C, for umbrellas, having its lower end permanently attached to a metal cap-ferrule, A, and a stay to prevent lateral movement and provided with a top part, which is rounded or contracted inward to a rim or opening, as set forth.

330,790. METHOD OF REMOVING HAIR AS A SUBSTITUTE FOR SHAVING. S. RIDGWAY KENNEDY, Philadelphia, Pa., assignor to the S. R. Kennedy Manufacturing Company, Camden, N. J. Filed Mar. 2, 1885. (No specimens.)

Claim.—1. The method of removing the hair as a substitute for shaving, which consists in first applying to the skin a protective film or artificial cuticle, and then applying over that a depilatory substance or compound to remove the hair projecting through the film or cuticle, substantially as and for the purpose described.

2. The method of removing the hair as a substitute for shaving, which consists in applying to the skin a substance or material adapted to form a protective film or artificial cuticle, then applying over this film or cuticle a depilatory substance or compound, and then removing the film or cuticle with the depilatory and the destroyed hair, substantially as and for the the purpose described.

3. The method of removing the hair as a substitute for shaving, which consists in applying to the portion of the skin a film or covering adapted to protect the skin around and among the hairs, then applying over this film or covering a substance or compound adapted to destroy or dissolve hair, and then removing the film with the substance or compound and the destroyed hair from the skin by washing or otherwise, substantially as and for the purpose described.

4. As an improvement in the art of removing hair with a chemical substance or depilatory as a substitute for shaving, the method of preventing possible injury to the skin, which consists in covering the skin with an artificial cuticle before applying the depilatory, substantially as and for the purpose described.

330,791. ADJUSTING-SCREW FOR DIE-PRESSES. FRANK M. LEAVITT, Brooklyn, assignor to Elphalet W. Bliss, New Utrecht, N. Y. Filed Aug. 17, 1885. (No model.)



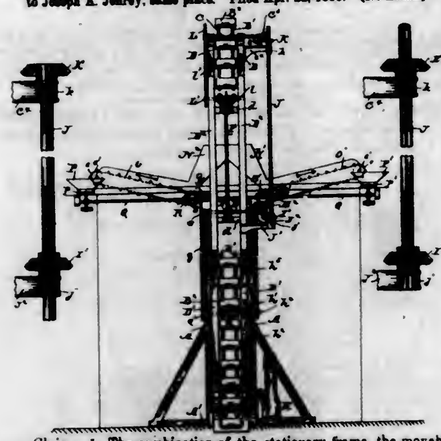
Claim.—1. In a press, the combination, with a crank or eccentric, *f*, and cross-head *c*, and an adjustable screw, *h*, in the connection between the two, of a pinion, *i*, collar *m*, and pawl *t*, substantially as and for the purpose set forth.

2. The combination, with an adjustable connecting-screw, *h*, provided with a pinion or ratchet, *i*, of two loose collars, *m n*, and reversely-acting pawls *t*, arranged and operating substantially as shown and described.

3. The combination, with the screw *h*, having the pinion *i*, of collar or collars *m n*, encircling said pinion, pawl or pawls *t t*, engaging said pinion, and retaining collars *r r*, substantially as shown and described.

4. In a press, the combination, with crank or eccentric *f* and cross-head *c*, of the parts *g h*, jam-nut *o*, pinion *i*, collar *m*, and pawl *t*, arranged and operating substantially as and for the purpose set forth.

330,792. ELEVATOR. BENJAMIN A. LEGG, Columbus, Ohio, assignor to Joseph A. Jeffrey, same place. Filed Apr. 22, 1885. (No model.)



Claim.—1. The combination of the stationary frame, the movable frame, the shaft passing through the movable frame, and the shaft or bar transverse thereto and carried by the movable frame, the two shafts being joined together, substantially as and for the purpose set forth.

2. The combination of the stationary frame, the movable frame, the bar or shaft on the stationary frame about which the movable frame swings, the transverse bar or shaft on the movable frame adapted to be connected with the aforesaid bar at various points to hold the movable frame higher or lower, and means for raising and lowering the last said frame, substantially as set forth.

3. The combination of the stationary frame, the movable frame, the screw-shaft carried by the movable frame, the nut carried by the stationary frame, and the rotating devices which operate said screw, substantially as set forth.

4. The combination of the stationary frame, the movable frame, the screw-shaft secured to one of said frames, the nut secured to the other and adapted to rock, and the power devices which rotate the screw-shaft, substantially as set forth.

5. The combination of the stationary frame, the movable frame, the screw-shaft about the axis of which the movable frame rocks, the gearing mounted about the axis of the said shaft, and the gearing which drives the elevator connected with the aforesaid gearing, substantially as described.

6. The combination of the stationary frame, the movable frame, the shaft or bar about whose axis the movable frame rocks, the gearing mounted upon said axis, the bracket-frame secured to the movable frame to support said gearing, and the sliding shaft, substantially as set forth.

7. The combination of the stationary frame, the movable frame, the bar or shaft about whose axis the movable frame rocks, a wheel, E', and a wheel, I, connected together and mounted upon said axis, the sliding shaft driven by wheel I, and a bracket-bearing connected with the movable frame and also with the wheel I and sliding shaft, substantially as set forth.

8. The combination of the stationary frame, the movable frame, the shaft at the end of the elevator which drives the latter, the screw-shaft by which the elevator is adjusted, and the power-transmitting devices interposed between the screw-shaft and said shaft at the end of the elevator, substantially as described.

9. The combination of the stationary frame, the movable frame, the devices which raise and lower the movable frame, the shaft which drives the elevator, and the sliding shaft which imparts power both to the elevator driving-shaft and to the raising and lowering mechanism, substantially as set forth.

10. The combination of the stationary frame, the sliding frame, the shaft F, shaft *l*, and the shifting-pinions *m m'*, substantially as set forth.

11. The combination of the stationary frame, the sliding frame, the shaft F, adapted to be connected at different points with the stationary frame, shaft *l*, shaft C, and transmitting devices between shaft C and shaft *l*, substantially as set forth.

12. The combination of the stationary frame, the movable frame, the bar or shaft about which the movable frame rocks, the gearing adapted to vibrate about the axis around which the movable frame rocks, the shaft which drives the elevator, and the power-transmitting devices between said gearing and said shafts, substantially as set forth.

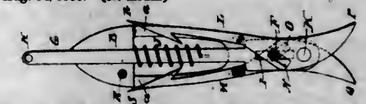
13. The combination of the elevator, shaft C, chain *l'*, shaft *l*, screw-shaft F, and reversible power-transmitting devices interposed between shaft *l* and shaft F, substantially as set forth.

14. The combination, with the delivery-chute, of the diverging hoppers or chutes and the endless carriers which withdraw the material therefrom, substantially as set forth.

15. The combination of the elevator, the receiving-chute which takes the material therefrom, the diverging hoppers or chutes, the carriers which respectively take the material therefrom, and the carriers which carry the material backward away from the last aforesaid carriers, substantially as set forth.

16. The combination of the carriers O O', the chute which feeds both of said carriers, the carriers *p p'*, and a wheel, Q', and mechanism interposed between said wheels and carriers whereby it is adapted to drive them all simultaneously, substantially as set forth.

330,793. FISH-HOOK. CORNELIUS LIE, Trondhjem, Norway. Filed Aug. 14, 1885. (No model.)



Claim.—1. The combination, with an artificial bait, of a bar held in the same to have longitudinal movement, of two hooks pivoted to said bar and having diagonal slots to receive a fixed part of said bait, and of a spring acting on said bar, substantially as shown and described, whereby the hooks are normally held within the bait and projected therefrom when tension is put on a line to which the bait is attached, as set forth.

2. The combination, with an artificial bait, of a bar having its outer end adapted for attachment to a fish-line and slotted near its inner end, two hooks pivoted at their lower ends to the inner end of the said bar and provided each with a diagonal slot, a pin or rivet passing through the said bait and through the slots in the bar and hooks, and of a spring attached to said bar and taking against the head end of the bait, substantially as shown and described.

3. The combination, with the bait A, of the bar G, having slot I, the hooks L and M, pivoted at K to said bar and provided with the slots N and O, respectively, the rivet F, and the spring J, substantially as shown and described.

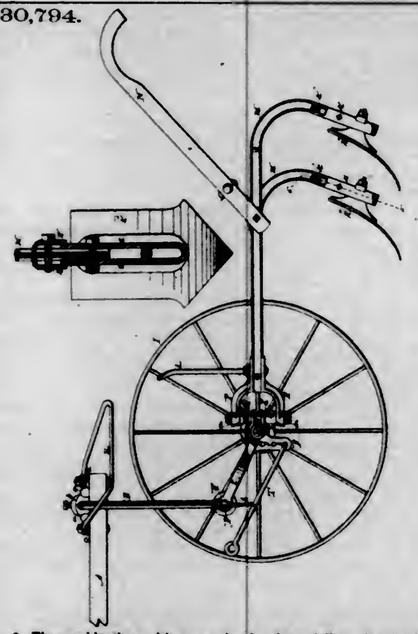
4. The combination, with the artificial bait A, painted with luminous paint, of the bar G, held to have longitudinal movement in said bait, the hooks L and M, having diagonal slots, the spring J, and the rivet or pin F, substantially as shown and described.

5. A combined artificial bait and hook consisting, essentially, of the slotted body A, the bar G, having slot I, the hooks L and M, pivoted to the inner end of bar G and having the diagonal slots N O, the pin or rivet F, and the spring J, all constructed and arranged substantially as shown and described, and for operation as set forth.

330,794. CULTIVATOR. JAMES MACPHAIL, Rockford, Ill., assignor to the N. C. Thompson Manufacturing Company, same place. Filed Jan. 26, 1885. (No model.)

Claim.—1. The combination, with the tongue-beams, of a cross-head consisting of parallel bars united by cross-bars, substantially as herein described, fixed to the rear ends of the beams, as and for the purpose set forth.

330,794.



2. The combination, with a cross-head, substantially as herein described, fixed to the rear ends of the tongue-beams, of a two-part arched bar having independent journal-supports in the cross-head and capable of an independent oscillatory movement therein, substantially as and for the purpose set forth.

3. The combination, with the cross-head and with the two-part arched bar supported to oscillate in the cross-head, of collars fixed to the arched bar to limit their oscillatory movement, substantially as and for the purpose set forth.

4. The combination, with the cross-head consisting of the parallel bars and cross-bars, and with the two-part arched bar capable of a lateral adjustment in their cross-head support, of collars made adjustable on the arched bar to vary the distance between the carrying-wheels, substantially as and for the purpose set forth.

5. The combination, with the cross-head and with the two-part arched bar supported to oscillate in its bearings in the cross-head and capable of a lateral adjustment therein, of collars adjustably fixed to the arched bars within the cross-head to permit a lateral adjustment of the arched bar and limit the oscillatory movement thereof, substantially as and for the purpose set forth.

6. An axle bracket-support, substantially as described, consisting, essentially, of a draft-bar and a sleeve to receive the arching bar, said sleeve and draft-bar having suitable bracket-arm connections, substantially as and for the purpose set forth.

7. The combination, with the supporting-wheels and the arched bar, of an axle-arm bracket-support consisting of a sleeve, rearwardly-projecting arms, and a tubular draft-bar, all substantially as and for the purpose set forth.

8. The combination, with the shovel-beams, of a shovel-supporting sleeve pivotally connected with the foot of the beam, frictional clamping-jaws to engage the beam and overlap the sleeve, and a clamping screw-bolt to fix the clamping-jaws and regulate their holding force, substantially in the manner and for the purpose set forth.

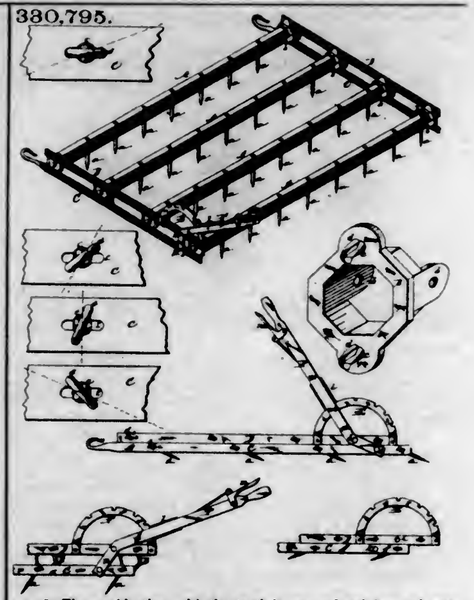
9. The combination, with the axle-arm bracket-support consisting of the sleeve, the rearward-projecting arms, and tubular shaft, of a draft-link having an adjustable connection with the said bracket and a flexible support, substantially as set forth.

330,795. HARROW. JAMES MAGHAR, Rockford, Ill., assignor to the N. C. Thompson Manufacturing Company, same place. Filed Feb. 26, 1885. (No model.)

Claim.—1. The herein-described coupling-socket, having a central opening to receive a beam, and stud-journals formed with securing-heads, substantially as set forth.

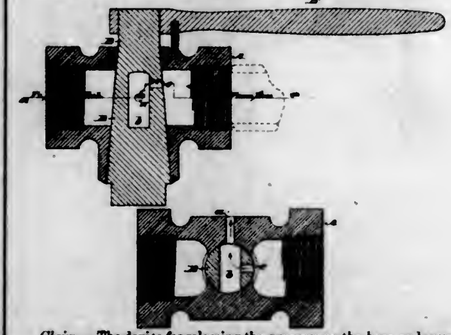
2. The combination, with the tooth-beams and with parallel end bars formed with openings, as described, of coupling-sockets fitted to the ends of said beams, and formed with stud-journals adapted to project through the opening of the end bars, and having inclined heads, substantially as set forth.

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3. The combination, with the tooth-beams and end bars, of coupling-sockets provided with headed stud-journals, and serving to support the beams and secure the beams and bars together, and a segment-ratchet, a hand-lever, and detent, substantially as set forth.

330,796. HYDRAULIC, STEAM, AIR, AND VACUUM BRAKE. HARRY C. MCCARTY, Williamsport, assignor of one-half to John F. Bickal Morton, Pa. Filed Mar. 20, 1884. (No model.)

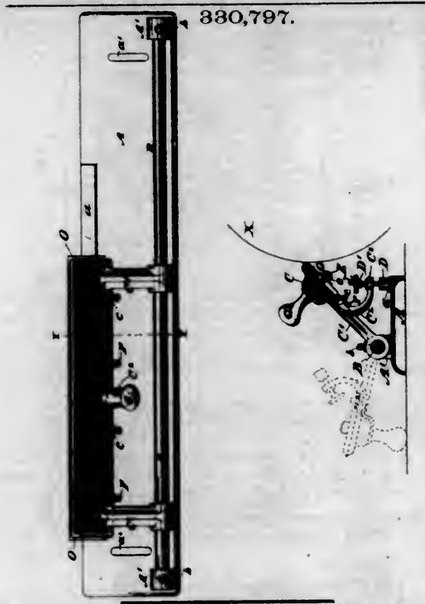


Claim.—The device for releasing the pressure on the hose and couplings of a steam, hydraulic, air, or vacuum brake, the same consisting of the shell A, having the opening *a* on one side, in combination with the plug B, having transverse opening *b*, and opening *c*, the said openings *a* and *c* not registering during any portion of the rotation of the said plug B, substantially as and for the purpose set forth.

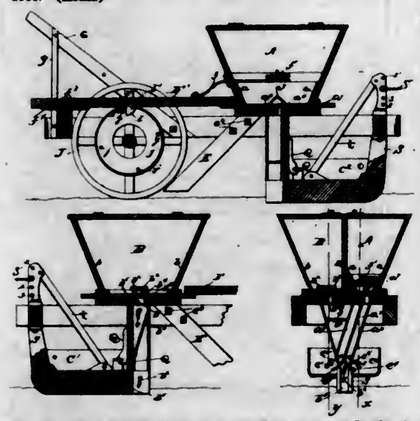
330,797. PLANER-KNIFE GRINDER. GEORGE H. MILLS, Concord, N. H., assignor to Henry F. Campbell, Boston, Mass. Filed Mar. 24, 1885. (No model.)

Claim.—In a device for holding planer-knives while grinding, the combination of a knife-rest having a T-groove running longitudinally in its lower face, adapted to receive the heads of bolts for clamping a knife thereon, and arms projecting from its lower edge, near either end thereof, and a rod upon which the outer ends of said arms are mounted, and rendered capable of a reciprocal and rotative motion by the hand of an operator, with a suitable bed-plate having elevated bearings in which said rod is mounted, and mechanism, substantially as described, for adjusting the height of said knife-rest relative to the axis of a grindstone, consisting of a curvilinear arm projecting from the lower edge of said knife-rest, about midway from either end thereof, toward a grindstone, and carrying a screw resting upon a suitable slide-rest adapted to move upon a finished raised surface provided for the purpose upon said bed-plate, whereby said knife-rest may be supported at an angle of about forty-five degrees, as and for the purpose set forth.

330,797.



330,798. CORN-PLANTER. GEORGE F. NUTTING, Randolph, Vt., and PEMBROKE S. REID and JOEL GARFIELD, Worcester, Mass. Filed Feb. 5, 1885. (Model.)



Claim.—1. The combination of the hoppers A and B, the feed-plates *a* b^4, and their supports, with the wheel J and the vibrating lever H, which latter serves as a means of alternately operating the feed-plates, substantially as described.

2. The combination of the hoppers and the feed-slides, the latter being provided with the spring-catches I, which serve alternately as propellers and idlers, with the vibrating lever H and the wheel J, substantially as described.

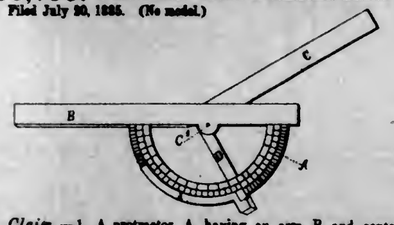
3. In a corn-planter, the plow-blade S, in combination with the hoppers A and B, the parallel conductors a^3 a^4, extending from one of the hoppers, and the conductor b^3, extending from the other hopper, the delivery-spout of the latter extending below and between those of the former, substantially as described, whereby the corn is deposited below the fertilizer, substantially as described.

4. In a corn-planter, the hoppers A and B, in combination with the horizontally-extended parallel vibrating side pieces, F and F', provided with the catches I, having the springs I^3 and the serrated plates f^4, in combination with the vibrating lever H, provided with cogs *h*, substantially as set forth.

5. In a corn-planter, the combination of the hoppers A and B, the parallel conductors a^3 a^4, the oppositely-inclined conductor b^3, the plow-blade S, having wings C' C^2, the bottoms of which are secured to the plow-blade S at a distance above the lower portion of the plow S, and the coverers E E', which are curved in opposite directions, substantially as described, whereby the corn is deposited below the fertilizer and the latter is agitated and covered out of contact with the corn, as set forth.

6. In a corn-planter, the combination of the hopper, the frame, and the plow-blade, of the brace *t*, extending diagonally across the two outer portions of the plow-blade, with the conductors, the wings, and the wheel J, substantially as described.

330,799. PROTRACTOR. GEORGE B. ORENDORFF, Batavia, N. Y. Filed July 20, 1885. (No model.)

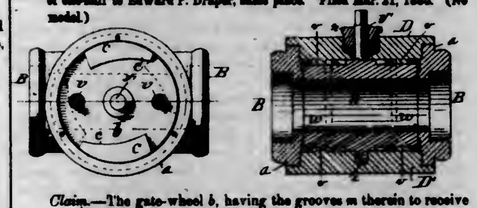


Claim.—1. A protractor, A, having an arm, B, and center C^2, combined with a movable arm, C, pivoted at the center C^2, and carrying a short arm, D, at right angle, and provided with the curved indicator-arm *d*, substantially as shown, for the purpose specified.

2. The movable arm C, having the rigid arm D at right angles thereto at the pivoted end, and having one of its edges in line with the true center of the joint, as shown and described.

3. The angular piece consisting of the arms C and D and curved indicator-arm *d*, and having a center, C^2, at the convergence of the angle formed by the inner edges of the arms C and D, whereby it is pivoted to arm B, as shown and described.

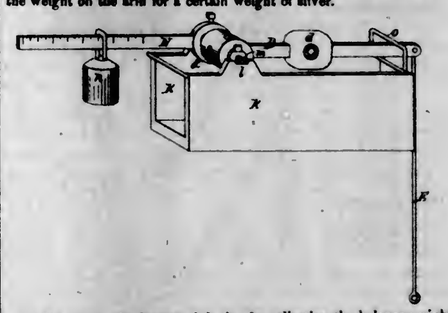
330,800. WATER-GATE. RICHARD PAYNE, Holyoke, Mass., assignor of one-half to Edward P. Draper, same place. Filed Mar. 21, 1885. (No model.)



Claim.—The gate-wheel *b*, having the grooves *m* therein to receive the gates, and having a pivot-connection with both heads of the gate, the gates *c*, of segmental form, having on each end thereof a cam-flange, *e*, the heads D D', each having the two pins *v* thereon, for engagement with said cam-flanges on the gates, and the barrel *a*, all combined and operating substantially as set forth.

330,801. DEVICE FOR ADJUSTING COTTON-SLIVER EVENERS. EZEKIEL P. PHILLIPS, Blackstone, Mass., assignor to Henry C. Phillips, same place. Filed June 9, 1882. (No model.)

Brief.—A shaft carries a graduated arm having an adjustable weight, and is arranged to receive the weighted trumpet-beam of an evener in such manner that the arm shall counterbalance the trumpet-beam, and the weight on the beam may be adjusted correspondingly to the weight on the arm for a certain weight of sliver.

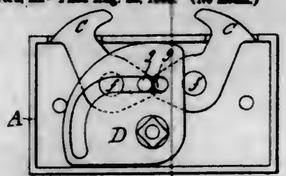


Claim.—1. An improved device for adjusting the balance-weights of cotton-sliver eveners, consisting of a suitably-mounted horizontal shaft constructed to receive and permit the removal of the end of a trumpet-beam, and having a fixed radial arm graduated, and provided with an adjustable weight in correspondence with various weights, sizes, densities, or numbers of cotton-slivers, substantially as described.

2. The combination, with the box or frame K, having the bearings *l* and the loop *o*, of the shaft *m*, provided with the graduated arm N, and the weight *n* upon said arm, the said shaft being adapted to receive

the hub of a weighted trumpet-beam of a cotton-sliver evener, as and for the purposes described.

330,802. SASH-LOCK. EDWARD T. PERRILL and FREDERICK C BAIRD, Aurora, Ill. Filed Aug. 22, 1884. (No model.)



Claim.—1. In a sash-fastener, the combination, with a pair of lever-latches having pins or projections on their inner arms, of a grooved turn-plate directly engaging with such pins, as set forth, and serving, when turned, to operate the levers and to lock them to place.

2. In combination with the case and with the latch-levers pivoted therein and provided with pins *g*, the turn-plate, as formed with cam-grooves serving to move the levers in opposite directions and to lock them in either their locked or their unlocked position, all substantially as set forth.

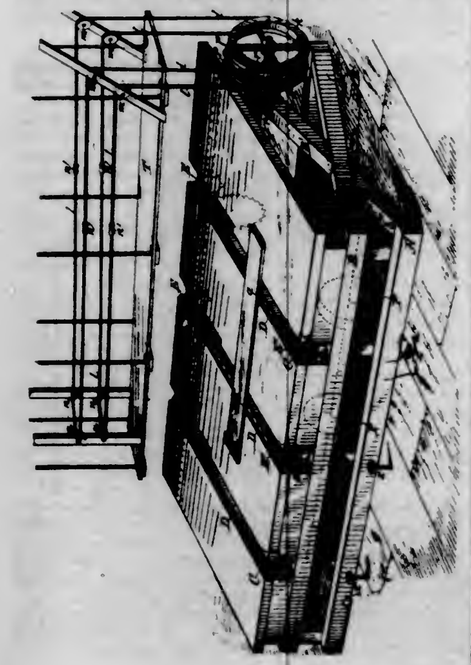
330,803. LUMBER-TRIMMER. ALEXANDER RODGERS, Muskegon, Mich. Filed Apr. 15, 1885. (No model.)

Claim.—1. In a lumber-trimmer, the combination, with the saw-table having transverse slots, the frames O, pivoted to said table and carrying circular saws, and the platform T, placed above the saw-table, of a crank-shaft, Q, having pitmen *g* attached to its crank arms or pins, the sleeves *h*, pivoted to the swinging saw-frames, the tubular shaft S, gears R R', grooved hand-wheels *k*, sheaves *m n* upon the elevated platform, and the endless ropes *l*, for connecting said hand-wheels and sheaves, substantially as described.

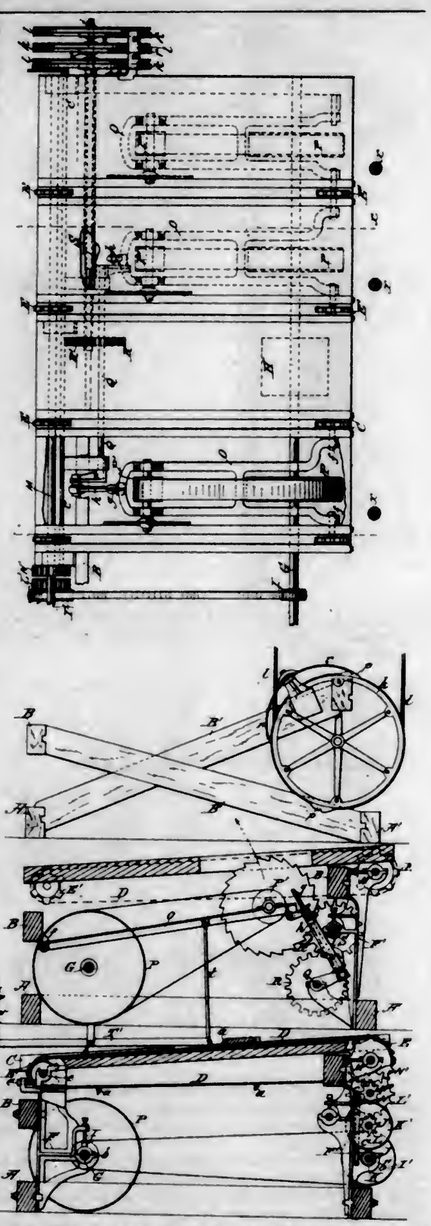
2. In a lumber-trimmer, a crank-shaft, Q, and pitman *g*, in combination with the sleeve *h*, sliding on said pitman, and a swinging saw-frame, O, carrying the saw and connected to said sleeve, all arranged as set forth, to adjust the saws vertically and allow their adjustment independently of the crank-shaft, substantially as described.

3. In a lumber-trimmer, the combination, with the swinging saw-frame O, hinged at one end to the machine-frame, and provided at its other end with a pivoted sleeve, *h*, of the crank-shaft Q, having a pitman, *g*, upon which said sleeve is mounted, the lever T', pivoted beneath the saw-frame and having stem *v* and foot-plate *x*, and the rod *t*, for connecting said lever and saw-frame, substantially as described.

4. In a lumber-trimmer, the combination of a slotted inclined table, the sprocket-wheels E E', mounted in the frame of said table, the end-



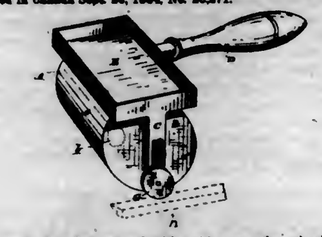
330,803.



less chains D, having projections *a*, the vertically-swinging frames O, pivoted at one end to the table-frame and carrying circular saws, the crank-shaft Q, having pitmen *g* and gear R, the sleeves *h*, pivoted to the saw-frames and engaging said pitmen, the sectional tubular shaft S, having gear R' and grooved hand-wheels *k*, the elevated platform T, sheaves *m n* thereon, and endless ropes *l*, placed on said sheaves and hand-wheels, substantially as described.

5. In a lumber-trimmer, the combination, with a slotted table and saw-carrying frames pivoted beneath said table, of an elevated platform for the machine attendant, a crank-shaft journaled beneath said table and having an operative connection with the saw-frames, a shaft carrying grooved hand-wheels, gears for connecting said shaft with the crank-shaft, vertical and horizontal sheaves mounted on the elevated platform and endless ropes passed over said sheaves and hand-wheels, whereby the saw-frames can be simultaneously actuated from said elevated platform, substantially as described.

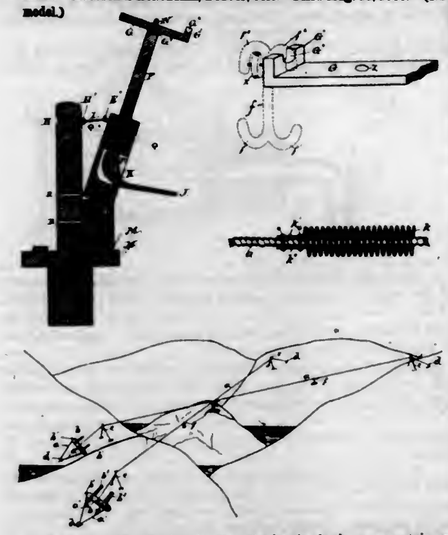
330,804. HAND-STAMP. GEORGE J. B. RIDDELL, Toronto, Ontario, Canada, assignor of three-fourths to Theodore Snell, same place, and R. H. Smith & Co., St. Catharines, Canada. Filed Sept. 19, 1884. (No model.) Patented in Canada Sept. 26, 1884, No. 20,271.



Claim.—1. A roller covered with rubber or other elastic material having letters, numerals, or fancy designs sunk below its surface, which surface is covered with printer's ink prepared substantially as described, the said roller being journaled in a frame provided with a handle and having a receptacle to receive a weight, substantially as and for the purpose specified.

2. A roller covered with rubber or other elastic material having letters, numerals, or fancy designs sunk below its surface, which surface is covered with printer's ink prepared substantially as described, the said roller being journaled in a frame provided with a handle and having a receptacle to receive a weight, in combination with an adjustable friction-roller, G, arranged substantially as and for the purpose specified.

330,805. DEVICE FOR TRANSFERRING LOADS DOWN MOUNTAINS. AUGUSTINE ROSCAGLIA, Denver, Colo. Filed Aug. 11, 1885. (No model.)



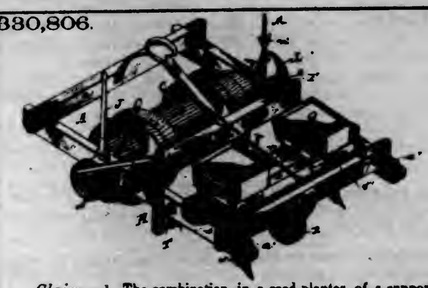
Claim.—1. In a device for transferring loads down mountain or other slopes, the combination of cable *h*, cylinder or windlass *b*, with holes b^3 and levers b^3, anchors *d*, supports *e*, spring *k*, and hook *f*, substantially as described and shown, and for the purpose set forth.

2. In a device for transferring loads down mountain or other slopes, means for transferring the load from one cable to another intersecting cable, consisting of perpendicular standard A, with holes R, pin S, circular platform B, with guide-track *c*, and the hoisting device attached to said standard, as shown, and consisting of base D, with trucks or pulleys M, part E, fashioned for the reception of lever J and arm F, said part E being attached to base D, as shown, cam-lever J, arm F, and revolving lever G, substantially as described and shown, and for the purpose set forth.

3. In a device for transferring loads down mountain or other slopes, the combination of cable *a*, anchored and supported as described and shown, cylinder *b*, levers b^3, hook *f*, with pulley *x*, spiral spring *k*, attached to cable, as shown, and suitable means for transferring the load from one cable to another intersecting cable, substantially as described and shown, and for the purpose set forth.

330,806. SEED-PLANTER. RISDEY G. SMITH, Hutchinson, Kans., assignor of one-fourth to Charles W. Snyder, same place. Filed Feb. 19, 1885. (No model.)

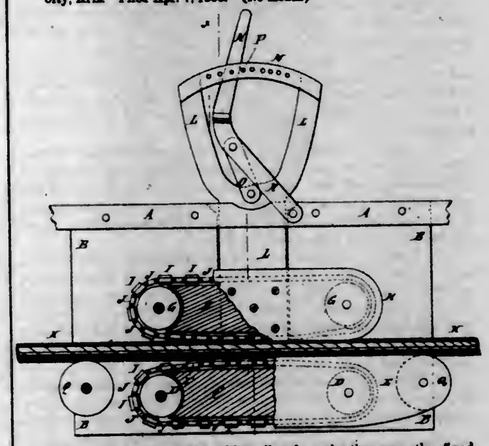
330,806.



Claim.—1. The combination, in a seed-planter, of a supporting-frame composed of side and end bars, a cylinder located between said side bars and provided with a central independent shaft bearing in journals on the under side of said side bars, clutching devices located on said cylinder and shaft causing them to revolve in common, a disk, G, located on one end of said shaft, a shaft, T, journaled in bearings in the forward part of the frame, carrying an arm connected eccentrically to said disk by a rod, O, coverers C, carried by said roller, seed-hoppers located at the front of the machine and provided with curved slides P, arms M, attached thereto, and bars N, connecting said arms with the shaft T to reciprocate said slides, substantially as set forth.

2. The combination, in a corn-planter, of a shaft, *v'*, journaled in bearings at the front of the frame, seed hoppers and slides, and devices for operating the latter, drill-spouts pivoted beneath said hoppers, and links connecting said spouts with said shaft *v'* independent of said seed-slides, and a lever for operating said shaft.

330,807. GRIP FOR CABLE RAILROADS. DAVID STOUT, Logan City, Ariz. Filed Apr. 7, 1885. (No model.)



Claim.—1. In a grip for cable railroads and other uses, the fixed and movable blocks or supports having pulleys at their ends, said blocks or supports and pulleys being encompassed by endless belts or chains of shoes, in combination with the sliding bar connected to one of the aforesaid blocks or supports and having a forked upper end, and the bent lever pivoted to a fixture and connected at its angle to a link connected to said sliding bar, substantially as and for the purpose set forth.

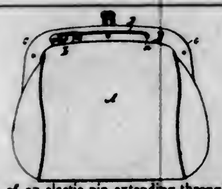
2. In a grip for cable railroads and other uses, the fixed and movable blocks or supports having longitudinal grooves or channels in their upper and lower surfaces, said channels or grooves having shoulders in their outer portions, in combination with the endless belts or chains of shoes encompassing said blocks or supports and pulleys, said shoes having tongues upon their inner portions entering the said grooves or channels below the shoulders of the latter, said shoes also having widened portions resting upon the shoulders of said grooves or channels and having outer concaved surfaces, the sliding bar connected to one of the aforesaid blocks or supports and having a forked upper end, and the bent lever pivoted to a fixture and connected at its angle to a link connected to said sliding bar, substantially as described.

330,808. PURSE. MATTHIAS STOVMEN, Jersey City, N. J. Filed June 15, 1885. (No model.)

Claim.—1. As an improved article of manufacture, a purse having one of its hinged jaws provided with an attached pin and a socket for receiving the free end of the pin, substantially as described.

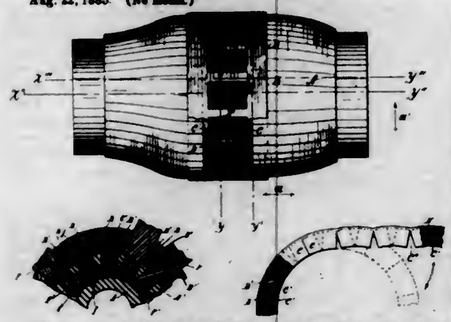
2. The combination, substantially as hereinbefore described, with

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a purse or the like, of an elastic pin extending through one of the jaws of the frame and secured thereto by a metallic plate fitting the jaw, and the socket for receiving and retaining the free end of the pin.

330,809. VEHICLE-HUB. DANIEL C. STOVER, Freeport, Ill. Filed Aug. 22, 1885. (No model.)



Claim.—1. A strip of malleable metal provided with suitable spoke-openings and adapted to be wrapped about a vehicle-hub and form a ring thereon, substantially as and for the purpose set forth.

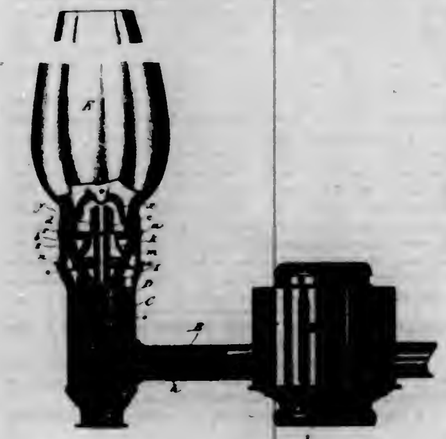
2. A strip of malleable metal formed with suitable spoke-openings and provided with transverse bars lying between said spoke-openings, said strip being adapted to be wrapped about a vehicle-hub and to form a series of spoke-mortises therein, substantially as and for the purpose set forth.

3. A strip of malleable metal formed with spoke-openings and provided with transverse bars V-shaped in cross-section lying between said spoke-openings, said strip being adapted to be wrapped about a hub with the thinner parts of said bars inward, and said bars being adapted to form bearing-surfaces for a series of spokes, substantially as shown and described, and for the purpose set forth.

4. A strip of malleable metal formed with suitable spoke-openings and provided with transverse bars lying between said spoke-openings, and with flanges at right angles to said bars and running lengthwise of the strip, said strip being adapted to be wrapped about a vehicle-hub with said bars and flanges inward, and said bars and flanges to form sockets for the reception of a series of spokes, substantially as and for the purpose set forth.

5. The ribbon D, of malleable metal, formed with suitable spoke-openings and provided with bars D' and flanges C, said flanges C being separated by notches C', substantially as and for the purpose set forth.

330,810. LAMP-BURNER. JOHN F. TROUT, Chicago, Ill. Filed Sept. 18, 1884. (No model.)

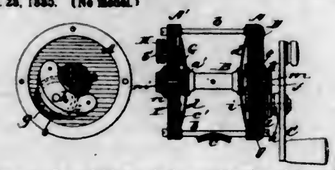


Claim.—1. In a lamp, the combination, with the wick-reservoir, of air and gas exit passages having outlets isolated from direct communication with the burning wick and protected from external atmospheric influences, substantially as described.

2. In a lamp, the combination, with the burner-cone and chimney having a space intermediate between them, of the wick-reservoir communicating with such space, substantially as described.

3. In a lamp, the combination, with the burner-cone and chimney having a space intermediate between them, of the wick-reservoir, having air and gas exit passages communicating with such space, substantially as described.

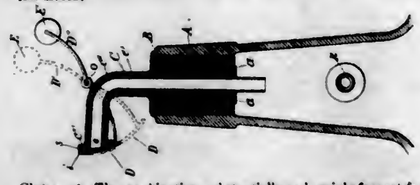
330,811. FISHING-REEL. JULIUS VON HOFE, Brooklyn, N. Y. Filed Aug. 28, 1885. (No model.)



Claim.—1. In a fishing-reel, the combination of the solid rubber head A, apertured, as at *a*, to receive the operating-gears of the reel within it, the outer metal plate, D, having bosses *k l*, constructed to form outside bearings for the spool and its operating-gears, and the bridge *i*, secured on the inner face of the rubber head A, substantially as specified.

2. In a fishing-reel, the combination, with the wheel *a'* on the spool thereof, of the double-acting click G, the rotatable button H in the head of the frame of the reel, the eccentric pin or pivot *b'*, connecting said click with the button, and the spring I, constructed and arranged to press on opposite sides of the click, essentially as shown and described.

330,812. BOTTLE-STOPPER. WHITFIELD WARD, New York, N. Y., assignor of one-half to Norbert R. Ward, same place. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the tubular mouth-piece having a face-piece either made with or attached to said tubular mouth-piece, a sliding stopper for engagement with the tubular mouth-piece provided with suitable weight or weights to automatically stop or unstop the bottle.

2. In a bottle-stopper, a mouth-piece inserted in a suitable stopper and having a face-piece either made with or attached to said mouth-piece, and provided with flanges which form ways for the engagement of a sliding stopper operated by a weight or weights by means of arms pivoted about midway their length, substantially as shown and described.

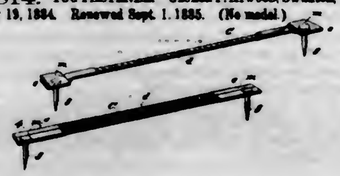
3. A mouth-piece constructed as described, having its working parts inclosed in a cover representing a head, P, with the lower jaw of said head connected to and moving with the sliding stopper, substantially as and for the purpose herein described.

330,813. SHEARS. JAMES M. WHITING, Providence, assignor to himself and George W. Paine, Johnson, R. I. Filed Apr. 22, 1885. (Model.)



Claim.—The combination of the opposite shear-blades, the pivot-pin secured to one of the blades, the inclined spring secured to the other blade, and a bearing-point upon the pivot-pin adapted to move upon the inclined surface of the spring, and thereby cause an increased tension of the same upon the closing movement of the blades, substantially as described.

330,814. TUG-FASTENER. GEORGE F. ATWOOD, Swanton, Vt. Filed July 19, 1884. Renewed Sept. 1, 1885. (No model.)



Claim.—1. A flexible fastening device consisting of a cord having sheet-metal end clamps carrying prongs or tacks, substantially as specified.

2. A flexible fastening device consisting of a cord having sheet-metal end clamps carrying tacks projecting through the metal of said end clamps, and covered by laps of the same, substantially as specified.

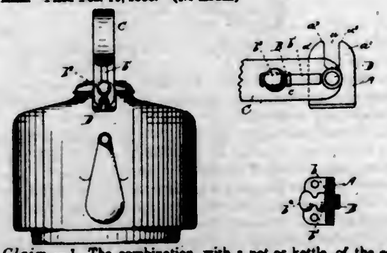
330,815. MANUFACTURE OF LACTATES. CHARLES E. AVERY, Boston, Mass., assignor to the Avery Lactate Company, Portsmouth, N. H. Filed Nov. 2, 1883. (No specimens.)

Claim.—1. The process of purifying and preserving a lactic ferment by adding said ferment to a medium specially favorable to its growth and less favorable to the growth of other ferments, substantially as set forth.

2. In the manufacture of crude lactates and lactic acid, the method of preparing a culture-bath consisting in adding about one thousand parts of starch-sugar, dextrine, glucose, or milk-sugar to six thousand parts of water, then adding about five hundred parts of carbonate of lime, and finally adding about one hundred parts of vegetable nitrogenous matter, the mixture being kept at a heat of from 95° to 113° Fahrenheit, substantially as set forth.

3. In the manufacture of crude lactates and lactic acid, the preparation of a practically pure reagent for producing lactic acid, consisting in the successive impregnation of a series of culture-baths with lactic ferment, the impregnation of each solution from the preceding one being effected at the point of full height of fermentation, as evidenced by the evolution of the carbonic-acid gas at its first maximum, substantially as set forth.

330,816. AUTOMATIC BAIL-LOCK. GEORGE B. BALLOU, Milford, Mass. Filed Feb. 19, 1885. (No model.)

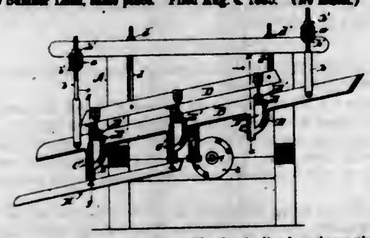


Claim.—1. The combination, with a pot or kettle, of the ears A and A', the former having the vertical locking-recess *a*, with the bail C, having the slot *b'*, and the locking bolt or latch B, secured to the bail, as described, and having a vertical movement in the slot *b'*, substantially as set forth.

2. The combination, with a pot or kettle, of the ears A and A', the former of which has the rounded surface *a'* and slot *a*, with the bail C and slot *b'*, and the sliding locking-bolt B, loosely mounted in said slot, whereby the locking-bolt may bear upon the edge of the ear A as it is moved from a horizontal to a vertical position, all substantially as and for the purposes described.

3. The combination, with a pot or kettle, of the bail-ears A and A', the former having the inclined or rounded upper surface or edge, a^2, with the bail C, having the slot *b'*, and the sliding locking bolt or block B, all substantially as and for the purposes described.

330,817. AMALGAMATOR AND CONCENTRATOR FOR STAMP-MILLS. LORENZO M. BOARDMAN, Minneapolis, Minn., assignor of one-half to Sumner Ladd, same place. Filed Aug. 4, 1885. (No model.)



Claim.—1. In combination with the inclined reciprocating pan having transverse pockets or depressions in its bottom, fixed agitators extending downward within the pockets, and partitions extending downward within the pockets and forming passages to direct the pulp to the lower part of the pockets, all substantially as described.

2. The combination, with the inclined pan B, provided with the transverse pocket C, having the curved wall, of the curved partition E, extending downward within said pocket substantially parallel with said wall, and forming therewith a passage to direct the pulp to the lower part of the pocket, substantially as and for the purpose set forth.

3. In a machine of the class described, the combination of the transversely-reciprocating pan B, the pocket C, having the inclined bottom, opening *c*, valve c^2, and the partition E, all substantially as described.

4. The combination, in a machine of the class described, of the pan B, concentrating-pocket C', having a bottom inclined from each end toward the center, the valve K, means for operating said valve, the sluice H, and the partition E, all substantially as described, and for the purpose set forth.

5. The reciprocating pan B, having the pocket C, provided with an inclined bottom, opening *c*, valve c^2, the pockets C', provided with bottoms sloping toward the center, the valve K, and sluice H, in combination with the fixed agitators, and the partitions E, extending downward within said pockets, all substantially as described, and for the purposes set forth.

330,818. DISTANCE-INSTRUMENT. JEFFERSON L. BUFORD, Albany, Tex. Filed July 13, 1885. (No model.)



Claim.—1. The combination, with the horizontal graduated ring E, of the centrally-pivoted telescope-frame bearing a telescope, and having a graduated radial arm, G, arranged to move over the ring, and provided with means for fixing it to the ring, and an independent centrally-pivoted graduated arm, F, also arranged to move over the ring, and provided with means for fastening it to the ring, substantially as and for the purpose described.

2. The combination, with the horizontal graduated ring E, of the centrally-pivoted telescope-frame bearing a telescope, and having a graduated radial arm, G, arranged to move over the ring, and provided with means for fixing it to the ring, an independent centrally-pivoted graduated arm, F, also arranged to move over the ring, and provided with means for fastening it to the ring, and the graduated base-line bar F^3, arranged to subtend the angle of the two bars G F, as and for the purpose described.

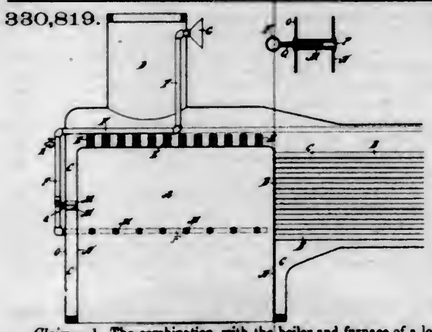
3. The combination of the compass C, having uprights D, the graduated ring E, mounted thereon and having radial arms, with spirit-levels *b*, the centrally-pivoted telescope-frame G' G^2, carrying a telescope and graduated arm G in the same vertical plane, the centrally-pivoted arm F, and the graduated base-line bar F^3, as and for the purpose described.

4. The combination, with the graduated ring E, of the centrally-pivoted telescope-frame G' G^2, bearing graduated horizontal radial arm G, the centrally-pivoted arm F, and the telescope G^4, hung in the graduated frame G^2, and having attached thereto the graduated ring G^3, arranged to move in a vertical plane, substantially as and for the purpose described.

5. The combination, with the frame J, of the bars H and I, guide-bar K, yoke L, and base-line bar F^3, as and for the purpose described.

330,819. LOCOMOTIVE-FURNACE. JAMES BURKEY, Falls Village, Conn., assignor of two-thirds to Nicholas Stingland, same place. Filed Aug. 25, 1885. (No model.)

330,819.

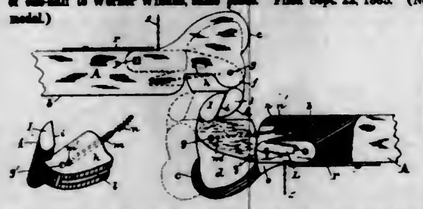


Claim.—1. The combination, with the boiler and furnace of a locomotive, of a pipe, F, which passes through the dome and boiler, or either of them, and is adapted to take in external air, stay-bolts which connect the boiler-plate with the furnace-plate and have central openings through them, and pipes Q, which convey air from pipe F through the stay-bolts into the furnace.

2. In a locomotive, a pipe, F, having a funnel-shaped opening to take in external air, and extending through the dome and boiler and out at the rear, stay-bolts connecting the boiler-plate with the furnace-plate, and having openings through them, and pipes leading from pipe F and passing into the stay-bolts, whereby heated air is admitted to the furnace over the fire.

3. The combination, with the boiler and furnace of a locomotive, of pipe F, having a stop-cock, as shown, stay-bolts M, having openings through them, and pipes Q, leading from pipe F through the stay-bolts and communicating with the furnace.

330,820. CAR-COUPLING. Joseph Button, Baltimore, Md., assignor of one-half to Werner Windus, same place. Filed Sept. 22, 1885. (No model.)

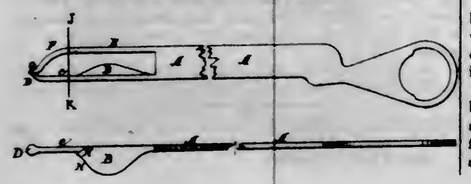


Claim.—1. In a car-coupling, the combination of a draw-head having a recess, *d*, open at one side in a horizontal direction, a coupling-hook, I, having a shank, *h*, pivoted in the open-sided recess to turn in a horizontal plane, a recess, *n'*, in the shank of the draw-head, a spring, *n*, occupying the last-named recess, and a link-bar having one end pivoted to the coupling-hook shank and its other end connected to the said spring, as set forth.

2. In a car-coupling, the combination of a draw-head having a recess, *d*, open at one side in a horizontal direction, a coupling-hook, I, having a shank, *h*, pivoted in the recess to turn in a horizontal plane, and provided with a horizontal slot, *l*, a link-bar occupying the shank-slot and pivoted therein, and a spring, *n*, connecting the link-bar with the draw-head, as set forth.

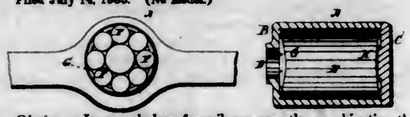
3. In a car-coupling, the combination of a draw-head having a recess, *d*, open at one side in a horizontal direction, a coupling-hook, I, having a shank, *h*, pivoted in the recess to turn in a horizontal plane, a recess, *o*, in the draw-head shank, open at the side opposite that where the coupling-hook is pivoted, a stop, L, pivoted by one end in the last-mentioned recess to turn laterally, a leaf-spring, *r*, on the side of the draw-head shank and bearing against the pivoted stop, a lever, T, pivoted at the end of the car, and a chain, *s*, connecting the pivoted stop and the said lever, as set forth.

330,821. PILE-WIRE FOR LOOMS. Edward Crossley and Richard Cobbaldi, Halifax, County of York, England. Filed Sept. 6, 1884. (No model.) Patented in England May 2, 1883, No. 2,225.



Claim.—A flat pile-wire having an inclined side cutting-blade, and stripe, formed substantially as described, adapted to hold the warp-yarns tight while being cut, and to receive between them the blades of adjacent wires, said stripe constituting a guide, and being free at their ends to permit of their withdrawal past the said blades, substantially as described.

330,822. CAR-AXLE BOX. Norman W. Cutter, Cleveland, Ohio. Filed July 14, 1885. (No model.)



Claim.—In an axle-box for railway-cars, the combination therewith of a circumferential continuous lining, having at each end thereof interiorly a rib of differential width, arranged and adapted, as described, to allow rollers to be inserted within the lining, and to prevent the said lining from turning around in the box, in the manner substantially as herein set forth, and for the purposes specified.

330,823. WITHDRAWN.

330,824. FORK-GUARD. James W. Drew, Nichols, Conn. Filed July 27, 1885. (No model.)



Claim.—1. The combination of a carving-fork and a guard of loop shape having the two legs D D, extending one each side the shank and hinged to the shank, with an arm extending therefrom and adapted to interlock with the shank when the guard is turned to its upright position, substantially as described.

2. The combination of a carving-fork and a guard of loop shape having the two legs extending one each side the shank, and hinged to the shank, with an arm, F, extending therefrom, adapted to interlock with the shank when the guard is turned to its upright position, the legs also constructed with projections H H on the side of the pivot opposite the interlocking arm, substantially as and for the purpose described.

3. The combination of a carving-fork constructed with trunnions *a* on the shank opposite each other, and a guard of loop shape, the two legs D D, adapted to extend one each side the shank, and constructed with holes *d*, corresponding to the trunnions, and adapted to spring over the trunnions, the legs also constructed with arms F, extending therefrom, adapted to interlock with the shank of the fork, and also constructed with projections H opposite the arms, substantially as described.

4. The combination of a carving-fork with a guard of loop shape, the two legs of the loop extending one each side the shank to form legs E E to serve as a rest, and also constructed with arms F, adapted to interlock with the shank, substantially as described.

5. The combination of a carving-fork with a guard of loop shape, the two legs of the loop extending one each side the shank to form legs E E to serve as a rest, and also constructed with arms F, adapted to interlock with the shank and with projections H upon the side opposite the arms F, substantially as described.

6. The combination of a carving-fork with a guard of loop shape, the two legs of the loop extending one each side the shank to form legs E E to serve as a rest, and also constructed with arms F, adapted to interlock with the shank, the two legs E E connected by a cross-piece, G, substantially as described.

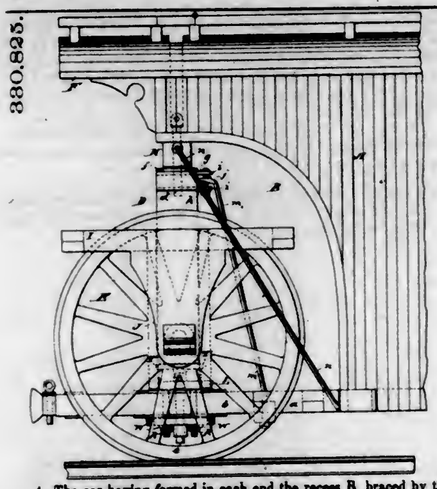
330,825. RAILWAY-CAR. Arthur W. Denis, Brooklyn, N. Y. Filed Sept. 16, 1885. (No model.)

Claim.—1. The car having the recesses B formed in its ends, and the floor-beams extending into said recesses, combined with the truck-frame, and large wheels located within the recess at each end of the car and pivoted above to the beam H, forming a rigid part of the car, and below to the said floor-beams, substantially as and for the purposes described.

2. The car having the recesses B formed in its ends and the floor-beams extending into said recesses, combined with the trucks and large wheels located and pivotally secured above and below within said recesses, the lower portion of the trucks being provided with the clamping-plate S and bolts R, substantially as and for the purposes set forth.

3. The car having the recesses B formed in its ends, and the floor-beams extending into said recesses, combined with the trucks located and pivotally secured above and below within said recesses, the truck-frame consisting of the rectangular frame I, arms J K, cross-bar L, standards M, cross-bars N O, and clamping-plate S, substantially as set forth.

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4. The car having formed in each end the recess B, braced by the rods *n n*, in combination with the trucks (with large wheels) located and pivotally secured above and below within said recesses, and the brace-rods *m*, substantially as set forth.

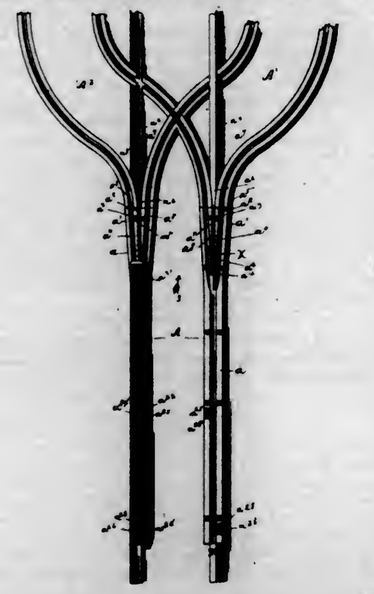
330,826. RAILROAD-SWITCH. N. Grehard Du Bois, Brooklyn, N. Y., assignor of one-half to F. R. Maloney, same place. Filed Sept. 3, 1884. (No model.)

Claim.—1. In a switch, the combination of a movable-tongue switch-rail having a projection, a shaft having a slot for said projection, and posts on each side of and connected with said shaft, one of said posts being operated by the car-wheel and the other under the control of the driver, substantially as described.

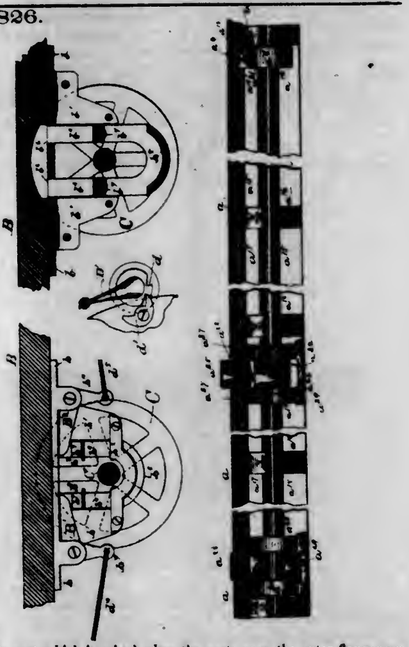
2. In a switch, the combination of a movable-tongue switch-rail having a projection, a shaft having a slot for said projection, and collars provided with longitudinal openings, and posts having trunnions resting in said longitudinal slots and adapted to be alternately raised by the car-wheel and mechanism under control of the driver, substantially as described.

3. A car-switch having on the wheel-bearing flange of the main rail a post operated by the car-wheel, and a second post outside the wheel-bearings, and adapted to be operated by a device on the car under control of the driver, substantially as described.

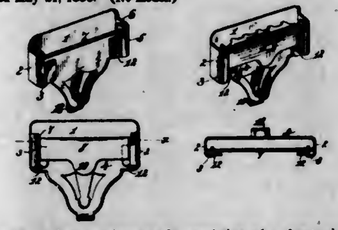
4. A car-switch the main rails of which are grooved, the outer flanges having a depressible post, and the inner flanges having a depressible post which is raised when the posts upon the outer flanges are depressed, and depressed when the posts on the outer flanges are raised, substantially as and for the purpose set forth.



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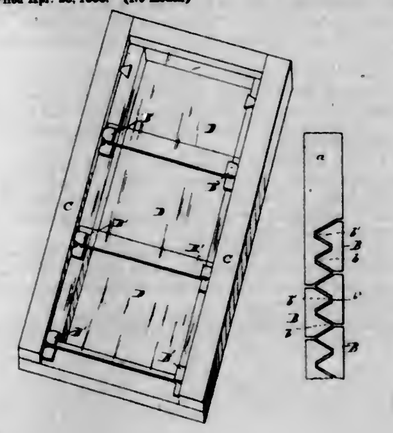


330,827. SUSPENDER-BUCKLE. David L. Durand, Derby, Conn. Filed May 21, 1885. (No model.)



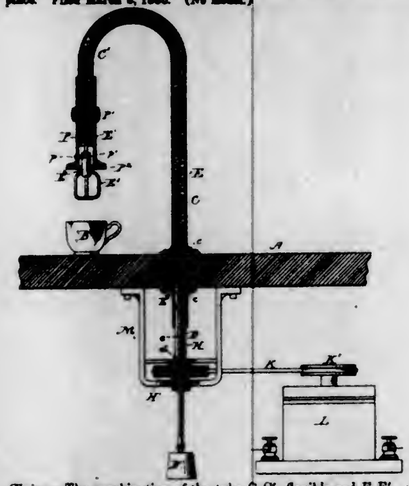
Claim.—A suspender-buckle consisting of a front plate having its ends bent to form flanges 3, each having its upper end bent inward to form ears 6, the pin 7, supported by said ears, and a lever having lips 9, bent around the pin adjacent to said ears, substantially as described.

330,828. GLAZIER'S POINT. Hiram W. Eaton, Milford, Mass. Filed Apr. 25, 1885. (No model.)



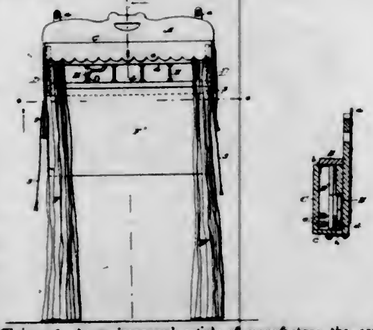
Claim.—As an improved article of manufacture, the glazier's point or fastening device having the fastenings or projections *b b'* and the shoulder *b²*, all substantially as described.

330,829. **MIXER FOR CREAMS, EGGS, AND LIQUORS.** Rufus M. Eastman, Boston, Mass., assignor of one-half to Charles H. Wilder, same place. Filed March 6, 1885. (No model.)



Claim.—The combination of the tube C C', flexible rod E E', and beater E² E², with the rod D, weight D', tube H, pulley H', and motor L, all operating together substantially as described, and for the purpose set forth.

330,830. **WARDROBE.** Elihu B. Estes, Flatbush, N. Y., assignor of one-half to Dunlow D. Hamlin, same place. Filed Feb. 11, 1885. (No model.)



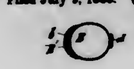
Claim.—1. As an improved article of manufacture, the combination of the back board provided with a shelf, B, the hinged supporting-brackets D D, and the cover C, hinged to B and provided with a drop-cornice, *c*, all to form the upper portion of a suspended wardrobe, as set forth.

2. The combination, to form a suspended folding wardrobe, of the back board provided with hooks, and the shelf B, the hinged supporting-brackets D, the cover C, hinged to B and provided with a drop-cornice, *c*, and the curtains, all constructed and arranged to operate substantially as set forth.

3. The combination of the back board provided with shelf B and hooks, the hinged supporting-brackets D, the cover C, hinged to B and provided with a drop-cornice, *c*, and wires *e* for the curtains, and the curtains F, suspended at the front from wires *e* and provided with operating-cords *g*, substantially as shown.

4. The combination of the back board, A, provided with the plates *d d*, folding hooks E, and shelf B, the hinged brackets D D, arranged as shown, the hinged cover C, provided with a drop-cornice, *c*, and the curtains, arranged as shown.

330,831. **ARTIFICIAL TOOTH.** Charles P. Grout, New York, N. Y. Filed July 9, 1885. (No model.)



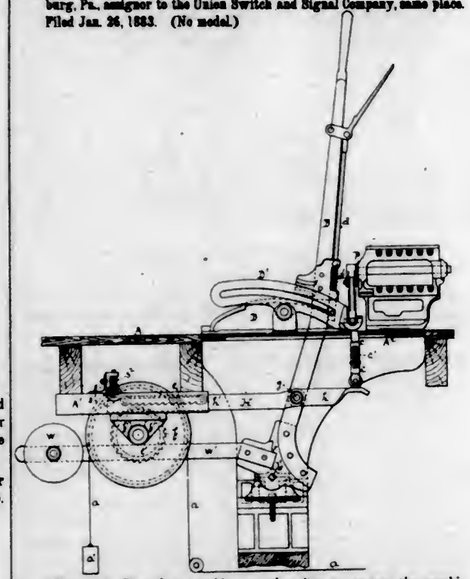


Claim.—1. In a signal-shifting or other like apparatus, the combination of a shifting-lever, a rack-bar pivoted thereto, a pulley carrying a cord or chain connected to the object to be moved and to a counterweight, said pulley being normally free to move axially under elongation or contraction of said cord or chain, a pinion fixed to said pulley and adapted to engage the teeth of the rack-bar, and cam and roller mechanism, substantially as described, actuated by the movement of the shifting-lever, to engage and disengage the rack-bar and pinion, substantially as set forth.

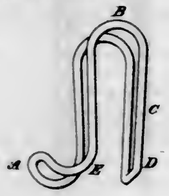
2. The combination of a signal-shifting lever, a catch-rod connected thereto, a tip-rod adapted to receive or be released from pressure in accordance with movements of the catch-rod, a rack-bar pivoted to the shifting-lever, said bar having a projection upon one side of its pivot receiving pressure from the tip-rod and a series of teeth on the opposite side of its pivot, a normally freely-moving pulley carrying a counterweighted line-connection to a signal, and a pinion connected to said pulley and adapted to engage the teeth of the rack-bar upon the release thereof from the pressure of the tip-rod, substantially as set forth.

3. The combination of a signal-shifting lever, a rack-bar pivoted at one end to said lever and having a slot adjacent to its opposite end, located partially in the line of its length and partially inclined thereto, a wrist mounted upon a fixed support and engaging said slot, a normally freely-moving pulley carrying a counterweighted line-connection to a signal, and a pinion connected to said pulley and adapted to engage the teeth of the rack-bar, substantially as set forth.

330,832. **SIGNAL-COMPENSATOR.** Frederick S. Guerber, Pittsburg, Pa., assignor to the Union Switch and Signal Company, same place. Filed Jan. 26, 1883. (No model.)

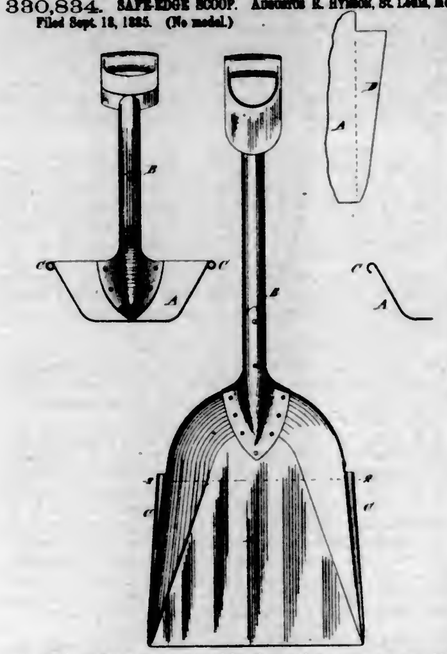


330,833. **BED-CLOTHING CLAMP OR FASTENER.** Charles G. Harger, Jr., Canton, Ohio, assignor to George V. L. Mellinger, same place. Filed Jan. 10, 1885. (No model.)



Claim.—A bed-clothing clamp or fastener having a straight back, C, a central strut, B, and a forward portion terminating at its lower extremity in an outwardly-curved disengaging projection, A, substantially as shown and described.

330,834. **SAFE-EDGE SCOOP.** Augustus R. Hyndon, St. Louis, Mo. Filed Sept. 18, 1885. (No model.)



Claim.—As an improved article of manufacture, a scoop provided with tapering tubes at its edges, substantially as shown and described, for the purpose set forth.

330,835. **WRENCH.** Edgar B. Jackson, Delaware, Ohio, assignor of one-half to Louis B. Jackson, same place. Filed Jan. 14, 1885. (No model.)



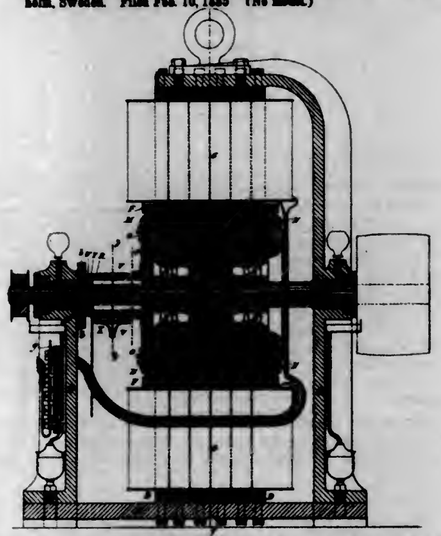
Claim.—1. A wrench consisting of a handle hook-shaped at one end and provided with a jaw at its opposite end, integral with and extending out at right angles, or substantially so, to said handle, and preferably V-shaped in cross-section, a jaw pivoted to said fixed jaw, a screw extending through the handle and engaging the pivoted jaw to adjust the jaws with relation to each other, and a holding-pin located between the ends of the handle and projecting out therefrom, substantially as shown and described.

2. In a wrench, the metallic handle A, provided with the jaw B, forming a part thereof and extending out at right angles thereto, said jaw B being provided with ears C at its base, to which is pivoted the adjustable jaw D, having a slot in its base to receive and hold a headed end of the adjusting-screw F, which screw extends through the metallic handle, as shown, and by which the jaw D may be tipped more or less to bring it and the jaw B more or less close together, the said jaws being of a shape in cross-section to correspond to the shape of two sides of a nut, substantially as described.

3. A wrench consisting of the handle A, of metal, hook-shaped at one end, as shown, and being provided with a holding-pin, H, extending out therefrom at a point nearly central between its ends, the jaw B, formed integral with the said handle, the jaw D, pivoted to the jaw B, as shown, and provided at its base with the elongated slot E, open at one end, as described, and the adjusting-screw F, provided with the round-headed end F', to engage the slotted jaw D, and by which the said jaw may be tipped more or less with relation to the jaw B, to adapt them to fit and tightly clamp nuts of different sizes, substantially as and for the purpose set forth.

4. A wrench having a nut-grasping jaw formed integral with the handle, in combination with the pivoted jaw D, provided with a biting-flange, *d'*, at its upper inner edge, and the adjusting-screw F, adjustably connected to the said jaw D, said adjusting-screw being adapted to tip the jaw D more or less with relation to the jaw B to grasp a nut, substantially as set forth.

330,836. **DYNAMO-ELECTRIC MACHINE.** Oscar F. Jumbon, Stockholm, Sweden. Filed Feb. 10, 1885. (No model.)



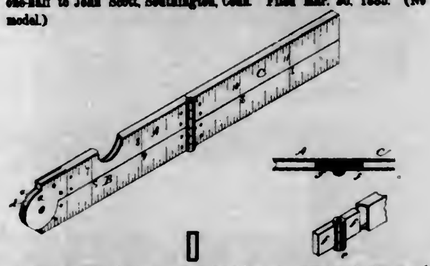
Claim.—1. The combination, in an inductor for dynamo-electric machines, of the metallic center, the adjusting-screws, the perforated wooden blocks, the toothed metallic rings arranged around the blocks, the insulating material between the rings, and the wires wound around the rings, substantially as set forth.

2. The combination, substantially as set forth, of the inductor-bobbins, the collector, the coupling-plate arranged at one side of the inductor between the collector and the bobbins, and the radial bars leading from the collector to the bobbins.

3. The combination, substantially as set forth, of the inductor-bobbins, the collector, the coupling-plate, the links by which the bobbins may be connected, and devices for connecting the links with the collector.

4. The combination, substantially as set forth, of two or more flat inductor-rings arranged side by side, their supports, the coupling plate or plates, and devices on the plates whereby the wires of the inductor-rings may be connected.

330,837. **POCKET-RULE.** Henry Judd, West Cheshire, assignor of one-half to John Scott, Southington, Conn. Filed Mar. 20, 1885. (No model.)



Claim.—1. The herein described pocket-rule, composed of several parts hinged together and so as to fold into a compact shape, each of the parts constructed from tubular metal, substantially as described.

2. A folding pocket-rule having the parts made from tubular metal, the hinge for the quarter-fold consisting of a pair of knuckles, each pair constructed with a flap, *f*, introduced into the end of the adjacent tubular parts and secured therein, substantially as described.

3. In a folding pocket-rule having the parts made from tubular metal, the central hinge composed of two wings, *a a*, secured to the one part, with a filling-block, *b*, introduced into the end of the said one part

between said wings, and the second part, *d*, of the hinge constructed to extend into the end of the corresponding tubular part, substantially as described.

4. A pocket-rule composed of several parts hinged together and so as to fold into a compact shape, each of the parts constructed from tubular metal, and the parts filled with a non-metallic material, substantially as described.

330,838. COLLAR OR CUFF. EBEL KIPPER, Adams, Mass. Filed Jan. 24, 1885. (No model.)

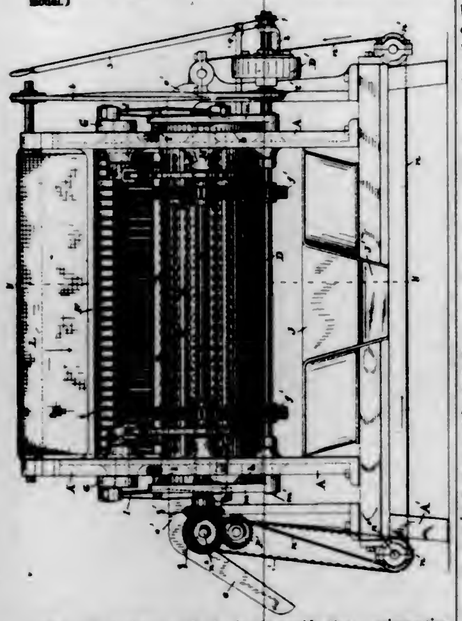


Claim.—1. A collar or cuff of pyroxyline compound having a clean-cut and smooth outer edge, and a hem formed by a strip separate from the body material and cemented thereto, substantially as described.

2. A collar or cuff composed of a sheet of a pyroxyline compound having a clean-cut and smooth outer edge, and a hem formed by a strip of a pyroxyline compound separate from the sheet and cemented thereto, with the smooth outer edges of the strip and the sheet in coincidence, or approximately so, substantially as described.

3. A collar or cuff of pyroxyline compound having a hem formed by a strip of a pyroxyline compound separate from the body material and cemented thereto, said hem having end pieces or extensions which overlie and strengthen the button-holes, the edges of the collar or cuff and the strip being in coincidence, or approximately so, substantially as described.

330,839. CHERRY-SEEDING MACHINE. GEORGE W. KNAPP, Baltimore, Md., assignor to WM. NUMSEN, JNO. W. NUMSEN, Nathaniel G. Numsen, and WM. N. NUMSEN, all of same place. Filed June 26, 1885. (No model.)



Claim.—1. A cherry-seeder having in combination a reciprocating bar, a tubular cherry-holder, A, carried loosely by the said bar and capable of free movement endwise up and down and having at its lower end a concave socket, a seed-punch attached to said bar and projecting through the tubular holder, and a cherry-carrier provided with sockets each having a hole in its bottom, as set forth.

2. A cherry-seeder having in combination a reciprocating bar provided with an upper and a lower laterally-projecting flange, a cherry-holder carried loosely by the lower flange, and a seed-punch rigidly attached to the upper flange, as set forth.

3. A cherry-seeder having in combination a revolving cylinder provided with sockets *a*, each having a hole in its bottom, a reciprocating bar above the cylinder carrying seed-punches, a rock-shaft extending through the hollow cylinder and having each end supported in stationary bearings, and provided with a seed-knocking strip, 13, which extends along the said rock-shaft, and mechanism, substantially as described, to turn the cylinder and impart motion to the rock-shaft, as set forth.

4. A cherry-seeder having in combination a revolving cylinder having at its end ratchet-teeth *d*, and provided with sockets each having a hole in its bottom, a reciprocating bar carrying seed-punches, a rock-shaft seed-knocker extending through the hollow cylinder and provided on its end with a short arm, a pawl-hook, *l*, engaged with the ratchet-teeth and also connected with the said short arm of the rock-shaft, and mechanism, substantially as described, to operate the pawl-hook, as set forth.

5. A cherry-seeder having in combination a revolving cylinder provided with sockets *a*, each having a hole in its bottom, a reciprocating bar carrying seed-punches, an endless belt passing through the hollow cylinder for carrying the seeds, a stationary upright side or guard at each edge of the belt, and a spout at one side of the machine having its upper part united with the ends of the said upright sides, as set forth.

6. A cherry-seeder having in combination a revolving cylinder provided with sockets *a*, each having a hole in its bottom, a reciprocating bar carrying seed-punches, a rock-shaft seed-knocker extending through the hollow cylinder, and an endless belt also passing through the hollow cylinder, as set forth.

7. A cherry-seeder having in combination a revolving cylinder provided with sockets *a*, each having a hole in its bottom, a reciprocating bar carrying seed-punches, and a bar located within the hollow cylinder and provided with punches *s*, to pass from the inside outward for removing cherries adhering to the sockets, as set forth.

8. A cherry-seeder having in combination a revolving cylinder provided with sockets *a*, each having a hole in its bottom, a reciprocating bar carrying seed-punches, a bar located within the hollow cylinder and provided with punches *s*, to pass from the inside outward for removing cherries adhering to the sockets, and a yoke connecting each end of the reciprocating bar with the ends of the bar in the cylinder, as set forth.

9. A cherry-seeder having in combination a revolving cylinder provided with sockets *a*, each having a hole in its bottom, a reciprocating bar carrying seed-punches, an endless belt passing through the hollow cylinder for carrying the seeds, and a bar also within the cylinder provided with punches to pass from the inside outward, as set forth.

330,840. WASHING-MACHINE. WILLIAM W. KOWE, Houston, Tex. Filed Apr. 28, 1885. (No model.)

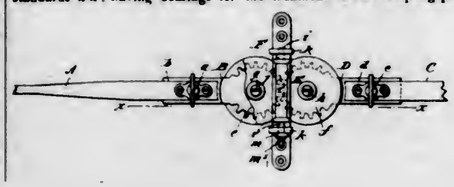


Claim.—1. In a washing-machine, the combination, with the trough A, of the casing E, secured to one end thereof, the rotating steam-chamber G, and the shaft F, provided with the diaphragm h^2, and arranged to take steam in one end, deliver the same through the openings *f'* to the steam-chamber, and exhaust through the boxing H and opening *h'* on the outer side of the diaphragm.

2. In a washing-machine, the combination of the casing E, secured to the end of the trough A, and communicating therewith by means of the openings *e'*, and the shaft F, taking steam from a proper source at one end and delivering it at the other, and provided with the openings *f'* and *h'* and diaphragm h^2, with the steam-chamber G, provided with the detachable end *g'*, ribs *g*, and door g^4, and the boxing H, provided with the openings A, substantially as and for the purposes specified.

330,841. BOW-FACING OAR AND OAR-LOCK. JACOB L. KWARSI, New York, N. Y., assignor to himself and Ludwig Roth, same place. Filed Aug. 6, 1885. (No model.)

Claim.—1. The combination, with a coupling having lateral trunnions and the oar supported by said coupling, of the oar-lock having standards *k k'*, having bearings for the trunnions of the coupling-pin



330,841.



m^4, projected from the outer side of standard *k'*, the plate *m*, having near one end a slot, *m'*, and provided in its other edge with a notch, m^3, fitted to engage pin m^4, and a headed pin, m^2, passed through slot *m'* and securing plate *m* to the standard, all arranged substantially as described, whereby the plate *m* may be moved on the pin m^2 and adjusted into or out of engagement with pin m^3 and be locked over or adjusted clear of the trunnion-bearing in standard *k'*, as and for the purposes specified.

2. The combination of the oar-lock having bearings, the coupling provided with trunnions journaled in said bearings, and a latch movable over the outer end of one of said bearings and adjustable at right angles to such bearing, all arranged substantially as described, whereby the latch may be adjusted over the bearing to secure the coupling in the lock or away therefrom to permit the lateral detaching movement of said coupling, as and for the purposes specified.

3. The improved bow-facing oar-support, substantially as herein described and shown, consisting of the coupling having top and bottom plates, *j j'*, the gears journaled between said plates and adapted to support, respectively, the oar-blade and handle, the arms *l*, projected up from the opposite sides of the bottom plate, *j'*, and provided at their upper extremities with lateral trunnions, the standards *k k'*, having bearings for such trunnions, the plate *m*, having a slot, *m'*, near one end, and provided in its opposite end with a notch, m^3, a pin, m^2, passed through slot *m'* and connecting the standard and plate *m*, so the latter can move longitudinally, and a pin, m^4, projected from standard *k'* on the opposite side of the trunnion-bearing thereof from pin m^2 and in position to be engaged by the notch m^3 of plate *m*, all arranged and operating substantially as set forth.

330,842. CAR-REPLACING JACK. LEWIS F. LOVEMORE, Lowell, assignor of one-half to George A. Byam, Chelmsford, Mass. Filed Mar. 9, 1885. (No model.)

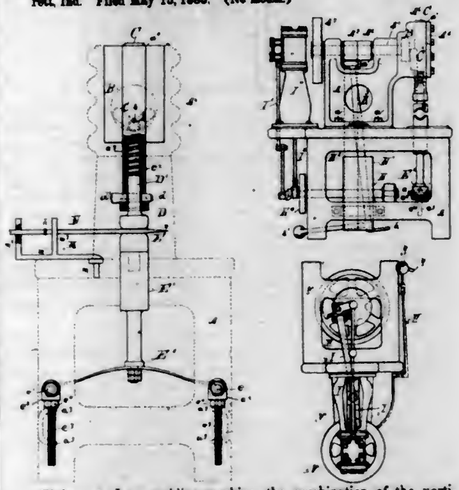
Claim.—1. The combination, with a jack, of a bed-plate provided with downward projections to receive the head of said jack, one or more holding-screws turning in one of said projections and thrusting against the head of said jack, a slide resting on said bed-plate and provided with a nut, and a screw turning in said bed-plate and engaging with said nut, as and for the purpose specified.

2. The combination, with a jack, of a bed-plate provided with downward projections to receive the head of said jack, holding-screws turning in one of said projections and thrusting against the head of said jack, a slide resting on said bed-plate and provided with a nut, a screw turning in said bed-plate and engaging with said nut, and chains, each secured at one end to said slide and at the other free end provided with a hook to be caught onto the truck of a railway-car, as and for the purpose specified.

330,843. WATER-CLOSET VALVE. HENRY S. LORD, Hartford, Conn. Filed June 8, 1885. (No model.)

Claim.—In a water-closet-valve arrangement, the combination of the valve arranged in the passage from the water-supply to the basin, a lever, H, in connection with said valve and by the movement of which the said valve may be opened and closed, a latch, J, adapted to engage said lever in the open position, the valve by which the escape from the basin is opened or closed, the device by which the said escape-valve is opened, adapted to turn the said lever H to open the valve in the supply, the float M, and weighted lever N, to which the said float is attached, the said lever N adapted to engage said latch J and turn it from its engagement with the lever as the float rises, substantially as described.

330,844. FLUE-WELDING MACHINE. BENJAMIN F. LOWTHER, Garrett, Ind. Filed May 15, 1885. (No model.)



Claim.—1. In a welding-machine, the combination of the vertically-moving hammer having an opening in its lower end, a die having a shank projecting into said opening, a cushion interposed between it and the hammer, a locking device for the die and hammer, the lower die for the tube to rest upon, and means, substantially as described, for moving said hammer and die, for the purpose set forth.

2. In a welding-machine, the combination of the vertically-moving hammer having a die with cushion interposed between it and the hammer, the lower die supported by a partially-yielding medium, and means, substantially as described, for operating the movable hammer and die, for the purpose set forth.

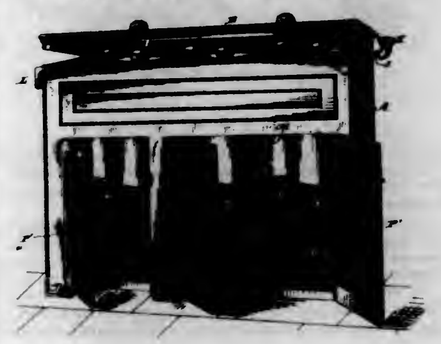
3. In a welding-machine, the combination of a die having a shank provided with a vertical slot, a hammer having a recess for the shank, and a key of less size than said slot for holding the die in place, and a cushion interposed between the die and hammer, substantially as described.

4. In a welding-machine, the combination of the lower die having the die-holder and an elliptical spring supporting said die-holder, substantially as described.

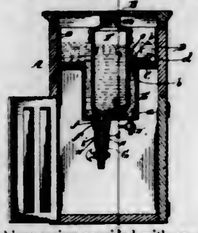
5. In a welding-machine, the combination of the lower die and the elliptical spring having adjusting devices, substantially as described.

6. In a flue-welding machine, the combination of a frame, the fast and loose pulleys above the frame and connected with a power-shaft by a belt, a vertical belt-shifter pivoted to the frame and having its upper end connected with the belt and its lower end having a fixed short arm or pedal and a fixed long arm or counter-balance, substantially as described.

330,845. COMBINED CREAMER AND REFRIGERATOR. FREDERICK W. MOSELEY, Poultney, Vt. Filed Sept. 21, 1881. (No model.)



330,845.



Claim.—1. A cabinet-casing provided with an upper and a lower compartment, the upper compartment serving as the cooling-tank and having a depending well extending into the lower compartment, in combination with a milk-can supported in said well, substantially as specified.

2. A cream raising and refrigerating apparatus united in a single structure and consisting of a cabinet-casing, an ice receptacle or chamber arranged in its upper part, one or more water-chambers depending from the ice-receptacle into a lower compartment of said cabinet-casing, and a milk vessel or vessels contained within and wholly surrounded by the ice-receptacle and the water chamber or chambers depending therefrom, whereby the refrigerative action of the agent employed in the primary separation of the cream is utilized in the lower compartment for general purposes, substantially as specified.

3. In a dairy-creamery, the refrigerator-box having the contracted lower portion forming a well depending into a lower compartment of a cabinet-casing including said refrigerator-box, in combination with the milk-receiving can secured within said well and extending upward through the refrigerator-box, the lower end of said can being provided with a nipple extending through the well into a lower compartment of said cabinet-casing, the space between the can and the box and the well being continuous and uninterrupted, as and for the purpose described.

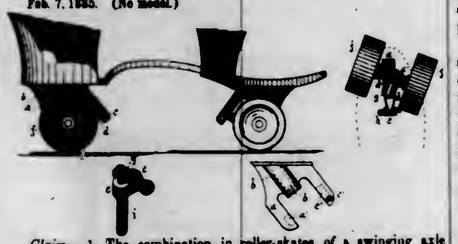
4. In a dairy-creamery, the combination, with a cabinet-casing having doors upon one side only, of an ice-receptacle occupying the upper portion thereof, a series of alternating water-chambers depending from said ice-receptacle and adapted together therewith to receive the milk-vessels and discharge-pipes leading from said vessels to the exterior and brought by the alternate arrangement within sight and reach of the operator from one side of the cabinet only, substantially as and for the purpose set forth.

330,846. CASKET-PLATE. George W. Moulton, Westfield, Mass., assignor to the Textile Manufacturing Company, same place. Filed June 10, 1885. (No model.)



Claim.—The herein-described casket-plate consisting of the elevated body A, and the fastening-wings a, extending downward from the corners thereof, substantially as described, and for the purpose specified.

330,847. ROLLER-SKATE. Henry Mueller, Decatur, Ill. Filed Feb. 7, 1885. (No model.)



Claim.—1. The combination, in roller-skates, of a swinging axle provided with a parallel-surfaced projection, and a pair of spring-plates secured laterally at each end and held in contact with the parallel surfaces of the projection on the axle at their longitudinal center, as and for the purpose set forth.

2. The combination, in roller-skates, of projections *a c*, bearing *b*, pintle *i*, provided with projection *g*, and axle-frame *e*, and springs *d*, supported at each end by *a* and *c*, and held in contact with projection *g* at their longitudinal center, as and for the purpose set forth.

3. The combination, in roller-skates, of projections *a c*, provided with cavity *a'* and slot *c'*, respectively, bearing *b*, pintle *i*, projection *g*, axle *e*, springs *d*, and securing-pin *h*, as and for the purpose set forth.

4. The combination, in a device for limiting the swing of a pair of wheels for roller-skates, of pintle *i*, axle *e* at right angles with said pintle, and projection *a*, adapted to act as a stop to the swing of the wheels when in substantially the position shown in Fig. 3, for the purpose set forth.

330,848. WASHING-MACHINE. Richard Orford, St. Joseph, Mich. Filed July 24, 1885. (No model.)

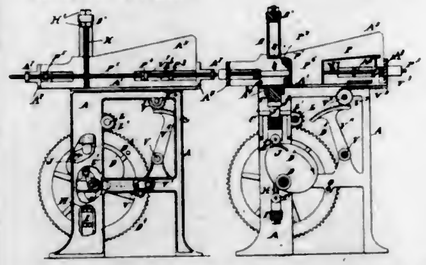


Claim.—1. In combination with the main frame or tub A, having standards A' with recesses *a'*, the presser-frame B, having rollers C and friction-roller *b*, and the rubber D, having oblique handle D', and gudgeons *d*, operating in the said recesses *a'*, to oscillate between the presser-frame and tub, as set forth.

2. In a washing-machine, substantially as described, the combination, with the tub A, having castings a^3, and the rubber D, having gudgeons *d*, of the presser-frame B, having rollers *b*, casting B', and saddles b^3, as and for the purposes set forth.

3. In a washing-machine, as described, the casting B', having pins b^3 and saddle b^3, secured to the frame B, and having rollers *b* upon said pins b^3, in combination with the tub A, having recesses *a*, and the rubber D, having gudgeons *d*, as set forth.

330,849. PLUG-TOBACCO MACHINE. Tillman Puett, Jr., St. Louis, Mo., assignor of one-third to George W. Bramford, same place. Filed Dec. 20, 1884. (No model.)



Claim.—1. The combination, with a frame, table, mold, charger, driving-shaft, and means for advancing and retracting the charger, of the main cam having side cams and secured to the driving-shaft, the vertically moving frame having upper, lower, and intermediate beams, the upper plunger secured to the upper beam, the lower plunger, and supports for the lower plunger, the main cam bearing on the lower and intermediate beams for reciprocating the upper plunger-frame, and the side cams elevating and dropping the lower plunger while the upper plunger-frame is at rest, substantially as set forth.

2. The combination, with a frame, table, mold, charger, driving-shaft, and means for advancing and retracting the charger, of the main cam having side cams and secured to the driving-shaft, the vertically-moving frame having upper, lower, and intermediate beams, the upper plunger secured to the upper beam, the lower plunger, the brackets for supporting the lower plunger, and plates depending from the lower plunger, the main cam bearing on the lower and intermediate beams for reciprocating the upper plunger-frame, and the side cams bearing on the plates for elevating and dropping the lower plunger while the upper plunger is at rest, substantially as set forth.

3. In combination with the upper and lower plungers, cross-beams connected by vertical rods, and a shaft having a cam for operating the upper plunger-frame, the additional cams formed upon or secured to the said cam, and the vertical plates passing through one of the said beams and connected at their upper ends by a block, substantially as and for the purpose set forth.

4. The combination, with a frame, table, charger, means for operating the charger, and means for operating the plungers, of the plunger-frame, upper plunger having openings through the face thereof, a mold provided with knives, and the lower plunger having openings through the face thereof, substantially as set forth.

5. The combination of a frame, a table on the frame, a charger formed with a front part, P', and a rear part, P, guides for directing the

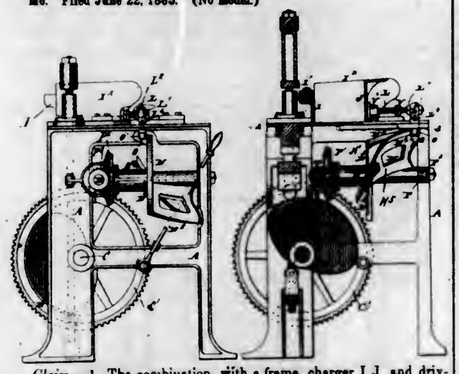
movements of the parts, and the devices, substantially as described, by which the parts are operated for receiving, compacting, and delivering the material.

6. The combination, with a frame, table having side pieces, and the upper plunger, of the sliding rods, guides for the rods, and a charger formed in two parts, one part being moved on said rods toward the other part, and both parts being moved with the rods, substantially as set forth.

7. The combination of an upper plunger, table having side pieces, sliding rods, stops P^2 and P^4 on said rods, charger having a part, P', fixed to the rods, and a movable part, P, sliding on the rods toward the other part, and means by which the outer part is moved toward the inner part and advances the rods with the inner part, substantially as set forth.

8. The combination of a table, upper plunger, charger having two parts, rods to which the parts are connected, a rack-bar secured to the outer part, an oscillating arm having a rack-segment, a pinion connecting the rack-segment with the rack-bar, a shaft having cams, and a yoke and rod connected to the oscillating arm, substantially as set forth.

330,850. PLUG-TOBACCO MACHINE. Tillman Puett, Jr., St. Louis, Mo. Filed June 22, 1885. (No model.)



Claim.—1. The combination, with a frame, charger I J, and driving-shaft, of the charger-operating mechanism comprising a pin depending from the charger, cam-shaft, devices connecting the driving and cam-shafts, and a cam formed with a hub mounted on the cam-shaft, a wing having an inclined face to advance the charger and a straight face to hold the charger, and an inclined wing for retracting the charger, operating substantially as set forth.

2. The combination, with a frame, charger I J, and driving shaft, of the charger-operating mechanism comprising a pin depending from the charger, cam-shaft, devices connecting the driving and cam shafts, and a cam formed with a hub mounted on the cam-shaft, a wing having an inclined face to advance the charger and a straight face to hold the charger, and a wing for retracting the charger, projecting forward in front of the other wing and inclined from end to end, the wings having a notch at their rear ends for the passage of the pin from one wing to the other wing, operating substantially as set forth.

3. The combination, with a frame and charger-operating mechanism, of a charger consisting of a front part having side pieces secured thereto, a rear part fitting between the side pieces, cross-bar secured to the side pieces behind the rear part, cross-head in rear of the cross-bar, rods connecting the cross-head to the rear part through the cross-bar, and stops on the rods to limit the movement of the cross-head toward the cross-bar and the rear part within the front part, substantially as set forth.

330,851. AUTOMATIC STOP. Tillman Puett, Jr., St. Louis, Mo. Filed Oct. 13, 1885. (No model.)

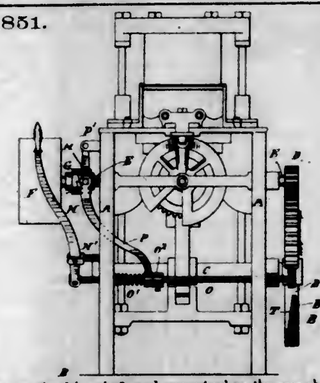
Claim.—1. In combination with a machine having a sliding clutch and a gear-wheel provided with a perforation, B^3, an automatic stop consisting of spring-rod arranged to enter the perforation in the gear-wheel and connected to the clutch, and a lever for operating the rod, substantially as set forth.

2. In combination with a machine having a sliding clutch and a gear-wheel provided with a perforation, B^3, an automatic stop consisting of a spring-rod arranged to enter the perforation in the gear-wheel and connected to the clutch by a pivoted arm or bar, and a lever for operating the rod, substantially as set forth.

3. In combination with a machine having a sliding clutch and a gear-wheel provided with a flange, B, having a perforation, B^3, and a taper, T, an automatic stop consisting of a spring-rod arranged to enter the perforation B^3 in the flange of the gear-wheel and connected to the clutch, and a lever for operating the rod, as set forth.

4. In combination with the drive-shaft, cam-shaft, sliding clutch,

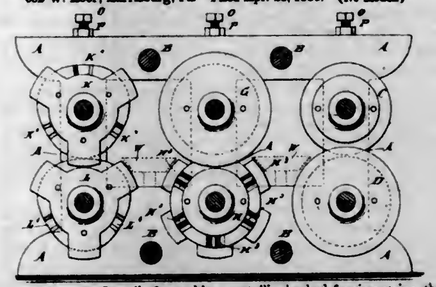
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and collar on the drive-shaft, and cog-wheel on the cam-shaft having a perforated flange, the lever for operating the clutch, and rod connected to the lever and adapted to enter the perforation in the cog-wheel, substantially as shown and described, for the purpose set forth.

5. In combination with the drive-shaft, cam-shaft, sliding clutch, and collar on the drive-shaft, and cog-wheel on the cam-shaft having a perforated flange, the lever for operating the clutch, and rod connected to the lever and adapted to be automatically engaged with the perforation in the cog-wheel by means of the spring O', substantially as shown and described, for the purpose set forth.

330,852. MACHINE FOR MAKING BARBED FENCE-STRIPS. Jacob W. Roop, Harrisburg, Pa. Filed Apr. 28, 1885. (No model.)



Claim.—1. In rolls for making metallic barbed fencing-strips, the rolls G H, made, substantially as herein shown and described, with plane portions G' H', to receive the web E of the fencing-strip blanks, annular grooves G^2 H^2, to receive the strengthening-beads F, and male and female dies G^3 H^3, to cut pieces from the outer parts of the web E to form barbs I and ornamental alarm-fins J, as set forth.

2. In rolls for making metallic barbed fencing-strips, the rolls K L, made, substantially as herein shown and described, with plane portions K' L', to receive the barbs I and fins J, annular grooves K^2 L^2, to receive the strengthening-beads F, and alternating male and female dies K^3 L^3 L^4 K^4, to bend the barbs I alternately in opposite directions, as set forth.

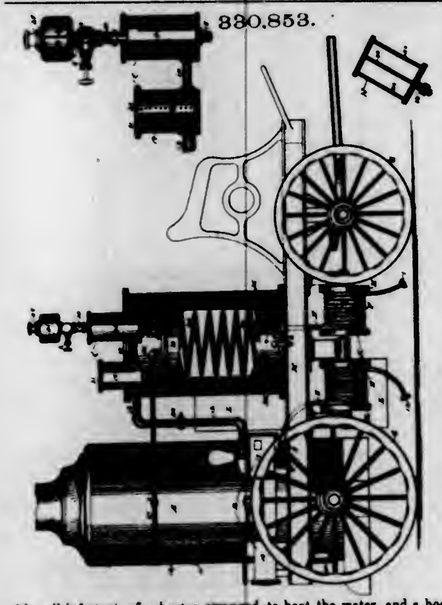
3. The combination, with the frame A B, of the pair of rolls C D, having plane portions C' D', and annular grooves C^2 D^2, for forming the blank strips, the pair of rolls G H, having plane portions G' H', annular grooves G^2 H^2, and male and female dies G^3 H^3, for forming the barbs I and ornamental alarm-fins J in the webs of the blank strips, the pair of rolls K L, having plane portions K' L', annular grooves K^2 L^2, alternating male and female dies K^3 L^3 L^4 K^4, for bending the barbs I in the opposite directions, and curved faces to corrugate the strips, and the connecting and driving gearing Q R S T S', substantially as herein shown and described, whereby the fencing-strips will be formed from a bar of metal by a continuous operation, as set forth.

330,853. PORTABLE DISINFECTING APPARATUS. William W. Rossfeld, New York, N. Y., assignor to the Home Vapor Bath and Disinfector Company, same place. Filed Mar. 23, 1885. (No model.)

Claim.—1. In a portable disinfecting apparatus, the combination, with a heater arranged to heat a quantity of water charged or impregnated with a disinfectant, of a hose or pipe arranged to conduct the heated water from the heater to the place of use, and a pump arranged to force the water from the heater through the hose, the whole being mounted upon a suitable vehicle, substantially as described.

2. In a portable disinfecting apparatus, the combination, with the feeding apparatus C, arranged to charge or impregnate a stream of water

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with a disinfectant, of a heater arranged to heat the water, and a hose or pipe arranged to conduct the heated water from the heater to the place of use, the whole being mounted upon a suitable vehicle, substantially as described.

3. In a portable disinfecting apparatus, the combination, with the feeding apparatus C, arranged to charge or impregnate a stream of water with a disinfectant, of a heater arranged to heat the water, a hose or pipe arranged to conduct the heated water from the heater to the place of use, and a pump arranged to force the water from the heater through the hose, the whole being mounted upon a suitable vehicle, substantially as described.

4. The herein-described portable disinfecting apparatus, consisting of the force-pump B, and a suitable motor for operating the same, the feeding apparatus C, arranged to charge or impregnate a stream of water with a disinfectant, a heater, D, arranged to heat the water, and the hose E F, the whole being mounted upon a suitable vehicle, and arranged to co-operate, substantially as and for the purposes set forth.

330,854. KEY-FASTENER. HENRY B. STRANAHAN, Cleveland, Ohio. Filed Apr. 7, 1885. (No model.)



Claim.—1. A key-fastener consisting, essentially, of a block terminating in a thin flat tongue for entering a key-hole, an elastic bail pivoted to the block and engaging grooves in the latter, by means of which the tension of the bail will hold the latter in position extended or closed, the end of the bail bent in the form of a hook for entering the bow of the key, with the arrangement of parts such that the tongue may be inserted in the key-hole and the hook in the bow of the key, so as to prevent the key from being turned or backed out, substantially as set forth.

2. In a key-fastener, the combination, with the block A, provided with the tongue A', the grooves *a* and *a'*, and the hole a^2, of the bail B, pivoted in the block, and provided with the hook *b*, substantially as set forth.

330,855. SOFA-BED. CHARLES STREIT, Cincinnati, Ohio. Filed July 27, 1885. (No model.)



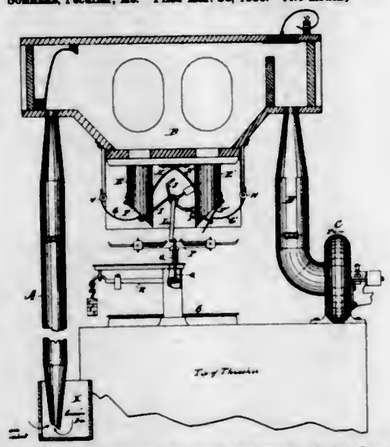
Claim.—1. A hinge for folding lounges, consisting of the right and left members E and arched coupling-link F, the said parts E having slots concentric with the pivot-pins, and the link F having pins projecting from it to traverse said slots when the parts are pivoted together.

2. In a folding lounge, the combination of the stationary and folding frames, each composed of back and end rails of equal width, and the narrow front rails, A^2 and B^2, with the hinge composed of right and left members E, and arched link F, connecting the two members and bracing the front and end rails together, substantially as set forth.

3. The locking-latch for folding lounges, consisting of the hook-plate H, having perforation, as *h*, for the pivot-bearing, and having perforated ledge *h'* to receive cord or strap I and I', and spring J, the said latch being constructed to be secured to the back rail of a folding frame, and held in engagement with the hook or pin upon the stationary frame by the said spring J, and is also secured to the folding frame, substantially as shown and described.

4. The combination, substantially as specified, in a folding lounge, of the stationary frame A, A', and A^2, and the folding frame B, B', and B^2, hinged to the said stationary frame, as shown, with the latch H, *h*, *h'*, and h^2, and the spring J, secured to the rail B of the folding frame, which has a notch in its meeting edge when folded, with a hook, K *k*, secured to the frame A and projecting above the edge of said frame and through the notch in frame B when the lounge is folded, substantially as shown and described.

330,856. GRAIN-BAG FILLER, WEIGHER, AND REGISTER. L. P. SUMMERS, Peculiar, Mo. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination of a hopper, discharging-tubes, valves hinged thereto, a vibrating device for alternately releasing and forcibly closing the valves, a vibrating trip-rod, a weighing-scale, and catch-rod that is connected with it and arranged to disengage said trip-rod when the scale operates, substantially as shown and described.

2. The combination of hopper-discharging tubes, valves hinged thereto, a weighted vibrating device for alternately releasing and forcibly closing the latter, the trip-rod L, having one end bent downward, a catch-rod for alternately engaging and disengaging the latter, a weighing-scale to which the catch-rod is attached, and a spring shifting device which actuates the trip-rod, and whose spring is compressed to set the latter, substantially as specified.

3. The combination of the hopper-discharge tubes, valves hinged thereto, bails connected with the valves, a valve-closer consisting of a bar having curved arms, and a weight rigidly connected with said valve-closer, as shown and described, whereby when the latter is shifted one of the valves is opened and the other closed and held closed until the next shifting operation, all as shown and described.

4. The combination of the hopper-discharge tubes, valves hinged thereto, bails connected with the valves, a valve-closer consisting of a bar having curved arms, a weight rigidly connected with said valve-closer, and curved friction-springs arranged, as specified, to act on the weight at the limits of its movement, all as shown and described.

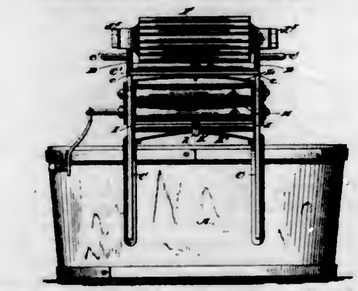
5. The combination of the hopper-discharge tubes, valves hinged thereto, bails connected with the valves, a valve-closer consisting of a bar having curved arms, a weight rigidly connected with said valve-closer, as shown and described, the vibrating trip-rod, the rotatable sleeve having a notched head and carrying the aforesaid valve-closer and weight, the collar fixed on trip-rod and having a projection that engages the head of the sleeve, a spring-actuated device for acting on the trip-rod, a catch-rod for engaging the latter, and a weighing-scale to which the catch-rod is applied, all as shown and described.

6. The shifting device consisting of a pivoted lever and counter-lever *f*, rods pivoted to the latter and working in guides affixed to the former, springs encircling the pivoted rods, and means for intermittingly locking and unlocking said counter-lever, all arranged substantially as specified.

7. The combination, with the vertical hopper-discharge tube, of the adjustable wind-guard W and a clamp-screw for securing the latter in any adjustment, as shown and described.

330,857. COMBINED WASHING-MACHINE AND WRINGER. JOHN A. TYNAN, Cincinnati, Ohio, assignor of one-half to Alexander Delerac, same place. Filed Apr. 29, 1885. (No model.)





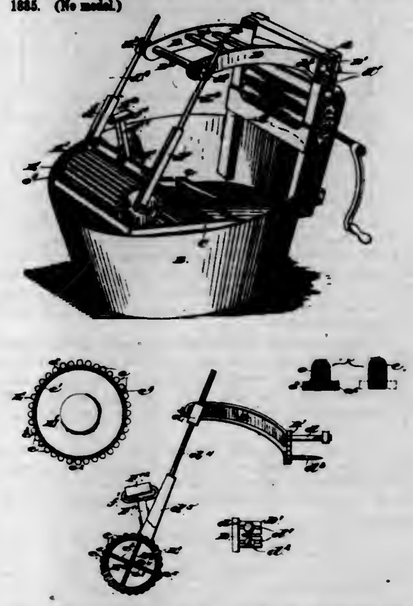
Claim.—1. In a combined portable washing-machine and wringer, the combination of side pieces having clamping-jaws, vertical portions, and upper curved extensions all cast integral, of an oscillating frame mounted in the ends of the curved extensions, a fluted roller in the lower portion of the said oscillating frame, and a wringer situated between the side pieces near the clamping-jaws, substantially as described.

2. In a combined portable washing-machine and wringer, the combination, with the side pieces having clamping-jaws, vertical portions, and upper curved extensions all cast integral, of a rocking shaft mounted in the extremities of said curved extensions projecting beyond the frame and engaging with extended T-joints, sliding rods mounted in the said T-joints, wooden rods secured to the sliding rods having holes in their lower extremities with bushing-bearings mounted therein, a fluted roller having journal-collars of non-corrosive metal engaging the said bushing-bearings, an operative handle, suitable brace-rods for the frame, and a wringer, substantially as described.

3. In a combined portable washing-machine and wringer, the combination, with the side pieces, as described, of an oscillating frame carrying a fluted wooden roller, a brace-rods near the wooden roller in said frame, a collar attached to an operating-handle having a vertical and longitudinal movement, collars on the ends of said brace-rods bearing against the wooden rods, suitable hollow brace-rods in the frame, rest-pins on the side pieces, and a wringer between said side pieces, substantially as specified.

4. In a combined portable washing-machine and wringer, the combination of the side pieces, D D, having clamping-jaws C C, the oscillating frame carrying the roller F, the wash-board B, wringer H, top plate, C', and means, substantially as described, for bracing and operating the parts, as set forth.

330,858. WASHING-MACHINE. JOHN A. TYNAN, Cincinnati, Ohio, assignor of one-half to Alexander Delerac, same place. Filed June 27, 1885. (No model.)



Claim.—1. In a washing-machine attachment, the combination of a frame having curved sides, and means, substantially as described, whereby the same may be secured and adjusted to any clothes-wringer, a rubber having compartments therein, provided with ports for the ingress and egress of the water, and an oscillating device connected with the frame and the rubber, whereby the rubber may have free movement and be supported by the frame, as set forth.

2. In a washing-machine attachment, the combination of the curved arms D D, ears D', having slots *d'* *d'* cast integral with said curved arms and engaging the bolts *d* of the wringer, the oscillating device carrying a hollow roller, E, having ports e^2 entering compartments E^2, and a swivel-handle, F', secured to the oscillating device, whereby the roller may be used in connection with the board C with an oscillating movement, substantially as described.

3. A rubber or roller for washing-machines, having compartments or buckets, divisional strips forming said buckets, ports or openings in said compartments for the ingress and egress of the water, strips for covering the roller, and a non-corrosive metal ring securing the ends of these strips to the heads of the rubber or roller, substantially as described.

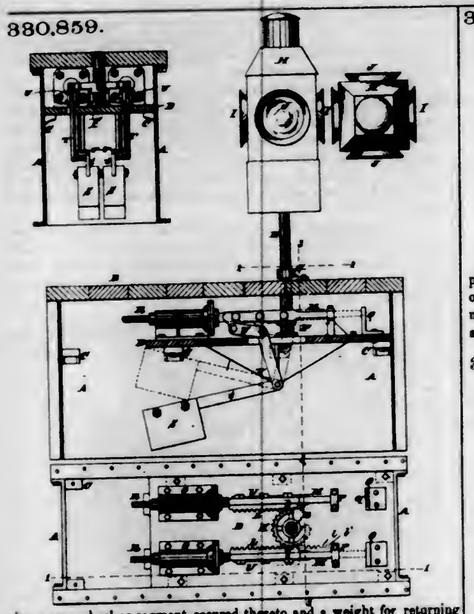
330,859. RAILWAY-SIGNAL. MOSES WURPEL, St. Louis, Mo. Filed Dec. 13, 1884. (No model.)

Claim.—1. The combination, with a wheel or segment upon a railway-signal staff, of two cog-racks engaging said wheel or segment, for the purpose set forth, and having one or more teeth removed partially or wholly at *l*, for the purpose set forth.

2. The signal-operating rack-rod M, wheel or segment K, and stop Q, substantially as and for the purpose set forth.

3. In a railway-signal, the combination, with the signal-staff hav-

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ing a cog wheel or segment secured thereto and a weight for returning said signal to its normal position, of a pair of reciprocating rack-bars located on the respective sides of said staff and adapted to be engaged with said cog-wheel at the will of the operator, substantially as and for the purposes set forth.

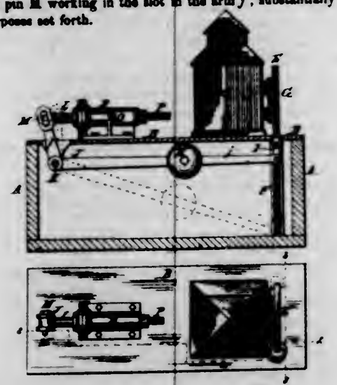
4. The combination, with the rotary staff of a railway-signal having a cog wheel or segment secured thereto, as explained, of a pair of reciprocating rack-bars located on the respective sides of said staff, and each provided with a mutilated portion, whereby the rotation of said cog wheel or segment by one of said racks is prevented from moving the other, as set forth.

5. The combination, with the staff G, having the cog wheel or segment K secured thereto, as described, of the rack-bars L, located on the respective sides of said staff, each having a mutilated portion, *l*, and a tooth, *l'*, beyond said mutilated portion, substantially as and for the purposes set forth.

6. The combination, with the signal-staff G, having the cog wheel or segment K secured thereto, of the racks L, located on the respective sides of said staff and having the mutilations *l* and the teeth *l'*, the weight S, for holding said racks normally retracted, and means under the control of the operator for forcing either of said racks forward for changing the signal, as explained.

330,860. RAILWAY-SIGNAL. MORRIS WUERPEL, St. Louis, Mo. Filed Dec. 13, 1884. (No model.)

Claim.—1. The combination, with the signal C, of the sliding sash E, the weighted bell-crank lever J, having the slotted arm *j''*, loose connection between the other arm, *j*, and the sash E, and the plunger L, having the pin M working in the slot in the arm *j''*, substantially as and for the purposes set forth.

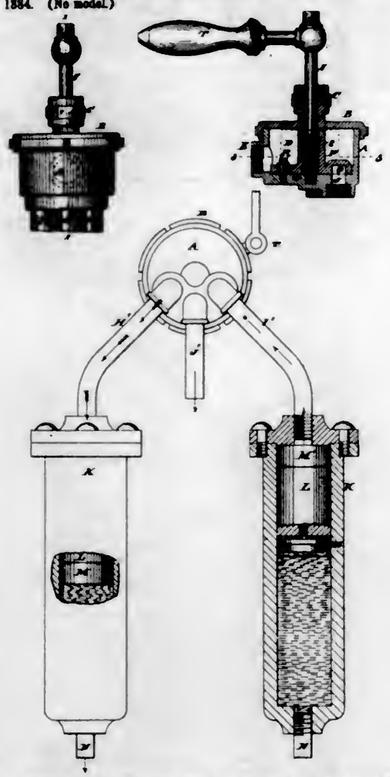


330,860.



2. The combination, with the signal C, of the sliding sash E, the plunger L, the weighted bell-crank lever J, loose connection between one arm of said bell-crank lever and said plunger, and the link I, connecting the other arm of said bell-crank lever with the sliding sash E, substantially as and for the purposes set forth.

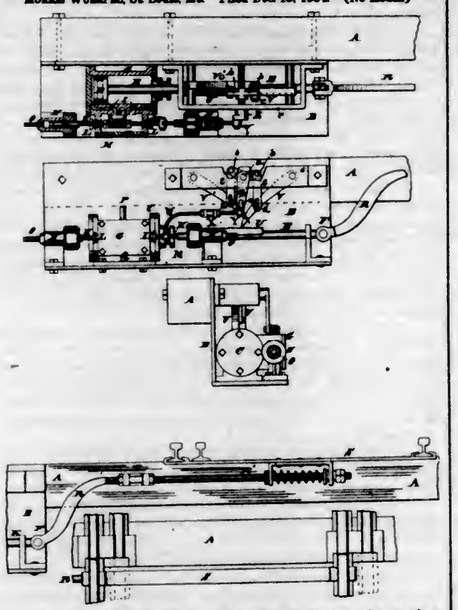
330,861. VALVE. MORRIS WUERPEL, St. Louis, Mo. Filed Dec. 13, 1884. (No model.)



Claim.—1. The combination of two independent pressure-cylinders with a single valve-case having a pair of eduction-ports communicating with the respective cylinders, an inlet-port and an exhaust-port, a valve adapted to close both of said eduction-ports, and having a pair of ports either of which is adapted to be brought into coincidence with its eduction-port, and a recess or passage for placing the other of said eduction-ports in communication with the exhaust-port, whereby when pressure is exerted in one of said cylinders it is simultaneously relieved in the other, as set forth.

2. The combination of the two independent pressure-cylinders K K', the valve-case A, having a pair of eduction-ports, H I, communicating with the cylinders K K', respectively, an inlet-port, E, and an exhaust-port, J, said ports being arranged in the valve-seat at equal distances apart, and the valve F, having the recess Q in its face, of sufficient length to place either one of said eduction-ports in communication with the exhaust-port and the ports O P, cut through said valve at the respective ends of said recess Q and at a distance therefrom equal to the distance between two of the ports in the valve-seat, substantially as set forth.

330,862. MACHINERY FOR OPERATING RAILWAY-SWITCHES. MORRIS WUERPEL, St. Louis, Mo. Filed Dec. 13, 1884. (No model.)



Claim.—1. The combination, in a railway-switch-moving mechanism, of a rack and two automatic pawls working upon the rack, and device connecting the pawls with the valve-stem K, substantially as and for the purpose set forth.

2. The combination, with the main cylinder and piston, of a slide-valve having a stem projecting from each end thereof, a piston secured to each of said stems, and a pair of cylinders with supply of motive power independent of that of the main cylinder in which the respective pistons work, substantially as and for the purposes set forth.

3. The combination, in a railway-switch-moving mechanism, of an engine moving the switch having a rack upon its piston-rod and pawls acting upon the rack, and lifted alternately by connection with the valve-stem of the engine.

4. The combination, in a railway-switch moving mechanism, of a rack and pawls working thereon connected to the arms of a rock-shaft rocked by connection to the valve-stem of the engine.

5. The combination, with the main cylinder and piston, of a slide-valve having a stem projecting from each end thereof, a piston secured to each of said stems, a pair of cylinders with supply of motive power independent of that of the main cylinder, a pair of oppositely-engaging pawls, and connection between said pawls and the valve-stem, whereby one or the other of them is lifted out of engagement at each oscillation of the valve, substantially as set forth.

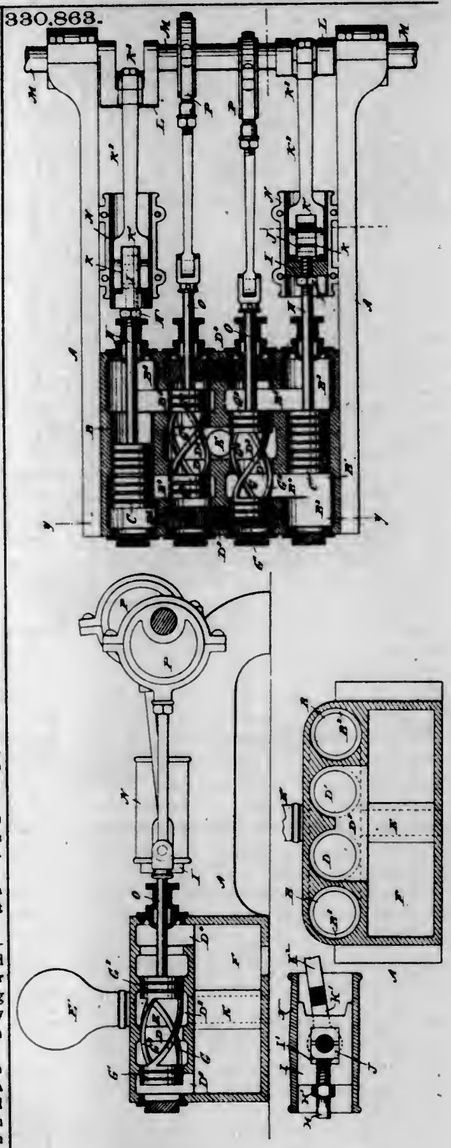
6. In a railway-switch-operating mechanism, the combination with a main cylinder and piston and a supply of motive power therefor, of a slide-valve for controlling the admission of said motive power to the said main cylinder and a supply of motive power for moving said valve in each direction, the three supplies being entirely independent of each other, as explained.

330,863. HYDRAULIC MOTOR. CHRISTOPH G. WURSTER, Hudson, N. Y. Filed Sept. 1, 1885. (No model.)

Claim.—1. In a hydraulic motor, the cylinders B and B', having the ports B^4 and B^5, and pistons C and C', in combination with the slide-valves G, consisting of the pistons G' G^3 and the spiral ribs G^2, said valves G being placed in the valve-chambers D and D', having the recess D^2, into which enters the inlet-pipe E, and having the recesses D^3 and D^4, which open in the exhaust-chamber F, all arranged substantially as shown and described.

2. In a hydraulic motor, the cylinders B and B', having the recesses B^2 and B^3 and the ports B^4 and B^5, the pistons C and C', the piston-rods H, the cross-heads I, the pitmen K^1, the crank-arms L, and the shaft M, in combination with the slide-valves G, placed in the valve-chambers D and D', having the central recess, D^2, into which the inlet-pipe E enters, and having the recesses D^3 and D^4, opening into the exhaust-chamber, the slide-valve rods O, and the eccentrics P, placed on the shaft M, substantially as shown and described.

330,863.



REISSUES.

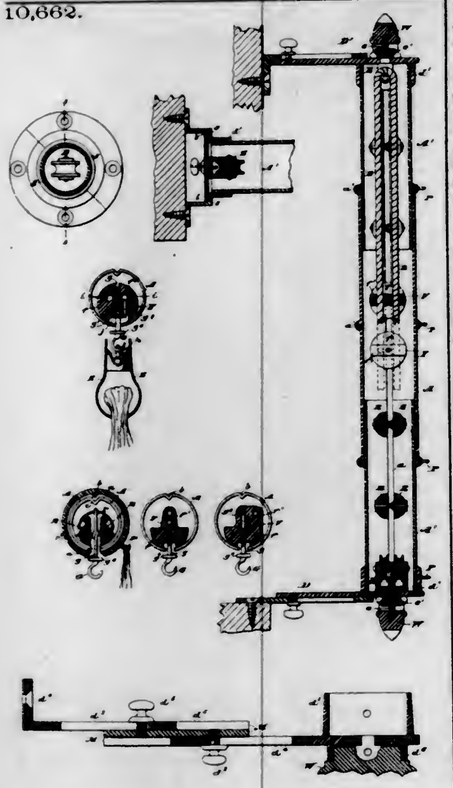
10,662. CURTAIN-FIXTURE. LOUIS PAGE and LOUIS WEBER, Brooklyn, N. Y.; said Page assignor to said Weber. Filed Dec. 2, 1884. Original No. 297,627, dated Apr. 29, 1884.

Claim.—1. As a support for a curtain-bar, a bracket having a socket, d', formed on it to receive the end of the bar, and a socket, d^2, formed on its opposite side or face to receive the end ornament, W, substantially as set forth.

2. The combination, with a curtain-bar, of sockets to support or confine the ends of said bar, each socket being divided diametrically into two parts, and provided with a flange which retains endwise the end cap of the bar, substantially as set forth.

3. The combination, to form a three-part extensible bracket for a curtain-bar, of the intermediate section, M, provided with set-screws d^3 and lateral flanges d^4, the slotted section or part d^5, provided with the

10,662.



wing d^9, and the slotted section or part d^8, constructed to receive the end of the curtain-bar, all constructed to fit together and operated substantially as set forth.

4. The combination, with the cylindrical hollow bar provided with a longitudinal narrow slot in its under side, and mechanism within said bar for operating a curtain lengthwise along the same, of a master-ball arranged within said bar and provided with an aperture for the passage of an operating-cord through said ball, and a screw-threaded curtain-supporting hook, G, constructed and operating to clamp the cord to the ball from outside the bar, said hook extending outside of the bar, and its shank provided with a disk, g^4, which is exterior to the bar and wider than the slot in the latter, substantially as and for the purposes set forth.

5. The combination, with a hollow slotted curtain-bar provided with internal mechanism for moving the curtain lengthwise along the bar, of the master-balls F F, provided with apertures i for the operating-cord B to pass through, a screw-hole at right angles to and between said cord-apertures, and a smooth hole opening into one of said cord-apertures to receive a pin, g^3, the said pin g^3, and the curtain-supporting hook G, provided with a screw-threaded shank, on which is a flange, g', all constructed and arranged to operate substantially as set forth.

6. The combination, with a tubular slotted curtain-bar provided with internal mechanism for operating a curtain lengthwise along the same, of a master-ball provided with two cord-apertures for the passage of the two sides of the operating-cord, and a curtain-supporting hook, the shank of which hook screws into such ball, and by its entry into the ball causes the cord in one of said cord-apertures to be clamped to the ball, substantially as set forth.

7. The combination, with the tubular slotted curtain-bar, of the rings a', made separate from and affixed to the bar at intervals, and the hooks, P, affixed to said rings, substantially as set forth.

8. A curtain-bar provided with means, substantially as described, for moving a curtain endwise along the same, and with hooks or eyelets P, attached to its under and front side for the support of a supplemental lambrequin or other ornamental drapery, substantially as set forth.

9. The combination, with a curtain-bar, of curtain-supporting hooks and rollers arranged to travel along such bar, each set being formed of two rollers, E R, their spindle r^2, the bail r, and the hook G, with its shank looped around the spindle and piercing at its upper end the bail r, which bail is looped around the ends of the spindle r^2, the whole operating substantially as set forth.

10. The combination, with a curtain-bar provided with end caps having each an angular aperture therein, as set forth, of the cord-guiding sheaves, their frames provided with squares on their shanks to fit said apertures on the caps, and screw-threads to receive the nuts e', and the said nuts e', all arranged substantially as set forth.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court---Eastern District of Michigan.

MATHEWS *et al.* v. FLOWER *et al.*

Decided October 26, 1885.

1. An inventor may not patent that which is either claimed or described as his invention in a prior patent granted to himself; but he may patent an improvement upon it.
2. When a patent has been judicially declared void for the reason that its claim is too broad, the defect may be corrected by a reissue of it.
3. The action of the Commissioner of Patents in rejecting an application for reissue on a reference to a prior patent, or because it covered a different invention from that disclosed in the original patent, though unreversed, does not operate as an estoppel or as *res adjudicata* upon the parties in a judicial proceeding under the patent afterward reissued.

ON PLEAS to bill and motion of the plaintiffs' for a preliminary injunction.

[This is a bill in equity for the infringement of Reissued Letters Patent No. 10,452, granted to Race and Mathews, February 26, 1884, for a hydrant. The original patent, No. 96,959 for, an improvement in hydrants, was granted November 16, 1869, and was held by the Supreme Court to be invalid by reason of the claim being so broad as to embrace matters previously known and in public use. (*Mathews* v. *The Machine Company*, 105 U. S. 54.) Another patent for an improvement in hydrants, No. 19,206, had been issued to Washburn Race and S. R. C. Mathews, as early as January 26, 1858. This had been reissued April 30, 1872, No. 4,887, and this reissue was also held void by the Supreme Court in the same suit, for the reason that it covered a different invention from the original. Defendants filed eleven pleas to plaintiffs' bill, and the case was argued upon the sufficiency of these pleas, and a motion by plaintiffs for a preliminary injunction. Defendants also filed a cross bill, to which plaintiffs interposed a demurrer; but this cross-bill was abandoned upon the hearing.]

Mr. George L. Roberts for the plaintiffs.

Mr. Edward J. Hill for the defendants.

BROWN, *J.*:

It is scarcely necessary to say that this case ought not to be embarrassed by a reconsideration of the questions involved in *Flower* v. *Detroit*, (22 Fed. Rep., 202.) That was a bill by the present defendants against a corporation which was making use of hydrants claimed to be protected by plaintiffs' patent, and the case turned upon the validity of a patent issued to Thomas R. Bailey, March 14, 1876, Reissue No. 6,990, which had been purchased by the defendants. The several points raised upon the argument of this case were considered with great care, and we see no reason for revising our rulings. We proceed to take up the several pleas in their order.

1. That in 1858 Mathews and Race procured Patent No. 19,206, and afterward and in 1872 Mathews, as the assignee of such patent, procured a reissue of the same, (No. 4,887,) and to procure such reissue stated that the invention consisted in a loose case or jacket around the body of the hydrant, by which Mathews, as far as he could do, secured to himself a grant for the said invention, which is the same invention as that described in the letters patent sued upon, so that it results that the said Mathews is estopped from claiming any rights or equities in any way to said invention. If it were true that complainants had previously obtained a patent for the same invention secured to them by the patent in suit, and that this prior patent had expired, it would doubtless be a complete answer to this bill, since a man cannot have two patents for the same invention. (*James* v. *Campbell*, 104 U. S. 356; *Suffolk Co.* v. *Hayden*, 3 Wall., 315; *Morris* v. *Huntington*, 1 Paine, 348.) And this disability extends not only to what is claimed in the first patent, but to that which is described therein as the patentee's invention. If a man cannot have a patent for what another has claimed or described in a prior patent, much less can he have one for what he himself has claimed or described, for he thus shows that he has anticipated himself. (*James* v. *Campbell*, 104 U. S. 356, 382.) The question then is, whether in their Reissue No. 4,887, Race and Mathews actually claimed or described the invention subsequently secured to them by the patent in suit. In this prior patent the invention is said to consist:—

> First. In the employment of a loose case or jacket around the body of the hydrant, whereby both the hydrant and the case, or the hydrant alone, may be detached and removed or withdrawn, as hereinafter set forth.
>
> The drawing, however, shows this loose case or jacket to be surrounded at its upper end by an elbow projecting from the superterrene portion of the hydrant, so that while it permits the hydrant to be withdrawn without disturbing the case it does not obviate the danger of breakage to the hydrant by the elevation of the case through the action of the frost. The claim, too, is for a protecting case or jacket, E, surrounding the body of the hydrant, and forming a separate and removable part from the elbow D, substantially as and for the purpose set forth.
>
> The invention described in Reissue No. 10,452 is said to consist in an improvement upon this patent,
>
> in which the distinguishing feature is a detached case or jacket surrounding the hydrant-stock and embedded in the ground, but more specifically in combining a case or jacket with the hydrant-stock, the said jacket being loosely fitted to said hydrant-stock and adapted to have end-play to compensate for the heaving by frost, sliding both at top and bottom, and keeping a dead-air space between said hydrant-stock and jacket; further, in so forming and connecting the loose case or jacket above specified that it extends above the surface of the ground, and conforms to the general outline of the hydrant itself, and may be driven back to place upon the elbow at the bottom when the frost has expended its force.
>
> The claim is for—
>
> 1. The detached case or jacket B, combined with a hydrant to have end-play or vertical motion, to compensate for heaving by

frost, the said case B forming a comparatively close sliding joint with the hydrant both at top and bottom, the upper part of same passing outside of the main stock of hydrant, so that any change in its position can be easily ascertained and the case driven back to its place without disturbing the hydrant.

The object of the first patent was to secure a loose case or jacket around the hydrant, so that the hydrant might be withdrawn without disturbing the case. The improvement consisted in so connecting the case with the hydrant that the upheaval of the case a few inches by the frost would not injure or break the hydrant. Unless a person who patents a new article or device is thereafter estopped from patenting an improvement upon such article or device, there is no estoppel in this case.

2. That Patent No. 96,959, the original of the reissue in suit, has been declared void by the Supreme Court in the case of *Mathews* v. *The Machine Company*, and consequently the complainants had no patent to amend when they applied for this reissue, and the same is void. It is true that the opinion of the Supreme Court was that this patent could not be sustained because the claim was too broad; but such are precisely the patents which by Revised Statutes, section 4916, the Commissioner is authorized to reissue—that is, in the language of the act:

> Whenever any patent is • • • invalid • • • by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new.

If defendants proposition were sound, the whole provision with respect to reissues would be nullified. The case of *Jones* v. *McMurray*, (2 Hughes 527,) is not controlling. In that case the Supreme Court had declared the whole invention disclosed in the original patent void for want of novelty, and not merely invalid for want of a proper specification and claim, as in this case.

3. If the third plea be not a substantial repetition of the first, in somewhat different language, we are unable to understand it, and it is therefore overruled.

4. That after the filing of the application for the original patent in this case, October 29, 1868, it was rejected on reference to the prior patent of Bailey of March 10, 1868, which covered and anticipated all the alleged claims of Race and Mathews; that this decision has never been reversed or modified, and therefore is an adjudication and estoppel of record. The answer to this is that this action was superseded by the actual issue of Patent No. 96,959 to Race and Mathews. We do not understand there is anything in the action of the Commissioner in rejecting an application which operates as an estoppel or as *res adjudicata* upon the parties in this court. Unless it be a good defense to a patent that the application for it was once rejected, this is not a good plea.

5. That Race and Mathews were duly notified that the patent to Bailey anticipated all the claims to the loose casing described in their application of October, 1868, and that on receiving such notice Mathews says, in his deposition on file in the case of *Flower* v. *Detroit*, that he thereupon called upon Bailey and asked him to disclaim the same in favor of Race and Mathews because they were the inventors of it, and that Bailey refused to do so, wherefore the complainants are estopped, &c. It is impossible for us to see how Mathews' assertion of a claim of right as against Bailey, and his request to Bailey to withdraw in his favor could estop him from setting up the priority of his invention when that was the very claim he made when he requested Bailey to withdraw. It is not alleged that Bailey was deceived in any way, or that he took any action upon the faith of Mathews' request, which would make it bad faith in the latter to deny the validity of his patent.

6. That Race and Mathews prior to 1872 applied for a reissue of No. 19,206, and therein claimed the same invention claimed in Reissue No. 10,452, and to that end made oath that they made said invention prior to October 29, 1857, and thereupon obtained Reissue No. 4,887, relating back to the date of the original patent in 1858, which thus gave them their prior patent for said invention described in No. 10,452. This is practically the same as the first plea. The fact is that Race and Mathews in their application for Patent No. 19,206 did not claim the same invention claimed in the reissue now in suit.

7. That after filing their application for the reissue of Patent No. 96,959, a decision was made by the Patent-Office holding that the claims covered an invention different from that set forth in the original patent, "and they are therefore objected to on the ground that they are based on new matter," which decision has never been reversed nor superseded, but operates as an adjudication and estoppel of record. This plea is objectionable upon the same ground that the fourth plea was held to be bad. Whatever action adverse to the plaintiff taken in the Patent-Office was superseded by the actual reissue of the patent, and it is for the court to determine whether such reissue is good or bad by a comparison of the same with the original patent.

8. That an appeal has been taken from the decree of this court dismissing the bill in the case of *Flower* v. *Detroit*, and a supersedeas bond filed, whereby the plaintiffs are estopped from claiming any benefit or advantage from said decree. Assuming that the appeal to the Supreme Court in the case of *Flower* v. *Detroit* vacated the decree of this court and prevents complainants from claiming any rights by virtue thereof, of which there is considerable doubt, (Freeman on Judgments, secs. 328, 433,) it certainly does not estop them from prosecuting a suit upon their own patent, the validity of which was not necessarily involved and was not passed upon in that case. The decision of this court turned entirely upon the validity of the Bailey patent.

9. This plea is similar to the first and is bad for the same reason.

10. This plea claims that plaintiff is estopped by certain admissions of Mathews in giving testimony in the Detroit case. We do not understand how this could operate as an estoppel. The remainder of the plea seems to be a substantial repetition of the others that have already been disposed of.

11. This plea is also a repetition in substance of the first, and therefore bad for the same reason.

We have found considerable difficulty in getting at the substance of some of these pleas; but upon the best consideration we have been able to give them we have come to the conclusion that none of them are a bar to the plaintiffs' bill. The reissue in this case is not open to the usual objection that the patentee has thereby sought to secure an expansion of his original claims, since the claim is actually narrower than that of the original. In the case of *Mathews* v. *The Machine Company*, (105 U. S.,) the court construed the original claim as covering any and every loose jacket having an endplay to compensate for the heaving of the frost, and having the upper end passing around the hydrant. It was intimated, however, that if this patent had been confined to a hydrant-jacket closed at the bottom and resting on a flange of the main elbow, it might perhaps have been sustainable; but it was held not to be so confined by reason of the patentee's stating only that the lower end preferably shuts into a flange of the elbow. To secure the benefit of this suggestion of the court, the reissue was applied for and obtained. As heretofore observed in discussing the second plea, the case seems to be one where, under the express language of the statute a disclaimer might be permitted. (*Mahn* v. *Harwood*, 112 U. S., 154, 360, 362.) We think there was no unnecessary delay in making this disclaimer. The construction of the original claim was doubtful, and we think that the patentee was not called upon to correct it until its meaning had been settled by the decision of the Supreme Court. (Walker on Patents, sec. 521; *O'Reilly* v. *Morse*, 15 How., 62, 121; *Seymour* v. *McCormick*, 19 How., 96, 106; *Silsbee* v. *Foote*, 20 How., 378, 387.)

There is no question about the infringement in this case. Defendants are shown to be manufacturing under the Bailey patent, and the two hydrants are identical with respect to the patented features. We do not think that the waste-water spout attached to the bottom of the case in the early hydrants manufactured by the Niagara Manufacturing Company would prevent the case from operating to compensate for the heaving of the earth by frost, or that its discontinuance makes any substantial change in the action of the casing. Indeed, it would seem to offer much less resistance to the upward movement of the casing than the flange around the bottom of the Bailey casing, which never seems to have occurred to the patentee as an obstacle to its successful working. To prevent the hydrant from freezing at its junction with the water-main, it must be long enough to reach below the frost-line. At this point then the earth would be sufficiently yielding to permit the slight upward movement occasioned by the action of the frost upon the upper portion of the casing.

The question of priority of invention as between plaintiffs and Bailey was presented as a prominent feature in the Detroit case, but was not passed upon, as the case was disposed of upon other grounds; nor is it in issue here, as there is no stipulation that the testimony in that case may be considered upon this motion.

This disposes of all the objections to the bill, and an order will be entered granting an injunction, as therein prayed.

U. S. Circuit Court---Eastern District of Missouri.

STEAM GAGE AND LANTERN COMPANY *et al.* v. ST. LOUIS RAILWAY SUPPLIES MANUFACTURING COMPANY.

Decided October 24, 1885.

Although the validity of the patent has been established in another court on the merits, an injunction *simpliciter* is refused, for the reason that on the *ex parte* showing here it does not satisfactorily appear that the defendant should be stopped from doing what is a clear and positive infringement.

Mr. E. S. Jenney and *Mr. F. N. Judson* for the complainants.

Mr. Paul Bakewell and *Mr. J. G. Chandler* for the defendant.

TREAT, *J.*:

I have had many matters under advisement which I think should be disposed of now, as we are nearing the end of the term. And first are these patent cases with regard to the manufacture of lanterns, No. 2,553, against the St. Louis Railway Supplies Manufacturing Company. I find that the demand of the plaintiff is on the first claim of No. 104,318 and the first and second claim of No. 151,703. These matters were particularly before Brother Brewer and myself, with the light shed upon the cases by Judge Shipman with regard to a like demand before him, followed by a great many preliminary injunctions. Instead of following the ordinary course, which is to grant an injunction, provided the proofs of infringement appear when the validity of the patent has been established in some other court on the merits, this case was presented at great length. Deferring to a large extent to what has been done elsewhere with regard to these matters, still the question remains about which there is a great deal of doubt, to be determined on final hearing.

Taking the statement of defendant's counsel as to the interruption of his business, instead of granting an injunction *simpliciter*, the order will be that the restraining order heretofore granted is dissolved, that the defendant give bond in the sum of twenty thousand dollars within five days and keep an account of all sales, to answer to any damages that may be hereafter found against him, in default of which the injunction will issue.

I am not disposed this morning to go into an analysis of these matters, because I do not choose, nor do I think it very prudent, to anticipate on this motion what may be the ultimate merits, and I think comments should be reserved for final hearing. True, it is very persuasive to this court that Brother Shipman has gone over these matters. I have also gone over them in a painstaking way, and Brother Brewer in a cursory way, because his engagements did not permit him to go into the inquiry to a very considerable extent. The order which I have just directed to be given, however, has his full concurrence. He thought that would be a proper solution and would give further time to examine the merits.

The Patent No. 104,318 is not new in regard to the general elements of these cases. The party supposes he has discovered a principle, and he thinks that any sort of device which covers that principle is within the terms of his patent. This court does not admit that. It is the device by which he may avail himself of the beneficial influence of his principle, and this court always restricts a party to his device. I think that is the meaning of all the rulings of the Supreme Court. A great deal has been said here concerning an irreversible current. I suppose it requires no large amount of ordinary experience to realize that where there is an "ascensive current," as it was called here, there must be a supply of air from some source, for nature abhors a vacuum. How shall it be done? By what beneficial influence and by what devices? That is all I choose to say this morning in regard to it. The order will be that the restraining order heretofore granted be dissolved and that the party give bond in the sum of twenty thousand dollars for any damages

that may be awarded and keep an account of sales, conditioned, however, if he does not give that bond within five days the injunction will go.

Mr. CHANDLER. We are ready to give it to-day.

The COURT. It may be approved by the clerk.

Mr. JUDSON. Of course we bow to the decision of the court. As to the matter of conditions, however, I would suggest to your Honor whether the parties would not be equally protected, in view of all the proceedings, by having the complainant give a bond in such sum as the court shall direct, and with such security as will be satisfactory to the other side.

The COURT. That is, by your client.

Mr. JUDSON. Yes; the plaintiff give bond, in lieu of the defendant's bond. Your Honor will see that injunctions are pending in other circuits, and the complainant will have ample remedy on our bond if the patent is not sustained on final hearing, and at the same time, inasmuch as these articles are easily manufactured and the market easily affected, our damage may be irreparable. This defendant is practically under injunction in the Northern District of Illinois. I am not suggesting this to influence the court, but to do substantial equity to protect both parties by having the plaintiff give bond satisfactory to my brethren on the other side.

The COURT. A bond for what?

Mr. JUDSON. A bond on the injunction to protect the defendants against any damage they may suffer by reason of the injunction in case the injunction is dissolved on final hearing.

The COURT. Oh, no.

Mr. JUDSON. We gave such a bond, your Honor will recollect, in the cast of Coburn against Clark.

The COURT. I do not choose to go into this further, Mr. Judson.

Mr. JUDSON. I just suggest it as a matter of condition.

The COURT. I shall not grant it. I have said all that I choose to say. The case, as it is presented to me now, must go to a hearing, because I am not satisfied that Brother Shipman reached a right conclusion with regard to it. That is all there is of it. I will not grant an injunction *simpliciter* in this or any other patent case until it is so made out *ex parte* (and, practically, this is *ex parte*) as to show that a party ought to be stopped from doing what is a clear and positive infringement.

In regard to Patent No. 104,318 the invention is peculiar. It has been before the court. Whether this defendent has ever infringed is a very doubtful question in my mind, and in regard to No. 151,703 the evidence submitted by way of affidavit makes the question very doubtful also. Admitting that the patent is entirely valid, which I take for granted for the present purposes, I think equities require the result which I have reached; and such was the opinion of Brother Brewer, only, as I stated to you, he desired, as he was very busy, that I would go through the case more in detail than he had been able to do. Ordinarily these matters are decided on what you may call the "first impression." That was our first idea of the case. Then I examined at large to see whether I would grant an injunction *simpliciter*, or whether the order should be as I have given it. After having spent weeks of time on the matter I have reached the conclusion that the resulting order is correct, and that the rights of all parties will be preserved by leaving the case as already ordered.

Mr. JUDSON. My suggestion was not to question your Honor's conclusion, but simply to change the form of condition by requiring us to give bond on which we can be held responsible if our case were not sustained on final hearing—that is, that we give bond in such sum as will amply indemnify the defendant and will be satisfactory to him.

Mr. BAKEWELL. We will not be satisfied with that.

Mr. JUDSON. We think, under the situation of the case, that will protect everybody.

The COURT. I wish to say this: I have never seen any occasion to change my views with regard to matters of this kind. A man has a patent *prima facia* valid. Should he have an injunction *simpliciter* for the asking? This court has never chosen to grant that, and until the Supreme Court changes its ruling it never will rule any other way, at least as long as I am on this bench. The law appertaining to patent cases in equity is like the law appertaining to all other equity cases. We preserve the rights of parties without doing any unnecessary wrong to either one, and an injunction *simpliciter* never goes except under extraordinary circumstances. Now this matter has been before this court in various forms with regard to the controversy. I do not know whether this party plaintiff grants licenses, deals in royalties, or what he does. If he does, the amount of his royalties or licenses would cover everything equitable. I have not gone into that inquiry at all.

Mr. JUDSON. The evidence shows there is only one licensee, and the complainant holds the entire monopoly.

Mr. CHANDLER. It don't show any license at all.

Mr. JUDSON. Then I submit that would be a stronger reason for a bond being given on the other side.

The COURT. I cannot go over the case again. It has cost me two or three weeks' time already.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 33—No. 8. TUESDAY, NOVEMBER 24, 1885. PRICE—$5 per year.

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Amendments to Rules of Practice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, November 16, 1885.

The following rules of the Rules of Practice of the Patent Office are amended to read as follows:

31. No application for a patent will be placed upon the files for examination until all its parts, except the model or specimen, are received. Every application signed or sworn to in blank, or without actual inspection of the petition and specification, or altered or partly filled up after being signed or sworn to, will be stricken from the files. Completed applications are numbered in regular order, the present series having been commenced on the 1st of January, 1880. The applicant will be informed of the serial number of his application.

The application must be completed and prepared for examination within two years after the filing of the petition; and in default thereof, or upon failure of the applicant to prosecute the same within two years after any action thereon, of which notice shall have been duly mailed to him or his agent, it will be regarded as abandoned, unless it shall be shown to the satisfaction of the Commissioner that such delay was unavoidable. (See Rules 165–167.)

32. It is desirable that all parts of the complete application be deposited in the Office at the same time, and that all the papers embraced in the application be attached together, otherwise a letter must accompany each part, accurately and clearly connecting it with the other parts of the application. (See Rule 10.)

33. The petition must be addressed to the Commissioner of Patents, and state the name and residence of the petitioner, requesting the grant of a patent for the invention therein designated by title, with a reference to the specification for a full disclosure thereof.

34. The specification is a written description of the invention or discovery, and of the manner and process of making, constructing, compounding, and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same.

35. The specification must set forth the precise invention for which a patent is solicited, explaining the principle thereof and the best mode in which the applicant has contemplated applying that principle, so as to distinguish it from other inventions.

36. In case of a mere improvement, the specification must particularly point out the parts to which it relates, and must by explicit language distinguish between what is old and what is claimed as new, and the description and the drawings, as well as the claims, should be confined to the specific improvement and such parts as necessarily co-operate with it.

37. The specification must conclude with a specific and distinct claim or claims of the part, improvement, or combination which the applicant regards as his invention or discovery.

38. Where there are drawings the description will refer to the different views by figures, and to the different parts by letters or figures. (preferably the latter.)

39. The following order of arrangement should be observed in framing the specification:

(1.) Preamble stating the name and residence of the applicant, and the title of the invention, and, if the invention has been patented in any country, the country or countries in which it has been so patented, and the date and number of each patent.

(2.) General statement of the object and nature of the invention.

(3.) Brief description of the several views of the drawings, (if the invention admits such illustration.)

(4.) Detailed description.

(5.) Claim or claims.

(6.) Signature of inventor.

(7.) Signatures of two witnesses.

40. Two or more independent inventions cannot be claimed in one application, but where several distinct inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application. An application should not ordinarily embrace matters belonging to distinct official classes, nor matters belonging to distinct sub-classes in cases where a contrary practice has heretofore prevailed among applicants.

41. If several inventions, claimed in a single application, be of such a nature that a single patent may not be issued to cover them, the inventor will be required to limit the description, drawing, and claim of the pending application to whichever invention he may elect. The other inventions may be made the subjects of separate applications, which must conform to the rules applicable to original applications. If the independence of the inventions be clear, such limitation will be made before any action upon the merits; otherwise it may be made at any time before final action thereon, in the discretion of the Examiner.

44. The specification and claims and all amendments must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly marked in marginal or foot notes written on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page, both of the specification and of the amendments.

45. The applicant, if the inventor, must make oath or affirmation that he does verily believe himself to be the original and first inventor or discoverer of the art, machine, manufacture, composition, or improvement for which he solicits a patent, and that he does not know and does not believe that the same was ever before known or used, and shall state of what country he is a citizen and where he resides. In every original application the applicant must distinctly state, under oath, whether the invention has or has not been patented to himself, or to others with his consent or knowledge, in any country, and if it has been, the country or countries in which it has been so patented, giving the date and number of each patent, and that it has not been patented in any other country or countries than those mentioned, and must state that, according to his knowledge and belief, the same has not been in public use or on sale in the United States for more than two years prior to the application in this country. (See Rule 39.)

47. In case the applicant seeks by amendment to introduce any claim not substantially embraced in the statement of invention or claim originally presented, and, therefore, not covered by the original oath, he will be required to file a supplemental oath to the effect that the subject-matter of the proposed amendment was part of his invention and was invented before he filed his original application, and such supplemental oath must be attached to and properly identify the proposed amendment.

86. Applicants for reissue, in addition to the requirements of Rule 45, must also file with their petitions a statement on oath as follows:

1st. That applicant verily believes the original patent to be inoperative or invalid, and the reason why.

2d. Where it is claimed that such patent is so inoperative or invalid "by reason of a defective or insufficient specification," particularly specifying such defects or insufficiencies.

3d. Where it is claimed that such patent is inoperative or invalid "by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new," distinctly stating such part or parts so alleged to have been so improperly claimed as new.

4th. Particularly specifying the errors which it is claimed constitute the inadvertence, accident, or mistake relied upon, and how they arose or occurred.

5th. That said errors arose "without any fraudulent or deceptive intention" on the part of the applicant.

140. Upon receiving a petition which shall state concisely and clearly any proper question, which has been twice acted upon by the Examiner, and which does not involve the merits of the case, or the rejection of a claim, and which shall also state the facts involved and the point or points to be reviewed, an order will be made fixing a time for hearing such petition by the Commissioner, and directing the Examiner to report upon or answer the matters averred in such petition at least five days before such day of hearing.

144. Immediately upon taking an appeal the appellant must give notice thereof to the Commissioner of Patents, and file in the Patent Office his reasons of appeal specifically set forth in writing.

145. *Pro forma* proceedings will not hereafter be had in the Patent Office for the purpose of securing to applicants an appeal to the Supreme Court of the District of Columbia.

The second foot-note, page 9, is eliminated.

(Signed) M. V. MONTGOMERY,
Commissioner.

Approved:

(Signed) H. L. MULDROW,
Acting Secretary of the Interior.

Issue of November 24, 1885.

Patents	405—No. 330,864 to No. 331,268, inclusive.	
Designs	10—No. 16,388 to No. 16,397, inclusive.	
Trade-Marks	21—No. 12,789 to No. 12,809, inclusive.	
Labels	7—No. 4,640 to No. 4,646, inclusive.	
Reissues	3—No. 10,663 to No. 10,665, inclusive.	
Total issue	446	

To citizens of the United States: Patents and Designs, 386; Trade-Marks and Labels, 24.

To citizens of Foreign Countries: Patents and Designs, 29; Trade-Marks and Labels, 4.

DESIGNS.

16,388.—PATTERN FOR A SPUR.—*August Buermann*, Newark, N. J. Application filed May 11, 1885. Serial No. 165,114. Term of patent 14 years.

16,389.—STATUETTE GROUP.—*John W. Ehninger*, Saratoga Springs, N. Y. Application filed September 2, 1885. Serial No. 176,039. Term of patent 3½ years.

16,390.—PAPER LANTERN.—*George Franke*, Baltimore, Md. Application filed May 15, 1885. Serial No. 165,627. Term of patent 3½ years.

16,391.—STABLE-HINGE.—*William Cameron Hanna, Jr.*, New York, N. Y., assignor to *J. W. Fiske*, same place. Application filed May 21, 1885. Serial No. 166,325. Term of patent 7 ars.

16,392 to 16,394, inclusive.—RUG.—*Richard Paul Hemming*, Philadelphia, Pa., assignor to *George W. Ennis & Co.*, same place. Applications filed October 26, 1885. Serial Nos. 181,001 to 181,003, inclusive. Term of patents 3½ years.

16,395.—CHAIR-BACK.—*Frank F. Parker*, West Gardner, Mass. Application filed October 19, 1885. Serial No. 180,356. Term of patent 3½ years.

16,396.—HEATING-STOVE.—*Rodney F. Schermerhorn* and *Ferdinand S. Weller*, Quincy, Ill., assignors to *Channon, Emery & Company*, same place. Application filed September 11, 1885. Serial No. 176,848. Term of patent 7 years.

16,397.—CAKE OF SOAP.—*Walter S. Vincent*, Burlington, Vt. Application filed October 12, 1885. Serial No. 179,736. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,789.—REMEDY FOR CHILLS AND A LINIMENT.—*James Lee Able*, Little Rock, Ark. Application filed October 13, 1885.

"The cut of the head of an Indian decorated with feathers, and having a band about the forehead, and the word 'SATANTA' printed or written in the band, and also printed or written below the said cut."

12,790.—WHEEL-HUBS.—*The Acme Hub Company, (Limited,)* Dayton, Ohio. Application filed February 26, 1885.

"The three letters 'B. S. B.'"

12,791.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed October 26, 1885.

"The arbitrarily-selected words 'KNIFE AND FORK' and a picture representing those articles."

12,792.—VIOLIN, GUITAR, AND BANJO STRINGS.—*Sigmund Blumenthal*, New York, N. Y. Application filed October 29, 1885.

"The picture of a boy sitting on a chair and playing the violin."

12,793.—VIOLIN-STRINGS.—*Sigmund Blumenthal*, New York, N. Y. Application filed October 29, 1885.

"The words 'OLE BULL.'"

12,794.—CHAMPAGNE.—*Carstairs, McCall & Co.*, Philadelphia, Pa., and New York, N. Y. Application filed October 29, 1885.

"The word 'MORIZET.'"

12,795.—ROASTED AND ROASTED AND GROUND COFFEE.—*Chase & Sanborn*, Boston, Mass. Application filed November 27, 1883.

"The arbitrarily-selected word 'STANDARD.'"

12,796.—CLEANSING PREPARATION IN FLUID FORM FOR GARMENTS, THE TOILET, &c.—*Thomas E. Davis*, Summit Hill, Pa. Application filed November 3, 1885.

"The word 'CLEANZINE.'"

12,797.—CUSTARD-POWDER.—*Goodall, Backhouse & Co.*, Leeds, county of York, England. Application filed October 30, 1885.

"The representation of a key."

12,798.—REMEDIES FOR COUGHS, COLDS, &c.—*Edwin F. Hyatt*, Newark, N. J. Application filed October 10, 1885.

"The word 'MELPINE.'"

12,799.—LAUNDRY AND TOILET SOAP.—*Lautz Bros. & Co.*, Buffalo, N. Y. Application filed October 19, 1885.

"The word and figure 'BIG 5.'"

12,800.—BITTERS.—*E. Masquelier*, Borgerhout, Belgium. Application filed October 27, 1885.

"The words and letters A. E. BOONEKAMP and a star between the first and last letters of the word 'BOONEKAMP.'"

12,801.—ROASTED AND GROUND COFFEE.—*Maynard & Irwin*, Boston, Mass. Application filed November 2, 1885.

"The word 'CLIMAX.'"

12,802.—ILLUMINATING COAL OR KEROSENE OIL.—*A. B. Morton & Sons*, Baltimore, Md. Application filed October 30, 1885.

"The word 'LUCERO.'"

12,803.—VERMIN-EXTERMINATOR.—*Charles B. O'Neill*, Paterson, N. J. Application filed October 22, 1885.

"An octagonal label, a laughing Chinaman in the center thereof between two broken lines drawn across said octagon, and the words 'LAUGH AT.'"

12,804.—COUGH-DROPS.—*Benj. F. Raymond*, Essex, Mass. Application filed October 21, 1885.

"The words 'OLD MOTHER HUBBARD'S.'"

12,805.—BOYS' CLOTHING.—*A. Shuman & Co.*, Boston, Mass. Application filed August 14, 1885.

"The arbitrarily-selected words 'CAVALRY SEAT.'"

12,806.—LAUNDRY-SOAP.—*John Taylor*, Toronto, Ontario, Canada, and Rochester, N. Y. Application filed October 14, 1885.

"A label with a mottled surface having printed or otherwise affixed thereon the words 'MORSE'S MOTTLED.'"

12,807.—LOCKETS, BRACELETS, AND LACE-PINS.—*Waite, Matheweon & Co.*, Providence, R. I. Application filed September 15, 1885.

"The representation of an eagle with a locket suspended from its bill."

12,808.—TONIC PREPARATION FOR THE TREATMENT OF CERTAIN DISEASES.—*Hulbert H. Warner*, Rochester, N. Y. Application filed November 2, 1885.

"The representation of an iron safe used in connection with the word 'SAFE.'"

12,809.—SMOKING-TOBACCO.—*B. Frank Weyman*, Pittsburg, Pa. Application filed October 19, 1885.

"The arbitrarily-selected letters 'C & D.'"

LABELS.

4,640.—Title: "GRANT'S CALISAYA AND IRON TONIC."—*Colburn, Birks & Company*, Peoria, Ill. Application filed October 5, 1885.

4,641.—Title: "THE "BEST" STOVE POLISH."—*Edwin Fisher*, Reading, Pa. Application filed October 6, 1885.

4,642.—Title: "A. E. BOONEKAMP MAAG BITTER."—*E. Masquelier*, Antwerp, Belgium. Application filed October 27, 1885. (Trade-Mark Registered.)

4,643.—Title: "DR. H. MOZLEY'S LEMON TONIC CORDIAL."—*H. Mozley*, Atlanta, Ga. Application filed October 31, 1885.

4,644.—Title: "DR. TYLER'S TOOTH TABLETS."—*A. S. Schloss* and *David Mueller*, New York, N. Y. Application filed October 20, 1885.

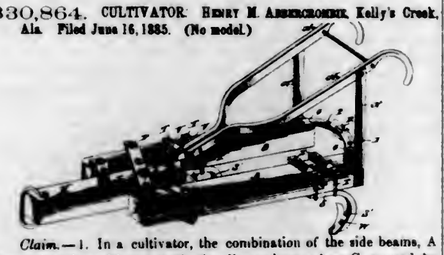
4,645.—Title: "DR. WYMAN'S UNEXCELLED TOOTH POWDER FOR CLEANSING, BEAUTIFYING, AND PRESERVING THE TEETH, AND IMPARTING A DELIGHTFUL FRAGRANCE TO THE BREATH."—*John O. Wyman*, Brooklyn, N. Y. Application filed October 17, 1885.

4,646.—Title: "DEXTER'S MAHOGANY STAIN." (FOR WOOD.)—*Dexter Brothers*, Boston, Mass. Application filed November 4, 1885.

PATENTS

GRANTED NOV. 24, 1885.

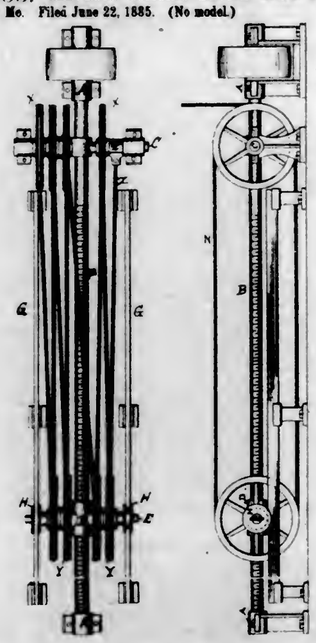
330,864. CULTIVATOR. HENRY M. ABERCROMBIE, Kelly's Creek, Ala. Filed June 16, 1885. (No model.)



Claim.—1. In a cultivator, the combination of the side beams, A B, carrying the cultivator-teeth, the diagonal cross-bars C, secured by pivotal bolts at their front ends to the front ends of the side beams and secured at their rear ends to said side beams by bolts F, the draft-beam pivoted on a bolt between the diagonal cross-beams, and the arm K, pivoted to one of the side beams and having its free end slotted, and a bolt passing through the slot in arm K and entering the draft-beam, whereby the latter may be adjusted, substantially as described.

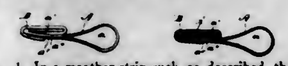
2. In a cultivator, the combination of the side beams, the diagonal cross-bars pivoted to the side beams at one end and having their free ends adjustably secured thereto, said bars being crossed, the bars O, connecting the rear ends of the side beams, and means for clamping said bars together at any desired point, whereby the side beams may be adjusted laterally, and the handles having foot L, secured by bolt G, passing through the intersecting portions of the diagonal cross-bars, substantially as described.

330,865. ELEVATOR-HOISTING DEVICE. RUBEN B. AYERS, St. Louis, Mo. Filed June 22, 1885. (No model.)



Claim.—In an improvement in elevator-hoisting devices, the combination of a threaded shaft, B, to which rotary motion is imparted by any of the well-known mechanisms to that end, bearings A A', shaft C, hung in fixed bearings, grooved wheels X, threaded cylinder D, firmly attached to shaft E, to which in turn are attached grooved wheels Y and track-wheels H, tracks G, and rope Z, the whole combined and operating to raise or lower an elevator, substantially as described, and for the purposes specified.

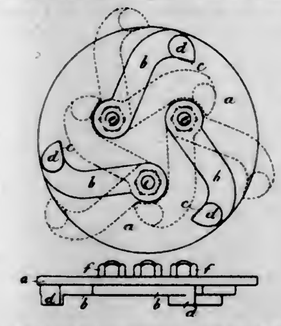
330,866. WEATHER-STRIP. JOHN Y. BASSELL, Leesburg, Va., assignor to Rebecca G. Bassell, same place. Filed Sept. 3, 1885. (No model.)



Claim.—1. In a weather-strip such as described, the combination of the flexible strip formed into a loop, as shown, by being overlapped on itself, and having a single thickness or ply, *a'*, left projecting beyond the top, with the metal strip having one wing turned in to embrace the extremity of the single ply or thickness *a'*, and the other wing turned in to embrace all three plies, a^4, a^3, and *a'*, whereby a saving of flexible strip is effected, substantially as described.

2. In a weather-strip such as described, the combination of the flexible strip formed into a loop, as shown, and having the plies constituting the loop sewed or otherwise positively secured together, with the metal strip having one wing turned in to embrace the extremity of the single ply or thickness *a'*, and the other wing turned in to embrace and hold all three plies, a^4, a^3, and *a'*, substantially as and for the purpose set forth.

330,867. LATHE-CHUCK. JOHN C. BAUER, Brockley, County of Kent, England. Filed Mar. 31, 1885. (No model.) Patented in England Sept. 8, 1884, No. 12,149; in France Mar. 3, 1885, No. 167,408; in Germany Mar. 3, 1885, No. 32,902; in Belgium Mar. 5, 1885, No. 66,099, and in Austria-Hungary July 22, 1885, No. 15,099 and No. 33,492.



Claim.—The described lathe-chuck, consisting of the following devices in combination, namely: the face-plate *a*, the series of eccentrically-placed lever-arms *b*, each having a projecting claw, *d*, roughened on its inner edge, *c*, the pivots *e*, and clamping-screws *f*, the construction permitting the free movement of the arms on their centers to grip or to release the article to be held, and also permitting the clamping of the arms in the desired position.

330,868. DIE-STOCK. JOHN C. BAUER, London, England. Filed Apr. 23, 1885. (No model.) Patented in England Mar. 17, 1884, No. 5,001; in Belgium Sept. 4, 1884, No. 64,218; in France Oct. 9, 1884, No. 164,711, and in Austria-Hungary Dec. 3, 1884, No. 37,163 and No. 56,675.

Claim.—1. In a screw stock and dies, a pair of rotatable disks, each

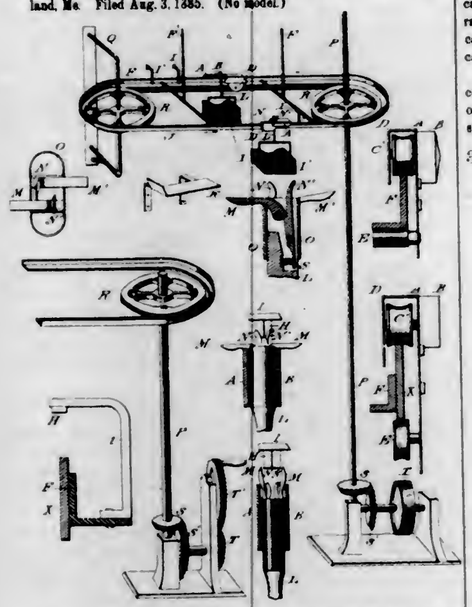
330,868.



provided with corresponding screw-cutters of different sizes, as described, in combination with a shaft journaled in the stock, the shaft having thereon an eccentric which serves as the journal of one of the said disks, substantially as shown and described.

2. In a screw stock and dies, the combination, with the disks *a a'*, each provided with cutting-threads of various sizes, of adjustable rods *g*, inclosed within the handles, and having inner curved ends, as set forth, having screw-caps for operating said rods, all substantially as hereinbefore described.

330,869. CASH AND PACKAGE CARRIER. WILLIAM P. BIGELOW, Natick, Mass., assignor to the Merchants' Store Service Company, Portland, Me. Filed Aug. 3, 1885. (No model.)



Claim.—1. In a store-service system, supporting-ways between the cashier's desk and the salesmen's stations, in combination with a traction-belt provided with a series of carriages having wheels arranged to run on the upper and lower edge of said ways, substantially as set forth.

2. In a store-service system, a supporting-way, a traction-belt, a series of carriages attached to said belt, carriers provided with arms having levers to support said carriers and discharge them, triggers and a wedge to operate the said levers, whereby the carriers are automatically discharged at the cashier's desk and at the salesmen's stations, substantially as described.

3. In a store-service system, the combination, with a track, of a traction-belt and carriages provided with wheels arranged to run on the upper and lower side of said track, which consists of an L-shaped strip of any suitable material, substantially as described.

4. The combination, with a traction-belt and its carriages, of the supporting-way and baskets, and shelf or pouch to receive the basket when it is disconnected from the carriage, substantially as described.

5. In a store-service system, a track consisting of the combination of a metallic supporting-way having a non-metallic rail for the wheels of the carriage to come in contact with, as and for the purpose substantially as described.

6. In a store-service system, a carriage for supporting a basket or carrier, consisting of a frame provided with wheels adapted to run on the upper and lower sides of a supporting-way, and also provided with flanges arranged to receive the arm or handle of a carrier, substantially as described.

7. In a store-service system, a basket or carrier, in combination with an arm provided with a mechanism for connecting it with the carriage which transports the carrier, the said mechanism consisting of two levers provided with triggers, which are operated by coming in contact with a wedge, and said wedge, whereby the carrier is supported and automatically discharged, substantially as described.

8. In a store-service system provided with a supporting-way and a traction-belt, and having two or more salesmen's stations and a cashier's desk, a carrier or basket for merchandise and cash for each station, which carrier or basket is automatically discharged from the supporting-way only at its own station and the cashier's desk, substantially as described.

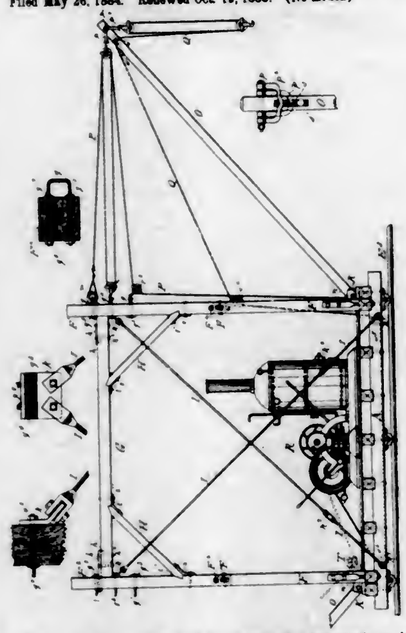
9. In a store-service system, the carrier having an arm provided with mechanism consisting of the levers M M', the triggers N N', and spring S, in combination with the carriage having flanges A B, whereby the carrier is supported and discharged, substantially as described.

10. In a store-service system, the carrier having an arm provided with mechanism consisting of the levers M M', the triggers N N', and spring S, in combination with the wedge or wedges arranged to operate said triggers, and a carriage having the flanges A B, whereby the carrier is supported and automatically discharged, substantially as described.

11. A store-service system consisting of a supporting-track, a traction-belt, carriages D, arranged to run on said track and propelled by said belt, carriers provided with arms arranged to be supported on said carriages and to be automatically discharged therefrom, and arms arranged to operate on the supporting and discharging mechanism of the carrier, whereby each carrier is discharged at its own station and at the cashier's desk only, substantially as described.

12. A store-service system in which each station has a carrier so connected to the traction-belt which carries it to and fro between its own station and the cashier's desk that it is only discharged at its own station and at the cashier's desk, substantially as described.

330,870. TRAVELING DERRICK. HENRY CASE, Brooklyn, N. Y. Filed May 26, 1884. Renewed Oct. 19, 1885. (No model.)



Claim.—1. A traveling derrick constructed substantially as herein shown and described, consisting of horizontal frame A A' B C D D', wheels and axles E E', A-frames F F' F² F⁴, timber G, corner-braces H, angle-plates *k*, brace-rods I, boom-shoes K, boom O, swinging clevises *p' p²*, topping-lift P, main fall Q, clevis-bolts *q q' q⁴*, hoisting-engine R, and suitable sheaves and blocks, all arranged and operated as set forth.

2. In a derrick, the combination, with the frame and a boom having its butt rounded off on two opposite faces, of a boom-shoe, K, consisting of a base-plate flat on its upper face, and adapted to be rigidly secured to the derrick-sills, of a shoe proper or rectangular box open at top and front, and having a curved or rounded seat for the boom-butt, and a vertically-perforated boss on its back, and of a pivoting-pin adapted to be passed down through the shoe-boss and the base-plate to serve as a pivot for the shoe proper, all constructed and arranged substantially as herein set forth.

3. In a derrick, the combination, with a boom shoe pivot and base-plate, of a shoe proper provided with side holes for the boom-butt pivot, and constructed with a boom-seat formed in a curve concentric with a line drawn through the pivot-holes, substantially as shown and described.

4. In a derrick, the combination, with a boom-shoe proper, of a base-plate constructed with cross-ribs on its under face, substantially as herein shown and described, whereby the said plate and shoe may be more securely fastened in place, as set forth.

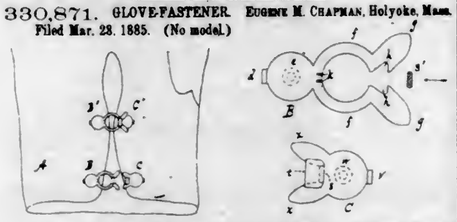
5. The combination, with the derrick-frames A, of forked brace-rods I, provided with turn-buckles and angle-plates *k*, and their respective fastenings, substantially as and for the purpose described.

6. In a derrick, the combination, with a topping-lift, as P, of clevis-bolts, as *q q' q⁴*, substantially as herein shown and described, whereby more purchase-points and more freedom of motion are given to said lift, as and for the purposes set forth.

7. In a derrick, the combination, with the frame and topping-lift, of clevis-bolts provided with collars, substantially as and for the purpose described.

8. In a derrick, the combination, with the boom, the topping-lift, and main fall, of swinging stirrups of clevises, as *p' p²*, substantially as and for the purpose described.

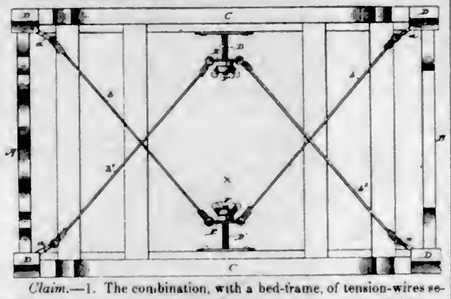
330,871. GLOVE-FASTENER. EUGENE M. CHAPMAN, Holyoke, Mass. Filed Mar. 28, 1885. (No model.)



Claim.—1. A glove-fastener consisting of the combination, with a holding-piece, B, having spring-arms, the outer ends of which are provided with inclined ears and also with notches having converging inner sides, as shown, of a securing-piece, C, having a flanged post adapted to be forced between said ears into said notches, substantially as set forth.

2. A glove-fastener consisting of the combination, with the holding-piece B, having projection or lip *d* and spring-arms *f f*, provided with inclined ears *g g* and notches *h h*, of the securing-piece C, having projection or lip *v*, ears *x x*, and post *s*, provided with flange *t*, substantially as set forth.

330,872. BEDSTEAD. WILLIAM B. CLOWERS, Decatur, Tex. Filed June 1, 1885. (No model.)



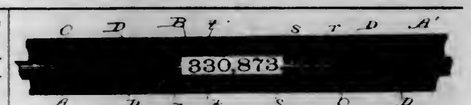
Claim.—1. The combination, with a bed-frame, of tension-wires secured to the corner-posts and extending diagonally across the bed-frame to the side pieces thereof at points intermediate between the corner-posts, and independent tension devices to which the ends of the wire are connected, whereby a longitudinal and lateral strain is exerted upon the bed-frame when the wires are adjusted, substantially as described.

2. The combination, with a bed-frame, of tension-wires secured to the corner-posts thereof and an adjusting-nut and cross-head secured to the opposite side pieces of the bed-frame at intermediate points between the posts, each set of said wires extending diagonally across the bed-frame and secured to the cross-head of the side piece thereof, intersecting with the wires of the other set, and adapted to be adjusted independently thereof, substantially as described.

3. The combination, with a bed-frame, of tension-wires secured to the corner-posts thereof, and extending diagonally across and intersecting with the wire at the adjacent corner-post, bolts D D', secured midway of the side pieces of the bed-frame, cross heads or plates E E', to which the free ends of the wires are secured, and thumb-nuts F, arranged on said bolts and adapted to bear against the cross-heads, whereby each set of wires is adapted to be adjusted independently of the other set, substantially as described.

330,873. INSULATING-TUBE FOR ELECTRIC WIRES. HENRY B. COBB, Wilmington, Del. Filed Feb. 14, 1885. (No model.)

Claim.—1. Sections of insulating-tubing connected together at their ends and provided with a close and permanent covering of metal formed upon the exteriors of the sections of tubing and continued from section to section over the joints, substantially as described.

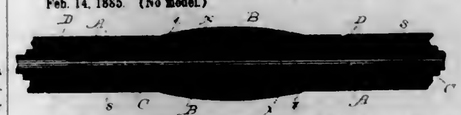


2. In combination with sections of insulating-tubing fitting one within the other at their ends, an internal tube, B, of tenacious material extending into both tubes, having its inner surface flush with the inner surface of the tubes which it enters, substantially as described.

3. In combination with sections of insulating-tubing fitted together at their ends, an internal tube, B, of tenacious material extending into both tubes, and a close covering of metal upon the exterior of the united sections and extending from one section to another over the joint, substantially as described.

4. In combination with sections of insulating-tube A and A', inserted one into the other at their ends, an internal connecting-tube, B, of tenacious material entering both sections, and a close and permanent covering of metal upon the exterior of the sections continued over the joint from one section to another, substantially as described.

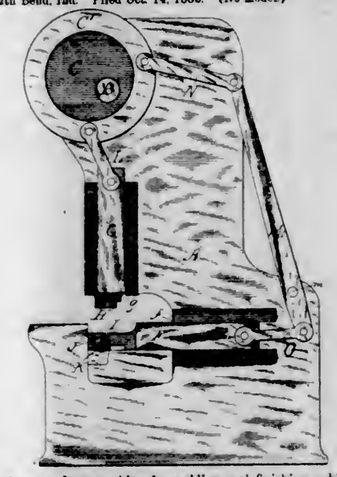
330,874. INSULATING-TUBE FOR ELECTRIC WIRES. SAM B. COBB, Chicago, Ill., assignor to Henry B. Cobb, Wilmington, Del. Filed Feb. 14, 1885. (No model.)



Claim.—1. In combination with insulating-tube for inclosing electric wire, the device for connecting sections of the said tube together and forming an impervious joint, comprising a ferrule, B, into which the adjacent ends of sections are inserted, and a close and permanent covering of metal formed continuously over the exterior of the tubing and ferrule, substantially as described.

2. Electric wire C, incased within tubing A of insulating material formed in sections, a ferrule, B, into which the adjacent ends of sections of tubing are inserted and thereby united, a filling, D, comprising an insoluble plastic substance that will not absorb moisture, surrounding the said wire within the said tubing, and a close and permanent covering of metal formed over the exterior of the tubing and ferrule, substantially as and for the purpose set forth.

330,875. MACHINE FOR WELDING TIRES. CHARLES M. COLLINS, South Bend, Ind. Filed Oct. 14, 1885. (No model.)



Claim.—1. In a machine for welding and finishing vehicle-tires, a vertically-movable die-carrying plunger and a horizontally-movable die-carrying plunger connected to and actuated by the same moving part of the machine and operating alternately, substantially as described.

2. The combination, with two stationary dies arranged at a right angle to each other, of two movable dies secured to alternately-operating plungers actuated by the same moving part of the machine, the stationary dies serving as anvils for shaping the bottom and one edge of the tire and the movable dies operating alternately to shape the top and opposite edge of the tire.

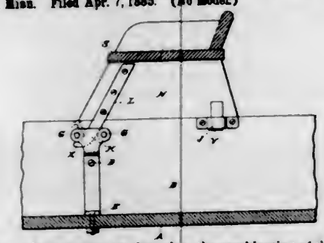
3. The combination, with two stationary dies arranged at a right

angle to each other, of a vertically-movable die and a horizontally-movable die secured to alternately-operating plungers actuated by the same moving part of the machine, said plungers being so connected with their actuating mechanism that the throw given to the vertically-movable die will be more than that given to the horizontally-movable die.

4. The combination, with two removable stationary dies arranged at a right angle to each other, of two movable dies removably secured to alternately-operating plungers actuated by an eccentric on the driving-shaft of the machine, said plungers being connected with the eccentric-strap by links and a lever, substantially in the manner described.

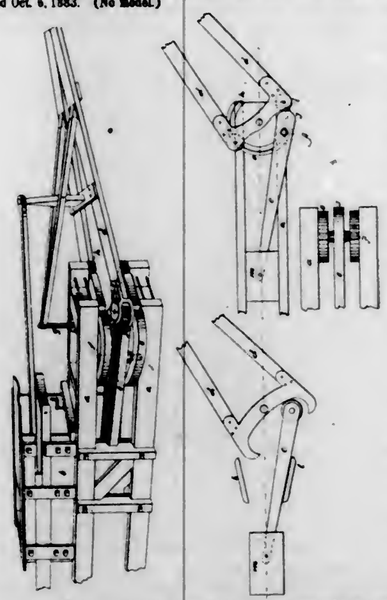
5. The combination, with the stationary dies J K and eccentric C C, of alternately-operating plungers F G, provided with movable dies H I, links O N and lever M, for connecting the vertically-movable plunger with the eccentric-strap, and link L, for connecting the horizontally-movable plunger with said strap, substantially as described, and for the purposes stated.

330,876. SEAT-FASTENER FOR VEHICLES. Edwin S. Davis, Winona, Minn. Filed Apr. 7, 1885. (No model.)



Claim.—In a wagon-seat fastening, the combination of the bearing-plate C, having the foot-flange E, and its upper end provided with the offset F, having the perforated bearing-studs G G in front and rear, with a passage, H, between them, and the seat having the plate L, provided with the forward and downwardly curved tongue Z at its lower end, adapted to enter the said bearing-plate between the front and rear studs thereof, substantially as specified.

330,877. BALING-PRESS. Peter K. Diederix, Loudonville, N. Y. Filed Oct. 6, 1883. (No model.)



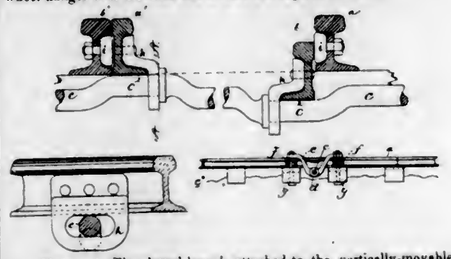
Claim.—1. The combination, with the pitman carrying the bearing arm or shaft, of the guides for the said bearing-arm, and the pivoted horse lever or sweep adapted when vibrated to operate upon the pitman and project it alternately at opposite sides of the press, thus making the power double-acting and giving the pitman the proper direction and power without the use of fulcrum-arms, substantially as described.

2. The combination, with the traverser, of the pitman, the bearing arm or shaft projecting from opposite sides of the pitman, and the guides in which the ends of the said bearing-arm work, whereby the pitman is steadied and guided on both sides without the use of a swinging crank, substantially as described.

3. In a baling-press, the combination, with the horse-lever and the pitman attached at one end to the traverser and free at the other end but projected in the path traversed by the horse-lever, of a guide for engaging the pitman to direct and control the movement of the latter when acted upon by the horse-lever, substantially as described.

330,878. RAILROAD-SWITCH. John A. Duggan, Quincy, Mass. Filed Sept. 10, 1884. Renewed July 8, 1885. (No model.)

Brief.—Switch-rails are vertically movable, each rail being depressed while the other is at the level of the fixed rails by means of cranks oppositely placed on transverse rock-shaft and working in slotted plates hung to switch-rails, the shaft having its journals in described cushioned hangers. Flat-faced heads of bolts passed through fixed rails guide switch-rails vertically. Inclined blocks fixed to ties lead wheel-flanges over elevated rail in case of misplaced switch.



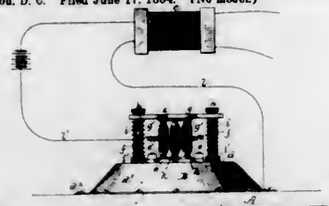
Claim.—1. The slotted bars *h*, attached to the vertically-movable rails *a'* and *b*, respectively, in combination with the fixed rails *a b'* and the crank-shaft *c*, having cranks *c' c''* which turn, respectively, in the slots of said bars *h*, as set forth.

2. The fixed wedge-shaped blocks *k*, having inclined upper faces and arranged in proximity to the outer sides of movable rails *a' b*, in combination with said rails, devices for raising and lowering the latter, and the fixed rails *a b'*, substantially as set forth.

3. The bolts having flat-faced heads *i*, in combination with the fixed rails to which they are attached, the movable rails which the said heads guide in a vertical path, and devices for raising and lowering said vertically-movable rails, substantially as set forth.

4. The arms *e* on opposite sides of the track, having bearings *d* formed therein, in combination with the elastic cushions *f*, on which they are supported, and the crank-shaft *c*, which turns in said bearings for the purpose of raising and lowering the movable rails for switching, substantially as set forth.

330,879. TELEPHONE-TRANSMITTER. Julius Emmner, Jr., Washington, D. C. Filed June 17, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a metallic diaphragm, an electrode firmly mounted centrally thereon, a second electrode coincident with the first and parallel with the diaphragm, and mounted upon but insulated from said diaphragm, and one or more intermediate electrodes, substantially at right angles to the diaphragm and loosely seated in recesses in said first and second electrodes.

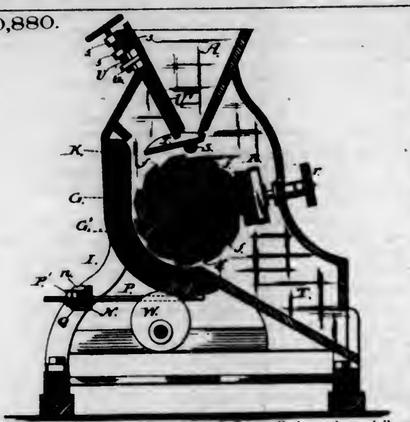
2. The combination, substantially as hereinbefore described, of the molded or struck-up diaphragm having a flat face, an annular rim, and a flange for securing it in position, the two main electrodes, and the one or more intermediate electrodes.

3. The combination of the diaphragm-electrode, the post-electrode, the one or more intermediate loose electrodes, and the posts, springs, and screws by which the post-electrode is maintained in position and adjusted with relation to the diaphragm-electrode for varying the contacts of the intermediate electrodes with their seats, substantially as described.

330,880. GRINDING-MILL. James J. Faulkner and Eliza T. Faulkner, McMinnville, Tenn. Filed Mar. 10, 1885. (No model.)

Claim.—1. The combination, with a pivotally-secured concave, of a rod attached to said concave, a rocking bar, N, secured to the frame,

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adjusting-nuts P', a spring, Q, and a grinding-cylinder, substantially as herein described.

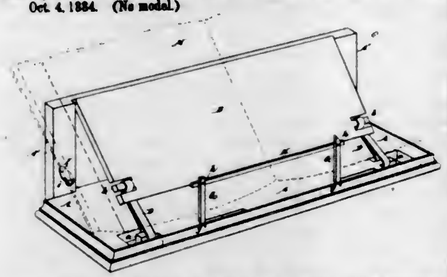
2. The combination, with the hopper, of the corrugated shoe T, rod S, spring *t*, arm F', and shaft E, having eccentric E', substantially as described.

330,881. PEN-HOLDER. Jacob Felbel, New York, N. Y., assignor to Louisa Lawrence, same place. Filed Oct. 23, 1885. (No model.)



Claim.—The combination, with the barrel provided with a transverse tongue, of the nib-piece provided with a longitudinal opening to receive the tongue upon a relative turning of the barrel and nib-piece, as and for the purpose set forth.

330,882. BOOK-HOLDER. William R. Field, New York, N. Y. Filed Oct. 4, 1884. (No model.)



Claim.—1. The board B, swinging on a hinge, C, in combination with the horizontal board A, upright A', links G, and cross-bar H, and with suitable springs urging forward the board B, so as to gently compress books of various thicknesses, as herein specified.

2. In a portable book-holder, the buttons I, recessed upright A', and swinging board B, hinged at C, in combination with each other and with removable springs D, arranged for joint operation, substantially as herein specified.

3. The book-holder described, having the horizontal board A, upright A', swing-board B, hinge C, springs D, links G, and cross-bar H, combined to constitute a portable device adapted to hold books of various thicknesses, as herein specified.

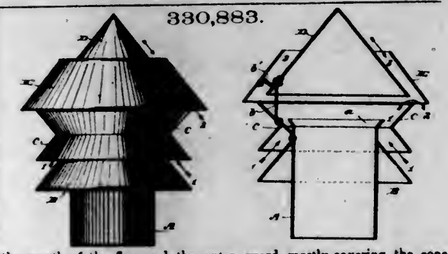
4. In a book-holder, as described, the swinging board B, cut away to form lug *b*, and the base A, cut away to form lug *a*, combined with the removable spring D and a stop, as G H, as specified.

5. In a book-holder, as described, the combination, with the links G, having narrow connecting cross-bar H, of the base A, mortised, as shown, the links G being pivoted in said mortises and the mortises being of a size to receive the links when folded down, as set forth.

330,883. CHIMNEY-COWL AND VENTILATOR. George Fischer, Quincy, Ill. Filed Sept. 13, 1885. (No model.)

Claim.—1. The combination, with the flaring-mouthed flue, of the conic frustum having its upper rim fastened air-tight some distance below the flare of the flue, the double-cone-shaped ring of larger diameter than the flue-mouth, the open-bottomed cone of greater diameter than

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the mouth of the flue, and the outer guard, mostly covering the cone and extending nearly down to the upper section of said ring, and forming with the cone a wind-channel, as set forth.

2. The combination, with the flue A, having flaring mouth *a*, of the conic frustum B, fastened air-tight some distance below the flue-mouth, the double-cone-shaped ring C, of greater diameter than the flue-mouth, and forming with flue A and frustum B a wind-channel, 1, the open-bottomed cone D, arranged next above said ring C to leave an opening, 2, between them, and the guard E, protecting said opening and forming with the cone a wind-channel, 3, also a slight circular opening between the bottom of said guard and the upper section of ring C, all the parts being held together by braces *b b'*, as set forth.

330,884. APPARATUS FOR FREEZING LIQUIDS. Edouard Fixary, Paris, France. Filed July 10, 1885. (No model.) Patented in France Aug. 23, 1884, No. 163,920.

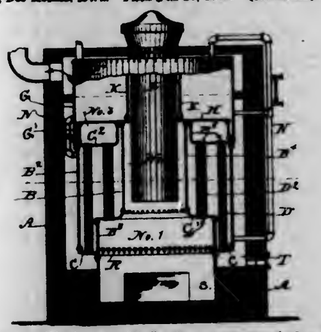


Claim.—1. The suspension or arrest momentarily of the vacuum and the vaporization of the volatile liquid, by any suitable means, in a part of the apparatus, while the vacuum and vaporization are continued in the other part of the said apparatus, or of several communicating apparatuses, in order to obtain sudden changes of temperature alternately, simultaneously, and at will without arresting the regular action of the refrigerating apparatus or the continuous cooling of the air, as set forth.

2. The combination of cocks and traps which serve to prevent the vacuum and the vaporization of the volatile liquid, and to direct the air-currents furnished to the apparatus in such a manner as to accelerate the melting of the frost on one side and the cooling and drying of the air on the other side before its entry into the room to be cooled, as set forth.

3. The separation of the vapor of water in a liquid form, accruing from the melting of the frost or ice, coincident with the arrest of the vacuum and the vaporization, in one part of the apparatus, and the forced flowing of the water without the current of air, as set forth.

330,885. BOILER-FURNACE. Charles W. Fowler and Afton O. Neff, Des Moines, Iowa. Filed Dec. 29, 1884. (No model.)



Claim.—1. The improved boiler-furnace composed of an outer wall, A, a boiler-section and furnace-chamber, B, a boiler-section, F G G' H J K, a fuel-magazine, L, tubes N, a grate, and an air and ash box, substantially as shown and described, to produce chambers Nos. 1 and 2 and 3, and to operate in the manner set forth, for the purposes specified.

2. The combination of the boiler-section composed of concentric walls B^2, B^3, B^4, and B^5, the ring-shaped plates C C' C^2, and the boiler-section composed of the concentric plates G and G', a bottom, H, a top, J, and an open-end cylinder, K, substantially as shown and described, for the purposes stated.

330,886. TRUNK. ALEXANDER C. FRANKEL, Newark, N. J., assignor to Jacob Lagowitz, same place. Filed Sept. 11, 1885. (No model.)



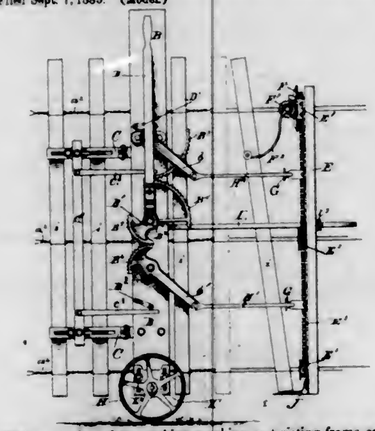
Claim.—1. In combination with a trunk, its tray and lid, the herein-described tray-support, consisting of the parts *a*, *b*, and *c*, the part *a* being attached at one end to the trunk, the part *b* being attached at one end to the lid above the tray, and the part *c* being pivotally connected at two points with the parts *a* and *b*, as shown and described, whereby the tray may be lifted and held in raised position without the use of other supports.

2. In combination with trunk-body A and lid B, bars *a*, pivotally attached to said body A, bars *b*, pivotally attached to the lid B, bars *c*, connecting and pivotally attached to bars *a* and *b*, and tray C, carried by the bars *c*, substantially as described and shown.

3. In combination with body A and lid B, a tray-support consisting of bars *a*, pivotally attached to the ends of the body A, bars *b*, pivotally attached to the ends of the lid and provided with slots *f*, pins *g*, passing through said slots, and parts *c*, connecting and pivotally attached to the bars *a b*.

4. In combination with trunk-body A, lid B, and the tray-support consisting of bars *a b c*, attached to the body, to the lid, and to each other, as explained, tray C, having hooks or ears to rest upon the bars *c*, whereby the tray is adapted to be applied to or removed from its support at will.

330,887. FENCE-MACHINE. JESSE P. FULGHAM, Richmond, Ind., assignor of one-half to the Wayne Agricultural Company, same place. Filed Sept. 7, 1885. (Model.)



Claim.—1. In a fence-making machine, a twisting-frame carrying a series of twisters, and means for rotating them, and supported entirely by the line-wires of the fence, in combination with mechanism for imparting reciprocating motion to said twister-frame back and forth upon the line-wires, substantially as described.

2. In a fence-making machine, a main bar or frame provided with devices for firmly securing it alongside of the line of the fence, in combination with a twister-frame carrying twisters, and means for rotating them, and supported entirely by the line-wires of the fence, and with gearing, substantially such as described, mounted on the main frame or bar and connected to the twister-frame for imparting to the twister-frame reciprocating motion upon the line-wires, substantially as described.

3. In a fence-making machine, a twisting-frame carrying twisters, and means for rotating them, and supported entirely by the line-wires of the fence, in combination with beaters mounted upon the twister-frame and projecting in the plane of the pickets, and with mechanism for imparting a reciprocating motion to said twister-frame back and forth upon the line-wires, substantially as described.

4. In a fence-making machine, a twister-frame carrying twisters, and means for rotating them, and supported entirely by the line-wires of the fence, in combination with a foot-bracket for supporting the lower end of the picket, and also carried by the twister-frame, and mechanism for imparting reciprocating motion to said twister-frame and parts carried thereby back and forth upon the line-wires, substantially as described.

5. In a fence-making machine, an adjustable main bar or frame provided with clamps for securing it to one or the other of the fence-pickets, so as to prevent movement of the said frame longitudinally of the fence, in combination with a twister-frame carrying twisters, and means for rotating them supported entirely by the line-wires of the fence, and mechanism, substantially as described, mounted upon the main frame, for imparting reciprocating motion to the twister-frame, substantially as described.

6. In a fence-making machine, and in combination with the main frame or bar thereof, a clamping-spring connected to said main bar on one side of the fence and extending to the other side of the fence, where it has a bearing upon one or more of the secured pickets, substantially as described.

7. In a fence-making machine, and in combination with the main frame or bar thereof, a clamping-spring connected to the main frame or bar on one side of the fence and extended forward of the picket last applied, and thence to the opposite side of the fence and back to a point which will give it a bearing upon one or more of the applied pickets, substantially as described.

8. In a fence-making machine such as described, and in combination with the main bar or frame thereof, the clamping-arms applied to said main bar, and having jaws for engaging with one of the secured pickets to prevent the movement of said bar or frame longitudinally of the fence, and the clamping-spring secured to said main frame or bar and extending around to the opposite side of the fence, and operating at all times to keep the main bar or frame close up against the fence, substantially as described.

9. In the herein-described fence-making machine, the combination, with the main bar or frame, of the hinged clamping-arms provided with jaws for engaging with a picket, and springs for holding said clamping-arms in engagement with the picket, substantially as described.

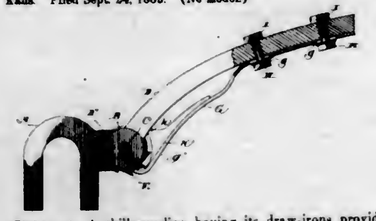
10. In the herein-described fence-making machine, the combination, with the twister-frame having the twisters, and means for operating them, and supported entirely upon the line-wires of the fence, of the actuating crank-arms mounted on the main frame or bar, and the connecting-rods between said crank-arms and twister-frame applied to the twister-frame at points above and below the middle thereof, so as to maintain the vertical position of the same, substantially as described.

11. In the herein-described fence-making machine, the combination, with the reciprocating twister-frame, of the main bar or frame having mounted upon it the operating-handle, the actuating-cranks, and the intermediate gear-segments, and the rods connecting the operating-cranks to the reciprocating twister-frame, substantially as described.

12. The combination of the main frame or bar carrying the operating-handle, the actuating crank-arms, and the intermediate gear-segments, with the reciprocating twister-frame connected to the actuating-cranks and supported entirely upon the line-wires of the fence, and with means, substantially such as described, for detachably connecting the main bar or frame to the completed portion of the fence, whereby upon the movement of the operating-handle the twister-frame will be caused to approach the main bar or frame, or the main bar or frame will be caused to approach the twister-frame, accordingly as the main bar or frame is connected to or disconnected from the fence, substantially as described, and for the purpose specified.

13. In the herein-described fence-making machine, the combination of the reciprocating twister-frame supported entirely upon the line-wires with the main bar or frame carrying mechanism, substantially such as described, for imparting reciprocating motion to the twister-frame, and a vertically-adjustable wheel applied to the lower end of the frame, substantially as described, and for the purpose specified.

330,888. THILL-SUPPORT. CHARLES E. GALBREATH, Osage Mission, Kans. Filed Sept. 24, 1885. (No model.)

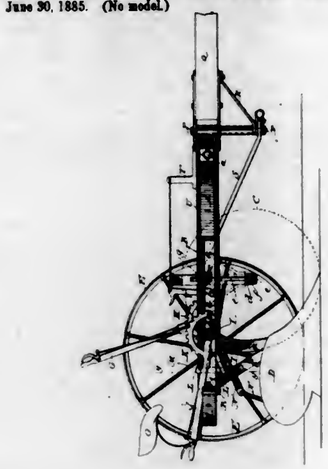


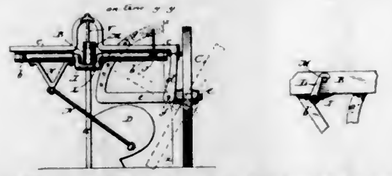
Claim.—1. A thill-coupling having its draw-irons provided with ratchet-teeth, and a spring-pawl secured to the thill-iron and engaging with the ratchet-teeth to support the thill in a raised position, substantially as described.

2. The combination of the clip having the ratchet-teeth E, the thill-iron pivoted to the clip, and the spring-pawl having the flexible curved portion *g'* and the curved end, said pawl being secured to the under side of the thill-iron and adapted to engage with the ratchet-teeth, substantially as described.

3. The combination of the clip having the ratchet-teeth E, the thill-iron pivoted to the clip, the spring-pawl having the flexible curved portion *g'*, and the stiffening-tongue K, said pawl being secured to the under side of the thill-iron and adapted to engage with the ratchet-teeth, substantially as described.

330,889. SULKY-PLOW. ROLAND R. GASKILL, Topeka, Kans. Filed June 30, 1885. (No model.)





Claim.—1. In a sulky-plow, the main frame consisting of a metal bar doubled or bent to an approximately circular form, with its two ends extended forward in parallel lines, in combination with the two carrying-wheels applied thereto, and the plow-carrying beam seated between the forward ends of the frame and secured thereto by a hinged pivot.

2. In a wheel-plow, the combination of the main frame, the two wheels mounted on opposite sides thereof, the plow-carrying beam united to the forward end of the frame by a horizontal pivot, the tongue or draft-pole united to the forward end of the beam by a vertical pivot, and locking devices to prevent the lateral motion of the tongue when required.

3. In a wheel-plow, the combination of the following elements: the main frame, the two carrying-wheels mounted on opposite sides of said frame, the plow-carrying beam united to the forward end of the frame by a horizontal pivot, the crank-shaft mounted in the frame and acting to lift the rear end of the beam, the draft-pole united directly to the beam by a vertical pivot, and the locking devices to prevent lateral motion of the beam.

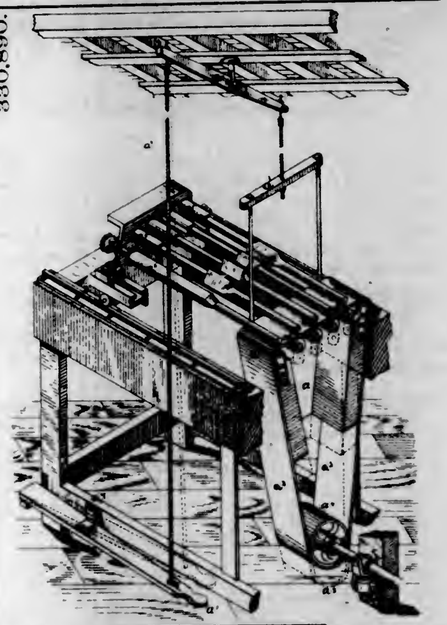
4. In combination with the wheel-frame, the rising and falling beam jointed thereto and provided with the plow at its rear end, the arm N', secured to and arranged to rotate with the crank, and the brace N, extending in a substantially horizontal position from the distal end of the arm to the plow, whereby the brace is caused to support the plow laterally without material tendency to hold the same down.

5. The wheeled frame and the plow-beam jointed thereto to rise and fall, in combination with the lifting-crank and the means for locking the same, and the hook or arm attached to the crank and adapted to engage the beam for the purpose of depressing the same, substantially as described.

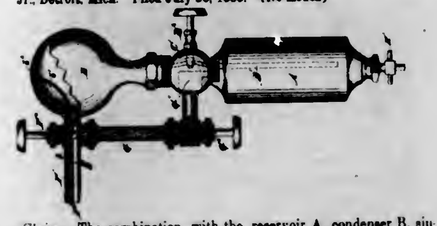
330,890. POLISHING MECHANISM FOR TURNING-LATHES. JAS. M. GILBERT, Putney, Vt. Filed Oct. 20, 1884. (No model.)

Claim.—The above-described improvement in polishing mechanism for turning-lathes, consisting of the vertically-sliding frame *a*, the abrasive apron or belt a^3, and the series of rolls a^2, in combination with suitable devices for driving the abrasive apron or belt and for raising and lowering the frame *a*, all substantially as described.

330,890.

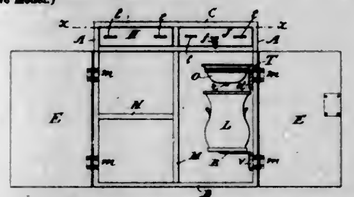


330,891. LUBRICATOR. EDWARD GRACE and CHARLES H. PARSHALL, Jr., Detroit, Mich. Filed July 30, 1885. (No model.)



Claim.—The combination, with the reservoir A, condenser B, single stem F, having a steam and an oil passage, and extending through the wall of the condenser, and a sight-feed tube, G, connected at its upper end with the oil-passage of stem F, of the neck C, intermediate of and connected with reservoir A and condenser B, and having a water-passage communicating with said condenser and reservoir, and an oil-passage, G', communicating with the reservoir and the sight-feed tube, the latter being connected at its lower end with the neck C, substantially as described.

330,892. SINK. JOHN B. GREENE, Ware, Mass. Filed Aug. 22, 1885. (No model.)



Claim.—1. In a cabinet-sink, the water-tank consisting of the drawer J, having a faucet, *f*, and a tight-fitting cover, *z*, provided with an opening, *b*, therein, and having a downwardly-projecting flange, *k*, around said opening, through which said tank is adapted to be filled when the drawer is drawn out, substantially as described.

2. In a cabinet-sink, the body, doors for closing the same, and brackets T and R, swinging in a horizontal plane, in combination with a basin supported by said bracket T, a jar supported by said bracket R, each of which is adapted to be housed by swinging its supporting-bracket inwardly, and a suitable tank above said basin, consisting of a drawer, J, having a faucet, *f*, adapted to come over said basin when the drawer is pulled out, substantially as described.

330,893. **BARBED FENCE-WIRE.** CHRISTIAN C. HILL, Chicago, assignor to George Monroe Fish, Oak Park, Ill. Filed June 18, 1883. (No model.)

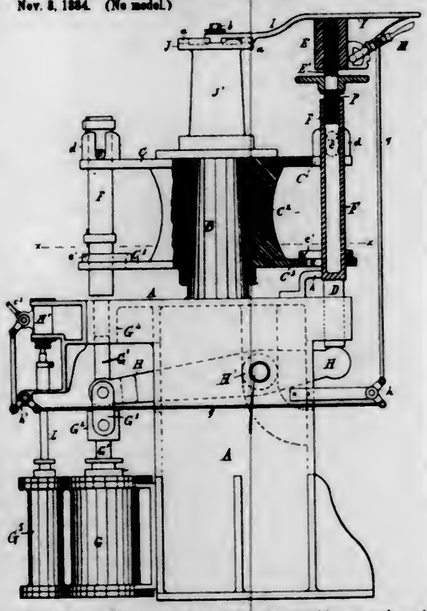


Claim.—The barbed fence-wire consisting of the combination, with two fence-wires, of the barb A, provided with a C-shaped loop, *a*, near its middle, lying on one side of the fence-wires and in a plane parallel thereto, and having barb points or ends *a'* *a²* passed between the fence-wires and bent back upon themselves, so as to form saddles *a³* *a⁴* for the fence-wires, said saddles being at right angles to said C-shaped loop, substantially as specified.

330,894. **SAFETY-PAPER FOR CHECKS, DRAFTS, &c.** FREDERICK M. HILL, Brooklyn, N. Y. Filed Apr. 18, 1885. (No specimens.)

Claim.—The combination consisting of the paper or pulp or sizing, ferro-cyanide of manganese, and hydrated peroxide of iron, for the purposes above mentioned.

330,895. **FLUID-METAL PRESS.** WILLIAM R. HINSDALE, Brooklyn, N. Y., assignor to the Compressed Steel Company, Cleveland, Ohio. Filed Nov. 8, 1884. (No model.)



Claim.—1. The combination, with a rotary table or carrier, of a mold provided with the side pins, *c*, and guides *d*, affixed to the table and adapted to guide the mold when moved vertically and to allow the tipping of the mold, substantially as and for the purpose set forth.

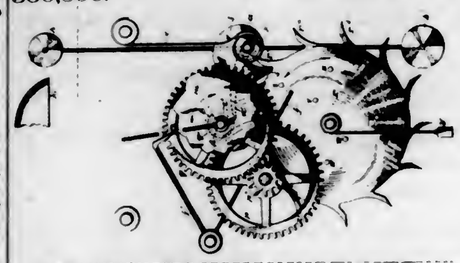
2. The combination, with the pressing-lever H, arranged and operated as described, of the rotary table arranged over the same, the hand-lever I, for moving the table from the station of the press-slide D, as set forth, the pressure-cylinder and valve-chest arranged opposite the press-slide, and connections for moving the valve from the station of the hand-lever I, as and for the purpose set forth.

3. In an ingot-press provided with a rotary table, the combination, with the table and its central supporting-pillar, of the bed provided with the pivoted lever H, and having the press-slide D arranged at one end of such lever, and a pressure-cylinder arranged at the other end of such lever and connected thereto, the whole operated substantially as and for the purpose set forth.

330,896. **CLOCK STRIKING MECHANISM.** ANDREAS G. HOVDE, Hitteren, Norway. Filed Aug. 11, 1884. (No model.)

Claim.—1. In a striking-train for clocks, the combination, with the spring-actuated hammer-axle, the hammer, the escapement-disk and the disengaging-arm secured thereon, and the escapement-wheel actuated by a spring or weight, of a notched or grooved disk secured on the center arbor and adapted to engage the disengaging-arm, and the stop-faced wheel secured on the hour-hand sleeve and adapted to regulate the stop-lever, substantially as set forth.

330,896.

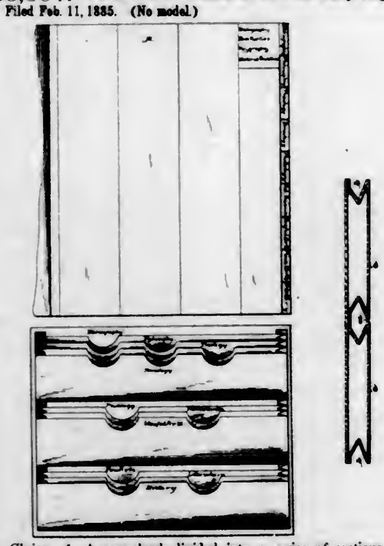


2. In a striking-train for clocks, a single-toothed escapement-disk secured on a spring-actuated hammer-axle, and adapted to be operated by a spring or weight actuated escapement-wheel, and to be held in check by an arm secured on the hammer-axle, in connection with a disk on the center arbor, substantially as set forth.

3. In a striking-train for clocks, the combination, with an actuated and hammer-actuating escapement-wheel provided with less than twelve stops, of a step-faced wheel adapted to make one revolution every twelve hours, and a two-armed stop-lever adapted to be actuated by the wheel and to stop the escapement-wheel at the proper intervals to strike the twelve hours, substantially as set forth.

4. In a striking-train for clocks, the combination, with the movement mechanism, consisting, essentially, of the spring-actuated hammer-axle, the balanced hammer, the escapement-disk, and the disengaging-arm, of the regulating and actuating mechanism, consisting, essentially, of the power-actuated escapement-wheel with its stops, the disk for locking and releasing the disengaging-arm, the wheel, and the two-armed lever, arranged substantially as set forth.

330,897. **SCRAP-BOOK.** HARRIET A. HULBURD, Perrysburg, Ohio. Filed Feb. 11, 1885. (No model.)



Claim.—1. A scrap-book divided into a series of sections and a pocket for each section, said pockets being arranged at one end of the book, substantially as set forth.

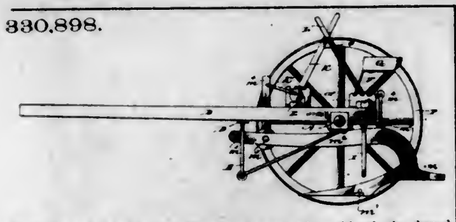
2. A scrap-book divided into a series of sections and a series of pockets upon the inside of the cover of the book, the pockets being separate from the sections and labeled to correspond to the section to which they relate.

330,898. **POTATO-DIGGER.** LOREN G. JACKSON, Woodman, Wis., assignor of one-half to Oscar M. Loomis, same place. Filed July 1, 1885. (No model.)

Claim.—1. In combination with the frame and the levers, the digger or scoop composed of the curved parallel fingers *m*, the beams *m²*, secured to the outer sides of the outer fingers, and the bars *m³*, journaled in the beams near the front and rear ends thereof for suspending the digger or scoop below the frame, substantially as described.

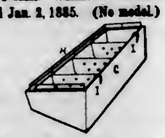
2. The combination of the frame having the levers K L and the depending slotted standards H and I with the scoop or digger having

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the curved parallel fingers, and the side beams, m^3, working in the slotted standards, the transverse bars m^3, journaled in the beams, and the links m^4, connecting the said bars with the levers, whereby the scoop or digger may be raised or lowered at either end, substantially as described.

330,899. **POULTRY-CAR.** WILLIAM P. JENKINS and JAMES L. STREETER, Muncie, Ind. Filed Jan. 2, 1885. (No model.)



Claim.—In a railroad live-poultry car, a wire-edged hanging feed-trough, as and for the purpose broadly set forth.

330,900. **BACK-BAND HOOK.** HENRY C. JOHNSON and JESSE B. MOORE, El Dorado, Ark. Filed Aug. 19, 1885. (No model.)



Claim.—1. A back-band hook consisting of the plate 1, having hook 2 on its front part and slot 3 in the rear part, eye 5, swiveled on the upper face of plate 1 and fastened by means of nut 7 or other equivalent means, and headed pin 4, adapted to work in said eye, all substantially as and for the purposes set forth.

2. The combination of the plate 1, having hook 2, slot 3, with back-band 6, looped through said slot, and headed pin 4, passing through the loop of said back-band, substantially as shown and described.

3. A back-band hook consisting of the plate 1, having hook 2 on its front part and slot 3 in the rear part, eye 5, secured on the upper face of plate 1, and headed pin 4, adapted to work in said eye, substantially as and for the purposes set forth.

330,901. **MACHINE FOR FORGING BOLT-BLANKS.** HENRY J. JOHNSON, Providence, R. I., assignor to Plumb, Bardiet & Barnard, Buffalo, N. Y. Filed July 12, 1884. Renewed July 22, 1885. (No model.)

Claim.—1. The combination, substantially as before set forth, of the shifting tool-holder, the piston which carries it, the main driving-shaft, the shifting devices, and the hand-lever which is adapted to be operated by the attendant.

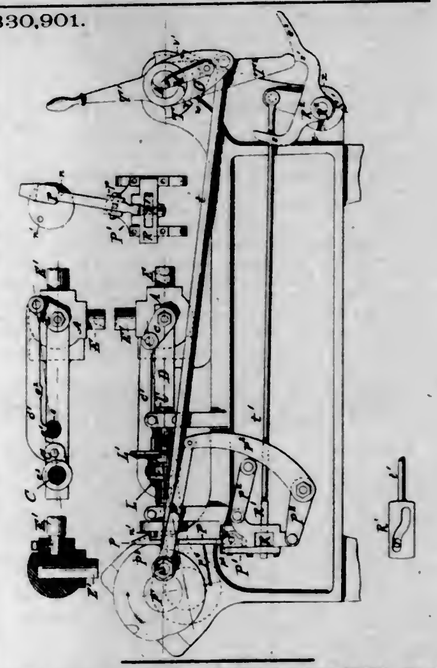
2. The combination, substantially as before set forth, of the shifting tool-holder, the piston which carries it, the main driving-shaft, the shifting devices, and the starting-handle whereby the shifting of the shifting tool-holder is effected by power directed by the attendant.

3. The combination, substantially as before set forth, of the shifting tool-holder, link, rocking sleeve, the rock-shaft, and its pins.

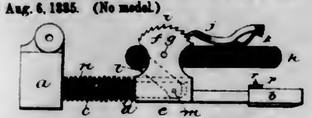
4. The combination, substantially as before set forth, of the rock-shaft with its pins, the shifting hook, the hook-stock to which it is connected pivotally, the cam for moving it so as to operate upon said pins, and the crank-pin for moving it up and down.

5. The combination, substantially as before set forth, of the shifting tool-holder with the operating-arm T^2 through the intervention of the rocking crutch and the stop-segment.

330,901.



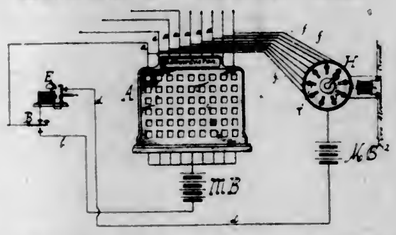
330,902. **DEVICE FOR HOLDING BOOTS OR SHOES.** JOHN P. KELLY, Biddeford, assignor of one-half to George Moore, Berwick, Me. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination of the bottom *e*, rod *c*, lever *h*, pawl *j*, link *l*, standards *f*, ratchets *i*, toe-piece *b*, and heel-piece *a*, as herein set forth.

2. The heel-piece *a*, provided with the rod *c*, and the spring *n*, in combination with the adjustable and movable toe-piece *b*, provided with the bottom rod, *e*, the standards *f*, the lever *h*, pivoted thereon, and the link *l*, for the purpose of expanding the jack within a boot or shoe, as herein set forth.

330,903. **COMBINED ANNUNCIATOR AND ALARM.** FRANK E. KINSMAN, New York, N. Y. Filed Jan. 31, 1883. (No model.)



Claim.—1. In a combined annunciator and alarm system, annunciator push-buttons having two contacts, one normally open, the other normally closed, a return-circuit to the annunciator from the normally-open contact, an extra return-wire for each leading-wire of the annunciator system connected with the normally-closed contact of the push-button or circuit-controller in each room, and containing an alarm apparatus, in combination with means for completing a circuit through a generator between any one or all of the leading-wires of the annunciator system and the extra return-wires, as and for the purpose described.

2. The combination, substantially as described, with each leading-wire in an annunciator system, and its push-button or circuit-controller having a normally-open contact and return-wire therefrom, of a separate extra return-wire whose circuit is formed through a normally-closed con-

tact of the push button or key for the annunciator system, an alarm in each extra return-wire, a normally-open separate connection from each leading-wire at or near the annunciator, and means for completing a circuit between each such separate connection and a corresponding extra return-wire, all as set forth, so that by the addition of extra and independent return-wires and normally-closed contacts to the push-buttons of the several leading-wires of the annunciator system a duplication of leading-wires may be avoided and each apparatus may be worked without interfering with the other.

3. The combination, with an annunciator system comprising the usual separate leading-wires and normally-open push-buttons for the several rooms, of extra normally-closed contacts for the push-buttons, extra return-wires, one for each annunciator leading-wire, an alarm in each extra return-wire, and a series of contacts, *g*, insulated from one another, and connected with the annunciator leading-wires, whereby a complete metallic circuit may be formed through each alarm simultaneously with the others, each such circuit thus formed being entirely independent of the others and of the ordinary return-wires of the annunciator system.

4. The combination, with the series of contacts *g g*, connected with the leading-wires *a a*, &c., of contact-plate K, mounted on a screw-spindle, as and for the purpose described.

5. The combination, with the annunciator leading-wires *a a* and alarm, each having an extra return-connection, of means for automatically connecting said leading-wires with an alarm-battery upon the occurrence of fire.

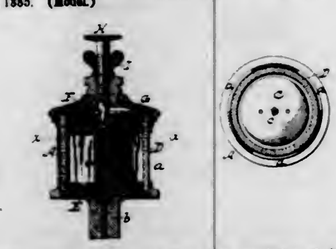
6. The combination, with the annunciator leading-wires normally connected to alarm apparatus in the several rooms, of a circuit-closer for connecting said leading-wires with a generator, a detent for restraining the action of said circuit-closer, and an electro-magnet connected to an automatic fire-alarm circuit for controlling the detent, and the consequent action of the circuit-closer.

7. The combination of plate K, mounted on screw-spindle L, circuit-closers *r*, and contacts *g*, as and for the purpose set forth.

8. The combination, with plate K, spindle L, provided with a screw-thread, circuit-closers mounted on the plate and over openings in the same, and a series of contacts beneath the plate and corresponding to the circuit-closers.

9. A multiple and individual circuit-controller consisting of two plates carrying a series of independent electrical contacts, and mounted upon a screw-spindle adapted to force said contacts together.

330,904. CRANK-PIN OILER. Frederick W. Krantz, Detroit, Mich., assignor to the Michigan Lubricator Company, same place. Filed Sept. 17, 1885. (Model.)



Claim.—1. The herein-described oiler, consisting of shell A, provided with openings *a*, tubular stem B, and disk C, transparent cylinder D, cap F, and screw-stem H.

2. An oiler consisting of a closed oil-receptacle, a tubular stem therein rising to a point above the oil-level, a disk carried by the upper end of the tubular stem, and a valve-stem passing through the cap of the oiler and into the top of the tubular stem, as shown.

3. An oiler consisting of a closed oil-receptacle, a tubular stem therein rising to a point above the oil-level, and a disk carried by the upper end of the tubular stem and of a less diameter than the interior of the receptacle.

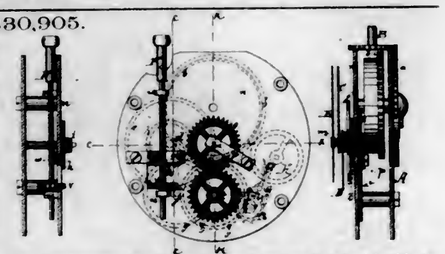
4. The herein-described oiler, consisting of shell A, having openings *a*, tubular stem B, and disk C, cylinder D, packings E and G, cap or cover F, screw-stem H, and jam-nut I.

330,905. WATCH. Edmond Kuhn, Brooklyn, assignor to the Manhattan Watch Company, New York, N. Y. Filed June 9, 1885. (Model.)

Claim.—1. In a watch-movement, the hand-setting slide F, carrying the hand-setting wheel *v*, and combined with the perforated plate *n*, with which the slide F is parallel, and with the frictional spring *w*, substantially as described.

2. In a stem-winding watch, the stem B, gearing directly into the wheel *a* on the barrel-arbor, in combination with the train of wheels from said winding-drum to the wheels *j z*, that carry the hands, and to the escapement, and with the perforated plate *n*, lugs *u u*, slide F, having the toothed hand-setting wheel *v*, and frictional spring *w*, the wheel *v* being adapted to turn said wheels *j z*, substantially as described.

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3. The combination of the winding-drum and its wheel *b* with the train of wheels *d e f g h i j z t q r* and escapement-wheel *s*, as specified.

4. The combination of the winding-drum and its wheel *b* with the train of wheels *d e f g h i j z t q r* and escapement-wheel *s*, and with the slide F, having toothed wheel *v*, substantially as described.

5. The sweep second-hand E, combined by its arbor with the toothed wheel *o*, plate *n*, and spring-support *p*, the spring crowding said wheel *o* against the plate *n*, substantially as specified.

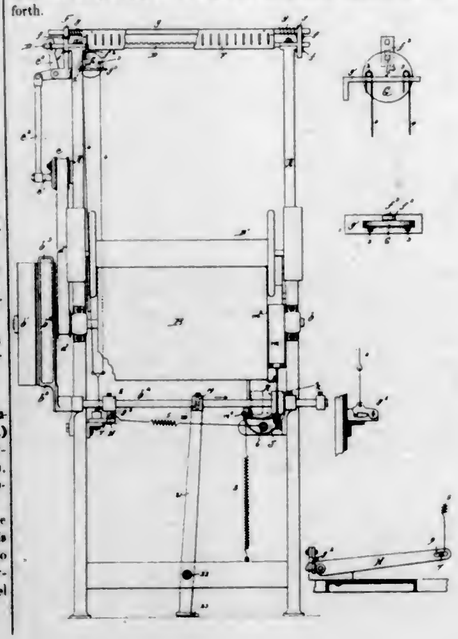
6. The combination of the winding-drum and its wheel *b* with the train of wheels *d e f g h i j z t q r* and escapement-wheel *s*, and with the toothed wheels *o o²* and sweep second-hand E, as described.

7. The regulator I, constructed out of one piece with the projecting pins *y y*, as and for the purpose specified.

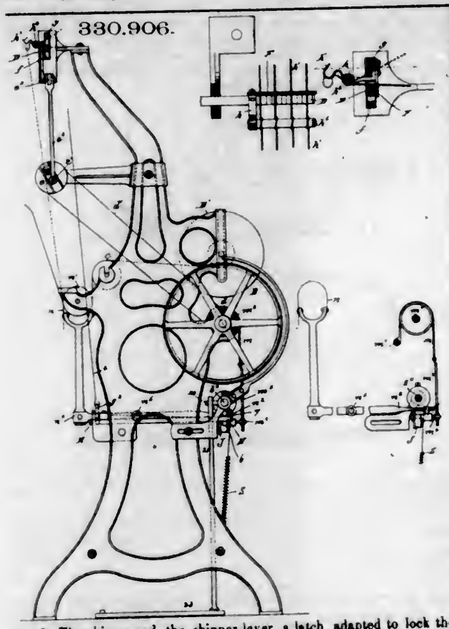
330,906. STOP-MOTION FOR SPOOLERS, &c. John Lancaster, Dover, N. H. Filed Jan. 2, 1885. (No model.)

Brief.—On the breakage of a thread the drop-wire attached to a bracket on the sheath falls to the lower end of the slot in the sheath, in which position it engages the reciprocating rack moving in front of the sheath, thus causing the sheath to move with the rack. A projection on the sheath then engages a pin on a disk beneath it and causes said disk to rotate, which, being connected to a latch over the shipper-lever by means of cords, disengages the latch from said lever, which, being acted on by a spring, causes the shipper-rod to operate, moving the belt from the fast to the loose pulley. At the same time a collar on the shipper-rod engages and depresses one end of a quadrant, to the other end of which is attached one end of a friction belt or strap which passes over a pulley on the drum-shaft, thereby stopping the drum.

Claim.—1. A belt-shipper, a shipper-rod, a shipper-lever, a main driven shaft, fast and loose pulleys on the said main driven shaft, and a latch engaging the shipper-lever to cause it to retain the shipper in position opposite the fast pulley, combined with a reciprocating rack, means for operating it, a contiguous sheath, a series of thread-engaging hooks, each having a portion extended over the rack and through the sheath, and mechanism, substantially as described, between the sheath and latch, to lift the latter whenever the sheath is reciprocated, substantially as set forth.



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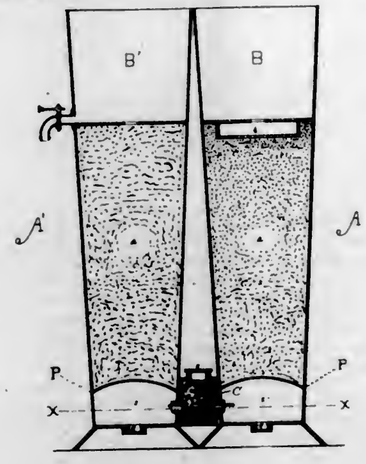


2. The shipper rod, the shipper-lever, a latch adapted to lock the same, as specified, a rack, means to reciprocate it, a sheath provided with the bifurcated arm, and a series of hooks adapted to engage the thread and to pass over the rack and through the sheath, as described, combined with the disk G, provided with the pins and adapted to be operated by the sheath, and the latch-lifting connections, substantially as and for the purpose set forth.

3. The hooks *h'*, the brackets *f'*, provided with the anti-friction rollers *f*, and the rack, and means to reciprocate it, combined with the rod *g*, the sheath, its rod h^3, brackets *h*, and the coiled springs, to operate substantially as described.

4. The shipper-rod, the shipper-lever, the latch to retain the said lever in position to hold the shipper in position opposite the fast pulley, the driven shaft provided with a pulley, the roller *n'*, the pivoted quadrant J, the collar affixed to the shipper shaft to operate the quadrant, a friction-strap connected with the quadrant and passed over the pulley on the drum-shaft, and a friction-strap passing over the roller *n'* and to an operating-lever to which it is attached, combined with means to retain one end of the said lever against the quadrant and to connect the shipper-lever with the quandrant, and with means to automatically disengage the latch from its lever, as and for the purpose set forth.

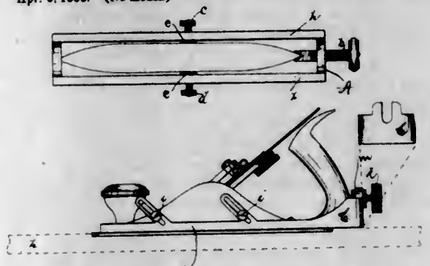
330,907. FILTER. John F. Le Beau, Toledo, Ohio. Filed Feb. 4, 1885. (No model.)



Claim.—1. Filters A and A', in combination with intervening sediment-chambers, *s s*, and connecting horizontal filter C, substantially as shown and described, for the purposes specified.

2. In a filter consisting of vessels A and A', intervening sediment-chambers, *s s*, and connecting-filter C, the cleansing device consisting of apertures *c* and *e e*, arranged substantially as shown and described, for the purposes set forth.

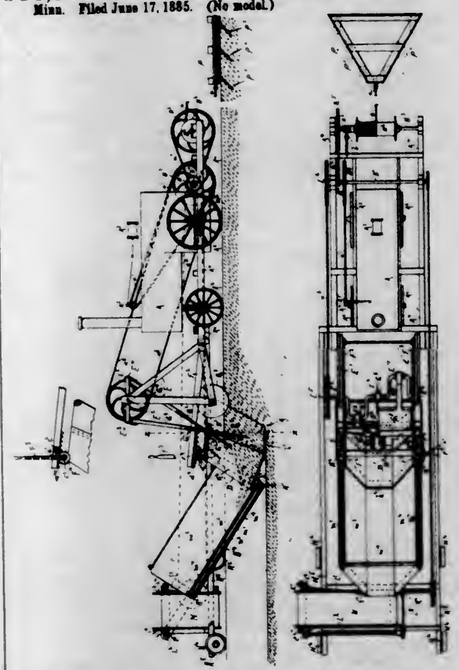
330,908. SHUTTLE-PLANER. Lodowick Leeds, New London, assignor, by mesne assignments, to Birdie L. Fenner, Versailles, Conn. Filed Apr. 6, 1885. (No model.)



Claim.—1. A device for holding a shuttle while in the act of planing or truing up the same, consisting of a frame provided with cup centers to support said shuttle by its tips, and means for squaring up and holding said shuttle, said supporting-frame being so provided with ways or guides on two opposite sides that the shuttle may be planed on two sides without removal from said frame, all substantially as described, and for the purpose specified.

2. In combination with the frame having ways or guides on two opposite sides, cup centers to support a shuttle by its tips, adjustable supports to square up and hold said shuttle on its sides, and a plane adapted to travel on said guides or ways, and provided with means by which said plane may be elevated or depressed, substantially as and for the purpose specified.

330,909. DITCHING-MACHINE. Francois X. Lemay, Crookston, Minn. Filed June 17, 1885. (No model.)



Claim.—1. In a ditching-machine, a scoop or mold-board adapted to be drawn through the ground, in combination with one or more rising and falling spades which cut the soil within said scoop and have a backward movement within the same, substantially as set forth.

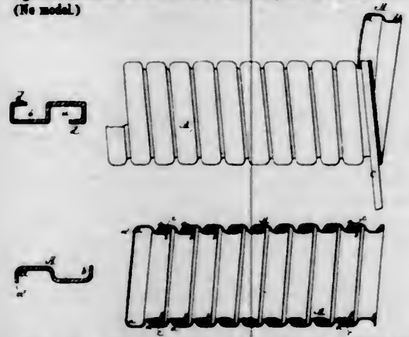
2. The combination of the frame A^4, carrying the motive power of

the ditcher, and adapted to be moved in the line of the ditch in advance of the cutting apparatus, a scoop or mold-board, D′, connected to said frame A^4 by a triangular frame, E′, and having a shaft, F′, carrying pinions d' d^2, journaled thereon, rack bar or bars F^3 F^3, connecting said pinions with said frame A^4, shaft E^2, having cranks E^2 E^4, spades G′ G^2, connected to said cranks by rods G^3 (F^3, means for revolving said shaft F′ to regulate the pitch of said mold-board D′, substantially as and for the purpose set forth.

3. In a ditching-machine, a scoop or mold-board, D′, adapted to be drawn through the ground, in combination with one or more rising and falling spades, G′ G^2, adapted to cut the soil within or in advance of said mold-board, and a cutting-wheel or colter, G^3, adapted to cut the soil in advance of said spades and mold-board, substantially as set forth.

4. In a ditching-machine, a scoop or mold-board, D′, adapted to be drawn through the ground, in combination with one or more rising and falling spades, G′ G^2, within or in advance of said mold-board, and revolving endless conveyer-belts m^4 m^5 m^6 N, adapted to receive the loosened soil from said mold-board, substantially as set forth.

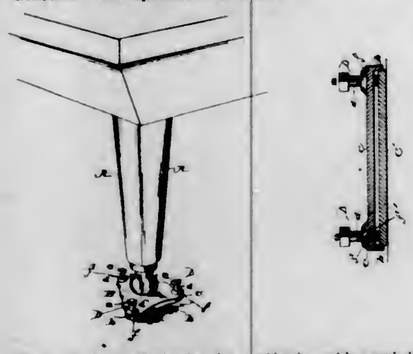
330,910. METAL TUBE. EUGÈNE LEVAVASSEUR, Paris, France, assignor of one-half to Henri Witzenmann, same place. Filed Sept. 10, 1885. (No model.)



Claim.—1. A tube consisting of a strip of metal wound helically, with its convolutions connected flexibly together and packed at the joint with a yielding packing, substantially as set forth.

2. A tube consisting of a strip of metal formed with two channels relatively reversed and wound helically, thereby interlocking the two channels, in combination with a flexible packing-strip confined in the space between said interlocking channels and making tight the joint between the adjoining convolutions of the metal strip, while permitting sufficient play to render the tube flexible, substantially as set forth.

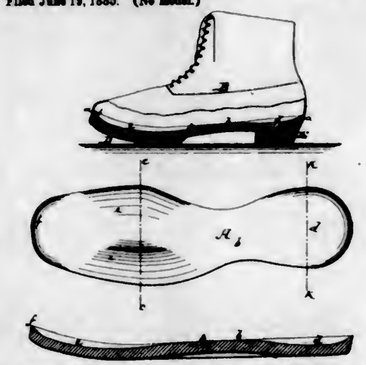
330,911. BILLIARD-TABLE LEVELER. GEORGE LIVINGSTON, Oskaloosa, Iowa. Filed Apr. 7, 1885. (No model.)



Claim.—1. In a table-leveler, the combination, with a table-leg, of the triangular flat plate resting on the floor, a vertically-adjustable plate interposed between the floor-plate and table-leg, which merely rests thereon, and a series of adjusting-bolts working in bearings in said upper plate and resting on the lower plate, and adapted to be adjusted independently of each other, substantially as described.

2. In a table-leveler, the combination, with the table-leg, of a triangular flat plate resting on the floor, a similarly-shaped vertically-adjustable plate arranged between said floor-plate and the table-leg, which has a broad bearing and merely rests thereon, said upper plate having a continuous depending flange, *b*, adapted to embrace the outer periphery of the lower plate, and adjusting screw-bolts D, working in enlarged bearings at each angle of the adjustable plate and adapted to bear on the lower plate, all arranged and combined as set forth.

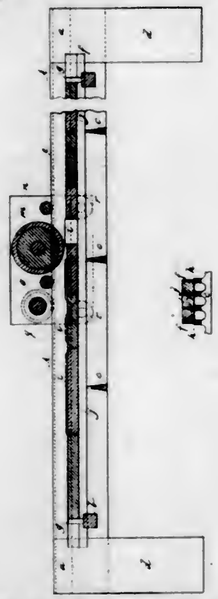
330,912. BOOT OR SHOE. ROBERT R. MATHEWS, New York, N. Y. Filed June 19, 1885. (No model.)



Claim.—1. The rigid insole A, formed with the cavities *d e* and raised portions *b f*, in combination with the flexible sole D and heel E, substantially as herein shown and described.

2. The combination of the upper B with the inflexible wooden insole A, to which said upper is secured, and with the flexible sole D and heel E, that are also attached to said insole, substantially as and for the purpose herein shown and described.

330,913. MACHINE FOR PERFORATING MUSIC-SHEETS FOR MECHANICAL MUSICAL INSTRUMENTS. JOHN MAXFIELD, London, England. Filed Oct. 25, 1884. (No model.) Patented in England Apr. 16, 1884, No. 6,432.

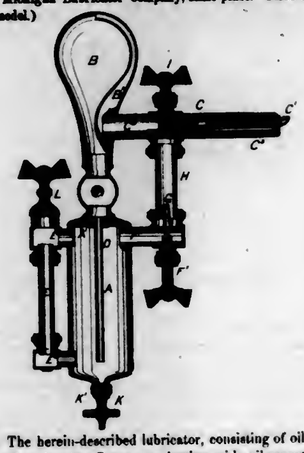


Claim.—1. The combination of the cutting-punches with movable interposed blocks for adjusting their position, bars *f*, provided with ledges *h*, which support the cutting-punches, and the longitudinal and transverse bars of the bed, substantially as set forth.

2. The combination of the bed and the cutting-punches of different sizes, adjustable lengthwise of the bed, with the interposed blocks, and means, substantially as described, for forcing a sheet upon the cutting-punches, said cutting-punches being adjustable into position to perforate the paper for different tunes, substantially as described.

3. The combination of the cutting-punches of different sizes and adjustable lengthwise of the bed with the movable interposed blocks for adjusting them to cut perforations for different tunes, and the roller for forcing a sheet against said cutting-punches, substantially as set forth.

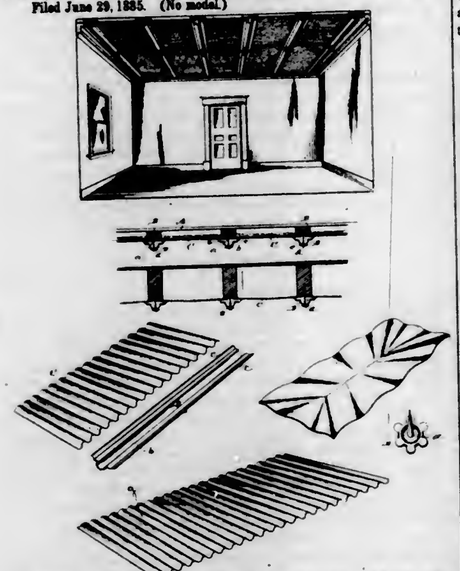
330,914. LUBRICATOR. THOMAS B. MCNIECE, Detroit, Mich., assignor to the Michigan Lubricator Company, same place. Filed June 8, 1885. (No model.)



Claim.—1. The herein-described lubricator, consisting of oil-receptacle A, condensation-chamber B, communicating with oil-receptacle A by a straight tube, D, steam-inlet B′, steam-ducts C′, C^2, and C^3, gage E, outlet F, sight-tube H, and outlet valve and ports K K.

2. In combination with oil-chamber A and condensation-chamber B, gage E, provided with air-vent A′, and cap L, applied to said tube and adapted to simultaneously open the gage for admission of oil and the vent for escape of air, and to simultaneously close the same.

330,915. METALLIC CEILING. ALBERT NORTHROP, Pittsburg, Pa. Filed June 29, 1885. (No model.)

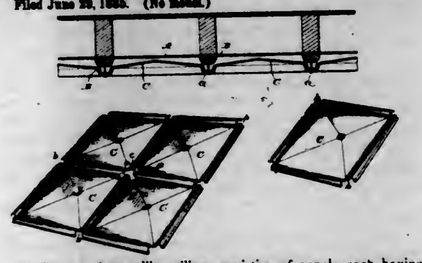


Claim.—1. In a metallic ceiling, the combination, with two adjacent panels, substantially as shown, arranged to form an intervening space between their edges, of the molding-strips overlapping the adjacent edges of both panels, and screws or other devices passing through the molding and between the adjacent panels for securing the molding-strip and panels in position.

2. In a metallic ceiling, the combination, with corrugated sheet-metal panels arranged to form an intervening space between their adjacent sides, and thereby allow of their expansion and contraction in all directions, of a molding-strip overlapping the adjacent side edges of the panels and devices passing through the molding-strip between the edges of the panels for securing the strip and panels to the ceiling.

3. In a metallic ceiling, the combination, with metal panels and molding-strips secured over their adjacent side edges to allow of the free expansion and contraction of the panels, of an asbestos lining on each panel, substantially as set forth.

330,916. METALLIC CEILING. ALBERT NORTHROP, Pittsburg, Pa. Filed June 29, 1885. (No model.)



Claim.—1. A metallic ceiling consisting of panels, each having a curved or channeled molding on its four sides, the moldings being cut away at the corners of the panels, substantially as set forth.

2. A metallic ceiling consisting of panels, each having a curved or channeled molding on its four sides, the moldings being cut away at the corners of the panels, and rosettes for covering and concealing said cut-away portions, substantially as set forth.

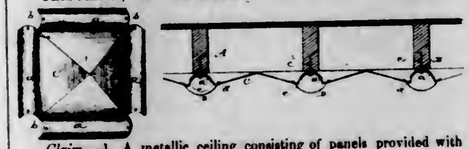
3. A metallic ceiling consisting of panels interlocked with each other by side moldings and secured to furring-strips by nails inserted through openings formed at the junction of four panels, substantially as set forth.

4. A metallic ceiling consisting of panels interlocked with each other by side moldings and nails provided with rosettes for securing the panels in place and covering and concealing the openings in the moldings, substantially as set forth.

5. A metallic ceiling consisting of panels having their sides (two or more) provided with channeled moldings, the corners of the panels being cut away, substantially as set forth.

6. A metallic ceiling consisting of panels, each having a curved or channeled molding on two or more of its sides, the panels being cut away at the corners, and rosettes for covering and concealing said cut-away portions, substantially as set forth.

330,917. METALLIC CEILING. ALBERT NORTHROP, Pittsburg, Pa. Filed June 29, 1885. (No model.)



Claim.—1. A metallic ceiling consisting of panels provided with inverted moldings or flanges, substantially as set forth.

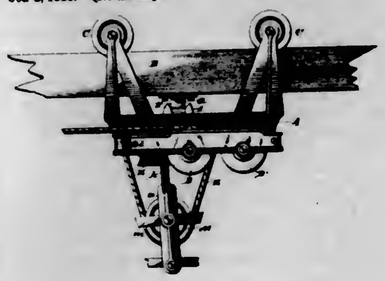
2. A metallic ceiling consisting of panels provided with inverted moldings or flanges and rosettes or ornaments arranged to cover the openings at the junction of the corners of the panels, substantially as set forth.

3. A metallic ceiling consisting of panels provided with inverted moldings or flanges, nails or screws inserted through said moldings or flanges for securing the panels in place, and rosettes or ornaments arranged to cover and conceal the nails or screws, substantially as set forth.

4. A metallic ceiling consisting of panels provided with inverted moldings or flanges, and with water-escape openings, and rosettes or ornaments for covering and concealing such openings, substantially as set forth.

5. A metallic ceiling consisting of panels having raised central portions and raised moldings or flanges on their sides, all or in part, and rosettes for covering and concealing the cut-away portions of the panels, substantially as set forth.

330,918. HAY-ELEVATOR. BENJAMIN OSBORN, Marion, Ohio. Filed Oct. 2, 1885. (No model.)



Claim.—1. In a hay-elevator, the combination, with the carriage, of a pair of sheaves or pulleys journaled therein and adapted to receive the hoisting-rope leading in either of two opposite directions, and thereby operate the elevator in either of said directions without changing any part of the carriage or its attachments, substantially as set forth.

2. In a hay-elevator in which a pair of sheaves or pulleys journaled in the carriage are adapted to receive the operating-rope from opposite directions, and thereby move the carriage in the direction from which it leads, the combination, with the gravity-latch and the funnel-shaped guide adapted to conduct the loop on the movable block into engagement with the gravity-latch, of a pair of bent locking-levers adapted to engage the stop on the track and an arm on the gravity-latch, for the purpose substantially as set forth.

3. In a hay-elevator, a carriage-frame cast in one piece, substantially as set forth.

4. In a hay-elevator, the combination, with the carriage provided with the pair of sheaves or pulleys for changing the direction of the carriage, and a movable block provided with a looped strap and a cross-bar guide, of the gravity-hook adapted to engage the loop, substantially as stated, and the pair of locking-levers adapted to engage the opposite sides of the stop and the arm on the gravity-latch, substantially as set forth.

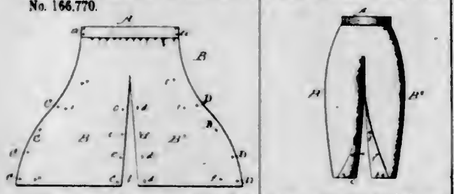
330,919. ATOMIZER FOR VENTILATING APPARATUS. Emil Oehlmann, Berlin, Germany. Filed July 8, 1884. (No model.)



Claim.—1. An atomizer for ventilating apparatus, consisting of a supply-pipe having one or more jet-nozzles, and of a convex deflecting plate or plates arranged in line with the axis of the nozzle or nozzles, substantially as set forth.

2. The combination of the tubular frame, a water-supply pipe connected thereto, a series of jet-nozzles attached to said tubular frame, and a convex deflecting plate or plates in line with the nozzles of the tubular frame, substantially as described.

330,920. CONVERTIBLE GARMENT. Ellen M. Page, Brighton, County of Sussex, England. Filed Aug. 15, 1885. (No model.) Patented in England Dec. 1, 1884, No. 15,789, and in France Feb. 2, 1885, No. 166,770.



Claim.—1. A petticoat divided from top to bottom behind, and nearly from top to bottom in front, and provided with buttons and button-holes along the clefts or lines of division, substantially as and for the purpose set forth.

2. The section B' and the section B^2, in combination with the material which unites them above the front cleft, *b*, the said sections being respectively provided with a row of buttons and a row of button-holes along the edges of said cleft, and double rows thereof along the other vertical edges of said sections, for the purpose set forth.

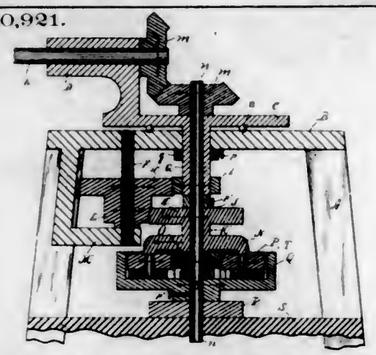
330,921. GEARING FOR WINDMILLS. George H. Pattison, Freeport, Ill. Filed Sept. 15, 1885. (No model.)

Claim.—1. The combination of the gear L, mounted on a shaft journaled in the tower of the mill, the gear K, engaging with said gear L, the gudgeon P, rigidly connected with the gear K, and the gear T, mounted on said gudgeon and free to rotate thereon and to revolve boldly with the gear K.

2. The combination of the gears H L, mounted on a shaft journaled in the tower of the mill, the gears I K, engaging with the gears H L, respectively, the gudgeon P, rigidly connected with the gear K, the gear T, mounted on said gudgeon and free to rotate thereon and to revolve about the axis of gear K, and the gear Q, engaging with said gear T, substantially as shown and described, and for the purpose set forth.

3. The combination of two gears mounted on a vertical shaft journaled in the tower of a windmill at one side of the vertical axis of the mill, a third gear engaging one of said two gears and having its axis coincident with the vertical axis of the mill, a fourth gear engaging the other of said two gears and itself free to rotate on a vertical axis, a loosely-mounted or planet gear free to rotate on its own axis and to re-

330,921.



volve bodily with said fourth gear, and a power-transmitting gear engaging with said planet-gear and adapted to transmit power to other machinery, whereby the rotation of said third gear, when the power-transmitting gear is stationary, rotates said planet-gear on its own axis and revolves it about the axis of said fourth gear.

4. The combination of the geared turn-table, the gear K, and the gear T, supported thereby and revolving therewith, gearing connecting the gear K with the gear on the turn-table, gearing engaging the gear T on one side and connecting it with power-transmitting mechanism, and gearing engaging said gear T on the opposite side and connecting it with the wind-wheel shaft.

5. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, a gear rigidly attached to the turn-table, two independently-journaled vertical shafts adapted to transmit the power of the mill to other mechanism, a third vertical shaft journaled in bearings attached to the tower of the mill, and a train of gearing connecting the wind-wheel shaft, the gear attached to the turn-table and said vertical shafts, one element of said train of gearing being a loosely-mounted gear supporting a planet-gear which is free to rotate on its own axis and to revolve about the axis of said loosely-mounted gear, substantially as shown and described, and for the purpose set forth.

6. In a windmill of the class described, the combination of a rotating turn-table and a gear rigidly attached thereto, a wind-wheel shaft journaled in the turn-table, a vertical shaft journaled in bearings attached to the tower, a loose gear, and a planet-gear free to rotate about its own axis and to revolve about the axis of said loosely-mounted gear, and gearing, substantially as shown and described, connecting the wind-wheel shaft, the gear on the turn-table, said loosely-mounted gear, and said vertical shaft journaled in bearings attached to the tower.

7. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, a vertical shaft geared directly to the wind-wheel shaft, a second vertical shaft adapted to transmit the power of the mill to other machinery, and a train of gearing connecting said vertical shafts and said turn-table, whereby the rotation of the wind-wheel shaft in its bearing rotates said vertical shafts in opposite directions without tending to rotate the turn-table, one element of said train of gearing being a planet-gear free to rotate about its own axis and to revolve about the axis of its support.

8. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, a vertical shaft journaled in the turn-table and geared directly to the wind-wheel shaft, a gear-wheel mounted loosely on said vertical shaft, and a planet-wheel whose shaft is rigidly fastened to said loosely-mounted gear, and gearing connecting said planet-gear with said vertical shaft, substantially as shown and described, and for the purpose set forth.

9. In a windmill of the class described, the combination of a rotating turn-table, a gear rigidly mounted thereon, and a wind-wheel shaft journaled therein, two independently-journaled vertical shafts adapted to transmit the power of the mill to other mechanism, and gearing connecting the wind-wheel shaft, the gear on the turn-table, and said two vertical shafts, whereby the rotation of the wind-wheel shaft in its bearings rotates said vertical shafts in opposite directions, one element of said gearing being a loosely-mounted gear free to rotate about its own axis and to revolve about the axis of its movable support, substantially as shown and described.

10. In a windmill of the class described, the combination of a rotating turn-table and a wind-wheel shaft journaled therein, a power-transmitting gear, a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of its movable support, and gearing connecting said turn-table, said wind-wheel shaft, said power-transmitting gear, and said loosely-mounted gear, whereby the rotation of the wind-wheel shaft in its bearing rotates said loosely-mounted gear on its own axis only, and the rotation of the turn-table rotates said loosely-mounted gear on its own axis and revolves it about the axis of its movable support without rotating either the wind-wheel shaft or the power-transmitting gear.

11. In a windmill of the class described, the combination of a wind-wheel shaft journaled in a rotating turn-table, a gear rigidly fastened to said turn-table, a power-transmitting gear, an intermediate loosely-mounted gear, a planet-gear loosely mounted on a shaft rigidly attached to said intermediate gear, and gearing connecting said turn-table gear, the wind-wheel shaft, the power-transmitting gear, said intermediate loosely-mounted gear, and said planet-gear, whereby the reaction of the work performed by said power-transmitting gear has no tendency to rotate the turn-table.

12. The combination, with the rotating geared turn-table of a mill, of a wind-wheel shaft journaled therein, the gear Q, adapted to transmit the power of the mill to other machinery, and the gears *m m'* H L K O T, connecting the wind-wheel shaft, the gear on the turn-table, and the gear Q, whereby during the simultaneous rotation of the wind-wheel shaft in its bearing and of the turn-table about its own axis the speed of rotation of the gear Q bears a constant ratio to the speed of rotation of the wind-wheel shaft.

13. In a windmill of the class described, the combination of a geared turn-table and a wind-wheel shaft journaled therein, a power-transmitting shaft, the gear K, and the gear T, supported thereby and free to rotate on its own axis and to revolve with the gear K, gearing connecting the gear K with the turn-table gear, and gearing connecting the wind-wheel shaft and the power-transmitting shaft through the gears K T, substantially as shown and described.

14. In a windmill of the class described, the combination of a geared turn-table and a wind-wheel shaft journaled therein, a power-transmitting gear, a loosely-mounted gear free to rotate about its own axis and to revolve about the axis of its support, gearing connecting said loosely-mounted gear with the turn-table gear, gearing engaging said loosely-mounted gear on one side and connecting it with the wind-wheel shaft, and gearing engaging it on the opposite side and connecting it with the power-transmitting gear, whereby the rotation of said wind-wheel shaft in its bearing rotates said loosely-mounted gear on its own axis only.

15. The combination of the central gears, I and O, and the connecting-gears H L K T Q, combined and operating substantially as shown and described, and for the purpose set forth.

16. The combination, with the turn-table and the gear attached thereto, of the gear K, and the gear T, rotating on a shaft attached to the gear K, and gearing connecting the gear K with the turn-table gear, whereby the rotation of the turn-table rotates the gear T bodily about the axis of the gear K, substantially as shown and described, and for the purpose set forth.

17. The combination of the turn-table and the gear I, rigidly fastened thereto, and the gears H L K T, all combined and operating substantially as shown and described, and for the purpose set forth.

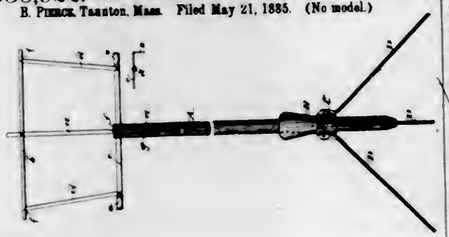
18. The combination of the turn-table C, the wind-wheel shaft E, journaled therein, the gear I, fastened rigidly to the turn-table, and the train of gearing *m m'* H L K O T Q, substantially as shown and described, and for the purpose set forth

19. In a windmill of the class described, the combination of a geared turn-table, a wind-wheel shaft journaled therein, a power-transmitting shaft, a loosely-mounted gear free to rotate on its own axis and about the axis of rotation of its support, and a train of gearing connecting said wind-wheel shaft, said geared turn-table, and said power-transmitting shaft, whereby the rotation of the wind-wheel shaft in its bearing rotates said loosely-mounted gear on its own axis only.

20. In a windmill of the class described, the combination of a rotating turn-table, a planet-gear free to rotate about its own axis and to revolve about the axis of its rotatable support, and means connecting said turn-table and said planet-gear, whereby the rotation of the turn-table rotates said planet-gear.

21. In a windmill of the class described, the combination of a rotating turn-table, a planet-gear free to rotate on its own axis and to revolve about the axis of its rotatable support, and gearing connecting the turn-table and the planet-gear, whereby the rotation of the turn-table rotates the planet-gear, but at a different rate of speed.

330,922. MUSIC-RACK AND WALKING-CANE COMBINED. Otis B. Pierce, Taunton, Mass. Filed May 21, 1885. (No model.)

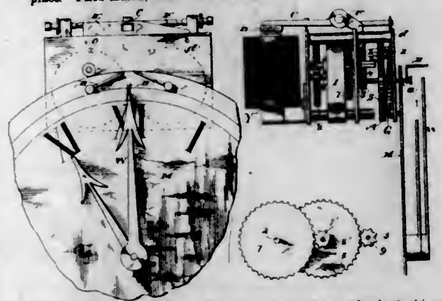


Claim.—1. The tubular head or handle B, the legs D D D, hinged to the lower portion of the same, and adapted to be closed closely together and contained within the cane or tube A, also the thumb-screw C of the handle B, substantially as shown and described.

2. The tubular head B, in combination with the vertically-adjustable tube of metal A, the lower end being closed and constructed as an ordinary cane, and the opening *g* near the top of said tube, substantially as shown, and for the purpose described.

3. The music-rack provided with the bars *b* and *c*, the sockets *f f* near the ends of bar *b*, the central standard, *a*, pivoted to bar *b*, and fitted to bar *c* with a dovetail joint where it crosses the same, the extreme lower end of standard *a* the same dimension as the opening *g* near the top of tube A, the standards *d d*, pivoted to bar *c* and sprung into sockets *f f* near the ends of bar *b*, the music-holders *e e*, hinged to the extreme ends of bar *c*, and adapted to be folded down upon bar *c*, and all being adapted to be contained within the tube A, substantially as shown, and for the purpose described.

330,923. CLOCK-SYNCHRONIZER. Alfred Rankl and William W. Dean, St. Louis, Mo., assignor of one-half to Paul Bakewell, same place. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a clock-synchronizing device, cog-wheels A A', rotated substantially as set forth, one of said cog-wheels having stops X X', rotary regulating-arms B B, mounted on suitable shafts and controlled in their rotation by the cog-wheels A A', pivoted lever C, having pawl E, said pawl E having lug Z to engage with stops X X' of cog-wheel A, and an armature, D, and electro-magnets Y Y, all combined and operating substantially as set forth, and for the purposes specified.

2. In a clock-synchronizing device, the combination of cog-wheels A A', rotated substantially as set forth, one of said cog-wheels having stops X X', rotary regulating-arms B B, mounted on suitable shafts and controlled in their line of rotation by the cog-wheels A A', pivoted lever C, having pawl E, said pawl E having lug Z and slot O, and an armature, D, electro-magnets Y Y, and lug K, substantially as described.

3. In a clock-synchronizing device, the combination of cog-wheels A A', rotated substantially as set forth, one of said cog-wheels having stops X X', rotary regulating-arms B B, mounted on suitable shafts and controlled in their line of rotation by the cog-wheels A A', pivoted lever C, having pawl E, said pawl E having lug Z and slot O, working on lug K, and an armature, D, and electro-magnets Y Y, the whole operating in connection with a clock-dial and minute-hand, substantially as set forth.

330,924. CAN-TESTING MACHINE. Joseph E. Reynolds and Winfield S. Reynolds, Port Deposit, Md. Filed July 14, 1885. (No model.)

Claim.—1. A can-testing apparatus comprising a vertically-moving frame, can-holders suspended therefrom, a water-tank beneath the same, an air-receiver, and suitable connections with said air-receiver, substantially as described.

2. A can-testing apparatus comprising a vertically-moving frame, can-holders suspended therefrom, a water-tank beneath the same, an air-receiver, and pipe therefrom, and a flexible pipe connecting the movable frame with the said air-receiver, substantially as described.

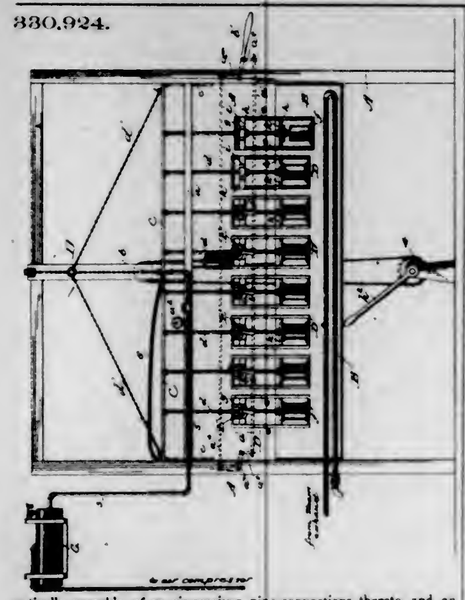
3. A can-testing apparatus comprising a vertically-moving frame, can-holders suspended therefrom having a fixed upper seat and a movable lower seat, clamping devices for clamping the seats together upon the can, a water-tank, an air-receiver, and suitable connections therewith, substantially as described.

4. In a can-testing machine, the combination, with the movable frame, of the can-holders, consisting of the side bars, slotted as described, the top connecting-bar, the lower can-seat and the upper seat, the cross-bar *i*, and the tool pivoted thereto and adapted to move the seats together to clamp the can, when operated, substantially as described.

5. A can-testing machine comprising the vertically-movable frame carrying the can-holders, flexible connection with the air-supply, the water-tank, and means, substantially as described, for elevating the frame or lowering the same, substantially as described.

6. In a can-testing machine, the combination, with a can-holder,

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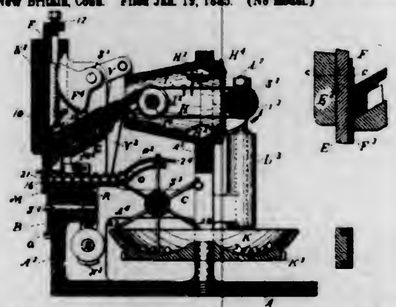


vertically movable, of an air-receiver, pipe-connections thereto, and an endless belt for removing the cans, as they are discharged, substantially as described.

7. A can-testing machine comprising suitable standards, a frame vertically movable between the same, can-holders suspended from said frame having means for clamping the can-seats upon the can, a water-tank, means for raising and lowering said frame, and flexible connection between said frame and an air-receiver, substantially as described.

8. In a can-testing machine, and in combination, the vertically-movable can-holding frames, the can-seats, the levers or tools for moving the holding-frames, an operating lever or device, and suitable connections between the said device and each of the levers or tools whereby the can-frames may be moved simultaneously, substantially as described.

330,925. BUTTON-SETTING MACHINE. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Jan. 19, 1885. (No model.)



Claim.—1. In a button-setting machine, the combination of a button-fastener-driving mechanism, the laterally-movable die for bending over into a hook the point of the button-fastener, mechanism, substantially as described, for operating said die, a button-chute leading to said die, and a button-feeding device, substantially as described, for feeding buttons away from said die after they are attached to a fabric, substantially as described, and for the purpose specified.

2. In a button-setting machine, the combination of the button-chute O, and the die D, adapted to have a lateral movement to enter the shank of a button placed in said chute, and means, substantially as described, for moving said die athwart said chute, substantially as described.

3. In a button-setting machine, the combination of chute O, slide D', having die D, wheel B, and means, substantially as described, for operating said slide and wheel, substantially as set forth.

4. The combination of wheel B, having notches 20, and guard M, having groove 21, substantially as described, and for the purpose specified.

5. The combination of a moving button-hopper, a fixed button-receiving chute, and one or more button-carrying arms, substantially as described, and means for moving said arm or arms to the chute, arranged to operate substantially as shown and described.

6. The combination of a revolving button-hopper, one or more revolving button-shank-receiving arms, mechanism, substantially as described, for operating said hopper and said arms, and a button-receiving chute, substantially as described, and for the purpose specified.

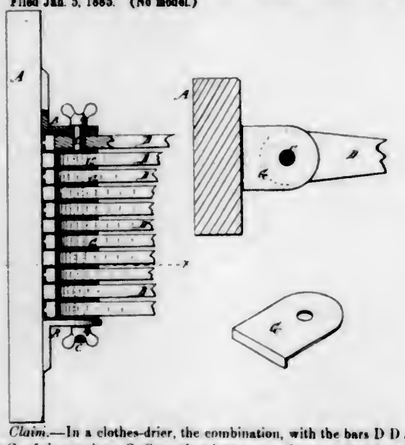
7. In a button-setting machine, the combination of button-chute O, having groove O^2, and curved substantially as described, a wheel having one or more button-shank-receiving arms, substantially as described, and frictional driving device, substantially as described, for so operating said wheel as to feed forward the buttons in said chute, substantially as set forth.

8. The combination of a slide having a driver-channel, a driver in said channel, a fastener-channel leading to said driver-channel, and a cut-off plate interposed between said channels, having an opening through which to admit fasteners from the one to the other, substantially as described.

9. In a button-setting machine, the fastener-channel G, having a groove wider than the fastener-prongs, and guides 3 and 4, and a cut-off plate having opening 7, to admit the passage through it of fasteners placed either side first, substantially as set forth.

10. The combination of slide E, driver F, channel G, cut-off plate F^2, and stop 12, whereby the upward stroke of said slide may be so adjusted as to bring said cut-off into proper alignment with said channel, substantially as described.

330,926. CLOTHES-BAR. WILLIAM D. ROBINSON, Kansas, N. Y. Filed Jan. 5, 1885. (No model.)



Claim.—In a clothes-drier, the combination, with the bars D D and bolt C, of the washers G G, resting between and separating the bars, said washers extending back and made square at the rear ends, and resting against the back board, as shown and described, and for the purpose specified.

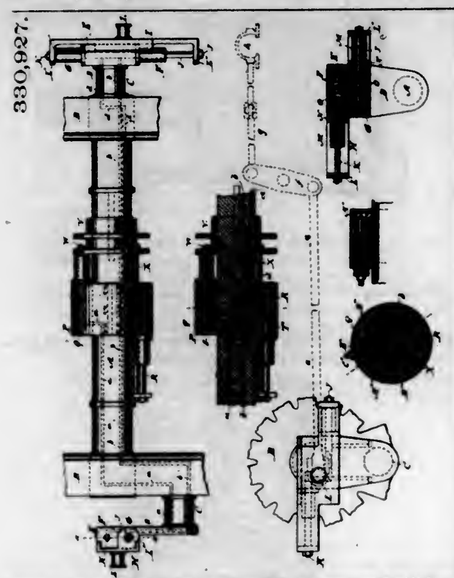
330,927. HYDRAULIC VALVE-MOTION FOR LOCOMOTIVES. F. F. ROSS, Brooklyn, assignor to the Ross Locomotive Improvement Company, New York, N. Y. Filed Apr. 20, 1885. (No model.)

Claim.—1. In an engine, the mechanism for controlling the movement of the valves, consisting of a shaft, a slide on the shaft carrying plungers, liquid-chambers to receive said plungers, a slide at each end of the shaft, one extending at right angles to the other and each carrying plungers, and a pin or support for the valve-rod, liquid-chambers at the end of the shaft to receive said last-mentioned plungers, and chambers connecting said liquid-chambers so that a movement of the slide on the shaft will cause the liquid to move the end slides and the rear end of the valve-rod, substantially as and for the purposes expressed.

2. In an engine, the mechanism for controlling the movement of the valve, consisting of a shaft carrying on its ends the driving-wheels and about its center a slide, plungers connected with the slide, liquid-chambers to receive said plungers, crank-pins on the wheels to receive the rear end of the pitman-rods, blocks connected with said crank-pins and containing at opposite ends liquid-chambers, slides extending at right angles to each other on said blocks and carrying plungers at opposite ends adapted to move within said last-mentioned liquid-chambers, pins on said slides to receive the rear end of the valve-rods, and channels connecting said liquid-chambers so that a movement of the slide on the shaft will move the end slides and valve-rods, substantially as and for the purpose set forth.

3. In an engine, the shaft having liquid-chambers Q R and supporting a slide carrying plungers adapted to move within said chambers,

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supports in line with said shaft for slides H I and containing liquid-chambers F G, plungers carried by the slides H I for movement within said chambers F G, pins or supports on the slides H I for the valve-rods, a channel, *a*, connecting the chamber Q with chamber F at one end of the shaft, a channel, *b*, connecting chamber G at said end of the shaft with the chamber F at the other end thereof, and a channel, *d*, connecting the chamber R with chamber G at the end of the shaft, substantially as set forth.

4. In an engine, the shaft having upon its center a collar, P, and slide V, the collar containing liquid-chambers Q R, and the slide carrying plungers S T, adapted to move in said chambers, in combination with the driving-wheels, crank-pins for the pitman-rods, supports in line with said shaft for slides H I, which extend at right angles to each other, chambers F G in said supports, plungers J K, pins on the slides, and channels *a b d*, substantially as set forth.

5. In an engine, the shaft having the collar P and slide V, combined with the plungers S T, chambers Q R, channels *a b d*, auxiliary plunger and chamber A'', channels B''', valve C'', and slides H I, with their plungers and chambers, substantially as set forth.

6. In an engine, the shaft combined with slides extending at right angles to each other, one being at each end of the shaft and carrying a pin for connection with the valve-rod, and hydraulic means, substantially as described, for simultaneously moving said slides, and thus altering the position of the valve-rod pins.

7. In an engine, the shaft combined with slides extending at right angles to each other, one being at each end of the shaft and carrying a pin for connection with the valve-rod, a system of hydraulic chambers and plungers for simultaneously moving said slides, and a lever connected with one set of said plungers, substantially as set forth.

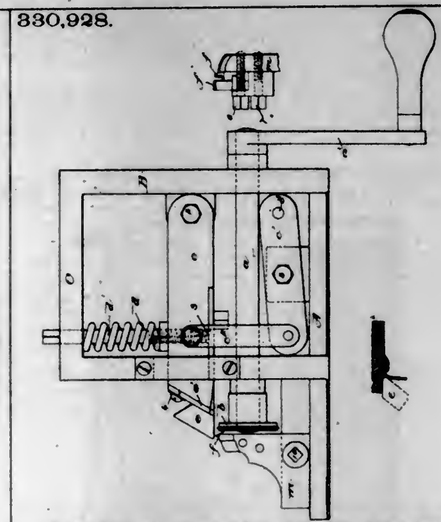
8. In an engine, the shaft combined with slides extending at right angles to each other on parallel planes, one being at each end of the shaft and carrying a pin for connection with the valve-rod, a system of hydraulic chambers and plungers for simultaneously moving said slides from a given point, and an auxiliary plunger and chamber charged with the liquid and separated from the other liquid-passages by an adjustable valve, substantially as set forth.

330,928. MACHINE FOR CHANNELING THE SOLES OF BOOTS OR SHOES. JOHN G. ROSS, Wakefield, assignor to James W. Brooks, trustee, Cambridge, Mass. Filed July 22, 1885. (No model.)

Claim.—1. In a machine for channeling the soles of boots and shoes, the frame, rotating shaft, and feed-wheel carried thereby, and the pressure-block and guide pressure-roller thereon, combined with a channeling-knife mounted in a block upon the frame-work and arranged to co-operate with the feed-wheel and guide pressure-roller to cut a channel as the sole is fed forward, all arranged substantially as described.

2. In a machine for channeling the soles of boots and shoes, the frame, rotating shaft, and feed-wheel, and the channeling-knife, combined with a spring-controlled pressure-block and adjustable guide pressure-roller carried thereby, and the treadle to raise the said pressure-block to permit the free entrance of the sole beneath the guide pressure-roller, all arranged substantially as described.

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3. The frame, the rotating shaft and its feed-wheel, the pressure-block and its guide pressure-roller, combined with an adjustable channeling-knife mounted in an adjustable block, *m*, substantially as described.

4. The frame, the rotating shaft and its feed-wheel, the pressure-block and its guide pressure-roller, combined with an adjustable channeling-knife mounted in an adjustable block, *m*, and a channel-groover also mounted in said block *m*, substantially as described.

330,929. FISH-PACKING APPARATUS. GEORGE P. RUST, Gloucester, Mass., assignor of one-half to David S. Presson, same place. Filed Oct. 14, 1885. (No model.)



Claim.—1. The combination, with a press and a receptacle adapted to hold the commodity to be pressed, of a separable platen or follower adapted to be locked to the receptacle and hold the pressure on the commodity after the press is released, substantially as set forth.

2. The combination, with a press and a receptacle adapted to hold the commodity to be pressed, of a platen or follower separate from the press and adapted to automatically lock itself to the receptacle when forced home by the press, substantially as set forth.

3. The combination, with a box or receptacle adapted to receive the commodity to be pressed, of a box-cover adapted to act as a movable platen of a press, substantially as set forth.

4. The combination, with a box separated into compartments and adapted to receive the commodity to be pressed, of a cover adapted to act as a movable platen, and provided with projections adapted to fit within the several compartments, substantially as set forth.

5. The combination, with the compartment-box, with its hinged sides, of the follower-cover with its hooks adapted to engage catches on the ends of the box, for the purpose substantially as set forth.

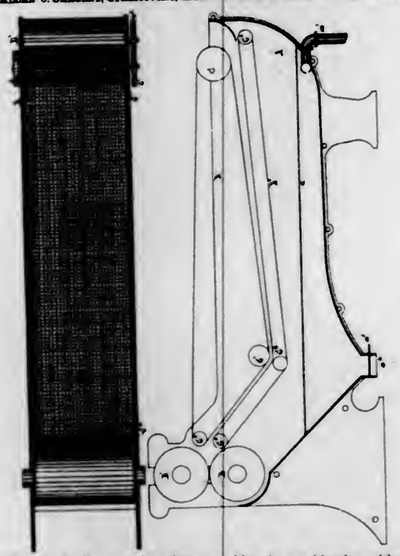
6. The combination, with the box and its follower-cover, of the lever-press adapted to force the follower-cover home by a single stroke, substantially as set forth.

7. In a press for packing fish, the combination, with a platform and

a rock-shaft journaled beneath it, of the head-block supported upon the vertically-movable standards, and the swinging standards connecting the lower ends of the vertically-moving standards with arms on the rock-shaft, substantially as set forth.

8. The combination, with the platform, the rock-shaft, and the movable hand-block, of the vertically-adjustable standards, and the swinging standards connecting the vertically-adjustable standards with the rock-shaft, substantially as set forth.

330,930. **WOOL-WASHING MACHINE.** Frederick G. Sargent and Allan C. Sargent, Graniteville, Mass. Filed Dec. 31, 1883. (No model.)



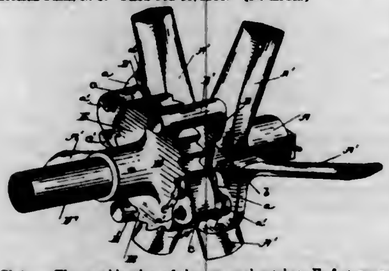
Claim.—1. In a wool-washing machine, in combination with the bowl A, the endless carrying-apron D', adapted to carry the wool through the bowl during the process of soaking and cleansing it, formed of woven wire, and the roller C^9, substantially as described.

2. In combination with the bowl A and squeeze-rolls B B', the endless carrying-apron D', adapted to carry the wool through the bowl during the process of soaking and cleansing it, formed of woven wire, substantially as described.

3. In combination with the bowl A, two endless carrying-aprons, D D', adapted to carry the wool through the bowl during the process of soaking and cleansing it, formed of woven wire, substantially as described.

4. In combination with the bowl A and squeeze-rolls B B', two endless carrying-aprons, D D', adapted to carry the wool through the bowl during the process of soaking and cleansing it, formed of woven wire, substantially as described.

330,931. **PAWL-AND-RATCHET MECHANISM.** Walter Scott, Hoosick Falls, N. Y. Filed Oct. 15, 1885. (No model.)

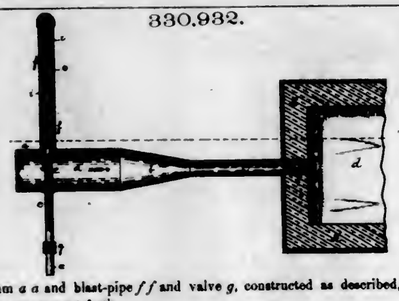


Claim.—The combination of the external ratchet, E, fast upon the shaft, with the swinging plate B, spring-pawl c', and driving-wheel A, constructed and arranged substantially as and for the purpose set forth.

330,932. **DEVICE FOR MIXING NATURAL GAS AND COLD AIR.** John H. Shaffler, Pittsburg, Pa. Filed Sept. 26, 1885. (No model.)

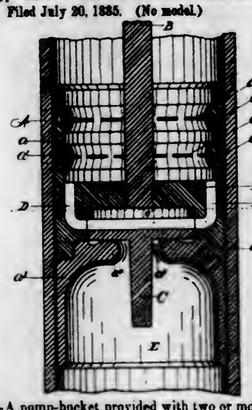
Claim.—The perforated gas-pipe $s\ s\ s\ s$, passing through the drum $o\ a$, and being perforated at $i\ i$, as described, in combination with the

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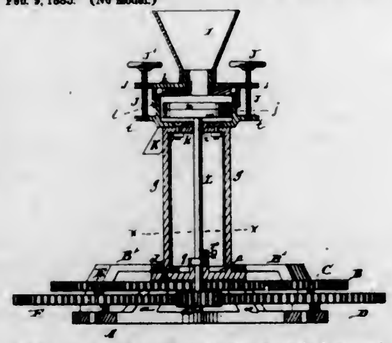
drum $a\ a$ and blast-pipe $f\ f$ and valve g, constructed as described, for the purposes set forth.

330,933. **BUCKET FOR LIFT-PUMPS.** Frederick H. Smith, Kansas City, Mo. Filed July 20, 1885. (No model.)



Claim.—A pump-bucket provided with two or more circumferential grooves, and having oblong apertures or slits connecting the grooves with the interior of the bucket, the apertures of one groove being arranged to alternate with the unbroken spaces between the apertures of an adjacent groove, substantially as described.

330,934. **GRINDING-MILL.** George K. Smith, Chicago, Ill. Filed Feb. 9, 1885. (No model.)



Claim.—In a grinding-mill, the posts g, the main frame, and a case consisting of two parts, one of which carries one of the grinding-disks, and can be raised and lowered without moving the other, in combination with adjusting-screws J J, spindle L, carrying the other grinding-disk, and adjusting-collar q, substantially as described.

330,935. **FIRE-CHAMBER FOR COOK-STOVES.** William C. Smith, Warsaw, Mo. Filed June 21, 1884. (No model.)

Claim.—1. The combination, with a cooking-stove having a fire-chamber provided with a perforated bottom and a front grating, and an inclined shelf beneath the fire-chamber, of a movable plate having wedge-shaped flanges depending therefrom at corresponding sides, substantially as described.

2. The combination, with a cooking-stove having a fire-chamber provided with a perforated bottom and a front grating, and an inclined shelf beneath the fire-chamber having a lug, of a movable plate having

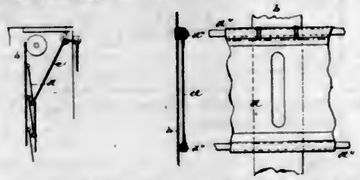
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wedge-shaped flanges at corresponding sides, and formed with a cleat on its under side, and a perforated extension or ear, substantially as described.

3. The combination, with a cooking-stove having a fire-chamber provided with a perforated bottom and front grating, and an inclined shelf beneath said chamber having a lug and constituting the oven-top, of the movable plate d, constructed with the wedge-shaped side flanges and the cleat t and perforated ear, substantially as described.

330,936. **SHADE AND BLIND.** Carl O. Sörlie, Christiania, Norway. Filed Sept. 25, 1885. (No model.) Patented in Norway Oct. 30, 1883; in Sweden June 7, 1884; in England Aug. 16, 1884, No. 10,480; in Denmark Aug. 27, 1884; in Belgium Aug. 30, 1884; in France Dec. 24, 1884, and in Germany Feb. 3, 1885.

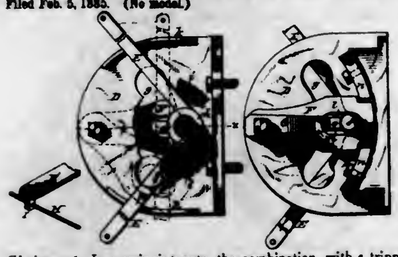


Claim.—1. A window-curtain composed of strips of paper or cloth having a wire or tube secured along their longitudinal edges, whereby the strips are given rigidity in the direction of their length, but are flexible in the direction of their widths, substantially as set forth.

2. A window-curtain composed of strips of paper or cloth having wires or tubes sewed or fastened to their edges, and means for gathering or rolling the slats, substantially as set forth.

3. A window-curtain composed of strips of paper or cloth having wires or tubes secured in their longitudinal edges, and bands for hanging the same, the bands being secured at the ends of the wires or tubes, substantially as set forth.

330,937. **SWINGING GATE.** William H. Starry, Trenton, Ohio. Filed Feb. 5, 1885. (No model.)



Claim.—1. In a swinging gate, the combination, with a tripping device composed of a pivoted lever having a curved elbow and incline, of a hinged connection for the gate, consisting of a bracket, a locking-plate pivoted thereto, a pivot-arm connected to the gate and supported in the bracket, and levers for operating said arm and plate, substantially as and for the purpose set forth.

2. In a swinging gate, the combination, with a tripping device, of a hinged connection for the gate, consisting of a bracket provided upon its under side with a locking-plate pivoted thereto, a spring for automatically pressing the plate into engagement with dogs upon the bracket, a pivot-arm secured to the gate and supported in the bracket, levers for operating said arm and locking-plate, and fulcrum-blocks upon the upper side of the bracket for the levers, substantially as and for the purpose specified.

3. In a swinging gate, the combination, with a tripping device, of a hinged connection for the gate, consisting of a bracket provided with a pivoted locking-plate, having a beveled-face lug and a slot, and a pivot-arm operated by levers, and provided with a tongue having a beveled end to act against the face of the lug, substantially as and for the purpose described.

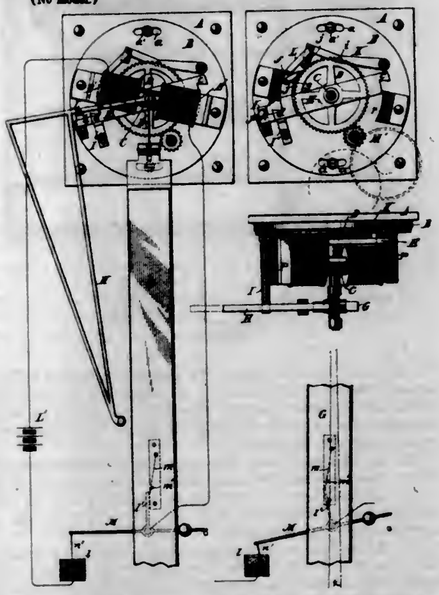
4. In a swinging gate, the combination, with a tripping device, of a hinged connection for the gate, consisting of a bracket, a pivoted arm supported thereby, levers for operating the arm, blocks to form fulcrums for the levers, a pivoted locking-plate, and a spring to act on the plate, substantially as and for the purpose set forth.

5. A hinged connection for an automatically-operating gate, consisting of a pivot-arm connected to the gate, having a beveled tongue, and levers for operating the arm, in combination with a bracket having a slot or opening, fulcrum-blocks for the levers, and a pivoted and slotted locking-plate provided with a beveled lug, and a spring for pressing the plate upward in engagement with dogs upon the bracket, substantially as and for the purpose specified.

6. A tripping device for automatically-swinging gates, consisting of a pivoted trip-lever having a curved elbow and double incline, as shown, in combination with a pivoted crank for operating the lever, substantially as and for the purpose described.

7. In a swinging gate, a hinged support for connecting the same to the gate-post, consisting of a bracket, a pivot-arm, and pivoted locking-plate, in combination with levers for operating the pivot-arm, having at their free ends pivoted blocks, and rods connected thereto and to pivoted trip-levers formed with curved elbows and double inclines, and pivoted cranks for operating the same, substantially as and for the purpose set forth.

330,938. **PRIMARY ELECTRIC CLOCK.** William L. Stevens, Dorchester, and Edwin J. Wescott, Hyde Park, Mass. Filed July 27, 1885. (No model.)



Claim.—1. The combination, with the train of a time or regulating mechanism, of a stationary magnet having poles with curved faces, an armature for moving or impelling said train, pivoted at its center between and in line with the curved faces of the poles and limited in its movement about its center by stops, and intermediate pawl and locking mechanism, all as set forth.

2. The combination, with the train of a time or regulating mechanism, of a stationary electro-magnet having right-angled pole-pieces, an armature centrally pivoted between said poles and limited in its movement, and a pawl and locking mechanism operated by the movement of the armature for moving or impelling the train, as set forth.

3. The combination, with the wheel or train of an electric clock, of a stationary electro-magnet having right-angled pole-pieces, an armature centrally pivoted between said pole-pieces and limited in its movement, the said armature having projections extending along the sides of the pole-pieces of the magnet, and a pawl and locking mechanism between the armature and the train, whereby the movements of the said armature are imparted to the train, as set forth.

4. The combination, with the wheels or train of an electric clock, of an electro-magnet and armature, a pawl carried by the armature and engaging with one of the wheels, a locking-pin placed just beyond the normal limit of the movement of the pawl, and a pivoted lever having a pin that locks the wheel, the said lever being adapted to be raised by the armature through a portion of its path of movement, as set forth.

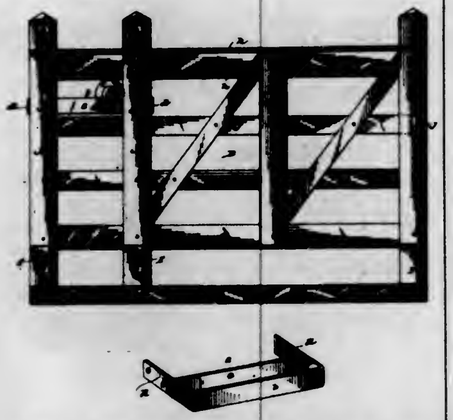
5. The combination, with the train of an electric clock, of an electro-magnet, an armature, a circuit containing said magnet, and a pendulum constructed and arranged for periodically making and breaking

the said circuit, a pawl and locking mechanism for rotating the train step by step by the movement of the armature, and a weighted lever for impelling the pendulum, arranged to be raised by the upward movement of the armature, as described.

6. The combination, with a base-plate carrying a stud or arbor, of a pendulum and weighted lever connected with the arbor, a plate adjustably secured to the base-plate, a clock-train, and electro-magnetic impelling mechanism carried thereby, substantially as herein set forth.

7. The combination, with one of the wheels of a primary electric clock or regulator, of a circuit-controller for one or more secondary clocks, composed of a bar attached to a pivoted circuit-controlling lever, the said bar being adapted to be moved in the direction of its length by one or more pins on the said wheel and having a pin or projection that is brought by said movement into the path of a pin or projection on the train-impelling armature, whereby the bar is raised from engagement with the pin or stop on the wheel, as and for the purposes set forth.

330,939. FARM-GATE. ALBERT O. THURSTON, Olneyville, R. I. Filed Mar. 12, 1885. (No model.)



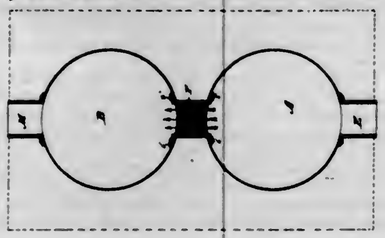
Claim.—1. The combination, with posts or uprights, of a bracket connecting the same, and consisting of the parallel plates *b c*, connected at their ends by plates *d*, extended beyond the said plates *b c*, a roller mounted to travel upon the upper edges of plates *b c*, and a gate supported on the roller, as set forth.

2. The combination, with posts or uprights, of a bracket connecting the same, a guide-roller loosely mounted on said bracket, a gate having metal bars secured to the upper and lower sides of its top rail, and guide-brackets secured to the upper and lower ends of the posts or uprights, substantially as set forth.

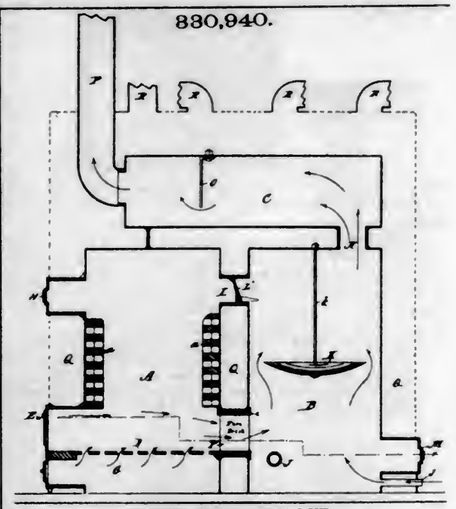
3. The combination, with posts or uprights, of a bracket connecting the same, a guide-roller loosely mounted on said bracket, a gate having tracks, as shown, one of which is provided with an upturned end, and guide-brackets secured to the upper and lower ends of the posts or uprights, substantially as set forth.

330,940. FURNACE. JOHN A. TOPLIFF, EDWARD S. CROSS, WILLIAM S. COX, and JOHN A. MCCULLUM, Elyria, Ohio. Filed Feb. 27, 1884. (No model.)

Claim.—A heating-furnace consisting, essentially, of the vertical fuel-chamber A, having the feed-door H, the draft-door E, the horizontal grate D, in line with the draft-door, an ash-pit, the vertical combustion-chamber B, the flanged lining *i*, connecting said chambers in line with the grate, the vertical fire-bricks therein, the flue L, valve L', the air-supply pipes J in the lower end of the combustion-chamber, the exit N, the horizontal drum or radiator C, and the outer surrounding casing, substantially as herein set forth.



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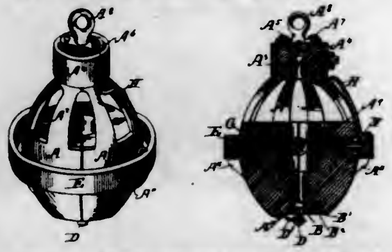


330,941. HAMMOCK. VINCENT P. TRAVERS, New York, N. Y. Filed May 16, 1885. (No model.)



Claim.—The arched hammock-spreader B, combined with the substantially-straight head-rest C, which is attached to the concave upper side of said spreader, substantially as herein shown and described.

330,942. BURGLAR-ALARM. BENJAMIN T. TREMPER, West Bloomfield, N. Y. Filed June 21, 1884. (No model.)



Claim.—1. A burglar-alarm consisting of a spherical casing provided with a series of radial chambers and a surrounding ring with means, substantially as specified, for successively exploding the cartridges therein.

2. A burglar-alarm of the class described, comprising a shell or case formed in two sections, each of which has formed therein one-half of a cartridge-chamber, substantially as specified.

3. A burglar-alarm of the class described, comprising a case formed in two sections pivotally secured to each other at their lower ends, and provided at their upper ends with a uniting-hook having a suspension-ring, substantially as specified.

4. The alarm-case consisting of the sections A A', provided with the hinge B B' B^2, and with a suspension-hook, A^2, having the eye A^3, and the firing-pin D, mounted upon spring D', and provided with the cartridge-chambers A^9, arranged as described.

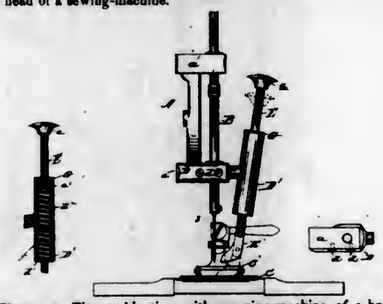
5. The combination of the section A, provided with the lug B, the spring and pin D D', and the half-chambers, with the section A', provided with the pintle B^2 and lug B', substantially as shown and described.

6. The case A A', provided with a central radial series of cartridge-chambers, A^9, and with the lower chamber A^9 the spring-supported firing-pin D, and the ring E, mounted upon the brackets A^{11}, substantially as shown and described.

7. The combination of the case A A', having the brackets A^{11}, and central radial cartridge-chambers, with the ring E and spring H, substantially as shown and described.

330,943. BUTTON-HOLE-CUTTING ATTACHMENT FOR SEWING-MACHINES. JOHN D. ULMER, Philadelphia, Pa. Filed Sept. 17, 1884. (No model.)

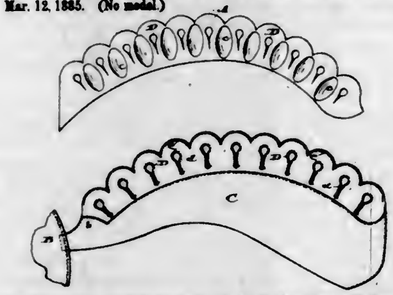
Brief.—A bracket holding a spring-plunger carrying a cutter-blade, said plunger being set in an inclined position, is adapted for attachment to the head of a sewing-machine.



Claim.—1. The combination, with a sewing-machine, of a button-hole-cutting attachment comprising a bracket, D, with tube or sleeve D', and inclined spring-plunger E, fitted in said tube or sleeve, and set obliquely with reference to the needle-bar of the machine, said plunger carrying a cutter or blade, E', substantially as shown and described.

2. The combination, with a sewing-machine, of a button-hole-cutting attachment secured to the head of the machine on the side adjacent to the operator's position, said attachment comprising a blade attached to a rod or support, and means which move the same in an inclined plane, substantially as shown and described, and for the purpose set forth.

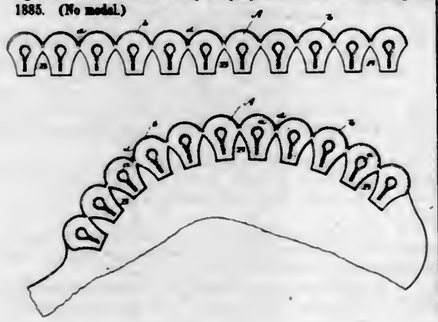
330,944. BOOT OR SHOE. GEORGE VALIANT, Toronto, Ontario, Canada, assignor to the Valiant Button Fly Company, Portland, Me. Filed Mar. 12, 1885. (No model.)



Claim.—1. In a boot or shoe, the fly or flap C, provided with a projection or lip, *b*, so that the strip A may be sewed to it without any stitches passing through them, being necessarily carried through the vamp B, as set forth.

2. A button-hole or eyelet-strip, A, made of stronger material than the fly or cap C, to which it is attached, and reduced in thickness between the button-holes in order to make it pliable, as specified.

330,945. BOOT. GEORGE VALIANT, Toronto, Ontario, Canada, assignor to the Valiant Button Fly Company, Portland, Me. Filed Aug. 17, 1885. (No model.)



Claim.—1. A button-hole strip, A, made of a single thickness of material provided with a series of button or eyelet holes, and having a series of notches, B, made in its inner or attaching edge, substantially as and for the purpose specified.

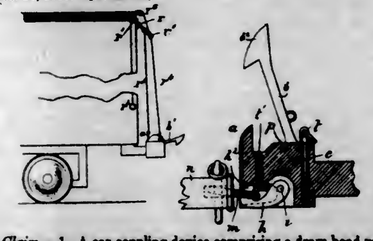
2. A button-hole strip, A, made substantially as described, and having a series of button or eyelet holes, *a*, with a series of notches, B, made in its edge and connecting with the button-hole *a*.

330,946. CAR-STARTER. WILLIAM P. VERKERY, East Auburn, Me. Filed Sept. 22, 1885. (No model.)



Claim.—The combination, with the wheel-shaft of a horse-car, of the pole *b*, cranks *c c'*, gears *i j*, segment-gears *f g'*, arm *g*, arms *k k'*, and pawls *m m'*, as herein set forth.

330,947. CAR-COUPLING. PAUL L. WHEELER, Boston, Mass. Filed Feb. 16, 1885. (No model.)



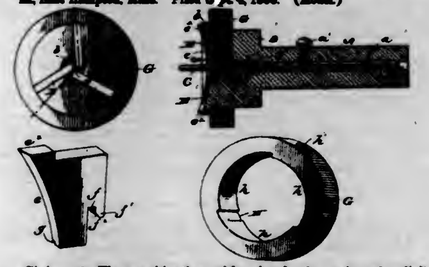
Claim.—1. A car-coupling device comprising a draw-head provided with a pivoted hook, and an inclined striking face and shoulder for co-operating with a corresponding hook of another similar draw-head, and a hook and connected counter-balance for engaging a coupling-link, whereby the coupling device may be made to co-operate either with a draw-head of similar construction or with an ordinary draw-head having a link, substantially as and for the purpose described.

2. A car-coupling device comprising a draw-head provided with a pivoted hook, and an inclined striking face and shoulder for co-operating with a corresponding hook of another similar draw-head, and a hook and connected counter-balance for engaging a coupling-link, whereby the coupling device may be made to co-operate either with a draw-head of similar construction or with an ordinary draw-head having a link, and uncoupling mechanism connected with both of the said hooks, whereby both may be simultaneously disengaged or uncoupled by the operator without passing between the cars, substantially as described.

3. The combination, with the draw-head provided at one side with a stationary inclined face and a shoulder, of a hook pivoted at the other side of the draw-head, and a disengaging device comprising the lifting-arm *f* and slide *g*, operatively connected with the said hook, and actuated thereby to disengage the corresponding hook of the opposite coupling from the said stationary shoulder, substantially as described.

4. The draw-head provided with an inclined face and a shoulder, and the pivoted hook for engaging the corresponding face and shoulder of the opposite coupling, combined with a hook-disengaging device connected with the said pivoted hook, and uncoupling mechanism also connected with the said hook, whereby the same may be disengaged or uncoupled by the operator without passing between the cars, substantially as described.

330,948. CUTTING APPLIANCE FOR LATHES. LEWIS E. WARREN, East Hampton, Mass. Filed Sept. 4, 1885. (Model.)



Claim.—1. The combination, with a head, of a series of radially-adjustable dies and a clamping-ring, substantially as shown and described.

2. The combination, with a recessed head, of a series of radially-adjustable cutting-dies and an eccentric clamping-ring, substantially as shown and described.

3. The combination, with a recessed head-stock, of a series of radially-arranged cutting-dies seated in said recesses and adjustably held in position therein, substantially as described.

4. The combination, with a recessed head-stock having a concave face, of radially-arranged cutting-dies seated in said recesses and adapted to clamp a center pin, and an eccentric clamping-ring adapted to engage and clamp said dies in position, substantially as described.

5. The combination of a recessed head having a concave face and a circumferential flange, of a series of cutting-dies arranged in said recesses and having shanks projecting beyond the walls thereof, and an eccentric ring adapted to grasp said die-shanks and abut against the flange of the head-stock, substantially as described.

6. The combination, with a head and a clamping-ring, of a series of radially-arranged cutting-dies having their cutting-edges arranged out of the plane of rotation of the adjacent edges of their fellow dies, substantially as described.

7. The combination, with a grooved head-stock having seats *c c'* therein, of notched cutting-dies seated therein, and an eccentric clamping-ring, substantially as described.

8. The combination of a recessed head-stock having seats *c c'* therein, and a concave face, a series of radially-arranged cutting-dies having their lower ends slotted, as at f^3, and bearing in the seats *c c'* a drill-center, C, clamped by said dies, and a recessed eccentric clamping-ring, G, substantially as described.

9. In a cutting appliance for lathes, the combination of a head-stock having radial grooves or seats in its outer face, arranged out the line of gravity between the periphery and center thereof, and a series of radially-arranged cutting-dies rigidly held in position in said head-stock, as set forth.

10. In a cutting appliance for lathes, the combination of a head-stock having central passages, and a series of radial grooves or seats arranged out of the line of center between the periphery and center of said head-stock, a series of cutting-dies seated in said grooves or seats and rigidly held in position, and a center pin arranged in the central passage of the head-stock and clamped in position by the cutting-dies, as set forth.

330,949. ELECTRIC SWITCH OR CIRCUIT-CONTROLLER. Merle J. Wightman, Hartford, Conn. Filed July 8, 1885. (No model.)



Claim.—1. The combination, in an electric switch or circuit-controller, of a rotary operating-cam, and a switching or circuit-controlling lever, having two operating projections upon which said cam acts, as and for the purpose described.

2. The combination, with the switching-lever having the two projections, of a cam acting upon the same, and the retaining-spring bearing on the lever, whereby the lever may be held positively in either of its two positions.

3. The combination, with the two contact-springs, of the connecting-lever having a double leg or projection, and an intermediate operating-cam acting on the latter and carried by a rotary spindle having a thumb-piece.

4. The combination, with the switching-lever, of the friction-wheel mounted on a projecting arm of the lever, and a spring bearing against the friction-wheel, and provided with a projection whereby the lever may be held positively in either position.

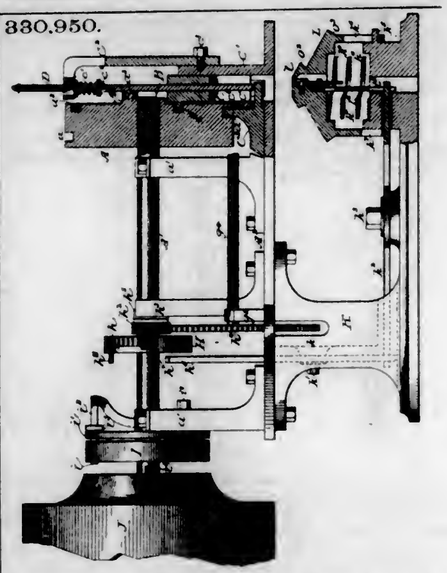
5. The combination, in an electric witch or circuit-controller, of a lever carrying or operating upon the contact devices, and adapted to retain either of its two extreme positions until moved positively into the other position, and a rotary operating-cam located between and acting upon two arms, lugs, or projections carried by said lever.

6. The combination, in an electric switch, of a switching-lever, and a double cam-spring bearing against an arm or projection of said lever, whereby the latter may have a quick or sudden action in breaking or completing the electric circuit.

330,950. STAPLING-MACHINE. John D. Wilder and A. Beverly Smith, Towanda, Pa. Filed Apr. 17, 1882. (No model.)

Claim.—1. The mutilated gear A, changeable wheels A' A^2, and gear-wheel A^4, in combination with the milled feed-wheels G and *g*, substantially as and for the purpose specified and shown.

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2. In a wire-stapling machine, the pin a^4, spring c^6, lever c^4, arm c', block E, and knife c^8, in combination with ways *e e*, slide c^2, and knife c^7, all arranged substantially as shown and specified.

3. In a wire-stapling machine, the recessed cross-head B, in combination with driver D, spring *c'*, and mandrel C^3, substantially as and for the purpose set forth.

4. The staple-driver D, with its cross-head B, guide C^2, spring *c'*, shoulder c^3, and crank-pin a^3, in combination with mandrel C^3 and staple-former C, substantially as and for the purpose set forth.

5. In a wire-stapling machine, the table-standard L, with angular shoulders a^3 a^3, and throat-plate *l*, so arranged as to form an attachment to suitable tables, substantially as set forth and shown.

6. In a wire-stapling machine, the table-standard L, throat-plate *l*, shoulders a^3 a^3, in combination with table P, having opening *p'*, and secured by set-screw *p*, and shoulder a^3, substantially as and for the purpose set forth and shown.

7. The anvil l^2, with circular sides forming ways, in combination with the clinchers *l' l'*, arranged substantially as shown and specified.

8. In a wire stapling machine, the clinchers *l' l'*, with slots l^3 l^3, working on a common center, l^4, in combination with anvil l^2 and lever l^5, substantially as and for the purpose set forth.

9. The lever l^5, containing V-shaped slot l^6, in combination with clinchers *l' l'*, anvil l^2, throat-plate *l*, and lever k^2, substantially as and for the purpose shown and described.

10. In a wire-stapling machine, the pin k^3, levers k^1 k^2, in combination with lever l^5 and clinchers *l' l'*, substantially as and for the purpose specified.

11. The combination of lever k^2 and lever l^5, for operating the clinchers, and having opening l^6, with standard L, having recess k^7, substantially as described.

12. In a wire-stapling machine, the combination of staple-former C, mandrel C^3, staple-driver D, pins c^5 c^4 a^3, cross-head B, and cam, having grooves *a* a^3, all arranged substantially as and for the purpose shown and specified.

330,951. BUTTON-FEEDER. Alexander G. Wilkins, Meadville, Pa., and Marcus J. Bartlett, Chardon, Ohio, assignors to the Railway Speed Recorder Company, Kent, Ohio. Filed July 7, 1885. (No model.)

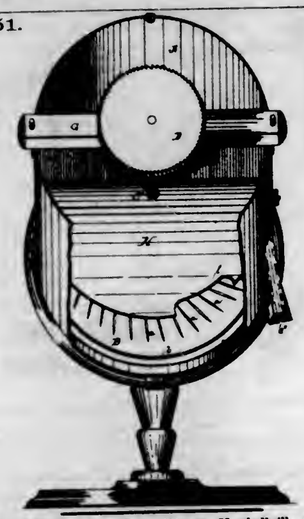
Claim.—1. The casing A, in combination with an interior conical disk, B, adapted to be intermittently moved, and provided with groove *b* and diagonal ball-grooves, and the slotted chute E, substantially as described.

2. In a button-feeding device, the slotted chute E, in combination with the spring-fingers *d d* and a device, substantially as described, to feed the buttons to the fingers, substantially as and for the purpose set forth.

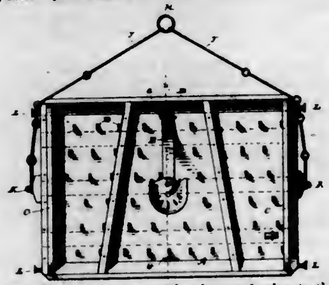
3. The supplemental button-receptacle formed by the plate H, in combination with the casing A, disk B, spring-fingers *d d*, and chute E, all constructed and arranged substantially as described.

4. In combination with a button-feeding device, substantially as described, the adjustable deflecting-guide *f g*, for the purpose specified.

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330,952. HARROW. Henry Wissen, Marshallville, Ohio. Filed Mar. 7, 1885. (No model.)

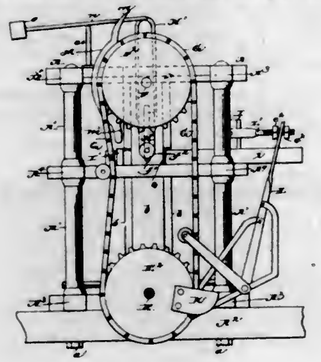


Claim.—1. The combination, with a harrow having teeth projecting from one face thereof, and provided at its opposite side edges, near the center, with bearings or projections, of draft mechanism pivoted to said bearings or projections, by means of which the harrow can be drawn in either direction and inverted, substantially as set forth.

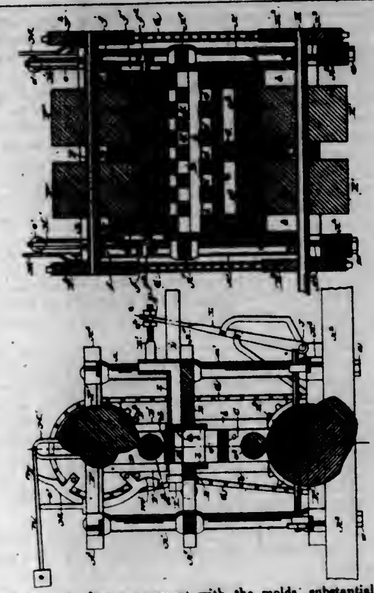
2. The combination, with a harrow consisting, essentially, of a platform or frame having teeth projecting from one face thereof, runners secured to the other face or side of said platform or frame, and bearings secured to the opposite side edges of the frame, at or near the center thereof, of draft mechanism loosely secured to said bearings and hooks secured to the ends of the frame, substantially as set forth.

330,953. BRICK-MACHINE. Abel B. Woodward, Nashville, Tenn. Filed Sept. 29, 1885. (No model.)

Claim.—1. In a brick-machine, the combination, with the molds, of a lower expelling-plunger, a compression-plunger, and an automatic lifting device connected with said compression-plunger for holding the



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same normally from engagment with the molds, substantially as described.

2. In a brick-machine, the combination of the molds, a compression-plunger, a shaft having cams for depressing said plunger, and lifting devices mounted on the cam-shaft and separate from the compression-plunger, to elevate said plunger out of the molds at the proper interval, substantially as described.

3. In a brick-making machine, the combination, with the molds, of a gravitating expelling-plunger, a compression-plunger normally held from engagement with the molds, two shafts having cams mounted in the machine-frame beneath and above the expelling and compression plungers, and an automatic lifting device connected with and separate from said compression-plunger, to keep the same normally in engagement with its actuating cam-shaft, substantially as described.

4. In a brick-making machine, the combination, with the molds, of a gravitating expelling-plunger, an upper compression-plunger, cam-shafts arranged beneath and above the expelling and compression plungers and geared together, lifting arms or brackets mounted on the cam-shaft of the compression-plunger, and a weighted arm and intermediate connections pivotally secured to the shaft of the compression-plunger at each end thereof, substantially as described.

5. In a brick-machine, the combination of the molds having depending guides, a gravitating expelling-plunger working in said guides and having frictional rolls, guides for the upper compression-plunger, a compression-plunger carrying frictional rolls at its middle, and having friction-rolls arranged thereon exterior to the guides of said plunger, cam-shafts for said plungers, geared together, and lifting device for said compression-plunger, arranged to act on the outer friction-rolls thereof, substantially as described.

6. In a brick-making machine, the combination of a frame, molds mounted therein, the compression and expelling plungers, cam-shafts for actuating said plungers and carrying sprocket-wheels, an endless traveling belt connecting said cam shaft sprocket-wheels, a reciprocating hopper arranged to move between the plungers, a rock-shaft mounted in the frame and having arms connected with the hopper, and operating-plates secured to the sprocket-wheels of the lower cam-shaft and arranged to successively operate the rock-shaft to oscillate the same and the hopper, substantially as described.

7. In a brick-making machine, the combination of a frame, molds mounted therein, a compression and expelling plunger, shafts having cams mounted in the frame for operating the plungers, and carrying sprocket-wheels geared together, a reciprocating hopper having guides working between the plungers and carrying scraping-blades, a rock-shaft mounted in the frame and having arms carrying frictional rolls, operating-plates mounted on the sprocket-wheels of the lower cam-shaft and arranged to successively strike the frictional rolls of the rock-shaft arms, upright bars secured to the rock-shaft and having slotted ends, and arms pivotally connected to the hopper and having threaded ends carrying nuts, substantially as described.

8. The combination, with the compression-plunger having its frictional roller-shaft extended, and the slotted guides therefor, of a vertically-

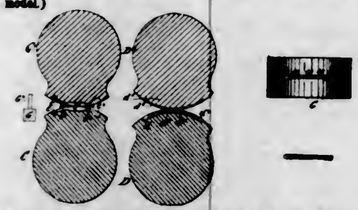
sliding plate connected to said shaft at each end thereof, a bail pivotally connected to each plate, a bracket secured to the frame of the machine at the sides thereof, and a weighted arm mounted in each of said brackets and connected to the bail-arm, substantially as described.

9. In a brick-machine, the combination of a frame, a mold or molds mounted therein, a gravitating expelling-plunger arranged to form a bottom to said mold or molds, a compression-plunger, lifting devices therefor separate from the compressing devices, a reciprocating hopper arranged to move between the plungers and over the mold or molds, and means, substantially as described, whereby the compression-plunger is withdrawn from the molds simultaneously with the upward movement of the expelling-plunger and the forward movement of the reciprocating hopper, substantially as described.

10. In a brick-machine, the combination, with the molds and the compressing and expelling devices, of a reciprocating bottomless hopper having closed ends and sides to provide a preliminary forming-chamber, and having a receiving-throat communicating therewith and arranged at an angle thereto to conduct the earth into said hopper, substantially as described.

11. In a brick-machine, and in combination with the molds and the expelling and compression plungers, a shaft having cams for actuating said plungers, each cam of the expelling-plunger shaft having three raised portions that lie at different distances from the center thereof, and are successively brought to act upon the expelling-plunger to maintain the same normally within the molds, to form a bottom thereto, to slightly elevate the said plungers simultaneously with the downward stroke of the compression plunger into the molds, and to force or expel the brick from the molds simultaneously with the withdrawal of the compression-plunger therefrom, substantially as described.

330,954. ROLL FOR MAKING SHUTTLE-BOX BINDERS. HORACE W. WYMAN and LYMAN F. GORDON, Worcester, Mass. Filed Oct. 7, 1885. (No model.)



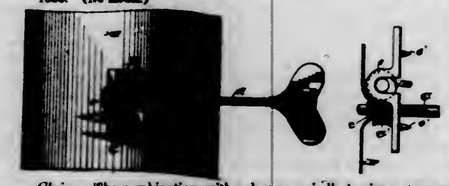
Claim.—1. In a machine for forming binders for shuttle-boxes, the rolls C C', each cut to leave recesses c c' c^2, with projections c^3 c^4, to shape the edge of the blank passed between them, substantially as shown and described.

2. In a machine for forming binders for shuttle-boxes, the rolls C C', each cut to leave recesses c c' c^2, with projections c^3 c^4, to shape the edge of the blank passed between them, combined with two rolls, D D', one of which is cut to leave recesses d d' d^2, the rolls C C' D D' operating successively upon the blank, for the purposes described.

3. In a machine for forming binders for shuttle-boxes, the roll F, having a die-groove cut therein, leaving spaces f f' f^2 and projections at f^3 f^4, combined with a roll, F', to force the blank into the said spaces, substantially as described.

4. In a machine for forming binders for shuttle-boxes, the roll F, having a die-groove cut therein, leaving spaces f f' f^2 and projections at f^3 f^4, and having the groove f^5 to shape the rib of the binder, combined with the roll F', to force the blank into the said spaces, substantially as described.

330,955. DAMPER. CARL G. EPP, Cleveland, Ohio. Filed Feb. 24, 1885. (No model.)

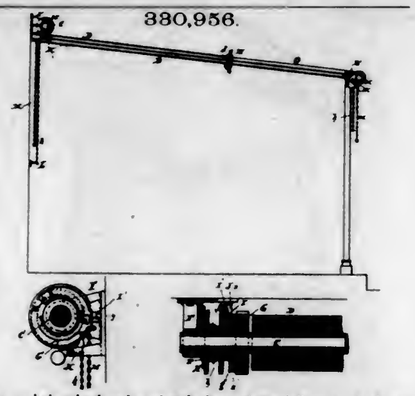


Claim.—The combination, with a damper-spindle having a damper, a worm-gear, and a pointer thereon, of the plate E, having outwardly-projecting bearings, a spindle journaled in said bearings, a worm secured on said spindle and engaging the worm-gear, and a thumb-piece secured to or formed integral with the spindle.

330,956. AWNING. FRANKS X. BOSSERMAN, Philadelphia, Pa. Filed Sept. 9, 1885. (No model.)

Claim.—1. The combination of the awning with its supporting-roller, a suitable catch to prevent its unwinding, an operating cord or

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chain, a chain-wheel, and ratchet devices, substantially as set forth, connecting the roller and chain-wheel, whereby a series of pulls upon the cord or chain winds up the awning, substantially as and for the purpose specified.

2. The combination of the awning with its supporting-roller, a suitable catch to prevent its unwinding, an operating cord or chain, a chain-wheel, and ratchet devices, substantially as set forth, connecting the roller and chain-wheel, whereby a series of pulls upon the cord or chain winds up the awning, and a similar ratchet-and-chain device connecting with the other end of the awning by a cord and adapted to positively move the awning in the other direction, substantially as and for the purpose specified.

3. The awning, in combination with a roller upon which it is wound, mechanism, substantially as described, to wind up the awning, a similar mechanism to unwind the awning, located at the other end thereof when extended, and connected therewith by a cord or chain, and locks at each end to prevent winding or unwinding of the awning except when desired, substantially as and for the purpose specified.

4. The combination of awning D, roller C, frame F, ratchet-wheel G, having teeth g, chain-wheel H, having spring-pawl I, spring P, cam projection J, and chain M, substantially as and for the purpose specified.

5. The combination of awning D, roller C, frame F, ratchet-wheel G, having teeth g, chain-wheel H, having spring-pawl I, spring P, cam projection J, pawl K, and chains M and k, substantially as and for the purpose specified.

6. The combination of awning D, roller C, frame F, ratchet-wheel G, having teeth g, chain-wheel H, having spring-pawl I, spring P, cam projection J, having stop j, and chain M, substantially as and for the purpose specified.

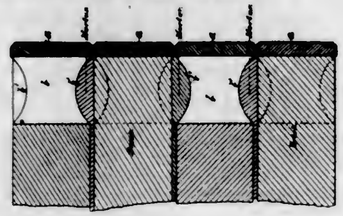
7. The combination of frame B B', awning D, roller C, frame F, ratchet-wheel G, having teeth g, chain-wheel H, having spring-pawl I, spring P, cam projection J, and chain M, substantially as and for the purpose specified.

8. The combination of frame B B', awning D, having guide-rollers e, roller C, frame F, ratchet-wheel G, having teeth g, chain-wheel H, having spring-pawl I, spring P, cam projection J, and chain M, substantially as and for the purpose specified.

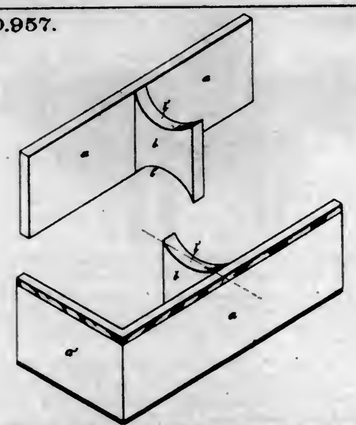
9. The combination of frame B B', awning D, roller C, frame F, ratchet-wheel G, having teeth g, chain-wheel H, having spring-pawl I, spring P, cam projection J, chain M, and a similar ratchet-actuating device secured to the frame B', and connected with the awning by a cord, O, substantially as and for the purpose specified.

10. The combination of the frame F, having clamp-jaws f and provided with pin N, with spring P, chain-wheel H, having pawl I, ratchet-wheel G, having wheel C' and ratchet-teeth g, and shaft C, substantially as and for the purpose specified.

330,957. GLASS OR VITREOUS FACING FOR BRICK FRONTS. WILLIAM BUTTLER, Pittsburg, Pa., assignor of one-half to James H. Blair, same place. Filed July 27, 1885. (No model.)



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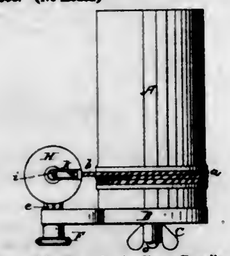


Claim.—1. A glazed brick front made separate from the brick or bricks to which it is to be applied, and having a backwardly-projecting tongue, which projects from the plate at right angles to the plane of its face, and at right angles to the longitudinal median line thereof, substantially as and for the purposes described.

2. A glazed brick front made separate from the brick or bricks to which it is to be applied, and having a backwardly-projecting tongue, which projects from the plate at right angles to the plane of its face, and at right angles to the longitudinal median line thereof, said tongue being hollowed out laterally to provide means for engaging the mortar of masonry, substantially as and for the purposes described.

3. The combination, with adjacent bricks of masonry, of separate glazed brick fronts set against the outer faces of the bricks, and having projecting tongues set vertically between the ends of adjacent bricks, substantially as and for the purposes described.

330,958. STEAM-ENGINE INDICATOR. ALBON R. CALKINS, Medford, assignor to the Ashcroft Manufacturing Company, Boston, Mass. Filed June 27, 1885. (No model.)



Claim.—1. The combination of a leading-off pulley with a steam-engine indicator by means of two adjusting clamping-joints, one of which coincides with the axial center of the paper-carrying drum, and the other of which is parallel to the first and at some distance from it by means of clamping devices C F, substantially as described.

2. The combination of the leading-off pulley with a disk provided with a center hole for the actuating-cord to pass through, and containing on one side of the said hole a pulley mounted in said disk, which pulley may be adjusted in arc around the center of the disk H, and clamped in any desired position by means of the clamping-nut F, ring G, and clamping-cone c', substantially as and for the purpose described.

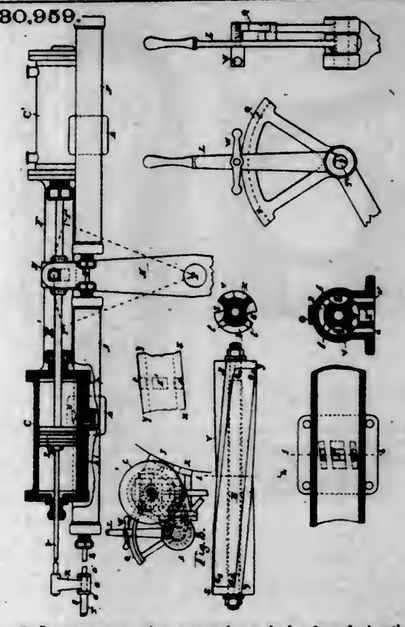
3. The combination, with a steam-engine indicator, of a leading-off pulley provided with three adjustments, one of which is in position around the axis of the disk H, another of which is around the axis of the standard e, and the third of which is around the axis or extension of the axis of the paper-carrying drum A, substantially as described.

330,959. STEAM REVERSING-GEAR. ARTHUR L. CHURCH, Philadelphia, Pa. Filed Apr. 27, 1885. (No model.)

Claim.—1. The herein-described cylindrical valve V, furnished with helical edges x x, y y, c^2 c^3, c^4 c^5, for the admission and release of steam or other fluids, in combination with the valve-chamber A and cylinder C, substantially as set forth.

2. In a steam reversing-gear, the combination of the steam-cylinder C and cataract-cylinder C' with lever N, cross-head H, piston-rod R, prolongation of piston-rod v, arm R', boss G, collars c c', reversing-lever L, quadrant Q, valve-stem T s s', valves V, and chambers A A', substantially as set forth.

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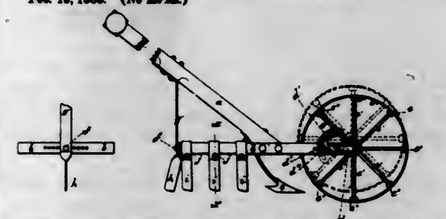


3. In a steam reversing-gear, and as a device for reducing the lateral motion of the valves, the arm w, the levers F r, and arm a, in combination with block b, pin d, and collars c c', substantially as described.

4. In a steam reversing-gear, the combination of the reversing-lever L with quadrant Q, block b, pin d, collars c c', valve-stem s s', valves V, chambers A A', arm k, slot Z Z, lug j, and arm x, substantially as described, and for the purposes set forth.

5. In a steam reversing-gear, the combination of the reversing-lever L with quadrant Q, block b, pin d, collars c c', valve-stem s s', valves V, chambers A A', sleeve c^2 c^3, slot Z' Z', pin p^3, arm n, and collar c^4, substantially as described, and for the purposes set forth.

330,960. CULTIVATOR. GEORGE M. CLARK, Higganum, Conn. Filed Feb. 15, 1883. (No model.)



Claim.—1. In combination, the frame, the handle, the wheel forward of the handle, and the guide-blade directly in the rear of the handle, substantially as described, and for the purpose set forth.

2 In combination, the handle, the frame, the wheel forward of the handle, the share-blade back of the wheel, the guide-blade back of the share-blade, and the soil-stirring blades, all substantially as described, and for the purpose set forth.

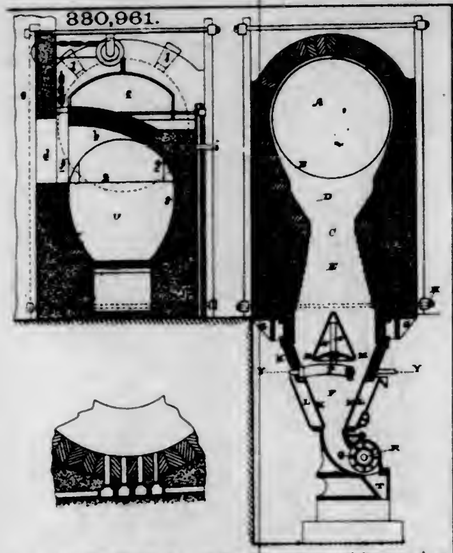
330,961. METALLURGICAL APPARATUS. JOSHUA E. CLAYTON and SIMON F. HACKER, Salt Lake City, Utah. Filed July 7, 1885. (No model.)

Claim.—1. A roasting-furnace and a receiving vessel or chamber provided with and inclosing suitable tuyeres, in combination with air-pipes j, discharging above the mass contained in said vessel or chamber, substantially as herein described.

2. A roasting or heating furnace and a receiving vessel or chamber provided with tuyeres, in combination with a fire-box, U, having an opening, d, the dampers e and f, and a chimney or stack, o, substantially as herein described.

3. The combination of a roasting or heating furnace, a receiving vessel or chamber, a receptacle inclosed by the chamber provided with tuyeres, and a superheater within the fire-box, substantially as herein described.

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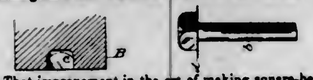


4. The combination of a heating-furnace, a receiving vessel or chamber provided with tuyeres, a fire-box containing a superheater, and a combustion-chamber having air holes or valves, substantially as herein described.

5. The combination of a heating-furnace, a receiving vessel or chamber provided with radial tuyeres, a fire-box opening into a combustion-chamber above said receiving-chamber, the dampers *c* and *f*, a discharge-stack, and a continuous discharge apparatus, substantially as herein described.

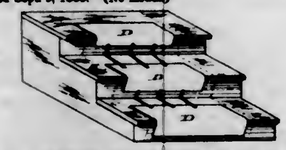
6. A roasting or heating furnace and a containing vessel or chamber provided with tuyeres, into which it discharges, in combination with a fire-box, U, dampers *c* and *f*, and stack or chimney, together with the air-pipes *j*, discharging above the material in the converter, substantially as herein described.

330,962. SQUARE-HEADED BOLT. WILSON DAVIS and WILLIAM CASEY, Southington, Conn. Filed June 11, 1885. (No model.)



Claim.—That improvement in the art of making square-head bolts from a round rod which consists in first enlarging the base of that portion which is to form the bolt-head while its upper end is of the size of the original rod, and then forming the head in a suitable matrix by endwise pressure upon the prepared rod, substantially as described, and for the purpose specified.

330,963. STAIR-CARPET COVERING. THOMAS J. DUNNE, Newark, N. J. Filed Sept. 9, 1885. (No model.)



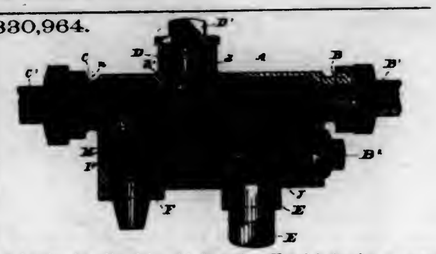
Claim.—1. A stair-carpet protector consisting of separate and removable sections covering each step and suitably held in position, for the purposes set forth.

2. A stair-carpet protector consisting of separate and removable sections covering each step, and connected by straps removably connected to said coverings, for the purpose set forth.

3. In a stair-carpet protector, the combination, with a stair-carpet and stair-rods, of separate and removable sections having eyes therein, and connected by elastic straps hooked into the eyes in the coverings and passing under the stair-rods, for the purposes set forth.

330,964. INJECTOR. JOHN DUNHAM, Cleveland, Ohio, assignor of one-half to William R. Gerrard, same place. Filed Feb. 6, 1885. (Model.)

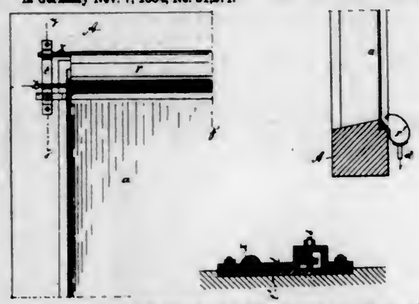
Claim.—1. In an injector for steam-boilers, the combination, with the chambers I and I^2 and hollow plugs L, M, and N, forming a direct passage-way through the injector from the steam-pipe to the feed-pipe,



of the chambers I' and *i*, and hollow plugs K and *k*, forming a second passage-way parallel and in open relation at either end with the first passage-way, relief-valves opening outward and connected with the first passage-way, and a suction-pipe connected with and at right angles to the second passage-way, with the ports arranged substantially as described.

2. In an injector for steam-boilers, the combination, with a direct passage-way through the injector from the steam-pipe to the feed-pipe thereof, a second passage-way leading across the mouth of the suction-pipe parallel and in open relation with the first passage-way, each passage-way provided with a succession of hollow plugs with spaces between, arranged substantially as indicated, of cold and hot water reliefs or overflows, each provided with a valve opening outward, the former arranged above, so that water will escape therefrom by pressure from within, and the latter arranged below, so that water will escape therefrom by gravity, substantially as shown.

330,965. APPARATUS FOR PROTECTING WINDOWS. EUGEN DIEZ, Weinsberg, Germany. Filed June 3, 1885. (No model.) Patented in Germany Nov. 7, 1884, No. 31,271.

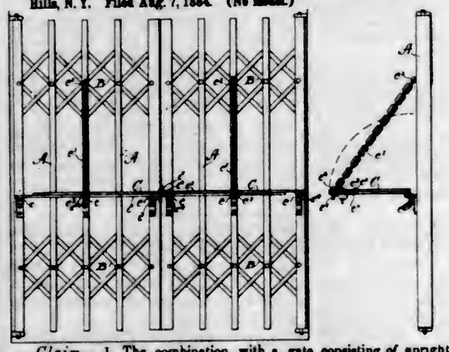


Claim.—1. The combination of window-frame A with trough *r*, extending across the same, and constructed to discharge its contents over pane *a*, substantially as specified.

2. The combination of window-frame A with pivoted trough *r*, and with set-screws *s* and plates *t*, substantially as specified.

3. The combination of window-frame A with pivoted trough *r*, plates *t*, strip *w*, and screws *s*, substantially as specified.

330,966. FOLDING GATE AND WINDOW-GUARD. CROWEL M. DEMOSWAY, Philadelphia, Pa., assignor to William R. Pitt, Richmond Hills, N. Y. Filed Aug. 7, 1884. (No model.)



Claim.—1. The combination, with a gate consisting of upright pickets and connections between them, whereby the gate may be folded by the lateral drawing together of the pickets, of a series of levers arranged in the form of lazy-tongs, attached to the gate and projecting

from the face in a plane transverse to the gate, substantially as herein described.

2. The combination, with a gate consisting of upright pickets and connections between them, whereby the gate may be folded by the lateral drawing together of the pickets, of a series of levers arranged in the form of lazy-tongs, hinged to the face of the gate to swing in a vertical plane, so that the series of levers may be folded into a plane parallel with the gate or adjusted into a plane transverse thereto, substantially as herein described.

3. The combination, with the gate consisting of pickets A and connections B, of the series of levers C, arranged in the form of lazy-tongs, and hinged to the gate to swing in a vertical plane, so that they may be swung upward into a plane parallel with the gate or downward and outward into a position transverse to the gate, and stops for limiting the downward and outward movement of the series of levers, substantially as herein described.

4. The combination, with the two parts of a double folding gate, consisting of pickets A and connections B, of the two series of levers C, arranged in the form of lazy-tongs, attached to the two parts of the gate and projecting from the face of the gate in a plane transverse thereto, and a connection, as bolt c^4, connecting the two series of levers C so as to form one continuous series, substantially as herein described.

330,967. TEMPORARY BINDER. SETH B. DUNN, Chicago, Ill. Filed Feb. 2, 1885. (No model.)

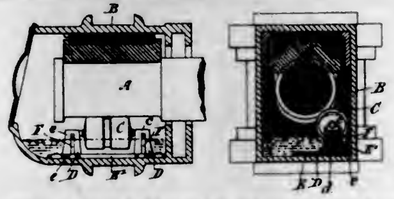


Claim.—1. The combination, with a suitable base-support and a circular tubular holder rigid on said base-support, open at one side, of a correspondingly-curved connecting-wire slidable in said holder to close the opening thereof, substantially as described.

2. The circular tubular and fixed holder open at one side only and provided with an elongated slot, in combination with a correspondingly-curved connecting-wire movable therein, and a knob on said wire projecting outwardly through the slot of the holder, substantially as described.

3. The combination, with the tubular holder having the elongated slot, the movable wire in said holder, and the stud or button on the wire, of a slidable bar provided with oblique slots engaging said stud, substantially as described.

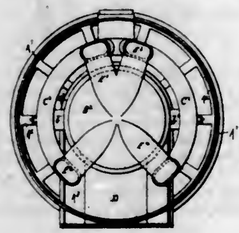
330,968. CAR-AXLE LUBRICATOR. DOMITIEN DUPRAT, Ste. Scholastique, Quebec, Canada. Filed Sept. 15, 1885. (No model.) Patented in Canada July 31, 1885, No. 22,158.



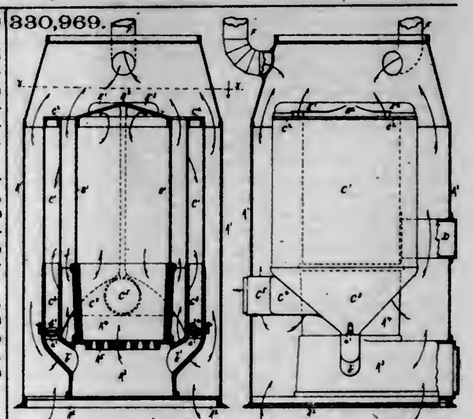
Claim.—In a car-axle lubricator, the combination of the lubricating-roller, standards in which the same is carried, and bed-plate on which these are mounted, formed with a folding-up flange, as and for the purposes set forth.

330,969. FURNACE. PATRICK V. DWYER, St. Paul, Minn. Filed Jan. 16, 1885. (No model.)

Claim.—1. In a hot-air furnace, an outer casing, A', having fresh-air inlets and hot-air flues leading therefrom, a fire-pot, A^4, ash-pit A^5 beneath said fire-pot, and dome B', rising from said fire-pot, in combination with radiators C' C', surrounding said dome and fire-pot, within



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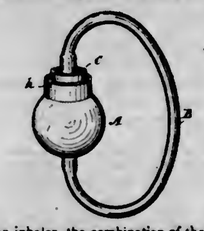


the outer casing, whereby air-spaces are formed between the radiators and the outer casing and between the radiators and the dome and fire-pot, radiating tubes or flues $E' E^2 E^3 E^4$ leading from the center of the dome to the radiators, a tubular section, C^4, connecting the lower ends of the radiators, and an exit-flue, C^5, communicating with said section C^4, substantially as set forth.

2. In a hot-air furnace, an ash-pit, a fire-pot above said ash-pit, and a dome rising from said fire-pot, in combination with radiators surrounding said dome and fire-pot, and communicating with said dome at their upper ends, said radiators being formed with funnel-shaped bottoms which communicate with said ash-pit, dampers which close said bottoms, and an exit-flue communicating with the lower ends of said radiators, substantially as set forth.

3. In a hot-air furnace, a fire-pot, A^3, and a dome consisting of a shell, B', and top B^2, the latter having tubes $E' E^2 E^3 E^4$ radiating from the center thereof and cast in one piece therewith, in combination with radiators C' C', having cast-iron tops C^2 C^3, which communicate with said tubes $E' E^2 E^3 E^4$, and cast-iron bottoms C^3 C^5, a tubular section, C^4, connecting said bottoms, and an exit-flue, C^5, communicating with said section, substantially as set forth.

330,970. INHALER. CLIFFORD C. ELLIS, Boston, Mass., assignor to Charles Albert Shaw, same place. Filed May 14, 1885. (No model.)



Claim.—In an inhaler, the combination of the following instrumentalities, to-wit: a body having a chamber adapted to hold a sponge or other absorbent material, and provided with an induction and an eduction flue, a nozzle or mouth-piece provided with a flue and adapted to serve as a stopper for or to close the induction flue or mouth of the body, and a flexible tube connecting said nozzle and body, through which tube the air passes when it is inhaled, substantially as described.

330,971. SHINGLE OR ROOF BRACKET. EDWIN R. ELMER, Buckland, Mass. Filed Aug. 10, 1885. (No model.)

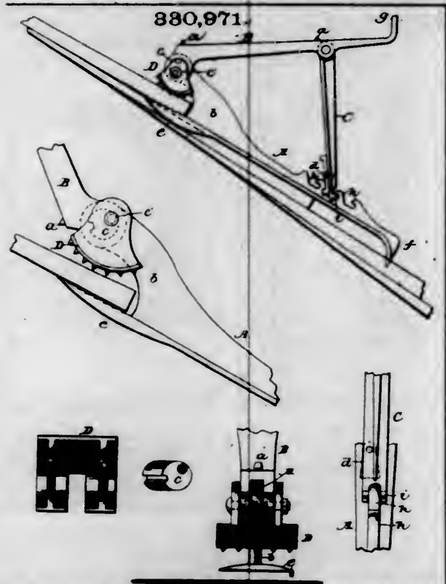
Claim.—1. The combination of a roof-bracket, as herein described, consisting of the bottom piece, A, with jaw *e*, claws A A A, arm *b*, and heel-spar *f*, the tread B, with top spurs, *a a a*, and stop *g*, brace C, with ledge *i* and button *d*, the rocking cam and presser-foot D, and eccentric pin *c*, with smaller pin, *c'*, when used as and for the purpose specified.

2. In a roof-bracket, the rocking cam and presser-foot D, hung eccentrically, adapting the bracket for adjustment to different thicknesses of shingle, as shown and described.

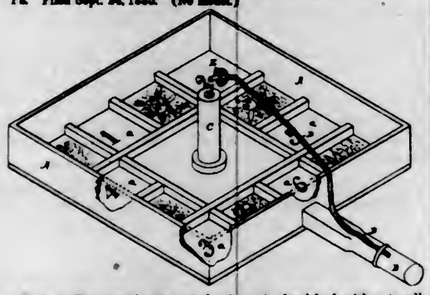
3. In a shingling-bracket, the combination, with the bottom piece, A, of the tread B, pivoted thereto by means of the pivot *c*, having eccentric pin *c'*, upon which is pivoted the presser-foot D, as herein shown and described.

4. In a shingle-bracket, the combination of the claws A A A, ledge *i*, and button *d*, for locking the brace in its different positions when adjusted to different pitches of roof, all substantially as set forth.

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330,972. GAME APPARATUS. HARRISON N. EWING, Philadelphia, Pa. Filed Sept. 24, 1885. (No model.)



Claim.—The combination of the box A, furnished with a handle, B, and divided into suitably-marked compartments *a*, and post C, with a depression, *b*, in its top, and cord D with weight E, all substantially as and for the purposes set forth.

330,973. MEANS FOR PUMPING OIL-WELLS. HERBERT FORBES, Franklin, Pa. Filed Dec. 22, 1884. (No model.)



Claim.—In a system for operating oil-pumps, the combination, with a drive-wheel and a pair of rock-wheels, of a pitman for independently connecting each rock-wheel with the drive-wheel, and pump-actuating rods connected to each of said rock-wheels in sets, substantially as set forth.

330,974. CORKSCREW. ALBERT FREEMANS, Milwaukee, Wis., and ABRAHAM L. RUSHMORE, Kalamazoo, Mich. Filed Aug. 18, 1885. (No model.)

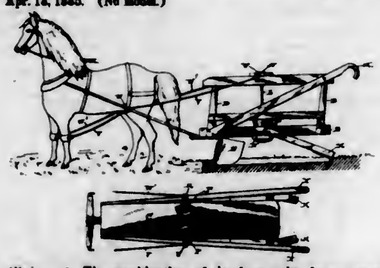
Claim.—A corkscrew consisting of a handle looped from wire, a double-wire-twisted stock extending below the handle, one end of the wire continued downward in a screw, the other end of the wire being

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wound, forming a heading, said heading provided on its under side with beards, substantially as set forth.

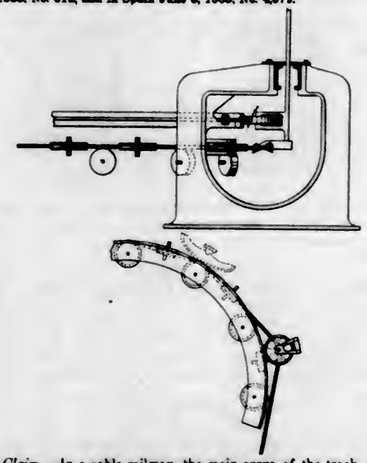
330,975. PLANTER. THOMAS C. GARLINGTON, Lafayette, Ala. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination of the frame, the furrow-opener, the hopper, the stirring-shaft located in the hopper, the pinion N, secured to said shaft, segment-gears S O, meshing with said pinion, and having the arms R and U, said arms being adapted to be operated by being attached to the legs of the draft-animal, substantially as shown and described.

2. The hopper, in combination with the stirrer-shaft, the pinion N on the latter, the gears meshing with the pinion, cords or chains V W', connecting with the gears, pulleys W, fitted to the traces, and through which the cords pass, the ends of the cords or chains being attached to both the fore-legs of a draft-animal, as set forth.

330,976. TRAMWAY FOR CURVES AND CABLE-GRIPS. ANDREW S. HALLIDIE, San Francisco, Cal. Filed Feb. 12, 1884. (No model.) Patented in England Dec. 13, 1879, No. 5,107; in Victoria July 10, 1880, No. 2,963; in New South Wales Oct. 19, 1880, No. 330; in Queensland Nov. 12, 1880, No. 322; in New Zealand Nov. 19, 1880; in Belgium Dec. 5 1883, No. 59,750; in Italy Dec. 27, 1883, No. 14,903; in Portugal Jan. 25, 1883, No. 312, and in Spain June 8, 1883, No. 4,079.

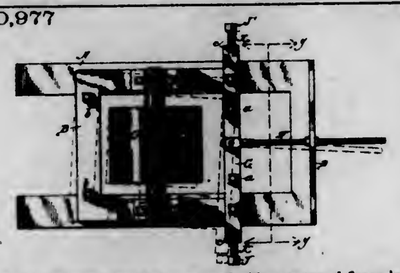


Claim.—In a cable railway, the main curve of the track and slot, in combination with the guide-rail beneath and the cable-carrying sheaves for carrying the cable around the curves, and a grip, as set forth.

330,977. COMBINED BELT EQUALIZER AND TIGHTENER. DAVID HARNEY, Turner Junction, Ill. Filed June 23, 1885. (No model.)

Claim.—1. A pulley and a pulley-frame, in combination with a bed-plate directly supporting said frame, and means for adjusting said pulley laterally and perpendicularly on the bed-plate, substantially as described.

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2. The bed-plate provided at one end with an upturned flange having an elongated slot, the pulley, and the pulley-frame supported on said bed-plate, in combination with a tightening-rod passing through said slot, and means for making a lateral adjustment of said pulley, substantially as described.

3. The pulley, the pulley-frame, and the bar G, in combination with adjusting-screws passing through said bar and impinging against the edges of the bed-plate, and a tightening-rod pivoted in said bar and bearing in the bed-plate, substantially as described.

330,978. HARVESTER. JOHN HAY, Tracy, Cal. Filed Aug. 30, 1884. (No model.)



Claim.—1. A grain cutting or heading apparatus mounted upon wheels, a thrashing and cleaning apparatus connected with one end thereof, and having the outer side supported upon an independent wheel and the shaft or axle upon which the bearing-wheels of the header are fixed, said shaft having a universal joint and extending from the header into the thrashing portion of the apparatus, substantially as herein described.

2. In a harvesting and thrashing machine, the grain cutting or heading mechanism supported upon wheels having a tongue extending rearwardly therefrom, with steering-wheel and adjusting-lever, together with a thrashing and cleaning mechanism having one side supported upon the inner header-wheel and the other side upon an independent bearing-wheel, means for attaching a team to the thrasher, an axle upon which the header-wheels turn having a universal joint, and a rod extending diagonally across the header from the thrasher, whereby the header is preserved in proper working position, substantially as herein described.

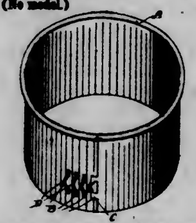
3. In a harvesting apparatus, the horizontally-moving endless belt or draper upon which the cut grain falls, having cutting-knives secured to it and projecting from its front edge, together with guides between which said knives pass across the front of the machine in opposite directions and in close proximity to each other, substantially as herein described.

4. In a harvesting apparatus, an endless traveling belt or draper upon which the cut grain falls, knives or cutters secured to the front edge of this belt, projecting therefrom, upper and lower guide-plates, I and *f*, between which and the central plate, T, these cutters move, together with the yokes *g*, by which the plates are held in position relative to each other, substantially as herein described.

5. In a harvesting apparatus, the endless traveling belt or draper upon which the cut grain falls and by which it is carried to the thrasher, knives or cutters secured to its front edge, and guides by which said knives are caused to pass each other in opposite direction in close proximity, driving and guiding pulleys around which the upper and lower portions of said endless belt pass, and a pulley, V, and mechanism by which the tension of the belt is regulated and adjusted, substantially as herein described.

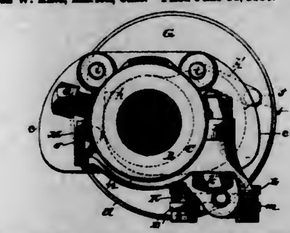
6. In a harvesting apparatus, a grain cutting or heading mechanism consisting of a frame supported upon bearing-wheels, an endless belt or draper upon which the cut grain falls, having knives or cutters which project from its front edge and pass each other in opposite directions in close proximity and between suitable guides, a thrashing and cleaning mechanism supported upon the inner header-wheel and an independent outside wheel and connected with the header so as to be propelled with it, an axle upon which the bearing-wheels of the header turn, said shaft being jointed and extending into the thrashing-machine, a receiver into which the straw is delivered from the traveling belt or draper, a thrashing-cylinder, straw and grain belt, and a cleaning-shoe, substantially as herein described.

330,979. HAT-STAY. HENRY A. HOUSE, Bridgeport, Conn. Filed Feb. 6, 1885. (No model.)



Claim.—As a new article of manufacture, a hat-stay formed from a single piece of straw or paste board having at the top a continuous laterally-projecting flange for the brim of the hat to rest on, and provided at the ends with a fastening device, whereby the stay may be contracted and thereby adapted to various sizes of hats and then fastened, for the purposes hereinbefore set forth.

330,980. REVERSING-GEAR FOR ENGINES. EDWARD HUBER and GEORGE W. KING, Marion, Ohio. Filed June 13, 1885. (No model.)



Claim.—1. The combination, with a hub provided with recessed flanges and an eccentric engaging against the outer face of said flanges, of swinging links located in said recesses and pivotally connecting the opposite sides of the eccentric to said flanges, substantially as set forth.

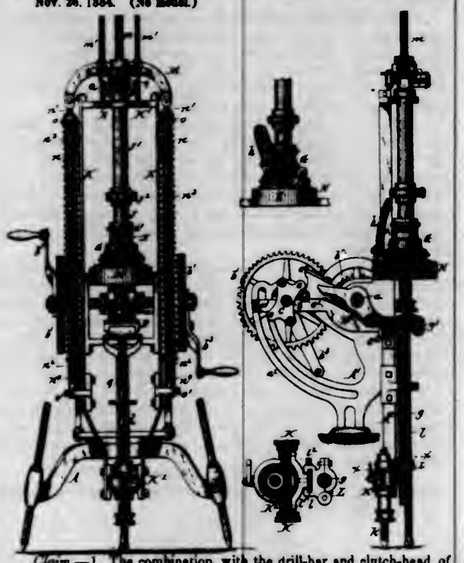
2. The combination, with an eccentric supported on swinging links, of a movable collar and devices disconnected from the links and connecting the collar and eccentric for moving the latter toward and away from the center of the shaft, substantially as set forth.

3. The combination, with an eccentric having an elongated opening therein, and a hub provided with a cylindrical sleeve that extends into said opening, of swinging links for connecting the eccentric to the hub, substantially as set forth.

4. The combination, with a hub and collar connected by groove and spline, of an eccentric and bell-crank lever and connections for adjusting the position of the eccentric by imparting an endwise movement to the collar, substantially as set forth.

5. The combination, with a hub and an eccentric connected therewith by swinging links, of a collar connected to the hub by spline and groove, and devices connecting the collar and eccentric for adjusting the position of the latter, substantially as set forth.

330,981. ROCK-DRILL. SYLVANUS HUSSEY, Buffalo, N. Y. Filed Nov. 26, 1884. (No model.)



Claim.—1. The combination, with the drill-bar and clutch-head, of the actuating-lever D, provided with starting-rollers e' and a tooth, e^2, the space between said rollers and tooth being unobstructed, and driving-plates C, having starting-arms e and a releasing-roller, e^3, the space between said arms and roller being also unobstructed, whereby the lever D is turned in the same direction by the successive engagement of the arms e with the rollers e' and of the roller e^3 with the tooth e^2, and then released and permitted to return to its former position, substantially as set forth.

2. The combination, with the drill-bar and clutch-head and springs, of the actuating-lever D, provided with starting-rollers e' and a tooth, e^2, and the rotating driving-plates C, having starting-arms e and a releasing-roller, e^3, the roller e^3 being arranged nearer the center of rotation of the driving-plates than the working-surfaces of the starting-arms e, whereby the leverage with which the springs are compressed is increased during the last portion of the compressing movement, substantially as set forth.

3. The combination, with the drill-bar *g*, provided with the feed-screw *m*, and the drill-frame, of the clutch-head G, secured to the tube J, a screw-nut, R, connected with the tube J' and held against turning, and a ratchet-coupling, J^3, connecting the tubes J J', which latter are moved with the clutch-head and drill-bar, substantially as set forth.

4. The combination, with the drill-bar *g*, provided with a longitudinal groove, *i*, of the clutch-head G and a feather, I, pivoted to the clutch-head G, whereby the feather can be disengaged from the groove, substantially as set forth.

5. The combination, with the drill-bar *g*, provided with a longitudinal groove, *i*, of the clutch-head G, feather I, pivoted to said clutch-head, and a lock-nut, *i'*, whereby the feather is secured in place, substantially as set forth.

6. The combination, with the drill-bar provided with a feed-screw, *m*, of the cross-head M, springs *n*, connected therewith, the guide-sleeve P, seated in said cross-head, and the divided nut R, pivoted to said sleeve, substantially as set forth.

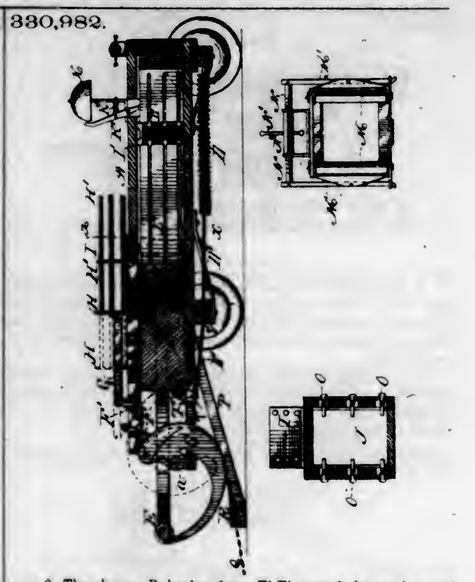
7. The combination, with the drill-bar provided with a feed-screw, *m*, of the cross-head M, springs *n*, connected therewith, the guide-sleeve P, seated in said cross-head, the divided nut R, pivoted to the sleeve P, the tube J', attached to said cross-head, the clutch-head G, attached to the tube J, and the ratchet-coupling J^3, connecting the tubes J J', substantially as set forth.

8. The combination, with the drill-bar and the swinging frame A^3, provided with side bars, K K, connected at their lower ends by a cross-head, K^3, of the upright bar *l*, secured to the cross-head K^3, and the guide-sleeve L, adjustably secured to the bar *l* and adapted to guide the drill-bar, substantially as set forth.

330,982. HAY-PRESS. GUSTAF JOHNSON, Denver, Colo. Filed Aug. 4, 1885. (No model.)

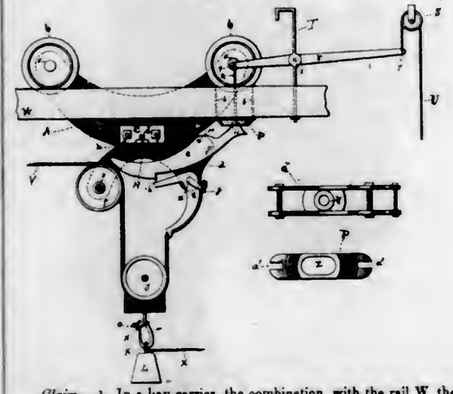
Claim.—1. The plunger B, actuated by cam C and chain Q, in combination with the frame E' E', the cam C, chain Q, pulley R, cord D', pulley T, and spring D.

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2. The plunger B, having frame E' E' secured thereto, in combination with the cam C, pulley R, chain Q, connecting-bars F G, bell-crank F', sliding head H, having guiding-rods H', rigid head I, travelers L, and rollers M, having mechanism, as shown, to adapt their distances from each other to the size of the bale.

330,983. HAY-CARRIER. JOHN G. KANOUSE, Appleton, Wis., assignor of two-thirds to Richard Miller and William Polifka, both of same place. Filed June 6, 1885. (No model.)



Claim.—1. In a hay-carrier, the combination, with the rail W, the wheels *b b*, the side plates, A, the disk C, the yoke *d*, the dogs *e* and *g*, the washer H, and bolt I, of the hand or controllable trip arranged to unlock the carrier from the catch-iron P, substantially as shown and described.

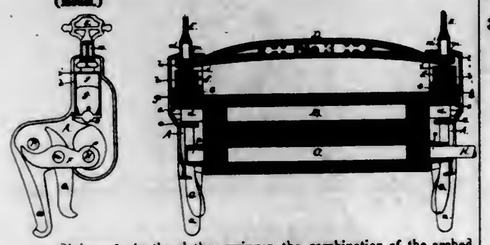
2. In a hay-carrier, the dog *e*, provided with a notch at 11 and 12, with a lug at 10, with a concave corrugated surface at its lower end, and supported by the yoke *d* at 1, substantially as and for the purpose named.

3. In a hay-carrier, the combination, with the yoke *d*, the dogs *e* and *g*, and pulley *f*, of the bolt I and washer H, adapted to secure yoke *d* to the thimble of disk C, substantially as shown and described.

4. In a hay-carrier, the combination, with the rail W, the wheels *b b*, the side plates, A, the yoke *d*, the pulleys *f* and J, the dogs *e* and *g*, the washer H, and bolt I, of the disk C, furnished with a thimble arranged to engage with yoke *d*, washer H, and bolt I, substantially as and for the purpose set forth.

5. A controllable trip arranged to move a pin or shaft through the rail of a hay-carrier, in which movement said pin or shaft, when in contact with a dog arranged to engage with a catch, allows said dog to pass out of the catch, thereby freeing the carrier, substantially as shown and described.

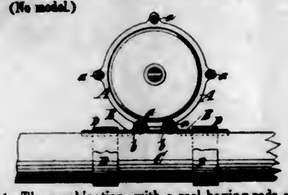
330,984. CLOTHES-WRINGER. JAMES L. KIRBY, Boston, assignor to the Colby Wringer Company, Highlandville, Mass. Filed July 7, 1884. (Model.)



Claim.—1. In the clothes-wringer, the combination of the arched bar D, having the tenons *l*, with the frame end portions, A, provided with the spring-carrying niches, and having such tenons extended upward into the crowns thereof, and also with the springs in the niches, and the screws screwed through the arched bar and against the said springs therein, all being substantially as set forth.

2. The combination of the frame end portions, A, provided with stationary jaws *a*, with the two jawed levers and the lower roller-supporting levers pivoted to such end portions, and with the actuator journaled in such end portions and furnished with the four eccentrics, to operate with the aforesaid levers, all being substantially as represented.

330,985. FISHING-REEL. JOHN KOPP, Brooklyn, N. Y. Filed Sept. 15, 1885. (No model.)

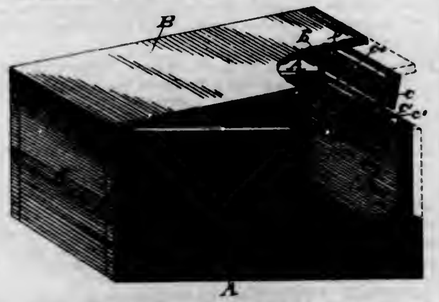


Claim.—1. The combination, with a reel having rods or posts *a*, of the base-plate having in its under surface recesses *b*, open on the under side, which receive said rods or posts, and may be placed laterally thereon, whereby the reel-frame and base-plate are connected together, substantially as herein described.

2. The combination, with a reel having rods or posts *a*, of a base-plate corrugated or bent to form in its under surface recesses *b*, open on the under side, which receive said rods or posts, and may be placed laterally thereon, whereby the reel-frame and base-plate are connected together, substantially as herein described.

3. The combination, with a reel having rods or posts *a*, of a base-plate having in its under surface recesses *b*, open on the under side, which receive said rods or posts, and may be placed laterally thereon, the base-plate being soldered or brazed to said rods or posts in the recesses, substantially as herein described.

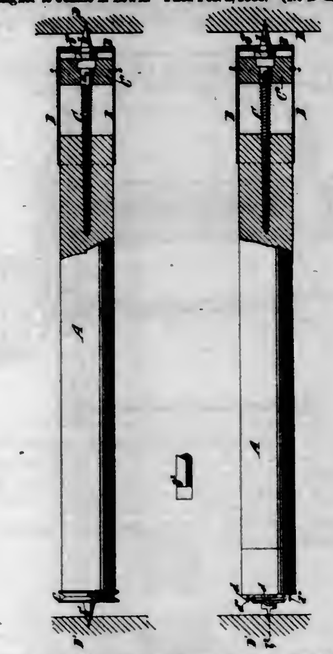
330,986. BOX FASTENER. EDWIN W. KIMBER, Milwaukee, Wis. Filed Dec. 16, 1884. (No model.)



Claim.—1. In a goods box or package, in combination with a cover provided with transverse notched bars fastened close to its ends or sides, and a box having a retaining-strip fastened in one of its ends or sides, a movable or flexible strip suitably connected to the opposite end or side of the said box, and adapted to be received into the notch of the transverse bar on the corresponding end or side of the cover, and a temporary securing device, substantially as set forth.

2. In a goods box or package, the combination of the box-body A, transverse bar *a*, the cover B, having notched strips *b b*, the movable fastening-strip C, sheet-iron plate *c*, having perforation at c', wire frame c', staples c^2 c^2, nut-plate c^3, and bolt C', substantially as shown and described, and for the purpose set forth.

330,987. SHADE-ROLLER. THEODORE A. LEWIS, New York, N. Y., assignor to Jennie L. Lewis. Filed Feb. 2, 1885. (No model.)

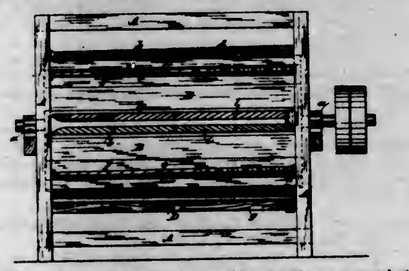


Claim.—1. The combination, with a shade-roller, of a cylindric cap, B, fitting the exterior of and capable of turning on the end portion of the roller, and a screw fixed to the cap and entering the end of the roller, whereby the cap and screw may both be turned together for adjusting the length of the roller, substantially as herein described.

2. The combination, with a shade-roller, of a cap fitting the exterior of the roller at one end, a screw fixed to the cap and entering the end of the roller, and a pivot shouldered and fitted to or in the end of the cap, and on which the cap may turn, substantially as herein described.

3. The combination, with a shade-roller having at one end a loose spring-actuated pivot, b^3, made wedge shape for entering the wood of a window-casing, of a cylindric cap, B, fitting the exterior of and capable of turning on the other end of the roller, and furnished with a pivot, and a screw fixed to the cap and entering the end of the roller, whereby the cap and screw may both be turned together for adjusting the length of the roller, substantially as herein described.

330,988. MACHINE FOR DISINTEGRATING JUTE, &c. FRANK LUFF, of New Orleans, La. Filed May 6, 1885. (No model.)



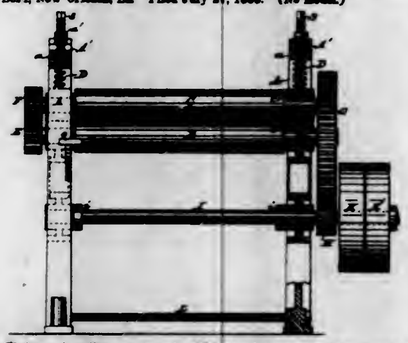
Claim.—1. In a disintegrating-machine for fibrous material, the cylinder B, provided with tapering rollers on its circumference, and said rollers alternately provided with serrations and spiral grooves, as shown, and for the purpose set forth.

2. The combination of a cylinder, B, provided with rollers *b* and *c*, as shown, with the feed-bars A and *i*, constructed and arranged substantially as and for the purpose herein described.

3. In a disintegrating-machine for fibrous material, the feed-bars A and *i*, arranged as shown, in combination with a cylinder, B, provided with rollers *b* and *c*, provided alternately with cutting-edges and spiral grooves, and the receptacle D, all substantially as specified.

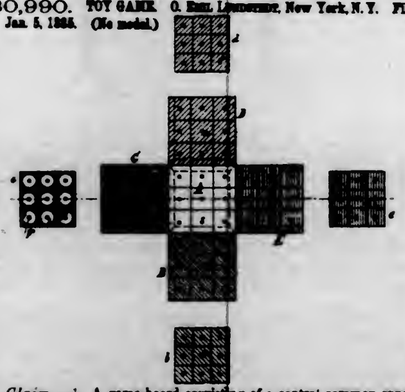
4. In a disintegrating-machine for fibrous material, the feed-bar A and *i*, made in sections and arranged as shown, in combination with a cylinder, B, having rollers *b* and *c*, the receptacle D, and frame A, all as set forth.

330,989. ROLLER CRUSHER FOR FIBROUS PLANTS. FRANK LUPP, New Orleans, La. Filed July 27, 1885. (No model.)



Claim.—A roller crusher for fibrous plants, comprising a pair of rollers, B C, bearings *b* and *c*, springs D D, caps A′ A′, gear-wheels E F, the supports A A, braces L, shaft I, having collars *i*, and the driving-pulleys and gearing, arranged as and for the purpose set forth.

330,990. TOY GAME. O. REIL LUDEWIG, New York, N. Y. Filed Jan. 5, 1885. (No model.)



Claim.—1. A game-board consisting of a central common square or plane and perimetrically-adjacent proprietary planes, each proprietary plane being divided in longitudinal and transverse checker-rows respectively in line with and parallel with similar rows on the central common, in combination with distinguishable sets of markers, one set for each proprietary plane, the markers of each set corresponding in number to the checkers of each plane, and the whole adapted to be operated substantially as specified.

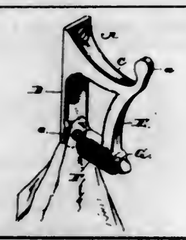
2. A game-board consisting of a central common square and perimetrically-adjacent proprietary squares hinged to the said central square, to fold and form a box for the reception of the markers, in combination with a retaining-cover, substantially as specified.

3. In combination with a game-board consisting of a central common plane, A, and adjacent proprietary planes hinged thereto, and with a retaining-cover, G, the separate nests corresponding to the said proprietary planes and provided with checker-rows to hold the markers, substantially as specified.

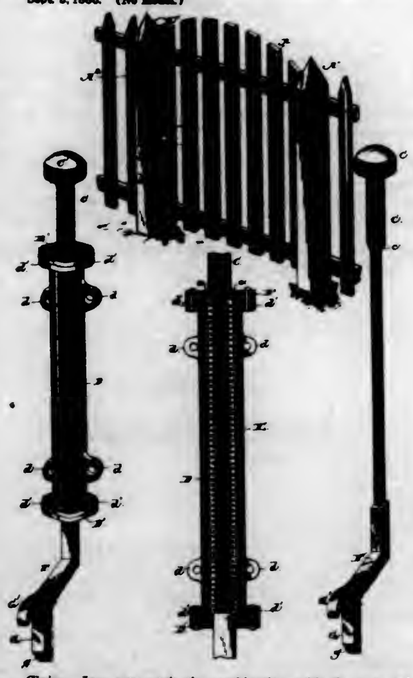
330,991. HAT AND TOWEL HOLDER. WILLIAM MATHEWS, Llano, Tex. Filed July 11, 1885. (No model.)

Claim.—As an improved article of manufacture, a coat or towel holder comprising a base-piece, substantially as described, having arms C E and a cylinder, F, cast in one piece therewith, the arms C and cylinder F being arranged in a horizontal position near each end of the base-plate, and connected together at their outer ends by the vertical arm E, and a plunger, G, provided with the finger-piece having a coiled spring, H, arranged in said cylinder F, and adapted to bear against the base-plate to provide a support for the coat or towel, as set forth.

330,991.

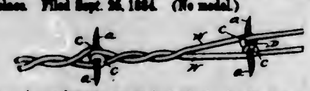


330,992. GATE-LATCH. WILLIAM MATHEWS, Llano, Tex. Filed Sept. 5, 1885. (No model.)



Claim.—In a gate-catch, the combination, with the gate and post A^2, of a cylinder having perforated lugs and removable heads, a locking-bolt working in the cylinder and projecting above the plane of the gate, said rod having a reduced portion or shoulder, *c*, a squared portion, and a right-angled locking-foot, a spring arranged in a cylinder and secured at one end to the locking-bolt, and a horizontal catch-plate having bevel-ed side edges and perforated lugs for securing the plate to the post A^2, substantially as described.

330,993. BARBED WIRE FOR FENCES. EUGENE R. MATTESON, Joliet, Ill., assignor to William H. Hunter and Ross E. Matteson, both of same place. Filed Sept. 26, 1884. (No model.)



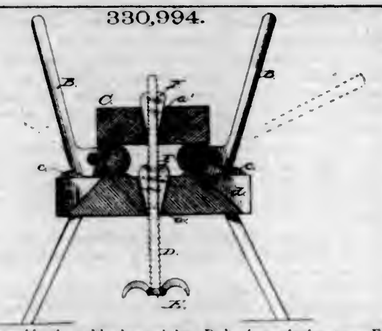
Claim.—As an improvement in barbed wire for fences, the combination of the barb *a*, having the central crimp, D, with the two strand-wires W W, the said strand-wires being attached to said barb by being coiled thereon, one on either side of said crimp, in opposite directions from each other, in the manner and for the purpose set forth.

330,994. STUMP-PULLER. JAS. W. MAYBERRY, Harvyn, Ala. Filed Oct. 1, 1885. (No model.)

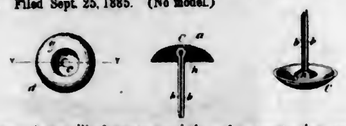
Claim.—1. The herein-described device for extracting roots or stumps of trees, consisting of the main frame A, having legs or supports *b* and central opening, *a*, and provided with the auxiliary block C, having central opening, *a′*, cam-levers B, rack-bar D, having gripping-tongs E, and the toothed wedges F, all co-operating substantially as and for the purpose specified.

2. In a stump-puller, the main frame A, having suitable legs or supports, *b*, central wedge-shaped opening, *a*, inclined grooves *d*, and bearings *c*, in combination with the rack-bar D, having gripping-tongs E, cam-levers B, auxiliary block C, and wedges F, substantially as and for the purpose specified.

330,994.

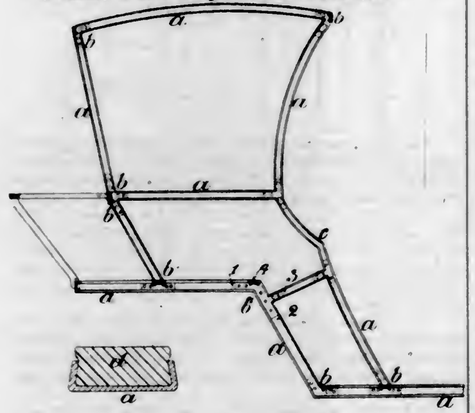


330,995. METALLIC FASTENER. GEORGE W. MCGILL, New York, N. Y. Filed Sept. 25, 1885. (No model.)



Claim.—A metallic fastener consisting of a penetrating part composed of two projecting shanks of metal, and a metal button-shaped head secured to the shanks by an integral collar swaged in the under center surface of the head and surrounding and clamping the top of the shanks, substantially as and for the purposes described.

330,996. VEHICLE-BODY. JOHN MCQUEEN and WILLIAM H. CARMONT, Manchester, County of Lancaster, England. Filed Apr. 8, 1885. (No model.) Patented in England June 14, 1884, No. 8,956.



Claim.—1. A carriage or vehicle frame, composed, principally, of channel-bars connected together by means of metal knees, which are formed with fingers or limbs, which are clamped and secured within the channels in the bars, to connect together the intersecting parts of the frame, substantially as set forth and indicated.

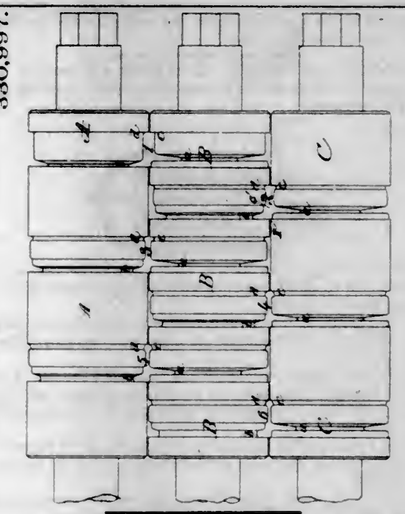
2. The body-frame of a vehicle, composed of members of channel steel or metal, *a*, connected together by means of knees or connecting-plates *b*, formed and secured within the channels in the metal bars, in the manner set forth and indicated.

3. In the construction of a body-frame of a vehicle, the channel steel or metal having the channel-sides inclining inward, to grip the connecting plates or knees and the wood filling, substantially as set forth and indicated.

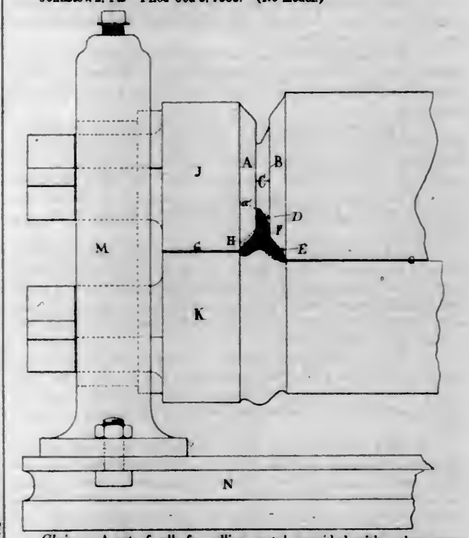
330,997. ROLLS FOR ROLLING GIRDER-RAILS. ARTHUR J. MOXHAM, Johnstown, Pa. Filed Oct. 1, 1885. (No model.)

Claim.—A set of rolls for rolling girder-rails, provided with passes of the respective shapes shown in the accompanying drawing and therein numbered from 1 to 6, inclusive, substantially as described, for the purposes set forth.

330,997.

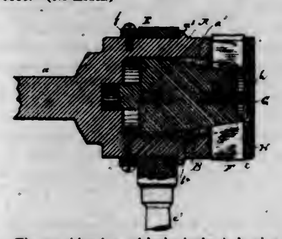


330,998. ROLL FOR ROLLING CAR-RAILS. ARTHUR J. MOXHAM, Johnstown, Pa. Filed Oct. 5, 1885. (No model.)



Claim.—A set of rolls for rolling metal, provided with a three-part dummy pass consisting of grooves shaped substantially as hereinbefore described, and illustrated in the accompanying drawing, whereby blooms are rolled into bars of the trilobe section indicated in said drawing, substantially as and for the purposes set forth.

330,999. SCREW-TAP. RICHARD C. NUGENT, Pittsburg, Pa. Filed June 8, 1885. (No model.)



Claim.—The combination, with the body A, having inner chamber, *a′*, dies F, and the reciprocating plunger B, of the headed end screw, G, and annulus H, the latter having an orifice, *h*, smaller than the head of said

screw, whereby the screw may be adjusted to regulate the throw of plunger from the outside of body.

331,000. GAS-REGULATOR. ALONZO F. OLDS, New York, N. Y., assignor to the Equity Gas Saving Company, same place. Filed Aug. 28 1885. (No model.)



Claim.—1. In a gas-regulator, the combination, with a float-valve, of a guide stem or rod connected with guiding devices working in a lubricating chamber or cavity.

2. In a gas-regulator, the combination, with a float-valve, of a guide stem or rod, and a liquid-sealing device whose parts constitute guiding devices for the rod.

3. In a gas-regulator, the combination, with the float-valve, of an upwardly-extending guide-stem, and a liquid seal connected with the valve-stem and closing the gas-space above the valve, as and for the purpose described.

4. In a gas-regulator, a float-valve having a stem or rod connected with a liquid gas-seal for sealing the float-chamber, as and for the purpose described.

5. In a gas-regulator, the combination, with the float-valve and rod M, of the inverted cup working in liquid and sealing the gas-space of the float-chamber, as and for the purpose described.

6. The combination, with the float-valve, of the guide-rod, and the inverted cup connected with said rod, and provided with guiding-points, as and for the purpose described.

7. In a gas-regulator, a collecting or drip chamber, E, cast in one piece with the regulator-case, and connected with a downwardly-leading gasway from the gas-inlet and an upwardly-leading gasway to the regulator-valve.

8. A gas-regulator case cast in one piece with three chambers or compartments, one of which is a gas and liquid compartment forming a float-valve chamber, a second of which is a liquid-compartment communicating at or near its bottom with the bottom of the first-named chamber, while the third forms a gas-passage connected at its top with the inlet-pipe of the regulator and at its bottom with a passage to the regulator-valve.

9. In a gas-regulator having a regulating float-valve, a gasway having a downwardly-leading portion, and an upwardly-leading portion leading to the gas-space of the float-chamber, and connected by a chamber, E, placed at the bottom of the gas-regulator and cut off from the main portion of the regulator-casing by a diaphragm or wall joining the vertical walls of the regulator-case.

10. In a gas-regulator, a gasway, G, whose walls are formed in part by the external wall of the regulator-case and in part by the walls cutting the same off from a float-chamber and from the outer leg of the two-compartment liquid-chamber, said walls and casing being cast in one piece.

11. In a gas-regulator, a casing cast in one piece with the diaphragms or walls, as described, to form a four-compartment case, one compartment being a drip-well, a second a gas-passage forming a communication between the inlet of the regulator and said well, while the two remaining chambers form a two-compartment liquid-chamber and are connected at their lower ends, as and for the purpose described.

12. The combination, with a gas-regulator having a float-chamber that contains the regulator-valve, and is connected at or near its bottom with a second chamber having an air-vent, of a plug in the latter chamber having a perforation at its end and an enlarged bore or cavity adapted to retain a porous material—such as cotton—for checking the free flow of air.

13. In a gas-regulator having a downwardly-leading gas-passage and an upwardly-leading passage leading to a gas-chamber formed at the upper portion of the float-chamber and communicating with the outlet, a by-pass applied in the wall between said downwardly-leading passage and said gas-chamber, as and for the purpose described.

14. In a gas-regulator, a by-pass cock secured to the wall B, dividing the gas-passage G from the gas-chamber I, as and for the purpose described.

15. The combination, with a gas-regulator having a dividing-wall, B, separating the gas-chamber from the passage leading from the gas-inlet, of a gas-cock whose body is provided with flanges, as described, and is secured to a wall, B, over an opening in the latter between the passage and chamber.

16. In a gas-regulator, a float for the regulating-valve, provided with guide projections *b*, placed so as to be beneath the level of the floating liquid, and working upon the outside of the gas pipe or tube L, opening into the float-chamber.

17. The combination, with the guide-rod for the valve, of guide-bearings lubricated in a glycerine-chamber, for the purpose described.

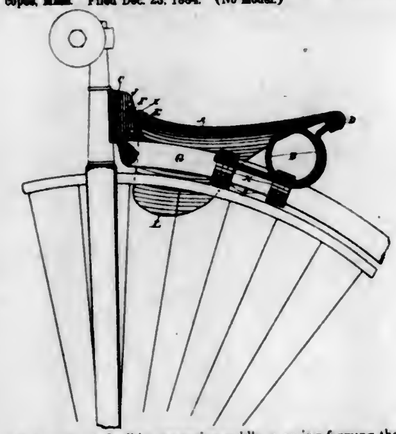
18. In combination with a gas-regulator, a gas-passage enlarged to constitute a drip or collecting chamber in which the gas may expand before reaching the regulator-valve, said chamber being provided at its bottom with a normally-closed outlet, through which the accumulated products of condensation may be withdrawn.

19. In a gas-regulator, a casing having a gas-expansion chamber at its bottom, connected on the one hand with the regulator-valve and on the other with a gas-inlet, said chamber being normally closed at its bottom and forming a collecting-chamber for the products of condensation.

20. In a gas-regulator, an expansion-chamber located in the gasway to the regulator-valve and normally closed at its bottom, as and for the purpose described.

21. In a gas-regulator, a casing having a gas-expansion and drip-collecting chamber at its bottom, said chamber being connected with a gasway leading downwardly into it from the gas-inlet, and a gasway leading upwardly from it to the regulator-valve.

381,001. SADDLE FOR VELOCIPEDES. ALBERT H. OVERMAN, Chicopee, Mass. Filed Dec. 23, 1884. (No model.)



Claim.—1. A flexible suspension-saddle, a spring forming the rear support of the saddle, which is detachably hooked to it, and detachable connection between the saddle and its forward support, whereby the saddle may be removed and attached at pleasure, substantially as set forth.

2. A flexible suspension-saddle, a U-shaped stay secured to its rear end, a spring forming the rear support of the saddle and adapted to have the said stay detachably connected with it, and detachable connection between the forward end of the saddle and its support, whereby the saddle may be attached to and detached from its supports at pleasure, substantially as set forth.

3. A flexible suspension-saddle, detachable connection between the same and its rear support, and a bifurcated hook attached to its forward end for detachable connection with its forward support, whereby the saddle may be attached to and detached from its supports at pleasure, substantially as set forth.

4. A flexible suspension-saddle, a spring located under the same and adapted to be thrown forward, and having the rear end of the saddle detachably connected with it, and detachable connection between the forward end of the saddle and its support, whereby the saddle may be attached to and detached from its supports at pleasure, substantially as set forth.

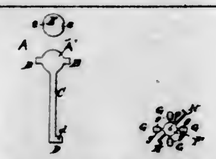
5. A saddle formed of flexible material and suspended at the rear and forward ends, and extended on each side at its forward end to form protective skirts or flaps for protection against the wheel of the vehicle, substantially as set forth.

6. In a bicycle, a suspension-saddle extended on each side, substantially as shown, to form protective skirts or flaps, a spring adapted to be thrown forward, and having the rear end of the saddle detachably connected with it, a bifurcated hook secured to the forward end of the saddle, and an adjustable pin located in the steering-head of the vehicle and having the said hook detachably engaged with it, substantially as set forth.

331,002. CLAMPING DEVICE FOR INCANDESCENT ELECTRIC LAMPS. CHARLES G. PERKINS, New York, N. Y., assignor to the Imperial Electric Light Company, same place. Filed Aug. 31, 1882. Renewed Nov. 5, 1883. (No model.)

Claim.—1. A clamp for one of the ends of the incandescent lamp, consisting of two thin metallic pieces provided with corresponding lugs

331,002.

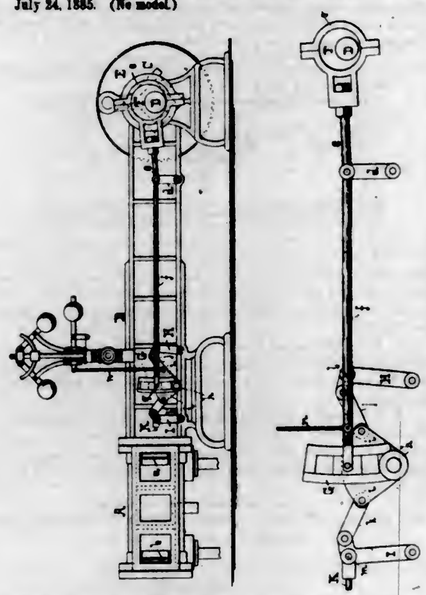


and notches, one of the pieces being formed on the inner end of a leading-in wire of the lamp, substantially as and for the purpose described.

2. In a clamping device for holding carbon filaments within the vacuous chamber of an incandescent lamp, the clamp A, lugs B B, and shank C, with a lug, D, on the end thereof, and the plate E, with notches *e e*, substantially as shown and described.

3. In a device for holding the carbon filaments within the vacuous chamber of an incandescent lamp, the combination of the clamps *a a*, multiple clamp F, with radial projections G, provided with notches *g*, which hold a corresponding plate, and the arms H H, made fast to the upright rod I, substantially as shown and described.

331,003. VALVE-GEAR. GEORGE T. PILLINGS, Baltimore, Md. Filed July 24, 1885. (No model.)



Claim.—In a steam-engine, the steam eccentric-rod connected to a sliding block within a pivoted vibratory link and to some adjustable portion of the governor, a plate adapted to have a movement in common with the said link, a pair of vibratory arms connected to the valve-stems, and pivoted links or rods to connect the said plate with the said pivoted arms, all combined substantially as specified.

331,004. TOY. HUGH REILLY and MARY JANE REILLY, Brooklyn, N. Y. Filed Dec. 26, 1884. (No model.)

Claim.—1. The combination of the vest A, provided with the lacings F and the reins D, substantially as set forth.

2. The combination of the vest A, provided with the lacing F, the reins D, and the bands E, substantially as and for the purposes set forth.

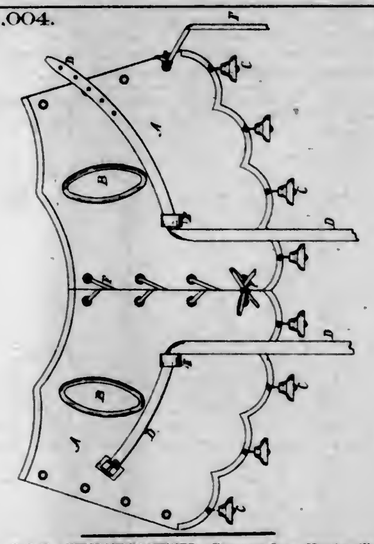
3. The combination of the vest A, the reins D, and the elastic bands or loops E, substantially as and for the purposes set forth.

4. The combination of the vest A, the reins D, the lacing F, and the bells C, attached to the vest, substantially as and for the purposes set forth.

5. The combination of the vest A, the reins D, the lacing F, the bells C, attached to the vest, and the elastic bands or loops E, whereby the reins are held to the vest, substantially as and for the purposes set forth.

6. The combination of the vest, made in two entirely distinct and separate parts united by lacings or like devices both in front and behind, and the reins D, attached to the two parts of the vest, substantially as and for the purposes set forth.

331,004.

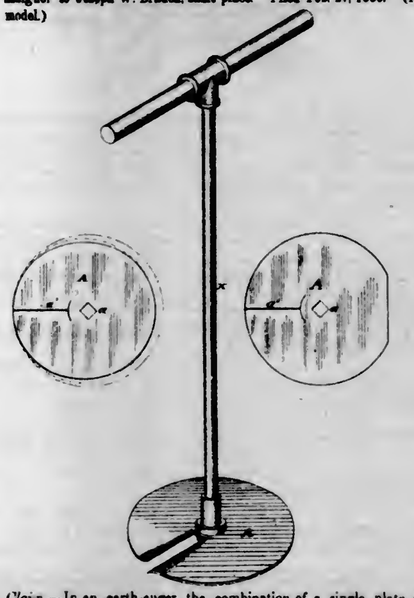


331,005. WINDOW-FASTENER. FREDERICK SAER, Martinsville, N. Y. Filed Sept. 25, 1885. (No model.)



Claim.—A sash-lock consisting of the casing, a pivoted forked bar having one of its arms projecting into the bolt and one of the forked arms provided with two bearing-surfaces, in combination with the cams c^2 and *e*, and mechanism, substantially as specified, for turning them in either direction, as described.

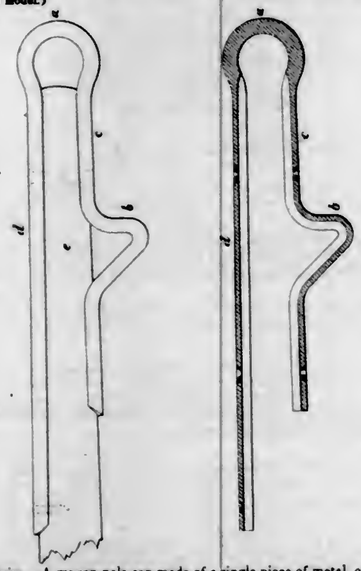
331,006. EARTH-AUGER BLADE. ANTHONY SCHULTE, St. Louis, Mo., assignor to Joseph W. Branch, same place. Filed Feb. 27, 1885. (No model.)



Claim.—In an earth-auger, the combination of a single plate or disk, A, formed of metal, a shaft, *x*, secured to the disk, situate eccen-

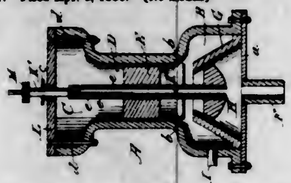
trically thereon, and a cutter, a', having an upper and lower lip curving in opposite directions, the edges of which are parallel with each other, situate on the same vertical plane and on a line radial to the axis of the shaft, substantially as and for the purposes specified.

331,007. WAGON-POLE CAP. RAPHAEL SERGEANT, Pittsburg, Pa., assignor to Oliver Brothers & Phillips, same place. Filed July 10, 1885. (No model.)



Claim.—A wagon-pole cap made of a single piece of metal, one arm of which is bent to form a lug or stop, the fiber of the metal following the line of curvature, substantially as and for the purposes described.

331,008. FLUID-PRESSURE REGULATOR. ROBERT SPEAR, New York, N. Y. Filed Apr. 8, 1885. (No model.)



Claim.—1. In a fluid-pressure regulator or governor, the combination, with the shell A, having induction and eduction openings and valve-casing G, of the piston-rod K K', partly tubular, and provided with perforations *e e*, stop *b*, and removable weights M M, and the piston E, and valve H, mounted on said tubular piston-rod below its perforations, substantially as described.

2. In a fluid-pressure regulator, the combination of the shell A, having eduction-pipe I, the valve-casing G, having inlet F, the tubular piston-rod K, provided with a stop-pin, *b*, and perforations *e e*, the piston E, and valve H, attached to said piston-rod, and the removable weights M, substantially as described.

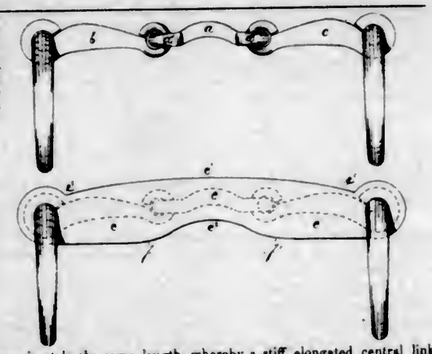
331,009. RUBBER-COVERED BIT. HORACE S. SQUIER, Newark, N. J. Filed Sept. 2, 1885. (Model.)

Claim.—1. A rubber-covered bit having the center thereof reduced in diameter with thickened or bulbous portions on each side thereof and tapering toward the cheek-pieces, for the purposes set forth.

2. A rubber-covered bit having a jointed or flexible core composed of three portions, the central portion being carved, and a rubber covering, which conforms to the shape of the core, being centrally reduced in diameter and thickened or bulbous around the joints of the core, for the purpose set forth.

3. The combination, with a rubber-covered bit having rubber eyes formed integrally therewith, of a cheek-bit extending through said eyes and held in connection thereby with the rubber bit, for the purposes set forth.

4. A rubber-covered bit composed of a jointed core consisting of three portions, the joints being placed between the center of the core and the cheek-pieces and dividing the said core into three portions of



approximately the same length, whereby a stiff elongated central link is formed, which constitutes a fulcrumal portion, the said jointed core being covered with rubber, which yields only at the joints at each end of the stiff central link, and by reason of its elasticity and its firm adhesion to the stiff fulcrumal central link causes the bit to return to its normal straight position when the tension of the reins upon the same is removed, substantially as and for the purposes set forth.

331,010. CHANGE-GATE FOR CAR-DOORS. JOHN STEPHENSON, New York, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. A car-door stile thickened and having a hand-hole above the lock-rail, with a passage at one of the edges of the stile extending into a chamber surrounding the hand-hole, and a slide in said chamber adapted to be lifted upward to expose the hand-hole, and to descend automatically by its gravity, substantially as and for the purpose set forth.

2. A car-door having a hand-hole in the stile, with a chamber receiving a vertically-moving slide, open at the side toward the edge of the door, and provided with a removable closing-piece, substantially as described.

3. A tram-car door having in its stile a hand-hole surrounded by a chamber for holding a slide, with an entrance into the chamber from the sash-edge of the stile, the entrance covered by a closure arranged to be concealed when the sash is up in position, substantially as and for the purpose set forth.

331,011. HOE-RACK. ROBERT S. THOMPSON, Pine Bluff, Ark. Filed Mar. 29, 1884. (No model.)



Claim.—1. A hoe-rack consisting of the platform A, standards B, handle-frame D, constructed as specified, and shield-pieces E, elevated above the platform to afford space for the hoe-blades, substantially as shown and described.

2. The shield-pieces E, in combination with platform A, having shouldered bars *g* and disks *i*, for supporting said shield-pieces, the longitudinal pieces *b*, having recesses *e*, posts B, and bars C, substantially as shown and described.

331,012. RAILROAD-RAIL CHAIR. JOHN TOWNSEND, Johnstown, Pa., assignor to the Johnson Steel Street Rail Company, same place. Filed Oct. 1, 1885. (No model.)

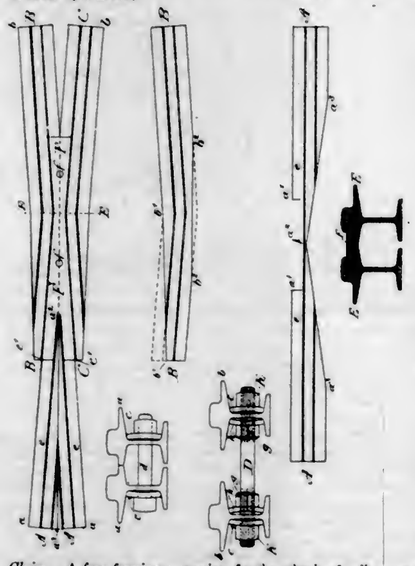
Claim.—A railroad-rail chair shaped out of grooved metal, and having lugs formed out of the thickened parts of the metal at the side of said groove, substantially as described, whereby the flanges of the

331,012.



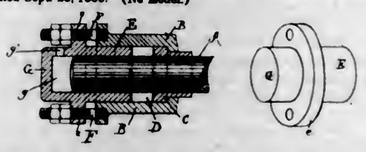
rail are securely clamped within said lugs, substantially as and for the purposes set forth.

331,013. RAILROAD-FROG. JOHN TOWNSEND, Johnstown, Pa., assignor to the Johnson Steel Street Rail Company, same place. Filed Oct. 1, 1885. (No model.)



Claim.—A frog forming a crossing for the wheels of railway-cars, composed of rolled center-bearing girder-rails, having the webs of said rails secured together by rivets or bolts, with or without interposed chocks, and the divergent ends of said rails secured to the rails of the track, substantially as and for the purposes set forth.

331,014. STUFFING-BOX. WILLIAM O. WEBBER, Lawrence, Mass. Filed Sept. 28, 1885. (No model.)



Claim.—1. In a stuffing-box, the gland-sleeve E, provided with cap G, as and for the purposes described.

2. The combination, in a stuffing-box, of the bearing C, the cap G, having the follower or gland E, and the chamber *g*, all substantially as described.

3. The combination of the shaft A and the gland-sleeve E, having the cap G, all substantially as described.

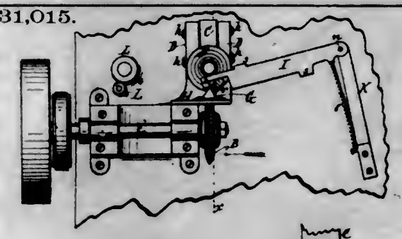
4. The combination of the shaft A, the gland-sleeve E, having the cap G, and chamber *g*, substantially as described.

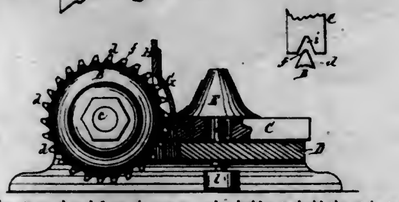
5. The combination of the shaft A, the gland-sleeve E, the cap G, having the hole *g'*, and the screw-plug *g*, substantially as described.

331,015. MACHINE FOR TRIMMING EDGINGS. JONATHAN B. WEST, Rochester, N. Y. Filed Aug. 24, 1881. Renewed Feb. 29, 1884. (No model.)

Claim.—1. In a machine for trimming edgings, the combination of a cutter, a shear-bed through which the cutter passes to cut the material, a gage for determining the position of the strip to be trimmed in relation to the cutter, a guide for sustaining the strip in proper position for

331,015.





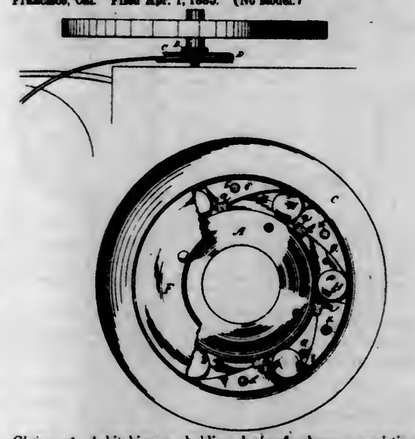
moving toward and from the gage, and a holder to hold the strip to the gage and cutter, substantially as and for the purpose herein set forth.

2. The combination, with the cutter, the shear-bed, the gage, and the holder, of a conical guide, E, for the purpose herein specified.

3. The combination of a cutter the teeth of which are adapted to cut away a portion of the material at each cut, a shear-bed, a gage with an opening between the same and the shear-bed for receiving the fabric, and mechanism, as revolving rollers, for automatically feeding the material to the cutter, as herein set forth.

4. The combination of a circular serrated cutter, the teeth of which are adapted to cut away a portion of the material at each cut, means, as a belt and pulleys, for rotating the cutter, a shear-bed, mechanism, as revolving rollers, for feeding the material along in a direction transverse to the plane of the cutter, and a gage with an opening between it and the shear-bed for receiving the fabric, as herein set forth.

331,016. HORSE-HITCHING DEVICE. WILLIAM C. WILCOX, San Francisco, Cal. Filed Apr. 1, 1885. (No model.)



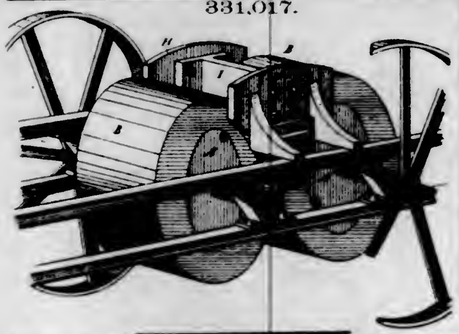
Claim.—1. A hitching or holding device for horses, consisting of an inner disk attached to the wheel-hub and an outer grooved rim having angular spaces upon its interior periphery, and rollers H, fitting transversely therein, and a lug or means for attaching the reins to the outer rim, substantially as herein described.

2. A hitching or holding device consisting of an inner disk attached to the wheel-hub and an outer grooved rim having angular spaces upon its inner periphery transverse rollers H, fitting loosely within these angular spaces, and a lug, D, for attaching the reins, in combination with the buffers or block *a* and *b*, substantially as herein described.

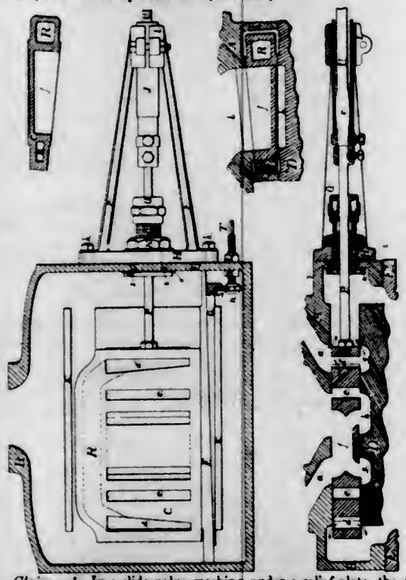
331,017. ORE-CRUSHING MACHINE. WILLIAM B. WELD, San Francisco, Cal., assignor of one-half to George E. Ames, same place. Filed July 9, 1885. (No model.)

Claim.—In an ore-crushing machine, the vertical fixed ends H, supported from the frame of the machine upon each side of the rolls and above their meeting point, and the transverse brace or support, in combination with the adjustable plates J, and adjusting-screws, whereby they may be held so as to prevent the escape of the material at the ends of the rolls, substantially as herein described.

331,017.



331,018. BALANCED SLIDE-VALVE. DANIEL A. WOODBURY, Rochester, N. Y. Filed Apr. 8, 1885. (No model.)



Claim.—1. In a slide-valve working under a relief-plate, the combination of the exhaust-cavity *f*, passage or passages *e*, passages *d* and *d'*, and passage or passages R, all arranged and operating substantially as set forth.

2. The combination, with a slide-valve having the rod or spindle attached rigidly thereto, of an adjustable bracket provided with suitable guide-box or guide, and a stuffing-box, constructed and operating substantially as shown and described.

3. The combination, with an adjusting-wedge and adjusting-screw, of the nut *m*, located inside of the chest, substantially as and for the purpose specified.

331,019. STREET-SIGN. THOMAS F. ADAMS, New York, N. Y. Filed Oct. 22, 1884. (No model.)

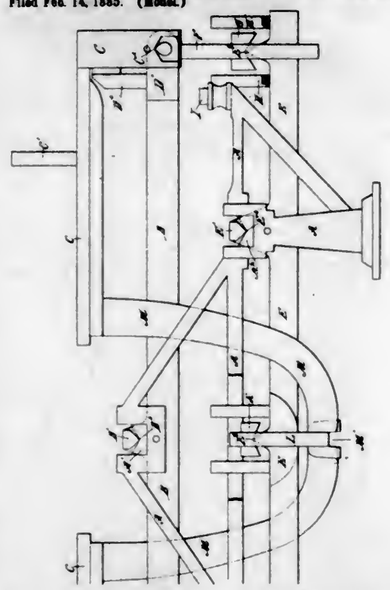


Claim.—1. The combination, with the sidewalks or curbstones, of street-signs embedded and attached into the same at one side of the street-crossings, substantially as set forth.

2. The combination, with a recessed sidewalk or curbstone, of a street-sign plate and means for securing the sign-plate into the recess, substantially as set forth.

3. The combination, with the sidewalk or curbstone having an inclined recess, of a street-sign plate and means for securing the sign-plates into said recess, substantially as set forth.

331,020. WEIGHING-SCALE. ERNEST C. BANKWITZ, Bridgeport, Conn. Filed Feb. 14, 1885. (Model.)



Claim.—1. In a scale, the beam, and a jack supported at each end of the beam and having depending arms, in combination with secondary beams at opposite ends of the scale, a link connecting each end of the beam with the outer end of a secondary beam, and a link connecting the end of each depending arm with the inner end of a secondary beam.

2. The beam, secondary beams, and jacks, the latter being provided with depending arms, and all being supported on knife-edges, in combination with links which connect each end of the beam with the outer end of a secondary beam, and other links which connect an arm depending from each jack with the inner end of a secondary beam.

3. The beam, secondary beams, and jacks, all supported on knife-edges, and knife-edges at the ends of the beam and secondary beams, in combination with links which connect the ends of the beam with the outer ends of the secondary beams, and other links which connect the inner ends of the secondary beams with arms depending from the jacks, said links being provided with bearings for the knife-edges.

4. The beam and secondary beams having cross-pieces provided with knife-edges, and bearings therefor in the frame-work, in combination with the jacks supported on knife-edges carried by arms at the ends of the beam, and having depending arms and links which connect the outer ends of the secondary beams with the beam, and other links which connect the inner ends thereof with the depending arms.

5. The beam, secondary beams, and jacks, having depending arms, in combination with links which connect the ends of the beam with the outer ends of the secondary beams, and other links which connect the inner ends of the secondary beams with the depending arms.

6. The beam and secondary beams having knife-edges at their ends, and the jacks having depending arms, in combination with links which connect the ends of the beam with the outer ends of the secondary beams, and other links which connect the inner ends of the secondary beams with the depending arms, said links being provided with bearings for the knife-edges.

7. The beam, secondary beams, jacks having depending arms, and the knife-edges, in combination with links which connect the ends of the secondary beams with the beam, and other links which connect the depending arms with the secondary beams, and detachable bearings carried by the links which engage the knife-edges.

8. The beam having at each end a cross-bar provided with knife-edges C^2, and a central arm, D^2, in combination with the jacks carried by knife-edges C^2, the secondary beams, and links F', which connect the secondary beams with arms D^2.

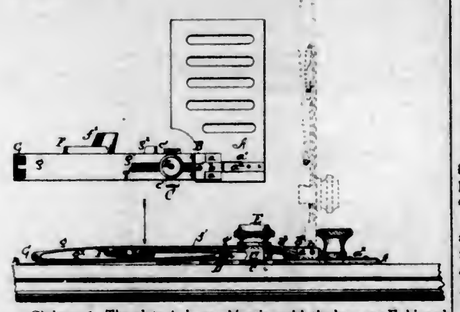
9. In a scale, the beam and secondary beams each supported on knife-edges, and having a knife-edge at each end, in combination with the jacks, also supported on knife-edges, and links F and L, substantially as described.

10. The jacks carrying pointers N, and having pins C' for the attachment of the pans, in combination with the beam, secondary beams, and links, as described, and for the purpose set forth.

11. The beam having a downwardly-projecting knife-edge at each end, and the secondary beams having upwardly-projecting knife-edges at their outer ends, in combination with links F, having slots at their ends and adapted to carry detachable bearings which engage the knife-edges.

12. The secondary beams having knife-edges at their inner ends, and the jacks having downwardly-projecting arms with notches M', in combination with links L, carrying detachable bearings which engage the knife-edges, and pins H, which hold the parts from displacement.

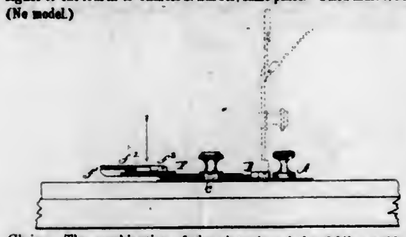
331,021. HEMMER. AMOS P. BARBER, Jr., Rahway, N. J., assignor of one-fourth to Charles S. Barber, same place. Filed Mar. 6, 1885. (No model.)



Claim.—1. The plate A, in combination with the hemmer F, hinged to such plate, and consisting of plate *f* and folder f^2, loosely hinged to the plate *f*, and the regulating-plate G, secured to the hemmer, and consisting of the top plate, *g*, and lower plate, g^2, loosely hinged to the plate *g*, all constructed and arranged as and for the purpose set forth.

2. The fastening-plate A, in combination with the hemmer F, consisting of the plate *f* and folder f^2, said plate *f* connected to the plate A by a hinge, and the folder f^2 suspended under the plate *f* by a hinge, whereby the hemmer has a free movement to prevent clogging, as set forth.

331,022. FOLDING-GUIDE. AMOS P. BARBER, Jr., Rahway, N. J., assignor of one-fourth to Charles S. Barber, same place. Filed Mar. 6, 1885. (No model.)



Claim.—The combination of the plate A and the folding-guide F, hinged thereto, the latter consisting of the folder *f'* and the top or cover f^3, hinged to it at f^2, as set forth.

331,023. STOPPER FOR BOTTLES. HENRY BARRETT, London, England. Filed Feb. 16, 1885. (No model.)



Claim.—1. A wooden screw-stopper constructed with one or more cuts or openings extending from the bottom of the stem toward the shoulder, as and for the purpose hereinbefore described.

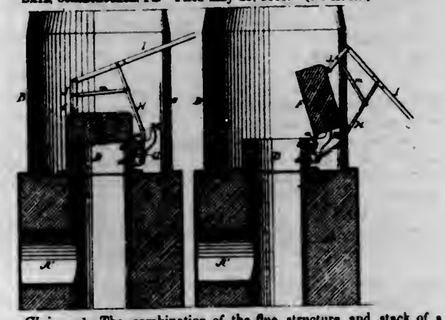
2. A wooden screw-stopper constructed with one or more cuts or openings extending from the bottom of the stem toward the shoulder, as set forth, combined with a suitable spring inserted therein, as and for the purposes set forth.

3. A wooden screw-stopper constructed with one or more cuts or openings therein extending from the bottom of the stem toward the shoulder, as set forth, and coated with varnish or with celluloid in solution, for the purpose set forth.

4. A wooden screw-stopper constructed with one or more cuts or openings extending from the bottom of the stem toward the shoulder, as set forth, and having a celluloid disk or a composition in its head, as and for the purposes set forth.

5. A wooden screw-stopper constructed with one or more cuts or openings therein extending from the bottom of the stem toward the shoulder, as set forth, and having a metal ring applied on its neck or shoulder, as and for the purpose set forth.

331,024. RELIEF-VALVE FOR GAS-GENERATORS. WILLIAM T. BATE, Conshohocken, Pa. Filed May 25, 1885. (No model.)



Claim.—1. The combination of the flue structure and stack of a gas-generating apparatus, the valve-seat B, a valve adapted thereto and pivoted at one side at a point close to the seat, and an operating-lever connected to the valve, but pivoted independently thereof, as set forth.

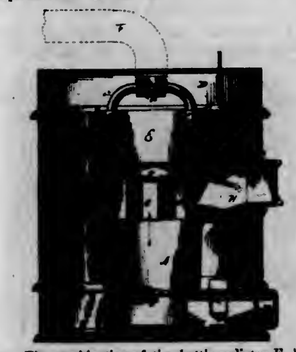
2. The combination of the flue structure A of the gas-generating apparatus, the stack B, having a slot, *g*, a valve-seat, D, a valve adapted to said seat and pivoted at one side at a point close to the seat, and an operating-lever connected to the valve, but pivoted independently thereof and projecting through the slot in the stack, as specified.

3. The combination of the valve-seat, the valve adapted thereto and pivoted at one side at a point close to the seat, the operating-lever connected to the valve, but pivoted independently thereof, and a stop for limiting the movement of the valve, as specified.

4. The combination of the valve-seat D, the pivoted valve F, free to swing upward from said seat, and plates M, upon the projecting outer ends of which the valve is supported when open, as specified.

5. The combination of the valve-seat, the pivoted valve, the operating-lever, the link, the fulcrum-rod, and the rod connecting said fulcrum-rod and link, as set forth.

331,025. HOT-AIR FURNACE. CHARLES M. BAXTER, Lebanon, N. H. Filed Apr. 22, 1885. (No model.)



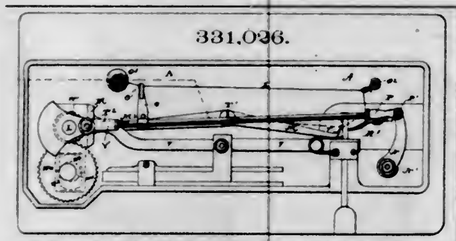
Claim.—The combination of the kettle-radiator E, having convex flanged bottom *a*, openings *t t*, and chutes *t' t'*, with the pipes f^2 f^2, perforated pipe-socket f^3, and exit-pipe F, the hot-air chamber open over the radiator and inclosing pipes f^2 f^2, the shell B, provided with interior air-pipes, C C, opening into the hot-air chamber and extending down to and around the fire-pot, and the said fire-pot, substantially as set forth.

331,026. SEWING-MACHINE. JOHN BRADLOW, Philadelphia, Pa. Filed Aug. 7, 1883. (Model.)

Claim.—1. In combination with the reciprocating needle of a sewing-machine, the looper R, constructed substantially as shown, and having a groove along its lower edge and between eyes, arranged substantially as described and shown.

2. In combination with the stitch-forming mechanism of a sewing-machine, a looper provided with supporting means which permits said looper to be turned up for convenience of threading, substantially as described.

331,026.

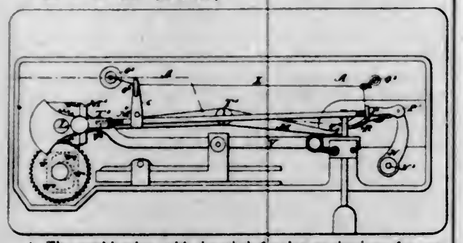


3. In combination with the needle of a sewing-machine, a looper, R, attached to a swinging bar, provided with a bearing at each of its ends, substantially as described.

4. In combination with sewing mechanism to make a stitch substantially as described, two stationary thread-guides, a looper-thread controller, and means for positively operating the same, substantially as described.

5. In combination with the stitch-forming mechanism, substantially as described, a looper-thread holder reciprocated transversely to the line of movement of the point of the looper, substantially as described.

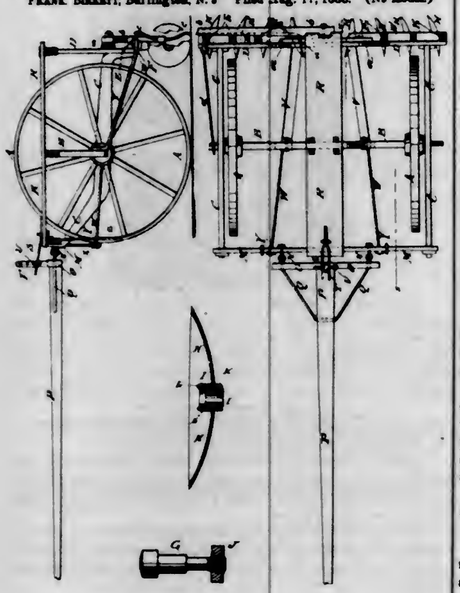
331,027. SEWING-MACHINE. JOHN BIGELOW, Philadelphia, Pa. Filed Oct. 22, 1885. (No model.)



1. The combination, with the stitch-forming mechanism of a sewing-machine, of a device to spring and deflect the point of the needle before entering the work, and a gage to determine the amount of such deflection, substantially as and for the purposes set forth.

2. In combination with the needle of a sewing-machine, a spring-bar, W, having a free end, W^4, provided, as described, with means for vibrating the same across the vertical line of the needle movement, whereby the needle-point may be deflected, substantially as described.

331,028. COMBINED CULTIVATOR AND LAND-MARKER. B. FRANK BURNETT, Burlington, N. J. Filed Aug. 17, 1885. (No model.)



Claim.—1. The combination, with the wheels A, the arched axle B, the side bars, C, the arched rear bar, D, having perforated flanges D′, the front bar, M, and the long seat-board R, of the adjustable standard F and the disk-plows H, substantially as herein shown and described.

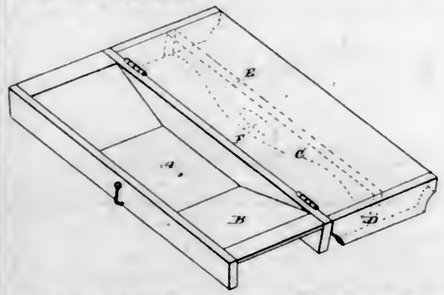
2. The combination, with the standards F, of the hubs I, having shoulders, the washers K, the disk-plows H on the hubs between the shoulders and the washers, and the journal-bolt G, provided with the nut J, substantially as herein shown and described.

3. The combination, with the axle B and the frame C D M, of the bars Y, secured to the front bar, M, of the frame, and having loops in their ends, substantially as herein shown and described.

4. The combination, the axle B, the frame C D M, and tongue P, provided with the perforated bar T, of the seat R, provided with the bars S, and the pin U, substantially as shown and described.

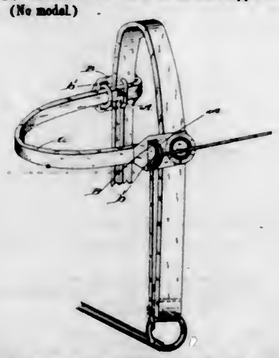
5. The combination, with the axle B, having its ends projecting beyond the wheels, and the arched bar D, of the cross-bar *a*, the bar *b*, pivoted to said cross-bar, the double shoe *c* on the free end of the bar *b*, and the draft chain or bar *d*, having its ends secured to the bar *b* and to the projecting ends of the axle, substantially as herein shown and described.

331,029. PASTRY-BOARD. WILLIAM T. BLACK, Graham, Mo. Filed Sept. 10, 1885. (No model.)



Claim.—The herein-described combined dough board, mixer, and bread-tray, consisting of a box having a hinged cover, which cover is provided on its upper surface with cleats, ledges, or projections of the same height as the box, which cleats or projections are united by a handle-piece extending lengthwise over the cover, substantially as set forth.

331,030. BRIDLE. ANSLEY F. BOWEN, Maseppa, Miss. Filed Sept 4, 1885. (No model.)



Claim.—1. In an overdraw check-rein, the ring arranged upon the forehead-strap or frontispiece of the bridle, in combination with a plate for holding it in place, through which also passes the shank of the rosette, substantially as and for the purpose set forth.

2. In an overdraw check-rein, the ring arranged upon the forehead-strap or frontispiece of the bridle, in combination with the plate having rectangular slots, through one of which slots the shank of a rosette is passed, and through the other slot is inserted the ring, through which ring also passes the frontispiece or forehead-strap, substantially as and for the purpose specified.

331,031. GRATE. WILLIAM H. BROWNE, Brooklyn, N. Y. Filed Apr. 13, 1885. (No model.)

Claim.—1. A raking-grate consisting of a frame, a series of removable but stationary grate-bars supported transversely in the frame, a series of intermediate grate-bars pivoted between the stationary grate-

331,031.

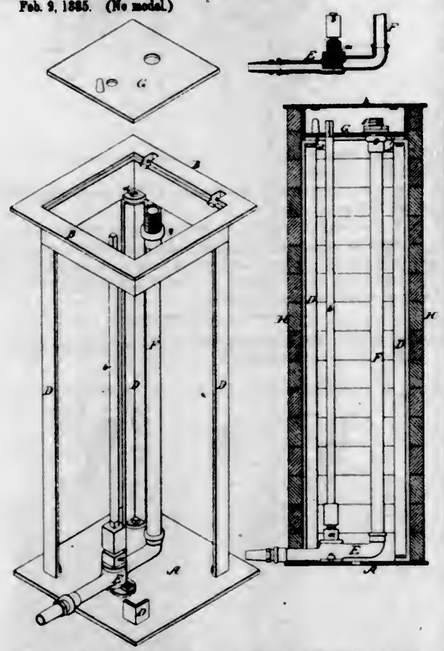


bars and provided with projections, and a bar mounted loosely in the frame and engaging said projections, substantially as set forth.

2. The frame carrying a series of removable fixed bars provided with teeth or projections on both sides, in combination with a series of intermediate rocking bars provided with teeth extending between those of the fixed bars, projections on the under side of the rocking bars, a bar engaging the projections, and a hand-lever connected to the bar, substantially as set forth.

3. The combination of a frame carrying a series of fixed transverse bars having pendent tongues 11, and intermediate rocking bars having like pendent tongues, and a connecting-rod provided with recesses receiving the tongues of the rocking bars, substantially as described.

331,032. WASH-PAVE. JAMES G. BRYAN, Philadelphia, Pa. Filed Feb. 9, 1885. (No model.)



Claim.—1. A wash-pave frame consisting of the lower projecting anchor-plate, A, the upper box or frame, B, and posts or bars D, secured to said anchor-plate and frame B, and serving to connect the two together and to support said frame B, as set forth.

2. The combination of the lower projecting anchor-plate, A, the upper box or frame, B, the connecting-posts D, which support the frame, and the brick-work structure H, resting upon the projecting portion of the anchor-plate, as specified.

3. The combination of the anchor-plate A, the top frame, B, and the posts D, supporting said frame, with the pipe F, and the detachable cap-plate G, independent of the frame B, and confined between a collar and nut on said pipe F, as set forth.

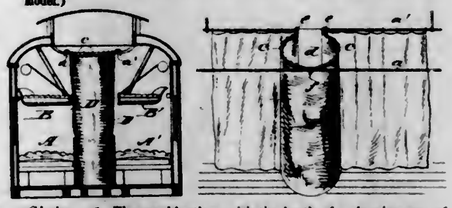
331,033. BRACELET. HORACE E. CHADWICK, Providence, R. I. Filed June 26, 1885. (No model.)



Claim.—1. A bracelet formed of the parts B $B^{\times}$ $B^{\times\times}$ and the spring strip A, the part $B^{\times}$ being secured to strip A at some distance from one end, and the part $B^{\times\times}$ secured on the other end of strip A, and having the uncovered end of strip A passed through it and provided with an enlargement or stop on its end, as set forth.

2. A bracelet formed of the spring-strip A, and circular buttons or parts, as described, having the under offset plates, B′, provided with openings, as shown, for the passage of the spring-strip, substantially as and for the purpose set forth.

331,034. MOVABLE DRESSING-CLOSET FOR SLEEPING-CARS. ADONIRAM J. CHANDLER, Cincinnati, Ohio. Filed Aug. 19, 1885. (No model.)



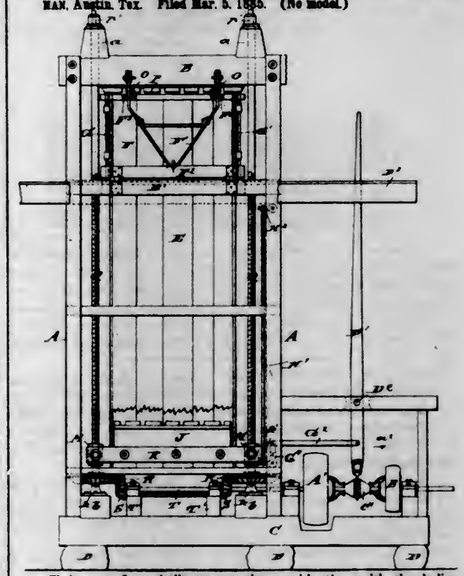
Claim.—1. The combination, with the berth of a sleeping-car, of a dressing-closet in the aisle of the car in front of said berth and communicating therewith, substantially as set forth.

2. The combination, with the curtain-rails of a sleeping-car, of a dressing-closet adapted to be secured to said rails at its top edge and be suspended in the aisle of the car in front of a berth and in communication therewith, substantially as set forth.

3. The combination, with the curtain-rails of a sleeping-car, of a dressing-closet consisting of a removable frame open at one side extending across the aisle and connected to the said curtain-rails, and a depending curtain secured at its top edge to the said frame, whereby the frame may be moved along the aisle from one berth to another or removed from the rails, substantially as set forth.

4. The combination, with the rails *a a′*, of the rods *c*, having hooks *e e* and *f*, and carrying a curtain, D, substantially as described.

331,035. BALING-PRESS. FRANK S. CLARK and JOSEPH A. BACHMAN, Austin, Tex. Filed Mar. 5, 1885. (No model.)

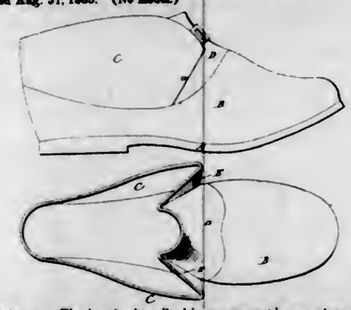


Claim.—1. In a baling-press, the combination, with the baling-box E, having the outwardly and downwardly swinging side doors, F of the latch frame or lever F′, hinged to a top cross-beam, the catch F^2 on the lower part of the door, and the notched plates F^3 on the upper part of the door, the side arms of the frame, when in a locked position, resting in the said notches, substantially as herein shown and described.

2. In a baling-press, the combination, with the vertical baling-box E, of two vertical screw-spindles, Q, the nuts M, having trunnions L, the beams K, apertured to receive the said trunnions, the pin *k′* on one of the said beams, the clutch-pulleys A′ B′, the double cone C′, the lever D′, the bell-crank G^4, having one end projecting in the path of the said

pin k', the bar G^3, the tripping-lever H^3, and the connecting-rod H', substantially as herein shown and described.

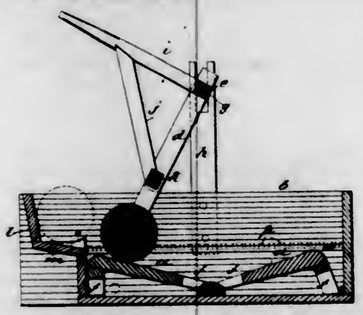
331,036. **OVERSHOE.** HARRY I. CRAMPTON, Naugatuck, Conn., assignor to the Goodyear's Metallic Rubber Shoe Company, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. The herein-described improvement in overshoes, having a bellows-like flap between the vamp and quarter, the vamp, quarter, and intermediate flap cut in a continous piece, forming the said parts integral with each other, and folded to bring the flap between the front edge of the quarter and the rear edge of the vamp, substantially as described.

2. An overshoe having a bellows-like flap between the vamp and quarter upon each side, the two quarters, the vamp, and the intermediate flap cut in a continuous piece and folded to bring the flaps which are integral with the quarters and vamp between the front edge of the quarter and the rear edge of the vamp, substantially as described.

331,037. **CLOTHES-WASHER.** GEORGE W. CROSBY, Good Hope, Ark. Filed May 23, 1884. (Model.)



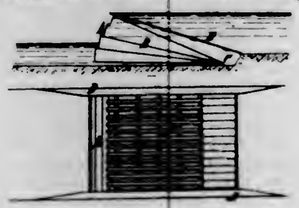
Claim.—The combination, in a wash-tub, of inclined roller-beds *a*, ascending each way from the middle of the tub, and a roller, *c*, having working-arms *d*, and a lever, *i*, pivoted in the posts *h*, said beds being constructed with passages *f*, for the water, through the end supports, and with passage *n* between the upper ends and the ends of the tub, to facilitate the return of the water under said beds, substantially as described.

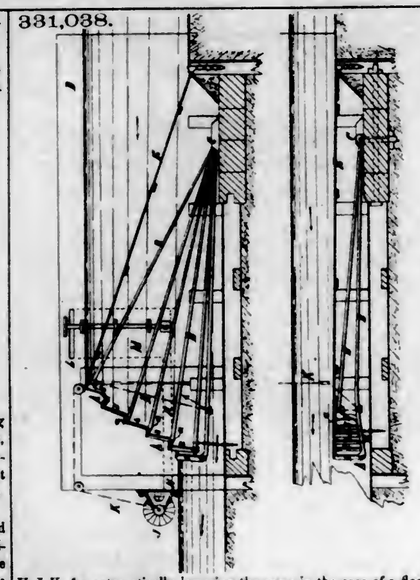
331,038. **WEIR AND SLUICE.** MIPAR D. CZVETKOVICH, Vienna, Austria-Hungary, assignor of two-thirds to Edmund Herbaczewski and Wilhelm von Kopal, both of same place. Filed June 3, 1885. (No model.) Patented in Austria-Hungary July 10, 1884, No. 34 and No. 1,196.

Claim.—1. The hatches A, gearing together and pivoted at C, substantially as described.

2. The combination of the hatches A with the arrangement serving for automatically lowering the same, and consisting of the passage H, provided with a valve, water-wheel J, and rope or chain K, substantially as described.

3. The combination of the hatches A with the arrangement L M



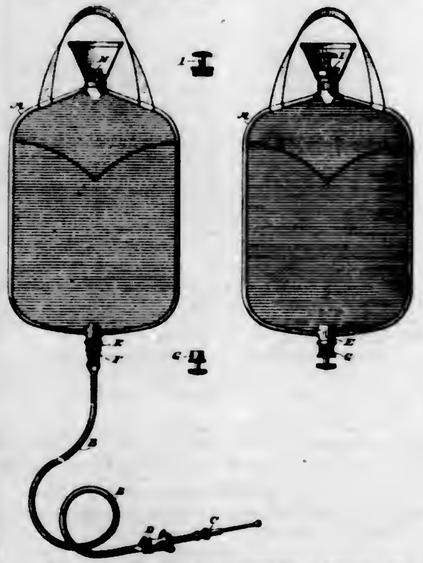


H J K, for automatically lowering the same in the case of a flood, substantially as described.

4. The combination of the hatches A with the floating grate E, substantially as described.

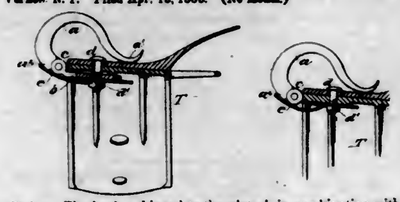
5. The combination, with a series of hatches pivoted at one end and connected at the other end with a fastened chain, by which their upper movement is restrained and restricted, of a supplementary hatch constructed and adapted to rise and fall independently of the other hatches, substantially as described.

331,039. **FOUNTAIN-SYRINGE.** FRANK M. DAVIS, New York, N. Y. Filed Oct. 5, 1885. (No model.)



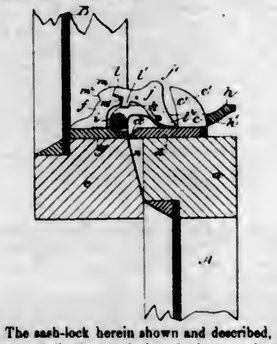
Claim.—A fountain-syringe whose reservoir is provided with a filling-orifice at its top and a discharge-orifice at its bottom, each provided with a plug, cap, or similar means for closing and opening the same, the discharge-orifice and the syringe-tube being also constructed with screw-thread connections, whereby the syringe-tube may be removed from the reservoir and the reservoir used as a hot-water bag, substantially as specified.

331,040. **CHECK-HOOK FOR HARNESS.** FRANKLIN T. DAVIS, Mount Vernon, N. Y. Filed Apr. 15, 1885. (No model.)



Claim.—The hook *a*, hinged to the plate *b*, in combination with the spring *e*, arranged to press upon the heel a^2 of the hook, substantially as and for the purposes described.

331,041. **SASH-FASTENER.** FRANKLIN T. DAVIS, Mount Vernon, N. Y. Filed Apr. 28, 1885. (Model.)



Claim.—1. The sash-lock herein shown and described, which consists of the horn *c*, and lip *d'*, attached to the lower sash, the locking-stud *f*, attached to the upper sash, in combination with the link or hasp *h*, and locking-dog *j*, pivoted therein, substantially as set forth.

2. The stud *f*, formed with shoulder m^2, in combination with hasp *h* and locking-dog *j*, formed with stud *l'*, for holding the hasp and dog in vertical position, substantially as described.

3. The hasp *h*, formed with curve *h'*, in combination with dog *j*, having projection *l'*, and stud *f*, having shoulder m^2, substantially as and for the purposes set forth.

4. The locking-stud *f*, formed with projections *m m'*, in combination with the hasp *h*, and dog *j*, pivoted therein and formed with projections *l l'*, substantially as and for the purposes set forth.

5. The combination, with the plate *g*, having locking-stud *f* and jaws *g'*, of the hasp *h*, dog *j*, and spring *i*, as set forth.

331,042. **ELECTRIC SIGNAL FOR RAILROAD-CARS.** JOHN R. DE MIER, Chester, Ill. Filed Mar. 17, 1885. (No model.)

Claim.—1. In an electric railroad-train signal, the combination of an electric battery stationed on the locomotive-tender, a positive and a negative conducting-wire fastened to the ceiling of each car, two interchangeable and removable automatic circuit-closers, D, between the cars, fastened above the doorways of the cars, an alarm-bell on the ceiling of each car and in the engineer's cab, a suitable circuit-closer, G, provided with suitable pull-ropes, *g g'*, whereby the breaking of trains and orders of the train conductor or manager are immediately communicated to the engineer, substantially as and for the purpose described.

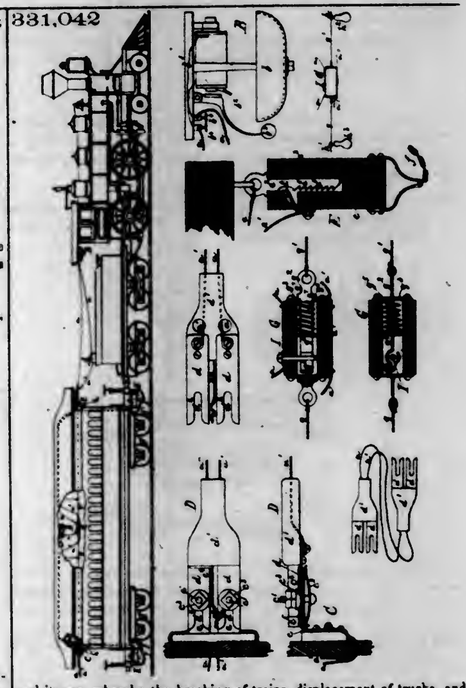
2. In an electric railroad-train signal having an open-circuit-alarm mechanism, the binding mechanism C, consisting of the angular plate *c*, having bolts *c'*, washers c^2, spring-washers c^3, and the connection D, having handle *d'*, forked conducting-plates *d*, and circuit-closing tongue d^4, and the alarm-gong B, substantially as and for the purpose described.

3. In an electric railroad-train signal, having an open-circuit-alarm mechanism, the combination of a track circuit-closer, E, consisting of serrated blade e^2, block *e*, having spring-conductor e^4, and the gong B, substantially as and for the purpose described.

4. In an electric railroad-train signal operated by means of an open circuit, the combination of circuit-closers consisting of the non-conducting pull-ropes *g g'*, barrel G, spring-bolt g^2, conducting-screw 1, and conducting-wires *a a'*, substantially as and for the purpose described.

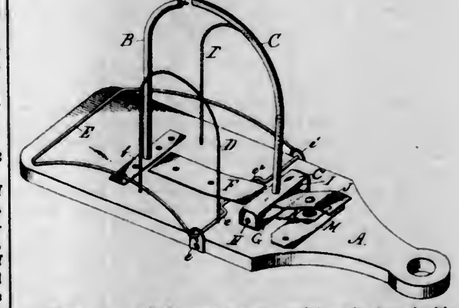
5. In an electric railroad-train signal, the combination of an electric battery stationed on the locomotive-tender, a positive and a negative conducting-wire fastened to the ceiling of each car, two interchangeable and removable automatic circuit-closers, D, between the cars, fastened above the doorways of the cars, an alarm-bell on the ceiling of each car and in the engineer's cab, a suitable circuit-closer, G, provided with suitable pull-ropes, *g g'*, and an automatic circuit-closer, E, between each truck

331,042



and its car, whereby the breaking of trains, displacement of trucks, and orders of the train conductor or manager are immediately communicated to the engineer, substantially as described.

331,043. **BILL-FILE.** GEORGE H. DUNN, Greensburg, Ind. Filed May 16, 1885. (No model.)



Claim.—1. A bill-file composed of a receiving-wire formed with a square-shouldered pin, a transfer-wire formed with a recess to receive said pin, a rocking plate on which the transfer-wire is mounted, a lever and spring for operating said plate, and a stop formed by bending the end of the lever downward at a right angle, to avoid strain on the transfer-wire.

2. The combination, with a transfer-wire and a rocking plate on which said wire is mounted, of a lever and spring for operating said plate, a punch secured to the lever, and a plate or base, perforated in line with the punch, for operation therewith, substantially as described.

3. In a bill-file, the combination, with a receiving-wire and a transfer-wire, of the two arched guides mounted one on either side of said wires and at an equal distance inwardly all around from them, substantially as described, and for the purpose set forth.

4. The combination, with a base, a receiving-wire, and a rocking transfer-wire, of a rectangularly-shaped clamp journaled in lugs on each side of the base, near the transfer-wire, and extending forward of the receiving-wire, and a spring for operating the clamp, substantially as described, and for the purpose set forth.

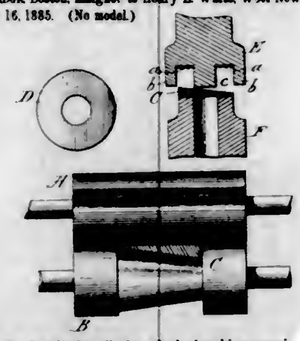
331,044. **METALLIC FABRIC.** WILLIAM C. EDGE, Newark, N. J. Filed July 7, 1885. (No model.)

331,044



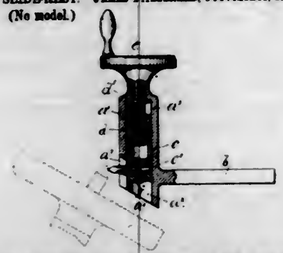
Claim.—The metallic fabric composed wholly of strips A A, each of said strips having apertures *a* and prongs *b*, the said apertures being as far apart as said prongs to receive the prongs through them, substantially as herein shown and described.

331,045. METHOD OF MAKING TAPERING WASHERS. MARTIN V. B. ETHERIDGE, Boston, assignor to Henry E. Waite, West Newton, Mass. Filed July 16, 1885. (No model.)



Claim.—The herein-described method of making tapering washers, which consists of making tapering bars of metal and punching or stamping the washers from these bars, substantially as shown and described.

331,046. SLIDE-REST. JAMES FITZGERALD, Providence, R. I. Filed Oct. 9, 1884. (No model.)

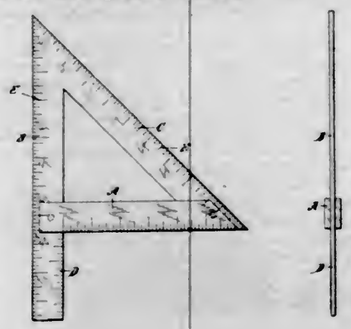


Claim.—1. In a slide-rest, in combination, a body having a connected shank and a slot for the passage of a cutting-tool, a carrier having a tool-socket with means for clamping a tool in the socket, and the feed-spindle held against longitudinal movement in the body of the rest, all substantially as described.

2. In combination, a slide-rest, *a*, having body *a'*, with slot a^3, and gage *g*, and bearing a sliding carrier, *c*, and a feed-spindle, *d*, whereby the carrier is reciprocated, all substantially as described.

3. As an improved article of manufacture, a slide-rest, *a*, having a body, *a'*, with a tool-slot, a^3, means for attaching the body to a carriage on the frame, a gage, *g*, a sliding carrier, *c*, with the transverse and longitudinal tool-sockets, and a feed-screw, *d*, all substantially as described.

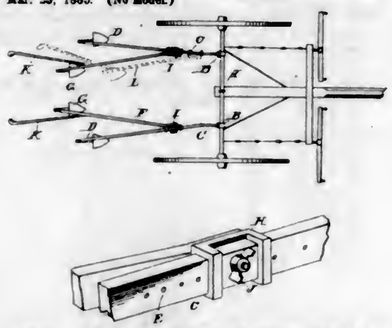
331,047. COMBINED SQUARE AND MITER. PHILO L. FOX, Bridgeport, Conn. Filed Aug. 3, 1885. (No model.)



Claim.—1. A combined square and miter consisting of parts B and C, the former having an extension, D, and a part, A, made thicker than the other parts, and having central slots at its ends to receive parts B and C, the former being joined thereto at a right angle and the latter at the outer end thereof.

2. A combined square and miter consisting of parts B and C, the former having an extension, D, all being made in a single piece, and having scales upon their outer edges, and a part, A, made thicker than the other parts, and joined to part B at a right angle thereto and to the outer end of part C.

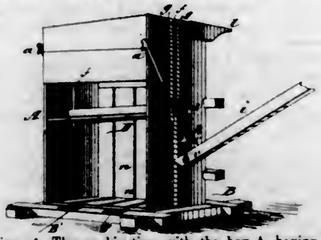
331,048. CULTIVATOR. JAMES H. FRAZER, Rushville, Ind. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a wheel-cultivator, the combination of the two outer shovel-beams attached to the axle of two transporting-wheels with the two inner shovel-beams adjustably secured to said outer beams, substantially as described.

2. In a wheel-coltivator, the combination of the outer shovel-carrying beams having double open collars, said collars being rigidly secured to the inner shovel-beams, and adapted to be fixed at any desired adjustment by a set-screw, which is situated between the bands of the double collars, with the inner shovels, the handles, and the axle, substantially as set forth.

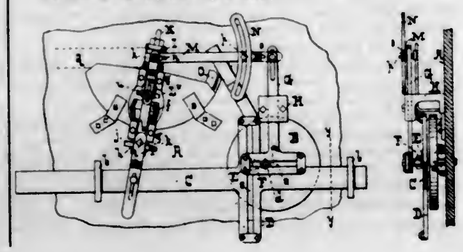
331,049. BALING-PRESS. WILSON GARDNER, Washington Court-House, Ohio. Filed Sept. 12, 1885. (No model.)



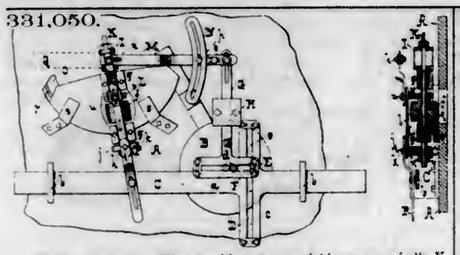
Claim.—1. The combination, with the box A, having the slots *f*, the racks *g g* on opposite sides thereof, and the rack *h*, below and in vertical alignment with the slots, of the follower D, having hooked arms *d* provided with pawls on their opposite sides to separately engage the racks *g g*, and the levers *i*, beveled at their ends to engage the rack *h*, and the link-connection *k k' k²*, between the lever and the hooked arms *d*, substantially as set forth.

2. The combination, with the follower of a baling-press, provided with hooked arms *d*, of the lever *i*, chain-links *k*, swivel *k'*, and clevis k^2, pivoted to the end of the lever, substantially as set forth.

331,050. MOLDING-MACHINE. WALTER S. GARRISON, Baltimore, Md. Filed June 29, 1885. (No model.)



331,050.

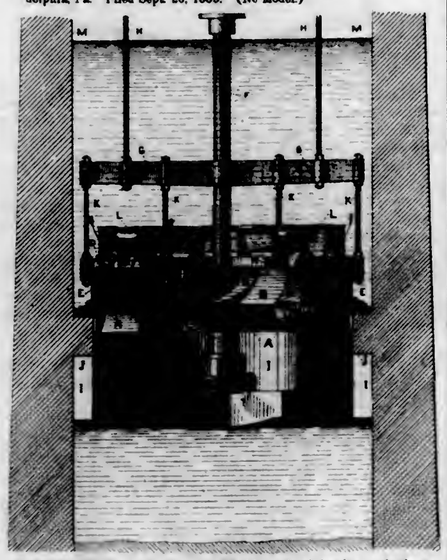


Claim.—1. In a molding-machine, the revoluble cutter-spindle K, adapted to have longitudinal motion on a plate having a vibratory movement, substantially as described, combined with the levers M and P, suitably connected to the said spindle, and the reciprocating bars G and C, attached, respectively, to the said levers, substantially as specified.

2. In combination with the revoluble cutter-spindle K, supported in bearing-boxes on the vibratory plate L, the lever M, connected to the said spindle, bar G, attached to the lever M and having the slot *e*, and the rotary crank-pin *d*, which rests in the said slot and in its revolution effects a reciprocating movement of the said bar and a longitudinal motion of the cutter-spindle, substantially as specified.

3. In combination with the revoluble cutter-spindle K, supported in bearing-boxes on the vibratory plate L, the lever P, connected to the said spindle, rod C, attached to the lever P and having the slot *e*, and the rotary crank-pin E, which rests in the said slot and in its revolution effects a vibratory movement of the cutter-spindle, substantially as specified.

331,051. GATE FOR TURBINE WHEELS. EMILE C. GEYELIN, Philadelphia, Pa. Filed Sept. 26, 1885. (No model.)



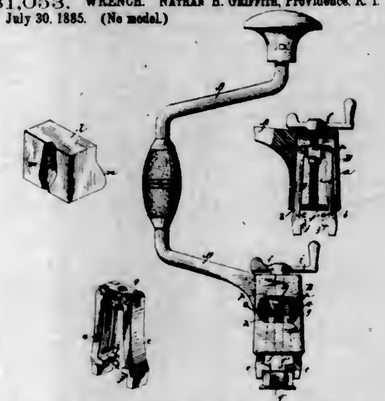
Claim.—The combination, in a turbine wheel having a single stationary or guide wheel, of a substantially vertical casing around the exterior of said guide-wheel and inclined casing around the interior of said guide-wheel, an annular hood whose inner and outer peripheries are respectively vertically above the outer and inner peripheries of said casings, and a double gate of sufficient vertical height to close the outer and inner openings between the hood and the guide-wheel casing, said gate being provided with suitable raising and lowering devices, substantially as set forth.

331,052. TELEPHONE. WILSTAR GILLETT, New York, N. Y., assignor to the Atlantic and Pacific Telephone Company, Saco, Me. Filed June 6, 1884. (No model.)



Claim.—The combination, in a telephone-transmitter, of the rigid diaphragm-cell I, elastic cell M, and granular filling contained therein, conducting-plates N N', conducting pivotal screws Q Q', conducting-arms R R', and connecting-wires, as herein specified.

331,053. WRENCH. NATHAN H. GRIFFITH, Providence, R. I. Filed July 30, 1885. (No model.)

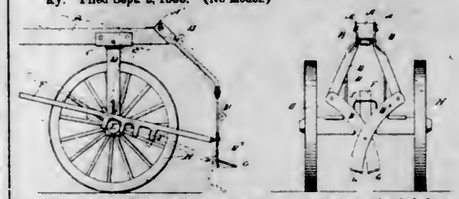


Claim.—1. The combination of the handle, the socket provided at its outer end with holding-openings for the jaws, the operating-screw having a bearing at the opposite ends of the socket, and the yoke-nut with the opposite jaws held in the openings of the socket and jointed to the yoke-nut, substantially as described.

2. The combination of the handle, the socket provided with holding-openings for the jaws, the operating-screw, and the yoke-nut with the opposite jaws held in the openings of the socket and jointed to the yoke-nut, and the shoes grooved on their adjacent faces and adapted to the projecting lugs of the jaws, substantially as described.

3. The combination of the handle, the socket provided at its outer end with holding-openings for the jaws, and with the side opening, *h*, the operating-screw having a bearing at the opposite ends of the socket, the yoke-nut, and the opposite jaws held in the openings of the socket and jointed to the yoke-nut, and also provided with inwardly-projecting lugs, substantially as described.

331,054. STUMP-EXTRACTOR. JOHN B. HEARD, Bowling Green, Ky. Filed Sept. 2, 1885. (No model.)



Claim.—1. The operating-lever A, secured on a wheeled frame, and the toothed adjusting-arm F, in combination with the axle E and the cutting device, substantially as shown.

2. The lever A, cap C, having prongs C', curved standard D, and toothed arm F, in combination with the grasping device, substantially as shown.

3. The lever A, having hooks A', the cap C, having prongs C', the curved standard D, the frame I, and the toothed arm F, attached to the toggle-levers B' B'', in combination with the centrally-rounded axle E and the toggle B' B'', having bent terminations G, to form cutters.

331,055. GRIP FOR CABLE RAILWAYS. JOHN HELLINGS, Philadelphia, Pa. Filed Aug. 13, 1885. (No model.)

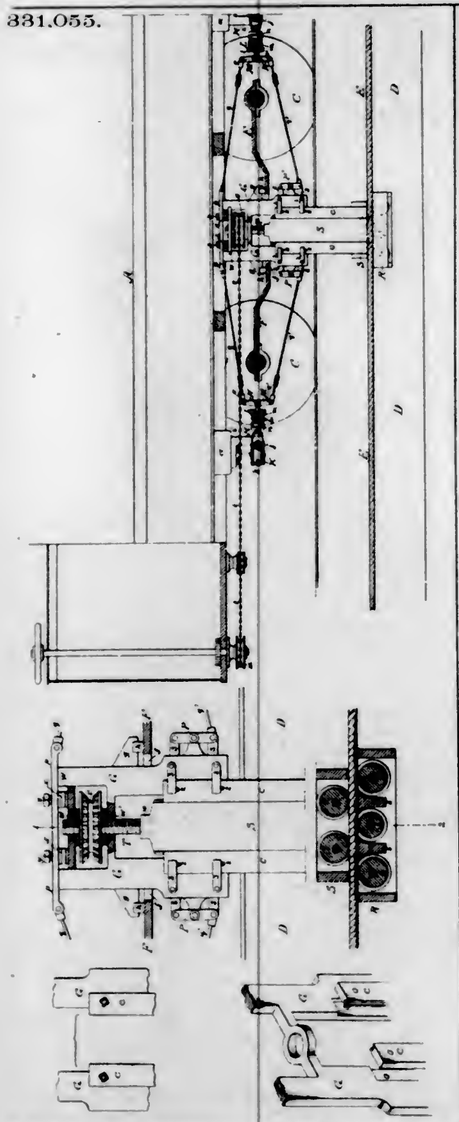
Claim.—1. The combination of the stationary frame of a cable-grip with a slide, S, one provided with anti-friction rollers and intermediate plates, 6 6, and the other having eccentric rollers immediately opposite said bearing-plates, substantially as described.

2. The combination of the frame G, carrying the grip-frame R, the slide S, mounted in the frame R, and a yielding connection between the slide and the frame G, as and for the purpose described.

3. The combination of the frame G with the grip-frame R, having arms *c c*, the frame, G having pins or projections 2, adapted to orifices in the arms *c*, and turn-buckles 3, for securing the frame R to the frame G, substantially as set forth.

4. The combination of the frame of the car and its axles and a frame, F, with a frame, G, suspended from the frame F, but connected

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to the body of the car independently of the frame F and axles, substantially in the manner described.

5. The combination of the frame G, carrying the cable-grip, with the brackets H and frames K, the levers M, connected to the frame G, and a yielding connection between the levers M and the frames K, substantially as set forth.

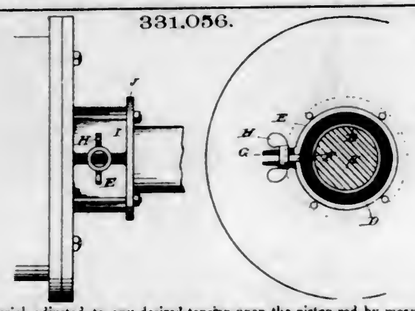
6. The combination of the frame G, carrying the cable-grip, the levers M M, connecting-rods q q', levers P P', and brackets H H, having a bar, J, supporting the rollers k, the said rollers being connected to the levers M, substantially as herein set forth.

331,056. METAL PACKING. NATHAN HERRIWAY, Parma, Ohio. Filed Mar. 27, 1885. (No model.)

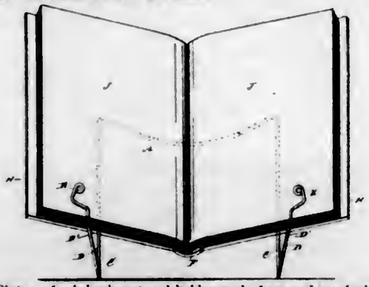
Claim.—1. In a metal packing, an inner metal tube formed with a slot at one side, so as to be compressible, and having outwardly rubber tubing inclosed within a metal tube, and so disposed as to be easily contracted by means of a thumb-nut engaging with semi-cone-shaped threaded lugs extending outwardly from the opposite wings, substantially as herein set forth.

2. The combination of a series of compressible tubes, the inner and outer formed of metal, and between them a compressible vulcanized material adjusted to any desired tension upon the piston-rod by means of a set-screw, the whole arranged as and for the purposes substantially as herein set forth.

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331,057. BOOK REST AND HOLDER. HENRY F. HENDRIX, St. Louis, Mo. Filed Mar. 5, 1885. (No model.)

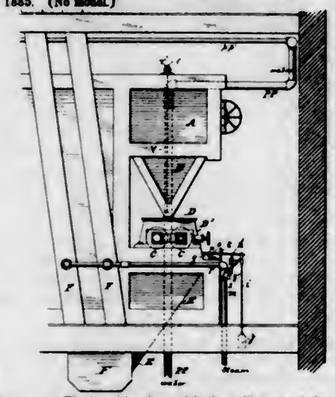


Claim.—1. A book rest and holder made from a piece of wire bent to form a cross-piece, A, the parts B on the ends of the same, the parts C on the ends of the parts B, and the V-shaped legs D on the front ends of the parts C, substantially as herein shown and described.

2. A book rest and holder made from a piece of wire bent to form a cross-piece, A, the parts B on the ends of the same, the parts C on the ends of the parts B, and the V-shaped legs D, having the upper ends of its front shanks bent to form parts D^2 and loops E, substantially as herein shown and described.

3. A book-holder made of a single piece of wire bent to form a cross-piece, having two legs for supporting the upper part of the book, and two legs at the front, the free ends of the front parts of the legs being bent upward to form holders for the bottom edges of the leaves, substantially as herein shown and described.

331,058. MECHANISM FOR EXTINGUISHING FIRES IN GRAIN OR MALT MILLS. CHARLES J. HEXAMER, Philadelphia, Pa. Filed Mar. 16, 1885. (No model.)



Claim.—1. The combination, with the mill-box, of the movable or hinged part or side D' thereon, a steam-supply pipe, with suitable connection to the point of explosion or fire in the mill, and provided with a normally-closed valve, and tripping devices for operating said valve by the sudden movement of said hinged side of the mill-box by the force of a dust-explosion within the latter, substantially as and for the purposes set forth.

2. The combination, with the mill-box, of the hinged part or side D', the trigger provided with the notch or offset n, the leg o, the steam-supply pipe leading into the mill-box, the weighted rod i, and a normally-closed valve in said steam-pipe, all constructed and adapted to operate substantially as and for the purpose set forth.

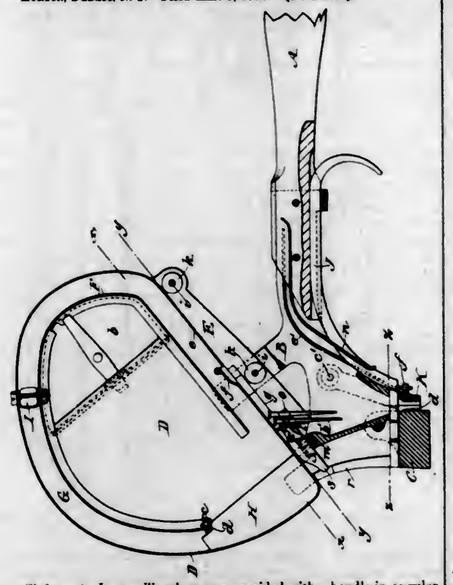
3. In combination, in a grain or malt mill, the hopper, the inflammable rope extending and secured within the same, the water-supply flooding-pipe, the normally-closed valve, and the weighted rod adapted to open said valve by its descent, the upper end of said rope being connected with said weighted rod, all constructed and adapted to operate substantially as and for the purpose described.

331,059. MANUFACTURE OF BETA-NAPHTHOL SULPHONIC ACID. MEINHARD HOFFMANN, Maisakur, near Frankfort-on-the-Main, assignor to Leopold Cassella & Co., Frankfort-on-the-Main, Germany. Filed Feb. 7, 1884. (No specimens.)

Claim.—1. The method of producing the gamma-disulphonic acid of beta-naphthol, which consists in first sulphonating the alpha-monosulphonic acid of beta-naphthol or beta-naphthol itself, and finally purifying the acid, substantially as described.

2. As a new article of manufacture, the herein-described gamma-disulphonic acid of beta-naphthol.

331,060. COMBINED HAMMER AND NAIL-FEEDING DEVICE. E. HORTON, Dundee, N. Y. Filed Mar. 3, 1885. (No model.)



Claim.—1. In a nailing-hammer provided with a handle in angular relation with its head, a raised nail box or receptacle, and an inclined guide or duct for conveying the nails from the lower portion of said receptacle to the forward portion of the hammer, the nail box or receptacle D, of curvilinear marginal configuration, provided on its interior with an outer mainly-curved way, G, open at its forward and lower ends for passage of the nails through it from the interior of the box, substantially as specified.

2. The divider H, in combination with the nail box or receptacle D of the hammer and the partition F, forming the inner wall of a curved outer way or passage, G, within the box, essentially as described.

3. The curved nail-box D of the hammer, having in its interior an outer curved way, G, for passage of the nails, provided with an adjustable regulator at or near its top for separating and restricting the passage of the nails through said way or channel, substantially as specified.

4. The curved way or nail-passage G of the box, made adjustable at its mouth end relatively to the front of the box, essentially as described.

5. The nail-holding box D of the hammer, having a slot, e, in its base, and provided with a raised stop, f, at foot of said slot, in combination with the slotted inclined nail guide or duct E, substantially as and for the purpose specified.

6. The slotted nail guide or duct E, having its one side adjustable relatively to the other, in combination with the elastic blocks k and screws i, essentially as described.

7. In a hand nailing-hammer in which the nails are passed from a raised box or receptacle by the working or using of the hammer, the combined nail cut-off and separating-hook S, provided with a hook end or piece, l', and a cut-off lip, l, substantially as and for the purposes specified.

8. The combined nail cut-off and separating hook S of the hammer, having its hook-piece l' made adjustable in or out, in combination with the inclined nail guide or duct E, having slots h and o, for operation in relation with each other essentially as specified.

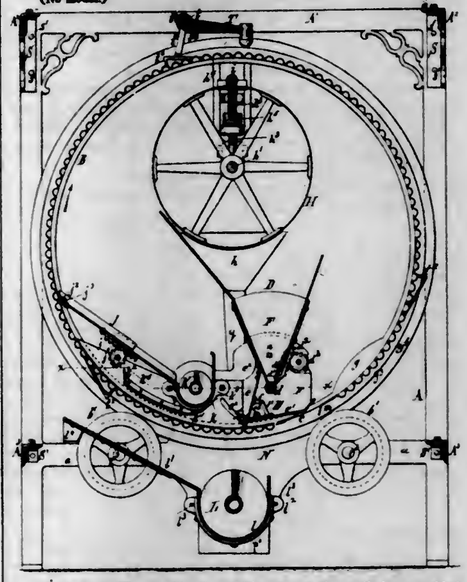
9. The combination of the trigger J of the hammer with the pivoted combined nail cut-off and separating-hook S and the inclined nail guide or duct E, substantially as described.

10. The pivoted pendent clamp K, controlled by a spring, as described, in combination with the hammer-head C, essentially as specified.

11. The combination of the spring-actuated trigger J with the spring-actuated pendent clamp K and the hammer-head C, the adjacent faces of the hammer-head and clamp being correspondingly grooved to receive a nail, substantially as described.

12. The combination, with the handle and head of the hammer, of the spring-actuated trigger J, the combined nail cut-off and separating-hook S, the inclined nail guide or duct E, and the spring-actuated clamp K, essentially as specified.

331,061. COCKLE-SEPARATOR. FREDERICK W. HOWELL, Buffalo, N. Y., assignor to Margaret T. Howell, same place. Filed Sept. 20, 1883. (No model.)



Claim.—1. The combination, with a separating-cylinder provided with cells or indentations in its inner surface and a discharge-opening in its side, of a feed-hopper arranged lengthwise in the cylinder, a bucket arranged in the cylinder below the feed-hopper and delivering the material directly upon the separating-surface of the cylinder at intervals, and an inclined catch-board, whereby the material elevated in the cells or indentations is collected, substantially as set forth.

2. The combination, with the cylinder B and feed-hopper D, of the bucket E, composed of the pivotal plates e e', and connecting-links f f', substantially as set forth.

3. The combination, with the stationary frame and a cylinder having cells or indentations formed in its inner surface, of end shields, k^2, secured to the stationary frame of the machine, substantially as set forth.

4. The combination, with a cylinder having cells or indentations formed in its inner surface, of a stationary plate, k', arranged over the ascending inner surface of the cylinder, whereby the grain is evenly distributed, substantially as set forth.

5. The combination, with a separating-cylinder, of a feed-hopper arranged lengthwise in the cylinder and a preliminary separating-screen arranged in said cylinder above said feed-hopper, substantially as set forth.

6. The combination, with a separating-cylinder having cells or indentations on its inner surface, of a rotating screen arranged in said cylinder and a longitudinal feed-hopper arranged in said cylinder underneath the rotating screen, substantially as set forth.

7. The combination, with the cylinder B, of a stationary frame having end plates N N, a feed-hopper, D, having end plates F F, secured to the plates N N, and shields k^3, secured to the plates N N, substantially as set forth.

8. The combination, with a rotating screen, of adjustable bearings in which the shaft of the screen is supported and a roller arranged in close proximity to the outer surface of the screen and supported in the adjustable bearings of the rotating screen, substantially as set forth.

9. The combination, with the cylinder B, provided with cams *g*, and stationary frame, of the feed-hopper D, bucket E, provided with rollers *g'*, and end plates k^2, having curved slots g^2, substantially as set forth.

10. The combination, with the cylinder B, of driving-rollers *b*, supported in fixed bearings and supporting-rollers *b'*, made lengthwise movable with reference to the cylinder, substantially as set forth.

11. The combination, with the cylinder B and stationary frame having plates N N, of the feed-hopper D, having end plates F, feed-roller *d*, and caps n' n^2, substantially as set forth.

12. The combination, with the cylinder B and stationary frame having plates N N, of the conveyer K, trough *k*, and caps *o o'*, substantially as set forth.

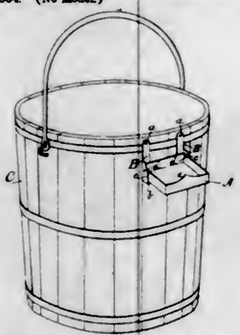
13. The combination, with the cylinder B and stationary frame having plates N N, of the conveyer L, trough *l*, and caps P P', substantially as set forth.

14. The combination, with the cylinder B, of the end frames, A' A', longitudinally connecting-pieces A^2, and brackets S, substantially as set forth.

15. The combination, with the cylinder B, of a knocker, T, and a depending actuating-arm, *t'*, provided, respectively, with interlocking portions, whereby the position of the actuating-arm with reference to the knocker can be changed, substantially as set forth.

16. The combination, with the cylinder B, of the supporting-roller *b*, reel H, feed-roller *d*, and conveyers K L, provided, respectively, with drive-wheels r^2, h', n^2, o^2, and p^2, and a single endless drive-chain, R, running around said drive-wheels, whereby all of said parts are driven by a single chain, substantially as set forth.

331,062. FOLDING SOAP-DISH. Elizabeth Hull, New York, N. Y. Filed Dec. 9, 1884. (No model.)



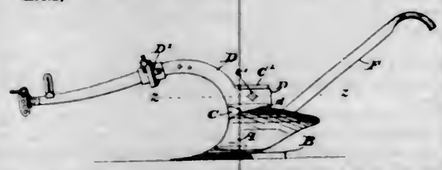
Claim.—1. The combination, with the bucket C, of the soap-dish A, hinged to the plates B, secured to the side of the bucket, substantially as described.

2. The soap-dish A, pivoted at two of its corners to two separate plates, B, substantially as described.

3. The plates B, formed with the side flanges, *c*, and lower horizontal flanges, *b*, in combination with the dish A, pivoted to and between the flanges *c*, substantially as described.

4. The dish A, formed with the inwardly-projecting lip *e*, and pivoted to the plates B, in combination with the bucket C, to which the plates B are attached, the lip *e* serving to hold the dish A in vertical position, substantially as described.

331,063. PLOW. Franklin B. Hunt, Richmond, Ind., assignor to the Richmond Sulky Plow Company, same place. Filed Mar. 13, 1885. (No model.)

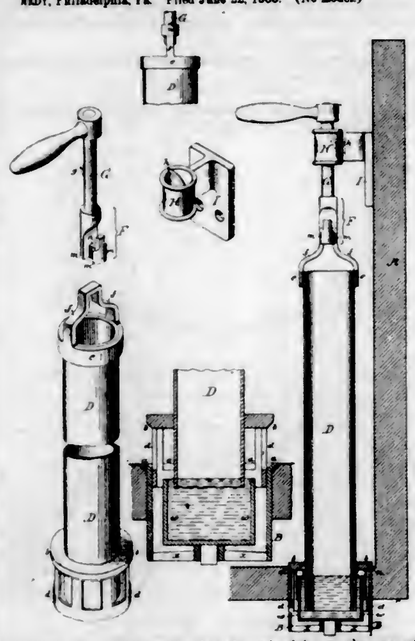


Claim.—1. In a plow, the combination, with the standard having socket *c*, open at one side and closed at top and bottom, of the beam D of width to fill the space between the top and bottom of said socket, and inserted therein, the slotted wedge of equal width also inserted in said socket, and the bolt passing through said standard, beam, and wedge, substantially as described.

2. The combination of the mold-board A, landside B, standard C, open-sided socket C', formed on the top of said standard, beam D, having a lip, *d*, on its lower corner, and having its rear end mounted in said socket, said lip engaging with its rear end, wedge E, having a longitudinal slot, *e*, said wedge being inserted between the adjacent faces of the beam and socket, and a bolt, *c'*, inserted through a hole in said socket and said beam and the slot in said wedge, and provided with a nut, c^2, whereby said several parts are secured in place, substantially as set forth.

3. In a plow, the hollow standard C, having the open-sided beam-socket *c'* and the open-sided handle-socket *c* and the integral brace *a*, and provided with seats to receive the mold-board, share, and landside, substantially as shown.

331,064. OVERFLOW FOR BATH-TUBS, SINKS, &c. Thomas Kennedy, Philadelphia, Pa. Filed June 22, 1885. (No model.)



Claim —1. The combination of a tub, sink, or other receptacle having an outlet-tube, B, with the overflow-pipe D, having a valve, *b*, and below the same a grating adapted to the tube B, said overflow-pipe being connected at the upper end to an operating-stem, G, guided in a sleeve or bearing, H, and having a connection therewith, forming a screw-thread or a section of a screw-thread, as set forth.

2. The combination of the overflow-pipe D, having a yoke at the upper end, with the operating-stem G, having a hook, F, adapted to said yoke, as set forth.

3. The combination of the overflow-pipe D, having a yoke, *f*, contracted at the upper end, with the operating-stem G, having a hook, F, with wings *m*, as set forth.

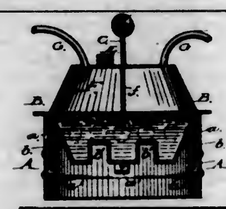
4. The combination of the overflow-pipe D, the operating-stem G, guided parallel with the axis of said pipe, and a vertically-slotted connection between said pipe and the stem, whereby a slight vertical play of the pipe independently of the stem is permitted without interfering with the lateral control of the pipe by the stem, as set forth.

5. The combination of the tub, sink, or other receptacle, the outlet-tube leading directly therefrom, the overflow-pipe having a valve closing the mouth of said tube, and a detachable sealing-cup disconnected from the overflow-pipe and supported in the outlet-tube below the mouth of the latter, whereby, when the overflow-pipe is removed, said sealing-cup is accessible from the tub or sink, and can removed from the outlet-tube, all substantially as specified.

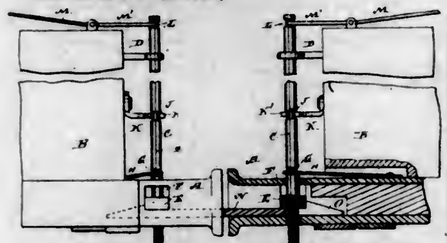
331,065. CANNING APPARATUS. James Kinney, Woodland, Cal. Filed Sept. 19, 1885. (No model.)

Claim.—In a canning apparatus, the boiler B, provided with the division-wall *f*, inclined sides *b*, and pipes G, entering the boiler upon each side of the division-wall, substantially as herein described.

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331,066. CAR-COUPLING. William H. Knight, Portland, Oreg. Filed June 15, 1885. (No model.)

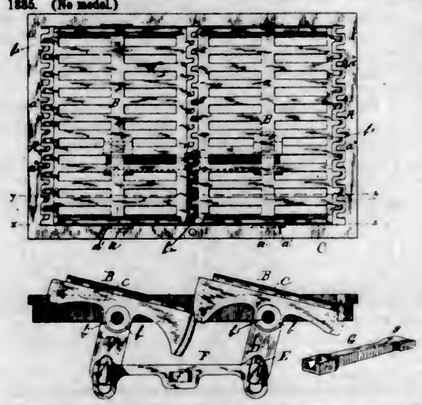


Claim.—1. In a car-coupling, the combination, with a draw-head, of a cross-bar in the same, a rod screwed in the cross-bar, and a spring secured on the draw-head, and having its free forked end in an annular groove in the rod, substantially as herein shown and described.

2. In a car-coupling, the combination, with a draw-head, of a cross-bar in the same, a rod screwed in the cross-bar and projecting from the top of the draw-head, a spring acting on the rod, and one or more levers pivoted on the car, and having forked ends which are in annular grooves in the rod, substantially as herein shown and described.

3. In a car-coupling, the combination, with a draw-head having slots in the sides, of a cross-bar having its ends passed into said slots, a rod projecting upward from the cross-bar, a spring acting on the rod, and one or more levers pivoted on the car, and having their forked ends passed into annular grooves in the rod, substantially as herein shown and described.

331,067. GRATE. John L. I. Knox, Allegheny, Pa. Filed Jan. 31, 1885. (No model.)



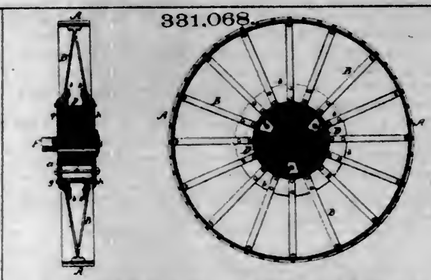
Claim.—1. The combination of the frame A, the grate-sections B, provided with pendants D, which have long-headed bolts E, and the bar F, having slots at each end for engaging the long-headed bolts in the pendants, substantially as shown and described.

2. The combination of a grate-frame and a pivoted grate-section having an open space between their ends, the grate-section being provided with beveled flanges extending upwardly from the sides thereof, as and for the purpose specified.

331,068. TRACTION-WHEEL. Henry B. Larkelber, Greencastle, Pa. Filed Apr. 13, 1885. (No model.)

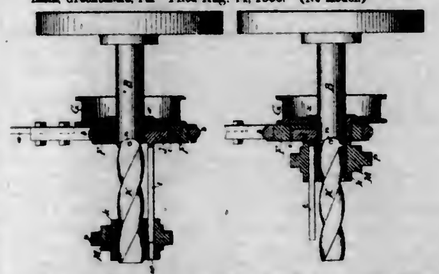
Claim.—1. The combination of the driving-wheel having a hub with internal ribs, *a*, the driving-shaft having a sleeve with projecting ribs *f*, and the elastic filling forming a cushion between the ribs *a* and *f*, between said ribs *a* and the sleeve, and between the ribs *f* and the hub, all substantially as set forth.

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2. The combination of the wheel having a hub with internal hollow ribs, *a*, a shaft, F, having a sleeve with ribs *f* and disk *g*, the elastic filling, the disk *h*, and the confining-bolts *i*, passing through the hollow ribs *a*, as set forth.

331,069. REVERSING-GEAR FOR ENGINES. Henry B. Larkelber, Greencastle, Pa. Filed Aug. 14, 1885. (No model.)

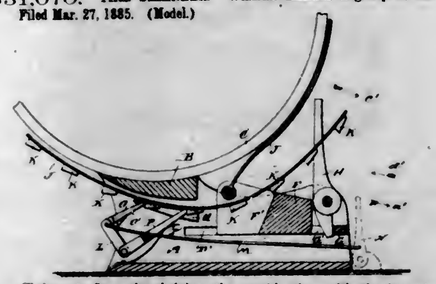


Claim.—1. The combination of the shaft B, the eccentric F, hung to a carrier on said shaft, and having a lug adapted to a slot in said carrier, and the eccentric J, hung to the shaft B, and adapted to a recess in the eccentric F, as specified.

2. The combination of the shaft B, having a threaded or twisted portion, K, the valve-operating eccentric F, hung to a carrier on said shaft, the eccentric J, hung to the shaft, adapted to a recess in the eccentric F, and having a projecting bar, *t*, and the longitudinally-adjustable sleeve M, having a nut adapted to said threaded portion of the shaft, and a recess, *w*, for the reception of the bar *t*, as specified.

3. The combination of the shaft B, the pulley G, secured thereto, the valve-operating eccentric F, hung to said pulley, and the eccentric J, hung to the shaft, and adapted to a recess in said eccentric F, as specified.

331,070. TIRE-SHRINKER. William Lehner, Logansport, Ind. Filed Mar. 27, 1885. (Model.)



Claim.—1. In a tire-shrinker, the combination, with the base A, of the band J, a pawl or dog for drawing the band taut around the tire, a sliding block connected with the band, and mechanism for shifting the block, substantially as herein shown and described.

2. In a tire-shrinker, the combination, with the base A, of the band J, having teeth K, of the dog or pawl for drawing the band taut, the dog or pawl for locking it in place, the sliding block connected with the band, and of a lever for shifting the block, substantially as herein shown and described.

3. In a tire-shrinker, the combination, with a base, of the toothed band J, the sliding block F, connected with the band, the lever L, the pawl O, pivoted to the said lever, the lever N, and the connecting-rod M, substantially as herein shown and described.

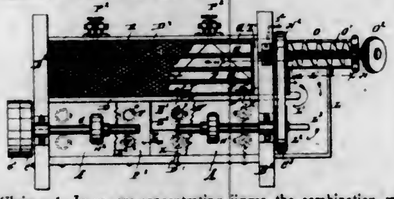
4. In a tire-shrinker, the combination, with the base A, of the toothed band J, the sliding block F, the pivoted lever L, the dog O, piv-

oted to the same, the dog P, the connecting-rod M, the lever N, and a lever for shifting the block, substantially as herein shown and described.

5. In a tire-shrinker, the combination, with the base A, having the guides Q, of the toothed band J, the sliding block F, a pawl or dog for drawing the band J taut, and of a lever for shifting the block, substantially as herein shown and described.

6. In a tire-shrinker, the combination, with the base A, of the toothed band J, the sliding block F, having the slotted lug G, the pivoted lever H, and a pawl or dog for drawing the band taut, substantially as herein shown and described.

331,071. ORE-CONCENTRATING JIGGER. JOHN S. LODER, Leadville, Colo. Filed Feb. 26, 1885. (No model.)



Claim.—1. In an ore-concentrating jigger, the combination, with the box A, divided into the sections D' D², of the plungers F' F², having ports F and valves G, and arranged in the section D', and the screen R in the section D², substantially as herein shown and described.

2. In an ore-concentrating jigger, the combination, with the box A, divided into the sections D' D² by the partition D, of the plungers F' F², having valves, the screen R in the section D², the valves J on the partition D, and the springs K, connected with the valves J, substantially as herein shown and described.

3. In an ore-concentrating jigger, the combination, with the box divided into sections D' D² by the partition D, of the partition E², dividing the section D' into the compartments E' E², the plungers F' F², having valves, the top E on the compartment E', the trough L, and the screen R in the compartment D², substantially as herein shown and described.

4. In an ore-concentrating jigger, the combination, with the box A, having communicating compartments, and the screen R, of the apron T, the gutter M, the conveyer O O', the trough L, and the semi-partition L², arranged in the said trough and forming therein the channels L' L², the trough L connecting with the upper edge of the gutter M, substantially as and for the purpose set forth.

5. An ore-concentrating jigger comprising the box A, the partitions D and E², the top E, the plungers F' F², having valves, the valves J on the partition D, the springs K, the trough L, the gutter M, the conveyer O O', the spout S, the apron T, and the screen R, substantially as herein shown and described.

331,072. SPARK-ARRESTER. JOHN W. MALONEY, Indianapolis, Ind. Filed Sept. 8, 1885. (No model.)



Claim.—1. The combination, with a spark-arrester secured in the smoke-box, of an internal double perforated pipe, one part of which is adapted to move upon the other, whereby said perforations may be kept unobstructed, substantially as set forth.

2. The combination, in a spark-arrester secured to the lower end of a smoke-stack, consisting of an internal perforated pipe having another perforated pipe mounted and adapted to move thereon, a surrounding pipe, an enlarged portion surrounding the upper ends of these portions, and provided with a top and bottom with an orifice leading therefrom, the space between said internal perforated pipes and the pipe surrounding them leading into this position below its top, substantially as set forth.

3. The combination, in a spark-arrester secured to the lower end of a smoke-stack, of the parts C' and C², said part C² being provided with a top having a central opening around which is a pipe, c', extending up toward the smoke-stack, a perforated pipe secured at its top around the lower edge of said opening in said top c, and a pipe surrounding said perforated pipe and extending up into said part C², substantially as set forth.

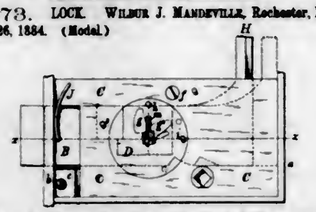
4. The combination, with the other parts of the spark-arrester, of the perforated pipe C³, provided in one side with a door, c^3, substantially as described, and for the purposes specified.

5. The combination, in a spark-arrester secured to the bottom of the smoke-stack, of a portion, C², having a top, c, provided with a central opening, and a bottom, c^2, having a central opening, pipes C³ C⁴, leading from below said bottom up into said portion, the perforated pipe C³, connected at its top to the top c of said portion C², and the perforated pipe C⁴, surrounding said pipe C³, and provided with an arm, c^7, extending out through the other parts, and means connected thereto for moving said pipe C⁴ upon said pipe C³, substantially as set forth.

6. The combination, with a spark-arresting device secured in the smoke-box to the bottom of the smoke-stack, of the receptacle D and a pipe leading from said device to said receptacle, said receptacle being provided with a semi-spherical door in its bottom, substantially as set forth.

7. In a spark-arresting apparatus, the combination, with the receptacle D for the sparks, of a semi-spherical-shaped door, d^2, arranged with its curved side fitting into the opening, substantially as set forth.

331,073. LOCK. WILBUR J. MANDEVILLE, Rochester, N. Y. Filed Dec. 26, 1884. (Model.)



Claim.—1. The combination, with the bolt B, provided with the recess N, of the revolving disk D, having cam g and means for turning the disk in either direction, whereby when turned in one direction it may move said bolt, and when turned in the other direction it may lock the same, substantially as described.

2. The combination, with a suitable lock-casing, of the sliding bolt B, provided with offset-arm H, knob-lever I, and the anti-friction rollers d and d', arranged to operate substantially as described.

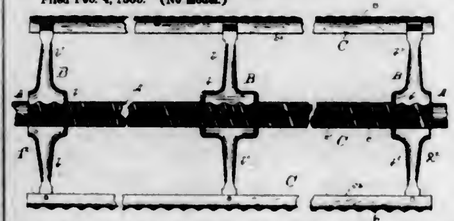
3. The combination, with a suitable lock-casing, of the sliding bolt B and the division-plate C, provided with an opening sustaining the disk D, having cam g, projecting into a recess in the bolt and provided on its outer side with suitable means for turning the disk, substantially as described.

4. The combination, with the sliding bolt B, division-plate C, rotating disk D, provided with cam g, pin h, and suitable tumblers, E, located on the side of the disk opposite the bolt, substantially as described.

5. The combination, with the sliding bolt B, division-plate C, rotating disk D, provided with cam g, and pins h i, of two or more tumblers located on the side of the disk opposite the bolt, and arranged to permit the turning of the key in opposite directions, substantially as and for the purposes specified.

6. The combination, with the sliding bolt B, of the division-plate C, disk D, provided with cam g, pin h, and slot m, the slotted tumblers E, and the slotted key-stud F, substantially as described.

331,074. GRAIN-SCOURER. MICHAEL MCMAHON, Bucyrus, Ohio. Filed Feb. 4, 1885. (No model.)



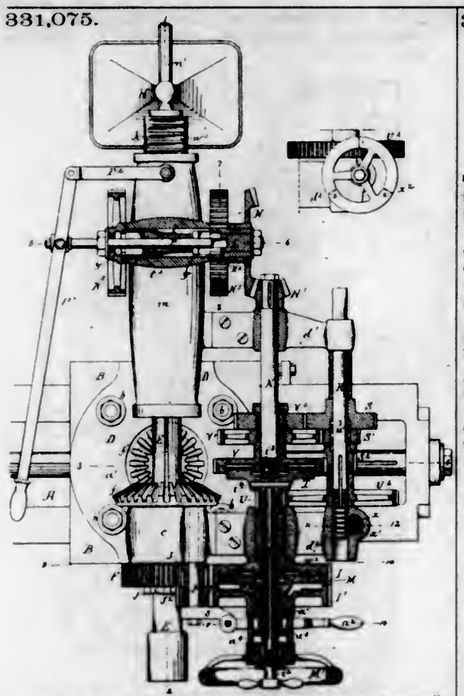
Claim.—1. In a grain-scourer, the shaft and spiders, in combination with the blades attached directly to the spiders, said blades having their rubbing-faces corrugated diagonally, and provided with flanges forming their front faces, and connected to the rubbing-faces by the bent parts c^3, substantially as described.

2. In a grain-scourer, the combination of the shaft and spiders with the sheet-metal blades, the latter being attached directly to the spiders, and having their rubbing-faces and flanges corrugated diagonally, and the bent parts c^3, substantially as described.

331,075. DRILLING-MACHINE. FREDERICK B. MILLER, Philadelphia, Pa. Filed June 5, 1884. (No model.)

Claim.—1. The combination of the drill-spindle E of a drilling-machine with the sleeve k, having an internal flange, t', forming an abutment for the spindle, and the oil-receptacle u, above the said flange, substantially as set forth.

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2. The drill-spindle E, the sleeve k, loose on but confined vertically to the said spindle, in combination with the weighted lever H, its segment p, and the metal ribbon n', connected at its upper end to the segment and at its lower end to the said loose sleeve, substantially as specified.

3. The combination of the drill-spindle E and its reduced portion e', the sleeve k and its internal flange, t', with the collar e^2, the collar g, fast on the spindle, and a washer or washers, t, substantially as described.

4. The combination of the drill-spindle, the sleeve k, with rack formed thereon, the pinion-shaft L, and gearing for driving the same, pinions N³ N⁴, wheels N² and N³, and clutching mechanism for throwing the said shaft L in and out of gear with the said pinion N² and wheel N², substantially as set forth.

5. The combination of the drill-spindle, sleeve k, with rack thereon, the hollow pinion-shaft L, pinions N² and N⁴, wheels N² and N³, the rod P, having pins y, adapted to recesses in the wheel N³, and pins y', adapted to recesses in the pinion N², and a device for operating the said rod P, substantially as specified.

6. The shaft K, geared directly or indirectly to mechanism for raising and lowering the drill-spindle, wheels I I', and gearing by which the said wheels are revolved in contrary directions, with a friction-disk M, and devices by which the said disk may be brought into frictional contact with either of the said wheels, substantially as set forth.

7. The combination of the drill-spindle, wheel F, shaft K, wheels I I', friction-disk M, and pinions J J², substantially as specified.

8. The combination, with mechanism for raising and lowering the drill-spindle, of a shaft, K, wheels V, V', and V², of different diameters, on said shaft, the driven shaft R, its wheels S, S', and S², and clutching and friction mechanism, all substantially as set forth.

9. The combination of the shaft R, its clutching-pins u', and wheels S, S', and S², with a shaft, x', geared to a rack on the shaft R, and the index-wheel x^2 on the said shaft x', substantially as specified.

10. The combination of the shaft x' and its index-wheel x^2, with a wheel, v, having notches to correspond with the graduation-marks on the said index-wheel, and the detent v', substantially as described.

11. The shaft K, its wheels V, V', and V², in combination with the clutching mechanism for throwing all the wheels in or out of gear with the said shaft, substantially as set forth.

12. The combination of the shaft K, its wheels V, V', and V², the friction-disk T, adjustable on but rotating with the shaft, and the screw-rod T', for operating the disk, substantially as specified.

331,076. BOX. GEORGE W. MILLER, Meriden, Conn. Filed July 27, 1885. (No model.)

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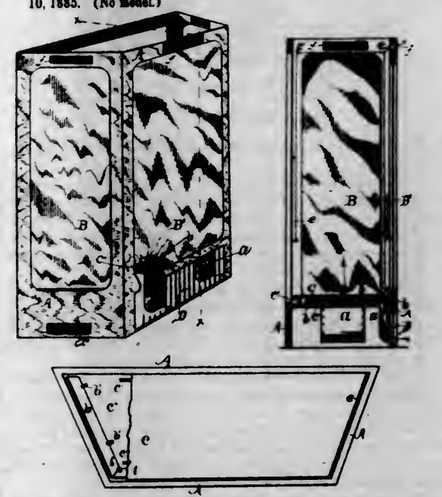
Claim.—1. In combination, the box-sections with openings in the adjacent walls, the hinges formed integral with the walls, and the spring fastened to the respective sections and passing through a slot or opening in the wall of each, all substantially as described.

2. In combination, the box-sections hinged or pivoted together, with openings through the adjacent walls, a cover or flap hinged between and common to each box-section, and the spring connected to each section, whereby the box is held both opened and closed, all substantially as described.

3. In combination, the box-sections a a', with the openings a^2, and hinged or pivoted together, the flap f, hinged between and common to both sections and made up of the frame f' and removable plate or panel f^2, and a spring whereby the parts are held closed, all substantially as described.

4. In combination, the box-sections a a', each with the opening a^2, and hinged or pivoted together, the flap or cover f common to both sections and having a roughened edge, and the spring whereby the sections are held in the closed position, all substantially as described.

331,077. SHOW-WINDOW VENTILATOR. MARTIN G. MOCK and WALTER S. MAYWOOD, Muncie, Ind. Filed June 21, 1883. Renewed Oct. 10, 1885. (No model.)



Claim.—The hinged lids b and the staples i, which connect them, in order that all of said lids may be raised and lowered together, in combination with the cord e, attached to one of said lids, the bottom c, false bottom c^2, and show-case having inlet-flues a at the bottom and outlet-flues f at the top, substantially as set forth.

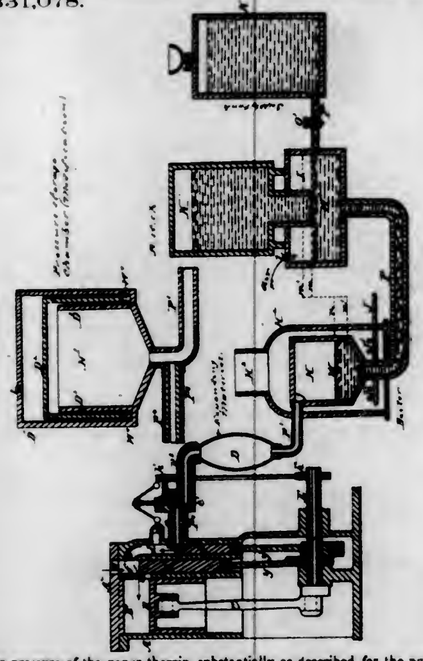
331,078. EXPLOSIVE-VAPOR ENGINE. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Oct. 23, 1884. (No model.)

Claim.—1. The combination, with an explosive-vapor engine, of a boiler for evaporating a volatile oil for operating the engine, a vapor-pressure-storage chamber, the vapor-supply pipes arranged to enter a hot portion of the engine and to drain into the boiler, and a supply-reservoir automatically supplying the boiler, according to the pressure of the vapor therein.

2. The combination, with an explosive-vapor engine, an independent boiler for evaporating a volatile oil for operating the engine, of a pressure-storage chamber and a supply-reservoir, the vapor-supply pipe being arranged to drain into the boiler, and the oil-supply pipes arranged to maintain an automatic regulated supply to said boiler, and a regulated vapor-supply to said engine, substantially as herein set forth.

3. The combination, with an explosive-vapor engine, of an independent boiler for evaporating a volatile oil for operating the engine, an automatic movable pressure-storage chamber for the vapor, and a supply-reservoir for the oil, the communication of said reservoir with the boiler being such as to supply the latter by gravity controlled solely by

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the pressure of the vapor therein, substantially as described, for the purpose specified.

4. The combination, with an explosive-vapor engine and an independent oil-evaporating boiler for operating the engine, of a pressure-storage chamber acting by a positive movement of itself, a supply-reservoir for the oil in perpetual communication with said vaporizing-boiler, and a gas-burner supply-pipe, all constructed and arranged for co-operation, substantially as described.

5. The combination, with an explosive-vapor engine, of an oil-evaporating boiler for operating the same, containing (within a liquid seal) a pressure-storage chamber for the vapor movable within said boiler, whereby to displace by gravity the vapor under pressure to the engine, substantially as described, for the purpose specified.

6. The combination, with an explosive-vapor engine, an independent boiler for evaporating a volatile oil for operating the engine, and a movable pressure-storage chamber for the vapor seated within a liquid seal within said boiler, of a burner-pipe and supply-controlling cock for said pipe controlled in its regulated position by connections with said movable pressure-storage chamber, substantially as described, for the purpose specified.

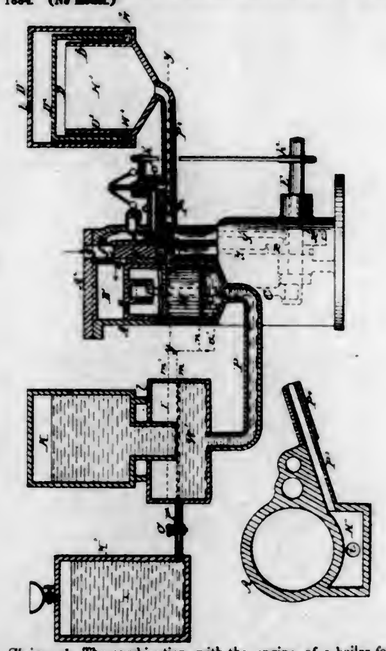
7. In combination, in an explosive-vapor engine, the evaporating-boiler H, the movable pressure-storage chamber for the vapor, and a supply-reservoir for the oil, both having free communication with said boiler, the vapor-supplying pipes being arranged to drain into the boiler, and the oil-supply pipes arranged to maintain, by gravity controlled solely by the pressure of the vapor in said boiler, an automatically-regulated supply to said boiler and an automatically-acting regulated vapor-supply to the engine, substantially as herein set forth.

8. The combination, with an explosive-vapor engine, an independent boiler for evaporating a volatile oil for operating the engine, and a pressure-storage chamber connecting with both contained within said boiler, of a gas-burner pipe, J, having a controlling-cock, *k*, and means for connecting it with the pressure-storage chamber, consisting of the connecting-rods k^2 and k^4, the latter having a fixed connection with the storage-chamber, and the collars c' c^3, for operating the cock-connecting rod, substantially as herein set forth.

9. The combination, with a boiler for evaporating liquid fuel having a suitable source of fuel-supply, of a pressure-storage chamber for the vapor, connected with the vapor-space of said boiler, and an explosive engine receiving its charge of vapor direct from said boiler, for the purpose specified.

10. The combination, with an explosive engine, of a boiler independent thereof, a pressure-storage chamber, and a supply-reservoir communicating with the bottom of said independent boiler, whereby the pressure of the vapor in the boiler will act to regulate the quantity of the oil exposed to its evaporating-surfaces, substantially as herein set forth.

331,079. EXPLOSIVE-VAPOR ENGINE. Lewis H. Nash, Brooklyn, assignor to the National Motor Company, New York, N. Y. Filed Oct. 23, 1884. (No model.)



Claim.—1. The combination, with the engine, of a boiler for containing a volatile oil formed upon and heated by the waste heat of the engine, and a pressure-storage chamber for the working-vapor produced within said boiler, having free communication with the boiler and engine-valves, substantially as described, for the purpose specified.

2. The combination, with the engine, of a boiler formed upon and heated by the waste heat thereof, a pressure-storage chamber for the working-vapor produced within said boiler, and a reservoir for supplying said boiler with volatile oil, the reservoir and the boiler being connected, so that the pressure of the vapor in the latter will regulate the quantity of the oil therein, and thereby regulate the quantity of oil evaporated.

3. The combination, with the cylinder of an explosive engine, of the boiler H, cast on the side thereof and heated by its waste heat, having the inlet-opening *i*, for the supply of oil at the bottom, and the outlet-opening *j*, for the vapor at the top, a pressure-storage chamber, and pipes connecting the latter with the engine-valves, substantially as described, for the purpose specified.

4. The combination, with the cylinder of an explosive engine, of the boiler H, cast on the side thereof and heated by its waste heat, a pressure-storage chamber connecting therewith and with the engine-valves, and a supply-reservoir arranged to automatically supply said boiler with a limited quantity of oil, substantially as described, and for the purpose specified.

5. The combination, with the cylinder of an explosive engine, of a boiler cast on the side thereof and heated by its waste heat, a pressure-storage chamber connecting with said boiler and with the engine-valves, and a supply-reservoir having communication with the bottom of said boiler, whereby the pressure of the vapor in the boiler will act to regulate the quantity of oil exposed to its evaporating-surfaces, substantially as herein set forth.

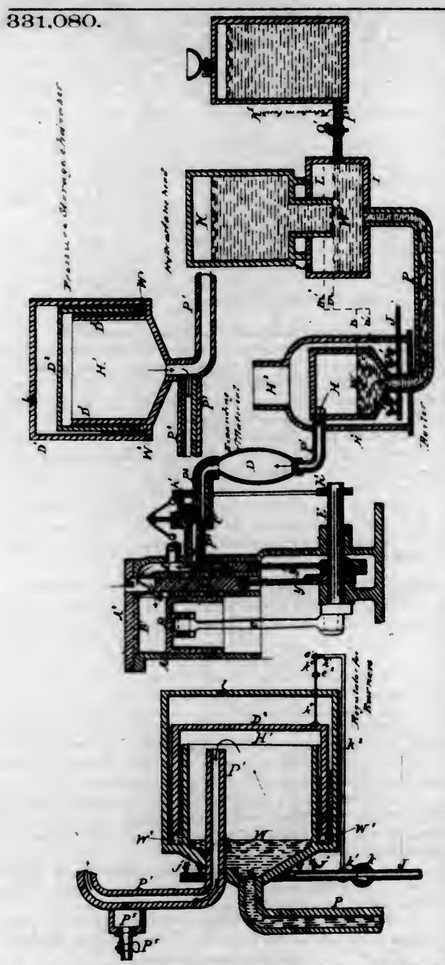
331,080. METHOD OF OPERATING GAS-ENGINES. Lewis H. Nash, Brooklyn, assignor to the National Motor Company, New York, N. Y. Filed Feb. 24, 1885. (No model.)

Claim.—1. The method, substantially hereinbefore described, of supplying vapor for operating an explosive engine, which consists in supplying a boiler or evaporator with a volatile oil solely by gravity from an uninterrupted communicating reservoir, evaporating it within the boiler, and controlling the supply of oil to the boiler by the pressure of the vapor generated therein, acting to drive the oil therefrom back into the supply-reservoir under an excess of pressure, and thereby diminish the supply of oil and the production of vapor.

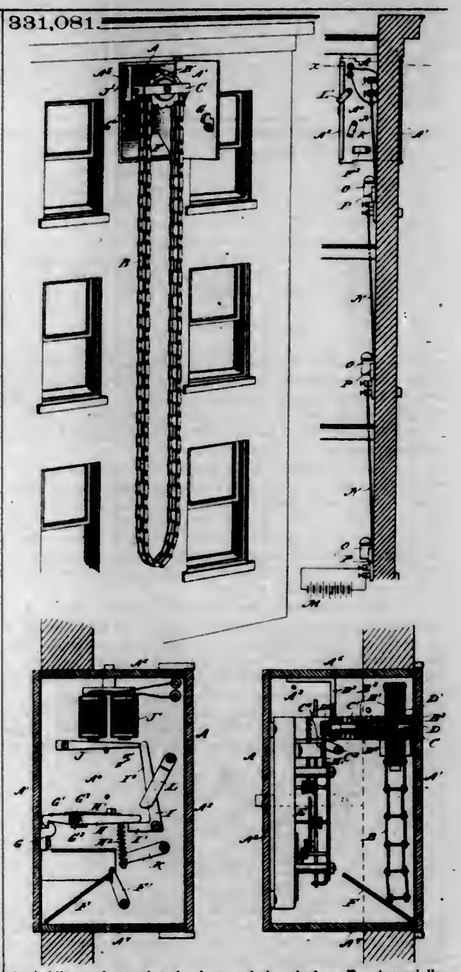
2. The method, substantially herein described, of supplying vapor to an explosive engine, which consists in supplying a boiler uninterruptedly with volatile oil evaporating therein, under a heat controlled by the pressure of the vapor, and regulating the production of the vapor by automatically displacing the oil from the boiler to reduce its evaporating capacity or surface in the way set forth.

3. The method herein described of operating an explosive engine with a volatile liquid, which consists in supplying a boiler with a volatile oil, evaporating it therein, controlling the quantity of oil evaporated by the pressure of the vapor generated within said boiler, passing the vapor so produced to the engine, and completing the charge for the engine by mixing it with a sufficient quantity of air.

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331,081. FIRE-ESCAPE. Horace F. Neuhever, Macungie, Pa. Filed Sept. 18, 1885. (No model.)

Claim.—1. In a fire-escape, the combination, with a casing having a hinged door, and means for locking and releasing the door, of a pulley journaled in the casing, an endless folding ladder passing over said pulley, and an inclined support for the ladder adjacent to the door, substantially as herein shown and described.

2. In a fire-escape, the combination, with the case A and its door A′, provided with a catch, of an electro-magnet in said case, a latch pivoted in the case, and a lever engaging the said latch and the armature of the electro-magnet, substantially as shown and described.

3. In a fire-escape, the combination, with the case A, provided with a door, A′, held closed by a spring-actuated latch, and which latch is held locked by a lever engaging with the armature of an electro-magnet, of a spring-pressed reel mounted loosely on a shaft in said case to bear against the door A′, substantially as shown and described.

4. In a fire-escape, the endless folding ladder B, the pulley. B′, the sliding frame C, the sleeve B^2, the pin B^3, the shaft D, having a slot, D′, and the spring D^4, in combination with the casing A, the door A′, means for holding and releasing the door, and the platform F, substantially as shown and described.

5. In a fire-escape, the endless folding ladder B, the pulley B′, the sleeve B^2, the pin B^3, the sliding frame C, having a notch, C^2, the lever C^3, the arm C^4, the shaft D, having the recess D′, and the spring D^4, in combination with the casing A, the door A′, means for holding and releasing the door, the platform F, the lever F′, and the arm F^2 substantially as shown and described.

6. In a fire-escape, the casing A, the door A′, and means for holding and releasing the door, the endless folding ladder B, the pulley B′, the sleeve B^2, the pin B^3, the sliding frame C, the shaft D, the spring D^4, and the pinion D^3, in combination with the gear-wheel E′ of the clock work E, having an escapement, substantially as shown and described.

7. In a fire-escape, the casing A, the ladder B, the door A′, and the catch G, in combination with the latch G′, the lever H, the springs H′ and H^2, the lever K, the arm K′, the L-shaped lever I, the lever L, the arm L′, and the lever J, substantially as shown and described.

8. In a fire-escape, the casing A, the ladder B, the door A′, and the catch G, in combination with the latch G′, the lever H, the springs H′ and H^2, the lever I, the armature-lever J, and the electro-magnets J′, substantially as shown and described.

9. In a fire-escape, the casing A, the ladder B, the door A′, the catch G, the latch G′, the lever H, the springs H′ and H^2, the lever I, and the armature-lever J, in combination with the electro-magnet J′, the battery M, the wires N, the push-buttons P, and the alarm-bells O, substantially as shown and described.

10. In a fire-escape, the casing A, the door A′, the catch G, the ladder B, the pulley B′, the sleeve B^2, the pin B^3, the shaft D, having the recess D′, the pinion D^3, the gear-wheel E′ of the clock-work

E, having an escapement, the sliding frame C, the spring D^4, the platform F, the lever F', and the arm F^2, in combination with the latch G', the lever H, the springs H' and H^2, the lever K, the arm K', the lever I, the armature-lever J, the electro-magnets J', the battery M, the wires N, the alarm-bells O, and the push-buttons P, substantially as shown and described.

331,082. POTATO-DIGGER. John Pfefferle, Yonkers, N. Y. Filed Apr. 7, 1885. (No model.)

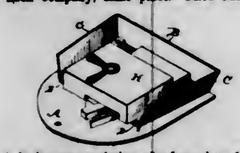


Claim.—1. The combination of the cross-head having grooves on its rear side, the back sections provided with grooves corresponding to those in the cross-head, so that when bolted to the cross-head sockets are formed by the grooves, and the fingers C C, provided with heads C', and placed in the sockets formed by the grooved cross-head and back sections, whereby the fingers are rigidly held.

2. The combination of the cross-head having grooves on its rear side, the back sections provided with grooves corresponding to those in the cross-head, so that when bolted to the cross-head sockets are formed by the grooves, the fingers C C, provided with the heads C' and placed in the sockets formed by the grooved cross-head and back sections, whereby the fingers are rigidly held, and the share connected to the front of the cross-head independent of the back sections, so that the fingers can be removed without disturbing the share.

3. The combination of the cross-head B', having grooves in and transverse tongues projecting from its rear side, the back sections, B^2, correspondingly grooved, and also having transverse grooves to receive the tongues upon the cross-head, the fingers C C, having heads C', the share connected to the cross-head independent of the back sections, and the beam having the projection A^4, substantially as described.

331,083. LOCK-CASE. Henry R. Flower, Terryville, Conn., assignor to the Eagle Lock Company, same place. Filed June 18, 1885. (No model.)

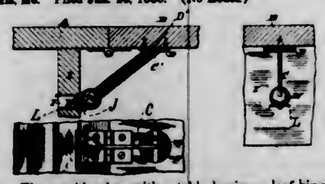


Claim.—1. A lock-case consisting of a face-plate formed with a top selvage at right angles thereto, and oblique holding-wings made separate from said plate and secured thereto a short distance inward from its vertical side edges, substantially as set forth.

2. A lock-case consisting of a face-plate formed with a top selvage at right angles thereto, and holding-wings formed of separate and independent plates having flanges riveted to the face-plate a short distance inward from the vertical side edges of the plate, said wings being arranged obliquely to the plane of the flanges and face-plate, substantially as set forth.

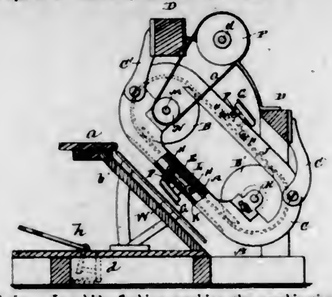
3. A lock-case consisting of the face-plate formed with the top selvage at right angles thereto, and separate and independent holding-wings secured to the said face-plate a short distance from the edges thereof, the said wings flaring outwardly from the face-plate and converging at their lower ends, substantially as set forth.

331,084. TABLE-LEAF SUPPORT. Alois Pohl and August Clark, St. Louis, Mo. Filed Jan. 26, 1885. (No model.)



Claim.—The combination, with a table having a leaf hinged thereto, a slotted piece, and a notched arm or bar hinged to said leaf, and by which the latter is supported on said piece, of the weighted sliding block N, supported on said arm or bar, and having a tongue, N', occupying the space in said slot above said arm for locking the latter to its seat, substantially as set forth.

331,085. HIDE-FLESHING MACHINE. Archibald W. Reid, Ballston Spa, N. Y. Filed July 16, 1885. (No model.)



Claim.—In a hide-fleshing machine, the combination, with two pulleys, of an endless belt passed over them, plates on the belt, rollers on the side edges of the plates, knives on the plates, the side plates, C, the tracks J on the inner edges of the plates C, on the top edges of which tracks J the rollers of the upwardly-moving plates run, and the tracks K and L on the inner sides of the side plates, C, at the lower edge, between which tracks K and L the rollers of the downwardly-projecting plates run, whereby the edges of the knives are held the same distance from the platform on which the hide has passed during the entire downward movement of the knives, and whereby the plates carrying the knives are supported during their upward movement and the strain is removed from the belt, substantially as herein shown and described.

331,086. FINGER-RING. William H. Richmond, Providence, R. I. Filed May 13, 1885. (No model.)



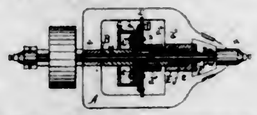
Claim.—1. An improved ring consisting of the ring proper, provided with a raised center suitably recessed, and an inserted section conforming to and fitting into said recess and forming the upper circular portion of the ring, as described.

2. An improved ring formed with a cavity beneath its center, suitably recessed and provided with a backing-piece to conceal its cavity, and also with a tube connecting the center with the backing-piece, substantially as described.

3. A ring having a perforated center or box integral with the shank, and suitably recessed, and a perforated backing adapted to fit said recess, and of a tube connecting said perforations, as described.

4. The ring composed of the center A, having the cavity, the extensions *a*, the backing-piece *b*, the tube *c*, and a setting, *d*, as set forth.

331,087. GRINDING-MILL. George W. Rundlett, Freeport, Ill. Filed Jan. 23, 1885. (No model.)



Claim.—1. In a grinding-mill, the combination of the non-rotating head with a rearward-extending hub having a shoulder thereon and a threaded end attached centrally thereto, substantially as and for the purpose set forth.

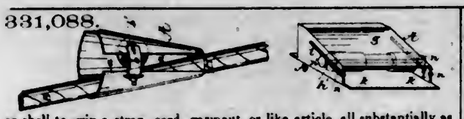
2. The combination of the non-rotating head having a rearward-extending hub having a shoulder thereon and a threaded end, a stationary box upon the main frame, having an inwardly-turned annular flange with a spring surrounding said hub and inclosed within said box, and a nut upon said hub which bears against said box, substantially as and for the purpose set forth.

3. In a grinding-mill, the non-rotating longitudinally-moving head having a rearward-extending hub with a threaded end, in combination with a nut having a series of peripheral apertures and a spring attached to the main frame having a tapering nipple near its upper end, substantially as and for the purpose set forth.

331,088. GRIPPING-CLAMP FOR LINES OR REINS. George H Sackett, Brooklyn, N. Y. Filed Sept. 29, 1884. (No model.)

Claim.—1. In a suspended clasp or similar device, the combination of a tapering tube or shell, constructed substantially as described, and a ball or roller adapted to be actuated by the tapering portion of said tube

331,088.

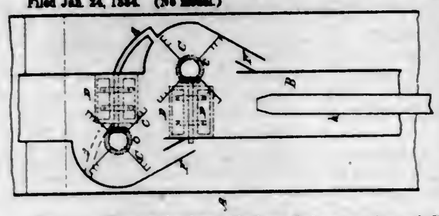


or shell to grip a strap, cord, garment, or like article, all substantially as herein set forth.

2. In a suspended clasp or similar device, the combination of a tapering tube constructed substantially as described, and a ball adapted to be inserted in the larger end of the tube and adapted to hold a strap cord, or garment, substantially as set forth.

3. The combination of a shell, A, having a bearing-surface against which the article to be gripped may be pressed, a gripping-roller, B', an inclined plane for causing said roller to grip the article when the same is moved in one direction, and to release the article when the same is moved in the opposite direction, and means for retaining the roller out of grip upon the article during the adjustment of the latter, all substantially as and for the purpose herein set forth.

331,089. SPARK-ARRESTER. George Saltsman, Bloomington, Ill. Filed Jan. 24, 1884. (No model.)



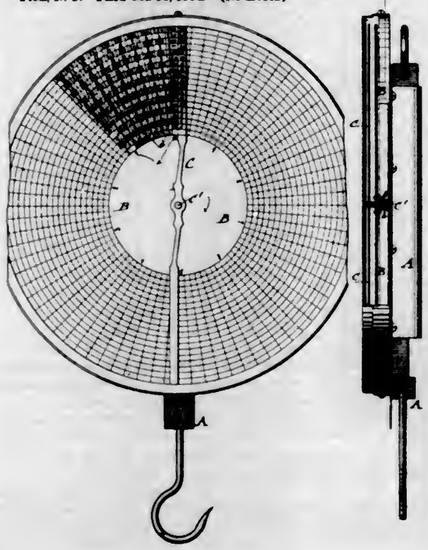
Claim.—1. The combination, with the cylinder or smoke-stack B, of the spark-arresting fans C C, arranged one above the other and projecting into the stack, so as to slightly overlap each other, and operated by the upward or rising products of combustion, heated air, and steam through said stack B, substantially as specified.

2. The combination, with the cylinder or smoke-stack B and fans C C, arranged therein, as shown, and operated by the upward or rising products of combustion, heated air and steam through said stack, of the fans D D, connected to and operated by the fans C C, and the conduits F F, and tubes G G, substantially as and for the purpose herein shown and described.

3. The combination, with the cylinder or smoke-stack B, of the fans C C and their chambers provided with the tube or tubes *d*, and the fan D, all arranged to operate substantially as herein shown and described.

4. The combination, with the cylinder or smoke-stack B, of the fans C C and their chambers provided with the tubes *d d*, the conduits F F, fans D D, and tubes G G, all arranged to operate substantially in the manner as and for the purpose herein shown and described.

331,090. WEIGHING AND PRICE SCALE. Emil Sauermilch, New York, N. Y. Filed Oct. 11, 1884. (No model.)

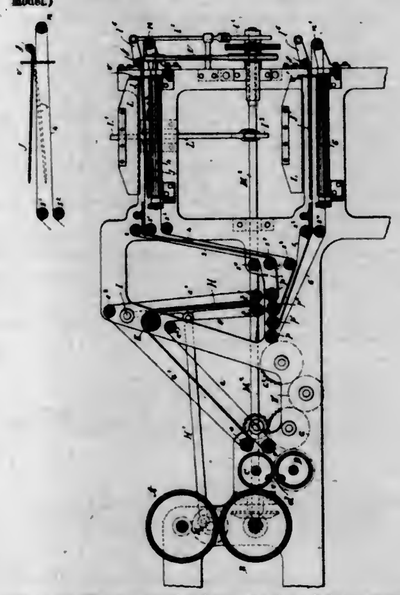


Claim.—1. A calculating-disk for spring-balances having circles subdivided so as to indicate the weight of the article, and a series of radial columns divided by concentric circles into spaces in which are alternately placed the prices of the weight calculated to different rates per pound up to the full scope of one revolution on said disk, and similar prices for the weights indicated by the second revolution, substantially as described.

2. A price-scale comprising a spring-balance, a calculating-disk rotated thereby, said disk having circles subdivided so as to indicate the weight of the article, and a series of radial columns divided by concentric circles into spaces in which are alternately placed the prices of the weight calculated to different rates per pound up to the full scope of one revolution on said disk, and similar prices for the weights indicated by the second revolution, and a fixed index the face of which is subdivided corresponding to the subdivisions of the disk, and marked with different prices per pound for such subdivisions, the same price-marks being opposite the corresponding subdivisions of the radial columns, substantially as described.

3. A price-scale comprising a spring-balance, a calculating-disk rotated thereby, said disk having circles subdivided so as to indicate the weight of the article, and a series of radial columns divided by concentric circles into spaces in which are alternately placed the prices of the weight calculated to different rates per pound up to the full scope of one revolution on said disk, and similar prices for the weights indicated by the second revolution, a fixed index the face of which is subdivided corresponding to the subdivisions of the disk and marked with different prices per pound for such subdivisions, the same price-marks being opposite the corresponding subdivisions of the radial columns, and an indicator on the scale-beam for designating the proper series of price-circles, substantially as described.

331,091. MECHANISM FOR SUPERIMPOSING AND FOLDING SHEETS. Walter Scott, Plainfield, N. J. Filed Mar. 3, 1885. (No model.)



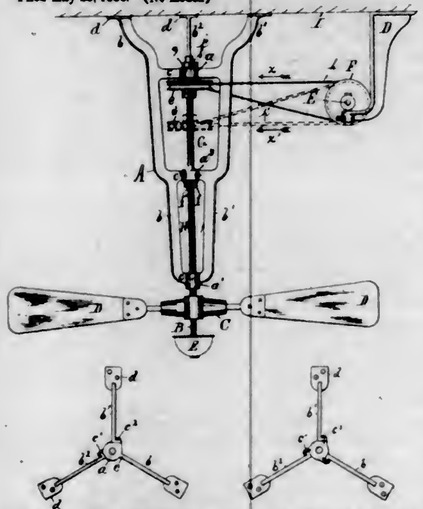
Claim.—1. The combination, in a press for printing on a web of paper, of the printing and impression cylinders, the cutting-cylinders for perforating the paper and partially separating one sheet from another, the belts *e e'*, and the rollers having an accelerated movement for separating one sheet from the next, the rollers p^2 p^3, and the belts or tapes for conveying away the separated sheets, and means, substantially as specified, for directing the sheets to the conveying-belts, the fingers J, the creaser L, and folding-rollers K, substantially as set forth.

2. The combination, with the creaser L, the rollers K, and belts for conveying the sheets, of the fingers J, between and parallel to the belts and the rock-shaft, and mechanism, substantially as described, for moving said rock-shaft and fingers, whereby the first sheets are conveyed by the tapes along over the fingers and by said fingers are raised off the tapes, and the second sheet is carried along upon the tapes beneath the fingers and the first sheet, substantially as specified.

3. The combination, in a sheet delivery and folding mechanism, of two pairs of rollers, a creasing-blade for each pair of rollers, cutting-cyl-

inders to act on the web of paper, accelerating and conveying belts to separate the sheets and deliver two sheets in succession beneath one creaser and the next two sheets in succession beneath the other creaser, and fingers to lift the respective sheets so that the second sheet may run in beneath the first, substantially as specified.

331,092. SUSPENDED FAN. James M. Seymour, Newark, N. J. Filed May 23, 1885. (No model.)

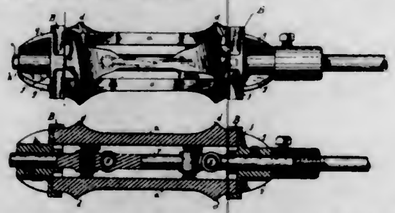


Claim.—1. The combiuntion, with the vertical spindle B and the fan suspended thereby, of the hanger provided with vertical bearings *a a'*, and having three legs, *b b' b²*, one or more of which are formed separately, and secured to both the bearings *a a'*, substantially as herein shown and described.

2. The combination, with the vertical spindle B and the fan suspended thereby, of the hanger provided with vertical bearings *a a'*, the hanger having one or more legs cast integral with the bearings, and the remainder of the legs being cast separate from the bearings and secured thereto, substantially as and for the purpose set forth.

3. The combination, with a rotary fan, D, and a vertical spindle, B, to operate the same, of the hanger constructed with three legs united at the vertical bearings *a a'* and at an intermediate point, *a²*, substantially as and for the purpose set forth.

331,093. BOILER-TUBE SCRAPER. Axel B. Smith, Lowell, Mass. Filed Apr. 15, 1885. (No model.)

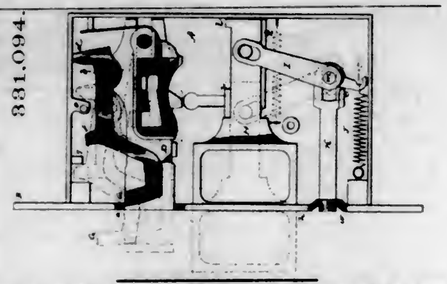


Claim.—In a boiler-tube scraper, the combination of the pair of radially-grooved heads with pairs of scraping-sections supported by the said heads, a central spindle provided with apertures at right angles to its axis, and spiral springs supported in the said apertures, each of the said springs acting upon a pair of the said scraping-sections to force them in opposite directions, substantially as described, and for the purposes specified.

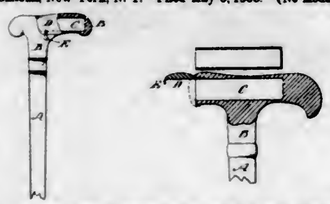
331,094. SLIDING-DOOR LOCK. William E. Sparks, New Haven, Conn., assignor to Sargent & Co., same place. Filed Aug. 17, 1885. (Model.)

Claim.—The combination, in a sliding-door lock, of the principal bolt D, adapted to be moved in the usual manner, its nose recessed on one side in rear of its face, and the auxiliary bolt F, pivoted to the principal bolt D, and adapted to move longitudinally with it, and constructed with the hook U, adapted to set into the recess in the principal bolt, and with shoulders *d f*, adapted to strike against stops in the case, substantially as and for the purpose described.

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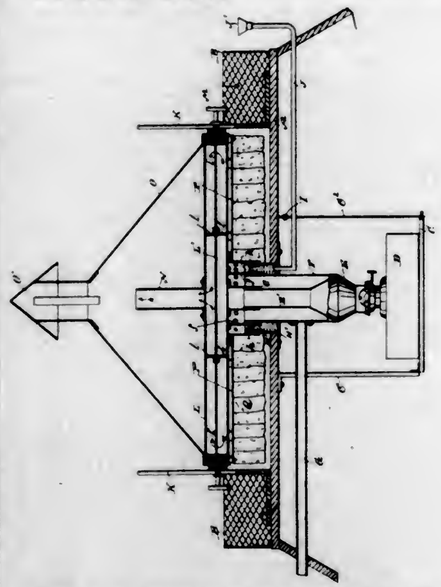
331,095. BOX-HANDLE FOR CANES OR UMBRELLAS. Louis Steinberger, New York, N. Y. Filed May 8, 1885. (No model.)



Claim.—1. As a new and improved article of manufacture, a recessed handle permanently secured at one end to a cane, umbrella, or other article constructed substantially as herein described, in combination with an interior box, as and for the purpose set forth.

2. As a new and improved article of manufacture, a recessed handle for a cane, umbrella, or other article constructed in two parts and hinged or otherwise united to form a handle, substantially as and for the purpose herein set forth.

331,096. CHICKEN-BROODER. Maurice H. Strong, Cincinnati, Ohio. Filed July 29, 1884. (No model.)



Claim.—1. In a chicken-brooder, the combination, with the floor, of standards on the same, and a heating-box held adjustably between the standards, substantially as herein shown and described.

2. In a chicken-brooder, the combination, with the floor, of slotted or forked standards on the same, a heating-box between the standards, and screws passing through the standards into the sides or ends of the heating-box, substantially as herein shown and described.

3. In a chicken-brooder, the combination, with the floor, of standards on the same, a vertically-adjustable heating-box between the standards, and means for locking the heating-box on the standards at the desired elevation, substantially as herein shown and described.

4. In a chicken-brooder, the combination, with a floor, of a vertically-adjustable heating-box held above the same, and of a peaked top on the said box, substantially as herein shown and described.

5. In a chicken-brooder, the combination, with the box L, having a horizontal partition, L', of the flue N, and an inlet-flue for hot air, all arranged and constructed substantially as herein shown and described.

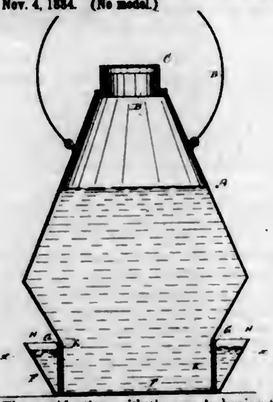
6. In a chicken-brooder, the combination, with a heating-box, L, of the downwardly-projecting necks *e* and *f*, the lamp D, the chimney E, having a flue, E', the cylinder F, surrounding the flue, the upper end of the flue E' and of the cylinder F passing into the necks *e* and *f*, respectively, substantially as herein shown and described.

7. In a chicken-brooder, the combination, with the box L, and the downwardly-projecting necks *e f k*, of the lamp D, the chimney E, having a flue, E', the cylinder F, surrounding the flue, and the annular water-chamber H, formed around the cylinder F, substantially as herein shown and described.

8. In a chicken-brooder, the combination, with the heating-box, of a lamp, a flue for conducting the hot air from the lamp into the box, a cylinder surrounding the flue and forming an air-chamber, a pipe for conducting air into the air-chamber, a water-cup surrounding the air-chamber, and a pipe for conducting water into the said water-cup, substantially as herein shown and described.

9. In a chicken-brooder, the combination, with the platform A and the heating device, of the heating-chamber L, above the platform, the horizontal partition L', having end openings, *l'*, and the vertical upper and lower partitions, *l l*, of less width than the heating-chamber, whereby the hot air will be evenly distributed across the entire surface of the heating-chamber, substantially as set forth.

331,097. POULTRY WATER-CAN. Maurice H. Strong, Cincinnati, Ohio. Filed Nov. 4, 1884. (No model.)



Claim.—1. The combination, with the can A, having the neck E, of the cup F, having the flange G, the neck E and flange G having apertures which can be adjusted to coincide, substantially as herein shown and described.

2. The combination, with the can A, having the neck E, provided with apertures L and pins K, of the cup F, having the upwardly-projecting flange G, provided with L-shaped slots J and apertures L, substantially as herein shown and described.

331,098. NECKTIE-FASTENER. Octave J. Theriault, Rutland, Vt. Filed Apr. 17, 1885. (No model.)



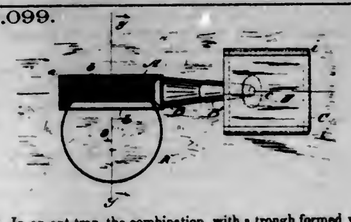
Claim.—1. A necktie-fastener consisting of the body portion A, adapted to be connected to the collar-button, and the hook portion B, pivoted to said body portion, whereby the said portion B may be swung up or down, so as to engage with the fabric of the tie or be disengaged therefrom, substantially as described.

2. A necktie-fastener consisting of the spring-arms *a b*, the part *e*, depending at right angles to the said arms, and the hook pivoted to the said part *e*, substantially as described.

331,099. ANT-TRAP. William H. Thompson, Luling, Tex. Filed Sept. 1, 1885. (No model.)

Claim.—1. In an ant-trap, the combination, with a trough, of a box connected thereto by a tube terminating in a disk, *c*, substantially as described.

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2. In an ant-trap, the combination, with a trough formed with a top flanged at *b*, of the connecting-tubes B B', box C, and fence K, substantially as described

331,100. SPRING-SEAT FOR VEHICLES. Charles Van Horn, Bethlehem, Pa. Filed Mar. 31, 1885. (No model.)



Claim.—In a seat, the combination, with the seat-board having the hangers near its ends, at the sides, and the springs D, bolted or connected to the under side of said board, of the lever-boards flexibly connected to the free ends of said springs at their inner ends, and connected to their pivotal rods by irons or plates projecting below said lever-boards and receiving said rods, substantially as shown and described, and for the purpose set forth.

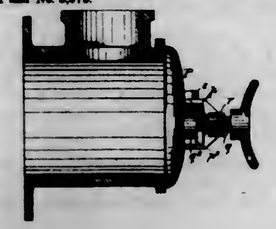
331,101. SPRING-SEAT FOR WAGONS. Charles Van Horn, Bethlehem, Pa. Filed July 20, 1885. (No model.)

Claim.—1. A wagon-seat consisting of the board A, having depending hangers C, springs D, the two boards B, pivoted between the hangers C, the plates F on the inner ends of said boards, and having forked hooked ends *f*, the connecting-hasps *d*, having loops at their upper ends, to which the springs D are pivotally connected, and shoulders *d' d'* at their lower ends for the hooked ends *f* of the pieces F, and the hooked finger-pieces d^3 below the shoulders, the plates *j* between the plates F, and the links j^2, pivoted together at their upper ends and pivoted at their lower ends to the plates *j*, substantially as set forth.

2. The combination, in a wagon-seat, of the spring D with the hasp *d*, having a loop at its upper end, to which the end of the spring is pivotally connected, and the shoulders *d' d'* and finger-piece d^3 at the lower end of the hasp, and the plates F, forked and hooked at *f*, to engage the hasp and its shoulders, substantially as set forth.

3. The combination, with the board A, having depending hangers C, and springs D, of the boards B B, having central side hangers, E, rods *e*, passed through said hangers C E, the forked hooked plates F, and the looped shouldered hasps *d d' d'*, pivotally connecting the plates F and springs D, substantially as set forth.

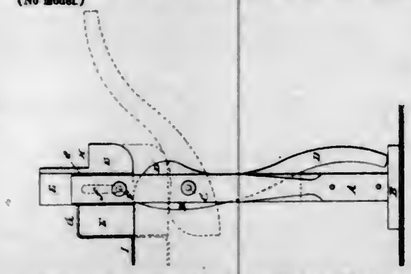
331,102. GAS-RETORT LID. William T. Walker, Bishopswood Road, Highgate, County of Middlesex, England. Filed Apr. 22, 1885. (No model.) Patented in England Apr. 10, 1884, No. 6,229; in France June 12, 1884, No. 162,896; in Belgium June 14, 1884, No. 65,474; in Germany June 17, 1884, No. 2,558, and in Austria-Hungary Jan. 29, 1885, No. 37,431 and No. 3,675.



Claim.—1. The combination of a gas-retort lid having a recess, *p*, slotted at the side, with a cross-bar carrying a screw provided with an eccentric to engage with said slotted recess.

2. The combination of the mouth of the retort having a long eye, *t*, with a cross-bar carrying the securing-screw for the retort-lid, and a hinging-pin *s*, secured to the cross-bar to turn in said eye, substantially as specified.

331,103. **WAGON-JACK.** Daniel B. Wanamaker, Ramsey's, N. J., assignor to himself and John Ackerman, same place. Filed Oct. 8, 1885. (No model.)



Claim.—1. In a wagon-jack, the combination, with the slotted standard A, of the lever-cam D D', pivoted to the said standard, and the sliding head-block E, having shoulders G H, of unequal height and lower than its top, and provided with a slot, *f*, to receive the bolt that limits its movements, substantially as herein shown and described.

2. In a wagon-jack, the combination, with the slotted standard, of the lever-cam pivoted to said standard and the sliding head-block having the plate provided with a horizontally-projecting lower part, said sliding block also having shoulders of unequal height and lower than its top, and a slot to receive the bolt that limits its movements, substantially as and for the purpose specified.

331,104. **PROCESS OF COVERING METALLIC OBJECTS WITH AN ELECTROPLATING OF MAGNETIC OXIDE.** William H. Winslow, Brooklyn, N. Y. Filed June 2, 1884. (No specimens.)

Brief.—Electroplates with iron, and then converts iron into magnetic oxide by means of superheated steam.

Claim.—The art of covering a metallic object with an electroplated coat of magnetic oxide of iron, which consists in first electroplating the object with iron and then converting the plating of iron into magnetic oxide, substantially as before set forth.

331,105. **MAGNETIC-OXIDE-OF-IRON-PLATED WARE.** William H. Winslow, Brooklyn, N. Y. Filed Apr. 30, 1885. (No specimens.)

Claim.—An electroplated metallic object, the plated coat of which is magnetic oxide of iron, substantially as before set forth.

331,106. **SEWING-MACHINE.** Satterlee Arnold, Brooklyn, N. Y., assignor to Anna M. Arnold, same place. Filed May 14, 1884. (No model.)

Brief.—The primary and secondary levers are connected together and with the needle-bar by ball-and-socket joints. The worm-gear wheel is provided with face or side cams, which latter vibrate a lever having a connecting-rod to communicate motion to the swinging head that guides the needle-bar.

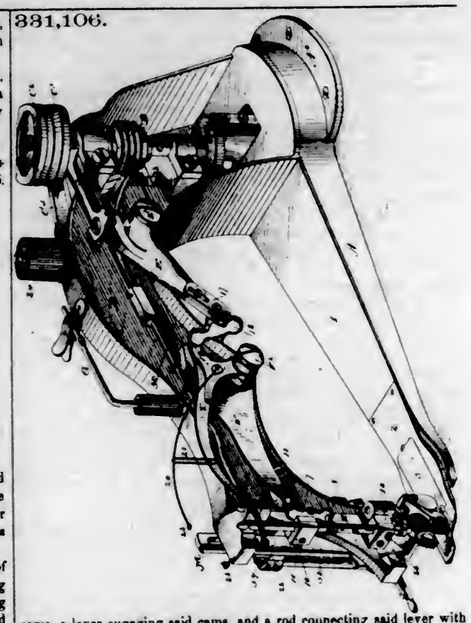
Claim.—1. In a sewing-machine, the combination of a bracket-arm, primary and secondary needle-operating levers loosely connected together and having long and short arms, the said long arms extending horizontally along said bracket-arm, a needle-bar loosely connected with the forward end of the long arm of the said secondary lever, and mechanism for operating said levers, substantially as set forth.

2. In a sewing-machine, the combination of a driving-shaft having an eccentric thereon, a pitman connected with said eccentric, primary and secondary needle-operating levers loosely connected together and with said pitman, a swinging needle-bar frame, mechanism for vibrating said frame, and a needle-bar mounted in said frame and loosely connected with the forward end of said secondary lever, substantially as set forth.

3. In a sewing-machine, the combination of a driving-shaft, an eccentric thereon, a pitman connected with said eccentric, primary and secondary needle-operating levers, a link for connecting said levers, a swinging needle-bar frame, mechanism for vibrating said frame, a needle-bar mounted in said frame, and a link having ball-and-socket connections with said needle-bar and said secondary lever, substantially as set forth.

4. In a sewing-machine, the combination of a needle-bar, a swinging frame in which said needle-bar is mounted, a worm having a thread of a uniform pitch, a worm-wheel provided with a series of face or side

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cams, a lever engaging said cams, and a rod connecting said lever with the said swinging frame, substantially as set forth.

5. In a sewing machine, the combination of a needle-bar, a swinging frame in which said needle-bar is mounted, a worm-wheel having a series of face or side cams, a lever engaging said cams, and a longitudinally-adjustable rod connecting said lever with said swinging frame, substantially as set forth.

6. In a sewing-machine, the combination of a needle-bar, a swinging frame in which said needle-bar is mounted, a worm-wheel having a series of face or side cams, a lever operated by said cam-wheel, and a rod attached to the said swinging frame and adjustably connected with the said lever, substantially as set forth.

7. In a sewing-machine, the combination of a needle-bar, a swinging frame in which said bar is mounted, a worm-wheel having a series of cams, mechanism through which said cams move said swinging bar laterally, and a feeding mechanism connected with and thus receiving its movement from said worm-wheel, substantially as set forth.

8. In a sewing-machine, the combination, with a needle-bar and mechanism for reciprocating said bar vertically and horizontally, of a stationary shuttle, a looper for carrying the needle-thread around said shuttle, and mechanism for imparting a circular movement to said looper in a horizontal path, substantially as set forth.

9. In a sewing-machine, the combination of a driving-shaft, a needle-bar, primary and secondary needle-operating levers connected with said shaft and needle-bar, a secondary shaft having its axis in a different plane from that of the said driving-shaft, and thus receiving a variable rotary motion therefrom, a stitch-forming device co-operating with the needle carried by the said needle-bar, and connections for operating said co-operating stitch-forming device from said secondary shaft, substantially as set forth.

10. In a sewing-machine, the combination of a needle-bar, a vertically-pivoted needle-bar frame, mechanism for swinging said frame horizontally on its vertical pivots, a stitch-forming device co-operating with the needle carried by the said needle-bar, and means for moving said co-operating stitch-forming device, when adjacent to the said needle, in a curved path corresponding to that in which the needle is moved when the needle-bar frame and needle are swung laterally, substantially as set forth.

11. In a sewing-machine, the combination, with a hook or looper adapted to co-operate with the needle in forming stitches, and means for moving said hook or looper in a circular path when near the needle, of a needle-bar and a needle-bar frame, the latter mounted on pivots which are arranged as nearly as possible in a plane coincident with the point from which the arc of the circle in which the said hook or looper moves when adjacent to the needle is described, so that the latter in its lateral movements will follow the curvature of the path in which the said hook travels when on that side of its orbit which is nearest the needle, substantially as set forth.

12. In a sewing-machine, the combination of a needle-bar, mechanism for reciprocating the same vertically and horizontally, a feeding

mechanism arranged above the work-plate, a stationary shuttle placed beneath the work-plate, and mechanism for carrying the needle-thread around said stationary shuttle, substantially as set forth.

13. In a sewing-machine, the combination of a driving-shaft, a secondary shaft connected with said driving-shaft and having its axis in a different plane from the axis of the latter, a hook or looper, connections between the said hook or looper and the said secondary shaft, a stationary shuttle, a needle-bar, mechanism for reciprocating said bar vertically, a needle-bar frame, mechanism for vibrating said frame horizontally, a feeding mechanism, and means for imparting the proper movements to said needle-bar, needle-bar frame, and feeding mechanism from the said driving-shaft, substantially as set forth.

14. In a sewing-machine, the combination of a needle-bar, mechanism for reciprocating the same vertically and horizontally, feeding and take-up mechanisms arranged above the work-plate, a stationary shuttle placed beneath the work-plate, and mechanism for carrying the needle-thread around said stationary shuttle, substantially as set forth.

15. The combination of a stitch-forming mechanism comprising a needle-bar, mechanism for reciprocating said bar vertically and horizontally, a slotted throat-plate to accommodate the horizontal movements of the needle carried by the said bar, two feeding-wheels arranged above the work-plate and on opposite sides the said needle, and mechanism for operating said feeding-wheels, substantially as set forth.

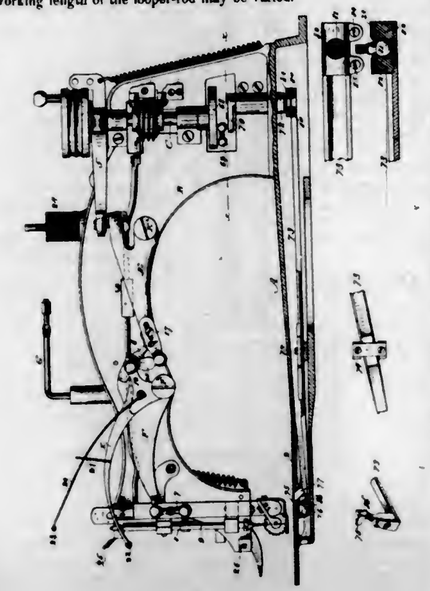
16. The combination of a stitch-forming mechanism comprising a needle-bar, mechanism for reciprocating said bar vertically and horizontally, two feeding-wheels arranged above the work-plate and at an angle to the movement of the work, and mechanism for operating said feeding-wheels, substantially as set forth.

17. The combination of a stitch-forming mechanism comprising a work-plate, a needle-bar, mechanism for reciprocating said bar vertically and horizontally, two feeding-wheels arranged above the said work-plate, and a presser-foot placed between said feeding-wheels, substantially as set forth.

18. The combination of a stitch-forming mechanism comprising a work-plate, a needle-bar, mechanism for reciprocating said bar vertically and horizontally, a bracket-arm, a feed hanger-frame supported by said arm above the work-plate, feeding-wheels carried by said hanger-frame, gearing, also carried by said hanger-frame, for operating said feeding-wheels, and a spring connected with said hanger-frame and a fixed part of the machine, for yieldingly holding said wheels against the work-plate, substantially as set forth.

331,107. **SEWING-MACHINE.** Satterlee Arnold, Brooklyn, N. Y., assignor to Anna M. Arnold, same place. Filed May 14, 1884. (No model.)

Brief.—The loop of needle-thread, upon being carried around the point of the stationary shuttle and disengaged from the hook or looper, is drawn around and over the shuttle by the reaction of the supplementary spring take-up, aided by the regular take-up. Primary and secondary levers connect with each other and with the needle-bar for operating the latter. A variable motion is imparted to the hook or looper, and the working length of the looper-rod may be varied.



Claim.—1. In a sewing-machine, the combination of a driving-shaft, a secondary shaft having its axis in a different plane from that of the driving-shaft and connected with the latter, and thus deriving a variable rotary motion from the uniformly-rotating driving-shaft, a stationary shuttle, a hook or looper for carrying the needle-thread around said shuttle, and a looper-rod for imparting an irregular or variable rotary movement to said hook or looper from said secondary shaft, substantially as set forth.

2. In a sewing-machine, the combination of a stationary shuttle, a hook or looper for carrying the needle-thread around said shuttle, a take-up for tightening the stitches, a supplementary spring take-up for drawing the thread quickly out of the way of the advancing hook or looper when said thread is released therefrom, a device, as loop 21, connected with the main take-up for limiting the upward movement of the said spring take-up, and mechanism for operating said hook or looper and take-up, substantially as set forth.

3. In a sewing-machine, the combination of a work-plate constructed in the form of an arm or horn, a stationary shuttle arranged in the forward part of said arm or horn, a looper-rod extending longitudinally of said arm or horn, and having at its forward end a hook or looper, and mechanism for imparting a rotary movement to the forward end of said looper-rod, substantially as set forth.

4. In a sewing-machine, the combination of a work-plate, a stationary horizontal shuttle supported by said work-plate, a vertically-pivoted looper-rod the forward end of which is adapted to work beneath said shuttle, a hook or looper attached to the forward end of said looper-rod and projecting above the latter, and mechanism for operating said looper-rod, substantially as set forth.

5. In a sewing-machine, the combination, with a needle-bar and its operating mechanism, of a stationary shuttle and a looper-rod carrying a hook or looper, and having a variable or differential rotary movement at its forward end, whereby the said hook or looper is enabled to move rapidly to carry the loop of needle-thread over the point of the shuttle, and then move slowly while the stitch is being completed, substantially as set forth.

6. In a sewing-machine, the combination, with the looper-rod and its operating mechanism, of a hook or looper having a vertical shank the upper portion of which is cut away to form a diminished neck, to which latter is attached a wedge-shaped horizontal hook, having its outer side slightly beyond or outside of said shank, and being provided at its base on its inner or beveled face with a thread-retaining groove, substantially as set forth.

7. In a sewing-machine, the combination of a looper-rod having at its rear end an internally-threaded sleeve and at its forward end a hook or looper, a bald-headed crank-pin projecting within said sleeve, and two adjusting-screws fitting said sleeve, and having concave recesses on their inner ends adjacent to the head of said crank-pin, substantially as set forth.

8. In a sewing-machine, the combination of a looper-rod having at its rear end an internally-threaded sleeve, which is split at one side and formed with ears, set-screws tapped in said ears, a hook or looper at the forward end of said rod, a ball-headed crank-pin projecting within said sleeve, and two adjusting screws fitting said sleeve and having concave recesses on their inner ends adjacent to the head of said crank-pin, substantially as set forth.

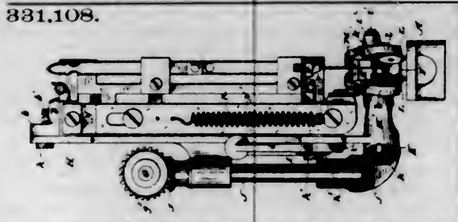
9. In a sewing-machine, the combination, with a needle-bar and its operating mechanism, of a stationary device, as a shuttle, for holding the lower thread, a pivoted looper-rod having a variable or differential rotary movement at its forward end, and provided with a hook or looper for carrying the needle-thread partly around said stationary device, and a take up timed to tighten each stitch while the looper-rod and looper are performing the lower part of their movement, substantially as set forth.

331,108. **FEEDING MECHANISM FOR SEWING-MACHINES.** Satterlee Arnold, Brooklyn, N. Y., assignor to Anna M. Arnold, same place. Filed June 28, 1884. (No model.)

Brief.—The machine is adapted for uniting the abutted edges of the knit or other fabrics, the needle having a lateral movement. The inclination of the feed-wheels to each other for this work causes their rotating feeding movement to closely press together the abutted edges of the fabric. In forming clocking or hosiery the fabric is stretched laterally through the action of the feed-wheels, they being arranged in this instance at acute angles to the line of work, but diverging rearwardly, as shown in Fig 8. The feed-wheels in some kinds of work have their faces arranged parallel. One feeding-wheel may be used with an opposing guide, and either arranged at an angle to the line of work. (See Fig. 5.)



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Claim.—1. In a sewing-machine, a work-plate, a feeding-wheel arranged at an angle to the line in which the work is to move, and mechanism for supporting and operating said wheel, combined with an opposing member co-operating with said feeding-wheel, substantially as set forth.

2. In a sewing-machine, a feeding-wheel arranged above the work-plate, and having its center in front of the sewing-point, combined with a work-plate, and mechanism for supporting and operating said wheel, substantially as set forth.

3. In a sewing-machine, a feeding-wheel and a co-operating-guide, one of which is inclined relative to the line in which the work is to move, said wheel being arranged above the work-plate, and said guide being to one side of said wheel, combined with a work-plate, and with mechanism for supporting and operating said feeding-wheel, substantially as set forth.

4. In a sewing-machine, a feed-hanger and a feed-wheel carried by a pivoted arm yieldingly supported on said hanger, combined with mechanism for operating said wheel, substantially as set forth.

5. In a sewing-machine, a feed-hanger, a gear-wheel sustained thereby, a pivoted arm also supported by said hanger, and a feed-wheel carried by said arm and held thereby in engagement with said gear-wheel, and adapted by its pivoted connection with the hanger to rise and fall and still retain its connection with said gear-wheel, combined with mechanism for operating said gear-wheel, substantially as set forth.

6. In a sewing-machine, two feeding-wheels arranged above the work-plate and on opposite sides of the needle, combined with a work-plate, and mechanism, also arranged above said work-plate, for supporting and operating said wheels, substantially as set forth.

7. In a sewing-machine, two feeding-wheels arranged on opposite sides of the needle at acute angles to each other and to the line of movement of the work, combined with a work-plate, and mechanism for supporting and operating said wheels, substantially as set forth.

8. In a sewing-machine, two feeding-wheels arranged on opposite sides of the needle and converging rearwardly toward each other, combined with a work-plate, and mechanism for supporting and operating said wheels, substantially as described.

9. In a sewing-machine, the combination of two feeding-wheels arranged above the work-plate, mechanism for operating said wheels, a presser-foot placed between the feeding-wheels, and a support for said presser-foot, substantially as set forth.

10. In a sewing-machine, two feeding-wheels arranged on opposite sides of the needle, and having their centers in front of the sewing-point, combined with a work-plate, and mechanism for supporting and operating said wheels, substantially as set forth.

11. In a sewing-machine, a vertically-movable feed-hanger arranged above the work-plate, and two feeding-wheels sustained by said hanger, combined with mechanism for operating said wheels, substantially as set forth.

12. In a sewing-machine, two feeding-wheels and two arms for supporting said wheels independently of each other, combined with a feed-hanger or support for sustaining said arms, and mechanism for operating said wheels, substantially as described.

13. In a sewing-machine, two feeding-wheels and two pivoted yielding arms by which said wheels are carried independently of each other, combined with a feed-hanger or support for sustaining said arms, and mechanism for operating said wheels, substantially as set forth.

14. The combination, with a stationary part of a sewing-machine frame, as the bracket-arm, of a feed hanger or support which is adjustable in the line of the movement of the work, and one or more feeding-wheels sustained by said hanger, whereby said wheel or wheels may be placed in different positions relative to the needle or sewing-point, substantially as set forth.

15. In a sewing-machine, the combination, with the bracket-arm, a vertically-movable feed-hanger attached thereto, and feeding devices carried by said hanger, of a lifter or device for raising and lowering said hanger having a frictional connection with the latter, and thus adapted to rigidly retain said hanger in any position in which it may be placed, substantially as set forth.

16. In a sewing-machine, the combination, with the feed-hanger and its shafts and their gearing, of a plate adjustably secured to said hanger, a pivoted bearing attached to said plate, and a transmitting-shaft having its forward end journaled in said bearing and provided with a removable gear, whereby the transmitting-shaft is adapted to receive interchangeable gears of varying sizes and to be adjusted into operative relation to the vertical shaft of the hanger, substantially as set forth.

17. In a sewing-machine, the combination, with the driving-shaft and one or more feeding-wheels, of a worm mounted on said shaft, a worm-wheel engaged by said worm, and intermediate mechanism for transmitting the movement of said worm-wheel to said feeding wheel or wheels, substantially as set forth.

18. The combination, with the driving-shaft C, worm D, worm-wheel E, transmitting-shaft G, having gear-wheel g^3, feed-hanger H, having arm H', shaft J, having gears j and j', shaft K, having gears k and k', and the feed-wheels L, substantially as set forth.

19. The combination, with the feed-hanger having the horizontal arm H', of the arms l, the forked spring M, bearing on said arms, the securing and adjusting screw m, and the feeding-wheels L, carried by said arms, substantially as set forth.

20. In a sewing-machine, the combination, with a feed-wheel, of a stripper arranged adjacent to the face thereof, and serving to strip the fabric from the teeth of said wheel, substantially as described.

21. In a sewing-machine, the combination, with a feed-wheel, of a stripper supported on the axis on which said wheel revolves, substantially as set forth.

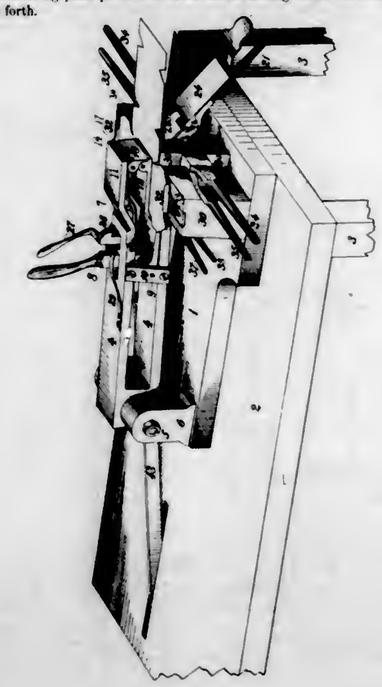
22. In a sewing-machine, the combination, with a feeding-wheel, of a combined stripper and guard arranged adjacent to the face thereof, substantially as set forth.

23. In a sewing-machine, the combination, with a feeding-wheel, of a stripper arranged adjacent to the face thereof, its stripping portion projecting rearwardly of the wheel and its front portion being extended to the periphery of the wheel, and thus adapted to serve as a guard, substantially as set forth.

331,109. MACHINE FOR MAKING ELEVATOR-BUCKETS. CHRIST BANKER and JOHN H. ROBERTS, Pittsburg, Pa., assignors to William M. Babbott, same place. Filed Nov. 5, 1884. (No model.)

Brief.—The blank, previously cut to shape, is placed on the lower bar of the mandrel and held thereon by the clamping-plate. Pressure on a treadle forces down the mandrel, carrying the blank, into the die, thus bending the sides. The jointed lever is then brought over, bending the bottom and back to shape, and is held by a catch. The pairs of seaming-levers are then operated to double-seam the bottom to the sides and to seam the sides to the back along the inclined portion. The mandrel is then raised, the levers thrown back, and the finished bucket removed.

Claim.—1. The combination, with a die, of a mandrel provided with a clamp and having a bottom-bending lever pivoted thereto, and a back-bending plate pivoted to the bottom-bending lever, substantially as set forth.



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2. The combination, with a die, of a mandrel, a bottom-bending lever, a back-bending plate, and a clamping-plate, substantially as set forth.

3. The combination, with a die, of a mandrel, a bottom-bending lever, a back-bending plate, and a pivoted latch-lever, substantially as set forth.

4. The combination, with a die, of a mandrel having a clamping-lever pivoted thereto, a clamping-plate coupled to the pivot of the clamping-lever and constructed to bear against a plane surface on the mandrel, a bearing-plate pivoted to the clamping-plate, and a link or bar connecting said bearing-plate with the clamping-lever, substantially as set forth.

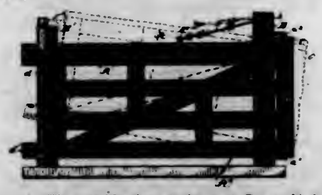
5. The combination, with a die, of an upper and a lower bar, said bars being connected at one end and separated for the remainder of their length, a clamping-plate pivoted to the lower bar and constructed to bear against the inner surface thereof adjacent to its open end, a bearing-plate coupled to said clamping-plate and to a rod or bar connected to a clamping-lever, said bearing-plate being constructed to stand perpendicular to the lower bar and in the plane of its open end, a bottom-bending lever pivoted to the open end of the lower bar and constructed to bear against the bearing-plate, and a back-bending plate pivoted to the bottom-bending lever, and constructed to bear against the upper bar, substantially as set forth.

6. The combination of a bed-plate, a mandrel pivoted thereto, a forming-die fixed to the bed-plate and having a central recess in line with and adapted to admit the mandrel, bottom-seaming levers pivoted in pairs on each side of the recess of the forming-die at the end thereof adjacent to the free end of the mandrel, and back-seaming levers pivoted in pairs to the top of the forming-die on each side of its recess and adjacent to its opposite end, substantially as and for the purpose set forth.

7. The combination of a bed-plate, a mandrel pivoted thereto and provided with a bottom-bending lever and back-bending plate, a forming-die fixed to the bed-plate and having a central recess in line with and adapted to admit the mandrel, bottom-seaming levers and back-seaming levers pivoted in pairs to the forming-die on opposite sides of its recess, a treadle-lever coupled to the mandrel and constructed to draw the same downwardly into the recess, a double-armed lever carrying a pin or arm constructed to bear against the lower side of the mandrel and coupled at its opposite end to a double-armed intermediate lever, and a double-armed treadle-lever coupled to said intermediate lever, substantially as set forth.

8. The combination, with a recessed forming-die, of a seam-turning lever and a seam-closing-down lever pivoted upon a common pin to the die at one edge of its recess, each of said levers having a bearing-face on its pivoted end, the bearing-face of the closing-down lever being located at a greater distance from the pivot than that of the seam-turning lever, substantially as set forth.

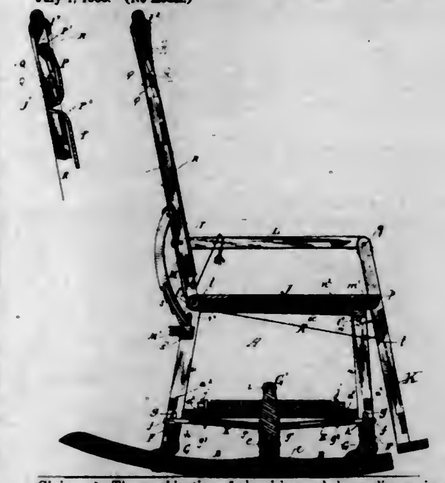
331,110. GATE. GEO. M. BATES, Tipton, Ind. Filed July 31, 1885. (No model.)



Claim.—1. The combination of the post B, provided with the hooks a' a^2, projecting rearward and at an angle to the front face thereof, the staple or hook b in the post B, above the gate and on a vertical line in advance of the hooks a' a^2, the chain b', attached to the hook a^2 or staple b and the top of the gate, the gate pivoted on the lower hook and resting between the upper hook, a^2, and the post, substantially as and for the purposes set forth.

2. The combination, with the gate supported by and tilting upon the hook a' and held by the hook a^2 on the rear post, of the latch d, pivoted at its upper end to the front end of the gate, and the catch a, secured on the front post, substantially as and for the purposes set forth.

331,111. CONVERTIBLE CHAIR. JOHN H. BATTON, Selma, Ala. Filed July 1, 1885. (No model.)



Claim.—1. The combination of the rising and descending reciprocating bars F, rasters G, arms E, bar C, standard D, and means for moving the standard up and down with a chair-frame, A, provided with jointed and pivoted rockers B, substantially as and for the purpose described.

2. The combination, with the jointed pivoted rockers, of the bar C, bars F, guided up and down by the legs of the chair, chair-frame A, and means for operating the bars C and F, substantially as and for the purpose described.

3. The lever G', rolling fulcrum H, and stop-bar I, in combination with the standard D, arms E, reciprocating bars F, having casters, bar C, jointed and pivoted rockers B, and chair-frame A, substantially as and for the purpose described.

4. The chair-frame A, provided with jointed and pivoted rockers B, and rising and descending reciprocating bars F, having casters G, substantially as and for the purpose described.

5. The arms E, fitted in socket g' of the standard D, fulcrumed on frame-pieces a^3 and connected by slot and pin at f with the bars F, substantially as and for the purpose described.

6. The casters having their shanks passed through round holes in bars F, and provided with enlarged bearing-heads and fastened to the bars F by plates A, having large round holes terminating in narrower slots, substantially as described.

7. The combination of the seat J, back J', and leg and foot rest K, chair-frame A, cord R, pivoted head-rest bar Q, and folding covering material P, substantially as and for the purpose described.

8. The head-rest bar Q, pivoted eccentrically to the side bars of the back of the chair, in combination with the covering material P and adjusting-cord R, substantially as described.

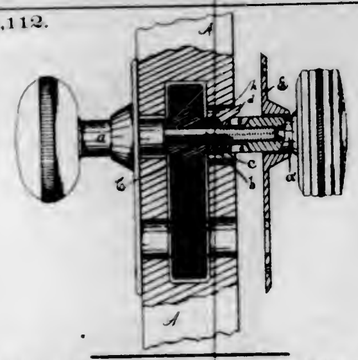
9. The curved tooth-bar M, hinged by the upper end to the hinged back J' of the chair, in combination with the chair-frame A, seat J, leg and foot rest K, stop-bar s' at the back of the chair-frame, and transverse hand-lever M' for raising the toothed bar above the stop-bar, all substantially as and for the purpose described.

10. The convertible chair having its seat, back, and foot rest removably fastened in position upon chair-frame A, in combination with the swing adjunct, as described, provided with a descending and rising bar, S^7, spring-acting lever S^4, stop-latch S^5, cords S^6 S^7, and ropes S^8, having hooks S^9, substantially as described.

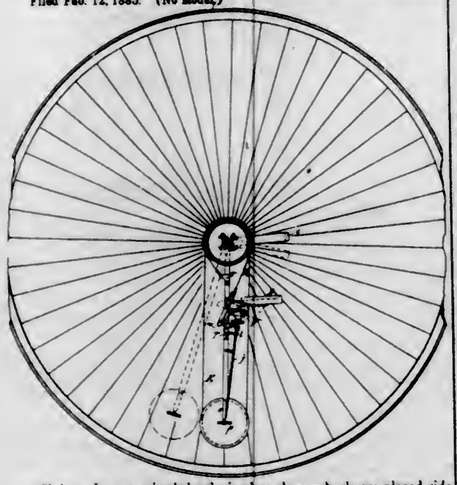
331,112. KNOB ATTACHMENT. CHARLES H. BEEBE, Norwich, Conn. Filed Apr. 6, 1885. (No model.)

Claim.—In combination with a spindle threaded at its angles, a collar longitudinally movable on said spindle and provided with a pivoted locking-latch, as described, an internally-threaded knob-neck adapted to engage the threaded spindle, and provided with one or more chambers, c, to receive the locking-latch when properly adjusted, and means for holding said latch in engagement with said chamber, all substantially as and for the purpose specified.

331,112.

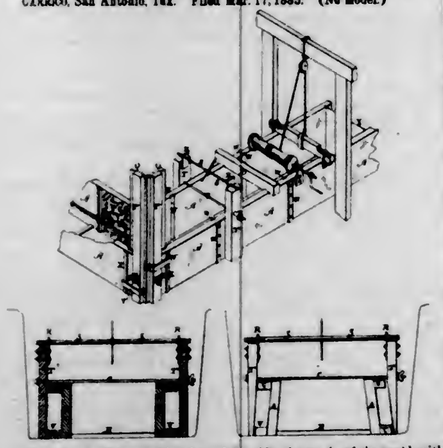


331,113. VELOCIPEDE. Anton H. Bock, Meissen, Saxony, Germany. Filed Feb. 12, 1885. (No model.)



Claim.—In two-wheeled velocipedes where wheels are placed side by side on one shaft, in combination with the main wheels, the axle *c*, the rods *m*, crank-axle C, the vertically-adjustable and turning rod *j*, having arm thereon, the rod *w*, the pivoted lever W, and the brake R, as set forth.

331,114. MOLD FOR BUILDING CONCRETE WALLS. Thomas W. Carrico, San Antonio, Tex. Filed Mar. 17, 1885. (No model.)

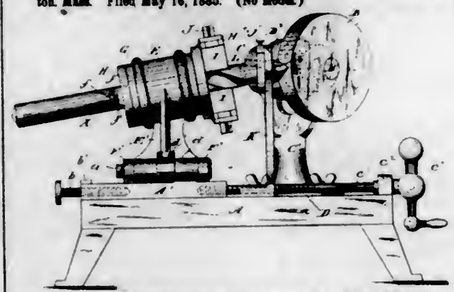


Claim.—1. The combination of the side pieces A, of the mold with clamps which are applied thereto and made to bear against both the upper and lower edges of the outside portion of the mold, substantially as described.

2. The combination of the side pieces of the mold, the clamps, the screw-rods C, and the shaft S, having right and left screw-threads, substantially as set forth.

3. The combination of the side pieces of the mold with the clamps having roughened metallic plates applied to their lower ends, the screw-rod C, and the shaft S, having right and left screw-threads, substantially as specified.

331,115. MACHINE FOR GRINDING DRILLS. Frank Chase, Boston, Mass. Filed May 16, 1885. (No model.)



Claim.—1. The combination of the rotatable and laterally and vertically movable drill-holding chuck, the grinding-wheel, and a side guide-rest, arranged and operating substantially as described to move the drill toward or to permit its recession from the grinding-wheel, according to the direction of the vertical movement of the drill, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the laterally-movable and rotatable drill-holding chuck, of a side guide-rest provided with a slanting or inclined bearing-face, these parts being combined and arranged together for joint operation substantially in the manner hereinbefore set forth, so that the said side guide-rest and drill held in said chuck shall by and during the rotation of the chuck be caused to move relatively to one another in the direction of the length of the said inclined bearing-face, as and for the purposes described.

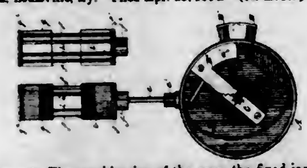
3. The combination of the laterally-movable chuck-stand, the barrel E, intermediate case, G, inner sleeve, H, and drill-gripping jaws carried by the same, the grinding-wheel, and the side guide-rest, these parts being arranged together for joint operation substantially as hereinbefore set forth.

4. The laterally-rocking chuck-stand and barrel forming a part of the same, in combination with the inner jaw carrying sleeve H, and intermediate case, G, detachably connected together, as described, the side guide-rest, and the grinding-wheel, substantially as and for the purposes hereinbefore set forth.

5. The rotatable drill-holding chuck arranged and adapted to move vertically, laterally, and longitudinally, in combination with the side guide-rest and the grinding-wheel, substantially as and for the purposes hereinbefore set forth.

6. The guide-rest provided with a bearing-piece adjustable to vary the slant of the face against which the drill takes a lateral bearing, in combination with the laterally-movable and rotatable drill-holding chuck, and the grinding-wheel, substantially as and for the purposes hereinbefore set forth.

331,116. MICROMETER-GAGE FOR WATCH-MAKERS. Elijah Clark, Louisville, Ky. Filed Apr. 23, 1884. (No model.)



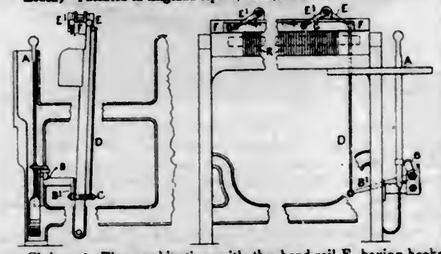
Claim.—1. The combination of the case, the fixed jaw B, movable jaw B', having toothed sector *a*, the disconnected and rectilinearly-sliding pin *e*, adapted to bear against a part of the sector, the pinion C with center-shaft, a spring for closing the movable jaw, and an index-hand, as and for the purpose described.

2. The combination, with the dial-plate and index-band, of the center-shaft having slot *c* at its outer end to receive a hair-spring, means for rotating the shaft in one direction by hand, and a spring for rotating it in the other direction, whereby the relative tensions of different hair-springs may be tested and compared, as set forth.

3. The combination, with the sector *a*, the dial and index-hand, and mechanism for adjusting the latter, of the push-pin *e*, spring D, and detachable gage-step blocks for pushing the pin *e* in by the separation of the blocks, as described.

4. The gage-step blocks *g* and *i*, combined with the parallel rods *h h* and *f f*, with plates upon the ends thereof, the split collet *f*², and the micrometer case and mechanism, substantially as described.

331,117. SHUTTLE-GUARD FOR LOOMS. Nathan Drake and Smith Feather, Bradford, County of York, England. Filed June 9, 1885. (No model.) Patented in England Apr. 9, 1885, No. 4,393.



Claim.—1. The combination, with the hand-rail F, having hooks H, of the guard rail or plate G, provided with staples J, the arms E', pivoted to the hand-rail and connected with the guard-plate G, the arm connected with the shaft of one of the arms E', the connecting-rod D, actuating-lever B B', and starting-rod A, substantially as described.

2. The combination, with the hand-rail F, having hooks H, of the guard-rail G, provided with staples J, the arms E', pivotally connected at one end to the guard-plate G, shafts to which the other ends of said arms are connected, brackets mounted on the hand-rail, in which said shafts have bearing, the arm E, connected to the shaft of one of said arms E', the connecting-rod D, the slotted link C, lever B B', and starting-rod A, substantially as described.

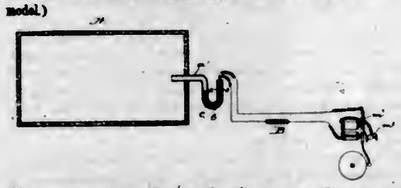
331,118. ENVELOPE. Joseph T. Dunbar, Brooklyn, N. Y. Filed Jan. 26, 1885. (No model.)



Claim.—1. An envelope having a flap, C, provided with a re-enforced hole, *c'*, and having a similar hole, *c*, in the front ply of its body, and the said holes constructed to register or coincide when the flap C is folded down, whereby the end of the back ply, *b*, of the envelope-body, which extends entirely across the latter, is clamped and removably secured, substantially as shown and described.

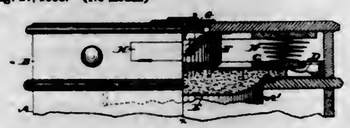
2. A mailing and tag envelope having a flap, C, folded over on and secured down to the inner face of the front ply of the body, and said flap being also constructed to take over the free end of the back ply of the body, as shown, whereby the mouth of the envelope covered by said flap C is secured against accidental opening, substantially as and for the purposes set forth.

331,119. APPARATUS FOR DETECTING THE PRESENCE OF GAS. George H. Eaton, North Middleborough, Mass. Filed Dec. 12, 1884. (No model.)



Claim.—An apparatus for detecting the presence of a gas, consisting of a closed vessel having porous walls, and a circuit-controlling device operated by variations in pressure of the air in the said vessel when in the presence of gas, and a signaling device controlled thereby, the parts being combined to operate substantially as described.

331,120. COMMODE. Albert Rehrbach, Philadelphia, Pa. Filed Aug. 27, 1885. (No model.)



Claim.—1. A commode-lid consisting of a box having its lower portion connected to the main part by a pliable material and springs, and provided with a cushion, substantially as described.

2. A hollow commode-lid having a disinfectant-chamber within the same provided with a valve opening to the atmosphere, the said lid also being provided with a flexible yielding lower portion, substantially as and for the purpose set forth.

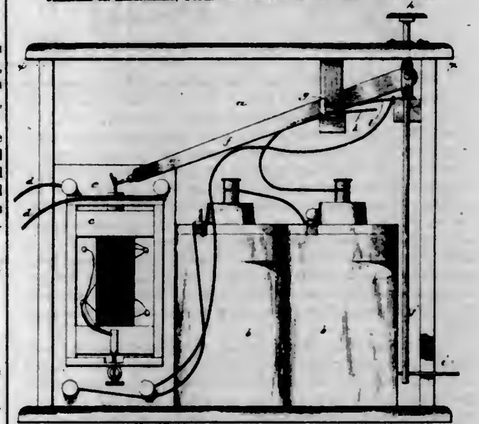
3. A commode-lid formed hollow with bellows-like parts C D, and springs E, a disinfectant-holder, F, a valve, G, for inlet of air to said holder, and a valve, H, for outlet of the disinfectant or air impregnated therewith from the interior of the lid, said holder being in communication with the lid, substantially as described.

4. A commode having a bellows-lid covering the seat, the said lid being provided with a disinfectant-chamber therein, substantially as described.

5. A commode-lid having an under portion thereof connected thereto by a piece of pliable material, and provided with a cushion, substantially as described.

6. A commode-lid provided with a yielding under portion having a cushion, the said lid containing a disinfectant-chamber having a valve communicating with the atmosphere, the interior of said lid having direct communication with the atmosphere, substantially as and for the purpose set forth.

331,121. ELECTRICAL APPARATUS FOR DENTAL OPERATIONS. Charles A. Ehrhart, York, Pa. Filed Feb. 10, 1885. (No model.)



Claim.—1. The combination, with an induction-coil, a lever loosely connected to its core, and means to operate said lever, of contact-makers crossing each other and operated by the fall and rise of said lever to make and break a circuit in connection with a suitable source of electricity, and dischargers and conductors connecting them with the induction-coil, substantially as described.

2. The combination, with the case, cells, induction-coils, and crossed contacts connected in circuit with suitable dischargers and a lever, of hand and foot pieces operating in conjunction with the crossed contacts to make and break the circuit, substantially as described.

3. In an electric apparatus for dental use, the tubular discharger provided with holes and containing a moistened substance, substantially as described.

4. An induction-coil and a lever loosely connected to its core, combined with a battery, dischargers, and conductors connecting the battery, lever, and coil, and means to operate said lever to regulate the strength of the current in accordance with the requirements of the operator, substantially as described.

5. The combination, with the case, cells, induction-coils, and crossed contacts connected in circuit with suitable dischargers, and a lever, of a foot-piece operating in conjunction with the crossed contacts to make and break the circuit, substantially as described.

331,122. SEAT-BACK. George Faulhaber, Cleveland, Ohio. Filed May 13, 1884. (No model.)

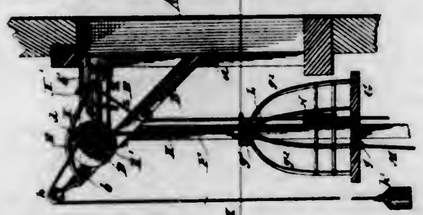


Claim.—1. A back for settees and pews, composed of two or more continuous layers of wood cemented together and curved concave to-

ward the seat in longitudinal section and convex toward the seat in transverse section.

2. As a new article of manufacture, a settee or pew back composed of two or more continuous layers of wood cemented together, and curved concave toward the seat in longitudinal section, and curved convex toward the seat in transverse section, and a cap secured to said back by a tongue and-groove connection, substantially as set forth.

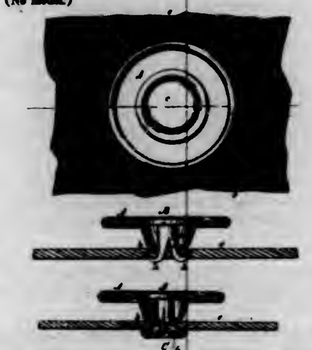
331,123. FIRE-ESCAPE. JACOB FISHER and ALEXIS COQUILLARD, South Bend, Ind. Filed May 12, 1885. (No model.)



Claim.—1. In a fire-escape, the combination, with a cage traveling in vertical ways between the ground and a frame secured to the front of the window, and a shaft journaled upon said frame and provided with brake-collars and a brake-drum, of a rope rising from the cage, taking one or more turns around the brake-drum, and having on its end a weight slightly heavier than the cage, spring brake-bars secured to the frame, passing over the collars, and having their free ends secured to and supporting a bar, a slotted stirrup-piece secured to said bar, a spring detent-bar secured by one end to the frame, passing through the slot in the stirrup-piece and engaging by its other end against a detent on the shaft, and a rope attached at its upper end to the bar which the spring brake-bars support, passing through the cage, and adapted, when pulled upon, to release the spring detent-bar from the detent on the shaft, and cause the spring brake-bars to bind on the brake-collars, substantially as specified.

2. In a fire-escape, the combination of the frame B, secured to the window-frame and provided with the beam C, and the shaft D, journaled upon said frame and provided with the collars E, brake-drum H, and detent *k*, of the rope H, having the weight A' attached, the curved spring brake-bars I, the bar I', secured to the free ends of said bars, the stirrup-bar J, the spring detent-bar K, and the ropes L and M, substantially as specified.

331,124. BUTTON. ELISHA FLAGG, New York, N. Y. Filed Mar. 27, 1885. (No model.)

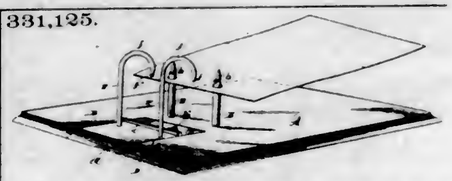


Claim.—1. The button A, having the recess *a* and opening *b*, combined with the rivet B, having the head *c* fitting in and filling said recess flush with and apparently as continuous of the upper outer surface of the button, and the prongs *d d*, passed through the opening in the button to engage the material and button applied thereto, substantially as described.

2. The button A, having the recess *a* and opening *b*, combined with the rivet B, having the head *c* fitting in and filling said recess flush with and apparently as continuous of the upper outer surface of the button, and the prongs *d d*, passed through the opening in the bottom and spread out in a conically-recessed washer, C, applied to the under side of the material to which the button is applied, substantially as described.

331,125. BILL-FILE. DAVID W. GARRISON, Woodbury, N. J. Filed Sept. 12, 1885. (No model.)

Claim.—1. The combination, with a two-part base, one part being movably secured to the other, of a spike secured to one section, a curved



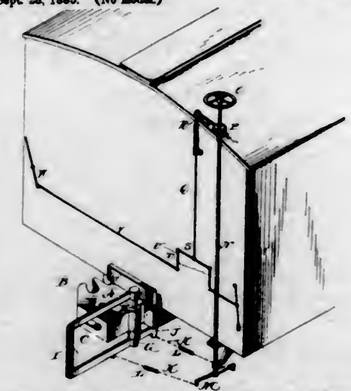
wire secured to the other section, and a spring engaging the two sections for yieldingly holding the upper end of the wire in contact with the upper end of the spike.

2. The combination, with a two-part base, one part being movably secured to the other, of the spikes secured to one part of said base and provided with shouldered upper ends, the curved wires secured to the other part of the base, and a spring engaging the two sections for yieldingly holding the upper ends of the wires in contact with the upper ends of the spikes.

3. The combination, with a two-part base, the metal plates secured within said sections, and the spikes and wires secured to their respective blocks, of the spring interposed between the sections of the base, substantially as set forth.

4. In a bill-file, the combination, with a two-part base, a spike secured to one part of the base, and a curved-wire guard secured to the other part of the base, the upper ends of said spike and guard being magnetized, of the spring for moving the wire guard and its section of the base toward the spike, substantially as set forth

331,126. CAR-COUPLING. HARVEY A. GILBERT, Down, Iowa. Filed Sept. 28, 1885. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head having a laterally-projecting hook, a link pivoted at its inner end upon the draw-head to swing in a horizontal plane and to engage the hook of the opposite draw-head, and chains for operating the said link having springs for cushioning the lateral motion of the link, the said chains being attached to the link and drawing it in opposite directions, as and for the purpose shown and set forth.

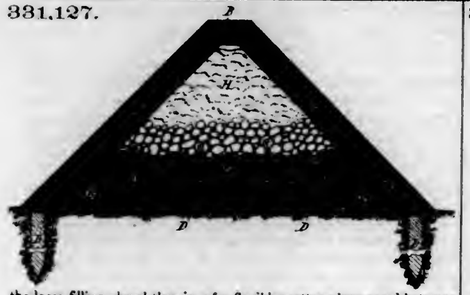
2. In a car-coupling, the combination of a draw-head having a laterally-projecting hook at one side and a vertical perforation at the inner end of the other side, a bolt passing through the said perforation, a link pivoted at its ends upon this bolt, swinging outside of the forward end of the draw-head, and having the inner end of its lower arm extended beyond the pivotal point, and operating-chains secured to the lower arm of the link at equal distances from the pivotal point in front and to the rear of the same and having springs at their middles, as and for the purpose shown and set forth.

3. In a car-coupling, the combination of a draw-head having a laterally-projecting hook at one side and a vertical perforation at the inner end of the other side, a bolt passing through the said perforation, a link pivoted upon the said bolt to swing forward of the draw-head and having the rear end of its lower arm extended beyond the pivotal point, a washer placed upon the bolt between the link and the draw-head, a vertical shaft having a hand-wheel at its upper end and means for securing it in its adjusted position and provided with a lever at its end, and chains secured to the ends of the lever and to the lower arm of the link at equal distances from the pivotal point and provided with yielding springs, as and for the purpose shown and set forth.

331,127. METHOD OF CONSTRUCTING JETTIES. JOHN C. GOODRIDGE, Jr., New York, N. Y. Filed May 2, 1885. (No model.)

Claim.—1. In a jetty, the combination, with a hollow shell and

331,127.



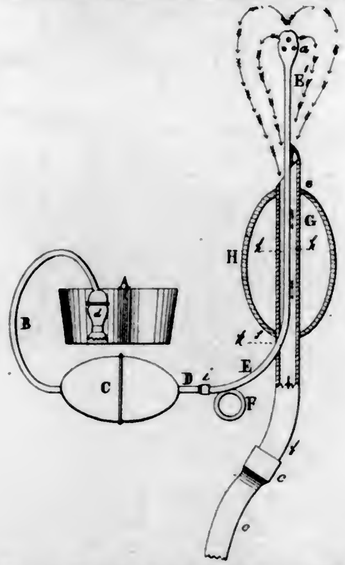
the loose filling placed therein, of a flexible mattress interposed between said filling and the bed of the stream.

2. The combination, with the hollow shell and the loose filling, of a flexible mattress, upon which said filling rests, the mattress being upturned at its edges, so as to partially envelop the filling, substantially as set forth.

3. The combination, with a hollow shell and the loose filling, of a flexible mattress formed in overlapping sections, interposed between said filling and the bed of the stream, substantially as set forth.

4. The combination, with the hollow shell, the filling of hay, straw, brush-wood, stones, dirt, sand, or other material, and the flexible mattress upon which said filling rests, of the fascines resting upon said mattress, substantially in the position and for the purpose set forth.

331,128. VAGINAL IRRIGATOR. JOHN W. GORDON and GEORGE T. BLANCHARD, Plymouth, Me. Filed May 24, 1884. (No model.)



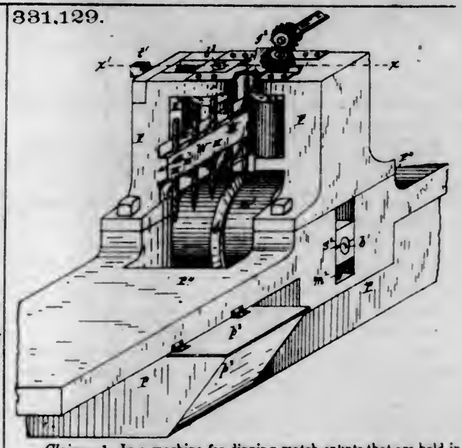
Claim.—1. The combination of a liquid-forcing apparatus, an injection-tube connected therewith, a drainage-tube attached to said injection-tube, and a tampon consisting of a hollow elastic and compressible soft-rubber bulb surrounding and carried by said tubes and tapering at its inner end, substantially as and for the purposes set forth.

2. The combination of the injection-tube, the drainage-tube G, of greater diameter, surrounding and rigidly attached to the same, and the tampon H, carried by tube G, the injection-tube being curved up at its outer end at an angle to the nozzle portion to form a handle, and being provided upon its lower side with the ring F, for the insertion of the finger of the operator, substantially as set forth.

3. The combination of the discharge-tube G, the surrounding tampon-bulb H, and the rigid injection-tobe E E', the latter being arranged within and secured to the tube G, and passing out laterally through the side thereof, to connect with the liquid-forcing apparatus and form a convenient handle for the instrument, substantially as described.

331,129. APPARATUS FOR DIPPING MATCHES. WILLIAM E. HAGAN and GEORGE E. NOREN, Troy, assignors of one-third to James K. P. Pine, Lansingburg, N. Y. Filed May 22, 1885. (No model.)

331,129.



Claim.—1. In a machine for dipping match-splints that are held in a web, the combination, with a pan adapted to be heated and contain match composition, of a roller made with a groove in its cylindrical face circumferential to its axis, and said roller constructed to be rotated with its lower surface, where the latter will be immersed in composition contained within the pan, substantially in the manner as shown and described.

2. In a machine for dipping match-splints that are held in a web, the combination, with a pan or receptacle that is adapted to be heated and to contain match composition, of a roller made with a groove in its cylindrical face circumferentially to its axis, said roller being constructed to rotate with its lower surface immersed in match composition when within the pan, and a scraper adapted to remove from the cylindrical face of the roller the adhering composition, excepting that portion of the latter which is within the groove, substantially in the manner as and for the purposes set forth.

3. In a machine for dipping match-splints that are held in a web, the combination, with the pan or receptacle P, adapted to be heated and to contain match composition, of the roller R', constructed to be rotated with its lower surface immersed in match composition contained within said pan, and the rollers R^2 and R^3, having vertical shafts, and arranged with reference to said roller R', substantially as and for the purposes set forth.

4. In a machine for dipping match-splints that are arranged in a web, the combination, with the pan P, constructed to contain match composition, of the roller R', made with the groove G, and the guide-plate P^2, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

5. In a machine for dipping match-splints that are arranged in a web, the combination of the pan P, made to contain match composition and adapted to be heated, the roller R', arranged to rotate with its lower surface in the match composition contained in said pan, the rollers R^2 and R^3, constructed to be actuated as described, and the guide-plate P^2, arranged with reference to the web and splints, substantially in the manner as and for the purposes set forth.

6. The combination of a web, W, having match-splints inserted therein, as shown, and actuated to be moved horizontally with the splints in a vertical position, as described, the rollers R^2 and R^3, adapted to hold said web and the splints in an impressed contact while the said rollers are rotating with the web and splints passing between them, a dipping-roller, R', adapted to be rotated with its lower surface in match composition, and its upper surface to apply the same to the lower end of the splints, and the pan P, constructed to contain match composition, and arranged with reference to the roller R', as shown and described.

7. The combination of the web W, having match-splints inserted therein, as shown, and actuated to move horizontally with the splints in a vertical position, the pan P, adapted to contain match composition, the roller R', adapted to be rotated with its lower surface within match composition in said pan, and its upper surface in contact with the lower end of the splints, and the guide-plate P^2, with its under surface in contact with the upper end of the splints, as and for the purposes set forth.

331,130. WINDOW-BLIND. WILLIS G. HALE, Philadelphia, Pa. Filed Oct. 2, 1885. (No model.)

Claim.—1. A slat having the end of its journal of angular form, and a toe secured thereto by means of a boss which is connected with the toe and has an angular opening, substantially as and for the purpose set forth.

2. The slat B and the journal thereof having an angular end portion, in combination with the boss D', having the toe D, slotted bar E

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with bent lip F, slotted face-plate G, spring H, serrated block J, and button K, substantially as and for the purpose set forth.

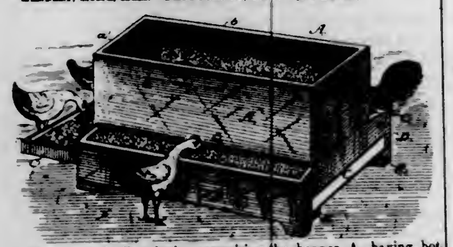
3. The slat B with toe D, in combination with the bar E, having a lip, F, forming a handle and locking-piece, the serrated block J with button K, and spring H, substantially as and for the purpose set forth

331,131. COMBINED SEEDER AND CART. MARTIN J. HALLIBURTON Portageville, Mo. Filed Sept. 8, 1884. (No model.)



Claim.—In a convertible seeder and cart, the removable and adjustably-pivoted seeder-frame composed of the side and cross bars, carrying the opener D, hopper K', housing C, shaft K, seed-wheel J, with cranks *e e*, coverer B, with cranks *b b'*, and raising and lowering devices H *k i l*, substantially as and for the purpose set forth.

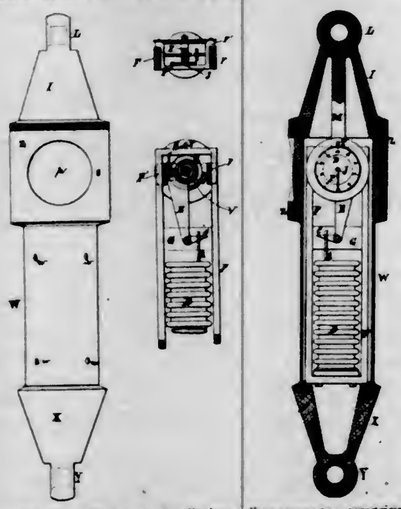
331,132. COMBINED FEED-HOPPER AND WATER-TROUGH. A HANDLEY, Acton, Mass. Filed June 20, 1885. (No model.)



Claim.—A feeding device comprising the hopper A, having bottom *a'*, side troughs communicating with said hopper, and sliding water-receptacles mounted upon cleats beneath the bottom of the hopper, substantially as described.

331,133. SOUNDING APPARATUS. JAMES B. HAMMAY, Cove Castle, Loch Long, County of Dumbarton, Scotland. Filed July 1, 1885. (No model.) Patented in England Nov. 6, 1883, No. 5,256; in France Apr. 29, 1884, No. 161,796, and in Germany May 9, 1884, No. 29,081.

Brief.—For accurate work, the operating parts are inclosed in a case of flexible material, and said case filled with a liquid to transmit the pressure of the external water to the internal.



Claim.—1. The herein-described sounding apparatus, comprising a case containing a hermetically-closed vessel free to change its form with changes of pressure, and the dial or pointer operated by said closed vessel, and devices to retain the dial or pointer in the position to which it has been moved, the whole being arranged to sink below the surface of the water, substantially as set forth.

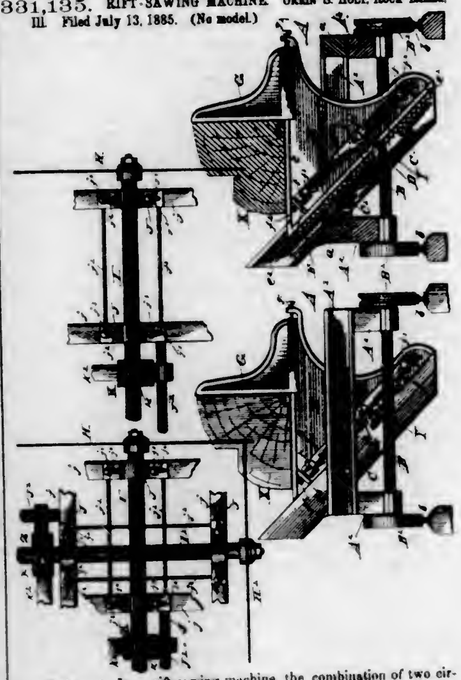
2. The herein-described sounding apparatus, comprising a hermetically-closed vessel free to alter in form with changes of pressure, and a dial and a pointer operated thereby, with a ratchet-wheel and a catch for retaining the pointer when moved by the movement of the closed vessel, the whole being arranged in one structure, and adapted to be sunk below the surface of the water substantially as set forth.

331,134. PREPARING CELERY-SALT. EDWD. C. HAZARD, Shrewsbury, N. J. Filed June 29, 1885. (No specimens.)

Claim.—1. The process of making a celery-salt condiment, comprising the formation of an alcoholic extract of celery, filtering the same mixing with it a compound of salt and dry flour, and finally evaporating the mixture to dryness, substantially as described.

2. The process of making a celery-salt condiment, comprising the formation of an alcoholic extract of celery, filtering the same, mixing it with a compound of salt and of rice-flour previously impregnated with celery, and finally evaporating the mixture, substantially as described.

331,135. RIFT-SAWING MACHINE. ORRIN S. HOLT, Rock Island, Ill. Filed July 13, 1885. (No model.)



Claim.—1. In a rift-sawing machine, the combination of two circular saws, each secured to a shaft aligned at right angles to the shaft of the other, and one saw so situated on its shaft as to enter, when at work, the kerf made by the other saw a suitable distance to the inner side of the periphery of the same, with a frame provided with a bed to hold the timber to be sawed and traveling on inclined ways secured to the carriage in a line forming angles of forty-five degrees with the planes in which the saws lie, substantially as specified.

2. In a rift-sawing machine, the combination of the saws H H', turning, respectively, with the shafts I I' at right angles to each other, and each rendered laterally and longitudinally adjustable by means substantially as described, with the frame composed of the bed-pieces E and holding-piece G, and traveling on inclined ways secured to the carriage on a line making angles of forty-five degrees with the planes in which the saws lie, substantially as specified.

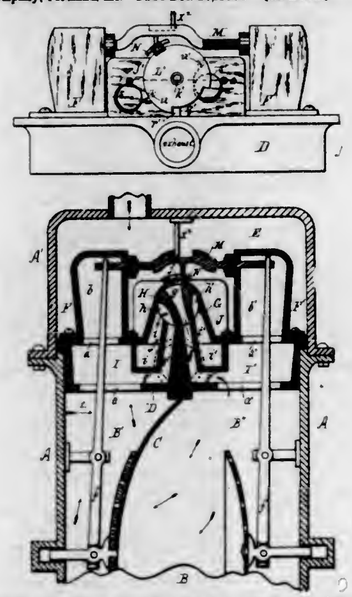
3. In a rift-sawing machine, the combination of the saws H H', turning in planes at right angles to each other with the respective shafts I I', each of which is rendered laterally adjustable by means of supports *j''* and bearing-blocks J, provided with the slots *j'* and set-screws *j''*, and rendered longitudinally adjustable by means of a support, *k'*, adjusting-screw J', and bearing-block K, coacting with a collar, *k*, on said shaft, with a frame composed of the bed-pieces E and holding-piece G, and traveling on inclined ways secured to the carriage in a line making angles of forty-five degrees with the planes in which the saws lie, substantially as specified.

4. In a rift-sawing machine, the combination of the saws H H', turning in planes at right angles to each other, the former projecting beyond the latter, and the latter arranged to enter the kerf made by the former, with the carriage A, provided with transverse sills *a a*, the rails C, secured to said sills, and provided with inclined ways for the setting mechanism, composed of the bed-pieces E, traveling on the rails C, and the holding-pieces G, adjustable, and mechanism, substantially as specified, whereby the setting mechanism is caused to travel and hold at any desired position on the rails C, substantially as specified.

5. In a rift-sawing machine, the combination of the saws H H', turning in planes at right angles to each other, with the carriage having the rail provided with inclined ways secured thereto, the setting mechanism traveling on said rails and composed of the parts G and E the inclined racks F on the parts E, the shaft C', and the pinions *c c* engaging the rack-bar, and thereby moving the feed mechanism, substantially as specified.

6. In a rift-sawing machine, the combination of the saws H H', turning in planes at right angles to each other, with the carriage having the rails provided with inclined ways secured thereto, the setting mechanism traveling on said rail and composed of the parts G and E, the inclined racks F on the parts E, adjustable ratchet-bars F'', secured to the parts E, the pinions c on the shaft C', engaging the rack-bars and moving the setting mechanism, and the pawls *d*, pivoted on the head-blocks, released by eccentrics on the shafts D D', and arranged to hold the setting mechanism in any desired position, substantially as specified.

331,136. APPARATUS FOR ACTUATING THE VALVES OF FLUID-METERS. FREEMAN W. HOOD and LEVI W. LOMBARD, Boston, Mass., assignors, by direct and mesne assignments, to the Lang Hydraulic Machine Company, Portland, Me. Filed Dec. 26, 1884. (No model.)



Claim.—1. In combination with an oscillating diaphragm and a pair of levers operated thereby, a disk and intervening connections actuated by said levers, a pair of studs, *u u'*, on opposite sides of said disks, a pair of springs, *s s'*, which bear against said studs, and a valve which is operated by said disk and springs when the latter are allowed to act by the change in position of said studs, substantially as set forth.

2. In combination with diaphragm C, levers *f f'*, and connecting-rod M, having a downward extension, the slotted bar N, engaged thereby, a disk attached to said bar and provided with a peripheral notch, a pair of springs which actuate said disk when it passes a certain point in rotation, and a valve provided with a stop or lug that enters said peripheral notch in the disk, for the purpose set forth.

3. In a diaphragm-meter, the combination, with the measuring-chamber and valve-chamber, of a dividing-plate constructed with secondary chambers provided with stuffing-boxes, wherein the actuating valve-arms reciprocate, and free circulation is thereby prevented between said measuring and valve chambers, except through proper passages, substantially as herein set forth.

4. In a device for measuring liquid, the combination, with the diaphragm and its rocking arms, of the valve rod or yoke moving within stuffing-boxes, whereby lifting of the yoke is prevented, and all communication between the measuring and valve chambers is prevented except through the proper passages, all substantially as and for the purposes herein described.

5. In a measuring device, the combination, with the chambered division-plate, of the oscillating valve mechanically operated by energy stored through the movement of the diaphragm, substantially as herein set forth.

6. In a mechanically-operated valve, the combination, with said valve mounted in fixed bearings, of the spring-actuated disks oscillating loosely upon the exterior periphery of said bearings, whereby the disks are allowed to move without affecting the valve until energy has been stored sufficient to operate said valve positively from one extreme of movement to the other, substantially for the purposes herein described.

7. In combination with the connecting-rod operated by the valve-arms and the diaphragm, the spring-actuated oscillating notched disks and similarly-notched hubs so disposed that their primary movements do not affect the valve, which remains unchanged until by the further advance of said disks the tension of said springs hitherto confined is free to be exerted upon the valve to shift it to one of its extremes of movement, substantially as stated.

8. In general combination, the valve H, provided with the radial pins *n n'*, moving in the slots *m m'*, formed in the fixed bearings *k k'*, the disks L L', notched at *q q'*, and their hubs *o o'*, similarly but diametrically notched at *p p'*, said disks loosely oscillating upon their bearings *k k'*, and the springs *s s' t t'*, actively induced by the reciprocating rod N through the pressure of liquid on the diaphragm, all operating and arranged substantially for the purposes herein set forth.

331,137. RUNNING-GEAR FOR WAGONS. HENRY M. HORNER, Blossom Prairie, Tex. Filed Apr. 30, 1885. (No model.)



Claim.—1. The combination, substantially as described, with an axle, of an elastic strain-distributer having its outer ends inserted at the skein portion of the axle, respectively, at points beyond the line of the inner end of the skein, for the purpose set forth.

2. An axle skein having the flat longitudinal portion within and provided with a recess, substantially as and for the purpose set forth.

3. An axle flat along its lower side, with its body arched or oval in cross-section, and with tables or flats upon its top at suitable points, substantially as described.

4. The combination, with an axle, of a spring, and strain-rods connected to the spring and attached to the axle at the skein portion, as set forth.

5. The combination, with the axle, the spring, and the strain-rods, of an axle-skein provided with a recess for the reception of the end of the strain-rod, thus forming a stop against longitudinal displacement inward of the axle-skein, as described.

6. The nut for holding the skein against longitudinal displacement outward and simultaneously holding on the wheel alone, having a cup-shaped or concavo-convex rim to serve as a sand-guard, the nut forming a sand-housing, as set forth.

7. In combination with an axle, a skein provided with a concavo-convex rim on its inner end, substantially as and for the purpose described.

8. The combination, with the king-bolt having a clipped portion below, to avoid weakening of the axle, and a shoulder on the bolt above, of the link *l*, substantially as described.

9. The combination of the axle, king-bolt, the link, the coupling-pole, and the pins, substantially as described.

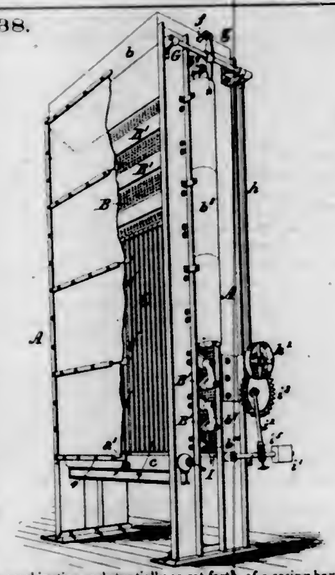
10. The combination of the king-bolt having the clip *i* and shoulder *k*, the coupling-pole with the clip for the rear axle, and having the coupling-eye *s* and pin *r*, as described.

331,138. GRAIN-DRIER. GEORGE H. IMMENDORF, Philadelphia, Pa., assignor to Henry G. Morris, same place. Filed Mar. 21, 1885. (No model.)

Claim.—1. The combination, substantially as set forth, of a casing having air inlet and discharge passages on its opposite sides, a chute or channel having gratings or perforations in its sides and extending through said casing and separating the grain-chute from the air-inlet passage on one side and the air-outlet passage on the other, a fan or blower for effecting the passage of a current of air through the casing and chute, and a series of radiators located transversely one above another in the chute.

2. The combination, substantially as set forth, of a casing having air inlet and discharge passages on its opposite sides, a chute or channel having gratings or perforations in its sides and extending through said casing and separating the grain-chute from the air-inlet passage on one side and the air-outlet passage on the other, a fan or blower for effecting the passage of a current of air through the casing and chute, a series of heater-pipes located in the casing between the supply-opening and the chute, and a series of radiators located transversely one above another in the chute.

331,138.



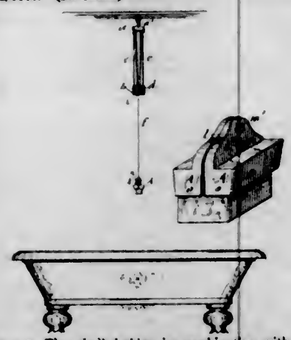
3. The combination, substantially as set forth, of a casing having air inlet and discharge passages in its opposite sides, a chute or channel having gratings or perforations in its sides and extending through said casing, a fan or blower for effecting the passage of a current of air through the casing and chute, and a series of radiators located transversely one above another in the chute, with their inner faces inclined alternately in opposite directions and their outer faces forming portions of the side walls of the chute.

4. The combination, substantially as set forth, of a casing, a grated or perforated chute or channel extending through said casing, a fan or blower for effecting the passage of a current of air through the casing and chute, a series of radiators or drying-boxes located transversely one above another in the chute and having their faces inclined in alternately opposite directions, a feed-hopper located above the chute and separated therefrom by a grated or perforated bottom, and an agitator adapted to reciprocate in the feed-hopper.

5. The combination, substantially as set forth, of a casing, a grated or perforated chute or channel extending through said casing, a fan or blower for effecting the passage of a current of air through the casing and chute, a series of radiators or drying-boxes located transversely one above the other in the chute and having their faces inclined in alternately opposite directions, a discharge-valve journaled to vibrate in bearings below an outlet in the bottom of the chute, and an adjustable mechanism adapted to vary the traverse of the discharge-valve and admit of the discontinuance of the movement of the same.

6. The combination, in a drier, of a grain-chute and a series of oppositely-inclined shelves, B, connected together and forming part of the walls of the chute, substantially as described.

331,139. CHALK-HOLDER. David Jimerson, Lyons, N. Y. Filed May 4, 1885. (No model.)

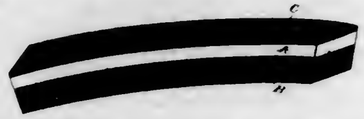


Claim.—1. The chalk-holder, in combination with its suspending device, consisting of the head-block *a*, foot-block *b*, guide-rods c c, attached to said blocks to maintain them a uniform distance apart, the slide *d* between the said guide-rods, sheaves e e', connected, respectively, with the head-block and slide, and the cord *f*, attached at one end to the head-block, and extending thence around the sheave *e'* of the slide and around the sheave *e* of the head-block, and connected at its free end with the chalk-holder, substantially as described and shown.

2. In combination with the chalk-holder, the suspending device consisting of the head-block *a*, foot-block *b*, guide-rods c c, holding said blocks a uniform distance apart, cushions *h h*, slide *d* between said rods, sheaves *e e'*, connected, respectively, with the head-block and slide, eyes *i i* on the slide and foot-block, and the cord *f*, attached at one end to the head-block, and extended thence around the sheave *e'*, and around the sheave *e* and through the eyes *i i*, and connected at its free end with the chalk-holder, substantially as described and shown.

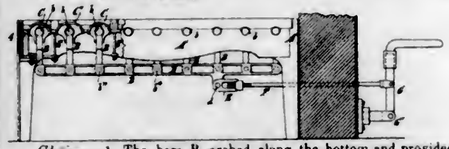
3. The chalk-holder consisting of the two half-cups A A, provided at their adjacent edges with the handles *l l*, and with the eyes *m m'* and the clamping-screw *n*, substantially as described and shown.

331,140. VULCANIZED-RUBBER PACKING. Frank C. Jones, New York, N. Y., assignor to the New York Belting and Packing Company, same place. Filed Oct. 10, 1885. (No model.)



Claim.—The improved packing having the back composed of an elastic vulcanized heat-resisting compound, such as the compound described, of rubber with oxide of zinc, talc, sulphur, and oil, the said backing being united to the edges of a number of plies of rubber-coated cloth, substantially as set forth.

331,141. GRATE. William F. Kelly, New Brunswick, N. J. Filed Jan. 31, 1885. (No model.)



Claim.—1. The bars B, arched along the bottom and provided with the ribs b^6, conforming to the arch of the bottom, and the ribs b^7, substantially as specified.

2. The combination, with grate-bars B, of leaves slotted from the bottom upward, the bars and the slots of the leaves being of different widths at different portions, so that they may interlock, and the bars having interruptions through which the leaves may be passed downward, and from which the leaves may afterward be moved lengthwise of the bars, substantially as specified.

3. The combination, with grate-bars having longitudinal ribs provided with interruptions, of leaves having slots corresponding with the cross-section of the grate-bars, and a leaf or leaves bolted or otherwise secured in place upon the grate-bars for preventing displacement of the leaves first named, substantially as specified.

4. The combination, with grate-bars having varying transverse projections, leaves having slots of varying widths extending from the bottom upward, interruptions in the bars, through which these leaves may be passed, and master or key leaves, substantially as specified.

5. The combination, with the grate-bars B, having shoulders b^{12}, flanges b^{11}, journals *b*, and interruptions b^9, of leaves provided with slots extending from the bottom upward, substantially as specified

6. The combination, with the bars B, provided with ribs b^8, having interruptions b^9, of the leaves C C', the leaves C^2, and the pins b^5, substantially as specified.

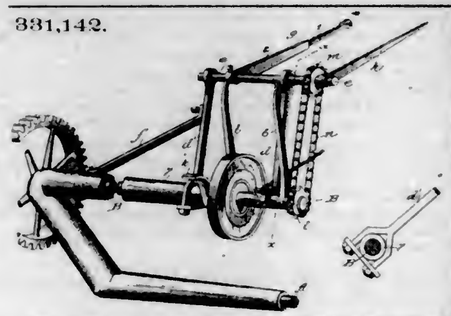
7. The combination of the reach-bar D, provided with the pin *d*, of the coupling-piece E, adjustable relatively to the reach-bar along the pin *d*, and the rod F, substantially as specified.

8. The combination of the reach-bar D, provided with the pin *d*, of the coupling-piece E, adjustable along the pin *d*, the rod F, screwing into the coupling-piece, and the lever G, to which the said rod is so connected that the rod will be prevented from adjustment in the coupling-piece, and the coupling-piece will be precluded from adjustment along the pin *d*, substantially as specified.

9. The combination, in a grate-frame, of the end pieces, A, provided with legs *a'*, lugs a^2, ribs a^3, the side pieces, A', resting upon the lugs a^2 and fitting the ribs a^3, and the bolts a^4, passing through the lugs a^2 and lugs a^3, extending from the side pieces, A', substantially as specified.

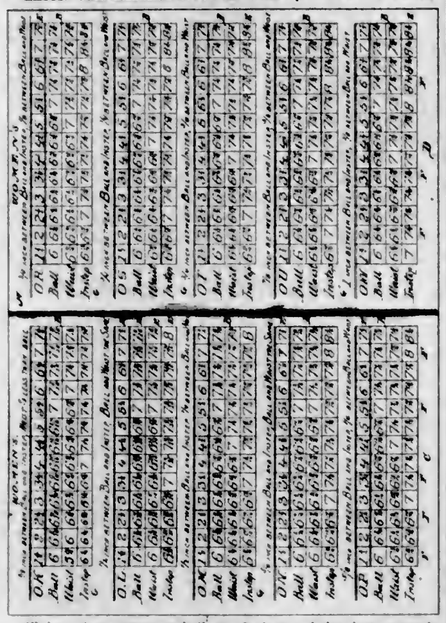
331,142. GRAIN-BINDER. Lewis G. Kemp and Peter Ross, Frederick, Md. Filed Aug. 16, 1884. (No model.)

331,142.



Claim.—In combination with a knotter-operating shaft and primary discharge-arms mounted thereon, a supplemental shaft, a suitable driving mechanism connecting the shafts, and an extensible arm, *g*, with a guide, *k*, fixed to the frame in the line of movement of said extensible arm, all substantially as described.

331,143. MEASUREMENT-INDICATOR OF BOOT AND SHOE LASTS. John Kimball, Boston, Mass. Filed Apr. 30, 1885. (No model.)



Claim.—A measurement-indicator for boot and shoe lasts, comprising a series of indicating and classifying spaces, "B.," which are divided into a series of cross-columns, "E. G.," in combination with indicating and classifying symbols or characters, and ball, waist, and instep measurements, all placed and arranged in the said columns of said indicating and classifying spaces, substantially as described, for the purpose specified.

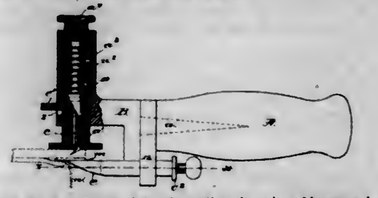
331,144. PLUMB-BOB FOR GAS-FITTINGS. Jas. J. Lawler, Scranton, Pa. Filed Mar. 16, 1885. (No model.)



Claim.—1. A plumbing device for gas-fitters, consisting of a frame, A, having a projection, *b*, and a tubular chamber, C, having different-sized screw-threads, and the plumb-bob D, and cord E, substantially as shown and described.

2. A plumbing device for gas-fitters, having a tubular chamber provided with different-sized screw-threads having a cord, E, secured therein, plumb-bob D, and frame A, having a projection, *b*, substantially as shown, and for the purpose specified.

331,145. TOOL FOR CHANNELING BOOT OR SHOE SOLE. John S. Leavitt, Boston, assignor to James W. Brooks, trustee, Cambridge, Mass. Filed July 27, 1885. (No model.)



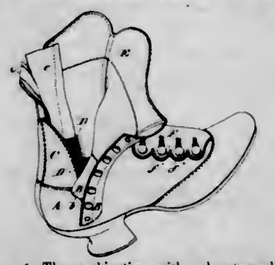
Claim.—1. In a tool for channeling the soles of boots and shoes, the hand-piece and connected frame or head B, the cutter-carrying block, and channel-cutter therein, combined with a yielding adjustable guide and the adjusting-screw *s'*, to secure the adjustability of said guide, substantially as described.

2. In a tool for channeling the soles of boots and shoes, the hand-piece and frame or head B, the cutter-carrying block and its attached spindle a^2, spring a^3, and adjusting-nut a^4, cutter *c*, and set-screw *c'*, combined with a yielding guide having a smooth bearing face and edge, and mounted in the frame or head at right angles to the axis of the cutter-carrying block, substantially as described.

3. In a tool for channeling the soles of boots and shoes, the hand-piece and frame or head B, combined with a yielding guide consisting of a bearing-face, forked arms *o o'*, cross-piece o^2, and spring *s*, substantially as described.

4. In a tool for channeling the soles of boots and shoes, the hand-piece and frame or head B, combined with an adjustable yielding guide to bear against the upper and upon the welt, the said guide consisting of forked arms *o o'*, cross-piece o^2, spring *s*, and adjusting-screw *s'*, having flange s^2 and unthreaded portion s^3, substantially as described.

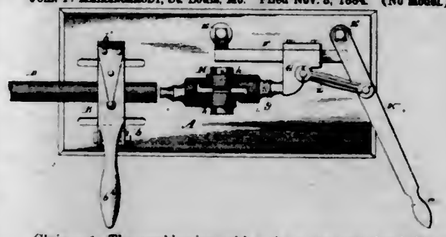
331,146. SHOE. Cyrus Libby, Austin, Ill. Filed Sept. 2, 1885. (No model.)



Claim.—1. The combination, with a shoe-top which is vertically divided on one side from a point at or near the counter upwardly, and is horizontally divided from the lower extremity of said vertical division to a point on the opposite side of the shoe, of a rear underlying ankle-piece which rises from the counter and side gores attached at their rear margins to said ankle-piece and at their front margins to the shoe-top, one in front of the vertical division and the other at a corresponding point on the opposite side of the shoe, substantially as described.

2. In a high shoe having its top or ankle portion divided vertically elsewhere than at the front, a vertical slit located over the instep, an external lapel attached to the upper at one side of said slit and covering the slit, and buttons on the opposite side of the upper for engaging the free edge of the lapel, substantially as described.

331,147. MACHINE FOR INSERTING COUPLINGS INTO HOSE. John F. Mallinckrodt, St. Louis, Mo. Filed Nov. 3, 1884. (No model.)

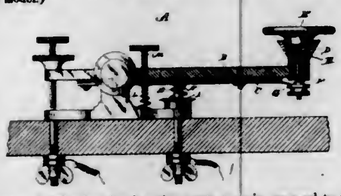


Claim.—1. The combination, with a clamp constructed to hold one end of a hose and a sliding block located in a line with the clamp and adapted to support a coupling or goose-neck, of an operating-lever for moving the sliding block toward and away from the clamp, substantially as set forth.

2. The combination, with a clamp consisting, essentially, of a stationary section and a hinged section, of a sliding coupling or goose-neck support located in a line with said clamp, and a lever for operating said sliding block, the parts being arranged, substantially as described, to enable the clamp to be operated by one hand and the sliding block by the other.

3. The combination, with a clamp, of a guide or way secured to two upright posts, a block adapted to slide on the way and provided with a plug or projection adapted to receive a coupling section and goose-neck holder, and an operating-lever pivotally secured to one of said upright posts and connected with the sliding block by a link, substantially as set forth.

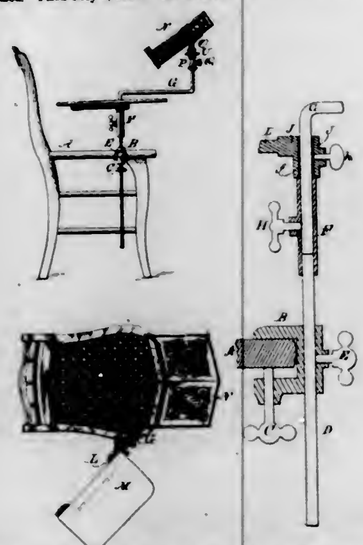
331,148. AUTOMATIC CIRCUIT-CLOSER FOR TELEGRAPH-INSTRUMENTS. James W. McArthur, Walton, Kan. Filed Oct. 3, 1885. (No model.)



Claim.—1. The key having the contact-strip secured to the lever and insulated therefrom, the flexible connection between the strip and the anvil, and the movable button having the contact disk or point in contact with the strip when the key is not in use, and adapted to automatically break connection with the strip when the button is depressed, substantially as described.

2. The combination, in a telegraph-key, of the strip C, secured to the lever and insulated therefrom, the spring connecting said strip with the anvil, and the vertically-movable button having the contact disk or point for connecting the strip C and the lever when the key is not in use, and breaking the said connection when the button is depressed, and the spring H, bearing under the button, substantially as described.

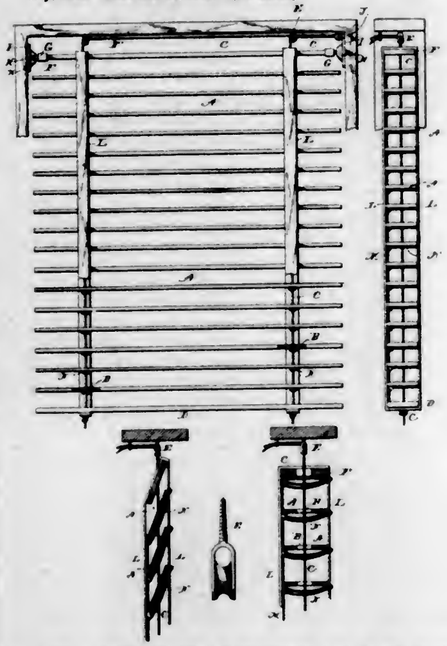
331,149. BOOK-REST FOR CHAIRS. Jesse D. McClure, Jeffersonville, Ind.; Simeon S. Johnson administrator of said Jesse D. McClure, deceased. Filed July 9, 1885. (No model.)



Claim.—1. The combination of a clamp shaped to be attached to a chair and having a perforation vertically through it, a set-screw extending to the said perforation, a standard fitted into the said perforation and provided with a socket fixed to its upper end for the reception of a book-rest, the said socket reduced circumferentially to a bearing having a shoulder at the lower end thereof, and a memorandum-shelf or arm-rest provided with a supporting-arm having a head perforated to fit upon the said bearing and shoulder and provided with a set-screw, substantially as shown and described, whereby the arm, when loosened, will revolve horizontally upon the socket without descending.

2. The combination of a clamp shaped to be attached to a chair, and having a perforation vertically through it, a set-screw extending into the said perforation, a standard fitted into the said perforation and provided at its upper end with a fixed socket opening upward and having an interior bottom, the said socket reduced circumferentially to a bearing having a shoulder at its lower end, a memorandum-shelf or arm-rest provided with a supporting-arm having a head perforated to fit upon the said bearing and shoulder and a set-screw to bind on the bearing, and a book-rest provided with a crank-shaped arm fitted at its lower end within the said socket to rest on the bottom thereof, and a set-screw in the socket, substantially as shown and described, whereby the shelf and the book-rest may both be held in any desired position in relation to each other, or either may be loosened and revolved to change its position horizontally without descending and without disturbing the other, as set forth.

331,150. WINDOW-SHADE ATTACHMENT. Elliott Metcalf, Cass City, Mich. Filed Jan. 24, 1885. (No model.)



Claim.—In an inside blind, the combination, with the slats strung upon a hoisting-cord and the tapes or bands secured to the top and bottom slats at both sides of the blind, of a cord passing down each pair of said tapes and secured to one of said tapes at regular intervals and formed into loops and knotted, the opposite end of said loops being secured to the other one of said tapes, and means for supporting and operating said blind, substantially as and for the purpose set forth.

331,151. APPARATUS FOR PURIFYING WATER. John H. Miller, Philadelphia, Pa. Filed Sept. 29, 1884. (No model.)

Claim.—1. The combination, with an inlet-pipe, of an air-chamber, an outlet-pipe therefrom having a valve therein, a pump communicating with said outlet-pipe, and a discharge-pipe from said pump, the inlet of the air-chamber having its upper end above the level of the outlet-pipe thereof, substantially as described.

2. The combination of pipe A, air-chamber B, pipe C, and cock C', the inlet-pipe A projecting so far into the air-chamber that its upper end is above the level of the pipe C, substantially as described.

3. The pipe A, air-chamber B, pipe C, pump D, air-pump E, pipes F F, pipe H, and air-chamber G, having openings G' G', combined and operating substantially as described.

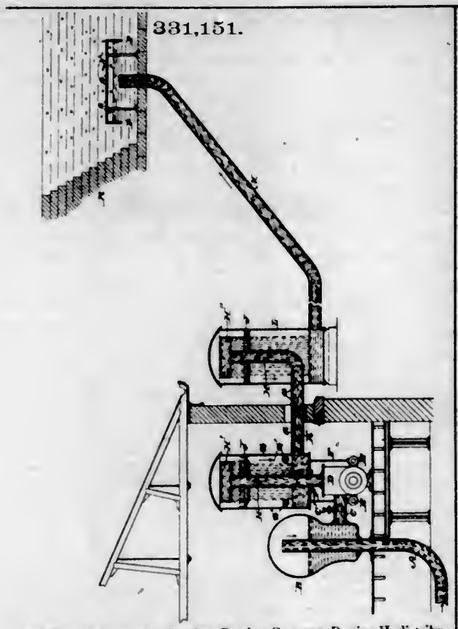
4. The pipe A, air-chamber B, pipe C, pump D, pipe H, air-chamber G, and outlet-pipe K, combined and operating substantially as described.

5. The pipe A, air-chamber B, pipe C, pump D, air-pump E, pipe H, air-chamber G, and distributer H', combined and operating substantially as described.

6. The pump D, pipe H, air-chamber G, and distributer H', combined and operating substantially as described.

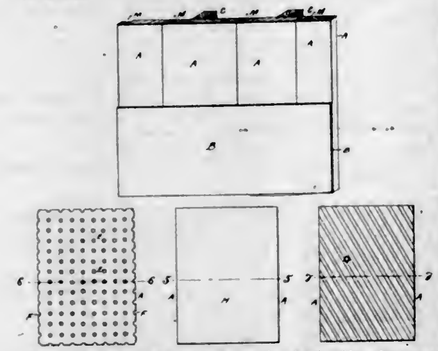
7. The pump D, pipe H, air-chamber G, air-pump E, distributer H', and pipe K, combined and operating substantially as described.

331,151.



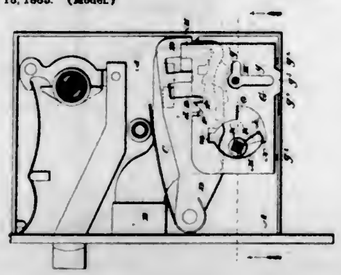
8. The inlet-pipe A, chamber B, pipe C, pump D, pipe H, distributer H', pipe K, air-chamber L, pipe M, cap N, and reservoir R, combined and operating substantially as described.

331,152. COMBINED COATING AND COVERING FOR SIDES OF ROOMS, &c. Edward C. Morris, Boston, Mass. Filed June 15, 1885. (No model.)



Claim.—An improved coating or covering for the sides of rooms or other inclosures and places, composed of separate layers made, the one of fibrous material or materials pulped and made water-proof into a sheet or other suitable form, and the other of a material or materials of a plastic nature or water-proof character, substantially as described.

331,153. LOCK. William M. Morton, Minneapolis, Minn. Filed May 18, 1885. (Model.)



Claim.—1. In a lock adapted to be operated by a key on one side and a cam turned by a suitable thumb-piece or knob on the other side, the guard-plate for covering the key-hole, adapted to be moved by the cam to close the key-hole after the bolt has been shot by the key substantially as shown and described.

2. In a lock, in combination with the bolt mechanism adapted to be operated by a key from the outside of the door, and means for operating the said bolt from the inside of the door, the guard-plate for covering the key-hole, adapted to allow such bolt to be shot by the key, and adapted to be moved by the means for operating the bolt from the inside, so that it shall cover the key-hole after the key is withdrawn, substantially as and for the purpose described.

3. In combination with the bolt-plate provided with a stud, the tumblers having slots through which extends said stud, the guard-plate for closing the key-hole, provided with a lug adapted to engage the rear side of the bolt-plate stud, and means, operated from the inner side of the lock, adapted to actuate the bolt to lock or unlock the door, and at the same time to move the guard-plate to close or unclose the key-hole, substantially as and for the purpose described.

4. In a lock adapted to be operated by a key on one side, the bolt-plate having a stud, and the tumblers having slots through which extends said stud, in combination with the guard-plate for closing the key-hole, provided with a lug engaging the rear side of the bolt-plate stud, when the bolt and plate are slid back, so that the bolt can be moved out by the key independently of the guard-plate, but the latter cannot be moved forward to close the key-hole without the bolt-plate and bolt being moved forward, substantially as and for the purpose set forth.

5. In a lock adapted to be operated from one side by a key and on the other by suitable means independent of such key, the bolt-plate and tumblers adapted to be operated by such means, and by the key, as desired, and the guard-plate for closing the key-hole, sliding on the outside of the series of tumblers, and provided in its upper edge with the two notches, the forward one of which has its rear side inclined backward, in combination with the pin on the outer tumbler adapted to engage these notches, and the means for operating the lock independently of the key, adapted also to reciprocate the plate, substantially as shown and described.

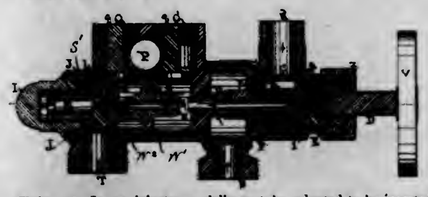
6. In a lock, in combination with the bolt-plate and tumblers adapted to be operated by a key from the outer side of the lock, the key-hole-guard plate provided in its upper edge with two notches, of which the forward one has its rear side inclined rearwardly, and the rear one has abrupt sides, the pin on the outer tumbler adapted to engage these notches, and means adapted to slide the bolt and guard-plate forward and back together in locking and unlocking the door, and move the guard-plate forward independently of the bolt when the said bolt has been shot by the key, substantially as shown and described.

7. The sliding guard-plate for the key-hole of a lock, provided on its upper edge with two notches, the forward one of which has its rear side inclined, and the other abrupt sides, in combination with a pin on the tumbler next the plate, adapted to engage such notches, substantially as and for the purpose described.

8. In combination with the sliding guard-plate for closing the key-hole of a lock, the cam for operating the tumblers and bolt, extending through and revolving in an opening in the plate, said opening being formed above the cam, so that as said cam is turned to throw the bolt in either direction it will also move the plate, and below with a shoulder against which the cam can be turned to throw the plate forward to close the key-hole, substantially as and for the purpose described.

9. In combination with the sliding guard-plate and means for automatically locking it when in position to close the key-hole, the cam for operating the tumblers and sliding the bolt independently of the action of a key extending through and revolving in an opening in the plate so formed above the cam that as the cam is turned to throw the bolt in either direction it will also move the plate, and below the cam formed with a shoulder against which the cam can be turned to throw the plate forward to close the key-hole when the bolt has been thrown forward by the key, substantially as and for the purpose described.

331,154. INJECTOR. Horace B. Murdock, Detroit, Mich. Filed Oct. 18, 1884. (Model.)



Claim.—1. In an injector, a delivery-tube adapted to be inserted through an opening in the end of a case made in one piece, and supported by one or more partitions cast in said case, in combination with

a screw-cap adapted to close the opening in said case and clamp said delivery-tube rigidly in position, substantially as shown and described.

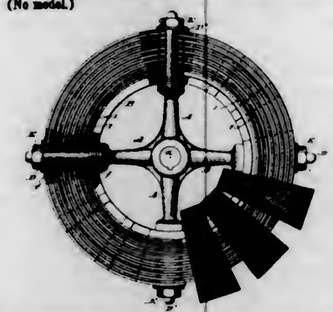
2. In an injector, the combination of the plug D, packing-rings E F, nut A, and stuffing-box Z, substantially as shown and described.

3. In combination with the plug D, having one end longitudinally perforated, and also having therein one or more transverse passages, C, the nut A, having the sections B cut therefrom, substantially as shown and described.

4. In an injector having its case made in one piece, and having steam, water, overflow, and discharge chambers formed therein by partitions cast integral therewith, a combining-tube formed in the partition which separates the water and overflow chambers, a plug adapted to close the mouth of said combining-tube, and having therein a longitudinal bore connected with the steam-chamber, supported by a stuffing-box, which closes one end of the case, and a delivery-tube connecting the overflow-chamber with the discharge-chamber, and held in place by a screw-cap, which closes the other end of said case, substantially as shown and described.

5. The combination of the delivery-tube having thereon shoulder L, perforated partition W, and screw-cap I, having therein one or more holes, J, substantially as shown and described.

331,155. ARMATURE FOR DYNAMO-ELECTRIC MACHINES AND MOTORS. Benjamin F. Orton, East Saginaw, Mich. Filed June 13, 1884. (No model.)



Claim.—1. An armature built up from thin superposed sheet-iron strips or plates bent in the armature-plane, and having lateral or transverse projecting portions integral with said strips or plates, and extending parallel with the axis of the armature, the superposed projecting portions being separated from one another by free air-spaces.

2. In a dynamo-electric machine or motor, a ring-armature having lateral projections at the spaces between the armature-coils, said projections being composed of thin sheet-iron plates placed one above the other in a radial line extending from the armature-center and separated from one another by air-spaces in planes transverse to such radial lines.

3. The combination, with a radial pin or bolt, as D, of two or more perforated sheet-metal strips having slots, as at H', for a radial pin or bolt, as D'.

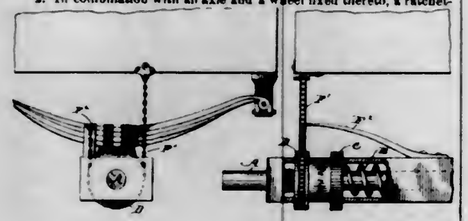
4. In an armature for a dynamo-electric machine or motor, the combination, with two or more superimposed sheet-metal strips, each having lateral extensions, and bent in the armature-plane of rotation, of interposed separating-pieces of iron.

5. In an armature made from iron in thin strips bent to the form of the armature, and having air-spaces extending laterally between the layers, lateral extensions integral with the bent strips.

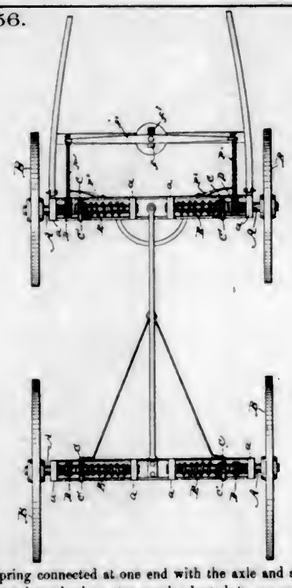
331,156. DRAFT DEVICE FOR VEHICLES. Theophilus H. Parmlee, Malvern, Ohio. Filed Sept. 17, 1885. (No model.)

Claim.—1. The combination, with an axle and a wheel fixed thereon, of a ratchet-wheel, a spring connected at one end with the axle and at its other end with the ratchet-wheel, a stop-pawl arranged to engage the ratchet-wheel, and a connection between said ratchet-wheel and the framing, whereby said wheel may be revolved and the spring be tightened, substantially as set forth.

2. In combination with an axle and a wheel fixed thereto, a ratchet-



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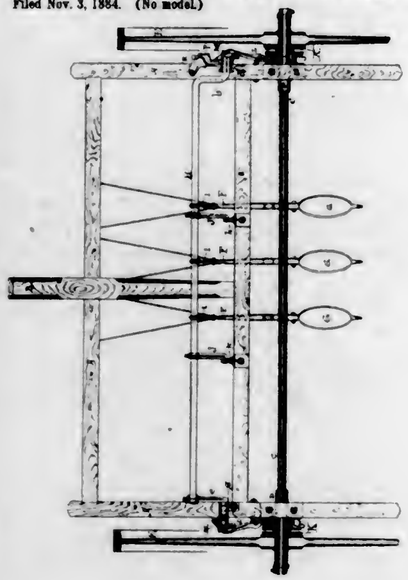
wheel, a spring connected at one end with the axle and at its other end with the ratchet-wheel, a stop-pawl adapted to engage the ratchet-wheel, a second wheel arranged to engage the ratchet-wheel, and an operating connection engaged with the said second wheel, substantially as set forth.

3. The combination of the axle, the wheel fixed thereto, the ratchet-wheel on said axle, the spring secured at one end to the ratchet-wheel and at the other end to the axle, a stop-pawl, a second-wheel adapted to engage the ratchet-wheel, and connections between said second wheel and the framing, substantially as set forth.

4. The improved draft-assisting mechanism herein described, consisting of the axle, the wheel fixed thereto, a ratchet-wheel and spring on said axle, a stop-pawl, a second wheel arranged to engage the ratchet-wheel, the whiffletree, and a connection between the whiffletree and the said second wheel, substantially as set forth.

5. The combination of the pair of axles, the whiffletree, the springs, stop-pawls, ratchet, and second wheels, and the connections between the second wheels and the whiffletree, substantially as set forth.

331,157. SEEDING-MACHINE. Charles E. Patric, Springfield, Ohio. Filed Nov. 3, 1884. (No model.)



Claim.—1. The hoes G, their lifting-chains, and the lifting crank-bar H, combined with arms J, rigidly secured to said crank-bar intermediate its ends, and jointed to the frame on the same axial line as the said crank-bar, for the purpose set forth.

2. The crank-bar H, with the crank-bend *b* at one end resting in the bearing *d*, combined with the arm *e*, rigidly secured to end of said crank-bar, and resting in the box *g*, whereby the arms J, lifting-chains, thimbles, &c., may be easily put on and off said crank-bar.

3. In a seeding-machine, a series of seed-cups and force-feed distributers, and a main axle or shaft, whereby power is transmitted to drive the seed-cups and distributers, provided at each end with a bearing-wheel, combined with clutches attached to said wheels, and clutch-collars adapted to simultaneously engage said clutches, whereby one or both of said wheels automatically may act as drivers for said shaft, as set forth.

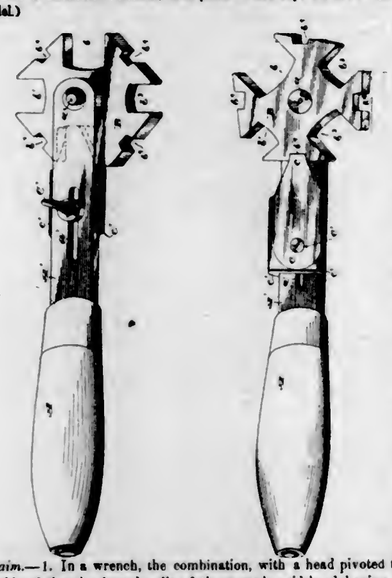
4 A seeding-machine wherein there is a series of seed-cups and force-feed distributers, and a main shaft to receive and transmit motion to the feed-wheels and the supporting and carrying wheels, each provided with a spring-clutch, combined with clutch-levers and a cam-bar, whereby said clutches may be simultaneously operated, and said wheels may be caused to engage and drive said shaft at both ends, as set forth.

5. In combination, in a seeding-machine, a main shaft to receive and transmit motion to the feed-wheels, the bearing-wheels, each provided with a clutch, and a cranked lifting-bar, H, to raise or lower the hoes, a cam, M, at each end of said lifting-bar, and the clutch-levers L, pivoted to the frame and actuated by said cams, whereby the turning of said bar to raise or lower the hoes automatically and simultaneously moves said notches out of or into engagement, as set forth.

6. The lifting crank-bar H, combined with the clutches J K, whereby the wheels E are locked to the axle C, and the clutch-levers L, in engagement with said crank-bar, so as to be actuated by it to control said clutches and move them into engagement when said crank is lowered and move them out of engagement when said crank is raised.

7. The lifting crank-bar H, provided at one end with two lugs, *p p*, each adapted to receive and hold the hand-lever Q, whereby said lever may be set in position convenient for operation from the driver's seat or from the ground, as set forth, combined with the arched rack or latch-plate R, with notches wherewith the hand-lever latch will engage with the lever in either position, as set forth.

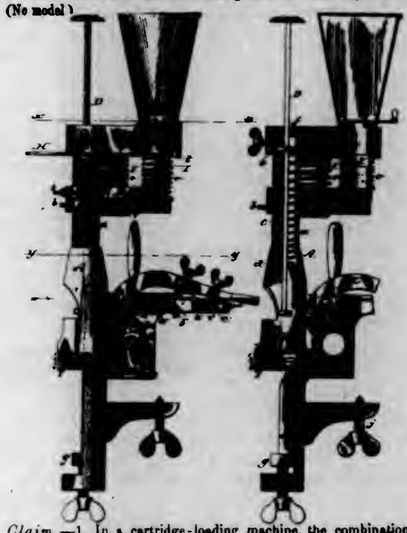
331,158. WRENCH. Edward Phillips, Cleveland, Ohio, assignor of one-half to Theodore F. Beidler, same place. Filed Sept. 15, 1885. (No model.)



Claim.—1. In a wrench, the combination, with a head pivoted to the outside of the shank or handle of the wrench, said head having a series of notches on the periphery adapted, respectively, to engage nuts, of a dog attached to the handle, for engaging the said notches on the periphery of the head to hold the head in the desired position, substantially as set forth.

2. In a wrench, the combination, with a revolving head pivoted to the handle, said head having a series of graduated notches on the periphery thereof, of a sliding dog arranged upon the handle to engage the respective notches on the periphery of the head, a thumb-screw for fastening the dog, substantially as set forth.

331,159. MACHINE FOR LOADING AND RELOADING CARTRIDGES. Martin F. B. Rice, Washington, D. C. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a cartridge-loading machine, the combination of a canister having separate compartments and discharge-passages, a swinging cut-off plate adapted to control both of said passages alternately and carrying two variable chargers, and the tables upon which the chargers rest arranged on different horizontal planes, substantially as described.

2. In a cartridge-loading machine, the combination of a canister having separate compartments, and discharge-pipes supported on a bracket, a swinging cut-off plate arranged below the canister and secured to the bracket by a pivot, two chargers having their upper portions attached to the swinging plate, and tables to support the chargers, said chargers being arranged upon the swinging plate, and apertures arranged in the tables in such relation to each other that one charger is filling while the other is discharging, substantially as described.

3. In a cartridge-loading machine, a wad-chamber formed in the column of the structure and provided with a swinging tapering gage at its bottom, substantially as described.

4. In a cartridge-loading machine, a wad-chamber provided with a series of tapering graduated gages arranged horizontally one above the other and removably secured to the discharge end thereof, substantially as described.

5. In a cartridge-loading machine, a wad-chamber formed in the column thereof and provided with two or more tapering gages removably attached thereto, in combination with seats or supports for said gages formed in the wall of the column, substantially as described.

6. In a cartridge-reloading machine, an arm projecting from the supporting-column and having a horizontal annular chamber formed therein to receive the open end of the cartridge, and vertical recesses to receive and support the closed or flanged end, in combination with a lever having a blade formed thereon in the plane of the lever and a blade projecting laterally therefrom and carrying points for decapping and recapping a cartridge, substantially as described.

7. In a cartridge-loading machine, a cradle provided with a revolving crimper at one end and a crimper for contracting a cartridge, hinged to one side of the cradle and adapted to be thrown into or out of the cradle, substantially as described.

8. In a cartridge-loading machine, a crimper consisting of a chamber having a series of tapering longitudinal grooves, and projections formed in one end thereof, and a central projecting core or stud integral therewith, substantially as described.

9. In a cartridge-loading machine, a cradle having a crimper hinged thereto and provided with a chamber containing a series of tapering longitudinal grooves and projections, and a central core in one end, formed integral therewith, in combination with a lever carrying a revolving wheel for forcing a cartridge into the crimper, substantially as described.

331,160. HOOK. John M. Riley, Newark, N. J. Filed Aug. 4, 1885. (No model.)

Claim.—1. A safety-hook consisting of two sections coupled together by means of a pivot, *b*, one of said sections being a hook and having at one end a longitudinal slot, *a*, for the passage of the coupling-pivot, said section being also provided with a longitudinal open notch, *d*, while the other section is elongated, so as to close the mouth of the hook-re-

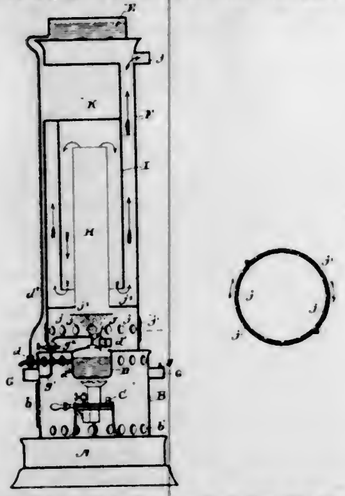
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cess when the two sections are interlocked, and is provided with a stud, *c*, which engages with notch *d* when the hook-section is moved laterally and longitudinally, substantially as described.

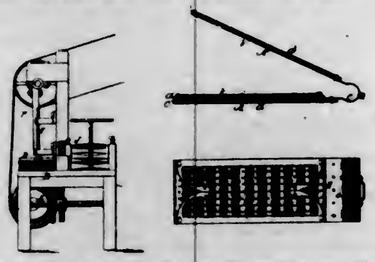
2. A safety-hook consisting of two similarly-shaped hook-plates united at one end by means of a pivot, one of said plates being provided with a longitudinal slot at its pivotal end for the passage of the pivot, and with a longitudinal open notch communicating with the hook-recess at the inner end of the latter, while the other plate is provided with a stud located between its hook portion and its pivotal end, adapted to enter and engage with said notch when the hook-plates are interlocked, substantially as shown and described.

331,161. PETROLEUM HEATING APPARATUS. ROBERT SCHULE Dresden, Saxony, Germany. Filed Dec. 31, 1883. (No model.)



Claim.—In a heating apparatus, the combination of two air-chambers provided with valves, the oil-supply pipe, the air or steam pipe, the chimney opening into the upper air-chamber, and the exit-flues formed by the cylinders D and E, substantially as described.

331,162. OIL-PRESS MAT AND COMPRESSOR. WILLIAM F. SHAFFER, Cedar Rapids, Iowa. Filed Feb. 24, 1885. (No model.)

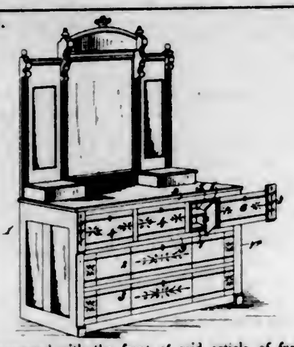


Claim.—In an oil-cake mat for box presses, the combination of an outer plane plate, an inner corrugated and perforated plate, an interposed oil-absorbing pad of fibrous material, and springs adapted to retain the cake and prevent cutting of the bag, substantially as specified.

331,163. HOUSEHOLD-FURNITURE. FRANK SHANNON, Middleport Ohio. Filed Aug. 11, 1885. (No model.)

Claim.—1. In a bureau or other article of furniture, a secret repository or concealed safe arranged within one of the divisions thereof, and a separable independent screening-plate having its front ornamented and

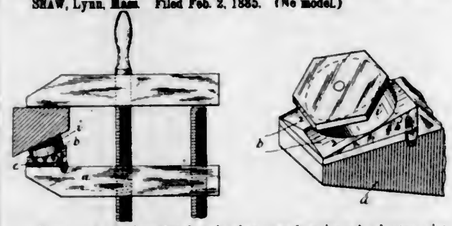
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paneled to correspond with the front of said article of furniture and adapted to engage therewith by grooves formed in the drawer-strips thereof, substantially as described.

2. In a bureau or other article of furniture, a secret safe or concealed repository arranged within one of the end divisions thereof and concealed by a screening-plate mounted on or rigidly attached to a section of the corner-post, said plate sliding in grooves in the drawer-strips, substantially as described.

331,164. HAND-SCREW OR VISE-JAW ATTACHMENT. EDGAR SHAW, Lynn, Mass. Filed Feb. 2, 1885. (No model.)

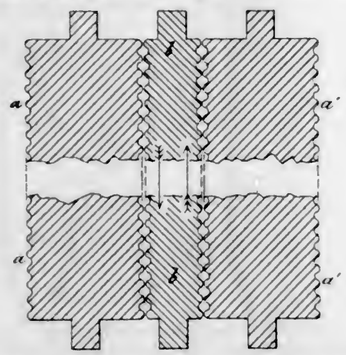


Claim.—1. A clamping-jaw having a wedge-shaped pivoted plate and a support for said plate, composed of two faces fixed relatively to the jaw and oppositely inclined transversely of the jaw, as set forth.

2. A clamping-jaw having a pivoted wedge-shaped plate and a supporting-surface for said plate, composed of two faces oppositely inclined transversely of the jaw and inclined lengthwise of the jaw, as set forth.

3. The improved clamping-jaw attachment composed of the detachable block *b'*, having the two-faced surface *b*, and the wedge-shaped plate *i*, connected to said block by a rocking pivot, *k*, as set forth.

331,165. MACHINE FOR SPLITTING WHEAT. THOMAS SHELDON, Oxford, County of Oxford, England. Filed Aug. 25, 1885. (No model.) Patented in England Nov. 19, 1884, No. 15,227.



Claim.—1. The combination, in a machine for splitting wheat lengthwise along the creases of the grain, of a rotating annularly-grooved roller, and a reciprocating annularly-grooved bar arranged adjacent and parallel to the roller, substantially as described.

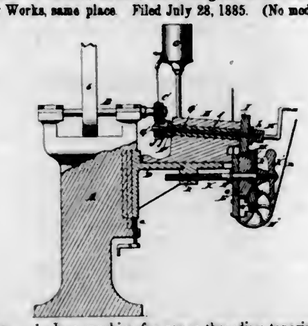
2. A machine for splitting wheat lengthwise along the creases of the grain, combining in its structure two annularly-grooved outside rollers revolving in opposite directions, and an intermediate longitudinally-reciprocating bar having annular grooves, substantially as described.

331,166. GATE. AMEL SIBERT, Grayville, Ill. Filed Aug. 10, 1885. (No model.)



Claim.—The combination of the gate B, the vertical cleat or brace L, having a continuation, K, the posts F, depending rods I, operating-levers J, and the cord O, connecting the rear end of the latch-bar to the end of one of the operating-levers, substantially as specified.

331,167. MACHINE FOR THREADING TAPERING BUSHINGS. HARRISON H. TAYLOR, Detroit, Mich., assignor to the Detroit Machine Screw Works, same place. Filed July 28, 1885. (No model.)



Claim.—1. In a machine for screw-threading tapering bushings, the combination, with a rotating multiple cutter, of a rotating chuck carrying the bushing, said cutter and chuck being set at an angle to each other, so that the tapering bushing at the point of contact with the cutter will be in the same plane therewith, substantially as and for the purpose described.

2. In a machine for screw-threading tapering bushings, the combination, with a rotating multiple cutter mounted upon a horizontal shaft, of a rotating chuck for carrying the bushing, said chuck being inclined at an angle to the cutter, substantially as and for the purpose described.

3. In a machine for screw-threading tapering bushings, the combination, with a rotating multiple cutter mounted upon a horizontal shaft, of a horizontally-movable block, a tubular arm located in said block in an inclined position, and having at one end a chuck upon which the bushing is carried, and a gear by which said arm is rotated, substantially as described.

4. In a machine for screw-threading tapering bushings, the combination, with a rotating multiple cutter mounted upon a horizontal shaft, of a horizontally-movable block having a tubular arm set in an inclined position in said block and carrying a chuck at one end, a vertically-movable bed for supporting the horizontally-movable block, and a gear by which said arm is rotated, substantially as described.

5. In a machine for screw-threading tapering bushings, the combination, with a rotating multiple cutter mounted upon a rotating shaft, of a vertically-movable bed supporting a horizontally-movable block, a tubular arm carrying a chuck located in said horizontally-movable block in an inclined position, a gear mounted on said arm and meshing with a gear mounted on a screw-shaft working in the vertically-movable bed, and passing through an apron depending from the horizontally-movable bed, substantially as and for the purpose described.

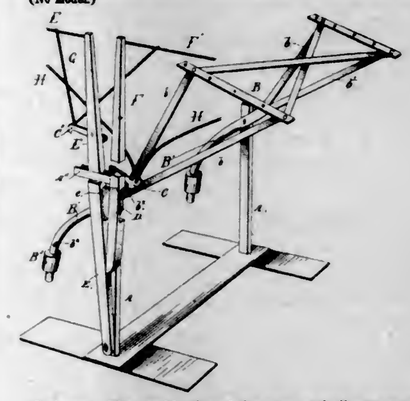
6. In a screw-cutting machine, a movable bed having, in combination therewith, a movable block supporting a rotatable chuck, a screw shaft engaging said block with said bed, said shaft and said chuck provided with gear for rotating the chuck and simultaneously moving the block horizontally, substantially as and for the purpose described.

7. In a screw-cutting machine, a chuck provided with movable jaws having a spindle sleeved therein, said spindle constructed with wedge-shaped grooves adjacent to said jaws, and having a screw-tapped engagement with an operating-handle, substantially as and for the purpose described.

8. In a screw-cutting machine, the combination, with a support, of a movable bed provided with a movable block located thereon, said block provided with a chuck for holding the work, a screw-shaft connecting said block to said bed, said shaft provided with a gear, L, meshing with a gear for rotating said chuck, and a gear, M, provided with a clutch to engage and disengage the gear L, substantially as described.

9. In a screw-cutting machine, the combination, with a movable block, of a tubular chuck provided with movable jaws for holding the work, a spindle sleeved in said chuck provided with wedge-shaped orifices and provided with an operating-handle screw-tapped thereon, and with a gear, I, and mechanism for operating said gear, substantially as described.

331,168. GATE. HIRAM TERRY, Bonham, Tex. Filed Nov. 20, 1884. (No model.)



Claim.—1. The combination of the gate, vertically-arranged arms projected rearwardly and upwardly therefrom and counterbalanced on their outer ends, supports pivotally connected to said arms midway of their ends, and an interlocking latch to engage and retain the gate in an elevated position, substantially as described.

2. The combination of the supports or standards, the gate provided with rearwardly-extended arms pivoted to said standards, the pulley journaled to one of the standards, and the main operating-lever pivoted to the support, a cord secured at one end to one arm of the gate and at its other end to the main lever, and carried over the said pulley, and means whereby the said lever may be actuated from either side of the gate, substantially as set forth.

3. The combination of vertical supports, a gate vertically arranged and set at a distance in advance of the supports, arms rearwardly extended from the gate and pivotally attached to the supports midway of their ends, counter-balances on the free ends of the arms, a stud projecting laterally from one arm, and a latch pivoted to the support and adapted to engage said stud, whereby the gate is held in a closed position, substantially as described,

4. The combination, with the standards or supports, of the gate and its rearwardly-extending counterbalance-arms pivoted to the supports, and latches on the supports adapted to engage one of the gate-arms and secure the gate in either its open or closed position, substantially as set forth.

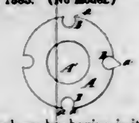
5. The combination of the supports, the gate having its arms pivoted thereto, the main lever pivoted to one of the supports and connected with one of the gate-arms, and the supplemental lever arranged to engage the main lever, substantially as set forth.

6. The combination, with the supports, the gate having its arms pivoted to the supports, the latch C', adapted to engage one of the arms and retain the gate in its closed position, the latch C, adapted to engage one of the arms and hold the gate open, the main lever E, pivoted at its

lower end and connected with one arm of the gate, and the supplemental lever F, all substantially as and for the purposes specified.

7. The combination of the standards or supports arranged laterally to and in rear of the gateway, the gate fitted to said gateway and provided with rearwardly-extended arms pivoted to the supports, and the levers and ropes whereby the gate may be operated, substantially as and for the purposes set forth.

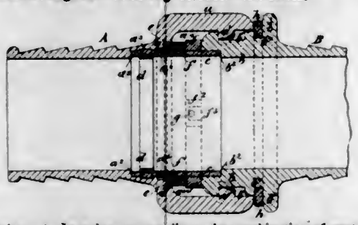
331,169. NUT-LOCKING WASHER. GEORGE C. THOMAS, Waterbury Conn. Filed June 15, 1883. (No model.)



Claim.—1. A nut-lock washer having in its edge apertures of circular form, the edges of the apertures being curved throughout their entire extent, and having the points or corners on opposite sides of the apertures bent or deflected in opposite directions, substantially as and for the purpose described.

2. A nut-lock washer having in its edge apertures of circular form the centers of which are within the line of the edge of the washer, or which are greater than a semicircle, and having the points or corners on opposite sides of the apertures bent or deflected in opposite directions, substantially as and for the purpose described.

331,170. UNION OR COUPLING FOR PIPES, HOSE, AND OTHER ARTICLES. NATHAN THOMPSON, 23 Southampton Buildings, County of Middlesex, England. Filed Aug. 10, 1885. (No model.)



Claim.—1. In unions or couplings, the combination of part A with a socket, *a*, projections *a'*, enlarged chamber or bore a^2, cylindrical space a^4, and recesses a^5 and a^6, to act in combination with an india-rubber tube or sleeve, *c*, metal ring *f*, spring *e*, and part B, which has a plug, *b*, formed with returned bayonet-grooves *b'*, and with an enlarged chamber or bore, b^2, substantially as herein shown and described, and for the purpose stated.

2. The combination of a socket, *a*, projections *a'*, enlarged chamber or bore a^2, cylindrical space a^4, plug *b*, grooves *b'*, enlarged chamber or bore b^2, india-rubber tube or sleeve *c*, and spring or springs *e*, all constructed substantially as herein shown and described, and for the purpose stated.

3. The combination, with the socket *a* and the plug *b*, having the enlarged chamber or bore a^3 b^2, of the india-rubber tube or sleeve *c*, fitting in said enlarged bore or chamber, as and for the purpose set forth.

4. The combination, with the socket *a*, having the enlarged bore or chamber a^3 and the cylindrical space a^4, and the plug *b*, having the enlarged bore or chamber b^2, of the india-rubber tube or sleeve *c*, occupying said enlarged bore or chamber, the metallic ring *f f'*, surrounding said tube, and the spring *e*, all constructed and arranged substantially as set forth.

5. The combination, with the socket *a* and plug *b*, having the enlarged bore or chamber a^3 b^2, of the india-rubber tube *c*, fitting within said chamber, and the expanding ring *d* within said tube for the purpose set forth.

6. The combination, with the socket *a*, having the enlarged bore or chamber a^3, and annular recess a^5, of the india-rubber tube *c* and the expanding ring *d*, arranged substantially as set forth.

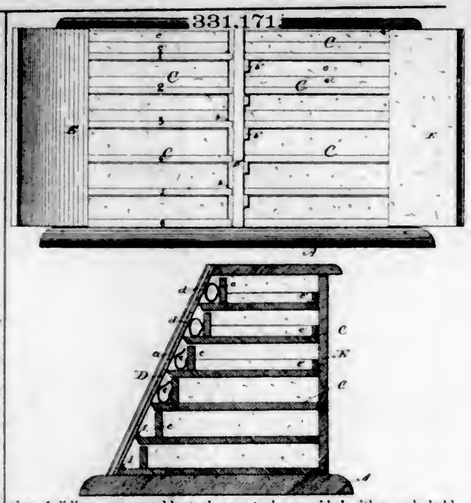
7. The combination, with the socket *a*, having the space a^4 and recess a^5, and the plug *b*, of the metallic ring *f*, having the contracted cylindrical portion *f'*, and the spring *e*, surrounding said contracted portion, as set forth.

331,171. COMBINED STOCK AND SAMPLE SHOW-CASE. WILLIAM P. VROOMAN, Johnstown, N. Y., assignor to Joseph R. Torrey, Worcester, Mass. Filed Apr. 24, 1885. (No model.)

Claim.—1. The combination, with a show-case having a transparent front and a door behind, by which its otherwise open rear portion is closed, of a series of stock-receptacles accessible from behind and provided at their front ends with sample-holding devices, substantially as set forth.

2. The combination, with a show-case having a transparent front and a door behind, by which its otherwise open rear is closed, of a series of sliding or removable stock-receptacles provided with sample-holding devices at their front ends, substantially as set forth.

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3. The combination, with a show-case having a slanting or inclined transparent front and a door behind, by which its otherwise open rear is closed, of a series of sliding or removable stock-receptacles having spaces or compartments at their front ends for holding samples corresponding to the stock behind them, substantially as set forth.

4. The combination, with a show-case having a transparent front provided with a series of numbers or other reference-characters, of a series of removable stock-receptacles provided at their front ends with sample-holding devices and at their rear ends with reference-characters corresponding with those on the said transparent front, substantially as set forth.

331,172. PAPER-FILE. EDWD. F. WEBSTER, Brainerd, Minn. Filed Jan. 28, 1885. (No model.)



Claim.—1. The combination of a closed case, A, having an interior series of parallel partitions, *a a'*, of varying length, so that one projects outward beyond the other, and the covers B, having their longitudinal edges resting on and supported by the outer edges of the partitions and provided with attached hooks *f*, substantially as described.

2. The combination of the closed case A, having a series of partitions, *a a'*, the detachable covers B, resting directly on the partitions, the stripe *e*, secured to the inner sides of the covers and fitting the spaces between the partitions and the walls of the case, and hooks secured to the said strips, substantially as described.

3. The combination of the closed case A, having the partitions *a a'*, one projecting outward beyond the other, the detachable covers B, resting directly on the partitions, the stripe *e*, secured to the covers and fitting the spaces between the partitions and the walls of the case, and hooks connected to the said strips, substantially as described.

4. The combination of the closed case A, having the steps *b b* and the partitions *a a'*, one projecting outward beyond the other, to correspond to the steps, and the detachable covers B, resting on the partitions and having attached hooks, substantially as described.

331,173. TREADLE FOR BICYCLES. GEORGE W. WEIDMAN, Washington, D. C. Filed Oct. 10, 1885. (No model.)



Claim.—1. The device herein described for converting a reciprocating motion into a rotary motion, consisting of a ratchet-wheel attached to an axle, in combination with a frame pivotally secured on a line with the center of the ratchet-wheel when the treadle is depressed, substantially as shown.

2. In a device for converting motion, the axle B, having a ratchet-wheel rigidly attached thereto, said axle having a bar pivotally attached to the same, a curved bar with ratchet-teeth pivotally secured to the bar attached to the axle, and a reciprocating lever attached to the same, the parts being organized substantially as shown.

3. In a bicycle, the combination of the axle B, having a driving-wheel rigidly attached thereto, a ratchet-wheel rigidly secured to said axle, a cross-bar, E, pivotally attached to the axle, and a frame pivoted to said cross-bar, said frame having attached thereto a pedal or lever, which is moved upwardly by a spring device, substantially as shown, and for the purpose set forth.

4. In combination with the drive-wheel of a bicycle, a ratchet-wheel attached to the axle of the same, and provided with a curved bar which is pivotally attached thereto and provided with ratchet-teeth, a treadle having a spring device attached thereto for moving said pedal upwardly, substantially as and for the purpose set forth.

5. In combination with a driving-wheel of a bicycle or velocipede, the ratchet-wheel D, rigidly secured thereto, a cross-bar pivotally attached to said axle, and provided with end bearings for the reception of the inwardly-projecting arms F of the curved bar G, which is provided with ratchet-teeth *g*, a lever attached to the pivoted frame, and provided with a spring device for moving said lever upwardly so as to carry the pivoted frame out of engagement with the ratchet-wheel, substantially as shown, and for the purpose set forth.

6. In a bicycle, the combination of the cross-bar E, which is centrally attached to the axle B, a frame consisting of arms F F, and a curved rack-bar, said frame having attached thereto a pedal, a ratchet-wheel rigidly attached to the axle, and a spring device for moving pedal upwardly, and pivotally moving the ratchet-teeth on the curved bar G out of engagement with the ratchet-wheel, substantially as and for the purpose set forth.

7. The treadle for bicycles herein described, having its end or foot portion to one side of the curved bar G, so that the same will be forced in contact with a ratchet-wheel, D, when depressed, substantially as and for the purpose set forth.

331,174. FEEDING MECHANISM FOR SEWING-MACHINES. NATHANIEL WHEELER and WILBUR F. DIAL, Bridgeport, Conn., assignors to Wheeler & Wilson Manufacturing Company, same place. Filed July 2, 1885. (No model.)

Brief.—A hand-lever at the rear side of the upright supporting the overhanging arm is attached to a rock-shaft, the turning of which raises or lowers the pin or shoe in a segmental groove for setting the device to secure any rate of feed desired.

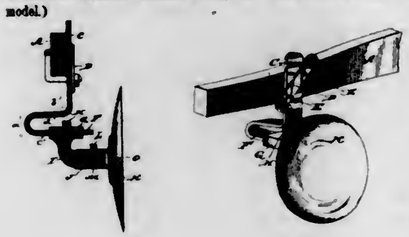


Claim.—1. The main rotating shaft located below the bed-plate, the cam B thereon, the elbow-lever D, grooved as described, and actuated by the said cam, the link C', the rock-shaft C, having the arms 4 and 3, and the feed-bar B^4, combined with the rock-shaft *b'*, its two arms *b b²*, and the cam *e*, to operate all substantially as described.

2. The main rotating shaft located below the bed-plate, the cam B thereon, the segmentally-slotted elbow-lever D, moved by the said cam, the rock-shaft C, provided with arms 3 and 4, the feed-bar B^4, the rock-shaft *b'*, having the arms *b* and b^2, and the cam *e*, combined with the link C', having a shoe to enter the slot of the lever D, and with the link *f*, rock-shaft f^2, and its arms *f' f²*, to operate substantially as described.

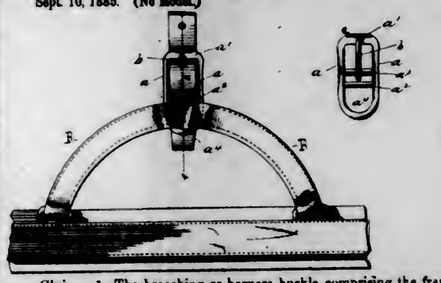
3. The main shaft, its attached cam-grooved hub, the rock-shaft C, and feed-bar pivoted to it, and the arm to support the free end of the feed-bar, and the link C', having the shoe or pin, combined with the segmentally-slotted elbow-lever, the connecting-rod extended above the bed-plate, and the rock-shaft f^2, having arms *f'* and f^3, the combination being and operating substantially as described.

331,175. COLTER AND JOINTER ATTACHMENT FOR PLOWS. WILLIAM A. WHITNEY, Stillman Valley, Ill. Filed Mar. 18, 1885. (No model.)



Claim.—In a connecting device for attaching a colter to a plow-beam, the combination, with the curved arm I, provided with annular grooved axle M, flat rectangular sleeve G, and set-screw H, of the arm F, having a lower U-shaped portion and a vertical or shank portion, and the clip D, for securing said arm to the plow-beam, substantially as and for the purpose set forth.

331,176. BUCKLE. MELANCTHON E. ZELLER, Bluffton, Ohio. Filed Sept. 10, 1885. (No model.)



Claim.—1. The breeching or harness buckle comprising the frame having two intermediate bars, one being the tongue-connecting bar standing outward or away from the inner base of said frame, the other intermediate bar being arranged flush with the outer or front side of said frame and a short interval from the aforesaid bar, and substantially in a line with the end bars, substantially as and for the purpose set forth.

2. In a breeching or harness buckle, the frame having the end loop and the intermediate bars, one being the tongue-connecting bar standing slightly outward or away from the inner or rear side of said frame, the other intermediate bar being arranged a short interval from the aforesaid bar and flush with the opposite or front side of the frame, the upper or outer end bar of said frame having a ledge or flange overhanging the free end of the tongue, substantially as and for the purpose set forth.

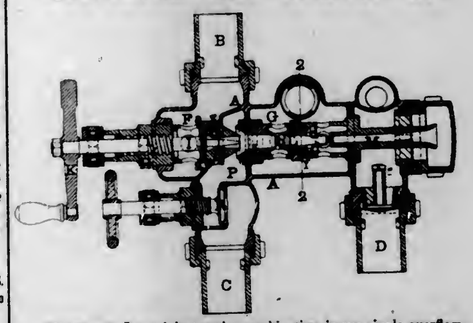
331,177. TABLE-FORK. ELMER E. ALDEN, Springfield, Ohio. Filed May 26, 1885. (No model.)



Claim.—1. A table-fork, A, combined with a detachable blade, B, provided with a cutting-edge on one margin and on the other a holding device adapted to receive the tine of said fork, substantially as set forth.

2. The blade B, curved flatwise and having along one margin a cutting-edge, *f*, and along the other margin one or more sockets, *d*, and a space, *g*, whereby said blade may be attached to the tine of an ordinary table-fork, substantially as shown.

331,178. INJECTOR. J. SELLERS BANCROFT, Philadelphia, Pa., assignor to William Sellers, same place. Filed June 6, 1885. (Model.)



Claim.—1. In an injector, the combination, in one single overflow-chamber, of a forward overflow-space located near the smallest diameter of the delivery-tube, and a rear overflow-space located in the combining-tube at a point in the rear of that where the cross-sectional area of this converging tube contracts to less than one and four-tenths that of the smallest cross-sectional area of the steam-nozzle, substantially as and for the purposes set forth.

2. In an injector, the combination, in one single overflow-chamber, of a forward overflow-space located near the smallest diameter of the delivery-tube, and a rear overflow-space perpendicular to the axis of the jet located in the combining-tube at a point in the rear of that where the cross-sectional area of this converging tube contracts to less than one

and four-tenths that of the smallest cross-sectional area of the steam-nozzle, substantially as and for the purposes set forth.

3. In an injector, a steam-nozzle, a combining-tube, and a delivery-tube, the steam-nozzle provided with a divergent discharging end, the combining-tube provided with a rear overflow-space perpendicular to the axis of the jet at a point where the cross-sectional area of this tube is greater than that of the largest cross-sectional area in the discharging end of the steam-nozzle, the delivery-tube provided with an overflow-space in the rear of its smallest cross-section, and an overflow-chamber common to both of the overflow-spaces, the combination being and operating substantially as and for the purposes set forth.

4. In an injector, the combination of a forward overflow-space with a rear overflow-space perpendicular to the axis of the jet and located in the combining-tube at a point where the cross-sectional area of this tube is greater than that of the largest cross-sectional area in the discharging end of the steam-nozzle, and an intermediate overflow-space, substantially as described, and for the purposes set forth.

5. In an injector, the combination of a forward overflow-space and a rear overflow-space perpendicular to the axis of the jet and located in the combining-tube at a point where the cross-sectional area of this tube is greater than that of the largest cross-sectional area in the discharging end of the steam-nozzle, with an intermediate overflow-space located in the converging combining-tube at a point forward of that where the cross-sectional area of this converging tube contracts to less than that of the steam-nozzle, for the purposes set forth.

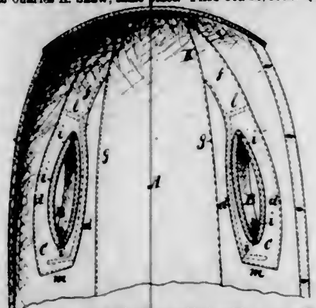
6. In an injector, the combination of a forward overflow space, a rear overflow-space, and an intermediate overflow-space, substantially as described, with an overflow-chamber common to all of these overflow-spaces, for the purposes set forth.

7. In an injector, a taper steam-plug and a steam-nozzle, in combination with a rear overflow-space perpendicular to the axis of the jet located in the combining-tube at a point in the rear of that where the cross-sectional area of this converging tube contracts to less than one and four-tenths that of the smallest cross-sectional area of the steam-nozzle, for the purposes set forth.

8. The collar *f* on the forward tube, L', in combination with the coupled ends of the tubes L and M, substantially as and for the purposes set forth.

9. In an injector, a steam-nozzle and a delivery-tube which are pressed toward each other by the steam and the water pressure, respectively, and are maintained in their proper relative positions against such pressure by valves and valve-seats, substantially as and for the purposes set forth.

331,179. CIRCULAR CLOAK. THOMAS D. BARTER, Boston, Mass., assignor to Charles A. Shaw, same place. Filed Oct. 30, 1884. (No model.)



Claim.—1. A gossamer-cloak provided with a re-enforcing stay stitched to and surrounding the arm-scye thereof, said stay being extended upward to the shoulder-seam of the cloak, substantially as described.

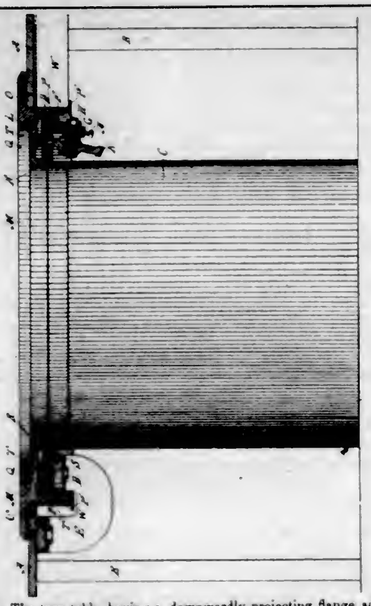
2. A gossamer-cloak provided with a re-enforcing stay stitched to and surrounding the arm-scye thereof, said stay being extended upward to the shoulder-seam of the cloak and being loose from a point above the arm-scye to its point of connection on the shoulder, substantially as described.

331,180. TURN-TABLE FOR HAT-FORMING MACHINES. RUSSELL A. BELDEN, Danbury, Conn., assignor to the R. A. Belden Co. Filed June 8, 1885. (No model.)

Claim.—1. In a hat-forming machine, the combination, with the ring and the rollers carried thereby, of the turn-table carried by said rollers and having a downwardly-projecting flange which bears against the edge of the ring and carries a belt whereby motion is imparted to the turn-table.

2. The bed-plate, brackets secured thereto, a ring carried by said brackets, and rollers carried by said ring, in combination with the turn-table having a downwardly-projecting flange which bears against the ring and is adapted to carry a belt whereby motion is imparted to the turn-table.

331,180.



3. The turn-table having a downwardly-projecting flange adapted to carry a belt, in combination with a ring carrying rollers which support the turn-table, and having oil-cups with openings through the outer edge of the ring whereby the bearing of the turn-table on the ring is kept constantly oiled.

4. The bed-plate, U-shaped brackets secured to said bed-plate, and a ring carried by said brackets, and having a series of rollers, in combination with a turn-table carried by said rollers and having a downwardly-projecting belt-flange with a lip, P', and a belt upon said flange.

5. The bed-plate having a central opening, a ring carrying rollers and having a notch at its inner edge, and brackets connecting the ring to the bed-plate, in combination with a turn-table carried by said rollers and bearing against the outer edge of the ring, the upper surface of said turn-table being made to cover said central opening and being provided with a downwardly-turned lip engaging the notch in the ring, whereby the escape of air under the turn-table is prevented, but the turn-table has no bearing except upon the rollers and the outer edge of the ring.

6. The ring having openings L and lugs F, the latter having slots G, in combination with the rollers whose journal-pins rest in said slots, the turn-table carried by said rollers, and screws N, which bear against the journal-pins, whereby said journal-pins and the rollers carried thereby may be raised or lowered to adjust the turn-table.

7. The turn-table having a belt-flange and the ring having rollers upon which the turn-table rides and a bearing at its outer edge for the belt-flange, in combination with an air-tight exhaust-tube.

8. The exhaust-tube and the ring carrying a series of adjustable rollers, in combination with the turn-table having a belt-flange and a lip which closely fits the inner edge of the ring to prevent escape of air, but which bears only upon the rollers and upon the outer edge of the ring, whereby all supporting mechanism within the exhaust-tube is dispensed with.

331,181. BEARING FOR FUR-BLOWING MACHINES. RUSSELL A. BELDEN, Danbury, Conn., assignor to the R. A. Belden Company. Filed June 8, 1885. (No model.)

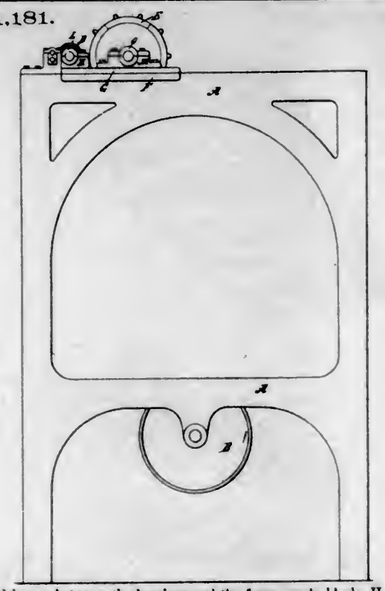
Claim.—1. In a hat-forming machine, the combination, with the cylinder-journals, of bearings therefor supported outside the frame-work of the machine and drip-cups between said bearings and frame-work, whereby the formation of grease dags or flakes in the fur is wholly prevented.

2. The cylinders having elongated journals, in combination with bearings therefor at the outer edge of a plate, G, a drip-cup in said plate between the bearings and the frame-work of the machine, and a bracket attached to or made part of the frame-work, whereby the plate is supported.

3. The cylinders having elongated journals, in combination with plate G, having a drip-cup, movable blocks bolted to the plate, in which are the bearings for the picker and brush cylinder journals, and a bracket upon the frame-work which supports the plate and the parts carried thereby.

4. The frame-work and bracket, in combination with plate G, having a drip-cup between the bearings and the frame-work, blocks H and M, in which are the bearings and whose attaching-bolts pass through slots N, whereby said blocks are made adjustable, journals K and Q, and the caps therefor.

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331,182. METHOD OF OBTAINING HYDRATE OF ALUMINA FOR PAPER-MAKERS' USE FROM BAUXITE, &c. GEORGE F. BURN, Philadelphia, Pa., assignor to the Pennsylvania Salt Manufacturing Company, same place. Filed Sept. 14, 1885. (No specimens.)

Claim.—1. The process herein described of manufacturing artificial hydrated alumina free from iron as a filler or for the production of sulphate of alumina to be used in the manufacture of paper, substantially as herein set forth.

2. The process herein described of producing from bauxite artificial hydrated alumina free from iron, substantially as herein set forth.

3. The process herein described of producing from bauxite artificial hydrated alumina free from iron, the process consisting, essentially, in first calcining an intimate mixture of bauxite, salt-cake, and coal, lixiviating the calcined mass with water, separating the liquid thus obtained from the insoluble matter, then boiling the clear liquor with finely-divided metallic copper or a suitable compound of copper, then separating the liquor thus obtained from insoluble matter, then precipitating hydrated alumina from the clear solution by carbonic-acid gas or bicarbonate of soda, and, finally, washing this insoluble product with water and drying the same by steam or otherwise, substantially as herein set forth

331,183. FEEDING MECHANISM FOR SEWING-MACHINES. ANDREW C. CAMPBELL, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed July 27, 1885. (No model.)



Claim.—The rotating shaft, its attached cam, and the elbow-lever actuated by it, and the feeding-bar and the rock-shaft to reciprocate it to effect the feeding movement of the material, combined with the two links *e f'*, pivoted together at *f*, one of the said links being connected with the said elbow-lever, while the other of the said links is connected to an arm of the said rock-shaft that reciprocates the feeding-bar, and with means to adjust the center pin joining the said links toward and from the center of motion of the said elbow-lever, substantially as described.

331,184. WATER-WHEEL. JAMES P. COLLINS, New London, Conn. Filed Feb. 2, 1885. (No model.)

Claim.—1. The combination, in a turbine of the class designated, of a water-wheel consisting of a central hub and buckets surrounding the same, with a series of guides for directing the water in an inclined direction to the said buckets, and a vertically-movable gate composed of a series of plates or vanes, each of said plates or vanes being adapted to slide on the rear face of one guide, and having a water-guiding curved or bent portion to abut the front lower portion of the next succeeding guide, as and for the purposes specified.

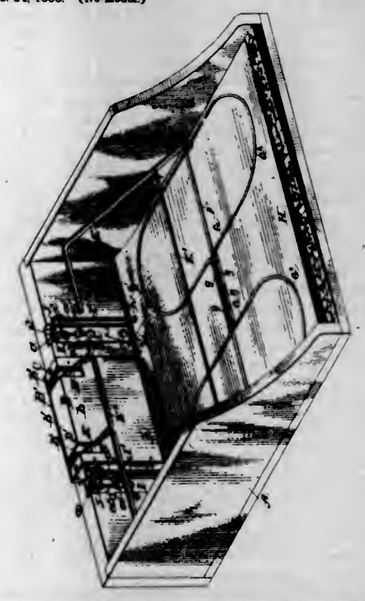
2. The combination, in a turbine of the class designated, of a water-wheel consisting of a central hub and buckets surrounding the same, with a series of guides for directing the water in an inclined direction to the said buckets, and a gate having a series of plates or vanes, each of said plates or vanes engaging the rear surface of one guide, and adapted to abut the toe or lower extremity of the next succeeding guide while in engagement with said preceding guide, whereby the sectional area of each vane is reduced at the point of delivery to the wheel without excluding the water from between the guides, substantially as set forth.

3. The combination of a series of stationary guides and a gate composed of a series of sliding plates or vanes having curved water-guiding portions co-operating with the stationary guides, as specified, with a water-wheel receiving the water substantially as it is received by a wheel of the class designated, but having portions of the buckets curved or inclined, so as to discharge the water in the manner substantially as described.

331,184.



331,185. LETTER-FILE. ARTHUR L. COLTON, Milwaukee, Wis. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a letter-file, the combination of a case and a series of loose sheets secured thereto with a clamping device connected by links and pivots to a slide having vertical play within the back of the case, as set forth.

2. In a letter-file, the combination, with the case and a series of loose sheets secured thereto, of a clamping device consisting of lever-arms connected by links and pivots to a slide having vertical play within the back of the case, and having pivoted to said lever-arms two independent oval frames adapted to exert pressure independently on the upper and lower portions of said sheets, as set forth.

3. In a letter-file, the combination of the case having vertical grooves on the inner side of the back of said case, and a series of loose sheets held together by means of rods passing through perforations near the rear of said sheets, said rods being secured to plates adapted to slide within the grooves in the case-back, and fastening devices whereby said

sheets, with their rods and plates, may be secured to the case or removed bodily therefrom, as set forth.

4. In a letter-file, the combination of the case A, centrally cut out at the back, and having loose sheets H, mounted on rods passing through perforations in said sheets, and connected to plates secured to said case, with the housing B, consisting of an inner or front plate extended back over the cut-away portion of the case, forming a top plate, b', and provided with slots b^2 through the upper part of the front plate and through the top plate, and a rear plate, B', having central vertical slot b^4, vertical guide-plates C C, one on each side of the cut-away portion of the case-back, and provided with right-angled guiding-flanges c c, slide D, with rear plate, d, adapted to engage with the flanges c, screw-bolt D^2, the shank of which has vertical motion in the slot b^4, and which screws into the plate d, and a clamping device having lever-arms which extend through the slots b^2, and are pivoted to projections on the guide-plates C and slide D, and which are adapted to be raised and lowered by the slide D, and to release or press down on the loose sheets H, and be secured in either position by the screw-bolt D^2, substantially as set forth.

5. In a letter-file, the combination of the case A, provided with the vertical grooves a a in the inner side of the case-back, and retaining-bolts a' a', projecting from said grooves a, vertical plates I, having loops or lugs i^3 on top and fitting within said grooves, and having key-hole slots i for engagement with said retaining-bolts, and rods I', connected to said plates I at the base, and terminating at top with hooks or eyes i', loose sheets H, having perforations h, whereby they are strung upon the rods I', and rings J, connecting the hooks or eyes i' with loops or lugs on the upper end of the plates I, substantially as set forth.

6. In a letter-file, the combination of the case A, provided with the vertical grooves a a in the inner side of the case-back, and horizontal grooves a^3 a^3, communicating with the grooves a a, and retaining-bolts a' a', projecting from said grooves a, vertical plates I, having loops or lugs i^3 on top and fitting within said grooves, and having key-hole slots i, for engagement with said retaining-bolts, and rods I', connected to said plates I at the base, and terminating at the top with hooks or eyes i', loose sheets H, having perforations h, whereby they are strung upon the rods I', rings J, connecting the hooks or eyes i' with the loops or lugs i^3, and hooks K, depending from the loops or lugs i^3 and adapted to lock the plates I, after the same have been adjusted by means of the bolts a' and slots i, by interposing the free ends of said hooks around the shanks of the upper bolts, a', between the inner surface of the heads of said bolts and the outer surface of said plates I, substantially as set forth.

7. In a letter-file, the combination of the case A, centrally cut out at the back, and having loose sheets H, mounted on rods passing through perforations in said sheets, and connected to plates secured to said case, with the housing B, consisting of an inner or front plate extended back over the cut-away portion of the case, forming a top plate, b', and provided with slots b^2 through the upper part of the front plate and through the top plate, and a rear plate, B', having central vertical slot b^4, vertical guide-plates C C, one on each side of the cut-away portion of the case-back, and provided with right-angled guiding-flanges c c, and bearings c' c' above said flanges, slide D, cut out at each side to receive the flanges c c, and having a rear plate, d, the ends of which have vertical movement between the plate B' and the rear surface of the flanges c c, and provided with perforated lugs d^2 d^2, screw-bolt D^2, the shank of which has vertical motion in the slot b^4, and which screws into the plate d, a clamping device having lever-arms E E, extending through the slots b^2, and having journal ends e e, pivoted in the bearings c' c', and double crank-arm D', extending across the length of the slide D and through the lugs d^2 d^2, and having cranked ends d' d', connected to the the lever-arms E E at a point forward of the pivotal points of the journals e, substantially as and for the purposes set forth.

8. In a letter-file, the combination of the case A and sheets H, attached thereto, with a clamping device consisting of the lever-arms E E', rod F, and oval frames G G, secured to said rod F near the centers of the ovals, but with the greater length of said ovals near the rear of the file-case when closed, and near the bottom of said case when the clamping device is raised, as set forth.

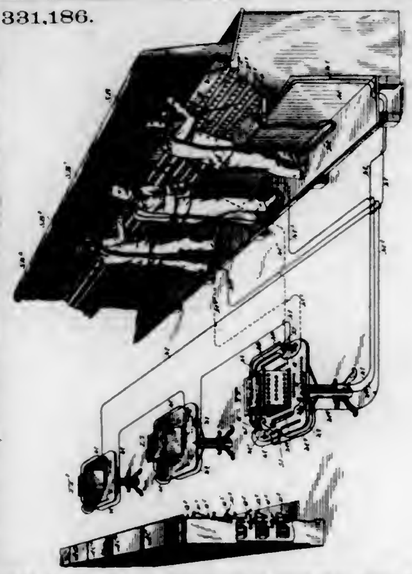
331,186. TELEPHONE-EXCHANGE SYSTEM. Joseph P. Davis, New York, N. Y. Filed May 12, 1885. (No model.)

Claim.—1. In a telephone-exchange, the combination of a series of subscribers' lines, a series of sectional switch-boards, and an annunciator-board through both of which said lines pass, and an operator's table which is in electrical communication with each of the series of sectional switch-boards.

2. In a telephone-exchange, the combination of an operator's table which is in communication with an annunciator-board from which directions for line-connections are sent, a series of sectional switch-boards to all of which directions are sent from each operator's table, switching devices for connecting the subscribers' lines with the operating-tables at the switch-board, and switching devices at the operating-table for joining the subscribers' lines together.

3. In a telephone-exchange, the combination of a series of subscribers' lines passing through each respective sectional switch-board, a

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series of sectional switch boards, and an annunciator-board through which said lines pass to earth, an operator's table which is in communication with the annunciator-board and with each of the sectional switch-boards, switching devices for disconnecting the normal earth connections of the subscribers' lines and joining them to the operator's table, and switches for connecting the subscribers' lines together at the operator's table.

4. In a telephone-exchange, the combination, with a series of sectional switch-boards through which independent groups of subscribers' lines pass, annunciator calling devices independent of the switch-boards, an operator's table with which the subscribers' lines are connected by the switchmen at the direction of the operator, and switching devices for joining the lines together at the operator's table.

5. In a telephone-exchange, the combination of a series of sectional switch-boards through which the subscribers' lines pass, an operator's table to which the subscribers' lines are connected by the switchmen, and a telephone-circuit from the operator's table to each switchman.

6. In a telephone-exchange, the combination of a switch-board through which subscribers' lines pass, a series of wires joining the switch-board with an operator's table, a head-telephone for the switchman in a local circuit extending to the operator's table, and an operator's telephone in said circuit at the operator's table.

7. In a telephone-exchange, the combination of a series of sectional switch-boards through each of which subscribers' lines pass to earth, one or more pairs of wires joining each sectional switch-board and a local operator's table, one wire of each pair being normally open at the operator's table and the other connected to earth through an annunciator, and a switch for disconnecting the same from its earth connection and joining it to the normally-open wire, thus forming a loop from each sectional switch-board to and through the operator's table.

8. In a telephone-exchange, the combination of a series of sectional switch-boards through each of which subscribers' lines pass to earth, one or more pairs of wires joining each sectional switch-board with a local operator's table, a switch for looping said wires together, a spring-jack in said loop, and a telephone-set, and a switch-plug for connecting the same in said loop.

9. In a telephone-exchange, the combination of a switch-board through which subscribers' lines pass to earth, a loop extending from the switch-board to an operator's table, a local circuit for the switchman's telephone, a spring-jack in the loop, and a spring-jack in the switchman's telephone-circuit at the operator's table, a telephone-set, and a switch-plug for joining said telephone either in the loop or in the switchman's telephone-circuit.

10. In a telephone-exchange, the combination of a series of sectional switch-boards through each of which subscribers lines pass to earth, a trunk-operator's table, one or more wires joining each sectional switch-board with said operator's table through an annunciator-drop and to earth, one or more trunk-lines extending from the earth at the trunk-operator's table to a distant exchange, and a switch, both for disconnecting a wire from the switch-board and the trunk-line from earth at the operator's table and connecting them together.

11. In a telephone-exchange, the combination of a series of sec-

tional switch-boards through each of which subscribers' lines pass to earth, one or more wires joining the switch-board with the trunk-operator's table, one or more trunk-lines joining said operator's table and a distant exchange, and a switch for joining one of the wires from the switch-board with a trunk-line at the operator's table.

12. In a telephone-exchange, the combination of a switch-board through which subscribers' lines pass to earth, a trunk-operator's table, a trunk-line and a spring-jack therein at the operator's table, a local telephone circuit between the operator's table and the switchman, a spring-jack therein at the operator's table, a telephone-set, a switch-plug and signaling-keys K K', and battery M B, as and for the purpose described.

13. In a telephone-exchange, the combination of a series of sectional switch-boards through each of which subscribers' lines pass, an operator's table, a wire joining said operator's table and corresponding sockets upon the several switch-boards.

14. In a telephone-exchange, the combination of a series of sectional switch-boards through each of which subscribers' lines pass to earth, two wires, each of which connects corresponding sockets upon the several switch-boards and is then connected to a local-operator's table.

15. In a telephone-exchange, a switch-board through which subscribers' lines pass, a series of conducting-cords and plugs which normally connect said lines to earth, a series of switch-plug sockets upon said board which are separately connected to operators' tables, the whole being so arranged that the cord-switch plugs may be removed from their normal positions and placed in said sockets, thus breaking the normal earth connections of the subscribers' lines and connecting the same with the operators' tables.

16. A sectional switch-board which is provided, first, with as many cord switch-plugs as there are subscribers' lines passing therethrough, and, second, with several sub-sections or groups of switch-plug sockets, the sockets of each sub-section being all independently connected with an operator's table.

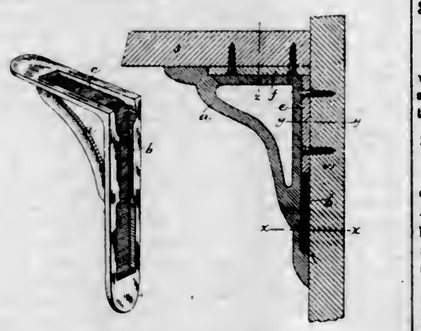
17. A sectional switch-board for a telephone-exchange, which is provided, first, with a series of cord switch-plugs; second, with several sub-sections or groups of switch-plug sockets, each sub-section being connected to a separate trunk-operator's table, and, third, with several sub-sections of switch-plug sockets, each sub-section in pairs being connected with a local operator's table, substantially as described.

18. In a telephone-exchange, the combination of several sectional switch-boards for a series of switchmen, a series of operator's tables, and a head-telephone for each switchman, placed in a local circuit leading to every operator's table in the exchange.

19. In a telephone-exchange, the combination of a series of sectional switch-boards each having corresponding sub-sections of switch-plug sockets, in which corresponding sockets of the same sub-section of the several sectional boards are connected together, and in which the several sockets of a sub-section are connected by independent wires with an operator's table, whereby each operator has several wires with which any switchman in the exchange may make connection.

20. In a telephone-exchange, the combination of a switch-plug and battery at the switch-board, a series of switch-plug sockets upon said board, to which wires are joined with operating-tables, and an annunciator for each such wire at the operator's table.

331,187. BRACKET. George B. N. Dow, Manchester, N. H., assignor of one-half to William Corey, same place. Filed June 12, 1885. (No model.)

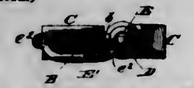


Claim.—1. A bracket having grooves b c, formed to receive blocks affixed to the parts to be connected by the bracket, as set forth.

2. A bracket having in one of its bearing-surfaces a groove, c, and in its other bearing-surface a groove, b, the lower portion of which is widened, as set forth.

3. The combination of a bracket having grooves b c, with blocks e f, adapted for attachment to the parts to be connected by said bracket and formed to closely fit the grooves b c, as set forth.

331,188. WRENCH. James Du Shane, South Bend, Ind. Filed May 26, 1885. (No model.)



Claim.—In a wrench, the combination of the fixed jaw A and shank B, provided on its front edge with the rack b, with the movable jaw C, provided with the recess or chamber F, the pivoted link E, having the extension E' at right angles to itself, curving around the shank from front to rear, and provided with the finger-hold e' and point e^2 to receive pressure from the thumb, the screw D, rotating on the link, and the leaf-spring G, in a recess, f, of the chamber F, and adapted to cause the screw to engage with the rack, substantially as specified.

331,189. RAPID-TRANSIT WRENCH. James Du Shane, South Bend, Ind. Filed July 15, 1885. (No model.)



Claim.—The combination, in a rapid-transit wrench, of the shank A, having the fixed jaw A' secured to its end, and the rack A^3 formed on its front edge with teeth of said rack at right angles across said edge, the traveling jaw B, provided with the chamber b, and spring-recess b', immediately in rear of the shank-slot, and with the threaded recess D in front of said slot, the tooth or flanged button E, engaging with the teeth of the shank but not traveling on the shank thereby, the threaded stem F, having its lower end fixed centrally on the button E, and the coiled spring C in the recess b and acting against the back of the shank, all substantially as specified.

331,190. DISINFECTANT AND CLEANSING-LIQUID FOR ANIMALS, &c. Herman Ehrmann, Brooklyn, assignor to W. H. H. Childs, New York, N. Y. Filed June 23, 1885. (No specimens.)

Claim.—A compound for disinfecting purposes and for destroying vermin, consisting of heavy oil of coal-tar, spirits of wood-tar, potash soap, and potash solution, combined in the manner and in the proportions specified.

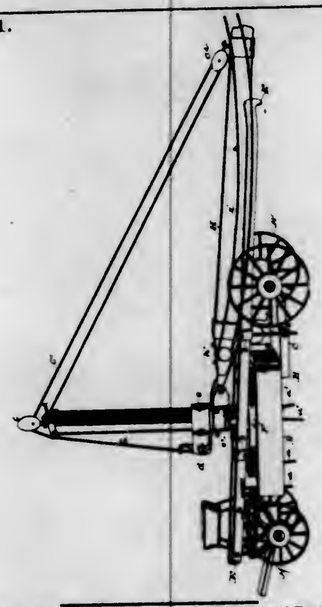
331,191. FIRE-ESCAPE. Josh Fleming, Calais, Me. Filed Feb. 2, 1885. (No model.)

Claim.—1. A carriage for a fire-escape of the character described, consisting of a front truck, A, supporting the driver's seat, a rear truck, A', provided with a platform, B, a table, C, secured to said platform, a pair of wings, D D', hinged to said table and provided with screws a a, and a link-frame, E, secured to said table and platform by means of screw-rods b b, all combined and arranged substantially as described.

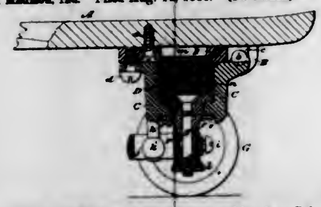
2. In a fire-escape of the character described, the combination, with the carriage, of the derrick-post F, an inclosing shell or jacket, G, turning upon said post, a connecting-jib composed of three telescopic sections arranged one within the other, and means for hoisting said jib and extending its sections, substantially as described.

3. In a fire-escape of the character described, the combination of the carriage-table C, derrick-post F, the revolving shell or jacket G, the jib consisting of the sections H H^2 and the rack-section H', the stirrup-shaped collar for attaching the jib to the revolving shell or jacket, and the chain and windlasses, whereby said jib is hoisted and extended, and whereby the means of escape is raised and lowered, the several parts combined, arranged, and operating substantially as described and shown.

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331,192. ROLLER-SKATE. Orlando V. Flora and Ellsworth E. Flora, Madison, Ind. Filed Aug. 11, 1885. (No model.)



Claim.—1. A roller-skate wherein the cushion-box C is hinged to the base-piece at its one end, and detachably secured at its other end by a screw, for example, substantially as described, whereby the cushion may be conveniently removed and replaced, substantially as set forth.

2. A roller-skate wherein the cushion-box C is hinged to the base-plate at its one end, and secured to said base-plate by a screw at its other end, and wherein said cushion-box is provided with interned lugs *f f*, to take under the follower, whereby the cushion is compressed to the normal tension between said follower and the base-plate, substantially as set forth.

3. The combination, with the cushion-box provided with hinging-lugs, a securing-screw, and interned lugs to take into recesses in the follower, of the base-plate provided with recesses to receive the hinging-lugs on the cushion-box, the follower provided with recesses to engage the interned lugs on the cushion-box, and the cushion, substantially as set forth.

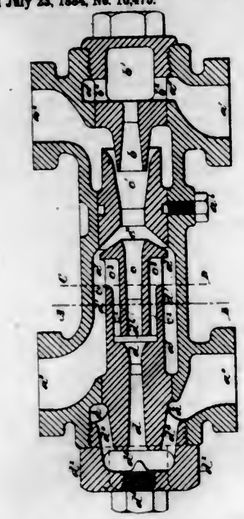
4. The combination, with the cushion-box hinged to the base-plate, substantially as described, and provided with a stop to limit the compression of the cushion and lugs to take under the follower, of the cushion and the follower provided with recesses to engage the lugs on the cushion-box, substantially as set forth.

5. The combination, with the base-plate and the open-topped cushion-box hinged thereto, substantially as described, of the cushion and follower, and the plate *m*, placed between the cushion and the base-plate, whereby the tension of the elastic cushion may be increased, substantially as set forth.

6. The combination, with the base-plate, cushion-chamber, cushion, and follower, all constructed substantially as described, of the stop-plate *n*, provided with a V-shaped lower edge or end for the follower to impinge on, substantially as set forth.

7. The combination, with the skate sole or plate A, the plate B, and the holder C, hinged to plate B, and provided with lugs *f f*, of the cushion D, the follower E, having recesses *e*, which engage the lugs *f*, the axis *g*, fixed in follower E, the carrier F, mounted on axis *g*, and provided with rollers G G and arms *j j*, and the arm *k*, fixed to or forming part of the holder C, and projecting downward between the arms *j*, substantially as and for the purpose set forth.

331,193. INJECTOR. James Gresham, Stretford, near Manchester, County of Lancaster, England. Filed June 19, 1885. (Model.) Patented in England July 23, 1884, No. 10,475.



Claim.—1. In an injector for steam-engines, the combination, with a steam-cone, a discharging-cone, and a lifting-cone having a convex or hollow conical seat formed at its discharge end, of a combining-cone arranged to slide between the discharging and lifting cones, and having a concave or conical bearing formed at its inlet end, substantially as and for the purpose specified.

2. In an injector for steam-engines, the combination, with a steam-cone, a discharging-cone, and a lifting-cone, the latter having a convex or hollow conical seat formed at its discharge end, of a combining-cone arranged to slide between the said cones and having a concave or conical bearing formed at its inlet end, the angles of said seat and bearing of the steam and combining cones differing from each other, substantially as and for the purpose specified.

3. In an injector for steam-engines, the combination, with a steam-cone, a lifting-cone, and a discharging-cone, the latter having a tubular extension, of a combining-cone fitted in said extension to form an overflow space between the two, and adapted to slide toward and from the lifting-cone, and the inlet-orifice of the discharging-cone, and a stop to limit the movement of said combining-cone toward said inlet-orifice of the discharging-cone, substantially as and for the purpose specified.

4. In an injector for steam-engines, the combination, substantially as hereinbefore described, with the steam-cone, the lifting-cone, and the discharging-cone having a tubular extension formed at one end, of a combining-cone fitted and sliding in said extension, and provided with ribs c^3 c^3, of varying diameter, to form abutments to limit the movements of the lifting-cone in one direction within the discharging-cone, for the purpose specified.

5. In an injector, the combination, substantially as herein described, with a steam-cone, a lifting-cone, *c'*, having a hollow convex or conical seat $c^\times$, and a discharging-cone, *d*, provided with a tubular extension, *d'*, of the combining-cone *c*, fitted and sliding within said extension, and terminating in a concave or conical head or bearing, for the purpose specified.

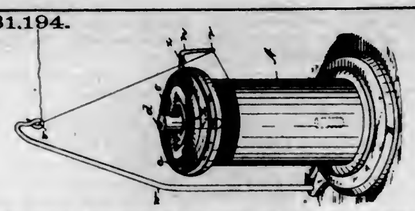
6. The combination, substantially as herein described, with the casing of an injector for steam-engines, having branches a' a^2 a^3 a^4, of the steam-cone *b'*, screwed in one end of said casing, the discharging-cone *d*, closed at one end and screwed in the opposite end of the casing, and having a tubular extension, *d'*, a lifting-cone, *c'*, detachably connected with the casing and having a concave or hollow conical seat, and the combining-cone *c*, provided with ribs c^3 c^3, and terminating in a convex or conical head or bearing, said cone *c* being fitted and arranged to slide in the tubular extension of the discharging-cone, for the purpose specified.

331,194. THREAD-UNWINDER. William Grover, Holyoke, Mass. Filed June 15, 1885. (No model.)

Claim.—1. In a thread-unwinder, the spool-cap *c*, having a neck thereon at the bottom of the groove *e*, combined with the flier *n*, having curved spring-actuated arms encircling said neck, substantially as set forth.

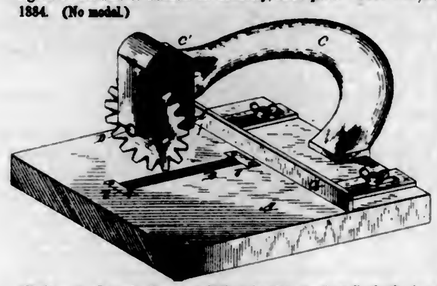
2. In a thread-unwinder, the spool-cap *c*, having a neck thereon at the bottom of the groove *e*, combined with the flier *n*, having curved

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spring-actuated arms encircling said neck, and the S-hook *z*, substantially as set forth.

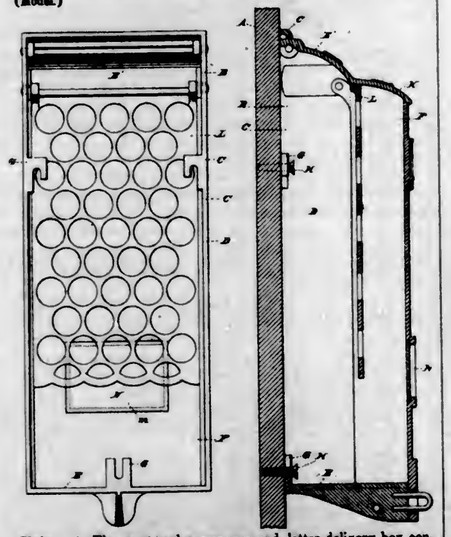
331,195. SPLITTING-SAW. William G. Hawley, Hanford, Cal., assignor of one-half to Francis A. Blakeley, same place. Filed Dec. 31, 1884. (No model.)



Claim.—1. In a device for splitting lumber as described, the base A, provided with a roller, B, in combination with an overhanging arm provided at its end with a circular blade, F, said blade being provided with teeth *f*, which are wedge-shaped in cross-section, substantially as shown, and for the purpose set forth.

2. The circular blade F, mounted upon a journal attached to a vertically-adjustable section, the arm C, gage G, and roller B, attached under the saw, the parts being combined and organized substantially as shown, whereby lumber may be forced beneath the blade to cause the latter to rotate, and result in its periphery entering said lumber and splitting the same, as and for the purpose set forth.

331,196. LETTER-BOX. Philip Heintz, Unionville, assignor of one-half to William O. Way, Newington Junction, Conn. Filed Nov. 18, 1884. (Model.)

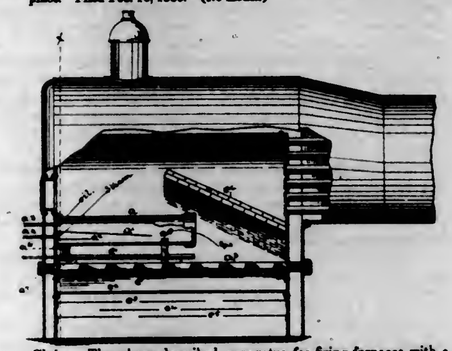


Claim.—1. The combined newspaper and letter delivery box consisting of the back frame open at its front and having the interior-slotted lugs, the front letter-box hinged to the back frame and having the rear guard-partition, and the cover pivoted to the back frame and projecting over the slotted top of the letter-box, substantially as specified.

2. A combined letter and newspaper box having a back frame, consisting of side and bottom walls with open front and carrying a pivoted lid, and the swinging letter-box pivoted to said back frame and having a guard-partition extending from its slotted to nearly to the bottom, substantially as specified.

3. In a delivery-box, the back frame consisting of side walls having interior downwardly-turned open-slotted lugs at their back portions, and the bottom having an interior upwardly-turned slotted lug at its back portion, substantially as specified.

331,197. APPARATUS FOR FIRING FURNACES. Charles Holland, Jr., Boston, Mass., assignor to Frederick L. Houghton, trustee, same place. Filed Feb. 16, 1885. (No model.)



Claim.—The above-described apparatus for firing furnaces with a fixed gas-fuel generated from the vapor of petroleum and steam in the combustion-chamber of the furnace where it is burned, consisting of the retort *a*, having within it the diaphragms a' a^2, the induction-pipes a^3 a^4, the eduction-pipes a^5 a^6, the gas-distributing device a^9, the perforated floors *e* e^2, the deflecting-plates e^3 e^4 e^5, and the kindling device *e'*, all substantially as described, for the purposes specified.

331,198. COTTON-SEED PLANTER. Samuel L. Houston, Richmond, Ind. Filed May 9, 1885. (No model.)



Claim.—1. A cotton-seed planter in which the feed-roller is provided with radial teeth that are automatically and eccentrically projected from and withdrawn into its periphery at each revolution of said wheel, in combination with means whereby the point of maximum projection with relation to the seed-hopper may be varied at will, substantially as and for the purpose set forth.

2. A cotton-seed planter in which the feed-roller is provided with radially-adjustable eccentrically-moving teeth, in combination with means, substantially as shown, whereby as said teeth are adjusted outward or inward the opening through which they pass from within the seed-hopper will be simultaneously and correspondingly enlarged or contracted, substantially as and for the purpose described.

3. The rotary seed-wheel provided with radial openings, the tooth-bars fitted loosely within such openings, the plate I, to which the inner ends of the bars are pivoted, the shaft F, and the eccentric K, fitting within and forming the bearing for plate I and capable of adjustment around shaft F, all combined substantially as and for the purpose described.

4. In combination with the discharge-openings d^3 of the hopper D, and with the seed-wheel teeth H, the pivotal plate I, the regulating eccentric K, provided with the radial arm k', and the gate S, connected to said arm and adapted to close said discharge-openings, substantially as and for the purpose shown and described.

5. In a seed-planter, in combination with the rotary shaft, a toothed feed-wheel secured on the shaft, and a second similar wheel secured on the shaft so as to be adjustable around the same, substantially as and for the purpose described.

6. In combination with a suitable hopper or seed-receptacle, the two wheels provided with teeth adapted to take seed from the hopper, the rotary shaft, and means, substantially as described, for securing the wheels on the shaft so that one or both of them may be adjusted around it, substantially as and for the purpose described.

331,199. **BICYCLE.** Frankland Janney, Washington, D. C., assignor to the H. B. Smith Machine Company, Smithville, N. J. Filed Apr. 6, 1885. (No model.)



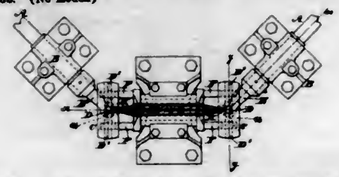
Claim.—1. The combination, with the frame-rods D and wheel A, of the brake-lever J and the clamps E', adapted to support said brake-lever, and a draft-rod, H, and suitable hand-lever, substantially as described.

2. The combination, with the frame and main wheel of a bicycle, of a brake-lever pivotally mounted upon said frame, a draft-rod, a hand-lever having an arm to which the draft-rod is attached, and an auxiliary arm provided with a brake-shoe adapted to be applied to the wheel by a movement of the hand-lever not affecting the main brake, substantially as described.

3. The combination, with the frame and main wheel of a bicycle, of the brake-lever J, clamps E', and frame-rod D, with the hand-lever K M, auxiliary brake K', and the draft-rod H, substantially as described.

4. In a bicycle, the combination, with suitable spring, L, of the detachable rearwardly-extending mud-guard L', substantially as described.

331,200. **SHAFT-COUPLING.** William Johnston, Philadelphia, Pa., assignor of one-half to Christopher Gallagher, same place. Filed May 19, 1885. (No model.)



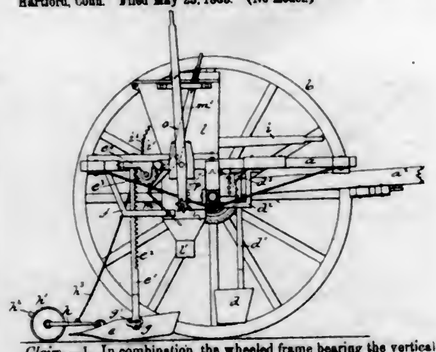
Claim.—1. In a shaft-coupling, a disk having journals within the same, extending at an angle to each other and connected with cranks or forks which are attached to the sections of the shaft, substantially as described.

2. A head provided with journals mounted within the same and formed with slots in its sides to receive cranks or forks which are connected with said journals and projecting through said slots in opposite directions, substantially as described.

3. In a shaft-coupling, a flexible duct lubricating the journals of the head of the coupling, substantially as described.

4. In a shaft-coupling, a rotary disk with journals, and a hanger having openings or oil-ducts, in combination with a coiled spring connected with said hanger and disk, substantially as described.

331,201. **FERTILIZER-DRILL.** Augustus W. Kappenberg, East Hartford, Conn. Filed May 25, 1885. (No model.)



Claim.—1. In combination, the wheeled frame bearing the vertically-adjustable plow, the hopper fixed to the frame back of the plow with the stirrer borne on the rotary and swinging shaft, the vertically-adjustable V-shaped coverer fast to the frame back of and in line with the hopper and bearing the hinged link that supports the marking-wheel, the chain connecting the link with the drum fast to the shaft, by means of which the coverer is vertically adjustable, and the respective levers for operating the parts, all substantially as described.

2. In combination, in a drill of the within-described class, the wheeled frame, the vertically-adjustable plow, the hopper, and the V-shaped coverer arranged in succession along the center of the frame, the coverer being pivotally connected to the forked ends of the rod having slots and bolts, whereby it is adjustable in a horizontal plane, and also bearing the marking-wheel having projecting pins on its periphery, all substantially as described.

3. In a drill of the within-described class, the hopper with a valve and stirrer arranged within the hopper and borne on the inner end of a swinging and rotary shaft which has its outer bearing in the short arm of a lever, and has also a cog adapted to be thrown into and out of mesh with the cog fast to the hub of one of the main wheels of the frame by means of said lever, all substantially as described.

331,202. **SEAL-LOCK.** Henry U. La Rue, Topeka, Kans., assignor of one-half to Samuel M. Warner, same place. Filed July 18, 1885. (Model.)



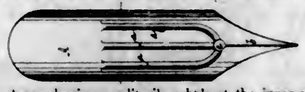
Claim.—1. In a seal-lock, a tube closed at its inner end, and provided near its open outer end with means for receiving and retaining the seal, in combination with a latch to engage said closed end, substantially as shown and described.

2. In a seal-lock, a seal-holding tube closed at its inner end, and provided near its open outer end with slots to receive the seal, and grooved guides to retain the same, substantially as shown and described.

3. In a seal-lock, a seal-holding tube closed at its inner end, and provided near its open outer end with means, substantially as described, for receiving and retaining the seal, and having a portion of one side between the two ends cut away, in combination with a pin or lug secured to or in the door, whereby the tube is given a limited in-and-out motion, substantially as specified.

4. The combination of the seal, the seal-holding tube, a pin or lug to limit the in-and-out motion of the tube, and the tube-retaining latch, substantially as specified.

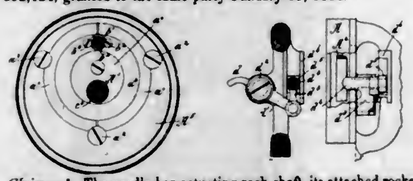
331,203. **PEN.** Lazarus Lobser, New York, N. Y., assignor, by direct and mesne assignments, to Gabriel Bamberger and Lewis Boelling, receiver, both of same place. Filed Oct. 9, 1884. (No model.)



Claim.—A pen having a split nib, a hole at the inner end of said split nib, and a series of troughs formed in the body of the pen and having their lower ends terminating in said hole, substantially as described.

331,204. **MECHANISM FOR ACTUATING NEEDLE-BARS.** Michel Marchi, Amherst, Mass., assignor to the Hills Company, same place. Filed Sept. 15, 1884. (No model.)

Brief.—The link-connecting pin of the needle-bar is provided with a pivoted block that engages within a guide-slot. The eccentric-ring mechanism on the main shaft is an improvement on that shown in Patent No. 292,124, granted to the same party January 15, 1884.



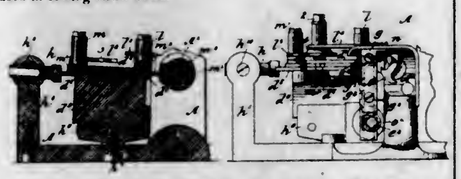
Claim.—1. The needle-bar-actuating rock-shaft, its attached rocker, the needle-bar, its connected link and horizontally-extended pin, and the block pivoted thereon, combined with the guide into which the said block is extended, substantially as described.

2. In a sewing-machine, the main shaft, its attached wheel and eccentric, and the eccentric ring and gib, and the pin having a ball-like head and entering a seat in the said ring, and the connecting-rod and the needle-bar-actuating rock-shaft and its rocker, combined with the needle-bar and intermediate connecting mechanism, substantially as described.

3. The main shaft A', the wheel A^2, its eccentric and the eccentric ring, and the pin b', having the globular head, and the cap b^2, attached to the eccentric-ring loosely and holding the pin, combined with the needle-bar-actuating rock-shaft and the connecting-rod b^4, to operate substantially as described.

331,205. **FEEDING MECHANISM FOR SEWING-MACHINES.** Michel Marchi, Amherst, Mass., assignor to the Hills Company, same place. Filed July 11, 1885. (No model.)

Brief.—The feeding mechanism is intended specially for machines used in sewing straw braid.



Claim.—1. The feed-carrier d^3, the shank A, the oscillating bearing A^3 for the said shank, a support for the said bearing, the feed-block g^4, and dog attached to the said carrier, the feed-regulating plate l^2, and the adjustable link l', combined with the tongue m', connected with the feed-regulating plate, and the shaft A' and eccentric thereon to move the said tongue, substantially as described.

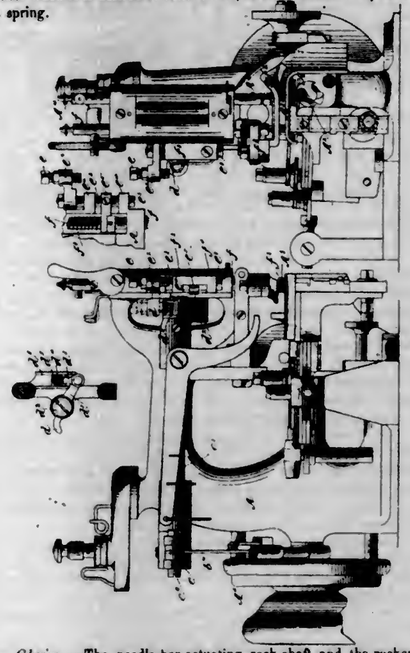
2. The feed-carrier having the rigidly-attached downwardly-extended keel d^9, the shank A, the connected feed-block and dog, and the oscillating bearing for the said shank, combined with the guide h^2 for the said keel, and with means, substantially as described, for moving the said feed-carrier.

3. The feed-carrier provided with the shank A, and having the depending portion g, the bearing for the shank A, the feed-block g' and its attached feed-dog, and the foot o and stop o', against which the said foot travels and bears, combined with the tongue m', feed-regulator l^2, and link l', and with means, substantially as described, to actuate the said tongue, as described.

4. The feed-carrier provided with the shank A, an oscillating bearing for the same, the feed-block, the feed-dog, the feed-regulating device l^2, having a shank, l^3, the oscillating bearing l^5, its shank 5, the sleeve 6, the tongue m', and the adjustable link l' and feed-carrier, combined with means, substantially as described, to move the said tongue, as set forth.

331,206. **PRESSER-FOOT LIFTER FOR SEWING-MACHINES.** Michel Marchi, Amherst, Mass., assignor to the Hills Company, same place. Filed July 11, 1885. (No model.)

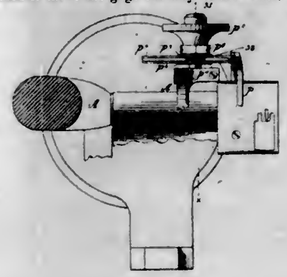
Brief.—A rocker is attached to the forward end of the needle-bar-actuating rock-shaft. An auxiliary presser-bar is pivoted so that it may be turned to bring its attached arm into the plane of movement of the rocker when it is desired to relieve the presser-foot from the pressure of its spring.



Claim.—The needle-bar-actuating rock-shaft and the rocker attached to it, the presser-foot, presser-bar and its spring, the auxiliary presser-bar, and its connected arm e^3, to act upon the said spring, combined with the pivoted arm e', connected to the auxiliary presser-bar and adapted to be turned into the plane of movement of the rocker when it is desired to relieve the presser-foot from the pressure of its spring, as set forth.

331,207. **GAGE FOR STRAW-BRAID-SEWING MACHINES.** Michel Marchi, Amherst, Mass., assignor to the Hills Company, same place. Filed July 11, 1885. (No model.)

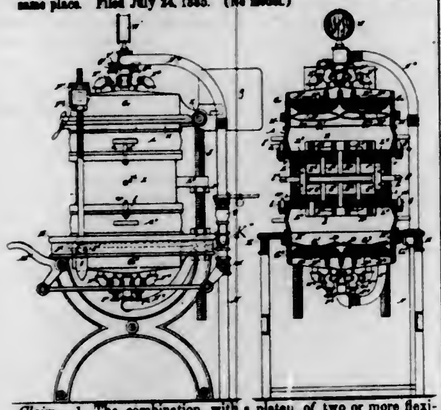
Brief.—By the rotation of the tubular nut the frictional connections are caused to move the gage one way or the other, as may be desired.



Claim.—1. The edge-gage *p*, provided with the beveled extension *p'*, and the friction-plates p^2 p^3 and stud p^4, combined and arranged to embrace the said extension, substantially as described.

2. The bed-plate, the edge-gage, and its beveled extension, combined with the stud p^4, friction-plates p^2 p^3, nut p^5, and spring 30, whereby a constant pressure is maintained on the extension *p'*, as and for the purposes set forth.

331,208. **MACHINE FOR MAKING MOLDS FOR CASTING.** MATTHEW R. MOORE, Indianapolis, Ind., assignor to the Pneumatic Company, same place. Filed July 24, 1885. (No model.)



Claim.—1. The combination, with a platen, of two or more flexible diaphragms containing a fluid adapted to expand and yield independently and to serve with a flask and pattern, as herein specified.

2. In a machine for making molds for castings, the combination, with a platen, of two flexible diaphragms adapted to yield independently, connections for leading a fluid to each, and means, as the reducers O, for independently adjusting the pressure in each, all substantially as herein specified.

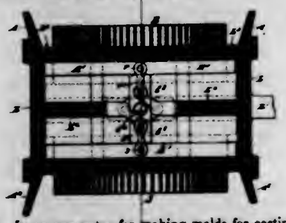
3. The construction of the series of air-bags D, each with means, as the open-work webs D', for restraining the lateral expansion, so as to allow the several bags to lie adjacent and cover the whole surface of the platen and be filled with fluid at different pressures without crowding each other, all substantially as herein specified.

4. In a machine for making molds for castings, one or more flexible pressers, G' G^2, with provisions for subjecting the same to a fluid-pressure arranged to press the sand in one direction, in combination with suitable means for pressing the sand in the opposite direction, and with provisions for introducing half-flasks and patterns in the space between, as herein specified.

5. In a machine for making molds for castings, one or more flexible pressers, G' G^2, with means for applying fluid pressure to act in one direction, in combination with one or more flexible pressers, G' G^2, with means for applying fluid-pressure to act in a direction opposite to the first-named, and with provisions for introducing half-flasks and patterns in the space between, as herein specified.

6. In an apparatus for making molds for castings, a pattern-box, L, turning on a center, J, supported on the framing, in combination with the two flasks A A^6, and with one or more diaphragms, G' G', arranged to be distended from below, and with one or more diaphragms, G' G', carried on a platen, G, turning on a hinge, K, arranged to be distended from above, and with suitable connections for supplying air or other fluid under pressure to both series of diaphragms, all combined and arranged for joint operation, substantially as herein specified

331,209. **PATTERN-BOX FOR SAND-MOLDING MACHINES.** MATTHEW R. MOORE, Indianapolis, Ind., assignor to the Pneumatic Company, same place. Filed Oct. 7, 1885. (No model.)

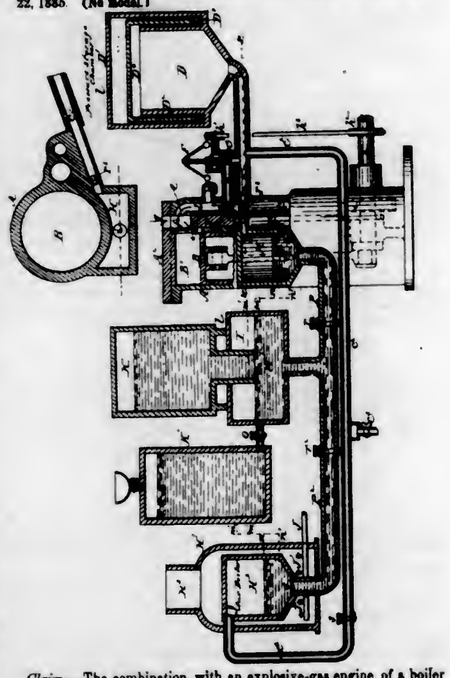


Claim.—1. In an apparatus for making molds for castings, a flask, A, a pattern-box, L, mounted with liberty to turn on a center, J, silhouette-plate L^2, sections L^5, and stools I^5, combined and arranged to serve relatively to each other and to one or more patterns, and means for operating the same through the silhouette-plate, substantially as herein specified.

2. In an apparatus for making molds for castings, the pattern-box L, silhouette-plate L^2, and pattern R, in combination with links r', and with the shaft l^2, having projections l^3, arranged to serve both as cams to support the pattern and as levers to operate the links, all substantially as herein specified.

3. In a machine for making molds for castings, the pattern-box described, having the two silhouette-plates L^2 L^4, the septum L^3, and two movable patterns or sets of patterns, R S, in combination with each other and with the shaft l^2, tumblers l^3, pins r^2, and links r' s', for forcing them outward and withdrawing them, as herein specified.

331,210. **EXPLOSIVE-VAPOR ENGINE.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Sept. 22, 1885. (No model.)



Claim.—The combination, with an explosive-gas engine, of a boiler for containing a volatile oil formed upon the power-cylinder and heated by the waste heat thereof, a pressure-storage chamber for the working-vapor, a reservoir for supplying a volatile oil, and an independently-heated auxiliary boiler connected with the reservoir and the vapor-supplying pipe of the primary boiler by pipes provided with controlling-cocks, whereby the engine may be started and operated by the vapor from one or both of said boilers, as described.

331,211. **CASTER.** WALTER A. OSBORN and DAVID M. ESTEY, Owosso, Mich. Filed Apr. 16, 1885. (No model.)

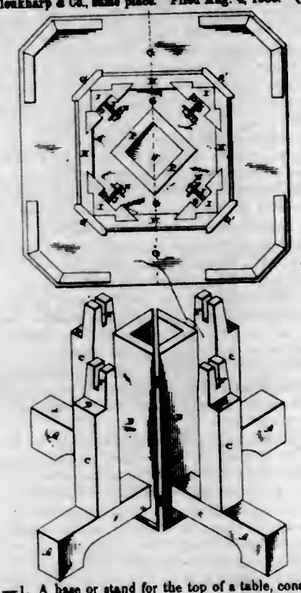


Claim.—1. A caster-bracket for furniture, consisting of a bracket-plate conforming in shape to the inner side of the furniture-leg to which it is to be applied, and having an outwardly-extending flange, at its lower edge, and a horizontal plate and a vertical diagonal brace supporting a caster-socket, substantially as herein described, for the purpose set forth.

2. In a caster-bracket for furniture, a bracket-plate having an outwardly-extending flange at its lower edge, a horizontal plate, and a vertical diagonal brace supporting a caster-socket, and vertical dovetailed

ribs upon its outer side, in combination with a furniture-leg having dovetailed grooves to receive the said ribs, substantially as herein described, for the purpose shown and specified.

331,212. **TABLE.** JAMES PLEUKHARP, Columbus, Ohio, assignor to James Pleukharp & Co., same place. Filed Aug. 4, 1885. (Model.)



Claim.—1. A base or stand for the top of a table, consisting of the feet A, the central post, B, made in two parts, and the posts C, placed upon the feet, in combination with the top and frame H, secured thereto, substantially as shown.

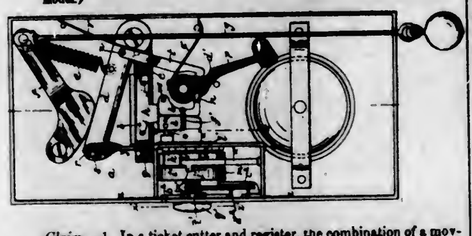
2. The combination of the feet, the central post, which is divided at its center, and the legs C, which are placed upon the feet, with the top of the table, substantially as described.

3. The combination of the feet, the central post, B, and the legs C, having their upper ends provided with slots or recesses, with the frame H, provided with clamping devices, substantially as set forth.

4. The combination of the top of the table and frame H, secured thereto, of the corner-pieces of the frame and the clamping-bolts and nuts, with the legs C, provided with slots or recesses in their upper ends, substantially as shown and described.

5. The combination of the central post, B, divided at its center, the feet A, and legs C, provided with shoulders and recesses, with the top of the table, the frame which is secured thereto, and the clamping-bolts, which are secured to the frame, and by means of which the frame is clamped to the upper ends of the legs C, substantially as shown and described.

331,213. **TICKET CUTTER, REGISTER, AND ALARM.** EDWARD F. POLAND and JAMES G. CRAWFORD, Boston, Mass. Filed Feb. 2, 1885. (No model.)



Claim.—1. In a ticket cutter and register, the combination of a movable blade, a register normally disconnected from the said blade, the movable plate A, and mechanism for connecting the blade with the register to operate the latter, and mechanism, substantially as described, to operate the movable blade, whereby the movements of the blade to sever a ticket will operate the connecting mechanism to form a connection between the blade and register and actuate the latter, all as set forth.

2. In a ticket cutter and alarm, the combination of a movable blade, a bell, a hammer therefor suitably pivoted and normally disconnected from the said blade, the movable plate A, and mechanism for connecting the blade with the hammer to operate the latter, and means, substantially as described, to operate the movable blade, whereby the movement of the blade to sever a ticket will operate the connecting mechanism to form a connection between the blade and hammer and lift the latter, all as set forth.

3. In a ticket cutter, register, and alarm, the combination of a movable blade, a bell, a register, and pivoted bell-hammer normally disconnected from the said blade, the movable plate A, and mechanism for connecting the blade with the register and hammer to operate the said register and hammer, and a device, substantially as described, to operate the movable blade, whereby the movement of the blade to sever a ticket will operate the connecting mechanism to form a connection between the blade and the register and hammer to operate them both, all as set forth.

4. The combination of the spring-retracted pivoted blade and means for depressing it, a trip-register, an alarm, and a hammer therefor, a plate or slide, and a hooked arm connected to said blade, the pivoted blade having a sliding dog, a sliding pin in the hammer of the alarm, and devices, substantially as described, operated by the depression of the blade to engage the sliding dog with the register and the sliding pin with the hooked arm, whereby when the blade is retracted the register and alarm are simultaneously operated, as set forth.

5. The combination of the spring-retracted pivoted blade and means for depressing it, the plate or slide, and the hooked arm secured to said blade, the pivoted blade having the sliding dog, the trip-register, the alarm, and a hammer therefor, the sliding pin in the alarm-hammer, the plate arranged to be depressed by the pivoted blade, and the levers on which the plate acts when depressed to project said sliding dog and pin and cause them to engage, respectively, with the register and with the hooked arm of the blade, as set forth.

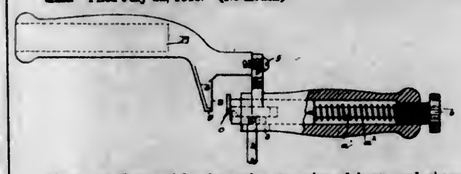
6. The combination of the arbor *b'*, a series of disks mounted thereon and rotating said arbor forward, as described, an operating-handle located on said arbor to revolve the same in a backward direction, a pinion mounted on said arbor, a double pawl pivoted relatively thereto to normally permit the forward rotation of said pinion, devices for moving said pawl to permit the backward rotation, a wheel, c^3, rotated and operated by said pinion to actuate said device when the register has been turned backward to zero, and again permit the forward rotation of the arbor as specified.

7. In a ticket cutter and register, the combination of a movable blade and intermediate devices, a register operated by said blade, but normally disconnected therefrom, and composed of an arbor having a toothed actuating-wheel and a registering-wheel fast upon it, the latter having a single projection on its periphery, and a notched registering-wheel loose upon the arbor and connected by friction therewith, an automatic detent which normally locks the loose wheel and is periodically displaced by the projection of the fast registering-wheel to allow the loose wheel to rotate, and mechanism, substantially as described, for rotating the arbor forward step by step.

8. In a ticket cutter, register, and alarm, the combination of a movable blade, a bell, trip-register, a total-register, and pivoted bell-hammer normally disconnected from the said blade, mechanism for connecting the blade with the said registers, and a bell-hammer, and a device for operating the blade, whereby the movement of the said blade to sever a ticket will operate the connecting mechanism to form a connection between the blade, registers, and bell-hammer to operate them, all as set forth.

9. In a ticket cutter and register, the combination of a movable blade and intermediate devices, a register operated by said blade, but normally disconnected therefrom, and composed of the wheel j^2, rotated directly by the retraction of the movable blade, and the notched normally-locked wheels m^2 n^2, the said wheel j^2 having a projection unlocking and rotating the wheel m^2, and a locking-detent on the wheel m^2, and an arm, s^2, pivoted to said wheel and operating conjointly with the first-mentioned projection to unlock and rotate the wheel n^2, as set forth.

331,214. **TOOL FOR CHANNELING SOLES OF BOOTS OR SHOES.** JOHN G. ROSS, Wakefield, assignor to James W. Brooks, trustee, Boston, Mass. Filed July 22, 1885. (No model.)



Claim.—1. In a tool for channeling the soles of boots and shoes, the main hand-piece and spring-controlled channel-cutter mounted therein, combined with the auxiliary hand-piece connected with the main hand-piece, and the guide *b'*, arranged to co-operate with the channel-cutter, all substantially as described.

2. In a tool for channeling the soles of boots and shoes, the main hand-piece and channel-cutter adjustably mounted therein, combined

with the auxiliary hand-piece adjustably connected with the main hand-piece, and the guide *b'*, arranged to co-operate with the channel-cutter, all substantially as described.

3. In a tool for channeling the soles of boots and shoes, the main hand-piece, the spring-controlled cutter-carrying block, and cutter adjustably mounted therein, and means, substantially as described, to compress the said cutter-carrying block, combined with an auxiliary hand-piece adjustably connected with the main hand-piece and having a guide, *b'*, as set forth.

4. In a tool for channeling the soles of boots and shoes, the auxiliary hand-piece and guide *b'*, combined with main hand-piece connected with the auxiliary hand-piece, the yielding cutter-carrying block and cutter mounted therein, and screw 2, to retain the cutter and compress the cutter-carrying block, substantially as described.

5. In a tool for channeling the soles of boots and shoes, the auxiliary hand-piece and guide *b'*, combined with the main hand-piece connected with the auxiliary hand-piece, the cutter-carrying block and cutter mounted therein, spindle *a'*, spring a^2, adjusting-nut *b*, and screw 2, all substantially as described.

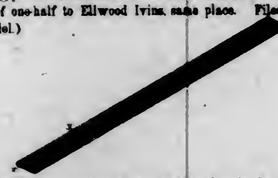
331,215. VEHICLE-SPRING. J. GEORGE ROTH, South Bend, Ind. Filed May 19, 1885. (No model.)



Claim.—1. A spring for vehicles, composed of two similar bars, each pivoted at its outer end to a shackle on the side bar, and at about its middle portion to a bracket depending from the spring-bar, and a central elastic metal bar having its ends secured to the inner ends of the two similar bars, and its central portion formed into one or more elastic coils, substantially as specified.

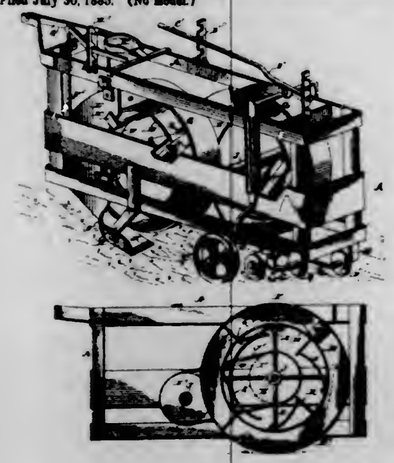
2. The combination, with the spring-bar A, brackets B B, depending therefrom, side bars, D, and shackles *d*, of the elastic bar F, having the central coils, *g g*, and the two similar bars C, secured by their inner ends to the ends of bar F, pivoted upon the brackets B, and having their ends pivoted to the shackles *d*, substantially as described.

331,216. HAIR-CRIMPER. DANIEL SNYDER, Philadelphia, Pa., assignor of one-half to Ellwood Ivins, same place. Filed Sept. 10, 1884. (No model.)



Claim.—The new article of manufacture herein described, the same consisting of a longitudinally doubled or folded strip of sheet metal, having a covering secured thereto by folding the projecting edges of the said covering in over the edges of the sheet-metal strip, as set forth.

331,217. DITCHING-MACHINE. SAMUEL M. STEWART, McComb, Ohio. Filed July 30, 1885. (No model.)



Claim.—1. In a ditching-machine, the combination of the frame, a crank shaft or rod suitably arranged and supported at the front end of the latter, and a series of colters or revolving cutters mounted upon the said rod or shaft, substantially as and for the purpose herein set forth.

2. In a ditching-machine, the combination of the frame, a series of colters or revolving cutters at the front end of the same, the dirt-elevating wheels, the rims of which are formed of inner and outer annular flanges connected by annular rings, the covering-plates covering the rear portions of the spaces thus formed, and terminating at their lower ends in the forwardly-extending scoops or undercutters, and the discharge-spouts, all arranged and operating substantially as and for the purpose herein set forth.

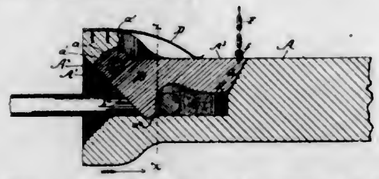
3. In a ditching-machine, the combination of the dirt-elevating wheels, the covering-plates covering the rear parts of the openings or annular spaces in the same, and terminating at their lower ends in the forwardly-extending scoops or undercutters having curved outer flanges, the discharge-spouts having curved tongues or extensions scraping the bottoms of the annular spaces in the elevating-wheels, the revolving cutters at the front end of the frame, and chain-wheels mounted upon the hubs of the elevating-wheels and connected by a suitable drive-chain, substantially as and for the purpose herein set forth.

4. In a ditching-machine, the combination of the dirt-elevating wheels, consisting of inner and outer concentric flanges connected by annular rings so as to form annular spaces, the inner flanges being provided with transverse slots or openings, the plates or cutters arranged to slide in the said slots, and the supporting-springs carrying the said plates or cutters at their free ends, said supporting-springs being attached to the said inner flanges of the elevating-wheels, substantially as and for the purpose herein set forth.

5. In a ditching-machine, the combination, with the frame, of the revolving dirt-elevating wheels having annular spaces, as described, and provided with transverse slots or openings in their inner sides, the guard-plates secured to the frame by means of brackets and bearing against the open spaces of the rear portions of the said wheels, and terminating at their lower ends in the forwardly-extending scoops or undercutters, the guide-plates or cam-plates secured to the inner edges of the said brackets, and the plates or cutters arranged to slide in the slots in the inner sides of the wheels and mounted upon the free ends of springs which are attached to the inner sides of said wheels, substantially as and for the purpose herein set forth.

6. In a ditching-machine, the combination of the frame, the adjustable supporting-wheels at the front end of the latter, the vertically-adjustable caster at the rear end of the frame, the dirt-elevating wheels having annular spaces, the reciprocating plates or cutters mounted upon springs, as described, the guard-plates or covering-plates terminating in the scoops or cutters and having the cam-plates secured thereto, the discharge-spouts, the chain-wheels upon the hubs of the elevating-wheels, the chain connecting the said wheels, and the revolving cutters or colters at the front end of the frame, all arranged and operating substantially as and for the purpose herein set forth.

331,218. CAR-COUPLING. GEO. C. THOMPSON, Darien, Ga., assignor to himself, James L. Foster, and William S. Mallard, all of same place. Filed July 31, 1885. (No model.)



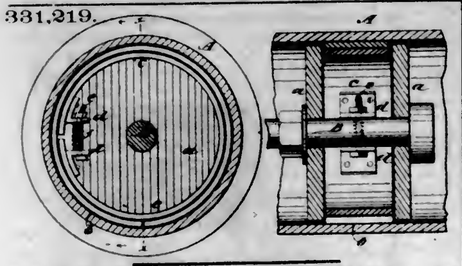
Claim.—1. A car-coupling hook pivotally supported at its forward end, and beveled or inclined rearwardly at such end from its upper to its lower side, and having a securing-shoulder, b^3, a recess, b^4, in its under side in rear of such shoulder, and a depending projection, b^5, at its rear end, substantially as and for the purposes specified.

2. The combination, in a car-coupling, of the draw-head having a mouth, A', mortise A^3, and the slot A^3, and having the under side of its top wall curved at *a* and extended forward in a straight line or stop, *a'*, and the coupling-hook pivoted below the said curved and stop portions of the stop-wall, and having its upper forward end curved and flattened at *b b'* correspondingly to said curved and stop portions *a* and *a'*, substantially as set forth.

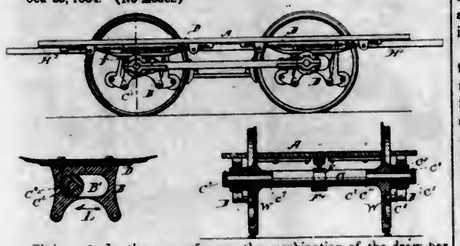
331,219. PISTON-PACKING. BENJAMIN C. WAITE, Brooklyn, N. Y. Filed June 23, 1884. (No model.)

Claim.—In piston-packings, the combination, with a split packing-ring, apertured lugs *d*, secured thereto near its ends, and with the spring *f*, located between said lugs *d*, of the bolt *e*, having its head and nut on the outsides, respectively, of the said lugs, as set forth.

331,219.



331,220. CAR-STARTER. HENRY H. WATSON, Waltham, Mass. Filed Oct. 23, 1884. (No model.)



Claim.—1. In the gear of a car, the combination of the draw bar H^3, chains H^4 H^4, levers H, and chains H^2 H^2 with the levers K K, each provided with friction-wheels K^2, housings B, collars C^2, axle C', and flange K^2, all operating together substantially as described, and for the purpose set forth.

2. In the running-gear of a car, the combination of the truck-frame F^3 F^3 F^3 F F' F' and housing F^4 with the loose revolving axle C and loose wheels W W, all operating together substantially as described, and for the purpose set forth.

3. In running-gear for cars, the combination of the wheel W, the housing B, secured to the frame of the car, provided with a slot, B', of sufficient size to receive the axle of the wheel and permit its revolving and longitudinal play, the axle C C' and guide C^2, and friction-rollers secured to the frame and operating upon the wheel, substantially as described.

331,221. MEANS FOR TURNING ON AND SHUTTING OFF GAS BY ELECTRICITY. LE ROY S. WHITE, Waterbury, Conn., assignor to the Electrical Appliance Manufacturing Company, same place. Filed June 3, 1885. (No model.)



Claim.—1. The combination, with a gas-burner and a valve for controlling the supply of gas thereto, of an armature connected with the said valve, by the rising movement of which the valve is opened, a lock or stop for holding the armature up with the valve open, and an electro-magnet above the armature, the metal in the armature being disposed, substantially as described, relatively to the pole or poles of the magnet, whereby the armature will, when attracted, be raised and rotated so as to bring it into engagement with the lock or stop, substantially as herein specified.

2. The combination, with a gas-burner and a valve for controlling the supply of gas thereto, of an armature connected with the valve and having an upwardly-projecting portion, a lock or stop for holding the armature up with the valve open, and an electro-magnet above the armature, having its pole or poles at the side of the projecting portion of the armature, whereby the armature, when attracted, will be raised and rotated into engagement with the lock or stop, substantially as herein described.

3. The combination, with a gas-burner and a valve for controlling the flow of gas thereto, of an armature connected with the valve and struck up or deflected to form an upward projection on the armature, a lock or stop for holding the armature up with the valve open, and an electro-magnet having its pole or poles at the side of the projecting portion of the armature, whereby the armature, when attracted, will be raised and rotated into engagement with the lock or stop, substantially as herein described.

4. The combination, with a gas-burner and a valve for controlling the flow of gas thereto, of an armature connected with the valve, a lock or stop for holding the armature up with the valve open, and two electro-magnets, the metal of the armature being disposed, substantially as described, relatively to the poles of the magnets, whereby the armature will, when attracted, be raised and rotated in one or other direction and into and out of engagement with the lock or stop, substantially as herein specified.

5. The combination, with a gas-burner and a valve for controlling the flow of gas thereto, of an armature connected with the valve and having an upward projection, *l*, a lock or stop for holding the armature up and the valve open, and two electro-magnets having their poles arranged at the sides of the projection on the armature, as described, whereby they serve to lift the armature and turn it in one or other direction and into or out of engagement with the lock or stop, substantially as herein described.

6. The combination, with a gas-burner and a valve for controlling the flow of gas thereto, of an armature, F, and a rod or stem, *b'*, connecting it with the valve, the armature having the projection *l* upon its face, the two magnet-coils D D', having their poles *d d'* on opposite sides of the said projection and on opposite sides of the rod or stem *b'*, and the magnet-coil E, having its pole *e* on the side of the projection opposite the pole *d*, and the locking hook or stop *n*, all substantially as herein described.

7. The combination, with a gas-burner and an inclosing-case, of the head or plate C, arranged in the upper part of the case, and having a valve-seat at its top, the magnet-coils D D' E below said head or plate, the valve *b*, the armature F, having an upward projection, *l*, and arranged below the poles *d d' e* of the magnets, with the projection *l* between the poles, as described, the rod *b'*, connecting the valve and armature, and the armature lock or hook *n*, substantially as herein described.

8. The combination, with a gas-burner and case, of a frame composed of heads or plates C C', and an interposed post, C^3, of insulating material, arranged within the case, two electro-magnets between the heads or plates C C', and having their poles presented downward, a valve, *b*, an armature, F, having an upward projection, *l*, and a rod, *b'*, connecting the valve and armature, a hook or lock, *n*, for the armature, metallic plugs or nuts in the post C^3, and which are in electric circuit with the magnet-coils, and screws for the attachment of wires, inserted through the case and into said plugs or nuts, substantially as herein described.

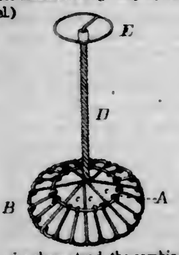
9. The combination, with a gas-burner and an inclosing-case containing electro-magnetic apparatus, of a movable electrode or contact-piece arranged adjacent to the burner-tip, a fixed electrode or contact-piece, and a tubular sheath projecting upward from the case, through which the fixed electrode or contact-piece extends, and from which it is insulated, substantially as herein described.

10. The combination, with a burner-case having an upwardly-projecting neck or socket, A^2, and a tip, *a*, inserted therein, of a fixed electrode or contact-piece, *g*, and a sliding electrode or contact-piece, *g'*, arranged in a guide or slideway external to the tip, but within the neck A^2, substantially as herein described.

11. The combination, with a burner-case having an upwardly-projecting neck, A^2, provided on its interior with a groove or slideway, *o*, and a tip, *a*, within the neck, of a fixed electrode or contact-piece, *g*, and a movable electrode or contact-piece, *g'*, arranged to move in said groove or slideway, substantially as herein described.

12. The combination, with a burner-case having an upwardly-projecting neck, A^2, provided on its interior with a groove, *o*, of a bushing or thimble, *p*, fixed within the neck A^2, and closing the groove *o*, the tip *a* within the bushing or thimble *p*, the fixed electrode or contact-piece *g*, and the movable electrode or contact-piece *g'*, arranged to slide in the groove, and external to the bushing or thimble *p*, substantially as herein described.

331,222. WIRE SHOW-STAND. SAMUEL AYRES, Worcester, Mass., assignor to the Ayres Manufacturing Company, same place. Filed Apr. 9, 1884. (No model.)

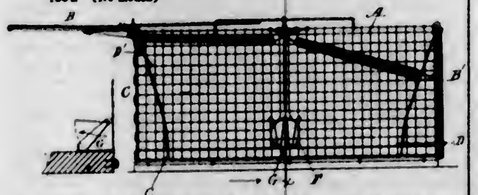


Claim.—1. In a wire show-stand, the combination of the base-rings A B, radial wires *b*, wires *c*, connected with one of the rings and twisted

together near the center, and the core F, said core being shorter than the stem, whereby the wires form a socket, G, above it, substantially as set forth.

2. In a wire show-stand, the combination of circular and radial wires, forming a base, with a vertical stem formed of some of the radial wires connected with the base and brought together, the stem-wires forming a socket, G, at their upper end, and provided with a ferrule, H, at the top, substantially as set forth.

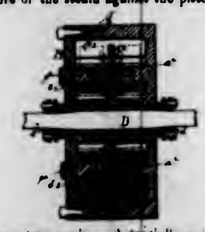
331,223. LOCK FOR TRAPS. SAMUEL AYERS, Worcester, Mass., assignor to the Ayres Manufacturing Company, same place. Filed Nov. 17, 1884. (No model.)



Claim.—In an animal-trap, the combination, with the hinged gate, of the locking-link and sloping locking-standard, constructed and operating substantially as and for the purposes described.

331,224. ROTARY ENGINE. CHARLES S. BIRD, Elyria, Ohio. Filed Mar. 17, 1883. (No model.)

Brief.—The inner wall of the steam-pressure chamber is formed by the rings *a* and *b'*, which, being supported by the casing, relieve the main shaft of the heavy weight occasioned in the ordinary rotary engine by the downward pressure of the steam against the piston-drum.



Claim.—1. In a rotary engine, substantially as described, the inner wall of the steam-chamber, formed of the rings *a* and *b'*, which, being supported by the casing A, relieve the main shaft D of the heavy weight occasioned in ordinary rotary engines by the downward pressure of the steam against the piston-drum, as and for the purposes set forth.

2. In a rotary engine, the cylinder A, and rings *a* and *b'*, having annular grooves a^2, in combination with the disk C, piston C', and abutment F, for the purpose set forth.

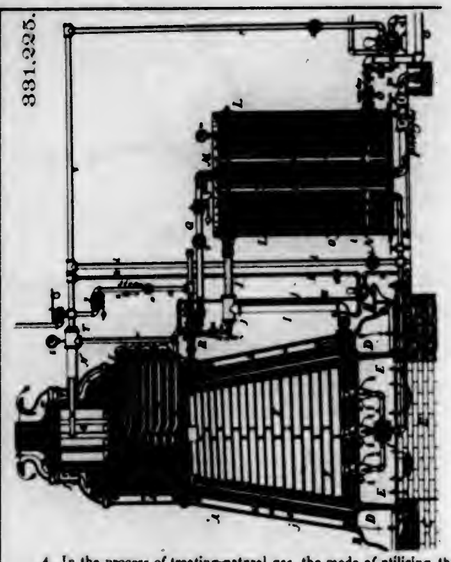
3. In a rotary engine, the cylinder A and rings *a* and *b'*, in combination with the annular groove b^2, disk C, piston C', abutment F, and shaft D, for the purpose set forth.

4. In a rotary engine, the cylinder A and rings *a* and *b'*, in combination with the spring p^2, annular groove b^2, disk C, piston C', and abutment F, for the purpose set forth.

5. In a rotary engine, the cylinder A, having grooves *f*, in combination with the abutment F, the rings *a* and *b'*, removable head B, annular groove b^2, disk C, and piston C', for the purpose herein set forth.

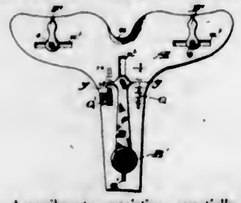
6. In a rotary engine, the piston-valve I, having aperture i', in combination with the piston-rod *i*, and rock-shaft N, and crank N^2, for the purposes herein set forth.

331,225.



4. In the process of treating natural gas, the mode of utilizing the heat contained in the treated gas on its discharge from the heated conduit, which consists in conducting such treated gas into suitable devices, wherein the heat is absorbed by the natural gas prior to its inflow into the conduit, wherein the gas is more highly heated, and chemically combines with the material which simultaneously flows therein prior to its discharge into and from said devices wherein the heat is absorbed.

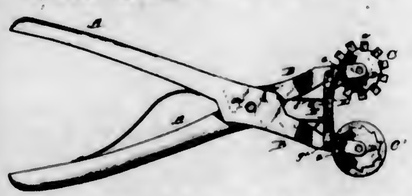
331,226. PUPILOMETER. LOU BURT, Detroit, Mich., assignor to Julius King, Cleveland, Ohio. Filed Apr. 7, 1885. (No model.)



Claim.—1. A pupilometer consisting, essentially, of a suitable supporting-plate and adjustable pointers that may be placed in juxtaposition to the eyes, a thumb-piece, and suitable connecting mechanism for moving the pointers simultaneously and equal distances toward or from each other, substantially as set forth.

2. In a pupilometer, the combination, with a plate arranged to fit astride the nose, and adjustable pointers arranged to operate in front of the eyes, of a sliding thumb-piece and suitable connecting mechanism for simultaneously moving the pointers equal distances toward or from each other, a scale, and index for noting the position of the pointers, substantially as set forth.

331,227. CHECK-STAMP. SAM. W. BUSARD, Jamesport, Mo. Filed July 3, 1885. (No model.)



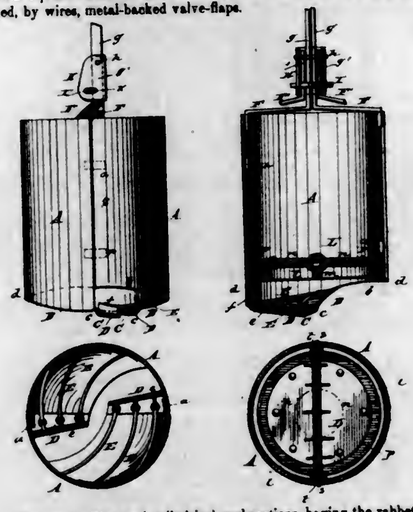
Claim.—1. In a device or implement for forming impressions in or upon papers, the disks provided with ratchet-wheels and pivotally secured, so as to be capable of a rotary motion between the bifurcated jaws, and spring-pawls for engaging with the ratchet-wheels, so as to cause the disks to move in unison, substantially as shown, and for the purpose set forth.

2. In a device for forming impressions upon paper or similar substances, the jaws B B, pivotally connected to each other and provided with handles, which are normally held apart from each other by a spring, the outward movement of the jaws being limited by the slotted bar G, which is pivotally connected to one of the jaws, and passes over a pin attached to the opposite jaw, in combination with the disks C C', provided with ratchet-wheels D D and spring-pawls, the parts being organized substantially as shown, and for the purpose set forth.

3. In a device for making impressions upon paper the bifurcated jaws B B, pivotally secured to each other, and the disk C, having dies projecting therefrom, in combination with the opposite disk, the ratchet-wheels D D, attached to the disks, and a spring-pawl which engages with said ratchet, so as to cause the said disks to rotate in unison, substantially as shown, and for the purpose set forth.

331,228. EARTH-AUGER. WM. W. CURTIS, Stanberry, Mo. Filed Feb. 15, 1883. Renewed May 9, 1885. (No model.)

Brief.—Bits are secured in rabbets in pod-section bottoms by bolts passing therethrough and through finger-bars. The pod-arms are pivoted to each other, and a pivoted clamp-bearing embracing them has slots in its sides for a key to prevent the pods from swinging apart. The pods have perforations for studs on a ring with a cross-bar to which are hinged, by wires, metal-backed valve-flaps.



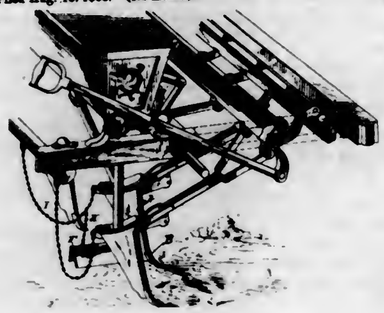
Claim.—1. The semi-cylindrical pod-sections having the rabbeted base-pieces, and the finger-bars projecting over the same to hold the bits, substantially as specified.

2. The semi-cylindrical pod-sections having the arms F and F', provided with vertical branches *g* and *g'*, pivoted together, and provided with a pivoted clamp-bearing having its lateral walls slotted to receive a transverse key, substantially as specified.

3. The sand-valve consisting of an iron band-ring having studs at its sides to engage the pod-sections, a transverse rod diametrically arranged, and leather valve-pieces covered with thin metal and hinged by means of wire to said transverse rod, substantially as specified.

4. The combination, with the semi-cylindrical pod-sections having perforations in their walls, of the sand-valve having a ring or band frame provided with studs projecting at opposite sides to engage the perforations of said pod-sections, substantially as specified.

331,229. GRAIN-DRILL. WILLIAM H. DYSINGER, Royalton, N. Y. Filed Aug. 18, 1885. (No model.)

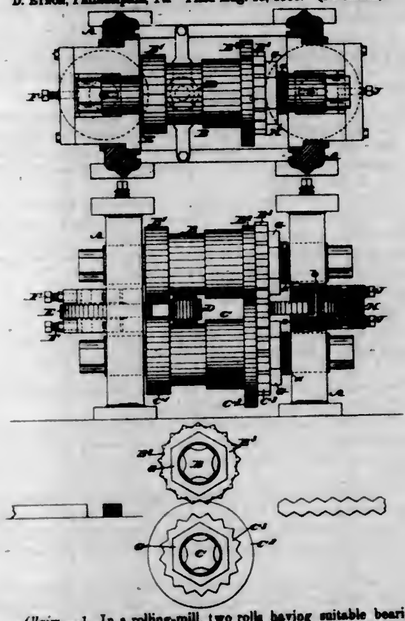


Claim.—1. In a grain-drill having its teeth placed in a zigzag line, the combination of the forward teeth, with trough-shaped drags formed each of a single piece of metal, and pivoted directly at their forward ends to the open rear sides of the lower ends of the drill-teeth, as and for the purpose shown and set forth.

2. In a grain-drill having its teeth placed in a zigzag line, the combination of the forward teeth having the rear sides of their lower ends cut away, with rectangular trough-shaped drags formed each of a single piece of metal having lips at the forward ends of its side flanges, and pivoted directly to the rear corners of the sides of the open lower ends of the teeth, as and for the purpose shown and set forth.

3. In a grain-drill having its teeth placed in a zigzag line, the combination of the forward teeth having the usual lifting-chains with trough-shaped drags formed each of a single piece of metal, and pivoted directly at their forward ends to the open rear sides of the lower ends of the teeth and chains secured to the rear ends of the drags and to the lifting-chains as and for the purpose shown and set forth.

331,230. MACHINE FOR ROLLING FLAT AND NUT BARS. WM. D. ETHON, Philadelphia, Pa. Filed Aug. 13, 1885. (No model.)



Claim.—1. In a rolling-mill, two rolls having suitable bearings, a roller on the side of the opening between said two rolls, and a roller within said opening, combined substantially as described.

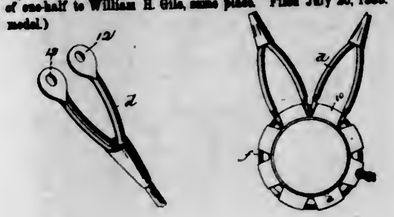
2. The rolls B C, the portions B' C', of increased diameter, and rollers D and E, combined therewith, said roller D being at the side of the opening between said rolls B C, and roller E within said opening, substantially as and for the purpose set forth.

3. The adjustable rolls B C, having flanges B' C', of increased diameter, in combination with roller D on one side, opening between said rollers B and C, and adjustable roller E within said opening, all of said rollers having bearings in the frame of the machine, substantially as described.

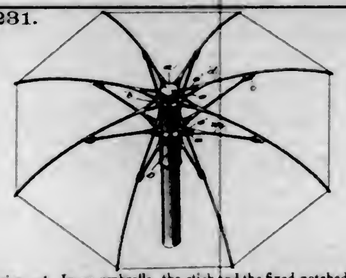
4. Rolls B C, with parts B' C', in combination with rollers D E, the roller E being laterally adjustable, substantially as described.

5. The rolls B C, having flanges B^2 C^2, of different diameters, in combination with annuli B^2 C^2, of the same diameters, and roller H, substantially as and for the purpose set forth.

331,231. UMBRELLA. ROWLAND FULLER, Milford, Mass., assignor of one-half to William H. Gile, same place. Filed July 20, 1885. (No model.)



331,231.



Claim.—1. In an umbrella, the stick and the fixed notched sleeve mounted thereon, combined with a series of ribs having bifurcated or forked ends and pivotally connected with the sleeves, the two arms of each bifurcated end entering different notches, the arms of one rib meeting the arm of an adjacent rib and straddling a projection of the sleeve, substantially as described.

2. In an umbrella, the stick and the notched fixed and running sleeves mounted thereon, combined with a series of ribs and braces pivoted to each other, and having bifurcated or forked ends pivotally connected with the sleeves, substantially as described.

331,232. METHOD OF APPLYING WOOD VENEER. ANN DE BOURBON D'ESTE PALEOLOGUS GONZAGA and CHARLES DE BOURBON D'ESTE PALEOLOGUS GONZAGA, 18 Elgin Road, St. Peter's Park, County of Middlesex, England. Filed Jan. 13, 1885. (No specimens.) Patented in England Oct. 15, 1884, No. 13,634.

Claim.—The method of applying and securing wood veneer to plaster or plaster walls, consisting in first treating the plaster surface with a silicious solution and then with a solution of chloride of calcium, then coating with a water-proof cement or other adhesive substance and pressing the veneer onto it, substantially as set forth.

331,233. SLEEPING-CAR. HENRI GUILLAUME, Washington, D. C. Filed June 23, 1885. (No model.)

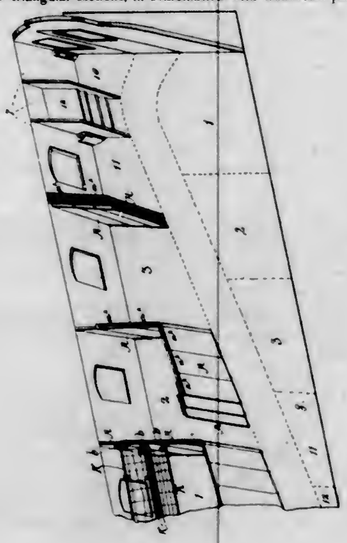
Claim.—1. A railway passenger-car divided longitudinally by a diagonal partition, substantially as and for the purpose specified.

2. A railway passenger-car divided longitudinally by a diagonal partition extending from the ends of the car to the longitudinal center thereof, substantially as and for purpose specified.

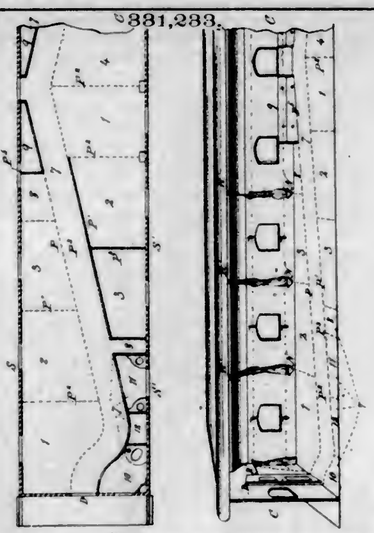
3. A railway passenger-car divided longitudinally by diagonal partitions into triangular sections, and a passage extending the full length of the car between said sections, substantially as and for the purpose specified.

4. A railway passenger-car divided longitudinally by diagonal partitions extending from the ends to the longitudinal center of the car into a series of triangular sections and a passage extending the full length of the car between said sections, substantially as and for the purpose specified.

5. A railway passenger-car divided longitudinally by a diagonal partition into triangular sections, in combination with transverse partitions



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for subdividing said triangular sections, substantially as and for the purpose specified.

6. A railway passenger-car divided longitudinally by diagonal partitions into triangular sections, and a passage extending the full length of the car between said sections, in combination with transverse partitions for subdividing said triangular sections, substantially as and for the purpose specified.

7. A railway passenger-car divided longitudinally by a foldable or removable diagonal partition, substantially as and for the purpose specified.

8. A railway passenger-car divided longitudinally by foldable or removable diagonal partitions into triangular sections, and a passage extending the full length of the car between said sections, substantially as and for the purpose specified.

9. A railway passenger-car divided longitudinally by a foldable or removable diagonal partition into triangular sections, in combination with foldable or removable transverse partitions for subdividing said sections, substantially as and for the purpose specified.

10. A railway passenger-car divided longitudinally by foldable or removable diagonal partitions into triangular sections, and a passage extending the full length of the car between said sections, in combination with foldable or removable transverse partitions for subdividing said triangular sections, substantially as and for the purpose specified.

11. A railway passenger-car divided longitudinally into triangular sections by a foldable or removable diagonal partition extending from the ends to the longitudinal center of the car, substantially as and for the purpose specified.

12. A railway passenger-car divided longitudinally into triangular sections, and a passage extending between said sections the full length of the car by foldable or removable diagonal partitions extending from the ends to the longitudinal center of the car, substantially as and for the purpose specified.

13. A railway passenger-car divided longitudinally into triangular sections by a foldable or removable diagonal partition extending from the ends to the longitudinal center of the car, in combination with foldable or removable transverse partitions for subdividing said sections, substantially as and for the purpose specified.

14. A railway passenger-car divided longitudinally by foldable or removable diagonal partitions extending from the ends to the longitudinal center of the car into triangular sections, and a passage extending the full length of said car between said sections, in combination with foldable or removable transverse partitions to subdivide the triangular sections, substantially as and for the purpose specified.

15. The combination, with a railroad-car, of the rods R, having arms *r r*, to which curtains are looped, and the hangers H, substantially as and for the purposes specified.

16. The combination, with a railroad-car, of the rods R, having arms *r r*, to which curtains are looped, and the hangers H', substantially as and for the purposes specified.

17. The combination, with a railroad-car, of the berth-supports consisting of the swinging arms M, provided at their ends with a headed bolt or pin, *m'*, and the uprights L, having laterally-projecting perforated lugs or ears *l* and T-slots *l'*, substantially as and for the purposes specified.

18. The combination, in a railroad-car, of foldable berths and bed-supports, with a bowl or cup shaped latch or retaining device, N, substantially as and for the purposes specified.

19. The combination, in a railroad-car, of foldable berths and bed-supports K L M, with the rods R, having foldable arms *r r*, from which the partition-curtains are supported, the hangers H', and the locking devices N, said parts being constructed and arranged for co-operation substantially as and for the purposes specified.

331,234. STEAM-ENGINE. DEXTER D. HARDY, Chicago, Ill., assignor to the Illinois High Speed Engine Company, same place. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a steam-engine, two single-acting cylinders placed equidistant from each other around a central driving-shaft, each of said cylinders being offset at about one-half of the radius of the crank to one side of a line drawn through the center of the main shaft and parallel with said cylinder, said cylinders having in connection therewith suitable steam-chests, steam ports and valves, with suitable mechanism for operating the same, and each cylinder having a single-acting piston connected by separate connecting-rods to the same crank on the driving-shaft in the manner substantially as and for the uses and purposes specified.

2. In a steam-engine having two or more single-acting cylinders placed around a central driving-shaft and offset to one side of a line drawn through the center of the driving-shaft and parallel to said cylinders, respectively, the combination of the pistons G G', the connecting-rods H H', and the crank I on the driving-shaft F, working in bearings *m m'*, in the manner and for the purposes specified.

3. In a steam-engine, the engine-frame A, having the steam-passage L and exhaust-chamber K therein, and the cylinders B B' on opposite sides of the driving-shaft F, and offset, one above and the other below a line drawn through the center of the driving-shaft, and parallel with said cylinders, said cylinders having steam-chests M M, attached thereto with steam-ports *a* and *b*, and exhaust-ports *l l* and J, in combination with the single-acting pistons G G', provided with the packing-rings *k k*, the connecting-rods H H', attached to the crank I, the driving-shaft F, working in bearings *m m'* in the frame A, and the slide-valves *o o*, in connection with the bars *e e'* and rods *f f*, operated by the eccentric *g* upon the shaft F, substantially as and for the uses and purposes specified.

4. In a steam-engine, the engine-frame A, having the steam-passage L and exhaust-chamber K' therein, the parallel offset-cylinders B B', having the ports *l l* and J therein, and the steam-chests M M, having the ports *a* and *b* therein, all cast in one piece.

5. In a steam-engine having two cylinders placed at opposite sides of a shaft and offset at opposite sides of a line drawn through said shaft and parallel with said cylinders, the combination of two single-acting valves operated by one eccentric, *g*, or its equivalent, with the driving-shaft F, and the two single-acting pistons G G', attached to the same crank I, substantially as set forth.

331,235. WAGON-TONGUE SUPPORT. CHRISTIAN HEIN, McKownville, N. Y. Filed Sept. 24, 1885. (No model.)



Claim.—The combination, with the link K, having a pivotal center that coincides with the king-bolt D, of the spiral spring L, turn-buckle M, and the hook *i*, attached to the pole I, all being constructed and connected to operate as and for the purpose specified.

331,236. LEMON-SQUEEZER. FRANK J. HERRICK, New Britain, Conn. Filed July 8, 1885. (No model.)

Claim.—1. In a lemon-squeezer, the bowl having ribs terminating at a line below the top thereof, leaving a smooth space above them, wherein the base of the cone of lemon is received upon the terminal

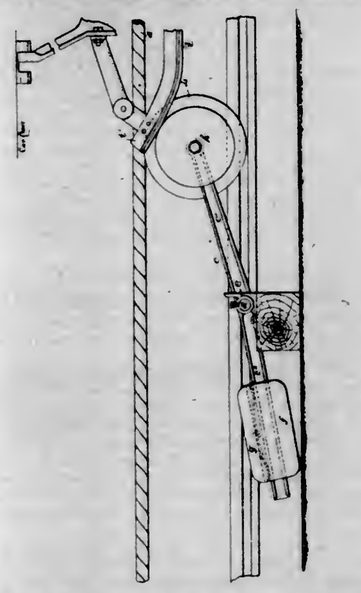
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ends of the ribs, in combination with the presser, substantially as described.

2. In a lemon-squeezer, the combination of the bowl part having a handle and a pair of eyes integral therewith, of a presser provided with a handle, and a stem and trunnions, the parts being united by inserting the trunnions in the eyes and bending the latter upon them, as set forth

331,237. CABLE-SUPPORTING SHEAVE FOR CABLE RAILWAYS. WILLIAM H. PAINE, Brooklyn, N. Y. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination, with the cable of a cable railway and a depressible sheave for supporting the same, of a car having a gripper, and a guard-bar having upturned or inclined ends for depressing said supporting-sheave, substantially as set forth.

2. In a cable railway, a depressible sheave for supporting said cable, and an idle-pulley journaled at one side of said sheave and movable therewith, in combination with a car having a grip, and a guard-bar having upturned ends for engaging and depressing said idle-pulley, and consequently the supporting-sheave, during the passage of said grip, substantially as set forth.

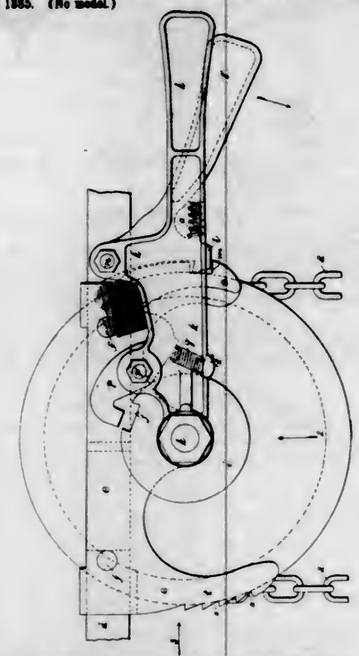
3. The combination, with the cable of a cable railway, of a sheave for guiding the same, a depressible lever carrying said sheave, and a car having a gripper, and a guard-bar having upturned ends, substantially as and for the purpose set forth.

4. The combination of the cable, a sheave for guiding the same, a depressible lever supporting said sheave, a pulley journaled to said lever, the car, the grip, and a guard-bar having upturned ends, all constructed and arranged substantially as set forth.

5. The combination, with the cable, of a guiding-sheave therefor, an adjustable counterbalance for holding said sheave normally elevated, a car, and a projection from said car for depressing said sheave while the grip is passing, substantially as set forth.

6. The combination, with the cable, of a lever fulcrumed at an intermediate point, a supporting and guiding sheave for said cable, journaled to one arm of said lever, a counterbalancing-weight mounted on the other arm, a car, and a projection from said car for depressing said sheave, substantially as and for the purpose set forth.

331,238. HAND MECHANISM FOR OPERATING GRIPPERS FOR CABLE RAILWAYS. WILLIAM H. PAINE, Brooklyn, N. Y. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination, with the winding-staff, of a pivoted hand-lever and a dog for automatically connecting said winding-staff and hand-lever when the latter is moved from its inoperative position, substantially as described.

2. The combination, with the winding-staff, of a hand-lever pivoted thereto, a latch for holding said lever normally out of operative position, an automatic dog carried by said lever, and a trip for holding said dog out of engagement with the winding-staff when the hand-lever is out of operative position, substantially as set forth.

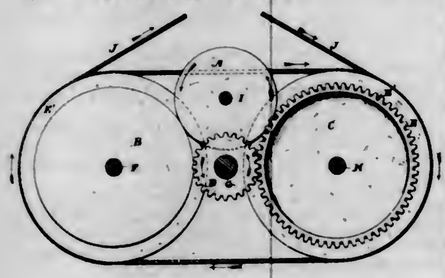
3. The combination, with the winding-staff having a notched disk secured thereto, of a hand-lever pivoted to said staff, an automatic dog pivoted to said lever and adapted to engage with said disk, and a trip for holding said dog out of engagement, in the manner and for the purpose set forth.

4. The combination, with the gripper, the winding-staff, and connection between them, of a hand-lever pivoted to said staff, and a dog for connecting said hand-lever and staff at the will of the operator, substantially as set forth.

5. The combination, with the winding-staff A and the concentric notches *m s*, of the hand-lever *k*, pivoted to the staff A, and provided with latch *l*, substantially as and for the purposes set forth.

6. The combination, with the staff A, having the notched disk *i*, of the hand-lever *k*, pivoted thereto, the dog *p*, and the latch *l*, pivoted to said lever *k*, and provided with the springs *q* and *o*, respectively, the trip *r*, and the notch *m*, all constructed and arranged to operate substantially as and for the purposes set forth.

331,239. ROPE-DRIVING MACHINERY. WILLIAM H. PAINE, Brooklyn, N. Y. Filed May 13, 1885. (No model.)

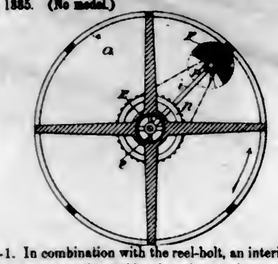


Claim.—1. A rope-driving apparatus consisting of a pair of rope-driving drums, and an interposed friction-drum for transmitting a portion of the power from one to the other, located at a different elevation from that of the cable-driving drums, substantially as set forth.

2. The combination, with the cable-driving drums E E', of the friction-drums B B', secured, respectively, to the said cable-driving drums, and the interposed friction-drum A, turning on an axis out of the common plane of the shafts of the said cable-driving drums.

3. The combination, of the cable-driving drums E E', turning on axes slightly inclined one to the other, and the interposed friction-drum A, for transmitting power from one to the other of the said drums, located above or out of line with the axes of the said cable-driving drums, substantially as set forth.

331,240. REEL-BOLT. OLIVER P. HUNFORD, Oakdale, Nebr. Filed July 29, 1885. (No model.)



Claim.—1. In combination with the reel-bolt, an interiorly-arranged stationary rod, arms secured to said rod, and a brush supported by said arms, substantially as set forth.

2. In combination with the reel-bolt, an interiorly-arranged stationary rod, arms adjustably secured to said rod, and a brush supported by said arms, substantially as set forth.

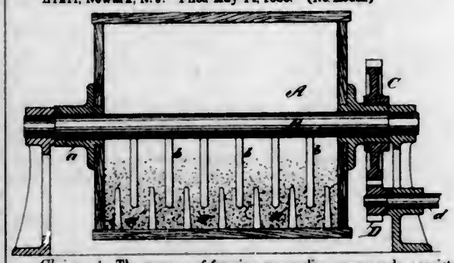
3. In combination with the reel-bolt, an interiorly-arranged stationary rod, arms secured to said rod, and a brush supported by said arms at an angle to the vertical, as and for the purpose set forth.

4. In combination with the reel-bolt, an interiorly-arranged stationary rod, arms secured to said rod, a rotary brush supported by said arms, and means, substantially such as described, for rotating said brush.

5. In combination with a reel mounted to rotate on gudgeons, an interiorly-arranged stationary rod supported at its ends in said gudgeons, arms secured to said rod, and a brush supported by said arms, as set forth.

6. In combination with a reel having dividing-partitions, an interiorly-arranged stationary rod, arms secured to said rod, rotary brushes supported by said arms, and means, substantially such as described, for rotating said brushes.

331,241. METHOD OF COMBINING PYROXYLINE AND ITS SOLVENTS IN THE MANUFACTURE OF SOLID COMPOUNDS. JOHN W. HYATT, Newark, N. J. Filed May 14, 1885. (No model.)



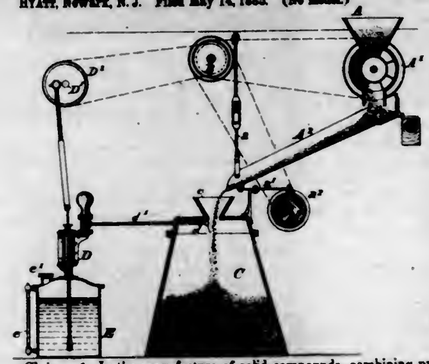
Claim.—1. The process of forming pyroxyline compounds, consisting of the following steps: first, reducing the pyroxyline to a finely-divided dry condition; second, moistening the same with alcohol or equivalent latent liquid solvent; third, adding powdered camphor, and subjecting the mixture to masticating-rolls, or to heat and pressure, substantially as described.

2. The manufacture of a solid pyroxyline compound by introducing the solvent by first mixing the alcohol or its equivalent with the pyroxyline in a finely-divided condition, and then adding powdered camphor to the mass, substantially as described.

3. The process of treating soluble paper in shreds by (1) combining the same with vinous alcohol or its equivalent, (2) and then adding powdered camphor, (3) and converting the mixture into a solid compound in masticating-rolls, or by the use of heat and pressure, substantially as described.

4. The manufacture of a solid compound by first mixing vinous alcohol or its equivalent with soluble paper in the form of shreds, and then adding powdered camphor, substantially as described.

331,242. METHOD OF COMBINING PYROXYLINE AND ITS SOLVENTS IN THE MANUFACTURE OF SOLID COMPOUNDS. JOHN W. HYATT, Newark, N. J. Filed May 14, 1885. (No model.)



Claim.—1. In the manufacture of solid compounds, combining pyroxyline with solvents of the same by spraying the solvents against a moving stream of pyroxyline pulp, substantially as described.

2. The process of manufacturing solid pyroxyline compounds, consisting of the following steps: first, grinding the pyroxyline to a pulp; second, bringing the pulp while moving, and little by little, into contact with a liquid solvent; third, allowing the mass to rest in a closed receptacle until the liquid solvent is diffused; fourth, masticating the resultant mass on rollers, substantially as and for the purpose described.

3. The apparatus consisting of the combination-chute A^3 and receptacle C and sprinkler *d*, by means of which pyroxyline pulp is mixed little by little with spirits of camphor or its equivalent, for the purposes mentioned, and substantially as described.

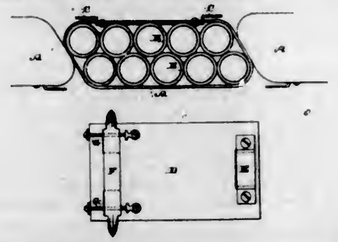
4. The apparatus consisting of the combination of reciprocating chute A^3, hopper *c*, receptacle C, and sprinkler *d*, so arranged that spirits of camphor or its equivalent in the condition of a fine spray can be mingled with particles of pyroxyline, for the purposes mentioned, and substantially as described.

5. The apparatus consisting of the combination of the measuring device A', or its equivalent, chute A^3, (stationary or reciprocating,) hopper *c*, receptacle C, and sprinkler *d*, arranged, substantially as described, to combine pyroxyline with a liquid solvent in definite proportions, substantially as specified.

331,243. MANUFACTURE OF CEMENT. WILLIAM JOY, Northfleet, England. Filed Sept. 26, 1885. (No specimens.) Patented in England July 30, 1885, No. 9,154.

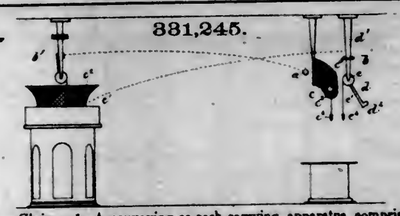
Claim.—The improvements hereinbefore described in the manufacture of cement, which improvements consist, essentially, in charging wet slurry or a mixture of wet slurry and fuel into a cement-kiln while the kiln is in action, the wet slurry or the mixture being deposited in successive portions on the burning charge in the kiln as the burning proceeds, and at the parts where, for the time being, the charge is burning most freely.

331,244. FEED-CASE FOR MAGAZINE-GUNS. JOHN C. KELTON, San Francisco, Cal. Filed July 18, 1885. (No model.)



Claim.—An original package for cartridges, consisting of a paper or pasteboard box having a metal band or strap riveted on the under side of the top, with its ends extending through and bent so as to form tongues parallel with the top, in combination with a shoe beneath the receiver of the gun, having a fixed slotted fastener at one end and a sliding slotted fastener at the opposite end, whereby the ends of the tongues may be secured and the case held in place, substantially as herein described.

331,245. CASH-CARRIER. THOS. M. KENNEY and FRANK E. MASON, Boston, Mass. Filed Aug. 13, 1885. (No model.)



Claim.—1. A conveying or cash-carrying apparatus comprising a throwing or shooting instrument at one station, and a co-operating receiving or catching device at another station, substantially as described.

2. In a conveying or cash-carrying apparatus, a throwing or shooting instrument for projecting a carrier or projectile in a definite path through the air from a given station, and a receiving device at the same station for catching carriers projected toward it, substantially as described.

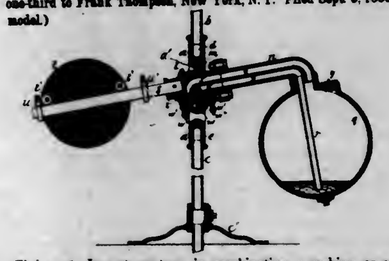
3. In a conveying or cash-carrying apparatus, a main or central station, as the cashier's desk, having receiving apparatus for carriers projected through the air from various points or outer stations toward the said central station, substantially as described.

4. A conveying or cash-carrying apparatus comprising the following elements: a carrier which receives within it the cash or article to be conveyed, and throwing and catching devices at different stations by which the said carrier is thrown through the air from one point and properly received at another point, substantially as described.

5. A throwing device adapted to be turned to direct a projectile in different directions, combined with a locking device for fastening the same in different definite positions, and a series of receiving devices corresponding with the different positions in which the said throwing device is thus fastened, substantially as described.

6. In a conveying or cash-carrying apparatus, a throwing device consisting of a pivoted arm provided at its end with a carrier receptacle or holder and a wheel or pulley at its pivoted end, combined with an actuating-cord attached to and passed around the said pulley, and a stop for arresting the pivotal movement of the said arm, substantially as described.

331,246. STEAM-TRAP. JOHN W. KENYON, Brooklyn, assignor of one-third to Frank Thompson, New York, N. Y. Filed Sept. 5, 1885. (No model.)



Claim.—1. In a steam-trap, in combination, a rocking or oscillating device, a hollow water-holder attached to one side of the same and connected by passages with two ports formed in the journal and bearing, and a loose counterpoise carried freely on a rod projecting from the other side of the rocking device, so as to slide toward the center of oscillation when the weight of the water-holder and its contents preponderates, and slide away from the center when the water-holder has discharged its contents, substantially as and for the purpose set forth.

2. In a steam-trap, in combination, the supporting-frame having inlet and outlet passages, a journal-plug fitted into the frame and having two ports connected to the inlet and outlet passages thereof, and a rocking device supported on the journal-plug, a sliding counterpoise on one side of the bearing and a water-holder on the opposite side, connected by passages to the ports in the journal, substantially as and for the purpose set forth.

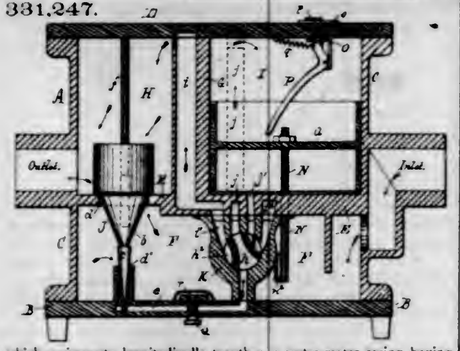
3. In a steam-trap, in combination, the supporting-frame *a*, having passages *d e*, the plug *f*, having ports *g h* and openings *g' h'*, and secured in an opening in the frame, the bearing-piece *i*, provided with ports *j k* and passages *j' k'*, the hollow arm *n* and pipe *r*, the water-holder *q*, the rod *s*, adjustable stops *u u'*, and sliding weight *t*, substantially as set forth.

4. In a steam-trap, the combination, with the bearing of the rocking gravity-trap and the water-holder and counterpoise carried thereby, constructed substantially as described, of the cap *w* and the yielding pressure-springs *w' w'*, as and for the purpose set forth.

331,247. DIFFERENTIAL-PISTON METER. LEVI W. LOMBARD, Boston, Mass., assignor, by mesne assignments, to the Lang Hydraulic Machine Company, Portland, Me. Filed Dec. 4, 1884. (No model.)

Claim.—1. In combination with a valve having two solid parts

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which reciprocate longitudinally together, a water-meter casing having two passages which are closed, respectively, by said parts of said valve, substantially as set forth.

2. In combination with a valve having two conical parts which reciprocate longitudinally together, a water-meter having two passages which are closed, respectively, by said parts of said valve, substantially as set forth.

3. In a liquid-meter, the outlet-passage, the passage which leads to the measuring-chamber, and a solid longitudinally-movable automatic differential valve which governs the latter passage, and also directs communication with the former, in combination with a passage which conducts the discharged liquid from said measuring-chamber to said outlet, in order that the back-pressure in the measuring device may be the same as the back-pressure of the main water-supply, substantially as set forth.

4. The compound differential valve J, having a larger conical part, *b*, which fits the seat *d*, and a smaller conical part, *c*, which fits the seat *d'*, in combination with the main outlet-passage supplied through the larger seat, the supplementary passage *e*, supplied through the smaller seat, the measuring-piston *a*, actuated by the liquid flowing through the latter passage, and an additional passage which conducts to the common outlet under pressure the liquid discharged by said piston, substantially as set forth.

5. In a liquid-meter, the combination of the supply-chamber, the measuring-chamber, and the discharge-chamber, with a passage leading from said supply-chamber to said measuring-chamber, a passage leading from said measuring-chamber to said discharge-chamber, and a solid longitudinally-movable automatic differential valve which governs the passage first named, and also governs the direct communication between the supply-chamber and discharge-chamber, substantially as set forth.

6. The automatic simultaneously-acting cones *b c* and their seats, in combination with the main outlet, which is governed by the first of said cones, the passage to the measuring-chamber, which is governed by the second of said cones, and the passage which conducts the discharge from the measuring-chamber to said outlet under the same back-pressure as that encountered by the main water-supply, substantially as set forth.

7. In combination with measuring-piston *a* and the chamber in which it works, a passage leading from the supply-chamber to both sides of said piston, a passage allowing the outflow to the discharge-chamber of the liquid forced out by said piston, and a weighted differential valve which governs both the main opening connecting the supply-chamber and discharge-chamber, and the supply of liquid to said piston, for the purpose set forth.

8. In a liquid-meter, a longitudinally-movable solid differential valve, in combination with a measuring-chamber and its inlet and outlet passages, said valve governing both the direct communication with the outlet and the flow of water to said measuring-chamber, the liquid entering the measuring-chamber subject to the main pressure of supply and flowing out of the same subject to the discharge-pressure, substantially as set forth.

9. The oscillating valve *g*, having inlet-passage *h* and outlet-passages h' h^2, in combination with the inlet-passages *j j'*, the outlet-passages *i i'*, alternately communicating with said valve-passages, as described, the measuring-chamber I, supplied by and discharging through said passages, respectively, the piston *a*, reciprocating in said chamber, devices actuated by said piston for oscillating said valve, the pipe *e*, which supplies passage *h*, the pipe *i*, which conducts the discharge from chamber I to the outlet, and the differential valve which governs simultaneously the direct communication with the main outlet and the flow of liquid through passage *e*, substantially as set forth.

10. The combination of the lever P, spring *q*, and registering mechanism actuated thereby with the piston *a*, arranged to strike said lever at every upstroke, and the inlet and discharge passages, substantially as set forth.

11. The combination, with a differential valve which governs the direct communication with the outlet, and also the passage which supplies the measuring-chamber, of said passage-chamber and outlet, a passage connecting said chamber and outlet, and a supplemental passage and adjusting-screw for regulating independently of said valve the supply of the piston with relation to the main supply, substantially as set forth.

12. In a meter of the class hereinbefore premised, the combination, with the measuring-chamber I and its piston *a*, of the rack n^3, the piston-rod N, and springs *n n'*, said rack operating alternately to disengage and engage with the pinion M and permit the latter to change the valve *g* to reverse said piston, substantially as set forth.

13. The combination, with the rack n^3, operated by the piston *a*, of the pinion M, provided with the sectoral notch and loosely mounted upon the slotted hub *k*, the actuating-springs *n n'*, and the valve *g*, whereby sudden impulse is imparted to the latter by the release of the pinion from said rack and the valve is intermittently changed, substantially as stated.

14. In meters of the class herein premised, the combination, with the automatic smaller or measuring valve, of a secondary adjusting-valve, Q, operated by hand, by which to increase or diminish the supply delivered by said measuring-valve, and thereby change the ratio or differentiality existing between the delivery and measuring valves, substantially as and for purposes set forth.

15. The automatic simultaneously-acting valves *b c* and their seats, in combination with the main outlet, which is governed by the first of said valves, and the passage to the measuring-chamber, which is governed by the second of said valves, substantially as set forth.

331,248. WHEEL FOR AGRICULTURAL IMPLEMENTS. JEREMIAH A. LONG, Akron, and ERSKINE L. BABCOCK, Cuyahoga Falls, Ohio. Filed May 21, 1883. (No model.)



Claim.—A wheel for agricultural implements, consisting of a rim and a hub united in the plane of their lateral faces by two concentrically-corrugated sheet-metal disks free from contact with each other between the hub and rim, the disks being connected to the tire substantially in the planes of the edges of the tire, as and for the purposes described.

331,249. PROCESS OF MAKING ZINC-SULPHIDE PIGMENT. THOS. MACFARLANE, Montreal, Quebec, Canada. Filed Nov. 8, 1884. (No specimens.)

Claim.—1. The herein-described method of preparing sulphide of zinc, combined with free sulphur, for the purpose set forth, which consists in mixing together the herein-described solution of chloride of zinc and the herein-described sulphur-liquor until the mixture shows a slightly-acid reaction, then filtering the precipitate in order to separate the zinc sulphide and free sulphur from the accompanying solution of chloride of calcium, and finally drying the cakes of sulphide and free sulphur at a moderate temperature, substantially as set forth.

2. The herein-described method of preparing anhydrous zinc sulphide for use as a white pigment, which consists in first preparing a sulphur-liquor, substantially as described, then preparing a chloride-of-zinc solution, substantially as described, then mixing these two solutions together until the mixture shows a slightly-acid reaction, as specified, then filtering the precipitate, then drying the cakes composed of hydrated zinc sulphide mixed with free sulphur, then igniting this mixture in a retort or furnace to drive off the water of hydration and the free sulphur, and finally drawing off the anhydrous sulphide of zinc in water, substantially as specified.

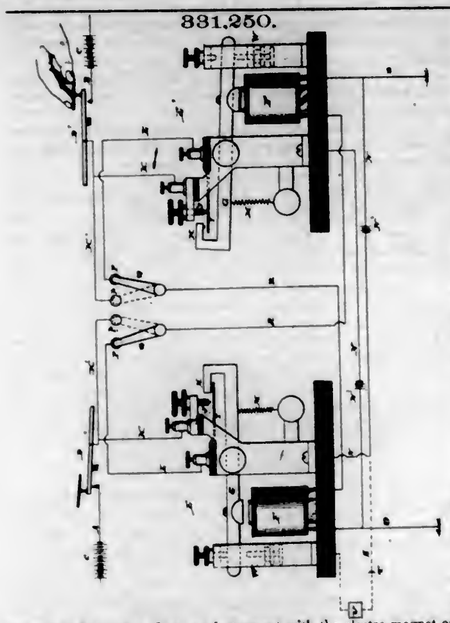
331,250. TELEGRAPHIC REPEATER. WILLARD M. MINER, Thurlow, Pa. Filed July 8, 1885. (No model.)

Claim.—1. The combination, with the lines A and B and their keys, of instruments E E', each consisting of electro-magnets F, armature G, contacts H I J, wires K, connecting the lines with the contacts J, wires L R, connecting the contacts I on one instrument with the electro-magnet on the other, and circuits N, having batteries N' and connecting contacts H of one instrument in circuit with the electro-magnet F of the other instrument, substantially as and for the purpose specified.

2. The combination, with the lines A B and their keys, of instruments E E', each consisting of electro-magnet F, armature G, contacts H I J, wires K, connecting the lines with the contacts J, wires L R, connecting the contacts I on one instrument with the electro-magnet on the other, circuits N, having batteries N', connecting contact H of one instrument in circuit with the electro-magnet F of the other instrument, wires K', connecting with each of said lines, and switches Q to connect the electro-magnets F in circuit with either wires K or L, substantially as and for the purpose specified.

3. The combination of the lines A B and their keys with instruments E E', each consisting of electro-magnets F, armature G, contacts H I J, wires K, connecting the lines with the contacts J, wires L R,

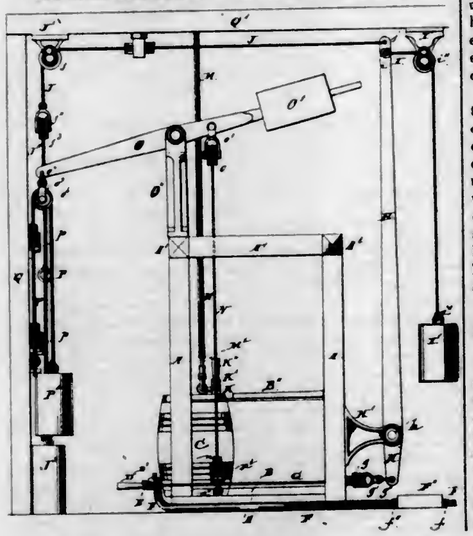
331,250.



connecting the contacts I on one instrument with the other, circuits N, having batteries N', connecting contacts H of one instrument in circuit with the electro-magnet F of the other instrument, and a local circuit having a sounder or other instrument located therein and controlled by the vibrations of the armature of the instrument E, substantially as and for the purpose specified.

4. In a telegraphic repeater, two electro-magnets, armatures therefor having each two circuit-closing contacts, one of which closes when the armatures are up, and the other when the armature is down, but in which both contacts in one instrument are never both opened at the same time, two line-circuits connecting, respectively, with one or the other of the contacts of said instruments, according as to whether the armature is up or down, lines connecting one of said contacts on each instrument with the electro-magnet of the other instrument, and local circuits having batteries connecting the other contact of each instrument with the electro-magnet of the other instrument, substantially as and for the purpose specified.

331,251. APPARATUS FOR FILLING KEGS WITH BEER. CHRISTOPH MÜSSEL, South Bend, Ind. Filed Feb. 5, 1885. (No model.)



Claim.—1. The head D and draw or holding arm or rod E, carried by the filling-head and having a direct bearing thereon, in combination with the slack or take-up rope G and the operating-lever H, for maintaining a close connection between the filling-head and the receptacle to be filled, substantially as and for the purpose described.

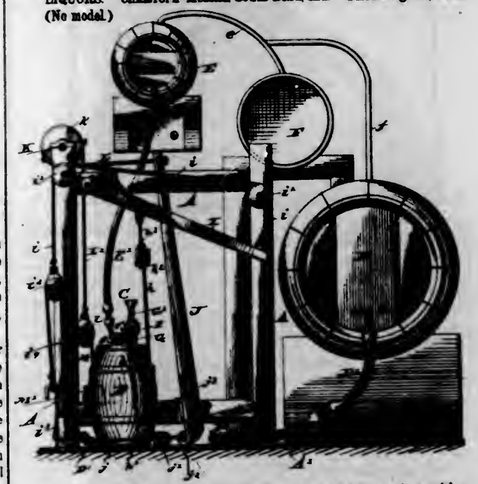
2. The head D and arm or bar E, in combination with the rope G, lever H, weighted rope I, rope J, and weighted rope J'', substantially as and for the purpose specified.

3. The filling-head K and draw or holding bar or arm L, carried by the filling-head and having a direct bearing thereon, in combination with the slack or take-up rope M and lever O, substantially as and for the purpose specified.

4. The head K and draw and holding arm or bar L, in combination with the rope N, weighted lever O, and weighted rope P, substantially as and for the purpose specified.

5. A filling and supply head for beer, and a filling and supply head for air, both located to communicate at different points with the vessel to be filled, and both acting simultaneously to supply beer and air to a keg or other receptacle, substantially as and for the purpose specified.

331,252. METHOD OF FILLING VESSELS WITH FERMENTED LIQUORS. CHRISTOPH MÜSSEL, South Bend, Ind. Filed Aug. 29, 1885. (No model.)



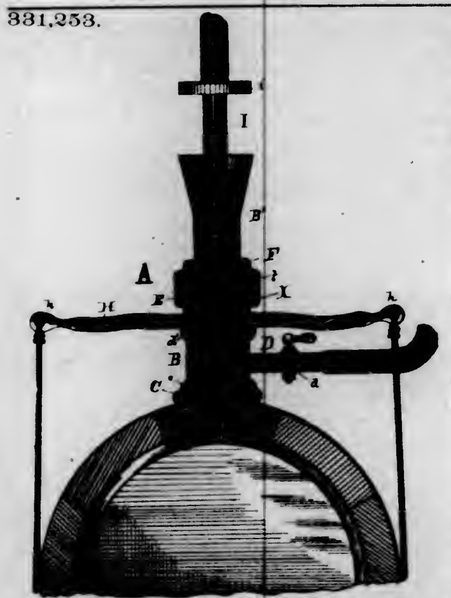
Claim.—1. The herein-described method of filling a keg with a liquid containing carbonic-acid or other gas in solution, which method consists in connecting the lower part of the keg, by valve-controlled tubing, with a vessel containing the liquid larger than the keg, and placed higher than the same, connecting, by valve-controlled tubing, the upper part of the keg with an empty vessel placed as high or slightly higher than the cask, connecting by tubing the empty vessel and the cask each with a reservoir containing air under greater compression than the expansive force of the gas in the liquid, and allowing the liquid in the cask to be forced by gravity to fill the keg, substantially as specified.

2. The herein-described method of filling a keg with a liquid containing carbonic-acid or other gas in solution, which method consists in connecting the lower part of the keg to a higher-placed larger vessel or cask containing the liquid by means of a tube and device whereby the opening in said lower part can be corked before the tube and device are removed from the keg, connecting the upper part of the keg to an empty vessel placed as high as the cask by a similar tube and corking device, connecting both the empty vessel and cask with a reservoir containing air under greater compression than the expansive force of the gas in the liquid, allowing the keg to fill by gravity from the cask, and corking the keg and detaching it from the tubing of the cask and of the empty vessel, substantially as specified.

331,253. CORKING DEVICE FOR VESSELS. CHRISTOPH MÜSSEL, South Bend, Ind. Filed Sept. 14, 1885. (No model.)

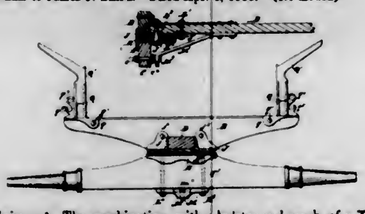
Claim.—1. In the corking device A, the combination of the tubular section B, provided with the branch escape-tube D, having one end externally threaded, and the other end provided with the ring-washer C, adapted to lie upon and form an air-tight joint with the cork-hole of a keg or similar vessel, the tubular section B', adapted to slide within the section B till its inner end is flush with the outer surface of the ring-washer, provided with a bore slightly conical, so that the cork will be compressed when driven inward, and will be held within its inner end, and having its outer end open and funnel-shaped, and the screw-cap F, substantially as specified.

331,253.



2. The corking device A, composed of the tubular section B, having the ring rubber washer C on its outer end, threaded at its inner end, and provided with the shoulder *d'* and the branch tube D, having the valve *d*, the tubular section B', sliding partially into the section B, having its outer end funnel-shaped and the bore of its straight portion slightly conical, the screw-cap F, engaging the threaded end of the section B, and the yoke H, all constructed and arranged to operate substantially as and for the purpose specified.

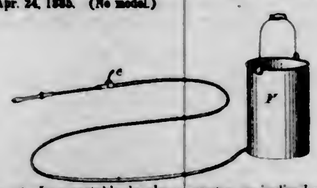
331,254. WAGON. SOLOMON R. OVIATT, Detroit, Mich., assignor of one-half to James J. Baird. Filed Apr. 8, 1885. (No model.)



Claim.—1. The combination, with a bolster and reach, of a T-plate engaged therewith, an axle engaged with a recessed plate, K, and an eye-plate, M², a bolt engaging the T-plate and the recessed plate together, and a brace-rod connecting the reach with said eye-plate, the construction being such that the line of oscillation will be in the rear of the bolster and axle, substantially as described.

2. A stake constructed with a fixed lower section adapted to be secured to the bolster and provided with a hook and ring and side flanges, and a removable section provided with a socket to receive said fixed section, substantially as described.

331,255. DOUCHE APPARATUS. HOWARD S. PAINE, Albany, N. Y. Filed Apr. 24, 1885. (No model.)



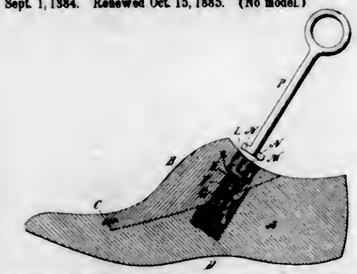
Claim.—1. In a portable douche apparatus, an inclined rest for the body of a patient, provided with a concavity at its upper end to receive the lower part of the body, in combination with a suitable support therefor, substantially as set forth and described.

2. In a douche apparatus, an inclined rest or support, with its upper surface made convex lengthwise, and concave from side to side, in combination with a base, A, to which it is secured, and a suitable receiving receptacle for the discharged fluid, substantially as shown and described.

3. In combination with a base, A, an inclined rest having its elevated front end made concave, and provided with a flange, D, substantially as set forth and described.

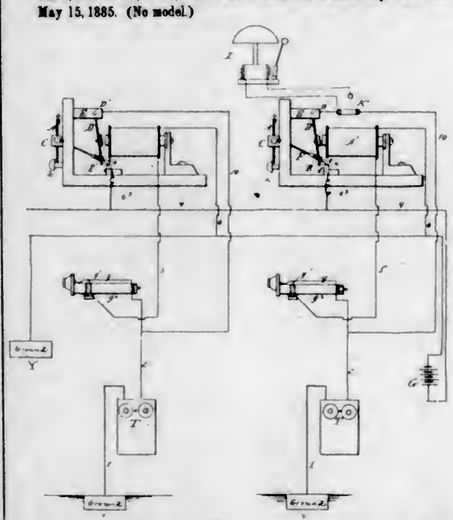
4. An inclined rest for douche purposes, having its front or elevated end made concave at S, and provided with a bent rod, E, to hold a receiving-vessel, substantially as shown and described.

331,256. SHOE-LAST. CHARLES POMEROY, New York, N. Y. Filed Sept. 1, 1884. Renewed Oct. 15, 1885. (No model.)



Claim.—The combination, with the upper and lower sections of a shoe-last, of a screw-bolt led through an aperture in the upper section to engage a fixed nut in the lower section, a shoulder formed above the threaded portion of the bolt to engage one or more transverse pins projecting into the aperture encircling the bolt, an offset within said aperture to engage the head of the bolt, and a slotted recess in the head adapted to receive and engage a key for rotating and retracting the bolt, all substantially in the manner and for the purpose herein set forth.

331,257. AUTOMATIC ELECTRIC ANNUNCIATOR. CHARLES W. PRICE, New York, N. Y., and ALBERT BARRETT, Kansas City, Mo. Filed May 15, 1885. (No model.)



Claim.—1. In electro-magnetic annunciators, the combination, with an electro-magnet and its pivoted armature, of an annunciator drop or shutter hung on trunnions and connected to said armature by a wire or connecting-rod attached to said shutter above its pivotal point and to the free end of the armature, whereby when the magnet is energized said drop or shutter will be raised, and when said magnet is discharged the drop or shutter will automatically fall, substantially as described.

2. The combination, with an electro-magnet located in a telephonic-call circuit, of a drop or shutter coupled or connected to the armature of said magnet and operated thereby, and a separate electrical circuit leading through the coils of said magnets and through contacts which are closed and opened by the armature, substantially as described.

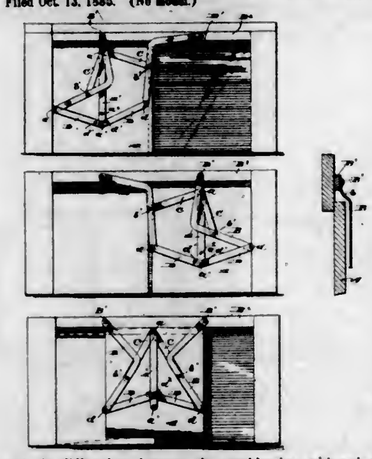
3. The combination, with an electro-magnet located in a telephonic-call circuit, of a drop or shutter connected to and operated by the armature of said magnet, a separate electrical circuit leading through the coils of said electro-magnet and through contacts which are closed and opened by the armature, and means, substantially as described, whereby such separate circuit is opened when a line is plugged for telephonic connection.

4. The combination, in a telephonic annunciator, of an electro-magnet in a normally-closed line-circuit and a normally-open local circuit, a connecting-jack having separate contacts through which both circuits are completed, an armature provided with means for closing and opening said local circuit, contacts controlled by said armature, and an annunciator shutter or drop connected to said armature and adapted to be lifted or moved thereby, substantially as and for the purpose described.

5. The combination, in a telephonic annunciator, with the annunciator-magnets and their armatures, said magnets being located in normally-closed line-circuits and separate normally-open local-battery circuits leading from a common battery through separate contacts attached to the spring-jacks, of a switch located between the local battery and the electro-magnets, substantially as and for the purpose described.

6. In a telephonic annunciator, the combination, with an electro-magnet and its armature, said magnet being located in a telephonic circuit and in local-battery circuit adapted to be closed and opened by said armature, of an electro-magnet call-bell, and a switch by means of which said bell may be cut in and out of said local circuit.

331,258. SLIDING-DOOR HANGER. CHARLES C. RUNYAN, Mansfield, Ohio. Filed Oct. 13, 1885. (No model.)



Claim.—1. In sliding-door hangers, the combination, with swinging levers pivoted above the line of the door, of links pivoted to the bottom of the levers and carrying bars pivoted to the levers at or near the central point of the latter, said links and bars being pivoted in pairs to the door or door attachment on the central vertical line of the door, substantially as set forth.

2. In sliding-door hangers, the combination, with swinging levers pivoted above the line of the door and offset near the top end of the same to balance the door, of the carrying-bars C and links D, the said links and bars being pivoted to the levers and to the door, substantially as set forth.

3. In sliding-door hangers, the combination, with swinging levers pivoted above the line of the door, said pivotal points being separated a distance about equal to the width of the door, and arranged substantially as described, whereby the levers are pivoted above the center of the door in the open or closed position of the latter, of the links D and carrying-bars C, substantially as set forth.

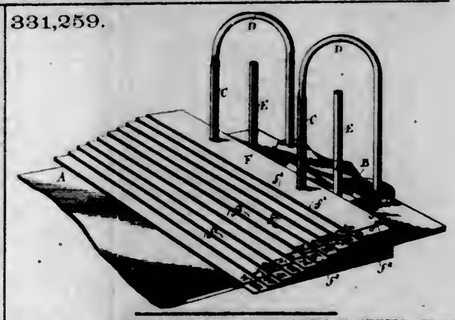
4. In sliding-door hangers, the combination, with the levers B, carrying-bars C, and links D, the parts being arranged substantially as described, of devices, substantially as indicated, for adjusting the said links, by means of which the door may be made to move in a straight or in a curved line.

5. In sliding-door hangers, the combination, with swinging levers of the bell-crank variety pivoted above the line of the door and arranged in reverse order, of the bars C and links D, the parts being arranged and operated substantially as set forth.

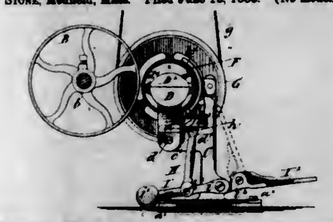
331,259. INDEX FOR PAPER-FILES. JAMES S. SHANNON, Chicago, Ill. Filed Mar. 5, 1884. (No model.)

Claim.—The combination, with the receiving-wires of a file, of a series of index sheets or strips loosely fitted upon the wires and arranged in pairs of equal width, each pair being of greater width than the pair above it, and the lower strip of each pair being longer than the superposed strip of the pair, substantially as and for the purpose set forth.

331,259.



331,260. MOTOR FOR SEWING AND OTHER MACHINES. GEORGE F. STONE, Medfield, Mass. Filed June 15, 1885. (No model.)

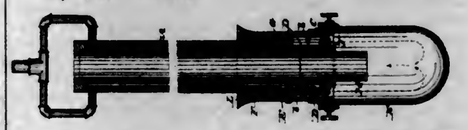


Claim.—1. The journal-support *d'*, carrying the journal-boxes D, and the shaft E, provided with the friction-wheel F, and pulleys G, in combination with the standard C and spring K, substantially as and for the purposes described.

2. The combination, with the journal-support *d'*, having a projection, *d²*, of a treadle, I I', wedge-bar H, and standard C, provided with a fulcrum or rest for the side *h* of the wedge-bar H, opposed to the said projection *d²*, substantially as and for the purposes described.

3. The two-part treadle, a wedge-bar, H, connected with one part thereof, and a counter-balance, *i*, in combination with the standard C, pivoted journal-support *d'*, and the shaft and friction-pulley, substantially as and for the purposes described.

331,261. GAS-BURNER. JOHN STUERTZ, Philadelphia, Pa. Filed May 11, 1885. (No model.)



Claim.—1. The gas-pipe A, in combination with the air-flue B, located in said pipe and open at both ends, burner C, having openings in its under side and connected to the pipe A by tubes D, band E, having passages G, globe K, closed at the bottom thereof, and cylinder F, surrounding said pipe A and having wire packing L, substantially as and for the purpose set forth.

2. In a gas-burner, the gas-pipe A and flue B, in combination with the burner C, cylinder H, cone J, open at the bottom and having side openings, *a*, band E, and cylinder F, having openings *b*, substantially as and for the purpose set forth.

3. The pipe A, having inclosed pipe B, in combination with pipes D, burner C, band E, having openings G, cylinder F, having packing L, and globe K, substantially as and for the purpose set forth.

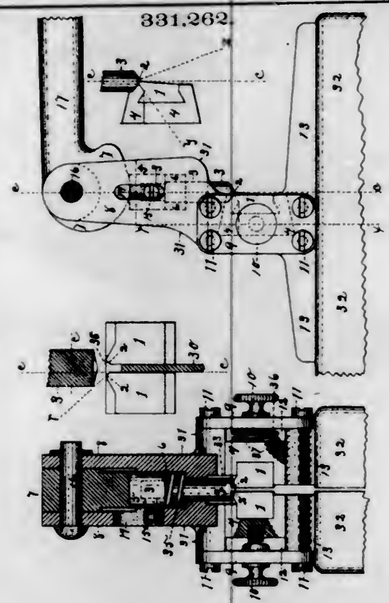
4. In a gas-burner, a supply-pipe having a flue within the same, in combination with a burner, a cylinder surrounding the supply-pipe and properly secured to the same, with passages for the admission of air between the two, and a globe closed at the bottom thereof, the said cylinder having a packing of wire, substantially as and for the purpose set forth.

5. A gas-burner provided with a band surrounding the same and having air-passages, in combination with a cylinder connected to said band, a globe secured to said cylinder, an air-pipe leading into said globe, and wire packing in said cylinder, substantially as and for the purpose set forth.

6. The pipe A, having flue B, open-ended and located within the said pipe A, in combination with the band E, having openings G, burner C, cylinder F, having openings *b*, and provided with wire packing L, and globe K, substantially as described.

331,262. MACHINE FOR SWAGING SAW-TEETH. JAMES E. TRAVERS, Cincinnati, Ohio. Filed Aug. 15, 1885. (No model.)

331,262.



Claim.—1. In a saw-tooth-upsetting machine, the combination of a saw-tooth upset having the operating-surfaces inclined to correspond with the front and back surfaces of the saw-tooth, an extension or holder sliding in guide-bearings in the frame and guided in a right line therein reciprocally toward the cutting-edge of the saw-tooth, the said guide-bearings, the said frame, and saw-tooth dies having parallel and smooth or rough blade-clamping surfaces and inclined diverging surfaces adjacent the sides of the tooth-point, the said frame serving to support or hold all of the parts of the device, substantially as and for the purposes set forth.

2. In a saw-tooth-upsetting machine, the combination of die-holders for the saw-tooth, clamping-dies having bearing-surfaces fitted to corresponding recessed bearing-surfaces of the supporting-frame, and affording means for guiding the holders and dies perpendicularly toward and from the saw-blade, the said clamping-dies, and the said frame, the said frame serving to support or hold all of the parts of the device, and having guiding-surfaces adapted to slide upon and be guided by a suitable but independent saw-support, substantially as and for the purposes set forth.

3. In a saw-tooth-upsetting machine, the combination of saw-tooth-clamping die-holders, the said clamping-dies, and a supporting-frame, the said die-holder having a recess adapted to receive and secure a corresponding portion of the said die, and having sliding bearing-surfaces fitted to corresponding recessed bearing-surfaces in the said frame, and the latter having a central opening for introducing the saw-blade, and having guidiog-surfaces adapted to slide upon and be guided by a suitable but independent saw-support, substantially as and for the purposes set forth.

4. In a saw-tooth-upsetting machine, the combination of saw-tooth-clamping die-holders having bearing-surfaces fitted to corresponding bearing-surfaces of the frame of the machine, whereby the holders are guided toward and from the saw-blade, the said frame, and wedges, the said die-holders having beveled surfaces, against which the said wedges act to force the holders against the saw-blade, and the said frame having guiding-surfaces adapted to slide upon and be guided by a suitable but independent saw-support, substantially as and for the purposes set forth.

5. In a saw-tooth-upsetting machine, the combination of a saw-tooth upset having the operating-surfaces inclined to correspond with the front and back surfaces of a saw-tooth, a reciprocating sliding extension or part guided in the machine-frame, a spring acting between the frame and the said part guiding the upset, an eccentric cam turning about a fulcrum supported by the said frame, the fulcrum, and the said frame, the said spring serving to elevate the upset and the cam to depress it, substantially as and for the purposes set forth.

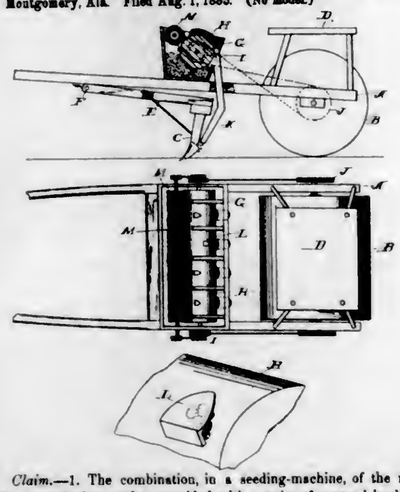
6. In a saw-tooth-upsetting machine, the main frame 13 31 8, having a base provided with one or more guiding-extensions parallel with of the upset and the saw-blade when in place, and adapted for introducing the saw-blade, lateral recesses and bearing-surfaces adapted to receive the dies and die-holders, openings and bearing-surfaces corresponding to the upset and the parts co-operating directly therewith, the said guiding extension or extensions being adapted to slide upon a suitable but independent saw-support, substantially as and for the purposes set forth.

7. In a saw-tooth-upsetting machine, the combination of the main frame 13 31 8, the clamping-dies 1, the die-holders 4, having provision, as set forth, for securing the dies, and having the dovetailed shape and bearing-surfaces set forth, by which they are guided in the framing, the upset-tool 3, sliding block 5, spring 35, eccentric cam 7, and cam-fulcrum 16, suitable means being provided for moving the die-holders toward or from the saw-blade.

8. In a saw-tooth-upsetting machine, the combination of the main frame 13 31 8, the die-holders 4, having the dovetailed shape and bearing-surfaces set forth, by which they are guided in the framing, and the removable side plates, 9.

9. In a saw-tooth-upsetting machine, the combination of the main frame 13 31 8, having openings and bearing-surfaces for the die-holders, slots 23 and a projection, and fulcrum-boss 19, the side plates, 9, the die-holders shaped and adapted to slide within the corresponding frame-bearings and having beveled bearing ends 27, springs for forcing the die-holders apart, wedges 25 20, wedge-springs 24, the fulcrum-pin 18, the forked lever 21, the adjusting-screws 28, and the cam-lever 17, having a tapped hole for the screw 28.

331,263. SEEDING-MACHINE. DANIEL S. TROY and JOHN S. DAVIS, Montgomery, Ala. Filed Aug. 1, 1885. (No model.)



Claim.—1. The combination, in a seeding-machine, of the roller having an unbroken surface provided with a series of recessed hooks secured thereto and deposited in series, so that the seed may be carried over from the bottom of the seed-box and deposited within the seed-tubes, and thus conveyed to the ground, with the revolving brush journaled in the upper part of the seed-box, to brush the periphery of the seed-roll and prevent the loss of seed in passing over said roller, substantially as herein set forth.

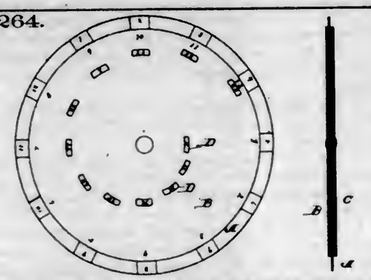
2. The combination of the seed-roller having an unbroken surface, journaled within the seed-box, and provided with a series of recessed hooks, and a revolving brush journaled within the seed-box, the two operated by means of a belt from the roller rearwardly, and the seed-box and vertical tubes to convey the seed therefrom, with the series of shovels within a frame hinged forwardly beneath the device, substantially as herein set forth.

3. The combination of the frame A, the roll B, the shovel-frame E, hinged forwardly beneath the device, the vertical tubes K, the seed-box G, having therein the seed-roller H, having an unbroken surface, and revolving brush M, the whole arranged as and for the purpose substantially as herein set forth.

331,264. CALCULATING DEVICE. ARGYLE W. TUCKER, Midlothian, assignor of one-half to William T. Stewart, Big Springs, Tex. Filed Apr. 13, 1885. (No model.)

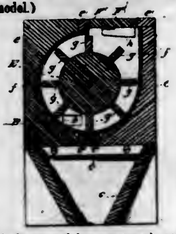
Claim.—1. In a calculating device, a central disk having a series of radiating columns of figures, all the figures in each column being multiples of the marginal figure, in combination with a smaller disk rotating on the central disk, having on its margin the same number of figures as on the margin of the central disk, and also provided with a series of apertures equal in number to the marginal numbers spirally disposed in the face of the disk, only one aperture being in line between the center and each marginal number, substantially as herein set forth.

331,264.



2. In a calculating device, the central disk, A, having a certain number of marginal figures on each side and a radiating column of figures to correspond with each marginal figure, in combination with smaller disks B C on each side centrally pivoted, each disk having marginal figures and spirally-arranged apertures for exposing the figures in the columns of the central disk, the whole arranged as and for the purpose substantially as herein set forth.

331,265. FLOUR-BOLT. BERRI W. TUTTLE, Council Hill, Ill. Filed Feb. 17, 1885. (No model.)



Claim.—1. A flour-bolt comprising a rotary beater, a partly-cylindrical bolting-screen with a straight upright portion, and a series of adjustable chutes completing the circumference of said screen, substantially as described.

2. In a flour-bolt, the combination of a rotary beater and a bolting-screen consisting of a semi-cylindrical section and another section made straight, with a slight curve at one end, substantially as described.

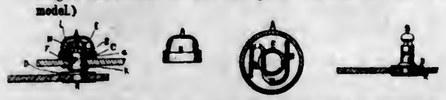
3. The bolting-screen D, composed of the grooved concave ribs e e, the end connecting-bars, e' e', the bolting-cloth, and the wires *f f*, pressed tightly with the cloth into the grooves of said ribs and secured substantially as described and shown.

4. In a flour-bolt, the combination of the stationary bolting-screen D, made in two sections, with a straight upright portion, and the solid rotary beater E, substantially as described.

5. In a flour-bolt, the stationary bolting-screen D, made in two sections with a straight upright portion, the solid rotary beater E, and the series of adjustable chutes *h h*, arranged above the latter and between the two sections of the bolting-screen, substantially as described.

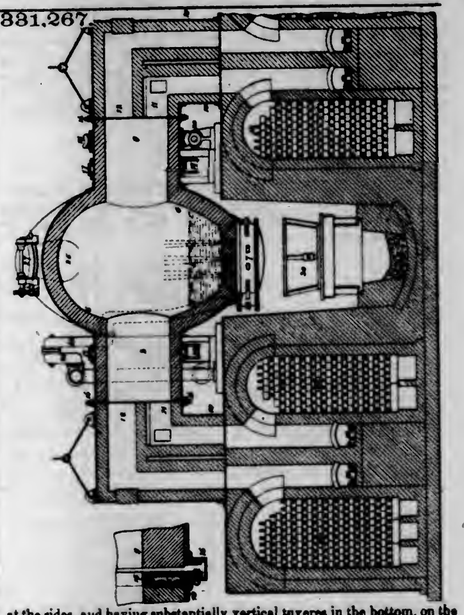
6. In a flour-bolt, the combination of the bolting-screen D, having a straight upright portion, the solid rotary beater E, the adjustable chutes *h h*, and the bolting-chest having the feed-opening at one end, near its top, and the discharge-opening near its center, at the opposite end, substantially as described.

331,266. GLOVE-FASTENER. WILLARD M. WILLIAMS, Boston, Mass., assignor to Edward J. Kreutzer, same place. Filed May 21, 1885. (No model.)



Claim.—A glove-fastener consisting of the shell or cap A, having an annular shoulder, B, and provided with the inclosed eyelet E, having a flange, C, resting upon said shoulder and provided with a slot, L, and the S-shaped spring H, having its central portion resting in said slot, and the eyelet F, provided with a flange, G, bearing upon the said flange C and secured to said shell, as described, all being constructed and arranged for operation with the stud P, substantially as shown and described.

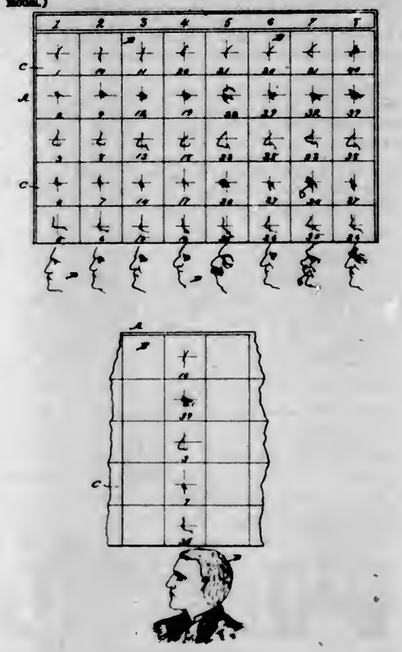
331,267.



at the sides, and having substantially vertical tuyeres in the bottom, on the side adjacent to said wall, and directed in lines tangential to the axis of the converter and against said curved wall, substantially as and for the purpose described.

2. The combination of regenerative furnaces, with an intermediate converter having hollow trunnions open to the said furnaces, and having a curved upper wall with substantially vertical tuyeres in its bottom, adjacent to said curved wall, and directed on lines tangential to the axis of the converter and against the curved wall, substantially as and for the purpose set forth.

331,268. CHART FOR TEACHING AND PRODUCING FACIAL EXPRESSIONS. FRANK E. WOODIS, Evart, Mich. Filed Feb. 26, 1885. (No model.)



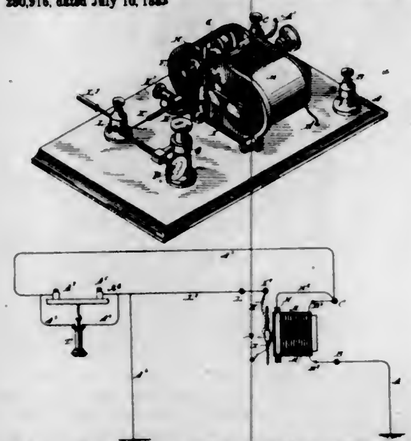
331,267. APPARATUS FOR THE MANUFACTURE OF IRON AND STEEL. THOMAS WILLIAMSON, Wishaw, County of Lanark, Scotland. Filed Sept. 22, 1884. (No model.) Patented in England Apr. 9, 1884, No. 6,062; in France Aug. 19, 1884, No. 163,837; in Belgium Aug. 21, 1884, No. 66,068, and in Germany Aug. 21, 1884, No. 31,236.

Claim.—1. The converter having a curved upper wall and outlets

Claim.—A chart for teaching and assisting in producing illustrations of facial expressions and the like, comprising a series of columns subdivided horizontally into spaces, the spaces of each column containing leading features arranged in consecutive order, so that by combining a series of the features selected from any of the columns a complete outline shall be produced, substantially as and for the purpose set forth.

REISSUES.

10,663. **TELEPHONE AND TELEGRAPH PROTECTOR.** CHARLES C. DRAKE, Trenton, N. J., assignor to the American Automatic Lightning Arrester Company of New York. Filed Mar. 30, 1885. Original No. 290,916, dated July 10, 1883.

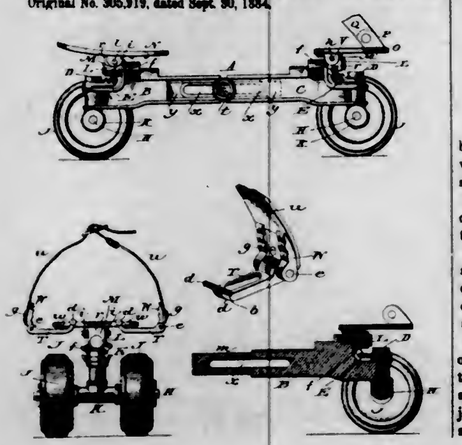


Claim.—1. In an electro-magnetic device for the protection of electrical instruments from abnormal currents, the combination, with the electro-magnets M M, located in the main circuit, of the armature D, located in the shunt-circuit, and the interposed contacts and connections, whereby abnormal currents traversing the main line will energize the magnet, attract the armature, and divert through a shunt-circuit all excess of current above that normal to the main line, substantially as described.

2. In an electro-magnetic device for the protection of electrical instruments from abnormal currents, the combination of the magnets M M in the main circuit, the contact-point G, arranged over said magnets, and also connected to the main circuit, of the armature D, located in a shunt-circuit, and the circuit-connections, substantially as and for the purpose set forth.

3. In an electro-magnetic device for the protection of electrical instruments from abnormal currents, the combination, with the magnets M M, of band H, contact-point G, armature D, and interposed circuit-connections.

10,664. **ROLLER-SKATE.** EDGAR HALL, Cambridge, Mass., assignor to the Hall Roller Skate Company, Nashua, N. H. Filed June 5, 1885. Original No. 305,919, dated Sept. 30, 1884.



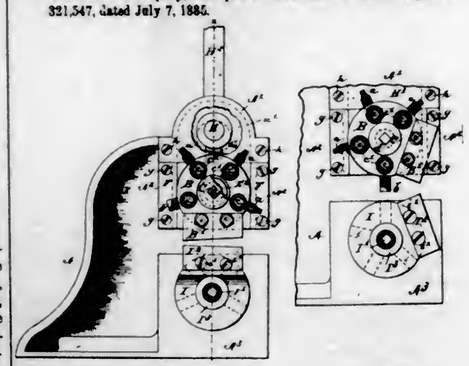
Claim.—1. In a roller-skate having a non-tilting body or frame, oscillating foot-supports provided with gears, in combination with swiveling trucks, the swivel-pins of which are provided with suitable racks to intermesh therewith, substantially as and for the purpose shown and described.

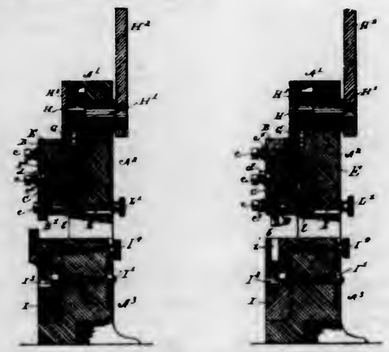
2. In a roller-skate, the body A, rendered extensible by the slots *x*, projections *m*, bolt and nut *t*, and grooves *y*, in which said projections rest, substantially as described.

3. In a roller-skate, the toe-piece N, provided with the slots R and grooves or notches *w*, in combination with the bars T, studs *d*, jointed levers W, and straps U, combined and arranged to operate substantially as set forth.

4. The improved roller-skate herein described, the same consisting of the sections B C, provided with the studs L, projections *m*, and slots *x*, the toe-piece N, provided with the slots R, notches *w*, and flanges *i*, the collets M, provided with the teeth *f* and flanges *r*, the studs D, provided with the toothed segments E and cross-heads K, the axles H, carrying the rollers J, the bars T, provided with the studs *d*, jointed levers W, and straps U, the heel-piece O, provided with the flanges *v* P and straps Q, and the bolt and nut *t*, constructed, combined, and arranged to operate substantially as described.

10,665. **COMPOUND METAL-WORKING MACHINE.** ASHER S. TOWLE, Rochester, N. H., assignor, by direct and mesne assignments, to the Rochester Machine Company, same place. Filed Oct. 10, 1885. Original No. 321,547, dated July 7, 1885.





Claim.—1. In a compound metal-working machine, the sliding block connected by means of a pitman or link with a spindle provided with a lever and arranged to operate a cutter, &c., head, substantially as shown and set forth.

2. The adjustable die arranged to operate in connection with the cutters and punches of the tool-carrying head, substantially as and for the purpose set forth.

3. The combination, with the sliding block, operated substantially as described, of a head provided with cutting and punching tools and capable of rotary adjustment on said block, and a subjacent die capable of like adjustment radially and centrally chambered and provided with a cutter, as set forth.

4. The combination, with the spindle and means for operating it, of the wrist, the link, the sliding block, the head attached to a projection on said block and provided with cutting and punching devices, the spring-actuated lock-pin engaging with sockets in the head, and the subjacent radially and centrally chambered die provided with an axial bolt, sockets, and a spring-actuated lock-pin, as set forth.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

SELLON *v.* HOCHHAUSEN.

1. In interference proceedings, where neither applicant files a preliminary statement, the senior applicant will, under Rule 111, be *presumed* the first inventor, and priority awarded him.
2. In such cases where the invention in controversy is disclosed in the application of the senior applicant priority cannot be awarded the junior applicant, even though such senior applicant expressly disclaims, for the present, any claim to a patent for such disputed invention.
3. In such interference cases priority must also be awarded such senior applicant, notwithstanding the oath of the junior applicant discloses the fact that he has received British patent for his invention which antedates the time of the filing of either application.

APPEAL from the Examiners-in-Chief.

SECONDARY BATTERIES.

Application of J. S. Sellon filed July 14, 1883. Application of W. Hochhausen filed June 21, 1883.

Mr. A. Pollok for Sellon.

Mr. H. C. Townsend for Hochhausen.

MONTGOMERY, *Commissioner:*

Haid, who was a third party to this interference, has dropped out of the case and is not a party to this appeal.

The Examiner of Interferences awarded priority to Hochhausen for the reason that each applicant rested his application on the record dates—that is to say, no one filed a preliminary statement, and no one took any testimony. The Board on appeal affirmed the Examiner of Interferences and awarded priority to Hochhausen under Rule 111. This rule provides in substance that in interference proceedings the several parties will be presumed to have made their invention in the chronological order in which they "filed their completed applications for patents, clearly illustrating and describing the invention."

Counsel for Sellon claims that Rule 111 is not applicable to this case for two reasons: First, because Hochhausen's application as originally filed did not exhibit or claim this particular invention; that the invention in controversy was not clearly illustrated and described, but that, on the contrary, in his specification he expressly disclaimed intending to include this invention, and declared that he would subsequently in some other application claim it. Second, because applicant Sellon declares in his oath that some time prior to the filing of either application British patents had been issued to him; that this being true, and the British patents antedating the Hochhausen application, Sellon's oath of the issue of said British patents, and that he was the first, original, and sole inventor, must be received to overcome the presumption of priority awarded to Hochhausen in pursuance of Rule 111.

I have caused an examination to be made of the records and files to ascertain the truth of the first assertion, and it is disclosed that while the application of Hochhausen as originally filed does clearly exhibit this invention in the drawings and specification, it is fairly disclaimed at present in the following language:

> I make no specific claim herein to an automatic switch of the kind just described as combined with a secondary battery, as this will form the subject of another application to be filed by me.
> (See conclusion of description.)

Now, the question arises as follows: The senior applicant exhibits plainly in his application the fact that he conceived this invention in controversy, and the branch of it in issue in the interference. He disclaims any patent for it at present. Still, he has clearly conceived and perfected it before the application of Sellon is filed. How can I shut my eyes to the fact of its conception and assume, as I must under Rule 111, that Sellon was really the first and original inventor when the records and files of this very interference disclose the contrary. I must therefore disagree with counsel for Sellon in such first position.

Now, as to the second. The statute, section 4886, declares that any person who has invented a new and useful machine, &c., shall have a patent therefor. Section 4904, directs that in case of a dispute as to priority of invention the Commissioner of Patents shall proceed to determine the question of priority, and may issue a patent to the party adjudged to be the prior inventor. Rule 111 declares distinctly that parties will be *presumed* to have invented in the chronological order in which their completed applications are filed. Rule 107 declares that if the junior party to an interference proceeding fails to file a preliminary statement, or if his statement fails to *overcome* the *"prima facie* case made by the respective dates of applications," priority shall be awarded to the senior applicant. Rule 112 provides that the junior applicant shall proceed first to take his testimony. Now, Sellon states in his oath, which verifies his application, the dates of his British patents, and those dates are anterior to the filing of Hochhausen's application. The trouble is that the rules require the determination of the question of priority to be adjudged without reference to what is contained in the oath. The oath has nothing to do whatever with this question of priority. Rule 111, above cited, says nothing about the oath. It simply provides that where all the parties rest on the dates of filing their respective applications you need not look any further. You may and shall *assume* that the earliest applicant was the prior inventor. In these interference cases, where they proceed to the filing of preliminary statements, no matter what has been said in the oath which verifies the application, the junior applicant must first proceed to take his testimony.

Upon him rests the burden of overcoming the *prima facie* case made by the filing of the senior application. He must proceed to take testimony to overcome this *prima facie* case; or priority must be awarded against him, and the Commissioner compelled to assume that his adversary is the prior inventor, and this without regard to what is contained in the verification of the application or in the preliminaray statement. It follows, therefore, that upon the filing of interfering applications in the Office they assume the following status: At once as soon as the interference is declared the senior applicant is *prima facie* entitled to the award of priority. Unless this be overcome in some way pointed out by the practice, priority must be awarded to him. It might be admitted for the purpose of this controversy that Sellon actually had an English patent which antedated the filing of Hochhausen's application, and it could make no difference with the award in this case. If it were admitted that Sellon's English patent issued and bore date three months anterior to the filing of Hochhausen's application, still that would come far short of proving that Sellon was the inventor of the thing which he patented in England. The issue of an English patent is by no means evidence that the patentee is the inventor, as in that country patents are issued not only to inventors but to importers of inventions. (*Lauder* v. *Crowell et al.* C. D.,1879, 177.) Indeper dent of this, however,I have no hesitation in declaring that priority must be awarded upon this record to Hochhausen. The argument of counsel for Sellon was ingenious and exhaustive. Upon reflection, however, there is nothing else to do but to affirm the decision of the Board. It is perhaps to be regretted that a case of this kind should be permitted to go off upon such a question. If Sellon really has a meritorious claim to be regarded as the first inventor, it is to be regretted that he has not attempted to show it by his proof. It is sufficient for me, however, that he has not done so, and I must dispose of the case as it comes to me.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Western District of Michigan.

REED *et al.* v. CHAFE *et al.* SAME v. LAWRENCE *et al.* SAME v. COBB.

Decided August 14, 1885.

1. REISSUES—EXPANSION OF CLAIM—VALIDITY.
   Where the reissue of letters patent covers anything not embraced within the original patent, the reissue is to that extent void.
2. SAME—EXPANSION OF DESCRIPTION—EFFECT.
   The insertion in a reissued patent of the inventor's opinion that his invention is one of a certain class and reduced into form, accomplishing a successful result, where it does not in any way affect or enlarge the claim of the original, does not invalidate the reissue.
3. SAME—REISSUE CONSTRUED AND HELD VALID.
   Reissue No. 9,148, dated April 13, 1880, given on original Patent No. 95,458, dated October 5, 1869, considered and *Held* to be valid.

MATTHEWS, *J.*:

These cases come before me now upon a rehearing, a petition for which was allowed, upon doubts entertained as to the validity of the Reissued Letters Patent No. 9,148, dated April 13, 1880, issued to David L. Garver, assignor to the complainants, the original Patent No. 95,458, dated October 5, 1869, for an improvement in harrows. There was an intermediate reissue, No. 8,142, dated March 26, 1878; but as that was surrendered when the subsequent reissue was granted, it has no relation to the present controversy.

At the time the decrees were ordered at the original hearing of these causes no argument was heard on the question of the validity of the reissued letters patent, which are the foundation of the complainants' claim for relief, because shortly prior to that hearing the question, after argument before the circuit court sitting in Indiana, had been decided in the affirmative, and it was considered expedient and a matter of comity to follow that decision in this circuit. The litigation having spread to other circuits, and doubts having been expressed by the judges in those circuits whether the ruling in favor of the validity of the reissued patent could be sustained, in view of the decisions of the Supreme Court upon the subject, a petition for a rehearing in these cases was allowed, and a full, thorough, and able argument has now been had upon the question, as though it was an original one, and the cases are now to be disposed of upon their merits, without prejudice from any former decrees.

The original patent was dated October 5, 1869. The application for the present reissue was not made until May 29, 1879, after an intervening delay of nearly ten years. No facts in excuse for this apparent laches are shown or claimed to exist, and upon the well-established doctrine of the Supreme Court it must be assumed, without anything further, that the reissued patent, so far at least as it covers anything not within the claim of the original, is void. This is conceded by counsel for the complainant. On the other hand, it is maintained that if the claims of the reissued patent, or one or some of them, are either within the scope of the claim of the original patent, or are legally identical with it, to that extent the reissued patent can and ought to be upheld. This is also the doctrine of the Supreme Court, as declared in *Gage* v. *Herring*, (107 U. S. 640, S. C.; 2 Sup. Ct. Rep., 819,) and is conceded to be so by the counsel for the defendant. This question of identity as to the claims in the two patents is one of construction and comparison, to be determined from the face of the instruments, interpreted according to the principles of law. The specifications to the original Patent No. 95,458, issued to David L. Garver, read as follows:

Be it known that I, DAVID L. GARVER, of Hart township, in the county of Oceana and State of Michigan, have invented certain Improvements in Harrows, of which the following is a specification.

NATURE AND OBJECTS OF THE INVENTION.

My invention relates to the construction of harrow-teeth of spring-steel, and of such form that when attached to an ordinary harrow-frame they will curve back over the bars of the frame, pass between them, and extend to the ground, their points inclining forward. The objects accomplished by my invention are the following, viz:

When a tooth strikes any solid substance, it rebounds or springs back and upward, thereby clearing the substance, and immediately enters the ground again without interfering with the working of the other teeth. Frequent clogging is avoided, and the harrow can be moved from place to place as readily as a common sled by simply turning it over.

DESCRIPTION OF THE ACCOMPANYING DRAWING.

Figure 1 is a perspective view of a harrow provided with my improved harrow-teeth. Fig. 2 is a transverse sectional view of a bar of the frame, also showing one tooth and its fastening. Fig. 3 is a longitudinal sectional view of a bar of the frame, also showing a tooth and its fastening.

GENERAL DESCRIPTION.

A is a common harrow-frame, constructed lighter than the ordinary teeth require it to be, and provided with hinges Z at the sides *b b*. *c c* are bars, to the under side of which the teeth *d* are attached. The teeth *d* are made of spring-steel about four feet in length, two inches in width, and one-fourth of an inch in thickness, having their points swaged in the shape of common cultivator-teeth. The teeth are then bent in a circular shape, their points being about eight inches to the rear, and extending about five or six inches below their ends. Their ends are fastened to the bar *c* by being let into the bar on the under side, so as to be even with the under surface, and are there firmly held by one or more iron bolts, *e*, provided with nut and screw, as shown in Figs. 2 and 3. The points of the teeth incline forward, and extend five or six inches below the under side of the frame. The dimensions of the teeth depend entirely upon the nature of the soil for which they are intended. If used in light, sandy soil, they may be constructed shorter; if in a clay soil, they should be stiffer, and if in rough, rooty, stony ground, they should be longer than I have described them. The shape or kind of frame, or the number of teeth used, are matters of choice. Sixteen teeth are enough for a medium-sized harrow. The construction of the teeth admits of the frame being made lighter than the frame of an ordinary harrow. Their points inclining forward, they have a tendency to enter the ground when the harrow is drawn, and this tendency obviates the necessity of a heavy frame.

CLAIM.

I claim as my invention the circular-shaped harrow-tooth *d*, constructed and used in the manner and for the purpose herein specified.

The drawings therein referred to are as follows:

Fig. 1.

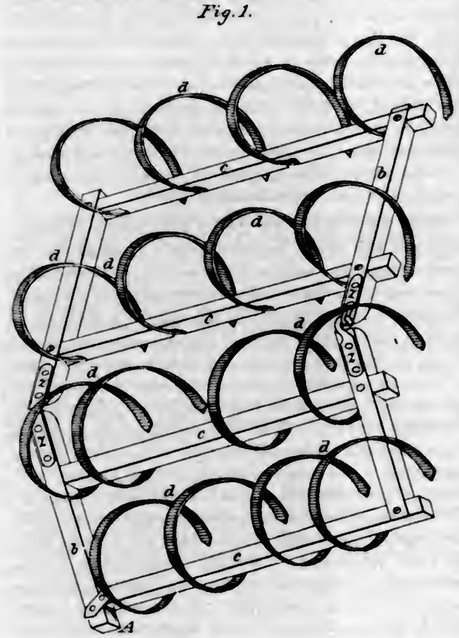


Fig. 2.



The reissued patent of April 3, 1880, differs verbally from the original in the following particulars:

1. In the introductory part of the specifications there is omitted in the reissue the following words contained in the original, viz:

NATURE AND OBJECTS OF THE INVENTION.

My invention relates to the construction of harrow-teeth of spring-steel, and of such form that when attached to an ordinary harrow-frame they will curve back over the bars of the frame, pass between them, and extend to the ground, their points inclining forward.

2. For the words "description of the accompanying drawings" in the original there are substituted the words

In the drawings is represented a harrow embodying the principle of my invention.

3. At the conclusion of the descriptive part of the specification, next prior to the claims, there is inserted the following new matter not contained in the original, to wit:

I am aware that prior to my invention a V-shaped cultivator has been provided with spring-shovels inserted vertically in the beams or frame, but limited in their backward movement by downward-projecting keys or wedges.

I am also aware that horse-rakes have also been provided with spring teeth or fingers, and that upon seeding-machines such teeth or fingers have been employed for scratching in the seed; but none of said devices have been constructed with two or more series of such long curved spring-teeth attached to and supporting the frame, and, so far as I am aware, I am the first ever to have produced a harrow wherein the harrow-frame is supported on two or more series of spring-teeth which are adapted to yield to an unlimited extent when in use.

4. Instead of the single claim of the original, the reissued patent sets out the following:

What I claim is—

1. The combination, with a harrow-frame, of a curved harrow-tooth made between its point of attachment to the frame and its point of contact with the ground to extend above the frame, so as to support the frame when turned upside down.
2. A spring-metal harrow-tooth attached to a harrow-frame and curved so that the main portion of the harrow-tooth shall be located above the horizontal plane of the lower surface of said harrow-frame, substantially as and for the purpose shown.
3. A harrow-tooth of spring metal curved upward from its point of attachment to the harrow-frame, then rearward above said frame, and downward to its point of contact with the ground, substantially as and for the purpose shown.
4. A harrow-tooth made of spring metal curved forward and upward in an arch extending well above the horizontal plane of its attachment to the harrow-frame, and free from contact therewith except on the lower side of the bar supporting said tooth, substantially as and for the purpose shown.
5. The combination, with a harrow-frame, of series or rows of spring-metal teeth, curved substantially as described, mounted upon the bars or frame of the harrow, and supporting said harrow-frame, substantially as and for the purpose shown.
6. A harrow consisting of a frame carrying rows or series of spring-metal teeth adapted to have a free and unlimited yielding motion to any abnormal pressure or obstruction, substantially as and for the purpose shown.
7. A harrow consisting of a frame carrying multiple rows or series of spring-metal teeth, said teeth curved between their points of attachment to said frame and their points of contact with the soil, and adapted to pierce and enter the ground as the harrow is drawn forward, and also adapted to have a free and unlimited yielding motion throughout their entire length, substantially as and for the purpose shown.

It is contended, in the first place, by counsel for the defendants, that, irrespective of the changes in claims, the omission from the reissued patent of the clause descriptive of the nature of the invention, and the insertion therein, in connection with a statement as to the existing state of the art, that the patented harrow is the first in which

the harrow-frame is supported on two or more series of spring-teeth, which are adapted to yield to an unlimited extent when in use,

enlarge the scope of the invention as originally described, and that this would have the effect, if the claims in both remained verbally the same, to extend the claim in the reissued patent beyond that of the original. As the claim in the original is for a harrow-tooth described, constructed, and used as therein specified, it is manifest that a material change in the description of the tooth would materially affect the claim by applying it to a different invention. But such is not the present case. The construction, manner of use, and purposes accomplished by the circular-shaped harrow-tooth referred to in the claim are in no respect altered by the changes made in the specification. The drawings are the same, and the description which iden-

tifies the tooth with them, showing its construction, the manner of its use, and the purposes to be effected, remains unaltered. The clause omitted, which declares the tooth to be of such form that when attached to an ordinary harrow-frame it will curve back over the bars of the frame, pass between them, and extend to the ground, its point inclining forward, simply points out what is otherwise apparent from the general description, and is shown by the drawings themselves, so that it remains true, as thus shown, whether the express statement of it is contained in or excluded from the specification.

The statement in reference to the state of the art, and the relation of the invention to it, is not a substantive part of the specification, which by reference is embraced in the claim, so as to cover every harrow where the frame is supported on two or more series of spring-teeth which are adapted to yield to an unlimited extent when in use, but is merely the expression of the inventor's opinion that his harrow is one of that class, and the first reduced into form, accomplishing a successful result. Its insertion in the reissued patent does not in any way affect or enlarge the claim of the original, considered or applied to it.

It is further contended, however, on the part of the defendant, that the claims contained in the reissued patent are larger and more comprehensive than that of the original, and that consequently the two patents are not for the same invention. The argument on this point involves and turns upon the construction to be put upon the claim of the original patent. That claim, it will be remembered, is as follows:

> I claim as my invention the circular-shaped harrow-tooth *d*, constructed and used in the manner and for the purposes herein specified.

The reference in the claim to the drawings and the specification undoubtedly constitutes them—that is, the drawings and specifications—to a certain extent and for some purposes a necessary part of the claim, for the latter cannot be understood without importing into it the things referred to as a part of it.

It is contended in argument on the part of the defendants that every part of the drawings and description in the specification is made by the reference literally an essential part of the claim, and that consequently the claim is to be limited and restrained to the particular device described, not only in its general form and construction, but in every detail, so that merely formal variations from it, not affecting its mode of operation, or the functions of any of the parts, or the purposes and results accomplished, would not be infringements of it. It is therefore insisted that it is essential that the teeth covered by the patent must be of the precise geometrical shape shown in the drawings and described in the specification and claim as circular-shaped, and that any variations from that shape, although not affecting the function or mode of operation or general character of the tooth or its effect in use, will not be an infringement of the patent. So, too, it is insisted that it is an essential part of the patent that the teeth shall be fastened to the bars of the harrow on the under side, and that it is permissible, without infringing the patent, to use similar teeth, provided they are fastened to the upper side of the bars or otherwise. But this mode of interpreting the patent and the conclusions resulting from it are not admissible. It rejects altogether, as inconsistent with it, the well-established rule of construing patents in the light of the existing state of the art, so as, by separating things which, although parts of the description, were well known and in common use, to eliminate the precise invention which it must be presumed the patentee intended to claim as his own, unless the claim itself is so express and so unambiguous as not to admit their exclusion, and also the equally well-recognized rule that a patent, even though it claims a device by a particular description, must be held also to include everything which is a mere equivalent for it, not itself involving invention. Without the aid of these reasonable and beneficial rules of construction few patents would be of any practical value. In the present case, upon the literal interpretation insisted on to defeat the complainants' title to relief, it would be sufficient to show that in the machines alleged to be infringements the ends of the teeth were not fastened to the bar by being let into it so as to be even with the surface, or that they were not held by iron bolts provided with nut and screw, but were fastened in some other equally well-known and equivalent manner.

In my opinion, the reasonable and correct interpretation of this patent includes within its grant the exclusive right, not only to harrow-teeth made literally according to the drawings and descriptions of the specifications, but also all similar harrow-teeth fastened at one end to the bars or frame of the harrow, and curved in shape so that they form an arch or bow above the plane of the bars or frame of the harrow, and descended between the bars in a curve to the ground, their points inclining forward. Upon this construction it cannot be successfully contended that any of the seven claims contained in the reissued patent, nor all of them combined, embrace anything not covered by the original. The claims of the reissued patent are separately within the original claim, and all combined are no more than its legal equivalent. The only purpose they can be conceived as accomplishing beyond the original claim is in excluding a construction of the original patent which its owner apprehended might possibly be suggested, which, if sustained, would not only defeat the reissue, but render the original of but little value, and which, as already declared, is not admissible.

It is equally clear that the defendants are guilty of the infringements complained of to the extent declared in the interlocutory decree. That decree is therefore confirmed, as is also the masters' report, to which exceptions have heretofore been filed and overruled, and a final decree may be entered accordingly.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

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Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of December 1, 1885.

Patents	481	No. 331,269 to No. 331,749, inclusive.
Designs	7	No. 16,398 to No. 16,404, inclusive.
Trade-Marks	20	No. 12,810 to No. 12,829, inclusive.
Labels	16	No. 4,647 to No. 4,662, inclusive.
Reissues	4	No. 10,666 to No. 10,669, inclusive.
Total issue	528	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	5	.....
Arizona Territory	1	.....	Nevada	1	.....
Arkansas	3	.....	New Hampshire	4	.....
California	12	1	New Jersey	8	4
Colorado	2	.....	New Mexico Territ'y	1	.....
Connecticut	24	.....	New York	91	9
Dakota Territory	1	.....	North Carolina	2	1
Delaware	2	.....	Ohio	34	4
District of Columbia	1	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	66	3
Georgia	7	1	Rhode Island	4	1
Idaho Territory	.....	.....	South Carolina	3	.....
Illinois	45	2	Tennessee	2	2
Indiana	11	.....	Texas	6	1
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	5	.....	Vermont	5	.....
Kansas	5	.....	Virginia	3	.....
Kentucky	3	.....	Washington Territ'y	.....	.....
Louisiana	1	.....	West Virginia	.....	.....
Maine	1	.....	Wisconsin	5	.....
Maryland	1	2	Wyoming Territory	.....	.....
Massachusetts	52	4	United States Army	.....	.....
Michigan	12	.....	United States Navy	.....	.....
Minnesota	2	.....			
Mississippi	1	.....	Total to citizens of the United States	459	35
Missouri	24	.....			
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
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Austria-Hungary	1	.....	Holland	.....	.....
Barbadoes	.....	.....	Italy	.....	.....
Belgium	1	.....	Norway	.....	.....
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British Columbia	.....	.....	Russia	.....	.....
Canada	7	.....	Scotland	1	.....
Chili	.....	.....	Sweden	.....	.....
China	.....	.....	Switzerland	4	.....
Colombia, U. S. of	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	29	1
England	8	.....			
France	2	.....			

DESIGNS.

16,398.—ARGAND-LAMP CHIMNEY.—*William Duffield*, London, Ontario, Canada. Application filed October 17, 1885. Serial No. 180,212. Term of patent 3½ years.

16,399 and 16,400.—PANEL.—*Frederick Mankey*, Williamsport, Pa. Applications filed July 18, 1885. Serial Nos. 172,006 and 172,010. Term of patents 7 years.

16,401 and 16,402.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Mankey*, Williamsport, Pa. Applications filed July 18, 1885. Serial Nos. 171,995 and 171,996. Term of patents 7 years.

16,403.—CARPET.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed October 15, 1885. Serial No. 180,026. Term of patent 3½ years.

16,404.—BODY OF WATER FILTER OR COOLER.—*Alexander Selkirk*, Albany, N. Y., assignor to *Louis Daniels*, same place. Application filed August 24, 1885. Serial No. 175,255. Term of patent 14 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,810.—GENTLEMEN'S NECKSCARFS.—*Louis Auerbach*, New York, N. Y. Application filed April 20, 1885.
"A representation of the serpent known as a 'WYVERN.'"

12,811.—SELF-SPACING TYPE.—*Henry Bledsoe*, Fort Worth, Tex. Application filed October 29, 1885.
"A device consisting of the words 'SYSTEM OF SELF-SPACING' in the following arrangement:

SYSTEM OF
SELF-
SPACING."

12,812.—WRITING-PAPER OF ALL KINDS.—*Z. Crane, Jr., & Bro.*, Dalton, Mass. Application filed October 23, 1885.
"The words 'TWILLED FLAX.'"

12,813.—REMEDY FOR UTERINE AND WOMB DISEASES.—*R. Parke Crump*, Baltimore, Md. Application filed October 31, 1885.
"The arbitrary words 'LADIES' GUARDIAN.'"

12,814.—CANNED BEEF OR COOKED COMPRESSED CORNED BEEF.—*Fairbank Canning Company*, Chicago, Ill. Application filed October 26, 1885.
"The word 'LION' and the representation of a lion."

12,815.—MEDICINE CALLED A BLOOD-RENEWER.—*Richard Guinn*, Baltimore, Md., and Macon, Ga. Application filed September 21, 1885.
"The word 'PIONEER.'"

12,816.—OINTMENTS, SALVES, PILLS, MEDICATED LIQUIDS, AND SOAPS.—*Ichthyol-Gesellschaft Cordes Hermanni & Co.*, Hamburg, Germany. Application filed September 25, 1884.
"The word-symbol 'ICHTHYOL.'"

12,817.—CONDITION-POWDERS.—*Horatio Johnson*, Fair Haven, N. J. Application filed October 24, 1885.
"The picture of an Indian resting one hand on his bow and holding a branch in the other, which is outstretched, offering it to a horse, a cow, a sheep, and a dog, with a background of hills, tents, and the sun."

12,818.—EMBLEMATIC SIGNS.—*Zero Marx*, Chicago, Ill. Application filed October 1, 1885.
"The word 'ZERO.'"

12,819.—PULVERIZING-HARROWS, CLOD-CRUSHERS, AND LEVELERS.—*Nash & Bro.*, Millington, N. J. Application filed November 9, 1885.
"The word 'ACME.'"

12,820.—REMEDY FOR RHEUMATISM AND SIMILAR DISEASES.—*Pfaelzer Bros. & Co.*, Philadelphia, Pa. Application filed October 7, 1885.
"The title 'RUSSIAN,' and two representations of a man apparently afflicted with rheumatism, and when cured of the same."

12,821.—WHEATEN FLOUR.—*Robert Franklin Piper*, Boston, Mass. Application filed November 2, 1885.
"The arbitrary words 'CORRUGATED PROCESS.'"

12,822.—SMOKING, PLUG CHEWING, AND FINE-CUT TOBACCO, CIGARS, AND CIGARETTES.—*William J. Pogue*, Durham, N. C. Application filed September 12, 1885.
"The arbitrary words 'SEAL OF DURHAM' and the picture of a hogshead of tobacco upon a shield."

12,823.—GINNED COTTON.—*The Ralston Ginning Company*, Nashville, Tenn. Application filed October 6, 1885.
"A five-pointed star, with the letters 'R. G. Co.' printed or stamped on the design of the star and inclosed by a circular border."

12,824.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'CONGRESS' and the number '404.'"

12,825.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'CAPITOL,' the number '188,' and the representation of the dome of the National Capitol."

12,826.—PLAYING-CARDS.—*The Russell & Morgan Printing Company*, Cincinnati, Ohio. Application filed September 19, 1885.
"The arbitrary word-symbol 'UNITED STATES' or the abbreviation 'U. S.'"

12,827.—OIL OR SPIRIT VARNISH.—*Southern Chemical Company*, New York, N. Y. Application filed October 12, 1885.
"The combination of letters or coined word 'TARGINE.'"

12,828.—DISTILLED PRODUCTS OF PINE WOOD.—*Southern Chemical Company*, New York, N. Y. Application filed October 12, 1885.
"The combination of letters or coined word 'FERNOLINE.'"

12,829.—NAILS AND SIMILAR PRODUCTS MADE FROM WIRE.—*The Wire Goods Company*, Worcester, Mass. Application filed October 26, 1885.
"A representation of a crown and the letter 'Q.'"

LABELS.

4,647.—Title: "DR. SAMUEL'S WORLD'S DYSPEPSIA CURE."—*Samuel W. Baxter*, Providence, R. I. Application filed November 5, 1885.

4,648.—Title: "DR. M. C. BEEBE'S RELIABLE CATARRH CURE."—*Melvin C. Beebe*, Columbus, Ohio. Application filed August 15, 1885.

4,649.—Title: "BOYD'S RHEUMATIC COMPOUND."—*Daniel F. Boyd*, Cambridge, Mass. Application filed November 11, 1885.

4,650.—Title: "SOL COLEMAN'S KO-KO TULU" (FOR CHEWING GUM.)—*Sol Coleman*, Memphis, Tenn. Application filed October 20, 1885. (Trade-Mark Registered.)

4,651.—Title: "PREPARED INVISIBLE PATCHES."—*Whilldin Foster*, Philadelphia, Pa. Application filed November 9, 1885.

4,652.—Title: "FRYER'S AHIETENE, AN EXTRACT FROM THE PINUS SABINIANA."—*Derrick F. Fryer*, Oroville, Cal. Application filed November 7, 1885.

4,653.—Title: "SCENTED CORSET" (FOR PACKAGES CONTAINING CORSETS.)—*Heilner & Strauss*, New York, N. Y. Application filed November 11, 1885.

4,654.—Title: "PERFUMED CORSET" (FOR PACKAGES CONTAINING CORSETS.)—*Heilner & Strauss*, New York, N. Y. Application filed November 11, 1885.

4,655.—Title: "FRAGRANT CORSET," (FOR PACKAGES CONTAINING CORSETS.)—*Heilner & Strauss*, New York, N. Y. Application filed November 11, 1885.

4,656.—Title: "COLOGNE CORSET" (FOR PACKAGES CONTAINING CORSETS.)—*Heilner & Strauss*, New York, N. Y. Application filed November 11, 1885.

4,657.—Title: "SWEET SMELLING CORSET" (FOR PACKAGES CONTAINING CORSETS.)—*Heilner & Strauss*, New York, N. Y. Application filed November 11, 1885.

4,658.—[Withdrawn.]

4,659.—Title: "THUERINGER EXPORT BEER."—*Anson H. Meyer*, Hoboken, N. J. Application filed October 23, 1885.

4,660.—Title: "JUNIPER LEAF GIN."—*Morris M. Reis*, Philadelphia, Pa. Application filed October 24, 1885.

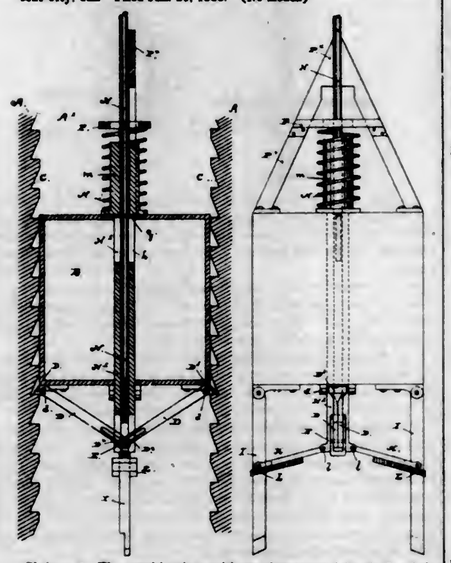
4,661.—Title: "S. A. C. SHAW'S ASTHMA CURE."—*James C. Shaw*, Savannah, Ga. Application filed November 5, 1885.

4,662.—Title: "THE F. T. S. GREAT INDIAN COUGH KILLER."—*F. T. Stamets*, Bloomsbury, N. J. Application filed November 5, 1885.

PATENTS

GRANTED DEC. 1, 1885.

331,269. **SAFETY-CATCH FOR ELEVATORS.** HENRY ALBERT, Crescent City, Cal. Filed Jan. 29, 1885. (No model.)



Claim.—1. The combination, with an elevator and its shaft, of the friction-brake levers I I, applied to operate also as door openers and closers, the slide-bar connected with the hoisting-rope at its upper end and to the levers I at its lower end by the links K K, the frictional surfaces L L, and the spring N, substantially as herein described.

2. The combination, with an elevator and its shaft, of frictional brake-levers having shoes or surfaces L to engage with the sides of the shaft, and the slide-bar connecting said levers with the hoisting-rope, and a spring, substantially as herein described, to operate in the manner set forth.

3. A safety device for cages or platforms of elevators, consisting of a sliding bar, H, running through the cage and connected with the hoisting-rope at the upper end, the pivoted levers D D' D D', connected with the slide-bar at their inner ends, so that by the drop on the downward movement of the bar the outer ends, D', will be thrown out beyond the sides of the cage and in position to engage with a rack or notched surfaces at each side of the elevator-well, the spring N, and the hinged bars J J, connected with the slide-bar H by links K K, in the manner described.

4. The combination together of the pawl-and-rack clutch device and the friction-brake levers having projecting shoes or surfaces L L and connected by links K K with a slide-bar, H', said bar being provided with a spring, N, which also constitutes the operating means of the pawl-and-rack clutch, substantially as described.

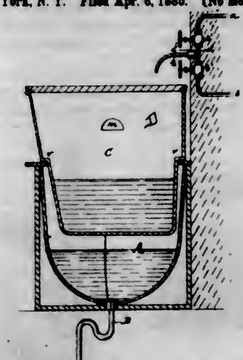
331,270. **PEN WIPER AND HOLDER.** ISAAC W. ALLYN, Philadelphia, Pa. Filed Dec. 2, 1884. (No model.)



Claim.—1. In a pen wiper and holder, the combination of a bunch of bristles cemented or glued together at the bottom thereof, a band surrounding said bristles at the base, and an adjustable band, substantially as and for the purpose set forth.

2. As a new article of manufacture, a pen wiper and holder consisting of a suitable receptacle, a bunch of bristles cemented or glued together at the bottom thereof and supplied with talc in a finely-powdered state, a band inclosing said bristles at the base thereof, and an adjustable band adapted to slide upon said bristles, as and for the purpose set forth.

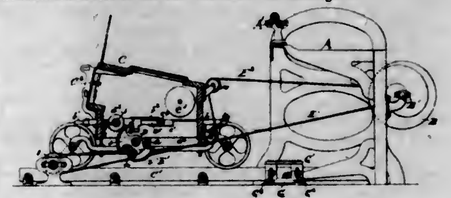
331,271. **BATH-TUB AND WASH-TUB COMBINED.** WILLIAM P. AUSTIN, New York, N. Y. Filed Apr. 6, 1885. (No model.)



Claim.—A sheet-metal wash-tub having the back, bottom, and front made in one piece and the sides attached to such piece, the back and front having shoulders, substantially as and for the purpose specified.

331,272. **SPINNING-MULE.** EBEN A. BALDWIN, North Andover, Mass., assignor to the Davis & Furber Machine Company, same place. Filed Mar. 7, 1884. (No model.)

Brief.—The object of the mechanism is to reduce the speed of the carriage at the commencement of the outward run and to change the position of the drawing-out scroll with relation to the carriage. Upon the squaring-shaft is loosely placed a double drum, the parts having interlocking ratchet-teeth, and having secured to them, respectively, the drawing-out rope and check-rope. By means of a rack on the floor nearly under the rolls the drum is made to store up a part of the drawing-out rope near the end of the inward run and to pay out the same at the commencement of the outward run of the carriage.





Claim.—1. The head-stock, drawing-out scroll and its shaft, and ropes E^2 E^2, combined with the carriage, and with means, substantially as described, for connecting the said ropes therewith, the same automatically operating to store up the drawing-out rope during the inward run of the carriage and pay out the same during the early part of the outward run of the carriage, substantially as described.

2. The carriage, the drum, its support, the head-stock, the drawing-out scroll and its shaft, and the ropes E^2 E^2, combined with mechanism, substantially as described, to automatically operate the said drum to wind up a part of the drawing-out rope during the inward run of the carriage and to pay the same out during the first part of the outward run of the carriage, whereby the speed of the carriage during the first part of its outward run is checked, substantially as described.

3. The carriage, the drum E, and its support, combined with the sliding worm and mechanism, substantially as described, to operate it, as and for the purpose set forth.

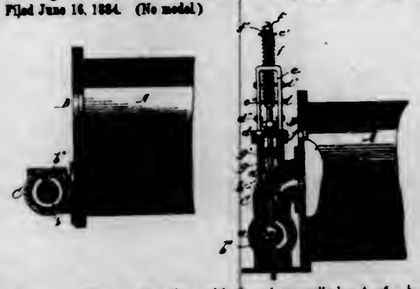
4. The carriage, the drum, its support, the worm, the arm *d*, and the links to connect it with the worm, combined with mechanism, substantially as described, to operate the said arm, as and for the purposes set forth.

5. The carriage, the drum, its support, the worm, the arm *d*, and the link, combined with the gear F, a rack to move the said gear, and the connecting device between the gear F and the arm *d* to move the latter, substantially as described.

6. The carriage, the drum and its support, and the head-stock, and the drawing-out scroll and its shaft, combined with the two ropes E^2 E^2, each of which at one end is connected with the said scroll, and at its other end with the said drum, substantially as described.

7. The check-rope and the drawing-out rope and the carriage, combined with the two drums E E', mounted loosely on an axis supported by the carriage and provided with clutch-teeth, the said drums being adjustable, one with relation to the other, to enable slack in the said ropes to be taken up, substantially as described.

331,273. **HYDRAULIC ELEVATOR.** Norman C. Bassett, Chicago, Ill., assignor to the Crane Brothers Manufacturing Company, same place. Filed June 16, 1884. (No model.)



Claim.—1. The combination, with the piston-cylinder A of a hydraulic elevator, of the fluid inlet and outlet pipe C, having a chamber, *a*, of larger diameter than the diameter of the openings at the ends of the pipe, and a ball-governor, *b*, located in the said enlarged chamber, and automatically moved by the speed of the fluid flowing into and out of the cylinder, to diminish the speed of such inflowing and outflowing fluid, and thereby control the speed of the elevator in its ascent and descent, substantially as described.

2. The combination, with the piston-cylinder A of a hydraulic elevator, of the fluid inlet and outlet pipe C, having a chamber, *a*, of larger diameter than the diameter of the openings at the ends of the pipe, a vertical rod, *b'*, held under spring-tension, and a ball-governor located on the rod in the enlarged chamber, and automatically moved by the speed of the fluid flowing into and out of the piston-cylinder, to control the speed of such inflowing and outflowing fluid, and thereby regulate the speed of the elevator, substantially as described.

3. The cylinder A, pipe C, having an enlarged portion, *a*, ball *b*, and rod *b'*, in combination with the yoke *d*, springs *e* and *f*, and collars *e' e''*, substantially as and for the purpose specified.

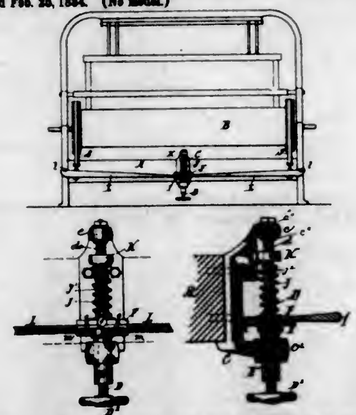
4. The cylinder A, pipe C, having an enlarged portion, *a*, ball *b*, and rod *b'*, in combination with the yoke *d*, bolts d'', slots d^2, springs *e* and *f*, and collars *e' e''*, substantially as and for the purpose specified.

5. The cylinder A, pipe C, having an enlarged portion, *a*, ball *b*, and rod *b'*, in combination with the cylinder *g*, having communication with the said pipe, and piston-head *g'*, having openings *i*, substantially as and for the purpose specified.

6. The cylinder A, pipe C, having an enlarged portion, *a*, ball *b*, and rod *b'*, in combination with a resisting-spring, *e*, cylinder *g*, having communication with the said pipe, and piston-head *g'*, substantially as and for the purpose specified.

7. The combination, with the piston-cylinder of a hydraulic elevator, of a pipe for the inflow and outflow of water to and from such cylinder, and a governor located in said pipe, and automatically moved by undue speed in the flow of the water into or out of the cylinder, to diminish the speed of such inflowing and outflowing fluid, and thereby control the speed of the elevator, substantially as described.

331,274. **LET-OFF MECHANISM FOR LOOMS.** John A. Bergan, Holden, assignor of one-half to Charles W. Gilbert, Worcester, Mass. Filed Feb. 25, 1884. (No model.)



Claim.—1. The combination, with friction-stirrups S, of the straining-levers L, the slotted plate F, engaging the ends of said levers, the vertical screw-threaded spindle D, the spring J, arranged thereon above said plate, and the adjusting-nut K, substantially as and for the purpose set forth.

2. The combination, with the back girt in a loom, of the bracket C, having the flange *a*, the rotative spindle D, the non-rotative nut fitted thereon, the plate F, the spring J, the straining-levers L, and stirrups S, substantially as and for the purpose set forth.

3. The button-plate F, having slots *e e*, and the under plate, I, having recesses *m m*, and retaining-notch *i*, in combination with the bracket C, having a guide-flange, *a*, the straining-levers L, stirrups S, spindle D, and a spring, J, substantially as and for the purpose set forth.

4. The combination, with the friction-stirrups S and straining-levers L, of the bracket C, the threaded spindle D, mounted in bearings on said bracket and provided with hand-wheel D', the plate F, having slots *e e*, the guide-sleeve E, surrounding said spindle, the plate I, provided with pockets *m m*, for receiving the ends of said levers, and lugs for engagement with the guide-flange *a*, the non-rotating nut K, and the springs J, coiled about the spindle between said nut and plates, substantially as and for the purpose set forth.

331,275. **STENO-TYPOGRAPH.** Angelo Beterlein, Chicago, Ill. Filed June 2, 1884. (No model.)

Claim.—1. The combination, with the finger-keys and rocking frames, of the slide-bars, mechanism, substantially as set forth, between said frames and bars to actuate the bars, the shifting plates and the electric connections therefor, substantially as described.

2. The combination, with the series of finger-keys and with intermediate mechanism substantially as described, of a series of shifting plates corresponding to the several unison combinations or changes of which said keys are capable, and printing devices, substantially as set forth, in electric connection with said plates, to register the several conventional combinations or changes, substantially as described.

3. The combination, with the finger-keys and the rocking frames, of the bell-crank levers and mechanism, substantially as set forth, for connecting the same with the rocking frames, the slide-bars having trip-pins thereon, and the pivot-plates provided with open sections, substantially as described.

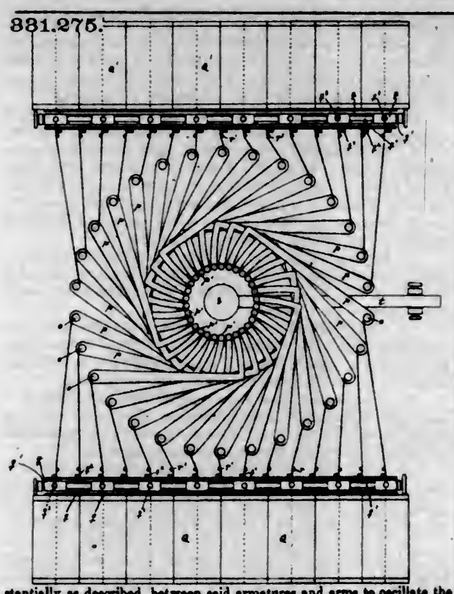
4. The combination, with the series of slide-bars, of the shifting plates and the electric connections therefor, substantially as described.

5. The combination, with the pivot-plates provided with open and closed sections and with the slide-bar engaging said plates, of the contact arms and legs co-operating with said plates to establish an electric circuit through the same, substantially as described.

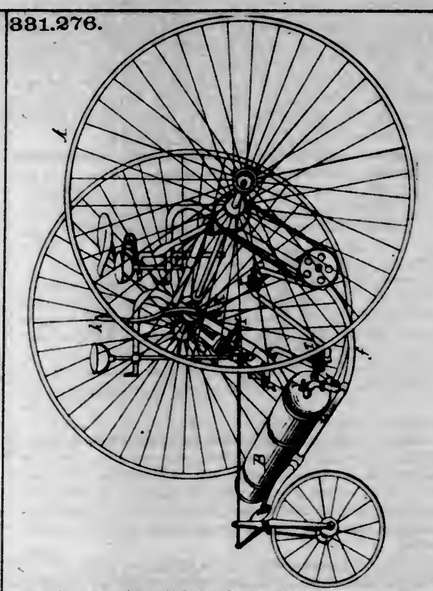
6. The combination, with the pivot-plate and with the slide-bar engaging therewith, of the arm attached to said plate, and the contact-piece in electric connection with the pivot thereof, substantially as described.

7. The combination, with the transmitter, of the receiving-instrument or typograph in electric connection therewith, the same consisting of a series of electro-magnets and suitable armatures therefor, a series of radial swinging arms angularly bent and carrying the separate types or characters in substantially circular order thereon, mechanism, substantially as described, between said armatures and arms to oscillate the latter by movement of the armatures, and a striker or presser pad, substantially as set forth.

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8. The combination, with the swinging type-carrying arms angularly bent in circular series, of the striker or presser pad located centrally with respect to said series, substantially as described.

9. The combination, with the series of electro-magnets and with their pivoted armatures, of the rocking posts, and mechanism, substantially as set forth, connecting the same with the armatures, the angularly-bent and radially-swinging type-arms joined to said posts, and the presser-pad, substantially as described.

10. The combination, with the series of electro-magnets and their armatures, of the radially-swinging type-carrying arms arranged in circular series, mechanism, substantially as described, between said armatures and arms to oscillate the latter by movement of the armatures, and a striker or presser pad, substantially as set forth.

11. The combination, with the paper and ribbon supporting devices, of the radially-swinging type-carrying arms angularly bent in circular series, and the presser-pad located centrally with respect to said series, substantially as set forth.

12. The combination, with the electro-magnet and its pivoted armature, of the connecting-wire, the swinging post, the type-carrying arm secured thereto, and the presser-pad, substantially as described.

13. The combination, with the electro-magnet and its pivoted armature, of the connecting-wire, the swinging post, the type-carrying arm secured thereto, and the presser-pad having independent electro-magnet to actuate the same, substantially as described.

14. The combination, with the slide-bar having the series of projecting pins thereon, of the series of shifting plates provided with open and closed sections, and with suitable electric connections, substantially as set forth, to establish the circuit through said shifting plates, substantially as described.

331,276. **VELOCIPEDE.** Charles E. Buell, Springfield, Mass., assignor of one-third to Wilking B. Cooley, Easton, Pa. Filed Oct. 16, 1884. (No model.)

Claim.—1. The combination, with a tricycle, of the holder B, provided with a valve, V, and removably attached to said tricycle, an engine mounted upon said tricycle and adapted to propel said tricycle, and means for connecting said holder B to supply said engine, substantially as described.

2. The combination, with a tricycle, of the holder B, removably attached thereto, an engine mounted on said tricycle, and means for connecting said holder B to supply said engine that are provided at two points with devices for controlling the flow of air from said holder B to said engine.

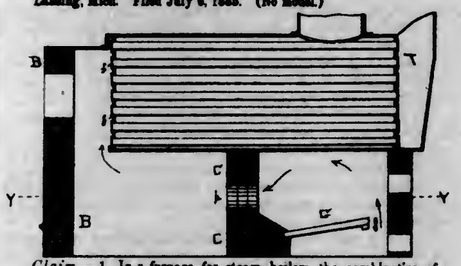
3. The combination, with a tricycle, of the removably-attached holder B, an engine for propelling said tricycle, and a throttle-valve provided with a lever for controlling the air-supply to said engine.

4. The combination, with a vehicle having a hollow frame charged with compressed air, of the holder B, removably attached to said vehicle and portable therewith, an engine mounted on said vehicle, and suitable means for connecting said holder B and said frame successively to said engine to supply it with air for propelling said vehicle.

5. The combination, with a vehicle having a hollow frame charged with compressed air, of the holder B, removably attached to said vehicle and portable therewith, an engine mounted on said vehicle, and suitable means for connecting said holder B and said frame successively to said engine to supply it with air for propelling said vehicle, and added means for controlling the flow of air to said engine.

6. The combination, with a vehicle, of the holder B, provided with a valve, V, removably attached to said vehicle, an engine mounted upon said vehicle and adapted to propel said vehicle, means for connecting said holder B to supply said engine, and independent devices for propelling said vehicle by foot-power, substantially as described.

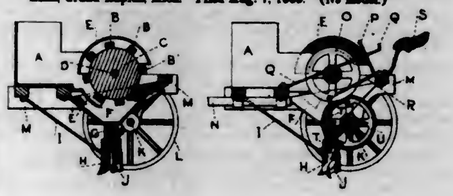
331,277. **FURNACE FOR STEAM-BOILERS.** Rolla C. Carpenter, Lansing, Mich. Filed July 6, 1885. (No model.)



Claim.—1. In a furnace for steam-boilers, the combination of a grate, set with an aperture between its forward end and the forward end of the furnace-wall, and a bridge-wall of refractory material, perforated, substantially as described.

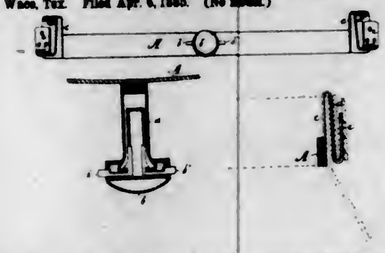
2. In a furnace for steam-boilers, a perforated bridge-wall behind the grate having the perforations, substantially as described, of an area jointly about equal to two-thirds the area of the fire-flues in the boiler, combined with a grate set so as to leave an aperture at the forward end thereof of a less or nearly the same area.

331,278. **POTATO-PLANTER.** Hans Christenson and William Timmer, Grand Rapids, Mich. Filed Aug. 7, 1885. (No model.)



Claim.—The combination of the shaft K upon the wheels L, the shaft D, the gearing O U, regulated by the spring V and lever Q, and the wheels C C, covered by the hoods E and bearing the cape B, with the boxes A A, having the conductors E', and the troughs F, terminating in the conductors G, carrying the adjustable drills H, provided with the wings J, said drills being supported in front by the rod I and regulated by the lever P, all substantially as shown and described.

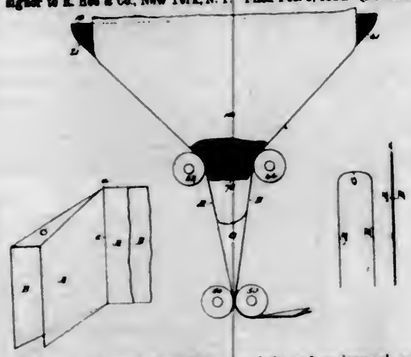
331,279. NECKTIE AND COLLAR FASTENER. Robert S. Coffey, Waco, Tex. Filed Apr. 6, 1885. (No model.)



Claim.—1. A fastener for securing the proper relation between the shirt-band, collar, and necktie, consisting of a spring, A, adapted to fit inside the shirt-band and next to the neck, in combination with a hollow stud, *a*, on the middle of the convex side, having a separable head, *b*, with spring-catches *b'*, and the bent hook-sections *c d e*, toothed as described, and arranged to separate the shirt-band, collar, and necktie, as described.

2. The combination, with a curved spring, A, having a collar-button secured at its middle, of the bent hook-section at its ends, extending from said ends at right angles, first upwardly at *c*, then downwardly at *d*, then upwardly at *e*, and having teeth upon the exterior face of section *e*, as described.

331,280. FOLDING-MACHINE. Luther C. Crowell, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Feb. 3, 1884. (No model.)



Claim.—1. A longitudinal folder consisting of an internal guide, two external turners set a distance apart, and a fold-laying device, substantially as described.

2. In a longitudinal folder, the combination, with an internal guide, of two external turners set a distance apart, whereby the major portions of the sides of the material, considered widthwise, are brought into parallel positions, but not into contact, substantially as described.

3. A longitudinal folder consisting of an internal guide having converging guiding edges or surfaces which do not meet, external turners set a distance apart, and a fold-laying device, substantially as described.

4. In a longitudinal folder, the combination, with an internal guide having converging guiding edges or surfaces that do not meet, of co-operating external turners set a distance apart, whereby the major portions of the sides of the material, considered widthwise, are brought into parallel positions, substantially as described.

5. A longitudinal folder consisting of an internal guide having converging guiding edges or surfaces that do not meet and a guiding-surface, as 81, connecting the same, external turners, and a fold-laying device, substantially as described.

6. In a longitudinal folder, the combination, with an internal guide having two converging guiding edges or surfaces that do not meet and a guiding-surface, as 81, connecting the same, of external turners, whereby the major portions of the sides of the material, considered widthwise, are brought into and supported in parallel positions and the central portion at right angles thereto, substantially as described.

7. In a longitudinal folder, the combination, with external turners set a distance apart, and by which the major portions of the sides of the material, considered widthwise, are brought into and supported in parallel positions, but not in contact, of a cross-support, as 81, between said turners for the central portion of the material, and a fold-laying device for distending the central portion of the material and bringing the sides into contact to complete the folding, substantially as described.

8. The combination, with external turners set a distance apart, of a fold-laying device and a fold-creasing device, substantially as described.

9. The combination, with an internal guide and external turners operating to support the major portions of the sides of the material, considered widthwise, in parallel positions, but not in contact, of a fold-laying device operating to bring said sides together, and a fold-creasing device for distending the central portion of the material and aiding the formation of the fold-line, substantially as described.

10. The combination, with an internal guide having converging guiding surfaces or edges and a guiding surface or edge, as 81, connecting the same, of external turners, a fold-laying device, and a fold-creasing device, substantially as described.

11. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and a supporting-body, 20, of external turners, 22 44, set a distance apart, substantially as described.

12. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and supporting-sides 40, of external turners, 22 44, set a distance apart, substantially as described.

13. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41, supporting-body 20, and sides 40, of external turners, 22 44, set a distance apart, substantially as described.

14. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and a supporting-body, 20, of external turners, 22 44, substantially as described.

15. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and supporting sides 40, of external turners, 22 44, substantially as described.

16. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81, a supporting-body, 20, and sides 40, of external turners, 22 44, substantially as described.

17. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and a supporting-body, 20, of external turners, 22 44, set a distance apart, and a fold-laying device, substantially as described.

18. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and supporting-sides 40, of external turners, 22 44, and a fold-laying device, substantially as described.

19. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and supporting body 20 and sides 40, of external turners, 22 44, and a fold-laying device, substantially as described.

20. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and a supporting-body, 20, of external turners, 22 44, and a fold-laying device, substantially as described.

21. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and supporting-sides 40, of external turners, 22 44, and a fold-laying device, substantially as described.

22. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81, a supporting-body, 20, and sides 40, of external turners, 22 44, and a fold-laying device, substantially as described.

23. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and a supporting-body, 20, of external turners, 22 44, and a fold-creaser, substantially as described.

24. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and supporting-sides 40, of external turners, 22 44, and a fold-creaser, substantially as described.

25. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surface 21 41 and supporting-body 20 and sides 40, of external turners, 22 44, and a fold-creaser, substantially as described.

26. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and a supporting-body, 20, of external turners, 22 44, and a fold-creaser, substantially as described.

27. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and supporting-sides 40, of external turners, 22 44, and a fold-creaser, substantially as described.

28. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81, a supporting-body 20, and sides 40, of external turners, 22 44, and a fold-creaser, substantially as described.

29. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and a supporting-body, 20, of external turners, 22 44, and a fold-laying device and a fold-creaser, substantially as described.

30. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and supporting-sides 40, of external turners, 22 44, and a fold-laying device and fold-creaser, substantially as described.

31. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the converging guiding edges or surfaces 21 41 and supporting-body 20 and sides 40, of external turners, 22 44, and a fold-laying device and fold-creaser, substantially as described.

32. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and a supporting-body, 20, of external turners, 22 44, and a fold-laying device and fold-creaser, substantially as described.

33. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81 and supporting-sides 40, of external turners, 22 44, and a fold-laying device and fold-creaser, substantially as described.

34. A longitudinal folder consisting of the combination, with an internal guide composed of a sheet or plate that provides the guiding edges or surfaces 21 41 81, a supporting-body, 20, and sides 40, of a fold-laying device and fold-creaser, substantially as described.

35. The combination, with a longitudinal folder consisting of an internal guide, external turners, and a fold-laying device, of a spring-seated fold-creasing device, substantially as described.

36. The combination, with the internal guide having the converging guiding surfaces or edges 21 41 and external turners set a distance apart, of the body-tapes 33 34 35 36 and 11 13, substantially as described.

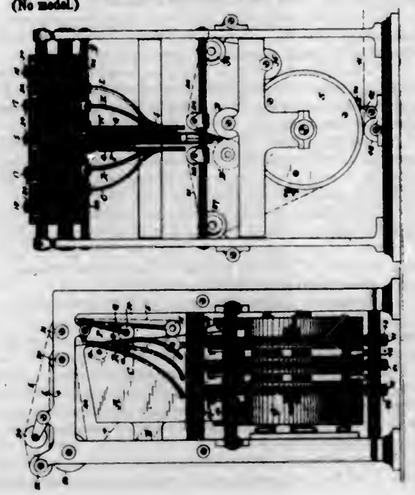
37. The combination, with the internal guide having the converging guiding surfaces or edges 21 41 and external turners set a distance apart, of the tapes 26 27, substantially as described.

38. The combination, with the internal guide having the converging guiding surfaces or edges 21 41 and external turners set a distance apart, of the tapes 26 27 33 34 35 36 and 11 13, substantially as described.

39. The combination, with the internal guide having the converging guiding surfaces or edges 21 41 and external turners set a distance apart, of the slitter 175, substantially as described.

40. The combination, with external turners, of an internal guide having a raised surface, 80, or its equivalent raised tapes, substantially as described.

331,281. FOLDING APPARATUS. Luther C. Crowell, Brooklyn, N. Y., assignor to R. Hoe & Co., New York, N. Y. Filed June 12, 1884. (No model.)



Claim.—1. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, and an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, all substantially as described.

2. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, and the projecting plate or creaser 2, for aiding in distending the central portion of the sheet, all substantially as described.

3. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, and the projecting plate or creaser 2, for aiding in distending the central portion of the sheet, all substantially as described.

4. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, and a fold-laying device, all substantially as described.

5. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, the projecting plate or creaser 2, for aiding in distending the central portion of the sheet, and a fold-laying device, all substantially as described.

6. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, the projecting plate or creaser 2, for aiding in distending the central portion of the sheet, and a fold-laying device, all substantially as described.

7. In a longitudinal folder, the combination, with two tapes or cords, as 4 5, passing over suitable pulleys and arranged to grasp or bite upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, and an internal central plate or guide, as A, arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, all substantially as described.

8. In a longitudinal folder, the combination, with two tapes or cords, as 4 5, passing over suitable pulleys and arranged to grasp or bite upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide, as A, arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, and the fold-laying roller or rollers D, all substantially as described.

9. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, and the adjustable projecting plate or creaser 2, for aiding in distending the central portion of the sheet, substantially as described.

10. The combination, with sheet-feeding mechanism, as the tapes 17 18 20, for advancing the sheet to the folding mechanism, of the tapes or cords 4 5, passing over suitable pulleys and arranged to grasp or bite upon the central portion or fold-line of the sheet to support and advance the same, the external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, and an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, all substantially as described.

11. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners consisting of bars, all substantially as described.

12. In a longitudinal folder, the combination, with a sheet carry-

ing or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners consisting of independently-adjustable bars, all substantially as described.

13. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners consisting of bars arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, and an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, all substantially as described.

14. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism consisting of the tapes or cords 4 5, which are arranged to grasp or bite upon the central portion or fold-line of the sheet to support and advance the same, of the pulleys 14 15, mounted in the arms P Q, and external turners which are arranged to act upon the unsupported sides of the sheet to turn them inward toward each other, all substantially as described.

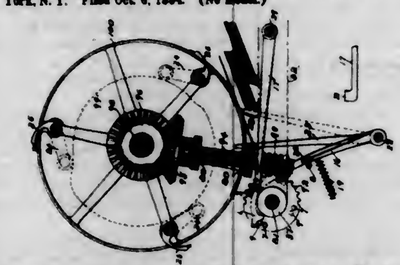
15. In a longitudinal folder, the combination, with a sheet carrying or feed mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, and having its edge beveled or tapered, as at 10, and the projecting plate or creaser 2, all substantially as described.

16. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, and external guides arranged to direct the sides of the sheet together to complete the folding, all substantially as described.

17. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to grasp or bite upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other, and a fold-laying device, all substantially as described.

18. In a longitudinal folder, the combination, with a sheet carrying or feeding mechanism arranged to act upon the central portion or fold-line of the sheet to support and advance the same, of external turners arranged to act upon the unsupported sides of the sheet to direct them inward toward each other, an internal central plate or guide arranged to direct the leading ends of the sides of the sheet after they have been turned toward each other and having its edge beveled or tapered, as at 10, the projecting plate or creaser 2, external guides arranged to direct the sides of the sheet together to complete the folding, and a fold-laying device, all substantially as described.

331,282. COUNTING MECHANISM FOR SHEET-DELIVERY APPARATUS. Lothar C. Crowell, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Oct. 6, 1884. (No model.)



Claim.—1. The combination, with a sheet laying or piling mechanism and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of one or more moving stops or arms, as 23, all substantially as described.

2. The combination, with a sheet laying or piling mechanism, consisting of a revolving cylinder or carrier and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of one or more moving stops or arms, as 23, all substantially as described.

3. The combination, with a sheet laying or piling mechanism, and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of one or more vibrating stops or arms, as 23, all substantially as described.

4. The combination, with a sheet laying or piling mechanism consisting of a revolving cylinder or carrier and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of one or more vibrating stops or arms, as 23, all substantially as described.

5. The combination, with a sheet laying or piling mechanism and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of one or more moving stops or arms, as 23, and one or more retaining-fingers, as 38, all substantially as described.

6. The combination, with a sheet laying or piling mechanism consisting of a revolving cylinder or carrier and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of one or more moving stops or arms, as 23, and one or more retaining-fingers, as 38, all substantially as described.

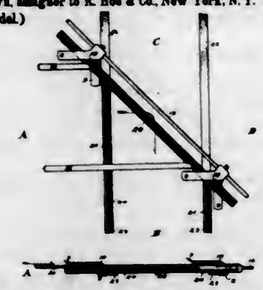
7. The combination, with a sheet-laying mechanism consisting of a revolving carrier, as 100, and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of one or more vibrating stops or arms, as 23, and one or more retaining-fingers, as 38, all substantially as described.

8. The combination, with a sheet-laying mechanism and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of the arms or stops 23 and means for causing said stops to move forward with the tapes or apron while a number of sheets are being laid, and then quickly backward, all substantially as described.

9. The combination, with a sheet-laying mechanism and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of the arms or stops 23, means for causing said stops to move forward with the tapes or apron while a number of sheets are being laid, and then quickly backward, and one or more retaining-fingers, as 38, all substantially as described.

10. The combination, with a sheet-laying mechanism and a moving carrier, as the tapes or apron 32, for removing the pile of sheets therefrom, of the arms or stops 23, means for causing said stops to move forward with the tapes or apron while a number of sheets are being laid, and then quickly backward, one or more retaining-fingers, as 38, and means for moving said fingers downward at the proper time, all substantially as described.

331,283. WEB-THREADING APPARATUS. Lothar C. Crowell, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with a turning-bar, of a curved directing guide or guides, 10, substantially as described.

2. The combination, with a turning-bar, as 20, provided with conductors for carrying the leading end of a web to and from said bar, of a curved directing guide or guides, 10, substantially as described.

3. The combination, with a turning-bar, with which is provided a moving conductor or conductors for carrying the leading end of a web to or from said turning-bar, of a curved directing guide or guides, 10, substantially as described.

4. The combination, with a turning-bar, with which is provided a continuous traveling conductor or conductors for carrying the leading end of the web to, over, and from said turning-bar, of a curved directing guide or guides, 10, substantially as described.

5. The combination, with a turning-bar, with which is provided a continuous moving conductor or conductors for carrying the leading end of the web to, over, and from said turning-bar, of a curved directing guide or guides, 10, provided with the opening 2 and distending support 3, substantially as described.

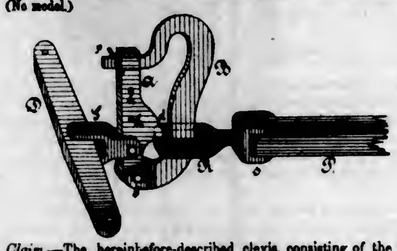
6. The combination, with the turning-bars 20 30 and the roll 40, arranged to reverse a web, of the curved directing-guides 10 12, and suitable conductors for carrying the web through the reversing apparatus, substantially as described.

7. The combination, with the turning-bars 20 30 and the roll 40, arranged to reverse a web, of the curved directing-guides 10 12 and suitable conductors for carrying the web through the reversing apparatus, said conductors passing around pulleys 35, arranged outside the roll 40, substantially as described.

8. The combination, with the turning-bars 20 30, having the curved guides 10, of the moving conductors 23, passing under said bars, and the stationary guides 24, arranged to co-operate with the conductors 23, substantially as described.

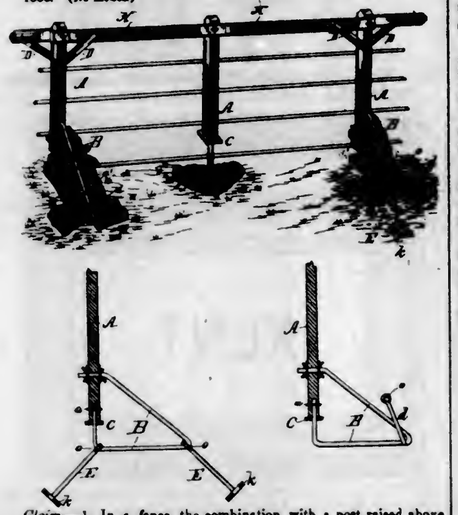
9. The combination, with the turning-bars 20 30, having the curved guides 10, of the upper conductors and guides, 22 21, the moving conductors 23, passing under said bars, and the stationary guides 24, arranged to co-operate with the conductors 23, substantially as described.

331,284. CLEVIS. John R. Davis, Bristol, Wis. Filed July 17, 1885. (No model.)



Claim.—The hereinbefore-described clevis, consisting of the limb A, with the adjusting-holes A and the spur *d*, hinged to limb B, and locked to it by the wooden pin *p*, in combination with the double staple S and staple-ring R, substantially as shown and described.

331,285. FENCE. Joseph Du Bois, Waverly, N. Y. Filed June 24, 1885. (No model.)



Claim.—1. In a fence, the combination, with a post raised above the ground by means of an anchoring device, and provided with a base-plate, of the detachable feet E, provided with a ground-plate, and hooks for securing the feet to the anchoring device, substantially as and for the purpose set forth.

2. In an anchoring device for fence-posts, the combination, with the rod B, bent and secured to the post, as described, of the detachable feet E, secured to the anchoring-rod at each angle by means of hooked rods, whereby said feet may be detached from the base, and provided at their lower ends with holding-plates, substantially as and for the purpose set forth.

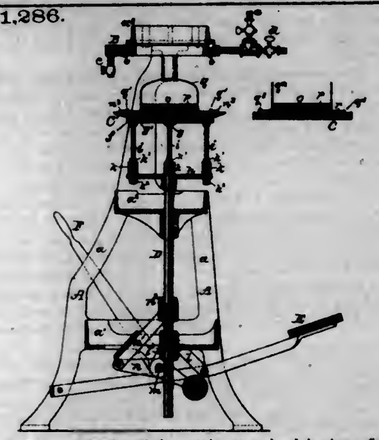
3. The anchor-rod B, bent and secured to a fence-post as described, and provided with a standard rigidly secured at its outer point or angle, having an eye for the reception of auxiliary anchoring-wires, substantially as and for the purpose set forth.

331,286. MACHINE FOR SETTING THE FOLDED OR CURLED EDGES OF HAT-BRIMS. Rudolf Eickemeyer, Yonkers, N. Y. Filed July 10, 1884. (No model.)

Claim.—1. The combination of the annular press-head and the vertically-movable hat-bed, substantially as described, whereby a hat having a brim with a folded edge mounted on said bed can be lifted to the press-head, and the folded portion of said brim compressed and set.

2. The combination of the annular-chambered press-head, pipes and cocks for supplying the same with cold water and steam, and the vertically-movable hat-bed adapted to receive a hat, and to compress between it and the face of the head the folded edge of a hat-brim, substantially as described.

331,286.



3. The combination of the annular press-head having a flat brim-pressing face and a central opening to freely receive a hat-crown, the hat-bed, the bed-lifting mechanism, and the springs for forcing the bed toward the press-head after the lifting mechanism has ceased to operate, substantially as described.

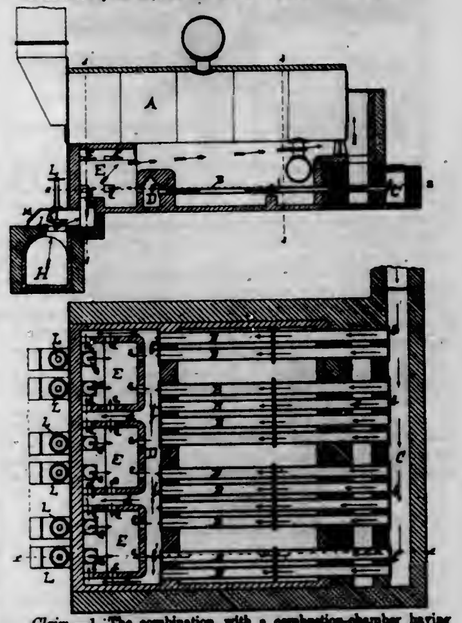
4. The combination of the annular press-head having a flat brim-pressing face and a central opening to freely receive a hat-crown, the hat-bed, its lifting mechanism, the detachable hat-bed, and its hat-block-centering devices, substantially as described.

5. The combination of the annular press-head, the hat-bed, its lifting mechanism, and the detachable annular guide-plate mounted on said bed, substantially as described.

6. The combination of the annular press-head, the hat-bed mounted on a spindle, the treadle-lever and links for lifting the spindle and bed, and the hand-lever for throwing the links out of line and lowering the bed, substantially as described.

7. The combination of the annular press-head, the detachable hat-bed, the bed-plate and spindle which supports said bed, and the screws for adjusting the face of the bed truly parallel with the face of the press-head, substantially as described.

331,287. FURNACE FOR HEATING STEAM-BOILERS. Matthew P. Elliot, Crystal City, Mo. Filed June 20, 1885. (No model.)



Claim.—1. The combination, with a combustion-chamber having ports in its crown for the escape of the products of combustion, of an air-chamber inclosing the base of said combustion-chamber and having

ports for delivering air thereinto, air-pipes which deliver into the air-chamber, and a gas-supply port which delivers into the combustion-chamber below the air-ports thereof, substantially as and for the purposes specified.

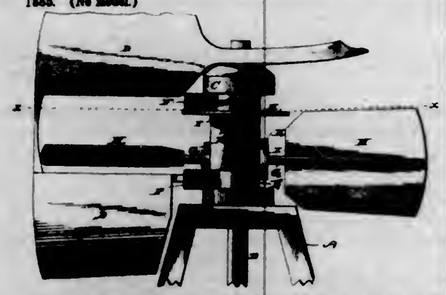
2. The combination, with a boiler having a smoke or waste-product chamber below it, of an independent combustion-chamber arranged in the smoke or waste-product chamber, said combustion-chamber having a gas-supply below and ports in its crown for the escape of waste products, an air-chamber which incloses the combustion-chamber and communicates therewith by suitable ports, and an air-supply delivering into the air-chamber, substantially as and for the purposes specified.

3. The combination, with a boiler having a waste-product chamber below it, of a combustion-chamber having ports in its crown for the escape of products of combustion, said chamber arranged below the boiler and in the waste-product chamber, an air-chamber which surrounds the combustion-chamber and has ports which deliver into the combustion-chamber, air-pipes arranged in the waste-product chamber below the boiler, and which deliver into the air-chamber, and gas-supply ports which deliver into the combustion-chamber, substantially as and for the purposes specified.

4. The combination, with a combustion-chamber having an air-heating chamber surrounding it and ports of communication between the two chambers, of a gas-supply main, a valve for controlling the entrance of gas into the valve-box, a valve-box having a port or man-hole, as at M, and a gas-port leading from the valve-box and delivering into the combustion-chamber, substantially as and for the purposes specified.

5. The combination, with a battery or plurality of boilers, of a series of independent combustion-chambers arranged in the waste-product chamber below the boilers, said chambers having crown-ports *e'*, surrounding air-chamber D *d d d*, having ports *e* leading into the several combustion-chambers, air-pipes B B, arranged in the waste-product chamber below the boilers and delivering into the air-chamber D, gas-conduit H, a series of valve-boxes, K, each having its port M, and gas-ports G, leading from the respective valve-boxes to the corresponding combustion-chambers, whereby the fire at various points under the battery may be dampened and controlled at will, substantially as and for the purposes specified.

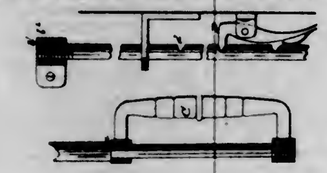
331,288. WINDMILL. Amos C. Ellsworth, Jay, Vt. Filed June 11, 1885. (No model.)



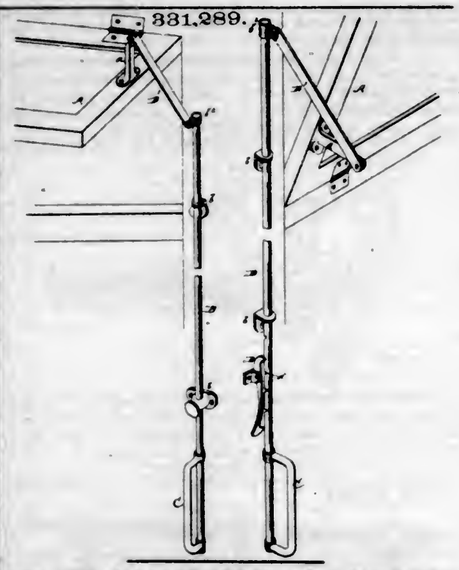
Claim.—1. The combination of the shaft B, the transverse shafts G, journaled therein, and having the wings arranged at right angles to each other on opposite ends of the shafts G, and having the tappet-arms I, and the camways E, adapted to cause the shaft G to rotate through a quarter of a circle as the shaft B revolves, for the purpose set forth, substantially as described.

2. The combination of the shaft B, the transverse shafts G, journaled therein and having the wings arranged at right angles to each other on opposite ends of the shafts G, and having the tappet-arms I, the collars C, swiveled on the shaft B, and having the camways engaging with the tappet-arms, and the vanes secured to the collars, substantially as described.

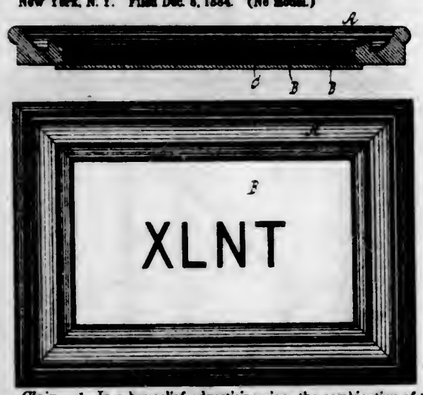
331,289. TRANSOM-LIFTER. Arthur Engleh, Chicago, Ill. Filed Mar. 26, 1885. (No model.)



Claim.—The lifting-rod B, screw-threaded at its upper end and provided with the lug *b'*, the hinged connecting-rod B', the guide-lugs *b* and handle C, in combination with the spring-pawl D, engaging a series of notches, *d*, in the rod, substantially as and for the purpose set forth.



331,290. BAS-RELIEF ADVERTISING-SIGN. Henry Frentzler, New York, N. Y. Filed Dec. 8, 1884. (No model.)



Claim.—1. In a bas-relief advertising-sign, the combination of the two layers of plastic B B, composed of plaster-of-paris, slaked lime, sufficient burnt umber to color, having between them the layer of porous fabric, C, and having upon the face raised letters or inscriptions or ornamentations and set in suitable frame, in the manner described, and for the purpose set forth.

2. A bas-relief advertising-sign composed of the two layers of plastic B B, having between them a porous fabric, C, and having a suitable inscription upon its face and the raised parts suitably painted or burnished and set in a suitable frame, A, and backed, substantially as described and shown.

3. In a bas-relief advertising-sign, the combination of the frame A with a composition sign, said composition consisting of the plastic layers B B, composed of plaster-of-paris, slaked lime, and burnt umber, having between them a wire-netting, and having the parts burnished or painted in a suitable manner, substantially as described.

331,291. ROLLER-SKATE. John H. Fenton, Chicago, Ill. Filed Oct. 28, 1884. (No model.)



Claim.—1. The cylindrical thimbles B, provided at their outer ends with interlocking points or lugs to enter recesses in the outer faces of the wheels around the hub-opening, substantially as described.

2. The thimble B, provided at its outer end with a laterally-projecting flange, *b*, provided with inwardly-extending points *b'*, to enter the face of a wheel around the hub-opening, substantially as described.

331,292. CAR-WHEEL. James Ferguson, Bridgewater, Mass. Filed Apr. 3, 1884. (No model.)



Claim.—1. In combination with the rim B, provided with a deeper shoulder, b^2, on one side of the groove b^2 than the corresponding shoulder on the other side of said groove, the blanks A A, provided with projections a^4 a^4, substantially as described.

2. In combination with the rim B, provided with the annular groove *b'*, the tire C, provided with the corresponding annular tongue, b^4, substantially as described.

3. In combination with the rim B, provided with the annular groove *b'* and flange b^3, the tire C, provided with the corresponding tongue, b^4, and the groove or recess *c*, substantially as described.

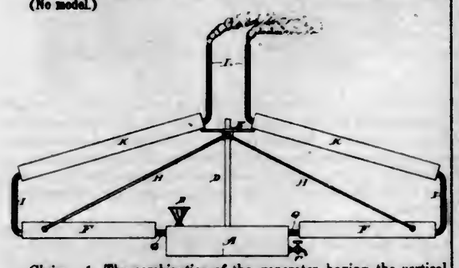
331,293. LEATHER WASHER. Timothy Gilligan, Buffalo, N. Y. Filed Sept. 23, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a leather washer consisting of an annular ring having an abutting joint secured together by a double-pointed tack or staple inserted substantially as described, for the use and purpose indicated.

2. The herein-described improved leather washer, consisting of a strip of leather having square ends, as described, said strip being formed into an annulus and the abutting ends secured together by means of a double-pointed tack or staple driven into the leather from the periphery of the ring and clinched on the inner side thereof, substantially as and for the object specified.

331,294. FRUIT-DRIER. John C. Gunn, Knoxville, Tenn., assignor of one-half to Henry N. Saxton, Jr., same place. Filed July 16, 1885. (No model.)



Claim.—1. The combination of the generator having the vertical central standard, D, the pans F, connected to and arranged on opposite sides of the generator and communicating therewith, and the brace-rods H, connected to the standard and to the pans for maintaining the latter in a horizontal position, and approximately in the same plane with the generator, substantially as described.

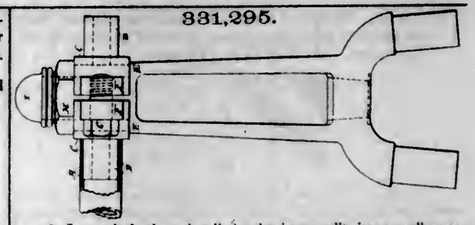
2. The combination of the generator A, the pans F, connected to opposite sides of the generator, communicating therewith and supported in a horizontal position, and the inclined pans K, communicating with the pans F and supported above the latter, substantially as described.

3. The combination of the steam-generator A, having the central vertical standard, D, the horizontal pans F on opposite sides of the generator and communicating therewith, and the inclined pans K above the pans F, communicating with the latter at their outer sides, the inner sides of pans K being supported by the standard D, substantially as described.

4. The generator A, in combination with the pans F, connected thereto, the standard D, having plate E, the inclined pans K, resting on the plate, and the pipes I, connecting the pans F K, as set forth.

331,295. BICYCLE. Charles F. Hadley, Chicopee, assignor to the Overman Wheel Company, Boston, Mass. Filed June 22, 1885. (No model.)

Claim.—1. In a velocipede, a handle-bar having a split ring provided with lugs carrying a tap-bolt, and adapted to be clamped upon the steering-head of the vehicle, substantially as set forth.



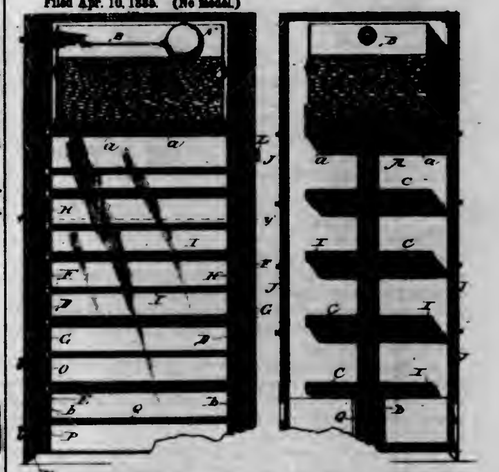
2. In a velocipede, a handle-bar having a split ring or collar provided with lugs carrying a tap-bolt, and a steering-head having an elliptical bearing upon which the split ring or collar of the box is clamped, substantially as set forth.

3. In a velocipede, a handle-bar having a collar, studs projecting from opposite faces thereof, and tubular handle-sections or arms secured to the said studs, substantially as set forth.

4. In a velocipede, a handle-bar having a split ring or collar provided with lugs carrying a tap-bolt, studs projecting from opposite faces of the said split ring or collar, and tubular handle-sections or arms secured to the studs, and a steering-head having an elliptical bearing upon which the split ring or collar of the bar is clamped, substantially as set forth.

5. In a velocipede, a handle-bar having a split ring provided with lugs carrying a tap-bolt, and adapted to be clamped upon the steering-head of the vehicle, and a nut connected with such steering-head and screwed down upon the upper edge of the split ring, substantially as set forth.

331,296. REFRIGERATOR. Frederick Hardsworth, Chicago, Ill. Filed Apr. 10, 1885. (No model.)

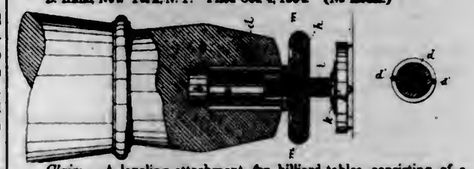


Claim.—1. A refrigerator provided with central water-space, A, and open shelves extending therefrom on opposite sides of central water-space, all communicating together, and also communicating with water-reservoir above, as and for the purpose shown.

2. The combination of the open shelves C C, inner wall, H, and bolts I I, as and for the purpose shown.

3. In combination with a refrigerator, the hollow bolts Q, to unite different water-spaces, substantially as shown.

331,297. ATTACHMENT FOR LEVELING BILLIARD-TABLES. C. B. Hall, New York, N. Y. Filed Oct. 4, 1884. (No model.)



Claim.—A leveling attachment for billiard tables, consisting of a sleeve or bushing inserted and secured within and at the end of the leg, a spindle fitted within said sleeve, and having its extended portion reduced and threaded, a base or removable foot-piece connected to the threaded end of said spindle, and a nut for adjusting the leg and fixed sleeve vertically upon the spindle, substantially as described.

331,298. METHOD OF MAKING WATER-PROOF FABRICS. THEODORE HAWLEY, Fairfield, Conn., assignor of one-half to Edward W. Harral, same place. Filed Aug. 3, 1885. (No model.)

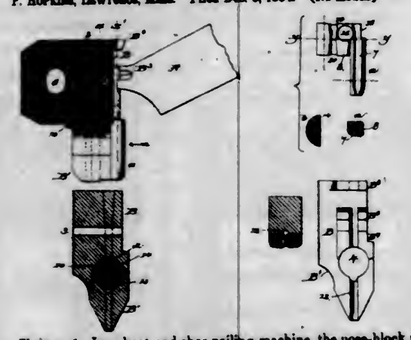


Claim.—1. The method of making colored water-proof fabrics, which consists in running a ground-work of water-proof material upon a suitable backing, then applying the coloring-matter in the form of powder and brushing or rubbing it into the surface of the water-proof compound, then varnishing the surface, and finally vulcanizing in the usual manner.

2. The method of making water-proof fabrics, which consists in running a ground-work of suitable material upon a textile backing, then applying the coloring-matter in the form of powder and brushing or rubbing it over the surface, then embossing it, then varnishing the surface, and finally vulcanizing the fabric in the usual manner.

3. As a new manufacture, a colored fabric in which a water-proof compound is laid upon a suitable backing, the coloring-matter placed upon the surface in the form of powder, then varnished over, and the fabric finally vulcanized in the usual manner.

331,299. NAILING-MACHINE FOR BOOTS OR SHOES. WILLIAM P. HOPKINS, Lawrence, Mass. Filed Dec. 5, 1884. (No model.)



Claim.—1. In a boot and shoe nailing-machine, the nose-block provided with a horizontal hole, 4, combined with a nail holder or director comprising two arms, *a*, grooved in opposite faces, and of rigid material, and rearward lateral semi-cylindrical projections *b* from said arms, fitted in the said hole in the nose-block and serving as pivots for said arms, substantially as described.

2. The nose-block, combined with the rigid arms *a a* of the nail holder or director, having semi-cylindrical projections *b b*, pivoted in a hole in said block, the opposite faces of said arms having longitudinal grooves which terminate in lips 8 8 at their lowermost end, substantially as and for the purpose described.

3. The nose-block provided with the hole 4, and the rigid grooved arms *a*, having projections *b*, semicircular in cross-section and inserted in the block B, combined with a spring located between the parts 14 of the said arms, to maintain the arms *a a* pressed toward each other to grasp the nail closely while it is being driven from between the said arms into the material, substantially as described.

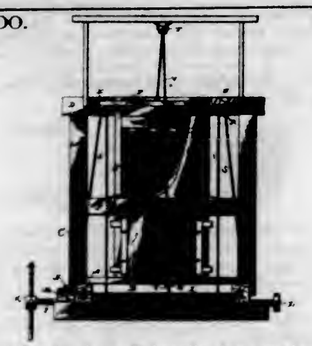
4. The nose-block B, grooved at its face for the passage of the driver, and bored at 4, combined with the nail holder or director provided with projections *b* to enter said hole, and having a surface, 16, to enter the hole 4 and fit closely to the concaved lower face of the projection B^4, substantially as described.

5. The nose-block B, grooved at 12, combined with the pivoted rigid arms *a a*, substantially as described.

6. The nose-block provided with the awl-passage, combined with the nail holder or director having arms *b b*, provided with grooves aligned with the said awl-passage in the nose-block for the passage of the awl between the said arms, substantially as described.

331,300. COTTON-PRESS. ROBERT F. HOSTON, Walnut Lane, La. Filed Mar. 13, 1885. (No model.)

Claim.—The frame, in combination with the horizontal shaft or windlass I, provided with hand-wheel K and pulley L, journaled in the bottom thereof, the press-box having its end walls provided with slots *g*, the follower O, the beam P, secured to the follower and having its ends projecting through and working in the slots, sheaves secured to the projecting ends of the beam, ropes S, secured at one end to the frame, then passing through the sheaves, and extending down so as to connect



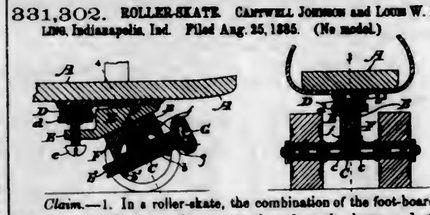
with the windlass I, a sheave, T, depending from a supplemental frame above the press-box, an elevating-rope, V, secured at one end centrally to the follower, passing upward over the sheave T and guided by sheaves W, and attached to the windlass, and around in a reverse direction to the ropes S, and the door Z, provided in the upper portion of the press-box, as set forth.

331,301. KEY-RING. GEORGE W. HUTCHINS, Newburyport, Mass., assignor to William C. Plummer, same place. Filed Aug. 3, 1885. (No model.)



Claim.—An improved key-ring, consisting of a body or loop, A, having interned free ends, which abut or nearly abut within the open portion of the body or loop, and provide a converging opening between such interned portions for the introduction of a key, substantially as shown and described.

331,302. ROLLER-SKATE. CALDWELL JOHNSON and LOUIS W. NUELING, Indianapolis, Ind. Filed Aug. 25, 1885. (No model.)



Claim.—1. In a roller-skate, the combination of the foot-board, the hanger secured thereon, axle-support pivoted to the lower end of said hanger, a spring at the upper portion of said hanger, a bar bearing at one end upon said spring and at the other against a stationary part, and a push-pin mounted between the lower edge of said bar and the top face of the axle-support, one end bearing against each, substantially as set forth.

2. The combination, in a roller-skate, of the foot-board, the hanger secured thereto, said hanger being provided with a hollow central portion, and a hole or slot through its upper portion across said hollow portion, the axle-support pivotally secured to the lower ends of said hanger, a spring secured at one side of said hanger, a bar passing through said transverse hole or slot, one end of which bears against said spring and the other against a stationary part, and a push-pin mounted in the central hollow portion of the hanger, one end of which bears against the under edge of said box, and the other end of which bears upon the top face of the axle-support, substantially as set forth.

3. The combination, in a roller-skate, of the foot-board A, hangers B, secured thereto, each of said hangers being formed with a central tubular portion, and a transverse hole or slot, b^2, through its upper portion, the front and rear edge of the hanger being extended down below the end of said central portion and having a stud-shaft, *b*, and bearing *b'*, formed on their ends, the axle-support C, pivoted on said shaft *b*, and the pivot b^3 in said bearing *b'*, the top face of said axle-support having a raised bearing portion, *c*, on each side of the pivotal line, the spring D, bar E, passing through the slot b^2, one end bearing against a stationary part and the other being provided with the set-screw *e*, which bears upon and operates against the spring, and the push-pin F, having a flat head, *f*, said pin being mounted in the tubular portion of the hanger, the flat head resting upon the raised bearing portion *c* on the top of the axle-support, and its other end resting in a notch in the under side of said bar E, substantially as set forth.

4. The combination of the hanger, axle-support pivoted thereto, said axle-support being provided with bearings for its pivots and the

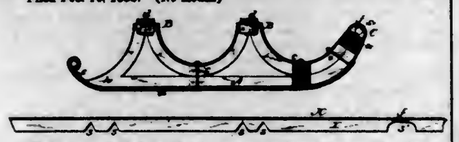
axle which communicate with each other, the hollow shaft *b*, on which one end of said axle-support is pivoted, and the oil-cup G, secured on the outer end of said hollow shaft, substantially as described, and for the purposes specified.

5. The combination of a hollow shaft having one end of the axle-support pivoted thereon, one end of said shaft opening into the bearing in said axle-support, and an oil-cup secured on the outer end of said hollow shaft, the outer end of said cup being partly inclosed, whereby the oil is prevented from escaping, substantially as set forth.

6. The combination of the foot-board, the hanger, the axle-support pivoted to said hanger, a spring secured at the upper portion of the hanger, and a pin mounted between said spring and the top face of said axle-support, whereby said spring is adapted to operate to steady said axle-support and give the required elasticity to the operation of the mechanism, substantially as set forth.

7. The combination of the foot-board, the hanger secured thereto, the axle-support pivoted to the lower end of said hanger, its upper face being formed with a raised bearing portion on each side of the pivotal line, a spring secured at the upper portion of said hanger, and an intermediate pin having an enlarged bearing-head mounted between said spring and said axle-support, said head resting upon said raised bearing portions, whereby as the skate is rocked the pin is operated to bear against the spring, substantially as set forth.

331,303. SLED-RUNNER. VICTOR D. JOHNSON, Mount Pleasant, Iowa. Filed Feb. 16, 1885. (No model.)



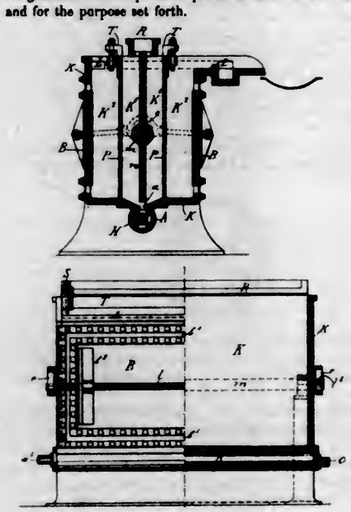
Claim.—1. A sled or sleigh runner designed for carrying heavy loads, formed of T or analogous shaped wrought-metal bars, having broad longitudinal ribs or flanges arranged at right angles to each other by bending said bars so as to form a complete runner, including the bench-knees and upward bends at the ends, all made of one continued unbroken bar, substantially as shown, for the purposes specified.

2. In combination with a sled or sleigh runner having bench-knees formed of T or analogous shaped iron by bending the bars so as to have the crown or cross-head K of said iron placed outward and upward in the formation of said knees, the knee-caps *d*, as made and attached to the runner, substantially as shown, for the purposes specified.

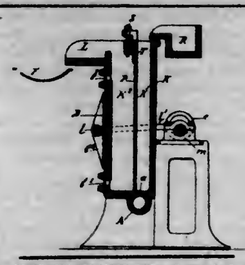
331,304. PULP-STRAINING MACHINE WITH VERTICAL SCREEN-PLATES. RUDOLF KNOB, Unterstrass, near Zurich, assignor to Escher-wyss & Co., Zurich, Switzerland. Filed July 1, 1885. (No model.) Patented in Belgium Mar. 6, 1885, No. 66,106, and in Italy Mar. 8, 1885, No. 18,024.

Claim.—1. The combination, with a box, as K, flues, as R, outlet-pipe, as A, discharge-overflow, as L, and oscillating plates, as B, of vertical screens, as P, all as shown and described, and for the purpose set forth.

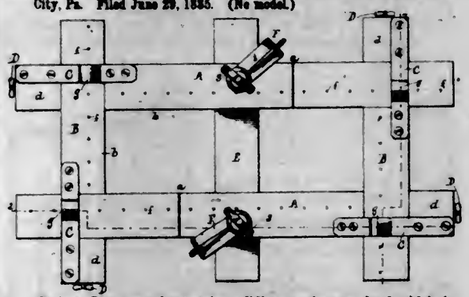
2. The combination, with a box, as K, flues, as R, outlet-pipe, as A, discharge-overflow, as L, oscillating plates, as B, and vertical screens, as P, of longitudinal vertical partition-plates, as *n*, all as shown and described, and for the purpose set forth.



331,304



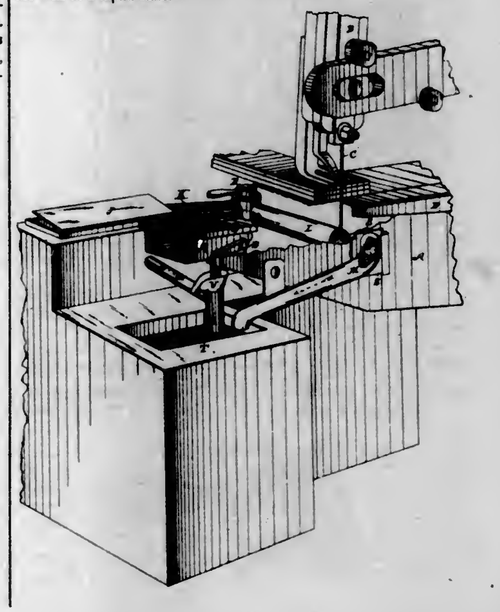
331,305. CURTAIN-STRETCHER. LOUIS E. LAFFERTY, Allegheny City, Pa. Filed June 29, 1885. (No model.)



Claim.—In a curtain-stretcher, sliding sections, each of which is composed of a long strip provided with stretching-pins on its upper surface, a bottom strip, to which one end of said long strip is secured, and a block secured to said bottom strip, substantially as set forth, whereby a guide-space is formed above said bottom strip between said block and long strip, in combination with guide-bands secured at opposite ends to the upper surfaces of said blocks and long strips across said guide-space, said guide-band being arched above the center of said space, substantially as set forth.

331,306. SEWING-MACHINE WAXING DEVICE. BENJAMIN F. LANDIS, St. Joseph, Mo. Filed Sept. 17, 1884. (No model.)

Brief.—The melted wax is pumped by means operated by the machine into a reservoir higher than the wax-cup that receives the point of the needle, whereby the wax constantly flows into said cup, and the overflow from the cup flows onto the strainer above the lower reservoir. A jacket surrounds the shuttle-race, permitting steam-passages to keep the wax in a liquid state.

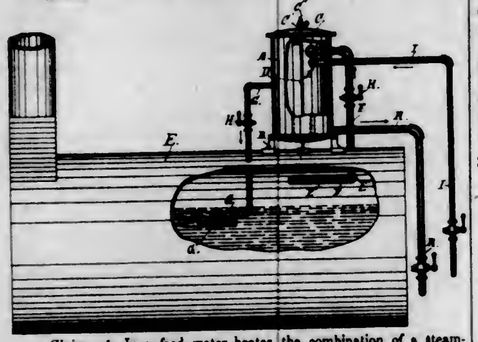


Claim.—1. In a sewing-machine waxing device, a cup fixed in the path of the needle at the lower end thereof, a wax-reservoir located above the level of the said cup, a pipe connecting the two, a drip-pan located below the level of the cup, a pipe connecting the cup and pan, and a pump or equivalent means for raising wax from the said pan to the said reservoir, substantially as shown and described.

2. The combination, with a needle-cup, a wax-reservoir above its level, a drip-pan below, a pump, and pipe-connections, whereby a complete circuit for wax is established, of a strainer located in the path of the wax, substantially as described.

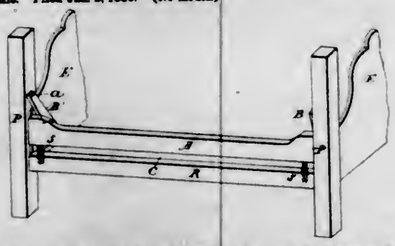
3. The combination of a wax-cup located in a sewing-machine at the lower end of the path of the needle to receive the point thereof, a wax-reservoir located above the level of the cup, and a pipe connecting the reservoir with the cup, substantially as shown and described, whereby wax will flow by gravity from the reservoir directly to the point of the needle, as set forth.

331,307. FEED-WATER HEATER. Daniel Lee, Sacramento, assignor to William Gould, San Francisco, Cal. Filed July 31, 1885. (No model.)



Claim.—1. In a feed-water heater, the combination of a steam-tank, J, provided with a central vertical diaphragm, D, a hot-water-feed pipe, G, entering the boiler below the water-line and having a perforated end, a steam-pipe, F, entering the boiler above the water-line and having also a perforated end, the cold-water-supply pipe I, and the blow-off pipe R, all constructed, arranged, and operating substantially as shown and described.

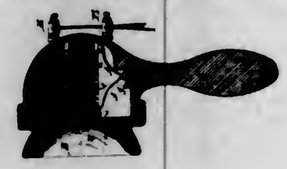
331,308. BED-COVER FASTENER. Mary J. Liggett, Wooster, Ohio. Filed Jan. 2, 1885. (No model.)



Claim.—1. In a bedstead, the combination, with the lower rail, R, of the upper rail, A, provided with ends T, matched to correspond with either tongue or groove in the posts P, and mounted to operate vertically above and upon said lower rail between said posts, substantially as and for the purpose specified.

2. In a bedstead, the combination, with the lower rail, R, of the upper rail, A, provided with ends T, matched with either tongue or groove to correspond with the same in the posts P, and mounted to operate vertically between said posts above and upon said lower rail, the springs *s*, and buttons B, substantially as and for the purpose specified.

331,309. TELEPHONE. William C. Lockwood, Brooklyn, assignor to Thomas Wallace, New York, N. Y. Filed July 21, 1884. (No model.)



Claim.—1. In a telephone, the combination, substantially as herein set forth, of two electrodes, both axially acted upon by two counteracting devices, one tending to withdraw and the other to preserve contact between them.

2. In a telephone, the combination, substantially as herein set forth, of two electrodes, both axially acted upon by two counteracting devices, one tending to withdraw and the other to preserve contact between them, and adjusting devices for regulating their initial relations.

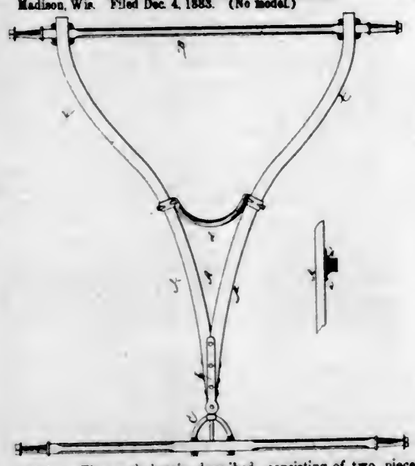
3. In a telephone, the combination, substantially as herein set forth, of two electrodes, both axially acted upon by two elastic counteracting devices, one tending to withdraw and the other to preserve contact between them.

4. The combination, substantially as herein set forth, of two flat-faced electrodes, supports for the same, a spring surrounding the electrodes and tending to withdraw them from contact, and an elastic device tending to preserve their contact, and adjusting devices for regulating their initial relations.

5. The combination, substantially as herein set forth, of a flat-faced carbon electrode, a flat-faced platinum electrode, non-conducting blocks for supporting them, elastic material interposed between the blocks, a spring connected to the blocks and surrounding the electrodes, a pair of arms or tongs connected to the blocks, and adjusting devices.

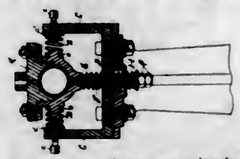
6. The combination, substantially as herein set forth, of a charged line and a set of telephones, each consisting, essentially, of flat-faced electrodes and counteracting devices acting axially upon both of the electrodes, one tending to make contact and the other to break contact in the manner set forth, whereby the disturbing effects of extraneous induction are not manifest in the receiving-instrument.

331,310. VEHICLE-REACH. Jacob A. Mack and Christian Hanson, Madison, Wis. Filed Dec. 4, 1883. (No model.)



Claim.—The reach herein described, consisting of two pieces of wood bent in compound curves *x y*, having their forward ends firmly secured together and braced by the brace *d*, clipped to the reach, and their rear ends spread apart and secured to the axle near its shoulders, and provided with a bearing-plate having one or more lugs engaging with the axle, all constructed, combined, and arranged to operate substantially as and for the purpose set forth.

331,311. JOURNAL-BEARING. J. George Marquardt, Erie, Pa., assignor to Black & Germer, same place. Filed Oct. 8, 1885. (No model.)



Claim.—1. In a journal-bearing, a supporting-frame provided with springs, in combination with movable journal-boxes supported both vertically and laterally by such springs, so that they will yield to vibrations of a shaft journaled therein, substantially as set forth.

2. The combination, with a journal-box frame not extending above the top of the journal-box, of a movable journal-box, and springs communicating with the journal-box and with said frame, adapted to support and retain the journal-box in place, substantially as and for the purpose set forth.

3. In a journal-bearing, the combination, with a supporting-frame, of a journal-box connected to said frame by means of springs on either side of and under said box, between said box and the supporting-frame, and springs under said supporting-frame, connected to said box by bolts, substantially as and for the purpose set forth.

4. The combination, in a journal-bearing, of the supporting-frame B, provided with arms C C, the side springs, D D, the springs G and H, and the stud-bolt F, with the journal-box E, substantially as and for the purpose set forth:

5. The combination, in a journal-bearing, of the supporting-frame B, having arms C C thereon, the adjusting-screws *c c*, side springs, D D, springs G and H, stud-bolts F, and the adjusting-nuts *f*, with the journal-box E, supported and held in place, substantially as and for the purpose set forth.

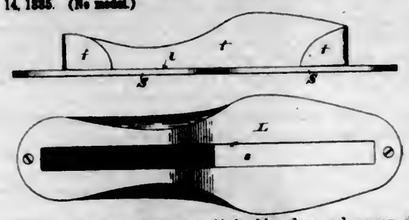
331,312. COMPOSITION FOR FIREPROOFING AND OTHER PRESERVATIVE PURPOSES. Abel Jean Martin, Paris, France, assignor to R. Onffroy de Vérac, same place. Filed Dec. 24, 1884. (No specimens.)

Claim.—1. A compound for fireproofing and other preservative purposes made substantially as described.

2. In a compound for fireproofing and other preservative purposes, a composition of glycerine, carbonate of ammonia, hydrochlorate of ammonia, soluble cream of tartar, oxalate of potash, and boracic acid, or their equivalents, substantially as set forth.

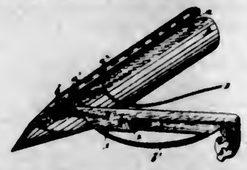
3. In a compound for fireproofing and other preservative purposes, the combination, with glycerine, of soluble cream of tartar, oxalate of potash, and boracic acid, substantially as specified.

331,313. LAST. Walter T. Martin, Denver, Mass. Filed Aug. 14, 1885. (No model.)



Claim.—An armored last provided with a deep and narrow slot along the middle of its face to receive the flaps of the sole, split from the edges approximately to the middle, and hold them in a vertical position, substantially as described, and for the purpose specified.

331,314. SEWING-MACHINE SHUTTLE. Virginius J. Mayo, Erie, Pa., assignor to George H. Noble, same place. Filed Nov. 28, 1884. (No model.)



Claim.—1. In a sewing-machine shuttle, the combination, substantially as herein set forth, of a shuttle-shell provided with a thread-slot which extends from the rear end of the shuttle-body to the forward end of the bobbin-chamber, and then offsets back toward the rear end, and a tension-bar covering said slot, which presses upon the shuttle-body back of the offset of said slot.

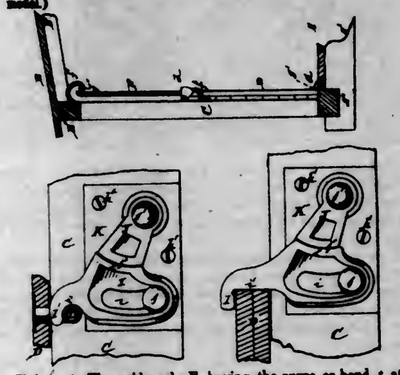
2. In a sewing-machine shuttle, the combination, substantially as herein set forth, of a shuttle-shell having the thread-slot $a\ a'\ a^3$, and the tension-bar B, covering said slot and having its bearing b^3 back of the end a^3 of said slot.

3. In a sewing-machine shuttle, the combination, substantially as herein set forth, of a shuttle-shell having a thread-slot which extends from the rear end of the shuttle-body to the fore part of the bobbin-chamber, and then offsets back toward the rear end, and a tension-bar which has its bearing-space back of the end of said offset, and a raised part for giving a free thread-space back of the said bearing-space.

4. In a sewing-machine shuttle, the combination, substantially as herein set forth, of a shuttle-shell having the thread-slot $a\ a'\ a^3$, and the tension-bar B, covering said slot, and having the bearing-space b^3 back of the end a^3 of said slot and the raised space b^3 back of said bearing-space.

5. In a sewing-machine shuttle, the combination, substantially as herein set forth, of the tension-bar B, having bearing-space b^2 and raised space b^3, and both of its ends secured to the shuttle-body, and a shuttle-shell having a thread-slot, which begins at the rear end of the shuttle-body at one side of the tension-bar and passes under the tension-bar and forward to near the inner end of the bobbin-chamber, and then offsets backward and ends at the forward end of the bearing-space b^2 of the tension-bar.

331,315. GRAIN-CAR DOOR. William McOmber, Chicago, Ill., assignor to himself and Frank Jager, same place. Filed June 6, 1885. (No model.)



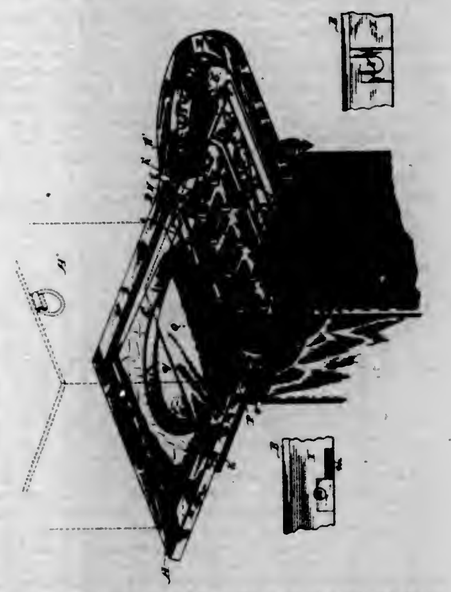
Claim.—1. The guide-rods F, having the curve or bend *f* at the lower end for preventing injurious effects in swinging the door up, substantially as specified.

2. The door D and corner-plates E, having trunnions *c*, in combination with the guide-rods F, having the curves or bends *f*, substantially as and for the purpose specified.

3. The combination, with a vertically-moving door, D, of the guide-stops G, having inclined or angular ends *g'*, substantially as and for the purpose specified.

4. The hook-plate I, having the curved slot *i* and curved face *i''*, in combination with the lock-plate J, having a curved engaging-face, *j''*, substantially as and for the purpose specified.

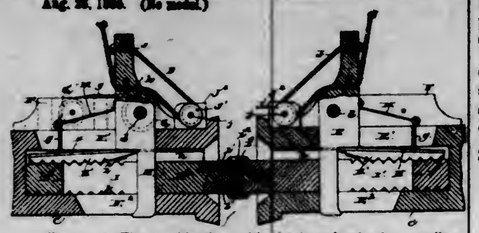
331,316. SLIDING TOP FOR OIL-STOVES. John Helm, Hamilton, Ontario, Canada. Filed Mar. 23, 1885. (No model.) Patented in Canada July 25, 1884, No. 19,859.



Claim.—1. The combination, with an oil-stove and with the top H and oven thereof, of a single element comprising a sliding top plate having a raised edge to receive the movable plates, covers, &c., a sunken portion forming a flue under the oven, and an opening to receive said top H, substantially as described.

2. The combination, with the sliding top plate, A, provided with perforated web-plate I, of the stove-top H, provided with openings H' and with ribs A', substantially as and for the purposes specified.

331,317. CAR-COUPLING. Silas Hoffman, Lafayette, Ala. Filed Aug. 28, 1885. (No model.)



Claim.—1. The combination, with the draw-head, of a coupling-pin pivoted therein, a spring-pressed bar carrying a bearing-plate, a pull-cord connecting said pin and bar for simultaneously operating the same, and a link on which said bar is adapted to bear, substantially as described.

2. In a car-coupling, the combination, with a draw-head, a spring-pressed coupling-pin mounted therein, a spring-actuated bar carrying a corrugated head, a pull-cord connected to said coupling-pin and bar and adapted to simultaneously operate the same, and a corrugated coupling-link on which the spring-bar is adapted to bear, substantially as described.

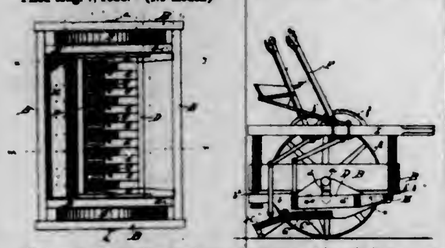
3. In a car-coupling, the combination, with a draw-head, a spring-actuated bar mounted therein, a link adapted to engage the said bar, a coupling-pin, and a pull-cord adapted to operate said spring-bar, substantially as described.

4. In a car-coupling, the combination, with a slotted draw-head, a spring-actuated coupling-pin pivoted therein, a pulley mounted on the coupling-pin shaft, a spring-actuated bar, arranged within the draw-head and carrying a corrugated contact-plate, a cord connecting said pulley and spring-bar, a corrugated coupling-link, and a pull-cord connected to said coupling-pin, substantially as described.

5. In a car coupling, the combination of a slotted draw-head, a coupling-pin mounted therein, a pulley, G, mounted on the pin-shaft, springs M L, connected to the coupling-pin and shaft thereof, a spring-bar, H, arranged within the draw-head and having a corrugated plate, a coupling-link, a cord, *g*, connecting the pulley G and spring-bar, a pulley, G', over which said cord *g* passes, a pull-cord, J, connected to the coupling-pin, and a pulley, J', over which said cord passes, all arranged and combined substantially as described.

6. In combination with the draw-heads and coupling-pins thereof, a coupling-link comprising two sections pivotally connected together and normally resting in a horizontal plane, and each section having a longitudinal slot for the passage of the coupling-pin, one of the sections of said link having a socketed end and provided with a rounded recessed portion, and the other link-section having a reduced rounded projecting tongue to provide shoulders, said tongue and shoulders fitting in the socketed and rounded recessed portion of the follow section, and serving to limit the lateral play of the link-section when the cars are rounding curves, as set forth.

331,318. SOIL-PULVERIZER. Joseph B. Orey, Indianapolis, Ind. Filed Aug. 7, 1885. (No model.)



Claim.—1. In a soil-pulverizer, a front row of long knives or cutters, C, pivoted at their tops to an inside frame, D, which is adapted to be raised and lowered at will, combined with a guide-frame, G, which holds the knives at the proper angle and serves as a cleaner when the knives are drawn up through the slots therein, substantially as described.

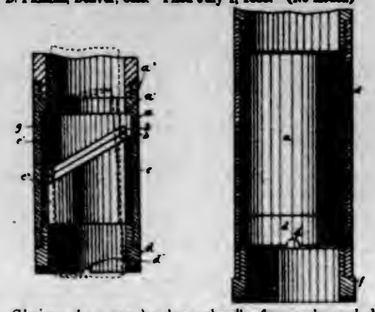
2. In a soil-pulverizer, the knives C, the cleaner or guide-frame G, adapted to clean dirt and foreign matter from said knives, in combination with adjusting-screws *b*', for said guide-frame or cleaner, substantially as described.

3. In a soil-pulverizer, the combination of the frame carrying the pivoted teeth C, the guide-frame and cleaner G, and the hinged follower H, provided with teeth or cutters following behind the front row of knives, C, the said teeth or cutters alternating with the knives C, and means whereby the said follower can be raised or lowered, substantially as described.

4. In a soil-pulverizer, the extended ends of the movable frame D, having suitable slots, *d*, to receive the axles *a* of the wheels A, thereby placing the draft of the front knives or cutters directly on the axles *a*, substantially as described.

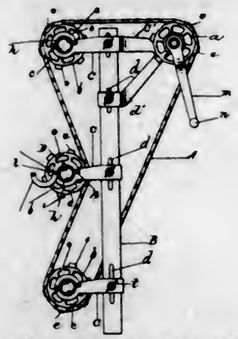
5. In a soil-pulverizer, the combination of the front row of cutters, C, pivoted to the frame D, the lever F, for raising and lowering the the cutters, the cleaner G, adapted to hold the knives C at the proper angle and clean them, and the follower H, to follow after the front row of cutters, C, substantially as described.

331,319. CORE BREAKER AND PULLER FOR ROCK-DRILLS. F. D. Parkin, Denver, Colo. Filed July 1, 1885. (No model.)



Claim.—In a core breaker and puller for annular rock-drills, the combination of the hollow cylinder *a* with the ring or rings *b*, arranged to operate within the cylinder *a* at an angle to its inside walls, said ring or rings held in respective positions within by angular or oblique collar *c* on the one side, and shoulder *d*' on the other, substantially as set forth.

331,320. FENCE-BUILDING MACHINE. William N. Parrish, Richmond, Ind. Filed Aug. 7, 1885. (No model.)

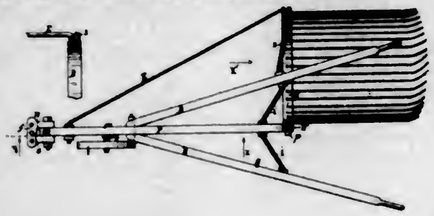


Claim.—1. The standard B, having slots *d d d*, arms C C C, and clamping-bolts, the arms being provided with a jointed circular bearing-frame, *b' b'*, and the wheels *b b b*, in combination with the wheel *a* and belt A, as and for the purposes set forth.

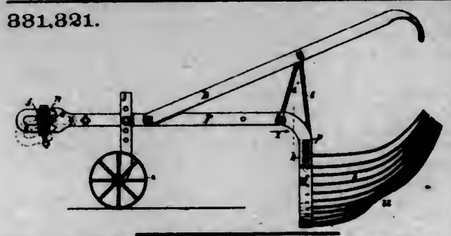
2. The twisting-wheel *b*, provided with openings *c c* and recesses *i i*, and arranged to revolve within the pivoted bearing-frame *b' b'*, substantially as specified.

331,321. POTATO-DIGGER AND BEAN-HARVESTER. Charles Pirie, Rochester, N. Y. Filed July 11, 1885. (No model.)

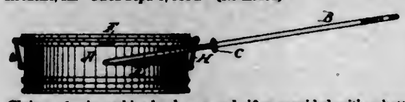
Claim.—In combination with the beam of a potato-digger and bean-harvester, a curved cutting-blade, B, extending laterally from said beam, and a series of rods, *b*, which extend backward and upward from said blade to their tips, the middle part of each one of said rods being bent to form an indentation, *u*, substantially as set forth.



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331,322. COMBINED ASH PAN AND SIFTER. Lyman E. Phelps, Rochelle, Ill. Filed Sept. 5, 1884. (No model.)



Claim.—1. A combined ash pan and sifter provided with a bottom connected thereto by a hinged link, whereby it is made convertible into a top or cover, or vice versa, substantially as described.

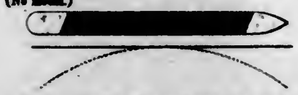
2. A combined ash pan and sifter provided with grooves E, and bail-holes I, in combination with a removable bail or spring-handle, B, substantially as described, and for the purpose set forth.

331,323. MANUFACTURE OF PULP FROM WOODY MATTER. R. P. Pictet, Geneva, and Georges L. Brélaz, Lausanne, Switzerland. Filed Feb. 13, 1885. (No specimens.) Patented in France Apr. 8, 1883, No. 155,026; in Belgium May 21, 1883, No. 61,437; in Germany May 22, 1883, No. 26,331, and in England June 27, 1884, No. 9,509.

Claim.—1. The herein-described process of treating wood for conversion into paper-pulp, which consists in subjecting it to the action of a sursaturated solution of sulphurous acid at a temperature not exceeding 100° centigrade.

2. The herein-described process of treating wood for conversion into paper-pulp, which consists in first subjecting the same to the action of a vacuum and to that of a sursaturated solution of sulphurous acid at a temperature not exceeding 100° centigrade.

331,324. FILE. Henry G. Pinyard, New York, N. Y. Filed June 6, 1885. (No model.)

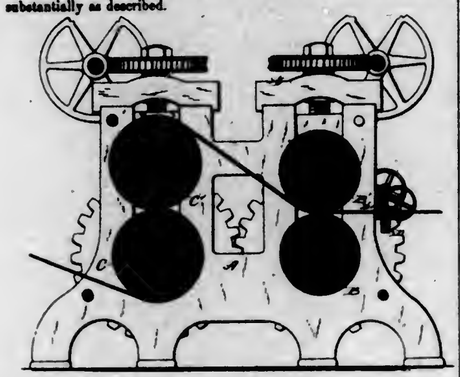


Claim.—As a new article of manufacture, an elastic metal file or piece of spring metal having suitably-formed file-teeth upon its surface, substantially as set forth.

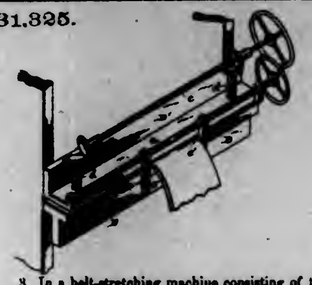
331,325. BELT-STRETCHING MACHINE. Benjamin M. Plummer, Philadelphia, Pa. Filed July 1, 1885. (No model.)

Claim.—1. In a belt-stretching machine consisting of two or more pairs of rolls, gearing for driving the forward pair at greater circumferential speed than the other, and means for adjusting the rollers of each pair with relation to each other, so as to regulate the tension on the belt, all combined and arranged as described.

2. In a belt-stretching machine consisting of two or more pairs of rolls, gearing for driving the forward pair at greater circumferential speed than the others, and means for adjusting the rollers of each pair with relation to each other, so as to regulate the tension on the belt, and an additional clamping and tension device all combined and arranged substantially as described.



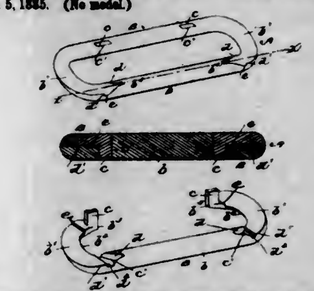
331,325.



3. In a belt-stretching machine consisting of two or more pairs of rolls, gearing for driving the forward pair at greater circumferential speed than the others, and means for adjusting the rollers of each pair with relation to each other, so as to regulate the tension on the belt, and a clamping and guiding device, all combined and arranged substantially as described.

4. The combination, with a belt-stretching machine consisting, essentially, of two or more pairs of rolls, of a guiding device consisting of a right and left screw rod and two pendent guide-pieces by which the belt is guided to the rolls and regulated as to width, substantially as described.

331,326. LINK FOR CHAINS. James P. Preston, Bisbee, Ariz. Filed Sept. 5, 1885. (No model.)



Claim.—1. A link made in two longitudinal sections having arms curved and tapered in the direction of their length and provided with teeth *c* and recesses *c'*, the arms and teeth of one link-section fitting the arms and passing through the recesses of the follow section and lying flush with the side bars thereof, substantially as described.

2. A chain-link made of two longitudinal sections having arms at each end curved toward each other and tapered in the direction of their length, the outer end of each arm being pointed and provided with a tooth, *c*, and shoulder *e*, and the side bar of the link-section having a tapered seat *d d*^{2}, and a recess, *c'*, whereby when the sections are fitted together the shoulders *e* and teeth *c* fit the sockets *d d*^{2} and recess *c'* of the follow section, and the curved tapered arms fit flush with the side bars, substantially as described.

3. A link made in two longitudinal sections, each of which consists of a side bar having a curved tapering arm at each end, each arm having a shoulder, *e*, and a tooth, *c*, at its outer end, and a seat, *d*^{2}, and socket *c'* at its juncture with the side bar of the link-section, as set forth.

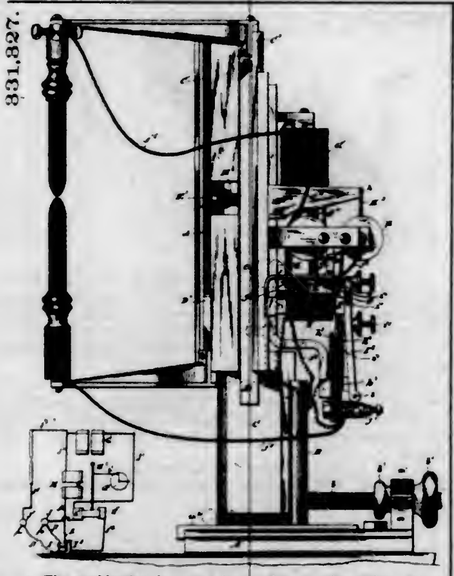
331,327. ELECTRIC LAMP. George C. Pyle, Cuyahoga Falls, Ohio, assignor to the American Electric Headlight Company of Indiana. Filed Sept. 27, 1884. (No model.)

Claim.—1. In combination with the reflector and the base upon which it is mounted, a plate attached to said base and carrying the working mechanism of an electric-arc lamp whose carbons are located within the reflector, said plate being pivotally attached to the base and provided with a clamping-screw, as described, whereby the plate can be secured at different points about the pivot and the carbons adjusted within the reflector, substantially as described.

2. In combination with the reflector and the vertically and laterally adjustable frames carrying the operating mechanism of an electric-arc lamp, the base-plate upon which said adjustable frames are supported, pivoted at one side of the reflector and held in adjusted position by a clamp, substantially as described, whereby the carbons can be swung in the arc of a circle longitudinally of the reflector.

3. The combination, in an arc-lamp, of two reciprocating carbon-carriers, an intermediate shaft connected to and operating upon said carriers to cause their simultaneous approach and recession, an oscillating support for said shaft, and an electro-magnet operating through suitable connections to tilt the operating-shaft, and thus cause a separation of the carbons, substantially as described.

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4. The combination, in an arc lamp, of two reciprocating carbon-carriers, an intermediate oscillating operating-shaft connected thereto, a movable feeding mechanism, and an electro-magnet for bringing said feeding mechanism into operative connection with said shaft, substantially as described.

5. In an arc lamp, and in combination with the reciprocating carbon-carriers and the oscillating connecting and operating shaft, a separate feeding mechanism mounted in a movable support and actuated by an electro-magnet to bring said feeding mechanism into connection with the operating-shaft and oscillate the latter, whereby the arc is formed and the feeding mechanism placed in operative connection with the carbon-carriers, substantially as described.

6. The combination, in an arc lamp, and with an oscillating shaft controlling the movements of the carbon-carriers, of an independent feeding mechanism adapted to engage said operating-shaft, and an electro-magnet located in the main line and adapted, when the current is established, to bring the feeding mechanism into operative connection with the oscillating shaft and sustain the same in position, substantially as described.

7. In an arc lamp, and in combination with an oscillating operating-shaft connected to and controlling the movements of the carbon-carriers thereof, an independent feed mechanism for actuating said operating-shaft, and an electro-magnet for bringing said feed mechanism into connection with the operating-shaft when the current is established, substantially as described.

8. In an arc lamp, and in combination with the carbon-carriers and operating-shaft thereof, an independent feeding mechanism normally disconnected from said operating-shaft, and an electro-magnet for bringing the feeding mechanism into operative connection, substantially as described.

9. In an arc lamp containing two movable carbon-carriers, and an intermediate shaft supported in an oscillating bearing and so connected to the carriers as to control their movements, and in combination with said shaft, an independent feed mechanism carrying a driver for engaging and rotating the said shaft, and an electro-magnet in the main circuit acting, when energized, to bring the said driver into engagement with the said oscillating shaft, substantially as and for the purpose set forth.

10. In an electric-arc lamp, and in combination with an independent feed mechanism and the two carbon-carriers, the intermediate shaft connected to the said carriers and mounted in a pivoted bearing, substantially as described, whereby when the lamp is not in operation the carbons are caused to approach by the action of gravity and independent of the feeding mechanism, substantially as described.

11. In an arc lamp, and in combination with the movable carbon-carriers and their operating-shaft supported in an oscillating bearing, an independent feed mechanism rotating in one direction only, and an electro-magnet operating to connect said feed mechanism and operating-shaft when the current is established through the carbons, substantially as described.

12. In an electric lamp containing two reciprocating carbon-carriers, and a connecting operating-shaft sustained in pivoted bearings and in combination with said shaft and the gear attached thereto, an independent feed mechanism provided with a pinion for engagement with the gear on the oscillating shaft, and an electro-magnet operating to raise said pinion into engagement with said gear, vibrate the said operating-shaft and hold the latter in position so long as the current is maintained, substantially as described.

13. In an arc lamp, and in combination with the mechanism connected with the carbon-carriers to actuate them, an independent feed mechanism, and mechanism for automatically connecting the feed mechanism and carbon-actuating mechanism when the lamp is in operation, substantially as described.

14. In an electric lamp wherein the feed mechanism is independent of the carbon-actuating mechanism and connected thereto automatically when the lamp is in operation, and in combination with said feed mechanism, a feed-controlling mechanism the actuating-magnet whereof is located in a branch of the main circuit, substantially as described.

15. In combination with the carbon-actuating mechanism, the independent feed mechanism, and the electro-magnet controlling the movement of the feed mechanism toward and from the carbon-actuating mechanism, a feed-controlling mechanism consisting, essentially, of an electro-magnet in a branch circuit, mechanism controlled thereby for alternately opening and closing said circuit to actuate the clutch, and an electro-magnet in a shunt-circuit for closing said branch circuit, substantially as described.

16. As a means for actuating the feeding mechanism of an arc lamp, and in combination with the clutch applied thereto, an electro-magnet in a branch circuit, a lever controlled by said electro-magnet and connected to said clutch, a circuit-breaker operating in unison with said lever and located in said branch circuit, and an electro-magnet in a shunt-circuit for closing said branch circuit, substantially as described.

17. In an arc lamp, and in combination with the carbon-actuating mechanism and the pivoted shaft thereof, the independent feeding mechanism mounted in the reciprocating frame, the electro-magnet actuating said frame and thereby applying the feed mechanism to the carbon-actuating mechanism, and a feed-controlling mechanism for operating the feed mechanism, substantially as described.

18. In an arc lamp wherein are included a carbon-actuating mechanism, an independent feeding mechanism, and a feed-controlling mechanism, an electro-magnet in the main circuit applied to the feeding mechanism to sustain the latter in operative connection with the carbon-actuating mechanism, a second electro-magnet located in a branch of the main circuit, a third electro-magnet located in a shunt-circuit and operating to close the branch circuit, and a switch mechanism located in the branch circuit and operating to alternately open and close said circuit and thereby actuate the brake mechanism, substantially as described.

19. In an electric lamp, and in combination with the carbon-feeding and arc-forming mechanism thereof, the electro-magnet located in the branch circuit, the electro-magnet in the shunt-circuit, the circuit-breaker actuated by the magnet in the shunt-circuit, the armature connected to the switch and clutch, and the switch-plates connected, respectively, to the branch and main circuits, substantially as described.

20. In an electric lamp, and in combination with the carbon-carriers and pivoted operating-shaft, the feeding-train mounted in the vertically-reciprocating frame and carrying the pinion for engagement with a pinion on the operating-shaft, the electro-magnet operating upon said frame to connect the feed mechanism and raise the operating-shaft, and a clutch actuated by suitable controlling mechanism applied to said feed mechanism, substantially as described.

21. In combination with the flanged driving-wheel G^4, applied to the feed mechanism, the grooved block g^7, pivoted to the arm g^8, attached to the lever g^4, and the spring g^9, carried by said lever and pressing upon the pivoted block g^7 to hold it in engagement with the flange of the driving-wheel G^4, substantially described.

22. In an electric lamp, and in combination with the carbon-carriers and operating-shaft thereof, an independent feed mechanism rotating intermittingly and in one direction only, and an electro-magnet controlling the application of said feed mechanism to the operating-shaft of the carbon-carriers, substantially as described.

23. In combination with the feeding devices and as a means for actuating the same, an electro-magnet in a branch of the main circuit for driving the feed mechanism, a circuit-breaker included in said circuit and actuated by the before-mentioned electro-magnet, and an electro-magnet in a shunt-circuit controlling a switch in the said branch circuit, substantially as described.

331,328. DRAWING-ROLL. NELSON L. RANDALL, Grafton, assignor to the Wright Machine Company, Worcester, Mass. Filed Mar. 31, 1884. (No model.)

Brief.—The cylinder of the roll is made of wire in a helical coil or coils, supported at the ends by suitable heads, the intervening coils being free to yield to external pressure, rendering the body of the roll elastic beneath its covering.



Claim.—1. A drawing-roll for spinning or roving machines, the body of which consists of a hollow cylinder formed of coiled wire, substantially as hereinbefore set forth.

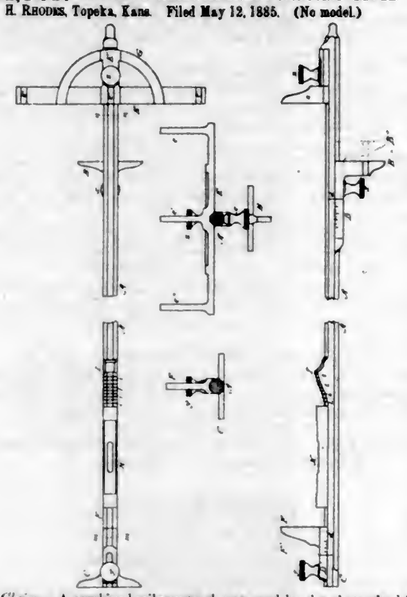
2. A drawing-roll consisting of a hollow peripheral shell or barrel formed of coiled wire supported by heads or end disks, said wire being laid in laterally-close unattached coils and externally dressed off to receive the face-covering, substantially as hereinbefore set forth.

3. A drawing-roll formed as described, with a hollow cylindrical barrel made from wire in close elastic coils or rings, with its exterior surface dressed off and longitudinally corrugated or roughened for retaining the surface-covering, substantially as set forth.

4. The combination of a flexible roll, A, consisting of a hollow cylindrical shell formed of coiled wire, with supporting-heads B, and the central arbor, C, substantially as and for the purpose set forth.

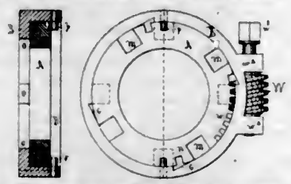
5. The drawing-roll having a hollow cylindrical body formed of yielding coils of wire arranged in the manner described, with the central part of said body of slightly greater diameter than the ends, substantially as and for the purposes set forth.

331,329. COMBINED RAILWAY-TRACK GAGE AND LEVEL. D. H. RHODES, Topeka, Kans. Filed May 12, 1885. (No model.)



Claim.—A combined railway-track gage and level and standard for testing track-gages, consisting of the rod A, curved T C, curved adjustable shoulder B, and scale D, ledge l, with steps i, level H, removable bar E, with shoulders e e' e'', and adjustable shoulder F, with scale D', all constructed, combined, and operating substantially as and for the purpose hereinbefore described.

331,330. SHAFT-FASTENING DEVICE FOR TRICYCLES. DAVID H. RICE, Lowell, Mass. Filed Sept. 19, 1885. (No model.)



Claim.—1. The combination of the inner clamping-ring, A, provided with notches *m m* and one or more notches, *n*, with the outer clamping-ring, B, provided with one or more studs, *o*, and pins *p*, substantially as described.

2. The combination of inner clamping-ring, A, provided with the series of notches *m m*, with the outer clamping-ring, B, provided with the corresponding series of cam-surfaces, *c' c'*, substantially as described.

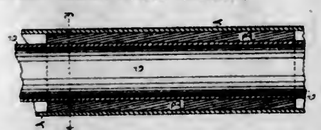
3. The combination of the inner clamping-ring, A, provided with the series of notches *m m* and one or more notches, *n*, with the outer clamping-ring provided with one or more studs, *o*, and pins *p*, and the corresponding series of cam-surfaces, *c' c'*, substantially as described.

4. The combination of the inner clamping-ring, A, provided with the series of notches *m m*, with the outer clamping-ring, B, provided with the corresponding series of cam-surfaces, *c' c'*, and mechanism adapted to revolve the one ring around the other, substantially as described.

5. The combination of the inner clamping-ring, A, provided with the series of notches *m m*, and the worm-gear *w*, with the outer clamping-ring, B, provided with the corresponding series of cam-surfaces, *c' c'*, and the worm W, substantially as described.

6. The combination of the inner clamping-ring provided with the series of notches *m m*, one or more notches, *n*, and the worm-gear *w*, with the outer clamping-ring provided with the corresponding cam-surfaces, *c' c'*, one or more studs, *o*, and pins *p*, and the worm W, substantially as described.

331,331. BRACE, SHAFT, &c., FOR VELOCIPEDES. DAVID H. RICE, Boston, Mass. Filed Oct. 19, 1885. (No model.)

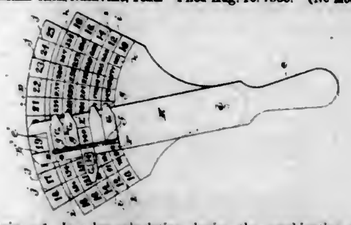


Claim.—1. As a new article of manufacture, the bar or shaft formed of an exterior tubular metallic shell and an internal core or filling of sulphur united together by heat, substantially as described.

2. The combination of the external tubular metallic shell, A, the core or filling of sulphur B, and the internal tubular shell, C, united by heat and forming a shaft or brace, substantially as described.

3. The combination of the outer tubular metallic shell, A, and an internal core or filling composed of sulphur and colophony, all united together by heat, substantially as described.

331,332. TABULAR CALCULATOR FOR MEASUREMENT OF LOGS. CHARLES RICE, Nashville, Tenn. Filed Aug. 10, 1885. (No model.)



Claim.—1. In a log-calculating device, the combination of a dial-plate having at its edges series of ordinals corresponding to the dimensions of the log, a slotted handle to which the dial-plate is pivoted, a rod secured to the handle adjacent to the slot therein, and a series of independently-pivoted flaps arranged to close the slot independently of each other to expose the figure on the dial beneath the flap, as set forth.

2. In a log-calculating device, the combination of the dial-plate having series of figures at its edges corresponding to the dimensions of the log and a scale to indicate the number of feet of lumber board measure therein, slotted handle pivoted to said dial-plates, and a series of independently-pivoted flaps having a figure to indicate one of the dimensions of the log and adapted to be thrown back to expose the figure lying beneath the said flap on the dial-plate, as set forth.

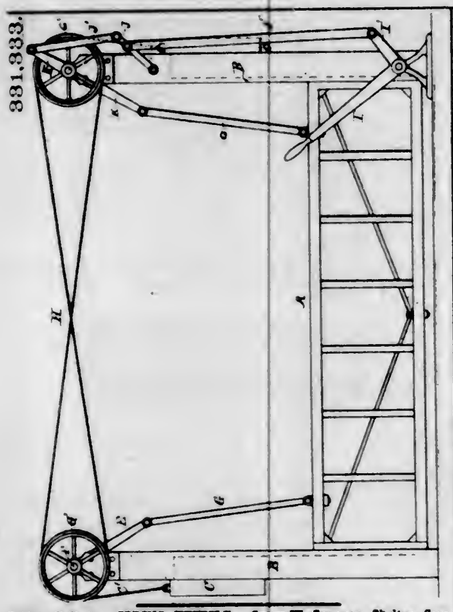
3. In a log-calculating device, the combination of a dial-plate having series of figures at its upper and side edges corresponding to the dimensions of the log and a scale to indicate the number of feet of lumber board measure therein, a handle pivoted to said dial-plate and having a longitudinal slot and an outer cut-away end, E^7, and a series of independently-pivoted flaps having a figure to indicate one of the dimensions of the log and adapted to be thrown back to expose the figure on the scale lying beneath the said flap on the dial-plate, as set forth.

331,333. RAILROAD-GATE. CORNELIUS S. RIGGIN and ALBERT E. GUNNERSON, Newark, N. J. Filed Dec. 10, 1884. (No model.)

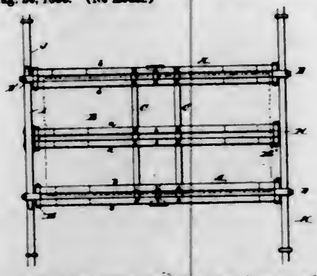
Claim.—1. The combination, with the gate A, of the oscillating arms E, mounted upon shafts above the opposite ends of the gate, the connections G from the arms to the gate, the opposite pulleys G', connected to the arms to actuate them simultaneously, the crossed ropes H, applied to the pulleys, a hand-lever, and a connection from the hand-lever to the pulley for oscillating one of the pulleys G' by the vibration of the lever, the whole arranged and operating substantially as and for the purpose set forth.

2. The combination, with the gate A, the arms E, connections G, oscillating pulleys G', and ropes H, arranged and operated as herein shown and described, of the counterbalance-weights C, suspended from the rims of the pulleys G' by ropes C', substantially as and for the purpose set forth.

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331,334. SPRING-VEHICLE. CYRUS W. SALADEE, Shelton, Conn. Filed Aug. 26, 1885. (No model.)



Claim.—1. In a road-wagon, two similar springs extended to connect the axles or bolsters, said springs being arranged longitudinally side by side on the same horizontal plane throughout their entire length, and having their opposite ends carried upon a single trunnion pin or bolt supported by the frame, substantially as described.

2. In a road-wagon, a spring-perch consisting of two similar flexion-springs arranged side by side, extended to connect the axles, and having their center portion rigidly secured in respect to the bottom of the body, substantially as described.

3. The combination, with the perch consisting of similar springs arranged side by side, of side springs and central connections between the side springs and the springs of the perch, substantially as described.

4. The combination, with a duplex-spring perch consisting of two similar parallel springs side by side, of the upper side springs, A A, and transverse connections, substantially as described.

5. The combination, with the rear axle, the suspended arm H, and rear springs, *a a*, of the duplex-spring perch B, substantially as described.

6. The yoke S, connected to the front bolster and interposed between the parallel springs *a a*, composing the spring-perch, substantially as described.

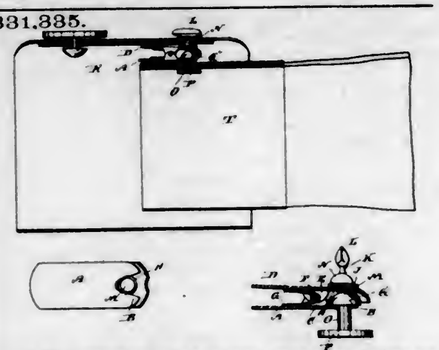
7. The eyes D D', interposed between the duplex side springs, *b b*, substantially as described.

8. The combination of the frame, side springs consisting each of a pair of springs arranged side by side, and a body extending over and secured above the inner spring of each pair, the outer springs being beyond the body, substantially as described.

331,335. CUFF-HOLDER. EMIL SMITH, Brooklyn, N. Y. Filed Mar. 25, 1885. (No model.)

Claim.—1. A cuff-holder comprising two spring-operated plates pivoted together to form grasping-jaws at one end, and one of said plates having a headed stem on its outer face at its grasping end, substantially as set forth.

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2. The combination, with two pivoted spring-operated plates constructed with grasping-jaws at one end, of a horizontally-turning stem pivoted on the outer face of one of said plates, over its grasping end, substantially as set forth.

3. The combination, with two pivoted spring-operated plates having grasping-jaws formed at one end, one grasping end being notched, of a headed stem on the outer surface of the opposite plate, near its grasping end, substantially as set forth.

4. The combination, with two plates pivoted together, of a stem held to turn on the end of one of the plates, a cross piece or head on the upper end of the stem, and a cross-piece on the lower part of the stem, and at right angles to the cross-piece on the end of the stem, substantially as herein shown and described.

5. The combination, with a spring-clamp, of the stem K, having the cross-pieces L and N at right angles to each other and formed on the stem, substantially as herein shown and described.

6. The combination, with the plate A, having a notch, B, and the plate D, pivoted together, of the stem K, having the cross-pieces L and N at right angles to each other, substantially as herein shown and described.

7. The combination, with the plate A, having a notch, B, and the plate D, pivoted to the plate A, and having its end bent, of the stem K on the plate D, and having the cross-pieces L and N at right angles to each other, substantially as herein shown and described.

331,336. LIFT-HANDLE FOR SASHES. WILLIAM F. SMITH, San Francisco, Cal. Filed Nov. 2, 1885. (No model.)



Claim.—1. The improved lifting-handle consisting of a slotted face-plate, A, and the sliding plate B, working through the slot of the face-plate, and adapted to be drawn out from the front thereof for a finger piece or handle, and to be returned again within the face-plate to present a flush surface, the back of the sliding plate having a stop to prevent it from being entirely withdrawn from the slot, substantially as shown and described.

2. The combination of the face-plate A and the sliding finger-plate or handle B, confined in but movable in and out of a slot, as *a*, in the face-plate, and the arm or member $B^{\times}$, connecting the plate B with a pivot or center of movement on the plate B at $B^{\times\times}$, substantially as described.

3. The combination of the face-plate A and sliding finger-plate B, pivoted to the back of the face-plate and working through a slot, as *a*, and the projection on the lower end of the plate, at or near the line of the pivot, working through a slot in the plate A, as a means for throwing out the plate B, substantially as described, for the purpose set forth.

331,337. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed June 12, 1885. (No model.)



Claim.—1. In a type-writer, the combination of a handle having a support at one end, a spindle at the other end, and a type-wheel mounted on the spindle and provided with a hub to be rotated by the thumb and forefinger while the handle is in the hand of the operator, substantially as specified.

2. In a type-writer, the combination of a handle with a support arranged at one end thereof to rest and move upon the surface to be printed, a rotatable type-wheel mounted on the other end of said handle, and inking mechanism, substantially as specified.

3. In a type-writer, the combination of a handle provided with a support arranged to rest and move upon the surface to be printed, a rotatable type-wheel mounted on a spindle at the end opposite to the support, inking mechanism, substantially as described, and a marking-wheel mounted at the extremity of the spindle, substantially as specified.

4. In a type-writer, the combination of a handle, a type-wheel, and an inker-arm loosely mounted thereon, an inker-operating and handle-supporting rod, and a spring, substantially as specified.

5. The combination of a handle free to move in all directions, a type-wheel having musical characters on its periphery, and provided with a hub for its rotation, inking mechanism, substantially as described, and a marking-wheel, substantially as specified.

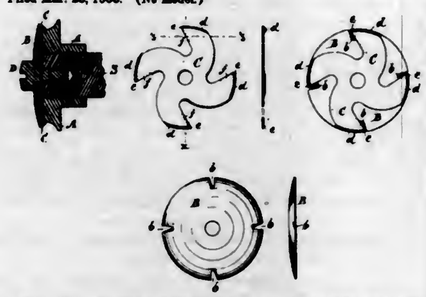
6. The combination, with a handle free to move in all directions, of a type-wheel rotatably mounted thereon, an inker-arm, and an ink-roll adjustably mounted thereon, and a rod for operating the inker-arm, substantially as specified.

7. The combination, with a base having a guide and rack-bar, of a handle having at one end a support removably arranged within the guide, a pawl, an angular spindle, a type-wheel rotatably mounted thereon, and an intermediate gear having a hub for rotating the type-wheel, substantially as specified.

8. The combination, with the handle A, free to move in all directions, of the type-wheel B, having the hub B', the inker D, inker-arm C, having the slotted arm C', the inker-operating rod E, the lug G, and the spring E^2, substantially as shown and described.

9. The combination of the handle A, type-wheel B, having hub B', inking mechanism, substantially as described, marking-wheel H, and inker H', substantially as specified.

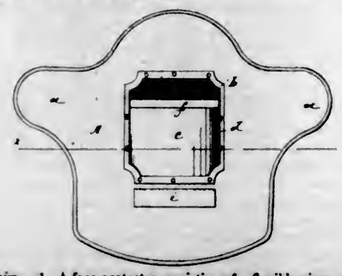
331,338. WELT-TRIMMER. CHARLES A. SQUIRE, Bradford, Mass. Filed Mar. 25, 1885. (No model.)



Claim.—1. The welt-trimmer C, having the turned-over lips *d*, beveled on the sides toward the edge-cutter A, and cutting-edges *e*, in combination with the shield B, having notches or recesses *b*, the sides of each of which are sharpened and beveled in opposite directions, substantially as shown and described.

2. In a welt-trimmer, the shield B, having radial notches or recesses *b*, the sides of each of which are sharpened and beveled in opposite directions, as shown and described.

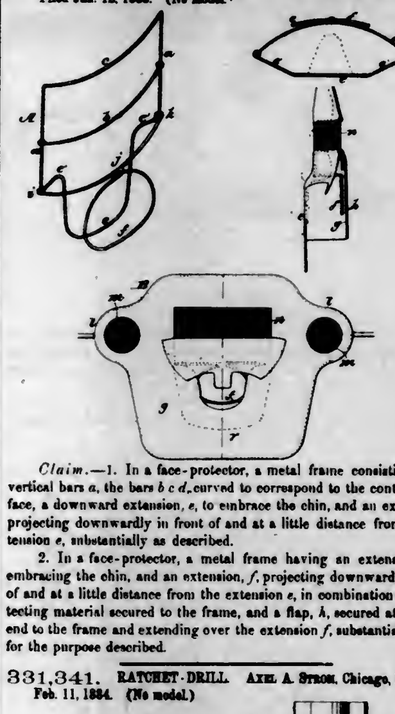
331,339. FACE-PROTECTOR. EVAN T. STOVER, Chicago, Ill., assignor to Joseph Stover and George W. Roberts, both of same place. Filed Nov. 10, 1884. (No model.)



Claim.—1. A face-protector consisting of a flexible piece, A, having extensions *a* to cover the ears, and provided with one or more openings for the eyes, and with a central opening below the line of the eyes, covered by a transparent piece, *c*, substantially as and for the purpose specified.

2. A face-protector consisting of a flexible piece, A, provided with one or more openings for the eyes, protected by wire-gauze *b*, in combination with a central transparent piece, *c*, over an opening in A, substantially as and for the purposes specified.

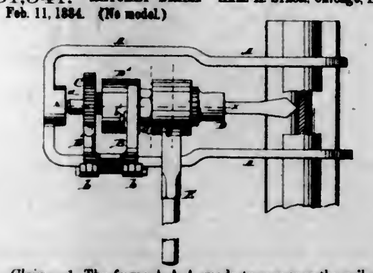
331,340. FACE-PROTECTOR. EVAN T. STOVER, Chicago, Ill., assignor to Joseph Stover and George W. Roberts, both of same place. Filed Jan. 12, 1885. (No model.)



Claim.—1. In a face-protector, a metal frame consisting of the vertical bars *a*, the bars *b c d*, curved to correspond to the contour of the face, a downward extension, *e*, to embrace the chin, and an extension, *f*, projecting downwardly in front of and at a little distance from the extension *e*, substantially as described.

2. In a face-protector, a metal frame having an extension, *e*, for embracing the chin, and an extension, *f*, projecting downwardly in front of and at a little distance from the extension *e*, in combination with protecting material secured to the frame, and a flap, *h*, secured at its upper end to the frame and extending over the extension *f*, substantially as and for the purpose described.

331,341. RATCHET-DRILL. AXEL A. STROM, Chicago, Ill. Filed Feb. 11, 1884. (No model.)



Claim.—1. The frame A A A, made to pass over the rail and catch the rail at or near the center of the web, substantially as described.

2. The ratchet *e*, with one or more dogs, *g*, spring g^2 back of each dog, and the slots *e' e'* in the plate Fig. 7, to allow the dogs to pass in, all substantially as described.

3. The combination of the dog B', lever B, and latch *b'* with the feed-wheel D', substantially as described.

4. The combination of the dog B' and lever B with the feed-drum D', substantially as described.

5. The self-feeding device consisting of a lever, B, and dog B', a feed-drum, D', cog-wheel C, and feed-screw *c*, attached to a ratchet-drill, substantially as described.

6. In combination with a ratchet-drill, the dog B', lever B, latch *b'*, and feed-wheel D'.

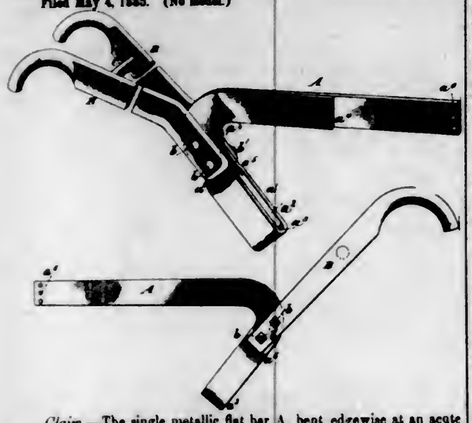
7. The combination, as described and shown, of the frame A, drill-stock D, and actuating-lever E, with the self-feeding device, substantially as described.

8. The combination, as described and shown, of the frame A, drill-stock D, and actuating-lever E, with the self-feeding device and the ratchet *e*, substantially as described.

9. The machine consisting of the frame A, boss *a*, jaws *b*, lever B, dog B', latch *b'*, cog-wheel C, feed-screw *c*, drill-stock D, feed-wheel D',

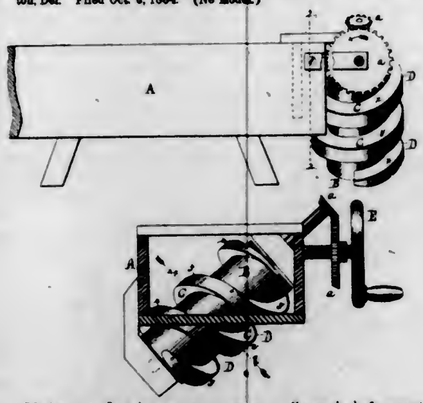
actuating-lever E, plate Fig. 7, ratchet *e*, slots *e' e'*, dogs *g g*, spring *g'*, and nut G, substantially as described.

331,342. COMPOUND PLOW-BEAM. HENRY H. SUMNER, Senoia, Ga. Filed May 4, 1885. (No model.)



Claim.—The single metallic flat bar A, bent edgewise at an acute angle to form both a plow-beam and standard, said standard being folded flatwise and shouldered to form a loop-seat for the plow-iron, as well as a seat for the handles, substantially as shown and described.

331,343. HAY OR STRAW CUTTER. THOMAS TATNALL, Wilmington, Del. Filed Oct. 6, 1884. (No model.)

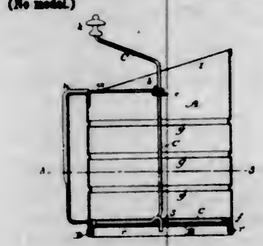


Claim.—1. In a hay or straw cutter, a diagonal shaft mounted thereon and provided with a spiral knife encircling it, in combination with the cutting-box provided with a stationary knife co-operating with said spiral knife, substantially as set forth.

2. In a hay or straw cutter, a diagonal shaft mounted thereon, provided with a spiral rib encircling it, and a band-knife secured to said rib, in combination with the cutting-box provided with a stationary knife co-operating with said spiral knife, substantially as set forth.

3. In a hay or straw cutter, a diagonal shaft mounted thereon, provided with double spiral knives encircling it, in combination with the cutting-box provided with a stationary knife co-operating with said spiral knives, substantially as set forth.

331,344. SIFTER. THEODORE F. TIBBY, Brooklyn, N. Y. Filed Sept. 30, 1884. (No model.)



Claim.—1. The combination, in a sifter, of an upright circular body, a flat sieve-bottom having a central step-bearing, a rotary agitator having a pivot at its lower end, a hand-crank at the upper end of its vertical stem, and a collar below said crank, and an upper bearing for said agitator, adapted to embrace said stem above said collar and to be opened to release the agitator, substantially as herein specified.

2. The combination, in a sifter, of an upright circular body having a sheet-metal handle on one side thereof, a sieve-bottom within the lower part of said body, an axial rotary agitator, and a wire or wires applied to said handle as stiffening-wires, and extending inwardly from the upper end thereof to support the agitator, substantially as herein specified.

3. The combination, in a sifter, of an upright circular body having a sheet-metal handle on one side thereof, a flat sieve-bottom secured within the lower part of said body, an axial rotary agitator having its stem provided with a collar, and a combined upper bearing unfastening device and pressure-regulator for the agitator, formed by a pair of wires, the inner ends of which embrace said stem above said collar, while their outer ends are held within the respective edges of said handle and serve to stiffen the latter, substantially as herein specified.

4. The combination, in a sifter, of an upright circular body, a flat sieve-bottom secured within the lower part of said body and provided with a central step-bearing, and an axial rotary agitator having a lower pivot, a series of horizontal skeleton wings of clover-leaf shape immediately above said bottom, a vertical stem, and a crank at the upper end of the latter formed of a single continuous wire, substantially as herein specified.

5. The combination, in a sifter, substantially as herein specified, of an upright circular body, a flat sieve-bottom, and an axial rotary agitator having a lower pivot, a series of horizontal skeleton wings of clover-leaf shape immediately above said bottom, and a central open space around said pivot, in which light foreign matters are collected in operation, in the manner set forth.

331,345. LINEAR OR OTHER SCALE. CHARLES A. L. TOTTEN, Garden City, N. Y. Filed Feb. 1, 1884. (No model.)

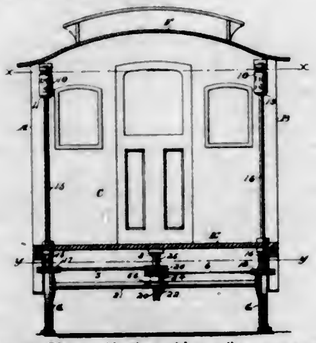


Claim.—1. A scale for linear measure the entire length of which is divided into five equal parts, each of such parts being also divided into five equal parts, as and for the purpose described.

2. A scale for draftsman's use, divided, as set forth, throughout its entire length, into fifths and twenty-fifths, and whose width is one-fifth of the length, substantially as described.

3. A linear scale for draftsman's use, bearing lines adapted to lay off the sides of rational and irrational polygons, and divided to indicate the radii of circles corresponding to squares of given dimensions, and vice versa.

331,346. TRAVELING SIGN FOR CARS. GEORGE M. TRAYLOR, Atlanta, Ga. Filed Oct. 17, 1884. (No model.)

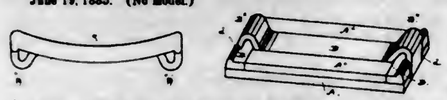


Claim.—1. The combination, with a railway-car or other vehicle and endless advertising aprons or belts mounted on pulleys and arranged to travel inside the car along its sides, of the vertical driving-shafts 15 16, mounted outside the car-body, and the duplex pulleys 26, and connections located below the platform thereof transmitting motion to said shafts from one car-axle, substantially as described.

2. The combination, with the vertical shafts 15 16, mounted outside the car-body and provided with the apron-pulleys 11 13, secured thereto, of the duplex pulleys 26, and connections located below the platform of the car or vehicle for transmitting motion from one car-axle to said vertical shafts, substantially as described.

3. The combination, with the endless advertising-aprons mounted upon pulleys and arranged to travel along the sides of a car or other vehicle, and the vertical shafts 15 16, mounted outside the car-body and provided with pulleys 17 18, of the stud 25, carrying duplex pulleys 26 and pulley 23, and the pulley 20, secured to the car-axle, and means for connecting said pulleys for driving said shafts, substantially as described.

331,347. BRAKE-SHOE. STEPHEN UREN, Sacramento, Cal. Filed June 19, 1885. (No model.)

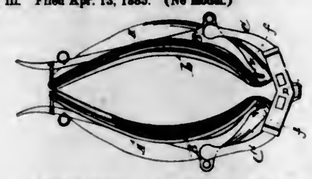


Claim.—1. A brake-shoe formed of the slab or face A, having bars or elevations along each edge of the back, and a central bar or strip with projections or loops laid in the channel between the side bars and united with the slab and side bars, substantially in the manner and for the purpose set forth.

2. A brake-shoe formed of the flat slab or face A and the side bars, A× A×, on the back of part A, with a space between them, and the center bar, B, having projections or loops, as described, laid in the space between said side bars, all of said parts being united together substantially in the manner and for the purpose set forth.

3. A brake-shoe formed of the slab or part A, having the three bars upon its back, the center bar being provided with projections or loops, and the filling-blocks C D, all constructed, arranged, and united substantially as and for the purpose set forth.

331,348. HORSE-COLLAR ATTACHMENT. GARRETT VAN WAGENEN, Chicago, Ill. Filed Apr. 13, 1885. (No model.)



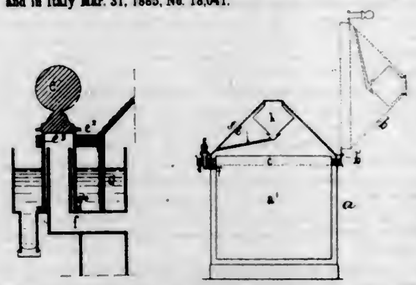
Claim.—1. A socket-piece, D, in combination with two side pieces, C C', adapted to be loosely secured at their upper ends to a pair of hames, and having their lower ends adapted to enter sockets in the piece D, substantially as and for the purpose specified.

2. A socket-piece, D, provided with hollow posts *m*, in combination with two side pieces, C C', adapted to be loosely secured at their upper ends to a pair of hames, and having their lower ends provided with holes, and adapted to enter sockets in the piece D, and a case, E, provided with a pin, *o*, and a locking device to lock the case and pin to the socket-piece, substantially as and for the purposes specified.

3. A collar made in two parts, A A', in combination with a pair of hames, the irons *d e*, and set-screw *f*, whereby the harness and collar are secured together, substantially as and for the purpose specified.

4. A collar consisting of two parts, A A', in combination with a pair of hames secured at their lower ends to the collar, two irons, C C', a socket-piece, D, and devices for locking the irons C C' to the socket-piece, substantially as and for the purposes specified.

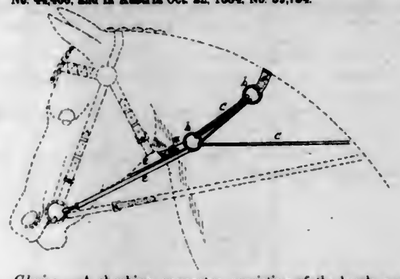
331,349. REFRIGERATOR. HERMAN VON ROH, Stuttgart, Wurtemberg, Germany. Filed Sept. 14, 1885. (No model.) Patented in Germany Feb. 5, 1884, No. 29,545; in France June 12, 1884, No. 162,705; in England Dec. 16, 1884, No. 16,555; in Belgium Jan. 9, 1885, No. 67,465 and in Italy Mar. 31, 1885, No. 18,041.



Claim.—1. In a refrigerator, the combination consisting of a receptacle provided with an ice-receiver beneath the top thereof, and having a conduit leading from its base to a water-channel formed near the upper rim of the receptacle, said water-channel forming the upper portion of an inclosed receptacle, the air-conduit leading from the interior of the inclosed receptacle to and through the base of the water-channel, the air-conduit provided with a corresponding cover supported by suitable means, and the cover of the receptacle mounted with suitable fabric adapted to absorb the water from the water-channel.

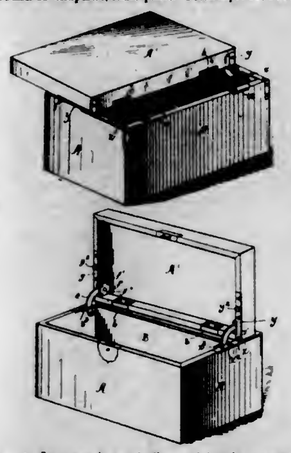
2. In a refrigerator, the combination consisting of the receptacle *a'*, cover *b*, flange *b'*, projecting ring *c²*, hollow tube *c²*, air-conduit *f*, handle *e*, projecting rim *c⁴*, and fabric *g*, substantially as shown and described.

331,350. APPARATUS FOR CHECKING AND CONTROLLING RUNAWAY HORSES. WILLIAM O. WALLEY, Altrincham, near Manchester, County of Chester, England. Filed Aug. 22, 1885. (No model.) Patented in England Sept. 6, 1884, No. 12,074; in France Oct. 7, 1884, No. 164,646; in Belgium Oct. 13, 1884, No. 63,330; in Germany Oct. 18, 1884, No. 44,468, and in Austria Oct. 22, 1884, No. 39,734.



Claim.—A checking apparatus consisting of the bands *a a* with rings *b b*, the elastic bands *c c*, attached to the bridle and rings *b*, and the cords *c c*, all arranged, combined, and operated substantially as and for the purpose set forth.

331,351. TRUNK. GEORGE H. WELLS, Boston, Mass., assignor of one-half to Frank R. Chapman, same place. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a trunk or similar article, the combination of the parts *a b*, arms *c*, band *x*, provided with the depression *x'*, hole *x²*, guard *x³*, and band *y*, provided with the pulley *y'* and projection *y²*, all suitably secured to the frame, substantially as and for the purposes set forth.

2. The device herein described for connecting the cover of a trunk to its body, consisting of the combination, with the cover and body, of the arms *c* and parts *a b*, arranged and adapted to operate substantially as and for the purposes set forth.

3. The combination of the body A, cover A', the arms *c*, one end of each arm pivoted to the body and the opposite ends pivoted to the cover, and adapted in the operation of opening to draw the back of the cover forward, and loose joint-hinges secured to the body and cover, substantially as and for the purposes set forth.

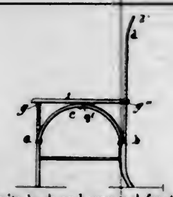
4. The combination, with the cover and body of a trunk or similar article, of the rigid arms *c*, fixedly pivoted at each end thereof, and suitable loose joint hinges or pivots adapted in such combination to hold the back of said cover from displacement when closed upon its body, substantially as specified.

331,352. CHAIR. ASA F. WHITE, Candor, N. Y., assignor of one-half to Charles O. White and Edward M. White. Filed Sept. 17, 1884. (No model.)

Claim.—1. A chair having its back and rear and front legs integral and cut from a single piece of wood.

2. A chair having its back and rear and front legs integral and cut from a single piece of wood and curved, as shown, to form side supports for its seat.

331,352.



3. A chair having its back and rear and front legs integral and cut from a single piece of wood, the rear and front legs being connected and supported by a curved piece, which also forms a side support for the seat.

4. In a chair, the combination of the back and rear and front legs formed integrally and cut from a single blank, the seat and fastening devices *a b g*, as shown and described.

5. A chair whose rear post and front leg and connecting side arch are integral and cut from a single piece of wood.

331,353. HARROW. ALBERT WILCOX, Cedar Rapids, Iowa. Filed Nov. 17, 1884. (No model.)

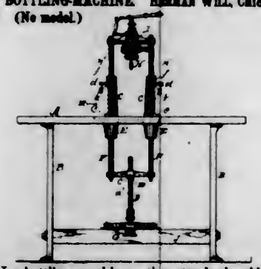


Claim.—1. A harrow-tooth having its upper end formed into a hook somewhat less than a right angle, whereby the tooth is adapted to oscillate without displacement in a rectangular socket and stop at the terminal positions by the contact, with the corresponding interior faces of the socket, of the hook at one extreme and the body of the tooth at the other, substantially as specified.

2. The combination of a harrow-tooth having a hook or angle at the upper end, a socket in or at one side of the frame adapted to allow the tooth to oscillate a short distance in the plane of its curvature and furnish at one end a stop for the body of the tooth and at the top a stop for the hook portion, respectively, and a pivot upon which the tooth is suspended by said hook, substantially as specified.

3. In combination with a tooth having a hook or angle formed at its upper end, a socket therefor made by securing to an angle-bar frame a stirrup-shaped cap by means of a single bolt adapted to serve as a pivot for the tooth, the socket so formed having an end bearing for the body of the tooth and a top bearing for the hook portion, according to the relative position of the tooth, substantially as described.

331,354. BOTTLING-MACHINE. HERMAN WILL, Chicago, Ill. Filed Oct. 12, 1885. (No model.)



Claim.—1. In bottling-machines, the standard-guides C C, cut away at their sides from *c* to *f*, and recessed out to receive the springs *b*, in combination with the sleeves S S, carrying set-screws, and placed around the rods and in the recesses below the cylindrical parts *f*, and the springs *b*, having seats in the lower portions, E, of the standards for adjusting the bottling-head, as specified.

2. The recessed standards C C, springs *b* therein, the rods F, provided with indentations *n n'*, and the sleeves S on the rods F, in combination with the cross-bars C', adjustable rod D, and treadle G, and the bottling-head H, as specified.

331,355. ENVELOPE. JAMES N. WILLIAMS, Mobile, Ala. Filed Dec. 6, 1884. (No model.)

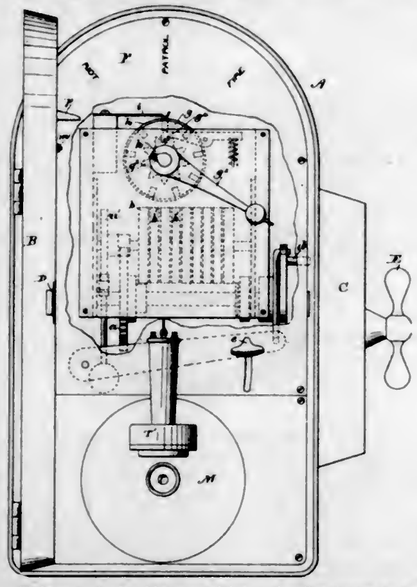


Claim.—1. An envelope in which a portion of one of the wings is folded under, forming a partition for the purpose, substantially as set forth.

2. An envelope in which a portion of one of the wings is folded under and glued to the body, forming a partition, for the purpose substantially as set forth.

3. A blank for forming an envelope, consisting, essentially, of a body and four wings, one of the wings being provided with a slit to admit of folding a portion thereof for the purpose of forming a partition, the whole constructed in the manner and for the purpose substantially as set forth.

331,356. MUNICIPAL-TELEGRAPH APPARATUS. JOHN C. WILSON, Boston, Mass., assignor to the Municipal Signal Company, Portsmouth, N. H. Filed Apr. 28, 1884. (No model.)



Claim.—1. A signal-box containing a signaling device for transmitting a box-signal characterizing the box or station, and a multiple-signal apparatus for transmitting any desired one of a number of special signals, combined with a citizen's door provided with a latch and local alarm mechanism operated from the outside of the box, the said door affording access to the box-signal only, substantially as described.

2. A signal-box containing a clock-work or motor having two independent starting devices accessible from different parts of the box, combined with independent doors, one affording access to each of the said starting devices, one of the said doors requiring the co-operation of a key or equivalent to effect its opening, and the other door being provided with a latch and alarm mechanism and knob or handle for operating the same, substantially as described.

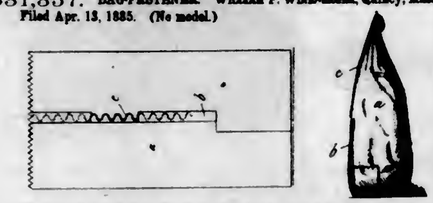
3. In a signal-transmitter, a clock-work or motor and series of break-wheels rotated thereby, combined with a series of co-operating contact-springs and a circuit-selecting device, the said wheels being all connected with the main-line circuit at one side of the box and one of the said springs and the circuit-selecting device being connected with the main line at the other side of the box, one of the said break-wheels being always in circuit, and any desired one of the others being placed in circuit by the selecting device, substantially as described.

4. A clock-work or motor and series of break-wheels or contact-surfaces adapted to be moved simultaneously by the said motor and a series of co-operating contact-springs, combined with a circuit-selecting device for a portion of the said springs and wheels, and a circuit-controlling device which when operated removes the springs and wheels affected by the said circuit-selecting device from the circuit, substantially as described.

5. A signal-transmitting apparatus comprising a series of signaling devices, each consisting of a notched or irregular surface and co-operating contact-piece, and a motor for moving the one relatively to the other, one of the said contact-surfaces and springs being always in circuit for producing an unchangeable main signal, combined with a selecting device, by which any desired one of the remaining devices may be placed in condition for producing a variable or special signal, and a circuit-controlling device for the latter, or special signaling devices by which the entire series may be removed from circuit, placing the apparatus in condition to transmit the main or unchangeable signal only, substantially as described.

6. A series of simultaneously-moving break-wheels and co-operating contact-springs, combined with a circuit-selecting drum, a pointer connected therewith, and a dial co-operating with the said pointer having a series of signals corresponding with those produced by the different break-wheels, substantially as described.

331,357. BAG-FASTENER. WILLIAM F. WHITTEMORE, Quincy, Mass. Filed Apr. 13, 1885. (No model.)



Claim.—1. A device for fastening bags, consisting of a strip of wire inclosed by or between layers of paper at the side of the bag in the direction of its length, substantially as described.

2. A paper bag provided at its side with a corrugated fastening-wire connected therewith, substantially as described, and adapted to be bent together with the paper when folding it to close the open end of the bag, substantially as described.

331,358. HARROW ATTACHMENT FOR PLOWS. VALENTINE WOOD, Peru, Ind. Filed Feb. 23, 1885. (No model.)



Claim.—1. The combination of the plow provided with a rack, a toothed bar journaled to the plow and provided with a crank, a lever arranged to engage the rack, and a rod connecting said lever with the crank, substantially as set forth.

2. The combination, in a plow attachment, of a rack, a lever arranged to engage such rack, a bearing-frame, a toothed bar journaled in said frame and provided with a crank, a rod secured at one end to the lever and projected at its other end through the crank, and a spring engaging said crank, whereby the toothed bar is held normally in operative position, substantially as set forth.

3. The combination, with a plow, of a laterally-adjustable frame, vertically adjustably secured to the stock of the plow-beam, a bar journaled in said frame and provided with teeth on its outer end and a crank on its inner end, a rack and lever, a pitman connecting the lever and the crank of the tooth-bar, and a spring coiled around the pitman and bearing on the crank, the parts being arranged and operating substantially as shown and described.

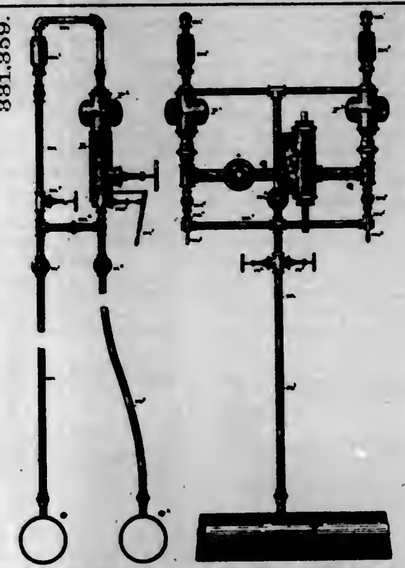
331,359. AIR-ENGINE. JAMES A. WOODBURY, Winchester, and JOSHUA MERRILL, GEORGE PATTEN, and EDWARD F. WOODBURY, Boston, Mass. Filed Apr. 13, 1885. (No model.)

Claim.—1. The method of starting air-engines in which the same body of air is used over and over without exhausting, which consists in alternately admitting air contained in a reservoir under pressure to opposite sides of the working-piston, as set forth.

2. In combination with the displacer and working-cylinders of an air-engine and their pistons, a reservoir constructed and arranged to contain air under pressure, pipes leading therefrom to and communicating with said cylinders upon opposite sides of said pistons, and a pair of valves in said pipes constructed and arranged to be operated by hand-levers to admit air under pressure first to one side of said pistons and then to the other, substantially as described.

3. In combination with the displacer and working-cylinders of an air-engine and their pistons, two reservoirs constructed and arranged to contain air under pressure, pipes connecting said reservoirs, valves in said connecting-pipes for opening or closing communication between them, pipes connecting each of said reservoirs with the interiors of said cylinders, and a pair of valves provided with hand-levers and arranged to be operated to control the admission of the air from one of said reservoirs alternately to opposite sides of said pistons, substantially as described.

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331,360. PISTON FOR AIR-PUMPS. JAMES A. WOODBURY, Winchester, and JOSHUA MERRILL, GEORGE PATTEN, and EDWARD F. WOODBURY, Boston, Mass. Filed Apr. 13, 1885. (No model.)



Claim.—1. A piston composed of the head *a*, provided with the ears *b b*, the cylinder *d*, provided with the segmental flanges *e e*, the screw-studs *i i*, the clamping-nuts *k k*, the metal ring *h*, and the cupped leather packing-rings *f* and *g*, all united and secured together, substantially as described.

2. The combination, in a pump-piston, of the head *a*, provided with the ears *b b*, the wrist-pin *c*, mounted in said ears, the cylinder *d*, provided with the segmental flanges *e e*, the metal ring *h*, the two

cupped leather packing-rings *f* and *g*, the set-screws or studs *i i*, and the clamping-nuts *k k*, all arranged and adapted to operate substantially as and for the purposes described.

331,361. AIR-ENGINE. JAMES A. WOODBURY, Winchester, and JOSHUA MERRILL, GEORGE PATTEN, and EDWARD F. WOODBURY, Boston, Mass. Filed Apr. 13, 1885. (No model.)

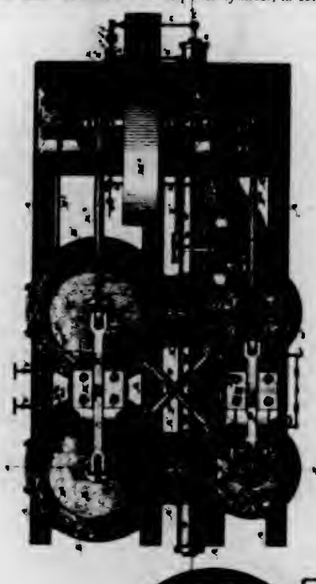
Claim.—1. The combination of the furnace-casings B and C, connected by an inclined pipe or passage opening from the casing B at its upper end or opposite the vertical wall of the heater and communicating with the interior of the casing C at or near the center of its length, substantially as described.

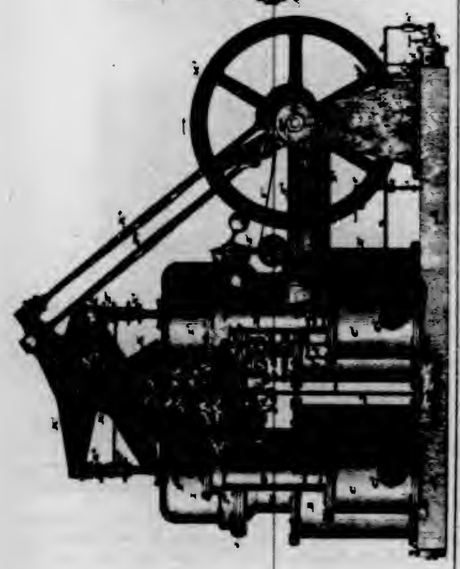
2. The combination of the regenerator-cylinder, the upper and lower sections, J and J', of the displacer-cylinder, the flange J^3, projecting outward from the section J', the packing-ring *e*, surrounding said section J' above the flange J^3, and the springs *e'*, substantially as described.

3. The displacer-piston L L', provided with the curved passage L^2, constructed and arranged substantially as and for the purposes described.

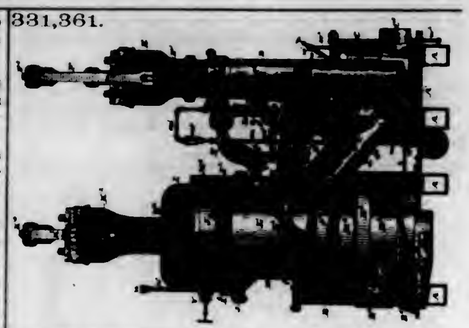
4. The working-cylinder heater D^2, provided with the semicircular groove or passage *h*, substantially as described.

5. As a means of securing the regenerator-plates in position, a series of tubular screw-studs set in the displacer-cylinder, in combination





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with a series of pins having thin flat heads and tapering shanks or bodies applied thereto, substantially as and for the purposes described.

6. The combination, in an air-engine, of a reservoir arranged and adapted to receive and hold air under pressure, a pump for forcing air into said reservoir, a regulating valve or cock placed in the supply-pipe to said pump, a cylinder having communication with said reservoir, a plunger-piston fitted to said cylinder and adapted to be raised by the pressure of air admitted to said cylinder, a rod connecting said piston with the regulating valve or cock, and a series of removable weights carried by said piston, all arranged and adapted to operate substantially as and for the purposes described.

7. In combination with the cylinders of an air-engine and a by-pass pipe connecting the chambers upon the opposite sides of the pistons working therein, the speed-regulating valve R, having a vertically-moving spindle, the lever T, connected to said spindle by a pin-and-slot connection, and a governor connected to the opposite end of said lever, substantially as described.

8. In combination with the two displacer-cylinders of an air-engine and a by-pass pipe connecting the same, the valve-casing R, the valve R^3, the spindle S, the lever T, and governor S', all constructed, arranged, and adapted to operate substantially as and for the purposes described.

9. In combination with the two displacer-cylinders of an air-engine and a by-pass pipe connecting their interiors, the valve-casing R, the valve R^3, mounted upon the spindle S, the slotted stirrup S^3, provided with the threaded stem *r*, the sleeve S^2, provided with the ears *r' r'*, and the flange or collar r^2, the pin r^3, mounted in the ears *r' r'* and passing through slots *s s* in the stirrup S^3, and the hand-nut U, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

331,362. GRAPPLING OR HOLDING DEVICE. MATTHEW T. WYATT, Quebec, assignor of one-half to William Fullerton Ramsay, Montreal, Canada. Filed Sept. 15, 1884. (No model.) Patented in Canada Feb. 23, 1885, No. 21,132.



Claim.—The combination, with a stick or handle carrying a ring, D, of a sliding block carrying spring-wires passing through said ring, and having hooked ends, and a catch for retaining the block in position upon the handle, substantially as described.

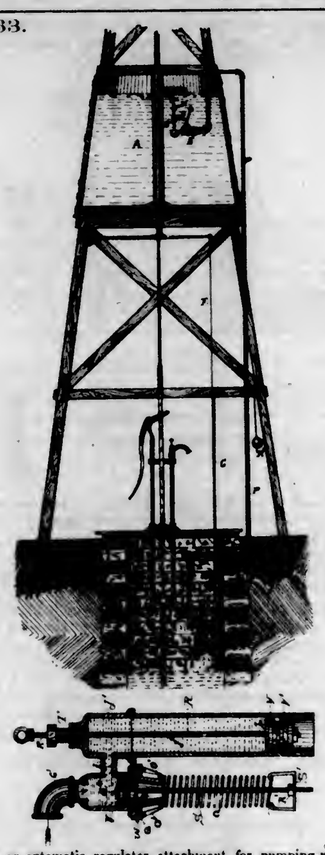
331,363. REGULATOR FOR PUMPING-WINDMILLS. H. RAYMOND ADAMS, Marseilles, Ill. Filed Sept. 19, 1885. (No model.)

Claim.—1. The regulator attachment for pumping-windmills shown and described, consisting of the combination of the cylinders J' J'', having the plunger L and piston R, cylinder G^2, having the piston H, depending stem S, neck Q, of smaller diameter than said cylinder, coil-spring O, having the stem S and hooks O', the said cylinders being connected by the web having the port I, the pipe P, having the valve E at its discharge end, the float B, having the depending spring M, screw-threaded rod K, provided with nuts C N, and weight K', the wire regulator F, and the cord G, having the weight H', substantially as set forth.

2. In combination with a windmill, the float B, the valve E, the cylinder G^2, having the spring-plunger H, the cylinder J' J'', having the plunger L and piston R, and connected with cylinder G^2 by a web having port I, the regulator-wire F and cord G, having the weight H', and the discharge-pipe P, all constructed and arranged as and for the purpose set forth.

3. In the regulator attachment for windmills shown and described, the combination of the float B, having the screw-threaded rod K, nuts C and N, and weight K', with the valve E, consisting of the pipe or core Z, having ports *d*, case E', having the ports *a* and sleeved on pipe Z, and weighted lever D, having the perforated arm D', and pipe P, as and for the purpose set forth.

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4. In an automatic regulator attachment for pumping-windmills, the combination of the cylinders G^2 and J' J'', connected by a port, I, plunger H, having the stem S and spring O, plunger L, having the piston R, and neck Q, forming a seat for plunger H, all arranged substantially as and for the purpose set forth.

5. In a regulator attachment for pumping-windmills, and in combination with the discharge-pipe P thereof, the valve E, arranged on its discharging end in a tank and connected with and operated by a float in said tank, and the cylinders G^2 J' J'', connected with said pipe between its ends, said cylinders having, respectively, the plungers H and L, said plunger L being attached through the medium of its piston R to the regulating-wire of the mill, and the pump of the mill connected to said pipe P at its feed end, so that the increased pressure developed in said pipe by means of the continued action of the pump after the closing of said valve by said float will operate said piston R and regulating-wire F and govern the sails of the mill, substantially as and for the purpose set forth.

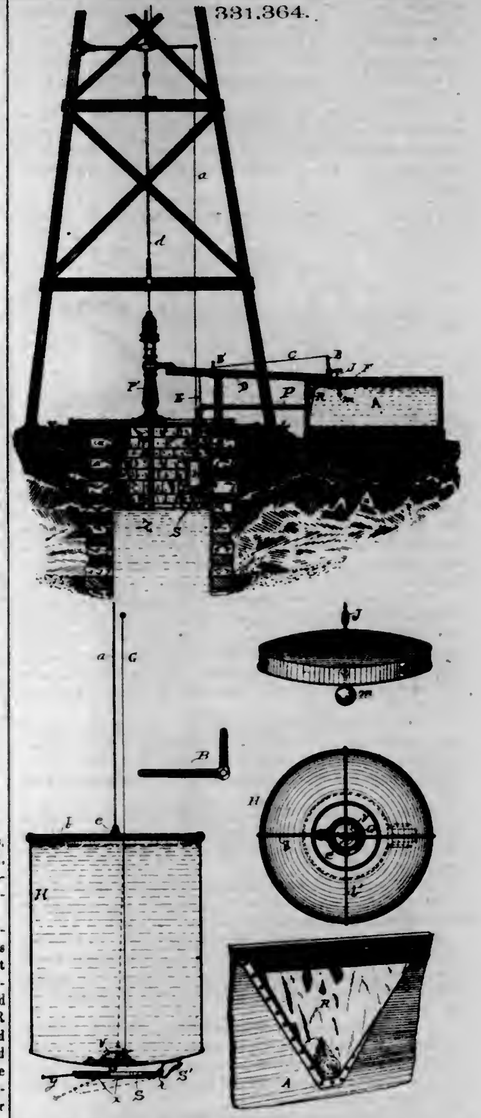
6. In a regulator attachment for pumping-windmills, the valve E, consisting of the core Z, having the ports *d*, the case E', sleeved on said core or pipe, and having the ports *a* and arranged to partially rotate thereon to bring said ports *a* and *d* in and out of line with each other, the weighted lever D, pivoted to said case, and having the arm D', and a float arranged to operate said valve, substantially as and for the purpose set forth.

331,364. WINDMILL-REGULATOR. H. RAYMOND ADAMS, Marseilles, Ill. Filed Sept. 19, 1885. (No model.)

Claim.—1. The regulator attachment for pumping-windmills shown and described, consisting of the bucket H, suspended from the regulating-wire *a* in such position as to catch the overspill from the trough W through the medium of pipe P, and having the catch-pan S hinged to its bottom and provided with drip-holes *x*, and also having the valve *v* in its bottom and provided with the arm *y*, rod G, for connecting said valve with bell-crank B' through the medium of chain E, bell-cranks B and B', connected by means of the link C, float F, connected with bell-crank B by means of chain J, tank A, having the funnel R, and discharge-pipe P, substantially as set forth.

2. In the regulator attachment for pumping-windmills shown and

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described, the bucket H, suspended from the regulating-wire *a* in such position as to catch the overspill from the trough W, and having the valve *v* in its bottom provided with the integral arm *y*, and connected to the float F through the medium of rod G, chains E and J, and bell-cranks B and B', and having the catch-pan S, provided with drip-holes and hinged to the bottom of said bucket, as and for the purpose set forth.

3. In a regulator attachment for pumping-windmills, a bucket for catching the overspill from a water-tank, arranged to hang suspended from the mechanism for turning the sails of the mill to or from the wind, and having a valve in the bottom connected to a catch-pan below, for assisting to quickly throw wide open and for holding open said valve, as described, and connected to a float in the tank for opening said valve, in combination with a tank-discharge having a wide overspilling-surface, adapted to catch and conduct the overspill from the tank to said bucket, substantially as and for the purpose set forth.

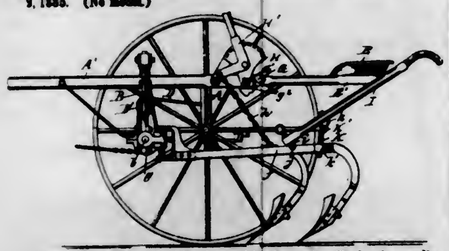
4. In a regulator attachment for pumping-windmills, in combination with the tank A and discharge-pipe P, the funnel R, secured to one of the inner walls of the tank in such manner that said tank forms one wall or side of said funnel, and arranged over said pipe to discharge therein, substantially as and for the purpose set forth.

5. In the regulator attachment described and shown for pumping-

windmills, the bucket H, having the weighted valve *v*, and having a perforated catch-pan, S, hinged to its bottom under said valve, having its side opposite its hinge supported by an integral arm, *y*, of said valve, and adapted to hold said valve open through the medium of said arm by the downward pressure of escaping water from said bucket, as and for the purpose set forth.

6. In the regulator attachment for pumping-windmills shown and described, the bucket H, having the valve *v*, provided with the integral arm *y*, in combination with the catch-pan S, provided with drip-holes, and hinged to the bottom of said bucket, substantially as and for the purpose set forth.

331,365. CULTIVATOR. John Q. Adams, Marseilles, Ill. Filed Feb 9, 1885. (No model.)



Claim.—1. The combination, with the yoke B, having spline-groove *b'*, of the two-part bracket C, having the adjacent faces of its parts grooved, as described, to fit upon the said yoke B, one of said parts being provided with the projection *c'*, to enter the groove *b'*, and the supporting-spring attached to the said bracket, substantially as and for the purposes specified.

2. The combination, with the yoke B, having splined groove *b'*, of the bracket C, consisting of two parts connected together by bolts *c*, said parts being adapted to fit upon the said yoke, and one of them being provided with a projection, *c'*, to enter the groove *b'*, and the other provided with perforated lugs C^2 and an end stop or projection, c^2, to receive and support the spring D, substantially as and for the purposes specified.

3. The combination, with the seat-frame E', having projections e^2, of the branching pole A', provided with brackets G, to receive the said projections, and the axle A, provided with sockets F, to receive the forward ends of the seat-frame, substantially as and for the purposes specified.

4. The combination, with the branching pole A' and the axle A, secured thereto, of the socket F, provided with a lateral flange, *f*, secured between the branching pole and axle, substantially as and for the purposes specified.

5. The combination, with the branching pole A', of the bracket G, provided with the inclined series of notches *g* and the guard-flange *g'*, substantially as and for the purposes specified.

6. The combination, with the branching pole A', of the bracket G, provided with the inclined series of notches *g* and guard-flange *g'*, and having flanges g^2 arranged at right angles to each other, and fitting against the end of the branching pole, substantially as and for the purpose specified.

7. The combination, with the cultivator-beam J, of the handle I, mounted on the pivot *i*, which is itself mounted on a pivot, *j*, arranged at right angles thereto in the cultivator-beam, and an adjustable support on the said handle, arranged in the rear of the said pivots, substantially as and for the purposes specified.

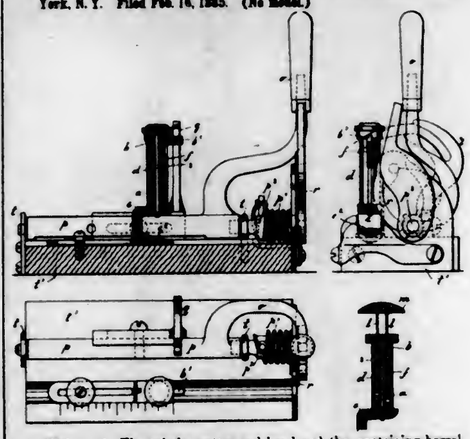
8. The combination, with the cultivator-beam, of the handle I, connected thereto by a universal joint, whereby the said handle may be moved to any desired position by a single direct movement, and a vertically-adjustable support for the said handle, secured to the cultivator-beam, and upon which said handle is laterally adjustable, substantially as and for the purposes specified.

9. The combination, with the cultivator-beam J, of the handle I, connected thereto by a universal joint, and the U-shaped bar or staple K, embracing the said beam and adjustably clamped thereto, the handle I being provided with a hook-bolt, K', by means of which it is adjustably clamped upon the transverse upper portion of the bar K, substantially as and for the purposes specified.

10. The combination, with the handle-support K, embracing the cultivator-beam, of the clamping-plates *k'*, arranged on each side of the said beam, and a bolt, k^2, connecting the said clamping-plates and passing through the beam, substantially as and for the purposes specified.

11. The combination, with the yoke B and the cultivator-beams loosely coupled thereto, of the brackets C, provided with perforated lugs C^2 and stops c^2, and the springs D, having their lower ends pivoted in said lugs and resting on said stops, and having their free rear ends suitably connected to the cultivator-beams, substantially as and for the purposes specified.

331,366. COMBINED CIGAR CUTTER AND PERFORATOR. Albert Apuell, East Orange, N. J., assignor of one-half to Isaac Teichman, New York, N. Y. Filed Feb. 16, 1885. (No model.)

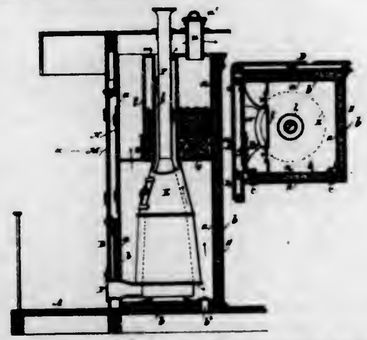


Claim.—1. The tubular cutter and head and the containing-barrel and spring, in combination with the stationary discharger and the bed upon which the cigar is to be laid, the pivoted cam-shaped arm *q* and lever to actuate the same, and the arm *b'*, substantially as set forth.

2. The shaft *p*, cutter *r*, and handle *o*, and the cam-shaped arm *q*, projecting from the shaft *p*, in combination with the tubular cutter and head, a discharger within the tubular cutter, a support in which the cutter slides, and a bed upon which the cigar is laid while being acted upon by the tubular cutter *f* and the cutter *r*, substantially as set forth.

3. The combination, with the tubular cutter and the support for the same, the discharger, and the rest upon which the cigar is laid, of the pivoted open cam-shaped arm *q*, a lever to actuate the same, and a projecting arm, *b'*, at the side of the cutter, and against which the cam-shaped arm *q* acts to move the same, substantially as specified.

331,367. CAR-HEATER. William C. Baker, New York, N. Y. Filed Feb. 9, 1885. (No model.)



Claim.—1. The combination, with the railway-car and heater, of the permanent partitions H K, having a metal lining and non-conducting material between the lining and the wood-work, and a door at an opening through the end of the car, adjacent to the opening in the heater, to give access from outside the car for the insertion of fuel, substantially as set forth.

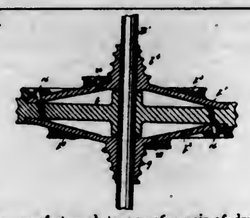
2. The combination, with the railway-car and heater and the partitions lined with sheet metal and inclosing the heater, of an iron door in the sheet-metal lining, and a door in the end of the car, and a door at the ash-pan of the heater, the said doors opening out upon the end platform of said car, substantially as set forth.

3. In combination with the railway-car and heater and the partitions and sheet-metal lining inclosing such heater, the platform *q* and inclosure forming a coal-receptacle in the upper part of the compartment, substantially as set forth.

331,368. MULE FOR SPINNING. Ebbe A. Baldwin, North Andover, Mass., assignor to the Davis & Furber Machine Company, same place. Filed Mar. 7, 1884. (No model.)

Brief.—The drawing-out scroll is composed of a central disk and two independent side plates, each provided with a detachable wing, whereby the speed of the carriage may be changed. The drawing-out

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and check ropes are fast each to one of a pair of drums loose upon a shaft of the carriage, provided with interlocking clutch-teeth, and capable of being rotated by a worm-gear, whereby either of the ropes may be taken up and the other let out to change the relative positions of both drawing-out and drawing-in scrolls with relation to the carriage.

Claim.—1. A drawing-out scroll composed, essentially, of a central disk and two independent side plates attached thereto, and provided each with a detachable wing, to operate substantially as described.

2. The central disk grooved at its periphery for the reception of a rope and provided with shoulders 22, and the two independent plates attached thereto and provided with grooved tips, combined with the detachable wings, to operate substantially as described.

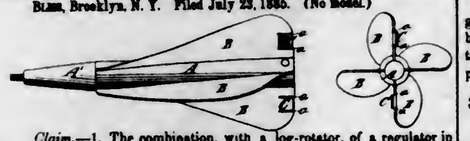
3. The drawing-out scroll and shaft to support it, and the ropes E^2 E^3, attached to the said scroll, and the carriage and the drums E E', each provided with clutch-teeth, and the drum E with a worm-gear, combined with a worm and its operating-shaft, to rotate the said drums and simultaneously take up one and let out the other of the said ropes, substantially as described.

4. The carriage, the drums E E' and shaft to support them, and the drawing-out scroll and its shaft, and the ropes E^2 E^3, connected with the drawing-out scroll and with the said drums, combined with mechanism, substantially as described, to rotate the said drums to simultaneously wind and unwind the said ropes, as and for the purposes set forth.

5. The drawing-in-scroll shaft, its support, its attached scrolls C' and D, and the carriage, combined with the drawing-in ropes *i* and the drawing-in check-rope n^3, and with the drums *p'* *p'* and *n*, to receive the outer ends of the said ropes *i* and n^3, and with mechanism, substantially as described, to simultaneously take up one and let out the other of the said ropes, to change the relative positions of the said scrolls and carriage, to alter the speed at which the latter arrives in at the head-stock, as described.

6. The carriage, the shaft H, attached drum *n*, having a worm-gear, 40, the clutch-plates *p*, and clutching-drums *p'*, combined with the drawing-in-scroll shaft C, the drawing-in scroll C', the check-scroll D, the ropes *i* and n^3, and with mechanism, substantially as described, to rotate the said drum D and shaft H, to operate substantially as described.

331,369. ROTATOR FOR SHIPS' LOGS. John Bliss and George H. Bliss, Brooklyn, N. Y. Filed July 23, 1885. (No model.)



Claim.—1. The combination, with a log-rotator, of a regulator in connection with one or more of the blades, capable of adjustment without shifting the blades, whereby the speed of rotation may be increased or diminished, substantially as herein described.

2. The combination, with the log-rotator, of a regulator or regulators applied to one or more of the blades, and capable of adjustment without shifting the blades, for the purpose of increasing or diminishing the speed of rotation, substantially as herein described.

3. The combination, with a log-rotator, of supplemental wings or fins on one or more of the blades, to be deflected or bent relatively to the blade or blades in order to increase or diminish the speed of rotation of the rotator, substantially as herein described.

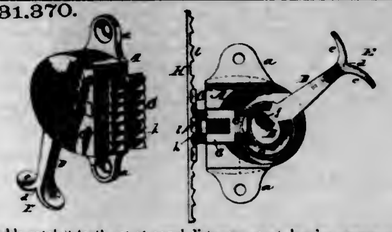
4. The log-rotator herein described, having one or more of its blades slitted to form a supplemental wing or fin, C, which may be bent or deflected relatively to the blade, substantially as herein described.

331,370. SASH-FASTENER. Martin Bourke, Youngstown, Ohio. Filed Mar. 2, 1885. (No model.)

Claim.—1. A sash-fastener consisting of a suitable casing, a sliding bolt working in guides therein and slotted in the direction of its movement, a square pin passing through the case and the slot in the bolt, to limit its movement and prevent oscillatory motion thereof, and a grooved cam engaging the bolt and terminating in a lever having a fish-tail thumb-piece, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

2. In a sash-fastener, the combination, with a bar adapted for attachment to a window-frame, and provided with two vertical rows of

331,370.



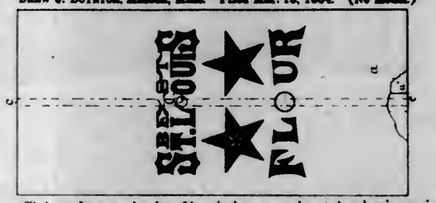
double ratchet-teeth set at equal distances apart, leaving square recesses between them, each tooth being reversely inclined, of a bolt provided with similarly-formed teeth and spaces operated by a pivoted grooved cam engaging with the flanged end of the bolt, substantially as and for the purpose set forth.

331,371. COMBINATION-TOOL. Martin Bourke, Youngstown, Ohio. Filed June 25, 1885. (No model.)



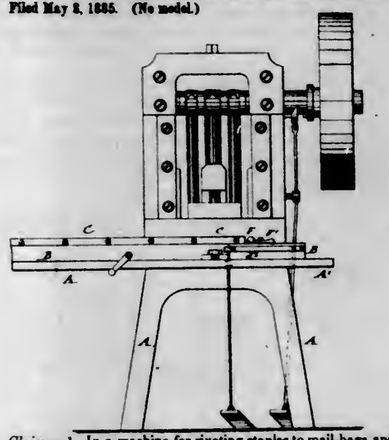
Claim.—A combination-tool consisting of two pivoted levers terminating at one end in cutting-blades, one of which has a perforation through it to receive the end of wire while being cut, said levers having loops for the fingers, and formed with serrations immediately in the rear of its pivotal connection, to serve as a pipe-wrench and nut-cracker, substantially as and for the purpose set forth.

331,372. TYPE-FORM FOR PRINTING PAPER-BAG TUBES. Andrew J. Boynton, Malden, Mass. Filed Mar. 18, 1884. (No model.)



Claim.—In a mechanism for printing paper-bag tubes having a single wet paste-line, a type-form the body of which is adapted to make bold, heavy printing on each side of said paste-line, the central part of the form being made with a very light face to make impression over the paste-line, substantially as and for the purpose specified.

331,373. MACHINE FOR RIVETING STAPLES TO MAIL-BAGS. Robert Brass, Brooklyn, N. Y., assignor to John Boyle, same place. Filed May 8, 1885. (No model.)



Claim.—1. In a machine for riveting staples to mail-bags and other articles, the combination of a slide-piece having fixed jaws, laterally-mova-

bie jaws connected by side straps, and mechanism, substantially as described, for locking the jaws to the staples, substantially as set forth.

2. In a machine for riveting staples to mail-bags and other articles, the combination of a slide-piece having fixed transverse jaws with recessed faces, laterally-movable jaws having raised portions, side straps connecting the movable jaws, a hand-lever for operating the same, and a cam-lever for locking the hand-lever and holding the staples rigidly in position in the jaws, substantially as set forth.

3. In a machine for riveting staples to mail-bags and other articles, the combination of a fixed guideway, a staple-holding clamp having a bottom rack, a crank-shaft having a pinion meshing with said rack, and a spring-pawl that engages side recesses of the clamp, and suitable riveting mechanism, substantially as set forth.

4. In a machine for riveting staples to mail-bags and other articles, the combination of a fixed guideway, a staple-holding clamp having fixed and movable jaws with recessed and raised faces corresponding to the shape of the staples, means for moving the clamp forward in the guideway, and a locking device for intermittently holding it in position for the action of the riveting die, substantially as set forth.

331,374. **RUBBER HOSE.** ABRAHAM BAUMGER, Jr., Chicago, Ill. Filed June 5, 1885. (No model.)



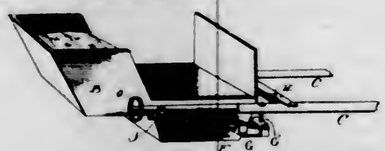
Claim.—1. The hose consisting of two separately-vulcanized tubes, one an inside fabric tube, A, having only a rubber lining, *a*, and the other an outside fabric tube, B, having only an outside rubber covering, *b*, the latter drawn over the former after vulcanization, substantially as specified.

2. The hose consisting of two tubes which have been separately vulcanized, one an inside fabric tube, A, having rubber lining *a* only upon its inside, and the other an outside fabric tube, B, having rubber covering *b* only upon its outside, said fabrics A B, between said rubber lining *a b*, being impregnated with a preservative before they are united, substantially as specified.

3. The combination, with inside tube, A *a*, of outside tube, B *b*, separately vulcanized, and couplings C C at the ends of the hose-section to bind the said tubes together and exclude dirt and moisture from between them, the outside fabric surface of the tube A being in juxtaposition with the inside fabric surface of the tube B, and the rubber linings *a b* being only upon the inside of tube A and the outside of tube B, substantially as specified.

4. The hose consisting of two separately-vulcanized tubes, one an inside fabric tube having only an inside rubber lining, and the other an outside fabric tube having only an outside rubber covering, the latter drawn over the former, said fabrics being impregnated with preservatives before they are united, and closed or joined together at their ends to prevent the escape of the preservatives or the admission of moisture between said fabric tubes, substantially as specified.

331,375. **TWO-WHEELED VEHICLE.** JAMES P. CALMAN, Clinton, Iowa. Filed July 15, 1885. (No model.)

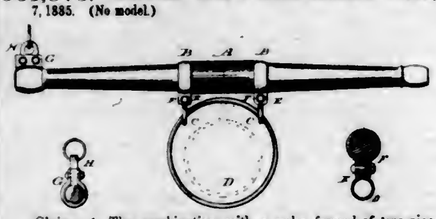


Claim.—1. The combination of thills C, fixed coupling-irons G, with bearings *a*, coupling-irons G', mounted on irons G and provided with vertical bolts *c*, having pivotal connection with the thills, and springs F, fastened to irons G and provided with hangers J, connected with the thills, substantially as and for the purposes described.

2. The combination of thills C, connected by a pivoted cross-bar, H, fixed irons G, with bearings *a*, coupling-irons G', journaled in said bearings and provided with vertical bolts *c*, which pass through the thills, springs F, fastened to irons G and provided with hangers J, and fixed rings O, substantially as and for the purposes described.

3. In combination with thill-couplings G G', provided with springs F, the running-gear provided with springs V, supported by bars T, and cross-bar R, journaled in boxes mounted on springs V and supporting the rear of the vehicle-body, substantially as set forth and described.

331,376. **NECK-YOKE.** DAVID W. CLARKE, Tidioute, Pa. Filed Apr. 7, 1885. (No model.)

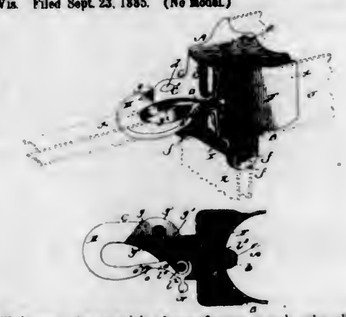


Claim.—1. The combination, with a yoke formed of two pieces, of a clamp-tube embracing and securely holding in a fixed position said two pieces, a ring embraced between the jaws of said clamp, and a bolt passing through said clamp and ring, substantially as described.

2. The combination, with a yoke, of a clamp-tube surrounding said yoke, a ring having an open joint, with both ends substantially close together and held between both jaws of the clamp, a ring inserted in said open-jointed ring, and a bolt binding directly on said clamp-tube and passing through it and part of the open ring, substantially as described.

3. The combination, with a yoke, of a clamp-tube surrounding said yoke, a closed ring, an open ring having both its ends held between both jaws of the clamp, and fastening means acting directly on the clamp and passing through part of the open ring, substantially as described.

331,377. **NECK-YOKE ADJUSTER.** JOHN R. DALTON, Burkhardt, Wis. Filed Sept. 23, 1885. (No model.)



Claim.—1. As an article of manufacture, a neck-yoke adjuster comprising a curved support, F, having lateral studs *f*, a roller journaled therein, and a hook arranged in rear of and transversely across the support B, and provided with a spring-actuated tongue, substantially as described.

2. A neck-yoke adjuster comprising a breast-strap support, F, and a snap-hook, H, cast in one piece, a friction-roller journaled in bearings formed with the support F, a spring-actuated tongue to said snap-hook, and a casting, C, bolted to said support F and the snap-hook, substantially as described.

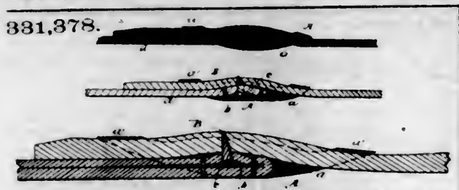
3. A neck-yoke adjuster comprising a curved breast-strap support, F, having a rear wall, lugs *f*, and a snap-hook, H, formed integral therewith, a casting, C, bolted to the support F and snap-hook on one of the side faces thereof, and a spring-actuated tongue pivoted to said casting C and the snap-hook shank, substantially as described.

4. As an article of manufacture, a neck-yoke adjuster comprising a curved support, F, having a rear wall, F' G, and lugs *f*, a roller journaled in said lugs, a hook formed with the walls F' G F, and having recessed portions in its vertical face, a casting, C, bolted to opposite side edges of the support F and hook-shank, a tongue pivoted between said casting C and hook, and a coiled spring seated in a recess therein, substantially as described.

331,378. **BUCKLE.** ROBERT M. DILLARD, Geneva, Nebr. Filed June 8, 1885. (No model.)

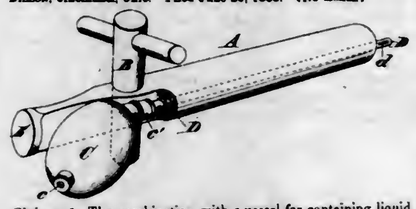
Claim.—In a harness-buckle substantially such as herein described, a frame, A, having end bars, *a'*, and a plate, *b*, the latter having a bridge

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or elevation provided with a rigid tongue inclined away from the line of draft, substantially as and for the purpose specified.

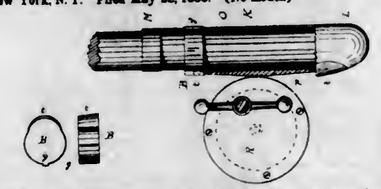
331,379. **FLUID-DISCHARGE AND VENT FAUCET.** WILLIAM S. F. DILLON, Cincinnati, Ohio. Filed June 29, 1885. (No model.)



Claim.—1. The combination, with a vessel for containing liquid, of a faucet having an opening for the passage of liquid, and suitable means for opening and closing the same, a second opening through said faucet, leading from the exterior to the interior of said vessel, the inner orifice of said second opening being below the level of the liquid in the vessel, a tube projecting into the outer end of said second opening, and an elastic bulb secured to the outer end of said tube, said bulb being provided with suitable valves, substantially as and for the purpose set forth.

2. The combination, with a vessel for containing liquid, of a faucet having an opening for the passage of liquid, and suitable means for opening and closing the same, said faucet being provided with a flattened recessed portion near its outer end, and also with a second opening leading from said recessed portion to the inner end of the faucet, a tube extending into said second opening, and an elastic bulb secured to the outer end of said tube, and provided with suitable valves, and adapted to be compressed against said flattened recessed portion of said faucet, substantially as and for the purpose set forth.

331,380. **REEL-HOLDER AND FASTENING FOR FISHING-RODS.** FREDERICK D. DIVINE, Utica, assignor of one-half to Walter D. Edmonds, New York, N. Y. Filed May 22, 1885. (No model.)



Claim.—1. In combination with a fishing-rod or reel-plate holder, a rigid rib or projection extending longitudinally in the direction of the rod's length, a ring grooved on one side to fit said rib and adapted to slide up and down said rib, and the section of rod or holder on which the rib is raised, and having on the other side a raised lip or bulge adapted to overlap and press upon one end of the reel-plate, and a socket on the other end of the holder formed by a similar raised lip or bulge, substantially as and for the purposes set forth.

2. The combination, with a fishing-rod or reel-plate holder, of a raised rib, K, slide-ring B, having a groove, *g*, and a socket, *t*, a corresponding socket, *t*, at the other end of the holder, and a reel-plate, P, having a reel attached, all for the purpose of holding the reel in position, substantially as described.

3. The combination, with a fishing-rod or reel-plate holder, of the raised rib K, the slide-ring B, having a groove, *g*, the overlapping lips *t t*, and a reel-plate, P, and reel R, all for the purpose of holding the reel in position, substantially as described.

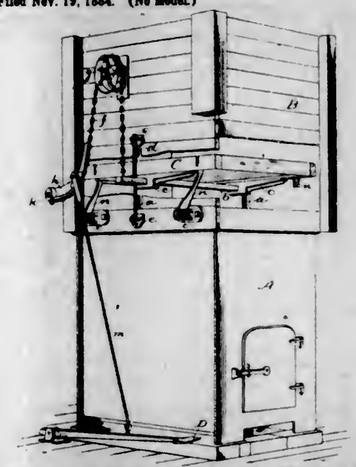
331,381. **LAMP-BURNER.** EDWIN A. DOBBINS, Middletown, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with the wick-tube having one side near the top removed, of an extinguisher adapted to pass into the said tube, a frame forming part of the extinguisher surrounding the tube, and pivots for the frame and extinguisher, substantially as specified.

2. The combination, with the wick-tube and serrated wick-raising wheel, of a swinging extinguisher and a stop-plate suspended from such extinguisher and passing in between the teeth of the wick-raiser and the side of the wick-tube when the lamp is extinguished, substantially as set forth.

331,382. **FRUIT-DRIER.** ALBERT J. DODGE, Peterborough, N. H. Filed Nov. 19, 1884. (No model.)



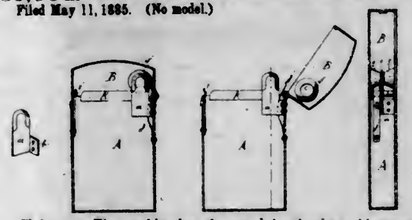
Claim.—1. The combination of the receiver B, the shaft or bar *b*, extending through said receiver and having tray-receiving brackets, the shaft *k*, extending from side to side of the receiver and set substantially parallel to the bar *b*, the cams *h*, secured to the shaft *k*, and having each a face adapted to press against a chain, the chains *f*, each having one end secured to one end of the bar *b*, while their opposite ends are secured, respectively, to the cams *h*, the pulleys *g*, over which the chains run, the treadle D, and the rod *m*, which connects it with one of the cams *h*, substantially as described, and for the purpose specified.

2. The combination of a suitable frame, the shaft or bar *b*, adapted to be raised and lowered within said frame, the cam *h*, mounted on a suitable axis, the chain *f*, having one end attached to said cam, while the opposite end is secured to the bar *b*, the pulley over which said chain runs, and means for operating said cam for forcing one edge against the chain in deflecting it and thereby raising the bar *b*, substantially as described, and for the purpose specified.

331,383. **MIXED PAINT.** HERBERT C. DORR, San Francisco, Cal., assignor to the Dorr Paint Company, same place. Filed Mar. 31, 1884. (Specimens.)

Claim.—The herein-described composition of matter to be used as a ship's paint, consisting of the oil of tar, gum-shellac, calomel, and gypsum, in about the proportions specified.

331,384. **CIGAR-CUTTER.** WILLIAM M. DUCKER, New York, N. Y. Filed May 11, 1885. (No model.)



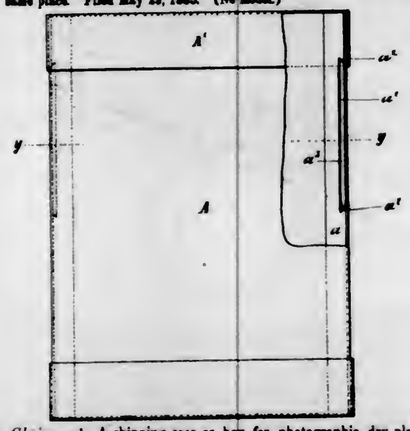
Claim.—1. The combination of a match-box having a hinged cover provided with a hole for the insertion of the tip of a cigar, and a transverse receiver for catching the severed tips, located in the cover between the hinge and the end of the box opposite the hinge, of a cutter secured to the body of the box, all arranged and operating as and for the purpose specified.

2. The combination of a match-box having a hinged cover provided with a hole for the insertion of a tip of a cigar, and a transverse receiver for catching the severed tips, and a discharge-hole, which registers therewith, located in the cover between the hinge and the end of

the box opposite the hinge, and a cutter secured to the body of the box, all arranged and operating as and for the purpose specified.

3. A match-box provided with a cutting-blade parallel to the side of the box and rigidly attached thereto in the angle formed by the box and its lid when the box is open, in combination with a hinged lid having a passage, *c*, transversely through the same, a hole for a cigar-tip on one side and a discharging-tube on the opposite side of the lid, and a slot, *e*, coincident with the cutting-blade between such hole and discharging-tube, the lid having the passage *c*, adapted to be moved across the cutting-blade by the operation of closing the lid, substantially as and for the purposes set forth.

331,385. **SHIPPING-CASE FOR PHOTOGRAPHIC DRY-PLATES.** JOHN H. DURHAM, Chicago, Ill., assignor of one-half to Lawrence C. Moore, same place. Filed May 29, 1885. (No model.)

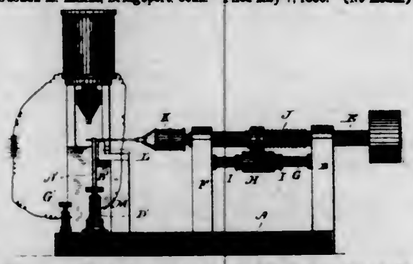


Claim.—1. A shipping case or box for photographic dry-plates provided with a series of adjustable separators permanently supported within the box, substantially as and for the purposes specified.

2. The combination, with the box or case, of back pieces attached to its edges, and separator-strips adjustably mounted on the back pieces, substantially as and for the purposes specified.

3. The combination, with the box A, of the back pieces, *a'*, undercut at their ends, and the separating-strips *a*, having recesses a^2 to receive the back pieces, *a'*, upon which the strips are adjustably mounted, substantially as and for the purposes specified.

331,386. **METHOD OF STRAIGHTENING NEEDLES, WIRE, &c.** GEORGE M. RAMER, Bridgeport, Conn. Filed May 7, 1885. (No model.)



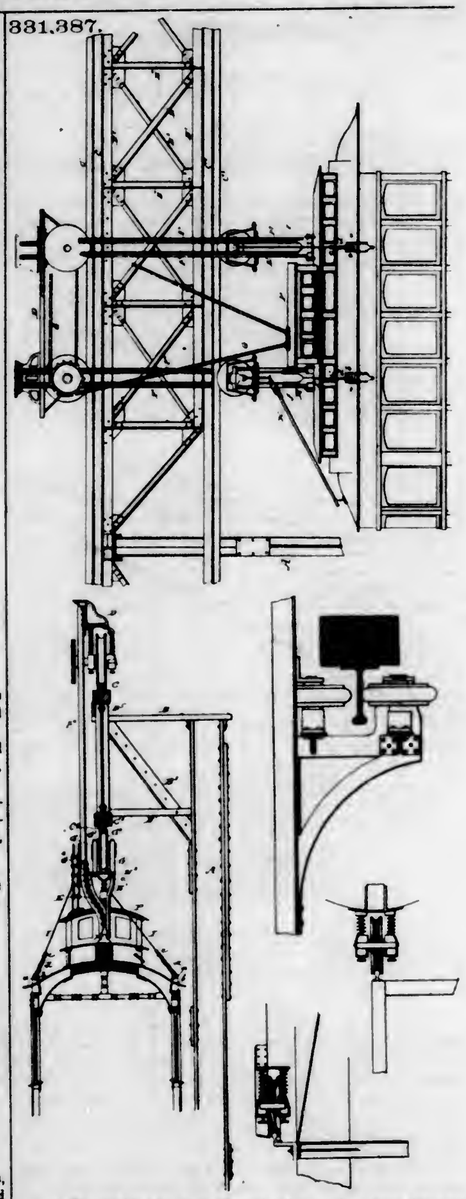
Claim.—1. The method herein described of straightening needles, wire, &c., the same consisting in revolving the object to be straightened and passing it across the path of the straightening device, and causing the eccentricities of said object to operate the straightening device.

2. The method herein described of straightening needles, wire, &c., consisting in revolving the object to be straightened and passing it across the path of an electrically-controlled straightening device, and causing the eccentricities of said object to operate the electrical controlling mechanism.

331,387. **SUSPENSION-RAILWAY AND CAR-HANGER.** JOHN A. ENOS, Peabody, assignor of two-thirds to Matthew H. Robinson, Quincy, and Orlando A. Foster, Salem, Mass. Filed Apr. 24, 1885. (No model.)

Claim.—1. The combination of a single elevated rail and a truck with a set of wheels arranged in the same plane and mounted thereon, a curved hanger depending therefrom, a car fastened to the hanger immediately beneath the vertical line of the supporting-truck wheels, and a subjacent track and guide-wheel arranged as shown and described, to prevent the swaying of the car about its upper supporting-rail.

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2. The combination of an elevated rail or track, a supporting-truck mounted thereon and provided with a curved hanger-bar, a car fastened to the hanger in the vertical line of the truck-wheels, and a lower rail and guide-wheel arranged in the vertical line of the upper rail, the said guide-wheel being connected to the hanger, substantially as shown and described.

3. The combination, with the post A, the horizontal bars B B', and diagonal brace B^3, of the vertical trestle-work B^2 B^4 B^5, the upper and lower stringers, C and C^2, and the upper and lower rails, C' and C^3, substantially as and for the purpose described.

4. The combination, with the upper and lower rails, C' C^3, of the hanger having a supporting-truck at its upper end, a car attached to its lower end, an adjustable guide-wheel bearing against the lower rail, and means, substantially as described, for increasing the pressure of this guide-wheel against its rail to increase the friction and tractive power of the trucks for climbing grades, as described.

5. The combination of the upper and lower tracks, the hanger F, having a supporting-truck at its upper end and a car attached to its lower end, the curved bar F and frame-work E' E', plates E^3 with yokes G' and posts G^3, the guided and vertical adjustable journal-boxes G^2, springs H, and the shaft G^3 and pulley G^4, substantially as shown and described.

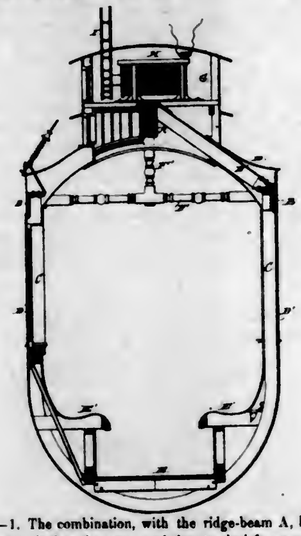
6. The combination, with the hanger F and the guide-rail C^3, of the guide-wheel G^4, having its shaft extended beyond its journal-boxes and provided with springs G^5, as and for the purpose described.

7. The combination, with the hanger-frame E E', of the lever K, rod J, having arms *e e*, and the guide-wheel G^4, having its journal-boxes attached to the arms *e e*, as and for the purpose described.

8. The combination, with the car and its hanger having a point of articulation at *x*, of the guy-rods I, having spring-seated or elastic connections with the car at their lower ends.

9. The combination, with a single track-rail, of a suspended passenger-car, a curved hanger-bar, a truck attached to the upper end of the hanger-bar, and having a set of spring-seated wheels arranged in the same plane and suspended on said rail, and means for moving thereon, substantially as described.

331,388. **RAILWAY-CAR.** JOHN A. ENOS, Peabody, assignor of two-thirds to Matthew H. Robinson, Quincy, and Orlando A. Foster, Salem, Mass. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination, with the ridge-beam A, having suspension-irons attached to the same, and the attached frame-work, of the cross-braces F and F', connecting the ridge-beam and the side frame of the upper portion of the car, substantially as and for the purpose described.

2. The combination of the ridge-beam A with suspension-irons, rafters B', and cross-braces B^3, the side irons, B, U-shaped ribs C, and the braces F F', substantially as shown and described.

3. A suspended car having U-shaped ribs, of metal, and a rounded bottom, substantially as shown.

4. The combination, with a car having a round bottom with U-shaped ribs C, of the step-irons J, bolted thereto, and the platform K, supported therein, substantially as shown and described.

5. The combination, with the hanger and the car having a hinged connection, of the safety-chains R, connecting the hanger and the car, as described.

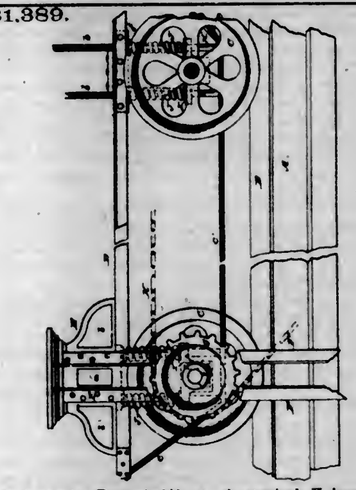
331,389. **TRUCK FOR ELEVATED CARS.** JOHN A. ENOS, Peabody, assignor of two-thirds to Matthew H. Robinson, Quincy, and Orlando A. Foster, Salem, Mass. Filed Apr. 24, 1885. (No model.)

Claim.—1. A hanger-truck for a suspended car, consisting of the combination of two wheels, C, the horizontal bars D D, brace-bars *c c'*, brackets E, bolted and extending across both the bars D D, journal-bearings for the wheels, and hanger-bars F, depending from the brackets, substantially as and for the purpose described.

2. A hanger-truck for a suspended car, consisting of the combination of two wheels, C, the horizontal bars D D, brace-bars *c c'*, brackets E, extending across and bolted to both bars D D, the hanger-bars F, attached thereto, the standards H, extending from bars D to *c'*, the journal-plates I, guided on said bars, and the springs J, wound around the standards H and disposed between the journal-plate and the upper bars, D, substantially as and for the purpose described.

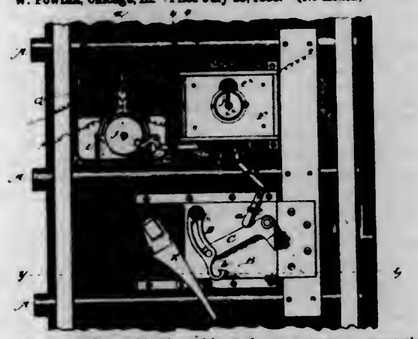
3. A hanger-truck consisting of the combination of two wheels, C, horizontal bars D D and *c c'*, brackets E, extending across both bars D

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D, the hanger-bar F, attached thereto, the standards H, journal-plate I, springs J, and gear-wheel G, with chain K, substantially as shown, and for the purpose described.

331,390. **DEVICE FOR OPERATING SAFE BOLT-WORK.** ELBERT W. FOWLER, Chicago, Ill. Filed July 23, 1885. (No model.)



Claim.—1. In combination with an electro-magnetic permutation-engine located in a safe or vault, and a detent to control the automatic unlocking mechanism of the safe or vault, and to be operated from the outside thereof, electrical connections, as described, of a dial outside of the safe or vault, whereby the instructed operator may know and control the operation of the electro-magnetic permutation-engine, substantially as specified.

2. The combination, with an electro-magnetic permutation-engine having notched tumblers rotated step by step by an electric motor to bring the notches of said tumblers into combination to admit the fence into the notches, of an indicator-dial-gear mechanism to rotate the dial while such tumblers are rotating, to indicate their position, substantially as specified.

3. A dial located outside of a safe or vault, having means for adjusting it to work in harmony with and to indicate the operation of an electro-magnetic permutation-engine attachment to a device for automatically operating the bolt-work of a safe or vault, substantially as specified.

4. A dial, in combination with its accompanying mechanism for automatically opening and closing an electro-magnetic circuit located outside of a safe or vault, and electrical connections, as described, to operate an electro-magnetic permutation-engine located in a safe or vault, and a detent to control the unlocking mechanism, substantially as specified.

5. An automatic switch and electric connections, as described, to shift the electric current for the purpose of rotating the tumblers in an electro-magnetic permutation-engine in opposite directions, in combination with an adjustable dial to indicate the movements of the tumblers, substantially as specified.

6. Notched tumblers driven by a pin in a driving-tumbler rotated step by step by electro-magnets, in combination with an adjustable dial and an indicator to show whether the driving-tumbler is running in harmony with the dial, substantially as specified.

7. An indicator located outside of a safe or vault and electric con-

nections with mechanism inside of the safe, in combination with toothed wheels, pallets, tumblers, a fence in an electro-magnetic permutation-engine for use within a safe or vault, and a detent to control the automatic unlocking mechanism, substantially as specified.

8. One tumbler driven by another in an electro-magnetic permutation-engine, and a detent for controlling the bolt-moving power, in combination with a dial or index, with electric connections to guide the unlocking of a safe or vault, substantially as specified.

9. An electro-magnetic permutation-engine having an adjustable tumbler, in combination with a dial and electric circuits and a fence, substantially as specified.

10. In combination with a device for automatically retracting the bolts of a safe or vault door, a cushion to protect the parts of said device from the strain of the operating-power, and an electro-magnetic permutation-engine, and the detent controlling the release of the operating-power, substantially as specified.

11. The combination, with the bolt-work of a safe or vault door, of a device for automatically retracting the bolts, an electro-magnetic permutation-engine for releasing the retracting-power, a dial electrically connected therewith, and a compound lever located between the retracting-power and the electro-magnetic permutation-engine, for the purpose of reducing the power required to be exerted by the electro-magnetic permutation-engine to release the retracting-power, substantially as specified.

12. In combination with the bolt-work of a safe or vault door, a detent for holding an automatic retracting-power in check, an electro-magnetic permutation-engine capable of being set by one instructed to release said detent, a cushion to protect the casting and retracting mechanism from injury by the action of the retracting-power when released, and a dogging-piece, F, which will ordinarily be inoperative, but which, in case the retracting-power be prematurely released by violence applied to the door, will then be brought into such position that the said power will be inoperative to retract the bolts, substantially as specified.

13. In combination with the bolt-work of a safe or vault door, a device for automatically casting the bolts, a stop to hold the bolts retracted after the casting-power has been set preparatory to closing the door, which stop will release said casting-power automatically when the door is closed, a device for automatically retracting the bolts, and an electric mechanism capable of being set to release said retracting-power, substantially as specified.

14. In combination with the bolt-work of a safe or vault door, and power for automatically operating the bolts, a time mechanism, and an electro-magnetic permutation-engine, substantially as set forth, whereby either or both of them may operate the restraining-detent, and thereby release said power, substantially as specified.

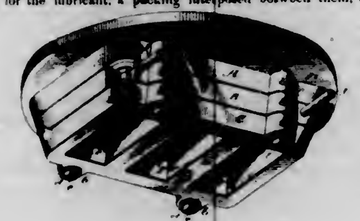
15. In combination with the bolt-work of a safe or vault, an electro-magnetic permutation-engine, and a time-mechanism circuit-controller, by means of which the electric circuit can be automatically opened or closed at a predetermined time, whereby a person setting the time mechanism can determine the time during which the electro-magnetic permutation-engine may or may not be used to bring into action the power of a device to automatically retract the bolts, substantially as specified.

16. An electro-magnetic permutation-engine, in combination with a time mechanism arranged to connect or disconnect the operating electric circuit, and a supplemental device for connecting or disconnecting the electric circuit by hand to enable the electro-magnetic permutation-engine to be used without the time mechanism, to bring into use the power of a device to automatically retract the bolts of a safe or vault door, substantially as specified.

17. An electro-magnetic permutation-engine, in combination with a switching mechanism so arranged that the electric circuit can be opened or closed by hand to enable it to be brought into use to release the power of a device for automatically retracting the bolts of a safe or vault door, and a time mechanism that may be used to automatically restore the hand switching mechanism to its normal position, substantially as specified.

331,391. BRICK OR TILE DIE. JESSE L. FRIEND, Perrysburg, Ind. Filed June 30, 1885. (No model.)

Claim.—1. A die for brick, tile, or other clay-working machines, formed in sections detachably connected together, each section having a groove for the lubricant, a packing interposed between them, and an

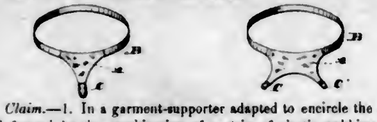




offset or shoulder formed by the increased width of one of the contacting faces of the die-sections, substantially as and for the purpose specified.

2. A die for brick, tile, or other clay-working machines, consisting of two or more detachable sections, each having a central groove and a series of transverse channels communicating therewith, packing interposed between the sections, and offsets or shoulders formed by the increased width of one of the contacting faces of the sections, substantially as and for the purpose specified.

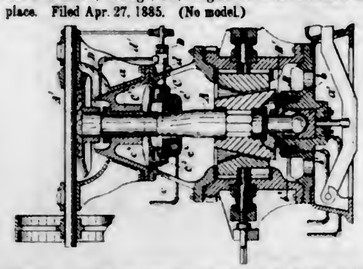
331,392. GARMENT-SUPPORTER. WARREN H. FROST, Cleveland, Ohio. Filed Jan. 21, 1885. (No model.)



Claim.—1. In a garment-supporter adapted to encircle the limb, a band formed by the combination of a strip of elastic webbing and a piece of cloth, said cloth arranged substantially as described, and having one or more garment-clasps attached thereto, substantially as shown and described.

2. In a garment-supporter adapted to encircle the limb, the combination of the piece of cloth A, one or more clasps, C, and the band B, with a device for separating one end of the band B from the piece A.

331,393. DUST-GUARD FOR PULVERIZING-MACHINES, &c. RYERSON D. GATES, Chicago, Ill., assignor to Alma Florence Gates, same place. Filed Apr. 27, 1885. (No model.)

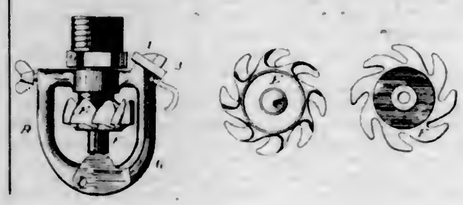


Claim.—1. The combination, with the shaft A, of the double-grooved cup C, surrounding the same below one of its bearings and having its lower groove filled with water or other suitable liquid, and a shield or guard, C', attached to the said shaft and having its lower edge arranged in the said lower groove below the level of the top of the liquid therein, and provided with a flange, c', extending over the upper groove, substantially as and for the purposes specified.

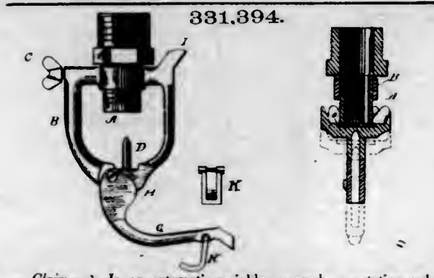
2. The combination, with the upper bearing of the pulverizing-shaft A, of a cup arranged below the said bearing to catch the oil which may drip therefrom and a pump connected with the said cup and with the oil-receptacle above the bearing to return the drip-oil to the said receptacle, substantially as and for the purposes specified.

3. The combination, with the upper bearing of the pulverizing-shaft, of a receptacle arranged below the said bearing to catch the drip therefrom and a water-seal arranged between the said receptacle and the lower portion of the machine to prevent any access of dust to the bearing, or of oil to the material operated upon, substantially as and for the purposes specified.

331,394. AUTOMATIC SPRINKLER FOR FIRE-EXTINGUISHERS. ALBION M. GRANGER, Medford, Mass. Filed Dec. 9, 1884. (No model.)



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Claim.—1. In an automatic sprinkler, a nozzle, a rotating valve-distributer in front of the nozzle, a socketed spindle on said valve, a fixed spindle which enters the socket of said rotating valve, but supports it only in depressed position, and a lever bearing on the valve-hub to hold it in closed position, the combination being and operating substantially as described.

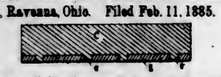
2. In an automatic sprinkler, the combination of a nozzle, an encircling-frame thereon having a fixed spindle in front of and extending toward the nozzle-opening, a rotating valve-distributer having a socketed hub mounted on the fixed spindle, and a lever pivoted in the frame in the line of the valve-spindle.

3. A rotating distributer-valve having spiral arms rising gradually from the plane of the face of the valve and from their highest points descending toward their periphery, said distributer having a hub containing a closed socket on its reverse face, substantially as shown.

4. In an automatic sprinkler, the combination of the nozzle, the closing-valve, and a non-fusible temporary valve-retaining piece, substantially as described.

5. In an automatic sprinkler, the combination of the nozzle, the valve, the valve-retaining mechanism, and a fusible piece operating to retain the valve closed, of a non-fusible piece attached permanently to the valve-closing mechanism, the fusible and non-fusible parts locking to the same seat, so that the non-fusible catch must be displaced in applying the fusible piece, as set forth.

331,395. GLASS TILE AND PROCESS OF MAKING THE SAME. JONATHAN HALEY, Ravenna, Ohio. Filed Feb. 11, 1885. (Specimens.)

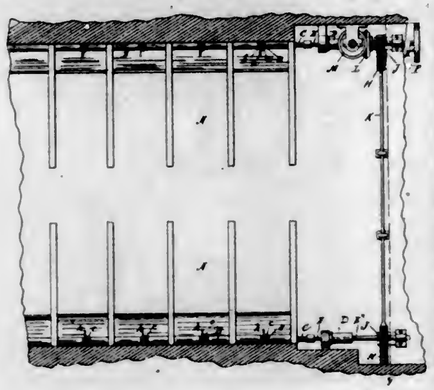


Claim.—1. As an article of manufacture, a glass tile formed with two parts or layers of different-colored glass united by pressure while heated, one of the parts being formed with ornamental indented figures which are filled by the other part, and the side of the tile being ground off to exhibit the ornamental configuration, substantially as described.

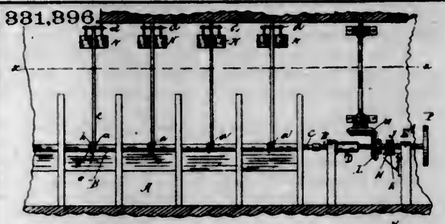
2. The process of making glass tiles, consisting of the following steps: first, pressing molten glass into the form of a thin plate with indented ornamental figures; second, pressing molten glass of a different color on said plate and into said figures, and thereby forming a plate or tile of the two united parts; and, third, grinding off the bottom of the first-mentioned plate to expose the glass of different color composing the ornamental figure, substantially as described.

331,396. STOCK-RELEASING DEVICE. MICHAEL W. HANLEY, Chicago, Ill. Filed June 19, 1884. (No model.)

Claim.—1. In a stock-liberator, a sleeve or tube, B, running across the head or front of a row of stalls, and provided with small openings *a*, in combination with the sliding bar C, provided with fingers *b*, for se-



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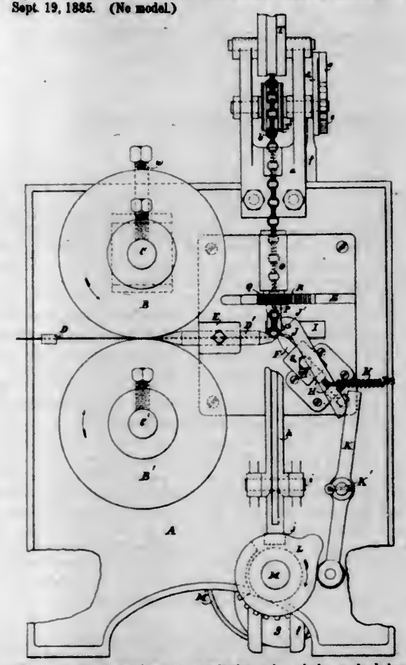
curing and holding the rings A, to which the halter-straps are fastened, the threaded shaft E, nut-shaft E', nut D, and hand-wheel P, substantially in the manner and for the purposes set forth.

2. The combination, in a stock-liberator, of the tube or sleeve B, extending across a row of stalls, and the sliding or locking bar C, nut D, threaded shaft E, nut-shaft E', and hand-wheel P, for the purpose of sliding the locking-bar C within the tube B, with the rod *c*, provided with the hook *d*, by which the alarm N is held in position, and the ring *e*, by which the rod is held in place, together with the alarm N, substantially as and for the purposes specified.

3. In a stock-liberator, the combination of the sleeve B, sliding bar C, nut D, threaded shaft E, nut-shaft E', and hand-wheel P, for operating the sliding bar C, with the pinion J, attached to the nut-shaft E', and the rod K, provided with racks H, which engage with the pinion or gear J, and by means of which several sliding bars C may be simultaneously moved in sleeve B, substantially as and for the purposes specified.

4. In a stock-liberator, the sleeve or tube B, arranged substantially as described, and provided with the openings *a*, in combination with the locking-bar C, arranged to slide within said sleeve, and provided with fingers *b*, a threaded shaft, E, connected to the locking-bar, and a nut, D, and nut-shaft E', for operating the threaded shaft and locking-bar, substantially as and for the purposes specified.

331,397. CHAIN-MACHINE. FRANKLIN P. HINDS, Boston, Mass. Filed Sept. 19, 1885. (No model.)



Claim.—1. A machine for producing wire chain, embodying the combination of mechanism for feeding the wire, mechanism for bending the wire into spiral form, mechanism for severing the spirally-coiled links from the main body or line of wire, and mechanism for receiving the chain as it is produced, and holding the last link formed therein in position to be interlinked with the succeeding link as the latter is coiled into form.

2. In a machine for producing chains composed of coiled-wire links, the combination, with devices for feeding, coiling, and cutting the wire, of mechanism for taking up the chain as it is produced, and turning the successive links formed therein so as to present their open sides to the ad-

vancing wire to receive its newly-formed coils through the same, thereby effecting the concatenation of links in the production of the chain.

3. The combination of feed-rolls B and B' and means for rotating the same, guide D', coiler F, and cutter J, with means for actuating the same, all constructed and arranged to operate together, as and for the purposes specified.

4. In combination with wire feeding, bending, and cutting devices, operating together substantially as and for the purposes described, the chain-tube P, and means for reciprocating the same about its vertical axis at intervals as required, and take-up rolls T and T', with means for intermittently revolving the same, all operating together, as and for the purposes specified.

5. In combination with the chain-tube P and take-up rolls T and T' and their respective actuating devices, whereby they are operated relatively to each other, as and for the purposes described, the locking-lever *h*, arranged and operated to secure the chain in the tube at intervals, in the manner and for the purpose specified.

6. In a machine for producing chains composed of coiled-wire links, the combination of an adjustable wire-feed, whereby more or less wire may be fed at one operation, and consequently more or less coils be put into a link, as described, with a guide, D', a coiler, F, and a cutting device for severing the coils from the main wire, all substantially as described.

7. In combination with wire-feeding, guiding, and cutting devices, substantially as described, a coiling device, F, having a curved groove formed therein to receive and coil the wire, as described, and being adjustable about its axis, whereby the required lateral deflection may be given to the wire to cause it to coil spirally, as specified.

331,398. PENCIL. Joseph Hoffman, New York, N. Y., assignor to Gustavus A. Goldsmith, same place. Filed July 20, 1885. (No model.)



Claim.—1. The combination, in a pencil, of an external case, A, an internal rigid tube, B, bearing a pivoted pawl, and a longitudinally-movable tube, H, provided with a cap, I, externally of the case or handle of the pencil, and also provided with a spring, L, the said longitudinally-movable tube engaging with the pawl, whereby the pawl is acted on by the spring automatically to dog a lead-bearing tube or rod, Q, placed within the longitudinally-movable tube, substantially as and for the purposes set forth.

2. The combination, in a pencil, of the lead-bearing rod or tube Q, the longitudinally-movable tube H, provided with a cap, I, a spring, L, and slot P, and a pivoted pawl, S, the free end whereof passes through the slot P in the longitudinally-movable tube H, and into the path of the lead-bearing tube or rod, and engages with shoulders on the same to hold it in a projected and retracted position, all being combined and operating substantially as and for the purposes set forth.

3. The combination, in a pencil, of a case or handle, A, a tube, B, rigidly attached to the inside of the handle, a pawl, S, pivoted to the tube B, and extending inwardly toward the central line of the pencil, a longitudinally-movable tube, H, provided with cap I, spring L, shoulder M, and slot P, through which the free end of the pawl S passes, the slots D and *d*, formed in the rigid tube B, the slot N, formed in the longitudinally-movable tube H, the stop O, formed on the longitudinally-movable tube H, and the rod or tube Q, bearing a lead-holder, and provided with notches or shoulders R and R' and stop T, all combined and operating substantially as and for the purposes set forth.

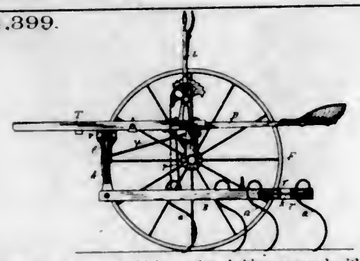
331,399. WHEEL HARROW AND CULTIVATOR. Ira J. Hunt, Kalamazoo, Mich., assignor to Moses Hill, same place. Filed Aug. 15, 1885. (No model.)

Claim.—1. A wheel-cultivator frame provided with the swiveled hangers having the lateral offsets for detachable connection with the share-bars, for the object stated, substantially as set forth.

2. The combination of the wheel-frame of a harrow or cultivator and longitudinal share-bars, swiveled hangers having the lateral offsets for detachable connection with the share-bars, and a bail detachably connecting the share-bars, to prevent the offsets from turning to wrong positions in use, all substantially as set forth.

3. In a wheel harrow or cultivator employing side and central

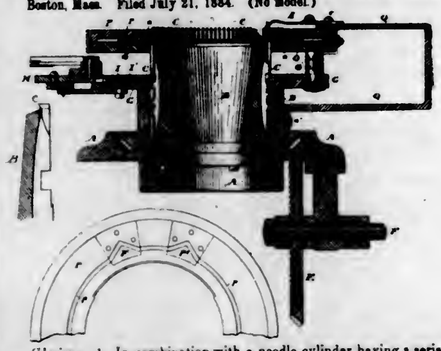
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share-bars, the latter of which are detachably connected with the side bars by a transverse beam, the combination, with the bars and beam, of the links jointedly connecting said bars and beam, substantially as set forth.

4. The brackets for adjustably supporting the shares, consisting of two integral arms at right angles to each other, the laterally-projecting arm supporting the share and the other arm being pivotally secured to the share-bar near the angle of the bracket, and the forward end of said arm being adapted for securing the share-bar at positions conforming to the tilt given the lateral arm which supports the share, substantially as set forth.

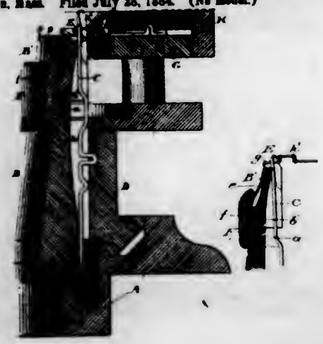
331,400. KNITTING-MACHINE. Warren D. Huse, Laconia, N. H., assignor to Orison Twombly, Lake Village, N. H., and Thomas S. Nowell, Boston, Mass. Filed July 21, 1884. (No model.)



Claim.—1. In combination with a needle-cylinder having a series of fixed sinkers, a series of vertically-moving needles, a needle-operating cam-cylinder, the annular plate O, a series of horizontally-movable cast-off fingers, the annular cam-plate P, provided with the path *p*, having two outward and inward throws, p' and p^2, the cam-cylinder D, the U-shaped arm Q, rigidly connected at one end to the cylinder D and at the other end to the cam-ring P, and the yarn-guide S, substantially as described.

2. In combination with a needle-cylinder having a series of fixed sinkers, a series of vertically-movable needles, and a series of horizontally-movable cast-off fingers, the cam-cylinder D, the annular plate O, the annular cam-plate P, provided with the path *p*, having outward and inward throws p' and p^2, and the U-shaped lever Q, rigidly connected at one end to the cam-ring D and at the other end to the cam-plate P, substantially as described.

331,401. KNITTING-MACHINE. Warren D. Huse, Laconia, N. H., assignor to Orison Twombly, Lake Village, N. H., and Thomas S. Nowell, Boston, Mass. Filed July 28, 1884. (No model.)



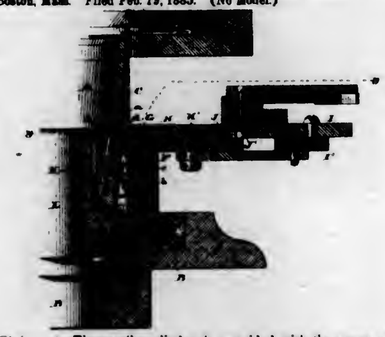
Claim.—1. A spring-sinker for knitting-machines, made of wire, and having the parts *c*, c', c^2, and c^3, arranged relative to each other, substantially as shown and described.

2. The spring-sinker E, in combination with the needle-cylinder, a series of needles, a cam-cylinder provided with a cam-path for operating the needles, the hook-bars A, and the cam-ring H, provided with a cam-path for operating the hook-bars, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination of the needle-cylinder, made in two parts, the series of spring-sinkers E, and the adjusting and holding ring F, all arranged and adapted to operate substantially as described.

4. The combination of the sections B and B', of the needle-cylinder, the former provided with the radial grooves *d* and the latter with the vertical grooves *e*, the sinkers E, and the adjusting and holding ring F, all arranged and adapted to operate substantially as described.

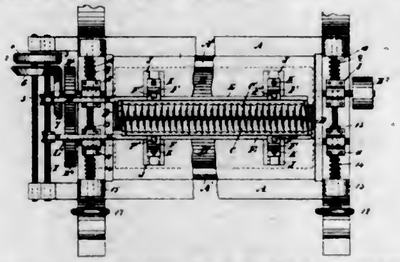
331,402. KNITTING-MACHINE. Warren D. Huse, Laconia, N. H., assignor to Orison Twombly, Lake Village, N. H., and Thomas S. Nowell, Boston, Mass. Filed Feb. 19, 1885. (No model.)



Claim.—1. The needle-cylinder A, provided with the grooves *a a*, made deeper at their lower than at their upper ends, the needles C C, provided with the lugs *b b*, the cam-cylinder D, provided with the cam-path *c*, the segmental plates H H', adapted to be moved against said needles, so as to throw them out of action, and the springs K K, adapted to press said needles into contact with said cam-path, substantially as described.

2. The needle-cylinder A, provided with the grooves *a a*, made deeper at their lower than at their upper ends, in combination with the needles C C, provided with the lugs *b b*, the cam-cylinder D, provided with the cam-path *c*, the segmental cams H H', adapted to be moved against said needles, so as to throw them out of action, the cylinder L, provided with the longitudinal grooves *f* and secured to the interior of the cylinder A, and the springs K, inserted between said cylinders A and L and extending through openings in said cylinder A into contact with the needles C, substantially as shown and described.

331,403. OATMEAL AND GRAIN REDUCTION MILL. William Hutchison, Ottawa, Ontario, Canada. Filed July 29, 1885. (No model.) Patented in Canada Aug. 10, 1883, No. 17,465.



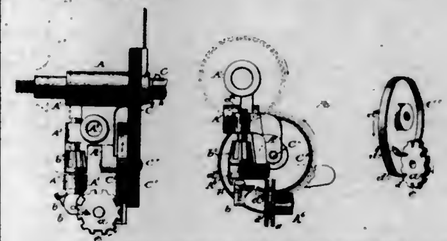
Claim.—1. In a feed-hopper, the combination of two oppositely-converging sides C C', vertically grooved, flexible ends D, and means for reciprocating said sides in opposite directions, as set forth, for the purpose described.

2. In a feed-hopper, the combination of two laterally-adjustable downwardly-converging vertically-grooved sides, C C', flexible ends D, and means for reciprocating said sides in opposite directions, as set forth, for the purpose described.

3. The combination, in a feed-hopper, of two downwardly-converging vertically-grooved sides, C C', beveled vertically at the bottom and laterally adjustable, flexible ends D, and pitmen L L', reciprocating said sides in opposite directions, as set forth, for the purpose described.

4. The combination of the vertically-grooved hopper-sides C C', having on the outside a horizontal rail, E, flexible ends D, adjustable bearings F, and pitmen L L', reciprocating said sides in opposite directions, as set forth.

331,404. CORD-HOLDER FOR GRAIN-BINDERS. Joseph O. Jackman, Chicago, Ill., assignor to William Deering, same place. Filed July 18, 1883. (No model.)



Claim.—1. The combination, with the cord-holding disk, of the continuously-revolving scroll or cam wheel, adapted to revolve the holding-disk intermittingly, substantially as and for the purpose described.

2. The shaft C, gear-wheels C' and C^2, and the holding-disk *a*, combined with the scroll-cam wheel C^3, substantially as described.

3. The cord-holder disk *a*, provided with the twine-holding notches, and the notches *e*, combined with the scroll-cam wheel C^3, substantially as described.

331,405. SAFETY DEVICE FOR ELEVATORS. William W. Jackson, Chicago, Ill. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination, with an elevator-shaft provided with inclined faces converging from the upper to the lower portion of the shaft, of an elevator-car provided with stop devices adapted to be projected therefrom to wedge the car between said converging faces of the shaft, substantially as described, and for the purpose set forth.

2. The combination, with the elevator-shaft provided at opposite sides with inclined faces, substantially as described, of the car provided with stops bearing with a yielding pressure against said inclined faces, and means for holding said stops immovable, substantially as and for the purpose described.

3. The combination, with the elevator-shaft having inclined faces *d*, of the car provided with self-adjusting stops bearing against the inclined faces with a yielding pressure, and an abutment-block connected with the hoisting-cable and located to drop into position to oppose a positive resistance to the retraction of the stops upon the breakage of the cable, substantially as described.

4. The combination, in an elevator, of the inclined faces *d* with the stops I and an abutment-block, I', having a wedge or tapering form, and connected with the hoisting-cable, substantially in the manner and for the purpose described.

5. The combination, in an elevator, of the inclined faces at the sides of the shaft with the stops I and the wedge or conical shaped abutment-block I', connected with a draw-head, H, which latter is in turn connected with the hoisting-cable, substantially as described.

6. In an elevator, the slide-stops normally projecting from the sides of the car, in combination with a draw-head connected with the cable and sustaining the weight of the car, and means, substantially as described, connecting the draw-head with an abutment-block located in position to permit the retraction of the stops when the car is sustained by the draw-head, and to drop back of the stops and check their retraction when the draw-head is released by a breakage of the cable, substantially as set forth.

7. The combination, in an elevator, of the inclined faces *d* with the

stops I, the abutment-block L', connected with the cable, substantially as described, and a spring for depressing the abutment-block as soon as a break has occurred in the cable, for the purpose specified.

8. The combination, in an elevator, of the inclined sides or faces *d* with the stops I, the abutment-block L', connected with the cable, substantially as described, and the anti-friction rollers supporting said stops, for the purpose set forth.

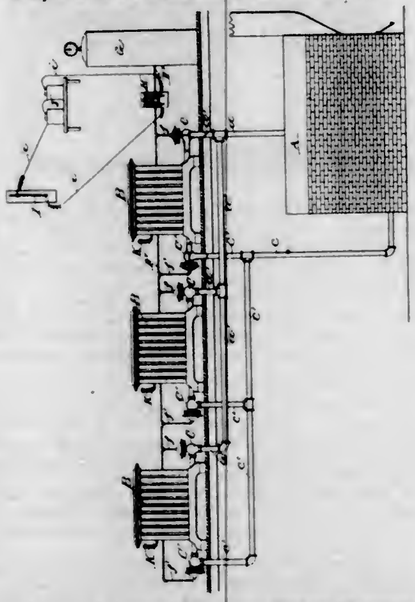
9. The combination, in an elevator, of the longitudinally-sliding stops I, movable in direction transverse to the line of motion of the car, substantially as set forth, with the wedge abutment-block L', adjustable vertically in a plane between the inner opposing ends of the stops, and substantially at right angles to the plane of movement of said stops, the draw-head H, connected with the cable and upholding the car, and a slide-rod, L, screwing into the draw-head and connected with the abutment-block, said rod being provided with a hand-wheel or handle for turning it, so as to effect a vertical adjustment of the abutment-block between the stops, substantially as set forth.

10. The combination, in an elevator, of the inclined faces *d* at the sides of the shaft, with the car provided with stops I, the abutment-block L', connected with a draw-head, H, and the cables C, attached to the draw-head and passing over pulleys at the top of the shaft, said draw-head being free to drop when a break occurs in the cables, and a spring being applied, substantially as described, to hasten the descent of the draw-head under such circumstances, for the purpose set forth.

11. In an elevator, the vertical guides D, having inclined faces *d*, formed in grooves thereof, in combination with one or more pairs of sliding stops carried by the car, and having their outer ends maintained by gravity against the said inclined faces, and bearing against the same with a yielding pressure, and a conical or wedge-shaped abutment-block connected, substantially as described, with the cable, said abutment-block being arranged at a point above the space intervening between the inner ends of the stops, and being arranged, when permitted to drop, to bring its sides between the stops upon the rupture of the cable, substantially as and for the purpose described.

331,406. SYSTEM OF TEMPERATURE-REGULATION. WARREN S. JOHNSON, Whitewater, Wis., assignor to the Johnson Electric Service Company, same place. Filed Feb. 24, 1885. (No model.)

Brief.—Makes use of the details of Patent No. 301,059.



Claim.—1. In a system of temperature-regulation, the combination of one thermostat, which serves to control, through the means of a fluid under pressure, the valves which govern the supply of heat to an apartment, with said valves and the fluid under pressure, and a supply-valve which shuts against the pressure from the steam-generator, and a return-valve which shuts with said pressure, substantially as set forth.

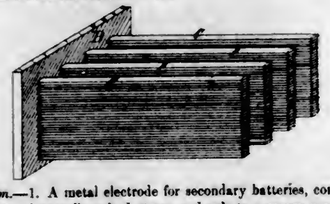
2. In a system of temperature-regulation, the combination of one thermostat, which serves to control, by means of a fluid under pressure, the valves which govern the admission of heat to the apartment in which the thermostat is situated, with said valves and the fluid under pressure, and two or more main valves connected with the source of heat, whereby all of the main valves are operated at the same time by means of the one thermostat, substantially as set forth.

3. In a system of temperature-regulation, the combination, with a system of heating-pipes, of a system of pipes containing a fluid under pressure, and a thermostat which serves to control said fluid under pressure, whereby said fluid under pressure operates the valves governing the supply of heat in the heating system, substantially as set forth.

4. In a system of temperature-regulation, the combination of a system of heating-pipes having valves operated by a fluid under pressure, a system of pipes containing and conveying said fluid under pressure, an electrically-actuated valve which serves to admit or release the fluid under pressure when it actuates said valves in the heating system, and a suitable electric generator and thermostat in circuit with said electric valve, whereby the thermostat, through the means of the electric valve and the system of pipes containing a fluid under pressure, operates the entire series of main valves in the heating system, substantially as set forth.

5. In a system of temperature-regulation, the combination of a heat-generator, A, and system of heating-pipes leading therefrom, provided with the supply-valves C and return-valve C', with the coils or radiators B B, reservoir G, containing fluid under pressure, pipe F and connections, and thermostat I, connected by wires *i i i* with battery J, and valve H on the pipe F, substantially as set forth.

331,407. SECONDARY BATTERY. EDWARD JONES, Leeds, County of York, England. Filed Dec. 4, 1884. (No model.) Patented in England Apr. 7, 1884, No. 6,068; in France Oct. 3, 1884, No. 164,602; in Germany Oct. 5, 1884, No. 32,987; in Italy Nov. 30, 1884, No. 17,485, and in Austria Jan. 23, 1885, No. 37,563.

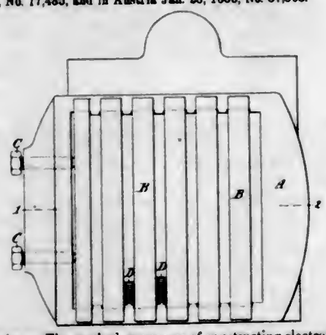


Claim.—1. A metal electrode for secondary batteries, consisting of strips or wires integrally united at one end only to a common supporting plate or base and extending therefrom in comb-like rows, the independent strips or wires in each row lying closely together, clear spaces being left between the several rows of strips in each electrode for the reception of the rows of strips of another electrode similarly constructed.

2. A secondary battery fitted with interlocking electrodes, each consisting of a series of comb-like rows of strips or wires of metal integrally united at one end only to a common supporting plate or base, in combination with a frame or rack, such as E E F F', whereby the electrodes are securely held in proper relative position and insulated, substantially as and for the purpose set forth.

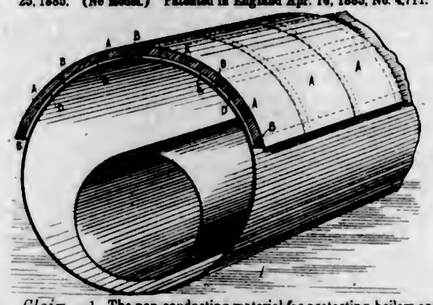
3. In a secondary battery, the combination, with a solid metal supporting-plate, as B, of the ribbons or strips C, of similar material to the plate, the said strips being arranged in parallel or concentric rows, with intervals between the rows, each row comprising a number of separate strips resting on or against one another, each strip being integrally connected by one end only to its base or support, and the strips in each row being free to move for the purpose of avoiding risk of short-circuiting the battery, substantially as herein set forth.

331,408. METHOD OF MANUFACTURING ELECTRODES FOR SECONDARY BATTERIES. EDWARD JONES, Leeds, County of York, England. Filed July 31, 1885. (No model.) Patented in England Apr. 7, 1884, No. 6,068; in France Oct. 3, 1884, No. 164,602; in Italy Nov. 30, 1884, No. 17,485, and in Austria Jan. 23, 1885, No. 37,563.



Claim.—The method or process of constructing electrodes for secondary batteries, which consists in uniting strips, ribbons, or wires of metallic lead or lead alloy to a metal backing of similar material by submitting the said strips, ribbons, or wires, held fast by chilling-clamps, to the molten backing metal contained in a mold, whereby the liquefaction or partially liquefaction of the said strips, ribbons, or wires beyond their points of junction with the backing is prevented, substantially as herein described.

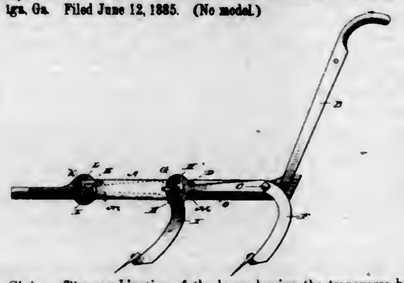
331,409. BOILER-COVERING. MATTHEW KEENAN, Armagh Works, Tredegar Road, North Bow, County of Middlesex, England. Filed June 25, 1885. (No model.) Patented in England Apr. 16, 1885, No. 4,711.



Claim.—1. The non-conducting material for protecting boilers and other articles, consisting of pulped turnips, sulphate of magnesium, sulphate of lime, vegetable black or spirit black, paper-pulp, oil, Stockholm tar, and vegetable size, in about the proportions stated, and for the purposes set forth.

2. The non-conducting material for protecting boilers and other articles, consisting of hair, felt, and a composition consisting of pulped turnips, sulphate of magnesium, sulphate of lime, vegetable black or spirit black, paper-pulp, oil, Stockholm tar, and vegetable size, all about in the proportions stated, and cemented to the inside of a metallic sheet, substantially as set forth.

331,410. PLOW. WITT C. KINARD and MARTIN J. MADDOX, Towaliga, Ga. Filed June 12, 1885. (No model.)



Claim.—The combination of the beam having the transverse bolts C, D, and E, the plow-stock F, fulcrumed on one end of the bolt C and having the bolt D passed through its outer end, the plow-stock I, fulcrumed on the bolt D on the opposite side of the beam from the stock F, and having the bolt E passed through its outer end, the bolts being sufficiently long to permit lateral adjustment of the plow-stocks thereon, keys O, adapted to be inserted between the plow-stocks and the beam, and having slots P, to receive the shanks of the bolts, and the clamping-nuts M on the threaded ends of the bolts, substantially as described.

331,411. VEGETABLE AND MEAT SLICER. THOMAS M. KNAPP, Tiffin, Ohio. Filed Oct. 2, 1884. (No model.)

Claim.—1. In a slicer, a retaining-box having one side slotted or grooved, in combination with a hinged or swinging door secured to a strip having longitudinal movement in said groove to or from the knife, substantially as and for the purpose specified.

2. The combination of a knife-holder with an adjustable gage in front of the knife, having slotted posts, and screw-bolts passing through both posts and holder, substantially as and for the purpose specified.

3. A knife-holder for slicers, having longitudinal strips on the top and bottom, and slotted for a distance under the top strip and to the rear of the knife, in combination with a gage placed in front of the knife and provided with slotted posts, and screw-bolts passing through the posts and strips, substantially as and for the purpose specified.

4. The combination of a reciprocating knife-holder, an adjustable gage therein provided with slotted posts, screw-bolts passing through said posts and into the holder, a retaining-box, a door therefor swung on a strip having longitudinal play in said box, and legs with countersunk screw-holes sharpened at the edges, the whole combined to form a slicer, substantially as and for the purpose specified.

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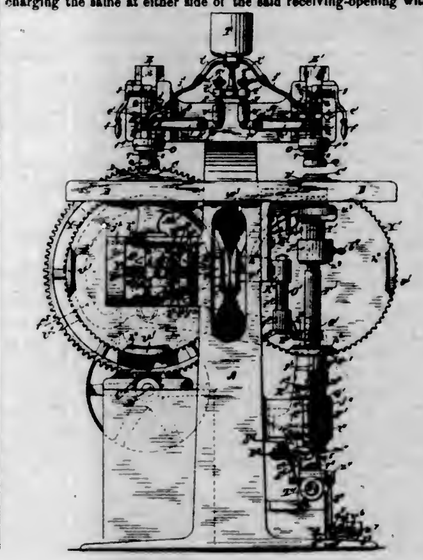


331,412. HEEL-MACHINE. ANTOINE J. LANGELIER, Providence, R. I. Filed July 9, 1885. (No model.)

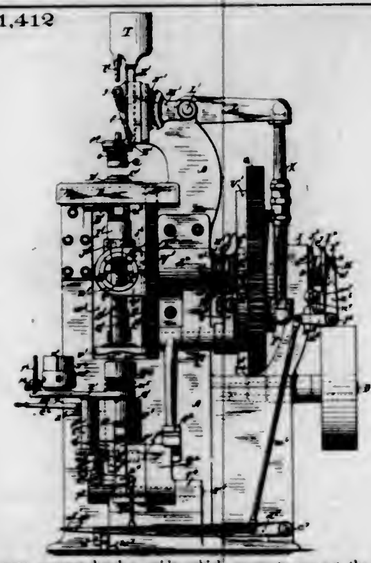
Claim.—1. The combination of the intermittently-revolving carriers with their heel-lift-receiving openings adapted for the reception of heel-lifts of different sizes with means, substantially as described, for forcing the accumulated smaller heel-lifts in the receiving-openings of one of the carriers into forcible connection with the accumulated larger heel-lifts in the corresponding receiving-opening of the opposite carrier, the pricking-awls arranged to operate through the smaller receiving-opening of one of the carriers to prick the combined lifts when held in the larger receiving-opening of the opposite carrier, and means, substantially as described, for operating the said awls.

2. The combination of the intermittently-revolving carriers having their openings adapted for the reception of heel-lifts of different sizes with means, substantially as described, for forcing the accumulated smaller heel-lifts in the receiving-opening of one of the carriers into forcible connection with the accumulated larger heel-lifts in the corresponding receiving-opening of the opposite carrier, the pricking-awls operating through the smaller receiving-opening of one of the carriers to prick the combined lifts when held in the larger receiving-opening of the opposite carrier, and means for driving nails into the said lifts upon the succeeding movement of the carriers, substantially as described.

3. The combination of an intermittently-revolving carrier provided with heel-lift-receiving openings of uniform dimensions extending through the carrier and adapted to embrace the edges of the heel-lifts and for discharging the same at either side of the said receiving-opening with the



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stationary pressure head or guide, which serves to prevent the inward movement of the lifts beyond the inner edge of the receiving-openings when the inclosed lifts are subjected to inwardly-directed pressure, substantially as described.

4. The combination of the intermittently-revolving carrier, provided with heel-lift-receiving openings, with the movable heeling-jack arranged interiorly of the carrier in the plane of the axis of the heel-lift-receiving openings of the same, substantially as described.

5. The combination of an intermittently-revolving carrier, provided with heel-lift-receiving openings, with the heeling-jack arranged interiorly of the carrier in the plane of the heel-lift-receiving openings, the sliding joint, and the catch, substantially as described.

6. The combination of an intermittently-revolving carrier, provided with heel-lift-receiving openings, with the heeling-jack arranged interiorly of the carrier in the plane of the axis of the heel-lift-receiving openings, the sliding joint, the catch, and the pivoted joint, substantially as described.

7. The combination of an intermittently-revolving carrier, provided with heel-lift-receiving openings, with a heeling-jack arranged interiorly of the carrier in the plane of the axis of the receiving-openings of the same, the reciprocating head, the rotative table attached thereto, the nail-driving head, and the heel-forming die, arranged for operation substantially as described.

8. The combination of an intermittently-revolving carrier, provided with heel-lift-receiving openings, with a heeling-jack arranged interiorly of the carrier in the plane of the axis of the receiving-openings of the same, the reciprocating head, the rotative table attached thereto, the nail-driving head, and the heel-forming die attached to the rotative table, and the clearing-forcer of the heel-forming die, all arranged for operation substantially as described.

9. The combination of an intermittently-revolving carrier, provided with heel-lift-receiving openings, with a heeling-jack arranged internally of the carrier in the plane of the axis of the receiving-openings, the pivot-joint of the heeling-jack, the sliding joint of the same, and the forked rest adapted to embrace the heel portion of the shoe-upper and to steady the free end of the heeling-jack, substantially as described.

10. The combination of an intermittently-revolving carrier, provided with heel-lift-receiving openings, with a holding-jack arranged internally of the carrier in the plane of the axis of the receiving-openings of the same, the pivoted socket-piece for holding the jack, the double-ended dog pivoted thereto, and the cam adapted to operate the pivoted dog so as to hold the heeling-jack in its two positions, substantially as described.

11. The combination of the reciprocating heel-forming die and an intermittently-revolving carrier, provided with heel-lift-receiving openings, with a heeling-jack arranged internally of the carrier in the plane of the axis of the receiving-openings of the same, the pivoted socket-piece for holding the jack, the double-ended dog pivoted thereto, and the means for operating the pivoted dog in timely relation to the forward movement of the heel-forming die.

12. In a heel-machine, the combination of the stationary heel-lift cutter, the reciprocating cutting-plunger, the paste-carrying tubular forcer adapted to force the heel-lifts through the stationary cutter, the valve and stem, with a projecting head provided with a catch and the fixed spring adapted for engagement with the projecting head of the valve-stem, whereby upon the downward movement of the cutting-plunger the paste-supplying valve will be both opened and closed and the paste be fully supplied to the upper surface of the leather previous to the cutting of the lift, substantially as described.

13. In a heel-machine, the combination of the intermittently-revolving carrier for the heel-lifts, the automatically-disengaged clutch for operating the same, the sliding clutch operatively connected to a pedal and provided with the diametrically-opposite disengaging-spurs, two upon one side of the axis of the sliding clutch and one upon the other, and arranged relatively to the said axis, as described, with a loose encircling-sleeve provided upon its outer face with disengaging-spurs adapted to match the corresponding disengaging-spurs upon the clutch, the spring-operated bolt which engages with the sleeve, and the fixed pin adapted to enter a notch in the flange of the clutch and to prevent the untimely disengagement of the same, substantially as described.

14. In a heel-machine, the combination of the heel-lift carrier, stationary heel-lift cutter, reciprocating cutting-plunger, and the graduated forcer adapted to force the heel-lifts through the cutter and into the receiving-opening of the carrier and to indicate the thickness of the accumulated heel-lifts to the operator, substantially as described.

15. In a heel-machine, the combination of the reciprocating head, the rotative table attached thereto, the perforated spring-operated head attached to the rotative table, the adjusting-screw, and the block provided with a series of nail-driving plunger adapted to enter the perforations of the spring-operated head and to operate therein, substantially as described.

16. In a heel-machine, the combination of the reciprocating head, the rotative table attached thereto, the cam for imparting a reciprocating movement to the head and table, the spring-operated bolt for operatively connecting the cam to an adjacent vibrating or reciprocating portion of the machine, with the treadle for engaging the bolt with said vibrating or reciprocating portion and the flange for preventing the untimely engagement of said bolt, substantially as described.

17. The combination of the opposite intermittently-revolving carriers having their openings adapted for the reception of heel-lifts of different sizes, the stationary cutters also of different sizes and adapted for their respective revolving carriers, the cutting-plungers adapted for the stationary cutters, the reciprocating heads to which the cutting-plungers are attached, the sliding bolts for operatively connecting the sliding heads with the adjacent reciprocating parts of the machine, and means for effecting the engagement and disengagement of the said parts, whereby both of the cutting-plungers may be operated, or either one of them separately, substantially as described.

18. The combination of the opposite intermittently-revolving carriers provided with heel-lift-receiving openings, the automatically-disengaging clutch adapted to operate the carrier mechanism, a treadle for engaging the said clutch, a heel-nailing mechanism, the treadle and clutch for engaging the same with the adjacent operative mechanism of the machine, and means for preventing the simultaneous engagement of the carrier and the heel-nailing mechanisms by means of their respective treadles, substantially as described.

19. In a heel-machine, the combination of the intermittently-revolving carrier provided with heel-lift-receiving openings which are adapted to hold and guide the edges of the heel-lifts, the heel-lift cutter, the cutting-plunger, the forcer passing through the cutting-plunger and adapted to force the heel-lifts into the carrier-openings, and a stationary head or guide at the back of the receiving-opening adapted to prevent the inward movement of the accumulating heel-lifts when under the action of the forcer, substantially as described.

20. In a heel-machine, the combination of an intermittingly-revolving carrier provided with heel-lift-receiving openings having inwardly-directed guiding-plates which are adapted to hold and guide the edges of the heel-lifts, the reciprocating plunger grooved to receive the guiding-plates of the carrier, and the pricking-forcer, the pricking-awls of which pass through openings in the face of the grooved plunger and are adapted to prick the heel-lifts when held between the edges of the guiding-plates of the carrier, substantially as described.

21. In a heel-machine, the combination of an intermittently-revolving carrier provided with heel-lift-receiving openings, the inwardly-directed guiding-plates at the receiving-openings of the carrier, the reciprocating plunger grooved to receive the guiding-plates, and the stationary pressure-head arranged in close proximity to the back of the guiding-plates and adapted to resist the compressing action of the grooved plunger upon the intervening heel-lifts, substantially as described.

22. In a heel-machine, the combination of an intermittently-revolving carrier provided with receiving-openings having inwardly-directed guiding-plates which are adapted to hold and guide the edges of the heel-lifts, the reciprocating plunger grooved to receive the guiding-plates of the carrier, the pricking-forcer, the pricking-awls of which pass through openings in the face of the grooved plunger, and a stationary head at the back of the guiding-plates adapted to resist the compressing action of the grooved plunger and the thrust of the pricking-awls, substantially as described.

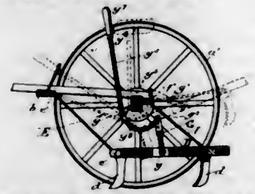
23. In a heel-machine, the combination of an intermittently-revolving carrier provided with receiving-openings having inwardly-directed guiding-plates which are adapted to hold and guide the edge of the heel-lifts, the reciprocating plunger grooved to receive the guiding-plates of the carrier, the stationary head at the back of the guiding-plates, and the clearing-forcer adapted to prevent the compressed heel-lifts from following the plunger in its backward movement from the stationary head, substantially as described.

24. In a heel-machine, the combination of an intermittently-revolving carrier provided with heel-lift-receiving openings having inwardly-directed guiding-plates which are adapted to hold and guide the edge of the heel-lifts, the reciprocating plunger grooved to receive the guiding-plates of the carrier, the pricking-forcer, and the clearing-forcer, arranged and operating substantially as described.

25. In a heel-machine, the combination of the revolving carrier provided with heel-lift-receiving openings having inwardly-directed guiding-plates which are adapted to hold and guide the edge of the heel-lifts, with the nail-inserting plunger grooved to receive the guiding-plate of the carrier, and the head or jack located at the back of the guiding-plates and adapted to receive the thrust of the nail-driving forces, substantially as described.

26. In a heel-machine, the combination of the intermittently-revolving carrier provided with heel-lift-receiving openings having inwardly-directed guiding-plates, which are adapted to hold and guide the edge of the heel-lifts, with the reciprocating heel-forming die grooved on its face to receive the guiding-plates of the carrier, and a head or jack located at the side of the carrier opposite to the forming-die and adapted to receive the forcible thrust of the forming-die through the carrier-opening, substantially as described.

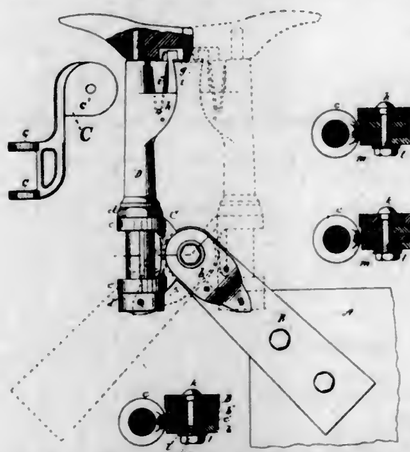
331,413. WHEEL CULTIVATOR AND FURROWER. IVORY LIBBEY, Lebanon, Me. Filed July 20, 1885. (No model.)



Claim.—1. A wheel cultivator or furrower having the axle A and shafts B, the frame D or D', supporting teeth, as specified, and the front rods or connections, E E', and the back rods, F F', attached to the frame and to the shafts and axle, as described, all substantially as set forth.

2. The combination of the axle A and shafts B, the frame D or D', supporting teeth, as specified, hung or attached to the axle and shafts by the rods or connections F F' E E', in the manner specified, the lever g^3, pivoted at g^4 and having the curved end g^5, and the connecting link or rod G, all substantially as specified.

331,414. SHOE-MAKER'S JACK. JOHN B. LITCHMAN, Marblehead, Mass. Filed June 26, 1885. (No model.)



Claim.—1. The combination of the arm B, provided with an ear, *b*, with the shank of a jack, D, adapted to pass through the socket-piece C, having the ears *c c'*, substantially as described.

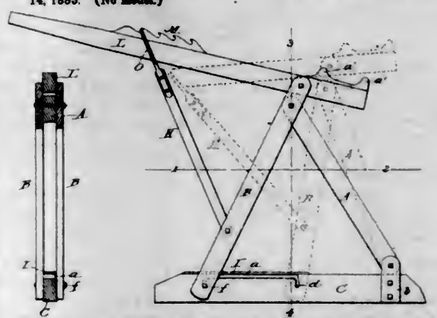
2. In an adjustable shoe-maker's jack, the clamp-joint composed of the members B, *b*, and *c*, combined together by means of the nut and bolt *k l* and sleeve *m*, substantially as described.

3. The combination, with the shank D of a jack, of the pintle E and spring-latch *i i'*, for the purpose of locking the last to the jack, substantially as and for the purposes described.

4. In combination with the latch attachment of a pegging-jack, a last having a hole for the pintle, and a locking-recess behind the same of the character described, substantially as and for the purposes set forth.

5. In combination with the latch attachment of a pegging-jack, the last provided with a metal plate, *g*, having holes formed therein, as described, all substantially as and for the purposes set forth.

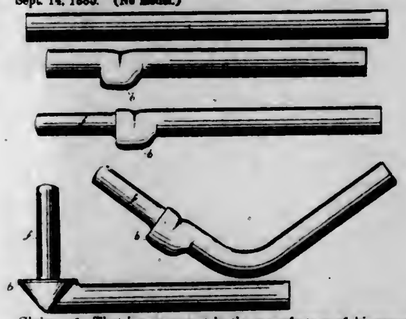
331,415. LIFTING-JACK. ALPHEUS C. LOWE, Edgar, Ill. Filed Sept. 14, 1885. (No model.)



Claim.—1. A lifting-jack composed of a base having a longitudinal transverse slot provided with a vertical offset bearing, a pivoted standard-section connecting the hand-lever, and having a bolt at its lower end arranged in the said slot, a brace-section pivotally connecting the said pivoted standard-section with the forward end of the base, and a locking-lever pivoted at its lower end to the standard and provided at its upper end with a loop to engage the hand-lever, substantially as specified.

2. In a lifting-jack, substantially as described, a base having a longitudinal transverse slot provided a vertical offset bearing at opposite ends and a standard having a bolt or engaging device adapted to operate in the said slot, as set forth.

331,416. MANUFACTURE OF HINGES. EDWIN LUCAS, Kensington, assignor to the Peck, Stow & Wilcox Company, Southington, Conn. Filed Sept. 14, 1885. (No model.)



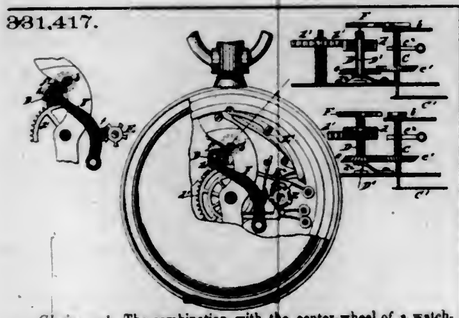
Claim.—1. That improvement in the manufacture of hinges which consists of upsetting a portion of a straight rod at the point intended for the base of the pintle, then curving the body of the rod, and then swaging the upset portion and curved body of the rod into form, substantially as described, and for the purpose specified.

2. That improvement in the manufacture of hinges which consists of throwing the stock into the successive series of forms represented in Figs. 1 to 5, inclusive, substantially as described, and for the purpose specified.

3. That improvement in the manufacture of hinges which consists of forming upon a straight rod, at the point intended for the base of the pintle, a circular enlargement, which is eccentric to said rod, then curving the body of said rod, and then swaging said curved body and eccentric enlargement laterally, substantially as described, and for the purpose specified.

331,417. STOP-WATCH. HENRY A. LOEHR, New York, N. Y., assignor to himself and Prosper Nordmann, same place. Filed May 15, 1885. (No model.)

331,417.

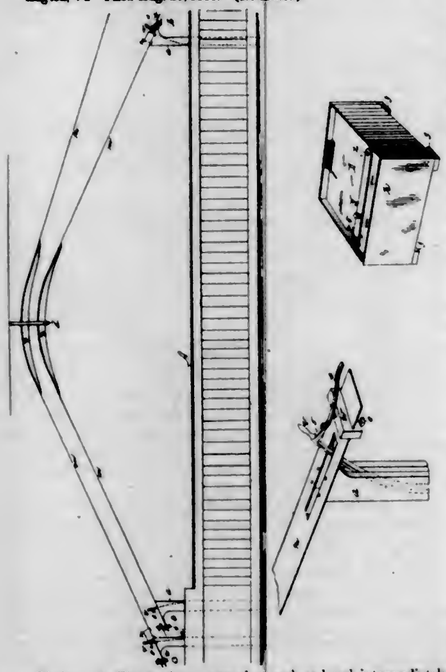


Claim.—1. The combination, with the center-wheel of a watch-movement, of an intermediate spring-pressed arbor having a pinion meshing with the center-wheel and a minutely-toothed bevel-wheel, an auxiliary arbor having a similarly-toothed bevel-wheel, a heart-cam, and a minute-hand, a lever adapted to engage the upper end of the intermediate arbor, and mechanism, substantially as described, for operating the lever so as to start, stop, or return the auxiliary minute-hand, substantially as set forth.

2. The combination, with the center-wheel of a watch-movement, of an intermediate hollow arbor having a pinion meshing with said center-wheel and a minutely-toothed bevel-wheel, a fixed spindle on which the hollow arbor is supported, a spring bearing on the lower end of said arbor, an arbor carrying the auxiliary minute-hand and having a minutely-toothed gear-wheel, and an operating-lever whereby the minute-hand is started, stopped, or returned, substantially as set forth.

3. The combination, with the center-wheel of a watch-movement, of an intermediate hollow arbor having a conically beveled cap at the upper end, a pinion meshing with the center-wheel and a minutely-toothed bevel-wheel, a fixed spindle for supporting the hollow arbor, a lifting-spring bearing on the lower end of the hollow arbor, an auxiliary arbor having a minutely-toothed bevel-wheel, a minute-hand, and a heart-cam, and an operating-lever having a hook-shaped end and a beveled edge back of the hook-shaped end, substantially as set forth.

331,418. AUTOMATIC CASH-BOX SYSTEM. JOSEPH C. MARTIN, Burlington, Vt. Filed Aug. 20, 1883. (No model.)

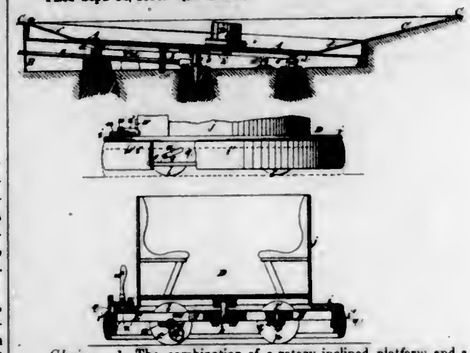


Claim.—1. The track *m*, secured at each end and intermediately therebetween to give it a double-inclined course, the spring-lever *v*, and the cash-box *n*, combined and operating substantially as set forth.

2. The fastening for the cover of the box *n*, consisting of the latch *y*, pivoted at *z* on said cover and having its free end bent over the edge of the latter, and the pin *t* in the side of said box, substantially as set forth.

3. In a cash-carrier system, a track made highest at a point between the ends and sloping toward both ends, combined with carriers adapted to travel on said track, substantially as described.

331,419. GAME APPARATUS. GIUSEPPE MARSARI, New York, N. Y. Filed Sept. 14, 1885. (No model.)



Claim.—1. The combination of a rotary inclined platform and a car consisting of a truck and a body pivoted thereto, substantially as herein described.

2. The combination, with the rotary inclined platform, of a car, one of whose axles is attached by a king-bolt, and which is furnished with stops to limit the otherwise free movement of the axle on the king-bolt, substantially as herein described.

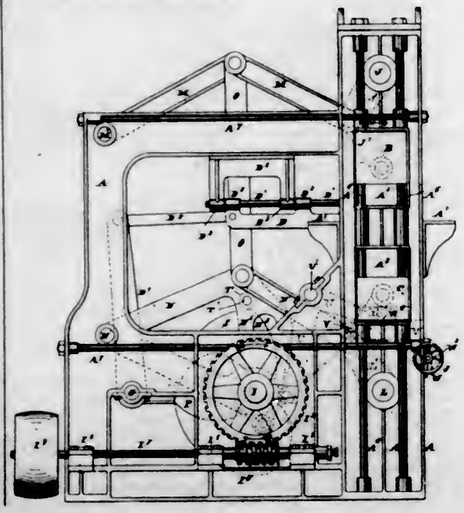
3. The combination, with the circular car-body, of a surrounding brake-ring and means, substantially as herein described, of raising and lowering the said ring, as herein set forth.

4. The combination, with the circular car-body, of the surrounding brake-ring furnished with an external elastic ring, which surrounds and projects below it, to serve as a buffer and as a brake-ring, substantially as herein described.

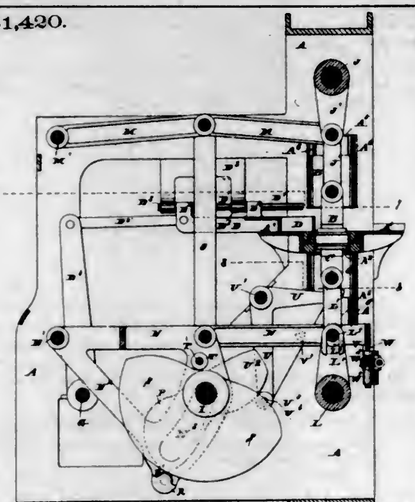
5. The combination, with the car-body and door, of a surrounding rising and falling brake-ring furnished with gearing, a pinion and shaft fitted to the car-body and gearing with said gearing on the ring, a hinged handle attached to said shaft for turning the same, and a stop on the car-body between which and the closed car-door the said handle may drop to lock the said door when the brake-ring is raised up, substantially as herein described.

6. The combination, with the car-truck and its axle *m*, of the loop-spring *x* and attached roller or block *x'*, carried by said axle, and the stop *y*, attached to the car-truck, substantially as and for the purpose herein set forth.

331,420. BRICK-MACHINE. PETER B. MATHIASON, St. Louis, Mo. Filed Oct. 20, 1884. (No model.)



331,420.



Claim.—1. The combination of a charger formed with upwardly-extending perforated lugs, hangers, and rods passed through the hangers and lugs for supporting the charger above the table, substantially as set forth.

2. The combination, with a charger suitably mounted, and a rock-shaft to which it is connected, of a driving-shaft provided with three cams and a slotted lever having friction-rollers and secured to the rock-shaft, the driving-shaft fitting in the slotted lever, and the cams bearing on the friction-rollers to elevate and depress the lever, causing the advance and retraction of the charger, substantially as set forth.

3. The combination, with upper and lower plungers and the toggle-arms by which the plungers are operated, of the upper and lower toggle-bars hinged to the frame and toggle-arms, and devices by which the latter are elevated and depressed, substantially as set forth.

4. The combination, with upper and lower plungers and the toggle-arms by which the plungers are operated, of the upper and lower toggle-bars hinged to the frame and toggle-arms, link connecting the toggle-bars, and devices by which the latter are elevated and depressed, substantially as set forth.

5. The combination, with upper and lower plungers and the toggle-arms by which the plungers are operated, of the upper and lower toggle-bars hinged to the frame and toggle-arms, link connecting the toggle-bars, a driving-shaft having cams, and an extension to the toggle-bars connecting the latter with the cams by which they are elevated and depressed, substantially as set forth.

6. The combination, with upper and lower plungers and the toggle-arms by which the plungers are operated, of the upper and lower toggle-bars hinged to the frame and toggle-arms, link connecting the toggle-bars, a driving-shaft having cams, and a slotted extension to a lower toggle-bar having projections provided with friction-rollers, substantially as set forth.

7. The driving-shaft I, having cams I' and I², for operating the charger-connections, cams P and S, for operating the plunger-connections, and cams U², for operating the bell-crank lever, which continues the upward movement of the lower plunger with that of the upper plunger, substantially as set forth.

8. The combination, with the plunger and charger connections, of the driving-shaft provided with cams I' and I² and cams P and S, substantially as set forth.

9. The combination, with the upper and lower plungers, the toggle arms by which the plungers are operated, a charger suitably mounted, and a rock-shaft to which the charger is connected, of the toggle-bars by which the toggle-arms are hinged to the frame, link connecting the toggle-bars, extension to the toggle-bars, levers secured to the rock-shaft, and a driving-shaft having cams P and S, embraced by the extension, and cams I' and I², embraced by the lever, substantially as set forth.

10. The lower plungers having toggle-arms formed with open yokes, substantially as set forth.

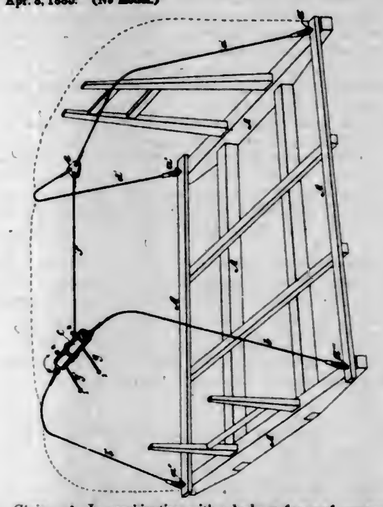
11. The combination of the perforated upper and lower plungers, perforated frame, and tie-rods passing through the plungers and tying the frame together, substantially as set forth.

12. The combination, with the falling lower plunger, of the ⊔-shaped frame adjustable thereunder, substantially as set forth.

13. The combination, with the falling lower plunger, of the ⊔-shaped frame having raised portions to receive the plunger and adjustable as to height, substantially as set forth.

14. The combination, with the falling lower plunger, of the ⊔-shaped frame hinged to the main frame, and the means for adjusting the ⊔-shaped frame, comprising set-screws having worm-blocks and secured to the main frame, and a threaded shaft by which the set-screws are adjusted, substantially as set forth.

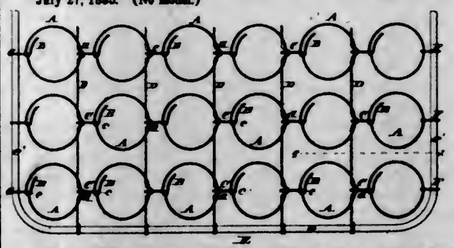
331,421. LOAD-BINDER. LYMAN R. MELLEN, Copake, N. Y. Filed Apr. 3, 1885. (No model.)



Claim.—1. In combination with a body or frame of a wagon, three or more ropes secured at various points of said body or frame, and a windlass secured to two of them at its ends, so as to turn upon the same, and secured to a third at its periphery, whereby when turned upon the first two the windlass will coil the third around its surface.

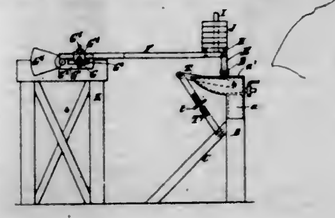
2. In combination with a wagon-frame or body, three or more ropes attached to the frame or body at various parts thereof, and a windlass composed of a cylinder, and a transverse bar movable longitudinally through the cylinder, the said cylinder being secured to two of the ropes at its ends and to the third rope upon its surface, substantially as described.

331,422. SPRING-BED. PETER H. MELLON, St. Louis, Mo. Filed July 27, 1885. (No model.)



Claim.—The combination, with a tie-rod having loops, of the springs having ends C, formed with double bends c' c^2 and portion c^3 in the same direction as the ends, and springs through which the loops of the tie-rods are passed, the double bends and end portions locking the loops to the springs, substantially as shown and described.

331,423. MACHINE FOR COMPRESSING AND EVENING FELT AND EXPELLING WATER FROM THE SAME. CHARLES H. MERRITT, Danbury, Conn. Filed July 11, 1885. (No model.)



Claim.—1. The combination, with a support for a felt hat or analogous article, of a roller arranged adjacent to the same, and mechanism for reciprocating the roller lengthwise of the said support, so as to cause it to travel along and beyond an article arranged upon the support, substantially as specified.

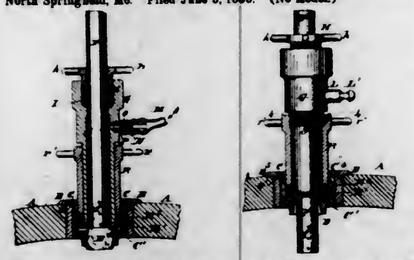
2. The combination, with a support for a felt hat or analogous article, of a roller arranged adjacent to the same, a weight or spring for forcing the roller toward the support, and mechanism for reciprocating the roller lengthwise of the said support, so as to cause it to travel along and beyond an article arranged upon the support, substantially as specified.

3. The combination, with a support for a felt hat or analogous article, of a roller arranged adjacent to the same, a frame in which the roller is journaled, a rod connected to said frame, a crank-pin connected to the rod, and a crank-arm mounted upon a shaft and having the crank-pin adjustably connected to it, substantially as specified.

4. The combination, with a support for a felt hat or analogous article, of a roller arranged adjacent to the same, a frame in which the roller is journaled, a rod connected to said frame, a crank-pin with which the rod is adjustably connected, a crank-arm carrying said crank-pin, and a shaft upon which said crank-arm is mounted, substantially as specified.

5. The combination, with a support for a felt hat or analogous article, of a roller arranged adjacent to the same, a frame in which the roller is journaled, a rod connected to said frame, a crank-pin adjustably connected to the rod, and a crank-arm mounted upon a shaft and having the crank-pin adjustably connected to it, substantially as specified.

331,424. APPARATUS FOR DRAWING BEER. HERMANN METZGER, North Springfield, Mo. Filed June 5, 1885. (No model.)



Claim.—1. An expansion-plug adapted to fit in a smooth cylindrical bore or recess, having a hollow sleeve or stem, a collar at the end of said stem, which is intended for insertion into the bore or recess, a sleeve screwing on the stem, an elastic packing-ring surrounding the stem between said sleeve and collar, and a tube passing adjustably through said hollow sleeve or stem, substantially as and for the purpose set forth.

2. The combination of a bung having a recess open at its outer side, a conduit-pipe passing through the bung, a sleeve surrounding said pipe, an expanding ring and an abutting collar therefor surrounding said sleeve, and a gland, also surrounding said sleeve and screw-threaded thereto, substantially as and for the purpose set forth.

3. The combination of a sleeve, G, with a conduit-pipe passing through it and through a stuffing-box of said sleeve, and having endwise movement therein, and an expansive packing surrounding said sleeve and fixed collar R', and screw sleeve or gland R, constructed to compress the expansive packing and force it outward against the side of the recess C'.

4. The combination of a conduit-pipe passing through a stuffing-box in a pipe or sleeve with an annular passage below the stuffing-box between the conduit-pipe and the sleeve, and an air-pipe in communication with the annular passage, and an abutting collar and a screw-threaded gland upon said sleeve, and an expanding ring between said collar and gland, all constructed and arranged substantially as set forth.

331,425. COUPLING-BOLT. MATTHIAS MILLER, Grand Rapids, Mich., assignor of one-half to George N. Davis, same place. Filed Apr. 20, 1885. (No model.)

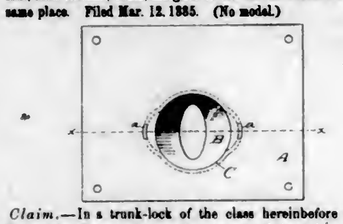


Claim.—1. As a new article of manufacture, a bolt cut diagonally in the direction of its length, forming two parts wedge-like in shape, one of said parts having the thread end C and the butt I, and the other part a slotted head to receive the nut E, as shown and described.

2. A bolt cut diagonally in the direction of its length in two parts, wedge-like in shape, in combination with the nut E and the locking-wire c, as shown and described.

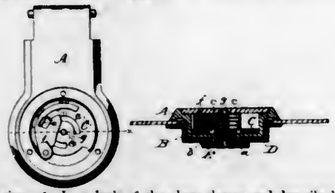
3. A bolt constructed of the wedge-shaped parts D and H, one of said parts having the butt I and the thread end C, and the other of said parts the slotted head forming the shoulder G and neck L, in combination with the nut E and the locking-wire c, all substantially as shown and described, and for the purpose set forth.

331,426. PLATE AND SOCKET FOR TRUNK-LOCKS. FRANK W. MIX, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Mar. 12, 1885. (No model.)



Claim.—In a trunk-lock of the class hereinbefore specified, the herein-described keeper-plate and socket, consisting of a socket having the swelled-out portions c c with the lugs *a a* on their edge, and the plate A, having the lug-receiving recesses by the side of the usual socket-orifice, all secured together, substantially as described, and for the purpose specified.

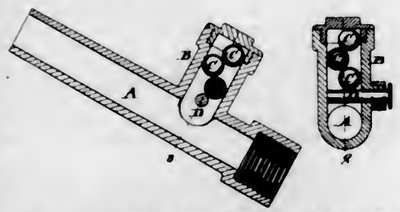
331,427. TRUNK-LOCK. FRANK W. MIX and GEORGE B. COWLES, New Britain, Conn., assignors to the Corbin Cabinet Lock Company, same place. Filed Mar. 30, 1885. (Model.)



Claim.—1. In a lock of the class shown and described, the circular bolt having central hub and disk-shaped portion, with the curved slot c made through said disk-shaped portion, substantially as described, and for the purpose specified.

2. In a lock of the class described, the circular bolt having the central hub and hole with deep countersink formed in said hub, and the central post, *g*, having the double-beveled head secured within said countersunk hole in the hub, substantially as described, and for the purpose specified.

331,428. FIRE-ESCAPE. PATRICK H. MONTAGUE, St. Louis, Mo., assignor of one-fourth to Thomas F. McDermott, same place. Filed Sept. 18, 1885. (No model.)



Claim.—1. A missile consisting of a ball or coil of wire or cord, in combination with a hose-nozzle, substantially as set forth.

2. A hose-nozzle formed with a branch for receiving a fire-escape wire or cord and having a cross-pin, substantially as set forth.

3. A ball of wire or cord, in combination with a hose-nozzle having a branch in which the ball is placed, substantially as set forth.

331,429. FIRE-ESCAPE. PATRICK H. MONTAGUE, St. Louis, Mo., assignor of one-fourth to Thomas F. McDermott, same place. Filed Sept 24, 1885. (No model.)

Claim.—1. The combination of the track, traveler, endless cable, and collars for securing the cage to the cable, as set forth.

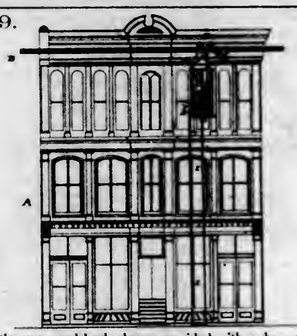
2. The combination of the track-cage having slotted tops and bottom, traveler, collars fitting in the slots of the cage, and endless cable passing through the collars, as set forth.

3. In a fire-escape, the combination of the track and traveler, consisting of arms hinged together and pulleys pivoted to the arms, as set forth.

4. In a fire-escape, the combination of arms provided with pivoted pulleys and hinged together at their lower ends, pulley pivoted to the arms, and endless cable passing through last-mentioned pulley, as set forth.

5. In a fire-escape, the combination of the track, traveler consisting of arms hinged together and pulleys, the cable, cage, collars for securing

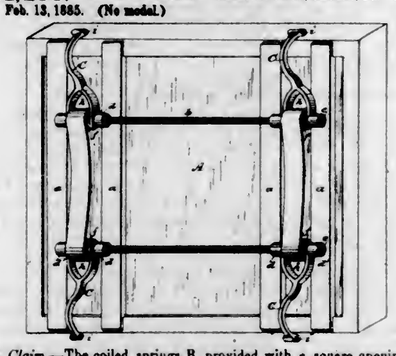
331,429.



the cable to the cage, and brake-lever provided with a shoe, substantially as set forth.

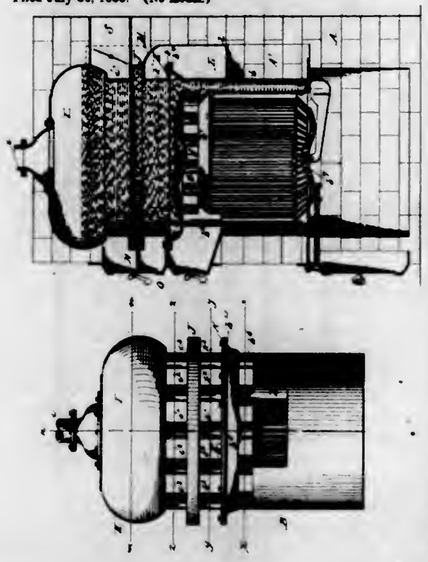
6. In a fire-escape, the combination of the track, traveler, cage, collars for securing the cable to the cage, and upper and lower brakes for clamping the cable against the cage, substantially as and for the purpose set forth.

331,430. VEHICLE-SPRING. JAMES D. OWEN, Silvara, Pa. Filed Feb. 13, 1885. (No model.)



Claim.—The coiled springs B, provided with a square opening it their centers, and the ribs *a a* on the body of the vehicle, in combination with the square rod *b*, provided with cylindrical journals *e e*, circular eyes *d d*, fitting said journals, and bifurcated hangers C C, having square openings to receive bar *b*, all constructed and arranged as set forth.

331,431. STEAM-GENERATOR. WILLIAM H. PAGE, Preston, Conn. Filed July 30, 1885. (No model.)



Claim.—1. In a steam-generator substantially as described, the casting B, formed with a water-chamber which comprises the walls of a fire-box having double-ogee-curve crown-sheet, as b^3, and connecting water-ways, as b^2, all cast in one piece, as set forth.

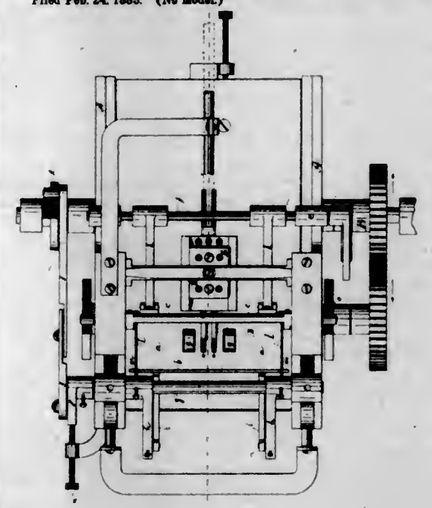
2. The crown-sheet b^3, having a form of double-ogee curve in cross-section, and having water-connections b^4, with the casting B, all in one piece of metal, as set forth.

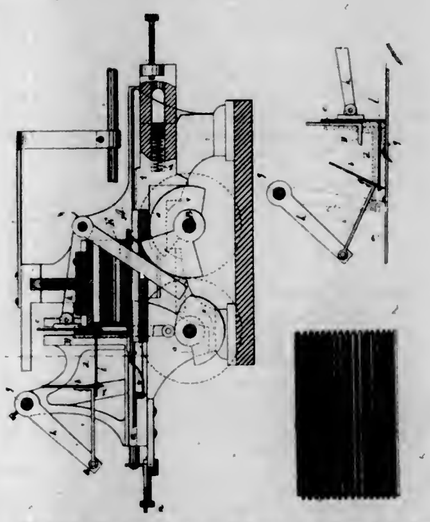
3. The casting B, having water-chamber which forms the walls of the fire-box, a crown-sheet, and a series of water-legs, as b^3, combined with the plates L, and adapted to serve with masonry, as A A', as set forth.

4. The combination, with the castings H B, as described, of the plates L, and diaphragm M N, as and for the purpose set forth.

5. The casting H, comprising the parts I, J, and K *k*, connected by water ways i^2 and i^3, &c., k^2 k^3, &c., combined with the casting B b^4 and the plates L, and diaphragms M and N, as and for the purpose set forth.

331,432. PLAITING-MACHINE. FRIEDRICH PANSE, New York, N. Y. Filed Feb. 24, 1885. (No model.)





Claim.—1. The combination of gage-plate *c*, receiving vertically-reciprocating motion from a power-shaft, B, with gage-plate *b*, which receives horizontal reciprocating motion from said power-shaft, the plates being substantially parallel when at their greatest proximity, substantially as specified.

2. The combination of gage-plate *c* with gage-plate *b*, which receives horizontal reciprocating motion from power-shaft B, and with

work-table *a*, the plate *b* bearing upon said table when approaching plate *c* by connection with said power-shaft, substantially as specified.

3. The combination of gage-plate *c*, operated from shaft B, with gage-plate *b*, operated from said shaft, and with intervening spring, to operate substantially as specified.

4. The combination of plate *c*, operated from shaft B, with slotted plate *b*, operated from said shaft, and with presser-foot D, the latter projecting through the slot in plate *b* when said plate is in proximity with plate *c*, substantially as specified.

5. The combination of shaft B with levers *f f'*, the lever *f* being sectional, and with shaft *g*, imparting motion to plate *b*, substantially as specified.

6. The combination of shaft B with levers *f f'*, shaft *g*, and plate *b*, connected to said shaft, and with screw *n*, bearing against lever *f'*, substantially as specified.

7. The combination of plates *b c*, operated from shaft B, with presser-foot D, spring *q*, and rods *r*, substantially as specified.

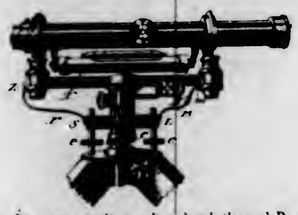
8. The combination of vertically-reciprocating plate *c*, having pin *l*, with plate *b*, having lug *m*, the plate *b* receiving horizontal motion from shaft *g* and vertical motion from pin *l*, substantially as specified.

9. The combination of reciprocating plate *c* and oscillating plate *b*, receiving motion from shaft B, with presser-foot D, cam *o*, spring *p*, presser-foot E, rack F, and cam *s*, substantially as specified.

10. The combination of plates *b c*, receiving motion from shaft B, with spring *q*, presser-feet D E, rack F, and cams *o s*, for imparting motion to the parts D F, substantially as specified.

11. The combination of plates *b c* and shaft B with presser-feet D E, rack F, slotted block *t*, spring *u*, and cams *o s*, substantially as specified.

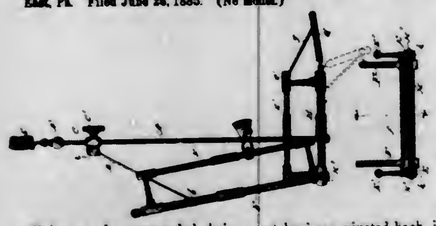
331,433. ATTACHMENT FOR LEVELING-INSTRUMENTS AND TRANSITS. FRANK PARSON, Raton, N. Mex. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a surveyor's transit or level, the rod P, secured to the leveling-plate at *s*, and curved upward and outward to register with a mark on the upper part of instrument, whereby parallelism between the leveling-screws and the level-bubbles may be attained.

2. In a surveyor's transit or level, the rod B, secured to the leveling-plate, combined with the rod H, secured to the upper part of the instrument, said rods being so placed on the instrument that when the edged or pointed extremity of one registers with the edged or pointed extremity of the other parallelism between the leveling-screws and the level-bubbles of the instrument will subsist, substantially as described.

331,434. BABY-JUMPER. HENRY S. PERK, Westfield, N. Y., assignor to A. F. Phelps, same place, and the North East Heading Company, North East, Pa. Filed June 26, 1885. (No model.)



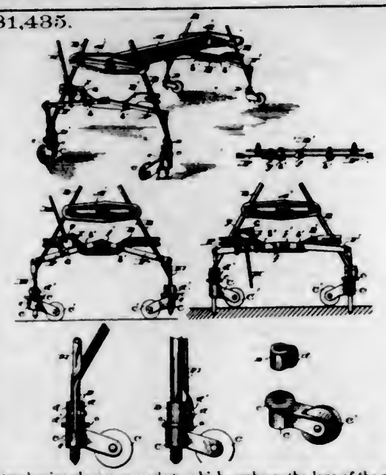
Claim.—1. In a suspended chair, a seat having a pivoted back, in combination with a suspending-bail consisting of the cross-bar A' and vertical rods which pass through said seat, and back-stays which are pivoted to the back, and in clamps which slide on said vertical rods A A, substantially as set forth.

2. In a suspended chair, the combination, substantially as set forth, of the seat E, with arms E', the back F, with sides F', pivoted together by the rung H, the suspending-bail A A A', the back-stays B B, and the sliding clamps C C on the rods A A, and the foot-piece G, connected with the seat by hooks, and provided with hooked supporting-stays *g g*, which engage with eyes or staples *e' e'* on the seat-arms.

331,435. ROCK-DRILLING MACHINE. CHARLES F. PEEBLES, Berea, Ohio. Filed July 31, 1885. (No model.)

Claim.—1. In drilling-machine attachments, the combination, with

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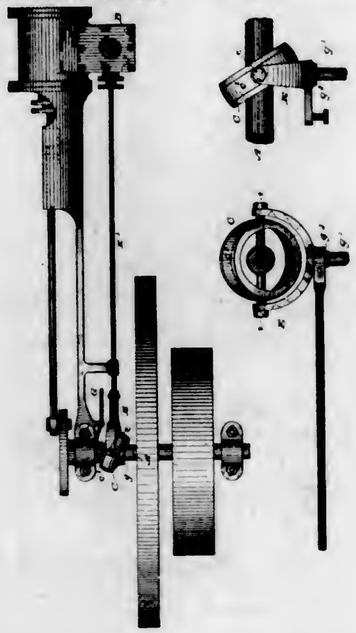


casters having sleeves or sockets which embrace the legs of the machine and adapted to revolve or slide endwise on the legs, of levers arranged in pairs and fulerumed to the machine, eccentrics for operating the levers, and suitable connecting mechanism, substantially as indicated, for elevating the machine and depressing the casters, or vice versa, by the action of the eccentrics, substantially as set forth.

2. In drilling-machine attachments, the combination, with the legs of the machine, casters having sleeves or sockets embracing the legs and adapted to revolve and slide on the legs, sleeves and push-bars for operating the casters, and arranged substantially as indicated, of levers arranged in pairs and pivoted to the machine, and pivoted, respectively, to the push-bars, said levers engaging each other, so that the pair of levers move in unison, and eccentrics arranged to elevate or depress the levers, substantially as set forth.

3. In drilling-machine attachments, the combination, with a leg of the machine, of a caster mounted thereon in condition to revolve or slide endwise on the leg, a sleeve mounted on the leg above the caster and in contact with the latter, a push-bar secured to the sleeve and arranged to engage a flange of the caster to elevate the latter, means, substantially as indicated, to operate the push-bar, and arranged to depress the caster and elevate the machine, or vice versa, substantially as set forth.

331,436. VALVE-GEARING. GEORGE M. PELTON, Belmont, N. Y. Filed Mar. 2, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, to form a valve-gear, of a disk pivoted to the shaft upon an axis oblique to said shaft but diametrical of the disk, means for swinging said disk upon its axis, a strap laid in a peripheral groove of said disk, and a valve-rod or shaft pivoted to said strap at points diametrically opposite each other.

2. The combination, substantially as hereinbefore set forth, of a disk pivoted to a revolving shaft by an oblique pivot-pin diametrical of said disk, means for swinging said disk upon its axis, a strap laid in a peripheral groove in said disk, an oscillating rod journaled in the framework and connected to said strap by a yoke and pivot-pins, and a valve operated by the oscillation of such rod.

3. The combination, substantially as hereinbefore set forth, to form a cut-off-valve governor, of a disk pivoted to a revolving shaft, a strap laid in a peripheral groove in said disk, an oscillating rod connected with said cut-off, and by a yoke and pivot-pins with the strap, and means whereby the disk is caused automatically to vary its angle with the shaft as the speed of the latter increases or diminishes.

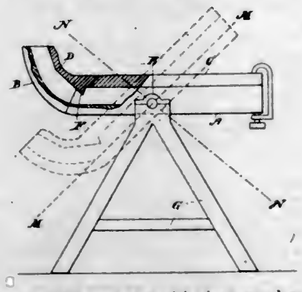
4. The combination, substantially as hereinbefore set forth, of a disk pivoted to a revolving shaft, a strap laid in a peripheral groove in said disk, an oscillating rod connected by a yoke and pivot-pins with said strap, and also connected with the cut-off valve, to control it by its oscillation, and a governor connected with the disk, to automatically change its angle with the shaft as the speed of the latter varies, to increase or diminish the oscillation of the rod and the throw of the cut-off valve.

5. The combination, substantially as hereinbefore set forth, of a disk pivoted to a revolving shaft, a strap laid in a peripheral groove in said disk, an oscillating rod connected with said strap by a yoke and pivot-pins, a cut-off valve connected with said rod, springs tending to hold the disk in a normal slightly-oblique position upon the shafts, and weights connected with each side of the disk in such manner that the centrifugal force will tend to increase its inclination to the shaft.

6. The combination, substantially as hereinbefore set forth, of the disk pivoted to a revolving shaft, the strap laid in a peripheral groove therein, the oscillating rod connected to said strap by a yoke and pivot-pins, the cut-off valve connected with said rod, the two rims fixed to the shaft, one on each side of the disk, the rods or arms pivoted to said rims, and link connected with lateral arms from the disk, the adjustable weights on said rods, and the springs connecting the rods with the rims.

7. The combination, substantially as heretofore set forth, of a disk pivoted to the revolving shaft and arranged to be set at different degrees of inclination thereto, a valve-rod and main valve operated by said disk, a second disk pivoted to the shaft and supplied with a governor, and a valve-rod and cut-off valve operated by said latter disk.

331,437. MOLD FOR CASTING METAL. WILLIAM S. PLATT, Waterbury, Conn. Filed Apr. 9, 1885. (No model.)



Claim.—1. A mold for casting metal, having a curved mouth-piece and contracted throat, and trunnions upon either side thereof, whereby it may be supported and whereon it may be turned, substantially as set forth.

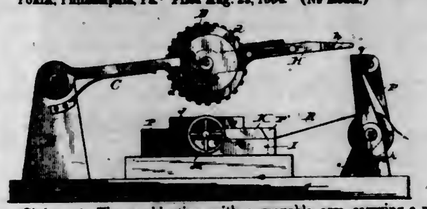
2. A mold for casting metal, having a mouth curved upward and contracted at its opening into the body of the mold, pivotal points upon either side thereof, and vent-holes at both ends, substantially as described.

3. A mold for casting metal, pivotally hung and provided with a mouth set at an angle or curve to the body of the mold, whereby the lower end of the mold may be elevated above the mouth thereof, and metal is retained in the mouth while the mold is so inverted, substantially as set forth.

4. In a mold of the character described, having a curved mouth and pivotally hung, vent-holes at the upper and lower ends of the mold, whereby the air may escape before the incoming metal, substantially as specified.

5. The combination of the body of the mold A, curved upward at B, and having trunnions E and vents *a*, with the cover C, turned upwardly at D and adapted to be secured to the body of the mold, substantially as set forth.

331,438. STEREOTYPE OR MATRIX MAKING MACHINE. J. LANE POALK, Philadelphia, Pa. Filed Aug. 29, 1884. (No model.)



Claim.—1. The combination, with a movable arm carrying a rotating type or die wheel, of an eccentric moving therewith and a variable feeding device, substantially as described, controlled by the eccentric.

2. The combination, with a movable arm carrying a rotating type or die wheel, of an eccentric moving therewith, a variable feeding device, substantially as described, and a slide operated by the eccentric and operating the feed device.

3. The combination, with a moving arm carrying a type or die wheel and an eccentric connected to the latter, of a slide bearing against the eccentric and a pawl or clutch operated by the slide, substantially as described.

4. The combination of a pawl or clutch, an arm carrying a type-wheel, and a slide for operating the pawl or clutch having a pivoted finger or end, and a cam or eccentric for controlling the slide, whereby the clutch may be moved more or less in accordance with the position of the type-wheel, substantially as set forth.

5. The combination, with a movable bed, of a pulley or wheel supporting a band or cord attached to the bed, a pivoted lever having a toe or stop for supporting it in its normal position, and a clutch carried by the lever and engaging the band, substantially as described.

6. The combination, with a matrix-bed, a pulley or wheel, and bands between the bed and wheel, of a pivoted lever carrying a clutch engaging with the wheel, a strip or bar attached to the lever, and an oscillating slide for operating the lever, having a pivoted end, whereby the bed is moved step by step, substantially as described.

7. The combination, with a movable bed carrying a matrix or plate, of a pivoted lever carrying a type or die wheel, an indicator carried by the lever, a pointer connected to the type-wheel, an eccentric carried by the lever, and means, substantially as described, whereby the bed may be moved in accordance with the character to be impressed to produce variable spacing, as set forth.

8. The combination, with a movable bed carrying a matrix or plate, of the type or die wheel supported in a moving frame, an indicator connected with the frame, a pointer for adjusting the wheel, a cam connected to the wheel, a slide bearing against the cam, and the feed devices, substantially as described, whereby the position of the cam will control the feed of the bed, as set forth.

9. The combination, with a bed-carrying matrix, of a clutch supported on a lever, connections between the bed and clutch, a strip or projection on the lever having an inclined face, and an arm carrying the type-wheel and having a pivoted end, the arrangement being such that the pivoted end does not operate the lever in its movement in one direction but does in the other, substantially as described.

331,439. METALLIC SEAL. CHARLES L. POND, Buffalo, N. Y. Filed Aug. 18, 1885. (No model.)



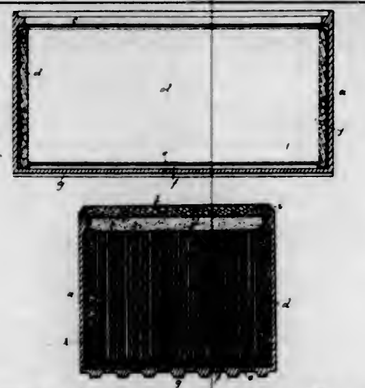
Claim.—1. A soft-metal seal-disk provided on opposite sides with a depression and an enlargement, and having a wire-orifice formed in the seal-disk between said depression and enlargement, whereby the wire inserted in said orifice is bent or corrugated upon pressing the seal-disk, substantially as set forth.

2. A soft-metal seal-disk provided on opposite sides with a depression and enlargement extending across the seal-disk, and orifices for the shackle-wire formed through the seal-disk between said depression and enlargement and about at right angles to the same, substantially as set forth.

331,440. CARBON-BAKING BOX. WILLIAM J. POSSONS, Cleveland, Ohio. Filed Apr. 11, 1884. (No model.)

Claim.—1. A receptacle for holding carbons during the baking process, consisting of a metal box provided with a cover, and independent

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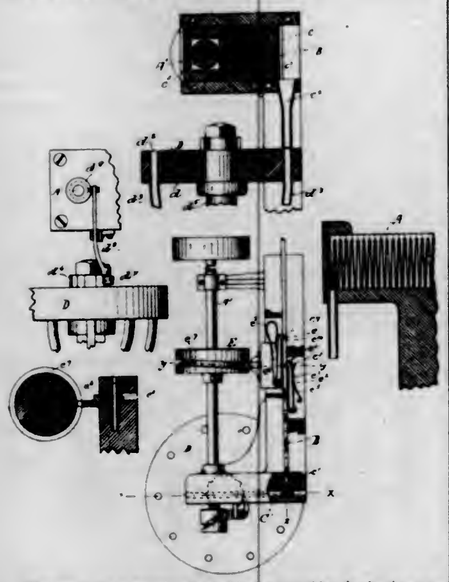
slabs or plates of refractory material, substantially as described, located adjacent to the inner sides of the box, substantially as set forth.

2. A receptacle for holding carbons during the baking process, consisting of a metal box provided with a cover, and slabs or plates of refractory material as described, situated within the box at its sides and ends, substantially as set forth.

3. A receptacle for holding carbons during the baking process, consisting of a metal box having a lining of refractory material, and having a supplemental floor or bottom provided with heat-circulating spaces on its under side, substantially as set forth.

4. A receptacle for holding carbons during the baking process, consisting of a cast-metal box having a lining of refractory material and having inwardly-projecting ribs or ledges, in combination with a cover adapted to be supported on said ribs or ledges, substantially as set forth.

331,441. HEEL-NAILING MACHINE. Freeborn F. Raymond, 2d, Newton, Mass. Filed Jan. 17, 1885. (No model.)



Claim.—1. In a machine for making or attaching heels, the combination of a bracket supporting above a distributer comb-strip-feeding mechanism, and a reciprocating punch or cutter, substantially as described, for feeding and cutting nails continuously and in regular succession, and a distributer arranged to receive the nails successively as they are severed and deposit them in a nail-holder, all substantially as specified.

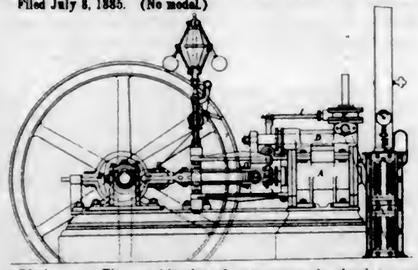
2. In a machine for making or attaching heels, the combination of a bracket supporting above the distributer comb-strip-feeding mechanism, and a reciprocating punch or cutter, substantially as described, for feeding and cutting nails continuously and in regular succession, a distributer arranged to receive the nails successively as they are severed and deposit them in a nail-holder, and a nail-carrier which receives the nails in a gang or group from the nail-holder and transfers them to a position to be driven, substantially as specified.

3. In a machine for making or attaching heels, the combination of a bracket supporting above a distributer comb-strip-feeding mechanism, and a reciprocating punch or cutter, substantially as described, for feeding and cutting nails continuously and in regular succession, a distributer arranged to receive the nails successively as they are severed and deposit them in a nail-holder, a nail-carrier which receives the nails in a gang or group from the nail-holder and transfers them to a position to be driven, and nail-driving devices, all substantially as set forth.

4. In a nailing-machine, the combination of the feedway B, the reciprocating pawl *e*, the detent-pawl *e'*, the reciprocating cutter C, the cutter or die passage *c'*, the passage c^2, and the nail-receiving passages d^2, arranged to be moved successively in line with the passage c^2, all substantially as and for the purposes described.

5. In a heeling-machine, the combination of the feedway B, the passage *c'*, the plunger or cutter C, the passage c^2, and the disk or block D, having a series of holes adapted to be brought successively in line with the passage c^2, all substantially as and for the purposes described.

331,442. STEAM-ENGINE. Alphonse Reis, Antwerp, Belgium. Filed July 8, 1885. (No model.)



Claim.—1. The combination of a steam-engine having a small cylinder employing high-pressure steam and a large cylinder employing low-pressure steam, with a refrigerator for reducing the temperature of the expanded steam, and a valve connected with the steam-supply and the small cylinder, and controlling the passage of the steam to the latter, a valve connected with and controlling the passage of steam from the small to the large cylinder, a valve connected with and controlling the passage of steam from the large cylinder to the refrigerator, a pump for forcing the cooled steam entering it from the refrigerator back to the generator, a valve connected with the refrigerator and pump and controlling the passage of steam from the former to the latter, and a valve connected with the pump and the steam-generator and controlling the passage of steam from the former to the latter, all as and for the purpose specified.

2. The combination, with a steam-engine, a steam-generator, and a refrigerator, of the valve E, in the form of a V, having a slide provided with a central chamber, Z, two lateral chambers, Y and Y', and six independent openings, I, II, III, I^a, II^a, and III^a, in its side walls, a cover, G, having the port J, a chamber, G', the side walls of which are provided with chambers *c*, *c'*, *c''*, and *c'''*, opening outward, respectively, into ports C, C', C'', and C''', and provided internally, respectively, with openings 1 and 2^a, 2 and 1^a, 3 and 4^a, and 4 and 3^a, the ports M and M', and passages 5 and 5^a, and connected, as described, with the steam-generator, the small cylinder A of the steam-engine, the large cylinder B of the steam-engine, and a refrigerator, R, whereby said single valve controls the passage of steam from the generator to cylinder A, thence to cylinder B, and thence to the refrigerator R, all as and for the purpose specified.

331,443. BLANK-FEEDING MECHANISM. Francis H. Richards, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Oct. 16, 1884. (No model.)

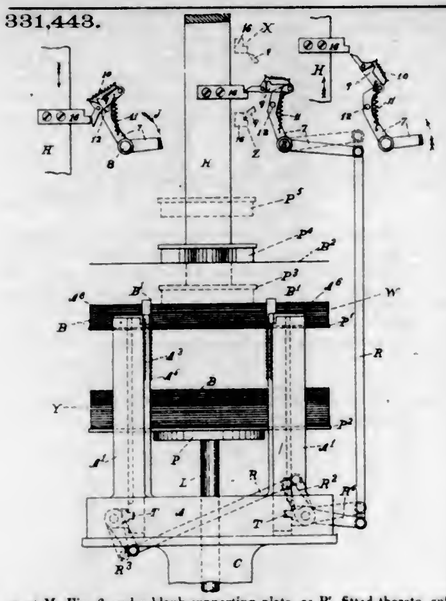
Claim.—1. A frame-work and a series of columns supported thereon, of which each one is adapted to receive and hold in place a pair of racks, a pair of racks to each column held in place thereby, a blank-supporting plate fed up by said racks, and a reciprocating mechanism, substantially as described, for operating said racks to feed up said plate, all combined and operating substantially as set forth.

2. A frame-work and a series of columns supported thereon, of which columns each one receives and holds in place two pairs of racks, two pairs of racks to each column, of which two pairs one pair in each column acts upon one blank-supporting plate and the other pair upon another plate, the two blank-supporting plates, and a reciprocating mechanism, substantially as described, for operating said racks up to said plates, all combined and operating substantially as set forth.

3. In combination, a suitable column, as A', rack A^4, rack A^5, spring D, cap A^6, arm T, and shaft T', substantially as described.

4. In combination, a series of racks, as A^3, having teeth inclined,

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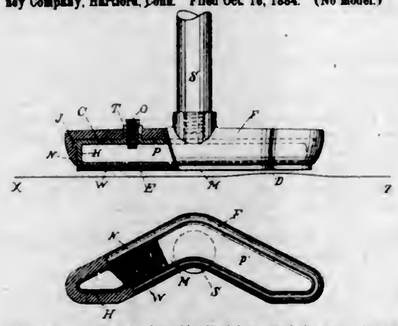


as at M, Fig. 6, and a blank-supporting plate, as P', fitted thereto, substantially as and for the purpose described.

5. A series of racks supported and operating substantially as described, a blank-supporting plate, as P', and plate-lifter L, all combined substantially as and for the purpose set forth.

6. A series of columns having a series of racks, substantially as described, the rock-shaft mechanism for operating said racks, slide H, having picker P^4 and arm 16, a latch-and-lever mechanism, substantially as described, and a connecting rod or part between said latch-and-lever and said rock-shaft mechanisms, all combined and operating substantially as set forth.

331,444. BLANK-PICKER FOR ENVELOPE-MACHINES. Francis H. Richards, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Oct. 16, 1884. (No model.)



Claim.—1. An envelope-blank picker consisting of a rigid frame and picker-body having a closed space filled with a flowing material, combined and operating substantially as described.

2. An envelope-blank picker consisting of a rigid frame and picker-body having a closed space filled with a non-compressible flowing material, combined and operating substantially as described.

3. An envelope-blank picker consisting of a rigid frame and a hollow picker-body filled with non-compressible solid flowing material, combined and operating substantially as described.

4. An elastic picker-body having therein a flexible web for preventing the lateral extension of its gum-receiving surface, substantially as described.

5. An elastic picker-body having therein a flexible metallic web, substantially as described.

6. An elastic picker-body having therein a flexible perforated metallic web, substantially as described.

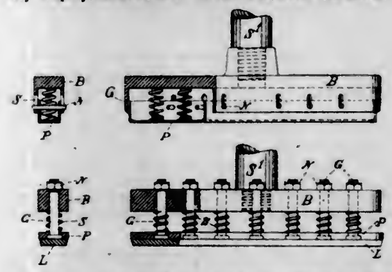
7. An elastic picker-body having therein a flexible perforated metallic web of wire-cloth, substantially as described.

8. The combination of frame F, having within it a recess for receiving a hollow picker-body, P, and a hole for receiving tube T, the hollow picker-body P lying in said recess and having a tube, T, passing into said hole, and plug O, substantially as described.

9. The combination of frame F, having flange N, and picker-body P, having stiffened face M and elastic side walls, H, substantially as described.

10. The combination of picker-body P, having the web W, elastic side walls, H, and flange J, and frame F, having flange N and a groove to receive flange J, substantially as described.

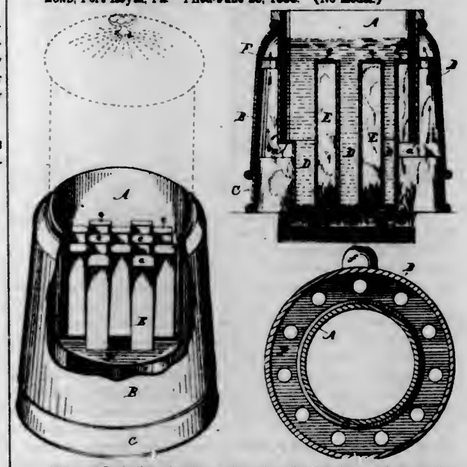
331,445. BLANK-PICKER FOR ENVELOPE-MACHINES. Francis H. Richards, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Oct. 16, 1884. (No model.)



Claim.—1. An envelope-blank picker and gummer consisting of a suitable frame, a flexible plate or picker-face, lateral-motion-resisting guides, downward-motion stops, and springs acting between said frame and plate, all combined and operating substantially as described.

2. In an envelope-blank picker, frame B, a flexible plate, P, rods G, springs *s*, and stops N, all combined, substantially as described, and shown in Figs. 4, 5, and 6, for the purpose set forth.

331,446. DOMESTIC AND AGRICULTURAL BOILER. Enos Richmond, Port Royal, Pa. Filed June 25, 1885. (No model.)



Claim.—In boilers for domestic and agricultural uses, the combination of the boiler A, having an offset, *a*, with the jacket B, the jacket-extension pieces C, the cups D, the tubes E, having caps *e*, and the perforated diaphragm F, having a flue, *f*, all in the manner hereinbefore described, whereby heat may be either rapidly or economically applied to liquids designed to be heated, and the same boiler may be used over inclosed or open fires, as herein set forth.

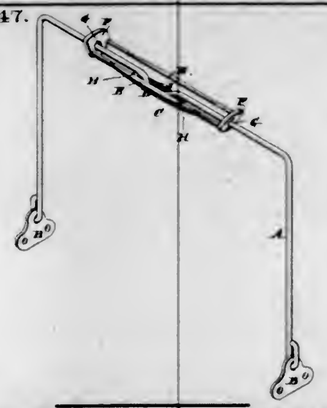
331,447. HANDLE FOR BUCKETS, &c. John Ringen, St. Louis, Mo. Filed Aug. 1, 1885. (No model.)

Claim.—1. In combination with a bail, the improved handle consisting of a body with upturned sides and perforated upturned ends, substantially as and for the purpose set forth.

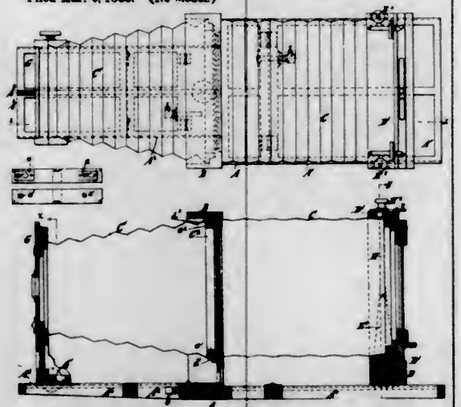
2. In combination with a bail, the improved handle consisting of the body D, upturned sides E, perforated ends F, and projections H, the bail being bent at J into an opening, I, of the handle, substantially as shown and described, for the purpose set forth.

3. In combination with a bail, the handle having perforated ends through which the bail passes, and an opening or recess into which the bail is pressed to prevent the handle from moving thereon, substantially as shown and described.

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331,448. PHOTOGRAPHIC CAMERA. GEORGE H. RIPLEY, Brooklyn, N. Y., assignor to the Scovill Manufacturing Company, Waterbury, Conn. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a photographic camera, the combination of a base-frame, an upright frame, B, erected thereon, and provided with lips d' d^2, a back piece adjustable along the base-frame toward and from said upright frame B, a body-section, C, extending from the back piece to the upright frame B, a front piece adjustable along the base-frame toward and from said upright frame B, and a body-section, C', attached to the front piece and having secured to its rear end a frame, C^2, provided with grooves c' c^2, that are adapted to engage with the lips d' d^2 of the upright frame B, substantially as specified.

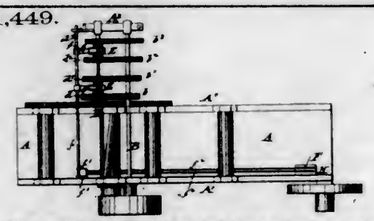
2. In a photographic camera, the combination of a base-frame provided with a detachable forward section, an upright frame erected thereon, a back piece adjustable along the base-frame toward and from the said upright frame, and a body-section extending from the back piece to the said upright frame, adjustable along the detachable forward section of the base-frame toward and from said upright frame, and provided at the rear with means whereby it may be adjustably secured to the said upright frame, substantially as specified.

3. In a photographic camera, the combination, with a base-frame having grooves in the sides, of a back piece composed of a base or lower section having an arc-shaped top surface, an upper section having an arc-shaped bottom surface, and screws extending through both sections, and having attached upon the lower ends slides which enter the grooves of the base-frame and are longitudinally rounded or curved to enable adjustments of the back piece with either side in advance of the other to be made.

331,449. VARIABLE FEED-MOTION FOR PLANING-MACHINES. JAMES ROGERS, Brooklyn, N. Y. Filed Aug. 22, 1885. (No model.)

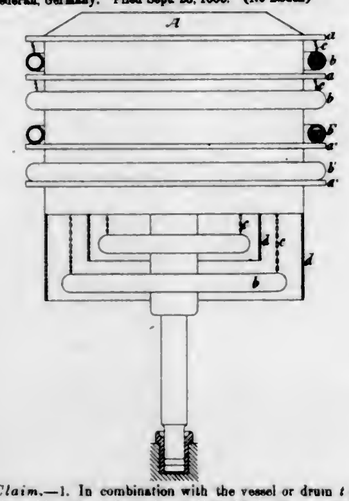
Claim.—1. The combination of the driving-shaft of a planing-machine having transmitting gear-wheels of increasing size, an auxiliary shaft having loose gear-wheels of decreasing size meshing with the corresponding gear-wheels of the driving-shaft, a transmitting-pinion keyed to said auxiliary shaft, clutch devices interposed between adjoining sets of gear-wheels, and lever mechanism whereby the clutch devices are thrown into gear with one of the sets of transmitting gear-wheels, substantially as set forth.

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2. The combination of a driving-shaft having fixed gear-wheels of increasing size, an auxiliary shaft having loose gear-wheels of decreasing size that mesh with the corresponding gear-wheels of the driving-shaft, a transmitting-pinion keyed to the auxiliary shaft, intermediate clutch devices interposed between adjoining sets of gear-wheels, shifting rods and levers for actuating each clutch device, and a laterally-shifting locking-plate having longitudinal slots with central recesses, whereby one shifting-lever is locked when the other lever is set, substantially as set forth.

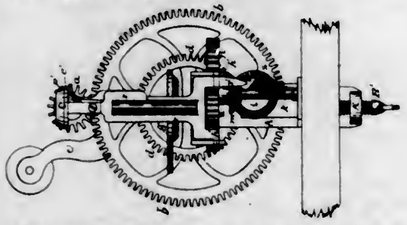
331,450. CENTRIFUGAL MACHINE. EMIL ROTHE, Breitenau, near Oederan, Germany. Filed Sept. 28, 1885. (No model.)



Claim.—1. In combination with the vessel or drum t of a centrifugal machine, the hollow rings b b' b^2, filled either partially with a liquid, as at b, or partially with balls, as at b', or entirely with a liquid containing some balls, as at b^2, which rings at some distance from the drum t surround the latter and may move horizontally, as described, and for the purpose specified.

2. In combination with the drum t, the flexible rings b^3 b^4, formed by endless chains or ropes and supported by the hoops a or suspended to the chains c, as and for the purpose set forth.

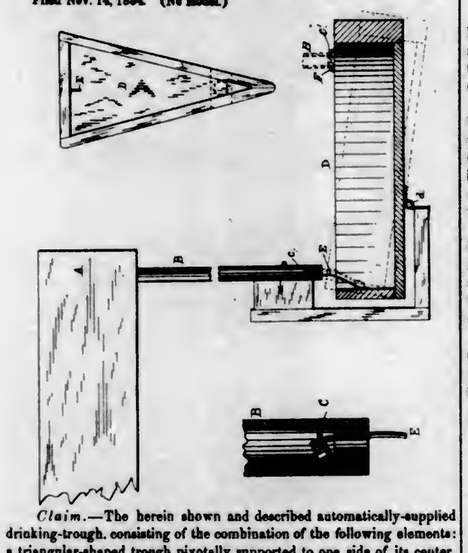
331,451. PEACH-PARING MACHINE. LANPHEAR H. SCOTT, Newark, N. J. Filed Nov. 29, 1884. (Model.)



Claim.—1. In a fruit-paring machine, the combination of the following elements, to wit: a driving spur-wheel, b, a horizontal spur-wheel, n, a shaft, k, gearing connecting said wheel n with the driving-wheel b, a pivoted knife-carrying standard, r, shaft t, gear connecting said shaft t with the spur-wheel n, longitudinally-slotted arm p on the shaft k, cam-plate g, gears for connecting said cam-plate with the driving-wheel b, tooth or stud w, working in the slot f'' of the arm p, and a suitable fruit-holding fork connected by gearing with the driving-wheel b, all substantially as and for the purpose herein set forth.

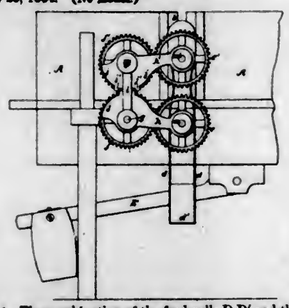
2. In a fruit-paring machine, the combination of a revoluble cam-wheel provided with a depending stud, a knife-supporting plate or carriage journaled on a vertical shaft placed to one side of the axis of the cam-wheel and radially slotted to receive the stud depending from the cam-wheel, a knife-standard pivotally supported by said plate or carriage and adapted to bear on the outer edge of the cam-wheel during its reverse motion, a revoluble knife mounted on said standard, gearing connecting said knife with the vertical shaft to which the knife-plate is journaled, and means, substantially as set forth, to rotate said shaft independently of the cam-wheel, substantially as and for the purposes specified.

331,452. AUTOMATIC CUT-OFF. PETER SEARS, Barnesville, Ohio. Filed Nov. 14, 1884. (No model.)



Claim.—The herein shown and described automatically-supplied drinking-trough, consisting of the combination of the following elements: a triangular-shaped trough pivotally supported to one side of its center, a supply-pipe, a valve and valve-seat for regulating the passage-way through the pipe, and a connection directly attached to the trough and controlling the passage-way through the supply-pipe, substantially as described, and for the purposes specified.

331,453. FEED-CUTTER. HORATIO G. SHIPPS, Philadelphia, Pa. Filed June 23, 1884. (No model.)



Claim.—1. The combination of the feed-rolls D D' and their spindles a a' with transmitting-gearing comprising the spur-wheels e e', pinions f f', shafts g g', arms h h', and link or links i, hung to the shafts g g', as set forth.

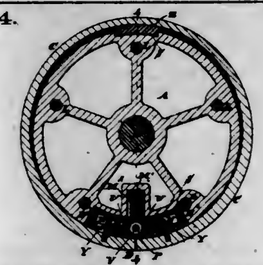
2. The combination of the spindles a a', shafts g g', spur-wheels e e', and pinions f f' with the link i and the arms h h', having interlocking teeth f'', as set forth.

3. The combination of the knife-slide and its operating-arm N, the clamp-block and its treadle, and a spring-catch, t, connected to the treadle, and serving to lock the arm N when the latter is elevated, as specified.

331,454. CYLINDER-PISTON PACKING. GUSTAVUS B. SIMONDS, Sedalia, Mo., assignor of one-half to Lucien B. Rhoads, same place. Filed Feb. 13, 1885. (No model.)

Claim.—1. The combination of the piston-body, ring surrounding the body, block fitting in a recess in the body and provided with chambers and ports, pistons in said chambers, and pins secured to the said ring and extending through slots in the block to be moved by said pistons by steam entering through ports in the body to expand the ring, substantially as set forth.

331,454.

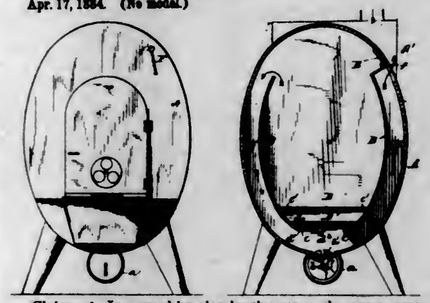


2. The combination of the piston-body, ring surrounding the body, block fitting in a recess in the body and provided with chambers and ports, piston in said chambers, pins secured to the ring and extending through slots in the block to be moved by steam entering through ports in the body to expand the ring, and spring for holding the block out against the ring, substantially as and for the purpose set forth.

3. The combination of the piston-body, ring surrounding the body, block M, fitting in a recess in the body and provided with chambers P N, ports V U and slots Y, pistons T O in said chambers, and pins W, secured to said ring and extending through the slots Y into the chambers N behind the pistons O, the whole being arranged and operating substantially as shown and described, for the purpose set forth.

4. The combination, with the piston-body, cut ring surrounding the same, and means for expanding said ring, of the splice-block M and the block Z, occupying diametrically-opposite recesses in the body, and the plate S, substantially as and for the purpose set forth.

331,455. HEATING-STOVE. WILLIAM C. SMITH, Warsaw, Mo. Filed Apr. 17, 1884. (No model.)



Claim.—1. In a wood-burning heating-stove, the upper grate, D, the lower dumping-grate, the latter forming in connection with the grate D a closed chamber for the reception and retention of the ashes from the fire-chamber, in combination with the shell A, and portion B, forming a flue, B', extending around the sides and beneath the fire-chamber, the said lower grate forming a central continuation of the flue, substantially as set forth.

2. In a wood-burning stove, an ash-chamber, a section, a, forming a chamber, and receiving ashes from said ash-chamber, a discharge-opening in said last-mentioned chamber, and means, substantially as described, for discharging the ashes through said opening, for the purpose specified.

331,456. PIPE-TONGS. HENRY F. W. SOMST, San Francisco, Cal. Filed Oct. 1, 1885. (No model.)



Claim.—1. A pipe-tongs comprising a handle or stock, a fixed curved or hooked jaw on said handle or stock, and a longitudinally-slotted or two-sided jaw having a convexed face and pivoted to the handle or

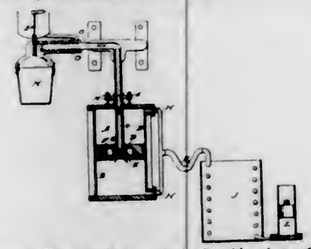
stock, said jaw being adapted to fit down on each side of the fixed jaw, substantially as described.

2. A pipe-tongs comprising a handle or stock, a fixed curved or hooked jaw on said handle or stock, a pivoted or swinging longitudinally-slotted or two-sided jaw having a convexed face, and a tie-piece between the sides of said jaw to limit its movement over the fixed jaw, substantially as described.

3. A pipe-tongs comprising a handle or stock, a fixed curved or hooked jaw on said handle or stock, a longitudinally-slotted or two-sided jaw having a convexed face and pivoted to the handle or stock, said jaw being adapted to fit down over the fixed jaw, and a spring bearing on the pivoted jaw, substantially as described.

4. A pipe-tongs consisting of the handle or stock A, the fixed curved or hooked jaw B on its end, the longitudinally-slotted or two-sided convexed-faced jaw C, the pin D, pivoting said jaw to the handle or stock, the tie-piece *c*, between the sides of said jaw, and the spring E, bearing on the tie-piece, substantially as described.

331,457. MODE OF AND APPARATUS FOR MAKING ICE, REFRIGERATING, &c. A. Gapper Southey, Jersey, Channel Islands, assignor of one-half to Frederick Delacourt Blyth, London, England. Filed May 26, 1885. (No model.) Patented in England Aug. 8, 1877, No. 3,017; in France Dec. 22, 1877, No. 121,767; in Belgium Dec. 22, 1877, No. 43,843, and in Germany Feb. 12, 1878, No. 2,744.



Claim.—1. The described method of making ice, refrigerating, evaporating, and desiccating, consisting in drawing off the vapor arising from water or liquids, or substances containing vaporizing water, when placed in a vessel from which the pressure of the atmosphere has been removed, and compressing the vapor so arising to a pressure less than that of the atmosphere by means of a pump or exhauster heated so as to prevent the condensation of the vapor in any of its parts, then delivering the vapor so compressed to another similarly-heated pump, by which it is further compressed to the pressure of the atmosphere and expelled or delivered to one or more pumps in succession to be so compressed and expelled, substantially and for the purposes herein described.

2. The described method of making ice, refrigerating, evaporating, and desiccating, consisting in drawing off the vapor arising from water or liquids, or substances containing vaporizable water, when placed in a vessel from which the pressure of the atmosphere has been removed, and compressing the vapor so arising to a pressure less than that of the atmosphere by means of a pump or exhauster heated so as to prevent the condensation of the vapor in any of its parts, then delivering the vapor so compressed into a vessel from which the air is exhausted by an air-pump or delivering it to another one or more heated pumps in succession, by which the vapor is further compressed, and then delivered into the exhausted vessel, then condensing the vapor by cooling the vessel either by water or air or by the evaporation of liquids or substances undergoing concentration or desiccation, then removing the water of condensation from the vessel either by the air-pump or intermittently by letting down the vacuum in the vessel, and drawing off the water, substantially and for the purposes herein described.

331,458. SPRING PISTON-PACKING RING. Valentine F. Stetzer, Toledo, Ohio. Filed Aug. 11, 1885. (No model.)

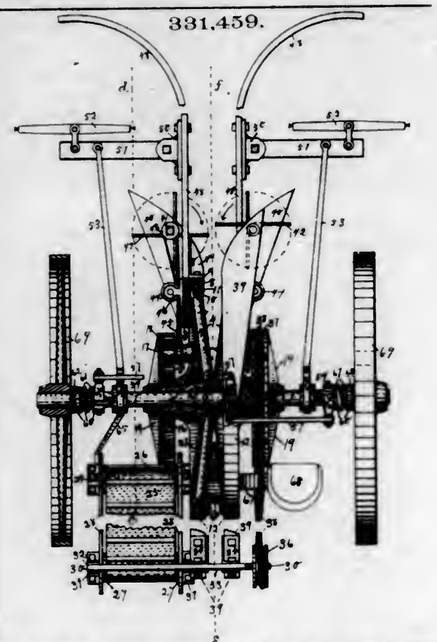


Claim.—A spring piston-packing ring made of one piece of material and having the notched lap K and a true circular periphery corresponding to the circular periphery of the inner surface of the cylinder in which it is to be used, and forming of itself an inherent adjusting-spring, substantially as herein shown and described.

331,459. CORN HARVESTING AND HUSKING MACHINE. James G. Stowe, Cincinnati, Ohio, assignor of one-half to John W. Parker, same place. Filed Feb. 9, 1885. (No model.)

Claim.—1. In a corn harvester and husker, the combination of one

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pair or more of adjacent rotating rollers, their axes projecting outward from a horizontal axis at right angles to the row of corn, and mechanism, substantially as described, for revolving said rollers upward and backward about the said horizontal axis, and also about their own axes, whereby each pair of rollers will roll upon and at the same time be moved bodily upward along the stalks of corn and press or burst the ears out of their husks, substantially as set forth.

2. The combination of the drive-wheels, the main axle, the sleeve turning upon said axle, one or more pairs of adjacent rotary rollers radiating from said sleeve, bearings for the inner ends of said rollers carried by said sleeve, bearings for the outer ends of said rollers carried by a support connected to and rotating with said sleeve, and mechanism, substantially as described, for rotating said sleeve, whereby the said rollers are rotated upward and backward about said axle, substantially as and for the purpose set forth.

3. The combination of the drive-wheels, the axle, the sleeve turning upon the axle, one or more pairs of adjacent rollers radiating from the sleeve, having their bearings in said sleeve and in a support rigidly connected to said sleeve, pinions fixed on the outer ends of the rollers, stationary racks fixed upon the frame and engaging said pinions, and mechanism, substantially as described, for rotating said sleeve, whereby the rollers are rotated upward and backward about the axle, and at the same time rotated about their own axes, substantially as and for the purpose set forth.

4. The combination of the axle 1, the sleeve 2, the ring-supporting spokes 13, the rings 9, and the rollers 4.

5. The combination, with the central sleeve, 2, of the circular stationary frames 3 14 12, having bearings upon the central sleeve, and the rim of each frame having an inner groove, the rings 9, held in said grooves, the rollers 4, carried by said sleeve and rings 9 and provided with pinions, and toothed racks fixed upon said stationary frames and engaging said pinions, substantially as and for the purpose set forth.

6. The combination of the axle 1, the central sleeve, 2, the circular stationary frames 3 14 12, the spokes 13, rings 9, rollers 4, pinions 10, mechanism, substantially as described, for rotating the central sleeve, the spokes, and the rollers 4 upward and backward about the axle, and the stationary racks 11, engaging said pinions, whereby said rollers are rotated inward and downward as they are carried around the axle, the walls of the circular side frames, 3 14 12, arranged close to the sides of the rollers 4, whereby the husked ears are retained between the two opposing circular walls, and carried by the said rollers upward and backward over the axle 1 and the sleeve 2, and are delivered in the rear of the machine, substantially as and for the purpose set forth.

7. The combination of the sleeve 2, the rollers 4, and the spring-bearings for the inner ends of the rollers, substantially as and for the purpose set forth.

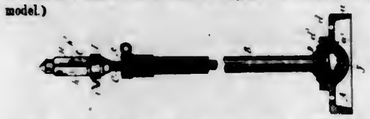
8. The combination of the circular frames 3 14 12, the ear-board 22, the back wall, 23, the opening 21 in the side of the circular frame,

and the rollers 4, whereby the husked corn is delivered from the husking-rollers, substantially as described.

9. The combination, in a corn harvesting and husking machine, of one pair or more of adjacent rollers, means, substantially as described, for rotating them about the driving-axle, and at the same time about their own axes, frames at the sides of the rollers for confining the husked ears, an inclined carrier, and mechanism, substantially as described, for driving said carrier, whereby the husked ears may be delivered to a wagon.

10. In a corn harvester and husker, one pair or more of adjacent rotating rollers, their axes projecting outward from a horizontal axis at right angles to the row of corn, said rollers having yielding or elastic surfaces, mechanism, substantially as described, for rotating said rollers upward and backward about the said horizontal axis, and at the same time about their own axes, whereby the rollers are moved bodily upward along the stalks of corn, and at the same time roll upon said stalks to press or burst the ears out of their husks, substantially as and for the purpose set forth.

331,460. LIFTING-JACK. Edmund Suckow, Buffalo, N. Y., assignor of one-half to Hardwicke & Ware, same place. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a lifting-jack, the combination, with the base and jack-screw, of a column supporting the jack-screw and composed of detachable sections, and a spherical joint whereby the column is connected with the base, substantially as set forth.

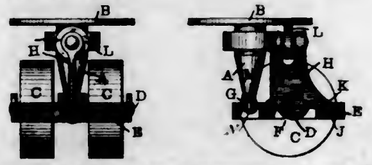
2. In a lifting-jack, the combination, with the jack-screw, of a base provided with a spherical socket and a column provided at its lower end with a detachable spherical knuckle, substantially as set forth.

3. In a lifting-jack, the combination, with the base provided with a spherical socket, of a column having a screw-threaded lower end, a spherical knuckle seated in said socket and provided with a screw-threaded cavity, and a stop whereby the knuckle is prevented from turning in screwing the column into said cavity and unscrewing it, substantially as set forth.

4. In a lifting-jack, the combination, with the base provided with a spherical socket, of a column provided with a spherical knuckle seated in said socket, and a set-screw whereby the knuckle can be clamped in the socket, substantially as set forth.

5. The combination, with the base A, having a spherical socket, *d*, and a stop, *e*, in the same, of the column B and a spherical knuckle, D, having a spherical groove, *f*, substantially as set forth.

331,461. CASTER. Rachel S. Thompson, Hamilton, Ohio. Filed May 20, 1885. (Model.)



Claim.—1. In a furniture-caster, the combination of a stem adapted for attachment to furniture, a hanger fitted to swivel thereon, and having at its base a hole for the axle of the floor-wheels, and also horizontal journals, a housing having bearings for the hanger-journals and bearings for the axle of the floor-wheels, floor-wheels, and a floor-wheel axle engaging the housing, the wheels, and the hanger, substantially as and for the purpose set forth.

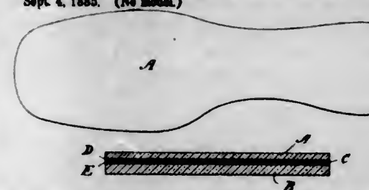
2. In a furniture-caster, the combination of a rectangular wheel-housing having cross-bars provided with downwardly-opened notches, a wheel-axle seated upward within said notches, and a retaining part encircling the axle between the floor-wheels and engaging the top of the housing, and serving to prevent the axle from leaving said notches, substantially as and for the purpose set forth.

3. In a furniture-caster, the combination of a housing provided with bearings of oscillation, two floor-wheels and an axle secured in the housing, a stem adapted for attachment to furniture and bearing at its foot in the housing forward of the wheel-axle, and a hanger fitted to swivel upon the stem and journaled at its foot in the bearings of oscillation of the housing, substantially as and for the purpose set forth.

4. In a furniture-caster, the combination of a stem, A, adapted for attachment to furniture, and provided at its foot with an upwardly-facing shoulder, N, a housing, E, provided with an axle for two floor-wheels, and with a projection forward of the wheels encircling the stem above the shoulder, and a hanger, H, encircling the upper part of the stem and engaging the housing by bearings of oscillation, substantially as and for the purpose set forth.

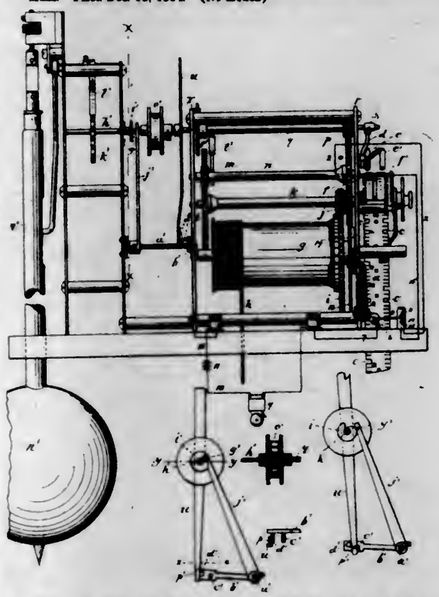
5. In a furniture-caster, the combination of stem A, plate B, wheels C, axle D, housing K, having bearings J and hole G, hanger H, having hole I and journals K, and anti-friction wheel L, substantially as and for the purpose set forth.

331,462. SOLE FOR BOOTS OR SHOES. James E. Telfon, Ashland, assignor to himself and William H. Huntington, Boston, Mass. Filed Sept. 4, 1885. (No model.)



Claim.—As an improved article of manufacture, the herein-described sole, composed of outer layers of leather and an intermediate sheet of textile fabric connected to said outer layers by a film of compound cement and pressure or vulcanization, substantially as described.

331,463. ELECTRIC SIGNALING APPARATUS. Jacob P. Terrell, Boston, assignor, by direct and mesne assignments, to James F. Emerson, Wakefield, George O. Carpenter, Boston, and John W. Carter, Newton, Mass. Filed Dec. 18, 1884. (No model.)



Claim.—1. In an electric time-signal, a flexible strip or band having notches or perforations arranged in conformity to a schedule or time-table, combined with mechanism, substantially as described, for moving said band progressively at a predetermined rate, so that each notch will be in a given position at a given minute, and an electric circuit, including a signaling device and having terminals which are separated by the imperforate portions of the band and are permitted to meet and close the circuit through the signaling device by the notches or perforations of the band, as set forth.

2. In an electric time-signal, a flexible strip or band having notches or perforations arranged in conformity to a schedule or time-table, combined with mechanism, substantially as described, for moving said band progressively step by step at a predetermined rate, an electric circuit, including a signaling device, and having terminals which are separated by the imperforate portions of the band, and mechanism, substantially as described, whereby one set of terminals is depressed at regular intervals corresponding to the intervals between the movements of the band, as set forth.

3. In an electric signal, the combination of a flexible strip or band having two series of notches or perforations, mechanism, substantially as described, for moving said band step by step, an electric circuit, including a signaling device, and having two branches, each having terminals which are separated by the imperforate portions of the band, and are permitted to meet by the notches or perforations thereof, one series of notches

co-operating with one branch and the other series with the other branch, and an automatic switch mechanism, substantially as described, whereby each branch is alternately made operative and inoperative, as set forth.

4. In an electric signal, the combination of the flexible band having notches or perforations, the electric circuit, including a signaling device, and having terminals which are separated by the imperforate portions of the band and are allowed to meet by the notches or perforations thereof, one of said terminals being capable of oscillating a time-train having on one of its arbors a drum which moves the flexible band, and on another a cam which depresses the oscillatory terminal, and a let-off mechanism, substantially as described, whereby the train is allowed to operate once in each minute, as set forth.

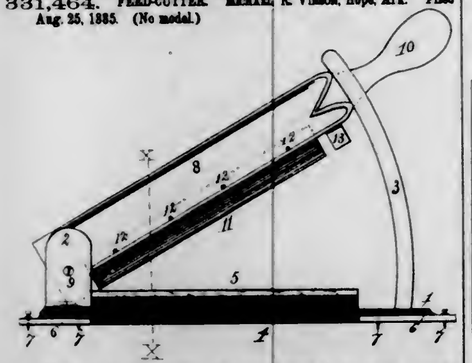
5. The combination, with the time-train, of the signaling mechanism operated thereby, an arbor, h', connected by a spring, o', with one of the arbors of said train, and provided with a cam and an escape-wheel, an escapement and pendulum, whereby the rotation of the arbor h' and its cam is regulated, and mechanism, substantially as described, controlled by said cam, whereby the time-train is alternately released and arrested, the spring o' being wound by the movement of the time-train, and thus caused to impel the arbor and cam, as set forth.

6. The combination, with the time-train having the arbor q and the arm u on said arbor, of the arbor h', having the cam i' and escape-wheel k', an escapement and a pendulum governing the rotation of said arbor, the spring o', connected at one end to the arbor q, and at the other end to the arbor h', and the rock-shaft d', having the arm j' bearing against the cam i', and the arm b', having the arresting-pallets c' d', as set forth.

7. The combination of the time-train, the toothed wheel 18, rotated thereby, the pivoted non-conducting arm 17, the switch 4, secured to said arm and pressed normally toward to the wheel by a spring, 6, the projection 19 on said wheel, whereby the arm 17 is displaced during a part of a complete rotation of the wheel, and a two-branched electric circuit, the branches whereof are alternately cut out by the movements of the switch, as set forth.

8. A time-train combined with let-off mechanism, substantially as described, whereby said train is released and allowed to move once each minute, combined with an electric circuit or circuits closed by each movement of the time-train, as set forth.

331,464. FEED-CUTTER. Michael R. Vinson, Hope, Ark. Filed Aug. 25, 1885. (No model.)



Claim.—In a feed-cutter, the combination, with the base 1, having flange 6, upright bearing 2, incline 4, slotted guide 3, and knife 5, with lever-arm 8, pivoted in said upright bearing 2, and having flat handle 10, working in said guide 3, knife 11 bolted in and block 13 fastened to the lower face of said lever-arm, all substantially as shown and described, and for the purposes set forth.

331,465. SPRING AND NOSE-GUARD FOR EYEGLASSES. George W. Wells, Southbridge, Mass. Filed Aug. 21, 1885. (No model.)



Claim.—1. The combination, with the eye-wires provided with upper and lower slotted posts, of a spring made imperforate throughout, passing through the upper posts, and having at the ends tongues less in width than the body of the spring, which enter the lower posts and are bent in the plane of the eye-wires to secure them in the lower posts, whereby the spring is secured to the eye-wires without screws, rivets, or other means, substantially as herein described.

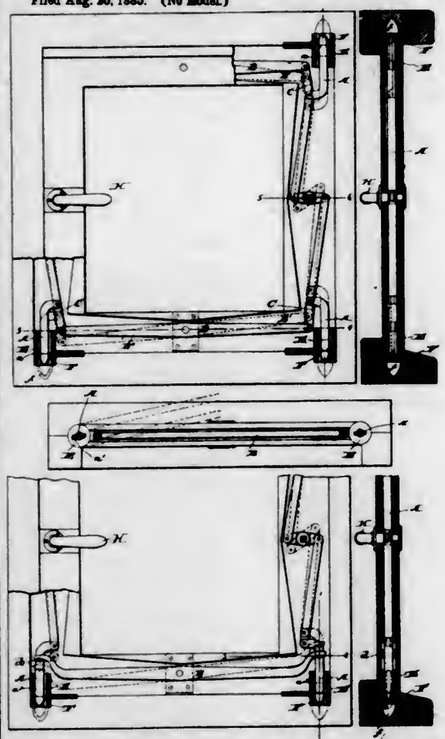
2. The combination, with an eye-wire provided with slotted posts, of a spring passing through the upper post and having at the end a bent tongue entering the slot in the lower post, and a guard fitting the slots in the posts and serving to secure the bent tongue of the spring from disengagement with the slotted lower post, substantially as herein described.

3. A spring for eyeglasses, made imperforate throughout, and provided at the ends with tongues c, less in width than the body of the spring, and bent transversely to the width of the spring, as at °, substantially as herein described.

4. The combination, with an eye-wire, having slotted posts, of a nose-guard having at the ends tongues, which are sprung into engagement with the posts, and are retained in engagement therewith by the elasticity of the nose-guard and without screws or rivets, substantially as herein described.

5. The post a for eyeglass-frames, having a slotted opening composed of two portions, a' a^2, of unequal width, substantially as and for the purpose herein described.

331,466. HANGING WINDOW. John R. Whitney, Radnor, Pa. Filed Aug. 20, 1885. (No model.)



Claim.—1. The combination, with a sash, door, panel, &c., fitted to an inclosing-frame, of sliding bolts on opposite edges of said sash, door, panel, &c., all connected together by one or more connecting and pivoted levers, by which the movement of the bolts on one side simultaneously operate and control the movement of those on the opposite side, substantially as set forth.

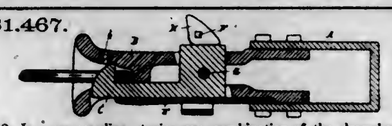
2. The combination, with a sash, door, panel, &c., fitted to an inclosing-frame, of bolts on opposite sides of said sash, door, panel, &c., the bolts on opposite sides being connected to move simultaneously, but in opposite directions, and provided at their ends or points with one or more projecting flukes or lugs, substantially as set forth.

3. The combination, with a sash, door, panel, &c., fitted to an inclosing-frame, of guiding-plates E on each corner of said sash, door, panel, &c., and socket-plates F, said guiding and socket plates being bored and slotted to correspond with and to receive and guide the bolts and their projecting flukes or lugs, substantially as set forth.

331,467. CAR-COUPLING. Peter A. Aikman, Windsor, Ontario, Canada, assignor of one-fourth to Wm. R. Merwin, Joseph Booth, and William Robinson, Detroit, Mich. Filed Sept. 16, 1885. (No model.)

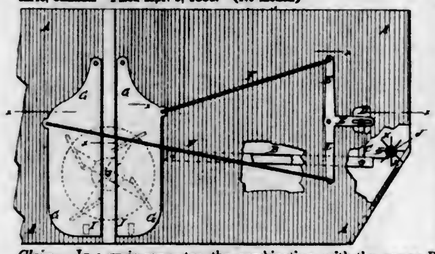
Claim.—1. In a car-coupling device, and in combination with a draw-head provided with a hook-coupler, substantially as described, a cam arranged to depress and elevate the free end of the coupling-hook, substantially as set forth.

331,467.



2. In a car-coupling device, the combination of the draw-bar A, hook-coupler C, pivoted within a recess in the head of said draw-bar, shaft F, arranged substantially over the pivot of said coupler, and cam H, rigidly secured to said shaft, and constructed, arranged, and operating substantially in the manner and for the purposes described.

331,468. GRAIN-SEPARATOR. Hezekiah Bailey, St. Thomas, Ontario, Canada. Filed Apr. 9, 1885. (No model.)



Claim.—In a grain-separator, the combination, with the screen B and the dampers G of the fan-blower, of the swinging bars C, the three-armed levers E, and the connecting-rods F, substantially as herein shown and described, whereby the strength of the air-blast will be regulated by the quantity of material on the said screen, as set forth.

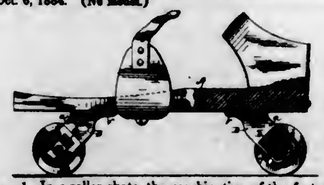
331,469. MATERIAL FOR THE DECORATION OF THE INTERIOR WALLS AND CEILINGS OF BUILDINGS. Jacob M. Baker, Boston, Mass. Filed Feb. 24, 1885. (Specimens.)



Claim.—1. As a new article of manufacture, a covering for interior walls, ceilings, &c., composed of chemical wood fiber, having an embossed surface, substantially as set forth.

2. A covering for interior walls, ceilings, &c., composed of two sheets of chemical wood fiber united by an interposed layer of glue or analogous adhesive substance and then embossed before the said glue or adhesive substance becomes dry, substantially as decribed.

331,470. ROLLER-SKATE. George P. Bosworth, Pawtucket, R. I. Filed Oct. 6, 1884. (No model.)



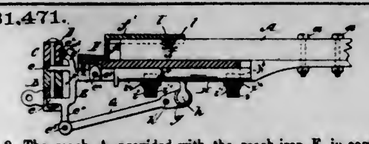
Claim.—1. In a roller-skate, the combination of the foot-plate with the longitudinally-inclined hanger B, made in two oppositely-arranged parts, a a, provided with attaching-flanges f, inclined recess b, and a slot, d, with the flanged bearing-piece C, provided with the guiding-shoulders g g, the rubber spring D, axle E, and rollers F F, substantially as described.

2. In a roller-skate, the combination of the foot-plate with the oppositely-inclined front and rear hangers, made in two oppositely-arranged parts, a a, provided with the attaching-flanges f, and having the inclined recesses b and slots d, with the flanged bearing-pieces C, provided with the guiding-shoulders g g, the rubber springs D, axles E, and rollers F, substantially as described.

331,471. RUNNING-GEAR FOR VEHICLES. John M. Bouck, Gouverneur, N. Y. Filed July 30, 1885. (No model.)

Claim.—1. The reach A of a four-wheel vehicle, attached to the axle B by a jointed and sliding connection, substantially as and for the purposes set forth.

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2. The reach A, provided with the reach-iron F, in combination with the clevis E, attached to the axle B and hinged to the iron F, substantially as described.

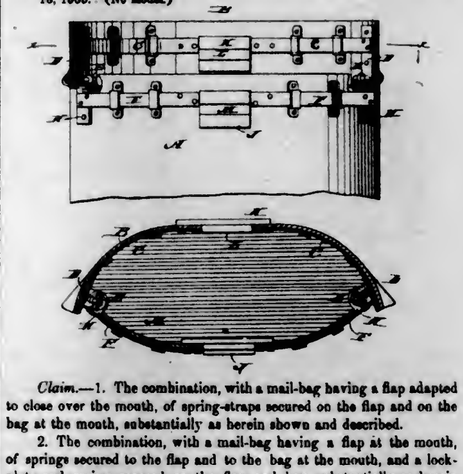
3. The reach A, provided with the bar H and sliding iron F, in combination with the clevis E, attached to axle B and hinged to the iron F, and the connecting-rods G, connecting the clevis with the iron H, substantially as described.

4. The reach-iron F, formed with upper and lower portions, f f', in combination with the bar H, attached to the reach, substantially as described.

5. The combination, with the reach-iron F and bar H, of springs i', arranged to prevent rattling, substantially as described.

6. The combination, with the reach-iron F and clevis E, of the spring j, arranged between the clevis and reach-iron, substantially as and for the purposes set forth.

331,472. MAIL-BAG. Dennis P. Brophy, Nokomis, Ill. Filed May 18, 1885. (No model.)



Claim.—1. The combination, with a mail-bag having a flap adapted to close over the mouth, of spring-straps secured on the flap and on the bag at the mouth, substantially as herein shown and described.

2. The combination, with a mail-bag having a flap at the mouth, of springs secured to the flap and to the bag at the mouth, and a lock-plate and casing secured on the flap and bag, substantially as herein shown and described.

3. The combination, with a mail-bag having the flap B at the mouth, of the lock-plate K on the flap, the spring-strap C, secured on the flap, the end pieces, D, secured on the ends of the flap and hinged on buttons E, the clips H on the bag, in which clips the buttons E are swiveled, the spring-straps F on the bag, and the lock-casing J on the bag, substantially as herein shown and described.

4. The combination, with a mail-bag having a flap, of end pieces on the ends of the flap, clips on the sides of the bag at the mouth, and of buttons swiveled on the clips, in which buttons the end pieces on the flap are pivoted, substantially as herein shown and described.

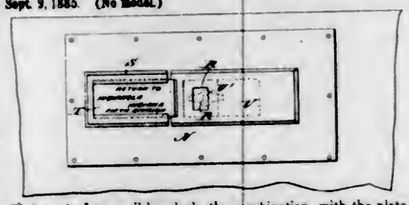
331,473. BAG-LOCK. Dennis P. Brophy, Nokomis, Ill. Filed June 17, 1885. (Model.)



Claim.—1. In a mail-bag lock, the combination, with a casing having apertured longitudinal partitions, of bars having lugs which pass through the apertures in the partition, springs acting on the bars, and of a top plate having an apertured rib on its under side which fits between the partitions in the casing, substantially as herein shown and described.

2. In a mail-bag lock, the combination, with the casing A, having the apertured partitions B, of the bars D, having the beveled lugs F and the flat middle lugs, H, the springs E, and the top plate, N, having the beveled apertured rib O, substantially as herein shown and described.

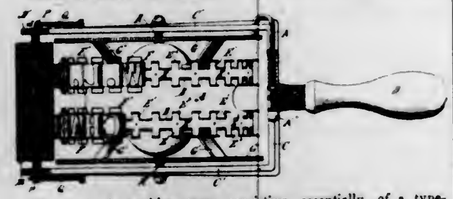
331,474. MAIL-BAG LOCK. Dennis P. Brophy, Nokomis, Ill. Filed Sept. 9, 1885. (No model.)



Claim.—1. In a mail-bag lock, the combination, with the plate N, having a key-hole slot, and a ticket-receptacle on said plate to one side of the key-hole slot, of a slide mounted in ways on the plate N in line with the open end of the ticket-receptacle, and adapted to slide over the key-hole slot and to close the open end of ticket-receptacle, substantially as set forth.

2. The combination, with the plate N, having a key-hole slot and a ticket-receptacle at one side of said slot, consisting of undercut ribs S, closed at their outer ends and open at their inner ends, of the ways in the plate N on the opposite side of the key-hole slot, and the sliding plate U, having undercut edges working in said ways and having its end adjacent to the ribs S, rabbeted to secure the ticket in place, substantially as set forth.

331,475. MARKING-STAMP. Frank M. Bulkley, Bridgeport, Conn. Filed July 6, 1885. (No model.)



Claim.—1. A marking-stamp consisting, essentially, of a type-wheel, spring type-holders secured to the periphery thereof, and detachable types adapted to engage said type-holders.

2. A type-wheel having flanges and spring type-holders secured thereto, in combination with detachable types adapted to engage the type-holders, and guard-rings secured to the type-wheel, which project out slightly beyond the ends of the type-holders, so that when the impression of the types is completed the bearing will be upon the rings and the type-holders be protected.

3. The type-wheel, type-holders, and detachable types, in combination with the guard-rings, one of which is provided with a bolt-hole, and a spring-bolt adapted to engage the bolt-hole at the end of each revolution of the type-wheel.

4. The type-wheel and one or more strips of type-holders consisting of base and side pieces secured to the periphery of the wheel, in combination with detachable types adapted to engage the type-holders.

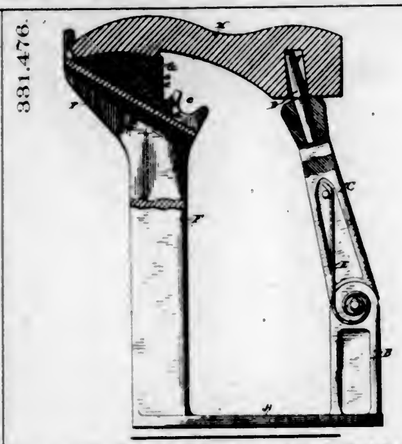
5. In a marking-stamp, detachable types having loops which serve as handles, in combination with a type-wheel having one or more series of type-holders secured to its periphery, said type-holders consisting of a base and a pair of slightly-curved springs which bear upon opposite sides of the types.

6. The type-wheel having springs F' secured to its periphery, and the guard-rings having arms by which they are secured to the type-wheel, one of said rings having a bolt-hole, in combination with suitable frame-work in which the type-wheel is journaled, and which carries a spring-bolt adapted to engage the type-wheel at the completion of each revolution.

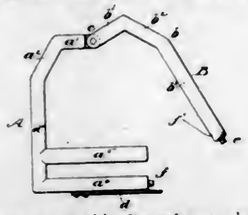
331,476. HEELING-JACK. Gardner H. Burgess, Jr., Providence, R. I. Filed Feb. 9, 1885. (No model.)

Claim.—In a heeling-jack, the combination of the standard B, pivoted arm C, provided with the pin D, spring E, standard F, provided at its upper end with the adjacent inclined series of notches c, with an inclined plane surface, a, between them, and the adjustable toe-piece G, provided with a hollowed upper surface, f, the downwardly-projecting rib e, and the opposite pins d d, which are adapted to enter the notches c, substantially as described.





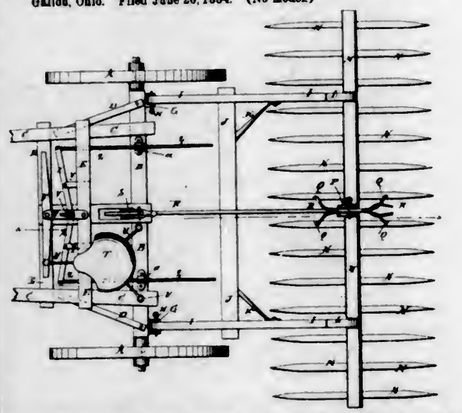
331,477. HARNESS-RING. Quintus Cato and Charles A. Spaulding, Estes Park, Colo. Filed Sept. 16, 1885. (No model.)



Claim.—1. As a new article of manufacture, a harness-ring made in two parts, A B, hinged together at c, the part A being formed with parallel bars a^4 a^5, the part a^4 being provided with a catch for holding the ring closed, substantially as described.

2. The harness-ring herein shown and described, composed of the parts A and B, hinged together at c, the part A being formed with the parallel bars a^4 and a^4, the latter formed with pin f and provided with the spring holding-plate d, the part B being formed with the small stud e and the aperture f', substantially as and for the purposes set forth.

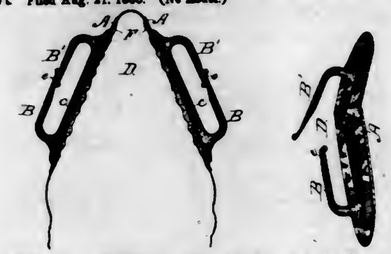
331,478. REVOLVING SULKY HAY-RAKE. Samuel B. Collins, Galion, Ohio. Filed June 26, 1884. (No model.)



Claim.—1. In a revolving sulky hay-rake, the combination, with the rake-head M N and the frame A B C, of the standard P, the springs Q, the bar R, having a forked rear end, and the lever S, substantially as herein shown and described, whereby the rake-head can be readily tripped to discharge the collected hay, and can be held securely while collecting the hay, as set forth.

2. In a revolving sulky hay-rake, the combination of the axle B, shafts C, cross-bars E of the frame, the levers V X X, and the sliding rods Z and cross-bar J, substantially as herein shown and described, whereby the rake-head can be readily supported above the ground, as set forth.

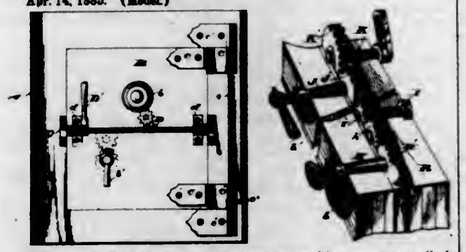
331,479. REIN-SUPPORT. Telesphore Desjardins, Burlington, Vt. Filed Aug. 21, 1885. (No model.)



Claim.—1. A rein-support consisting of two parts forming a closed loop when in place, the base ends of which overlap, and thereby adapted to engage each other and be held together, in combination with a suitable flexible support, substantially as described.

2. A rein-support consisting of the two sectional loops B and B', both loops having their upper and base ends beveled and overlapping to form close joints, in combination with a flexible pad, substantially as described.

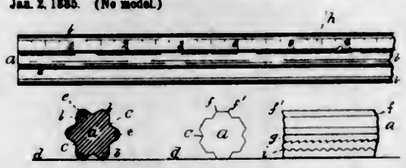
331,480. SAFE ATTACHMENT. Carl Diebold, Canton, Ohio. Filed Apr. 14, 1885. (Model.)



Claim.—1. In safe attachments, double-door hinges, a stop to limit the outer movement of the intermediate part of the hinges, a presser-bar arranged on the door, and suitable engaging cam-blocks arranged on either side of the door and so arranged that in operating the door the latter will automatically swing to its place in the casing and the wrists or ends of the presser-bar will automatically enter the respective places in the cam-blocks, substantially as set forth.

2. The combination, with a door and a presser-bar secured thereto, of the spindles H, I, J, and K and the gearing, the above parts being combined and arranged substantially as described.

331,481. RULER. Myer Dittenhoefer, New York, N. Y. Filed Jan. 2, 1885. (No model.)



Claim.—1. As a new article of manufacture, a star-shaped ruler with the points of the star rounded off, as set forth.

2. A ruler star-shaped in cross-section, with the points of the star flattened, as and for the purpose set forth.

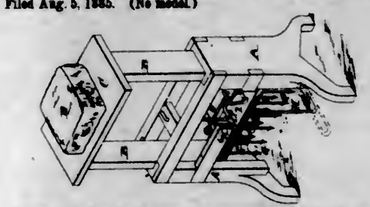
3. A star-shaped ruler having the points of the star tipped with soft rubber or other elastic material, as and for the purpose set forth.

331,482. SHEET-METAL CAN. Thomas G. F. Dolby, London, England. Filed Apr. 25, 1884. (No model.)



Claim.—The combination, in a sheet-metal can, of the can-top, provided with an aperture and a conical marginal flange, b, the cover provided with a conical flange, c, and a raised central part, e, the screw-threaded flange or ring D, and the screw-threaded ring E, provided with an inturned flange, g, all arranged substantially as herein set forth.

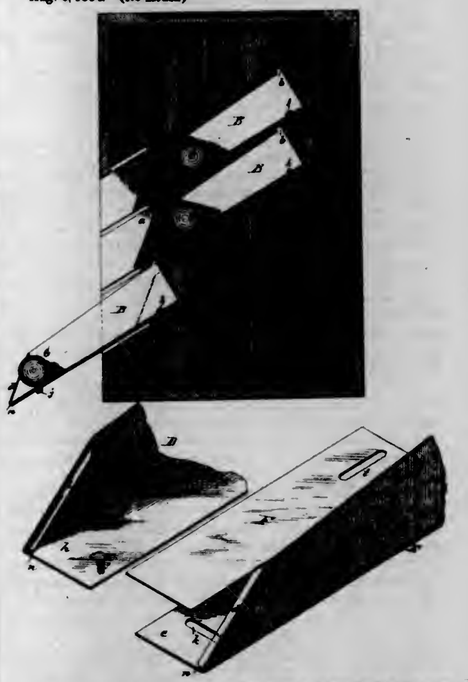
331,483. MOLE-TRAP. William R. Eddington, Woodburn, Ill. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a mole-trap, the combination, with a drop-head having a lever hinged thereto, of the trip I, having two arms, and also hinged to the head, and the trigger-rod having a crook, the lower arm of the trip extending to the crook and the upper arm of the trip engaging the lever, substantially as set forth.

2. The combination of the frame having a fulcrum-bar, K, a sash having a head, E, armed with spikes, lever J, secured to the head, trip-lever I, having arms and secured to the head, and a trigger-rod, H, formed with a crook, H^2, and loop H', the arms of the trip resting, respectively, on the crook and lever, substantially as set forth.

331,484. TICKET-CASE. William E. Elam, Americus, Ga. Filed Aug. 6, 1884. (No model.)



Claim.—1. A box or receptacle for holding tickets, having an open front end and laterally extensible or adjustable sides to increase or diminish its width, substantially as and for the purpose described.

2. A box or receptacle for tickets, having an open-front end with inclined and inwardly-extending flanges, said box or receptacle adapted to be laterally extensible to increase or diminish the width thereof, substantially as and for the purpose set forth.

3. A box or receptacle for holding tickets, constructed of two sections, each of which forms one side and bottom of the box, and connected together, substantially as described, whereby they are capable of lateral adjustment to increase or diminish the width of the box, substantially as and for the purpose set forth.

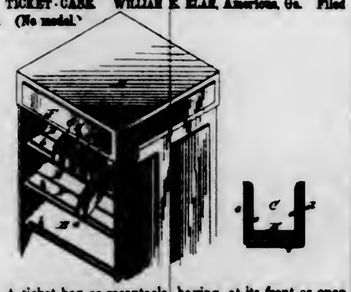
4. A box or receptacle for tickets, open at its front end and having inwardly-extending flanges and a longitudinally-adjustable false bottom to diminish or increase the space through which the tickets are extracted, substantially as and for the purpose specified.

5. A box or receptacle for tickets, constructed of three independent sections, two of said sections forming, respectively, the sides and bottom of the box, and connected together, whereby they are laterally extensible or adjustable to increase or diminish the width of the box, and a longi-

tudinally-adjustable false bottom connected to the bottom of the box, substantially as and for the purpose set forth.

6. A ticket-case provided with a series of inclined partitions having a depending flange and a slot at their front ends, in combination with a series of ticket boxes or receptacles having bolts or projections upon their under side and front end to engage with the slot in the inclined partitions, and upwardly-extending lugs upon the rear end of the box to abut against the flange on the inclined partition, and prevent the box from becoming entirely withdrawn, substantially as and for the purpose specified.

331,485. TICKET-CASE. William R. Elam, Americus, Ga. Filed Oct. 23, 1884. (No model.)



Claim.—1. A ticket box or receptacle having at its front or open end and upon its sides inclined retaining-flanges, in combination with a supplemental spring-bottom, the end of which normally stands in the path of the ticket and adapted to be pressed down to form an opening for the withdrawal of the tickets, substantially as and for the purpose set forth.

2. The combination, with a ticket-case having one or more transverse rods or bars at its front or open end, of one or more boxes or receptacles for containing the tickets, provided with a yielding catch, constructed substantially as described, whereby it will be depressed, when inserting the box or receptacle in the ticket-case, by coming in contact with the rod, and after passing under it resume its normal position to act as a stop to prevent the withdrawal of said box or receptacle, substantially as and for the purpose described.

3. The combination, with a ticket-case having one or more transverse rods or bars at its front or open end, of one or more boxes or receptacles for containing the tickets, constructed with an open front end, through which they are withdrawn, and a yielding catch connected to said box or receptacle and acting in connection with the transverse rod, as and for the purpose specified.

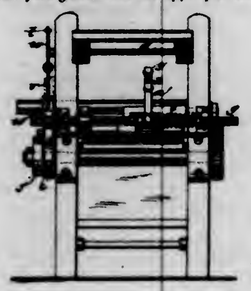
4. As an improved article of manufacture, a box or receptacle for tickets, having an open front end with inwardly-projecting flanges, laterally-adjustable sides, and a supplemental spring-bottom, the end of which normally stands in the path of the ticket, and adapted to be pressed down to form an opening for the withdrawal of the tickets, substantially as and for the purpose set forth.

5. The combination, with a ticket-case having one or more transverse rods or bars at its front or open end, of one or more boxes or receptacles for containing the tickets, provided with a pivoted and weighted catch, substantially as and for the purpose set forth.

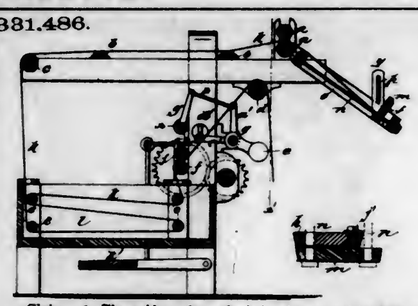
6. A ticket-case having one or more downwardly-inclined partitions and transverse rods or bars arranged over them, in combination with one or more boxes or receptacles for containing the tickets, having a front open end and a yielding catch acting in connection with the transverse rods or bars, as and for the purpose described.

331,486. STOP-MOTION FOR COLORING-MACHINES. Frank P. Fitz Simons, Clark's Mills, N. Y. Filed Mar. 12, 1884. (No model.)

Brief.—On inclined ways on the front of the frame are mounted yarn-guides having eyes of varying size, which slide on said ways, and above the yarn-guide is mounted a cranked rod, the lower part of which is in the path of the yarn-guide, while the upper part is connected to a belt-shifter.



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Claim.—1. The guide *m*, for each chain of yarn, and inclined ways *n*, in combination with the cranked rod *p*, having arms *s*, substantially as shown and described.

2. The combination, with a yarn-dyeing machine, of the inclined rods *n*, the guides *m*, the cranked rod *p*, having arms *s* journaled above said ways, the belt-shifter *g*, notched bar *d'*, arm *c'*, and suitable connections from the rod *p* to the bar *c'*, substantially as shown and described.

3. The guides *m*, inclined way *n*, cranked rod *p*, arm *s*, connecting-rod *t*, bell-crank *u*, connecting-rod *v*, arms *w* and *y*, rock-shaft *x*, connecting-rod *z*, arm *a'*, belt-shifter *g*, arm *c'*, and notched bar *d'*, combined and arranged substantially as described.

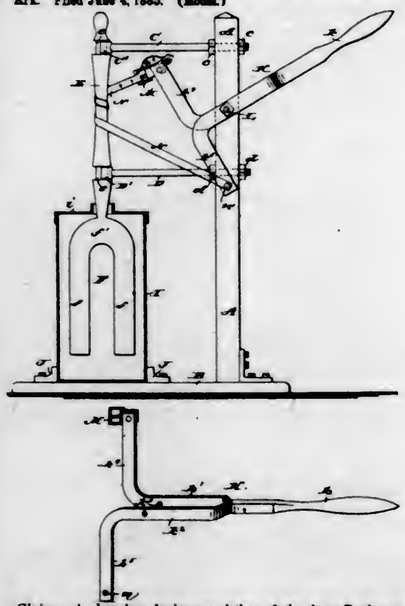
4. The combination, with the weighted and sliding belt-shifter *g*, having arms *c'*, notched holding-bar *d'*, cranked rod *p*, having arms *s* and suitable connections, substantially as described, between the arms *c'* and *s*, of the guides *m* and inclined ways *n*, as set forth.

5. The combination, with the cranked rod *p* and inclined ways *n*, of guide *m*, having eye *g'*, and provided with the pivoted plate *h'*, having a corresponding eye, substantially as shown and described.

6. The guides *m*, having means for varying the size of the opening of eyes *g'* for the yarn-chains, in combination with the inclined supporting-ways *n* and the cranked tripping-rod *p*, substantially as described.

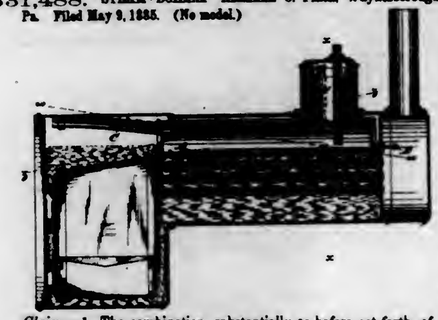
7. The guides *m*, having an eye, *g'*, and a pivoted plate, *h'*, having a corresponding eye, in combination with the bolt *j''*, substantially as described.

331,487. CHURNING DEVICE. Fountaine L. Fournier, Batesville, Ark. Filed June 4, 1885. (Model.)



Claim.—A churning device consisting of the base B, the vertical standard A, the upper and lower horizontal rods, C D, having semicircular heads C' D', and nuts *c c' d d'*, securing said rods on the standard, the vertically-moving forked lever K, having handle *k*, side arms, *k' k²*, embracing the standard, the pivot-bolt L, the dasher-shaft E, having peripheral grooves *e e* for the heads C' D', and the strap N, connected at its ends to the ends of the arms *k' k²*, and passed around the dasher-shaft at its middle portion, said parts being combined substantially as set forth.

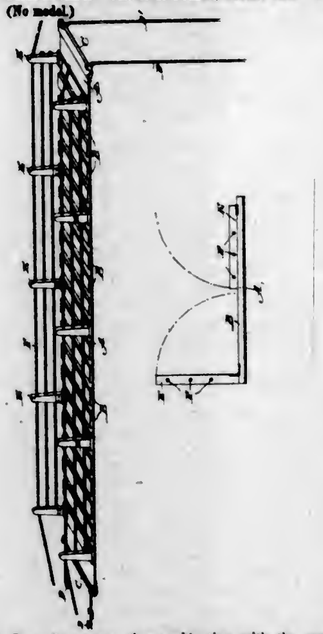
331,488. STEAM-BOILER. Abraham O. Frick, Waynesborough, Pa. Filed May 9, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, of a steam-boiler of the locomotive-boiler type, the steam and displacement drum in the upper part thereof, having an open neck projecting up into the steam-dome, and the separator-pipe for conducting steam into said drum from the space above the crown-sheet.

2. The combination, substantially as before set forth, of a steam-boiler of the locomotive-boiler type, the steam and displacement drum in the upper part thereof, having an open neck projecting up into the steam-dome, the separator-pipe for conducting steam into said drum from the space above the crown-sheet, and the steam-service pipe projecting into said drum.

331,489. FIRE-ESCAPE. Jennie R. Fuller, Toledo, Ohio. Filed Oct. 9, 1885. (No model.)



Claim.—1. In a fire-escape, the combination, with the canvas bridge A, of the slats B on the same, the railing-posts E, hinged on the slats B, to swing on the same, and of the railing-ropes F, held in the said posts, substantially as herein shown and described.

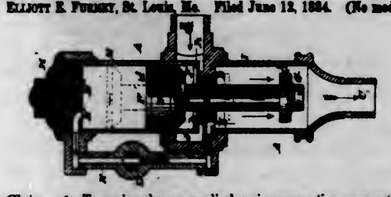
2. In a fire-escape, the combination, with the piece J, of the piece K on the same, and of the rope ladder L, fastened on the piece J, substantially as herein shown and described.

3. In a fire-escape, the combination, with the piece J, having the apertures M M, of the piece K, secured on the piece J, and also having the apertures M, the rope ladder L, secured to the piece J, and of the rope O, having the end pieces, N, substantially as herein shown and described.

4. In a fire-escape, the combination, with a flexible bridge secured to one building, of a receptacle containing a rope ladder on the opposite building, substantially as herein shown and described.

5. In a fire-escape, the combination, with a flexible bridge secured to a building, of a receptacle containing a rope ladder on the opposite building, and of a rope extending from one building to the other and connected with the receptacle containing the rope ladder, substantially as shown and described.

331,490. APPARATUS FOR CHECKING THE WASTE OF WATER. Elliott E. Fuhrmy, St. Louis, Mo. Filed June 12, 1884. (No model.)



Claim.—1. Two chambers or cylinders in connection, respectively, with the water supply and discharge, and separated by a diaphragm through which passes a connecting-stem of two valves, one of which has a small passage and works as a piston in one chamber or cylinder, the other valve working free in the other chamber or cylinder, a passage for water through the diaphragm from one chamber to the other, closable by either of the valves, and a duct controlled by a cock or valve leading from one chamber to the other.

2. Two chambers or cylinders in connection, respectively, with the water supply and discharge, separated by a diaphragm having a port connecting the chambers closed by valves working in the chambers, and connected by a stem passing through the diaphragm, and a duct leading from one chamber to the other, controlled by a cock or valve, the upper valve having a small passage.

3. The combination of a cylinder containing a valve working as a piston therein, and having a water-orifice in the side thereof, a valve-stem connecting said valve with another valve working in a chamber separated from said cylinder by a diaphragm or partition through which the valve-stem passes, and having a port closable by the valves, for the passage of liquid between the cylinder and chamber, a water-orifice in the chamber, the piston-valve having a passage to allow the water in given quantity to pass from one side of the piston-valve to the other side thereof, for the purpose set forth, and a duct controlled by a cock or valve leading from one end of the cylinder to the chamber.

4. The combination of cylinder H, with valve-seats A H', diaphragm D, with valve port or ports *d*, and orifice for the passage of valve-stem E, stem E, carrying valves F and G, constructed to close the passages between cylinder H and a chamber or pipe, I, a small passage through the upper valve, and a duct leading from the upper part of cylinder H to the chamber I, controlled by a cock or valve, L, for the purpose set forth.

5. The combination of a casing divided by a diaphragm forming two chambers or cylinders, a stem provided with two valves to seat against the diaphragm, a small passage through the upper valve, a passage connecting the said chambers or cylinders between the valves, a duct connecting the said chambers or cylinders independent of the passage between the valves, and a cock or valve controlling the operation of the apparatus, the duct connecting through the valve-seat of the upper chamber, and with the lower chamber beneath the diaphragm.

6. The combination of a casing divided by a diaphragm forming upper and lower chambers, a stem passed through the diaphragm, having a valve at its upper end provided with a perforation, *f*, and seating against the diaphragm, and a valve at the lower end of the stem, also seating against the diaphragm, a passage through the diaphragm closed by either valve, a duct connecting the upper end of the upper chamber with the lower chamber, and a cock or valve in the duct for controlling the operation of the apparatus.

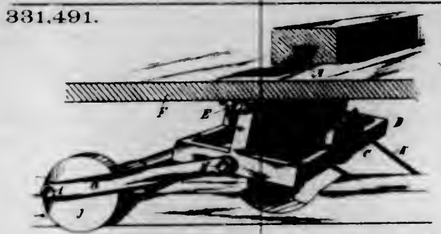
7. The combination of the casing, a diaphragm, D, having an orifice for the valve-stem, a valve-port, and dividing the casing into an upper chamber, H, having valve-seats H' and A, and a lower chamber, I, a stem, E, carrying valves F and G, seating on opposite sides of the diaphragm, a small passage through the valve F, and a duct leading from the upper part of the upper chamber to the lower chamber, having a cock or valve controlling the operation of the apparatus.

331,491. DOVETAILING-MACHINE. Leonpaul P. Garnier, San Francisco, Cal. Filed Aug. 26, 1885. (No model.)

Claim.—1. An apparatus for cutting dovetailed slots, comprising a cutter or saw mounted in a frame which is journaled in bearings and oscillates automatically below the table over which the work passes, the edge of the cutter extending up through the table, substantially as herein described.

2. In an apparatus for cutting dovetailed grooves or slots, the saw or cutter mounted upon an arbor which is journaled in a frame swinging on trunnions beneath the table, and a pitman and crank-wheel through which an oscillating motion is communicated to the frame, substantially as herein described.

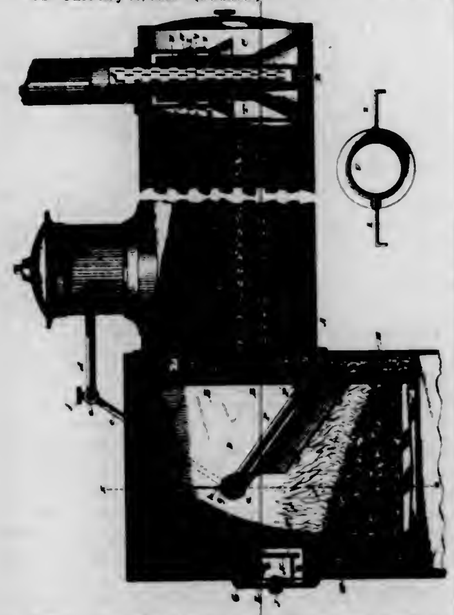
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3. In an apparatus for cutting dovetailed slots, a frame suspended beneath the table upon trunnions, a saw or cutter mounted upon an arbor at right angles to and below the plane of the trunnions, a belt-pulley or means by which the cutter is caused to rotate, and a pitman connecting the oscillating frame with a crank-wheel, substantially as herein described.

4. In an apparatus for cutting dovetailed slots or channels, a frame suspended upon trunnions beneath the table, and a means for oscillating said frame about the trunnions, in combination with a saw or cutter mounted upon an arbor at right angles with and below the trunnions, journal-boxes in the sides of the frame, in which the ends of the arbor turn, and a means for raising and depressing said boxes on the frame so as to raise or depress the edge of the saw above the table and vary the depth of the cut, substantially as herein described.

331,492. BOILER-FURNACE. William F. Graebler, Williamsport, Pa. Filed May 11, 1885. (No model.)



Claim.—1. In a boiler-furnace, the combination, with the fire-box and an inclined deflector located therein, of steam-injectors located at or near the upper end of the deflector and disposed so as to throw a film of steam across the remaining upper portion of the fire-box, whereby the escape of the products of combustion to the smoke-flues is intercepted.

2. In a boiler-furnace, the combination, with an air-inlet for the fire-box, and a deflector located therein, of the jacket-pipes and the steam-injecting tubes having sprayers and communicating with the boiler.

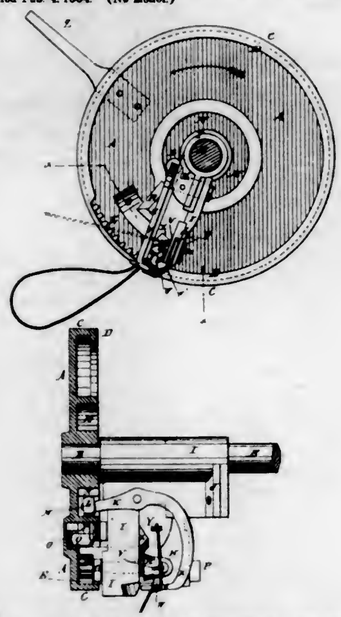
3. In a boiler-furnace, the combination, with the fire-box and an air-inlet door having a distributing-plate and an inclined deflector located therein, of the jacket-pipes and the steam-injecting tubes having sprayers and communicating with the boiler.

4. In a boiler-furnace, the combination, with the fire-box and an inclined deflector therein, of jacket-pipes and steam-injecting tubes having sprayers and communicating with the boiler.

5. In a boiler-furnace, the combination, with the fire-box, of the jacket-pipes communicating with the water-legs, and the steam-injecting tubes communicating with the boiler extended into the said pipes and provided with sprayers projecting into the fire-box.

6. In a boiler-furnace, the combination, with the fire-box, of the jacket-pipes communicating with the water-legs and having a space between their inner ends, and the steam-injecting tubes having sprayers and communicating with the boiler.

331,493. GRAIN-BINDER. David N. Green, Commercial Point, Ohio. Filed Feb. 4, 1884. (No model.)



Claim.—1. In a grain-binder, the combination, with the cam and gear wheel A, having a recess, O, and projection R, of the knotter operated by said wheel, and the cord-holder comprising the fixed plate S at right angles to the axis of the cam and gear wheel, and the movable clamp P, at right angles to the plate S, and provided with a notch, T, adjacent to the inner edge of the said plate S, substantially as set forth.

2. The combination, with the shaft B, the cam and gear wheel A thereon, and the frame I, of the knotter operated from the said wheel, the movable cord-clamp P, operated from the cam and gear wheel, the said clamp being forked at its outer end and notched at T on the inner edge of said notched portion, and the stationary plate S, fixed to the frame I and extending through the forked end of the clamp P, substantially as set forth.

3. The combination of the frame I, the cam and gear wheel A, provided with the rim C, inwardly-projecting flange D, and gear-teeth E, of the knotter H, the shaft of which is provided with a pinion, F, and shoe G within the flange D, the movable jaw V, pivoted to the knotter, the cam X, the cam W, and spring W', substantially as set forth.

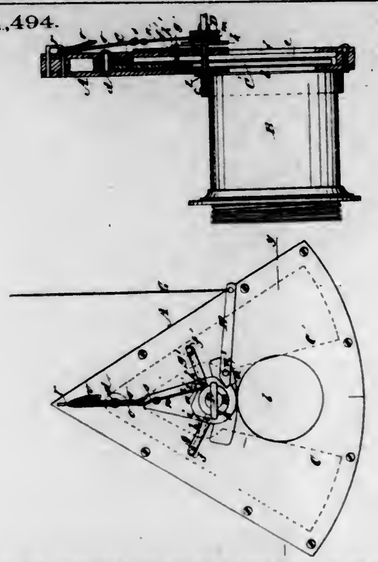
4. The combination of the cam and gear wheel A, having gear-teeth E, cam-groove M, and cam N on the inner wall of the groove facing the gear-teeth, and the knotter H V, the pinion F on the shaft thereof, and the cord guide and deflector K, pivoted to swing laterally, as shown, one end of the said guide resting in the cam-groove, and the other end having a notch at right angles to said guide, as shown, whereby the cam N will cause the cord guide and deflector to bend the twine laterally over the knotter-jaws just before the knotter-pinion F is operated by the gear-teeth E to revolve the knotter, and the said cord-guide be returned to its normal position as soon as the knotter has caught the twine, substantially as set forth.

5. In a grain-binder, the combination, with the cam and gear wheel A, of the forked movable clamp P, the fixed arm or plate S, at right angles thereto and extending through the fork, and the knife U, fixed to the frame adjacent to the inner face of the inner prong of the forked clamp, substantially as set forth.

331,494. SHUTTER FOR PHOTOGRAPHIC CAMERAS. William C. Hadden, New York, N. Y. Filed Sept. 14, 1885. (No model.)

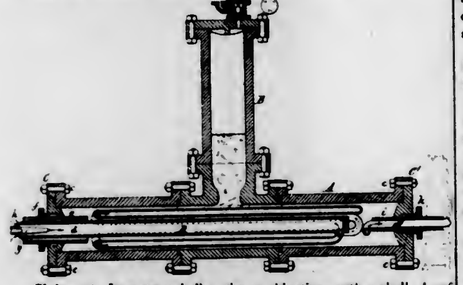
Claim.—1. The rotatable button or double crank D *k*, having opposite crank-pins *i i* and stops or notches *a' a²*, arranged one in advance of the other, in combination with the catch E, a spring controlling the movement of the button in one direction, the pivoted reciprocating shutters C C', and the links *h h'*, substantially as and for the purposes herein set forth.

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2. The combination, with the shutter frame or case, of the pendent reciprocating shutters C C', the rotatable button or double crank D *k*, arranged between or within the space occupied by the shutters, and having crank-pins *i i* and duplicate stops or notches *a' a²*, the links *h h'*, the pawl or catch E, and a spring applied to turn the button in the one direction, essentially as herein shown and described.

331,495. STEAM-BOILER. Thursten G. Hall, Niagara Falls, N. Y. Filed Apr. 10, 1883. (No model.)

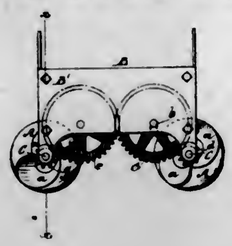


Claim.—1. In a steam-boiler, the combination, with a shell, A, of a heating-coil, D, arranged lengthwise in said shell, stuffing-boxes arranged in the heads of the shell in which the ends of the coil are supported, a gas-tuyere, *g*, and an air-supply passage, *h*, opening into the coil, substantially as set forth.

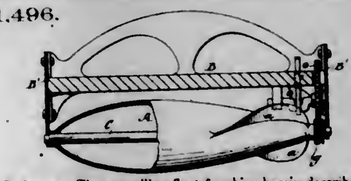
2. In a steam-boiler, the combination, with a shell, A, of a heating-coil, D, arranged lengthwise in the shell and stuffing-boxes arranged in the heads of the shell in which the ends of the coil are supported, substantially as set forth.

3. In a steam-boiler, the combination, with the shell A, of the heating-coil D, sleeve *e*, and stuffing-box *f*, substantially as set forth.

331,496 BUOYANT PROPELLER FOR STEAMBOATS. William Hall, Waterbury, Conn. Filed July 22, 1885. (No model.)



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Claim.—1. The propelling-float for ships herein described, consisting of the hollow float having spiral blades at its rear portion, and having an enlarged diameter in advance of said blades.

2. The combination, with the vessel B, of the floats A, and the blades *a a*, secured to said floats at or near their rear ends, whereby the water will not be churned below the body of the vessel, substantially as set forth.

331,497. JOURNAL-BEARING. Robert W. Hardie, Albany, N. Y. Filed Sept. 10, 1885. (No model.)



Claim.—1. A journal-bearing consisting of a sustaining-base block, a bearing-box, and resilient cushions so placed between said base-block and bearing-box that a spindle revolving in said box will adjust itself to a constant center, substantially as shown and described.

2. A journal-bearing consisting of a sustaining-base, a bearing-box loosely connected with said base, and supported upon resilient cushions placed between said base and box in such a manner that a pressure exerted upon any part of the spindle revolving in said box will be compensated for at a point directly opposite its point of application, substantially as shown and described.

3. A journal-bearing consisting of a sustaining-base, a bearing-box capable of a limited motion with respect to said base by means of yielding cushions, and set-screws at opposite sides of said base adapted to hold said box tightly in position, substantially as shown and described.

4. A journal-bearing consisting of a sustaining-base, a bearing-box, a loose-jointed connection between said base and box, and yielding cushions interposed between said base and box, substantially as shown and described.

5. A journal-bearing consisting of a pillow-block, a bearing-box loosely connected with said block, and resilient cushions intermediate between said box and block, substantially as shown and described.

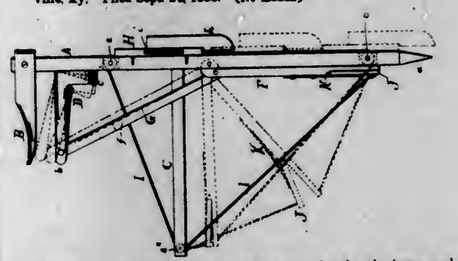
6. A journal-bearing consisting of a sustaining-base, a bearing-box, resilient cushions between said base and box, and a tightening-eyebolt, substantially as shown and described.

7. A journal-bearing consisting of a sustaining-base, a bearing-box, resilient cushions intermediate between said box and base, and a resilient cushion beneath said base connected with the tightening-eyebolt, substantially as shown and described.

8. A journal-bearing consisting of a pillow-block, a bearing-box, resilient cushions between said block and box, and a cap extending over the bearing-box and adjustably secured to the pillow-block, whereby the tension of the box on the cushion may be regulated, substantially as shown and described.

9. A journal-bearing consisting of a pillow-block, a cap for said block, a bearing-box whose outer surface is provided with a rim adapted to fit within an annular groove upon the inner surface of the pillow-block, and resilient connections between the box and block, substantially as shown and described.

331,498. TOBACCO-PLANT SETTER. John W. Hawkins, Mansfordville, Ky. Filed Sept. 24, 1885. (No model.)



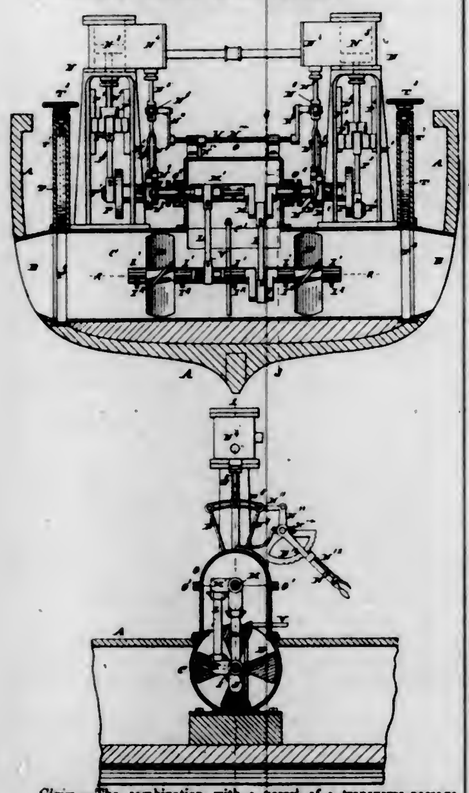
Claim.—1. In a plant-setter, a main post pointed at its lower end, a handle fixed at the upper end thereof, a horizontal arm fixed to the main post near its center, a bell-crank lever pivoted at its elbow to the main post immediately below the handle, a coiled spring fixed at opposite ends to the main post and the vertical arm of said lever, a swinging

arm pivoted at its upper end to the main post, and a connecting-rod pivoted at one end to the end of the horizontal arm of the bell-crank lever and at its other end to the swinging arm below the pivot thereof, in combination with a sliding plant-carriage, which slides up and down along the main post, rollers mounted near the upper and lower ends of the main post and at the outer end of said horizontal arm, and a cord which passes over said rollers and is attached to said carriage and to the free end of said swinging arm, substantially as set forth.

2. A post, and an arm fixed at right angles thereto, and a swinging arm pivoted near the point where said arm is secured to said post and adapted to swing between said post and arm, in combination with a spring-actuated bar, pivoted to said swinging arm near the free end thereof, and a cord attached at one end to the free end of said swinging arm and at the other end to said pivoted bar, said cord passing over or through said post and arm, substantially as set forth.

3. In a plant-setter, a main post and a sliding plant-carriage, which slides up and down along said post, in combination with a swinging arm and a cord attached to said carriage and to the free end of said swinging arm, substantially as set forth.

331,499. APPARATUS FOR STEERING BOATS, &c. William Hayner, St. Louis, Mo., assignor of one-half to John Trumlett and W. H. Lee, same place. Filed May 18, 1885. (No model.)



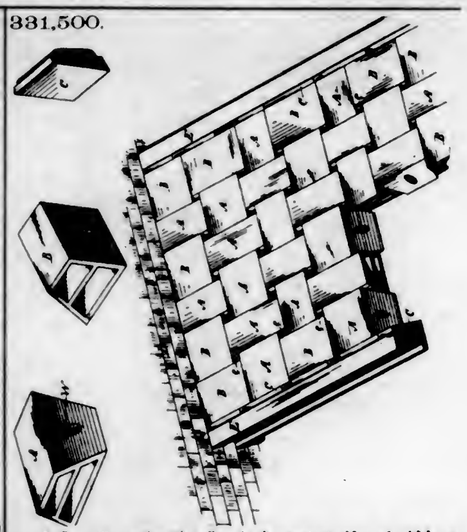
Claim.—The combination, with a vessel, of a transverse passage extending from side to side thereof, valves for closing said passage, an opening in the top thereof, a box having a removable top covering said opening, a crank-shaft journaled in the passage and having the propelling-blades secured thereto, a second crank-shaft parallel thereto, passing through stuffing-boxes in the box before mentioned, pitmen connecting the cranks of the two shafts and the engine, all constructed and arranged to operate substantially as and for the purposes set forth.

331,500. TILE SECTION BETWEEN WALLS, JOISTS, &c. William F. Rhodes, San Francisco, Cal. Filed July 11, 1885. (No model.)

Claim.—1. In a tile section, the tiles A, the contact sides of which are trapezoidal planes, substantially as described.

2. In a tile section, the tiles A, the contact sides of which are trapezoidal planes, and the tiles B, two opposite sides of which are rhombic or rhomboidal planes and two are trapezoidal planes, substantially as herein described.

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3. In a tile section, the tiles A, the contact sides of which are trapezoidal planes, and the tiles C, seated in the joists or other fixed support or bearing and having one side beveled to the angle of the adjacent side of the tiles A, substantially as described.

4. In a tile section, the tiles A, the contact sides of which are trapezoidal planes, the tiles B, two opposite sides of which are rhombic or rhomboidal planes and two are trapezoidal planes, and the tiles C, seated in the joists or other fixed support or bearing and having one side beveled to the angle of the adjacent side of the tiles A and B, substantially as described.

5. A tile section having continuous air-passages made both ways through it, substantially as and for the purpose herein described.

6. A tile section composed of hollow or chambered tiles, said tiles having apertures W at right angles to their chambers and so laid as to form continuous air-passages, substantially as and for the purpose herein described.

331,501. FELT GLOVE OR MITTEN. Walter P. Hyatt, Matteawan, N. Y. Filed Mar. 23, 1885. (No model.)



Claim.—1. A process for making seamless felt gloves, mittens, &c., consisting of uniting several bats of wool cut out in the shape of a glove, mitten, &c., along the edges of said bats by the hardening process, substantially as herein shown and described.

2. A process for making seamless felt gloves, mittens, &c., consisting in placing between two bats of wool cut out in the shape of a glove, mitten, &c., a layer of material which prevents the bats from coming in contact except at the edges, and then uniting the edges which are in contact by the hardening process, substantially as herein shown and described.

331,502. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. Chas T. Jackson, New York, N. Y., assignor to the Hecla Electric Light Company, same place. Filed Apr. 13, 1885. (No model.)



Claim.—1. In an armature for dynamo-electric machines, the combination, with a shaft and disks mounted on the same, of soft-iron wires placed on the rims of the disk parallel with the shaft, and of insulated copper wires wound lengthwise over the iron wires, substantially as herein shown and described.

2. In an armature for dynamo-electric machines, the combination, with the shaft A and the disks B on the same, of the rods or wires D, placed on the rims of the disks parallel with the shaft, the wires F, passed around the wires D to bind them together, and of the insulated copper wires G, wound lengthwise over the core formed of the disks B and the wires D, substantially as herein shown and described.

331,503. GANG-PLOW. David M. Johnston, Stockton, Cal. Filed Sept. 19, 1885. (No model.)



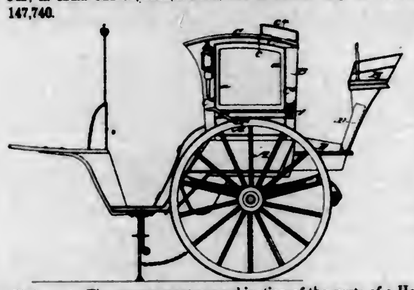
Claim.—1. In a gang-plow, the diagonally-arranged plow-supporting frame composed, essentially, of two portions suitably braced and standing parallel with each other, in combination with plows having their beams or standards bent and made convex, so as to carry the plows forward of the beam, and their upper portions horizontal, so as to extend across the beam and be secured within suitable grooves or channels in the frame by clamps or bolts, substantially as herein described.

2. The diagonally-arranged plow-supporting frame having grooves or channels formed in it, in combination with plows, the standards or beams of which extend across the beam and fit these channels, having their forward ends forming a convex outward curve and extending downward to the plows, which are supported in front of the beams, substantially as herein described.

3. In a gang-plow, the frame having the plows secured thereto, in combination with a shaft extending across the frame-front having a crank-axle secured to it and carrying the furrow-wheel, and two crank-axles upon the land side of the frame carrying independent wheels, said crank-arms being united, so as to be actuated by one lever, substantially as herein described.

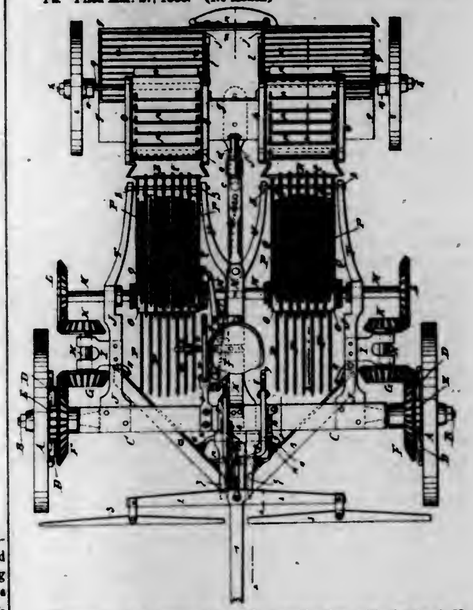
4. In a gang-plow, the crank-arms mounted upon shafts and extending downwardly from the plow-frame, in combination with caster-wheels, suitable blocks or sockets through which the shanks of the caster-wheels loosely pass, and keys or wedges which lock the wheels and prevent their swiveling, as herein described.

331,504. HANSOM CAB. William Johnstone, Edinburgh, County of Edinburgh, Scotland, assignor to George C. Banks, same place. Filed Sept. 16, 1885. (No model.) Patented in England Jan. 26, 1881, No. 342; in India Jan. 25, 1882, No. 102, and in France May 15, 1882, No. 147,740.



Claim.—1. The arrangement or combination of the parts of a Hansom cab or vehicle, so constructed that the panels or glass frames may be lowered and the upper frame-work and roof folded down to form an open carriage, substantially as described.

331,505. POTATO-DIGGER. Silvester W. Kelchner, Fowlersville, Pa. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a potato-digger, the combination, with the reach N, the sleeves O, carrying the hooked prongs P, and the grates Q R S, of the levers V X, substantially as herein shown and described, whereby the machine can be readily adjusted as the distance apart of the rows may require, as set forth.

2. In a potato-digger, the combination, with the reach N, of the hinged bar *b*, the spindle *d*, connected with the hinged bar by a universal joint, the arm *f*, having a bearing to receive the spindle, the box *g*, mounted upon the wheels and axles i A, and provided with recesses *o* and aprons *t*, and the elevators *p* and their driving mechanism, substantially as herein shown and described, whereby the potatoes will be received from the grates and deposited in the said box, as set forth.

3. In a potato-digger, the combination, with the arm *f*, attached to the receiving-box *g*, and the cross-beam C, carried by the wheels and axles A B, of the rod *v* and lever *w*, substantially as herein shown and described, whereby the said receiving-box can be adjusted closer to or farther from the conducting-grates as may be required, as set forth.

4. In a potato-digger, the combination, with the receiving-box *g* and the elevators *p q r*, of the partitions *j* and inclined grates *u*, substantially as herein shown and described, whereby the potatoes will be sorted as they pass into the said box, as set forth.

5. In a potato-digger, the combination, with the cross-beam C, and the bars J, and hounds *z*, rigidly attached to the said cross-beam, of the lever and bail 8 12, the guide rods and arms 14 15, the hinged rods and arms 17 16, and the scrapers 13, substantially as herein shown and described, whereby the said scrapers can be adjusted to clean off the tops of the rows, as set forth.

331,506. SLIDE-VALVE. Dennis O'B. Lado, Chicago, Ill., assignor of one-half to George Farnsworth, same place. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination, with a cylinder having suitable steamways, of a main slide-valve having escape-ports therein adapted to be brought coincident with said steamways, and having a supplemental valve adapted to open and close the escape-ports of the slide-valve, said

slide-valve and supplemental valve being arranged for relative co-operation, substantially in the manner and for the purpose described.

2. The combination, with a cylinder having suitable steamways, of a chambered slide-valve having escape-ports therein adapted to be brought coincident with said steamways, and a supplemental valve placed within the slide-valve and adapted to open and close the escape-ports thereof, substantially as described.

3. The combination, with a cylinder having suitable steamways, of a main slide-valve having escape-ports therein, a supplemental valve for opening and closing the slide-valve ports, and a supplemental piston and an auxiliary valve for controlling the movement of the supplemental valve, said several parts being relatively arranged for co-operation substantially in the manner and for the purpose set forth.

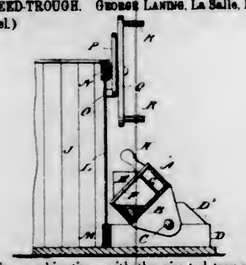
4. The combination, with a cylinder having suitable steamways, of a slide-valve having escape-ports therein, a supplemental valve for opening and closing the said escape-ports, a supplemental piston in connection with said supplemental valves, an auxiliary valve for said piston, and an adjustable rod for said auxiliary valve, substantially as described.

5. The combination, with cylinder having suitable steamways, of a slide-valve having escape-ports therein, a supplemental valve located within the slide-valve for opening and closing its escape-ports, and a pressure-ping in the wall of said slide-valve adapted to hold the supplemental valve to its seat, substantially as described.

6. The combination, with a cylinder having suitable steamways, of a slide-valve having escape-ports therein, a supplemental valve for opening and closing said escape-ports, a supplemental piston in connection with the supplemental valve, an auxiliary valve for said piston and cushion-plugs for the said piston, the various parts being provided with suitable steam-channels, substantially as described.

7. The combination, with a cylinder provided with suitable steamways, of a slide-valve having escape-ports therein, a supplemental valve for opening and closing said escape-ports, a supplemental piston for operating the supplemental valve, and a pivotal link connecting said supplemental valve and piston, substantially as described

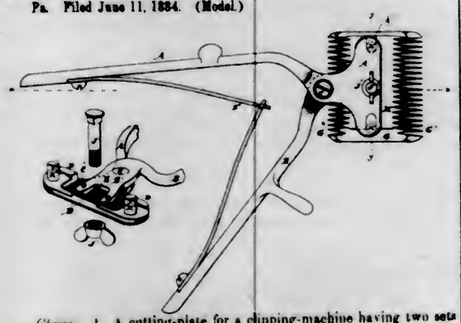
331,507. FEED-TROUGH. George Landis, La Salle, Ill. Filed June 4, 1885. (Model.)



Claim.—1. The combination, with the pivoted trough, of the partitions E, extending to within short distances from one side of the trough, and of the slides G, between the ends of the partitions and the side of the trough, substantially as herein shown and described.

2. The combination, with the pivoted trough A, of the transverse slats F, the partitions E, and the slides G, between the slats, substantially as herein shown and described.

331,508. HAIR-CLIPPING MACHINE. Lewis S. Lee, Philadelphia, Pa. Filed June 11, 1884. (Model.)



Claim.—1. A cutting-plate for a clipping-machine having two sets of cutting-teeth, the depth of cut of one set being greater than the depth of cut of the other, substantially as and for the purpose specified.

2. A cutting-plate for a clipping-machine having two sets of cutting-teeth, the depth of cut of one set being greater than the depth of the other, in combination with a movable cutter arranged to slide upon said plate and levers to hold the plate and move the cutter, substantially as and for the purpose specified.

3. A lever, A, for a clipping-machine, having its end enlarged and recessed, as at C', and provided with the bearing-straps D D D' and pin K, the said recessed part being open in the direction of the handle, but practically closed toward the front or cutting side of the machine to prevent passage of hair, wool, or other material into the lever-connections, in combination with the lever B, hinged to lever A, and having its cutter-actuating end located wholly within the recessed part C' and protected thereby, and the two cutting-plates, one of which is held by the lever A and the other of which is moved by the lever B, substantially as and for the purpose specified.

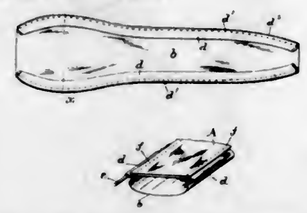
4. The cutter H for a clipping-machine, provided with the teeth *g*, the two lugs I I, a slot, *h*, located between the said lugs, and the slots or notches *k k*, exterior to said lugs, substantially as shown.

5. In a clipping-machine, the combination of the two levers A B, hinged together, one of which has the notch E and tongues *e*, stationary cutting-plate G, and movable cutting-plate H, having lugs I I, which fit upon the outside of the tongues *e*, and a bolt, J, extending through the notch E and clamping both cutting-plates together, substantially as and for the purpose specified.

6. In a clipping-machine, the combination of levers A B, double-edged plate G, having cutting-teeth of different thickness, and cutting-plate H, having lugs I, substantially as and for the purpose specified.

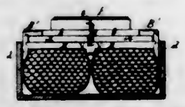
7. In a clipping-machine, the combination of lever A, lever B, having notch or slot E and tongues *e*, plate G, bolt J, plate H, having slot *h* and lugs I, and springs F, substantially as and for the purpose specified.

331,509. HARNESS-SADDLE PAD. Hugo Lehr, Baltimore, Md. Filed Feb. 6, 1885. (No model.)



Claim.—The improvement in the manufacture of harness-saddle pads, consisting of the herein-described pad-tube as an article having each of the two reed-covers *d* secured to the lower face-cover, *b*, by a row of stitching, *d'*, and to the flap or upper back-piece, A, by a row of stitching, *f*, located between the reeds and the first-named row of stitching, as set forth.

331,510. PRESS-BOARD FOR CIGAR-BOXES. Conrad Lorenz, New York, N. Y. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination of a main piece having a central transverse bottom strip, adjustable extension-pieces having end strips, and interchangeable strips interposed between the main piece and extension-pieces to regulate the length of the press-board, substantially as set forth.

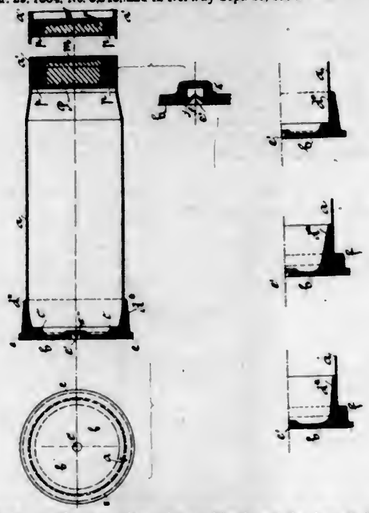
2. The combination of a main piece having a transverse central bottom strip, adjustable extension-pieces guided on the main piece and having transverse end strips and a spiral spring connecting the extension-pieces, substantially as set forth.

3. The combination of a main piece having a central transverse bottom strip, adjustable extension-pieces guided on said main piece, and provided with transverse end strips beveled at their inner sides, a spiral spring connecting the inner ends of the extension-pieces, and interchangeable strips interposed between the main and extension pieces, substantially as set forth.

4. The combination of a main piece, adjustable extension-pieces guided on the main piece, interchangeable strips interposed between the main and extension pieces, and a cover hinged to the main piece and inclosing a storage-space between the main and extension pieces for the interchangeable strips, substantially as set forth.

5. The combination of a main piece, A, having guide-strips *b b'*, and a central transverse bottom strip, *a a'*, adjustable extension-pieces B B, having top pieces, B' B', and end strips, *d d*, spiral spring C, connecting the top pieces, B' B', and interchangeable strips D D, that are interposed between the transverse strip *a* and the extension-pieces B B, substantially as set forth.

331,511. CARTRIDGE. Wilhelm Lorenz, Carlsruhe, Baden, Germany. Filed Nov. 3, 1883. (No model.) Patented in Germany June 23, 1883, No. 26,549; in France Aug. 6, 1883, No. 156,898; in Belgium Oct. 13, 1883, No. 62,886; in England Oct. 13, 1883, No. 4,872; in Italy Oct. 13, 1883, No. 15,995; in Sweden Dec. 13, 1883; in Austria-Hungary Dec. 20, 1883, No. 33/2,533; in Denmark Jan. 25, 1884, No. 2,274; in Spain Mar. 29, 1884, No. 5,345, and in Norway Sept. 23, 1884.

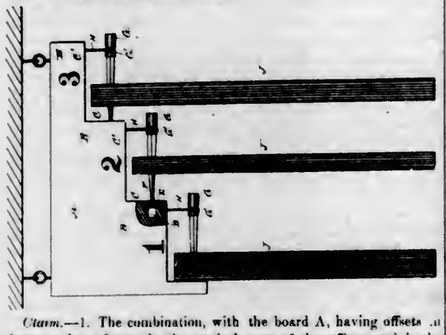


Claim.—1. In a cartridge, the combination of the base *b*, having annular inclined groove, and lips *c d*, of different lengths, with the cylinder *a*, the said cylinder and base being packed by the act of forcing them into proper contact, as set forth.

2. In a cartridge substantially as described, the combination of the cylinder *a* with the wad P, of cork or similar flexible material, and the imperforate expanding cap *m*, arranged between the wad and the projectile, as set forth.

3. The combination, with the cylinder and projectile, of the wad P, wrapped or otherwise provided with an oiled covering, *p*, and the concavo-convex cap *m*, arranged between the wad and projectile, as and for the purposes set forth.

331,512. PAPER-BAG HOLDER. Edward T. Martin, Concordia, Kans. Filed June 3, 1885. (Model.)



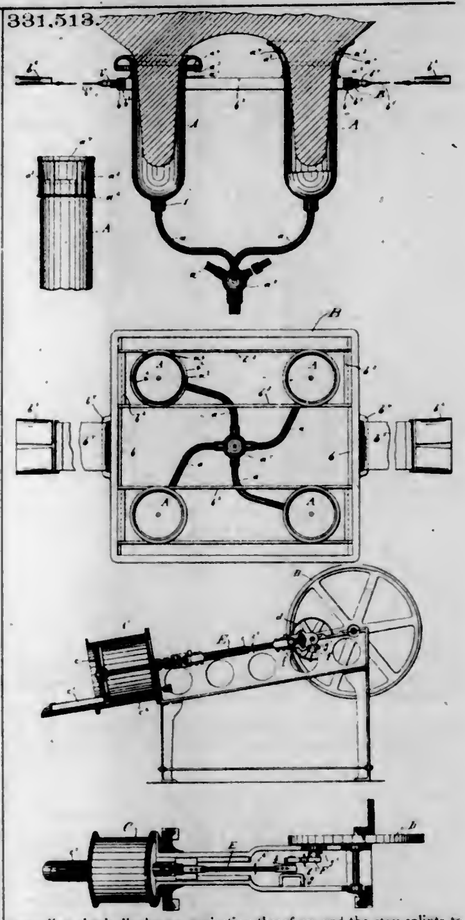
Claim.—1. The combination, with the board A, having offsets at its bottom edge, of caps in the vertical parts of the offsets and hooks on the ends of the horizontal parts, substantially as herein shown and described.

2. The combination, with a board having offsets in its bottom edge, of caps held in the vertical parts of the offsets, hooks on the horizontal part, and of nails rested on the hooks and having their ends passed into the above-mentioned caps, substantially as herein shown and described.

3. The combination, with the board A, having offsets in its bottom edge, of the caps E, the hooks H, and the pins or nails F, provided with heads G, having annular grooves, substantially as herein shown and described.

331,513. COW-MILKING APPARATUS. James P. Martin, St. Paul, Minn. Filed July 16, 1884. (No model.)

Claim.—1. The combination, with the teat-cover, of the outwardly-extending elastic diaphragm projecting therefrom and the stay-splints to support the same, substantially as set forth.



2. The combination, with the teat-cover, and with the outwardly-extending elastic diaphragm connected at one end thereto, of the series of stay-splints joined at their ends to said teat-cover and diaphragm, respectively, but otherwise free from said diaphragm, to permit the free elastic movement thereof, substantially as described.

3. The combination, with the teat-cover sets, of the supporting-frame having elastic connections to sustain the same in position, and to permit automatic adjustment thereof during milking, substantially as set forth.

4. The combination, with the individual teat-covers, and with the milk-receptacle connected thereto, of the separate supporting-frame to removably retain said covers and receptacle, and means, substantially as described, to sustain said frame in position, substantially as set forth.

5. The combination, with the teat-covers, and with the supporting-frame, of the movable slides adapted to receive and retain the teat-covers, substantially as set forth.

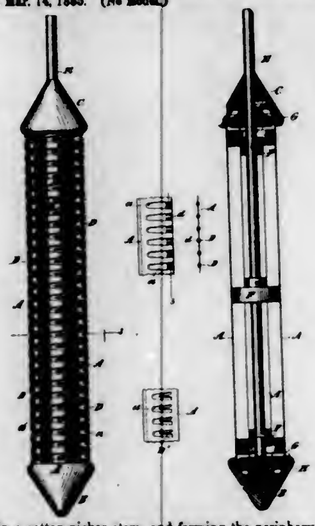
6. The combination, with the teat-covers, and with skeleton frame B, having tongues *b*, of slides b^2 b^2, moving in ways thereon and adapted to sustain the teat-covers, substantially as described.

7. The combination, with the teat-covers, and with the tubing, of the exhaust-pump, the intermittingly-moving drive-wheel therefor, the extensible connecting-rod, and the crank-arm provided with a shifting crank-pin for said connecting-rod, whereby the stroke of the pump may be gradually lengthened as the exhaust proceeds, substantially as set forth.

8. In cow-milking apparatus, the combination, with the teat-covers and tubing, and with the pump-cylinder and piston-head, of the divided connecting-rod having threaded spindle to join the same, the crank-arm, the crank-pin, and spindle engaging said pin, and means, substantially as described, projecting in the paths of the socket-wheels on the spindles to automatically turn the same, substantially as set forth.

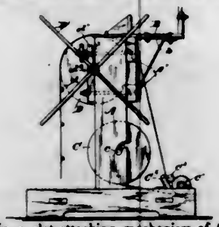
9. In cow-milking apparatus, the combination, with the teat-covers and tubing, and with crank-arm F, forked, as shown, of the crank-pin adapted to move in ways therein, the threaded spindle f', carrying sprocket-wheel f^3, and engaging with said crank-pin, and the distance-block f^4, substantially as set forth.

331,514. COTTON-PICKER STEM. Charles T. Mason, Jr., Sumter, S. C. Filed Mar. 14, 1885. (No model.)



Claim.—In a cotton-picker stem, and forming the periphery thereof, a sheet-metal plate provided with slots *a* and integrally-formed teeth D, arranged in said slots, substantially as described.

331,515. SLAT-ATTACHING DEVICE FOR ELEVATOR-BELTS. D. Maxwell, Paris, Ontario, Canada. Filed Sept. 26, 1885. (No model.)



Claim.—1. In a slat-attaching mechanism of the character specified, the combination of the tension device applied to the web and a roll or movable anvil provided with slat carrying and spacing devices, substantially as described.

2. The combination, with devices for holding and straightening the web, of a movable anvil or roll having slat-engaging devices for positioning the slats and feeding the web, substantially as described.

3. The combination, to form a slat-attaching mechanism for elevator belts or aprons, of a tension device for application to the web, a slat carrier and spacer over which the web is drawn, and a table to receive the slats, and fastening devices supported in rear and at about the level of the upper surface of the slat-carrier, substantially as described.

4. In combination with the tension device for application to the web, the rotary anvil provided with slat-carrying devices and a brake or detent and actuating devices, substantially as described.

5. In combination with the movable roll or anvil, the notched heads or flanges detachably secured to said anvil, substantially as and for the purpose described.

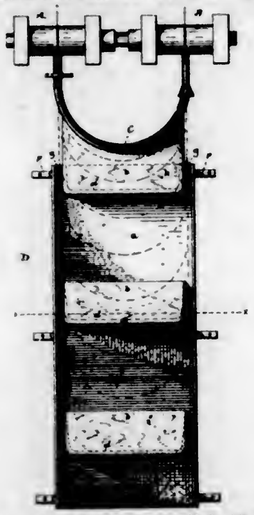
6. In a machine such as specified, and as a means for spacing the slats and feeding the web, a movable roll or anvil provided with engaging shoulders or projections to receive the slats and hold them beneath the web while the fastenings are applied, and when the roll or anvil is moved forward to draw the web through the medium of the previously-secured slat, substantially as described.

7. In combination with the web or roll of canvas or other flexible material, the straightening-roller, inclined rest, and superimposed bar or roll applied to the web in rear of the feeding and slat-applying devices, substantially as described.

8. In combination with the slat receiving and spacing roll or anvil supported in bearings in front of the uprights, the table secured to the said uprights with its front edge behind, but at about the level of the upper surface of the roll or anvil, and the tension and guiding devices applied to the web, the latter being conducted beneath the table and onto the surface of the roll or anvil, substantially as described.

9. An organized machine for applying slats to a web of canvas or other flexible material, consisting of the following elements in combination: a frame, bearings for the roll of canvas, a tension and straightening device applied to the web, a movable or endless roll or anvil having slat-spaces and engaging devices, a brake or detent applied to said roll or anvil, and devices for moving the latter at intervals to draw the web from the roll and bring the slats in position for the application of the fastening devices, substantially as described.

331,516. OVERFEED-REGULATOR FOR ROLLING-MILLS. William W. McCalley, Cleveland, Ohio. Filed Feb. 7, 1885. (No model.)



Claim.—1. An overfeed-regulator provided with one or more caps formed in elevation from the floor and adapted to permit the overfeed to pass over and be caught behind the same, substantially as set forth.

2. An overfeed-regulator provided with one or more caps formed in elevation on its floor and adapted to permit the overfeed to pass over and be caught behind the same, said regulator having side guards forming channels between them and said caps, in which the sides of the metal loop fit, substantially as set forth.

3. An overfeed-regulator having a plurality of caps respectively formed in inclined elevation to its floor, and located in consecutive order along the length of the latter, substantially as set forth.

4. In an overfeed-regulator, a cap formed in elevation on its floor and provided with a side recess which increases in depth from the front to the rear of said cap, substantially as set forth.

5. An overfeed-regulator having its floor provided with one or more transverse caps projecting in elevation therefrom, substantially as set forth.

6. An overfeed-regulator having its floor provided with one or more transverse caps, the two sides of each cap constituting guards which prevent the sides of the loop of working metal from bending inwardly, substantially as set forth.

7. An overfeed-regulator having its floor provided with one or more caps formed in elevation thereon adapted to prevent the sides of the metal loop from bending inwardly, said regulator also provided with longitudinal guards along the sides, extending from the floor upwardly, adapted to prevent the metal from bending outwardly, substantially as set forth.

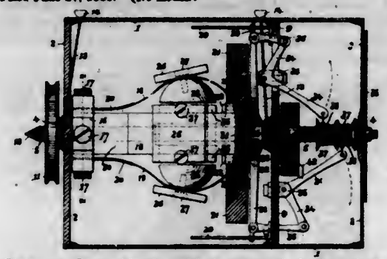
8. An overfeed-regulator having longitudinal side guards, and provided with one or more transverse caps forming guide-channels between them and said guards, substantially as set forth.

9. The combination, with a repeater, of an overfeed-regulator having width substantially same as the repeater, and provided with one or more caps located transversely on its floor, substantially as set forth.

10. An overfeed-regulator provided with a cap, and adjusting means for locating the latter at different points of the length of its floor, substantially as set forth.

11. An overfeed-regulator provided with means for maintaining the loop of working metal straight, and adjusting means for locking the floor of said regulator at different elevations, substantially as set forth.

331,517. VELOCIMETER. Richard J. McCarty, Fort Scott, Kans. Filed June 27, 1885. (No model.)



Claim.—1. In combination with the rotary shaft of a velocimeter, bowed plate-springs fixed at their ends thereto, centrifugal weights fixed to the bows of said springs, and means of connection with the indicating-needle, substantially as set forth.

2. In combination with the main shaft of a velocimeter, a hub rigid thereon having recessed faces, as shown, bowed governor-springs and their weights, and clamps for fixing said springs on said hub, substantially as set forth.

3. In combination with plate-springs fixed to the main shaft, the centrifugal weights fixed within the bows of said springs and having curved outer surfaces, substantially as and for the purpose set forth.

4. In combination with the main shaft 5, plate-springs 18, fixed thereto, and two-part weights 25 26, bolted together, so as to clamp said springs between them, as shown.

5. In combination with the main shaft and a centrifugal governor thereon, the momentum-disk arranged to slide on said shaft and regulate the movement of the indicator-connections, substantially as described.

6. The combination of shaft 5, plate-springs 18, clamped thereto, centrifugal weights fixed to said springs, momentum-disk 21, clamped to said springs and arranged to slide upon shaft 5, and connections from said disk to the indicating-needle, substantially as set forth.

7. In combination with the main shaft and the centrifugal governor thereon, the yoke connected to said centrifugal governor, so as to accompany its reciprocating but not its rotary motion, an indicating-needle and its arbor, bell-crank levers, and connections between said yoke, levers, and arbor, substantially as and for the purpose set forth.

8. In combination with a centrifugal governor, the yoke 28, connected thereto, parallel guides for said yoke, an indicating needle and arbor, and bell-crank levers connecting said arbor and yoke, substantially as set forth.

9. In combination with an indicating needle and arbor, a centrifugal governor, levers connecting said arbor and governor, and a spiral spring wound on said arbor for returning it to a normal position when the apparatus is at rest, substantially as set forth.

10. The combination of a centrifugal governor and an indicating-arbor, a tension-spring on said arbor, and two levers connected to both governor and arbor, substantially as and for the purpose set forth.

11. In combination with governor, head-block, yoke, and bell-crank levers, the indicating-arbor, and connecting-chains from said levers to said arbor, substantially as set forth.

331,518. VELOCIPEDE. Alexander W. McClure, Chicago, Ill. Filed Jan. 7, 1885. (No model.)

Claim.—1. In a velocipede having two trailing wheels, the combination, with the front and rear wheels, of a connecting-frame jointed or hinged together between the wheel-centers, and provided with a pedal pin or pins, also between the wheel-centers, whereby the application of the weight upon one side or the other slightly sways the frame to preserve the center of gravity over the central line of motion, substantially as and for the purpose set forth.

2. In a velocipede, a steering-wheel having its fork hinged to the main frame, and provided with a bevel-gear at this point, in combination with a steering-bar pivoted on the same pin as the fork, and also provided with a gear, and an idler connecting the two, substantially as and for the purpose set forth.

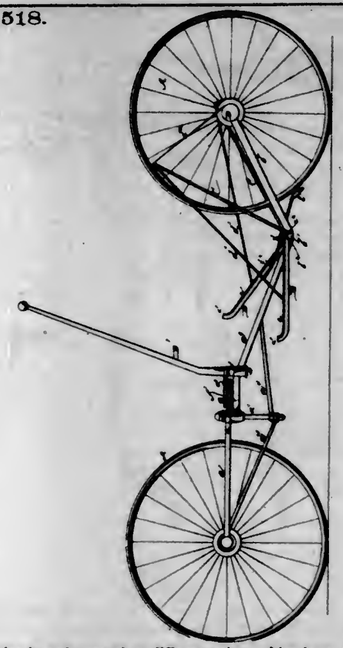
3. In a velocipede, the combination of an oscillating pedal and a pedal-pin, one of which is formed with a knife-edge bearing and the other with V-shaped sockets therefor, substantially as and for the purpose set forth.

4. In a velocipede, the combination, with the pedal B, having a A-shaped socket, c^2, upon each side, connected by a bar, c^2, of the pedal-pins b', formed with knife-edge bearings b^2 at each end, the upper side of the bar c^2 and the lower side of the pin b' curved from a common center and connected by a retaining-band, substantially as and for the purpose set forth.

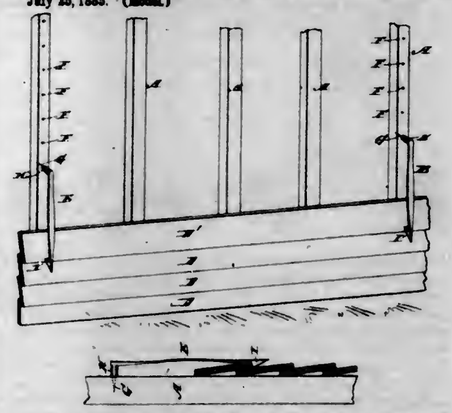
5. In a velocipede, a driving wheel or axle provided with a disk rigidly secured thereon, and a clutch-band loosely surrounding the disk and having its ends secured at different points, with a lever, in combination with a surrounding casing engaging said clutch-lever, and an operating-band secured to said casing, substantially as and for the purpose set forth.

6. In a velocipede, the front and rear wheels, the axle of the latter provided with driving-clutches, and a main frame connecting them, and a steering-handle, in combination with operating pedal-levers fulcrumed between and below the wheel-centers, and having their rear ends flexibly connected to the driving-clutches, substantially as and for the purpose set forth.

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331,519. SIDING-REST. John McDonald, Central City, Nebr. Filed July 25, 1885. (Model.)

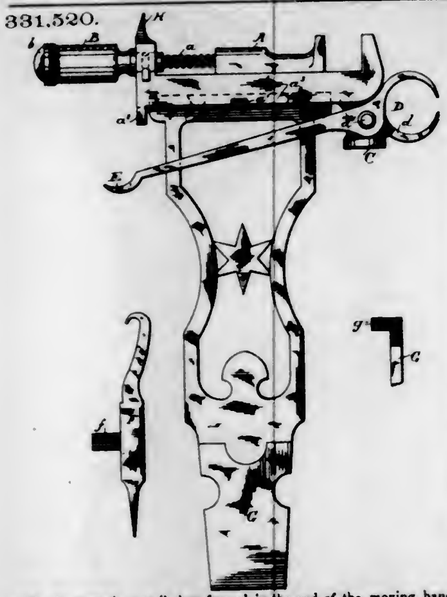


Claim.—As a new and improved article of manufacture, a rest and gage to be employed in laying siding upon buildings, made in one piece, having a rigid suspension-point, G, on one end to be driven into a joist, and a step, I, on the opposite end, upon which the siding is to be supported, and made flexible centrally, so as to permit the siding to be introduced between it and the joist and firmly held while being nailed, substantially as herein described.

331,520. COMBINATION-WRENCH. Whitfield S. McKinzie, Kemp, Tex. Filed Aug. 31, 1885. (No model.)

Claim.—1. The combination of a sliding-jaw wrench, a tallow-box formed in the handle of the said wrench, a hammer formed integral with the said wrench, the pinchers, one jaw of which is also formed integral

331,520.

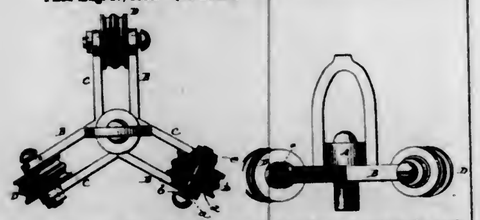


with the wrench, a nail-claw formed in the end of the moving handle of the pinchers, the horseshoe-pick F, a plow-paddle, and a screw-driver formed on the lower part of the said wrench, substantially as and for the purpose set forth.

2. The combination of the sliding-jaw wrench A, having the dovetailed socket a^3, the pinchers D, having a movable arm, and the plow-paddle provided with the dovetailed projection g, substantially as described and shown, and for the purpose set forth.

3. The combination, with the sliding-jaw wrench A, having the dovetailed socket a^3, the slot a', and the catch a^2, of the pinchers D, having a movable arm, the plow-paddle provided with the dovetailed projection g, and the horseshoe-pick F, having the projection f, substantially as described and shown, and for the purpose set forth.

331,521. LAMP-HANGER. DENNIS MCMAHON, Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. Filed Aug. 17, 1885. (No model.)

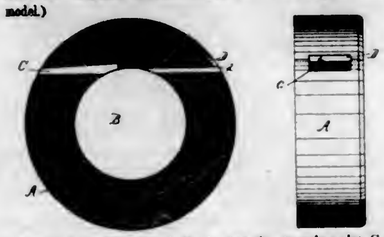


Claim.—1. In a hanger provided with pulleys over which the cords or chains run from the lifting power to the thing to be adjusted or lifted, the pulley arranged between cheeks, the axle extending through said cheeks taking a bearing in one of said cheeks, the opening through the other cheek of larger diameter than the body of the axle, and a spring around the axle within the said opening in the cheek, the inner end of said spring bearing against the corresponding face of the pulley, the outer end of the spring against an adjustable part of the axle, substantially as described, and whereby the pressure of the spring upon the pulley may be adjusted.

2. In a hanger substantially such as described, the pulley arranged between a pair of cheeks, the axle extending through said cheeks and pulley, the pulley loose on the axle, the axle taking a bearing in one of the cheeks, the opening through the other cheek of larger diameter than the axle, a spring around the axle extending through the opening, and a disk on the side of the pulley against which one end of said spring rests, the other end of the spring taking a bearing against an adjustable part of the axle, and whereby the pressure of the said spring may be adjusted, substantially as described.

3. In a hanger substantially such as described, the combination of the pulley D, arranged between two cheeks, the axle E, headed at one end and screw-threaded at the other and extending through both cheeks and through the pulley, the end of the axle screw-threaded into the cheek upon that side of the pulley, the opening through the other cheek of larger diameter than the body of the axle, and a spring, b, arranged through said opening and between the head of the axle and the pulley, substantially as described.

331,522. DEVICE FOR LOCKING COLLARS AND RINGS TO SHAFTS. CONSTANT MEHRE, Oakland, Cal. Filed Aug. 24, 1883. (No model.)

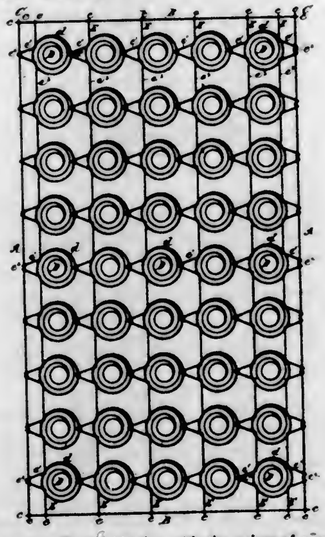


Claim.—1. A collar for shafts, having the tapering slot C formed transversely through it in such position as to pierce the central bore, B, and provided with the wedge D, insertible in said slot, so as to impinge directly upon the shaft when the collar is set in place thereon.

2. A collar for shafts, having a tapering slot, C, and wedge D, for insertion into said slot, and a transverse pin, d, placed across the mouth of the slot to prevent the escape of the wedge, as set forth.

3. A collar for shafts, having the tapering slot C, and the wedge D, for insertion therein, said wedge being provided with serrations or teeth upon its lower face for incision into the shaft to hold the collar thereon, as set forth.

331,523. SPRING-BED. PETER H. MELLON, St. Louis, Mo. Filed June 30, 1884. (No model.)



Claim.—1. The combination, with the springs of a spring-bed, of the connecting-rods having V-formed loops extending through the end ring of one spring, and connected to the end ring of an adjacent spring by a hook formed by bending the end of the loop, substantially as set forth.

2. The combination of rectangular wire or bar-iron frame, connecting-rods extending the length or breadth of the frame, and attached at the ends to the frame, and having V-formed loops with the end bent to form a hook, and wire springs connected together by their end rings and to the frame by the brace-rods, substantially as set forth.

3. The combination of frame A B, connected by eye-joints at the corners, the wire springs D, and connecting-rods with V-formed loops passing through the end ring of a spring and bent into a hook engaging the end ring of an adjacent spring.

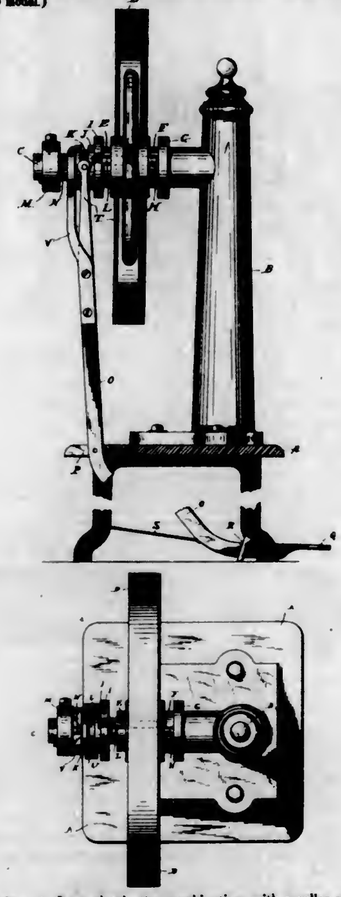
4. A spring-bed having connecting-rods running from end to end or side to side, and having loops c' c^2, serving to connect spring to spring by their end rings, and the springs to the side or end bars, as the case may be.

5. A connecting-rod, E, for bed-springs, formed with straight portions e^2, and V-shaped loops e' between the straight portions, having their outer ends bent into hooks e^3, substantially as described.

6. The combination of upper and lower side and end bars, double-conical springs having closed rings at each end, and connecting-rods having eyes at each end engaging the frame, straight portions between the coils, and V-shaped loops extending through one row of springs, having their outer ends bent into hooks engaging the adjacent row of springs.

7. The combination of the upper and lower side and end bars having interlocking eyes, double-conical springs having closed rings at each end, and connecting-rods having eyes at each end engaging the frame, straight portions between the coils, and V-shaped loops extending through one row of springs, having their outer ends bent into hooks engaging the adjacent row of springs.

331,524. CLUTCH. MARTIN L. METZGER and ALBERT COOPER, Harrisburg, Pa., assignors to W. O. Hickok, same place. Filed Oct. 26, 1885. (No model.)



Claim.—1. In a clutch, the combination, with a collar secured to the shaft and provided with a stud, of another collar provided with a pin, and a lever to throw the pin into engagement with the stud.

2. In a clutch, the combination, with a collar secured to the shaft and having a disk provided with a stud, of another collar provided with a pin, and a lever to throw the pin into engagement with the stud.

3. In a clutch, the combination, with a collar secured to the shaft and provided with a stud, of another collar provided with a pin, and a wheel provided with an aperture through which the pin passes, and a lever to throw the pin through the wheel and into engagement with the stud.

4. In a clutch, the combination, with a collar secured to the shaft and having a disk provided with a stud, of another collar provided with a pin, and a wheel provided with an aperture through which the pin passes, and a lever to throw the pin into engagement with the stud.

5. In a clutch, the combination, with the collar secured to the shaft and provided with a stud, of another collar provided with a pin, and a third collar provided with a stud, whereby the lever automatically throws the pin into engagement with the stud.

6. In a clutch, the combination, with a collar secured to the shaft and having a disk provided with a stud, of another collar provided with a pin, and a third collar provided with a stud, by means of which the lever throws the pin into engagement with the stud.

7. In a clutch, the combination, with a collar secured to the shaft and having a disk provided with a stud, of another collar provided with a disk and pin, and a third collar secured to the shaft and provided with a stud, by means of which the lever automatically throws the pin into engagement with the stud.

8. In a clutch, the combination, with a collar rigidly secured to the shaft and provided with a stud, of another collar loosely mounted on the shaft and provided with a pin, and a third collar rigidly secured to the shaft and provided with a stud, by means of which the lever automatically throws the pin into engagement with the stud.

9. In a clutch, the combination, with a collar secured to the shaft and provided with a stud, of another collar provided with a pin, and a wheel provided with an aperture through which the pin passes, and a third collar secured to the shaft and provided with a stud, whereby the lever automatically throws the pin through the wheel and into engagement with the stud.

10. In a clutch, the combination, with a collar secured to a shaft and having a disk provided with a stud, of another collar provided with a pin, and a wheel provided with an aperture through which the pin passes, and a third collar secured to the shaft and provided with a stud, by means of which the lever automatically throws the pin through the wheel and into engagement with the stud.

11. In a clutch, the combination, with a collar secured to the shaft and having a disk provided with a stud, of another collar provided with a disk and a pin, a wheel provided with an aperture through which the pin passes, and a third collar secured to the shaft and provided with a stud, by means of which the lever automatically throws the pin into engagement with the stud.

12. In a clutch, the combination with a collar secured to the shaft and having a disk provided with a stud, of another collar provided with a disk having a slot in which fits a pin, a wheel provided with an aperture through which the pin passes, and a third collar secured to the shaft and provided with a stud, by means of which the lever automatically throws the pin into engagement with the stud.

13. In a clutch, the combination, with a collar secured to the shaft and provided with a stud, and another collar provided with a pin, of the lever having a bifurcated extension, the members of which fit within a groove on one of the collars, by means of which the pin is automatically thrown into engagement with the stud.

14. In a clutch, the combination, with the collar secured to the shaft and provided with a stud, and another collar provided with a pin, of the lever having a bifurcated extension the members of which are provided with lugs which fit within a groove on one of the collars, by means of which the pin is automatically thrown into engagement with the stud.

15. In a clutch, the combination, with a collar secured to the shaft and provided with a stud, and another collar provided with a pin, of the lever having two bifurcated extensions the members of one of which fit within a groove on one of the collars, and the members of the other of which nearly meet and are tapered toward their extremities.

16. In a clutch, the combination, with the collar secured to the shaft and provided with a stud, and another collar provided with a pin, of the lever having two bifurcated extensions, the members of one of which are provided with lugs which fit within a groove on one of the collars, and the members of the other of which nearly meet and are tapered toward their extremities.

17. In a clutch, the combination, with the stud secured to the shaft and a collar provided with a pin, of a lever to throw the pin into engagement with the stud.

18. In a clutch, the combination, with the stud secured to the shaft and a collar provided with a pin, of a lever to automatically throw the pin into engagement with the stud.

19. In a clutch, the combination, with the stud secured to the shaft and a collar provided with a pin which engages the stud, of a lever which will at a predetermined point throw the pin out of engagement with the stud.

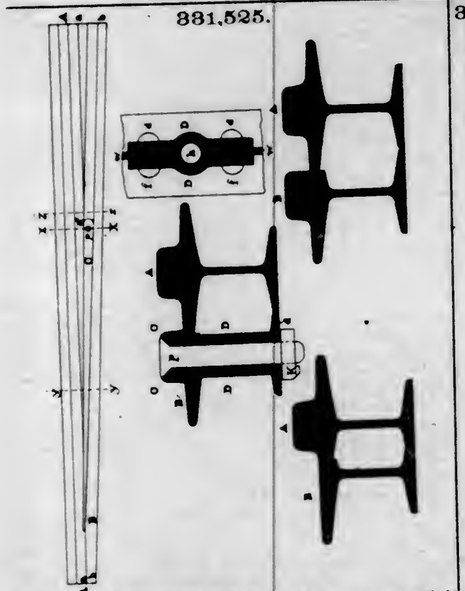
20. In a clutch, the combination, with the stud secured to the shaft and the pin which engages the stud, of the lever which will at a predetermined point throw the pin out of engagement with the stud.

21. In a clutch, the combination, with the stud secured to the shaft and the pin which engages the stud, of the lever which will at a predetermined point automatically throw the pin out of engagement with the stud.

331,525. RAILROAD-SWITCH. ARTHUR J. MOXHAM, Johnstown, Pa. Filed Aug. 25, 1885. (No model.)

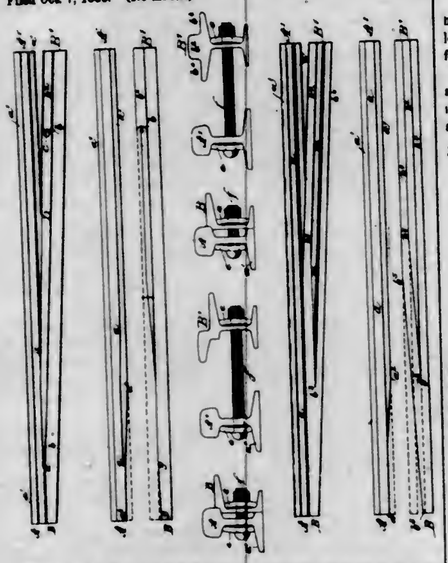
Claim.—A railway-switch for street-car tracks, composed of two rolled center-bearing girder-rails cut and fitted together at the necessary

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angle to deflect the car, secured together at their junction, and at their divergent ends to the main rails of the track, substantially as and for the purposes set forth.

331,526. RAILROAD-SWITCH. Arthur J. Moxham, Johnstown, Pa. Filed Oct. 7, 1885. (No model.)



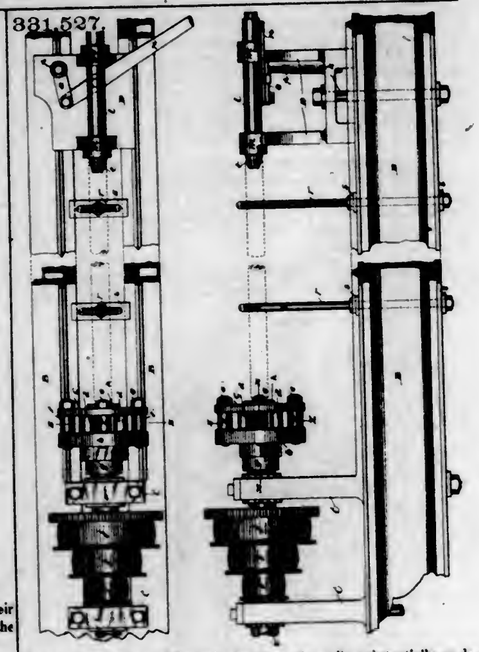
Claim.—A railway-switch for street-car tracks, composed of a T-rail and a rolled girder tram-rail cut and fitted together at the necessary angle to deflect the car, secured together at their junction and at their divergent ends to the main rails of the track, substantially as and for the purposes set forth.

331,527. MACHINE FOR WELDING PLUGS IN THE ENDS OF TUBES. Carleton W. Nason, New York, N. Y. Filed Aug. 28, 1885. (No model.)

Claim.—1. The combination, with the rolls *d*, arranged to receive the end of the tube between them, of means for presenting the end of the tube between the rolls, substantially as described.

2. The combination, with the rolls *d*, mounted in the revolving head and arranged to receive the end of the tube between them, of means for

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presenting the end of the tube between the rolls, substantially as described.

3. The combination, with the rolls *d*, mounted in the revolving head and arranged to receive the end of the tube between them, of the longitudinally-moving spindle *l*, having the milled or roughened end *t*, for holding the tube, substantially as described.

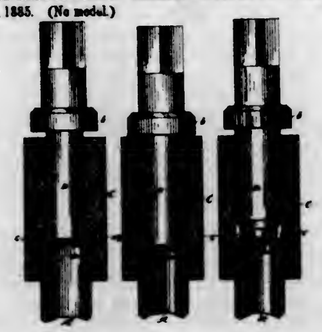
4. The combination, with the rolls *d*, mounted in the revolving head and arranged to receive the end of the tube between them, of one or more rests, as *r*, and the longitudinally-moving spindle *l*, substantially as described.

331,528. METHOD OF CLOSING THE ENDS OF METAL TUBES. Carleton W. Nason, New York, N. Y. Filed Aug. 28, 1885. (No model.)



Claim.—The herein-described method of closing the ends of metal tubes, which consists in inserting a metal disk into the end of the tube and then subjecting the end of the tube properly heated to the action of a plurality of tapering rolls, whereby it is pressed around and welded to the disk, substantially as described.

331,529. APPARATUS FOR CENTERING AND INSERTING DISKS IN THE ENDS OF TUBES. Carleton W. Nason, New York, N. Y. Filed Oct. 9, 1885. (No model.)

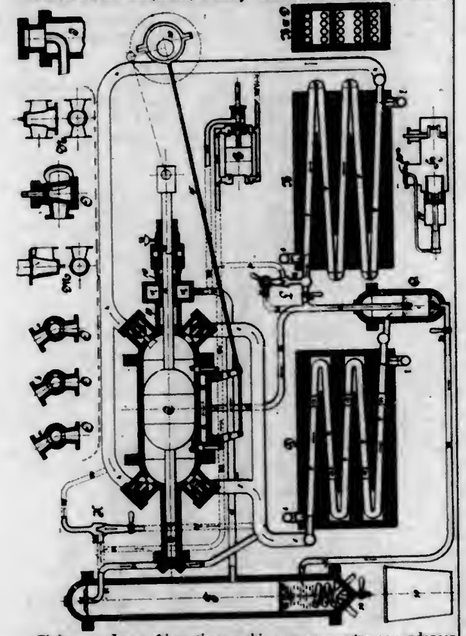


Claim.—1. The herein-described device for centering disks over the ends of tubes, consisting of the tubular shell C, provided upon its interior with the curved or inclined shoulder *c*, substantially as described.

2. The combination, with the tubular shell C, provided upon its interior with the curved or inclined shoulder *c*, of the plunger or rammer B, substantially as described.

3. The combination, with the tubular shell C, provided upon its interior with the curved or inclined shoulder *c*, of the plunger or rammer B, having the collar *b*, substantially as described.

331,530. REFRIGERATOR. Hugo Nehrlich, Berlin, and Adam Neubecker, Offenbach-on-the-Main, Hesse, assignors to A. Neubecker, of Offenbach-on-the-Main, Hesse, Germany. Filed Mar. 16, 1885. (No model.)



Claim.—1. In a refrigerating-machine, an evaporator or condenser separated internally into compartments by wedge-shaped partitions, whereby the several compartments are alternately inclined in opposite directions, in combination with pipes placed in said compartments for the passage of a refrigerating substance, substantially as described.

2. In a refrigerating-machine, the combination, with the pipes 9, of annular cleaning-brushes 11, placed on and surrounding said pipes, substantially as described.

3. In a refrigerating-machine, the combination, with the receiver A and the compressor C, directly connected by pipes and valved passages, of the counter-streaming evaporator B, the counter-streaming condenser D, and pipes for connecting the receiver, evaporator, compressor, and condenser in a continuous circuit, substantially as described.

4. In a refrigerating-machine, the combination, with the receiver A, the compressor C, and the evaporator D, of the leveling-vessel F, having valve 20 and valved heating-coil 37, and pipes for connecting said receiver, compressor, condenser, and leveling-vessel, substantially as described.

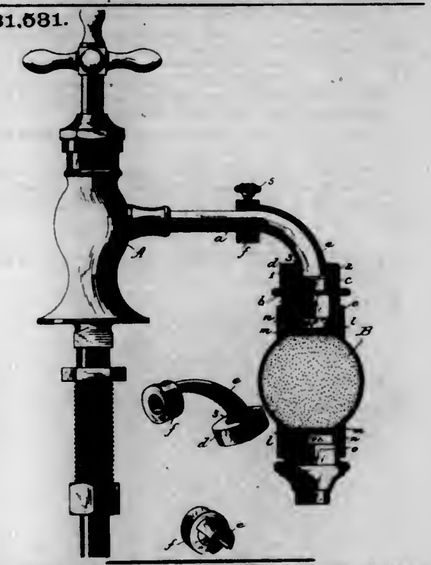
5. In a refrigerating-machine, the combination, with the pump E and compressor C, of the fore chamber, 18, annular chamber 17, and lubricating-vase 23, substantially as described.

6. In a refrigerating-machine, the combination, with the receiver A, evaporator B, condenser D, and compressor C, connected in a circuit by pipes, of the valved leveling-vessel F, the pump or ejector E, the chamber 17, having lubricating-vase 23, fore chamber, 18, and gas-ring 19, pipes for connecting the leveling-vessel F to the receiver, pump, and chamber 17, and pipes and valved passages for connecting the receiver and compressor, substantially as described.

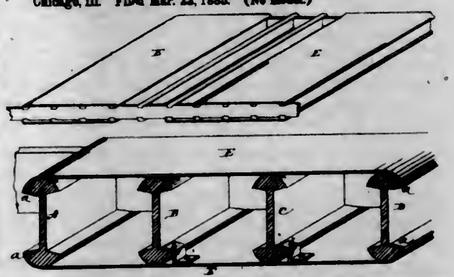
331,531. FILTER. William Neracher, Cleveland, Ohio. Filed Feb. 18, 1885. (No model.)

Claim.—In combination with the filter, the cap *d*, threaded to fit the stem of said filter, having a packing-ring and opening for the stem of the faucet, the arm or yoke *e*, carved to conform to the curve of the faucet-stem, and the ring or collar provided with a set-screw for attachment to the faucet, all substantially as described.

331,531.



331,532. PLATEN FOR DRYING APPARATUS. Aaron S. Nichols, Chicago, Ill. Filed Mar. 23, 1885. (No model.)

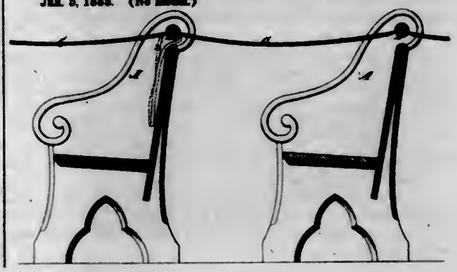


Claim.—1. The herein-described platen for drying purposes, consisting of a series of parallel I-shaped bars connected at their ends, combined with flat plates adapted to be arranged upon and secured to the surface of the said bars or removed therefrom, substantially as described.

2. A platen for drying purposes, consisting of a series of parallel I-shaped bars connected at their ends, combined with flat plates adapted to cover two or more of the said bars, the edges of the said plates turned under to form a flange upon each edge to pass beneath the corresponding flange of the bars to which they are to be applied, and so as to be removably attached to said bars, substantially as described.

3. A platen for drying purposes, consisting of a series of parallel I-shaped bars connected at their ends, combined with flat plates adapted to cover two or more of the said bars, the edges of the said plates turned under to form a flange upon each edge to pass beneath the corresponding flange of the bars to which they are to be applied, and so as to be removably attached to said bars, said plates also provided with connections *b* to engage the flange of intermediate bars, substantially as described.

331,533. PEW-GUARD. Michael E. O'Connor, Brooklyn, N. Y. Filed Jan. 5, 1885. (No model.)



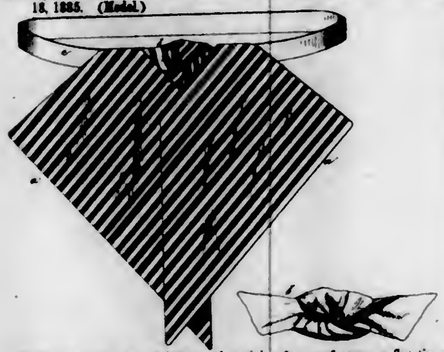
Claim.—In combination with a pew or seat lock, a guard-chain secured thereto, and having a catch or hasp adapted to lock into the next seat lock, substantially as described.

331,534. MANUFACTURE OF FIBROUS MATERIAL FROM WOOD FOR SURGICAL AND OTHER PURPOSES. Josef Odelga, Vienna, Austria-Hungary. Filed Apr. 6, 1885. (No specimens.)

Brief.—Improvement on English Patent No. 4,444, dated September 17, 1883.

Claim.—As a new article of manufacture, wood lint or vegetable wool, consisting of fine long threads, having an unchanging fibrous structure and deprived of splinters or dust-like particles, substantially as described.

331,535. NECKTIE. Charlotte E. Page, Chicago, Ill. Filed Apr. 18, 1885. (Model.)

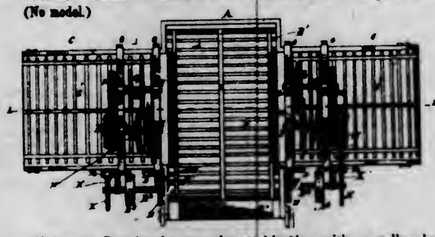


Claim.—1. As an improved article of manufacture, a flat tie or neckscarf having its center piece composed of a strip of material tied in a knot, with the ends of said strip twisted after being passed through the loop of the said knot to give a twisted and bunched appearance to the knot when drawn tight, and secured in such twisted position beneath the body of the scarf, substantially as shown and described, and for the purpose set forth.

2. As an improved article of manufacture, a flat tie or neckscarf having the main body composed of two pieces of material, *a a*, whose meeting edges are cut on a line diagonal to the lines bounding the right angular outer corners of the scarf, and the said scarf edges overlapping one upon the other in a vertical line down the center of the said scarf, substantially as shown and described, and for the purpose set forth.

3. In a neckscarf, the pieces *a a*, formed and secured together to form a V-shaped main portion, as specified, in combination with the center piece, *b*, having the knotted appearance herein described, the neck-strap *c*, and pin *d*, all constructed and combined substantially in the manner and for the purpose set forth.

331,536. BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES. Charles Parmy, East St. Louis, Ill. Filed Aug. 24, 1885. (No model.)



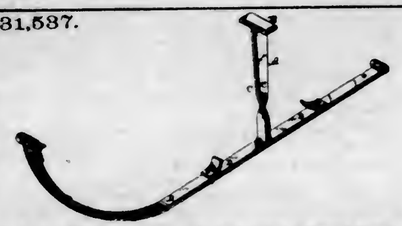
Claim.—1. In a band-cutter, the combination, with an endless belt or apron, of a plurality of superposed cutters increasing in diameter, as described, and rotating in planes transverse to the said endless apron, for the purpose set forth.

2. In a band-cutter, the combination, with an endless belt or apron, of a plurality of superposed rotary shafts placed parallel with said apron, and a plurality of cutters increasing in diameter, as described, secured to each shaft, the cutters on the respective shafts overlapping, in the manner and for the purpose set forth.

331,537. SLEIGH-KNEE. John Parkhill, Stue Lake, Dak. Filed Sept. 9, 1885. (No model.)

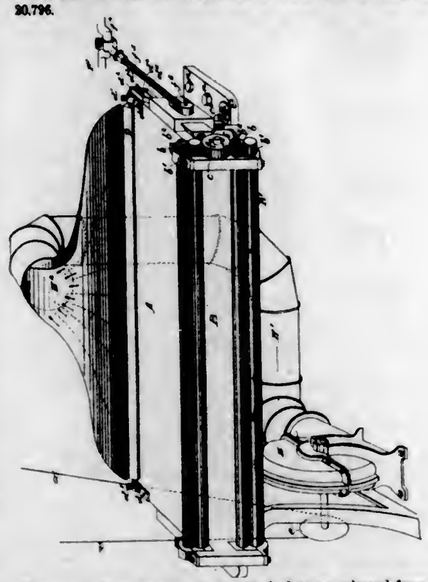
Claim.—1. A sleigh-knee, which is formed from a single piece of metal, which is bent at B, and has its vertical portions C twisted, so as to turn their ends out at a right angle to the top of the knee, substantially as shown.

331,537.



2. A sleigh knee, runner, and shoe, which is formed from a single piece of metal, and which is bent at B, and has its vertical portions C twisted, so as turn their ends outward, and thus form the runner and the shoe, substantially as set forth.

331,538. REMOVING STAGY HAIRS FROM FUR-SEAL AND OTHER SKINS. Ambrose Patterson, London, England. Filed Dec. 27, 1884. (No model.) Patented in England Feb. 16, 1884, No. 3,429; in France Dec. 10, 1884, No. 165,853, and in Canada Dec. 26, 1884, No. 20,796.



Claim.—1. In an apparatus to be attached to an enlarged fur-cutting machine, for the removal of stagy hairs from seal and other skins, the combination, with an oscillating frame, A, of a double-crank shaft, F f^4, and its crank-arms for working said frame, and the grooved rollers B B', for passing the skin over the straight edge, all substantially as shown and described.

2. In an apparatus to be attached to an enlarged fur-cutting machine for removing stagy hairs from skins, the combination of an oscillating frame worked by a double-crank shaft and crank-arms, with the grooved rollers B B', for passing the skin over the straight edge, and with mechanism, substantially as described, serving to actuate the geared wheel C, to cause the grooved rollers to move intermittently, substantially as shown and described.

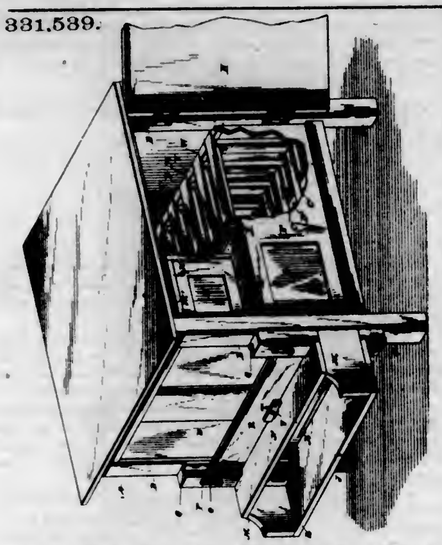
3. The combination, with a rotary blower, and with the oscillating frame, of the straight edge on the oscillating frame, substantially as set forth.

4. In combination, the rotary blower, as set forth, the straight edge on the oscillating frame, guard-rod D on the frame, and its bearings *d*, and guard-rod D' and its slotted bearing d^3, substantially as and for the purposes set forth.

331,539. BEE-HIVE. Sidney Perkins, Stanford, Ky. Filed July 22, 1885. (No model.)

Claim.—1. In a bee-hive, the combination of the hive-box having an entrance at the lower edge of its side, a frame consisting of the foot or a lighting board, side pieces having vertical grooves in their facing sides, and a top board secured between the said side pieces above the foot-board and having a notch in its inner edge, a door sliding in the grooves of the side pieces and having a notch in its lower edge registering with the entrance, but of smaller dimensions than the same, and a turn-button pivoted upon the door registering with the notch in the top

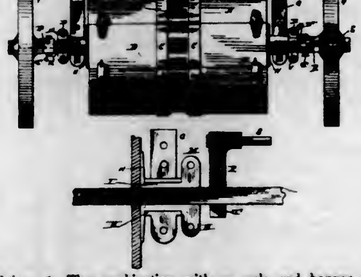
331,539.



piece and slightly narrower than the said notch, but longer than the same, as and for the purpose shown and set forth.

2. The combination, with the hive-box having the entrance at the lower edge of its side, of a foot-board having vertically slotted upright side pieces and engaging screws in the side of the hive, whereby the foot-board can be raised to cover the bee-entrance, as and for the purpose shown and set forth.

331,540. MANURE-DISTRIBUTER. Joseph E. Pierson, near Fremont, N. C. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with an axle and hopper secured thereto, of a bearing at each end of said hopper having a cylindrical continuation, and securing said hopper to the axle, a shaft clamp or clip surrounding said continuation, an arm secured to said axle, and a longitudinally-moving pin supported by said arm, substantially as and for the purpose specified.

2. The combination, with an axle and distributing-hopper, of a device for securing the hopper to the axle, consisting of plate fastened to the hopper, a cylindrical continuation and a clamp-plate, the device being divided longitudinally, a shaft-clip consisting of semi-cylindrical plates and wings, and an engaging device consisting of an arm secured to the axle, and a pin having longitudinal movement in said arm, the whole arranged substantially as and for the purpose specified.

331,541. BAKING-POWDER. Andrew Peters, Brooklyn, N. Y. Filed Sept. 5, 1885. (No specimens.)

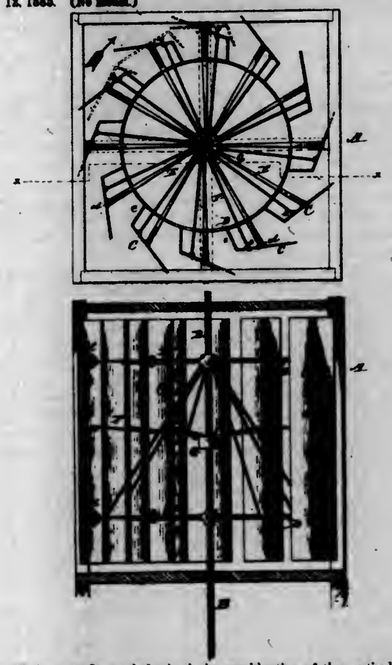
Claim.—1. A baking-powder consisting in its essential elements of a carbonate of lime or magnesia or strontia, with an acid sulphate of soda or any other equivalent acid sulphate of an alkali, substantially in the manner and proportions specified.

2. A baking-powder consisting in its essential elements of a carbonate of lime or magnesia or other suitable carbonate of an alkaline earth equivalent for the purpose of the compound with an acid sulphate of soda or any other equivalent acid sulphate of an alkali, substantially in the manner and proportions specified.

331,542. BAKING-POWDER. Andrew Peters, Brooklyn, N. Y. Filed Sept. 5, 1885. (No specimens.)

Claim.—A baking-powder consisting in its essential elements of an acid phosphate of lime and a carbonate of lime or magnesia or strontia, substantially as described.

331,543. WIND-WHEEL. Walter G. Read, Hney, Ill. Filed Feb. 12, 1885. (No model.)



Claim.—1. In a wind-wheel, the combination of the vertical vanes pivoted to move laterally, a shaft, a sliding collar mounted thereon, and rods connecting said vanes and collar and adapted to raise said collar under centrifugal action, substantially as set forth.

2. In a horizontal wind-wheel, a vertical shaft having radiating arms rigidly attached thereto, said arms pivotally carrying at their outer ends vanes, circular rims supported from said shaft to limit the movement of said vanes, a collar sliding upon said shaft, and a series of rods connecting said vanes and collar and adapted to raise said collar under centrifugal action and move the vanes, substantially as set forth.

3. In a horizontal wind-wheel, a vertical shaft, a series of horizontal arms with vanes attached to the outer ends of said arms and provided with inwardly-projecting portions *c*, rims connected to said arms and forming abutments for said portions, and a collar sliding upon said shaft and connected to said vanes by a series of rods, F, which under centrifugal action elevate said collar and move the vanes, substantially as set forth.

4. In a horizontal wind-wheel, a vertical shaft provided with a series of horizontally-extending arms, a series of vanes pivoted to the outer ends of said arms, brace-rods extending from the hub of the upper series of arms to near the outer ends of the lower series, rims D, carried by the arms, a collar sliding on said shaft, and a series of rods connecting said collar and vanes, whereby the arms raise said collar under centrifugal force and move the vanes, substantially as set forth.

331,544. GAS REGULATOR AND CUT-OFF. John P. Rehmer, Pittsburg, Pa. Filed May 5, 1885. (No model.)



331,544.



Claim.—1. In a regulator for gas or similar fluids, having an inverted bell having its sides immersed in a mercury or similar fluid seal, and having a valve playing upward against a valve-aperture in the bottom of the regulator-casing, the combination, with the said bell and the valve, of a set of longer toggle-arms pivoted to the bottom of the regulator-casing and to the top of the bell, a set of shorter toggle-arms pivoted to the bottom of the regulator-casing and to the upper end of the valve-stem, and arms pivoted to the joints between the longer toggle-arms and to the joints between the shorter toggle-arms, as and for the purpose shown and set forth.

2. In a regulator for gas or similar fluids, the combination, of a casing having an annular mercury or similar fluid seal, and having an aperture at its bottom provided with a downwardly-facing valve-seat, an inverted bell having its sides immersed in the seal, a T-joint secured at the valve-seat and having its lower branch covered by a cap, a diaphragm of flexible material covering the upper end of the chamber formed in the said lower branch of the T-joint, and a valve playing against the valve-seat, having a stem extending upward and connected to the bell by means of toggle-arms, and a downwardly-extended stem secured to the diaphragm and formed with a longitudinal bore opening through the side of the stem above the valve and below the diaphragm, as and for the purpose shown and set forth.

3. In a regulator for gas or similar fluids, provided with an inverted bell having its sides immersed in a fluid seal and having an upwardly-closing valve at its bottom, the combination, with the said bell and the valve having an upwardly-projecting stem formed with a yoke at its upper end, of a yoke having an upwardly-projecting shank secured in the top of the bell, two pairs of toggle-arms pivoted to the ends of the yoke with the upper ends of the upper pair of arms and to the bottom of the regulator-casing with the lower ends of the lower arms, two pairs of shorter toggle-arms pivoted with the lower ends of the lower arms to the bottom of the regulator-casing and with the upper ends of the upper arms to the yoke upon the end of the valve-stem, and two arms pivoted with their outer ends to the joints between the longer toggle-arms and with their inner ends to the joints between the shorter toggle-arms, as and for the purpose shown and set forth.

4. A cut-off attachment for regulators for gas or similar fluids, having a bell descending by the decrease of the pressure in the regulator, consisting of a valve having a spring forcing it down upon the outlet-aperture, and an upwardly-projecting stem formed with a notch, and a hook engaging the said notch, and having an arm or trigger which will tilt the hook when depressed by the descending bell, as and for the purpose shown and set forth.

5. A cut-off attachment for regulators for gas or similar fluids, having a bell descending by the decrease of the pressure in the regulator, consisting of a valve having a spring forcing it down upon the outlet-aperture, and having an upwardly-projecting stem provided with a notch, a bell-crank lever provided with a hook for engaging the notch upon its downwardly-projecting arm, and having a horizontal arm provided with an upwardly-projecting lug for the bell to bear against when descending, and a spring bearing against the under side of the horizontal arm of the bell-crank lever, as and for the purpose shown and set forth.

6. In a cut-off attachment for regulators for gas or similar fluids, the combination of a bell descending by the decrease of the pressure of the gas, a valve having a spring forcing it down upon the outlet-aperture, and having an upwardly-projecting stem provided with a notch, a bell-crank lever having a hook upon its downwardly-projecting arm for engaging the notch, and having a horizontal arm provided with an upwardly-projecting lug for the bell to bear against, a spring forcing the horizontal arm upward, a casing secured around the outlet-aperture and having a stuffing-box diametrically opposite to the under side of the valve, and a rod sliding in the said stuffing-box for forcing the valve upward, as and for the purpose shown and set forth.

7. In a cut-off attachment for regulators for gas or similar fluids, the combination of a bell descending upon the decrease of the pressure of the gas, a valve having an upwardly-projecting stem provided with a notch, having a downwardly-projecting stem formed with an enlargement, and having a spring for forcing it down upon the outlet-aperture, a bell-crank lever having a hook upon its downwardly-projecting arm for engaging the hook, and having an upwardly-projecting lug upon its horizontal arm, a spring bearing against the under side of the said horizontal arm, a casing or T-joint secured around the outlet-aperture, having a cock in the branch opposite to the lower stem of the valve and formed with a stuffing-box below the cock, and a rod sliding in the said stuffing-box and through the bore of the barrel of the cock for raising the valve, as and for the purpose shown and set forth.

331,545. KNIFE-SHARPENER. FRANK J. REINHOLD, Detroit, Mich. Filed Feb. 17, 1885. (No model.)



Claim.—1. In a knife-sharpener, the combination, with two sharpening-rollers mounted upon shafts, of ratchet mechanism and a spring acting on one of the rollers to permit it to yield, substantially as and for the purpose described.

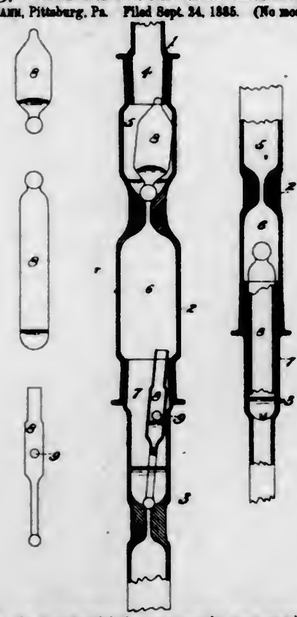
2. In a knife-sharpener, the combination, with two sharpening-rollers mounted upon shafts and having frictional contact with each other, of ratchet mechanism and a spring acting on one of the rollers to permit it to yield, substantially as and for the purpose described.

3. In a knife-sharpener, two sharpening-rollers mounted upon shafts, one of said rollers constructed with a groove provided with an elastic band, and the other roller constructed to engage in said groove and in frictional contact with said band, substantially as and for the purpose described.

4. A knife-sharpener consisting of a support, sharpening-rollers mounted upon shafts having their bearings in said support, one of said rollers constructed with a groove provided with an elastic band, and the other roller constructed to engage in said groove and in frictional contact with the band, one of said rollers provided with ratchet mechanism and a retracting-spring, all arranged substantially as and in the manner described.

5. In a knife-sharpener, two rollers provided with sharpening-surfaces mounted upon shafts, and a brush located in range of the contact-surfaces of said rollers, substantially as and for the purpose described.

331,546. VALVE-CASE FOR MERCURIAL AIR-PUMPS. ALBERT L. REINMANN, Pittsburg, Pa. Filed Sept. 24, 1885. (No model.)

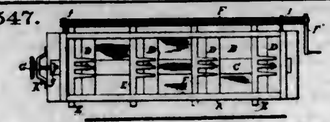


Claim.—In a mercurial air-pump, a valve-case consisting of the enlarged ends of adjoining sections of pipe forming a part of the pump said enlarged ends fitting one within the other, in combination with a valve located within said case, substantially as set forth.

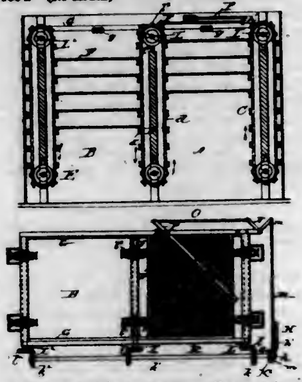
331,547. SEED-SOWER. FRANCIS ESTHER, Lathrop, Cal. Filed June 9, 1885. (No model.)

Claim.—The combination of the seed-box having a perforated bottom with the adjustable plate C, the plate D, and agitator E, arranged at right angles thereto, and the shaft F, provided with arms for moving the agitator E, substantially as shown.

331,547.



331,548. FRUIT-DRIER. MYERS REYNOLDS, Jr., Milton, Del. Filed Sept. 17, 1884. (No model.)



Claim.—1. In a fruit-drier having ascending and descending flues and lifting and lowering chains therein, the combination, with the chain-shafts L L' L², of shaft K and lever H, said shafts having gear-wheels *l l' l²* and *k k' k²*, and said lever having a spring-pawl, h^2, engaging with a ratchet, K', on said shaft K, substantially as shown and described.

2. The combination, with a fruit-drier having ascending and descending flues, and mechanism for lifting and lowering trays therein, of a shifting-lever, P, for transferring said trays from one flue to the other, substantially as shown and described.

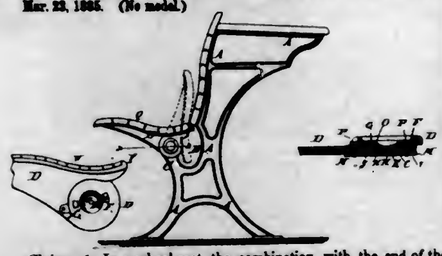
3. In a fruit-drier having ascending and descending tray-carriers, the combination therewith of a device for transferring the trays from one to the other of the tray-carriers, said device comprising the lever P, pivoted at one end to the frame of the fruit-drier, and adapted to engage with the trays successively at its other end, the rods O and M, and bell-crank N, connecting said lever P to the lever H, from which it receives motion, substantially as described.

4. In a fruit-drier, the combination, with the lifting and lowering chains and their shafts and the shifting-lever P, of lever H, carrying a pawl which engages with a ratchet on the shaft from which said chains receive motion, and being connected to said lever P, substantially as shown and described, whereby the operation of said lever H causes the chain to travel and the shifting-lever to operate, as set forth.

5. In combination with a fruit-drier having two flues, and mechanism, substantially as described, for raising trays through one flue and lowering them through the other, the hinged spring-boards G G on opposite sides of the drier, extending from one flue to the other, forming supports for the trays, and serving as rails or ways on which said trays are successively moved from one flue to the other, substantially as shown and described.

6. In a fruit-drier, the combination, with ascending and descending chains and the sprocket-wheels on which said chains are carried, of spring-boards G G, hinged to the frame of the drier, levers S S, also pivoted upon the frame, and wipers f^2 f^3, secured to the sprocket-wheels, and adapted to engage with said levers and move the hinged boards outwardly, substantially as shown and described.

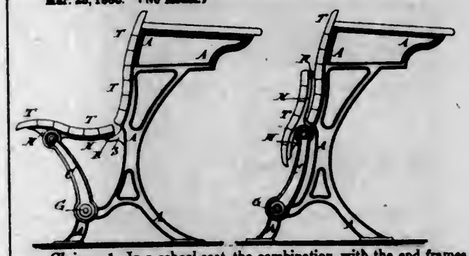
331,549. SCHOOL-DESK. JOHN M. SAUDER, Harrisburg, Pa. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a school-seat, the combination, with the end of the seat-standard C, having rounded recess H, curved slot I, curved groove J, and curved rounded recess O, of the end of the seat-arm D, having rounded projection E and stop projections F G, the spring cap-plate M, having rounded projection N, and the fastening-bolts P, substantially as herein shown and described, whereby is produced a firm and strong joint, working easily and without noise, as set forth.

2. In a school-seat, the combination, with the end of the seat-standard C, having rounded recesses H, curved slot I, curved groove J, spring-receiving recess K, having spring L, and curved rounded recess O, of the end of the seat-arm D, having rounded projection N, and the fastening-bolts P, substantially as and for the purpose set forth.

331,550. SCHOOL-SEAT. JOHN M. SAUDER, Harrisburg, Pa. Filed Mar. 23, 1885. (No model.)



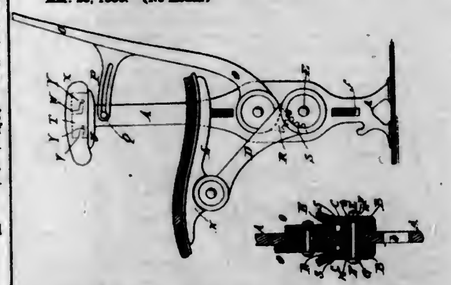
Claim.—1. In a school-seat, the combination, with the end frames, A, having projections B, provided with recesses F upon the opposite sides, and curved slots K, and the seat-arms N, having projections M, provided with a boss upon one side, a recess upon the other side, and a curved slot, K', of the seat-bars C, having recesses E, bosses D, and projections J J' at their ends, and projections Q upon their upper forward parts, the spring connecting-rods O, the pivot-bolts G, and nuts H, and the four-armed washers I, substantially as herein shown and described, whereby the seat can be readily folded and extended, and will automatically take an inclined position, as set forth.

2. In a school-seat, the combination, with the end frame, A; the seat-arm N, and the seat-bar C, jointed at its ends to the said frame and seat-arm, and provided with a projection, Q, of the spring-rod O, substantially as herein shown and described, whereby the seat will take an inclined position when left free, as set forth.

3. In a school-seat, the combination, with the seat-frame A, having a forward projection, B, and a projection, S, the seat-arm N, having a projection, M, and the seat-bar C, jointed to the projections B and M, and provided with leg Q, of the spring-rod O, substantially as shown and described.

4. In a school-seat, the combination, with the pivoted seat-bar C, having boss D and recess E, and the projection B, having recesses F, of the pivoting-bolt G, having slotted forward end, the spring-washers I, the nut H, and the locking-pin L, substantially as herein shown and described, whereby the movement of the joint is prevented from working the said bolt and nut loose, as set forth.

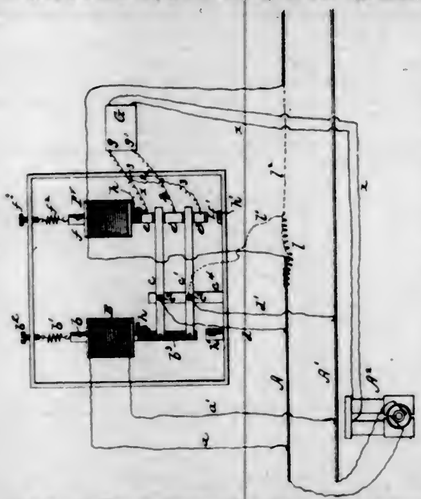
331,551. OPERA-CHAIR. JOHN M. SAUDER, Harrisburg, Pa. Filed Mar. 23, 1885. (No model.)



Claim.—1. In an opera-chair, the combination, with the standard A, having pairs of circular recesses B upon its opposite sides, and provided with bolt-holes larger than the bolts of the pairs of seat-bars D, and of back bars, O, having bosses C upon the inner sides of their lower ends and circular recesses G upon the outer sides, the pivot-bolts E, the nuts F, and the pairs of spring-washers H, substantially as herein shown and described, whereby the said seat and back bars will work freely when set at an angle with the said standard, as set forth.

2. In an opera-chair, the combination, with the seat-standard A, having flange U and tenon T, provided with inclined slot V and angular slot W, of the mortised arm-rest X, provided with pins Y, crossing the said mortise and adapted to engage with the said slots, substantially as herein shown and described, whereby the said arm-rest can be readily secured to the said standard, as set forth.

331,552. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. W M. SCHLIEBNER, Philadelphia, Pa. Filed Sept. 19, 1885. (No model.)



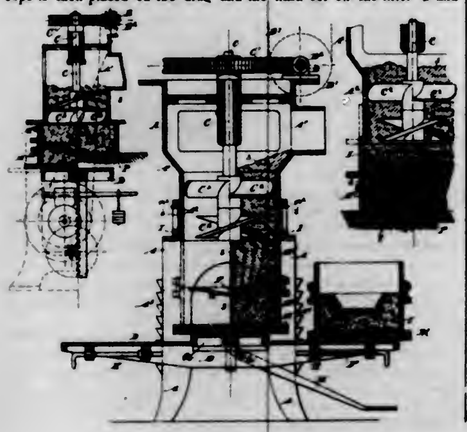
Claim.—1. The combination, with a dynamo-electric generator and its line-circuit, of a loop from the line-circuit having an electro-magnet with armature, a circuit-changing switch in engagement with said armature, a second loop from the line-circuit leading to said switch, an electro-magnet included in one of the conductors of the line-circuit, and provided with an armature having insulated blocks forming part of said reversing-switch, and a regulator in circuit with the field-magnets of the generator and with said insulated blocks, substantially as and for the purpose set forth.

2. The combination, with a dynamo-electric machine or generator and its line-circuit, of a loop from the line-circuit having an electro-magnet with armature, a circuit-changing switch in engagement with said armature, a second loop from the line-circuit leading to said switch, and a regulator in circuit with the field-magnets of the dynamo, and with said switch, substantially as and for the purpose set forth.

3. The combination, with a dynamo-electric machine and its outside circuit, of a loop from said circuit having a high-resistance magnet with armature, a circuit-changing switch in engagement with said armature, a low-resistance magnet having an armature and located in the circuit of one of the conductors of said outside circuit, insulated blocks on said armature forming part of said switch, and a regulator in circuit with the field-magnets of the dynamo and with said insulated blocks, substantially as and for the purpose set forth.

331,553. SAND-MOLDING MACHINE. CARL SCHLICKEYSEN and EDUARD BERNLAUER, Berlin, Germany, assignors to said Schlickeysen. Filed July 3, 1885. (No model.)

Brief.—The drag, with the pattern in position, is first packed with sand in the ordinary way, turned over, and sifted with parting sand. The cope is then placed on the drag and the flask set on the lifter G and



raised against the casing A or ring I. Operating the screw then compresses the sand in the flask, after which, a wire being drawn across between the cope and the casing A or ring I, the completed mold may be removed to withdraw the pattern, &c.

Claim.—1. The combination, with casing A, the drag and cope, and the screw C^3, of the lifter G, lever H, and the adjustable table D, as set forth.

2. In a machine for making molds for castings, the casing A, the table D, and means for adjusting it at different heights, in combination with the lifter G and its operating means, and with the screw C^3 and its operating means, arranged for joint operation as herein specified.

3. In a machine for making molds for casting, the ring I, having vertical slots i, adapted to rise and sink around the cylinder A^2, in combination with the screw C^3 and with pins a^3, as herein specified.

4. The combination, with the cylinder A^2, the screw C^3, and its operating means C' B B' B^3, of the ring I, having slots i, and the pins a^3 operating in said slots, as and for the purposes set forth.

331,554. SHEET-MUSIC HOLDER. GERARD C. SCOTT, Bradford, Pa. Filed Dec. 8, 1884. (No model.)



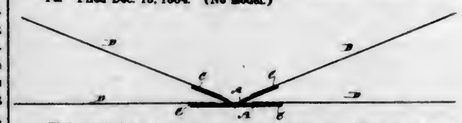
Claim.—1. In a sheet-music holder, the combination, with a back and two covers hinged to the same, of a strip having fingers and held on one of the covers parallel with the free edges of the leaves or sheets held in the holder, substantially as herein shown and described.

2. In a sheet-music holder, the combination, with a back and two covers hinged to the same, of a strip held on one of the covers adjustable a greater or less distance from the free edge and parallel with the said edge and a series of fingers projecting inwardly from the said strip, substantially as herein shown and described.

3. In a sheet-music holder, the combination, with a back and two covers hinged to the same, of a stepped strip held on one cover parallel with the free edge, and of spring-fingers projecting from the said strip, substantially as herein shown and described.

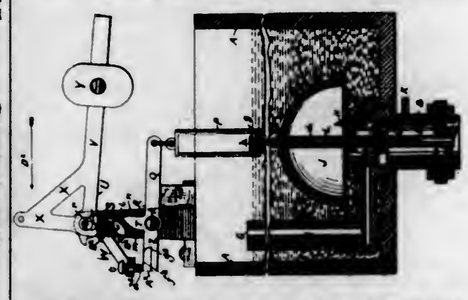
4. In a sheet-music holder, the combination, with a back and two covers, of the guides K on the inner surface of one cover, the spring H, arranged to slide between the covers, and having a bent end, J, and of the stepped strip L, held on the outer bent end of the strip, and having inwardly-projecting spring-fingers at each step, substantially as herein shown and described.

331,555. BACK FOR SHEET-MUSIC. GERARD C. SCOTT, Bradford, Pa. Filed Dec. 13, 1884. (No model.)



Claim.—A back for sheet-music, consisting of a fabric strip on one surface of which two gummed paper strips are secured longitudinally, the inner edges of the gummed strips being separated a short distance from each other, substantially as herein shown and described.

331,556. VALVE FOR WATER-CLOSETS. WILLIAM SCOTT, Malden, Mass. Filed Jan. 7, 1884. (No model.)



Claim.—1. The combination, with the discharge-pipe B of a tank, of a chambered valve, D, having an air-passage, *d*, leading from its chamber downward into said discharge-pipe, and a suitable water-passage, *b*, substantially as described, for the purpose specified.

2. The combination, with the discharge-pipe B of a tank, of a chambered valve, D, having a suitable air-passage leading therefrom, and a water-passage, *b*, making connection with a discharge-pipe, K, substantially as described, for the purpose specified.

3. The combination, with the discharge-pipe B of a tank, of a chambered valve, D, having an air-passage, *d*, leading from its chamber downward into said discharge-pipe B, and a water-passage, *b*, making connection with a discharge-pipe, K, substantially as described, for the purpose specified.

4. The combination, with a tank for liquid, an outlet or discharge pipe for the liquid, and a valve to said outlet-pipe, of a reciprocating lever for operating said valve and having faces d^3 a^3, and of an abutment for said lever connected to the valve, and having faces f^3 *n*, and said lever and said abutment adapted in one movement of said lever for said lever to work by its face d^3 against the face f^3 of said abutment, and thus to lift and open the valve and then to escape therefrom and leave the valve free to close, and in the other movement of said lever for said lever to work by its face a^3 against the face *n* of said abutment, and thus to again lift and open the valve, and then to escape therefrom and leave the valve free to close, substantially as described.

5. The combination, with a tank for liquid, and an outlet or discharge pipe for the liquid, and a valve to said outlet-pipe, of a reciprocating lever for operating said valve, and having faces d^3 b^3 a^3, and of an abutment for said lever connected to the valve, and having faces f^3 *m n*, and said lever and said abutment adapted in one movement of said lever for said lever to work by its face d^3 against the face f^3 of said abutment, and thus to lift and open the valve, and then to escape therefrom, and also the face b^3 of said lever, from the face *m* of said abutment, and leave the valve free to close, and in the other movement of said lever for said lever to work by its face a^3 against the face *n* of said abutment, and thus to again lift and open the valve, and then to escape therefrom, leaving the valve free to close and to bring the faces d^3 b^3 of the lever and the faces f^3 *m* of the abutment into position for operation substantially as described.

6. The combination, with a valve to a water-passage, B, of an operating-lever, U, and a valve-lever, R, which is connected to said valve, and both levers constructed and arranged substantially as described, whereby from the movement of the operating-lever in opposite directions the valve-lever is moved in the same direction, for the purpose specified.

7. The combination, with a tank for liquid, an outlet and discharge pipe for the liquid, and a valve to said outlet-pipe, of a reciprocating lever for operating said valve, and having faces d^3 a^3, and of an abutment for said lever, which is carried by a reciprocating lever connected to the valve, and has faces f^3 *n*, and said lever and said abutment adapted in one movement of said lever for said lever to work by its face d^3 against the face f^3 of said abutment, and thus to lift and open the valve, and then to escape therefrom and leave the valve free to close, and in the other movement of said lever for said lever to work by its face a^3 against the face *n* of said abutment, and thus to again lift and open the valve, and then to escape therefrom and leave the valve free to close, substantially as described.

8. In combination with a valve of a water-passage, B, a valve-lever, R, connected to said valve, and provided with bearing-surfaces f^3, *m*, and *n*, and an operating-lever, U, to operate lever R, and provided with bearing-surfaces d^3, b^3, and a^3, which are arranged in relation to each other and to the said bearing-surfaces of valve-lever, and said levers arranged in relation to each other, and the whole operating from the forward and backward movement of operating-lever U, substantially as and for the purposes specified.

9. In combination with a valve for opening and closing a passage, B, the operating-lever U, having bearing-surfaces d^3 b^3 a^3, weighted arm V, elongated bearing *q*, fulcrum-pin *r*, and abutment B^3, and the valve-lever R, having bearing-surfaces f^3 *m n*, fulcrum *k*, and abutment T^3, substantially as and for the purposes and operations described.

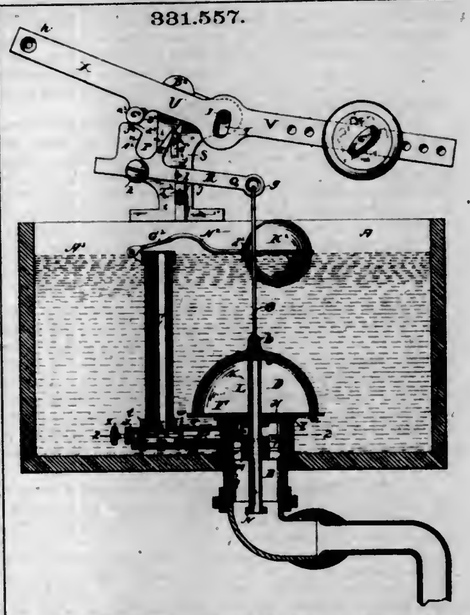
331,557. VALVE FOR WATER-CLOSETS. WILLIAM SCOTT, Malden, Mass. Filed Nov. 26, 1884. (No model.)

Claim.—1. The combination, with a tank for liquid, an outlet-pipe for the liquid, and a valve to said outlet-pipe, of two pivoted levers for operating said valve, one lever being provided with a nose, O^3, having three bearing-faces, d^3, b^3, and a^3, and the other with a nose, A^3, having bearing-surface f^3, and a nose, T, having bearing-surface *m* and separating notch or depression P, substantially as described, for the purposes specified.

2. The combination, with a tank for liquid, an outlet-pipe for the liquid, and a valve to said outlet-pipe, of two pivoted levers for operating said valve, one lever provided with a nose, O^3, having three bearing-surfaces, d^3, b^3, and a^3, a sliding pivotal point, and a supplementary fulcrum, *e*, and the other with a nose, A^3, having bearing-surface f^3, and a nose, T, having bearing-surface *m* and separating notch or depression P, substantially as described, for the purpose specified.

3. In a tank for liquid, a discharge or outlet pipe for the liquid, a guided valve to said outlet-pipe adapted to be opened and closed, and a pipe which enters said outlet-pipe below the seat of its valve and is adapted to make communication between the liquid-passage of said outlet-pipe and the external air, in combination with a valve or partition located in said outlet-pipe below the seat of its valve and adapted to reduce the area of the liquid-passage of said outlet-pipe, substantially as described, for the purpose specified.

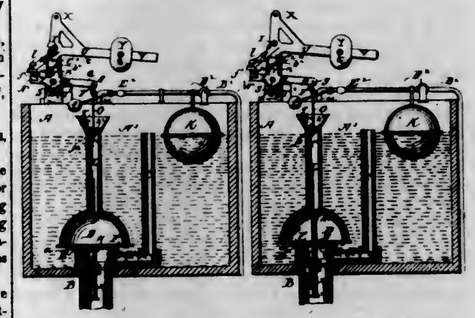
331,557.



4. The combination, with a tank for liquid, an outlet-pipe for the liquid, a valve to said outlet-pipe having liquid and air passages, the air-passage extending into the outlet-pipe, and the valve adapted to be opened and closed, and an air-pipe separate from the air-passage of the valve and leading from the outside of the liquid in the tank to the outlet-pipe below the seat of the valve to said pipe, of a valve-plate or partition located within the outlet-pipe near its valve-seat and in relation to said air-passage of the valve, substantially as described, for the purpose specified.

5. The combination, with a tank for liquid, an outlet-pipe, B, for the liquid, having a valve adapted to be opened and closed, and an air and overflow pipe, C, connected to said outlet-pipe through a boss or side projection, D^3, thereof, in combination with a slide-plate, E^3, adapted to regulate the size of the opening of the outlet-pipe for the passage of liquid from the tank, substantially as described, for the purposes specified.

331,558. VALVE FOR WATER-CLOSETS. WILLIAM SCOTT, Malden, Mass. Filed Nov. 26, 1884. (No model.)



Claim.—1. A tank for a liquid, an outlet-pipe for the liquid, and a chambered valve for said pipe, adapted to be opened and closed, and having passages adapted, when the valve is opened, to admit water or other liquid, &c., to the valve, for weighting it, from a source or supply separate or distinct from the liquid in the tank, and to discharge said liquid, &c., so admitted to the valve therefrom when the valve is closed, in combination with a separate or distinct supply of liquid, &c., provided with a valve adapted to be opened on the opening and to close in relation to the closing of the valve, substantially as described, for the purpose specified.

2. A tank for a liquid, an outlet-pipe for the liquid, and a chambered valve for said pipe, adapted to be opened and closed, and having passages

adapted, when the valve is opened, to admit a liquid to the valve for weighting it, and to discharge said liquid so admitted to the valve therefrom when it is closed, in combination with a valve adapted to be opened in relation to the opening of said chambered valve, for then admitting liquid to said valve, and to be closed in relation to the closing of the valve, substantially as described, for the purpose specified.

3. A tank for a liquid, an outlet-pipe for the liquid, and a chambered valve for said outlet-pipe, adapted to be opened and closed, and having passages adapted, when the valve is opened, to admit a liquid, &c., to the valve, for weighting it, from a source or supply separate and distinct from the liquid in the tank, and to prevent the then ingress of air to and egress thereof from the valve, and to discharge said liquid, &c., so admitted to the valve therefrom when the valve is closed, in combination with a separate or distinct supply of liquid, &c., provided with a valve adapted to be opened on the opening and to close in relation to the closing of the valve, substantially as described, for the purpose specified.

4. A tank for a liquid, an outlet-pipe for the liquid, and a chambered valve for said pipe, adapted to be opened and closed, and having passages adapted, when the valve is opened, to admit a liquid to the valve for weighting it, and to prevent the then ingress of air to and egress thereof from the valve, and to discharge said liquid so admitted to the valve therefrom when the valve is closed, in combination with a valve adapted to be opened on the opening of said chambered valve, for then admitting liquid to said float-valve, and to be closed in relation to the closing of the valve, substantially as described, for the purpose specified.

5. A tank for a liquid, an outlet-pipe, B, for the liquid of the tank, and a chambered valve, D, for said pipe, adapted to be opened and closed, and having passages E and H, adapted, when the valve is opened, to admit liquid to the valve, for weighting it, from a source or supply, E^2, separate or distinct from the liquid in the tank, and to discharge said liquid so admitted to the valve therefrom when the valve is closed, in combination with a separate or distinct supply, E^2, of liquid, provided with a valve adapted to be opened on the opening and to close in relation to the closing of the valve, substantially as described, for the purpose specified.

6. A tank for a liquid, an outlet-pipe, B, for the liquid of the tank, and a chambered valve, D, for said pipe, adapted to be opened and closed, and having passages E, H, and M^2, adapted, when the valve is opened, to admit liquid to the valve, for weighting it, from a source or supply, E^2, separate or distinct from the liquid in the tank, and to allow air to escape from the valve and to discharge said liquid so admitted to the valve therefrom when the valve is closed, and at the same time to admit air thereto, in combination with a separate or distinct supply, E^2, of liquid, provided with a valve adapted to be opened on the opening and to close in relation to the closing of the valve, substantially as described, for the purpose specified.

7. In combination, a tank for liquid, an outlet-pipe to said tank, an opening and closing valve to said outlet-pipe, a reciprocating lever for operating said valve, and a part connected to said valve as an abutment for said lever, and said operating-lever and said valve abutment constructed with faces, at least one of which is made separate therefrom and attached thereto and is yielding, to have in one movement of said lever a working contact with each other and in the other movement thereof a yielding movement and non-working contact, whereby in the one movement the valve will be opened and released to close and in the other the lever can return to position to again open the valve, substantially as described.

8. The combination, with a tank for liquid, an outlet-pipe for the liquid, and a valve to said outlet-pipe, adapted to be opened and closed, of two pivoted levers, R U, for operating said valve, provided with two sets of bearing-surfaces, b^2 and m and a^2 and n, the one set, b^2 and m, adapted to yield in one or the forward movement of the lever U, for the passage of the other set, a^2 and n, of said surfaces into a position for action thereof in the other or return movement of the lever U, substantially as described, for the purpose specified.

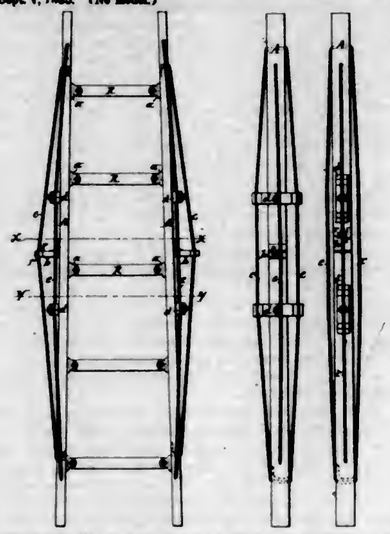
9. The combination, with a tank for liquid, an outlet-pipe for the liquid, and a valve to said outlet-pipe, adapted to be opened and closed, of two pivoted levers, R U, for operating said valve, provided with three sets of bearing-surfaces, d^2 and f^2, b^2 and m, and a^2 and n, adapted in one or the forward movement of the lever U for the set d^2 and f^2 to work and finally to escape from each other, and for the other set, b^2 and m, to yield for the passage of the other set, a^2 and n, into a position for action thereof in the other or return movement of the lever U, substantially as described, for the purpose specified.

10. The combination, with a tank for liquid, an outlet-pipe for the liquid, and a valve to said outlet-pipe, adapted to be opened and closed, of two pivoted levers, R U, for operating said valve, provided with necks O^2 and T, hinged to and butted and both made with two sets of bearing-surfaces, b^2 and m and a^2 and n, the one set, b^2 and m, to yield in one or the forward movement of the lever U, for the passage of the other set, a^2 and n, of said surfaces in a position for action thereof in the other or return movement of the lever U, substantially as described, for the purpose specified.

331,559. COCOANUT PULP. Ferdinand Sehm, New York, N. Y. Filed July 16, 1885. (No specimens.)

Claim.—The cocoanut pulp herein described, consisting of cocoanut, glucose, and sugar incorporated and combined with salicylic acid, substantially as and for the purpose described.

331,560. FOLDING LADDER. Dennis P. Sharp, Ithaca, N. Y. Filed Sept. 7, 1885. (No model.)



Claim.—1. The combination, with the side rails, A A, connected by pivoted rungs R R, of the truss-rods c c, attached to the outer sides of the end portions of the rails A A, and the bridges b b, projecting outward from the sides of the rails and parallel with the plane of the ladder, substantially as described and shown.

2. In combination with the side rails, A A, and truss-rods c c, the bridges b b, pivoted on the side rails to project laterally therefrom and fold closely against the sides of the same, and provided with two or more bearings for the truss-rods at different distances from the hinged ends of the bridges, substantially as and for the purpose set forth.

331,561. BOOT. James F. Shaw, Jackson, Mich., assignor to himself and Joseph M. Quivey, same place. Filed July 25, 1885. (No model.)



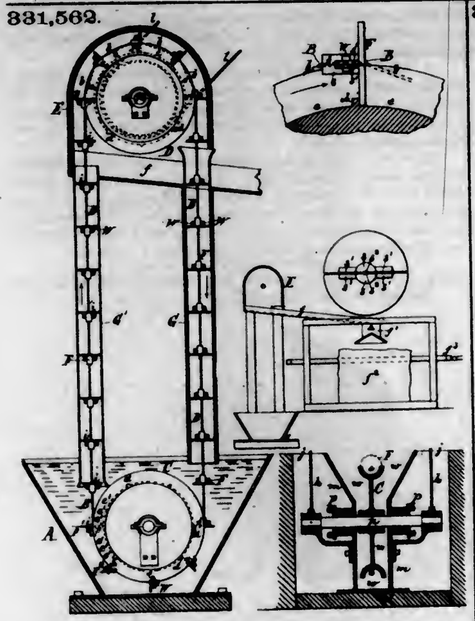
Claim.—1. As an improved article of manufacture, a boot consisting of a felt, knit, or wool foot-piece provided with a leg portion projected above the instep portion, and a leg proper or protector, of leather or analogous material, fitted over the leg portion of the foot-piece and secured thereto, said leg or protector being extended in front down over the vamp of the foot-piece to a point over the instep thereof, substantially as described, and for the purposes specified.

2. The combination, with the felt, knit, or wool foot-piece having a leg portion, of the leg proper or protector, of leather or analogous material, fitted over the leg of the foot-piece, and having its back portion depending approximately to the base of the heel of the foot-piece, substantially as set forth.

331,562. MACHINE FOR FEEDING SAND AND WATER TO STONE-SAWING MACHINES. David Shortleeve, Rutland, Vt., assignor to Edmund A. Mayo, same place. Filed Mar. 25, 1885. (No model.)

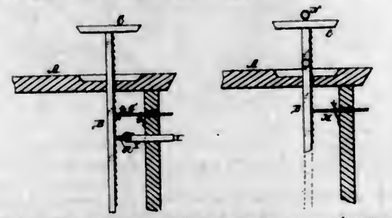
Claim.—1. The endless rope B, provided with lifters F, having shanks s, flanges s', and plane working-face i, and tightening bolt and nut, in combination with tubes G G' and sheaves C and D, substantially as and for the purpose described.

331,562.



2. The receiving-box A, composed of an inner water-tight sand and water receptacle having a containing-space, w, for the sand and water to be fed, and an outward inclosing chamber for the bearings and packing-boxes P P of a sheave-shaft, p, substantially as and for the purpose described.

331,563. ADJUSTABLE REST FOR BOOKS. William A. Sipe, Monterey, Va. Filed July 19, 1884. (Model.)



Claim.—The combination of the table having an opening through its top, the rest provided with a toothed shank, an operating-lever for raising the rest, and a support for holding the rest in any desired position, substantially as described.

331,564. DEVICE FOR FEEDING HOGS. Harvey Sloan, Kirksville, Mo. Filed May 18, 1885. (Model.)

Claim.—1. In a device for feeding animals, in combination with the feed-hopper, a universal pivotal support for the same allowing it to swing in different planes, substantially as and for the purpose described.

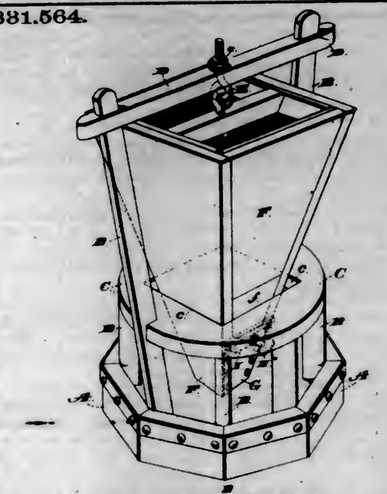
2. In combination with the feed-trough allowing access from all sides, a swinging feed-hopper, and a universal pivotal support for the same allowing it to swing in all directions, substantially as and for the purpose described.

3. In combination with the swinging hopper of a device for feeding animals, the universal pivotal support for the same, made adjustable in height to raise or lower the hopper, substantially as and for the purpose described.

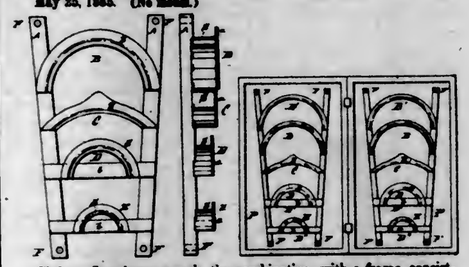
4. In combination with a suitable frame and the swinging hopper of a device for feeding animals, an eyebolt supported in a portion of the frame, and a second eyebolt secured to said hopper and having its eye linked with that of the other bolt, substantially as and for the purpose described.

5. The hereinbefore-described device in which the trough A, stanchions B, plate C, and cross-bar D are combined with the vertically-adjustable eyebolt E, and conical hopper F, provided with hinged valve f, bar I, and swiveled screw H, substantially as and for the purpose specified.

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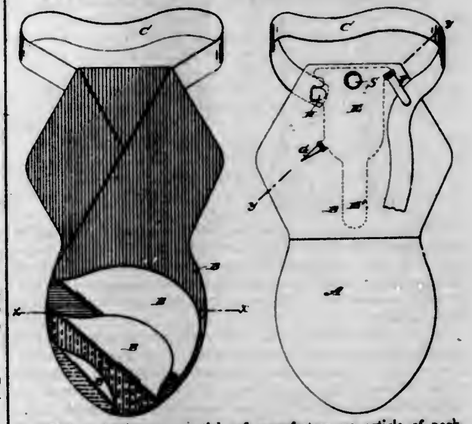


331,565. HARNESS-RACK. Devine J. Smith, McCook, Nebr. Filed May 25, 1885. (No model.)



Claim.—In a harness-rack, the combination, with a frame consisting of the uprights A and cross-bars b, of supports, each having a front flange, a, and a protecting-strip of zinc, substantially as described.

331,566. NECK-WEAR. Edwin D. Smith, New York, N. Y. Filed July 6, 1885. (No model.)



Claim.—1. As a new article of manufacture, an article of neck-wear—such as a scarf, bow, &c.—formed of a series of layers of paper, fabric, or fabric on paper, one layer being placed loosely and detachably on the other to permit of tearing off the several layers successively, beginning at the top, substantially as herein shown and described.

2. In an article of neck-wear, such as a bow, scarf, &c., the combination, with a backing, of a series of layers of paper, fabric, or fabric secured on paper, which several layers are held on the backing, one layer covering the other, the several layers being united loosely and detachably, so as to permit of tearing off the several layers successively,

beginning at the uppermost end, substantially as herein shown and described.

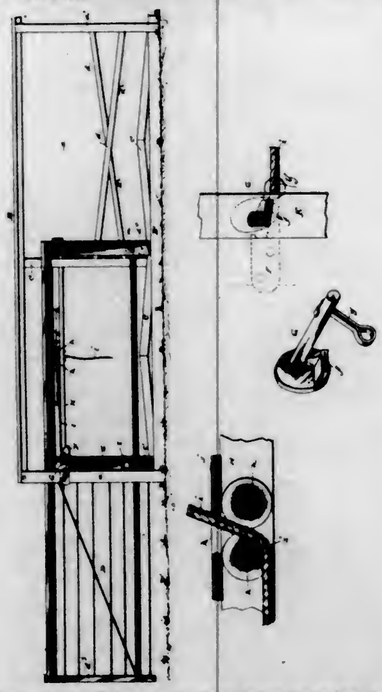
3. In an article of neck-wear, such as a bow, scarf, &c., the combination, with a backing, of a series of layers of paper, fabric, &c., held on the same, all being embossed the same as an ordinary scarf, bow, &c., substantially as herein shown and described.

4. In an article of neck-wear, such as a scarf, bow, &c., the combination, with a series of layers of paper, fabric, &c., of a shield placed on the back of the innermost layer or on the backing, the layers being folded over the back of the shield, substantially as herein shown and described.

5. In an article of neck-wear, such as a scarf, bow, &c., the combination, with a series of layers of paper or fabric, of a shield provided with one or more prongs, the layers being folded over the back of the shield, and the prongs passed through the overlapping parts of the layers, substantially as herein shown and described.

6. In an article of neck-wear, such as a scarf, bow, &c., the combination, with a series of layers of paper, fabric, &c., of the shield E, having the prongs F, G, and H, and of the band C, held by the prong H, prongs F and G being passed through parts of the layers folded over the shield, substantially as herein shown and described.

331,567. GATE. Daniel Snell, Little Falls, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a sliding gate, the frame having two inclined tracks arranged one above the other, and each raised at the center and inclining toward each end, in combination with the gate carrying a pair of rollers located one above the other, one roller working against the under side of the upper track, the other traveling on the upper side of the lower track, as set forth.

2. The standards *a a' c*, in combination with the lower track, C, extending from the standard *a* to the standard *a'*, the upper track or way located between the standards *a c*, the gate carrying a pair of rollers at its rear end, one roller arranged above the other, the upper roller working against the under side of the upper track, and the lower roller on the upper side of the lower track, the gate when closed being held in place at one end by the rollers, and stop-pins for holding the other end of the gate from upward movement, as set forth.

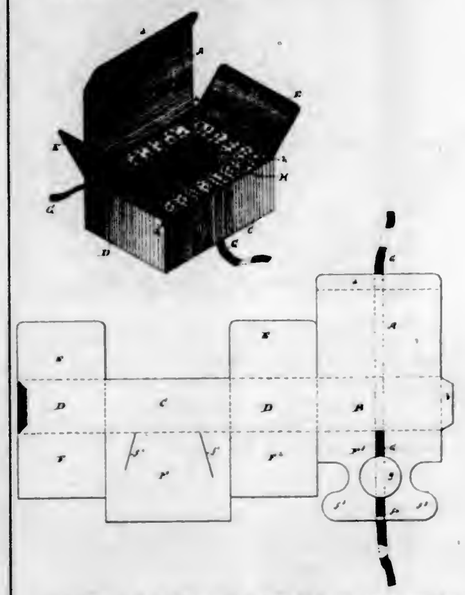
3. The frame provided with the inclined track C and the crossed bars *d*, which form an inclined track or way, d^2, above the track C, in combination with the gate carrying rollers to work at all times against the under side of the upper track and the upper side of the lower track, as set forth.

4. The frame comprising the standards *a a' c* and the top and bottom rails, B B', in combination with the inclined track C, supported on the bottom rails, the cross-bars *d*, connecting the standards *a' c*, and forming an inclined guide or track, d^2, and the gate carrying rollers to work against the tracks d^2 C, as set forth.

5. The frame provided with a keeper, in combination with the gate, and the herein-described latch carried by the latter and comprising the journaled shaft, a plate at one end of the shaft to engage the keeper, an arm at the other end of said shaft, and a cord connecting with the arm, for the purpose set forth.

6. A gate comprising in its construction a frame having an inclined track, as shown, a guide, d^2, and a bar carrying rollers, a gate having rollers to travel on said track, a roller to engage said guide, and stops for holding the gate from upward movement when closed, a keeper on the frame, a pivoted latch to engage the same, and a cord for operating said latch, the parts being combined substantially as set forth.

331,568. FOLDING PAPER BOX. Isidor Tabl, New York, N. Y. Filed Aug. 14, 1885. (No model.)



Claim.—1. A folding paper box provided with ornamental lace, scalloped, fancy, or perforated paper round the top edges of it, substantially as described and shown, and for the purpose set forth.

2. A blank for a folding paper box having ornamental lace, scalloped, fancy, or perforated paper attached thereto in a position to come at the top edge of the box when the same is folded, substantially as and for the purpose set forth.

3. A folding paper box provided with a strip of ornamental lace attached to the top edges of the box and beveled away at the corners, substantially as and for the purpose set forth.

4. A blank for a folding paper box having the cover A, rear side, B, front side, C, sides D, the strip of ornamental material H, attached thereto, and the interlocking bottom pieces, substantially as and for the purpose set forth.

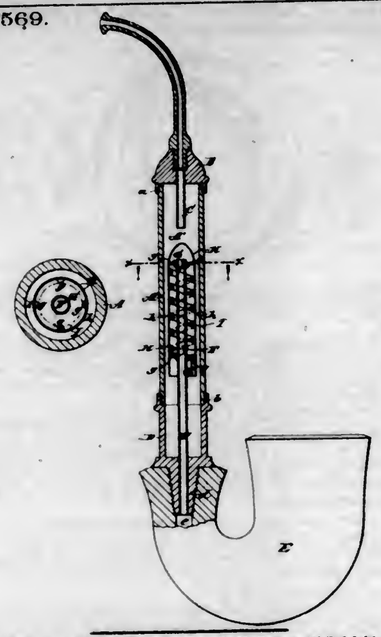
5. In a folding paper box, the combination of the cover A, having flap *a*, rear side, B, having flap *b*, front side, C, the sides D, having upper flaps, E, and bottom flaps, F and F^2, connected to them, the bottom piece F', having slits *f'*, and the bottom piece F^2, having wings f^2, substantially as and for the purpose set forth.

6. In a folding paper box, the combination of the bottom pieces, F, F', F^2, and F^3, the string G, attached to part F^2 by wafer *g*, and passing through the slits f^2, the sides B, C, and D, the cover A, and upper flaps, E, substantially as described and shown, and for the purpose set forth.

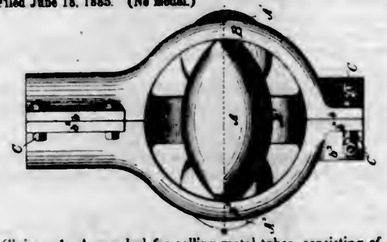
331,569. TOBACCO-PIPE. August Tapfe and Charles Tapfe, Bloomington, Ill. Filed June 30, 1884. (No model.)

Claim.—As an improved article of manufacture, a pipe for smoking tobacco and other substances, constructed and arranged substantially as described, consisting of a bowl, E, and stem or mouth-piece, body A, intermediate detachable section, D, tube F, and return-tube H, having a spiral, I, therein inclosed between two perforated diaphragms, as set forth.

331,569.



331,570. MANDREL. Stephen P. M. Tasker, Philadelphia, Pa. Filed June 18, 1885. (No model.)



Claim.—1. A mandrel for rolling metal tubes, consisting of three or more ellipsoidal rolls, the axes of which lie in or close to a common plane, in combination with and mounted by bearings at their extremities in a stock or frame.

2. A mandrel for rolling metal tubes, consisting of three or more ellipsoidal rolls, the axes of which lie in or close to a common plane, in combination with and mounted by bearings at their extremities in a sectional stock or frame, substantially as and for the purposes set forth.

3. A mandrel for rolling metal tubes, consisting of three or more ellipsoidal rolls having bearings at their extremities, suitably mounted in a sectional stock or case, with all of their axes in or close to the same plane, but with the axis of each roll at an angle to the axes of adjacent rolls, substantially as and for the purposes set forth.

4. A mandrel for rolling metal tubes, consisting of the combination of three or more rolls having bearings at their extremities, a stock or frame consisting of as many sections as there are rolls, and means for uniting the sections, substantially as and for the purposes set forth.

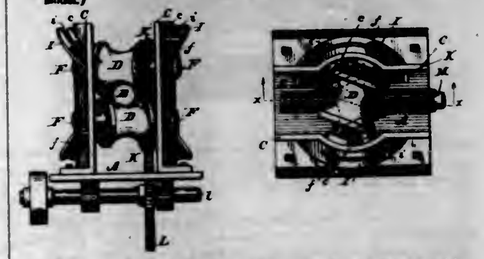
5. In a roller-mandrel, the combination of three or more ellipsoidal rolls with a sectional case composed of a number of curved sections corresponding in number with the rolls, and provided with flanges whereby the said sections may be united, substantially as and for the purposes set forth.

6. The combination, in a roller-mandrel, of three or more ellipsoidal rolls, a sectional case composed of a number of curved sections corresponding in number with the rolls and provided with flanges, and bolts for uniting the flanges of the sections, substantially as and for the purposes set forth.

7. The combination, in a roller-mandrel, of three or more ellipsoidal rolls, a series of segmental sections containing the bearings for the rolls, and interposed between the extremities of said rolls, and suitable means for uniting the said sections together, substantially as set forth.

8. In a roller-mandrel, the combination of a stock composed of a series of segmental sections adapted to contain the bearings of the rolls and to be interposed between the extremities of said rolls, means for uniting the said sections together, and a series of ellipsoidal rolls corresponding in number to the number of the sections of the stock, substantially as and for the purposes set forth.

331,571. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 20, 1885. (No model.)



Claim.—1. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, and mechanism for driving the rolls, substantially as set forth.

2. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a mandrel adapted to be rotated with the ingot, at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, and mechanism for driving the rolls, substantially as set forth.

3. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, and mechanism for driving the rolls, substantially as set forth.

4. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, means for securing the fixed adjustment of the axles of the rolls with respect to said segmental ways, and a mechanism for driving the rolls, substantially as set forth.

5. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings or bearings for the axles of the rolls adapted to said segmental ways, adjusting-arms connected with both the axles of the rolls and the framing, and mechanism for driving the rolls, substantially as set forth.

6. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, mechanism for driving the rolls, and a rotatable mandrel which is passed through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

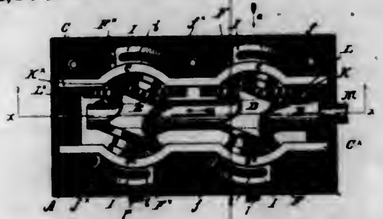
7. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, means for securing the fixed adjustment of the axles of the rolls with respect to said segmental ways, mechanism for driving the rolls, and a rotatable mandrel which is passed through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

8. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings or bearings for the axles of the rolls adapted to said segmental ways, adjusting-arms connected with both the axles of the rolls and the framing, mechanism for driving the rolls, and a rotatable mandrel which is passed through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

331,572. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 20, 1885. (No model.)

Claim.—1. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the passes of such sets gradually diminish in diameter, with a mandrel at least as long as the tube to be formed,

331,572.



and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, and mechanism for driving the rolls, substantially as set forth.

2. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the passes of such sets diminish gradually in diameter, with a mandrel adapted to be rotated about its longitudinal axis, at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of the rolls, and with mechanism for driving the rolls, substantially as set forth.

3. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, with a mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, and with mechanism for driving the rolls, substantially as set forth.

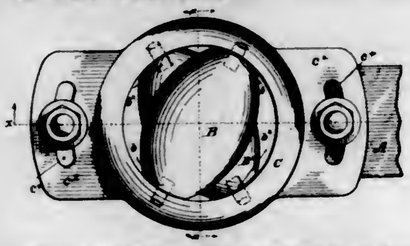
4. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, with a mandrel adapted to rotate about its longitudinal axis, at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, and with mechanism for driving the rolls, substantially as set forth.

5. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways for the axles of each set of the rolls, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, and mechanism for driving the rolls, substantially as set forth.

6. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways for the axles of each set of the rolls, means for securing the fixed adjustment of the axles of the sets of rolls with respect to their segmental ways, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, and mechanism for driving the rolls, substantially as set forth.

7. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings or bearings for the axles of the rolls of each set adapted to said segmental ways, adjusting-arms connected with both the axles of the rolls of each set and with the framing, the arrangement being thereby such that each set of the rolls is capable of an independent adjustment, a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, and mechanism for driving the rolls, substantially as set forth.

331,573. ROLLER-MANDREL. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 20, 1885. (No model.)



Claim.—1. The combination, in a roller-mandrel, of two ellipsoidal rolls the axes of which are inclined to each other, substantially as set forth.

2. The combination, in a roller-mandrel, of two ellipsoidal rolls the axes of which are inclined to each other, and a two-part frame, one part of which carries one roll, and the other part of which carries the other roll, substantially as set forth.

3. The combination, in a roller-mandrel, of two ellipsoidal rolls the axes of which are inclined to each other, a two-part frame, one part of which carries one roll, and the other part of which carries the other roll, and means for adjusting the position of the frames the one with respect to the other, so as to alter the inclination of the axes of the rolls, substantially as set forth.

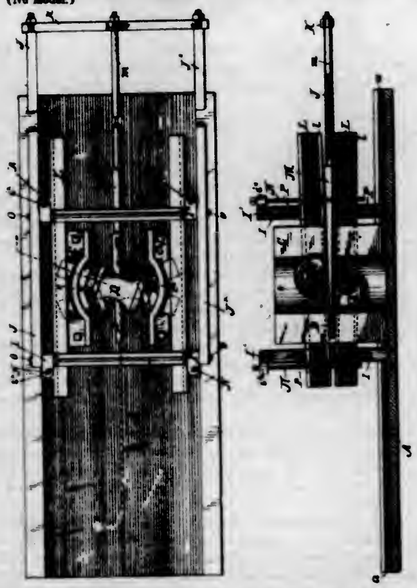
4. The combination, in a roller-mandrel, of two ellipsoidal rolls, roll-frames respectively carrying the said rolls, a mandrel-rod to which said roll-frames are connected, means for securing the relative adjustment of the said frames with respect to each other and with respect to the mandrel-rod, substantially as set forth.

5. The combination, in a roll-mandrel, of the ellipsoidal rolls, the roll-frames respectively bearing the said rolls and adapted to have a movement about a common center, a mandrel-rod, and means for securing the said frames in various adjusted positions with respect to each other and said mandrel-rod, substantially as set forth.

6. The combination, in a roller-mandrel, of the ellipsoidal rolls B B×, the frames C C×, the mandrel-rod A, and the bolts D and E, substantially as set forth.

7. The combination, in a roller-mandrel, of the ellipsoidal rolls, the frames provided with flanges having segmental slots, the mandrel-rod, and the retaining-bolts, substantially as set forth.

331,574. MACHINE FOR MAKING TAPER TUBES FROM HOLLOW INGOTS. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 21, 1885. (No model.)



Claim.—In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, and a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

2. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, and a conico-cylindric mandrel at least as long as the tube to be formed, which is passed through the pass formed by the rolls in a direction right angular to their common axis, and is rotated about its longitudinal axis, substantially as set forth.

3. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, and means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-pass, substantially as set forth.

4. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, which is passed through the pass formed by the rolls in a direction right angular to their common axis, and is rotated about its longitudinal axis, and means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-pass, substantially as set forth.

5. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and adapted to be passed through the pass formed by the rolls in a direction right angular to their common axis, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-pass, and means for causing the advance and retraction of the mandrel, substantially as set forth.

6. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, which is passed through the pass formed by the rolls in a direction right angular to their common axis, and is rotated about its longitudinal axis, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-pass, and means for causing the advance and retraction of the mandrel, substantially as set forth.

7. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, and means for moving said roll-adjusting bars with respect to the housing, substantially as set forth.

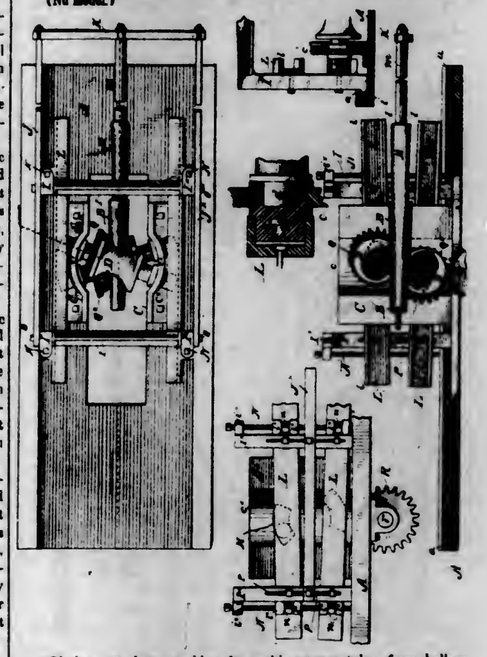
8. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, a movable frame or carriage for carrying the said roll-adjusting bars, substantially as set forth.

9. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindrical mandrel at least as long as the tube to be formed, and adapted to be passed through the pass formed by the rolls in a direction right angular to their common axis, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, a movable frame or carriage for carrying the said roll-adjusting bars, and means for simultaneously actuating the mandrel and the carriage or frame for the roll-adjusting bars, substantially as set forth.

10. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, a movable frame or carriage for carrying the said roll-adjusting bars, and means for securing the adjustment of the roll-adjusting bars with respect to the movable frame or carriage, substantially as set forth.

11. In a machine of the class herein set forth, the combination of a movable carriage or frame for the mandrel, roll-adjusting bars carried by the frame and adapted to be engaged with the axles of the rolls, a conico-cylindric mandrel also carried by the frame, and suitable means for securing the adjustment of the roll-adjusting bars with respect to the movable frame or carriage, substantially as set forth.

331,575. MACHINE FOR MAKING TAPER TUBES FROM HOLLOW INGOTS. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 21, 1885. (No model.)



Claim.—1. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-pass, and mechanism for driving the rolls, substantially as set forth.

2. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and adapted to be passed through the pass formed by the rolls in a direction right-angular to their common axis, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-pass, mechanism for driving the rolls, and means for causing the advance and retraction of the mandrel, substantially as set forth.

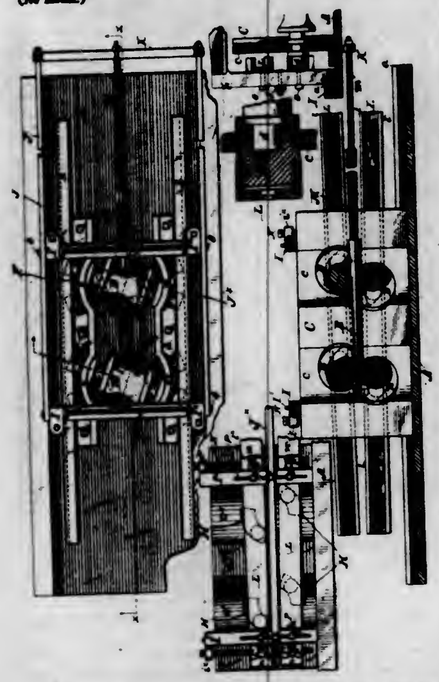
3. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, which is passed through the pass formed by the rolls in a direction right angular to their common axis and is rotated about its longitudinal axis, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-pass, and means for driving the rolls, substantially as set forth.

4. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, adapted to be passed through the pass formed by the rolls in a direction right angular to their common axis, and adapted to be rotated about its longitudinal axis, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reduc-

ing-pass, means for driving the rolls, and means for causing the advance and retraction of the mandrel, substantially as set forth.

5. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, means for moving said roll-adjusting bars with respect to the housing, and means for driving the rolls, substantially as set forth.

331,576. MACHINE FOR MAKING TAPER TUBES FROM HOLLOW INGOTS. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 21, 1885. (No model.)



Claim.—1. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, substantially as set forth.

2. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and a conico-cylindric mandrel adapted to be rotated about its longitudinal axis at least as long as the tube to be formed, and which is passed through the passes formed by the rolls in a direction right angular to the common axis of each pair or set of rolls, substantially as set forth.

3. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-passes, substantially as set forth.

4. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel adapted to be rotated about its longitudinal axis, at least as long as the tube to be formed, and adapted to be passed through the passes formed by the rolls in a direction right angular to the common axis of each pair or set of rolls, and means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-passes, substantially as set forth.

5. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel adapted to be rotated about its longitudinal axis, at least as long as the tube to be formed, and adapted to be passed through the passes formed by the rolls in a direction right angular to the common axis of each pair or set of rolls, and means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-passes, substantially as set forth.

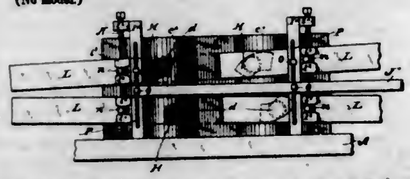
6. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, and means for moving said roll-adjusting bars with respect to the housing, substantially as set forth.

7. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, and a movable frame or carriage for carrying said roll-adjusting bars, substantially as set forth.

8. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and adapted to be passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, a movable frame or carriage for carrying said roll-adjusting bars, and means for simultaneously actuating the mandrel and the carriage or frame for the roll-adjusting bars, substantially as set forth.

9. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, a movable frame or carrige for carrying said roll-adjusting bars, and means for securing the adjustment of the roll-adjusting bars with respect to the movable frame or carriage, substantially as set forth.

331,577. MACHINE FOR MAKING TAPER TUBES FROM HOLLOW INGOTS. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 21, 1885. (No model.)



Claim.—1. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-passes, substantially as set forth.

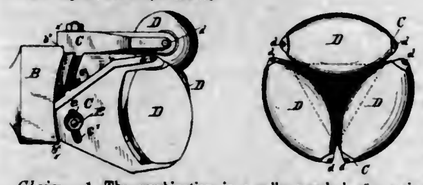
2. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and adapted to be passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of their reducing-passes, mechanism for driving the rolls, and means for causing the advance and retraction of the mandrel, substantially as set forth.

3. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel adapted to be rotated about its longitudinal axis, at least as long as the tube to be formed, and adapted to be passed through the passes formed by the rolls in a direction right angular to the common axis of each pair or set of rolls, means for automatically occasioning variances in the angular disposition of the rolls, and consequently variances in the diametric extent of the reducing-passes, means for causing the advance and retraction of the mandrel, and mechanism for driving the rolls, substantially as set forth.

4. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, means for moving said roll-adjusting bars with respect to the housing, and means for driving the rolls, substantially as set forth.

5. In a machine for making taper tubes from hollow conico-cylindric metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, a conico-cylindric mandrel at least as long as the tube to be formed, and adapted to be passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, roll-adjusting bars, a movable frame or carriage for carrying said roll-adjusting bars, means for simultaneously actuating the mandrel and the carriage or frame for the roll-adjusting bars, and means for driving the rolls, substantially as set forth.

331,578. MANDREL. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 22, 1885. (No model.)



Claim.—1. The combination, in a roller-mandrel, of a series of three or more ellipsoidal rolls, the axes of which are inclined to each other, substantially as set forth.

2. The combination, in a roller-mandrel, of a series of three or more ellipsoidal rolls, the axes of which are inclined to each other, bridles for supporting the rolls, and a stock to which the bridles are connected, substantially as set forth.

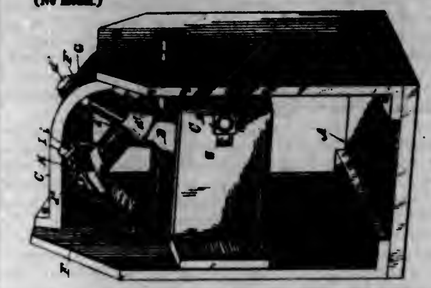
3. The combination, in a roller-mandrel, of a series of three or more ellipsoidal rolls, the axes of which are inclined to each other, bridles for supporting the rolls, a stock to which the bridles are connected, and means for adjusting the bridles with respect to the stock, substantially as set forth.

4. The combination, in a roller-mandrel, of a prismatic stock, a series of ellipsoidal rolls, the axes of which are inclined to each other, and which correspond in number with the side faces of the stock, bridles for carrying said rolls, which are applied to the respective faces of the prismatic stock, and means for adjusting the bridles with respect to the stock, substantially as set forth.

5. The combination of the stock, the segmental ways in said stock, the bridles provided with segmental lugs and with slots, nut-provided threaded stems for effecting the retention of the bridles in different adjusted positions, and ellipsoidal rolls carried by the bridles, substantially as set forth.

6. The prismatic stock provided with the segmental ways and the segmental shoulders, in combination with the bridles, provided with the segmental lugs and with slots, and also provided with ellipsoidal rolls, and with means for securing the adjustment of the bridles with respect to the stock, substantially as set forth.

331,579. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS. Stephen P. M. Tasker, Philadelphia, Pa. Filed July 22, 1885. (No model.)



Claim.—1. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and all of such rolls are adapted to revolve in opposite directions, substantially as and for the purposes set forth.

2. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and all of such rolls are adapted to revolve in opposite directions, and frame-plates for the journals of the rolls, substantially as and for the purposes set forth.

3. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and all of such rolls are adapted to revolve in opposite directions, and suitable means for advancing and retracting the article to be rolled through the pass of the rolls in a direction right angular to the common axis of said rolls, substantially as and for the purposes set forth.

4. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and all adapted to revolve in opposite directions, frame-plates for the journals of the rolls, and suitable means for advancing and retracting the article to be rolled through the pass of the rolls in a direction right angular to the common axis of said rolls, substantially as and for the purposes set forth.

5. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and all adapted to revolve in opposite directions, frame-plates for the journals of the rolls, and means for securing the fixed adjustment of the journals of the rolls with respect to their frame-plates, the arrangement being thereby such that each roll is capable of an independent adjustment, substantially as and for the purposes set forth.

6. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and all of such rolls are adapted to revolve in opposite directions, slotted frame-plates for the journals of the rolls, and adjusting-arms connected with the journals of the rolls and with the framing, the arrangement being thereby such that each set of the rolls is capable of an independent adjustment, substantially as and for the purposes set forth.

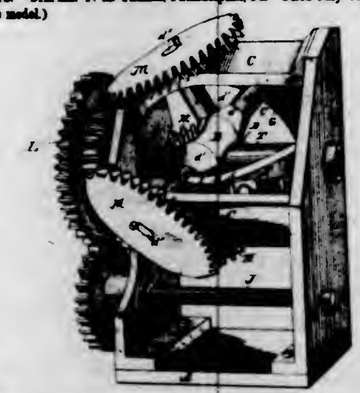
7. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled

is passed in a direction right angular to the common axis of the set, and all of such rolls are adapted to revolve in opposite directions, slotted segmental frame-plates for the journals of the rolls, means for securing the fixed adjustment of the journals of the rolls with respect to their frame-plates, the arrangement being thereby such that each roll is capable of an independent adjustment, and suitable means, substantially as set forth, for advancing or retracting the article to be rolled through the passes of the rolls in a direction right angular to the common axis of said rolls, substantially as and for the purposes set forth.

8. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and all of such rolls are adapted to revolve in opposite directions, slotted segmental frame-plates for the journals of the rolls, adjusting-arms connected with the journals of the rolls and with the framing, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and suitable means, substantially as set forth, for advancing and retracting the article to be rolled through the pass of the rolls in a direction right angular to the common axis of said rolls, substantially as and for the purposes set forth.

331,580. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS.

STEPHEN P. M. TASKER, Philadelphia, Pa. Filed July 22, 1885. (No model.)



Claim.—1. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and mechanism for revolving all of the rolls in opposite directions, substantially as and for the purposes set forth.

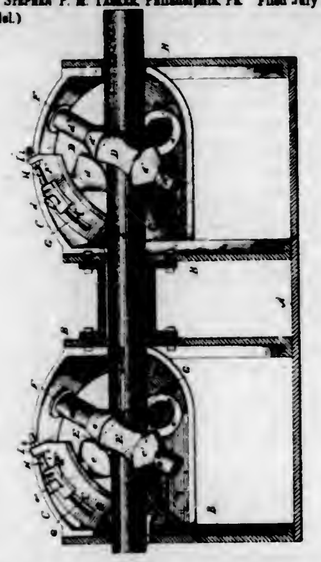
2. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, frame-plates for the journals of the rolls, and mechanism for revolving all of the rolls in opposite directions, substantially as and for the purpose set forth.

3. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, frame-plates for the journals of the rolls, means for securing the fixed adjustment of the journals of the rolls with respect to their frame-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and mechanism for revolving all of the rolls in opposite directions, substantially as and for the purposes set forth.

4. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of three or more concave-faced rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, frame-plates for the journals of the rolls, adjusting-arms connected with the journals of all of the rolls and with the framing, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and mechanism for revolving all of the rolls in opposite directions, substantially as and for the purposes set forth.

331,581. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS.

STEPHEN P. M. TASKER, Philadelphia, Pa. Filed July 22, 1885. (No model.)



Claim.—1. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of each set, the passes of such sets diminish successively in diameter and all of such rolls revolve in opposite directions, with suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set of rolls, substantially as set forth.

2. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of each set, the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, and all of such rolls revolve in opposite directions, with suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set of rolls, substantially as set forth.

3. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, the passes of such sets diminish successively in diameter, and all of such rolls revolve in opposite directions, frame-plate for the journals of the rolls of each set, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set of rolls, substantially as set forth.

4. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, the passes of such

sets diminish successively in diameter, and all of such rolls revolve in opposite directions, frame-plates for the journals of the rolls of each set, means for securing the fixed adjustment of the journals of the rolls with respect to their frame-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set of rolls, substantially as set forth.

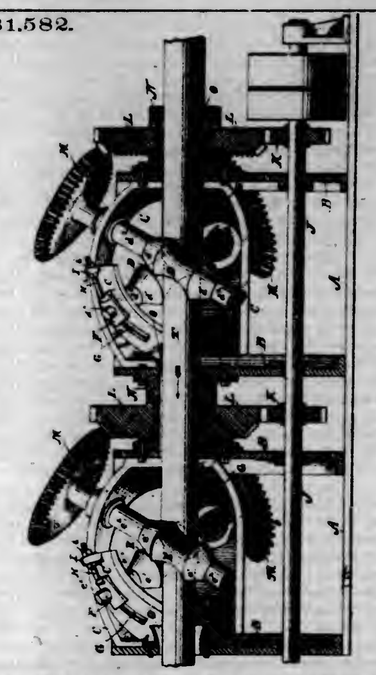
5. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, and all of such rolls revolve in opposite directions, frame-plates for the journals of the rolls of each set, means for securing the fixed adjustment of the journals of the rolls with respect to their frame-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set of rolls, substantially as set forth.

6. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, the passes of such sets diminish successively in diameter, and all of such rolls revolve in opposite directions, slotted segmental frame-plates for the journals of the rolls of each set, adjusting-arms connected with the journals of the rolls of each set and with the framing, the arrangement being thereby such that each set of the rolls is capable of an independent adjustment, and suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set or pair of rolls, substantially as set forth.

7. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, and all of such rolls revolve in opposite directions, slotted segmental frame-plates for the journals of the rolls of each set, means for securing the fixed adjustment of the journals with respect to the frame-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set of rolls, substantially as set forth.

8. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, and all of such rolls revolve in opposite directions, frame-plates for the journals of the rolls of each set, means for securing the fixed adjustment of the journals of the rolls with respect to their frame-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and suitable means for advancing and retracting the article to be rolled through the passes of the series of sets in a direction right angular to the common axis of each set of rolls, substantially as set forth.

331,582.



331,582. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS.

STEPHEN P. M. TASKER, Philadelphia, Pa. Filed July 22, 1885. (No model.)

Claim.—1. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the passes of such series of sets diminish successively in diameter, and mechanism for revolving all of the rolls of each set in opposite directions, substantially as set forth.

2. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of each set, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the series of sets gradually diminish in diameter, and mechanism for revolving all of the rolls of each set in opposite directions, substantially as set forth.

3. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the passes of such series of sets successively diminish in diameter, slotted segmental frame-plates for the journals of the rolls of each set, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and mechanism for revolving all of the rolls of each set in opposite directions, substantially as set forth.

4. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the passes of such series of sets successively diminish in diameter, slotted segmental frame-plates for the journals of the rolls of each set, means for securing the fixed adjustment of the journals of the sets of rolls with respect to their segmental frame-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and mechanism for revolving all of the rolls of each set in opposite directions, substantially as set forth.

5. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or

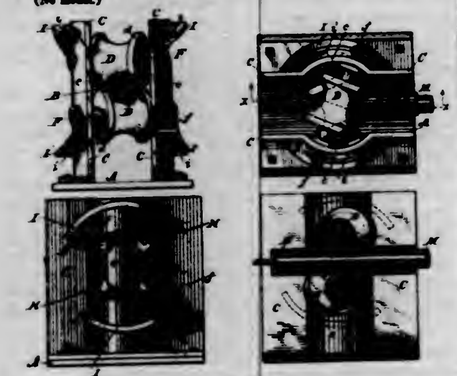
more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the series of sets gradually diminish in diameter, slotted segmental frame-plates for the journals of the rolls of each set, means for securing the fixed adjustment of the journals of the set of rolls with respect to their segmental framing-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and means for revolving all of the rolls of each set in opposite directions, substantially as set forth.

6. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the passes of such series of sets successively diminish in diameter, slotted segmental frame-plates for the journals of the rolls of each set, adjusting-arms connected with the journals of the rolls of each set and with the framing, the arrangement being thereby such that each set of the rolls is capable of an independent adjustment, and mechanism for revolving all of the rolls of each set in opposite directions, substantially as set forth.

7. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the series of sets gradually diminish in diameter, slotted segmental frame-plates for the journals of the rolls of each set, means for securing the fixed adjustment of the journals with respect to the frame-plates, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and mechanism for revolving all of the rolls of each set in opposite directions, substantially as set forth.

8. In a machine for making tubes from hollow metal ingots, or for reducing tubes or rods of metal, the combination of a series of sets of concave-faced rolls, each of which sets consists of a series of three or more rolls arranged at an angle to each other, and each roll at a common angle to its neighbors, so that the concave surfaces of all of the rolls form a circular pass, through which the article to be rolled is passed in a direction right angular to the common axis of the set, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the series of sets gradually diminish in diameter, slotted segmental frame-plates for the journals of the rolls of each set, adjusting-arms connected with the journals of the rolls of each set and with the framing, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and mechanism for revolving all of the rolls of each set in opposite directions, substantially as set forth.

331,588. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS. STEPHEN P. M. TASKER, Philadelphia, Pa. Filed July 20, 1885. (No model.)



Claim.—1. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, with a mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

2. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, with a mandrel adapted to be rotated with the ingot, at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

3. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, and reversely-disposed segmental ways for the axles of the rolls, substantially as set forth.

4. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, and means for securing the fixed adjustment of the axles of the rolls with respect to said segmental ways, substantially as set forth.

5. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings, or bearings for the axles of the rolls adapted to said segmental ways, and adjusting-arms connected with both the axles of the rolls and the framing, substantially as set forth.

6. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a mandrel at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, and means for advancing and retracting the mandrel, substantially as set forth.

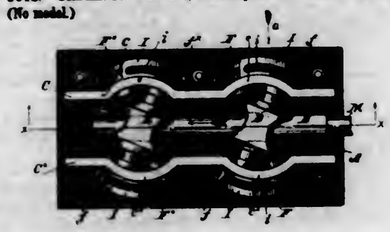
7. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, a mandrel adapted to be rotated about its longitudinal axis, at least as long as the tube to be formed, and which is passed through the pass formed by the rolls in a direction right angular to their common axis, and means for advancing and retracting the mandrel, substantially as set forth.

8. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, a rotatable mandrel at least as long as the tube to be formed, and means for advancing and retracting the said mandrel through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

9. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways for the axles of the rolls, means for securing the fixed adjustment of the axles of the rolls with respect to said segmental ways, a rotatable mandrel at least as long as the tube to be formed, and means for advancing and retracting the said mandrel through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

10. In a machine for making tubes from hollow metal ingots, the combination of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings, or bearings for the axles of the rolls adapted to said segmental ways, adjusting-arms connected with both the axles of the rolls and the framing, a rotatable mandrel at least as long as the tube to be formed, and means for advancing and retracting the said mandrel through the pass formed by the rolls in a direction right angular to their common axis, substantially as set forth.

331,584. MACHINE FOR MAKING TUBES FROM HOLLOW INGOTS. STEPHEN P. M. TASKER, Philadelphia, Pa. Filed July 20, 1885. (No model.)



Claim.—1. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the passes of such sets diminish in diameter, with a mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, substantially as set forth.

2. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the passes of such sets diminish in diameter, with a mandrel adapted to be rotated about its longitudinal axis, at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, substantially as set forth.

3. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, with a mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, substantially as set forth.

4. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, with a mandrel adapted to rotate about its longitudinal axis, at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, substantially as set forth.

5. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the passes of such sets diminish successively in diameter, with a mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, and with means for advancing and retracting the mandrel through the passes of the series of sets in a direction right angular to the common axis of each set or pair of rolls, substantially as set forth.

6. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the passes of such sets diminish successively in diameter, with a mandrel adapted to be rotated about its longitudinal axis, at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, and with means for advancing and retracting the mandrel through the passes of the series of sets in a direction right angular to the common axis of each set or pair of rolls, substantially as set forth.

7. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, with a mandrel at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of rolls, and with means for advancing and retracting the mandrel through the passes of the series of sets in a direction right angular to the common axis of each set or pair of rolls, substantially as set forth.

8. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, and the concave working-faces of the rolls of each succeeding set of such series are more filled in and of greater diameter than the rolls of the set immediately preceding, so that the passes of the sets gradually diminish in diameter, with a mandrel adapted to rotate about its longitudinal axis, at least as long as the tube to be formed, and which is passed through the passes formed by the rolls of the successive sets in a direction right angular to the common axis of each pair or set of roll, and with means for advancing and retracting the mandrel through the passes of the series of sets in a direction right angular to the common axis of each set or pair of rolls, substantially as set forth.

9. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, and reversely-disposed segmental ways for the axes of each set of the rolls, the arrangement being such that each set of rolls is capable of an independent adjustment, substantially as set forth.

10. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways for the axles of each set of the rolls, and means for securing the fixed adjustment of the axles of the sets of rolls with respect to their segmental ways, the arrangement being such that each set of rolls is capable of an independent adjustment, substantially as set forth.

11. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings or bearings for the axles of the rolls of each set adapted to said segmental ways, and adjusting-arms connected with both the axles of the rolls of each set and with the framing, the arrangement being such that each set of rolls is capable of an independent adjustment, substantially as set forth.

12. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways for the axles of each set of the rolls, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, substantially as set forth.

13. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways for the axles of each set of the rolls, means for securing the fixed adjustment of the axles of the sets of rolls with respect to their segmental ways, the arrangement being such that each set of rolls is capable of an independent adjustment, and a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, substantially as set forth.

14. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings or bearings for the axles of the rolls of each set adapted to said segmental ways, adjusting-arms connected with both the axles of the rolls of each set and with the framing, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, and a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, substantially as set forth.

15. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways for the axles of each set of the rolls, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, and means for advancing and retracting the mandrel through the passes of the rolls of said series of sets, substantially as set forth.

16. In a machine for making tubes from hollow metal ingots, the combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways for the axles of each set of the rolls, means for securing the fixed adjustment of the axles of the sets of rolls with respect to their segmental ways, the arrangement being thereby such that each set of rolls is capable of an independent adjustment, a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, and means for advancing and retracting the mandrel through the passes of the rolls of said series of sets, substantially as set forth.

17. In a machine for making tubes from hollow metal ingots, the

combination of a series of sets of concave-faced rolls, each of which sets consists of a pair of concave-faced rolls arranged with their axes inclined to each other, housings for supporting said sets of rolls, reversely-disposed segmental ways formed in or connected with the framing, boxings or bearings for the axles of the rolls of each set adapted to said segmental ways, adjusting-arms connected with both the axles of the rolls of each set and with the framing, the arrangement being thereby such that each set of the rolls is capable of an independent adjustment, a mandrel adapted to be rotated about its longitudinal axis, and which is passed through the pass of each set of rolls in a direction right angular to the common axis of each set, and means for advancing and retracting the mandrel through the passes of the rolls of said series of sets, substantially as set forth.

331,585. **CONTACT DEVICE FOR SUSPENDED ELECTRIC CONDUCTORS.** CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Oct. 2, 1885. (No model.)



Claim.—1. The combination, with a vehicle, of the contact-wheel H, movable bearing H' therefor, the frame H², containing said movable bearing, and a spring, J, located within said frame and adapted to support the weight of the movable bearing and the contact-wheel, substantially as set forth.

2. The contact-wheel H, composed of a non-elastic hub having a suitable axis, a metallic rim for contact with the conductor, and an elastic web uniting the rim and the hub, substantially as set forth.

3. The combination of the wheel H, composed of the grooved metallic rim h², metallic hub A, and flexible web h', with the vertically-moving bearing H', carried within the frame H², in which the said wheel is suitably mounted, and the spring J, located below and sustaining the movable wheel-carrying bearing, substantially as set forth.

4. In an electric railway system, the combination, with the supporting pole or post C, carrying cross-arms D D, provided at their extremities with the insulating-cups *d d*, of the conductor F, means for suspending said conductor, said means consisting of straps or other similar devices, and a flexibly-mounted contact-wheel traveling with the vehicle, said contact-wheel being spring-pressed upward against the conductor, substantially as described.

5. In a system of electric railroading, the supporting-posts C, provided with cross-arms overhanging the track or tracks, in combination with the insulating-cups *d d*, held by said cross-arms, the insulating-cups being surrounded by elastic sockets, as described, in order to avoid vibrations of the suspending and suspended parts, substantially as set forth.

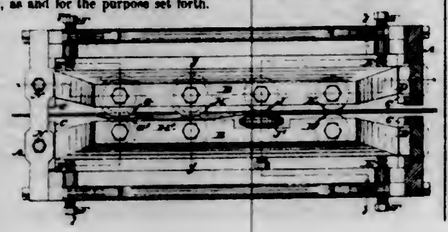
6. In an electric railway system, the flexibly-mounted insulating-cups *d d*, provided at their top part with a fastening-rod, *d'*, not in electric contact with any of the other metallic parts of the insulator, and a link or hook of suitable shape and material secured to the upper inner part of the inverted cup, and from which the electric conductor is suspended, by means of a suitable strap or support, substantially as described.

7. In an electric railway system, a suspended electric conductor consisting of a copper wire cable, or rod of hard-drawn copper, provided at intervals with ears or clamps brazed or soldered thereto, and by which it is secured to suitable straps for suspending it in the path of its contact, as described and set forth.

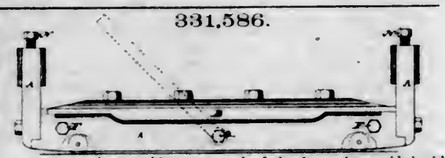
8. In an electric railway system, a suspended electric conductor of copper or other suitable metal, provided at intervals with ears or clamps permanently secured to its upper side, and by means of which the conductor is suspended, not interfering with the free passage of the contact-wheel along the under side of said conductor, substantially as described.

331,586. **ROOF DOUBLE-SEAMING MACHINE.** JOHN H. WAGENHURST, Dewart, Pa. Filed May 19, 1885. (No model.)

Claim.—1. In a seaming-machine, the combination of the bars B, having tongues and carrying rollers, grooved blocks C, frame A, and means, substantially as described, for adjusting said blocks C and bars B, as and for the purpose set forth.



331,586.



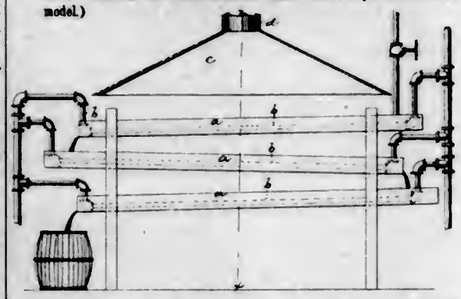
2. A seaming-machine composed of the frame A, provided with lateral and vertical adjustable bars B, having blocks C connected therewith, rollers G G', H H', J J', and K K', all of said parts being arranged, combined, and operated substantially as and for the purpose set forth.

3. A seaming-machine having the rollers G G', H H', and J J', the said rollers being formed, arranged, and combined substantially as described.

4. In a seaming-machine, the combination of the frame A, bars B, blocks C, springs E, and screws F, substantially as and for the purpose set forth.

5. In a seaming-machine, the frame A, provided with screws secured to blocks C, in combination with bars B, carrying rollers and adjustably attached to the said blocks C, substantially as and for the purpose set forth.

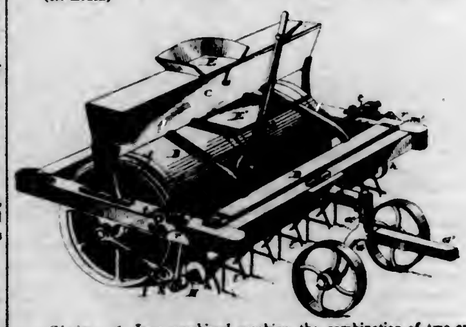
331,587. **SYSTEM OF INCLINED TROUGHS WITH INCLOSED STEAM-PIPES FOR EVAPORATING SALINE OR SACCHARINE LIQUIDS.** CHARLES N. WAITE, Medford, Mass. Filed Sept. 1, 1884. (No model.)



Claim.—1. An evaporator consisting of an inclined open trough with inlet at the upper and outlet at the lower end, and a steam-pipe inside said trough, near the bottom and parallel therewith, said pipe entering the trough from above, near one end, and having its exit above the trough, near the other end, substantially as described.

2. An evaporating apparatus consisting of a series of open troughs arranged one above another, the inclination of each lower trough being in reverse direction from that of the one above it, and each upper trough having an escape at its lower end into the upper end of the trough beneath it, and a steam-pipe inside each trough, parallel with the bottom thereof, the several steam-pipes communicating, substantially as set forth.

331,588. **COMBINED SEEDER, ROLLER, AND HARROW.** THOMAS WALKER and ORRIN G. BARLOW, Portland, Oregon. Filed Aug. 12, 1885. (No model.)



Claim.—1. In a combined machine, the combination of two or more rollers mounted in a suitable frame and having drive-wheels J, connected to said rollers by ratchets and pawls, and a rotating harrow connected to the axle by pivoted arms and to the drive-wheels by chains, the said parts being arranged to operate substantially as described, whereby a continuous rotation is imparted to the harrow whether the machine be moved in a straight line or be made to move in a circle in either direction, as set forth.

2. The combination of the rollers B, drive-wheels J, connected thereto by ratchets and pawls, the rotating harrow H, connected to the axle R by the swinging arms I, and the rock-shaft *d*, provided with the arms *r*, connected to the harrow by pendants *v*, with a rack, *c*, and pawl on the lever for suspending or adjusting the harrow, all arranged and operating substantially as set forth.

3. In combination with the rollers B, having drive-wheels J, connected thereto by ratchets and pawls, the rotating harrow arranged and adapted to be used either in front or in rear of the rollers, as set forth.

4. In combination with the frame A, carrying the rollers B, and drive-wheels J with the reversible rotary harrow, the shifting rock-shaft *d*, constructed and arranged to be shifted from front to rear of the machine, and vice versa, substantially as and for the purpose set forth.

5. The combination of the rollers B, each connected by a ratchet and pawl to its drive-wheel J, a rotary harrow, and a seed-hopper containing suitable seed-distributing device, said harrow and distributing device both being operated by the driving-wheels at opposite sides, so as to continue them in operation whichever way the machine may be turned, substantially as shown and described.

6. The combination of the stationary supply-hopper C and the distributing-hopper D, the latter being made adjustable to and fro on the frame, and connected to the supply-hopper by telescopic tubes *a*, substantially as and for the purpose set forth.

7. In combination with the open-mouthed boxes or bearings *t*, the rock-shaft *d*, having its sides cut away at the points where it enters said boxes, whereby said shaft can be readily attached or detached and be held securely in place, substantially as set forth.

8. The longitudinally-adjustable arms I, constructed and arranged to operate in combination with the rollers B and rotating harrow H, substantially as described.

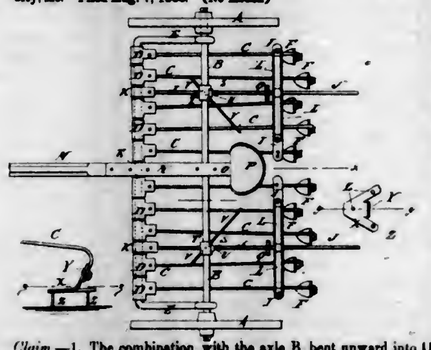
9. The combination, with the rotating harrow, of the swinging arms I and the swiveled bearings *z*, whereby the opposite ends of the harrow are enabled to rise or fall independently and without binding in its bearings, substantially as and for the purpose set forth.

10. In a seeding-machine having a rotating harrow attached, the adjustable and detachable guard F, constructed and arranged to operate substantially as and for the purpose set forth.

11. The spring-key *n*, constructed to clasp around a journal or stud and rest in a groove formed therein for securing the parts, substantially as shown and described.

12. The harrow-shaft H, having its teeth *l l* located in transverse holes extending through said shaft at different angles, and locked therein by a pin or key, *k*, inserted in a hole between the adjoining teeth or shanks of each pair or set, substantially as shown and described.

331,589. **CULTIVATOR AND HARROW.** DALTON WALLS, Appleton City, Mo. Filed Aug. 7, 1885. (No model.)

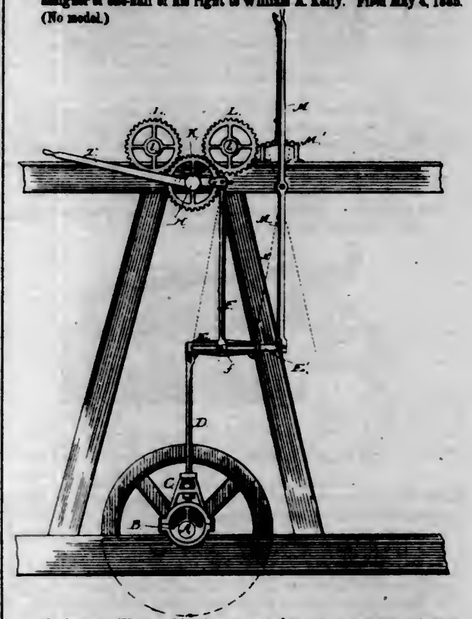


Claim.—1. The combination, with the axle B, bent upward into U shape and having the cranks on its ends for the wheels A, of the forwardly-projecting U-shaped bar E, secured at its ends to the cranks of the axle, the gang of cultivator-beams hinged to the bar E, the tongue M, secured to the bar E, the brace N, connected to the tongue at its lower end and extending upward and rearward to the axle B, and secured thereto, and a spring, *o*, secured to or formed on the bar N, and projecting behind the axle, and the driver's seat P, secured to the free end of the spring *o*, substantially as set forth.

2. The combination, with the U-shaped axle B, the bar E, at right angles thereto, and the beams C, hinged to the bar E and projecting rearward under the axle B, of the collars T, secured to the axle, and having dovetail grooves, the slotted bars S, working in said grooves, the set-screws U, passed through the slotted plates and collars, and the chains R, connecting the plates S and the beams, substantially as set forth.

3. The combination, with a cultivator drag-bar, of the flat V-shaped harrow-tooth frame X, having the shank Y bent up from between its ends, and the teeth Z on the lower face of the frame, substantially as set forth.

331,590. **FEED FOR GANG-SAWS.** JAMES H. WATSON, Tawas City, and CHARLES H. HUBBELL, East Tawas, Mich.; said Charles H. Hubbell assignor of one-half of his right to William A. Kelly. Filed May 4, 1885. (No model.)



Claim.—1. The combination, in a feed mechanism, of the shaft A, eccentric B, and connecting-rod D with the slotted rocking arm E, connecting-rod F, and the clutch-lever G, all constructed and combined substantially as and for the purpose set forth.

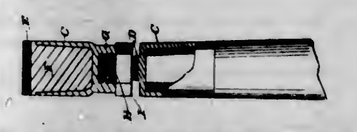
2. The clutch-lever G and shaft H, in combination with the wedge-pieces I, butting-blocks J J', and gear K, with mechanism, as described, for operating the clutch, substantially as herein described.

3. The clutch-lever G, provided with the shoulders *a*, in combination with the wedge-pieces I, provided with the shoulders *a'*, and turning loosely on the shaft H, and the butting-blocks J J', rigidly attached to the shaft H, substantially as and for the purpose set forth.

4. The clutch-lever G, wedge-pieces I I, and butting-blocks J J', the block J being provided with a ratchet on its outer periphery, in combination with the lever T and pawls *m*, all constructed to operate substantially as and for the purpose set forth.

5. The slotted rocking arm E, connecting-rod F, provided with sliding block *f*, and friction-lever G, in combination with the connecting-rod E' and vertical lever M, all constructed to operate substantially as and for the purpose herein set forth.

331,591. **SPOKE-SOCKET.** J. HARRY WEBB, Middle Settlement, Ark. Filed July 2, 1885. (No model.)



Claim.—The clip C, which clasps the felly, and which is provided with a socket, G, at its rear end, and also having an imperforate partition between the part G and the outer socket, (which accommodates the felly,) all cast in a single piece, in combination with the socket on the spoke B, said socket being provided with a closed end, said end also having a threaded bolt, D, and the nut I, whereby the felly and spoke are both firmly seated in the bottoms of their sockets and the length of the spoke may be adjusted, all constructed and combined to operate substantially as described.

331,592. **SASH-BALANCE.** JACOB WEBER, New York, N. Y., assignor to himself and William F. Lennen, same place. Filed May 27, 1885. (No model.)

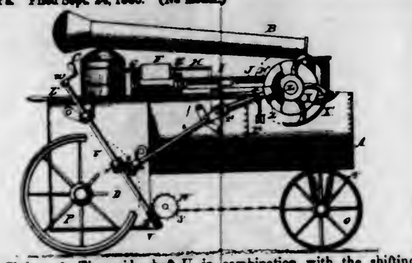
Claim.—1. In a sash-balance, the combination, with the weights having racks engaged by pinions which engage with the racks of the sashes, of the guide-plates, each formed or cast in one piece with the walls of chambers receiving and guiding the weights, substantially as shown and described, and for the purpose set forth.

331,592.



2. The channel B', offset from the window-sash, and provided with weight D, having rack *d*, in combination with the sash provided with rack *c*, and the two pinions F' F', secured on shaft *f'*, and meshing on opposite sides with the rack of the weight and that of the sash, substantially as and for the purposes set forth.

331,593. TRACTION-ENGINE. Daniel W. Webster, Christiana, Pa. Filed Sept. 24, 1885. (No model.)



Claim.—1. The guide-shaft U, in combination with the shifting-gear and its lever, the main shaft and its opposed faces, the shafts *z* and S, the connecting-gearing, the chains T T', and the axle R, substantially as set forth.

2. The shaft *z*, consisting of two sections connected by a double joint, in combination with the lever Z' and shifting-gear Z, the pulley X, having opposed faces *x x'*, the shaft which carries said pulley, the cylinder and piston for driving said shaft, the pivoted front axle, R, the shaft and chains for turning said axle, and the necessary intervening devices, substantially as set forth.

3. The pivoted bearing Z' and doubly-jointed sectional shaft *z*, in combination with the shifting-gear and its lever, the main shaft with its opposed faces or gear-wheels, the cylinder, piston, pivoted front axle, and necessary intervening devices, substantially as set forth.

331,594. RAILROAD-FROG. Frederic C. Weir, Cincinnati, Ohio. Filed July 12, 1883. (No model.)



Claim.—1. The filling-piece D, for a railroad-frog, having the supporting-ledges *b*, and a bolt-space, *a*, formed by casting a piece integral, in combination with the filling-plates F, bolted thereto, substantially as herein set forth.

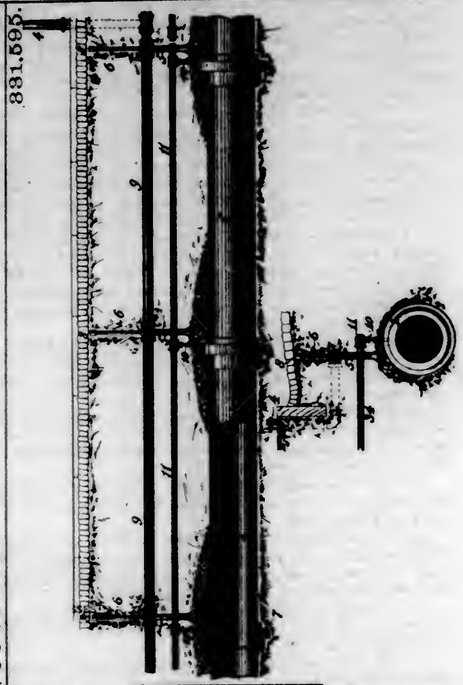
2. The sectional forked filling-piece E, provided with tenons *d* adapted to fit and be secured to the section D, substantially as herein set forth.

3. In combination with a railway-frog, the sectional filling-blocks D E, each cast integral and secured to the wing and point rails by bolts H, and filling-plates F, bolted thereto, substantially as herein set forth.

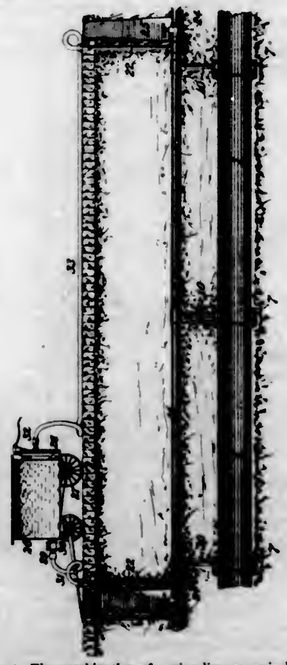
331,595. MEANS FOR DETECTING AND CARRYING OFF LEAKAGE FROM GAS-MAINS. George Westinghouse, Jr., Pittsburg, Pa. Filed Nov. 2, 1885. (No model.)

Claim.—The combination of an underground gas-main having internal chambers or receptacles on its joints or couplings adapted to receive gas leaking from its connected section, a supplemental line communicating with said joint-chambers, a series of bodies of loose packing having intercommunicating recesses inclosing the upper portion of the main at and near its joints, a series of vent or escape pipes, each leading from one of said bodies of packing to a detector and escape line, a waste or discharge pipe leading from said detector-line to a point above the level of the ground, and a series of test-pipes, each leading from the detector-line adjacent to one of the vent or escape pipes to point at or near the level of the ground, substantially as set forth.

331,595.



331,596. MEANS FOR DETECTING AND CLOSING LEAKS IN GAS-MAINS. George Westinghouse, Jr., Pittsburg, Pa. Filed Nov. 2, 1885. (No model.)

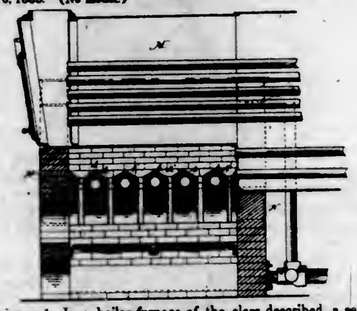


Claim.—1. The combination of a pipe line or main having chambers or receptacles at its joints or couplings adapted to receive fluid leaking from its connected sections, a supplemental or leakage line communicating with said joint-chambers and provided with valves or gates by which it may be divided into separate sections, and a device adapted to be connected at two points to a section of the supplemental line for the purpose of effecting a circulation of sealing or cementing material, under pressure, through said section and into the communicating joint-chambers of the main, substantially as set forth.

2. The combination of a pipe line or main having chambers at its joints or couplings, a supplemental or leakage line communicating with said joint-chambers and provided with valves or gates by which it may be divided into separate sections, pipes leading from each of said sections near its terminals to points at or accessible from the level of the ground, and removable caps or plugs closing said pipes, substantially as set forth.

3. The combination of a pipe line or main having chambers at its joints or couplings, a supplemental or leakage line communicating with said joint-chambers and provided with valves or gates by which it may be divided into separate sections, detector and circulating pipes leading from each of said sections near its terminals to points at or accessible from the level of the ground, a reservoir for holding fluid or semi-fluid sealing or cementing material under pressure, a circulating device communicating therewith, and pipes whereby the reservoir may be connected to the detector and circulating pipes of a section of the supplemental or leakage line, substantially as set forth.

331,597. FURNACE. William Westlake, Brooklyn, N. Y. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a boiler-furnace of the class described, a series of transverse arches of fire-brick having broad bases and arranged low in the fire box, whereby said bases will present efficient coking-surface, and at such proximity to each other as to leave narrow deep transverse spaces for the passage of gas, adapted to serve with air-supply apertures, as and for the purposes set forth.

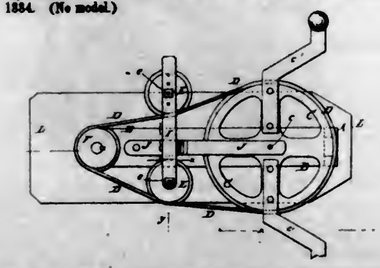
2. The transverse arches of fire-brick having broad bases and arranged low in the fire-box to provide narrow deep intervening spaces, combined with upwardly-inclined fresh-air jets arranged along the upper part of said spaces, as and for the purpose set forth.

3. In a boiler-furnace, the combination, with fire-brick arches arranged, as described, to form deep and narrow intervening spaces, of fresh-air chutes or passages having jets arranged with an upward incline in opposite directions, whereby fresh air under force will be projected across such spaces to meet or cross each other and thoroughly mix with the rising heated gases, as set forth.

4. The tubular arches A, having connections with air-passages *n*, and having upwardly-inclined tubes A', combined with a furnace, and arranged transversely therein to form an arch low in the fire-box, with narrow and deep transverse passages, into which or across which the said tubes A' direct the fresh air under force, as set forth.

5. A boiler-furnace having a horizontal stratum of fire-brick, with narrow and deep vertical passages formed therein, and having a series of air jets or orifices opening upon an upward incline into or above such narrow passages, as set forth.

331,598. CHURN. Frank L. White, Gainesville, Tex. Filed Oct. 2, 1884. (No model.)

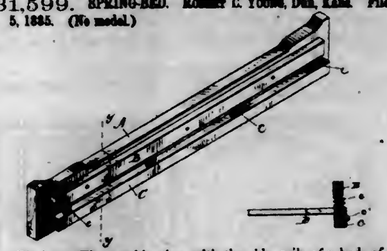


Claim.—1. In combination with the standard A and bracket K, the hinged arm B, having bearing *b*, oscillating driving-wheel C, belt D, belt-tightening wheels E E, dasher-wheel F, and socket G, as herein shown and described.

2. In combination with the standard A, bracket K, hinged arm B, provided with bearing *b*, driving-wheel C, belt D, and dasher-wheel F, the slotted bar H, perforated bar I, and belt-wheels E E, adjustable on said bars, as herein shown and described.

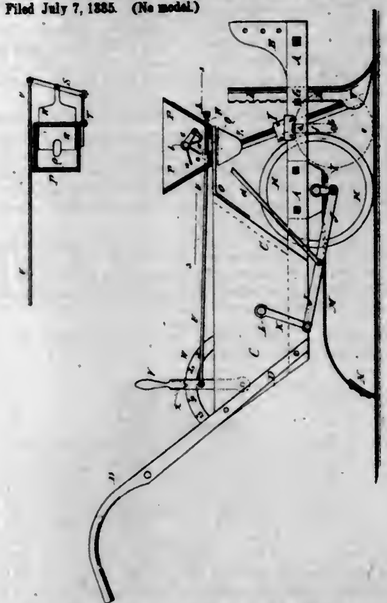
3. The brace J, in combination with the arm B, axle *c*, and bar H, as herein shown and described, whereby the bar will be locked in place and the axle *c* supported, as set forth.

331,599. SPRING-BED. Robert C. Young, Dun, Kans. Filed May 5, 1885. (No model.)



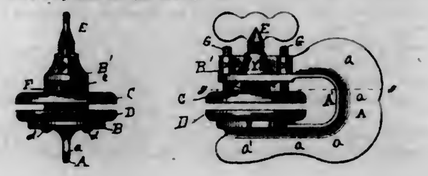
Claim.—The combination, with the side rails of a bed, of spring-supported rails secured thereto having recesses upon their outer sides, pieces of elastic material secured in said recesses and projecting therefrom, and the slats resting upon said spring-supported rails, substantially as and for the purpose set forth.

331,600. COMBINED SEED-PLANTER AND FERTILIZER-DISTRIBUTER. Charles F. Ziegler and John D. Autley, St. Matthew's, S. C. Filed July 7, 1885. (No model.)



Claim.—In a combined seed-planter and fertiliser-distributer, the combination, with the hopper, of the gage-slide provided with a central extension or projection on one end, a transverse lever pivoted about centrally to the gage-slide extension or projection, and pivoted at one end to a hinged support and at its other end to a rod connecting with a hand-lever, substantially as and for the purpose set forth.

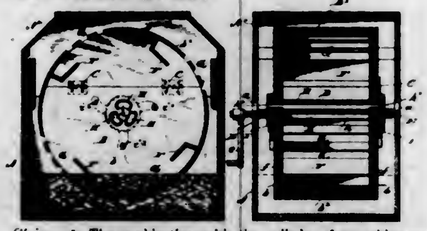
331,601. PORTABLE SEAL-PRESS. James W. Allen, St. Louis, Mo. Filed July 2, 1885. (No model.)



Claim.—1. As a new article of manufacture, a portable seal-press having broad flange *a* and an extension, *a'*, to form a hand-grip, seat B, and screws *d d*, in combination with a lower seal-plate, D, thumb-screw E, and guide-pins G G, said thumb-screw E and guide-pins G G being hung in bearings in the end of frame-work A opposite to seat B, and said thumb-screw E and guide-pins G G being connected with upper seal-plate, C, so as to operate and move with said plate C, substantially as described, and for the purposes specified.

2. In a portable hand seal-press, the combination of a frame, A, with its flange *a*, extension *a'*, seat B, bearings X X and Y, seal-plate D and screws *d d*, seal-plate C, with its stop c and guide-pin holes *g g*, thumb-screw E and its groove *c'*, pin F, and guide-pins G G, the whole combined and operating substantially as set forth, and for the purposes specified.

331,602. WASHING-MACHINE. BENJAMIN A. ALLISON, Decatur, Ill. Filed June 30, 1884. (No model.)



Claim.—1. The combination, with the cylinder of a washing-machine, of an interior series of transverse buckets having the flaring mouths and a series of transversely-arranged pipes opening outside of the cylinder at their ends, substantially as set forth.

2. The combination of the cylinder having openings in its heads, plates secured upon the latter and having corresponding openings, and a series of transverse tubes forming channels and having their ends passing through the said openings and secured to the plates, substantially as and for the purpose set forth.

3. As an improvement in washing-machines, a rotary cylinder provided with openings in its heads, plates secured upon the latter and embodying the bearing-gudgeons of the cylinder, said plates being provided with corresponding openings and with surface-grooves extending around the edges of the same, and a series of transverse tubes having a longitudinal slot or opening, and having their open ends seated in the grooves in the plate, substantially as set forth.

4. An improved rotary cylinder for washing-machines, having a series of transverse flaring buckets, and openings in the wall of the cylinder in front of said buckets, and provided with a central series of transverse tubes having longitudinal slots, whereby a free circulation of water and steam is secured, substantially as set forth.

331,603. LATHE-CHUCK. GEORGE A. BARNES, New Haven, Conn. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a chuck, the combination, with a solid frame provided at its forward end with a shoulder, jaws mounted in the said frame; screws and pinions for operating the jaws, and a ring provided with a rack abutting against the shoulder of the frame and meshing with the said pinions, substantially as set forth.

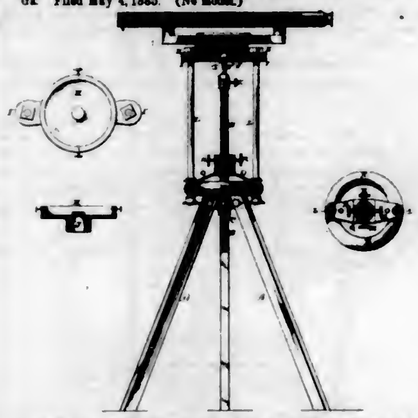
2. In a chuck, the combination, with a frame, of jaws mounted therein, screws and pinions for operating the jaws, a ring encircling the frame and provided at its forward end with a rack, which meshes with the said pinions and having such end rabbeted, and a cap fitting over the forward end of the frame and over the pinions and rack, and extending into the rabbet of the ring, substantially as set forth.

3. In a chuck, the combination, with a frame provided at its forward end with a shoulder, jaws located in the frame, screws and pinions for operating them, a ring encircling the frame and provided at its forward end with a rack, meshing with the said pinions and abutting against the shoulder of the frame, and having such edge rabbeted, a cap fitting over the forward end of the frame and over the pinions and rack, and extending into the rabbet of the ring, and a collar encircling the frame and holding the ring in place thereon, substantially as set forth.

4. In a chuck, the combination, with a frame, of jaws mounted therein, and each consisting of a circular body portion and two guides projecting an equal distance each from opposite faces of such body portion, screws entering the body portions of the jaws, and pinions carried by the screws for operating them, substantially as set forth.

5. In a chuck, the combination, with a frame, of jaws located therein, screws and pinions for operating them, a rack encircling the frame and meshing with the pinions, and a cap fitting over the forward end of the frame and over the pinions and the rack, substantially as set forth.

331,604. LEVELING-INSTRUMENT. THOMAS J. BARRON, Newnan, Ga. Filed May 4, 1885. (No model.)



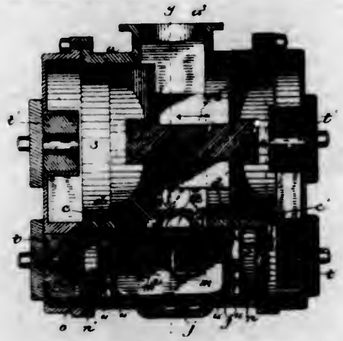
Claim.—1. The combination of the tripod, the staff which is secured thereto, and which has a separate bearing-point attached to its upper end, with the table having a socket in its top to receive a pivot upon which the sighting-tube is placed, and a socket in its under side, and a counter-balance connected to it by means of suitable rods, substantially as shown.

2. The combination of the table having a socket or bearing in its under side, a circular socket in its top, with the frame upon which the sighting-tube and level are placed, and which frame has a circular grooved pivot which catches in the socket, and the set-screws which are passed through the side of the table, so as to catch in the groove on the side of the pivot, substantially as shown.

3. The combination of the table or frame upon which the sighting-tube and the level are placed, with a counter-weight which is connected to the table at a suitable distance below it, the staff upon which the table is supported, a bridge which is connected to the counter-weight, and set-screws which are passed through the bridge for securing the table in any desired position, substantially as described.

4. The combination, in a leveling-instrument, of a frame upon which the sighting-tube and level are placed, with the bridge and a counter-weight which is suspended from the table, and which is connected thereto by suitable rods, the counter-weight and bridge having a slot or slots through them for their adjustment upon the rods, substantially as specified.

331,605. PISTON-METER FOR FLUIDS. HENRY M. BARTLETT, Boston, Mass. Filed Feb. 14, 1885. (No model.)



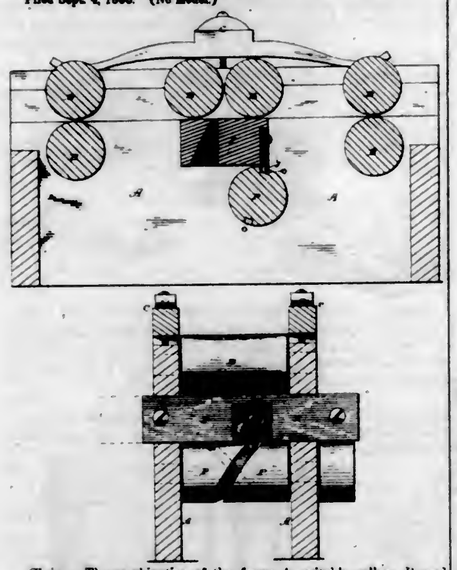
Claim.—1. The combination of the piston-reversing valve having the central ports, *l l'*, communicating through the valve with the opposite ends of the casing, the central outlet-port, *p*, and the ports *g h* and *g' h'*, arranged at opposite sides of the ports *l*, *l'*, and *p*, and communicating, respectively, with the inlet and outlet, the casing having the induction and piston chambers, and the valve-seats having ports *d d'*, communicating with the outer portions of the piston-chambers, the D-valve resting on the central portion of the piston-reversing valve, and the reciprocating pistons adapted to operate the D-valve, as set forth.

2. The piston-reversing valve having the central ports, *l l'*, communicating with the casing at the opposite ends of the valve, the central outlet-port, *p*, the D-valve connecting the ports *l l'* alternately with the port *p*, and the inlet and outlet ports arranged in pairs at opposite sides of the central ports, combined with the casing having the induction and piston chambers, the ports *d d'*, communicating with the outer ends of the piston-chambers, and coinciding alternately with the inlet and outlet ports of the valve, and the pistons reciprocating in said chambers and operating the D-valve, as set forth.

3. The semi-cylindrical piston-reversing valve having the inlet and outlet ports in its flat side, and the grooves in its outer or semi-cylindrical surface coinciding with said ports, whereby the valve is balanced, as set forth.

4. The reciprocating pistons having the radially-winged connecting-bar, whereby the water entering the meter is caused to rotate the pistons, as set forth.

331,606. PLANING-MACHINE. F. SAMUEL BELTER, Burlington, Vt. Filed Sept. 4, 1885. (No model.)



Claim.—The combination of the frame A, suitable rollers, B, and springs which are applied to the rollers, with an endwise-moving block carrying the planing iron or knife, and which is provided with a suitable projection, and the roller P, having a groove formed in its surface, and in which the projection of the sliding block is made to catch, substantially as shown and described.

331,607. MACHINE FOR SEWING IN A SPIRAL OR HELICAL PATH. ROBERT ENNS, South Windham, Conn. Filed May 6, 1885. (No model.)

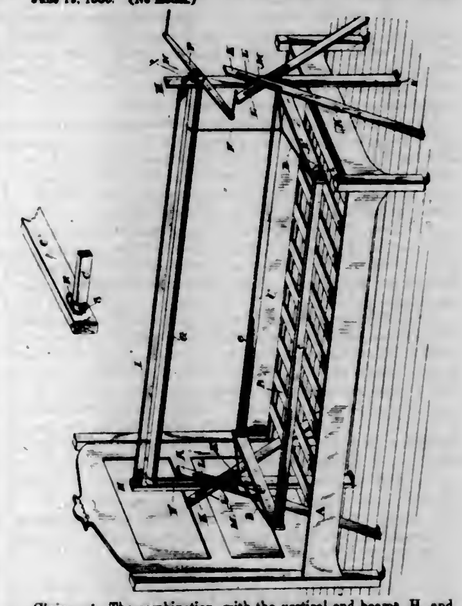
Brief.—The article or work being stitched as it is fed forward by the ordinary feeder of a sewing-machine is thereby caused to revolve with the spindle carrying the toothed disk, to which latter the work is attached. This spindle rotates the bevel-gears and the screw. The threads of the screw engage a stud, thereby causing the screw and its supporting-carriage and the work to be gradually moved toward the sewing-machine.



Claim.—1. The combination, with a sewing-machine, of the auxiliary feeding mechanism, substantially as described, consisting of the carriage or bar, supported so as to be movable longitudinally, as explained, the revolvable spindle, its clamp and nut and toothed disk, the bevel-gears, and screw and its stud, all being arranged and to operate substantially as and for the purpose set forth.

2. The auxiliary feeding mechanism, substantially as described, combined and for use with a sewing-machine in manner and for the purpose as explained, such mechanism consisting of the bar B, supported so as to be movable longitudinally and rectilinearly, the rotary spindle C, adapted to such bar, the clamp F and nut E and toothed disk D of such spindle, the screw I, supported by bearings projected from the bar B, the bevel-gears G and H, adapted to the spindle and screw, and the stud L, to engage with the screw, all being arranged essentially as represented.

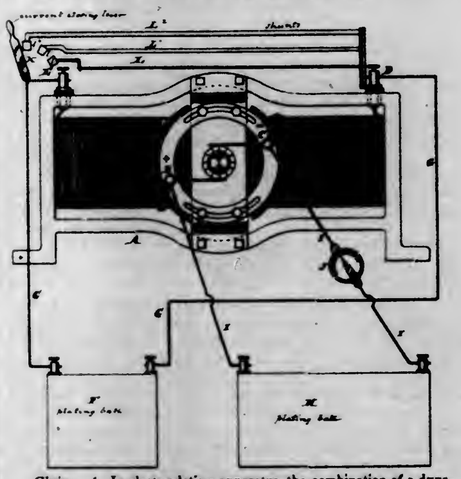
331,608. INVALID-BED. SAMUEL BISHOP, Bloomington, Ill. Filed June 19, 1885. (No model.)



Claim.—1. The combination, with the vertical end beams, H, and connecting-beam I, of the cross-braces K, having slots L, and the bolt M, whereby the parts may be adjusted, substantially as specified.

2. The combination, with the vertical beams H, the connecting-beam I, and the slotted cross-braces K and connecting-bolt, of the stretcher-frame A, arranged above the bedstead, and the suspension-cords F, and windlass G, and operating-lever and ratchet, the whole arranged substantially as specified.

331,609. APPARATUS FOR ELECTROPLATING. HERMAN R. BOSSERT, New York, N. Y. Filed July 30, 1885. (No model.)



Claim.—1. In electroplating apparatus, the combination of a dynamo-electric machine, two plating-baths, and two electric circuits, one of which includes one bath, the field-magnets, and the armature, and the other the armature, substantially as and for the purpose specified.

2. In electroplating apparatus, the combination of a dynamo-electric machine, a shunt-circuit, substantially as set forth, two plating-baths, and two electric circuits, one of which includes one bath, the field-mag-

nets, and the armature, and the other the armature, substantially as and for the purpose specified.

3. In electroplating apparatus, the combination of a dynamo-electric machine, a shunt-circuit, substantially as set forth, means to make or break said shunt, two plating-baths, and two electric circuits, one of which includes one bath, the field-magnets, and the armature, and the other the armature, substantially as and for the purpose specified.

4. In electroplating apparatus, the combination of a dynamo-electric machine, a shunt-circuit, substantially as set forth, means to make or break said shunt, two plating-baths, and two electric circuits, one of which includes one bath, the field-magnets, and the armature, and the other the armature, and a galvanometer arranged in the latter of said circuits, substantially as and for the purpose specified.

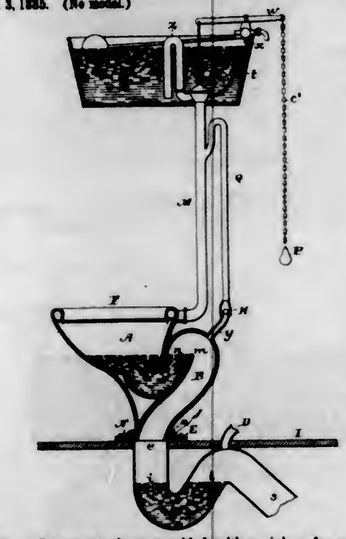
5. In electroplating apparatus, the combination, with a dynamo-electric machine and two separate plating-baths, of two separate circuits emanating from said dynamo-electric machine and including, respectively, the said baths, and so coupled that the current passing through one of said circuits is considerably greater than that passing through the other, substantially as and for the purpose specified.

6. In electroplating apparatus, a dynamo-electric machine, in combination with a plating-bath, a line-circuit including said plating-bath and emanating from the armature alone, and a shunt-circuit completing the circuit through the field-magnets, substantially as and for the purpose specified.

7. In electroplating apparatus, the combination of a dynamo-electric machine, a shunt-circuit, substantially as set forth, means to vary the resistance of said shunt, two plating-baths, and two electric circuits, one of which includes one bath, the field-magnets, and the armature, and the other the armature, substantially as and for the purpose specified.

8. The combination, with a shunt-wound dynamo-electric machine, of shunts L L' L^2, of different resistances, connecting with one end of the field-magnet coils and independent of the armature-coils, and circuit-closing lever K, connecting with the other end of said coils and adapted to put either of said shunts into circuit, substantially as and for the purpose specified.

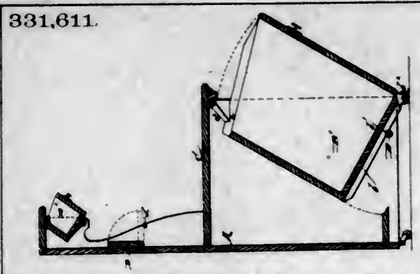
331,610. WATER-CLOSET. WILLIAM BOWDING, Jr., Boston, Mass., assignor to the Meyer-Sniffen Company, (Limited,) New York, N. Y. Filed Mar. 3, 1885. (No model.)



Claim.—In a water-closet provided with a siphon for continuing the supply to the outlet-pipe of the tank after the supply-valve shall have been closed, and with means for effecting a supplemental supply of water to the upper end of said outlet-pipe after the action of the siphon in emptying the tank shall have ceased, the combination, with these devices, and with the bowl A and that portion of the exit or discharge pipe located between the water-seal of the bowl and the secondary trap beneath the bowl, of a tube, Q, communicating at its lower end with said space in said exit-pipe and having its upper end communicating with the outlet-pipe of the tank, (at a proper elevation,) all substantially in the manner and for the purposes set forth.

331,611. KITCHEN-CABINET. ERASTUS G. DUBBERT, Wabash, Ind. Filed July 28, 1885. (No model.)

Claim.—In a kitchen-cabinet, the combination of the main frame A, provided with the pawl C' and bar B, of the removable bin B', provided with cross-bars *b*, having recesses *b'* and rollers b^2 at the lower forward corners, and notch *c*, all constructed and arranged substantially as shown and described, and for the purpose set forth.

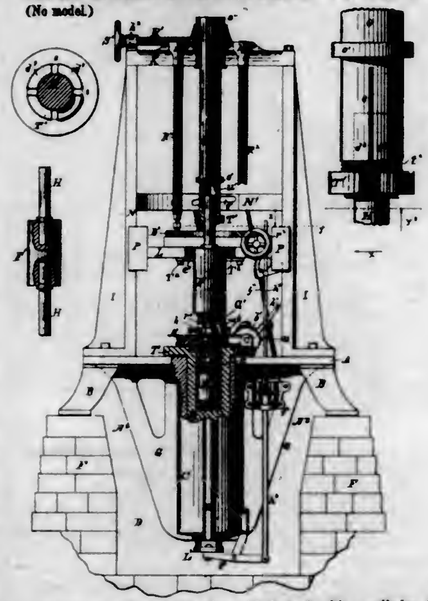


331,612. COUPLING FOR RAILROAD-RAILS. HENRY C. BURKHEAD, Hardin Springs, Ky. Filed Sept. 17, 1885. (No model.)



Claim.—In a joint for railroad-rails, the rails provided with notches *a a*, a plate with upwardly-projecting portions, which enter said notches, and a covering-plate, B, provided with notches *b*, with which engage spikes, so as to prevent longitudinal movement thereof upon the rails, substantially as shown, and for the purpose set forth.

331,613. MACHINE FOR GROOVING METAL ROLLS. CHARLES B. CAMPBELL and WILLIAM H. CAMPBELL, Buffalo, N. Y. Filed Aug. 29, 1885. (No model.)



Claim.—1. The cylinder-piece A^3, formed with a cylinder, C, a horizontal flange at the upper end of said cylinder, and braces G, distributed around said cylinder and extending up to said flange, in combination with supports I, rising from said flange and secured thereto, and lintel K, upheld by said supports, substantially as set forth.

2. The adjustable guides e', in combination with the tool-frame L, having a central opening, T^6, the cutters, and the roll-carrying shaft, said guides extending inward toward the roll or other bod to be operated on, and consisting of a horizontal part and a raised inner part, substantially as shown.

3. The combination of smooth stationary tubular guide R with shaft O, sliding longitudinally therein, vertical rack g^3, attached to said shaft, and a pinion gearing with said rack, substantially as set forth.

4. The roll-carrying shaft O, in combination with a rack, g^3, and the shaft and pinion for operating said rack, the latter moving longitudinally with said shaft, but allowing said shaft to turn while said rack remains stationary, substantially as set forth.

5. The tool-frame L, in combination with brace-rods R^3, the blocks P, and supports I, and clamping devices for holding said rods, substantially as set forth.

6. The tool-frame L, the blocks P, and supports I, in combination with brace-rods R^3 and clamping devices for holding said rods, the latter being provided with adjustable bearing-points l^7, substantially as described.

7. The thrust-bolts o^7, arranged under the lower end of the roll and receiving the pressure thereon, in combination with the holders to which they are attached, the reciprocating roll-operating shaft and plunger, and a support for said holders, substantially as set forth.

8. A pivoted guide arranged to occupy either a vertical or inclined position, in combination with a plunger having an extended part engaging therewith, the frame, and tools, said plunger being capable of axial motion, according to the inclination of said guide.

9. The combination, in a power corrugating-engine, of the cylinder and plunger therefor, a worm-gear fitted to turn upon a bearing with the plunger, and a rotating worm, *r*, for the gear resting in bearings with the plunger, for the purpose specified.

10. A longitudinally and axially movable support for the roll, gearing for turning said support as it rises, a pawl and ratchet for actuating said gearing, a lever moving with said pawl, a stud or rod for engaging and actuating said lever, and an adjustable stop which limits the motion of the latter, said lever having a yielding section to let it pass said rod or stud, substantially as set forth.

11. The tool-stock C' of a corrugating-engine, formed with a longitudinal groove, *c*, and transverse tongue *i*, in combination with the cutter *f*, formed with a longitudinal tongue, *n*, to fit the cavity *c* of the tool-stock, and the transverse groove *e*, to receive the tongue *i* of the tool-stock, and bolts *g*, to hold the cutter and tool-stock together, substantially as described.

12. The tool-holder A^1 of a corrugating-engine, and the slotted ring F^3, fitted thereon, in combination with tool-stocks C', provided with studs or pins a^3, which are adjustable independently of the said stocks, and operate with the slotted ring, substantially as specified.

13. The tool-stock C' of a corrugating-engine, formed with a cavity, F^3, in combination with a stud or pin, a^3, occupying said cavity, an externally-threaded sleeve, r^3, passing through a wall of the cavity, and a threaded bolt, u^3, resting in said sleeve and fitted with a screw-thread to the head of the stud, substantially as and for the purpose specified.

14. A longitudinally and axially movable support for the roll or work, in combination with gearing for turning said support as it rises, a rod or stud for engaging and actuating said gearing, and a regulator, substantially as set forth, which makes the action of said gearing constant.

15. The tool-frame of a corrugating-engine, formed with a slide-block fitted thereon, in combination with a screw-shaft, n^3, fitted thereto, and the toothed block u^3, fitted to the screw-shaft and formed to move longitudinally upon the slide-block, substantially as shown.

16. In combination with the tool-frame of a carrying-engine, formed with an arm, p^3, provided with a rigid threaded stud, c^3, a slide-block provided with a threaded stud, o^3, and pinion k^2, fitted to said studs, with a rocker-arm engaging with said pinion, for the purpose specified.

17. An arm moving with the roll, in combination with a ring oscillated thereby, connections between said arm and ring, and a series of cutters engaged by said ring and alternately advanced and withdrawn thereby, substantially as set forth.

18. In a corrugating-engine, the tool-holder A^1 and slotted ring F^3, fitted thereon, in combination with the tangent-block u^3, which engages with said ring, a tangential movement of said block causing the slotted ring to turn upon its bearing, substantially as described.

19. A tool-holder and series of tool-stocks arranged therein, in combination with an adjusting-ring for engaging with said stocks to adjust them all simultaneously, and screws bearing against the rear of said stocks, respectively, for adjusting any one of the tools independently, substantially as set forth.

20. In a corrugating-engine, a pinion, k^2, formed with stops e^3, in combination with a toothed segment arm or rocker, g^3, to turn the pinion, provided with stop-bars d^3, to meet the stops of the pinion, substantially as and for the purpose specified.

21. In combination with a series of cutters and a ring, whereby they are advanced and withdrawn, a rocking segment-arm which oscillates as the roll moves up and down, a pinion engaged by said segment to oscillate said ring, and connections between said pinion and ring, said pinion and segment engaging only during a part of the oscillation of the latter, in order that a variable motion of the roll may be transformed into an invariable motion of the cutters, substantially as described.

22. In a corrugating-machine, a longitudinally and axially movable support for the roll or work, in combination with the cutters, an inclined guide, and adjusting devices for regulating the inclination of said guide, for the purpose specified.

23. The rod f^3, provided with laterally-projecting fingers d' d^3, fitted adjustably thereto, in combination with the pawl-lever k' of the indexing device, said rod being held in position to have said fingers encounter said lever k', substantially as and for the purpose set forth.

24. In combination with the cylinder-piece of a corrugating-engine, a lever, n^3, formed at one end with gear-teeth, and provided at the opposite end with a movable or sliding block, r^3, fitted to said lever and actuated by a spring, a toothed rack, l^3, to engage the teeth of the lever, and a reciprocating rod to operate the rack.

25. A lever, n^3, of a corrugating-engine, formed with a projection, a^3, and a stud or guide, i^3, in combination with a movable head, r^3, fitted to the lever, the said head being formed with a longitudinal slot, s^3, and a projection, u^3, a rod, l^3, resting in said arm and projection, and a spring, c^3, substantially as shown and described.

26. A tool-holder and a series of cutters, in combination with a ring which engages with and actuates all of said cutters, a sliding block, and intervening devices for moving said ring, and gearing which reciprocates said block as the roll moves up and down, substantially as set forth.

27. In combination with a roll-carrying plunger and the cylinder and inlets for raising the same by the influx of liquid, the inlet-valves of said cylinder, and a spring-impelled spear-head or incline, which is moved by the rising of said plunger into position to suddenly open said valves, substantially as set forth.

28. The combination, in a corrugating-engine, of the cylinder with the lever n^3, provided with a sliding head, the cross-head d^3, with its guides f^7 and rod k^3, and the lever l^3, substantially as specified.

29. In combination with the roll-carrying plunger and an arm oscillated thereby, the outlet-valves which allow the escape of liquid below said plunger, a pin connected with said valves to allow them to be opened and shut, a sliding spear-head or incline arranged to slide back as its lower side comes in contact with said pin, a spring which forces said spear-head forward when its point passes said pin, and thereby causes the upper side of said spear-head to lift said pin and open said valves, a lever on which said spear-head is mounted, a rocking arm oscillated by the rise and fall of said plunger, and connections between said arm and lever whereby the oscillation of said arm causes said spear-head to oscillate also, substantially as stated.

30. The cylinder C, having fixed tubes P, extending from the interior to the exterior of said cylinder and provided with internal packing-pads, said tubes having their upper ends closed, and openings in their respective sides just below said ends, in combination with tubes p^3, which slide within said tubes P, and a lever, k^3, whereby the tubes p^3 are forced against said packing for closing said valves, substantially as shown and described.

31. The cylinder C, having fixed tubes P, extending from the interior to the exterior thereof and provided with internal packing-pads, said tubes having their upper ends closed, and openings in their respective sides just below said ends, in combination with tubes p^3, which slide within said tubes P, a lever, k^3, whereby the former tubes are forced against said packing for closing said valves, and packing-boxes r^3 at the outer respective ends, said tubes P surrounding said respective tubes p^3, substantially as described.

32. In combination with the cylinder of a corrugating-engine, the guides f^7, provided with stop-pins v^7, and the cross-head d^3, provided with lugs w^7, to encounter the stop-pins as said cross-head is moved up or down, substantially as described.

33. The shaft d^4 of a power corrugating-engine, provided with a loose clutch-pinion, c^4, and sliding clutch P, with the clutch-shifter O^2, provided with a spring-bolt, i^3, and spring b^3, in combination with the bell-crank d^3, operated by the plunger, substantially as described.

34. In combination with the roll-carrying plunger and a set of pumps for supplying liquid to the cylinder, a clutch on the driving-shaft of said pumps, an arm or lever operated by said plunger, for unshipping said clutch, and a spring-pressed V-head which is carried by said lever, said V-head operating suddenly to effect said unshipping when the point passes over the opposed part, substantially as set forth.

35. In combination with a roll-carrying plunger and a set of pumps which supply liquid to the cylinder, a shifting-clutch which controls the operation of said pumps, and a yielding arm or lever forming part of the clutch-unshipping mechanism, said lever acting suddenly to effect said unshipping when the plunger reaches its highest point, substantially as described.

36. In a corrugating-engine, the arms g^3 and g^3, connected by a rod, k^3, in combination with the plunger for the cylinder provided with a projection, h^3, to alternately encounter said arms, substantially as and for the purpose specified.

37. In combination with the cylinder of a corrugating-engine, the rotating pulley-shaft d^3, resting in standards f^4 thereon, provided with a pinion, c^1, the parallel shaft g^4, provided with gear c^2, eccentrics h^4, and a series of pumps, with pipe connecting said pumps and cylinder, substantially as shown and described.

38. In combination with a longitudinally and axially movable support for the piece being corrugated, an adjustable inclined guide which engages with an extended part of said support to regulate the twist of the corrugations, and a girt or rest, N', for the inclined guide, having a curved slot which engages with the head formed on said guide, substantially as described.

39. In combination with the fluid-cylinder of a corrugating-engine provided with tubes P, communicating between the interior and exterior thereof, having their inner ends closed, formed with side openings, n^3, and provided with packing-boxes r^4 at their respective outer ends, the tubes p^3, telescoped within said respective packing-boxes, and tubes P, to cover said openings n^3, and packing-pads within said tubes P, substantially as described and shown.

331,614. **BOUQUET-HOLDER.** MORTON L. CARDELL, Hancock, Mich. Filed Sept. 7, 1885. (No model.)



Claim.—The bouquet-holder herein described, consisting of the vessel A, having upon one side the vertically-extended lip B, provided with side notches, C, carrying a band, G, and upon the opposite side a downwardly-bent lip, D, provided with projections F on the inner side, substantially as set forth.

331,615. **COFFEE-ROASTER.** MATTHEW J. CLARK, Clermontville, Ohio. Filed May 13, 1885. (No model.)

Claim.—In a coffee-roaster, the metallic cylinder formed of separate longitudinal sections and riveted together, each section provided with an inwardly-projecting flange formed integral with the section and one of the ends of the cylinder formed with a detachable head, substantially as herein set forth.

331,616. **RIBBON-HOLDER.** HENRY W. COBURN and DOWNING B. VAN FLEET, Newville, Ind. Filed Aug. 5, 1885. (No model.)

Claim.—1. The combination of the bottom B, having studs b' and the central openings, b, with the yoke having the spring-arms provided with studs a', to enter the openings b, and the spring C, for bearing on the free end of the roll, substantially as described.

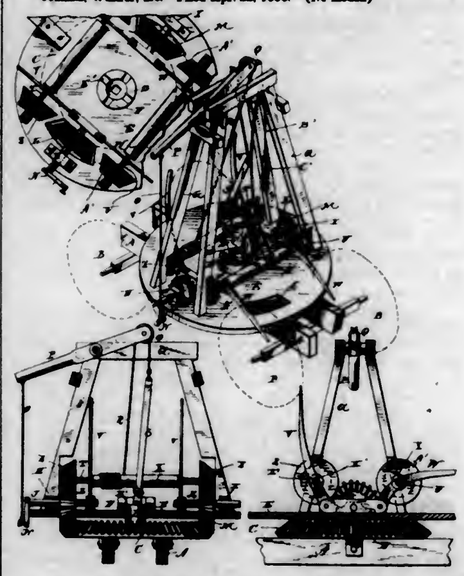
2. The yoke having spring-arms and the inwardly-extending studs a', adapted to enter the center of the core and journal the yoke thereto, and the bearing-spring C, attached to the center of the yoke, for bearing on the free end of the roll, and the foot D at the free end of the spring, as described.

3. The yoke having its middle portion extending transversely across the circumference of the roll and provided with arms to clasp the sides of the roll, said arms being journaled to the core, and a curved arm, C, extending at right angles from the middle portion of the yoke, and bearing on the free end of the roll, as set forth.

4. The combination of the yoke adapted to be journaled to the center of the core, the spring secured to the yoke and bearing on the free end of the roll, the spring having a scale inscribed thereon, and the indicator sliding on the spring, substantially as described.

5. The yoke having spring-arms adapted to be journaled to the core and press against the sides of the roll, the curved arm C, extending from the middle arm of the yoke, and a foot, D, at the termination of the arm C, as set forth.

331,617. **MACHINE FOR WORKING WELL-AUGERS.** SYLVESTER S. COLLINS, Walker, Mo. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a machine for operating well-boring tools, the combination of a stationary crown-wheel, a frame journaled to revolve in a horizontal plane above the crown-wheel, pinions secured upon shafts journaled radially to the frame and meshing with the crown-wheel, drum-shafts having pinions at their ends, and levers pivoted with their inner ends near the bearings of the pinion-shafts and having bearings for the drum-shafts, so that by tilting a lever toward the pinion-shaft the pinion nearest to the lever may mesh with the pinion meshing with the crown-wheel, as and for the purpose shown and set forth.

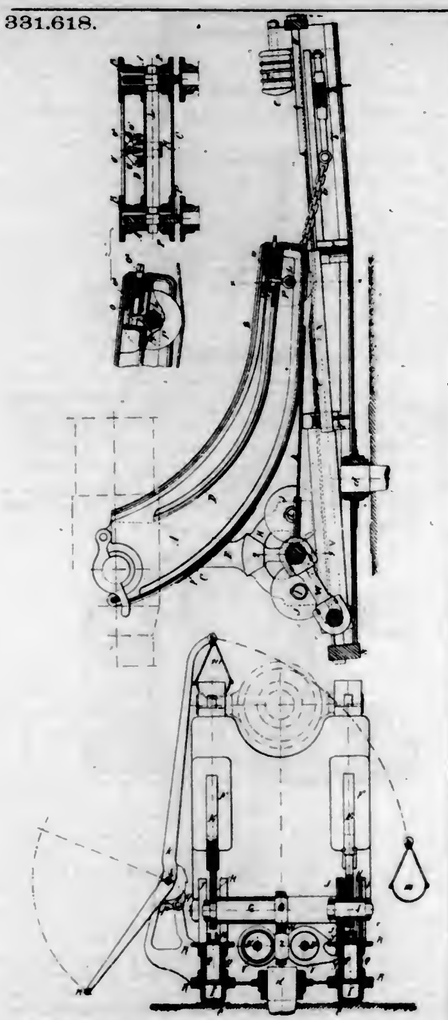
2. In a machine for operating well-boring tools, the combination of the base A, having the crown-wheel secured upon it, frame E, journaled with its hollow notched spindle upon the hollow spindle of the crown-wheel, having the upright frame G, and having the radiating bearings H and I, shaft J, journaled in bearing H and having the crank at its outer end and having the pinion meshing with the crown-wheel, the lever having the rope-clamp at its inner end, and having the rope at its outer end secured to the crank, the said lever pivoted at the top of the upright frame, shaft K, having pinion M, levers V and W, having bearings near their inner ends and pivoted at their inner ends near the radiating bearings upon the frame, drum-shafts T X and U Y, having pinions Z and A' and journaled in the bearings in the levers, and the drill-rope having the drill and secured to one drum, and the sand-pump rope having the sand-pump and secured to the other drum, as and for the purpose shown and set forth.

331,618. **GUN-CARRIAGE.** CHARLES T. M. V. DE BANGE, Paris, France. Filed Dec. 4, 1884. (No model.) Patented in France May 27, 1884, No. 162,396.

Claim.—1. In a gun-carriage, substantially as described, the trail formed of curved spring-metal plates B C D, arranged one above another, and secured together and to the carriage, and extending first downward and then rearward, as and for the purposes set forth.

2. In a gun-carriage, substantially as described, the trail formed of curved metal plates B C D, arranged one above another and secured to side plates, A, by angle-irons, riding-wheels, as P, journaled in said side plates and arranged upon eccentric bearings at the rear of the trail, an arm rigid with the shaft of said wheels, and a spring arranged to be compressed by said arm, as and for the purpose set forth.

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3. The trail formed of the curved metal plates B C D and side plates, A, the trucks J I, supporting the body of the carriage and carrying the uprights E, and connecting-yokes H, flexibly connected with each other, in combination with the plate F, arranged to re-enforce the flexible joint, the wheels P upon the rear of the trail, and the tie-plate K, connecting the truck-shaft G to the rear of the trail, as set forth.

4. In a gun-carriage, substantially as described, the combination, with the curved trail and its carried wheels P, having eccentric bearings, and with the shaft L, having finger M, of springs O', arranged in the path of said finger, and means, as O^2, for adjusting the force of the spring, as set forth.

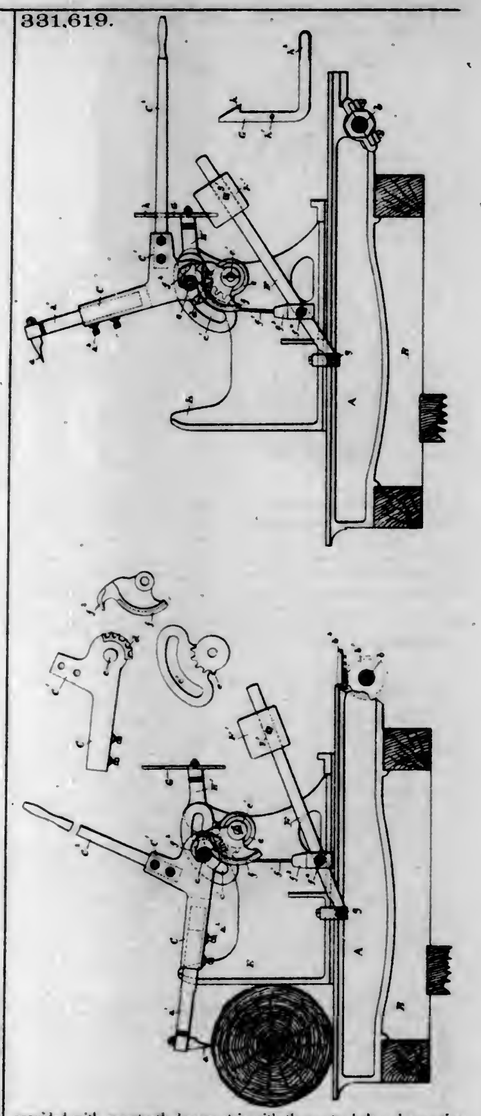
5. In a gun-carriage, as described, two trucks or sets of wheels, J, arranged under the trunnions of the gun and supporting the same by yokes H and uprights E, as described, in combination with each other and with a spring-curved trail, and a tie, K, connecting such trail with the shaft of the trucks, as and for the purposes set forth.

6. The charging-lever k, projectile-support m, transverse bar n, and fulcrum-pivot l, in combination with each other and with a gun-carriage and gun, and with the click q and counter-weight p, for holding the lever elevated, arranged to elevate and support a projectile, as herein specified.

331,619. **SAW-MILL DOG.** ALEXANDER DELANEY and JOHN M. BOND, Richmond, Va. Filed May 19, 1885. (No model.)

Claim.—1. A saw-mill-dog mechanism having, in combination, a guide mounted on a suitable support and provided with an arc-shaped slot, c', a fixed pinion, e, and a dog-lever having a center bolt, c, which has movement in the arc-shaped slot, and a partly-circular-shaped end

331,619.



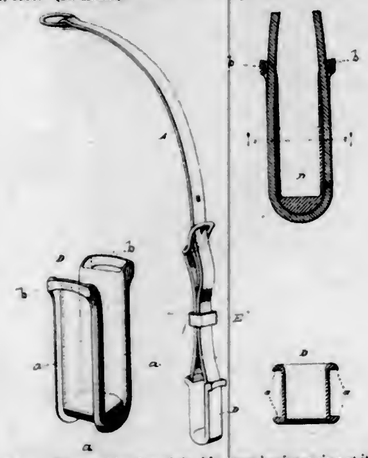
provided with gear-teeth d concentric with the center bolt and engaging with the said fixed pinion, as set forth.

2. A saw-mill-dog mechanism having, in combination, a guide mounted on a suitable support and provided with an arc-shaped slot, c', a fixed pinion, e, a dog-lever having a center bolt, c, which has movement in the arc-shaped slot, and a partly-circular-shaped end provided with gear-teeth d concentric with the center bolt and engaging with the said fixed pinion, and a weight connected to the dog-lever, substantially as described, for drawing the lever forward and down, as set forth.

3. A saw-mill-dog mechanism having, in combination, a dog-lever pivoted to move forward and down, a sector-pulley having a hook bearing against the dog-lever, a lever, F, pivoted by one end and the free end carrying a weight, and a rope, f', connecting the sector-pulley and weighted lever, substantially as set forth.

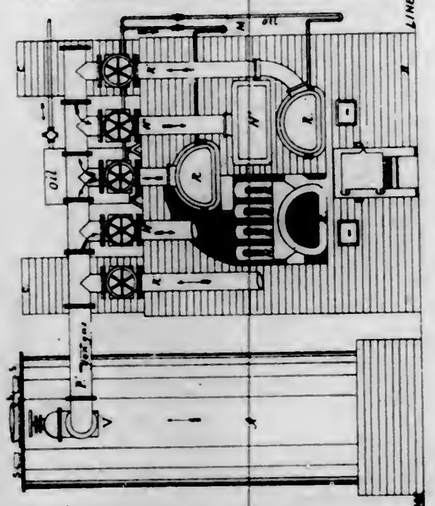
4. A saw-mill-dog mechanism having, in combination, a guide mounted on a suitable support and provided with an arc-shaped slot, c', a fixed pinion, e, a dog-lever having a center bolt, c, which has movement in the arc-shaped slot, and a partly-circular-shaped end provided with gear-teeth d concentric with the center bolt and engaging with the said fixed pinion, a sector-pulley, f, having a hook which bears against the center bolt, and a weight connected to the sector-pulley, substantially as set forth.

331,620. TRACE-CARRIER. James B. Dick, Creta, Nebr. Filed May 11, 1885. (No model.)



Claim.—The combination of the hip-strap having a ring at its upper end to be attached to a harness, and provided at its opposite end with a buckle to form a loop, the box or slide loop on the strap-loop, and the metallic wear-loop D, open at its upper end, having the external marginal flanges, and the lateral loops at its opposite ends for the passage of the hip-strap, which supports the said wear-loop, substantially as specified.

331,621. APPARATUS FOR MAKING ILLUMINATING-GAS. Frederic Egner, St. Louis, Mo. Filed Sept. 28, 1885. (No model.)



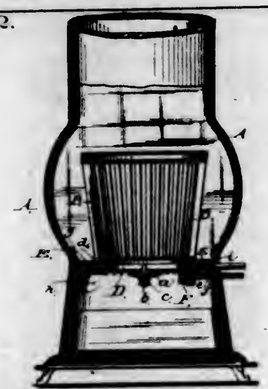
Claim.—In combination with a generator, retorts, exhauster, hydraulic seal, and regulating-valves, all in regular sequence, as described, the fixing-chambers N N, &c., as shown and described.

331,622. COAL-STOVE. Samuel H. Falls, New Haven, Conn. Filed May 11, 1885. (No model.)

Claim.—1. The combination of a casing, a perforated damper-plate, a correspondingly-perforated slide, an open basket-grate or fire-pot supported upon the damper-plate, a revolving grate having a peripheral groove, an arbor with toothed wheel for operating the slide, said arbor passing through the damper-plate and guiding the movement of the grate, and a pinion for revolving the grate, substantially as herein described.

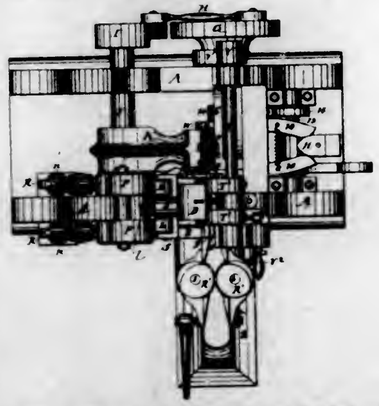
2. In a stove, the fire-pot, the casing, and the revolving grate having a grooved periphery, in combination with the perforated damper, the correspondingly-perforated slide, and the arbor *s*, which serves the double purpose of a guide for the grate and a means of regulating the draft, substantially as set forth.

331,622.



3. In a stove, the combination of the casing, the fire-pot supported therein, a chamber between the fire-pot and casing, the revolving grate having a groove in its periphery, a sliding arbor engaging the groove, and a toothed wheel engaging teeth on the bottom of the grate for revolving the latter in either direction, substantially as herein described.

331,623. HORSESHOE-MACHINE. David J. Farmer, Penn Yan, assignor of one-half to R. Nelson Gere, Syracuse, N. Y. Filed Apr. 23, 1884. (No model.)



Claim.—1. In combination with the creaser C, slide S, and presser D D′ on said slide, the vertical levers P P, pivoted on the frame A, the push-bars *k k*, interposed between the upper end of the levers P P and slide S, the tractile spring *m*, for drawing the slide toward the levers, and the rotary cams Q Q, having abruptly-terminating eccentric contours for imparting quick action to the levers P P, substantially as set forth and shown.

2. In combination with the creaser C, slide S, and a presser, D D′, on said slide, the levers P P, pivoted on the sides of the frame, push-bars *k k*, interposed between the upper ends of the levers and the slide, spring *m* for retracting the slide, the rotary cams Q Q, engaging the lower end of the levers at one side, the elbow-levers R R, arranged at the opposite side of the levers P P, the push-bars *n′ n′*, interposed between the arms of the levers R R and levers P P, and the springs *n n* actuating the levers R R, substantially as described and shown.

3. In combination with the creaser and the reciprocating slide and presser, a rock-shaft mounted on the frame over the creaser, jaws projecting from the rock-shaft, and an oscillatory swaging-arm suspended from said jaws, substantially as and for the purpose specified.

4. In combination with the shoe-bending mechanism and creaser, the slide S, plate E, provided with the guide-groove *a*, and the pressing-plate D, hinged on plate E, and having the overhanging face D′ occupying the side of the groove opposite the creaser, substantially as and for the purpose specified.

5. In combination with the creaser C and slide S, the hinged plate D and the face D′, detachably connected to said plate, substantially as described and shown, for the purpose set forth.

6. In combination with the creaser C and its sustaining-holder *f*, provided with flanges *f′*, the dog A, removably attached to the frame and holding by its free end the creaser and its holder in their positions, substantially as described and shown.

7. The combination, with the creaser C, of a supporting-holder, *f*, resting with its front portion on a rocker-bearing, the dog A, holding the shoe on its said bearing, and set-screws *e e*, for adjusting said holder in its position, substantially as described, for the purpose specified.

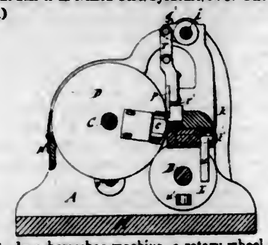
8. In combination with the creaser and presser, a rock-shaft arranged above the creaser, a swage suspended from the rock-shaft, and a lever connected with the swage to carry it out of its operative position when required.

9. In combination with the slide S, the plate E, provided with the groove *a*, and the lining a^2, detachably secured in said groove, as shown and described.

10. In combination with the oscillatory arm carrying the die and former for bending the shoe, a rotary die having projecting cheeks adapted to receive between them the shoe-carrying end of the arm and laterally compress the shoe, as specified.

11. The combination of the oscillatory arm carrying the die and former for bending the shoe, laterally-yielding plates on opposite sides of the arm, movable jaws interposed between the plates and die, and a rotary die having projecting cheeks adapted to embrace the end of the oscillatory arm and compress the side plates thereof, substantially as described and shown, for the purpose set forth.

331,624. HORSESHOE-MACHINE. David J. Farmer, Penn Yan, assignor of one-half to R. Nelson Gere, Syracuse, N. Y. Filed June 11, 1884. (No model.)



Claim.—1. In a horseshoe-machine, a rotary wheel carrying shoe-formers and dies, in combination with preliminary creasers arranged in feed-passage to said shoe-former and die, whereby the creasing is performed on a line with the bar before bending, as set forth.

2. In a horseshoe-machine, a rotary wheel carrying shoe-formers and dies, in combination with creasing and swaging mechanisms arranged in the feed-passage to said wheel, die, and former, substantially as set forth and shown.

3. In a horseshoe-machine, a rotary wheel carrying one or more formers, in combination with creasers arranged to crease the blank in its passage to the former and cutters, substantially as set forth.

4. In a horseshoe-machine, a rotary wheel carrying one or more formers, in combination with creasers, a slide for pressing the blank against the creasers, and cutters for severing the blank, as specified.

5. In combination with the rotating wheel carrying in its periphery a shoe-former and die and a blank-supporting bed or channel arranged transversely in front of the periphery of said wheel, a stationary cutter on said bed, and a vertically-reciprocating cutter arranged over the bed to cut the blank edgewise, substantially as specified and shown.

6. In combination with the rotary wheel carrying the shoe-former and a stationary bed arranged across the periphery of said wheel and provided with a stationary vertical cutter, a rock-shaft above said bed provided with a radial arm, and a vertical pressing-plate connected to the free end of said arm and carrying on its lower end a cutter coinciding with the stationary cutter, substantially as described.

7. In combination with a rotary wheel and horseshoe-formers mounted thereon, horizontal slides arranged at opposite sides of the wheel at the periphery thereof, shoe-bending rolls pivoted on the slides, arbors having cams engaging with the slides, levers connected to the arbors, and a rotary wheel or roller having projecting from opposite sides cams engaging the levers, substantially as set forth.

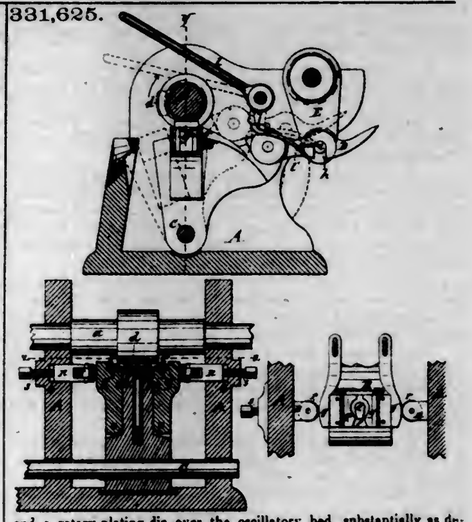
8. The combination, with the vertically-revolving wheel, of the shoe-former and die carried on the periphery of said wheel, laterally-movable jaws at the outside of the die, and compressing-rollers secured to the frame of the machine at opposite sides of the aforesaid wheel, substantially as shown and described.

9. In combination with the rotary wheel carrying shoe-formers, dies, and yielding jaws at the side of the dies, a throw-off bar secured across the frame of the machine and lying in proximity to the periphery of the aforesaid wheel, for sweeping from the latter the completed shoe, substantially as set forth.

331,625. HORSESHOE-SWAGING MACHINE. David J. Farmer, Penn Yan, assignor of one-half to R. Nelson Gere, Syracuse, N. Y. Filed Apr. 29, 1885. (No model.)

Claim.—1. In a horseshoe swaging and finishing machine, the combination of an oscillatory bed, a die and former mounted on said bed, laterally-moving swaging-jaws at opposite sides of said die and former,

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and a rotary plating-die over the oscillatory bed, substantially as described and shown.

2. In a horseshoe swaging and finishing machine, the combination of an oscillating bed carrying a die and former, and laterally-yielding jaws at opposite sides of the die and former, compressing-rollers at the sides of the jaws, and a rotary die arranged to impinge the shoe carried on the aforesaid bed, substantially as described and shown.

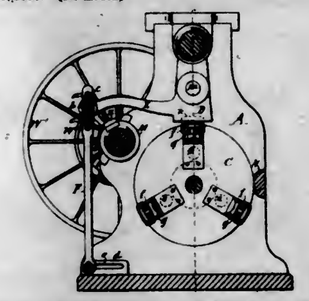
3. In combination with the oscillating bed carrying a die and former, and the actuating-arm of said bed, a detachable connecting link or arm, whereby the bed can be thrown into a dormant position during the motion of the machine, substantially as set forth.

4. In combination with the rotating die and curvilinear oscillating bed carrying a die and former, an oscillatory shaft, a rock-arm on said shaft, and provided with trunnions on its free end, and a connecting-link hinged to the oscillating bed, and having its opposite end bifurcated and formed with hooks adapted to be thrown in and out of engagement with the trunnions of the rock-arm, substantially as described and shown.

5. In combination with the oscillating bed carrying a die and former, a rock-arm provided with trunnions, a coupling-link having hooks adapted to engage the trunnions, and a lever for throwing the link out of its engagement with the rock-arm, substantially as described and shown.

6. In combination with the oscillating bed carrying a die and former, laterally-yielding jaws at opposite sides of said former, arms supported movably at right angles to the bed, jaw-compressing rollers pivoted on said arms, and set-screws for adjustably confining the arms in their position, substantially as described and shown.

331,626. HORSESHOE-SWAGING MACHINE. David J. Farmer, Penn Yan, assignor of one-half to R. Nelson Gere, Syracuse, N. Y. Filed Apr. 29, 1885. (No model.)



Claim.—1. A horseshoe swaging and finishing machine comprising a rotary carrier, shoe-holding dies or former mounted on said carrier, and an oscillatory flattening and compressing die carried in proximity to the shoe-holding die to impinge the shoe, substantially as set forth and shown.

2. In combination with the rotary carrier C and a series of formers and dies on said carrier, swaging-jaws connected to and moving with the carrier C, and the oscillatory arm D and flattening-die *k* on said arm, as set forth and shown.

3. In combination with the rotary carrier C, having a former and jaws *f*, the oscillatory arm D, flattening-die *k* on said arm, and the rotary plating-die *n*, as described and shown.

4. In combination with horseshoe-holding dies mounted on the periphery of a rotary carrier, a flexible or jointed oscillatory arm carrying over the rotary carrier a flattening and compressing die, and an arm extended from the latter and connected to an oscillatory support, whereby the said die is caused to bear uniformly on the whole surface of the shoe, substantially as specified.

5. In combination with the rotary carrier and the shoe-holding dies mounted thereon, a flexible or jointed oscillatory arm carrying over the rotary carrier a flattening and compressing die, an arm extended laterally from the latter, an oscillatory support, and a wrist-pin connecting the lateral arm with the support and adapted to be shifted on the latter, substantially as and for the purpose specified.

6. In combination with the oscillatory arm D, provided with the arm E, the standards F F, provided with the slot *a*, the wrist-pin *b*, connecting the arm E with said slot, and the springs *c c*, supporting the wrist-pin, substantially as described and shown.

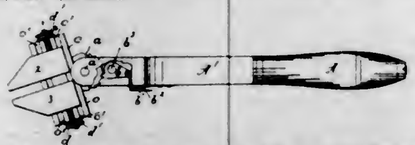
7. In combination with the rotary die-carrier C and the oscillatory arm D, provided with the arm E, the plates *d d*, provided with the slot *e*, the standards F F, connected with said slot, and the wrist-pin *b*, connecting the arm E with the opposite end of the standards, as set forth and shown.

8. In combination with the rotary die-carrier C and oscillatory arm D, provided with the arm E, the plates *d d*, provided with the slot *e*, the standards F F, connected with the slot *e*, and provided at their opposite end with the slot *a*, the wrist-pin *b*, connecting the arm E with the slot *a*, and the springs *c c*, supporting said wrist-pin, all substantially as described and shown.

9. In combination with the rotary carrier C and oscillatory arm D, the jaws *f*, provided with cheeks or rollers, and the cam G, secured to the sides of the frame, substantially as described and shown.

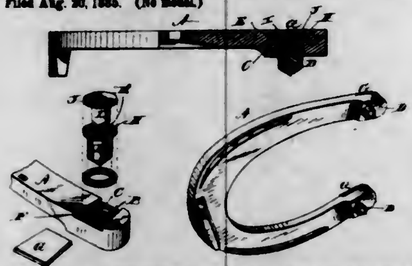
10. In combination with the rotary carrier C, the jaws *f*, arranged so as to yield laterally and endwise, and mechanism for actuating said jaws, substantially as set forth.

331,627. WRENCH. FREDERICK FARRAR, Boston, Mass. Filed Mar. 9, 1886. (No model.)



Claim.—A wrench comprising the head-block *c*, pivoted to the handled shank and provided with the ratchet-toothed segment and pawl co-operating therewith, the double-acting screw *d*, arranged in said head-block, and the guides *c' c'* on opposite faces of the head-block and both sides of the screw, combined with the jaws 2 and 3, having the guiding projections c^3 c^3, engaging said guides *c' c'*, and the threaded bridges *f*, to receive the screw to cause said jaws to move in parallelism and without strain and tendency to bind upon the screw, substantially as shown and described.

331,628. HORSESHOE. FRANK E. GARDNER, Columbus Grove, Ohio. Filed Aug. 20, 1885. (No model.)



Claim.—1. The combination, with a horseshoe provided near its heel ends with vertical openings or perforations having shoulders or offsets, of the calks fitting in the said openings and projecting on the under side of the shoe, said calks being provided at their upper edges with flanges or collars adapted to rest upon the said shoulders or offsets, substantially as and for the purpose herein set forth.

2. The combination of the body of a horseshoe having vertical openings or perforations provided with shoulders or offsets, the calks seated in the said openings and having annular flanges resting upon the said shoulders or offsets, suitable covering plates or slides, and springs or elastic cushions interposed between the said calks and the covering plates or slides, substantially as and for the purpose herein shown and specified.

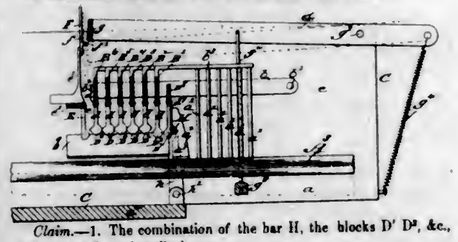
3. The combination of a horseshoe-body having suitable vertical perforations provided with shoulders or offsets and transverse recesses registering with the said perforations and having dovetailed slightly-converging sides, the slides or covering-plates having beveled slightly-converging sides, the calks having annular flanges at their upper edges, and the interposed springs or elastic cushions, substantially as and for the purpose set forth.

4. The combination of the horseshoe-body having vertical perforations provided with shoulders or offsets, the calks having annular flanges adapted to rest upon the said shoulders or offsets and provided with recesses in their upper sides, the rubber spring-cushions adapted to be seated in the recesses in the calks and having flanges extending over the flanges of the latter, and the slides or covering-plates, all combined and arranged substantially as and for the purpose herein shown and specified.

5. The combination of the horseshoe having vertical shouldered recesses, the calks having annular flanges, springs arranged to force the said calks in a downward direction, suitable covering-plates, and washers or rings interposed between the flanges of the calks and the shoulders of the recesses or openings in which said calks are seated, substantially as and for the purpose herein set forth.

6. The combination of the horseshoe-body having vertical shouldered recesses and transverse recesses registering with the same and having dovetailed slightly-converging sides, the calks having annular flanges, the springs or elastic cushions, and the covering plates or slides having beveled slightly-converging sides adapted to be seated in the transverse recesses and projecting with their narrow ends beyond the inner edges of the shoe, against which the projecting ends of the slides may be clinched or upset, so as to prevent the accidental removal or withdrawal of the said covering plates or slides, all combined and arranged to operate substantially in the manner and for the purposes herein shown and specified.

331,629. DEVICE FOR OPERATING A SET OF LEVERS. HERVEY D. GANSE, Lake View, Ill. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination of the bar H, the blocks D' D^2, &c., and the lever E, as described.

2. The combination of the file of blocks D' D^2, &c., and the lever E, as described.

3. The combination of the file of blocks D' D^2, &c., the lever E, and the lever F, as described.

4. The combination of the lever E, the lever F, and the frame G, as described.

5. The combination of the file of blocks D' D^2, &c., the levers E F, and the frame G, as described.

6. The combination of the key A', the arm a^2, the bar H, and the file of blocks D' D^2, &c., as described.

7. The combination of the bar H, the block D^7, and the file of blocks D' D^2, &c., as described.

8. The combination of a file of blocks, D' D^2, &c., a movable part to press against, and a movable part to be pressed by the file when the blocks are in line, substantially as described.

9. The combination of a file of blocks, D' D^2, &c., a movable part to press against the file, a movable part, substantially as described, to be pressed by the file when the blocks are in line, and means, substantially as described, for moving the blocks of the file into line.

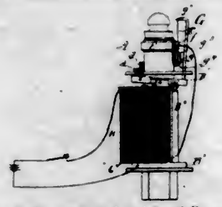
10. The combination of a series of files of blocks, D' D^2, &c., a bar, H, adapted to be moved against the files, and a series of movable parts to be moved, respectively, by the files as the blocks of the files respectively come into line, substantially as described.

11. The combination of a file of blocks, D' D^2, &c., and the frames B' B^2, &c., said blocks being connected with said frames by means of connections of different lengths, as and for the purpose described.

331,630. ELECTRIC GAS-LIGHTER. JOHN GEARY, Philadelphia, Pa. Filed Aug. 14, 1883. Renewed Mar. 14, 1885. (No model.)

Claim.—1. In an electric lighter, the combination, with a magnet having two limbs, one of which has a surrounding helix, the other being bare, of an armature pivoted to or hinged upon one of said limbs, said armature carrying an electrode at one end and having a retracting-spring

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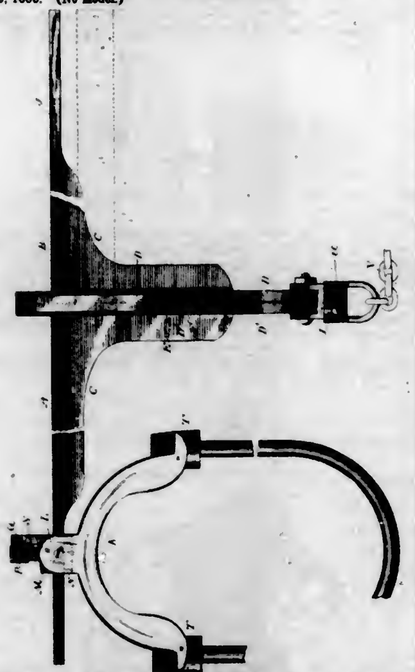


and adjusting-screw at the other end, substantially as shown and described.

2. The combination, in an electric lighter, of two movable electrodes, one of which is attached to an armature, the other being swiveled on an insulated collar and having a spring for imparting movement and a stop for limiting such movement, whereby said electrodes move together and slide upon each other, their separation being effected by the armature-electrode moving farther than the collar-electrode, substantially as and for the purpose set forth.

3. In an electric gas-lighter, the combination, with a burner, of a magnet, its armature, and two movable electrodes, one of said electrodes being attached to and moving with the armature, the other electrode being pivotally secured on an insulated collar attached to the burner, the armature having a retracting-spring and the pivoted electrode having a spring or equivalent means for moving it and a stop for limiting its movement, said electrodes being normally in contact, but moving together when the magnet is energized, the armature-electrode then moving farther than and away from the pivoted electrode, substantially as shown and described.

331,631. OX-YOKE. WILLIAM H. GIBBENS, Watson, N. Y. Filed June 9, 1885. (No model.)



Claim.—1. A double ox-yoke having the yoke-connecting beam formed in two parts and pivotally connected together.

2. In an ox-yoke, a two-part yoke-beam having flanged inner ends pivotally connected together, and having stops to limit the oscillatory movement of the two members of the beam.

3. An ox-yoke having a yoke-beam provided with slots or holes in its outer ends, bows each having upwardly-extending ears, and a transversely and vertically slotted block pivotally connected to said ears to receive the ends of the beam and permit of the independent sidewise movement of the bows, and suitable means for connecting the slotted block and bow-beam.

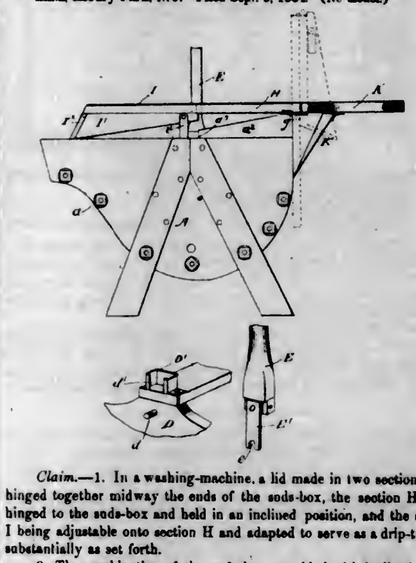
4. In an ox-yoke, a yoke-connecting beam having a rearwardly-extending portion and a chain pivotally connected thereto for connecting the same to the draft-pole, substantially as and for the purpose set forth.

331,632. POLISHING COMPOSITION. HARRY L. HAAR, New York, N. Y., assignor to the Zacker & Levett Chemical Company, same place. Filed Oct. 24, 1884. (No specimens.)

Claim.—1. A polishing composition consisting of a base or vehicle of tar, in combination with suitable polishing materials, substantially as described.

2. A polishing composition consisting of a base or vehicle of tar, in combination with fatty substances and polishing materials, substantially as described.

331,633. WASHING-MACHINE. GEORGE F. HALL and GEORGE M. LANE, Asbury Park, N. J. Filed Sept. 5, 1884. (No model.)



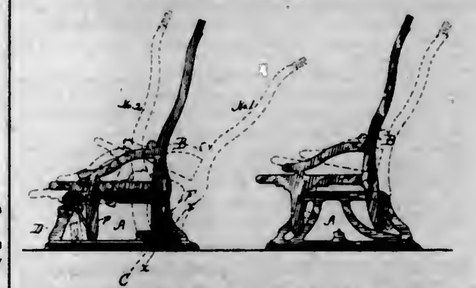
Claim.—1. In a washing-machine, a lid made in two sections, H I, hinged together midway the ends of the suds-box, the section H being hinged to the suds-box and held in an inclined position, and the section I being adjustable onto section H and adapted to serve as a drip-trough, substantially as set forth.

2. The combination of the suds-box provided with inclined extensions a^2, the lid-section H, hinged at one end to the suds-box at the outer end of the extension *a'*, the section I, hinged at its inner end to the inner end of section H, and provided with depending sides having inclined edges, and button *i*, substantially as set forth.

3. The combination of the suds-box, the lid composed of section H, hinged at its outer end to the suds-box, and the section I, hinged at its inner edge to the inner edge of section H, the button *i*, and the board K, hinged to the outer end of section H and provided with a brace, K', substantially as set forth.

4. The combination, with the rubber having a socket, D', and trunnion *d*, of the handle formed at its end to fit in said mortise and having a depending plate, E', on its outer side slotted in its extremity at *e* and fitted over the trunnion, substantially as set forth.

331,634. CHAIR. GEORGE F. HALL and GEORGE M. LANE, Asbury Park, N. J. Filed Dec. 12, 1884. (No model.)



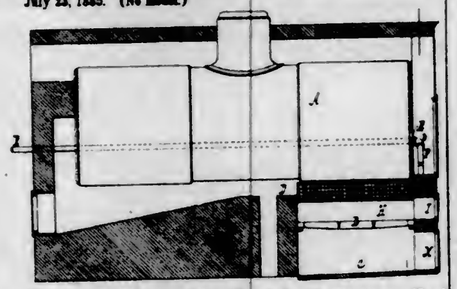
Claim.—1. An easy-chair consisting of the following elements in combination: a base provided with grooves at one end and hangers at its opposite end, a chair having lateral projections at one end to enter said grooves in the base, its other end being pivotally connected to the free ends of the hangers, substantially as and for the purposes described.

2. In an easy-chair, the combination of a base provided with grooves at one end, and hangers pivotally connected to its other end, with a chair having legs, lateral projections extending from a pair of legs and provided with anti-friction rollers to enter the grooves in the

base, the other pair of legs being pivotally connected with the free ends of the hangers, substantially as set forth.

3. The combination, with the base having grooves C, the hangers F, and the chair proper, of the retracting-spring H, secured at one end to the base and at its other end to the chair proper, all arranged and operating substantially as and for the purposes specified.

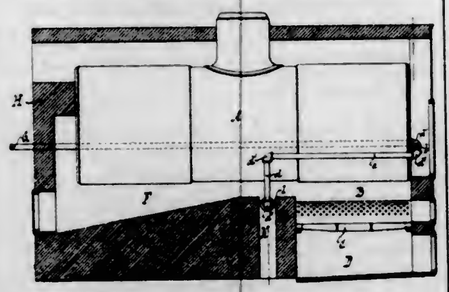
331,635. BOILER-FURNACE. JOHN HAM, New York, N. Y. Filed July 23, 1885. (No model.)



Claim.—1. The combination, with a boiler, A, and furnace H, of air-distributers G, consisting of perforated boxes or cases located at the sides of the furnace, in front of the bridge-wall, air-pipes E, extended through the boiler, and connections between the air-pipes and air-distributers, substantially as described.

2. The combination, with a boiler, A, and furnace H, of air-pipes E, extended through said boiler, air-distributers G, located at the sides of the furnace, in front of the bridge-wall, and pipes F, having elbows *b c*, for connecting said air pipes and distributers, substantially as described.

331,636. STEAM-BOILER FURNACE. JOHN HAM, New York, N. Y. Filed Nov. 13, 1884. Renewed Oct. 10, 1885. (No model.)



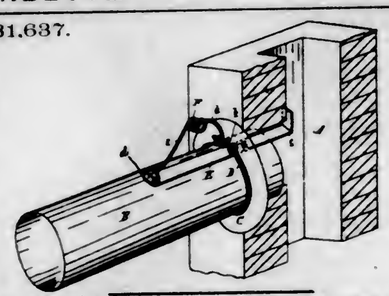
Claim.—1. The combination of the fire-chamber B, the combustion-chamber F, and the bridge-wall E, with the boiler A, the transverse foraminous air-distributer I, arranged in rear of the bridge-wall, the air-flue G, passing longitudinally through the boiler, and pipes *b*, *c*, and *d*, connecting the end of the air-flue which is at the front end of the boiler with the air-distributer, said pipes being subject to heat from the fire-chamber, to constitute a supplementary heater to the air-flue in the boiler, substantially as described.

2. The combination of the fire-chamber B, the combustion-chamber F, and the bridge-wall E, arranged in relation to the bottom wall L, of the combustion-chamber to form the clear space K, with the boiler A, the air-flue G, extending longitudinally through the boiler, the foraminous air distributer I, arranged in said clear space with its upper side approximately on a line with the tops of the bottom L and bridge E, and a pipe-connection subject to direct heat from the fire-chamber and connecting the end of the air-flue which is at the front end of the boiler with the air-distributer, substantially as described.

331,637. STOVE-PIPE ATTACHMENT. CLARENCE J. HAMILTON, Plymouth, Mich., assignor of one-half to WM. O. ALLEN, same place. Filed Apr. 29, 1885. (No model.)

Claim.—In combination with a stove-pipe, a substantially-circular band embracing such pipe, a bolt securing the two ends thereof together, and a metallic strap bent at one end to engage with the chimney-breast, and carrying at its other end a lever formed of spring-wire having a coiled spring near its center, and terminating in a hook to engage with the bolt which secures the two ends of the circular band together, substantially as described.

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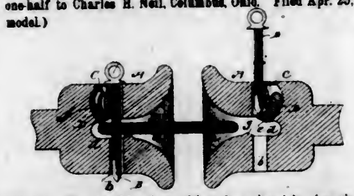
331,638. EAR-RING. GEORGE M. HATHAWAY, New York, assignor of one-half to Charles D. Shepard, Mamaroneck, N. Y. Filed June 29, 1885. (No model.)



Claim.—1. In pendent jewelry, a pin and elongated socket connection for suspending the drop or jewel, substantially as described.

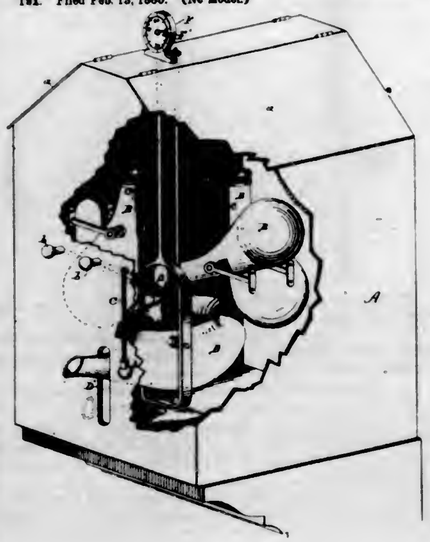
2. In pendent jewelry, the combination of the split ring attached to the ear-loop and provided with an elongated socket, and the ring attached to the drop or pendant and provided with a pin or stud, substantially as shown and described.

331,639. CAR-COUPLING. JOSEPH HIRN, Chillicothe, assignor of one-half to Charles H. Neil, Columbus, Ohio. Filed Apr. 25, 1885. (No model.)



Claim.—The combination, with a draw-head having the usual link and pin openings, and the opening C, smaller at its lower than at its upper end and located in the upper inner side of the draw-head, of a latch located in said opening, said latch being slightly curved and larger at its upper than at its lower end and located in the opening C, and adapted to support the coupling-pin upon its lower end, substantially as set forth.

331,640. WEIGHING APPARATUS. WILLIAM F. IRVINE, Lampasas Tex. Filed Feb. 13, 1885. (No model.)

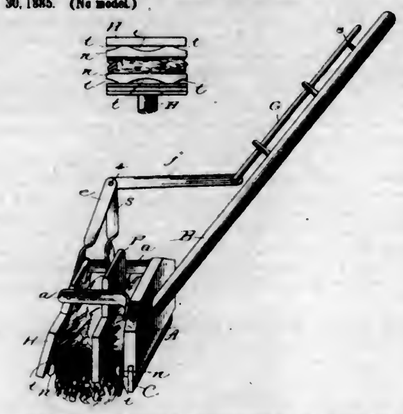


Claim.—1. The combination, with a weighing-pan, D, of the series of independent shot-holders B, pivoted and suspended normally vertical and arranged around said pan, as shown and described, whereby any one of them may be tilted and its contents discharged into the pan, as specified.

2. The combination, with the box A, having a slot, of the weighing device proper, and an indicating attachment located on the top of the box, the rod E, pendent from said device, and a pan, D, pivoted to the lower end of the rod and projecting through the slot, all as shown and described, to operate as specified.

3. An improved apparatus for containing and weighing shot and powder, the same consisting of the box A, slotted as specified, the pivoted bottles B and connecting-cords and knobs, the pan D, pivoted and projecting through the slot, the weighing device proper, and indicator located on top of the box, and having a rod pendent from it and supporting the said pan, as shown and described.

331,641. FLOOR-MOP. GEORGE A. KEENE, Lynn, Mass. Filed Apr. 30, 1885. (No model.)



Claim.—1. In a floor-mop, the combination of a fixed jaw provided with a handle, a pivoted jaw, and suitable operating-rods to move the said jaw toward and from the fixed jaw, a mop-rag composed of sponge or other flexible material, and a supporting-block therefor suspended between the two jaws, substantially as described.

2. In a floor-mop, the combination of a fixed jaw provided with a handle, a pivoted jaw, operating-rods for moving said jaw to or from the fixed jaw, a mop-rag composed of sponge or other flexible material, a supporting-block therefor suspended between the two jaws, and a locking device, substantially as described, for holding the movable jaw in an open or closed position, substantially as described.

3. In a floor-mop, the combination, with the jaws thereof, of a scraper secured to one of the jaws and projecting below the edge of the same, the mop-rag or sponge, the supporting-block therefor, and operating-rods adapted to move the mop within the edges of the jaws, whereby the scraper is permitted to come into action, substantially as described.

4. In a mop, the combination of the jaws H and A, an intermediate mop-rag, and the cleats or strips *n n*, all substantially as described.

5. In a mop, and in combination, the jaws H A and intermediate mop-rag, K, said jaws being provided with the cleats or strips *n n*, and having the openings *t* for the escape of water, substantially as described.

6. A floor-mop composed, essentially, of the handle B, the block A, having extensions *a a*, the block H, pivoted to swing in said extensions, the intermediate mop-rag, K, and operating-rods for opening and closing he movable jaw H, substantially as described and shown.

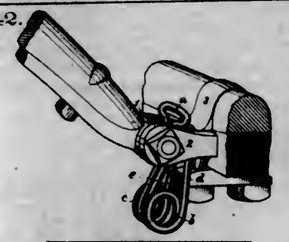
7. In a mop of substantially the construction described, the combination of handle B, the block A, secured to said handle and provided with extension-frame *a a*, the block H, pivoted to swing in said extension, and provided with the upwardly-extended arm *e*, said arm being jointed to a rod, *f*, a rod, G, connecting with the rod *f*, and extended along the handle B, and the mop-rag K, attached to a supporting-block, P, and suspended by arm *s* from the toggle-joint 4, all substantially as described.

331,642. THILL-COUPLING. DANIEL E. KEMPSTER, Boston, Mass. Filed Sept. 21, 1885. (No model.)

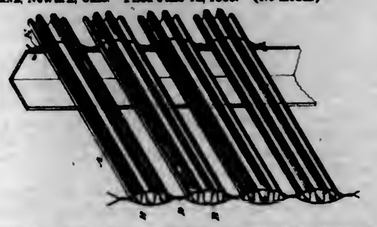
Claim.—1. The anti-rattling thill-spring composed of a single piece of wire bent near its center to form a T-head, bight, or loop, *a*, and having short coils *b* and *c* and the extending ends *d* and *e*, substantially as and for the purpose set forth.

2. The anti-rattling shaft-holding coiled-wire spring provided with a T-head, substantially as described.

331,642.



331,643. FIRE-PROOF LATHING. LOUIS LANE and WILLIAM H. LANE, Newark, Ohio. Filed June 12, 1885. (No model.)



Claim.—A sheet of metallic lathing composed of strips of sheet metal woven together by wire-warp strands, which are twisted together where they cross, substantially as before set forth.

331,644. GEAR FOR TRICYCLES. ADRIAN C. LATTA, Friendship, N. Y. Filed Feb. 19, 1885. (No model.)

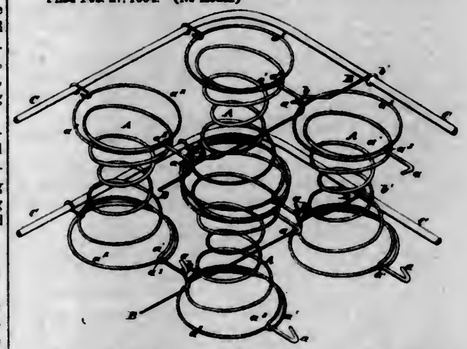


Claim.—1. The combination, with the portions A A' of the axle, of an inclosing tubular portion, a driving wheel or pulley secured to said tubular portion, a frame, F, also secured to said tubular portion, pinions G G', journaled in said frame, and gear-wheels B B', secured to the axle portions A A', substantially as set forth.

2. In a differential gear for tricycles, the combination, with the tubular casings C^3, of the frame F, provided with wings *f*, seated in said casing, and pinions G G', journaled in said frame, substantially as set forth.

3. The combination, with the axle portions A A', provided with gear-wheels B B', of the tubular casing C^3, inclosing the wheels B B', and provided with a support for the same, a frame, F, secured to said tubular casing, and pinions G G', journaled in said frame, substantially as set forth.

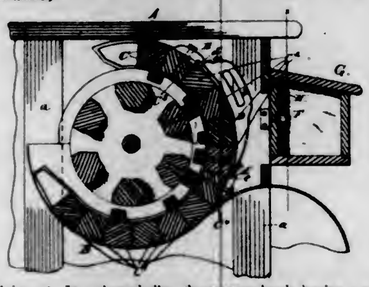
331,645. SPRING BED-BOTTOM. PETER H. MELLON, St. Louis, Mo. Filed Feb. 27, 1884. (No model.)



Claim.—In a bed-bottom of springs, the combination, with a row of springs and a tie-rod formed with loops projecting through their outer rings, of another row of springs having ends projecting at right angles

thereto, and formed with hooks at their extremities engaging the loops independent of the loop-rings, the hooks and loops forming hinge-connections intermediate of the rows of springs, substantially as set forth.

331,646. CLOVER-HULLER. Abraham Hiller, Newark, assignor to the Newark Machine Company, Columbus, Ohio. Filed July 24, 1885. (No model.)



Claim.—1. In a clover-huller, the concave heads having a portion of their outer flanges cut away to allow the insertion of the upper and lower staves, combined with a removable panel having staves corresponding to such cut-away portion, as set forth.

2. The heads B, having inner flanges, b^2, and outer flanges, b, cut away at b', the said sides being beveled from the flange b^2 outward beyond the cut-away portion, as set forth.

3. In a concave of a clover-huller, the heads B, having slots b^4, combined with a stave, C^2, having a longitudinal slot and a tie-rod, c, a removable panel, and one or more separately-removable staves, as and for the purpose specified.

4. In a clover-huller, a concave consisting of upper and lower staves, two or more staves formed into a separate removable panel, and means for securing the said removable panel in place, as set forth.

5. In a clover-huller, the combination of upper and lower staves with two or more staves formed into a panel, plates D, having projections d', and buttons, as E, having recesses e, as set forth.

6. In a clover-huller, the combination, with the upper and lower staves of the concave, of a removable panel consisting of a number of staves, metal plates secured to said staves and having handles, and buttons, as E, for locking said panel in place, as specified.

7. In a lower concave, the combination of the heads or sides B with cut-away flanges, the staves C^2 C^4, locking tie-rod c, removable panel and sliding buttons arranged on said staves C^2 C^4 for locking said panel in place, as set forth.

8. The concave described, comprising heads or sides B, with cut-away flanges b b', the staves C C', held by the flanges b b', the removable panel formed by the staves (C^2, and plates D, with lugs d', and the buttons E, with recesses e, as set forth.

9. The combination, with the lower cylinder and concave and the casing of a clover-huller having an open space opposite such concave, of a removable tool-box adapted, when in position, to cover said space, as set forth.

10. The combination, with the frame having lugs or pins, as F, of a removable tool-box, G, having slotted plates H, as set forth.

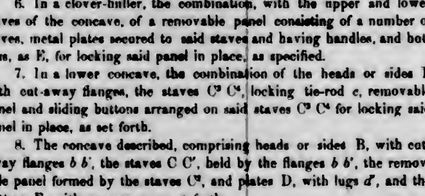
11. The combination, with the removable tool-box G and lugs F, of pivoted plates H, having curved slots h^3, and set-bolts h^2, as and for the purpose set forth.

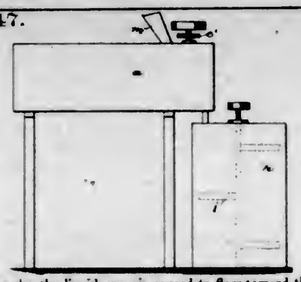
12. In a clover-huller, the combination, with the upper and lower staves of the concave, of a removable panel, plates secured to said panel and having handles, and means for securing said removable panel in place, as and for the purpose set forth.

13. In a clover-huller, the combination, with two or more separately-removable staves, of a removable panel formed of two or more staves rigidly secured together, and means for securing said removable panel in place, as set forth.

331,647. APPARATUS FOR MAKING PASTE. Olden Nichols, Boston, Mass. Filed June 9, 1884. (No model.)

Claim.—1. The combination, with a tank or receptacle and revolving stirrers or agitators therein adapted to rotate toward each other, of independent stationary guides co-operating with the said stirrers, as described, whereby the liquid mass is caused to flow toward the stirrers at one point and outward therefrom at another point, producing a constant circulation of the fluid, substantially as and for the purpose set forth.

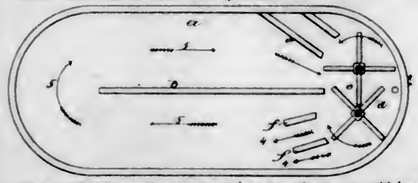




2. The tank and rotating stirrers at one end thereof arranged on vertical shafts and adapted to rotate toward each other, combined with a longitudinal partition, with one end near to and in a line drawn about midway between the spindles of the stirrers, and guides fixed to and extending obliquely from the side walls of the tank toward the stirrers at one side of the partition, to resist the outward flow of the material from the stirrers, said guides and partition together forming a throat leading to the said stirrers, through which the material passes to be repeatedly acted upon by the stirrers, substantially as described.

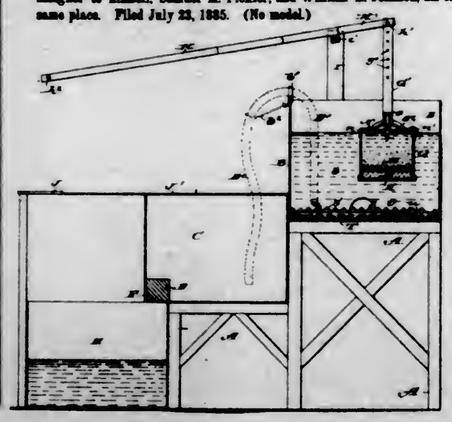
3. The elongated tank, and rotating stirrers at one end thereof arranged on vertical shafts and adapted to rotate toward each other, combined with a longitudinal partition, with one end near to and in a line drawn about midway between the spindles of the stirrers, and guides e, fixed to and extending obliquely from the side walls of the tank toward the stirrers at one side of the partition, and other guides, f, attached to the bottom of the tank, between the side walls of the tank and the partition at the other side thereof, substantially as and for the purpose specified.

331,648. METHOD OF MAKING PASTE. Olden Nichols, Boston, Mass. Filed June 15, 1885. (No specimens.)



Claim.—The herein-described method of making paste, which consists in mixing the flour and other ingredients with water, thoroughly commingling the same by establishing counter-currents in the water, whereby the particles of flour and other ingredients contained therein and set in motion in opposite directions are caused to beat and rub against each other, thus thoroughly triturating the same and producing a mixture the particles of which are so finely divided that the entire glutinous properties are brought into contact with the liquid solvent, producing a mixture of uniform consistency free from lumps, and thereafter cooking the said mixture, substantially as described.

331,649. GOLD-SEPARATOR. Samuel C. Oliphant, Novinger, Mo., assignor to himself, Samuel M. Pickler, and William H. Johnson, all of same place. Filed July 23, 1885. (No model.)



Claim.—1. A gold-separator comprising a water-tank, a plunger-sieve operated therein, double filtering-tanks, and receivers for the filtered water, substantially as herein set forth.

2. A gold-separator comprising a water-tank, B, a plunger, G, operated therein, tanks C' C^3, provided with filters D, and receivers E for the filtered water, substantially as herein set forth.

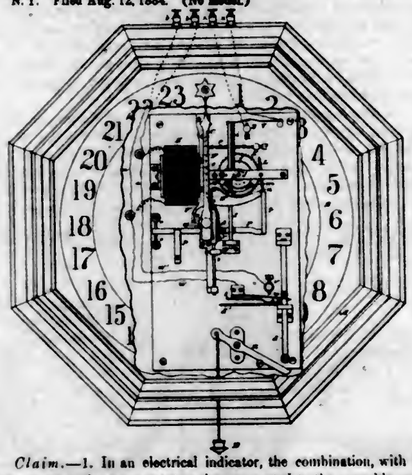
3. In a gold-separator, the combination, with a water-tank and a plunger-sieve operated therein, of a cover applied to the plunger and provided with an outlet for the air from the interior of the plunger, substantially as herein set forth.

4. In a gold-separator, the combination, with a water-tank and a plunger-sieve operated therein, of a flexible cover applied to the plunger and provided with an outlet for the air from the interior of the plunger, substantially as herein set forth.

5. In a gold-separator, the combination, with a water-tank and a plunger-sieve operated therein, of a flexible cover, N, applied to the plunger, and provided with a float-chamber, R, and an outlet for the air from the interior of the plunger, substantially as herein set forth.

6. In a gold-separator, the combination, with the plunger G, the jigger-arm H, and the plunger-hangers G', of the bars g^3, provided with series of holes g^3, and the pins or screws g^4, substantially as herein set forth.

331,650. ELECTRICAL INDICATOR. Chester H. Pond, Brooklyn, N. Y. Filed Aug. 12, 1884. (No model.)



Claim.—1. In an electrical indicator, the combination, with the electro-magnet, the escapement-anchor connected to the movable member thereof and vibrated thereby, and the escapement wheel, of a locking device, substantially as described, operating independently of the magnet and adapted to act upon the cessation of the operation of the escapement and engage and lock the escapement-anchor, thereby preventing further vibration thereof and further advance of the indicating mechanism after the latter has reached the proper character, and rendering impotent any further excitation of the magnet, substantially as specified.

2. In an electrical indicator, the combination, with the electro-magnet, the escapement-anchor connected to the movable member thereof and vibrated thereby, and the escapement-wheel, of a projection on said anchor, a movable locking-tooth adapted to be moved into the path of said projection on either side thereof, according to the position of the anchor, and suitable locking mechanism, substantially as specified, independent of the electro-magnet, for so moving the locking-tooth upon the completion of the operation of the escapement, and thereby locking the anchor and preventing any further advance of the indicating mechanism, as set forth.

3. In an electrical indicator, the combination of the electro-magnet, the escapement-anchor vibrated thereby, the escapement-wheel, a projection on said anchor, a locking-tooth adapted to be moved into the path of said projection, a locking-lever bearing said tooth, a follower adapted to be released by the movement of the escapement and to follow the indicating mechanism and overtake the same after its final stoppage, and means interposed between said follower and locking-lever whereby upon the stoppage of the former the latter shall be moved with its locking-tooth engaging and locking the escapement-anchor, substantially as set forth.

4. The combination of magnet E, armature e, anchor F', having projection d, escapement-wheel G, rack H, its arm H', the follower I, wedge M thereon, locking-lever P, having arm q, and locking-tooth r, mounted on said lever opposite the mid-stroke of projection d, and adapted when the lever is moved to enter the path of said projection and so lock the anchor, substantially as set forth.

5. The combination of magnet E, armature e, anchor F', escapement-wheel G, rack H, its arm H', and a locking mechanism, substantially as described, adapted to be operated by the deflection of said arm, with a follower, I, adapted to descend after the rack H, and a wedge, M, on said follower, adapted to enter against and deflect the arm H', and thereby lock the indicating mechanism, substantially as set forth.

6. In an electrical indicator, the combination, with the magnet E, the escapement-anchor F', the escapement-wheel G, and the rack H, having a projecting arm, H', of a follower, I, a rapidly-revolving fan, L, geared to said follower and adapted to control its descent, and a projection on the arm H', adapted when it is elevated to intercept said fan and prevent its rotation, and thereby uphold the follower, substantially as set forth.

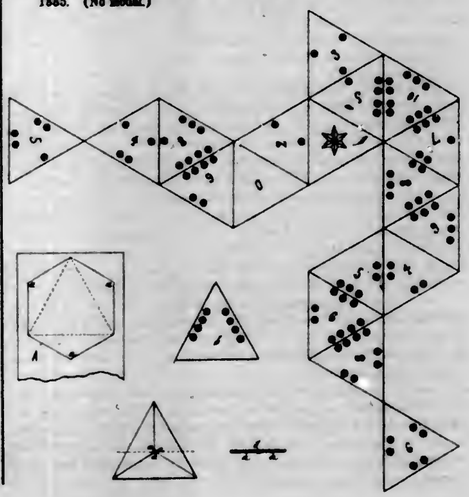
7. In an electrical indicator, the combination, with the follower I and fan L, geared to it, of the circuit-closing spring V, upheld by said follower when the latter is elevated, and the contact-screw y, adapted to receive said spring when dropped by the descent of the follower, substantially as set forth.

331,651. HANDLE-CAP FASTENING FOR HAND-BAG FRAMES. Louis B. Prahar, Brooklyn, N. Y., assignor to himself and Charles S. Shepard, same place. Filed Oct. 10, 1885. (No model.)



Claim.—The combination, with a hand-bag frame, A, and the handle-caps E, having perforations in their opposite sides, of the pairs of posts B, rigidly attached to the said frame, and having their upper ends bent inward and inserted in the perforations of the said handle-caps, substantially as herein shown and described, whereby the said handle-caps will be securely hinged to the said frame, as set forth.

331,652. DOMINO. Frank H. Richards, Troy, N. Y. Filed June 13, 1885. (No model.)



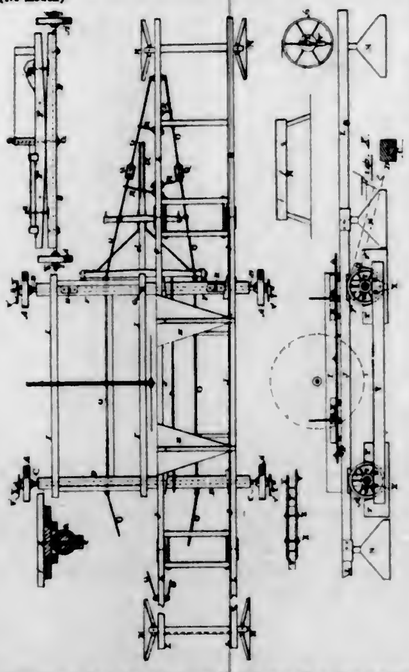
Claim.—1. The herein-described domino, made of sheet material, having the notations punched through or indented in the face, and having the projecting triangular margins of the six-sided blank bent back and down, as described, to cover the back of the domino, substantially as shown and described.

2. In a domino, the back formed of the projecting triangular margins of the six-sided blank bent and having their points turned outwardly, as described, so as to form the central pivot, substantially as and for the purposes set forth.

3. The herein-described set of triangular dominoes, having the dots upon the edges in each piece disposed and arranged as described, so that the set shall include all the possible dissimilar combinations of blanks and dots, as indicated in Figs. 6 and 7, for the purposes set forth.

4. The herein-described set of triangular dominoes, having the dots upon the edges in each piece disposed and arranged as described, so that the set shall include all the possible dissimilar combinations of blanks and dots, as indicated in Figs. 6 and 7, and having a number or figure marked upon each piece representing the sum total of all the dots thereon, substantially as and for the purposes set forth.

331,653. PORTABLE SAW-MILL. JAMES N. RICKEY, Waynesborough, Pa., assignor to the Frick Company, same place. Filed Sept. 2, 1885. (No model.)



Claim.—1. In a portable saw-mill, the rear sill or axle provided with wheels, the front axle, also provided with wheels, the front sill, which is adjustably secured upon the top of the front axle, the husk and ways which are placed upon the tops of the two sills and connect them together the saw which is journaled upon the husk, and the carriage which moves back and forth upon the ways, substantially as shown.

2. In a portable saw-mill, the combination of the rear sill and axle, combined together so as to form practically one piece, and provided with wheels, the front axle, the front sill, which is adjustably secured upon the front axle, the husk and ways which are placed upon the tops of the wheels and connect them together, the saw, and the carriage which moves back and forth upon the ways, substantially as described.

3. In a portable saw-mill, the combination of the rear sill or axle provided with wheels, the front axle, the front sill, adjustably secured thereon, the husk, the ways, tie-rods which secure the two sills together, the saw, and the carriage which moves back and forth upon the ways, substantially as set forth.

4. The combination of the front axle provided with wheels, the front sill adjustably secured thereto, and devices for passing through the sill and securing it rigidly in position in a line with the front axle while the mill is in operation, with the husk and ways, the rear axle provided with wheels, the saw, and the carriage which moves back and forth upon the ways, substantially as specified.

5. The combination of the rear sill or axle, the front axle, the front sill which is adjustably mounted thereon, the husk and ways which connect the two sills together, the saw, and the carriage, with the movable parts of the ways which are mounted upon supports and then secured rigidly in position in line with the stationary part of the ways by means of tie-rods which extend from the ends of the husk and ways, and which are fastened at one end to opposite sides of one of the tracks, substantially as shown.

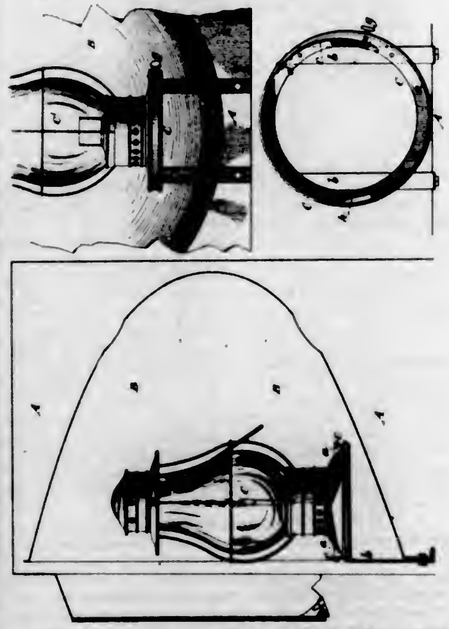
6. The combination of the rear sill or axle, the front axle, the front sill movably secured thereon, the husk and ways which connect the two sills rigidly together, the saw, and the carriage, with the movable portions of the ways, the tie-rods provided with swivels, the adjusting-rods which are passed through one of the ways and connect with the tie-rods, and suitable supports for the movable parts of the ways, substantially as described.

7. In a portable saw-mill, the combination of the rear sill or axle provided with wheels, the front axle, also provided with wheels, the front sill which is adjustably secured upon the front axle, the husk and ways which connect the two sills together, the saw, and the carriage which moves back and forth on the ways, with the recessed blocks or frames which are placed under the wheels, the planks which are applied to the blocks and connect them together, and the bolts which secure the blocks and plank together, substantially as set forth.

8. The combination, in a saw-mill, of the two triangular frames of the head-block, placed upon the ways and provided with suitable wheels or rollers for moving on the ways, the pipe which connects the two frames of the head-block together, the rod placed inside of the pipe, and the teeth which are formed upon or secured to the under side of the pipe, and a means for moving the carriage back and forth by means of the pipe, substantially as specified.

9. The combination, in a portable saw-mill, of the rear sill or axle, the front sill, wheels which are applied to the axles, the husk, saw, ways, and carriage which moves back and forth on the ways, with clamping devices which are applied to the wheels so as to lock them rigidly to their axles, and thus prevent the frame of the saw-mill from swaying laterally while the mill is in operation, substantially as described.

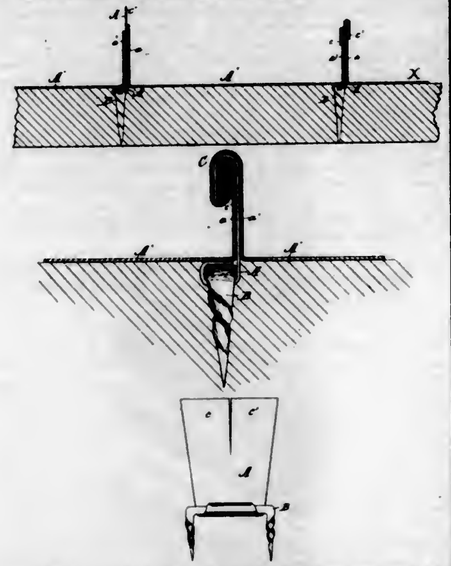
331,654. LOCOMOTIVE HEAD-LIGHT. GEORGE M. D. RILEY, Savannah, Ga. Filed Nov. 19, 1884. (No model.)



Claim.—1. In combination with a locomotive head-light, a clamping-ring secured to the head-light case or reflector and extending upward within the reflector and adapted to receive and clamp the lower end of an ordinary lamp or lantern, substantially as set forth.

2. In combination with a locomotive head-light, a ring or clamp secured to the head-light case or reflector and extending upward within the reflector, provided with lamp or lantern clamping devices and means for preventing vertical movement of the lamp or lantern, substantially as set forth.

331,655. TIN-ROOF CLEAT. WARREN C. ROCKWELL, Mount Carmel, assignor to himself and Ludlum B. Rockwell and Francis S. Rockwell, Sunbury, Pa. Filed May 7, 1885. (No model.)



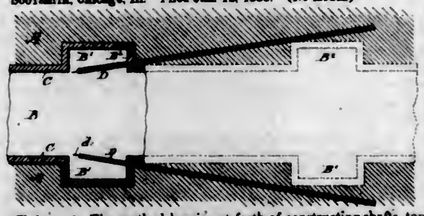
Claim.—1. A cleat for sheet-metal roof-seams, consisting of a staple having a square or right-angular middle portion and a sheet-metal strip having one end folded around said staple, substantially as described.

2. A cleat for sheet-metal roof-seams, consisting of a staple having a square or right-angular middle part and a sheet-metal strip, having one end folded around the middle part of the staple and the other end made wider and slitted, as described.

3. A sheet-metal roof consisting of strips of sheet metal having upturned adjacent flanges combined with a sheet-metal cleat arranged between the upturned flanges and folded therewith into a seam, the said cleat having its lower end folded around a square staple arranged below the roof and driven into the sheathing, substantially as and for the purpose described.

4. A sheet-metal roof consisting of strips of sheet metal having upturned adjacent flanges combined with a sheet-metal cleat made widest at its upper end and slitted and bent in reverse direction over the flanges, and a staple folded in the lower end beneath the roof and driven into the sheathing, the said cleat and sheet-metal flanges being turned over to form a seam, as described.

331,656. METHOD OF TUNNELING AND SINKING SHAFTS. C. SOOTHSMITH, Chicago, Ill. Filed Jan. 12, 1885. (No model.)

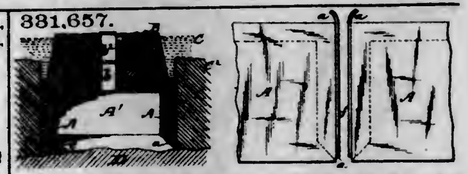


Claim.—1. The method herein set forth of constructing shafts, tunnels, and similar earth-works, which consists in freezing the earth adjacent to the proposed excavation, forming offsets in said excavation, and again inserting pipes in the adjacent earth from said offsets, and freezing as before for farther excavation, and so on substantially as specified.

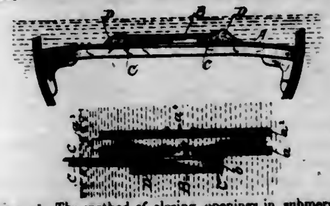
2. The method herein set forth of excavating earth-works, which consists in freezing the earth adjacent to said excavation, forming offsets in said excavation, and disposing freezing-pipes from said offsets diagonally into the earth adjacent to the proposed extension of the excavation, and freezing and excavating as before, substantially as specified.

331,657. METHOD OF BUILDING TUNNELS. CHARLES SOOTHSMITH, Chicago, Ill. Filed Jan. 17, 1885. (No model.)

Claim.—The method of uniting caisson-sections to each other or to the ground, which consists in placing the said caissons in positions, arranging in or adjacent to the joint a circulating-pipe, packing the joint with clay or any suitable lute, and circulating a freezing-mixture through the pipe, substantially as and for the purpose described.



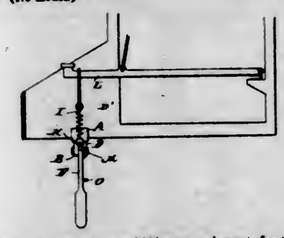
331,658. METHOD OF CLOSING SPACES BETWEEN SUBMERGED BODIES. CHARLES SOOTHSMITH, Chicago, Ill. Filed Aug. 11, 1885. (No model.)



Claim.—1. The method of closing openings in submerged bodies and raising them, which consists in applying a covering-body near the opening, luting the space between said bodies and said covering with clay or any suitable lute, inclosing a pipe in said lute, and circulating a freezing-mixture therethrough, then exhausting the water and admitting air in said bodies, substantially as and for the purpose described.

2. The method of uniting a covering-body to a submerged body, which consists in placing freezing-pipes between said covering and body, packing luting-clay around said pipes, so that the lute will be in contact with both bodies, and passing a current of a freezing medium through said pipes, whereby the packed clay is made to adhere by congelation to both of the submerged bodies, substantially as and for the purpose described.

331,659. PLATEN-SHIFTING ATTACHMENT FOR TYPE-WRITING MACHINES. CHARLES S. SOUTHWORTH, Deep River, Conn. Filed Jan. 31, 1885. (No model.)



Claim.—1. In a platen-shifting attachment for type-writers, the combination, with the platen-shifting key, of the lever with its arms frictionally pivoted to each other at their meeting ends, substantially as described, to permit one arm to stand at a right angle to the other, and to yield or move out of said position as it is unduly acted upon in depressing the platen-shifting key, the other arm of said lever having spring-connection with the platen-shifting key, whereby is prevented the accidental breaking or derangement of the aforesaid parts, substantially as set forth.

2. In a platen-shifting attachment for type-writers, the combination, with the spring connected to the platen-shifting key, of the lever having its pivoted arms frictionally connected by an interposed washer, and binding screw and sleeve, substantially as and for the purpose set forth.

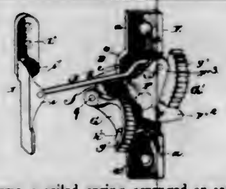
3. The combination, with a type-writer frame, of the elbow-lever held on the same and provided with a joint at the angle, and a spring connecting it with the free end of the platen-shifting key or lever, substantially as herein shown and described.

331,660. SASH-HOLDER. CHARLES A. SPRAGUE, Minneapolis, Minn. Filed Aug. 18, 1885. (No model.)

Claim.—1. In a sash-lock, the combination, with a window-frame, of a supporting-plate mounted in said frame, holding-dogs pivoted to said plate, springs secured to the plate for actuating said dogs, a cam-plate pivoted to the supporting-plate and having arms arranged to bear on the dogs, a lever pivoted to the window-frame, and a link connecting said lever and the cam-plate, as set forth.

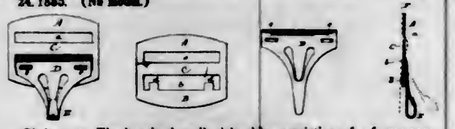
2. The combination, with a recessed supporting-plate having rearwardly-extending arms, dogs G, pivoted on a common pin or shaft

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mounted in said arms, a coiled spring arranged on said shaft and having bent arms adapted to bear on the pivoted dogs, a cam-plate pivoted to the supporting-plate, and a lever pivoted to the window-frame and connected to the cam-plate, substantially as described.

331,661. SUSPENDER-BUCKLE. James Spruce, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Aug. 24, 1885. (No model.)



Claim.—1. The herein-described buckle, consisting of a frame composed of three or more parallel bars, A B C, in the same plane and connected at their ends, forming parallel slots *a b*, combined with a lever, D, hinged to the bar B by tongues on the one and pintles on the other, the said tongues and pintles being within the length of the slot *b*, substantially as described.

2. The buckle-frame consisting of the parallel bars A B C, connected at their ends and in the same plane, and so as to form slots *a b*, the bar B constructed with tongues on its upper edge extending into the slot *b*, combined with the tongue D, constructed with pintles *e e*, depressed from the surface of the tongue below its clasping-edge, the said tongues on the bar B bent around the depressed pintles *e e*, to form hinges for the lever, substantially as described.

331,662. EGG-BEATER. George H. Thomas, Chicopee Falls, Mass. Filed May 2, 1885. (No model.)



Claim.—1. An egg-beater having a suitable frame and hand-grasp, operative mechanism journaled within said frame, and horizontally-coiled wire dashers connected to said operative mechanism and adapted to alternately reciprocate vertically, substantially as set forth.

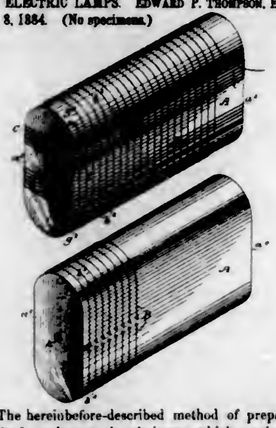
2. An egg-beater having a handle or frame provided with a hand-grasp and having at its lower end a depending rod, one or more disks journaled in said frame, suitable operative mechanism journaled in said frame and adapted to engage with and rotate said disks, and one or more dashers loosely connected to the rod depending from the frame and having eccentric connection with the disks, substantially as and for the purpose set forth.

3. An egg-beater having a frame or handle, suitable operating mechanism mounted thereon, one or more disks or wheels mounted in said frame and connected with said operative mechanism, and one or more coiled-wire dashers eccentrically connected with the disk or disks.

4. An egg-beater frame or handle having an outwardly-extending shaft or arm, one or more disks or wheels pivotally mounted upon said frame, suitable gearing connected with and adapted to rotate said disks or wheels, horizontally-coiled wire dashers having eccentric connection with said disks and adapted to reciprocate upon the shaft or arm, substantially as and for the purpose set forth.

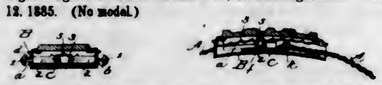
5. An egg-beater having mounted thereon disks and suitable mechanism for rotating the same, an outwardly-extending shaft or rod, horizontally-coiled wire dashers of unequal circumference, to permit of the smaller dasher reciprocating through the larger, each dasher having a rod or wire connecting with said disk and adapted to slide along the shaft upon the rotation of said disks and vertically reciprocate the dashers, substantially as set forth.

331,663. METHOD OF CARBONIZING FILAMENTS FOR INCANDESCENT ELECTRIC LAMPS. Edward P. Thompson, Elizabeth, N. J. Filed Apr. 8, 1884. (No specimens.)



Claim.—The hereinbefore-described method of preparing carbonized filaments for incandescent electric lamps, which consists in winding the filaments upon a block of carbon or other refractory material having an oval or approximately oval cross-section, holding the said filaments to said form by winding a ligature about the same at right angles to the filaments, severing the filaments at one or more points, inclosing the whole within a crucible or kiln, and subjecting the same to heat, substantially as described.

331,664. BRACELET-CLASP. Warren E. Willis, North Attleborough, assignor to Thomas Totten & Co., Attleborough, Mass. Filed June 12, 1885. (No model.)



Claim.—1. A center-piece of a bracelet composed of fixed parts having a cavity or chamber and slotted sides, combined with a sliding carriage combined with lateral moving slides and pins projecting through the slotted sides for operating the locking devices, and also combined with a bracelet-band permanently connected to the center-piece at one end, and detachably connected to the slide at the other end, all substantially as described.

2. In combination with a center-piece of a bracelet, having a sliding carriage, and means for moving and locking said carriage-plate, a slotted tube on the free end of the bracelet-band, all substantially as described.

3. In combination with the center-piece of a bracelet, a central longitudinal spring rack-bar, a longitudinally-sliding carriage having a stop-catch and laterally-moving pins, and slides adapted to raise the bar from the catch, all substantially as described.

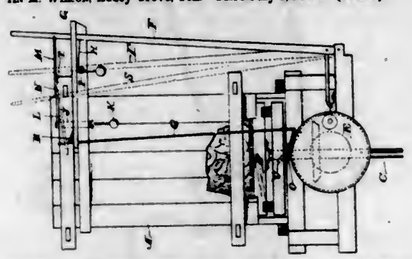
4. The spring rack-bar formed with spring-arms at the ends, and adapted to the chamber, the carriage, and the locking mechanism, all substantially as described.

5. In combination with the spring rack-bar of the center-piece chamber, the carriage having slides moving laterally against a spring, and adapted to at their ends raise the spring-bar from the catch, all substantially as described.

6. In combination with the center-piece of a bracelet, a longitudinally-arranged rack-bar, a carriage sliding longitudinally in the chamber of the center-piece, with a catch on the carriage adapted to be released by springing the rack-bar therefrom, and mechanism on the carriage for springing off the said bar, all substantially as described.

7. In combination with the center-piece of a bracelet, a longitudinally-arranged rack-bar, a carriage sliding longitudinally in the chamber of the center-piece, with a catch on the carriage adapted to the rack-bar, mechanism for releasing the catch from the bar, and an attachment for connecting the carriage with free end of the band completed by drawing in the carriage, all substantially as described.

331,665. AUTOMATIC TRIP-GEAR FOR POWER-PRESSES. Martin M. Wilson, Honey Grove, Tex. Filed July 8, 1885. (Model.)



Claim.—1. In an automatic trip-gear for power-presses, the weighted lever F, connected near its lower end by an arm with the friction-gearing E, the upper end of said lever F having an arm, M, notched at the end, which, when engaging with the hinged lever L, causes the press to run in one direction, and when the said arm is hooked to a projecting wing, R, causes the press to move in an opposite direction, and when said arm is wholly disengaged the weight moves the lever centrally, throwing the device out of gear, all as described.

2. The metallic plate K, hinged through the side of the press, near the top, and weighted at its lower outer end, combined with the hinged lever L and arm M of lever F and the follower-block, whereby the rising follower-block will throw said plate against the side of the press, and thus moving lever L release arm M, allowing the weighted lever F to automatically resume its position, and thus stop the press.

3. In an automatic trip-gear for power-presses, a hinged lever, O, at the lower part of the frame, one end provided with an inturned lug, P, so that the follow-block B will come in contact therewith, the opposite end of said lever provided with a vertical arm, Q, hinged thereto, the upper end of said arm passing through the slot in the platform above, whereby in downward motion the follow-block comes in contact with the inturned part of the lever, and throws the arm connected with the lever upwardly, and thus releases the forwardly-projecting arm of the weighted operating-lever F, permitting it to assume its normal central position, thus stopping the press, substantially as herein set forth.

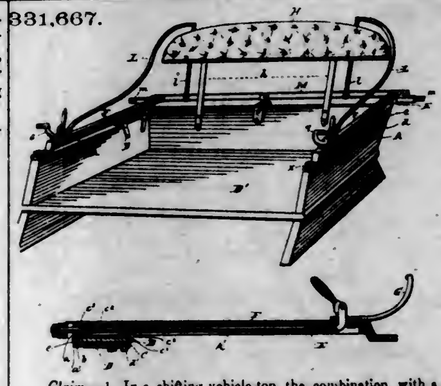
4. The combination of the press A, the follow-block B, the hinged metallic plate J, the lever L, arm M, lever O, vertical arm Q, and the weighted operating-lever F, the whole arranged as and for the purpose substantially as herein set forth.

331,666. SEWING-MACHINE MOTOR. John T. Winburn, Sumter, S. C. Filed Oct. 13, 1885. (No model.)



Claim.—In a machine to wind up coiled motor-springs, the combination of the shaft C, the ratchet-wheel secured thereto, the gear-wheel or disk turning loosely thereon, and the motor-spring having its outer end secured to the said gear-wheel or disk, and its inner end secured to the shaft C, with the double treadle, the brackets D and E, link-bars *d* and *e*, vibrating lever *e'*, pivoted on the upright e^2, bars e^3, coiled springs d^3 and e^3, and pawl-rods d^2 and e^4, arranged to act alternately in engaging and turning the ratchet-wheel, substantially as specified.

331,667. VEHICLE SHIFTING TOP. Addison H. Winchell, Huron, Ohio, assignor of two-thirds to Sayres N. Lomes, same place, and George F. Gardner, Hillsdale, Mich. Filed Sept. 2, 1885. (No model.)



Claim.—1. In a shifting vehicle-top, the combination, with a side piece pivoted at its forward extremity to the seat, of a pivotal device connecting the rear extremity of said side piece to the seat, substantially as set forth.

2. In a vehicle shifting top, the combination, with a side piece pivoted at its forward extremity to the seat, of a pivotal device secured to the latter, and connecting with the rear extremity of the said side piece by adjustable mechanism permitting free swinging movement of said side piece on its forward pivot, substantially as set forth.

3. In a vehicle-top device, the combination, with a swinging piece having its forward extremity pivoted to the seat side and its rear end provided with a pivoted guide-rod, of a pivotal guideway for said rod, said guideway attached to the side of the seat and in substantial parallelism with it, substantially as set forth.

4. In a vehicle-top device, the combination, with a swinging piece provided with a pivotal guide-rod attached to its rear end, and a pivotal guideway for said rod substantially parallel with the side of the vehicle-seat, of a hanger with which said guideway is pivotally connected, said hanger attached to the vehicle-seat, substantially as set forth.

5. In a vehicle shifting-top device, the combination, with swinging piece A and rod E, fitted within said piece, of the pivotal guideway C, attached to said piece, and provided with one or more projecting knobs, c^3, adapted to press upon said rod, substantially as set forth.

6. In a vehicle shifting-top device, the combination, with the swinging piece A, provided at its rear end with the pivotal guide-rod B, of the guideway C, pivoted to hanger D, and provided with the outwardly-projecting flange c, substantially as set forth.

7. The combination, with the swinging piece A, provided with the pivotal guide-rod B, of guideway C, pivoted to hanger D, and provided with the projecting lip c', substantially as set forth.

8. The combination of swinging piece A, having guide-rod B pivoted at its rear end, and guideway C, in which said rod plays, of hanger D, to which said guideway is pivoted, said hanger attached to the seat and provided with the projecting flange *d*, substantially as set forth.

9. The combination, with the hollow swinging piece A, having slot formed in its upper surface, and rod E, sliding within said hollow piece, of cap F, connected at both its ends with said rod, and adapted to cover said slot more or less as said rod is variably adjusted in said piece A, substantially as set forth.

10. The combination, with guideway C, provided with one or more knobs, c^3, and hanger D, provided with set-screw d', of swinging piece A, provided with sliding rod E, substantially as set forth.

11. The combination, with pivotal guideway C and hanger D, of adjusting device d', substantially as set forth.

12. The combination, with an arm-rest, L, and rear bar, M, of support *l*, connecting the two, substantially as set forth.

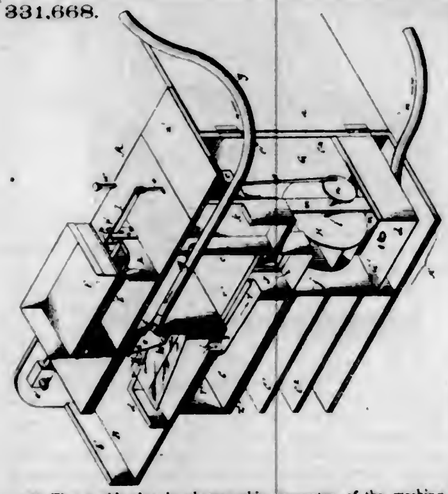
13. The combination, with rods E and bar M, connecting their rear ends, of the two arm-rests L and the two vertical supports *l*, respectively connecting the rear extremity of each arm-rest to said bar M, substantially as set forth.

14. The combination, with lazy-back H, rigid with the seat, of supports *l*, rigid with the movable arm-rests, said lazy-back having bearing against said supports when the vehicle-top is in forward locked position, substantially as set forth.

331,668. APPARATUS FOR DEVELOPING AND WASHING PHOTOGRAPHS. Horace F. Wyman, Philadelphia, Pa. Filed May 18, 1885. (No model.)

Claim.—1. The combination, substantially as herein described, of a bath for washing photograph-plates, and having an inlet and an outlet for water, a motor operated by water escaping from said bath, developing or fixing pan, and mechanism, substantially as herein described, whereby said motor is caused to give a rocking motion to said pan.

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2. The combination, in photographic apparatus, of the washing-tray B, having an inlet and an outlet for water, water-motor H, and a valve for opening and closing communication between said tray and said water-motor, all substantially as described.

3. The combination, in photographic apparatus, of the tray B, having an inlet and an outlet for water, water-motor H, a valve for opening and closing communication between said tray and said water-wheel, and an overflow-outlet for the free escape of water from said tray when said valve is closed, all substantially as set forth.

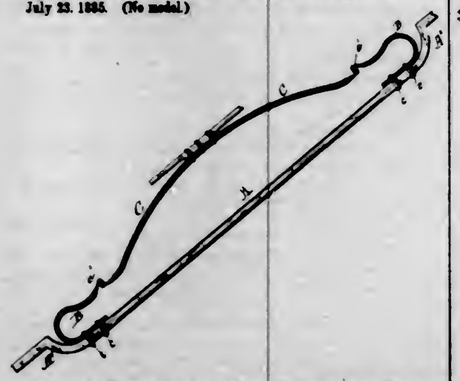
4. The combination, substantially as and for the purpose described, of tray B, having an inlet and an outlet for water, a water-wheel, H, and a tank or reservoir, J, communicating with said tray and said water-wheel, and having a valved outlet and an overflow-outlet.

5. The combination, with box A, of a tray, B, arranged to slide therein, having a perforated inlet-tank, *e*, and an outlet for water, and furnished with a flexible or extensible inlet-pipe, *g*, attached to the tank *e* and free to follow the motions of said tray within the box, substantially as and for the purposes herein set forth.

6. The combination, substantially as set forth, with box A, of tray B, arranged to slide therein, outlet-pipe *i*, and stationary trough or spout *r*.

7. The combination, in box A, of sliding tray B, having an inlet and an outlet for water, trough or spout *r*, tank or reservoir J, spout *s*, and water-wheel H, all arranged substantially as and for the purpose herein set forth.

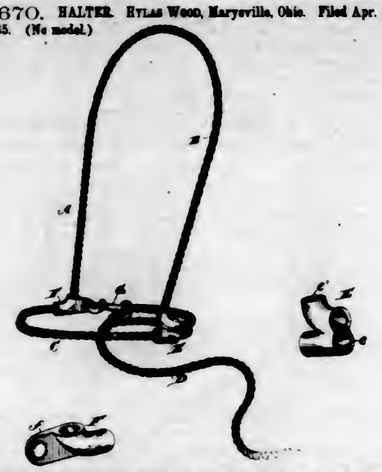
331,669. VEHICLE-SPRING. Jacob Wolf, Catchegue, N. Y. Filed July 23, 1885. (No model.)



Claim.—1. The combination, with an axle having upwardly-curved portions A', of auxiliary springs attached to the axle within its curved portions, and constructed to abut against said curved portions and to receive the body-spring, substantially as described.

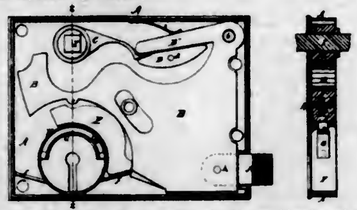
2. In combination with an axle having upwardly-curved portions, a spring consisting of a body portion, C, and curved end members, B, pivotally connected thereto, said members being clipped to the axle, substantially as shown, and for the purpose set forth.

331,670. HALTER. Hylas Wood, Marysville, Ohio. Filed Apr. 14, 1885. (No model.)



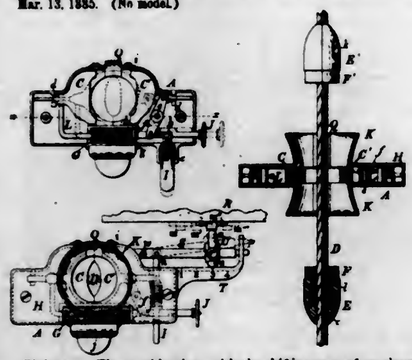
Claim.—A halter constructed of a single piece of rope, and consisting of the head-loop B, nose-loop C, and stale D, in combination with the double thimble E, consisting of the straight tube *e* and curved tube *e'*, said tubes engaging, respectively, the head-loop B and nose-loop C upon one side of the animal's head, the thimble F, engaging the nose-loop C upon the opposite side of the animal's head, and provided with an eye, *f*, and the hook G, carried by the stale, all the parts being constructed and arranged substantially as shown and described.

331,671. LOCK AND LATCH COMBINED. John A. E. Anderson, Lebanon, assignor to himself, and Jacob Gushwa, Lafayette, Ind. Filed Mar. 13, 1884. (No model.)



Claim.—In a weight-lever lock-latch, the combination of a single weight-lever, B, formed, as shown, with arm B', and projection *e*, knob-lever C, intermediate lever, D, and segmental locking-tumbler E, having recesses in its periphery, substantially as set forth.

331,672. AUTOMATIC ELEVATOR-STOP. James S. Ashton, Rochester, N. Y., assignor of one-half to Charles L. Bartels, same place. Filed Mar. 13, 1885. (No model.)



Claim.—1. The combination, with the shifting-rope of an elevator, of the divided ball E, and the elastic cushion or collar F, attached to the ball by means of the flange *f*, inserted in a recess in the end of the ball, substantially as described.

2. The combination, with the shifting-rope of an elevator, of the two balls E E', provided on their inner ends with the elastic cushions F F', substantially as described.

3. The combination, with an elevator-car, of the shifting-rope, D, provided with balls E E', and the movable stops C C', connected together, so as to move simultaneously toward or away from the shifting-rope, substantially as described.

4. The combination, with an elevator-car, of the shifting-rope D, provided with balls E E', the movable stops C C', connected together, so as to move simultaneously toward or away from the shifting-rope, and spring G, substantially as described.

5. The combination, with an elevator-car, of the shifting-rope D, provided with balls E E', the movable stop or stops C C', spring G, push J, and spring-catch *a*, substantially as described.

6. The combination, with the shifting-rope of an elevator-car provided with ball E, of the sliding stops C C', lever *f*, rod H, and spring G, substantially as described.

7. The combination, with a suitable supporting-case, of the sliding stops C C', lever *f*, rod H, spring G, push J, and spring-catch *a*, substantially as described.

8. The combination, with the shifting-rope of an elevator-car provided with ball E, of the body A, having funnel K, and supporting a movable stop or stops, substantially as described.

9. The combination, with the shifting-rope D, provided with ball E, of the body A, sliding stops C C', funnel K, and supporting-tube O, inclosing the shifting-rope, substantially as described.

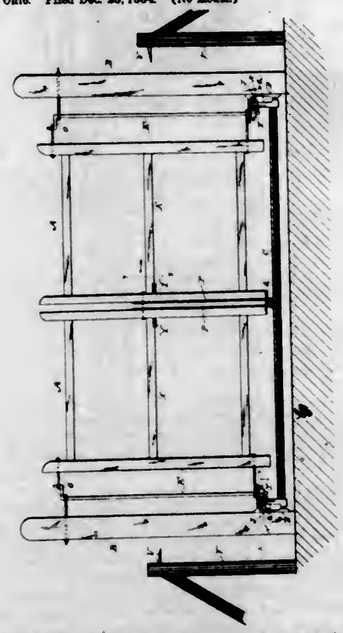
10. The combination, with the shifting-rope D of an elevator-car of the body A, supporting a movable stop and provided with detachable segment Q, substantially as described.

11. The combination, with an elevator-car, of the shifting-rope D, provided with ball E, and one or more movable stops, C, spring G, spring-catch *a*, lever S, adjustable contact-piece U, and a series of lugs or projections attached to the side of the elevator well, substantially as described.

12. The combination, with an elevator-car, of the shifting-rope D, provided with ball E, and one or more movable stops, C, spring G, spring-catch *a*, lever S, indicator-scale T, adjustable contact-piece U, and a series of lugs or projections attached to the side of the elevator-well, substantially as described.

13. The combination, with an elevator, of a series of lugs, *m m'*, arranged out of line with each other on different stories, and an adjustable contact-piece applied to the car and arranged to operate the shifting-rope by suitable mechanism, whereby the motion of the car is arrested at any desired point, substantially as described.

331,673. GATE. Josiah Austin and Roscoe Chamberlain, East Liberty, Ohio. Filed Dec. 23, 1884. (No model.)

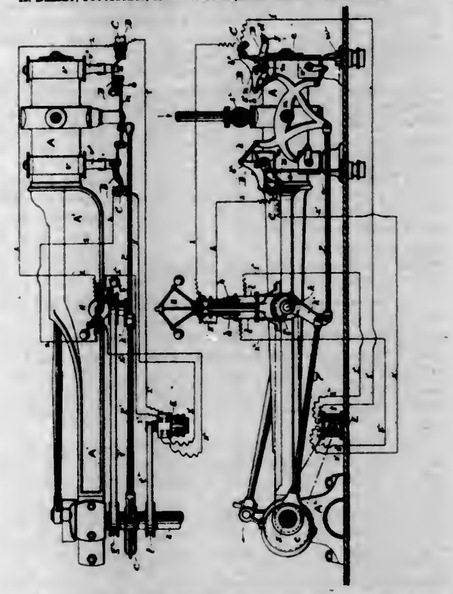


Claim.—1. The combination, with a gate and post, of the hinge-rod E, journaled vertically in brackets secured to the posts and provided with the crank O at its upper end, the said gate being hinged at its upper edge upon the said crank and at its lower edge upon the rod of the crank, a pinion, F, secured on the lower end of the crank and provided with teeth M L at each side of the plane of the gate and a blank segment, I, between the teeth M, and a slide-rod or rack, G, having a blank section, H, adapted to bear against both teeth M at once, and having a tooth, K, at each side of the space H, adapted to engage the teeth M L, substantially as shown and described, for the purpose specified.

2. The combination of the post B, the hinge-rod E, provided with a crank, O, and vertically journaled on the post, the gate A, hinged upon said rod and crank, the latch P on the gate, the keeper Q, secured on the ground beneath the edge of the gate and provided with the stops *r*, and the stops R, pivoted to the keeper Q in the path of the latch P, and provided with projections *s* and the springs T, substantially as shown and described.

3. The combination of the gate A, the cranked hinge-rod E therefor, the serrated plate Y, secured to the gate and inclined upward each way from the center, and the serrated catch U and post V, substantially as shown and described.

331,674. ELECTRO-MAGNETIC CUT-OFF FOR ENGINES. Richard A. Bailey, Providence, R. I. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, in an engine or other analogous motor having mechanically-operated inlet and exhaust valves, of one or more vibrating loosely-mounted levers having one or more electro-magnets secured thereto, a generator and regulator for the electric current, with an armature-lever secured to the valve-stem, and an inlet-valve mounted thereon, substantially as and for the purpose herein set forth.

2. In a detachable valve-gear engine, the combination, with inlet-valves, each having an arm secured thereto, and means for closing the valve, one or more electro-magnets secured to a loosely-mounted lever, and a wrist-lever adapted to impart a vibratory or reciprocating movement to said electro-magnet-carrying lever, of an electrically-connected regulator, whereby the latter in its fluctuations determines the point of cut-off or movement of the inlet-valve, substantially as hereinbefore set forth.

3. The inlet-valves of an engine, each secured to an armature-lever, electro-magnets mounted upon vibrating levers, substantially as shown, and generator for the electric current, in combination with the engine-regulator having partially-insulated rods connected and moving therewith, electrically-connected brushes alternately moving on said rods, and an eccentric or other equivalent means for vibrating the brushes.

4. In an engine having a regulator and detachable valve-gear, one or more electro-magnets secured to each of the loosely-mounted vibrating levers, which connect with the wrist-lever, an armature-lever connected with a weight or vacuum pot, and also carrying the inlet-valve, a generator for the electric current, and conductors for electrically connecting said magnets, in combination with one or more mechanically-moving commutator-brushes, one or more partially-insulated rods connected with the regulator-sleeve, and conductors which electrically connect said brushes and rods, substantially as shown, and for the purpose described.

5. The combination, in an electric circuit for controlling the action of the inlet-valves of an engine having detachable valve-gear, of a

dynamo-machine or other generator for producing an electric current, commutator-brushes having an invariable movement, a regulator having partially-insulated rods frictionally connected with said brushes, one or more electro-magnets secured to each loosely-mounted vibrating valve-lever, armature-levers adapted to magnetically connect with said vibrating levers, a valve and vacuum-pot or weight connected to and moving with each armature-lever, mechanism, substantially as shown, for operating said moving parts, and conductors for electrically connecting said brushes, regulator, and magnets with each other and with the generator, the whole combined and arranged substantially as shown, and for the purpose herein set forth.

6. In a detachable or drop cut-off engine, the loosely-mounted lever B, connected with the wrist-lever *a*, electro-magnets C, secured to said lever B, an electric circuit embodying a generator and a regulator electrically connected, in combination with the arm D, secured to the valve-stem *m*, said arm being provided with a vacuum pot or weight and the soft-iron armature *d*, whereby the said lever B and arm D are magnetically connected, substantially as and for the purpose set forth.

7. In a drop cut-off engine, the combination, with the lever B, having electro-magnets C, secured thereto, of the inlet-valve connected with the lever D, the latter having a vacuum-pot and armature, *d*, secured thereto, substantially as shown and set forth.

8. In a drop cut-off engine, the inlet-valve lever having the armature, vacuum-pot, and valve secured thereto, and, further, having a locking-pin mounted in said lever, the combination therewith of the loosely-mounted electro-magnet-carrying lever having an opening or pocket therein adapted to receive said locking-pin, substantially as and for the purpose set forth.

9. The loosely-mounted electro-magnet-carrying lever B, having an opening or pocket, n^4, therein, in combination with the inlet-valve lever D, having the locking pin or plug n', mounted in the slotted and recessed arm n^2 of said lever D, the plug having a pin, r', therein guided by means of the slotted arm, and a spring, s^3, adapted to restrain the locking-pin from rearward movement, substantially as shown, and for the purpose set forth.

10. In a detachable valve-gear or automatic cut-off engine having its inlet-valves electro-magnetically controlled, the combination, with the regulator having one or more partially-insulated and electrically-connected rods connected to and moving with the regulator-sleeve, of electrically-connected brushes engaging the rods, said brushes connected with the eccentric or other suitably-moving parts of the engine having positive motion, substantially as and for the purpose hereinbefore set forth.

11. In a detachable valve-gear or automatic cut-off engine having its inlet-valves electro-magnetically controlled, the regulator H, having rods *h h*, adjustably connected with its sleeve H^2, strips *h'*, secured to said rods, and wires 1 2, connected with the strips, in combination with the brushes *l*, mechanism, substantially as shown, for alternately moving the brushes, and wires 1^2 2^2, connected with said brushes, the whole arranged whereby an electric current in passing through the said wires, rods, and brushes, and the magnets connected with the inlet-valve levers causes said valves to cut off the steam at a point in the stroke corresponding to the (then) position of the regulator.

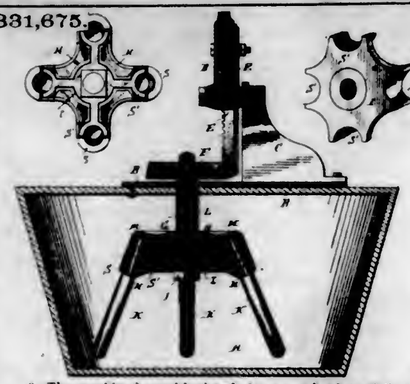
12. In a cut-off engine having inlet-valves electro-magnetically controlled by the action of the regulator, the combination, with rods having both conducting and non-conducting surfaces adjustably connected to and moving with the regulator-sleeve, and wires 1 2, electrically connected with the rods, electro-magnets and generator, of suitably-guided brushes carrying wires 1^2 2^2, also electrically connected with the electro-magnets and generator, and means, substantially as shown, for reciprocally moving the brushes, said rods and brushes being so adjusted and connected with each other that an unbroken, intermittently broken, and broken electric circuit is adapted to be maintained corresponding to the fluctuations of the regulator, substantially as and for the purpose described.

13. In a cut-off engine having its inlet-valves electro magnetically controlled, the combination, with the non-conducting rods *h*, having electrically-connected conducting-surfaces *h'* secured thereto, and means, substantially as shown, for connecting said rods with the regulator, of suitably mounted and guided electrically-connected brushes *l*, and means, substantially as shown, for imparting reciprocating motion to the brushes, the whole combined and arranged whereby the conducting portions *h'* of the rods are adapted to move wholly above and partially below the contact-surface of the brushes *l*, and corresponding with the extreme up and down positions of the regulator-balls and sleeve, substantially as shown, and for the purpose hereinbefore set forth.

331,675. WASHING-MACHINE. DANIEL L. BATES, Dayton, Ohio, assignor of one-half to Benjamin F. Arnold, same place. Filed July 17, 1885. (No model.)

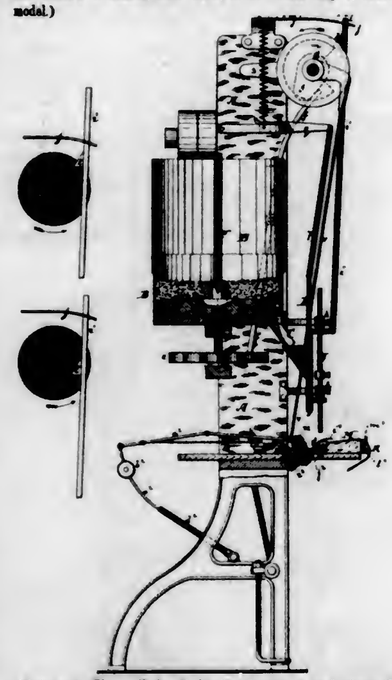
Claim.—1. The combination, with the shaft, operated substantially as described, of an agitator-head having semicircular sockets, agitator-sticks, a washer below said head and provided with corresponding semicircular sockets, and a nut for adjusting the washer toward the head, to lock the sticks between them, as set forth.

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2. The combination, with the shaft, operated substantially as described, of an agitator-head, the sticks, the subjacent adjustable washer, and the nut on the shaft, the said head and washer being constructed, substantially as shown, to clamp the sticks between their peripheral surfaces and incline them outward, as set forth.

331,676. CIGAR-BUNCHING MACHINE. NICHOLAS H. BORGFELDT and ADOLPH C. SCHUTS, New York, N. Y. Filed May 8, 1885. (No model.)



Claim.—1. The cylinder B, having bottom *a*, and chute C, combined with the rotary disk D, having notches *b*, upper disk, E, having apertures *d*, and scraper H, for operation substantially as herein shown and described.

2. The combination of the measuring-disk D, having the larger notches, *b*, with the upper disk, E, having smaller notches or apertures, *d*, part of each notch *b* being covered by the disk E, as specified.

3. The cylinder B, having discharge-chute C, combined with the reciprocating hopper I and reciprocating plunger L, as specified.

4. The combination of the cylinder B, rotary notched disk D, stationary scraper H, and chute C with the hopper I, having perforated wall *n*, plunger L, and mechanism, substantially as described, for first lowering said hopper, then said plunger, then raising said hopper, and then said plunger, as and for the purpose specified.

5. The binder-rest apron M, combined with the sliding frame N, having roller *u*, tilting frame P, and spring j^3, substantially as herein shown and described.

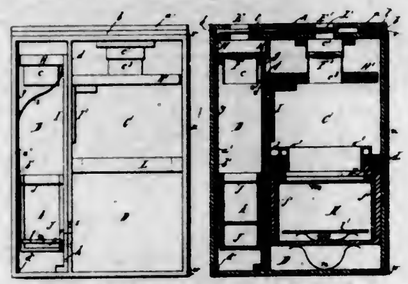
6. The combination of the apron M with the frame N, having roller *u*, pivoted frame P, having cross-bar i^3, spring j^3, and stationary bracket g^3, substantially as described.

7. The combination of the sliding frame N, which has the roller *u*, with the apron M, tilting frame P, and pivoted elbow-rods *v*, as specified.

8. The combination of the vibrating arm *y*, link *z*, rods a^3, and guide-tube d^3 with the sliding frame N, roller *u*, apron M, pivoted frame P, spring j^3, and bracket g^3, substantially as described.

9. In a bunch-machine, the combination of the cylinder B, having notched disk D, and chute C, with the reciprocating hopper I, reciprocating plunger L, apron M, sliding frame N, having roller *u*, and bunch-receiver R, substantially as specified.

331,677. PHOTOGRAPHIC CAMERA. GEORGE B. BRAINERD, Brooklyn, N. Y. Filed Dec. 2, 1884. (No model.)



Claim.—1. In a photographic camera, the focusing device consisting of telescopic tubes, a lens therein fixed, and a finder-lens, combined with a carrier and screens, substantially as described.

2. In a photographic camera, a focusing device consisting of telescopic tubes, a support therefor in a dark-chamber, and a lens therein fixed, combined with a finder-lens in a separate chamber and a carrier, substantially as described.

3. In a photographic camera, a lens-support in an exposing-chamber, combined with a lens-support in a separate finder-chamber and a carrier, substantially as described.

4. In a photographic camera, a lens-support in an exposing-chamber, combined with a lens-support in a separate finder-chamber, a carrier, and a removable finder, substantially as described.

5. In a photographic camera, a lens-support in an exposing-chamber, combined with a lens-support in a separate finder-chamber, a carrier, and a removable plate-box, substantially as described.

6. In a photographic camera, a lens-support in an exposing-chamber, combined with a lens-support in a separate finder-chamber, a carrier, a removable finder-box, and a removable plate-box, substantially as described.

7. In a photographic camera, a lens-support in a dark-chamber, combined with a carrier and a removable plate-box, substantially as described.

8. In a photographic camera, a movable lens-support, combined with a carrier, a slotted partition, and a spring, substantially as described.

9. In a photographic camera, a separate plate-box and a separate finder, combined by a detachable joint, substantially as described.

10. In a photographic camera, a separate plate-holding box and a separate finder-box, combined with a removable focusing-screw, substantially as described.

11. The combination of a finder-box and a plate-box united by a dovetailed or separable joint with a slotted fixture attached to the combined box, a slotted fixture attached to a photographic camera, and a focusing-screw, substantially as described.

12. In a photographic camera, a finder-lens in a finder-chamber and a photographic lens in a separate exposing-chamber, combined with a finder-box and a plate-box united by a separable joint, and a device for moving both boxes forward or backward or retaining them in any position, substantially as described.

13. A fixed lens, a removable reservoir of plates in separate holders, and a slot attached thereto, combined with a removable focusing or retaining screw and a slotted fixture attached to a photographic-camera box, substantially as described.

14. A focusing device consisting of a slot attached to a removable plate-holding box and a slotted fixture attached to a photographic camera, combined with a focusing-screw and nut flanged to fit therein, substantially as described.

15. In a photographic camera, a plate-reservoir smooth inside, with a flexible cover and a projecting nose, substantially as described.

16. In a photographic camera, the combination of a plate-holding magazine smooth inside and having a flexible cover and a projecting nose with a partition or frame adapted to fit on said nose, substantially as described.

17. In a photographic camera, a plate-holding box with a projecting nose, a removable bottom, and a frame forming one side of an exposing-chamber, substantially as described.

18. In a photographic camera, a separate plate-holding box with a projecting nose, a removable bottom, a flexible cover, a flap, and a spring, combined with a frame forming one side of an exposing-chamber, substantially as described.

19. In a photographic-plate holder, the combination of a flexible cover with a box open on one side containing a spring-compress and having a sliding bottom, substantially as described.

20. The combination of a double flexible cover with break-joint seams with a box to form a photographic-plate holder, substantially as described.

21. The combination of a wedge-shaped flexible bag with a box to form a photographic-plate holder, substantially as described.

22. The combination of a double wedge-shaped flexible bag with a box to form a photographic-plate holder, substantially as described.

23. The combination of a double wedge-shaped bag having break-joint seams with a box to form a photographic-plate holder, substantially as described.

24. In a photographic-plate-holding box or reservoir, the combination of a plate-holder with thin edges and a flexible cover, substantially as described.

25. In a photographic camera, a plate-reservoir or plate-changing box with a light-tight flexible cover, combined with a plate-holder having thin edges, substantially as described.

26. In a photographic camera, a plate-reservoir or plate-changing box with a light-tight double flexible cover, combined with a plate-holder having thin edges, substantially as described.

27. In a photographic-plate-holding box, a wedge-shaped flexible cover combined with a plate-holder having thin edges, substantially as described.

28. In a photographic-plate-holding box, the combination of a light-tight double wedge-shaped flexible cover with plate-holders having thin edges, substantially as described.

29. In a photographic-plate-holding reservoir, the combination of a flexible cover with a box adapted to contain one or more plates or plate-holders, and provided with a lining terminating so far below the top of the plates or plate-holders as to leave space to insert the fingers between the top of the plates or plate-holders and the inside of the box above said lining, and thereby grasp and withdraw a plate or plate-holder, substantially as described.

30. In a photographic camera, a plate-box or changing-box cover consisting of two pieces of opaque flexible cloth of the form shown, combined to constitute a wedge-shaped bag with break-joint seams, substantially as described.

31. In a photographic-plate holder or changing-box, a movable screen or dummy plate, in combination with a flexible opaque bag, substantially as described.

32. In a photographic camera, a plate box or reservoir smooth inside and having a flexible cover, combined with plate-holders and a compress, substantially as described.

33. In a photographic camera, the combination of movable lens-supports, a carrier, and a finder with a plate-reservoir or plate-changing compartment, smooth inside, having a flexible cover, and containing plates in separate plate-holders compressed by a spring-compress.

34. In a photographic camera, a removable plate-holding reservoir or changing-box with a projecting nose, a hinged or sliding bottom, and a frame forming one side of an exposing-chamber, substantially as described.

35. In a photographic camera, a plate-holding reservoir or changing compartment having an inner reduced lining, a flexible cover, and a spring-compress, and open on one side toward an exposing-chamber, substantially as described.

36. In a photographic camera, the combination of a flexible cover with a plate-changing compartment adapted to contain separate plate-holders and reduced in size by an inner lining so arranged as to leave a space between the front and sides of the plates or holders near the top, substantially as described.

37. In a photographic camera, an exposing-shutter operated behind a false front and before the lens and where it is visible before or after exposure, through the exposing-aperture, colored or ornamented to conform with the color or design upon the front of the camera, substantially as described.

38. In a photographic camera, a flexible plate-holder cover constructed of two layers of flexible material glued together only at the edges and not throughout, substantially as described.

39. In a photographic camera, a photographic lens in an exposing-chamber and a finder-lens in a separate chamber, combined with a finder-box and a plate-box united by a separable joint, and a device for moving both boxes forward and backward, or retaining them in any position, substantially as described.

40. In a photographic camera, a plate-holding reservoir or plate-changing compartment having a flexible cover and a spring-compress

and open on one side toward an exposing-chamber, substantially as described.

331,678. NAIL-EXTRACTOR. Thomas M. Brentnall, Maryville, assignor to himself and Robert U. Hendrick, St. Joseph, Mo. Filed June 12, 1885. (No model.)



Claim.—1. A nail-extractor consisting of a base-piece, an arm pivoted at one end to said base and provided with a depending jaw, the lever pivoted to said arm and having a jaw arranged to act in opposition to the jaw of said arm, and a bearing-extension projected beyond said jaws in a direction opposite that of the pivoted end of the arm, substantially as set forth.

2. A nail-extractor consisting of a base having a handle at one end, an arm pivoted at one end to said base and provided with a jaw, a lever pivoted to the arm and having a jaw arranged and adapted to act in opposition to the jaw of said arm, and a bearing-extension, substantially as set forth.

3. The combination of a base-piece, an arm pivoted at one end to the base, a roller journaled to the opposite end of the arm, a jaw depending from the arm between the roller and its pivot, and a lever pivoted to the arm close to the jaw thereof, and having a jaw arranged and adapted to act in opposition to the jaw of the arm, substantially as set forth.

4. The nail-extractor herein described, consisting of the base having its end slotted forming arms, the extremities of which are bent downward forming binding-prongs, the arm pivoted at one end to the base and provided near its other or outer end with a depending jaw arranged to operate through the slot of the base-plate, and the lever pivoted to the said arm and having a jaw adapted to operate in opposition with the jaw on the arm, substantially as set forth.

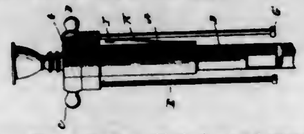
5. The combination, in a nail-extractor, of a base having a handle at one end and having its opposite end adapted to serve as a guide in placing the device for use, an arm pivoted to said base and having a jaw, and a lever pivoted to said arm and having a jaw adapted to operate in opposition to that of said arm, substantially as set forth.

6. The combination, with the base-piece and the swinging arm pivoted at one end to the base and provided with a depending jaw, of the lever pivoted to the arm and having a jaw arranged to act in opposition to the jaw of the arm, a bearing-extension projected beyond said jaws on the side thereof opposite the pivoted end of the arm, and a roller journaled at approximately the extremity of said extension, substantially as set forth.

7. In a nail-extractor, the combination, with the swinging arm having a jaw, D, and a slot, C^3, of the lever having its lower end slotted forming arms fitting on opposite sides of and pivoted to the swinging arm, and the jaw E, secured to the lever and projected through the slot of the swinging arm, substantially as set forth.

8. A nail-extractor comprising a base-piece, an arm pivoted at one end to the base, a jaw depending from the arm between its ends, and a lever pivoted to the arm close to the jaw thereof, and having a jaw arranged and adapted to act in opposition thereto, the swinging or free end of the arm being extended in advance of the jaws forming a bearing-extension, substantially as set forth.

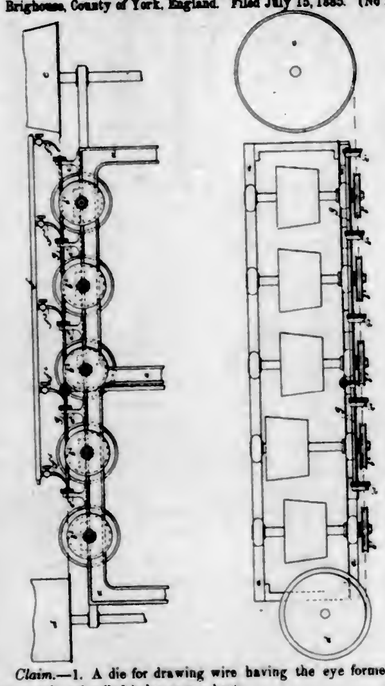
331,679. TUNING ATTACHMENT FOR CORNETS. Wade Buckley, Easton, Pa. Filed Apr. 21, 1885. (No model.)



Claim.—1. The combination, with the inner and outer tubes of the attachment, adapted to be secured to the forward end of the tube of a cornet, of the guide-rods, and the stops at their ends to limit the movement of the respective tubes, substantially as and for the purposes specified.

2. The combination, with the sliding tubes and the guide-rods, of the lock spring or latch whereby the two are held in proper relative positions, substantially as and for the purposes specified.

331,680. APPARATUS FOR DRAWING WIRE. Samuel H. Byrne, Brighouse, County of York, England. Filed July 15, 1885. (No model.)

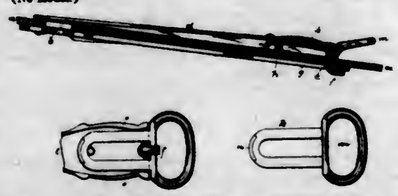


Claim.—1. A die for drawing wire having the eye formed in the stone or mineral called bolus or pea bort.

2. As an improvement in an apparatus for wire-drawing, a series of dies having eyes formed in bolus or pea bort, through which series of eyes the wire is drawn continuously at one operation.

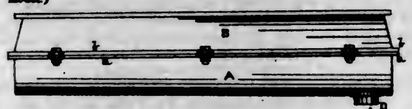
3. As an improvement in apparatus for wire-drawing, a series of dies which are caused continuously to rotate, and which have eyes formed in bolus or pea bort, through which the wire is drawn continuously at one operation.

331,681. HARNESS-SADDLE. Raymond W. Cahoone, Philadelphia, Pa., assignor to Charles E. Cahoone, Newark, N. J. Filed Feb. 4, 1885. (No model.)



Claim.—In combination, in a saddle, the flap and perforated under plate, the holding-plate having the hook *f*, lug *h*, and bearings o o, and the separable loop *m*, having the perforated shank and lug *n*, all said parts being arranged and operating substantially as and for the purposes set forth.

331,682. PRIVY-SINK. Patrick Cassidy, New York, N. Y., assignor of one-half to I. Richard Adler, same place. Filed Apr. 18, 1885. (No model.)



Claim.—A privy-sink divided horizontally at or near its center into an upper and lower portion, flanged and bolted together, forming a watertight trough having its contracted upper side open for its entire length, substantially as shown, and for the purpose specified.

331,683. GRINDING-MILL. Henri H. Colin, Philadelphia, Pa., assignor to Henry Troemner, same place. Filed Dec. 13, 1884. (No model.)

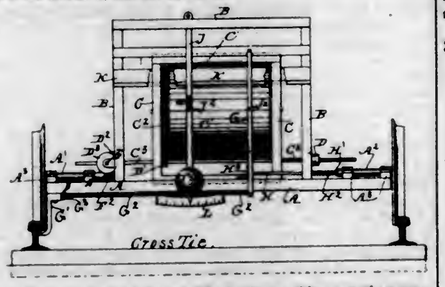


Claim.—1. In a grinding-mill, a burr having a flanged rim provided with teeth projecting beyond the grinding-teeth on the said burr, the inner faces of which are adapted to correspond with the outer faces of the outer row of teeth of the other burr, substantially as and for the purpose set forth.

2. In a grinding-mill, a burr provided with teeth of a pyramidal form, each having the apex at the side of and not over the center of the base, and having a rounded side, *a*, substantially as shown, the said teeth being arranged irregularly radially, in combination with a burr having teeth of a like form but arranged regularly radially, one of the said burrs having a toothed flange, substantially as and for the purpose set forth.

331,684. AUTOMATIC RAILWAY-TRACK INSPECTOR. Porter C. Compton, Ames, Iowa. Filed Dec. 15, 1884. (No model.)

Brief.—The four pencils are arranged as follows: two in bar K, one in the carrier G, and one on rod J.



Claim.—1. In a railway-track-inspecting machine, a carriage composed of a horizontal frame having fixed axle-bearings at its opposite ends, one axle being fixed to a traction-wheel, and provided with a worm on its end adapted to transmit rotary motion, a rotating shaft that slides in bearings fixed to the frame, gearing to transmit motion from the worm to said sliding shaft, and one axle fixed to a traction-wheel in such a manner that the axle and wheel can rotate and also slide laterally relative to the variations in the gage of a track.

2. A carriage having one of its axles provided with a worm at its inner end, and one of its axles provided with springs adapted to slide it longitudinally and in reverse ways, a vertical frame fixed on top of the horizontal carriage-frame, a rotating and sliding shaft, gearing to transmit motion from the worm on the rotating axle to said sliding shaft, pencil-carriers suspended on the vertical frame, and a sliding frame carrying a rotating cylinder, arranged and combined to operate in the manner set forth, for the purposes specified.

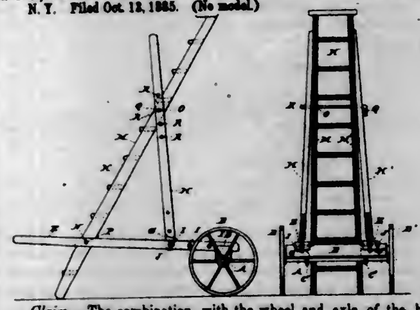
3. A carriage-frame, A B, having a worm on the end of one of its axles, a sliding frame, C, carrying a cylinder having a gear-wheel on its axle, a shaft having a bevel gear-wheel feathered to one of its ends and a screw-threaded section at its opposite end extended through a fixed nut, D, and a pinion fixed to its intermediate portion, and a short shaft, F, having a fixed worm-wheel, F', and a fixed bevel gear-wheel, D^2, arranged and combined to operate in the manner set forth, for the purposes stated.

4. The combination of a suspended pencil-carrier, G, with a carriage having a stationary pencil-holder, K, a sliding frame carrying a rotating cylinder, a sliding axle, A^2, a sliding rod, H, and springs H^2 and H^3, to operate in the manner set forth, for the purposes specified.

5. The combination of a suspended pencil-carrier, G, with a carriage having a stationary pencil-holder, K, a sliding frame carrying a rotating cylinder, a sliding axle, A^2, a sliding rod, H, an elbow-shaped lever, G', and a connecting-rod, G^2, to operate in the manner set forth, for the purposes specified.

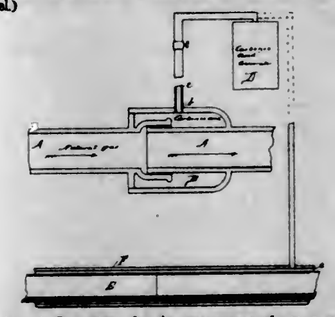
6. An automatic railway-track inspector and notator, composed of the following elements, to wit: a carriage consisting of a horizontal frame having a vertical frame fixed on its top, a revolving axle provided with a worm at its inner end and a flanged traction-wheel at its outer end, a revolving axle adapted to slide longitudinally in its bearings and having a flanged traction-wheel at its outer end, a sliding frame carrying a revolving cylinder and a gear-wheel, a rotating and sliding shaft carrying a pinion, mechanism to transmit motion from the rotating carriage-axle to the rotating shaft, a sliding frame and a rotating cylinder, a fixed bar and pencil-holder, a pendent pencil-carrier having a bob on its end, a pendent pencil-carrier having pressing devices on the opposite sides of its lower end, substantially as set forth.

331,685. WHEEL STEP-LADDER. Anthony Comnik, Cornackia, N. Y. Filed Oct. 12, 1885. (No model.)



Claim.—The combination, with the wheel and axle, of the bifurcated handles connected to the cross-piece on the axle and supported at their opposite end in a horizontal position by the latter, the said handles having transverse perforations through the bifurcated portions, and the braces H, adjustably connected with the upper portion of the ladder and secured at its lower end in the bifurcations of the handles by pins, substantially as specified.

331,686. GAS-CONVEYING APPARATUS. Thomas A. Connolly and Anthony A. Connolly, Washington, D. C. Filed Oct. 22, 1885. (No model.)



Claim.—1. In systems for the conveyance of gas, a seal for the joints of conduits or pipes, consisting of a fixed gas or vapor of greater specific gravity than air, inclosed within a chamber surrounding the conduit or pipe.

2. In systems for the conveyance of gas, a seal for the joints of connected conduit sections or pipes, consisting of a fixed gas or vapor under pressure, inclosed in a chamber surrounding or adjacent to the joint-seams.

3. In systems for the conveyance of gas, a seal consisting of a fixed gas or vapor under pressure and of greater density than the conveyed

gas, contained in a chamber or casing surrounding or adjacent to the joint-seam.

4. In systems for the conveyance of gas, the combination, with the conduit or pipe sections, of chambers or chambered casings surrounding the pipes or conduits, and containing a fixed gas or vapor of greater density than air.

5. In systems for the conveyance of practically inodorous gas, the combination, with the sections of conduit or pipe, of chambers or chambered casings surrounding the former and containing a sealing gas or vapor having commingled therewith an odorous gas, substantially as described.

6. A seal for conduits or pipes or joints, consisting of a fixed gas or vapor of greater specific gravity than air, contained within a closed chamber or chambered casing encircling said joints or adjacent thereto.

7. The combination, with a conduit pipe or conveyer for gas, having packed or mechanically-close joints, of a seal consisting of a gas-tight chamber or casing containing a fixed gas or vapor of greater specific gravity than air.

8. The combination, with a gas conduit or pipe, of chambered casings or chambers adjacent to the joints, and adapted for the reception of a sealing gas or vapor, with a gas generator or tank for supplying said sealing gas or vapor, to said chambers.

9. A gas-conduit having its jointed sections sealed by a fixed gas or vapor of a greater density and pressure than the gas within the conduit, said fixed and sealing gas being inclosed within a casing or casings.

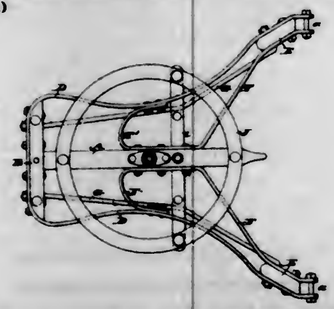
10. A seal for natural-gas conduits, consisting of carbonic-acid gas inclosed in a chamber or casing formed within the joint-couplings or around the joints.

331,687. **COMBINED GRAIN-DRILL, SEED-SOWER, FERTILIZER-DISTRIBUTER, AND ROLLER.** THOS. B. CRAFT, Heatherville, Va. Filed July 17, 1885. (No model.)



Claim.—A machine having, in combination, a land-roller, B, having its journals provided with a combined drive sprocket and crank wheel *l*, a frame, A, wholly supported on the land-roller and provided with a rigidly-attached draft-pole, C, which extends to the rear part thereof, and having a shifting seat on the said rear end of the draft-pole, a fertilizer-distributer, O, having a rock-shaft provided with an arm, *z*, a grain-hopper, F, and a seed-hopper, G, each provided with feed devices and a shaft to operate the same, the said shafts each having a sprocket-wheel, *k*, a rod, p^3, connecting the crank-wheel and fertilizer rock-shaft arm and an endless chain passed around the drive sprocket-wheel, and thence over the said two sprocket-wheels *k* on the shafts of the grain and seed hopper, all constructed and arranged as hereinbefore set forth.

331,688. **PLATFORM-GEAR FOR VEHICLES.** PIERCE B. CUNNINGHAM and AVON BARKER, Allentown, Pa. Filed July 11, 1885. (No model.)



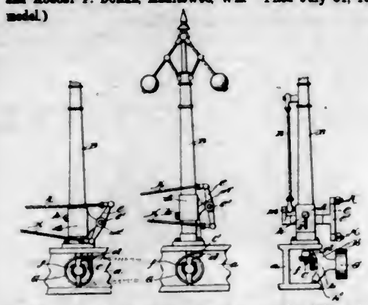
Claim.—1. A central beam, A, in combination with side bars D and braces F F', the side bars being each formed of a single bent piece of material, and the said brace-bars F' being secured at one end thereof to the said bars D, about midway of their sides, and the said side bars F being secured to the bars D at the ends of the latter, substantially as and for the purpose set forth.

2. A central beam and a cross-beam, in combination with the bars D, the bars F, with bends F', and the braces G, substantially as and for the purpose set forth.

3. The central beam, A, the bars D, and front blocks, E, and rear block, B, in combination with the bars F, which are secured to said beam and have their rear ends bent laterally and connected with the bars D, substantially as described.

4. The central beam, A, the bars D, front blocks, E, and rear block, B, and bars F, with bends F', in combination with the cross-beam C and braces G, said cross-beam being secured to the central beam and said braces being connected with said cross-beam and the front and rear of the gear, substantially as described.

331,689. **AUTOMATIC SAFETY STOP-MOTION.** AUGUST C. DUNKE and AUGUST F. DUNKE, Manitowoc, Wis. Filed July 31, 1885. (No model.)



Claim.—1. In a valve-cut-off mechanism, the sliding sleeve carrying the shaft operating the valve-tripping rods, and having an extension or arm resting upon a lateral arm of the pivoted support of the driving-wheel or pulley-shaft, substantially as and for the purpose set forth.

2. In a valve-cut-off mechanism, the slotted sliding sleeve engaged by a stop and carrying the shaft operating the valve-tripping rods, said sleeve having a pendent arm or extension with a tapered or conical lower end and resting upon a lateral arm of the pivoted shaft-box extensions of the driving wheel or pulley, substantially as and for the purpose specified.

3. In a governor-valve cut-off, the driving-pulley or band-wheel having its shaft-box provided with two arms, one of said arms having an inwardly curved or extended arm for supporting a pendent arm or extension, and pivoted by said arms to permit of the automatic lateral movement of the pulley in the event of the slipping or breaking of the driving-belt, substantially as shown and described.

4. In a governor-valve cut-off, the combination, with the sliding sleeve having a depending arm, and the valve-operating rods, the said sliding sleeve carrying the shaft of the said valve-operating rods, of the driving-polley having its shaft-box provided with two arms, one of said arms having an inwardly curved or extended arm, and said arms being pivoted to permit of the automatic lateral movement of said polley, substantially as shown and described.

331,690. **SUSPENDER-BUCKLE.** DAVID L. DURAND, Derby, assignor to the Osborne & Chessman Company, Ansonia, Conn. Filed Oct. 10, 1885. (No model.)

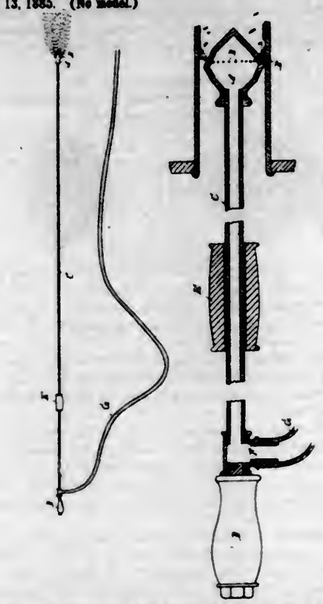


Claim.—1. A suspender-buckle consisting of a front plate having its ends bent to form flanges, a lever pivotally connected with said flanges and provided at each end with an inwardly-bent flange to bear upon or engage the suspender in the direction of the length thereof, and having a transverse flange to transversely engage the suspender between said end flanges, substantially as described.

2. A suspender-buckle consisting of a front plate having its ends bent to form flanges and having a portion of each flange bent into an eye, a pintle or pin mounted in said eyes, and the lever having lips bent around the pintle or pin and provided at each end with an outwardly-projecting flange for bearing upon or engaging the suspender in the direction of the length thereof, said lever also having a transverse flange for engaging the suspender transversely between said end flanges, substantially as described.

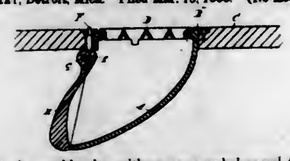
3. A suspender-buckle consisting of a front plate having its ends bent laterally and then toward each other to form flanges parallel, or approximately so, to the front plate, and each flange having a portion bent into an eye, a pintle or pin mounted in said eye, and a lever pivoted on the pintle or pin and composed of a rectangular plate having end flanges to bear upon the suspender along the length and adjacent to the edges thereof, substantially as described.

331,691. **FLUE-CLEANER.** LOUIS DUERRBECK, Sandusky, Ohio. Filed May 13, 1885. (No model.)



Claim.—The improved flue-cleaner herein described, consisting of the tube C, provided at one end with a fixed handle, D, a nipple, F, adjacent to said handle, flexible steam-connection G, secured to said nipple, the nozzle A, spear-shaped in cross-section, removably secured to the opposite end of said tube, and the handle E, loosely and independently sleeved on said tube and free to slide thereon between said head A and connection G, as herein shown and described.

331,692. **CUSPIDOR FOR RAILWAY-CARS.** JOHN J. ENRIGHT and DAVID J. MAY, Detroit, Mich. Filed Mar. 18, 1885. (No model.)



Claim.—1. In combination with an open-ended vessel for the purposes described, a valve constructed to normally close the lower end of such vessel, and an opening-pin, as F, loosely stepped upon the neck of such valve and projecting above the floor to which such vessel is attached and constructed to open said valve by pressure on its head, substantially as described.

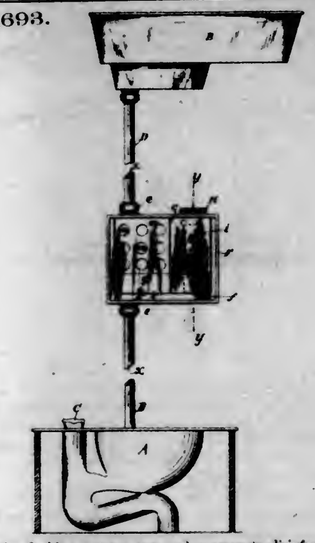
2. The combination, with the vessel A, having hole *d* and ears *c c*, of the valve E, hung between said ears and provided with groove *e*, and the pin F, passed through the hole *d*, and engaging with the groove *e* in the neck of the valve, substantially as and for the purpose specified.

331,693. **DISINFECTING WATER-CLOSETS.** WILLIAM M. ERNST, New York, N.Y. Filed May 29, 1885. (No model.)

Claim.—1. The combination, with a water-closet bowl or urinal and the pipe for supplying water thereto, (from the usual tank or other source of supply,) of a chamber or box placed at any convenient locality between the closet or urinal and the source of water-supply, which is so connected with the said supply-pipe that the flushing-water must pass through it, and which is made or provided with devices forming two interiorly-arranged compartments communicating with each other, one of which compartments is adapted to retain some suitable solid disinfectant, and the other of which compartments communicates with the water-supply pipe, the combination being such, as shown and described, that the water entering one of said compartments will be thrown into a state of agitation therein, and passing partially into the other of said compartments will become impregnated or charged with the solid disinfectant contained in the latter, as and for the purposes hereinbefore set forth.

2. The combination, with a water-closet bowl or urinal and the pipe for supplying the water thereto, of a chamber or box located intermediately of the water-closet and the source of supply, and through

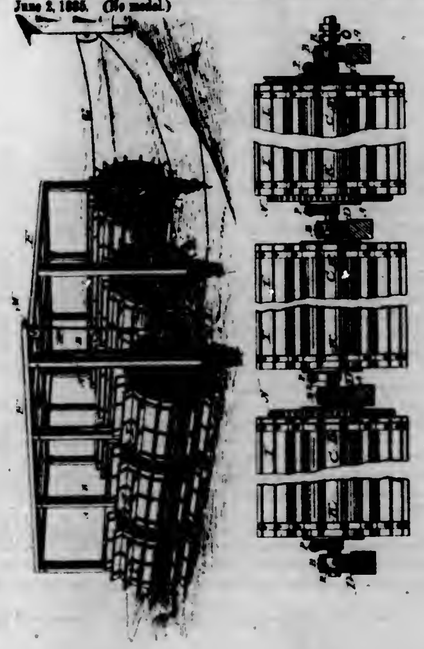
331,693.



which the flushing-water passes, and a separate disinfectant-receptacle arranged interiorly of the said chamber or box and constructed, as described, to retain always along with the solid disinfectant a given quantity of water, in order that at each flushing operation the supply of fresh water shall not only be thrown into contact with the solid disinfectant, but shall also be commingled with and carry off with it a portion of the impregnated standing water of the disinfectant-receptacle, all as hereinbefore set forth.

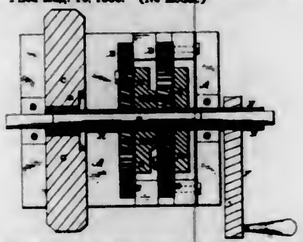
3. The combination, with a water-closet bowl or urinal, the chamber or box F, a water-supply pipe entering the upper part of said box, and a pipe leading from the bottom thereof to the closet-bowl, of an interiorly-arranged disinfectant-chamber, onto the bottom of one of the compartments of which the stream of water supplied to the box F is directly discharged for the purpose of causing the supply of water to be thrown into a state of agitation, and thus better insure a thorough impregnation of it with the solid disinfectant contained in the other of said compartments, all as hereinbefore set forth.

331,694. **WATER-POWER.** MILTON J. ERSKINE, Omaha, Nebr. Filed June 2, 1885. (No model.)



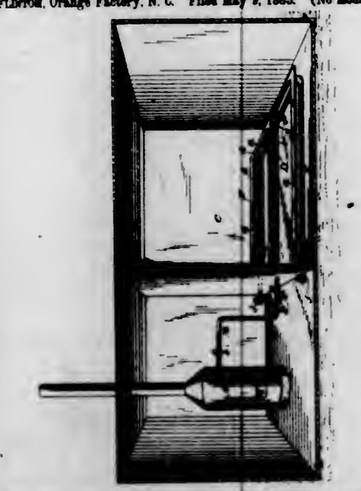
Claim.—The combination of the buoyant wheels C, having paddles I, and sprocket-wheels and endless chain N, vertical rails A D B, spindles S, rollers R, frame F, ropes, pulleys, and balance-weights, as described, the windlass W, clutch-wheel O, rope H, pulleys M, and lever L, as described.

331,695. MECHANICAL MOVEMENT. GEORGE D. FERRIS, Springfield, Ill. Filed Aug. 18, 1885. (No model.)



Claim.—In a mechanical movement, the combination of an internally-toothed disk, the driving-crank, a central shaft, a series of sleeves placed upon the shaft, a series of spur-gears revolving levers or arms carrying the pinions, which mesh both with the internally-toothed disks and the spur-gears, and the driving-wheel, all being arranged to operate substantially as shown and described.

331,696. APPARATUS FOR STEAMING TOBACCO. SAMUEL G. FLEETON, Orange Factory, N. C. Filed May 9, 1885. (No model.)



Claim.—1. In an apparatus for steaming tobacco, the combination, with the boiler and supply-pipe, of the central and auxiliary perforated pipes having the perforations increasing in size from the point where the central pipe enters the building, and the equalizing plates or bars arranged above the graduated perforations of the said perforated pipes, as set forth.

2. In an apparatus for steaming tobacco, the combination, with the boiler and supply-pipe, of the central perforated pipe and the auxiliary perforated pipes having the valves arranged immediately one on each side of the point where the central pipe joins the auxiliary pipes, the perforations of the said perforated pipes increasing in size from the point where the central pipe enters the building, and the equalizing plates or bars arranged above the gradnated perforations of the said perforated pipes, substantially as set forth.

3. In an apparatus for steaming tobacco, the combination, with the boiler, of the supply-pipe having the valve and the condensed-steam outlet, the central perforated pipe, and the auxiliary perforated pipes having the valves arranged immediately on each side of the point where the central pipe joins the auxiliary pipes, and the equalizing plates or bars arranged above the perforations of said perforated pipes, substantially as set forth.

4. In an apparatus for steaming tobacco, the combination, with the boiler and supply-pipe, of the central and auxiliary perforated pipes having the perforations increasing in size from the point where the central pipe enters the building, as shown and described, for the purpose set forth.

5. In an apparatus for steaming tobacco, the combination, with the boiler and supply-pipe, of the central perforated pipe and the auxiliary perforated pipes having the perforations increasing in size in regular order from the point where the central pipe enters the building, as shown and described, and provided with the valves arranged immediately on each side of the point where the central pipe joins the auxiliary pipes, for the purpose set forth.

331,697. AUTOMATIC ALARM-BELL. EDWARD P. FORBES, Hartford, Conn. Filed June 25, 1885. (No model.)



Claim.—1. In combination, a base-plate, with a bell supported on the plate, an elastic tongue bearing the hammer, and a rock-shaft journaled in bearings on the plate and having a crank-arm and a trip-arm, the latter alternately engaging and releasing the bell-tongue as the shaft is rocked, all substantially as described.

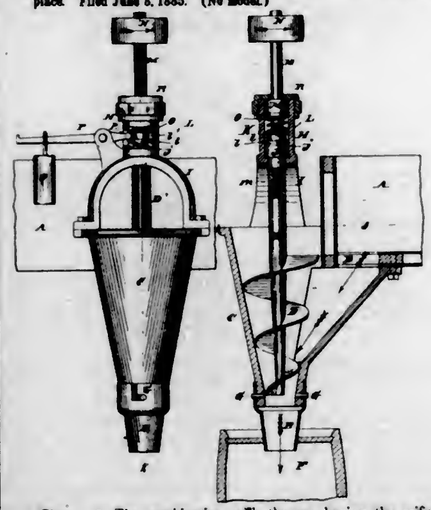
2. In combination, a base plate, *a*, with the flange *a'*, having spurs *a²*, the bell *b*, elastic tongue *e*, bearing the hammer, the spring-actuated rock-shaft, with the crank-arm and trip-arm, and the stop *h*, all substantially as described.

3. In combination, a base-plate, with a bell supported on the plate, an elastic tongue bearing the hammer, a rock-shaft journaled in bearings on the plate and bearing a crank-arm and a trip-arm, a tripping-spring adapted to rotate the rock-shaft, and the trip-arm projecting so as to alternately engage and release the bell-tongue as the shaft is rocked, all substantially as described.

4. In combination, a base-plate, with a bell supported on the plate, the elastic tongue bearing the hammer *d*, the tongue-rest *i*, the rock-shaft *f*, with the crank-arm *f'* and trip-arm *f²*, the spring *g*, actuating the rock-shaft, and the stop *h* in the path of trip-arm *f²*, all substantially as described.

5. In combination, a base-plate, with a bell supported on the plate, an elastic tongue bearing the hammer, a rock-shaft journaled in bearings on the plate and bearing a crank-arm and a trip-arm, a tripping-spring adapted to rotate the rock-shaft, the trip-arm projecting so as to alternately engage and release the bell-tongue as the shaft is rocked, and the catch *j*, all substantially as described.

331,698. APPARATUS FOR FEEDING WHITE LEAD. MICHAEL FORST, St. Louis, Mo., assignor to the Southern White Lead Company, same place. Filed June 8, 1885. (No model.)



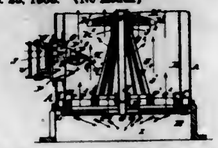
Claim.—1. The combination, with the pan having the orifice in the bottom and vessel or receptacle having a filling-orifice, of a tube or funnel, and a spiral conveyer within said tube or funnel, for the purpose set forth.

2. The combination, with the pan A, having the orifice B, and the receptacle F, having the filling-orifice, of the tapering funnel C, having the contracted nozzle E, and the spiral conveyer within said funnel, for the purpose set forth.

3. The combination, with a pan having an orifice in the bottom thereof and a receptacle having a filling-orifice, of a tube or funnel connecting said orifices, a spiral conveyer mounted in said tube or funnel, a rotary shaft, and a clutch for connecting the latter with the shaft of the conveyer, as and for the purposes set forth.

4. The combination of the conveyer-shaft having the drive-shaft stepped in the upper end of the same, a clutch-collar splined upon the drive-shaft and engaging a fixed clutch-collar on the conveyer-shaft, a spring holding the clutch in engagement, and a lever arranged to lift the movable clutch-collar, substantially as set forth.

331,699. STEAM-BOILER FURNACE. MICHAEL A. FOSTER, St. Louis, Mo. Filed Feb. 25, 1885. (No model.)



Claim.—1. The combination, with the door of a furnace, of a hot-air chamber formed therein having a hinged jaw, an arm projecting from said jaw through an aperture in the face-plate of the door, and a pivoted curved arm or cam for controlling the position of said arm, as set forth.

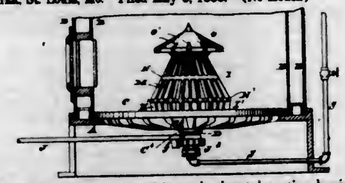
2. In a furnace-door, the combination of a hot-air space, an aperture in the outer plate of the door for the admission of air thereto, and a movable jaw on the inside for regulating the passage of air therethrough, as set forth.

3. The combination, in a furnace-door, of a mouth discharging atmospheric air into the furnace, and studs extending from the top, bottom, or sides of the mouth into the air-current.

4. The combination, in a furnace-door, of an air-chamber or passage, a mouth extending from said chamber or passage into the fire-space, having a fixed jaw and a movable jaw, and studs extending from the jaws into the air-current passing through the mouth.

5. The combination, in a furnace-door, of an air chamber or passage in communication with the outer air, and having a mouth discharging within the furnace, and having a movable jaw with an arm extending to the outer side of the door, for the purpose set forth.

331,700. GRATE FOR STEAM-BOILER FURNACES. MICHAEL A. FOSTER, St. Louis, Mo. Filed May 8, 1885. (No model.)



Claim.—1. A grate comprising a horizontal portion having a hub, concentric rings or partitions, and bars connecting the rings to the hub, a vertical portion having upwardly and inwardly inclined bars, downwardly and inwardly inclined bars, a ring or partition connecting the bars, a hub, and bars connecting the ring to the hub, and a tube by which the vertical portion is rotated on the horizontal portion, substantially as set forth.

2. A grate comprising a horizontal portion having a hub and a rabbet, a vertical portion having upwardly and inwardly extending bars, downwardly and inwardly extending bars supported in the rabbet, and a ring or partition connecting the bars and having a hub seating on the hub of the horizontal portion, and a tube having perforations and forming a pivot by which the vertical portion is rotated, substantially as set forth.

3. A grate comprising a horizontal portion having a hub, a vertical portion having a hub seating or supported on the hub of the horizontal portion, a tube having perforations within the vertical portion and perforations above the vertical portion, and means for connecting a steam-pipe with the tube, substantially as set forth.

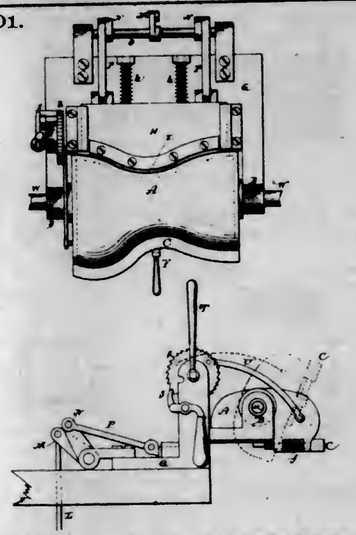
4. A grate comprising a horizontal portion, a vertical portion, a tube passing entirely through said portions, having perforations for the escape of steam therethrough, and the crown supported on the top of the vertical portion, substantially as set forth.

5. A grate comprising a horizontal portion, a vertical portion, a tube, and a lever, the vertical portion being secured to the tube and rotated therewith, substantially as set forth.

331,701. MACHINE FOR SHAPING CORSETS. THOMAS S. GILBERT, New Haven, Conn., assignor to Mayer-Strouse & Co., same place. Filed Mar. 30, 1885. (No model.)

Claim.—1. In an apparatus for forming and shaping corsets, a former hung upon trunnions and adapted to receive a rotative movement, a clamp at one side of said former, stationary and independent of said former, combined with a clamp upon the opposite side of said former, attached to and movable with said former in its rotative movement, substantially as described.

331,701.



2. A former in shape corresponding to the corset to be finished, hung upon trunnions eccentric to the axis of the said former and adapted to rotate thereon, a clamp at one side of said former, but stationary and independent of the former, combined with a second clamp attached to said former and movable therewith, the said two clamps adapted the one to engage one edge of the corset and the other adapted to engage the other edge of the corset, substantially as described.

3. In an apparatus for forming and shaping corsets, the combination of a former hung upon trunnions, one at each end, and adapted to rotate thereon, a clamp independent of said former, arranged at one side thereof, and stationary with relation to the said former, a clamp upon the opposite side of the former, and movable with it, the said two clamps adapted to engage, the one clamp one edge of the corset to be shaped, the other adapted to engage the opposite edge of the corset, a ratchet, and a connection therefrom to the former, whereby the former may be held in position after the shaping of the corset, substantially as described.

4. The combination of the former A, hung upon trunnions at its respective ends, and adapted to rotate thereon, the clamp C, attached to one side of said former, and so as to move therewith, the said clamp adapted to engage one edge of the corset, the fixed jaw J, and a slide carrying a second jaw, I, which, together with the jaw J, forms a fixed clamp to engage the other edge of the corset, and independent of the former, springs to force said slide toward the fixed jaw, and a system of levers to withdraw said slide to open the said jaws I J, substantially as described.

5. The combination of the former A, hung upon trunnions at its respective ends, and adapted to rotate thereon, the clamp C, arranged at one side of the former, springs *f f*, adapted to draw said clamp against the corresponding surface of the former, a cam, D, and levers extending therefrom into substantial connection with the said clamp C, and whereby said clamp C may be forcibly opened by the cam or closed by its spring, and a clamp upon the opposite side of the former, but stationary and independent thereof, the said stationary clamp adapted to engage one edge of the corset, and the said clamp C to engage the other edge of the corset, substantially as described, and whereby the corset is drawn over the former by a rotative movement thereof, substantially as described.

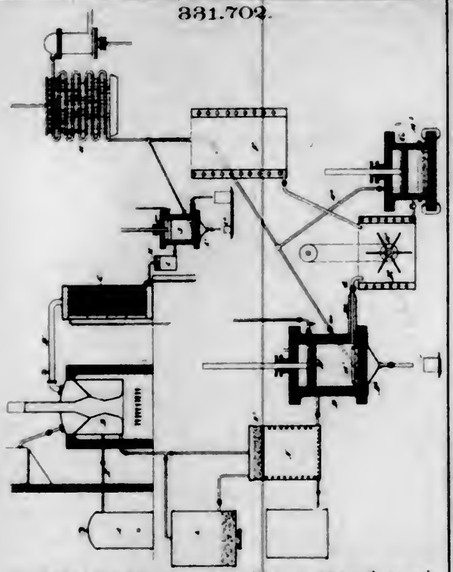
331,702. METHOD OF TREATING COTTON-SEED AND ANALOGOUS OILS. JAMES B. GRANT, New York, and ALLAN MASON, Brooklyn, N. Y. Filed Apr. 27, 1885. (No specimens.)

Claim.—1. The within-described process of treating cotton-seed oil or analogous quickly-decomposing oils, by partially distilling in the presence of carbonic-acid gas and then saturating with carbonic-acid gas, substantially as herein specified.

2. The process described of treating cotton-seed oil or analogous rapidly-oxidizing oils and fats, by partially distilling, saturating with carbonic-acid gas, freezing, separating the frozen from the parts remaining liquid, mixing other fat with the hard portion, and immediately freezing again, all substantially as herein specified.

3. The oil described, produced from cotton-seed or analogous source from which the most volatile portions have been removed by partial distillation and saturated with carbonic-acid gas at ordinary temperature, as herein specified.

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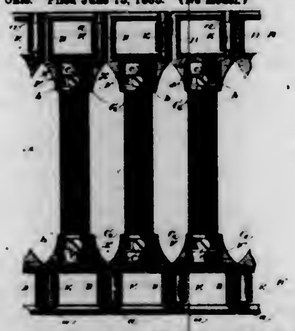


4. The oil described, composed of oil from cotton-seed or analogous sources partially distilled, frozen, and pressed, as herein specified.

5. The product described, composed of hard fat or stearine from cotton-seed oil or analogous sources partially distilled, frozen, and pressed, as herein specified.

6. The product described, composed of volatile matter from cotton-seed oil or analogous sources distilled over, frozen, and pressed, as herein specified.

331,703. **STRAW-CARRIER.** PETER GRATER and JACOB SEIBEL, Napoleon, Ohio. Filed June 15, 1885. (No model.)



Claim.—1. A straw-carrier composed of two sides, each comprising a series of flexible connected sections, each section having a hook at one end and an inwardly-extending thimble having a slot, and slats fitting in the thimbles, and having projecting pins engaging the slots in said thimbles, as set forth.

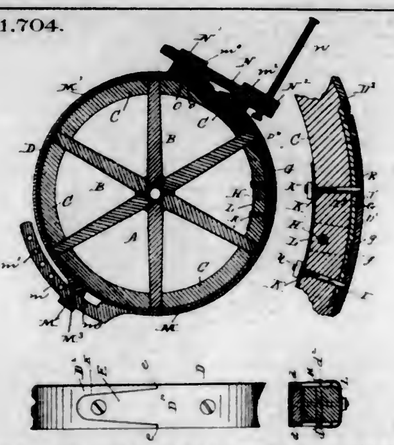
2. A straw-carrier composed of two sides, each comprising a series of flexible connected sections, each section having a hook at one end and a notch at its other end, extensions projecting inwardly from the inner sides of each section, thimbles on the extensions, said thimbles having slots, slats connecting the sides and having their inner ends engaging the thimbles, and pins in said slats engaging the slots in the thimbles, as set forth.

331,704. **VEHICLE-TIRE AND SETTER THEREFOR.** ALBERT HEMMEN, Taylor, Nev., assignor of one-half to Arthur J. Underhill, same place. Filed June 6, 1885. (No model.)

Claim.—1. The combination, with the tire having the ends detachably connected together, of a setter having the ring-segments M M', one being formed with an extension provided with a series of perforations, to which the end of the other is adapted to be adjustably fastened, perforated lugs or abutments carried by said segments, and a bolt and nut adapted to force the said segments together, substantially as described.

2. A setter for tires having ring-segments separable from each other

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at two points, and which at one pair of adjacent ends are adjustable to different points, and at the other ends are provided with perforated lugs, and a bolt and nut separate from the segments, substantially as set forth.

3. A tire-setter having two ring-segments separable from each other at two points, a clamp for forcing and holding together one pair of ends of said segments, and a clamp for holding the other ends at different points relatively to each other after adjustment, substantially as set forth.

4. The combination, with a tire-setter having separable ends and abutments for the fastening devices on the said ends, of a bolt formed separately from the setter, and a nut, said nut and one of the aforesaid abutments having interlocking projections, whereby the nut can be prevented from rotating, substantially as set forth.

5. The combination, with the tire-setter having two sections, both ends of each of which sections are adapted, substantially as set forth, to be moved toward and from the corresponding ends of the opposite section, means, substantially as set forth, for fastening two of the adjacent ends of the sections at different positions, and means, substantially as set forth, situated diametrically opposite to the aforesaid fastening devices, for moving the other adjacent ends of the sections, substantially as described.

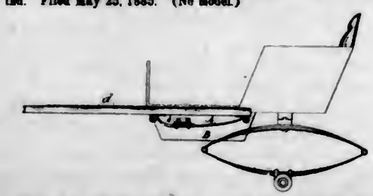
6. The combination, with the wheel, of the herein-described tire having separable ends, each provided with serrations or ribs adapted to interlock with those on the other, and the inward-projecting flanges *d*, adapted to lie by the sides of the felly, substantially as set forth.

7. The herein-described tire having separable ends, each end carrying a series of serrations or ribs, those carried by one end being adapted to interlock with the serrations or ribs carried by the other end, flanges *d*, adapted to bear against the sides of the felly, and inward-projecting lugs or plates d^2, provided with bolt-apertures, substantially as set forth.

8. The herein-described tire having the separable ends D' D^2, the end D^2 being provided with a recess or slot and carrying ribs or serrations, and the end D' having a tongue, E, adapted to fit into the said recess or slot, and carrying serrations or ribs adapted to engage with those aforesaid, both ends being provided with corresponding bolt-apertures, and the inward-projecting ears or plates d^2, substantially as and for the purposes set forth.

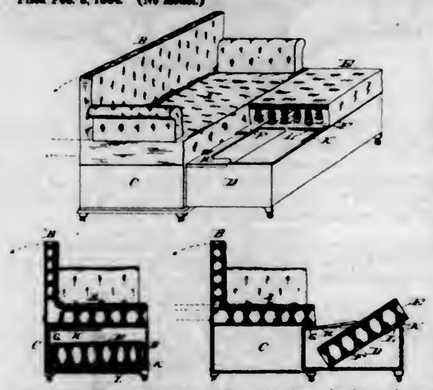
9. The herein-described tire having the separable ends D' D^2, the end D^2 being provided with a recess or slot, and the end D' with a tongue, E, fitting in said recess or slot and having serrations or ribs, and the serrated or ribbed metal strip G, secured to the end D^2, and adapted to engage with the aforesaid serrations or ribs, substantially as set forth.

331,705. **TWO-WHEELED VEHICLE.** ADAM HOFMANN, Indianapolis, Ind. Filed May 25, 1885. (No model.)



Claim.—In combination with a two-wheeled vehicle mounted on suitable riding-springs, and a pair of shafts for drawing the same, a pair of flat springs, A, each having the short curve *r*, and eyes *b* and *c*, attached to the under sides of said shafts, and a pair of brackets, *h*, secured to the vehicle-body forward of the axle and to the springs near the curve *r*, all arranged in the manner and for the purpose specified.

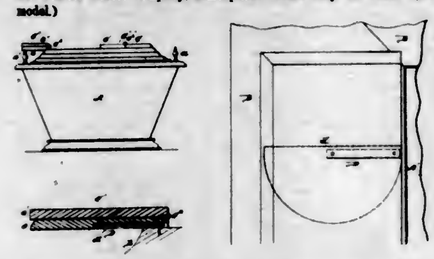
331,706. **SOFA-BED.** THEODORE HOFSTATTER, Jr., New York, N. Y. Filed Feb. 3, 1884. (No model.)



Claim.—1. The combination of the main frame having a drawer beneath the same and opening on the front side thereof, with a mattress fitting loosely in said drawer, and a supporting-strip divided longitudinally into two parts, the one part secured to rear edge of drawer, and the other hinged to the front edge of the first part, substantially as and for the purpose set forth.

2. The combination, with the main frame of a sofa, having a drawer beneath the same opening on the front side thereof, of a mattress fitting loosely in said drawer, and provided with a cleat, K, and inclined face-strips L, secured to the under side of the frame near the front edge, substantially as and for the purpose set forth.

331,707. **COFFIN.** WILLIAM HOLDSWORTH, Detroit, Mich., assignor to the Detroit Casket Company, same place. Filed July 17, 1885. (No model.)



Claim.—1. The combination, with a casket, of leaves pivotally connected to the top of the casket upon each side, the construction being such that said leaves may be opened and closed by swinging upon their pivotal connections, whereby the same face is always uppermost, substantially as described.

2. The combination, with a casket, of leaves connected therewith upon each side, said leaves being connected with the casket by a bar or plate pivoted to the leaves and to the casket-cover, whereby said leaves may be opened and closed with the same face uppermost, a semicircular recess being formed in the under side of said leaves, in which the bar or plate is located, and against the straight shoulder of which the bar or plate abuts, forming a stop to limit the actions of the pivots, substantially as described.

3. The combination, with a casket, of panels pivotally connected to the top of the casket at each side, so as to be opened and closed with the same face uppermost, said panels provided with folding leaves, substantially as described.

331,708. **DIE FOR SHAPING SINGLE-TWIST AUGERS.** DWIGHT S. HOLLEY, Pinkdale, Mass., assignor to the Snell Manufacturing Company, same place. Filed Apr. 30, 1885. (Model.)

Claim.—1. The combination of dies having teeth or projections which, when said dies are placed together, form a single continuous spiral rib, for the purpose set forth.



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2. The combination, with a pair of dies each having a semicircular groove and teeth or projections which, when said dies are placed together, form a single continuous sectional spiral rib, of a die or punch for swaging the end of the blank, as set forth.

3. A pair of dies which, when united, have a cylindrical bore, and a sectional spiral rib within said bore whose lines of division are in planes outside of the axis of said bore, as set forth.

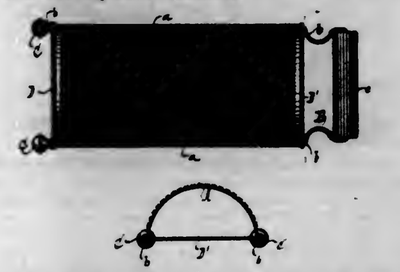
4. A pair of dies which, when united, have a cylindrical bore, and a sectional spiral rib within said bore whose lines of division are in planes transverse to the axis of bore, as set forth.

5. The combination of a pair of dies, A B, having teeth or projections D, lips or extensions *a b c*, &c., and abutments *a' b' c'*, &c., all constructed and arranged substantially as set forth.

6. The dies having, when united, a cylindrical bore and teeth or projections, constituting together a continuous sectional spiral rib extending beyond the axis of said bore, as and for the purpose set forth.

7. The combination, with the dies having a single sectional spiral rib, of a punch for swaging the head on a single-twist auger, substantially as set forth.

331,709. **CULINARY GRATER.** HENDRIK HORGWIER, New York, N. Y. Filed May 7, 1885. (No model.)



Claim.—1. The combination, with a culinary grater having tubular edges, of a detachable wire frame provided with two arms that are passed through said tubular edges, and detachable fastenings, that are also adapted to serve as legs for the grater, substantially as described.

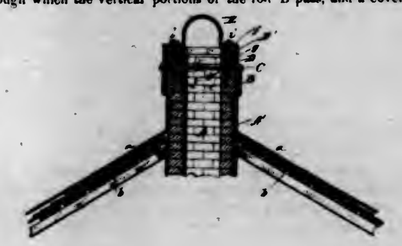
2. The combination, with a convex grater, A, having tubular edges, of the cross-bars D D', the wire frame comprising two arms extending through the tubular edges and engaging the bars, and screw-nuts or buttons fitting the extremities of the arms, substantially as described.

3. As a new article of manufacture, a grater having tubular edges provided at each end with a cross-bar having eyes in their ends, a wire frame provided with a handle, and comprising two arms extending through the eyes of the bars and the tubular edges of the grater, and screw-nuts or buttons engaging the extremities of the arms, substantially as described.

331,710. **CHIMNEY-PROTECTOR.** WILLIAM HUBBARD, Odon, Ind. Filed July 23, 1885. (No model.)

Claim.—1. In a device for protecting chimneys, a superstructure composed of alternating layers of brick and metal plates, bent metal bars extending through central openings in said superstructure, and a covering-plate, E, with open ends, secured by said bars, substantially as and for the purpose set forth.

2. In combination with a chimney, the rod B, having inwardly and upwardly bent portions, as shown, said rod having secured thereto, under the horizontally-bent portion of a plate, C, with downwardly-turned sides, one or more plates with central openings and vertical perforations, through which the vertical portions of the rod B pass, and a covering-



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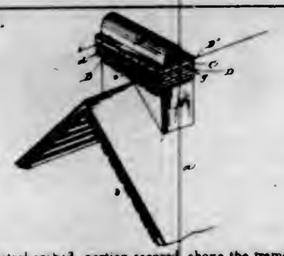
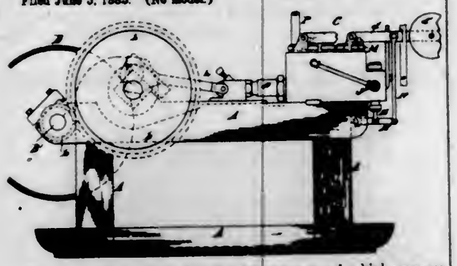


plate with a central arched portion secured above the frame, the parts being organized substantially as shown, and for the purpose set forth.

3. In combination with a chimney, a casing, A', which extends above and below the roof, the plates *a b*, attached thereto, and the rods B, secured to the upper portion of the casing and extending through the plates C *g* E, which are separated from each other by the rows of bricks D D', substantially as shown.

331,711. HYDRAULIC PUMP. JOSEPH H. HUSSELL, Dayton, Ohio. Filed June 5, 1885. (No model.)



Claim.—1. The combination of a low-pressure and a high-pressure pump having in common an inlet-pipe, K, and an exit-pipe, L, and each formed with a piston-chamber communicating with the said inlet-pipe, a suction-valve controlling the communication between said pipe and chamber, a piston working in its chamber, a passage communicating with said exit-pipe, a passage connecting said passage and piston-chamber, a check-valve controlling said connecting-passage, a weighted regulating-piston working in the passage communicating with the exit-pipe, and a system of levers connecting said weighted piston and the suction-valve, the high-pressure pump being also provided with a valve, 17, at the union of the exit-pipe and its communicating-passage, and a pressure-pipe, P, substantially as and for the purposes described.

2. The combination of a low-pressure and a high-pressure pump having in common an inlet-pipe, K, and an exit-pipe, L, and each formed with a piston-chamber communicating with said inlet-pipe, a suction-valve controlling the communication between said pipe and chamber, a passage communicating with said exit-pipe, a passage connecting said passage and piston-chamber, a check-valve controlling said connecting-passage, a weighted regulating-piston working in the passage communicating with the exit-pipe, and a system of levers connecting said weighted piston and the suction-valve, the high-pressure pump being also provided with a passage, N, communicating with the regulating-piston passage, a high-pressure safety-valve, O, connected therewith, and a check-valve, 18, controlling the communication between the regulating-piston passage and passage N, substantially as and for the purposes described.

3. The combination of a series of low-pressure and a series of high-pressure pumps having in common an inlet-pipe and an exit-pipe, each pump having an independent piston and valve-controlled passages connecting the inlet and exit pipes, a suction-valve, and a weighted regulating-piston connected by a system of levers with the suction-valve, the low-pressure pumps being each further provided with a safety-valve so weighted above the regulating-pistons, and the high-pressure pumps having a safety-valve common to all of them, substantially as and for the purposes described.

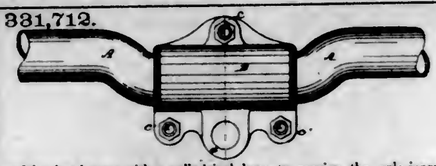
4. The combination of a series of high-pressure pumps connected with one or more low-pressure pumps by a continuous passage, each having independent regulating-pistons for controlling the work, and a single safety-valve common to all the high-pressure pumps, for preventing undue pressure upon the pump-pistons, substantially as specified.

5. The cross-head connection consisting of the block T, detachable section *x*, packing-strips *m*, and set-screw *r*, for connecting the pitman A with the pump-piston, substantially as specified.

331,712. WHEELBARROW. DANIEL J. HUGHES, Brooklyn, N. Y., assignor to Joseph Annin, same place. Filed May 13, 1885. (No model.)

Claim.—1. A clamp axle-bearing for wheelbarrows, which consists of two parts adapted for application and attachment to the handle,

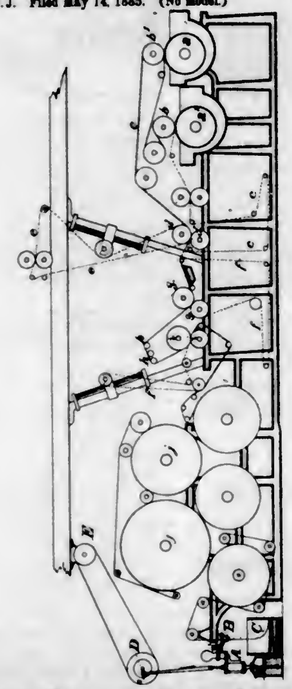
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and having bosses with a cylindrical bore to receive the axle-journal, substantially as shown and described.

2. The combination, with the wheelbarrow-handle, of the clamp axle-bearing formed of two like parts provided with lugs and adjacent bosses having coincident bores for the axle-journal and bolts for securing the parts together, substantially as shown and described.

331,713. COMPOUNDING PYROXYLINE WITH ITS SOLVENTS IN THE MANUFACTURE OF SOLID COMPOUNDS. JOHN W. HYATT, Newark, N. J. Filed May 14, 1885. (No model.)



Claim.—1. The process of making pyroxyline compounds in the following steps: first, grinding pyroxyline in pulp or flock; second, forming the pulp or flock into a thin sheet or sheets; third, applying a suitable solvent to the sheet by sprinkling or equivalent means; fourth, completing the material in masticating-rolls or by the use of heat and pressure, substantially as described.

2. The process of manufacturing pyroxyline compounds, consisting of the following steps: first, forming films or sheets from pyroxyline flock or pulp; second, saturating the sheets with the requisite quantity of solvent; third, massing the sheets together in a closed receptacle; fourth, completing the material by means of masticating-rolls or heat and pressure, substantially as described.

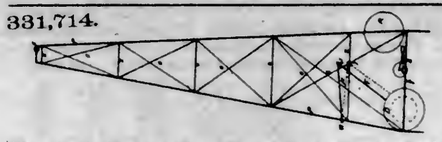
3. The process of manufacturing pyroxyline compounds by first forming thin sheets from pyroxyline flock or pulp and then saturating such sheets with the requisite quantity of liquid solvent, substantially as described.

4. The process of manufacturing pyroxyline compounds, consisting of the following steps: first, forming a pulp or flock of pyroxyline by means of revolving knives in a drum; second, forming a paper from the pulp by means of a paper-making machine; third, saturating the pyroxyline-paper with liquid solvents; fourth, massing the saturated paper together and permitting it rest for a definite time until the solvents are absorbed; fifth, completing the conversion by means of masticating-rolls or heat and pressure, substantially as described.

331,714. ARTESIAN-WELL RIG. ALFRED T. HYDE, Oil City, Pa. Filed Sept. 22, 1885. (No model.)

Claim.—1. In an oil-well rig, the braced metal derrick, substan-

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tially as described, and consisting of three tubular posts, one leg of which replaces the samson-post, in combination with the bridle H, pitman F, sand-reel K, band-wheel D, and engine S, all constructed to operate substantially as and for the purpose set forth.

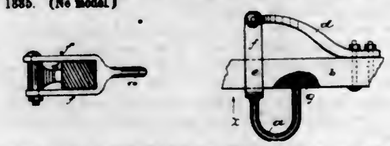
2. In an oil-well rig, the bridle H and pitman F, in combination with the U-shaped bar or hook I, sand-reel K, sand-reel clutch M, and a suitable lever, all constructed to operate substantially as and for the purpose set forth.

3. In an oil-well rig, the brace-bars G and O and horizontal struts Z, in combination with the sectional posts P, having parts of unequal size, so as to embrace the loops of the braces and struts, substantially as herein described, and for the purposes set forth.

4. In an oil-well rig, the bifurcated pitman F, in combination with the bridle H, U-shaped bar I, and crank-shaft N, all constructed to operate substantially as and for the purpose set forth.

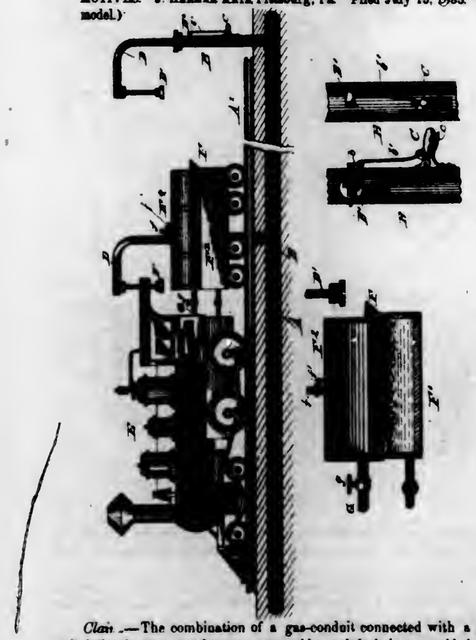
5. In an oil-well rig, the sand-reel K and lever L, in combination with the conical-faced wheel or clutch M, and shaft N, substantially as and for the purpose set forth.

331,715. WHIFFLETREE-HOOK. CHARLES G. JACOBUS, Cedar Grove, N. J., assignor to Herbert H. Jacobus, Brooklyn, N. Y. Filed May 11, 1885. (No model.)



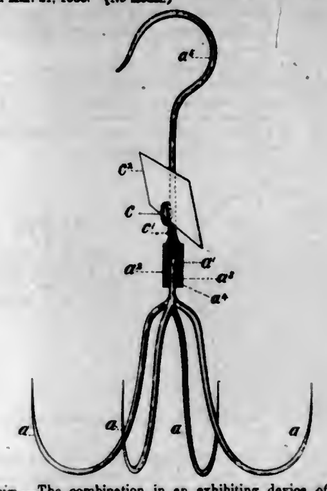
Claim.—In a trace-holding device, the combination, with a whiffletree-bar, as *b*, of a spring-arm, *d*, bolted to one side of said bar, a clip through which the whiffletree-bar passes, having arms *f* secured to said spring, and a hook, *a*, the end of which is normally held in engagement with the opposite side of the whiffletree-bar to which the spring is bolted, by the force of the said spring, and an elastic cushion, *g*, countersunk in said whiffletree-bar, substantially as and for the purpose set forth.

331,716. APPARATUS FOR SUPPLYING NATURAL GAS TO LOCOMOTIVES. J. HARMAR KATE, Pittsburg, Pa. Filed July 15, 1885. (No model.)



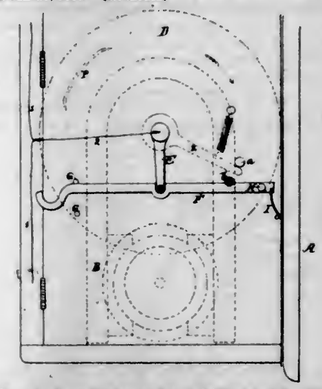
Claim.—The combination of a gas-conduit connected with a gas-well delivering gas under pressure, said conduit being provided with suitable stand or branch pipes at intervals, substantially as specified, with a suitable gas-holder mounted on a locomotive-tender, or moving in conjunction therewith, said reservoir or holder being provided with the necessary connections or appliances for conveying the gas from the stand-pipes to the holder, all substantially as herein set forth.

331,717. DEVICE FOR EXHIBITING HOSIERY. JOHN A. KRESEL, Buffalo, assignor of one-half to Charles M. Van Sicklen, New York, N. Y. Filed Mar. 21, 1885. (No model.)



Claim.—The combination, in an exhibiting device, of a series of connected hooks for suspending the articles to be displayed, a supporting-hook connected to said series of hooks by a swivel-joint, and a coiled-spring clamping card or tag holder secured to the supporting-hook, substantially as and for the purpose set forth.

331,718. MAGNETO CALL-BOX. JAS. F. KETTELL, Worcester, Mass. Filed Jan. 21, 1885. (No model.)



Claim.—1. A current-generator, a driving-shaft for imparting motion to the generator, a circuit making or breaking wheel electrically connected with the line, a mechanical power for driving the circuit-wheel, a stop device for arresting the movement of the circuit-wheel at each full revolution, and a projection carried by the said driving-shaft for actuating the stop device and releasing the circuit-wheel upon the revolution of the shaft and the energizing of the current-generator, the whole constructed to act in combination, substantially as set forth.

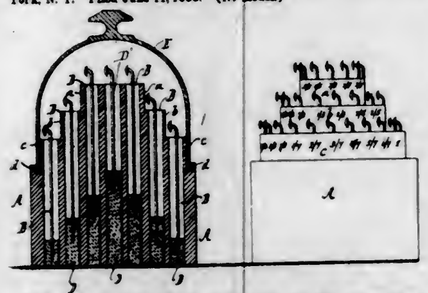
2. A current-generator, a driving-shaft for imparting motion thereto, a circuit making or breaking wheel, a mechanical power for driving the circuit-wheel, a stop device for arresting the movement of the circuit-wheel at each full revolution, a shunt in which the circuit-wheel is located, and means, substantially as described, carried by the driving-shaft, for breaking the shunt-circuit and releasing the said stop device upon the revolution of the shaft and energizing of the generator, all in combination, as set forth.

3. A series of magneto call-boxes, each comprising a magneto-generator, an open circuit in connection therewith, a self-impelled train of gears, a circuit-piece rotated by the gears, and a shunt normally short-circuiting the circuit-piece, and means for breaking and restoring the shunt and rotating and stopping the circuit-piece upon the energizing of the magneto, all in combination.

4. A current-generator, a driving-shaft for imparting motion to the generator, a circuit-wheel and a mechanical power for driving said wheel, a stop device for arresting the movement of the circuit-wheel at each full revolution, a galvanometer in electrical connection with the line, a shunt for normally short-circuiting the circuit-wheel, and projections carried by the driving-shaft for breaking the shunt and actuating the stop which releases the circuit-wheel upon the revolution of the shaft and energizing of the current-generator, the whole constructed to act in combination, substantially as specified.

5. The driving-shaft of a magneto-electric machine, a projection carried thereby, and a pivoted spring locking-arm adapted normally to receive and hold the said projection, all in combination, as set forth.

331,719. JEWELER'S CABINET. Henry Kirchmann, East New York, N. Y. Filed June 11, 1885. (No model.)

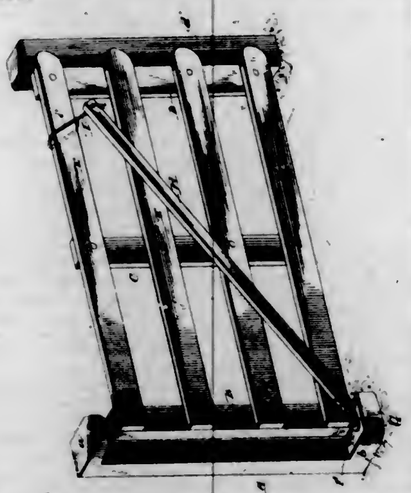


Claim.—1. A cabinet for pin-tongues and the like, consisting of a block having a series of concentric cells of varying depths arranged in tiers and extending vertically into the block, substantially as shown and described.

2. A cabinet for pin-tongues and the like, consisting of a block having a series of concentric cells of varying depths arranged in tiers and extending vertically into the block, cork or similar material placed in the bottom of the cells, and a cover fitting over the block, substantially as shown and described.

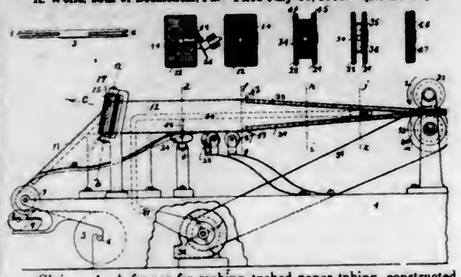
3. A cabinet for pin-tongues and the like, consisting of a block having a series of concentric holes arranged in tiers and extending completely through the block, plugs inserted in the bottom of the same to form cells of varying depths, and a cover fitting the block, substantially as shown and described.

331,720. GATE. John H. Labourieux, Robinson, Ill., assignor of one-half to William Wesley Roundtree, same place. Filed July 2, 1885. (No model.)



Claim.—In a swinging gate, the supporting-post A, having horizontal projecting top and base pieces, between which is pivoted the gate-supporting batten B, and an upwardly-projecting pin, F, located eccentrically to the gate-pivots, in combination with the supporting-bar H, having attached at the upper end thereof a looped bar, I, which encircles the upper rail of the gate, the parts being organized substantially as described, and for the purpose set forth.

331,721. PAPER-BAG MACHINE. William A. Lorenz and William H. Howes, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wolle, both of Bethlehem, Pa. Filed July 16, 1883. (No model.)



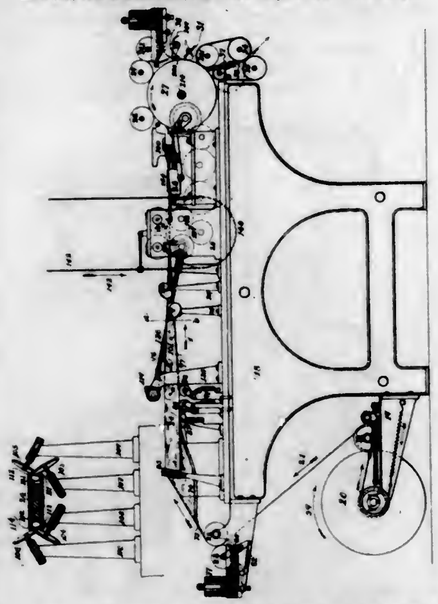
Claim.—1. A former for making tucked paper tubing, constructed substantially as described, and combined with pneumatic mechanism, substantially as described, for forcing the walls of the tubing into substantial conformity with the shape of the former.

2. The combination of the former having the pipe 34 and the openings 35 and 36, with mechanism for exhausting air from that pipe.

3. The combination of a former having a rectangular ungrooved part corresponding in cross-section with the untucked paper tube formed thereon, with the rolls 18 and 19, for guiding the paper to the former, and for defining the two lower corners of the rectangular untucked paper tube, all substantially as described.

4. The combination of a former having a rectangular ungrooved part corresponding in cross-section with the untucked paper tube formed thereon, with the inclined apron 11, joined to that former at the curved surfaces 15, 16, and 17, and with the rolls 18 and 19, for guiding the paper from the apron to the former, and for defining the two lower corners of the rectangular untucked paper tube, all substantially as described.

331,722. PAPER-BAG MACHINE. William A. Lorenz and William H. Howes, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wolle, both of Bethlehem, Pa. Filed May 15, 1884. (No model.)



Claim.—1. The combination of the roller 51, the two slides 52, the two racks 53, the shaft 54, and the two pinions 55, substantially as described.

2. The combination of the former 24, having the tuck-recesses 101 and 102, with the beveled rollers 103, 104, 105, and 106, substantially as described.

3. The combination of the roller 90, the head 92, the bolt 94, and the spring 95, substantially as described.

4. The combination of the carriage 26, operated by the connecting-rod 175, the crank 176, and the gear 177, with the presser-plate 154, operated by the connecting-rod 189, the cam 190, and the spring 192, substantially as described.

5. The combination of the carriage 26, the switch-cams 198, the springs 199, and the track-arms 156 and 157, substantially as described.

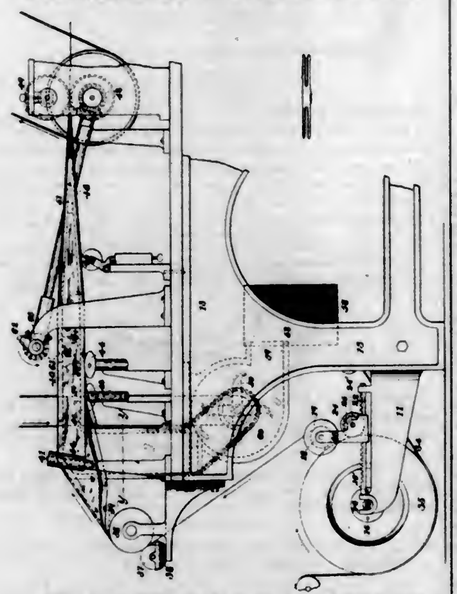
6. The combination of the crank 176, provided with the cam 190, rigidly fixed thereto by the crank-pin 191, with the connecting-rod 175, the connecting-rod 189, and the spring 192, all constructed and adjusted in such a way, substantially as described, as that the connecting-rod 189 has an auxiliary reciprocating motion in the same line as the general reciprocating motion of the two connecting-rods, all substantially as described.

7. The combination of the finger 215 and the shaft 216, both rocking substantially as described, with the carriage 26, reciprocating substantially as described, all operating to deliver the front end, 171, of the diamond to one of the grippers of the cylinder 27, substantially as described.

8. The combination of the pincher 259 and the box 31, both operating together to flatten the fold at the line 14, substantially as described.

9. The combination of the cylinder 28, the feeler 265, the hook 268, the spring 267, and the arm 270, all operating together in such a way as that when the point of the feeler enters one of the recesses 269 the said mechanism will stop the machine by shifting the belt to the loose pulley 144, through intermediate mechanism, substantially as described.

331,723. PAPER-BAG MACHINE. William A. Lorenz and William H. Howes, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wolle, both of Bethlehem, Pa. Filed June 16, 1884. (No model.)



Claim.—1. The combination of the shaft 10, the truncated cones 14 and 15, the grooved roller 66, and the spring 27, all operating together, substantially as described, to keep the outer layer of the paper roll 35 constantly central to the apron 39 and to the former 40, substantially as described.

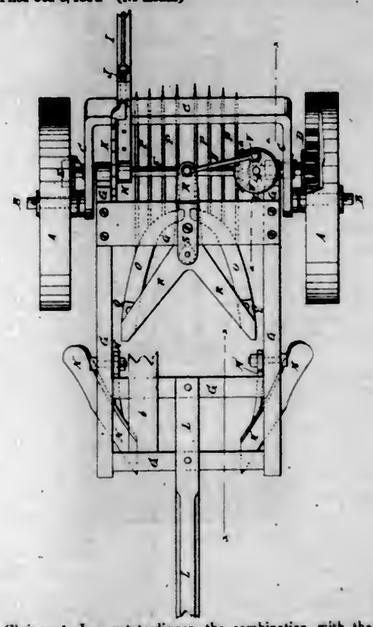
2. The combination of the roller 18, the shaft 65, the carriages 20 and 21, the pinions 25 and 26, and the racks 22 and 23, all operating together to keep the roller 66 or its described equivalent constantly in contact with the adjacent border of the constantly-receding periphery of the roll of paper, all substantially as described.

3. The combination of the shaft 10, the pulleys 29, 30, and 31, the unequal weights 32 and 33, and the strap 34, all operating together substantially as described.

4. The combination of the hollow former 40, having the openings 51 and 52, and the series of openings 54, 55, 56, and 57, and the series of grooves 58 and 59, with mechanism, substantially as described, for drawing air from the interior of that former, all operating together substantially as described, for the purpose set forth.

5. The combination of the hollow former 40, having one or more openings, 53, with mechanism, substantially as described, for drawing air from the interior of that former, all operating together, substantially as described, to remove the chip made by cutting holes in the paper tube.

331,724. POTATO-DIGGER. Henry H. Lovejoy, Cambridge, N. Y. Filed Oct. 3, 1884. (No model.)



Claim.—1. In a potato-digger, the combination, with the wheels A, the frame G, and the digging-hoe O, provided with fingers P, of the three-armed lever R, pivoted to the said frame, and having its forward arms connected to the digging-hoe by standards Q, and its rear arm to a crank-shaft operated by the drive-wheels, substantially as herein shown and described.

2. In a potato-digger, the combination, with the drive-wheels A, the shaft F, driven by the same, and the frame G, of the digging-hoe O, the standards Q, the three-armed lever R, the connecting-rod U, the shaft X, and the gear-wheels a Z, substantially as herein shown and described.

3. In a potato-digger, the combination, with the drive-wheels A, the shaft F, and the frame G, of the U-shaped bar C, the bar H, having its upper end attached to the bar C, and its lower end provided with a bearing for the shaft F, and the lever I, attached to the bar H, substantially as herein shown and described.

4. In a potato-digger, the wheels A, the frame G, the three-armed lever R, the standards Q on two of the arms of the said lever, the digging-hoe O, secured to the lower end of the said standards, and intermediate mechanism for vibrating the said lever by the forward movement of the machine, in combination with standards M, secured to the frame in front of the standards Q, and the plows N, secured to the lower ends of the standards M, substantially as herein shown and described.

331,725. APPARATUS FOR FILTERING LIQUIDS. Maurizio M. Mosmanto, New York, N. Y., assignor to W. A. Ogden Hageman, same place. Filed July 10, 1884. (No model.)

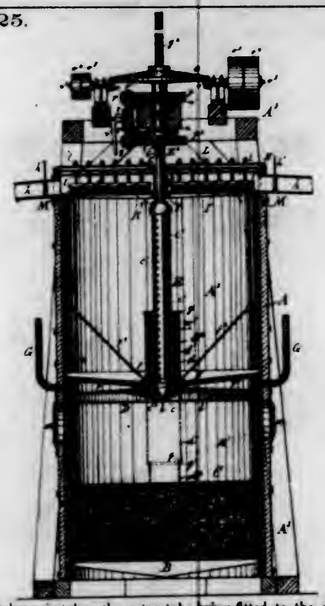
Claim.—1. In a filtering apparatus having a cutter-head arranged to be kept in contact with the filter-bed, and to continuously or intermittently remove the surface of the filter-bed, the combination, with such cutter-head, of a stationary division-plate or diaphragm adapted and arranged to separate the supply-chamber from the filtering-chamber, substantially as and for the purpose described.

2. In a filtering apparatus in which provision is made for removing the surface of the filter-bed during the filtering process by means of a cutting device adapted to be kept in constant contact with the filter-bed surface, the combination, with said cutting device, of a hollow laterally-perforated spindle carrying the same, and a telescoping spindle-extension, substantially as and for the purposes herein shown and described.

3. In a filtering apparatus, the combination, with the filter case or shell, of the revolving spider I I', the fixed trough H, having controlled outlets *h* and perforated plate *k*, and the brushes M, adapted to arrest and remove suspended or floating foreign matter from the liquid before the latter comes in contact with the filter-bed, substantially as herein shown and described.

4. In a filtering apparatus, substantially as described, the combination, with the cutter-head, perforated tube, and a diaphragm, as F, of a

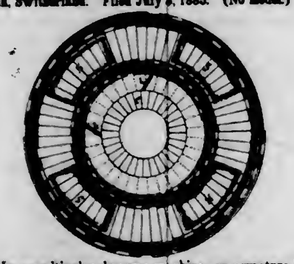
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series of telescopic tubes, the outer tube being fitted to the diaphragm and the inner one secured to the hub of the cutter-head, as set forth.

5. In a filtering apparatus, as described, the combination, with the shell A, having bent pipes G, man-holes a, and diaphragm, of the cutter-head D, the telescopic tubes, and means for operating the cutter-head, as set forth.

331,726. DYNAMO-ELECTRIC MACHINE. HERMANN MÜLLER, Zurich, assignor to the Werkzeug und Maschinenfabrik Oerlikon, Oerlikon near Zurich, Switzerland. Filed July 3, 1885. (No model.)



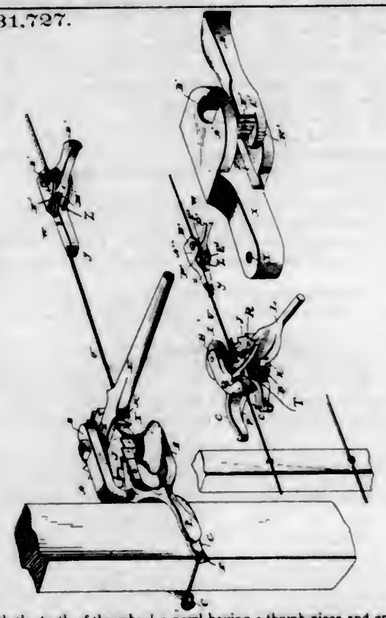
Claim.—In a multipolar dynamo-machine, an armature having the conductors wound upon it in one continuous course, so that the distance between each two successive induced portions of the conductors is greater or less than that between the poles of the field-magnets according to the formula $D=d-\frac{n}{p}$ or $D=\frac{n}{p}-d$, substantially as set forth.

331,727. WIRE-STRETCHER. ELI S. MULLINAX, Gonzales, Tex. Filed July 21, 1885. (No model.)

Claim.—1. In a wire-stretcher, the combination of a frame consisting of two forked portions secured to each other at their inner ends at right angles, and having the ends of the rear portion hooked and of the forward portion formed with transverse perforations, a bolt passing through the perforated forward ends of the frame, a drum turning upon the bolt and having a ratchet-wheel at one end, a pawl pivoted upon the frame and engaging the teeth of the ratchet-wheel, a lever having a longitudinal slot at its inner end sliding upon the bolt and having a shoulder provided with ratchet-teeth meshing with the teeth of the wheel, and a cord or chain secured to the drum and winding upon the same, provided with a wire-clamp at its free end, as and for the purpose shown and set forth.

2. In a wire-stretcher, the combination of a frame having two forked portions at right angles to each other, the ends of the rear fork being hooked and the ends of the forward fork being provided with transverse perforations, a bolt passing through the perforations, a drum turning upon the bolt and having a ratchet-wheel at one end, a lever having a longitudinal slot at its inner end sliding upon the bolt and having a shoulder formed with ratchet-teeth corresponding to and meshing

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with the teeth of the wheel, a pawl having a thumb-piece and engaging the ratchet-wheel pivoted upon the under side of the frame, a cord or chain secured at one end to the drum and having a wire-clamp at its free end, and a wire-clamp pivoted at the upper side of the frame, and consisting of a cam-lever having a serrated shoulder, and a lower cam end projecting into a transverse groove in the upper side of the frame at the inner end of the forward fork, as and for the purpose shown and set forth.

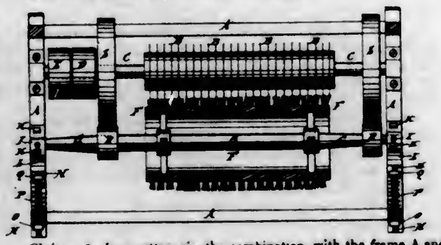
331,728. TOWEL-HOLDER. DANIEL H. MURPHY, Hartford, Conn., assignor, by direct and mesne assignments, to F. Willson Rogers and Joel P. Haff, both of same place. Filed Nov. 17, 1883. (No model.)



Claim.—1. The improved article of manufacture consisting of a loop having converging side arms, the ends of which are fixed to a gravitating ball, in combination with an attached eyebolt, substantially as described.

2. As an improved manufacture, the loop B, the converging portions C, forming a V-shaped groove, and a weight, D, all cast entire, substantially as set forth.

331,729. COTTON-GIN. JOHN T. NIXON and DANIEL N. CREEL, Lexington, Miss. Filed July 14, 1885. (No model.)

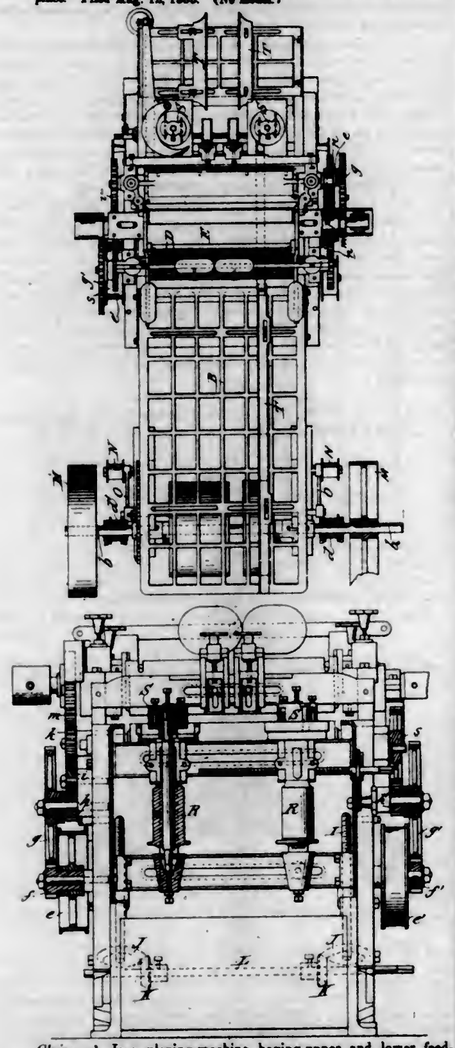


Claim.—1. In a cotton-gin, the combination, with the frame A and the saw-shaft C, provided with the large friction-wheels S, of the brush-shaft G, provided with the small friction-wheels R, the bearing-blocks L, the screws N, nuts O, and springs P, substantially as herein shown and described.

2. In a cotton-gin, the combination, with the frame A and the journals of the brush-shaft G, having V-shaped collars H, of the grooved journal-boxes I, having gudgeons J, the bearing-blocks L, having gudgeon-bearings K, the screw-rods N, nuts O, and spiral springs P, substantially as herein shown and described, whereby the inward movement

of the bearing-blocks can be limited, and the brush-shaft can spring without binding in its bearings, as set forth.

331,730. PLANING-MACHINE. GERRIT V. ORTON, San Francisco, Cal., assignor to himself, Henry P. Gregory, and Silas W. Gregory, same place. Filed Aug. 12, 1885. (No model.)



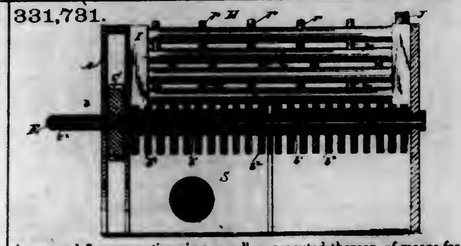
Claim.—1. In a planing-machine having upper and lower feed-rolls driven independently by a belt and gearing on opposite sides of the machine, the combination, with the front and back upper roll-gears, n n, of an intermediate gear, m, arranged to rotate upon an annular bushing, p, fitted to the outer end of one of the cutter-head mandrel-bearings, whereby the cutter-head mandrel is enabled to carry a pulley at each end, substantially as described.

2. In a planing-machine, the combination of the main frame A, having inclined guideways H H on each side, the lower feed-rolls, C C, mounted in journal-boxes supported in said main frame, the vertically-adjustable frame F, having guide-arms G G, the vertically-inclined screw-shafts I I, having gears J J, the transverse shaft L, having pinions K K, the cutter-head E, and upper feed-rolls, D D, mounted in said adjustable frame F, and belting and gearing on opposite sides of the machine for driving the upper and lower feed-rolls independently, substantially as described.

331,731. FURNACE. JOHN A. PEEK, Scranton, Pa. Filed July 15, 1884. (No model.)

Claim.—1. The combination, with the hollow shaft, perforated as

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shown, and fire-supporting rims or collars mounted thereon, of means for blowing air into the ash-pit up through the grate and fire-bed, and means for blowing steam into the fire-bed through the hollow shaft, substantially as described.

2. In a furnace, grate-sections composed of the hollow perforated shafts and the fire-supporting arms or collars mounted upon said shafts, said arms or collars having their spacing-lugs so arranged as to permit the free outward passage of steam from the jet-perforations in the shafts, substantially as described.

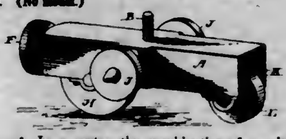
3. The combination, with the hollow revolving shafts having the ribs, of the fire-supporting arms or collars having the corrugations around their central perforations and recesses for accommodating the rib on the shaft, whereby both the sections and shaft are prevented from warping.

4. The fire-supporting arms or collars provided with the spacing-lugs having the openings between them, substantially as described.

5. The combination, with the hollow perforated shafts of the revolving grate-sections, of the steam-pipe having the nozzles fitting tightly within the ends of said grate-shafts, substantially as described.

6. The combination of the pairs of grate-sections and the partition separating the same, whereby the fire is troughed, substantially as described.

331,732. CASTER. JASPER L. PURPLE, Owego, N. Y. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a caster, the combination of a suitable block or frame, a swiveling pintle extending upwardly from the same, a friction-wheel journaled at the outer end of said frame and adapted to bear against the under side of the article or body to which the said caster is applied, friction wheels or rollers journaled to the sides of the frame on diametrically-opposite sides of the pintle, and the caster-wheel journaled longitudinally in the frame, and having its bearings centrally between the pintle and the outer friction-wheel, substantially as and for the purpose herein set forth.

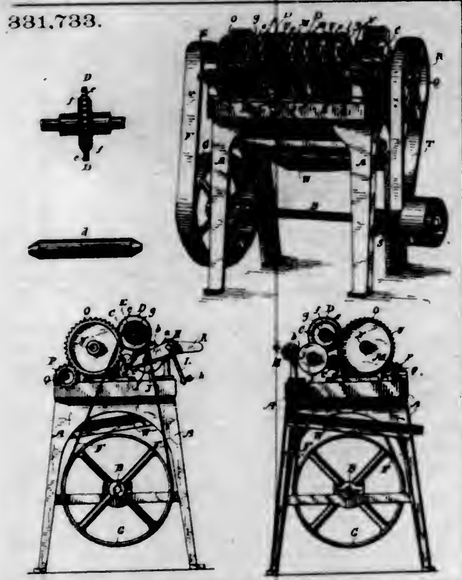
2. In a caster, the combination of a suitable block or frame, a pintle extending upwardly from the same, a friction-wheel journaled transversely at the outer end of the said frame and adapted to bear against the under side of the article or body to which the said caster is applied, a caster-wheel journaled in the said frame and having its bearings at a point about centrally between the swiveling pintle and the outer friction-wheel, and a wheel or roller journaled longitudinally at the inner end of the frame and having its periphery normally raised from the floor with which it shall come in contact only in the event of the tipping or tilting of the article or body to which the caster is applied, substantially as and for the purpose herein shown and specified.

3. In a caster, the combination of a suitable block or frame, a swiveling pintle extending upwardly from the same, a friction-wheel journaled transversely at the outer end of the said frame and adapted to bear against the under side of the article or body to which the caster is applied, a caster-wheel journaled in the said frame and having its bearings at a point about centrally between the pintle and the outer friction-wheel, friction wheels or rollers journaled to the sides of the frame on diametrically-opposite sides of the pintle, and a wheel or roller journaled longitudinally at the inner end of the frame and having its periphery normally raised from the floor, with which it shall come in contact only in the event of the tipping or tilting of the article or body to which the caster is applied, substantially as and for the purpose herein shown and specified.

331,733. MACHINE FOR MAKING DOWEL-PINS. CHARLES J. ROBINSON, Battle Creek, Mich., assignor of one-half to Reuben P. Kingman, same place. Filed Sept. 7, 1885. (No model.)

Claim.—1. In a dowel-pin machine, a series of circular saws which cut a dowel-rod into sections, and an oscillating dowel-rod-carrying frame which brings said rod into contact with said saws, in combination

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with rotating feeding-rollers which rotate said dowel-rod by contact with the same when said rod is brought into contact with the saws, substantially as set forth.

2. In a dowel-pin machine, a series of circular saws which cut a dowel-rod into sections, and an oscillating dowel-rod-carrying frame which brings said rod into contact with said saws, in combination with a series of idler-rollers mounted in said rod-carrying frame against the peripheries of which said dowel-rod rests, and rotating feeding-rollers which rotate said dowel-rod by contact with the same when said rod is brought into contact with the saws, substantially as set forth.

3. In a dowel-pin machine, a series of circular saws provided with peripheral teeth which cut a dowel-rod into sections, and provided with beveled teeth or cutters on the sides thereof, which point the ends of said dowel-sections, in combination with an oscillating dowel-rod-carrying frame which brings said dowel-rod into contact with said saws, and rotating feeding-rollers which rotate said dowel-rod by contact with the same when said rod is brought into contact with the saws, substantially as set forth.

4. In a dowel-pin machine, a series of circular saws which cut a dowel-rod into sections, in combination with an oscillating dowel-rod-carrying frame which brings the dowel-rod into contact with said saws, and a stop-arm on said rod-frame, which, by contact with a fixed stop, automatically limits the extent of the oscillation of said frame, substantially as set forth.

5. In a dowel-pin machine, a series of circular saws provided with peripheral teeth which cut a dowel-rod into sections, and provided with beveled teeth or cutters on the sides thereof, which point the ends of said dowel-sections, in combination with an oscillating dowel-rod-carrying frame which brings the dowel-rod into contact with said saws, and an adjustable stop-arm on said rod-frame, which, by contact with a fixed stop, automatically limits the extent of the oscillation of said frame, substantially as set forth, whereby, owing to the adjustability of said stop-arm, the same machine may be adapted to the manufacture of dowel-pins of different diameter.

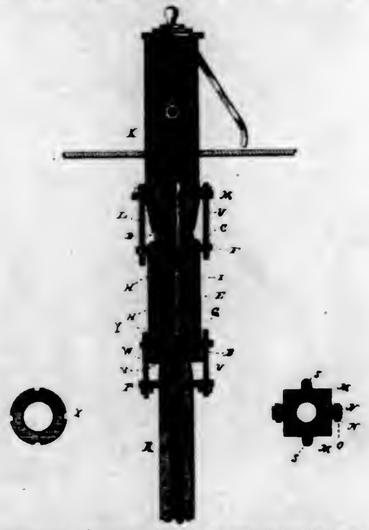
6. In a dowel-pin machine, a series of circular saws mounted on the same arbor which cut a dowel-rod into sections, an oscillating dowel-rod-carrying frame located beneath said arbor, which frame brings the dowel-rod into contact with said saws, and a series of idler-rollers mounted on said oscillating frame, against the peripheries of which said rod rests, said idler-rollers being located between and alternating with said circular saws, in combination with a series of rotating feeding-rollers, which rotate said dowel-rod by contact with the same when said rod is brought into contact with the saws, said feeding-rollers being mounted on the same shaft and located between and alternating with said circular saws, and in the same line with said idler-rollers, respectively, substantially as set forth.

7. In a dowel-pin machine, a series of circular saws provided with peripheral teeth, which cut a dowel-rod into sections, and provided with beveled teeth or cutters on the sides thereof, which point said dowel-sections, an oscillating dowel-rod-carrying frame, which brings the dowel-rod into contact with said saws, and an adjustable stop-arm on said rod-frame, which, by contact with a fixed stop, limits the extent of the oscillation of said frame, whereby, owing to the adjustability of said stop-arm, dowel-rods of different diameters may be cut by said saws to the axial centers thereof, in combination with rotating feeding-rollers which rotate said dowel-rod by contact with the same when said rod is brought into contact with the saws, said feeding-rollers being provided with elastic tires, substantially as set forth, whereby they may accommodate themselves to dowel-rods of different diameters.

8. In a dowel-pin machine, an oscillating dowel-rod-carrying frame, a series of idler-rollers mounted in line thereon, and a series of circular saws having beveled teeth or cutters on their sides, said saws being mounted on an arbor above and behind said rod-carrying frame, in combination with a series of feeding-rollers which rotate slowly in a direction opposite to that of the rotation of the saws, which hold said dowel-rod in contact with the said idler-rollers and rotate the same while being operated upon by said saws, and which are mounted on a shaft below and behind said saw-arbor, substantially as described.

9. In a dowel-pin machine, a main driving-shaft carrying a large and a small pulley, a saw-arbor carrying a series of saws and a small pulley, a belt connecting said arbor-pulley with the large pulley on the main shaft, and a dowel-rod-carrying frame which brings a dowel-rod into contact with said saws, in combination with a feeding-roller shaft provided with feeding-rollers, which rotate the dowel-rod when in contact with said saws, said roller-shaft carrying a large pinion, an intermediate driving-shaft carrying a small pinion, (which meshes with the pinion on the roller-shaft,) and a large pulley, and a belt connecting said large pulley with the small pulley on the main driving-shaft, substantially as set forth.

331,734. PUMP. JOHN H. ROOK, Jonesborough, Ind., assignor of one-half to B. F. Burk, same place. Filed Sept. 1, 1885. (No model.)



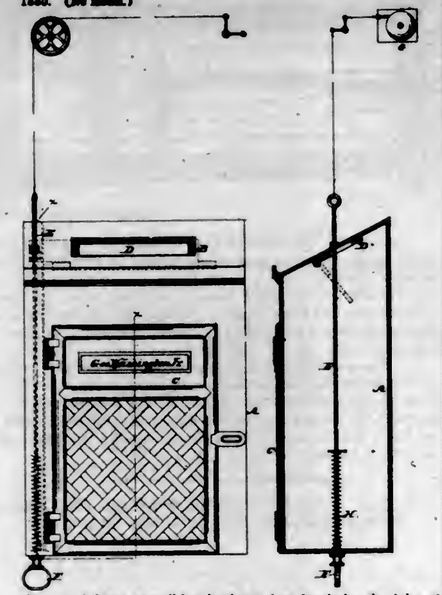
Claim.—1. Combined with a pump-stock having its lower end provided with an interior taper, a plunger-cylinder having an integral reduced continuation provided with an exterior taper, and having its interior diameter about the same as that of the said cylinder and pump-stock, substantially as specified

2. Combined with a cylinder having an integral reduced externally-tapered continuation, a glass cylinder interior thereto and provided with an annular flange resting under said reduced portion, a removable ring fitting one end of said exterior cylinder and provided with an internal taper, a pump-stock with the lower end internally tapered, a pipe with an end externally tapered, and clamps holding the parts in conjunction, substantially as specified.

3. A pump having a plunger-cylinder, with an externally-tapering reduced continuation at one end and at the other an internally-tapering removable reducing-ring, combined with a stock having an internal taper at its lower end, a pipe with an exterior taper at one end, and clamps for securing the cylinder-stock, and pipe, substantially as and for the purpose specified.

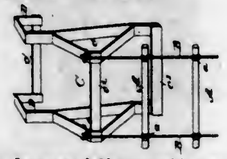
4. A pump-plunger cylinder with an interior glass surface, combined with an exterior cylinder having reduced tapering ends and exterior eyes, a pump-stock having an interior taper to fit the cylinder, a pipe with an exterior taper to fit the cylinder, and clamps formed of frames surrounding the stock and the pipe and secured to the eyes on the cylinder by bolts, substantially as and for the purpose specified.

331,735. ALARM LETTER-BOX. HENRY ROSSER, Philadelphia, Pa., assignor of one-half to Manoel J. Nascimento, same place. Filed Feb. 20, 1885. (No model.)



Claim.—A letter or mail box having a door for closing the inlet of the same, and a spring-pressed rod connected with said door, in combination with a bell or alarm mechanism, said rod passing through the box, and having its spring adapted to both restore the rod to its normal position and close the door of the inlet, substantially as and for the purpose set forth.

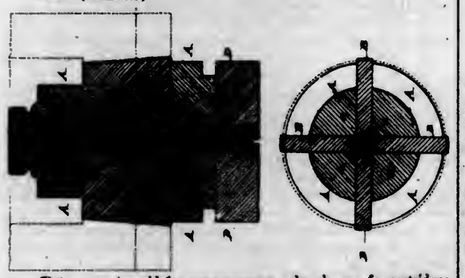
331,736. FIRE-ESCAPE LADDER. ALEXANDER ROSS, Lawrence, Kans. Filed Sept. 11, 1885. (No model.)



Claim.—1. A fire-escape ladder comprising rounds A, ropes or chains B B, connecting the spaced rounds, and a hanger, C, provided with hooks D D, and with outwardly-projecting brackets, c c, adapted to support the ropes or chains B B clear of the building, substantially as herein set forth.

2. In fire-escape ladders, the hanger C, adapted to support the ladder A B, and made with opposite side brackets, c c, provided with outwardly-projecting face-pieces, the hooks D D, and the cross-bars c^1 c^2, substantially as herein set forth.

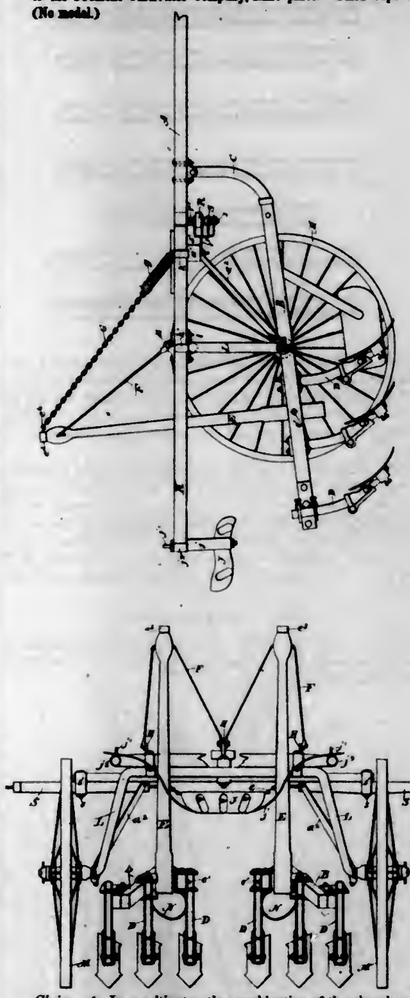
331,737. MOLD FOR MAKING COMPRESSED POWDER-CHARGES FOR CARTRIDGES. EDUARD RÜBEL, Thun, Switzerland. Filed May 8, 1885. (No model.)



Claim.—1. A mold for compressing powder-charges for cartridges, which consists of a cylindrical block having radial guide-slots, laterally-movable pressure-cheeks having concave inner and conically-tapering outer ends, detachable top and bottom plugs, and a cap having an interior conical portion fitting over the pressure-cheeks, substantially as set forth.

2. A mold for compressing powder-charges for cartridges, consisting of a recessed main block, radially-guided pressure-cheeks having concave inner and tapering outer ends, detachable top and bottom screw-plugs, an auxiliary screw-plug extending through the bottom of the cup and having a core-pin extending into the space between the pressure-cheeks, and an interior cap having an interior conical portion fitting over the pressure-cheeks, substantially as set forth.

331,738. CULTIVATOR. HARLOW C. STAHL, Fremont, Ohio, assignor to the Fremont Cultivator Company, same place. Filed Sept. 9, 1885. (No model.)



Claim.—1. In a cultivator, the combination of the plow-beams, the main standards, the looped rods F, provided with flat ends having elongated holes in them, the leg-brackets H, and the leg-bracket H', so that the plow-beams can be worked independently of each other, substantially as described and shown.

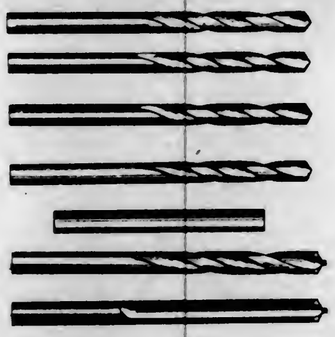
2. In a cultivator, the combination of the plow-beams, the main standards provided with collars d^1, having hooks d^2 projecting therefrom, the main standard-rods F, pivoted to the framing of the cultivator, the side bars, A, and the spring-chains G, having springs g, for connecting the tops of the main standards with the said side bars and limiting the downward movement of the cultivator-teeth, substantially as described and shown.

3. In a cultivator, the combination of the removable and adjustable seat-bars K, the spring-seat J, attached to the rear ends of the said seat-bars, the loops k, bolted to the side bars, and the trough-shaped pieces

b', clamped between the said side bars and the axle, substantially as described and shown.

4. In a cultivator, the combination of the steps N, provided with the bolt-holes *n* and shoulders *n'*, the plow-beams E, main standards E, main standard-rods F, pivoted to the framing, and the bolts *e*, substantially as and for the purpose set forth.

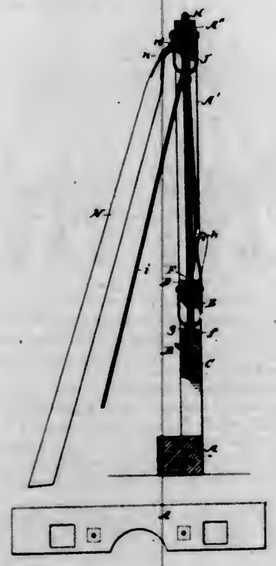
331,789. METHOD OF MANUFACTURING TWIST-DRILLS. GEO. R. STIMSON, New Bedford, Mass., assignor to himself and the Morse Twist Drill and Machine Company, same place. Filed May 16, 1885. (No model.)



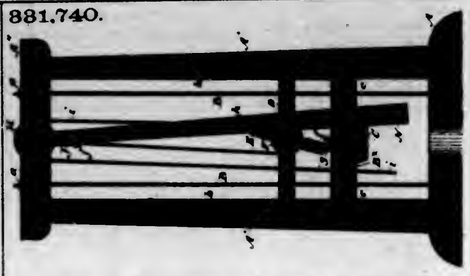
Claim.—1. The improved art, method, or process of making twist-drills herein described, the same consisting of the following steps, viz: first, rolling a pair of grooves into the hot blank; second, twisting the hot grooved blank so produced to form, approximately, the twist of the drill; third, rolling the hot grooved and twisted blank, substantially as described.

2. The improved art, method, or process of making twist-drills herein described, the same consisting of the following steps, viz: first, rolling a pair of grooves into the hot blank; second, twisting the hot grooved blank so produced to form, approximately, the twist of the drill; third, rolling the hot grooved and twisted blank, substantially as described; fourth, annealing the blank so produced, and vitrioling it, if required; fifth, re-rolling this blank while cold, all substantially as herein described.

331,740. POST-DRIVER. JOHN G. STIMMEL, Glen Hope, assignor of one-half to Samuel Hagarty, Hagarty's Cross Roads, Pa. Filed May 6, 1885. (No model.)



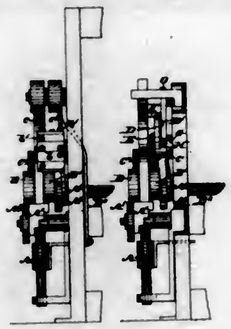
331,740.

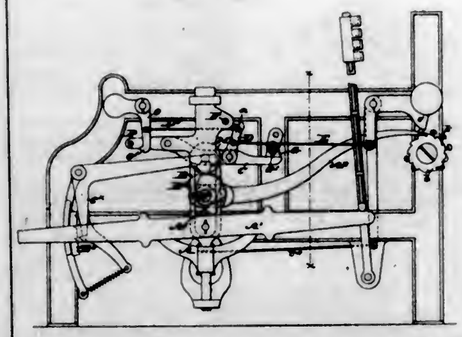


Claim.—1. The combination, in a machine for driving fence posts or pickets, of a supporting-frame, a base recessed as described, a block having a dovetailed recess, a weight having a dovetailed portion designed to enter said dovetailed recess, a bar having a lever carrying a hook to engage said block, means for elevating said bar, and a block for tripping said lever to release the hook thereof from the block, substantially as set forth.

2. The combination, in a machine for driving fence posts or pickets, of a supporting-frame, an inclined leg provided with a swivel-eye, *n'*, for engaging with said frame, a block having a dovetailed recess, and the loop *f*, the weight C, the bar D, the lever E, provided with hook *g* and loop *h*, and the means for elevating and releasing the weight, substantially as described, and for the purpose set forth.

331,741. ANCHOR SHUTTLE-BOX MOTION FOR LOOMS. CHARLES STROBEL, Philadelphia, Pa. Filed June 6, 1885. (No model.)





Claim.—1. The lever C, in combination with the yoke B, the loom-shaft B², the cam B' thereon, the loom-frame, the pivoted stop thereon, and the spring G' of said stop, substantially as described.

2. The lever C, lever D, with step *a*, and means, substantially as described, for controlling the position of said lever D, in combination with yoke B, the cam B', the shaft B², the tooth or projection F, the pin P on the lever C, the weighted lever O, and means, substantially as described, for connecting the levers O and D, substantially as and for the purpose set forth.

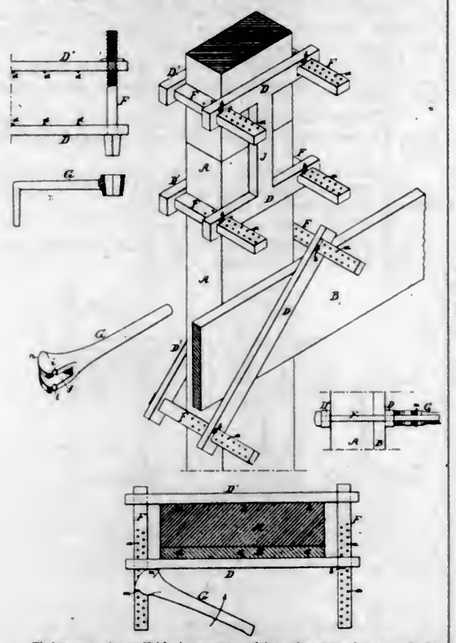
3. The rod E, having a slotted end, in combination with the feeler *c*, the pattern-wheel and operating mechanism therefor, substantially as described, the lever D, lever C, pin F, yoke B, and operating-cam,

weighted lever O, with hooked end O', the pin P, and the rod D', substantially as and for the purpose set forth.

4. The anchor and yoke and their operating-cam and the lifting-lever, in combination with the lever C, the lever D, with a step, means, substantially as described, for controlling the position of the lever D, the tooth F, stop G, the pin P, weighted lever O, with hooked end O', and the connecting-rod D', substantially as described.

5. The anchor, the feeler *c'*, connections, substantially as described, between said feeler and the anchor, the yoke and the operating-cam, the lifting-lever, the pattern wheel or chain provided with a double row of pins or screws, and the pusher or pawl A^2 and its operating mechanism, in combination with the additional feeler *c*, rod E, lever D, with step *a*, lever C, tooth F, stop G, weighted lever O, with hooked end O', the pin P on the lever C, and the connecting-rod D' of the levers D O, substantially as described.

331,742. SCAFFOLD-CLAMP. THOMAS N. SUBERS, Philadelphia, Pa. Filed May 18, 1885. (No model.)



Claim.—1. A scaffold-clamp comprising the opposite bars D D', having spurs *d*, the straining-rods F F, and a tightening-lever, G, detachable from said rods, all substantially as specified.

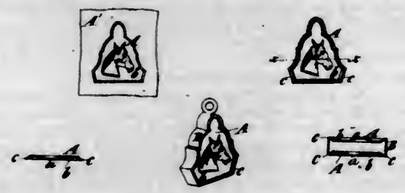
2. The combination of the opposite bars D D', the straining-rods F F, having perforations *a*, the tightening-lever G, having a cam, *n*, and the pins *b*, whereby the bars are retained when tightened, as set forth.

3. The tightening-lever having a cam-head and notched in the rear of the head for the reception of a fulcrum-pin, as specified.

4. The tightening-lever having a forked end, forming a cam, and notched in the rear for receiving a fulcrum-pin, as specified.

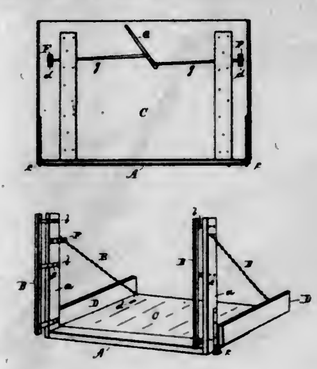
5. The combination of splicing-frames, each comprising upper and lower clamp-bars and a connecting-web, and each having retaining-spurs with straining-rods F, whereby the frames are secured together at both ends of each clamp-bar, as set forth.

331,743. APPENDAGE FOR ORNAMENTAL CHAINS. JOSEPH L. SWEET, Attleborough Falls, Mass. Filed Apr. 7, 1883. (No model.)



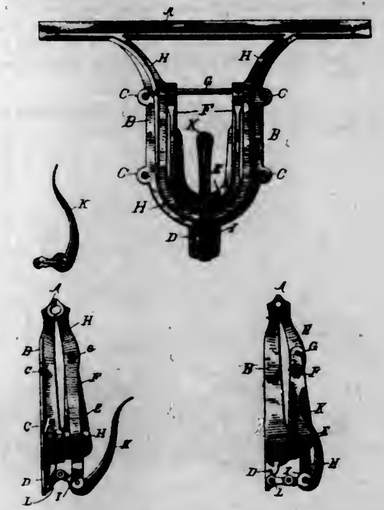
Claim.—The ornamental chain-tip herein described, consisting of the struck-up or embossed ornamental plates A A, of corresponding form, and the band or frame B, interposed between the plates and to the opposite edges of which the plates are secured, each plate A having its edge portion offset slightly, so as to produce a rim or flange, *c*, corresponding in form to and fitting the band B, and forming on the outer face of the plate a sunken panel, *b*, substantially as herein set forth.

331,744. WAGON END-GATE. HEZEKIAH H. TURNER, Tiskilwa, Ill. Filed Sept. 4, 1885. (No model.)



Claim.—An end-gate formed of a bar, A, posts *a a*, vertical bars B B, straps *b b*, bolts *e e*, gate C, having the sides D D and holes *d d*, hinges *c c*, chains E E, lever G, rods *g g*, and staples F F, as herein set forth.

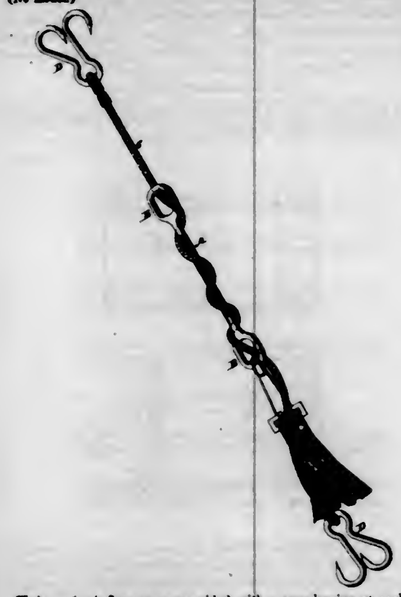
331,745. SAW-VISE. AARON J. TYLER, Albion, N. Y., assignor to E. C. Cole, same place. Filed Sept. 22, 1885. (No model.)



Claim.—1. A saw-vise consisting of the fixed U-shaped frame B, carrying a jaw formed at the ends of the said frame, a U-shaped frame, E, integrally attached to the base of the frame B and having upwardly-projecting arms F, and a U-shaped jaw-carrying frame, H, of a size corresponding to that of the frame B and pivoted to the arms F, the whole operated substantially as specified.

2. A saw-vise consisting of a fixed U-shaped jaw-carrying frame, B, a U-shaped frame, E, integral with the base of the fixed frame and having arms F, a U-shaped frame, H, carrying a jaw and pivoted to the arms F, and a toggle-joint connection consisting of a link, L, pivoted to the base of the fixed jaw, and an angle-lever fulcrumed to the base of the frame H and pivotally connected by its shorter arm to the link L, substantially as specified.

331,746. **FIRE-ESCAPE.** Charles S. Watson, Philadelphia, Pa., assignor of one-half to Isaac Townsend, same place. Filed May 7, 1885. (No model.)

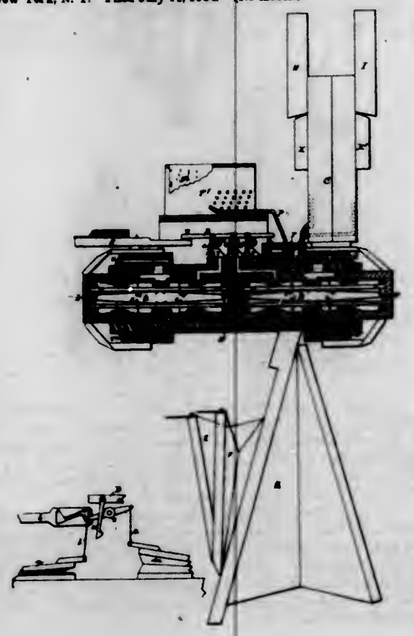


Claim.—1. A fire-escape provided with a rope having at each end thereof a hook having two flaring and pointed prongs, substantially as and for the purpose set forth.

2. A fire-escape consisting of a stock having eyes at each end thereof, and a rope having a hook at each end, each hook having an eye and double flaring points, substantially as and for the purpose set forth.

3. A fire-escape consisting of a stock having an eye at each end, and a hook formed of an eye and two prongs, the eye being of two lengths of metal bent from the prongs, substantially as and for the purpose set forth.

381,747. **MECHANICAL MUSICAL INSTRUMENT.** Merritt Gally, New York, N. Y. Filed July 11, 1884. (No model.)



Claim.—1. In an organ-action, two valve-boards facing each other and provided with pneumatic valves alternately leading to the two valve-boards.

2. The bar or lever, as D, provided with lifting-hooks, as *a e f*, for operating different sets of vent-valves, substantially as specified.

3. The combination, with the vent-valves, as 1 2 3, of the manual-key K and the operating lever and hooks, substantially as specified.

4. The combination, with the vent-valves, as 1 2 3, of the lever D, provided with its operating-hooks, and a pneumatic motor, as T, substantially as specified.

5. The combination, with the pneumatic vent-valve, as 1, of the operating lifting-book and a device for throwing the hook out of operating connection with the valve, substantially as specified.

6. The combination, with a series of lifting-hooks for operating pneumatic vent-valves, of the cammed rock-shaft *z*, substantially as set forth.

7. The combination, with a series of lifting-hooks for operating a series of pneumatic vent-valves, of the cam rock-shaft *z*, operated by means of pneumatics, as *n* and *m*, substantially as specified.

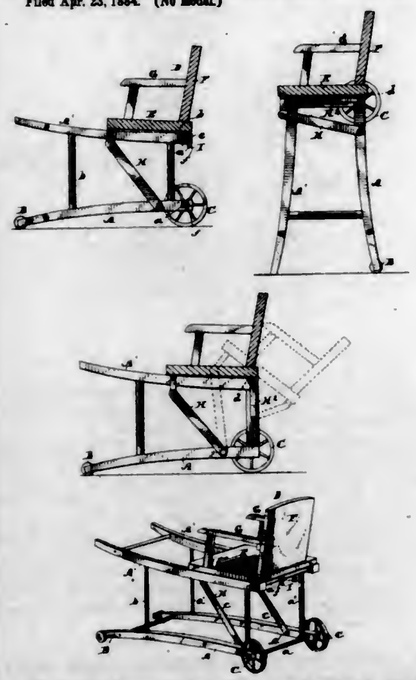
8. The combination, with the series of valve-operating hooks and devices for throwing the hooks out of connection with the valves, of a hand draw-stop, for operating the throw-off.

9. The combination, with the cammed rock-shaft *z* and its lever projections, of the reciprocating cam L, substantially as and for the purpose specified.

10. The combination, with a vent-valve and a single lifter for the same, of a manual-key and a pneumatic motor, both operating on the lifter.

11. The combination, with a vent-valve and a lifter for the same, of a manual-key operating on one end of said lifter, and a pneumatic motor operating on the other end thereof.

331,748. **NURSERY-CHAIR.** William Holden, Baldwinsville, Mass. Filed Apr. 23, 1884. (No model.)

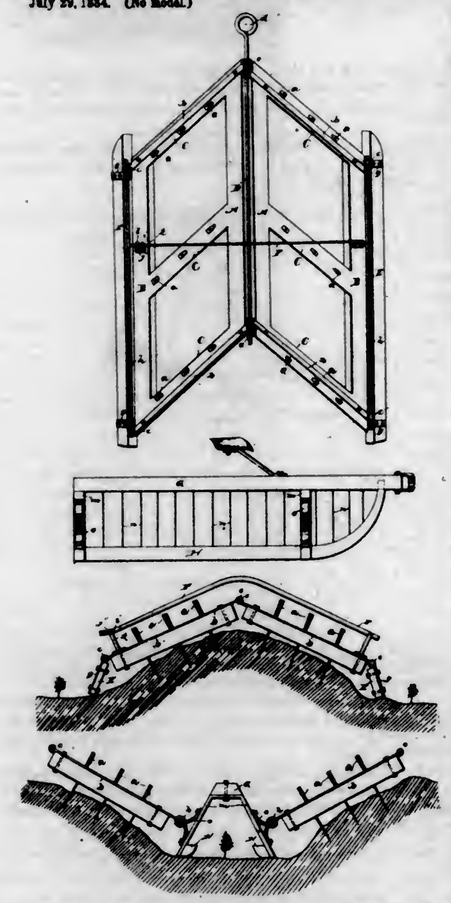


Claim.—1. The combination of the two pair of legs A A', rigidly connected together by rounds, the movable seat D, the short arms *c'*, rigidly attached to the bottom of the seat, adjacent to the front thereof, the long arms *c*, pivoted at one end to the short arms, and at the other end pivoted to the legs A, for adjusting the seat from the ends of the legs to the sides of the legs A', substantially as described.

2. The combination of the two pairs of legs A A', rigidly connected by rounds, and the front and rear top rounds provided with catch-pins *f f'*, the seat D, the short arms *c'*, rigidly attached to the under side of the seat-bottom, adjacent to front thereof, the long arms *c*, pivoted to the short arms and to the legs A, for adjusting the seat from the ends of the legs to the edge of the legs A', and a fastening device, I, on the rear edge of the seat for engaging the catch-pins to hold the seat either on the ends or the sides of the legs, substantially as described.

3. A child's chair and carriage consisting of the following elements, to wit: a pair of legs, A, each provided at both ends with rollers, a pair of legs, A', rigidly connected with the legs A by rounds, a seat, D, the short arms *c'*, rigidly attached to the seat-bottom, and the long arms *c*, pivoted to the rigid arms and to the legs A, for adjusting the seat from the ends to the sides of the legs and retaining it in either position, substantially as described.

331,749. **HARROW.** George G. Sinker, Hillsdale, Iowa. Filed July 29, 1884. (No model.)



Claim.—1. The combination, with a harrow consisting, essentially, of two sections, of loops upon the opposite side edges of each section adapted for the attachment of guards either to the inner or outer side edges of both sections, substantially as set forth.

2. In a harrow, the combination, with a central rod and two harrow-sections pivoted to said rod on opposite sides thereof, of a depending guard pivotally secured to the outer side edge of each harrow-section.

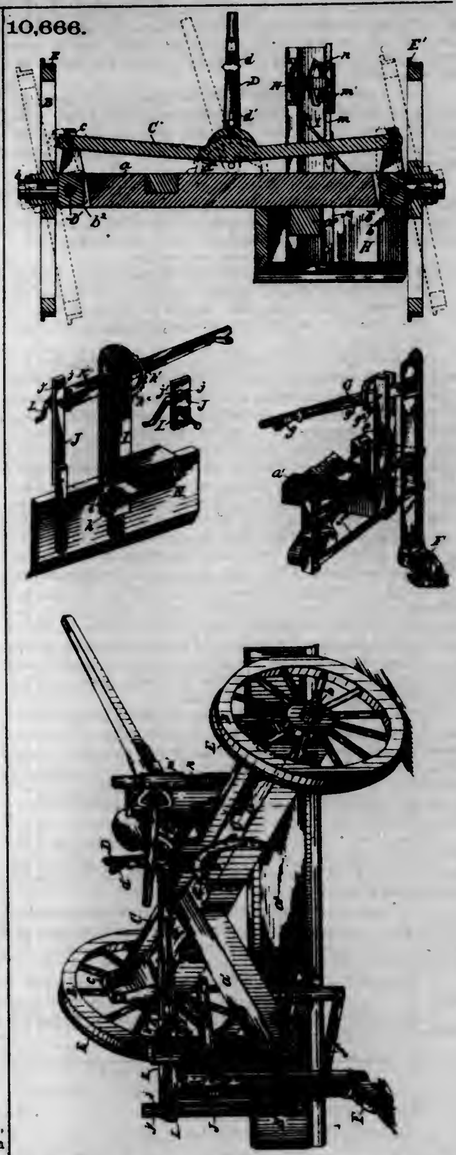
3. In a harrow, the combination, with a central rod, two harrow-sections pivoted to said rod on opposite sides thereof, and a bar pivotally secured to one section and adjustably secured to the other section, of a depending guard pivotally secured to the outer side edge of each harrow-section.

4. In a harrow, the combination, with two harrow-sections pivoted together, of a depending guard pivotally secured to the outer side edge of each harrow-section.

REISSUES.

10,666. **ROAD-GRADING MACHINE.** Joseph D. Adams, Marshall, Ind. Filed Oct. 29, 1885. Original No. 310,165, dated Jan. 6, 1885.

10,666.



Claim.—1. In a road-grading machine, the combination, with the scraper or leveling bar and supporting-wheels, of the pivoted and adjustable spindles and the adjustable caster-wheel, substantially as and for the purpose specified.

2. In a road-grading machine, the combination of the pivoted and adjustable spindles and the supporting-wheels provided with the projecting circular metallic flanges, substantially as and for the purpose specified.

3. In a road-grading machine, the combination, with a carrying-frame having a main axle and a scraping or leveling bar suspended from and beneath and arranged obliquely to the line of draft of said frame, of a pair of wheel-spindles pivoted to opposite ends of said main axle, carrying-wheels mounted on said spindles, and intermediate mechanism connecting said spindles, whereby the spindles and their wheels are simultaneously inclined in the same direction and at the same angle, all combined and arranged to co-operate substantially as and for the purpose set forth.

4. In a road-grading machine, the combination of the slotted caster-wheel standard, the parallel bars *f' f'*, pivoted to each side of said standard

and connecting the same to the main frame, the upright *e*, slotted at its upper end, and the lever G, fulcrumed in said slotted standard *e* and loosely pivoted to the upright *f*, substantially as described, and for the purpose specified.

5. In a road-grading machine, the combination of the scraper or leveling bar having the blocks *h h*, vertical uprights I I, having corresponding guide-grooves for said blocks, and mechanism for connecting and adjusting said bar relative to the main frame, substantially as herein shown and described.

6. The combination, with the scraper or leveling bar and the pivoted lever K, of the vertical bar J, having the horizontal slot *j*, enlarged circular opening *j'*, and a lock-pin having its ends of different diameters, substantially as and for the purpose herein shown and described.

10,667. **MANUFACTURE OF SACCHARINE COMPOUNDS.** CONSTANTIN FAHLBERG, New York, N. Y., assignor of one-half to Adolph List, Leipzic, Germany. Filed July 25, 1885. Original No. 319,062, dated June 2, 1885. Patented in Belgium Aug. 16, 1884, No. 66,043, and in France Aug. 16, 1884, No. 163,797.

Claim.—1. The process of making a new sweet compound from toluene and other derivatives of coal-tar, which consists of the following successive steps: first, converting toluene and the substitution products of benzine and its homologues into toluene-monosulphonic acids by fuming or concentrated sulphuric acid; second, converting the toluene-monosulphonic acids into calcium toluene-monosulphonates by chalk or carbonate of lime; third, converting the calcium toluene-monosulphonates by sodium carbonate or bicarbonate, or any other carbonate of the alkalies, into sodium toluene-monosulphonate or any toluene-monosulphonate of the alkalies; fourth, evaporating the sodium toluene-monosulphonate in open or vacuum pans and cooling and drying the same; fifth, converting the dry product into the two isomeric toluene-monosulphochlorides and phosphoroxychloride by the action of phosphor-pentachloride and separation of the resulting solid toluene-monosulphochloride in a centrifugal machine; sixth, converting the liquid toluene-monosulphochloride into the corresponding amid by treatment with caustic or carbonate of ammonia; seventh, treating the amid thus obtained with certain oxidizing agents in an alkaline solution to obtain the salts of the same; and, eighth, separating the pure saccharine compound from its salts by acids, acid salts, and hydrogen sulphide, substantially as described.

2. The process of making a new sweet compound from toluene and other derivatives of coal-tar, which consists in converting toluene into toluene-sulphonic acid, oxidizing said acid or its salts into sulphobenzoic acid or its salts, then evaporating the latter and treating it with phosphor-pentachloride and caustic or carbonate of ammonia, and finally separating the pure saccharine from the ammonium salt thus obtained, substantially as set forth.

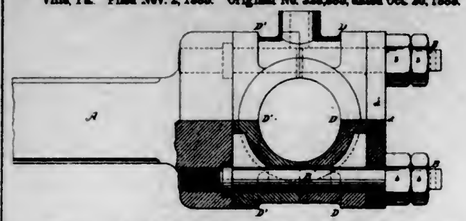
3. The regeneration of toluene and the generation at the same time of hydrochloric and sulphurous acids from the solid toluene-monosulphochloride by the action of carbon, water, and superheated steam under pressure, substantially as described.

4. The generation of chlorine for the preparation of phosphor-pentachloride from phosphoroxychloride, bleaching-powder, (hypochlorite of lime,) and water, respectively, hydrochloric and phosphoric acids, or one of them, substantially as set forth.

5. The saccharine compound, benzoic sulphinide, substantially as described.

6. The saccharine compound, benzoic sulphinide, made by the process herein described.

10,668. **STUB END FOR CONNECTING-RODS.** LEWIS GIBSON, Pottsville, Pa. Filed Nov. 2, 1885. Original No. 328,885, dated Oct. 20, 1885.



Claim.—A stub end or other bearing having bearing-blocks and provided with confining bolts or straps of a metal having a greater rate of expansion than the crank-pin or other journal, substantially as described.

10,669. **BOOT.** GEORGE VALIANT, Toronto, Ontario, Canada. Filed Dec. 18, 1884. Original No. 298,638, dated May 13, 1884. Patented in Canada Oct. 16, 1883, No. 17,896.



Claim.—1. A boot having its fly or flap B partly cut away, substantially as set forth, and provided with a narrow button-hole strip of stronger material firmly attached thereto, substantially as described.

2. A boot having the edge of its fly or flap cut so as to receive a button-hole strip and to leave a point or lip, *b*, in combination with the button-hole strip A, made of a single thickness of stronger material, substantially as described.

3. A boot having the edge of the fly or flap of its upper serrated or scalloped, in combination with a piece of material sewed to the said edge, and having eyelets or button-holes stamped out of it, substantially as and for the purpose specified.

PHOTO LITH NORRIS PETERS

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. District Court—Southern District of New York.

KASS *v.* HAWLOWETZ.

Decided April 10, 1885.

1. Under the statute anybody is privileged to bring an action against persons who falsely and designedly mark articles with the word "patented."
2. If the jury find that the person marking articles in that manner did it with the intention to deceive the public, then all other questions are impertinent, and it is the duty of the jury to find a verdict of guilty.
3. Where a man is carrying on a manufacture, and necessarily employs various persons, the acts of the persons that he employs, if done according to his direction or with his sanction, are in law his acts.
4. The jury have a right to infer from the evidence whether this is a patented or unpatented article, and the fact that there is no evidence of a patent is to be taken into consideration.

CHARGE OF JUDGE BROWN.

BROWN, *J.*:

This action, gentlemen of the jury, is a statutory one, founded upon the statute connected with the patent laws. One of the sections provides for the penalty of one hundred dollars in the case of each offense where a person in any manner marks upon or affixes to an unpatented article the word "patented," or any word importing that the same is patented, for the purpose of deceiving the public. Under that section this action has been brought by George V. Kass, who sues for himself and for the United States, the action being provided by law to be brought in that manner; and any penalties recovered are divided between the prosecutor and the Government. It requires no interest in the person who brings the action other than that he is one of the general public. Everybody is invited to make complaints and to bring actions against persons who falsely and designedly mark articles with the word "patented;" and if the jury find that the person marking articles in that manner did it with the intention to deceive the public, then all other questions are impertinent, and it is the duty of the jury to find a verdict of guilty and inflict the punishment defined by law—namely, one hundred dollars for each offense, one half of which is due to the prosecutor and the other half to the Government.

The question for you here is whether the stamping of the words "Pat. Jan. 17, 1882," upon these marabou-band-feather goods was an act of stamping those words upon an unpatented article; and, if so, whether it was done by the defendant and with the intent to deceive the public.

The first question involved is a question for the court to pass upon—namely, whether the articles produced here, and which it is sworn have been stamped in this manner, were articles upon which the defendant was entitled to put the stamped words "Pat. Jan. 17, 1882." Upon that point the court is clear in its conviction of its duty to charge you that the defendant had no right to put those words upon those goods, and if any error is made by the court in that respect the remedy of the defendant is made easy upon his appeal. It is a question of law purely upon the evidence given here. It is the duty of the court to pass upon that question one way or the other, and the duty of the jury to take that finding and act upon it fairly as given; and if error is committed the remedy is upon appeal, in case a judgment should be founded upon this direction and upon the other facts of the case. Perhaps I should say a single word in explanation of why this view is taken by the court in regard to the patent itself, although the subject will come up for some comments in regard to the defendant's intention. I take this view of the patent obtained in January, 1882, because, as I read it, it is a very clear statement of what is intended, of what was before the state of the art, and of what the defendant here meant to claim as new throughout his claim; and the patent issued upon his claim, as I read it and construe it, is upon an ostrich-feather trimming, and nothing else, as an article patented; secondly, upon a particular process of making ostrich-feather trimmings. I take this patent as valid for what it claims, and whether it is valid or not is not important here. I say it purports to be a patent based upon ostrich-feather trimming as an article patented; and, secondly, upon the process of making ostrich-feather trimmings in a particular way. It is your duty to take from the court its charge as to that matter, so far as concerns these goods that were stamped as not being articles which should be stamped in that manner.

The next question is whether the defendant stamped these articles. Where a man is carrying on a manufacture, and necessarily employs various persons, the acts of the persons that he employs, if done according to his direction, or under his supervision, or with his knowledge, or with his sanction, are in law his acts. The proprietor of every branch of business must be held legally responsible and accountable for what takes place in the course of his business, by his direction or his knowledge, or by his concurrence. Such acts are deemed his acts. Therefore I charge you that if the stamping of these articles or the affixing of these labels was done by a person in the employ of Mr. Hawlowetz, by his direction, with his knowledge, or with his sanction, that is his act so far as the stamping goes. I need not refer to the testimony in detail on that subject. You have heard the testimony of Mr. Steinitz on that

subject. You have also heard what Mr. Hawlowetz says himself. It is not necessary at this time for me to delay you in commenting upon that. As sensible men, familiar with the methods of business and what is likely as to the circumstances here, you will deal with this case.

I pass now to the next question. If you find that these stamps or labels were put on by the employé of Mr. Hawlowetz, with his knowledge or concurrence, or by his direction, the next question is whether this was done with the intent to deceive the public. A necessary ingredient in this offense, and before any penalty can be imposed, is that you find that this was done for the purpose of deceiving the public. Of course, an intent to deceive the public necessarily follows if there was anything done tending to mislead and intended to mislead the public. There is no necessary refinement about this matter at all. It is a matter of plain common sense. The object of the statute is clear enough. The stamping of articles with the word "patented," giving the day and date, if it be not patented, tends to mislead the public. It gives an enhanced value to articles offered for sale, and therefore, presumably, injures the whole community as buyers. It tends to deter other persons from entering into the manufacture of articles bearing this stamp. It therefore tends to prevent fair competition in the proper fields of industry. Therefore a stamp of this kind put upon goods, not authorized, misleads the whole public; and if that is the intent with which it is put on that is an intent to deceive the public. A patent creates a monopoly in the thing invented; rightfully so, because the law intends to give that monopoly for a limited period of time as the reward of skill and invention; but by just so much as you are bound to protect the inventor in the rightful fruits of his own invention it is your duty to protect the public against any extension of this monopoly to articles known not to be within it.

The question then comes down to this: If you find that these articles were stamped by Mr. Hawlowetz, or with his concurrence or knowledge, or by his direction, the question whether he did believe honestly and in good faith that these articles were covered by his patent is important; and on that point I charge you that you are not to give any penalty against him, if you find upon all the evidence that he did believe that these articles were embraced in his patent of January 17, 1882. If he believed that truly and honestly, then he did not stamp them with the intent to deceive the public within the meaning of this law. Therefore you are brought face to face with the evidence in regard to his knowledge or intention. That, of course, gentlemen, is a somewhat difficult point. In one way you may say difficult, because you have to infer a person's knowledge or intention from other circumstances; and if the person comes upon the stand and says I believed so and so, you must weigh the credit to be given to the man's testimony as to what he says he believed, and when there is a considerable sum involved in the action it is for you to judge his testimony upon that point, and whether you consider that other circumstances in the case bear out his statement.

Mr. Hawlowetz testifies in a few general words that he never authorized or gave authority for articles to be stamped that were not patented. What he claims or believes in regard to marabou-feathers I leave you to determine from what you have heard. I shall not go into detail upon what his knowledge or belief may have been. I shall simply direct your attention to a few of the subjects, to recall them to your attention, and you will go over them in your deliberations. In the first place you have his own application for his patent of January, 1882. This, which was read to you, was filed, as appears by this copy, on the 8th day of November, 1881. The specification was filed at the same time. In that specification, in relating to the previous condition of the art, he says that—

> This invention relates to an improved fabric in imitation of fur to be used as a trimming for ladies' wear and as a material for ladies' caps and ladies' sacks.
>
> Fabrics in imitation of fur composed of a textile base or backing and a coating of marabou-feathers have heretofore been made by cementing the feathers to the backing, and also by interweaving such feathers with the backing. In the former case dust gathers upon and sticks to the fabric, and in the latter case, owing to the fineness, flexibility, and smoothness of this class of feathers, they readily pull out, and the fabric is soon destroyed. Moreover, such feathers are too fine to give a sufficient body to the fabric.

That is his statement of the former state of the art. Thereupon he states what his invention is:

> The invention consists in a fabric for trimming and other uses composed of a textile base or backing and an outer face of ostrich-feathers, which are interwoven with the backing, which latter is shrunk upon the bodies or quills of the feathers, as hereinafter described.

Then, as I observed before, the claim itself for what is new and for his patent is for the two things: an ostrich-feather trimming composed so and so, and a process of making ostrich-feather trimmings so and so. The process of making included, among other things, the use of a dye after the interweaving, by which the textile fabric was caused to shrink, as it is said, upon the body or quills. In this nothing is said about a wash or washing, but the use of a dye, assumed as meaning some chemical. That is the state of the art, and that is Mr. Hawlowetz's description, in his own application, of what is new in his invention, for which he used the words, "Patented January 17, 1882." Now, you have had some testimony before you calculated to relieve, it may be said, Mr. Hawlowetz to some extent from what would be a fair inference upon that testimony. Mr. Goepel expressed the belief that he did not think Hawlowetz fully understood this description. You must remember, gentlemen, that this is a formal document—one prepared with great care—and it will be a serious question for you how far a person coming into a court of justice is to be credited in intimating that he did not understand a matter seemingly so clearly stated as in this passage which I have read to you. What I refer to is whether the defendant supposed *bona fide* and honestly that this marabou-feather trimming was embraced in this patent here and within the language I have given. In addition, you have next his patent of September 30, 1884. He says in this that he has invented certain new and useful improvements in feather-trimmings:

> This invention has reference to certain improvements in feather-trimming, and more especially in the manufacture of feather-trimmings, for which Letters Patent No. 252,374, dated January 17, 1882, have been granted to me heretofore, the improvements being designed with a view to utilizing all kinds of feathers, such as ostrich, marabou, turkey-downs, and other feathers, and of imparting a fuller and more finished appearance to the trimming.

It is for you to judge from this whether at this time the fair meaning of this is not a renewal of the statement that in his former patent he only understood ostrich-feather goods to be covered, while his improvements consisted in part in the use of all kinds of feathers, as expressed here—such as marabou, turkey-downs, and other feathers. This second patent claims and gives only the process for an article woven with feather-trimmings, consisting of a textile base or backing, with feathers interwoven therewith parallel with the weft-threads, the quills and fines of the wefts or fillings being arranged alternately in opposite directions to those of the adjoining weft or filling. That, so far as this article is concerned, is all that has been claimed in this later patent, together with the process of doing it—the process of making the goods in this way.

There are two or three other circumstances that have some bearing upon this question. The manufacture by him to some extent of marabou goods before this patent was issued, not to any considerable extent in the band form, as I understand, but more or less in the larger pieces, such as he exhibited here, which it appears also by one of the witnesses was manufactured and sold some six months before this patent was applied for, the mode of dyeing and washing in use from the early part of the year 1881, the washing and dyeing being about the same time.

There are also some conversations testified to, showing, if you believe them, that he did not understand that his marabou goods were embraced within this patent. Mr. Tausky says that in the latter part of the year, when there was a dispute between them as to what they should make, he objected to making so many marabou goods as Tausky wanted to make, because not patented, and consequently they had a larger stock of ostrich feathers than of marabou, and they had a quarrel, and Tausky left the defendant.

Mr. Steinitz also refers to a conversation in regard to the marabou goods being made, and Mr. Hawlowetz thought it was hardly worth following, or they could not do much about it—something of that sort.

These are the main points which bear upon the question of Mr. Hawlowetz's knowledge. If you were to take these things alone they would apparently warrant the inference, without doubt, that he knew what he was doing. Every man is supposed to understand what he is saying, and certainly in documents of the kind stated here; and it is for you to consider whether his statements to you—if you think he has stated that he supposed these marabou goods were covered by his patent—are justified by all the evidence.

With regard to the proof of the patent itself, which had escaped my thought for the moment, I would say that it is the duty of the plaintiff to satisfy you on the whole evidence that this was an unpatented article—that the marabou goods were an unpatented article. I have charged you that they were not covered by this patent. As to whether they were covered by any other or not, you must infer from the evidence you have heard. On this point you have the statement in the very patent which is applied for by Hawlowetz as to what the condition of the art was, that this kind of goods had been made heretofore by interweaving the feathers with backing—that is, the marabou-feathers have been made before by cementing them on the back and also by weaving such feathers with the backing. There is no allusion here to any previous patent. This is no application for an improvement on any former patent as to marabou-feathers, and it is for you to infer from this, as reasonable men, whether there was a patent or not for the articles in question. If there was a patent for marabou goods, it might perhaps easily enough be produced; but you cannot prove a negative in the same way that you can prove an affirmative. The jury have a right to infer, and should infer, as reasonable men, from the evidence, whether this is a patented or unpatented article, and that you will find from the evidence. There is no evidence of any other patent, and it is for you to say whether the evidence does not warrant you in finding that there was no other patent.

I have been asked to charge by the defendant quite a number of propositions, most of which, I think, are covered by what I have said. If you desire, I will go over them.

Mr. RAEGENER. I desire to have them read.

The COURT. The first request of the defendant is as follows, and which I charge you:

I.

> The statute under which this action is brought, though a public statute, and designed to prevent impositions upon the community, is nevertheless a highly penal one. * * * Such penal statutes are always construed strictly—that is, they are not to be extended to acts which do not clearly come within the plain meaning and ordinary acceptation of the words used. The offense being created by statute, does not extend, and cannot in such cases be construed by the courts as extending, beyond the fair meaning of the language employed in designing the offense. (Brown, J., in *Pentlarge* v. *Kirby*, XIX, Federal Reporter, citing *Ferretts* v. *Atwell*, 1 Blatch., 151, 158.)

II.

It is incumbent upon the plaintiff to prove that the articles upon which the defendant placed the words importing that they were patented were unpatented.

III.

It is not the duty of the defendant, in order to prevent a recovery against him, to prove that the articles in question were patented.

IV.

It is incumbent on the plaintiff, for the purpose of a recovery herein, to prove that the defendant himself marked the articles as "patented," or with words importing that they were patented.

The COURT. That I decline.

Defendant excepts.

V.

> The intent to deceive must accompany the act. (Brown, J., in the case above cited.)

And if the jury believe that the defendant in good faith supposed that the articles in question were covered by his patent of January 17, 1882, then his so marking them is not the marking of them with intent to deceive the public, and so not within the provisions of the statute.

VI.

The jury must find that the marking was done within the jurisdiction of this court. (There is no such evidence in the case.)

The COURT. I decline to charge the latter part of the sixth request.

The defendant excepts.

Mr. RAEGENER. I ask your honor to charge that there is no evidence that the marking was done in New York city.

The COURT. That I decline to charge.

VII.

The plaintiff must prove his case with the same particularity and exactness as on the trial of an indictment.

The COURT. That I decline to charge.

Defendant excepts.

The COURT. The jury must be reasonably satisfied on the evidence on each of the points that I have told them were necessary to find in order that the defendant be held, and that is all that is required in this class of cases.

VIII.

The defendant is entitled to the benefit of every doubt.

IX.

The jury, in weighing the evidence, have a right to take into consideration the fact that the only important witness for the plaintiff confesses himself to be the wrong-doer, (if any wrong has been done,) and that he is in the employment of a rival house, and may discredit his testimony if they think proper to do so.

X.

The mere marking of an unpatented article as patented is not within the provisions of the statute. The jury must also find that the same was done with intent to deceive. To determine that a case is within the intention of a statute, its language must authorize us to say so. The offense is "stamping the articles, accompanied by the intent to deceive the public." (See case cited above.) Steinitz, who testified that he personally stamped the articles, has not testified as to his intent or as to the defendant's intent.

XI.

In order to recover, the plaintiff must prove, first, the case stated in the complaint; second, that the defendant marked upon or affixed to an "unpatented" article the word "patented," or any word importing that the same is patented, for the purpose of deceiving the public.

XII.

The intent to deceive cannot be inferred; it must be proved, like any other fact.

The COURT. I decline to charge the twelfth request.

Defendant excepts.

XIII.

Courts will not infer any intention to commit an offense if the attendant facts and circumstances will justify an innocent construction.

Mr. RAEGENER. I further request your honor to charge that if in the marabou-trimmings the defendant used one or more of the elements or processes of his patent of January 17, 1882, and consequently marked his goods so made "patented January 17, 1882," he has not made himself liable to the provisions of the statute sued on.

The COURT. I decline to charge as requested.

Defendant excepts.

Mr. RAEGENER. I further ask your honor to charge that the patentee may, at his discretion, dispense with some of the details mentioned in his patent in making the unpatented article.

(The court so charged.)

Mr. RAEGENER. I further ask your honor to charge that the patent of January, 1882, is good until set aside by a court of proper jurisdiction.

(The court so charged.)

The COURT. That, gentlemen, covers the points of this case. If upon these facts which I have presented to you, and upon the evidence, you find that there has been a stamping by the authority or direction of the defendant with the intent to deceive, as it is explained, then you will come to the question of amount of penalty—that is to say, the number of offenses. On that the testimony is considerably varied—somewhat elastic. According to my own notes, which I have been looking at, as to what was testified yesterday, I find nothing beyond the number specified by Mr. Steinitz, and that, as finally brough tdown by him, to twenty-five. It is necessary that the complainant state in his complaint the offenses for which he seeks to recover, and he is consequently limited to what he states. The complaint covers a period from August, 1882, only; therefore everything prior to that time is excluded. I understood Mr. Steinitz to state, in answer to a question by the court, that twenty-five were all he was prepared to swear were so stamped of the marabou goods after August, 1882. He had previously stated different numbers, from three inches to six inches, and included the entire period from January 31 to the last day; but in answer to the question by the court as to what he would swear to from August, 1882, downward, within the time stated by the complaint, his answer was, "at least twenty-five." Now, aside from his testimony, I find nothing from any of the other witnesses, or all of them combined, to exceed this number—twenty-five; and therefore there is no reason for exceeding that number, unless you think the other testimony of Mr. Steinitz tends to show clearly a greater number of offenses during the period from August forward, and you are necessarily limited to that period.

As to the number of offenses that you find to have been committed in the manner and under the conditions I have stated, one hundred dollars penalty for each offense should be found by you.

That, I believe, is all I have to say to the jury.

Mr. RAEGENER. I except to that portion of your Honor's charge where the court says it is the duty of the court to pass upon the question of whether the marabou-feather goods marked "patented" were unpatented, and the court finds they were, and where you say as follows:

> I have charged you that they were not covered by this patent. As to whether they were covered by any other or not you must infer from the evidence you have heard. On this point you have the statement in the very patent which is applied for by Hawlowetz, as to what the condition of the art was, that this kind of goods had been made heretofore by interweaving the feathers with backing—that is, the marabon-feathers have been made before by cementing them on the back, and also by weaving such feathers with the backing. There is no allusion here to any previous patent. This is no application for an improvement on any former patent as to marabou-feathers, and it is for you to infer from this, as reasonable men, whether there was a patent or not for the articles in question. If there was a patent for marabou goods, it might perhaps easily enough be produced; but you cannot prove a negative in the same way that you can prove an affirmative. The jury have a right to infer, and should infer, as reasonable men, from the evidence, whether this is a patented or unpatented article, and that you will find from the evidence. There is no evidence of any other patent, and it is for you to say whether the evidence does not warrant you in finding that there was no other patent.

I except also to that portion where you charge that the patent applies only to ostrich-feathers.

I except also to that portion of the charge which says that if the affixing of the labels, or the stamping, were done by his direction, or with his knowledge, or with his sanction, the defendant is liable under the statute.

At 3.45 the jury retired.

At 4.30 the jury returned to the court-room for further instructions.

The COURT. The jurors have applied to me for further instructions in regard to the subject of damages—

that is to say, the offenses proved. All that I can say to you, gentlemen, upon that subject is to refer you to your recollection of the testimony. You have heard the testimony. I simply remind you of Mr. Steinitz, the first witness. The testimony, as I said before, is quite elastic as to the amount of stamped articles sold which he was capable of testifying to. There is other evidence of some articles purchased, as I understand, evidence of dealings between the defendant and one or two other persons. You have a right to take all of it into consideration, and if you reach the question of the number of offenses in stamping articles you are to consider and accept as proved such as you regard as certainly established. You are not bound by any one particular statement, but you are to be governed by all the evidence. So far as there is uncertainty, of course, I should say to you that you are not to convict the defendant in respect to any item or on any number as to which you regard from the evidence that there is uncertainty, whether that is derived from Mr. Steinitz's testimony or from a consideration of the other witnesses produced before you who have dealt with the defendant. You have a right to base your verdict upon one or all, according as you think they are most entitled to credit. It is not for the court to say to you that one species of evidence is better than other in a case like this. It is for you to recall, as far as you can, all the evidence given, and make up your minds, as far as the proof goes, as to the number of offenses, which is the only item which affects the damages, and allow so many as you think established; and, as I said before, you have no right to give a verdict for any more than that evidence proves. You have no right to give a penalty of more than one hundred dollars upon each of those you do find; but the number must be based upon all the evidence, and as to that you have the right to give the most weight to such as you think is the most entitled to your belief. That is all that I am warranted in saying to you.

Mr. KNAUTH. I ask your Honor to charge that the statutory limit of the penalty is one hundred dollars—that is, the jury is not to find for less than one hundred dollars, but the jury are allowed to find for more than one hundred dollars for each act.

The COURT. My impression is that this statute reads that the jury have no discretion with regard to the amount of one hundred dollars.

Mr. RAEGENER. I think your Honor is in error. I have the statute here and will show it to you.

The COURT. Still, notwithstanding this, gentlemen, I shall rule that in a penal statute like this, where the statute says a penalty of "not less than one hundred dollars," it gives no discretion to the jury to impose more.

A JUROR. Have we got to find for the full number of counts, or can we find for less?

The COURT. If you come to the question of the number of offenses, I have said that all you are bound by is one hundred dollars for each stamp that you find proved; but it is for you to determine from all the evidence how many of the offenses, if any, you find to be proved, subject to the other instructions which I have given to you. If you find five, then the penalty will be five times one hundred dollars; if you find ten, then the penalty will be ten times one hundred dollars, and so on. This you are to determine from all the evidence.

At 4.35 the jury again retired.

At 4.55 the jury again returned to the court-room.

The jury found a verdict for the plaintiff in the sum of eight hundred dollars, finding eight cases specifically proved.

U. S. Circuit Court—District of New Jersey.

SESSIONS *v.* GOULD *et al.*

Decided November 20, 1885.

1. If Patent No. 108,300, dated October 11, 1870, can be sustained, it is not infringed by a party who makes a device slightly different therefrom.
2. Since a double use is forbidden as a patentable invention, a roller-frame for casters in trunks must be regarded as anticipated by roller-frames for other purposes.

Mr. Charles E. Mitchell for the complainant.

Mr. Arthur v. Briesen for the defendants.

NIXON, *J.:*

The bill of complaint alleges infringement of certain letters patent, No. 108,300, dated October 11, 1870, for an improvement in trunk-rollers, and owned by complainant, as assignee for one Albert J. Sessions, the inventor.

The answer sets up various defenses; but after a careful consideration of the state of the art at the date of complainant's patent I think the only defenses that demand serious thought are (1) that Albert J. Sessions was not the original and first inventor of any material and substantial part of the thing patented, and (2) that the defendants are not infringers.

It is not necessary for me to express an opinion on the first of these defenses in the present suit, because if decided in favor of the complainant I must give such a narrow construction to the scope of his patent that the defendants cannot be held to infringe.

The inventor in his specification says that his invention consists of forming a trunk-roller frame from a square sheet-metal blank having four short diagonal incisions in the edges of the same, between which incisions two opposite corners of the blank are turned up to form the ears. His method is quite simple. He first cuts the metal into square blocks, slightly rounds the four corners, and punches a hole in each corner. The blank is then placed in the forming-dies specially made for the purpose, which as they close or meet make four incisions diagonally with the blank. The corners of the blank between those incisions are then bent up at right angles to the rest of the plate, thus forming the ears. The usual cast-metal rollers are then secured between the ears by a pin, as in ordinary trunk-rollers.

He claims as his invention—

> The herein-described trunk-roller the frame of which is formed from a square sheet-metal blank cut or incised at the junction of the plate A, and ears B B, said ears being bent up from two opposite corners so as to leave the points *c c c c*, substantially as described.

As trunk-rollers were old, and as this patent only claims to be an improvement on existing rollers, it is quite clear that the proper interpretation of the claim is the described mechanism or mode of forming the frame to hold the rollers. The complainant takes pains to show that before the invention claimed in his patent trunk-rollers were framed by taking a square piece of metal blank, turning up two opposite corners for ears

or lugs, between and in which the roller is suspended on an axle, and fastening the ends or corners of the plate not turned up to the trunk with screws or other proper devices. Such rollers, however, were imperfect and unsatisfactory, being liable to turn and to be run off on account of the narrowness of the base of the plate by which the roller was attached to the bottom of the trunk. If there is any merit or novelty in the complainant's patent, it arises from the additional strength and stability imparted to the frame of the roller by the diagonal incisions into the plate for the formation of the ears, which leaves the metal on the outside of the incisions to project laterally from the base-plate at the foot of the ears.

Possibly the complainant's patent may be sustained by limiting it to the specific method of forming the frame which the inventor reveals in his specifications and claims in his patent. Under this strict construction only those roller-frames infringe which have diagonal incisions in the plate and the opposite corners of a square turned up. The defendants' trunk-roller is produced from blanks in which the incisions are not diagonal nor the opposite corners turned up; but, using a rectangular rather than a square blank, they make their incisions in lines parallel with the longer sides of the rectangle. Such roller-frames are not new. They are indicated in a number of patents antedating the complainant's patent, notably in letters patent to Stephen Chamberlain, No. 70,957, dated November 19, 1867, and in letters patent to Harlow and Perry, No. 65,077, dated May 28, 1867. The weight of the evidence also shows that roller-frames of substantially the same character were in use in Philadelphia several years before 1870, the year in which complainant's patent was issued.

Since a double use is still forbidden, it is no longer a reply to those proofs of the state of the art to say, as complainant's expert seems to suggest, that roller-frames and rollers thus constructed were not made or used for casters in trunks.

If the complainant's patent is sustained, no infringement is shown, and the bill of complaint must be dismissed, with costs.

U. S. Circuit Court—Eastern District of New York.

THOMPSON *v.* HALL *et al.*

Decided July 24, 1885.

Letters Patent No. 232,975, dated October 5, 1880, issued to Henry G. Thompson, as assignee of Moses C. Johnson, for improvements in cutting-pliers, examined, and, upon full consideration of all the evidence adduced, *Held* that Moses C. Johnson was not the first and original inventor of the improvements claimed by the patent.

Mr. Horace Barnard for the complainant.

Mr. Amos Broadnax and *Mr. J. Edgar Bull* for the defendants.

BENEDICT, *J.*:

This action is founded upon Letters Patent No. 232,975, dated October 5, 1880, issued to Henry G. Thompson, assignee of Moses C. Johnson, for an improvement in cutting-pliers. The bill charges infringement, and prays for damages and an injunction.

The question at issue is whether the combination described in the plaintiff's patent was invented by Moses C. Johnson while an employé of a corporation styled "The Interchangeable Tool Company," which corporation was engaged in the manufacture of cutting-pliers under a patent issued to the defendant, Hall, then the president of that corporation. In support of the averment that Moses C. Johnson was the first inventor of the combination in question the plaintiff produces a model, known in the case as "Defendants' Exhibit C," which model embodies the invention in question, and was made, as the plaintiff has sought to prove, while Johnson was in the employ of the Interchangeable Tool Company. On the other hand, the defendants assert, and have sought to prove, that this model was not made by Johnson while employed by the Interchangeable Tool Company, but after Johnson had been discharged from that employment, and for the purpose of supporting a fraudulent claim to an invention really discovered by the defendant Hall, put forth for the first time by Johnson after he had been discharged from the service of the Interchangeable Tool Company.

In one aspect the decision of the case depends upon a question of time—that is to say, whether this model, "Exhibit C," composed of brass and iron, was made when Johnson says it was, while he was a workman for Hall's company, or at a date subsequent to Hall's discharge of Johnson. Upon this question much testimony has been taken on both sides. Upon a full consideration of all the evidence my conclusion is that "Exhibit C" was not made when Johnson says it was, but subsequent to Johnson's leaving the employment of the Interchangeable Tool Company, and that Moses C. Johnson was not the first inventor of the combination described in the patent issued to the plaintiff as assignee of Johnson.

There must therefore be a decree dismissing the bill, with costs.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

VOL. 33—No. 10. TUESDAY, DECEMBER 8, 1885. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

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Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

33 O G—10—1

Issue of December 8, 1885.

Patents	473	No. 331,750 to No. 332,222, inclusive.
Designs	8	No. 16,405 to No. 16,412, inclusive.
Trade-Marks	7	No. 12,830 to No. 12,836, inclusive.
Labels	4	No. 4,663 to No. 4,666, inclusive.
Reissues	2	No. 10,670 to No. 10,671, inclusive.
Total issue	494	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	1	.....	New Hampshire	1	.....
California	14	.....	New Jersey	23	.....
Colorado	4	.....	New Mexico Territ'y	1	.....
Connecticut	22	.....	New York	72	5
Dakota Territory	1	.....	North Carolina	1	.....
Delaware	.....	.....	Ohio	32	.....
District of Columbia	4	2	Oregon	1	.....
Florida	1	.....	Pennsylvania	60	2
Georgia	2	.....	Rhode Island	5	.....
Idaho Territory	1	.....	South Carolina	1	.....
Illinois	49	.....	Tennessee	2	.....
Indian Territory	1	.....	Texas	3	.....
Indiana	16	.....	Utah Territory	.....	.....
Iowa	9	.....	Vermont	6	.....
Kansas	6	.....	Virginia	2	.....
Kentucky	4	.....	Washington Territ'y	.....	.....
Louisiana	6	.....	West Virginia	2	.....
Maine	3	.....	Wisconsin	10	.....
Maryland	6	1	Wyoming Territory	1	.....
Massachusetts	41	1	United States Army	.....	.....
Michigan	18	.....	United States Navy	.....	.....
Minnesota	6	.....			
Mississippi	3	.....	Total to citizens of		
Missouri	11	.....	the United States	454	11

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	.....	.....	Germany	5	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	.....	.....	Ireland	.....	.....
Bermuda	.....	.....	Mexico	1	.....
Brazil	.....	.....	Norway	.....	.....
Canada	7	.....	Russia	.....	.....
Cape of Good Hope	.....	.....	Scotland	.....	.....
Colombia, U. S. of	.....	.....	Spain	1	.....
Cuba	.....	.....	Switzerland	2	.....
Denmark	.....	.....	Victoria	1	.....
Egypt	.....	.....			
England	9	.....	Total to citizens of		
France	1	.....	foreign countries	27	

DESIGNS.

16,405.—CARD RECEIVER AND STAND.—*Minford S. Clark*, New York, N. Y. Application filed October 16, 1885. Serial No. 180,107. Term of patent 14 years.

16,406.—WAITER.—*David M. Ireland*, Waterbury, Conn., assignor of one-half to *Henry A. Matthews*, same place. Application filed October 19, 1885. Serial No. 180,357. Term of patent 3½ years.

16,407.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Mankey*, Williamsport, Pa. Application filed July 18, 1885. Serial No. 171,993. Term of patent 7 years.

16,408.—PANEL.—*Frederick Mankey*, Williamsport, Pa. Application filed July 18, 1885. Serial No. 172,005. Term of patent 7 years.

16,409.—GLASSWARE.—*John E. Miller*, Pittsburg, Pa. Application filed October 26, 1885. Serial No. 181,013. Term of patent 7 years.

16,410.—LOCK-KEEPER.—*Charles W. Robison*, Allegheny, Pa. Application filed October 29, 1885. Serial No. 181,336. Term of patent 14 years.

16,411.—COFFIN ORNAMENT.—*Cephas B. Rogers* and *Russell H. Burr*, Meriden, Conn., assignors to *C. Rogers & Bros.*, same place. Application filed October 19, 1885. Serial No. 180,358. Term of patent 14 years.

16,412.—FORK-HANDLE.—*Charles Witteck*, New York, N. Y., assignor to *Dominick & Haff*, same place. Application filed October 13, 1885. Serial No. 179,819. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,830.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed November 6, 1885.

"The word-symbol 'EXPLORER' and a pictorial representation of two explorers."

12,831.—TEA.—*Jonathan Keer*, Buffalo, N. Y. Application filed June 18, 1885.

"A map of India."

12,832.—COLLARS, CUFFS, AND BOSOMS.—*George N. March*, Boston, Mass. Application filed November 6, 1885.

"The word 'FIBERLENE.'"

12,833.—NERVINE.—*Scotch Oats Essence Co.*, New York, N. Y. Application filed September 25, 1885.

"The picture of a pigmy figure with wings at the shoulders, and arms encircling a sheaf of grain, and a sickle lying upon the ground, all inclosed by a border of oat-stalks with branches of ripened grain, and the words 'DR. BUCKLAND'S SCOTCH OATS ESSENCE' above the inclosed figure."

12,834.—BITTERS.—*Charles Pingel*, Rochester, N. Y. Application filed April 11, 1885.

"The representation of a Latin cross."

12,835.—MEDICATED ASTRINGENTS AND SEDATIVES.—*Annie M. Wilson*, Washington, D. C. Application filed November 6, 1885.

"The arbitrary word 'TURKISH,' together with the picture of a Turkish physician, in native costume, sitting on an ottoman."

12,836.—WIRE-CLOTH.—*De Witt Wire Cloth Company*, New York, N. Y., and Philadelphia, Pa. Application filed November 3, 1885.

"The words 'DE WITT.'"

LABELS.

4,663.—Title: "PARISIAN" (FOR CACHOUS.)—*Dabbs Bros.*, New York, N. Y. Application filed November 12, 1885.

4,664.—Title: "PINE PECTORAL" (FOR A MEDICAL COMPOUND.)—*The Fraxine Manufacturing Company*, Philadelphia, Pa. Application filed November 14, 1885.

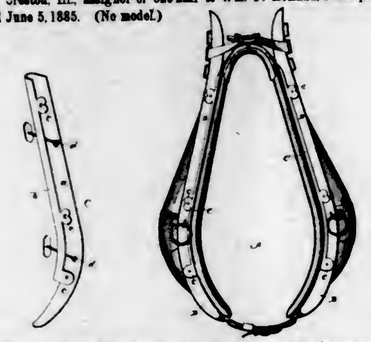
4,665.—Title: "FRAXINE, THE GREAT REMEDY FOR DYSPEPSIA."—*The Fraxine Manufacturing Company*, Philadelphia, Pa. Application filed November 14, 1885.

4,666.—Title: "TYREE'S POWDERED HYPOPHOSPHITES COMPOUND." *Josiah Samuel Tyree*, Washington, D. C. Application filed October 29, 1885.

PATENTS

GRANTED DEC. 8, 1885.

331,750. COMBINED HORSE-COLLAR AND HAME. WILLIAM C. AGNEW, Creston, Ill., assignor of one-half to Wm. F. Holland, same place. Filed June 5, 1885. (No model.)



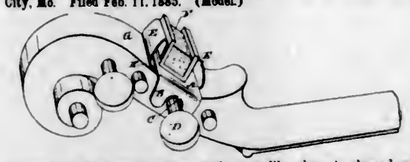
Claim.—1. As an improved article of manufacture, a hame crease or shell, of metal or other suitable hard material, constructed, as described, with curved portion *b* and tongues *c*, as and for the purpose set forth.

2. The combination, with a hame crease or shell, of metal or other suitable material, constructed, as described, with the curved portion *b* and tongues *c*, of the screw-bolts or rivets *d*, as set forth.

3. The combination, with a collar, of a hame crease or shell, of metal or other suitable material, constructed as described, and fixed thereto, capable of receiving a hame to be fixed therein, whereby a hame attachment is adapted to be fixed to any suitable collar, substantially as described.

4. The combination, with a horse-collar made in two sections, of the described hame attachment, consisting of the hame crease or shell C and wooden hames fixed therein, substantially as described.

331,751. ROSIN-HOLDER FOR VIOLINS. JAMES W. ANGUS, Macon City, Mo. Filed Feb. 11, 1885. (Model.)



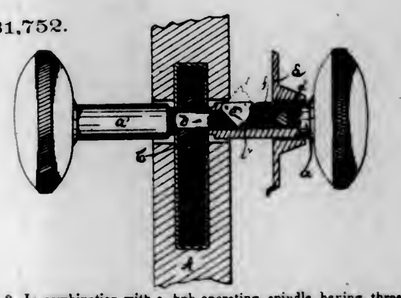
Claim.—1. The combination of the metallic plate A, shaped with lugs B at a distance apart equal to the thickness of a violin-head, and the plate E, secured midway to the said plate A and bent at its ends, forming springs, substantially as shown and described, whereby the device may be secured upon the head of the violin, and whereby rosin may be held, as set forth.

2. In a rosin-holder for violins, the combination, with the plate A, having its ends bent to form lugs B, having notches C, of the plate E, secured transversely on the plate A and having its ends bent to form spring-jaws E, substantially as herein shown and described.

331,752. KNOB ATTACHMENT. HENRY P. APPLETON, Norwich, Conn. Filed Mar. 27, 1885. (No model.)

Claim.—1. In combination with a longitudinally slotted hub-spindle whose angles are threaded, and an internally-threaded knob-neck adapted to engage said spindle, a key pivoted in a longitudinal slot in the knob-neck and capable of entering the longitudinally-slotted spindle, to prevent said spindle from rotating within said knob-neck, and means for retaining said key in engagement with the spindle-slot, all substantially as herein described.

331,752.



2. In combination with a hub-operating spindle having threaded angles, a knob-neck internally threaded to engage said spindle, a key so pivoted in the knob-neck that it may be forced into the spindle-slot, and a spring-pressed plug located in the knob-neck and adapted to engage notches *i i'* in the sector-shaped edge of the key, all substantially as described, and for the objects set forth.

331,753. SEEDING-MACHINE. WILLIAM D. ARNETT, near Morrison, Colo. Filed Mar. 20, 1885. (No model.)



Claim.—In a seeding-machine, the combination of the conductor *j*, the adjustable plates *d*, attached to the drag-bar, as described, and the wedges *e*, substantially as described and shown, and for the purpose set forth.

331,754. FRICTIONAL ELECTRICAL GENERATOR. PHILIP ATKINSON, Chicago, Ill. Filed Apr. 16, 1885. (No model.)

Claim.—1. The hub F, having a metallic core, F', in combination with the arms I, of non-conducting material, terminating in the hub F, and the arms G, of conducting material, terminating in the metallic core F', substantially as and for the purpose specified.

2. The arms G, carrying a comb, in combination with the curved rods H and head H', carrying a comb for connecting two combs to run to a common point, and located and operated with distinct rotary disks, substantially as and for the purpose specified.

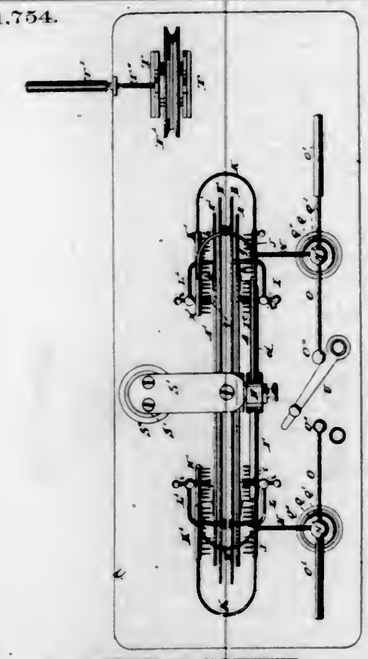
3. The rotary disks A A' and stationary disks B B', in combination with a double series of combs and brushes carried by rods G H, and a double series of combs carried by rods J K, and a double series of brushes carried by rods L to coact with the respective disks, substantially as and for the purpose specified.

4. A hub, F, having a metal core, F', arms G, having connection with the metal core, and rods I, terminating in the hub F, in combination with the curved rods H, having head H', and curved rods K, having head K', substantially as and for the purpose specified.

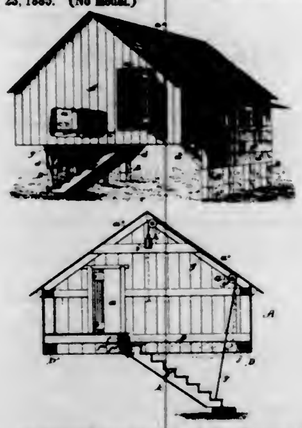
5. In a Leyden jar, an interior coating, Q^3, slotted at one end and provided with a cross-support, Q^4, for carrying the rod of a Leyden jar and forming and interior lining for the jar, substantially as specified.

6. In a Leyden jar, the interior flexible support, Q^3, having a support, Q^4, in combination with a stopple, Q', and rod P, for giving the rod a firm support, substantially as specified.

331,754.



331,755. CORN-HOUSE. JAMES S. BAILEY, Leading Creek, W. Va. Filed Sept. 23, 1885. (No model.)



Claim.—1. An elevated corn-house having a stairway pivoted at its upper end, a counterweighted cord connected thereto, and pulleys G A', substantially as described.

2. A corn-house having a slatted floor, and supported upon uprights, a pair of stairs hinged at its upper end to the floor of said house, and a counterweighted cord connected to said stairs and extending over supporting-pulleys, substantially as described.

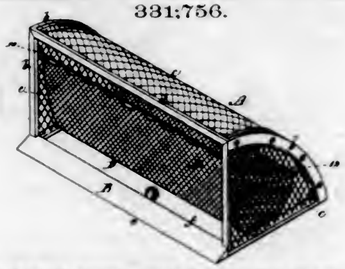
3. A corn-house supported upon uprights and having an open slatted floor, braces or struts *d*, transverse rods E, bearing in the braces, a pair of stairs hinged to the floor, a cord connected to said stairs and having a counter-weight, and supporting-pulleys G A', over which the cord passes, as set forth.

4. A corn-house having a slatted floor and supported upon uprights above the ground, so that a fire may be built or heating devices arranged under the house, to cause the smoke and heat to pass into the latter through the flooring, as set forth.

331,756. POLO-GOAL. FRANKLIN P. BAKER, Chelsea, Mass. Filed Dec. 17, 1884. (No model.)

Claim.—1. A polo-goal composed of a casing or receptacle having an open front provided along its lower edge with an upwardly-sloping

331,756.

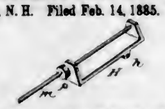


board or threshold adapted to retain the ball within the goal, and provided with a piece, D, of netting or other suitable fabric, suspended within its interior opposite to the open front, and adapted to receive the impact of the ball and deaden its force, whereby it is prevented from rebounding out of the goal, substantially as described.

2. The combination, with the casing or receptacle A, having an open front, of the board or threshold B, inclined from the floor upward, and having a raised inner edge, *f*, and the loosely-hanging net or curtain D, suspended within the casing from a point at or near the top of the same opposite to the open front, and adapted to receive the impact of the ball and deaden the force of its blow, substantially as and for the purpose set forth.

3. The combination of the casing A, composed of wire-netting secured to a frame, *b*, and having an open front and a curved or inclined back, the board or threshold B extending along the lower edge of the open front of the casing, and sloping from the edge *e* upward, and adapted to retain the ball within the goal, and the net or curtain D, arranged within the casing in a position to receive the impact of the ball as it enters the goal and prevent it from rebounding out of the same, substantially as described.

331,757. APPARATUS FOR PAINTING BOBBINS. LUTHER C. BALDWIN, Manchester, N. H. Filed Feb. 14, 1885. (No model.)



Claim.—1. In apparatus for painting bobbins and other like articles, the mechanically-driven table F, turning upon a central post, D, and provided with one or more work-carrying spindles, *m m*, as and for the purpose set forth.

2. In machines for painting bobbins and other like articles, the disk J, provided with one or both the annular flanges *c* and *d*, arranged to rotate the work while being painted, substantially as shown.

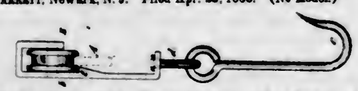
3. In an apparatus for painting bobbins, the work-carrying spindles *m m*, provided with friction-pulleys *p*, and supported by the frames H, said frames being so hinged that by depressing their inner ends said spindles may be inclined upward and outward, as described, and for the purpose set forth.

4. In apparatus for painting bobbins, &c., the cam-plate *a*, arranged to depress one end and correspondingly raise the opposite end of the spindle-supports H, together with their spindles or mandrels *m*, as shown, and for the purpose named.

5. In bobbin-painting machines, the combination of the revolving table F, carrying spindle-supports H, armed with work-carrying spindles *m*, with the presser P, for holding the work in contact with the brush *g*, and the cam-plate, *a*, for raising the spindles at a convenient angle for removing and replacing the bobbins after they have been painted.

6. In an apparatus for painting bobbins, the combination of the revolving table F, the work-carrying spindles *m*, the disk J, provided with the work-rotating flanges *c* and *d*, a device, P, for steadying the bobbins while being painted, the brush *g*, and a device, *a*, for inclining the spindles upward and outward, all substantially as specified, and for the purpose set forth.

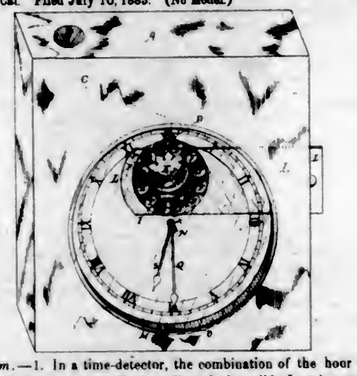
331,758. TRAVELER FOR CARRYING CARCASSES. RICHARD BARRETT, Newark, N. J. Filed Apr. 23, 1885. (No model.)



Claim.—In a traveler, the combination, with a flanged wheel provided with journals and adapted to run upon a track, of a frame extending on one side of the wheel far enough only to receive the journal on that side of the wheel, and extending on the other side a sufficient distance to leave a wide space between its lower end and the wheel, said frame being provided with an inclined projection forming a shoulder ex-

tending into a plane coincident with the tread of the wheel, to facilitate the placing of the wheel upon the track, and having a hook upon its lower end, substantially as described, and for the purpose specified.

331,759. WATCHMAN'S TIME-DETECTOR. ELIAS BERMAN, Los Angeles, Cal. Filed July 10, 1885. (No model.)

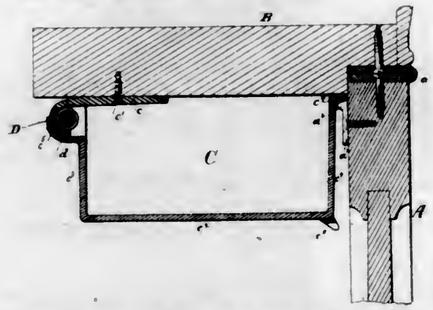


Claim.—1. In a time-detector, the combination of the hour cog-wheel I, cell-wheel cog G, cell-wheel E, and glass slide L, substantially as and for the purpose set forth.

2. The combination, in a time-detector, of the slide L, the perpendicularly-mounted cell-wheel E, and the semi-spherical check-receiving cells F, arranged substantially as set forth, whereby the time-checks are caused to fall out of the cells whenever the slide is removed.

3. In a time-detector, substantially such as described, a vertically-mounted cell-wheel provided with semi-spherical cells in the face thereof, whereby the same is adapted to discharge its checks whenever the entrance to the cell is opened, whether such cell is above or below the center of the wheel.

331,760. LETTER-BOX. JOHN J. BLAIR, Cincinnati, Ohio. Filed June 12, 1885. (No model.)



Claim.—1. The combination, with the jamb of a door and a door having a strip secured to it a slight distance from its inner edge, of a mail-box, its rear forming one leaf of a hinge secured to such jamb, the sides and front formed in one piece and having a lug at right angles to the body of the side nearest the door, all constructed and arranged substantially as described.

2. The combination of the jamb B and door A, having strips *a'*, with the mail-box C, constructed of rear *c*, hinge D, with its spring *d*, front c^2, sides c^3 c^4, the latter having the lug c^5, and pull or handle c^6, all constructed and arranged substantially as described.

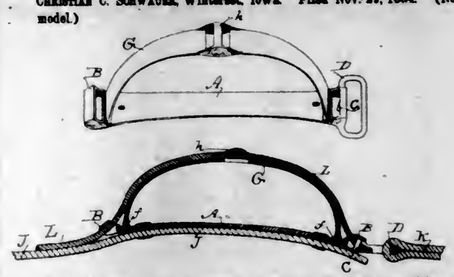
3. The combination, with the jamb of a door and a door having a strip secured to it a slight distance from its inner edge, of a mail-box, its rear forming one leaf of a spring-closing hinge secured to such jamb, the sides and front formed in one piece and having a lug at right angles to the body of the side nearest the door, all constructed and arranged substantially as described.

4. In combination with a door and its jamb, a letter-box attached to the latter, and having a hinged side adapted to be held closed by the door.

5. In combination with a door and its jamb, a letter-box attached to the latter and adapted to be held closed by the door, said letter-box being provided with a spring to hold the box closed when the door is opened.

6. The combination of jamb B, box C, secured thereto, and provided with a hinged leaf having a lug, c^5, door A, and lug or catch a^2, all arranged as shown.

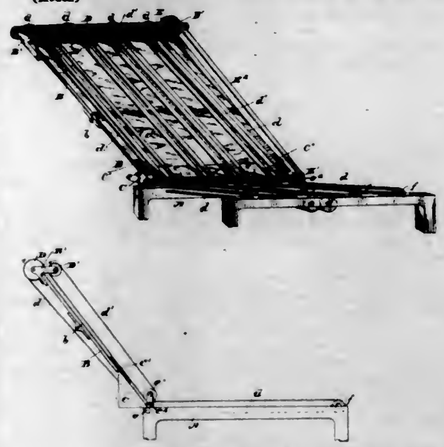
331,761. TRACE-SUPPORT. HARRY S. BOLLINGER, Chicago, Ill., and CHRISTIAN C. SCHWAGER, Winterset, Iowa. Filed Nov. 29, 1884. (No model.)



Claim.—1. The combination of the base A, having integral loops B B and D, and a tongue, C, and an arch, G, having an integral loop, *h*, for the purposes stated.

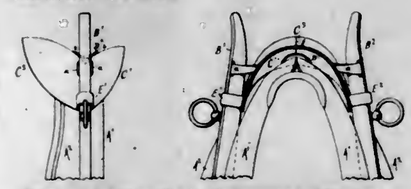
2. The combination of the metal trace-support composed of a base, A, having integral loops B B and D, and a tongue, C, an arch, G, having a loop, *h*, a leather strap, J, a belly-band, K, and a covering-strap, L, substantially as and for the purposes shown and described.

331,762. CARRIER ATTACHMENT FOR FOLDING-MACHINES. R. T. BROWN, Erie, Pa., assignor, by mesne assignments, to the Brown Folding Machine Company, (Limited,) same place. Filed May 28, 1883. (Model.)



Claim.—In a sheet-carrier attachment for folding-machines, the combination, in the frame of said carrier, of the parts B B and C, the hinges *b*, joining the parts B B together in a manner substantially as shown, whereby the two parts will fold with their under sides together, the hinges C' C' joining the lower part, B, to the part C, in a manner substantially as shown, whereby the parts B B will fold over onto the part C, substantially as set forth.

331,763. HORSE-COLLAR HOUSING. RALPH BROWNSON, St. Paul, Minn., assignor of one-half to Peter R. L. Hardenbergh, same place. Filed June 22, 1885. (No model.)



Claim.—1. A horse-collar housing composed of two concavo-convex sections, C' C^2, united together at an angle, whereby a depression or channel is formed on the outside at the line of junction and provided with attaching-loops, substantially as and for the purpose herein specified.

2. A horse-collar housing composed of two concavo-convex sections, C' C^2, united together at an angle, as herein set forth, and provided with a brace-loop, D^2, connecting the two sections on the outside, substantially as and for the purpose herein specified.

331,764. METHOD OF PREPARING GLASS FOR CEMENTATION. CHARLES F. BRUSH, Cleveland, Ohio. Filed Aug. 21, 1885. (No specimens.)



Claim.—1. The method of preparing glass for cementation, consisting, essentially, in coating the glass with a preparation which will cling tenaciously thereto, and providing the said coating preparation with granulated material, substantially as set forth.

2. The method of preparing glass for cementation, consisting, essentially, in first coating the glass with a preparation which will adhere tenaciously thereto, and, secondly, embedding hard granulated material in the coating before it hardens, substantially as set forth.

3. The method of setting a glass bulb in a socket, consisting, essentially, in coating the glass with a varnish or other preparation, which will cling tenaciously thereto, embedding hard granulated material in the coating, and applying a plaster or other cement to the roughened surface, substantially as set forth.

331,765. REPAIRING-LAST. JAS. BURKE, Springfield, Mass. Filed July 13, 1885. (No model.)

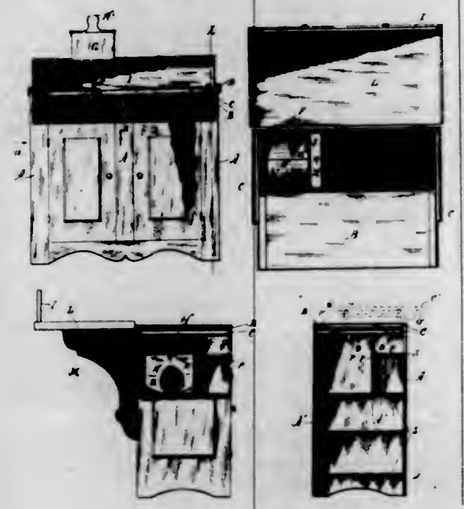


Claim.—1. A cobbling-last having two foot-pieces, *a b*, and having the heel and shank portion formed to bear against the heel and shank on the inside of a shoe, the two being connected by a uniting part, *c*, substantially as shown.

2. A cobbling-last formed of two foot-pieces united at the heel, as shown, and having stem-receiving openings *d*, in combination with a button, *e*, provided with a stem, *f*, substantially as shown.

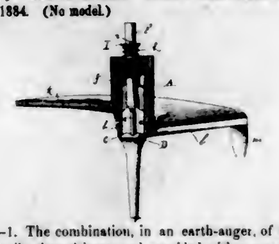
3. A cobbling-last formed of a single casting having two foot-pieces of a different size united at the heel portions by a straight connecting part, *c*, and having the heel and shank portions thereof raised or formed to bear against the shank and heel of a boot or shoe on the inside, and with one or more removable adjustable buttons, substantially as set forth.

331,766. KITCHEN-CABINET. MILES H. CARD and JOSEPH PLACE, Freeport, Ill. Filed Nov. 24, 1884. (No model.)



Claim.—In a kitchen-cabinet, the combination, with the sides thereof, of two opposite vertically-adjustable cleats and a bread-board supported by said cleats and free to slide back and forth on or in said cleats.

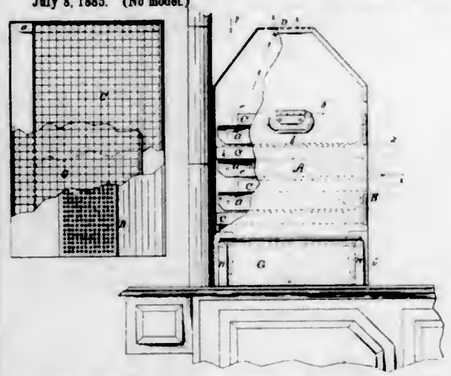
331,767. EARTH-AUGER. SAMUEL CARY, Centreville, La. Filed June 26, 1884. (No model.)



Claim.—1. The combination, in an earth-auger, of an auger-head having a conically-shaped lower end provided with a recessed valve-seat and an internal guideway, as described, with a winged valve adapted to operate therein, said valve provided with an outwardly-projecting point, the upper portion of which is made to conform to the conical end of the auger-head, substantially as and for the purpose set forth.

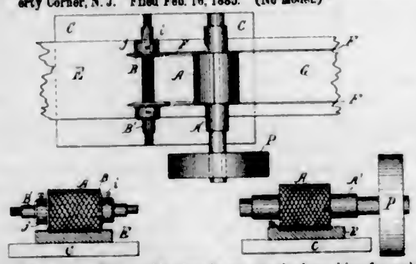
2. The combination, in an earth-auger, of an auger-head having a conically-shaped lower end provided with a recessed valve-seat, an internal guideway and guide-bar, and an external spiral blade provided with a cutting edge and spur, as described, with a winged valve adapted to operate in the aforesaid valve-seat and guideway, the said valve having an outwardly-projecting tapering point, the upper portion of which is enlarged to form an unbroken surface at the line of intersection with the anger-head, and a stem adapted to operate in the guide-bar, with means for retaining the same therein, substantially as and for the purpose set forth.

331,768. FRUIT-DRIER. MARY E. CLARK, Fairville, N. Y. Filed July 8, 1885. (No model.)



Claim.—The body of a fruit and vegetable evaporator provided with feet to support it, and vertical holders *n*, secured to said feet, the latter inclosing spaces or openings between them, in combination with vertically-adjusted slide-pieces or slides resting in said holders to wholly or partially close said respective openings, substantially as described.

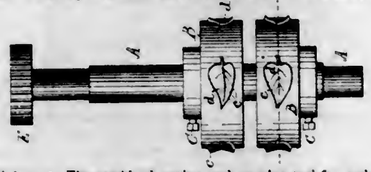
331,769. WOOD-EMBOSSING MACHINE. WILLIAM A. COMPTON, Liberty Corner, N. J. Filed Feb. 16, 1885. (No model.)



Claim.—1. The combination, in an organized machine for embossing wood, of an embossing-roller provided with a continuous annular pattern, means for applying and pressing the same upon the wood, and two cutters arranged and operated in relation to the edges of the annular embossing-pattern to sever the fibers of the wood to a given depth in parallel lines at such edges, the whole being arranged and operated for the roller to depress the entire surface of the wood between such parallel cuts, and the cutters thus operating to separate continuously, by a clean cut, the depressed strips from the undepressed portion of the wood at the opposite edges thereof, substantially as shown and described.

2. The combination, in an organized machine, of a wood-embossing roll constructed with a continuous annular pattern unprovided with cutting-edges upon its surface, and cutters affixed to its ends and adapted to cut the woody fibers to the depth of the intended depression in indented parallel lines, the embossing-roller being operated as described, for the continuous annular pattern to impress the entire surface of the wood between such indented parallel lines, substantially as and for the purpose set forth.

331,770. WOOD-EMBOSSING. WILLIAM A. COMPTON, Liberty Corner, N. J. Filed Sept. 13, 1884. Renewed May 6, 1885. (No model.)



Claim.—1. The combined cutting and pressing tool for embossing wood, constructed with the cutters *c* and raised embossing-surfaces *d*, arranged and operated substantially as and for the purpose set forth.

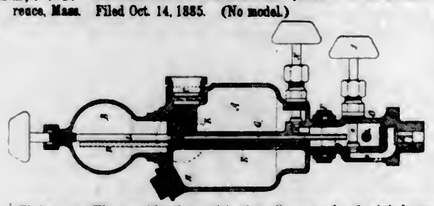
2. The rotary embossing-tool, consisting in the roller provided with the cutters *c* and raised embossing-surfaces *d*, and adapted to emboss the wood without the removal of any of the woody fiber, substantially as set forth.

331,771. CUTTER-HEAD FOR HEEL-TRIMMING MACHINES. WILLIAM P. CORSON, New York, N. Y. Filed Aug. 19, 1885. (No model.)



Claim.—The combination, in a heel-trimming machine, with its cutter-spindle, the tread-guard at its inner end, the cutter-guard at its outer end, and means, substantially as described, for securing the counter-guard upon the spindle, of an internally-threaded sleeve screwing upon the inner end of the spindle, substantially in the manner and for the purpose herein set forth.

331,772. STEAM-ENGINE LUBRICATOR. WARREN H. CRAIG, Lawrence, Mass. Filed Oct. 14, 1885. (No model.)



Claim.—1. The combination, with the oil-reservoir of a lubricator provided with the steam and oil passages E and G, and with the drainage-passage M and its screw-plug N, as described, of the connection O, having the chamber F, the steam-inlet passage *c*, the oil-outlet passage *g*, and the screw-plugs *e* and *h* thereto, all being arranged substantially and to operate as set forth.

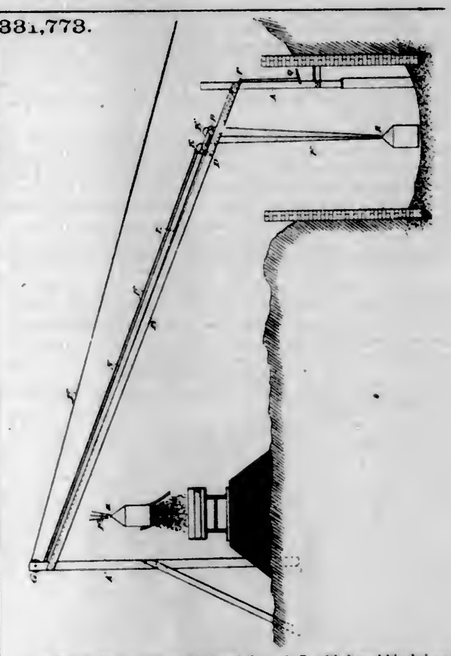
2. The combination, with the oil-reservoir of a lubricator provided with the steam and oil passages E and G, as described, of the connection O, having the chamber F, steam-inlet passage *c*, oil-outlet passage *g*, and the screw-plugs *e* and *h* thereto, all essentially as set forth.

3. The connection O, having the chamber F, steam-inlet passage *c*, valve *d*, oil-outlet passage *g*, and the screw-plugs *e* and *h*, arranged substantially as represented, such connection having its upper part provided with a neck opening out of the chamber and screw-threaded for joining the connection to the oil-reservoir of the lubricator, as specified.

331,773. HOISTING AND CARRYING MACHINE. BENJ. S. CROCKER, Topeka, Kans. Filed Apr. 8, 1885. (No model.)

Claim.—1. In a hoisting and carrying machine, the combination of the pulley with the inclined plane illustrated by the tackle H, the inclined plane B B', with its trolley C, fitted with pulleys E E', and cable F, all constructed and operating substantially as and for the purpose hereinbefore described.

331,773.



2. The trolley-brake consisting of the axle I, with bored block *i*, and lever M, in combination with the brake-ropes L L', and manipulating-rope N, and offset rod S, substantially as hereinbefore described.

331,774. SAFETY DEVICE FOR MAINSPRINGS. LEDRU C. DAVIS, Colorado Springs, Colo. Filed Mar. 14, 1885. (No model.)



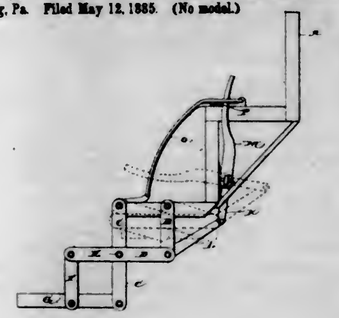
Claim.—1. The combination, with a watch-barrel provided with an annular groove, and with a shoulder or stop located within said groove, of a supplemental barrel adapted to receive the mainspring, and a yielding arm carried by the supplemental barrel and adapted to rest and move within the groove of the watch-barrel.

2. The combination, with a watch-barrel having an annular groove on its inner surface, and a stop or shoulder located within said groove, of a supplementary barrel adapted to receive the mainspring, and a spring-arm secured to said supplementary barrel and adapted to rest and move with the groove of the watch-barrel.

331,775. FOOD COMPOUND. AMBON A. DE PUY, San Francisco, Cal. Filed July 1, 1885. (No specimens.)

Claim.—A food compound consisting of sugar, nitrate of potash, glycerine, bicarbonate of soda, protoxide of soda, chloride of sodium, water, and milk, combined and prepared in the proportions substantially as herein specified.

331,776. CAR-STEP. JOHN A. DOYLE and THOMAS L. SOHURMAN, Phillipsburg, Pa. Filed May 12, 1885. (No model.)



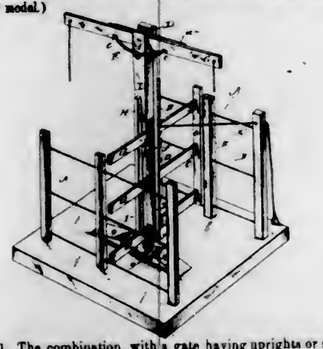
Claim.—1. The combination, with the steps A of a railway-car or other vehicle, of the extension-step G, connected thereto by the lazy-tongs, the shafts H, secured to the lazy-tongs and having the arms L, the shaft I, journaled to the steps A and having the arms K, which are pivoted or fulcrumed to the arms L, and the hand-lever M, substantially as described.

2. The combination, with the steps A of a railway-car or other vehicle, of the extension-step G, connected thereto by the lazy-tongs, the shaft H, secured to the lazy-tongs and having the arms L, the shaft I, journaled to the steps A and having the arms K, which are pivoted or fulcrumed to the arms L, the hand-lever M, and the guideway O, having the rack-tooth P and the spring-pawl R, substantially as described.

331,777. DYEING ANILINE-BLACK. ALEXANDRE N. DUBOIS, Philadelphia, Pa. Filed Jan. 22, 1884. (No specimens.)

Claim.—The process of dyeing aniline-black, consisting in first preparing the fabric to be dyed by soaking in a bath of soluble castor-oil, then soaking same for about three hours in a bath composed of water, aniline-oil, hydrochloric acid, nitrate of iron, and bichromate of potash, after which it is finished in a bath of soap, substantially as above set forth.

331,778. GATE. HENRY F. DUNN, Eagle Lake, Tex. Filed May 17, 1884. (No model.)



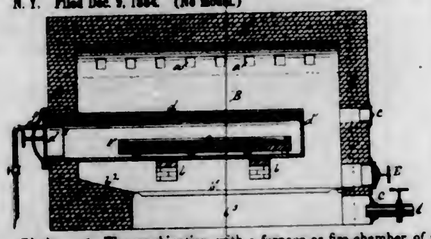
Claim.—1. The combination, with a gate having uprights or standards secured thereto, of a bar carrying a roller at its lower end and sliding between said uprights, a latch-plate, and mechanism, substantially as described, for operating the bar and gate.

2. The combination, with a gate, of uprights or standards secured thereto, a bar carrying a roller at its lower end and sliding between said uprights, and a bracket or latch adapted to receive said roller, as set forth.

3. The combination, with a gate having vertical standards secured thereto, of a bar carrying a roller at its lower end and provided with a projection, *f*, for limiting its upward movement, a latch adapted to be engaged by said roller, and means for raising said bar and roller, substantially as set forth.

4. The combination, with a gate having vertical standards secured thereto, of a bar carrying a roller at its lower end sliding between said uprights, a latch adapted to be engaged by said roller, a bracket secured to the upper end of one of said standards, and a lever pivoted to the bar and resting on the upper side of the bracket.

331,779. CREMATION-FURNACE. CHARLES J. EAMES, New York, N. Y. Filed Dec. 9, 1884. (No model.)



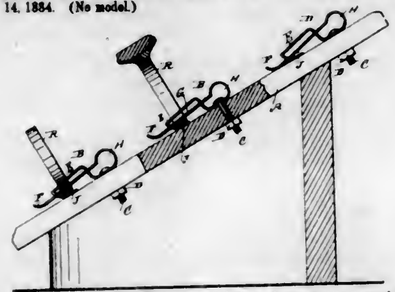
Claim.—1. The combination, with a furnace or fire-chamber, of a cremation-retort having a series of perforations arranged above the body-line of the retort, which perforations increase in diameter from the inner to the outer surface of the retort, and deliver into the fire-chamber, substantially as and for the purposes specified.

2. A corpse-bed for cremation-retorts, consisting of a refractory slab hollowed out on its upper surface, substantially as specified.

3. A corpse-bed for cremation-retorts, consisting of a refractory slab hollowed on its upper surface, and having ball-grooves on its under surface, substantially as and for the purposes specified.

4. In a cremation-furnace, the combination, with a retort or muffle perforated above the body-line, of a corpse-bed consisting of a refractory slab mounted and movable on refractory ball-rollers, substantially as and for the purposes specified.

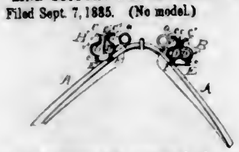
331,780. RING-HOLDER. MAX EBING, New York, N. Y. Filed June 14, 1884. (No model.)



Claim.—1. A spring-clamp consisting of two tongues projecting from a bow, the upper one being slotted, and the lower one having a bent middle portion projecting through the slot of the upper one and provided with a prong projecting toward the bow, substantially as herein shown and described.

2. The herein-described clamp, consisting of the slotted tongue F, having its point bent upward, the bent tongue E, having its middle portion projecting through the slot of the tongue F, and provided with the prong J, and the apertured bow H, as set forth.

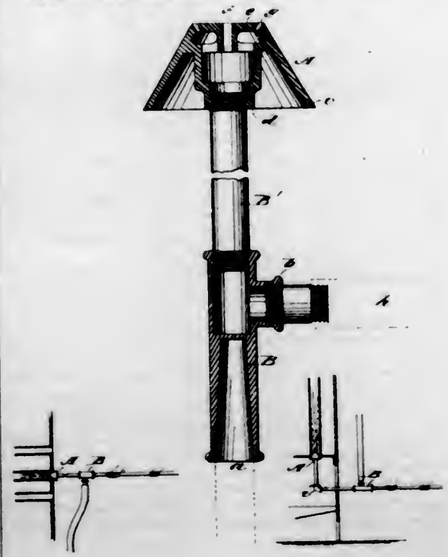
331,781. LINE-SUPPORT FOR HARNESS. DAVID L. EMRY, Carthage, Mo. Filed Sept. 7, 1885. (No model.)



Claim.—1. A line-supporter composed of a spring-wire, E, provided with arms C C' C², bent to form openings D D', and narrow necks *d d²*, bent at *c*, *c²*, *c'*, and *c⁴*, to receive the line, substantially as set forth.

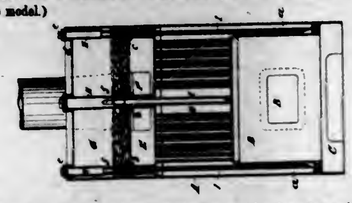
2. The combination, with the back-band of a harness, of a spring-support composed of a piece of spring-wire, E, provided with a coil, *e*, and arms C C' C², the outer arms being bent at *c² c²* and *c' c⁴* to form the openings D D', and narrow neck, *d d²* and flaring ends *c c²*, substantially as shown and described.

331,782. BOILER-FLUE CLEANER. JAMES M. FERGUSON, New Orleans, La. Filed Feb. 4, 1885. (No model.)



Claim.—In a flue-cleaner, the nozzle having a central aperture in its disk portion, said aperture having an inner tubular extension, around which is arranged an annular space, also opening through said disk portion, said tubular extension and annular space connecting with a steam-chamber of the nozzle, all cast or made in one piece, substantially as and for the purpose set forth.

331,783. STEAM-GENERATOR. JOHN FISH, Summit, N. J., assignor of one-third to Lorenzo Barbass, Brooklyn, N. Y. Filed Apr. 3, 1885. (No model.)



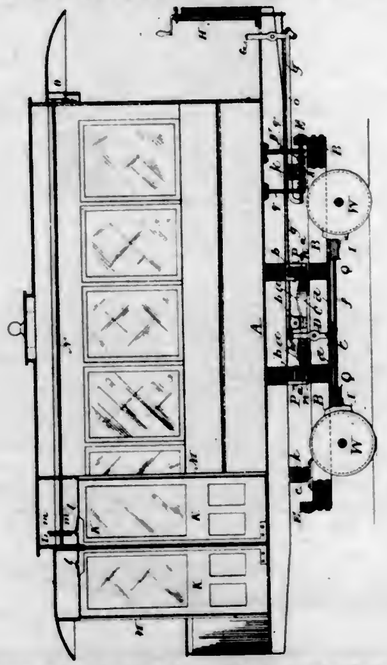
Claim.—1. In a steam-generator, the combination of a main water-space, a steam and water chamber, and intermediate smoke-chamber, and pipe-bolts extending between the main water-space and the steam-chamber, and serving to establish communication between the same and connect the parts together, substantially as specified.

2. In a steam-generator, the combination of a main water-space, a steam and water chamber, an intermediate smoke-chamber, the circulating-pipe bolts H, and the pipes I, substantially as specified.

3. In a steam-generator, the combination of a main water-space, a steam and water chamber, an intermediate smoke-chamber, the circulating-pipe bolts H, and the pipes I, having bell-mouths, substantially as specified.

4. In a steam-generator, the combination of a main water-space, a steam and water chamber, an intermediate smoke-chamber, the circulating-pipe bolts H, the flanges *b*, the gaskets *c d*, and the cap-nuts *e*, substantially as specified.

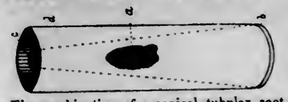
331,784. PASSENGER-REGISTER. ROBERT W. FLACK, Toronto, Ontario, Canada. Filed Sept. 12, 1884. (No model.)



Claim.—1. The combination, in a passenger-register, of the revolving door K K, cruciform in cross-section, the semi-cylindrical partition M, inclosing the space on one side of said door, shaft N, provided with ratchet-wheel L, arranged to be engaged by the wings of said door and to be turned thereby in one direction only, and the register or indicator O, substantially as and for the purposes set forth.

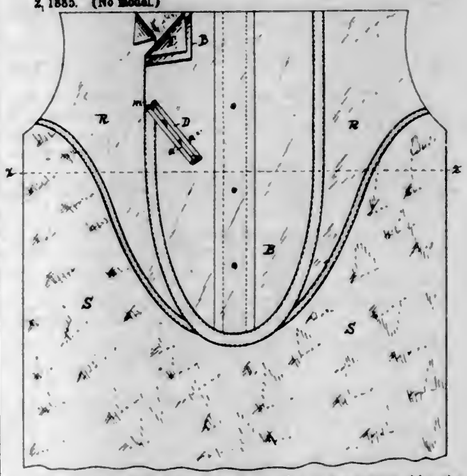
2. The combination, in a passenger-register, of the turnstile-door K K, provided with lugs *l l*, the shaft N, ratchet-wheel L, provided with gravitating pivoted teeth *m m*, and the register O, substantially as and for the purposes set forth.

331,785. SOOT-CONSUMER AND SPARK-ARRESTER. JOHN GOERTY, Decatur, Ill. Filed Feb. 11, 1885. (No model.)



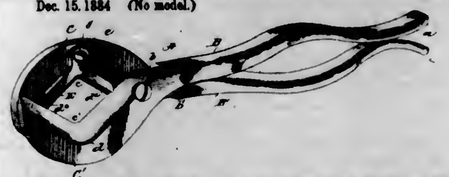
Claim.—The combination of a conical tubular soot-collector, perforated at suitable intervals throughout its upper portion, a heat-retarding plate on the upper extremity of the perforated soot-collector, and an imperforate band on the lower portion of the soot-collector, of suitable size and conformation to precisely intervene between pipe-joints, as set forth.

331,786. BOSOM-SHIRT. WILLIAM L. HALL, Troy, N. Y. Filed Feb. 2, 1885. (No model.)



Claim.—In an attachment for connecting a bosom to a shirt, the combination of the re-enforce R, having an opening, O, with the edges of the bosom and bosom-facing both superimposed to overlap the edge of the re-enforce opening O, and a bias-cut strip, D, having turned-in side edges, *a' a²*, which strip is sewed through one of its turned-in side edges to and through the bosom, bosom-lining, and underlapping re-enforce, and upon its other side edge through the latter, and to and through the re-enforce and shirt-body, the said strip as attached covering the overlapping edges of bosom and facing, as shown and described.

331,787. PIPE-CUTTER. COMINS C. HARLOW, Brockton, Mass. Filed Dec. 15, 1884. (No model.)



Claim.—1. The combination, in a pipe-cutter, with knives or cutters, of gages attached to the face of said knives, substantially as set forth.

2. The combination, in a pipe-cutter, with knives or cutters, of gages adapted to be adjusted to or from the cutting-edges of said knives, substantially as set forth.

3. The combination, in a pipe-cutter, with knives or cutters having cutting-edges approximating a V shape, of gages adjustably secured to said knives, substantially as set forth.

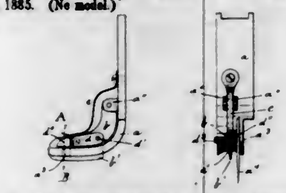
4. The combination, in a pipe-cutter, with knives or cutters, of gages having the diverging arms and adjustably attached to said knives, substantially as set forth.

5. The combination, in a pipe-cutter, with knives or cutters having the V-shaped cutting-edges, of gages, each of which consists of two diverging arms having integral therewith an ear or lug provided with a slot, and screws for attaching said gages to the knives, substantially as set forth.

6. The herein-described pipe-cutter, consisting of two pivoted arms

or sections having knives formed therewith, said knives having cutting-edges approximating a V shape, shoulders on said arms, and gages adapted to be adjusted to or from the cutting edges or faces of the knives, substantially as set forth.

331,788. PRESSER-FOOT. THOMAS P. HART, LYNN, MASS. Filed Mar. 25, 1885. (No model.)

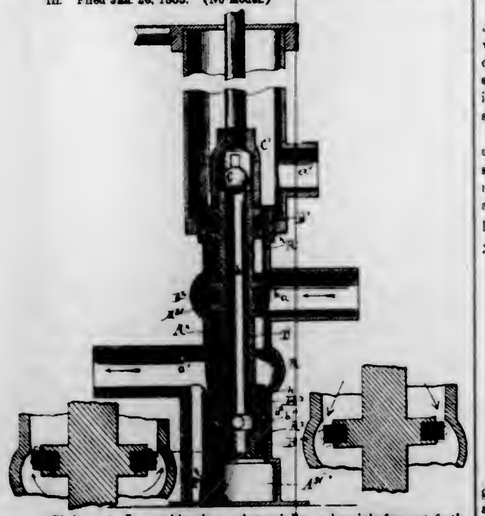


Claim.—1. The slitted presser-foot *a a'* and its hinged yielding bar *b* and guide-rib *b'*, in combination with the laterally-adjustable needle-guide *d d''*, as and for the purpose set forth.

2. In a presser-foot, the vertically-yielding guide-rib *b'*, in combination with the laterally-adjustable needle-guide *d''*, as and for the purpose set forth.

3. In combination, the presser-foot *a*, its slit *a'*, the hinged yielding lever *b*, and its rib *b'*, the spring *c*, and spring-bar *d*, secured in one end to bar *b*, and having the inclined needle-guide *d''*, and regulating-screw d^2, by means of which it may be adjusted laterally toward the needle, as and for the purpose set forth.

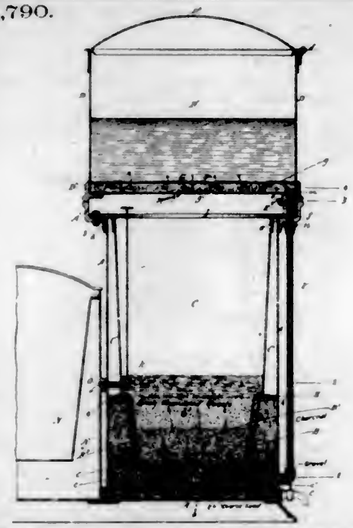
331,789. STOP AND WASTE VALVE. PATRICK HARVEY, Chicago, Ill. Filed Jan. 26, 1885. (No model.)



Claim.—1. In combination, substantially as hereinbefore set forth, the valve-shell having cylindrical valve-seats and enlarged cavities adjacent thereto, and supply, service, and waste ports communicating through such seats and cavities, and the valve-stem having piston-valves rigid with it, closing such communication when in their seats, respectively, and standing in such enlarged cavities when out of their seats, the seat through which the supply and service ports communicate and the seats through which the service and waste ports communicate being respectively on opposite sides of the enlarged cavities in which said valves respectively stand when out of their seats.

2. In combination, substantially as hereinbefore set forth, the valve-shell having cylindrical valve-seats and enlarged cavities adjacent to said seats, and supply, service, and waste ports communicating through such seats and cavities, and the valve-stem having within it the waste-duct communicating with the service-port and the waste-port, and having piston-valves rigid with it, closing the said communication between said ports when in their seats, respectively, and standing in said enlarged cavities when out of their seats, the seat through which the supply and service ports communicate and the seat through which the service-port communicates with the waste-duct being respectively on opposite sides of the enlarged cavities in which the valves respectively stand when out of their seats.

331,790. FILTER. BENJAMIN L. HOOD, Albany, N. Y., assignor, by direct and mesne assignments, to Louis Daniels, same place. Filed July 17, 1885. (No model.)



Claim.—1. In water-filters, the combination, with the vessel containing in its lower portion a filtering chamber or chambers, and a pure-water chamber above and communicating with said filtering chamber or chambers, of the impure-water vessel D, supported on the upper end of said vessel, and the perforated pivot E and tube F, connecting the said impure-water vessel with said filtering chamber or chambers, substantially as and for the purposes set forth.

2. In water-filters, the combination, with shell A, containing in its upper portion the pure-water chamber, and the internal flange-ring H, secured to said shell at the bottom of said pure-water chamber, of the removable vessel containing filtering material, pipe F, perforated pivot E, and the water-vessel D, adapted to be turned in either direction on said pivot, substantially as and for the purposes set forth.

331,791. COMBINED SPECTACLES AND WATCH-MAKER'S EYE-GLASS. GRANVILLE H. HULL, Lafayette, Ind. Filed Aug. 10, 1885. (No model.)



Claim.—The combination, with a pair of spectacles, S, of an eye-glass, A, an arm, C, rigidly secured to and supporting the eyeglass A, and being pivoted to the end joint, *j*, of the spectacle-frame in such a manner as to allow the eyeglass to be swung around vertically in front of the spectacle-lenses and away from them, and a projecting pin or stud, *d*, secured to the arm C at such a place that it will rest against the end joint, *j*, of the spectacle-frame, and form a stop for the eyeglass A in either position in front of the spectacle-lenses or away from them, substantially as described and specified.

331,792. GUN AND PROJECTILE FOR THROWING LIFE-LINES. SIMON INGERSOLL, Stamford, assignor of one-half to Arnold C. Hawes, Norwalk, Conn. Filed July 20, 1885. (No model.)



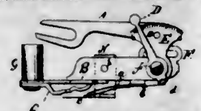
Claim.—1. The combination of the following instrumentalities, to wit: a tube, a projectile adapted to slip on over the tube, a cartridge adapted to slip into the projectile, and a firing-pin within the tube, adapted to be driven against the cartridge to explode it.

2. In a device for throwing life-lines, a tube and a projectile adapted to slip on over the tube and provided with devices—for example, a loop and link—for the attachment of a line, in combination with a cartridge adapted to slip into the projectile, and a firing-pin within the tube for exploding the cartridge.

3. The tube and firing mechanism—for example, a firing-pin and hammer—in combination with a projectile closed at its end by a screw-cap and adapted to slip on over the tube, and a cartridge adapted to slip into the projectile and be exploded by the firing-pin.

4. The projectile having a longitudinal opening closed at its outer end and a cartridge adapted to be passed into said opening, in combination with a tube over which the projectile is adapted to pass, and which is provided with a guard, V, against which the projectile rests, and firing mechanism—for example, a pin and hammer—as shown.

331,793. RUFFLING ATTACHMENT FOR SEWING-MACHINES. ALBERT W. JOHNSON, New Haven, Conn. Filed Feb. 9, 1885. (No model.)



Claim.—1. In a ruffling attachment for sewing-machines, the combination, with a reciprocating ruffling-blade, of a shield or guard, *b*, attached by a hinge-joint to an adjusting-lever, D, pivoted to the frame B, the free end of said shield or guard extending forward under the ruffling-blade, between it and the cloth to be operated upon, substantially as and for the purpose set forth.

2. In a ruffling attachment for sewing-machines, a shield or guard, *b*, attached by a hinge-joint to an adjusting-lever, D, pivoted to the frame B, combined with a slide, F, carrying a ruffling-blade, and a bell-crank lever, A, pivoted to said frame and actuated by the needle-bar, and adapted to impart a limited reciprocating movement to said slide by the engagement of its arm I with lips *m n*, so arranged upon said slide as to move in and out of the path of said arm, substantially as described.

3. In a ruffling attachment for sewing-machines, the combination of the frame B, reciprocating slide F, carrying a ruffling-blade, *a*, and provided with an outwardly-projecting lip, *n*, and bell-crank lever A, pivoted to said frame, connected with and actuated by the needle-bar, with its arm I, constructed and arranged to hold said slide F in frictional contact with the vertical side of said frame, to engage with said lip *n* at the upstroke of the needle-bar, and thereby impart to said slide and ruffling-blade a forward movement, limited by the said lip *n* passing out of the path of said arm I, and to prevent a rearward movement of said ruffling-blade by its curved end operating as a stop against said lip *n* until after the upstroke of the needle-bar is completed and its motion reversed, and adapted to impart movement to said slide and ruffling-blade in the opposite direction at the downstroke of the needle-bar by engagement with a suitable projection, *m*, upon said slide, substantially as described.

4. The combination, with the frame B, foot C, and shank G, constructed as described, of a slide, F, carrying a ruffling-blade, *a*, a bell-crank lever, A, pivoted to said frame and operating to hold said slide in frictional contact therewith, and the lips *m n*, projecting outwardly from said slide, constructed and arranged to be moved by the arm I of said bell-crank lever in and out of the path thereof, whereby a limited reciprocating movement is imparted to said slide and ruffling-blade, substantially as and for the purpose set forth.

5. The combination of the frame B, bell-crank lever A, separator H, provided with the blade *c*, slide F, provided with lips *m n* and carrying a ruffling-blade, *a*, and shield *b*, hinged to its supporting and adjusting lever D, with the foot C and shank G, when constructed and arranged substantially as described.

6. In a ruffling attachment for sewing-machines, the combination, with a reciprocating ruffling-blade, of the foot C and shank G, formed of separate pieces, and the frame B, when so secured together that said frame B is firmly clamped between said foot and shank at the heel end of said foot, and supported upon and interlocked with said foot at its toe end by means of a projection on one engaging in a corresponding notch, *u*, in the other, substantially as described.

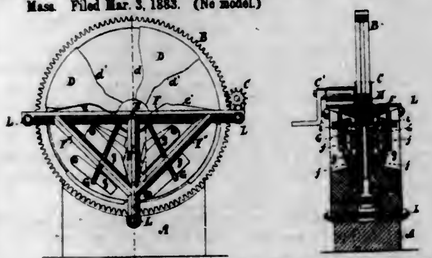
331,794. FOUNTAIN-PEN. FEDOR JULIUSBERGER, Berlin, Germany. Filed June 4, 1885. (No model.)



Claim.—1. In a fountain-pen, a regulating attachment consisting of the combination of the socket-tube B, inserted into the tube A and provided with an inwardly-projecting flange, *b*, upon one end and with a female screw upon the other end, the screw-cap E, screwed into the said female screw, the diaphragm C, resting upon the said flanges *b*, the ring D, located between the said diaphragm C and said socket-tube B, and a push-button, H, provided with an enlarged portion, *h*, which is located between said diaphragm and projection F, said projection F being located upon the interior of the socket-tube B, substantially as and for the purpose specified.

2. In a fountain-pen, the combination of the tube A, for containing ink, the socket-tube B, inserted into said tube A, a frame, I, embracing the said socket-tube and located within said tube A, a needle, K, upon one end of said frame, and orifice J', in which fits said needle K, a threaded piece, K', secured to the other end of said frame I, and upon said threaded piece a packing-box consisting of the gland-screw M, provided with a central hole, through which passes the said threaded piece, a stopper, N, provided with a cavity containing the washer O, and said female screw, in which screws said gland-screw M, substantially as described.

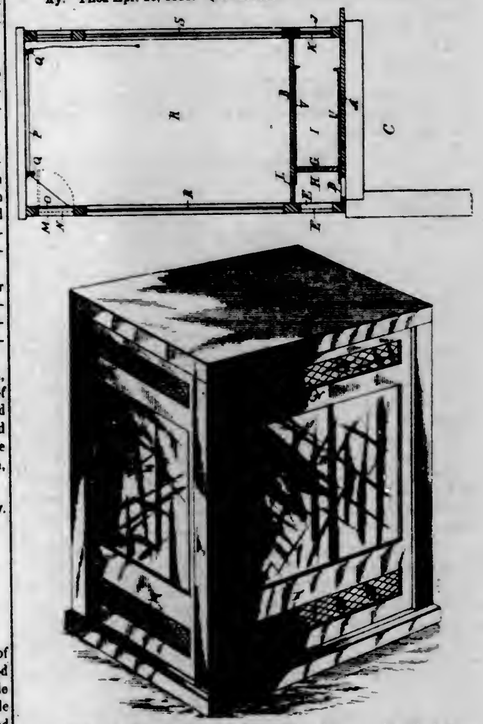
331,795. CRIMPING-MACHINE. CHARLES M. KIMBALL, Bradford, Mass. Filed Mar. 3, 1883. (No model.)



Claim.—1. In a crimping-machine, the semicircular plates E E, the upper edges, *e e'*, of which are made in outline, the one for crimping boots and the other for crimping shoes, in combination with the formers D, having edges *d d'*, corresponding, respectively, with those of the plates E E, whereby the formers as they are rotated in one direction will crimp a boot, and when rotated in the opposite direction will crimp a shoe, substantially as set forth.

2. In a crimping-machine, the plugs or plungers *f f*, held in position by adjusting-springs, in combination with the perforated plates E E, substantially as and for the purpose set forth.

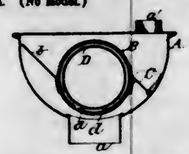
331,796. WINDOW-VENTILATOR. PHILIPP C. KLAPPER, Louisville, Ky. Filed Apr. 20, 1883. (No model.)



Claim.—A show or bulk window of the character described, having ventilating-openings at top and bottom extending substantially the entire width of the glass, a floor above the lower openings, said floor provided with corresponding openings near the walls of the window, all the said openings provided with valves by which they may be opened

or closed, and an opening between the cellar and the lower openings in the window, and means for closing said opening at will, substantially as described, and for the purpose hereinbefore set forth.

331,797. STOVE ATTACHMENT. PETER LAHR, Marshfield, Wis. Filed Apr. 23, 1884. (No model.)



Claim.—An attachment for stoves, consisting of the case A, of semi-cylindrical form, having the thimble *a* at the center of its rounded base, and the thimble *a'* rising from the rear edge of its flat top, in combination with the central cylinder, B, above the thimble *a*, and the damper C, in line with and beneath the thimble *a'*, and the deflector *b*, secured to the cylinder on the side opposite to the damper and extending up to near the top of the case A, with a narrow space between the upper edge of said deflector and the inner wall of said case, substantially as set forth.

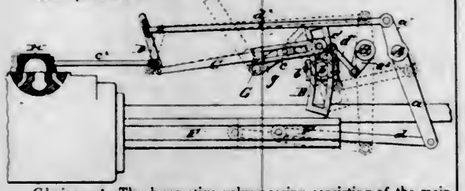
331,798. BRACELET. PHILIPP LEITER, Attleborough, Mass., assignor to T. I. Smith & Co., same place. Filed May 8, 1884. (No model.)



Claim.—1. In combination with the wings having loops or arms pivoted on the central part and springs, the stops on the ornamental piece or head for limiting the movement of the wings, substantially as described.

2. The wings pivoted on the central piece or ornament, the springs, and the covering-pieces covering the ends of the springs, substantially as described.

331,799. LOCOMOTIVE VALVE-GEAR. WALLACE J. LEWIS, Tyler, Tex., assignor of one-half to John W. Addin, same place. Filed May 5, 1884. (No model.)



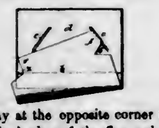
Claim.—1. The locomotive valve-gearing consisting of the main rocker-shafts A A, each provided with a cross-head arm, valve-lever arm, and link-arm, and connected to the cross-heads of the locomotive by means of adjustable connecting-rods, the link rocker-shafts *b b*, provided with hub-saddles *b'*, carrying the radial links B, and connected by arms *b'* and links *d'* to the main rocker-shafts A, the valve-rods C, formed with slots containing blocks *c*, that are connected to a tumbling-shaft, and the said valve-rods being connected at one end to the radial links by means of shifting blocks and pins, and the valve-levers D, connected to the valve-rods C and to the valve-stem at a point above the connection to the valve-rod, the lever being also connected to the valve-arm of the main rocker-shaft, all substantially as shown and described.

2. In a locomotive valve-gearing, the combination of the main rocker-shafts A A, the link rocker-shafts *b b*, the valve-rods C, the valve-levers D, and the connecting-rods, substantially as described, for operation as specified.

3. In locomotive valve-gearing, the combination of the main rocker-shafts A A, the link rocker-shafts *b b*, the valve-rods C, the valve-levers D, and the connecting-rods, said valve-levers being adapted to give the valves lead and to compensate for lap, substantially as and for the purpose set forth.

331,800. PAPER BOX. CHARLES L. LOCKWOOD, Philadelphia, Pa. Filed Oct. 10, 1885. (No model.)

Claim.—1. A knockdown box provided with plain terminal flaps *a a* at two sides, with a flap, *b*, at another side, provided with diagonal slots *a a'*, and at the opposite sides with a flap, *b*, having a tongue, *f*,



at one edge and cut away at the opposite corner to form an edge, *x*, at right angles to the terminal edge of the flap, substantially as described.

2. A knockdown box provided at opposite sides with terminal flaps, one having inclined diagonal slots, and the other having a tongue at one corner and a notch and straight edge at the opposite corner, substantially as set forth.

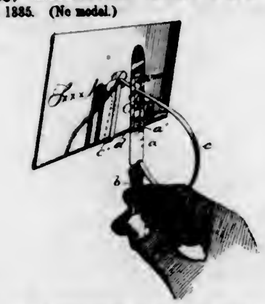
331,801. STEAM-BOILER INDICATOR AND ALARM. HENRY F. LOGER, Stillwater, Minn. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination of the cylinder A, having a pipe, B, adapted to connect with the lower part of a boiler, and the upper section, E, having a pipe, A^2, adapted to connect with the upper part of the boiler, and the alarm M, connected with said upper section, the valve-stem N, valve R, levers G' and F', and actuating-rod C' and float B', all arranged to operate substantially as specified.

2. The combination, with the cylinder A, of the float B', the vertical rods A' C', the adjustable boss D', the levers F' G', the valve-rod N, the valve P, and the alarm and index devices, whereby the height of the water in the boiler is indicated, substantially as specified.

331,802. LETTER-SCALE. THOMAS J. LOMB, Hartford, Conn. Filed July 25, 1885. (No model.)



Claim.—1. In combination, a blade, *a*, having a slot, *a'*, a handle, *b*, and a graduated scale, *d*, and a curved or bent spring, *c*, which passes through the slot in the blade, has one end fast to the body of the device, and bears at its free end a letter-clamp, all substantially as described.

2. In combination with a blade having a handle and a scale marked along the blade, a bent spring with one end fast to the body of the device, the free end bearing a letter-clamp and supported against lateral play by contact with the blade, all substantially as described.

3. The combination spring-balance and paper-cutter, consisting of the handle bearing a blade and a curved spring with one fast and one free end, the latter terminating in a letter-clamp and extending across the blade, the latter having a graduated scale along the limited path of the spring, and having a point or extension beyond the play of the spring, all substantially as described.

331,803. REEL FOR MEASURING AND CUTTING CHEESE-BANDAGES. ALEXANDER J. LUEDDEN, Sheboygan Falls, Wis. Filed July 2, 1884. (No model.)

Claim.—1. A reel which decreases in diameter as the material is wound on it, substantially as and for the purposes set forth.

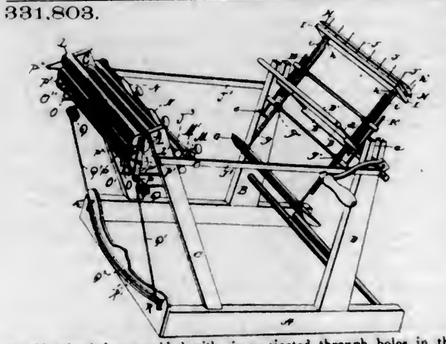
2. A reel having slats and provided with mechanism which draws the slats in as the reel is revolved, substantially as and for the purposes set forth.

3. In a machine for measuring and cutting cloth, the combination, with the slat, of the needle-bar, the former being adapted to be drawn inward and the latter being provided with pins, which are pushed outward from the slat as the material is wound upon the reel, substantially as set forth.

4. In a cloth measuring and cutting machine, the marking and retaining bar provided with two rows of pins and an intermediate knife-groove, substantially as and for the purposes set forth.

5. In a cloth measuring and cutting machine, the retaining and marking bar consisting of a fixed and an adjustable or movable strip, one

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of said strips being provided with pins projected through holes in the other bar, together with mechanism, substantially as shown, which gradually and continually advances the pins as the cloth is wound upon the reel, substantially as and for the purposes set forth.

6. The combination, with the reel, of the marking and retaining bar having two diverging rows of pins and an intermediate knife-groove, substantially as and for the purpose set forth.

7. In a machine for measuring and cutting cloth, the set-screw which actuates the reel contracting and expanding mechanism, provided with a spur-pinion, in combination with a stud or projection arranged in position to be engaged by the arms of said pinion, substantially as and for the purposes set forth.

8. In an adjustable reel, the combination of the slats, the shaft, the adjusting-bars arranged on opposite sides of the shaft, the set screw or screws journaled at about its middle point in the shaft and having its opposite ends turned through the adjusting-bars, and rods connecting the slats and adjusting-bars, substantially as set forth.

9. In an adjustable reel, the combination, with the shaft, the adjusting-bars, and the screws journaled in the shafts and having their ends turned through the adjusting-bars, of the slats having rods extended inward and detachably connected with the adjusting-rods, substantially as and for the purposes set forth.

10 In an adjustable reel, the combination of the shaft, the adjusting-bars, the feed-screws, the slats, and the rods extended therefrom through and secured to the adjacent adjusting-bar, thence through the shaft and the other adjusting-bar, substantially as set forth.

11. In an adjustable reel, the combination of the shaft, the slats having inwardly-projected rods, the adjusting-bars, the feed-screws, and the needle-bar sliding on the rods of one of the slats, and having projected from its inner side rods extended through the adjacent adjusting-bar and secured to the shaft, substantially as set forth.

12. The combination, in a slat-reel, with the shaft, of the adjusting-bars connected with and supporting the slats and the set-screws journaled at about their middle points in the shaft, and having their threaded ends turned through the adjusting-bars and adapted to be revolved, substantially as set forth.

13. The combination of the reel, the cutter-shaft arranged in front thereof, a plurality of cutters secured on said shaft and adapted to cut the cloth into longitudinal strips, and a tension device arranged in front of the knives, substantially as set forth.

14. The combination, with the reel and the cutters, of the guides, as L L', arranged in front of the knives and adjustable or movable transversely to the line of motion of the cloth or bandage, substantially as set forth.

15. The combination, with the reel, the knives, and the pressure-rollers, of the spring-bail having its cross bar or arm arranged to bear against a board of the framing, substantially as set forth.

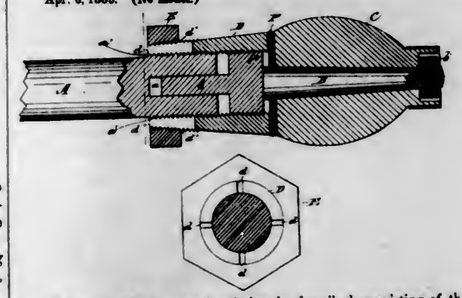
331,804. DEVICE FOR CUTTING THE RUNNERS OF STRAWBERRY-VINES. WILLIAM M. MASON, Wauseon, assignor of one-half to Ebenezer Ross, Toledo, Ohio. Filed July 20, 1885. (No model.)



Claim.—1. In a device for cutting runners of strawberry-vines, the combination of the handle, the cutting-disk journaled thereon and adapted to penetrate the soil, and a guard attached to said handle, extending along the side and in advance of said cutting-disk, substantially as specified.

2. The combination of the handle B, the cutting-disk A, journaled on the handle, the guard C, pivoted at *e* to the handle, and the means for adjusting the guard, as and for the purposes set forth.

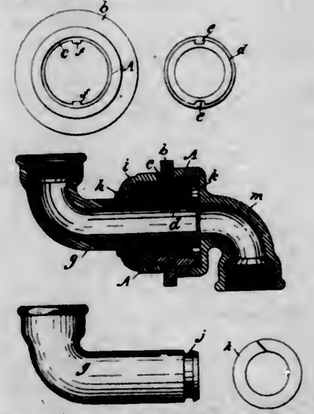
331,805. VEHICLE-AXLE. JAMES I. MCCALOP, Clinton, N. C. Filed Apr. 6, 1885. (No model.)



Claim.—1. The improved axle herein described, consisting of the axle proper or body A, provided with an opening, *a*, made angular in cross-section, and having an external thread, *a'*, the spindle having a stem, *b*, corresponding in cross-section to and fitted in the opening *a*, and having a threaded enlargement, b^2, and a sleeve, D, threaded onto the enlargement b^2 and onto the end of the axle proper.

2. The combination of the axle A, having angular opening *a* and thread *a'*, the spindle having a threaded enlargement, b^2, and an angular stem, *b*, projected into the opening *a*, the externally-tapered sleeve D, threaded onto the axle and the portion b^2 of the spindle, and having its inner end divided by slots *d*, and the nut E, turned on the inner end of the tapered sleeve, substantially as set forth.

331,806. PIPE-COUPLING. FRED L. MCGAHAN, Indianapolis, Ind. Filed Jan. 26, 1885. (No model.)



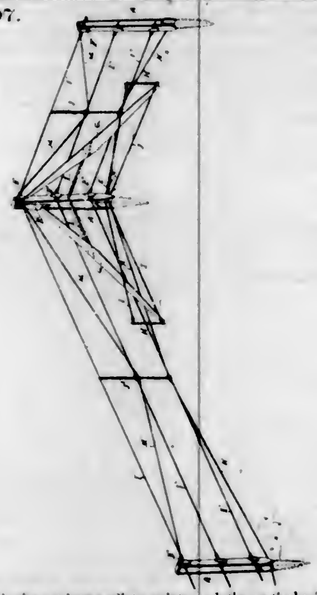
Claim.—The combination, with cylinder A, having an interior annular bearing, gland *h*, screw-cap *i*, and elbow *m*, of tube *g*, adapted to rotate and slide longitudinally within said gland and interior bearing, and having groove *j* and removable ring *k*, all substantially as and for the purpose specified.

331,807. WIRE FENCE. PLINY MCOMBER, Maple Grove, Mich. Filed Oct. 24, 1884. (No model.)

Claim.—1. In a fence, the combination, with the post, the main braces, and the sub-braces fitted between the main braces and the posts, the stakes, and the wires connecting them with the posts, and the horizontal wires connected to the posts, of the oblique upper stringers secured also to the post and the vertical connecting wire or wires, whereby the fence is suspended between the posts.

2. In a fence, the combination, with the posts having each a lug near its upper end, the main and sub braces, and the horizontal strands secured to said posts, of the upper oblique stringer secured to said posts, running downward in both directions, and connecting with the horizontal strands at intermediate points, and the lower oblique stringer secured to the posts and running upward in both directions and connecting with

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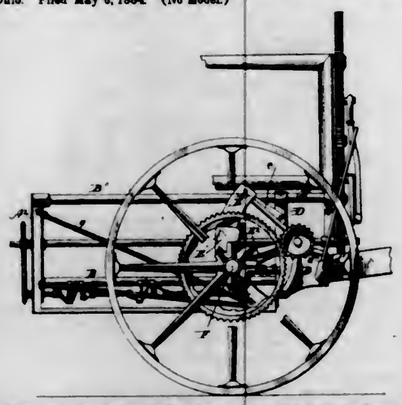


the horizontal wires at intermediate points, and the vertical wires connecting the horizontal strands together where the stringers cross them, substantially as described.

3. In a fence, the combination, with the posts, the main and sub braces, the stakes, the wires connecting them with the posts, and the horizontal strands connected with the post, of the upper and lower oblique stringers also secured to the strands and to the post, substantially as described.

4. In a fence, the combination, with the corner or end posts, of the main braces fitted against the upper end, the sub-braces fitted between the main braces and intermediate points of the post, and the stakes connected at one or more points with the post by wires, substantially as described.

331,808. GRAIN-BINDING HARVESTER. LEWIS MILLER, Akron, Ohio. Filed May 6, 1884. (No model.)



Claim.—1. In a grain-binding harvester in which the inclined elevating binder-table is interposed between the platform-carrier and the path of the driving-wheel, the rear platform-frame sill having its inner end bent upward to form the rear transverse bar of the inclined binder-frame, in combination with the longitudinal bars of said binder-frame, supported at their rear ends in said inclined portion of the rear sill, substantially as described.

2. The inclined binder-frame interposed between the platform-carrier and the path of the driving-wheel, in combination with the standard bracket or chair on the platform-sill, supporting the upper longitudinal binder-frame bar at its forward end, and the upwardly-inclined inner or heel end of the rear platform-frame sill supporting the rear end of said longitudinal binder-frame bar, substantially as described.

3. The combination, with the platform-frame, the inclined binder-frame, and table secured to said platform-frame on the grain side of the driving-wheel, and the interposed binder-frame-standard bracket or chair, of the segmental standard rigidly secured to said platform-frame, the grooved axle-block, within which said standard is adjustable, and an arm pivotally connecting said axle-block with the secondary or pinion shaft mounted in the binder-frame standard or chair, substantially as described.

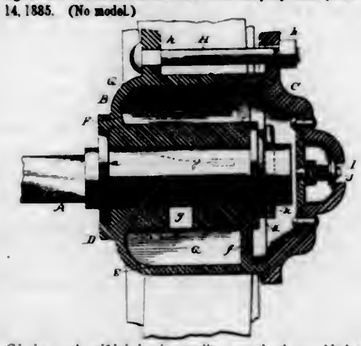
4. In a grain-binding harvester, the combination of the platform-frame, the binder-frame on the inner end thereof between the platform-carrier and the path of the driving-wheel, a standard-bracket supporting the outer end of the binder-frame above the forward platform-sill and provided with bearings for the secondary or pinion shaft, a segmental standard rigidly connected with the platform-frame, an axle-block or sleeve within which said standard is adjustable, an arm connecting said axle-block with and adjustable around the pinion-shaft as a center, and means for adjusting the platform-frame, substantially as described.

5. The binder-frame-standard bracket or chair provided with the tongue-socket, and a transverse sleeve-bearing for the secondary or pinion shaft, substantially as described.

6. The binder-frame-standard bracket provided with the tongue-socket, a transverse sleeve-bearing for the secondary or pinion shaft, and a bearing for the worm-wheel shaft, through which the adjustment of the height of the frame is effected, substantially as described.

7. The combination of the front and rear sills of the platform-frame, the rear sill having its inner end bent upward to support the rear end of the upper longitudinal binder-frame bar, the chair supporting the forward end of said binder-frame bar, and a brace extending from the inner end of the platform-frame sill in front upward to the angular extension of the rear sill, substantially as described.

331,809. LUBRICATOR. ROBERT B. MOTHERWELL, Logan, Ohio, assignor to the Motherwell Iron and Steel Company, same place. Filed Oct. 14, 1885. (No model.)



Claim.—A self-lubricating pulley or wheel provided with a hub having an annular reservoir surrounding its bore, radial partitions dividing the reservoir into several compartments, flanges formed at right angles to and extending on either side of the free ends of the partition, and the inner wall of the compartments having ducts formed therethrough close to and on either side of the partitions, substantially as shown, and for the purposes specified.

331,810. CLEANING-FLUID. CHARLES T MUTCHLER, Ottumwa, Iowa. Filed Aug. 20, 1885. (No specimens.)

Claim.—The herein-described compound, consisting of alcohol, sulphuric ether, salts of tartar, cyanide of potassium, and aqua ammonia, in substantially the proportions specified.

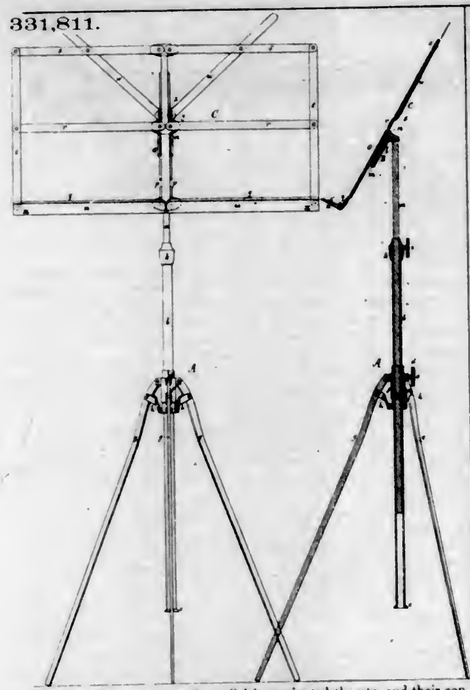
331,811. FOLDING MUSIC-STAND. JAMES NEWTON, Hanover, Mass. Filed Mar. 2, 1885. (No model.)

Claim.—1. The combination, with the standard having a flange or shoulder at its lower end, and with the legs of the tripod, of the split primary sleeve connected to the legs by links, and the secondary sleeve encompassing the primary sleeve and jointed to the legs at their upper ends, and provided with a clamp-screw to bear against the said primary sleeve, all being substantially as set forth.

2. The combination of the two braces and their connecting slide with the music-rack, as described, consisting of the median bar, the two series of parallel bars pivoted thereto, and their connecting parallel bars, such braces being pivoted to the upper bars of the rack, and the slide being adapted to embrace and slide on the median bar, as specified.

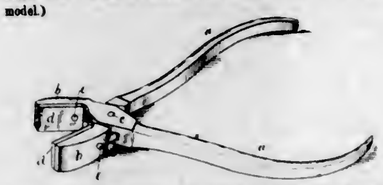
3. The combination of the arm B, formed in two sections or parts, *l* and *m*, hinged together, and provided, as described, with the dovetailed clasps *n* and *o*, with the tripod and with the music-rack C, substantially as described, such music-rack being composed of the notched

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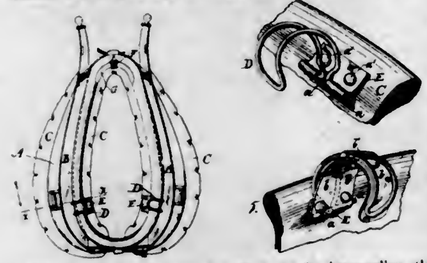
median bar, the two series of parallel bars pivoted thereto, and their connecting parallel bars, all being essentially as set forth.

331,812. CUSHIONED NIPPERS AND PLIERS FOR GLASS-CUTTERS' USE. JEREMIAH NORRIS, Chelsea, Mass. Filed Mar. 7, 1885. (No model.)



Claim.—As an improvement in pinchers and pliers, a cushion of rawhide or other suitable slightly-yielding material secured to the abutting faces of the jaws in the manner to allow the engagement thereof with the glass or other material without contact between the metal and glass, substantially as specified.

331,813. FASTENING FOR SWEAT-PADS FOR HORSE-COLLARS. ANDREW ORTMAYER, Chicago, Ill. Filed July 30, 1885. (No model.)

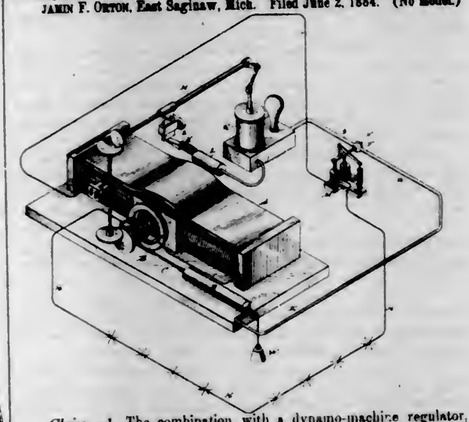


Claim.—1. The combination of a sweat-pad for horse-collars, the hook D, made of wire and bent or curved, as shown, for clasping the front roll of a horse-collar, and being bent near its ends for forming the laterally-extending arms *a a*, projecting in opposite directions from the sides of the said hook, respectively, and the leather E, or its equivalent, folded upon itself and over the said extensions, and attached to the said pad, substantially as and for the purposes specified.

2. The combination of the pad C, the hook D, made of wire, bent or curved, as shown, for clasping the front roll of a horse-collar, and having laterally-extending arms *a a*, projecting in opposite directions, and the leather E, or other equivalent, folded upon itself and over the said extensions and attached to the said pad, and also extending along underneath the said hook, and having a loop, *b'*, for connecting the said extension or tongue to the said hook, substantially as and for the purposes specified.

3. In combination, a horse-collar having thereon a safe-piece, G, and a sweat-pad having thereon hooks for clasping the front roll of the collar, and also having a loop, F, applied to the upper part of the pad, the said loop being adapted and arranged to permit the passage through it of the said safe-piece, substantially as and for the purposes specified.

331,814. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. BENJAMIN F. ORTON, East Saginaw, Mich. Filed June 2, 1884. (No model.)



Claim.—1. The combination, with a dynamo-machine regulator, of devices for adjusting the same through variations of air or fluid pressure, an air or fluid pump, a driving-power therefor, and mechanism for throwing off the driving-power when the pressure reaches a predetermined degree.

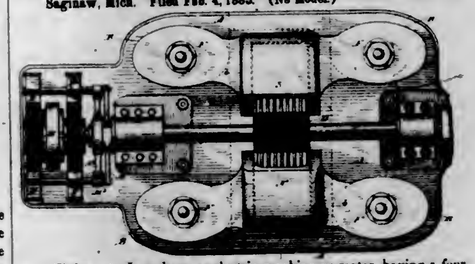
2. The combination, with a dynamo-machine, of an adjustable commutator controlled by variations of air or fluid pressure, a pump worked from the shaft of the machine, and an electro-magnet controlling a valve or cock in the pipe between the air-pump and the mechanism that acts on the commutator.

3. The combination, with a dynamo-machine, of a current-governor therefor worked by variations of air-pressure, an air-pump mechanically connected with the shaft of the machine, and disconnecting mechanism for severing the connection with the shaft when the air-pressure produced through the agency of such pump reaches a predetermined degree.

4. The combination, with a dynamo-electric machine, of an adjustable commutator, mechanism for actuating the same through air or fluid pressure, an air-pump driven from the dynamo, a cock or valve in the passage from the air-pump to the commutator-actuating device, and an electro-magnet controlling said cock or valve, as and for the purpose described.

5. The combination, with a dynamo-machine regulator, of an air-pump, an electro-magnet, a valve or cock controlled thereby, and devices for adjusting the regulator through variations of air or fluid pressure.

331,815. DYNAMO-ELECTRIC MACHINE. BENJAMIN F. ORTON, East Saginaw, Mich. Filed Feb. 4, 1885. (No model.)



Claim.—1. In a dynamo-electric machine or motor having a four-pole field-magnet, the combination, with said poles, of detachable pole-sections adapted to fill the interval between two adjoining poles, whereby said magnet may be converted into a two-pole magnet or reconverted into a four-pole magnet at pleasure.

2. In a dynamo-electric machine or motor, the combination, with two or more vertical field-magnet cores on the same side of the armature-shaft, of a detachable plate of iron formed in a single piece and secured to and bridging the tops of said cores, said plate being provided on its under side with a curved and grooved pole-piece formed in one piece with the same, as described, so that by detaching the plate the armature may be removed.

3. The combination, with the armature-bobbins, of separating-pieces adapted to fill the space between adjoining bobbins, and provided with wedge-shaped lips or projections *i* to enter between the bobbin and the core, as described.

4. As a new article of manufacture, a commutator disk of plastic insulating material having a retaining or strengthening rim or band, in which the disk is cast or molded and allowed to harden, so as to form a strong and firm union of the disk and band, as and for the purpose described.

5. In a dynamo-electric machine or motor, a commutator consisting, essentially, of a disk or plate of cement carrying the commutator plates or segments, combined with an outer metallic retaining rim or band, in which the cement disk is cast or molded, so as to form a strong and secure union between the band and disk, as and for the purpose described.

6. In a dynamo-electric machine or motor, a commutator consisting, essentially, of a concrete or other insulating disk cast in a metallic rim or band, and having the commutator-plates secured to one or both faces.

7. In a dynamo-electric machine or motor, the combination, with a supporting commutator disk or plate made of cement or other suitable plastic material cast in a strengthening-frame consisting of a retaining-rim and one or more radial wings or spokes.

8. In a dynamo-electric machine or motor, a commutator disk or plate of cement or other plastic material cast in a strengthening-frame composed, essentially, of a hub, spokes, and rim, in combination with commutator-segments secured to the face or faces of said disk.

9. The combination, with the disk or plate of cement and a strengthening metallic frame therefor, of commutator-segments provided with rectangular or radial projections bearing against the face of the disk and secured thereto by bolts or screws.

10. In a dynamo-electric machine or motor, a commutator having its conducting plates or segments disposed alternately on opposite faces of a non-conducting disk or plate.

11. The combination, in a dynamo-electric machine or motor, of a system of armature-coils, a commutator consisting, essentially, of a non-conducting disk or plate having its commutator-segments secured to its opposite faces, and connections from the armature system of coils taken in order to the commutator-plates on opposite sides of the disk alternately.

12. The combination, in a dynamo-electric machine or motor, of a supporting disk or plate, commutator-segments secured to opposite faces of the disk, a sytem of armature-coils connected to said segments, and compound brushes, one portion of which bears upon the segments on one side of the disk, while another portion bears upon the segments upon the opposite side of the disk.

13. In a commutator for dynamo-electric machines or motors, a compound commutator-brush having its two brushes secured at opposite ends of a pivoted support carried upon the usual rocker arm or frame, as described.

14. The combination, with the rocker-frame carrying the pivoted brush-holder, of a hub sleeved on the hub of the rocker and carrying a series of arms engaging with the pivoted brush-holders, as and for the purpose described.

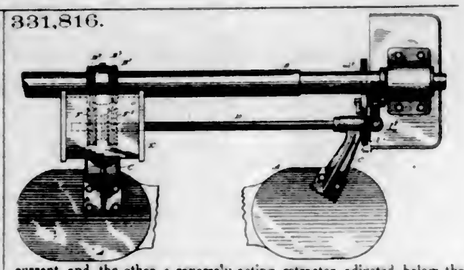
15. In a dynamo-electric machine or motor, a Gramme or Pacinotti armature having its coils divided into two or more sets, with the coils of one set alternating with those of the other, a commutator-cylinder and brushes for each set, and connections from the commutator of one set to that of the other, whereby the currents developed in the two sets may be combined for tension.

16. In a dynamo-electric machine or motor, a four-pole field-magnet, an armature provided with two sets of bobbins alternating with one another, and having the coils of each set connected in closed circuit and to a separate commutator-cylinder, four commutator-brushes for each cylinder, connected in pairs, as described, and a connection from the positive compound brush of one cylinder to the negative compound brush of the other cylinder.

331,816. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. BENJAMIN F. ORTON, East Saginaw, Mich. Filed Feb. 4, 1885. (No model.)

Claim.—1. The combination, with a dynamo-electric machine, of current-adjusting devices operated by mechanical power from the dynamo-machine shaft or a shaft rotating therewith, a mechanical reversing mechanism for controlling the movement of the adjusting devices under the action of said power, an actuating magnet or magnets for operating said reversing mechanism, and two switches controlling the flow of current to said magnets and governed by fluctuations of the current, one of said switches having a retractor adjusted above the strength of the normal

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current and the other a reversely-acting retractor adjusted below the tension of the normal current, as described, so that said switches may act separately upon an increase or a decrease of current, respectively.

2. The combination, with the adjusting mechanism for a dynamo-machine, of mechanical reversing devices, and two magnet-coils or sets of coils adapted to act in opposite directions upon a movable core or cores connected with the reversing mechanism, each of said coils having a portion of its core fixed and connected with a magnetic yoke-piece, as and for the purpose described.

3. The combination, with the yoke-piece E, made of iron, of the two sets of coils mounted thereon, movable cores K, fixed core-pieces for each coil bolted or secured to the common yoke-piece, and adjusting mechanism for the dynamo-machine governed by the movement of the movable cores K.

4. The combination, with the counter-shaft D, of the shaft L, having formed upon it a screw-thread, a nut carrying a cross-bar, and circuit-closing plates or springs borne by said cross-bar and bearing, respectively, upon the series of contact-studs, one series for each of the field-magnets whose strength is to be varied.

5. The combination, with the base M, of the series of contact-studs *p*, secured thereto, the shaft L, turning in suitable bearings at opposite ends of the base-plate, nut R, movable longitudinally on the shaft, and spring-contact carried by the latter and bearing on the studs.

6. The combination of the shaft L, nut R, cross-bar R^3, contact-pieces p^3, and spiral springs r^4, as and for the purpose described.

7. The cross-bar R^3, carrying insulating-bushings r^3, through which pass bolts or rods surrounded at their inner portion with spiral springs, as and for the purpose described.

8. In a dynamo-electric machine, the combination, with field-magnet coils divided into sections, of connections from the coil-sections alternately at opposite sides of the center section to the contacts of a shunting-switch, whereby the sections may be shunted, as described, alternately to each side of the center, as and for the purpose described.

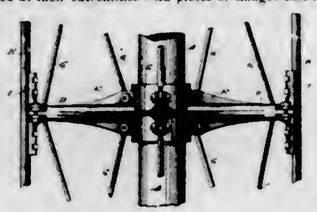
9. In a dynamo-electric machine, the combination, with a field-magnet divided into sections, of a line of shunting contact studs or plates, and a connection from the individual contacts in order to the terminals of the coil-sections farthest from the center, the connection being made in alternate progression from the central coil to coils on opposite sides thereof, as described, whereby a contact moving over said studs and bridging adjoining studs in succession may effect a short-circuiting of the coil-sections in the order described.

10. The combination, with a dynamo-electric machine, of a switch governing the charge of the field-magnets and operated by mechanical connection with the dynamo-shaft or a shaft rotating therewith, an interposed reversing mechanism consisting, essentially, of two constantly-revolving disks upon a counter-shaft, an interposed clutch-disk fixed to the counter-shaft, and two controlling switches for determining the set of said reversing mechanism, said switches being adjusted to close or break circuit reversely, as the case may be, and being provided with retractors, adjusted one above and the other below the effects of a normal current.

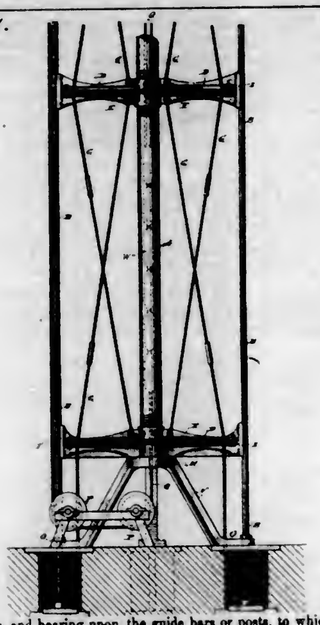
331,817. TOWER. BENJAMIN F. ORTON, East Saginaw, Mich. Filed Feb. 4, 1885. (No model.)

Claim.—1. In a tower having a central mast or pillar carrying spiders at intervals, a spider cast in one piece and having vertical webs, as E.

2. In a tower having a central mast or pillar, a spider whose arms are provided at their extremities with plates or flanges cast in one piece



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with the arms, and bearing upon the guide bars or posts, to which they are fastened by suitable screws or bolts.

3. In a tower containing a central post or mast, spiders secured thereto at intervals, and having eyes or openings cast in them for the passage of vertical truss or tie rods, as described.

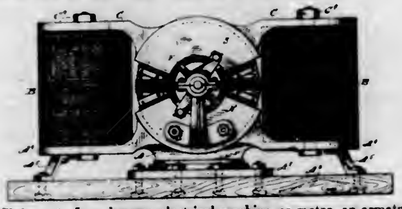
4. The combination, with the central post or mast and the spiders, of the upright posts fastened to the extremities of the spiders, and formed of channel-iron having its groove presented outwardly, so as to constitute a guide-groove for the carriage.

5. The combination, with the central mast or post, the spiders, and the vertical guide-rods at the extremities of the spider-arms, of horizontal tie or truss rods connecting the ends of the spider-arms.

6. The combination, with the hollow central mast through which the rope Q passes, of the chair or frame supporting the end of the mast, so as to leave a space directly beneath for the drum and rope.

7. The combination, with the central mast and side posts, of the chair supporting the mast and provided with feet, through which the side posts pass into a suitable anchorage.

331,818. DYNAMO-ELECTRIC MACHINE OR MOTOR. BENJAMIN F ORTON, East Saginaw, Mich. Filed Feb. 11, 1885. (No model.)



Claim.—1. In a dynamo-electrical machine or motor, an armature cylindrical in outline having its coils or bobbins separated at their outer circumference by iron plates set on edge upon a common base or shoe that is applied to the armature core or body, and is provided with the radially-extending plates R, through which fastening-pins *a* pass.

2. In a dynamo-electric machine or motor, the combination, with the armature-core cylindrical in outline, of transverse plates or shoes of iron applied to the outer circumference of the core between the coils or bobbins and provided with a series of plates extending radially from the surface of the transverse plates and separated by free air-spaces, as described.

3. In a dynamo-electric machine or motor, the combination, with the armature-core and its bobbins, of separating-plates of iron curved to the form of the armature and provided with the radially-extending side plates to form a tray or box for a series of iron plates secured in the space between the sides by bolts or screws, as described.

4. In a dynamo-electric machine, the combination, with the spider-frame, the armature-core, and the separating bodies of iron interposed on the outer periphery of the armature-body between the armature coils or bobbins, of fastening-bolts passing transversely across the ends of the spider-arms and through the separating-bodies.

5. The combination, with the bifurcated spider-arms and the armature, of the transverse bolts at the outer end thereof and exterior to the outer periphery of the armature core or body.

6. The combination, with the spider-frame and the armature supported thereon, of the transverse fastening-pieces, the curved separating plates or shoes of iron resting on the armature core or body, and plates of iron supported on said shoes and having the fastening pieces or bolts of the spider passing through them.

7. In a dynamo-electric machine or motor, the combination of a spider-frame whose arms are bifurcated at their outer ends, an armature-core supported thereon, and transverse bolts K^2, passing transversely through both sides or arms of the bifurcation.

8. The combination, with the bobbins or coils in an annular armature, of interposed sets of iron plates fastened to the sides of the armature and overlapping at their inner ends, while their outer ends diverge to follow the sides of the bobbins.

9. The combination, with the coils or bobbins in an annular armature, of the iron plates S, overlapping at their inner ends and provided at their outer diverging ends with separating-pieces of any desired material.

10. The combination, with the annular armature, of the curved iron shoes M, having the toes or projections L^4 entering beneath the armature-bobbins and provided with the iron sides M^2, the plates of iron mounted edgewise on the shoes, the side plates of iron interposed between the bobbins, and fastening pins or bolts *a*.

11. The combination, with an annular armature, of a spool for the armature-coils adapted to be slipped upon the armature-core, and having a substantially straight axis or body, and key-pieces between the spool and armature-core, as and for the purpose described.

12. In an annular armature for dynamo-electric machines or motors, armature-coil spools having circumferentially-extending projections locking into the dividing or separating pieces applied to the armature-core between the bobbins.

13. In a dynamo-electric machine or motor, a pedestal of iron formed at its top into a pole-piece and provided with longitudinal extensions to either side of the pole-piece and pedestal, in combination with vertical magnet-cores secured to said extensions and joined at their top by a plate that is parallel to the pedestal and extensions thereof, and is provided with a pole-piece presented to the pole-piece upon the pedestal.

14. In a dynamo-electric machine or motor, an armature spool or bobbin holder consisting, essentially, of two plates located at opposite sides of the spool-axis and separated at their edges, said plates being joined at their ends in spool heads or flanges.

15. In a dynamo-electric machine or motor, the combination, in an annular armature, of two or more bobbins wound in suitable bobbin spools or holders, compound separating-pieces of iron applied to the sides of the armature-core, and projections from the spool-heads, arranged as described, to hold the separating-pieces against lateral displacement.

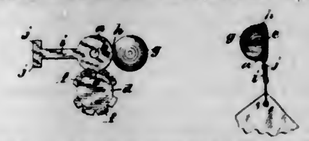
16. In a dynamo-electric machine or motor, the spools T, provided with the projections V^2, extending from the spool-heads and lapping over upon the separating-pieces applied to the sides of the armature, so as to hold said separating-pieces from lateral displacement.

17. In a dynamo-electric machine or motor, the spools T, having projections extending therefrom and interlocking with the separating masses interposed between the spools, as and for the purpose described.

18. The combination, with the fastening radial bolt or screw K, for fastening the armature-core to the spider, of the transverse bolt K^2, passing laterally through the spider-arm directly over the bolt or screw.

19. In a dynamo-electric machine or motor, a coil-spool consisting, essentially, of two plates, W, and the beads or flanges V.

331,819. SUSPENSION-HOOK. CHARLES E. RAABE and GEORGE E. HACKELL, Milwaukee, Wis. Filed Apr. 23, 1885. (No model.)



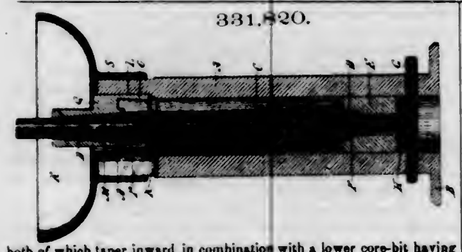
Claim.—1. The device consisting of the plate *a*, having aperture *b*, the cover *d*, secured to plate *a*, shield *g*, attached to plate *a*, and tongue *i*, projecting from plate *a*, in combination with a tack, *c*, substantially as and for the purpose set forth.

2. The perforated plate *a*, cover *d*, secured to said plate *a*, and tongue *i*, projecting from plate *a* and provided with tangs *j j*, in combination with a tack, *c*, substantially as and for the purpose set forth.

331,820. MOLD FOR CASTING SEAMLESS TUBING. ADRIAN RAIS, Waterbury, Conn., assignor to Brown & Brothers, same place. Filed Sept. 16, 1885. (No model.)

Claim.—1. A solid core of uniform diameter, except at its ends,

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both of which taper inward, in combination with a lower core-bit having an opening tapered upward and outward to receive the base of the core, and an upper core-bit adapted to move vertically in the mold, and having an opening tapered downward and outward to engage the taper of the core, whereby the latter is held firmly whether long or short.

2. A solid core having reduced tapered portions at both ends, in combination with a core-bit having an opening tapered upward and outward to receive the base of the core, and an upper core-bit consisting of a sleeve adapted to move vertically in the mold, and an inner sleeve connected thereto by cross-pieces, said inner sleeve having an opening tapered downward and outward, to adapt it to slip down upon the incline of the core, whereby the latter is firmly held in all positions.

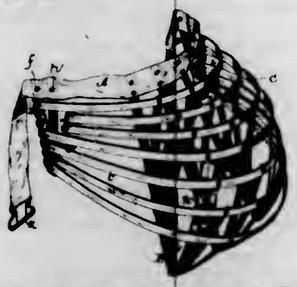
3. The combination, with the core, of a core-bit consisting of a sleeve having an opening to receive the core, an outer sleeve whose outer sides are straight and whose inner sides are inclined inward from top to bottom, and bridges which connect the two sleeves.

4. The combination, with a core tapered at its upper end and a correspondingly-tapered sleeve which engages said core, of the mold, a sleeve fitting within the mold and tapered inward from top to bottom, and bridges extending to the inner sleeve by which the latter is supported.

5. The combination, with the mold, the lower core-bit, and the core, of a sleeve which supports the upper end of the core, cross-pieces or bridges Q, and an outer sleeve fitting within the mold and having sides inclined inward from top to bottom, whereby in pouring the metal is thrown against the core, thus protecting the mold.

6. The mold having enlargement L and the core tapered, as shown, in combination with the lower core-bit having a tapered opening, sleeve M, having a tapered opening, and sleeve O, adapted to fit the enlargement of the mold and having incline P, whereby the metal is thrown against the core.

331,821. BUSTLE. BEVERLY S. REED, Boston, Mass. Filed May 14, 1885. (No model.)

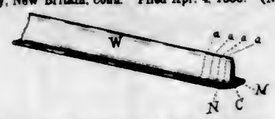


Claim.—1. A waistband and V-shaped stays projecting downwardly therefrom, in combination with ribs rigidly connected at their ends to the outer arms of said V-shaped stays, the inner arms thereof passing inside said ribs, whereby the ends of the ribs are sprung outward and prevented from indenting the body of the wearer, substantially as described.

2. A waistband and V-shaped stays projecting downwardly therefrom, in combination with ribs rigidly connected at their ends to said stays, and several series of V-shaped springs, the springs of each series being united at their angles, the outer spring of each series being connected to said waistband at the end of its longer arm, and to the lower rib at the end of its shorter arm, the ends of the intermediate springs being connected to different ribs, substantially as described.

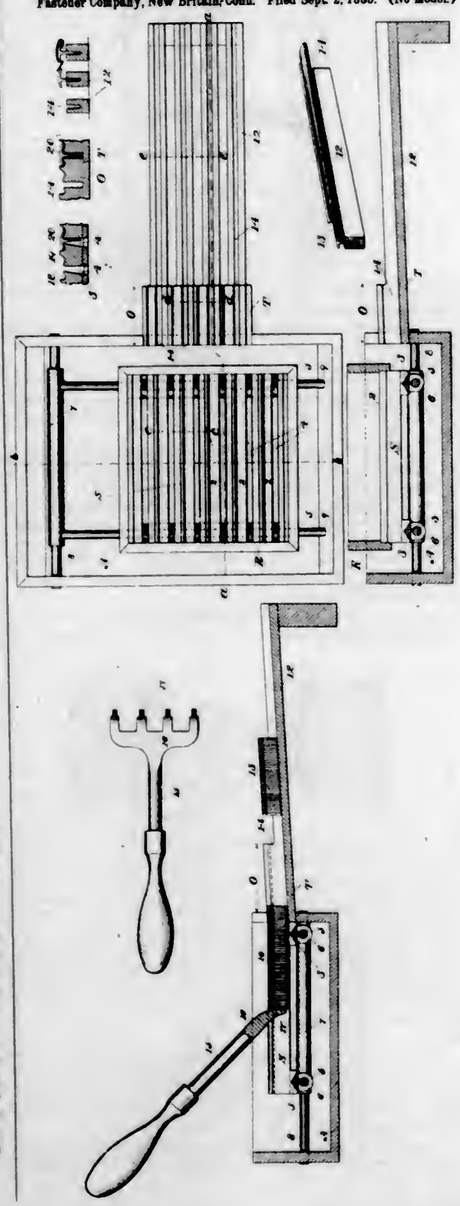
3. A waistband and V-shaped stays projecting downwardly therefrom, in combination with ribs rigidly connected at their ends to said stays, several series of V-shaped springs, the springs of each series being united at their angles, the outer spring of each series being connected to the waistband at the end of its longer arm, and to the lower rib at the end of its shorter arm, the ends of the intermediate springs being connected to different ribs, and diagonal crossed braces uniting the several series of springs, substantially as described.

331,822. METHOD OF MAKING BUTTON-FASTENERS. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Apr. 4, 1885. (No model.)



Claim.—The herein-described method of making button-fasteners having soft-wrought prongs and hard-wrought heads, as specified, it consisting in first shaping the metal into a flanged rod, then hardening the flanges, substantially as described, and then severing the rod into short lengths, substantially as set forth.

331,823. APPARATUS FOR PACKING BUTTON-FASTENERS. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Sept. 2, 1885. (No model.)



Claim.—1. The combination, in a button-fastener sieve, of a series of bars having between them grooves 4, narrow side groove 18, and wider side groove 19, substantially as set forth.

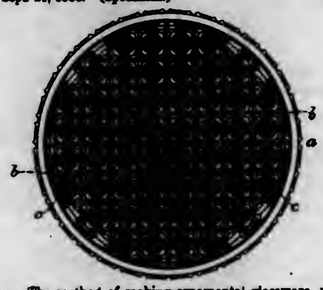
2. The combination of the sliding sieve having channels, substantially as described, the grooved table corresponding thereto, substantially as described, and means, substantially as described, for supporting said sieve to said table, substantially as set forth.

3. The combination of sieve S and table T, each having channels, substantially as described, guides for supporting the sieve to the table, and a fingered instrument, substantially as described, fitting the grooves of said sieve to push fasteners therefrom to the table, substantially as set forth.

4. In an apparatus of the class described, the channeled table T, corresponding at one end to a portion of the channeled sieve and having an extension consisting of bars 12 cut away, substantially as shown and described.

5. In an apparatus for packing button-fasteners, the combination of bin A, rod 8, slide 7, and guides 5, and the sieve supported on the guides, substantially as set forth.

331,824. MANUFACTURE OF ORNAMENTAL GLASSWARE. DANIEL C. RIPLEY, ADDISON M. HERSEY, and GEORGE B. SWIFT, Pittsburg, Pa. Filed Sept. 21, 1885. (Specimens.)



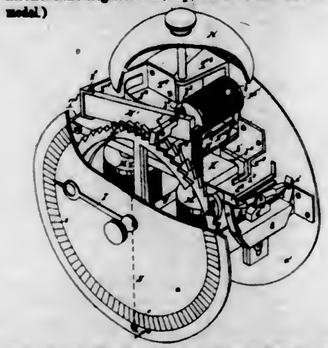
Claim.—The method of making ornamental glassware, which consists in pressing a glass article with raised and depressed surfaces, in imitation of cut-glass patterns, painting the raised surfaces, and then baking in the color on the same, substantially as and for the purposes described.

331,825. TUNING-PIN FOR PIANOS. CHARLES E. ROGERS, Boston, Mass., assignor to George M. Guild, same place. Filed Jan. 28, 1885. (No model.)



Claim.—A tuning-pin made tubular at one end and slotted longitudinally through said tubular portion, in combination with a fixed or non-movable pin, upon which said tubular pin is mounted, and about which it may be revolved, and a piano-string having one end inserted through one of the slots and wound upon the slotted tubular portion of said first-mentioned pin, whereby the tension of said string contracts said slotted tubular portion of said pin, and thus increases the friction of said tubular pin upon the fixed pin, substantially as and for the purposes described.

331,826. ELECTRIC REGISTER AND RECORDER FOR FARES, &c. EDWARD A. SCRIBE, Lowell, Mass., assignor, by mesne assignments, to the Electric Fare Register Company, Portland, Me. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination of a stationary graduated dial, the main shaft, an index-finger secured to said shaft and adapted to be moved by the rotation thereof over the graduations of said dial, two ratchets secured to said shaft, the teeth of one of said ratchets being turned in the opposite direction from the teeth of the other of said ratchets, the operating-magnet and its pivoted armature, a pawl pivoted to the free end of said armature and adapted, when said armature has moved through a part of its course, to engage with a tooth of one of said ratchets and to rotate said shaft, a pivoted locking-pawl, one end of which normally engages the other of said ratchets, and the other end of which is provided above said pivot with a hook, the unlocking-armature provided with a staple which engages said hook, and the unlocking-magnet to draw said locking-pawl out of said last-named ratchet, as and for the purpose specified.

2. The combination of a stationary graduated dial, the main shaft, an index-finger secured to said shaft and adapted to be moved by the rotation thereof over the graduations of said dial, two ratchets secured to said shaft, the teeth of one of said ratchets being turned in the opposite direction from the teeth of the other of said ratchets, the operating-magnet and its pivoted armature, a pawl pivoted to the free end of said armature and adapted, when said armature has moved through a part of its course, to engage with a tooth of one of said ratchets and to rotate said shaft, a pivoted locking-pawl, one end of which normally engages the other of said ratchets, and the other end of which is provided above said pivot with a hook, the unlocking-armature provided with a staple which engages said hook, and a spring adapted to force said unlocking-armature away from its magnet, and the unlocking-magnet to restore said locking-pawl to engagement with said last-named ratchet, as and for the purpose specified.

3. The combination of an electric circuit, the operating-magnet always in said circuit, the unlocking-magnet in a shunt-circuit, a pivoted switch normally arranged to include said shunt-circuit in the main line, and the operating-armature provided with a projection and adapted, when attracted by its magnet, to strike said switch, and by moving the same to cut out said unlocking-magnet, as and for the purpose specified.

4. The combination, in an electric circuit, of a circuit-closer, the operating-magnet connected to the battery, the unlocking-magnet connected to said operating-magnet, a contact-spring connected to said unlocking-magnet, a pivoted switch-lever normally in contact with said contact-spring, the pivot of said lever being connected with said circuit-closer, the circuit-closer being connected with said battery, another contact-spring insulated from the last-named contact-spring and connected with the line between said operating-magnet and said unlocking-magnet, the operating-armature provided with a projection adapted, when said armature is attracted by the operating-magnet, to strike said switch-lever to rock the same upon its pivot, and to bring the same out of contact with the first-named contact-spring and into contact with the other contact-spring to cut out said unlocking-magnet, the unlocking-armature, the locking-pawl, pivoted, as described, and loosely connected above its pivot to said unlocking-armature, the main shaft provided with two ratchets, the teeth of one of said ratchets being turned in the opposite direction from those of the other ratchet, the operating-armature being provided with a pawl adapted to engage with one of said ratchets, and the locking-pawl adapted to engage with the other of said ratchets, as and for the purpose specified.

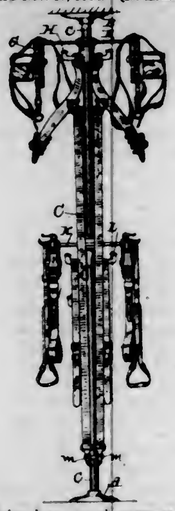
5. The combination of the frame, the lever pivoted to the back of said frame and provided at one end with a point, the tube extending through said frame from front to back thereof, and the rod sliding in said tube, and provided with a head larger than said tube, the other end of said lever resting against said head, whereby a paper disk, caused to rotate at the back of said frame, between said frame and point, may be pricked by said point when said rod is pushed backward by a pointed instrument inserted in the front end of said tube and thrust against said rod, as and for the purpose specified.

6. The combination of the frame, the lever pivoted to the back of said frame and provided at one end with a point, the tube extending through said frame from front to back thereof, the rod sliding in said tube, and provided with a head larger than said tube, the other end of said lever resting against said head, whereby a paper disk, caused to rotate at the back of said frame, between said frame and point, may be pricked by said point, when said rod is pushed backward by a pointed instrument inserted in the front end of said tube and thrust against said rod, and a spring connected to the back of said frame, and pressing the end of said lever against said head to withdraw said point from said paper disk, as and for the purpose specified.

7. The combination of an armature pivoted and provided above its pivot with an arm having a puncturing-knife, the electro-magnet of said armature, a metallic post secured to said magnet and normally in contact with said arm, the pivot of said armature being connected with one pole of a battery, said post being electrically connected with said magnet, and said magnet being connected with a circuit-closing spring, another circuit-closing spring parallel with said last-named spring, and insulated therefrom and connected with the other pole of said battery, the operating-magnet, and the operating-armature, adapted, when attracted by the operating-magnet, to bring said circuit-closing springs in contact with each other, whereby said knife may be caused to puncture

the edge of a paper disk rotated in the path of said knife when the circuit is closed through said operating-armature as and for the purpose specified.

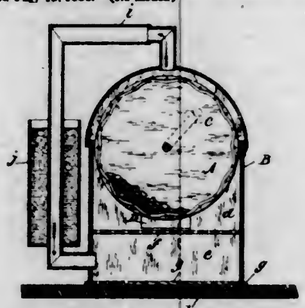
331,827. SHOW-RACK FOR HARNESS. Christian C. Schwaner, Winterset, Iowa. Filed Nov. 17, 1884. (No model.)



Claim.—1. A revolving harness-rack composed of a pivoted perpendicular post or tube having arms and hooks at its top end, a second post or tube adapted to rotate with the pivoted post and also to slide vertically thereon, and to carry arms and hooks projecting laterally at its top and bottom, and a fixed step and bearing to support the complete rack, to operate in the manner set forth.

2. The combination of a pivoted post having fixed arms and hooks at its upper end adapted to support harness with a sliding tube or frame carrying fixed arms and hooks at its upper and lower ends, for the purpose specified.

331,828. COFFEE-ROASTER. Charles J. W. Shearer, Indianapolis, Ind. Filed July 13, 1885. (No model.)



Claim.—1. In a coffee-roaster, the combination, with a closed chamber and a roasting-cylinder arranged to rotate therein, of a tube connecting the upper and lower portions of said chamber, and a refrigerating tank surrounding a portion of said tube, substantially as and for the purpose set forth.

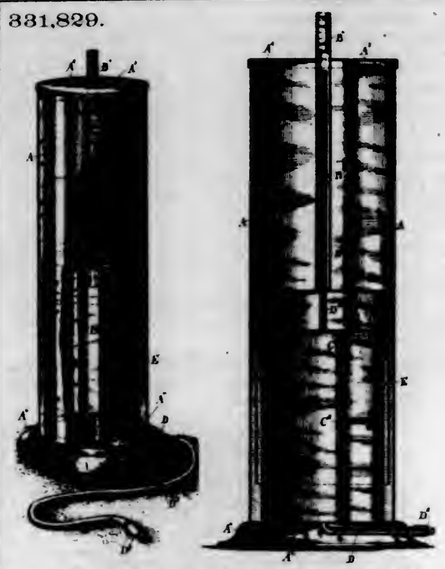
2. In a coffee-roaster, case B, having compartments *d* and *e*, separated by a perforated partition, cylinder A, arranged to revolve within compartment *d*, tube *i*, and refrigerating-tank *j*, all combined and arranged to co-operate substantially as and for the purpose specified.

331,829. SPIROMETER. William A. Shepard, Elgin, Ill. Filed Feb. 24, 1885. (No model.)

Claim.—1. A spirometer comprising a stationary vessel, A, having an inner wall, C, forming with the wall of the vessel A a space for containing liquid to form a seal, the space within said wall C being covered by a top, C', and a vertically-movable open-bottomed receiver, B, located within the said vessel A, substantially as and for the purpose set forth.

2. In a spirometer, the combination, with a stationary vessel, A,

331,829.



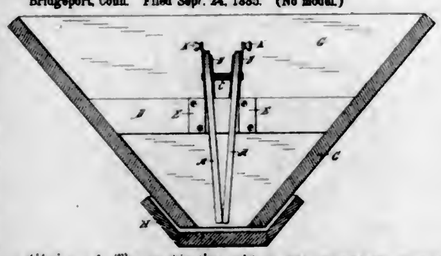
containing liquid to form a seal, and a vertically-movable open-bottomed receiver located within said vessel A, of an inlet-tube for the receiver attached to the bottom part of the stationary vessel and extending upwardly within the latter to a point above the top of the receiver, said receiver being provided with an upwardly-extending closed tube, B', surrounding the upper end of the inlet-tube, substantially as and for the purpose set forth.

3. A spirometer comprising a stationary vessel provided with an inner wall, C, forming, with the wall of the vessel, a narrow space for containing liquid to form a seal, a vertically-movable open-bottomed receiver, B, located within the vessel A, and provided with an upwardly-projecting tube, B', closed at its top, and having upon it a suitable index or scale, and an inlet-tube extending upwardly from the bottom of the stationary vessel within the receiver and the tube B', and terminating within the latter, substantially as and for the purpose set forth.

4. In a spirometer, the combination, with a stationary vessel, A, having an inner wall, C, forming, with the wall of the vessel A, a space for containing liquid to form a seal, the space within said wall C being covered by a top, C', of a vertically-movable open-bottomed receiver, B, provided with an upwardly-projecting tube, B', closed at its top, and an air-inlet tube extending upwardly from the top C' into the tube B', substantially as described.

5. In a spirometer, the combination, with the vessel A, provided with an inner wall, C, in its lower portion and with an apertured removable top, A^3, of a vertically-movable receiver, B, provided with an upwardly-extending tube, B', having upon it a suitable index or scale, said tube being closed at its top and engaged with the aperture of the top A^3, and an air-inlet tube extending from the base of the vessel A upwardly through the receiver and tube B', and terminating within the latter, substantially as described.

331,830. MAKING MAGNETS SELF-KEEPING. Erva B. Sillman, Bridgeport, Conn. Filed Sept. 24, 1885. (No model.)



Claim.—1. The combination, with a series of magnets arranged side by side with their poles alternating, of mechanism—for example, a shaft having sockets arranged thereon at an angle other than a right angle to said shaft—whereby the magnets may be supported in their operative position, or may be armatured by placing their opposite poles in contact.

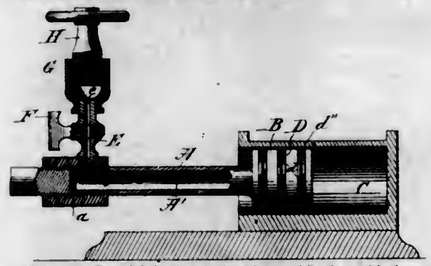
2. The combination, with a hopper or spout, of one or more pairs of magnets, each pair being placed side by side with their opposite poles adjacent, a shaft having sockets for the magnets, placed at an angle other than a right angle to said shaft, and a supporting-strip adapted to be embraced by the magnets and to support said shaft.

3. A series of magnets placed in pairs with their opposite poles next to each other, and a shaft having pairs of disks set at an angle, which form sockets for the magnets, in combination with a supporting-strip lying between the arms of the magnets, and upon which the disks rest.

4. A series of magnets placed with their opposite poles adjacent and a shaft carrying disks set at an angle other than a right angle thereto, in combination with a supporting-strip having stops which limit the outward movement of the magnets when the shaft is rotated.

5. The combination, with magnets having heads or covers L, which incline inward from the outer edge, of a shaft having disks forming sockets corresponding in shape with the magnets, and set at an angle other than a right angle to said shaft, and means, as a strip, by which said disk and magnets are supported.

331,831. LUBRICATOR FOR PISTONS AND CYLINDERS. Alexander Simpson and Ellis R. Simpson, Scranton, and Mathias Specher, Archbald, Pa. Filed Oct. 15, 1885. (No model.)



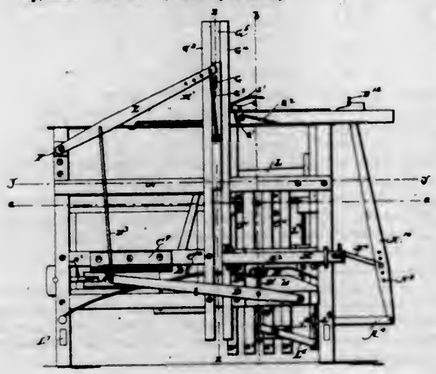
Claim.—1. In a lubricating device, the combination, with the soft-tallow cup provided with an opening in its bottom connecting with a hollow piston-rod, a piston-head formed integral with the rod, having grooves on its periphery, and provided with radial passages, and radial holes connecting with said passages, of a grooved and slitted spring ring-packing adapted to fit in said grooves and bear against a cylinder, substantially as described.

2. In a device for lubricating with a semi-fluid or soft tallow, the combination, with the cup containing the soft tallow, a forcing-plug, a check cock or valve, and means for conveying the semi-fluid to and between the piston-head and cylinder, of a slitted spring ring-packing adapted to surround the piston-head, substantially as described.

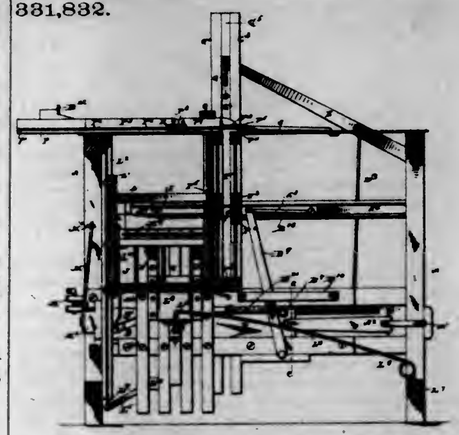
3. The combination, with a cylinder, of a hollow piston having peripheral grooves therein, and openings leading from the interior of the hollow piston to said grooves, split rings located within said grooves and having openings for the escape of the lubricant, and a hollow piston-rod connected with the hollow piston-head, substantially as described.

4. The combination, with a cylinder, of a hollow piston having peripheral grooves therein, and openings leading from the interior of the hollow piston to said grooves, and split rings located within said grooves, and means whereby the lubricant when escaping will cause the rings to expand and form a tight packing between the cylinder and piston, substantially as described.

331,832. PAPER-FOLDING MACHINE. Fred H. Smith, Blue Earth City, Minn. Filed Oct. 10, 1884. (No model.)



331,832.



Claim.—1. The combination, in a paper-folding machine, of the lifter S, the reciprocating feed-clamp having the pivoted jaw, and means, substantially as described, for opening and closing the jaw for grasping one edge of the paper to be fed, substantially as described.

2. The combination, with the frame provided with the feed-table having the vertical middle pocket, F', of the lifter S, having the curved arm S', the grooved parallel ways P, the feed-clamp P^5 with pivoted upper jaw, the pivoted inclined arms Q^2, and mechaniam, substantially as described, for operating the feed-clamp, substantially as specified.

3. The combination, with the frame provided with the transverse vertical middle pocket, F', the horizontal intersecting pocket I, and the vertical pocket J, of the slide B, the friction roller or stud B^7 on its inner face, the spring B^{11}, the lever B^8, guide C^9, link B^{10}, and second knife, K, substantially as specified.

4. The combination, with the frame A, provided with the vertical strips or guideways B^4, of the packer having stem C, the packer-table B^5, the detent B^6, and mechanism, substantially as described, for operating the packer-table, as specified.

5. The combination, in a paper-folding machine, of the vertically-moving knife G, the horizontally-moving knife K, the vertically-moving knife L, and the horizontally-moving knife M^6, with the lever D connected to knife G, for operating the latter, slide B, having stud or roller B^7, and spring B^{11}, lever B^8, operated by slide B and connected to knife K, guide C^9, for operating spring B^{11} to release lever B^8, lever M, lever O, connected to lever M, the knife M^4 being connected to lever O, substantially as described.

6. The combination, with the frame A, provided with the transverse vertical middle pocket, F', the horizontal intersecting pocket I, the vertical pocket J, the packer, the packer-stem having the lateral arm C^2, the lever D, the pitman-rod D^2, and lever E, connected with the slide of the first knife, G, of the first knife, G, secured in the slide G^1 in guides G^3 G^4, and grooved upright H', the second knife, K, horizontal way K^4, lever B^8, slide B, having friction-roller B^7, spring B^{11}, guide C^9, and link B^{10}, the third knife, L, secured to the vertical slide L', working in vertical ways, the lever N^{10}, connected to the angle-lever N^9, the rod N^7, connecting lever N^9 with lever M, the rod O^2, connecting the levers M and O, and the rod O^3, connecting the lever O to the handle O^4 of the fourth folding knife, M^6, substantially as specified.

7. The combination, with the frame A, provided with the beveled guide C^9, of the slide B, provided with the spring B^{11}, and the friction roller or stud B^7, and the lever B^8, connected to knife K, substantially as specified.

8. The combination, with the frame A, provided with the vertical strips B^4, the packer-table, its slides and supporting-spring, of the packer having its stem provided with a lateral arm, and the slide B, provided with slot B', substantially as specified.

9. The combination, with the frame provided with the transverse vertical middle pocket, F', the horizontal pocket I, intersecting pocket F', the vertical pocket J, the packer and packer-table, and the knives G, K, L, and M^6, of the slotted slide B B', the feed-clamp, and the levers and connecting-rods, substantially as described, connecting the knives, packer, and feed-clamp with the slotted slide B B', substantially as specified.

10. The combination, with the frame A, provided with the feed-table, the vertical middle pocket, F', vertical knife G, horizontal pocket I, horizontal knife K, vertical pocket J, and vertical knife L, of the horizontal knife M^6, and the packer and packer-table in vertical slides, and mechanism, substantially as described, for operating the knives, packer, and packer-table, as set forth.

331,833. SHOE. GEORGE A. SMITH, Rockland, Mass. Filed Sept. 19, 1885. (No model.)



Claim.—As an improved article of manufacture, a shoe having its upper of a single piece of material crimped into form in the instep portion thereof, and slitted down the middle of such portion, and provided with lacing-holes and a lacing, and having its ends extending to and seamed together at the middle of the back of the heel, all substantially as set forth.

331,834. CABLE RAILWAY. REINALDO SOLANO, Brooklyn, N. Y., assignor of two-thirds to John W. Howard and David R. Morse, both of same place. Filed May 5, 1885. (No model.)

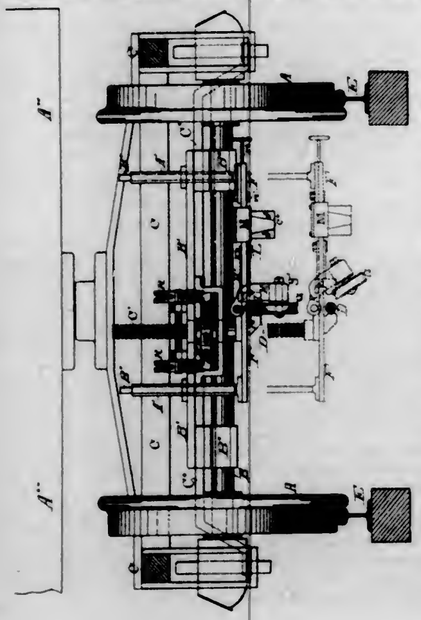
Claim.—1. In a cable-railway apparatus, the combination of the following elements, to wit: a car-body, a truck independent of said car-body, but supporting a portion of the weight thereof, and connected therewith by a vertical bolt or like vertical connection, a supplemental frame arranged to be raised and lowered with reference to the said truck, and carried thereby, and gripping mechanism carried by said supplemental frame and arranged to clutch or grip the cable when lowered with the said frame, substantially as and for the purpose herein set forth.

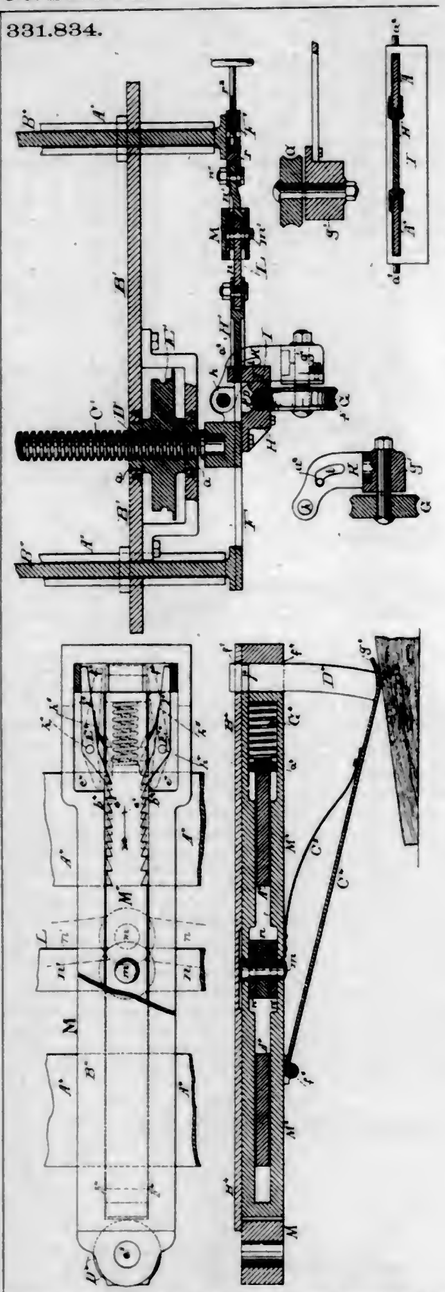
2. In a cable-railway apparatus, the combination of a truck, a supplementary frame arranged to be raised and lowered with reference to the said truck, a screw and nut for raising and lowering said supplemental frame, and gripping mechanism carried by said supplemental frame and arranged to clutch or grip the cable when lowered with the said frame, substantially as and for the purpose herein set forth.

3. In a cable-railway apparatus, the combination of a truck, a supplemental frame arranged to be raised and lowered with reference to said truck, a vertically-movable screw, C', an internally-threaded nut, boss, or wheel, E', bearings *b* for said nut, boss, or wheel, and a gripping mechanism carried by the supplemental frame and arranged to clutch or grip the cable when lowered, substantially as and for the purpose herein set forth.

4. In a cable-railway apparatus, the combination of a truck, a supplemental frame, F, arranged to be raised and lowered with reference to said truck, a jaw, H, fixed with reference to said frame F, a jaw, I, carried by said frame and laterally movable with reference to the fixed jaw H, a wheel, G, and pivoted suspending-bracket K, and means, substantially as described, for actuating the movable jaw, the wheel, and the bracket in unison, substantially as and for the purpose herein set forth.

5. In a cable-railway apparatus, the combination of a truck, a supplemental frame capable of being raised and lowered with reference thereto, a screw, C', internally-threaded wheel E', endless chain N,





sprocket-wheel G', shaft A'', hand-wheel G°, and guide-rollers R and R°, all substantially as and for the purpose herein set forth.

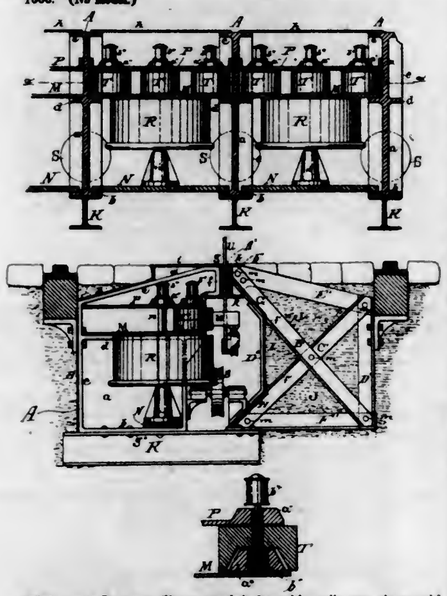
6. In a cable-railway apparatus, a gripping device composed of a fixed jaw, H, a sliding movable jaw, I, having a laterally-projecting stud or pin, a^2, a wheel, G, and a pivoted bracket, K, constructed with a slot, *i*, to receive the stud or pin a^2, all substantially as and for the purpose herein set forth.

7. In a cable-railway apparatus, the combination of a vehicle carrying a horizontal frame, B', a supplemental frame, F, capable of being raised and lowered with reference thereto, a movable gripping-jaw, a toggle-joint actuating said jaw, a sliding bar, M, arranged to actuate the toggle-joint to operate the movable jaw to grip upon the cable when the

supplemental frame is lowered, a rod, D°, and lever E°, having its pivot fixed with reference to the vehicle itself and slotted at its lower arm where the rod D° is attached thereto, all substantially as and for the purpose herein set forth.

8. In a cable-railway apparatus, the combination of a movable gripping-jaw, a toggle-joint arranged to actuate said jaw, a slide-bar, M°, arranged to actuate said toggle-joint and constructed with a rack or racks, e^3, a bar, M, constructed to receive the said slide-bar and provided with pawls E^4, spring G^4, wedges D^4, and a plate, C^4, constructed and arranged to act in conjunction with an incline, P^4 all substantially as and for the purpose herein set forth.

331,835. CURVILINEAR CONDUIT FOR CABLES OF CABLE RAILWAYS. REINALDO SOLANO, Brooklyn, N. Y., assignor of two-thirds to John W. Howard and David R. Morse, both of same place. Filed May 5 1885. (No model.)



Claim.—1. In a curvilinear conduit for cable railways, the combination of a curvilinear system of carrier-pulleys, S, arranged to rotate on horizontal axes, a curvilinear system of rollers, R, arranged to rotate on vertical axes and to guide the cable supported by the carrier-pulleys aforesaid, a separate curvilinear system of pulleys, T, arranged to rotate on vertical axes, and a grip provided with a horizontal bar, W, constructed and arranged to bear simultaneously upon two pulleys, T, in passing around the curve, substantially as and for the purpose herein set forth.

2. The combination of the brackets A, pulley-supporting plates M, pulleys T, rollers R, carrier-pulleys S, and a bar, W, carried by the grip and arranged to bear simultaneously upon two pulleys in traversing the curve, substantially as and for the purpose herein set forth.

3. In a cable conduit, the combination of brackets A, pulley-bearing plates M, curvilinear series of pulleys T, rollers R, carrying-pulleys S, plates G H, braces D'', system of braces and bars B' C' E' F' D', and a bar, W, carried by the grip and arranged to bear simultaneously upon two pulleys while passing around the curve, the whole organized and arranged substantially as and for the purpose herein set forth.

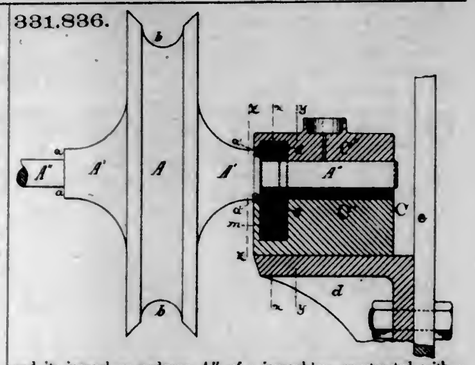
331,836. CARRYING-PULLEY FOR CABLE RAILWAYS. REINALDO SOLANO, Brooklyn, N. Y., assignor of two-thirds to John W. Howard and David R. Morse, both of same place. Filed May 5, 1885. (No model.)

Claim.—1. A journal-box for the carrying-pulleys of cable railways, constructed with a chamber, *f*, for the reception of a non-conductor of sound, substantially as and for the purpose herein set forth.

2. The combination, with a pulley, A, and its journal or gudgeon A'', of a journal-box constructed with a chamber, *f*, and a non-conductor of sound placed in said chamber and arranged to receive the impact from the pulley.

3. The combination, with a pulley, A, and its journal or gudgeon A'', of a journal-box constructed with a chamber, *f*, a non-conductor of sound composed of an impact-block, *m*, and elastic packing *g*, and arranged within the chamber *f* to receive the impact from the pulley, all substantially as and for the purpose herein set forth.

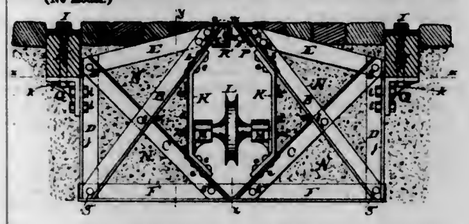
4. The combination, with the pulley, A, constructed with a boss, A',



and its journal or gudgeon A'', of a journal-box constructed with a chamber, *f*, having an opening, *a'*, a non-conductor of sound placed in the said chamber and arranged to receive the impact of the pulley by the thrust of the end *a* of the boss A' through the opening *a'* into contact with said non-conductor of sound, substantially as and for the purpose herein set forth.

5. The combination, with the pulley A, constructed with a boss, A', and its journal or gudgeon A'', of a journal-box constructed with a chamber, *f*, having an opening, *a'*, a non-conductor of sound composed of a contact-block, *m*, and an elastic packing, *g*, placed in the said chamber and arranged to receive the impact of the pulley A by the thrust of the end *a* of the boss A' through the opening *a'* into contact with the contact-block, all substantially as and for the purpose herein set forth.

331,837. CONDUIT FOR THE CABLES OF CABLE RAILWAYS. REINALDO SOLANO, Brooklyn, N. Y., assignor of two-thirds to John W. Howard and David R. Morse, both of same place. Filed May 5, 1885. (No model.)





Claim.—1. In a metallic conduit for the cables of cable railways, the combination of inclined plates *b c* and vertical braces K, bolted or riveted thereto to form the shell of the conduit, substantially as and for the purpose herein set forth.

2. The combination, with the plates *b c*, of the system of braces and bars B C D E F, arranged and connected substantially as and for the purpose herein set forth.

3. The combination, with the plates *b c* and vertical braces K, of the system of braces and bars B C D E F, all substantially as and for the purpose herein set forth.

4. The combination, with the plates *b c* and vertical braces K, of the intermediate plates, *d*, substantially as and for the purpose herein set forth.

5. The combination, with the shell of a conduit for cable railways, of the stringers H and the system of braces and bars B C D E F, secured to said stringers, substantially as and for the purpose herein set forth.

6. The combination, with the shell of a conduit for cable railways, of the stringers H, the brackets G, and the system of braces and bars B C D E F, all substantially as and for the purpose herein set forth.

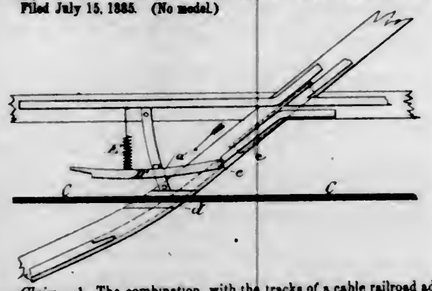
7. The combination, with the shell of a conduit for cable railways,

of the system of braces and bars B C D E F and angle-irons P and R', all substantially as and for the purpose herein set forth.

8. The combination of the plates *b c*, vertical braces K, system of braces and bars B C D E F, and angle-irons P R', substantially as and for the purpose herein set forth.

9. The combination of the plates *b c*, vertical braces K, system of bars and braces B C D E F, flanges *c''* on braces E, and angle-irons P R', substantially as and for the purpose herein set forth.

331,838. CABLE RAILWAY. REGALDO SOLANO, Brooklyn, N. Y. Filed July 15, 1885. (No model.)



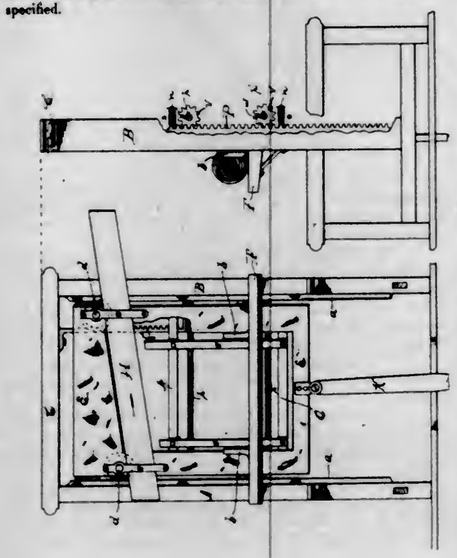
Claim.—1. The combination, with the tracks of a cable railroad adjacent to and connected with a switch therein, of movable bars, plates, or devices arranged to cover the openings in the rails where intersected by the slot of the tube during the passage of the wheels of a car or vehicle upon said rails, substantially as and for the purpose herein set forth.

2. The combination, with the switch, the tracks and cables of a cable railroad, of a pivot-bar, plate, or device arranged to swing and to be swung from the openings of the switch-rails at the intersection of the slot therewith during the normal use of one or the other of said tracks, and to swing over the said openings during the transit of a car or vehicle over the said rails from one track to another, substantially as and for the purpose herein set forth.

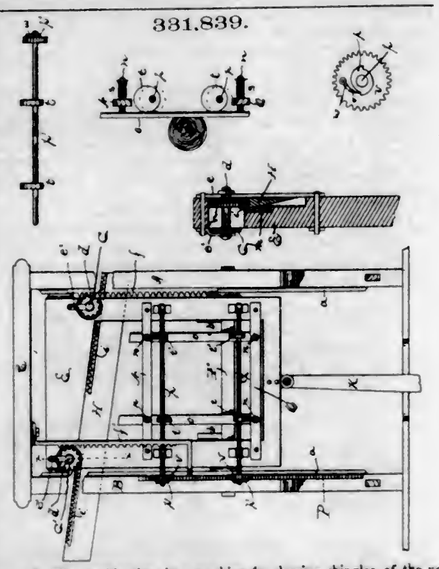
3. The combination, with the switch, the tracks, and cables of a cable railroad, of a movable bar, plate, or device arranged to be moved over the opening in the rails by the action of a passing car or vehicle, and a spring or equivalent device for moving said movable bar, plate, or device away from said opening when the bar, plate, or device is released from the action of the vehicle, substantially as and for the purpose herein set forth.

331,839. SHINGLE-SLICING MACHINE. CHARLES H. SPENCER and JOSEPH B. SPENCER, Niantic, Conn. Filed June 17, 1885. (No model.)

Claim.—1. The combination, with the reciprocating frame, of the horizontal and vertical gages, the shafts secured to the same, the eccentrics mounted on the said shafts, and the mechanism whereby the positions of the gage-bars are changed, substantially as and for the purposes specified.



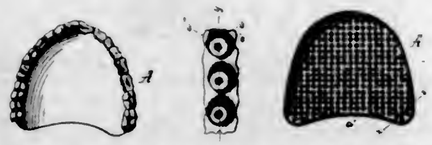
331,839.



2. The combination, in a machine for shaving shingles, of the vertically-moving carriage E, the perforated cross-bars N O, the rods *n n*, attached to vertical bars *o o*, which are located on the front side of the cross-bars N O, the springs S S, located on the rods *n n*, the cams *f'*, mounted on the shafts *p*, and the cog-gearing, whereby said cams are operated to operate the gage-bar, substantially as specified.

3. In a machine for shaving shingles, the combination, with the vertically-reciprocating frame and its racks, and the intergearing pinions mounted on a common shaft, of the knife-bar and its rack, and the brackets in which the knife-bar is arranged to move diagonally across the frame, substantially as and for the purpose specified.

331,840. DENTAL SUCTION-PLATE FORMER. JOS. SPYER, Santa Fé, N. Mex. Filed May 19, 1885. (No model.)



Claim.—The herein-described surface-suction former for dental casts, consisting of a thin sheet having a series of projections formed thereon, and a cavity in the apex of such projections, as and for the purposes hereinbefore specified.

331,841. COTTON-ELEVATOR AND COTTON-GIN FEEDER. ABNER D. THOMAS, Little Rock, Ark. Filed May 12, 1885. (No model.)

Claim.—1. In a cotton-elevator, the vertical casing A, elevator-belt B, its shafts provided with sprockets D' and D^2, chain D^2, and rollers B' and C', in combination with the belt C^2, provided with rake-teeth c^2, substantially as and for the purpose described.

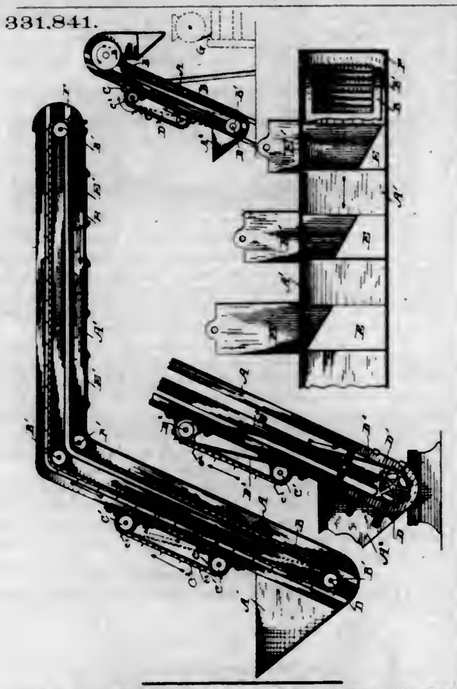
2. In a cotton-elevator, the combination of the horizontal casing A', provided with openings E in the bottom thereof, and the endless elevator-belt A, with sliding boards E', having their inner end cut diagonally, substantially as and for the purpose described.

3. The combination of the elevator-casings A and A', provided with openings E, and sliding boards having their inner ends cut diagonally, rollers B', elevator-belt B, with the belt *c'* on the outer side thereof, and hopper, substantially as for the purpose described.

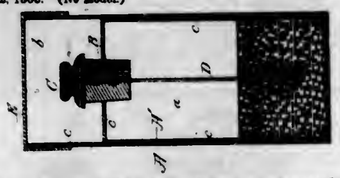
4. In a cotton-elevator, the combination of the vertical casing A, elevator-belt B, its shafts provided with sprockets, chain D^2, and rollers B' and C', with the revolving rake having teeth c^2, revolving in a direction contrary to the current of ascending cotton, substantially as and for the purpose described.

5. The combination of an endless-belt elevator with a cotton-gin so arranged together that while the elevator receives the cotton in front of the gin a passage is left for the operator immediately in front of the gin, and the cotton is conducted to the gin over the head of said operator, substantially as described.

331,841.

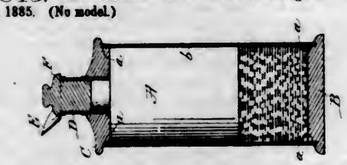


331,842. PAPER PACKAGE. LEVI H. THOMAS, Chicago, Ill. Filed Jan. 12, 1885. (No model.)



Claim.—As a new article of manufacture, a water-proofed paper package composed of successive layers of card-board or paper united together, and having a perforated diaphragm, B, a stopper, C, and an outer lid, E, substantially as described.

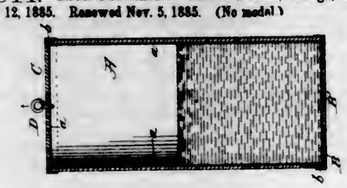
331,843. INK-BOTTLE. LEVI H. THOMAS, Chicago, Ill. Filed Jan. 12, 1885. (No model.)



Claim.—1. An ink-bottle consisting of a paper body, a bottom, a wooden top, and a metallic neck, the interior of said bottle being provided with a water-proof coating, substantially as described.

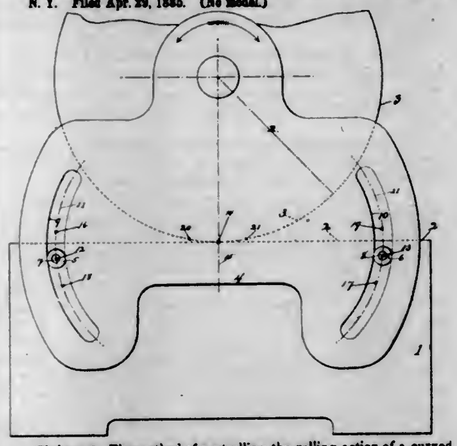
2. An ink-bottle consisting of the paper body A, having a bottom, B, and top C of rigid material, a metallic neck, D, provided with spout E, a stopper, F, and an interior water-proof coating, *b*, substantially as described.

331,844. BLUING-PACKAGE. LEVI H. THOMAS, Chicago, Ill. Filed Jan. 12, 1885. Renewed Nov. 5, 1885. (No model.)



Claim.—The herein-described paper package for liquid laundry-blue, the same consisting of the body A, having a bottom, B, provided with a removable piece, B', and the top C, provided with a removable wire pin or plug, D, the interior of said package having a water-proof coating, substantially as described.

331,845. MECHANICAL MOVEMENT. JOHN THOMSON, Brooklyn, N. Y. Filed Apr. 29, 1885. (No model.)

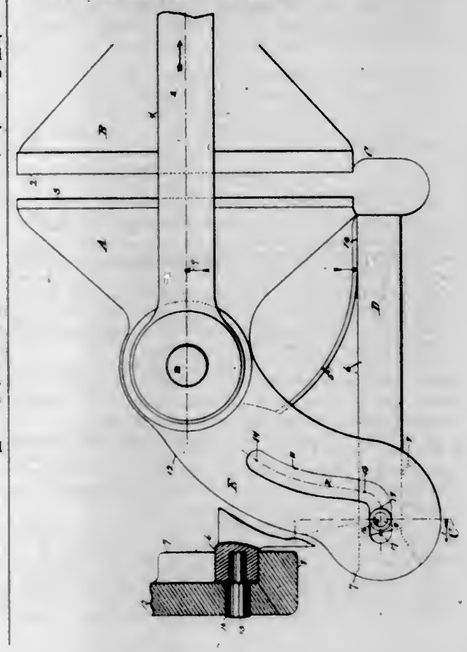


Claim.—1. The method of controlling the rolling action of a curved surface upon a plane, which consists in connecting one to the other by a cam, and a roller or stud acting in the cam, the form of the said cam being that of a cycloidal curve, substantially as specified.

2. The method of controlling the rolling action of a plane upon a curved surface, which consists in connecting one to the other by a cam, and a roller or stud acting in the cam when the form of the said cam is that of a cycloidal curve, substantially as specified.

3. The method of maintaining rolling action between a curved surface and a plane, which consists in connecting one to the other by a cam and a roller, the form of the cam being such that the curve and the plane are prevented from slipping one upon the other, substantially as described.

331,846. MECHANICAL MOVEMENT. JOHN THOMSON, Brooklyn, N. Y. Filed June 1, 1885. (No model.)



Claim.—1. The within-described improvement in controlling a rocking and sliding motion, the same consisting in combining, with a block having a curved face resting upon a table and a guide-plate connected to the block, a slot having curved and straight portions, and a guide-stud extending into said slot, substantially as set forth.

2. The combination of a table, a block having a curved face resting on said table, a reciprocating arm jointed to said block, a plate connected to said block and having a slot partially curved and partially straight, and a stud projecting from the table into said slot, all substantially as set forth.

3. The combination of a table and a stationary plate or bed, a block provided with a curved face and supported by said table, a plate having a slot partly curved and partly straight and connected to said block, and a stud extending to the slot in said plate, substantially as set forth.

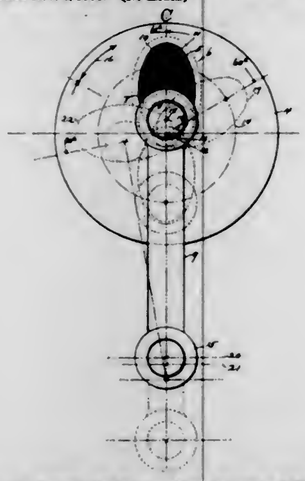
4. The combination, with the table and rocking block and stationary guide-stud, of a plate connected to the block and provided with a slot and with lugs, arranged substantially as set forth.

5. The combination, with the table and sliding and rocking block, of a stationary stud and plate connected to the block and provided with a slot receiving said stud, formed to insure the true rolling action of the block upon the plate, and also formed to gradually convert the rolling into a sliding motion, or vice versa, substantially as set forth.

6. The combination, with the table and stationary stud and reciprocating arm, of a block journaled to said arm, and provided with a curved face merging into a flat face, and a guide-plate connected to the block and provided with a slot receiving said stud, substantially as set forth.

7. The sliding and rocking block provided with a plate having a slot, one portion of which coincides with a cycloidal curve, the other portion straight, and the two connected by a portion coinciding with the arc of a circle, substantially as set forth.

331,847. MECHANICAL MOVEMENT. John Thomson, Brooklyn, N. Y. Filed Nov. 4, 1885. (No model.)



Claim.—1. A crank having two fixed bearings of different radii, the said bearings being extended to form a cam in which is caused to operate a roller and a stud, the said stud being connected to the mechanism to which the motion of the crank is desired to be imparted.

2. A crank having two fixed bearings of different radii, the said bearings being extended to form a cam with which is caused to operate a bearing, the said bearing being connected to the mechanism to which the motion of the crank is desired to be imparted.

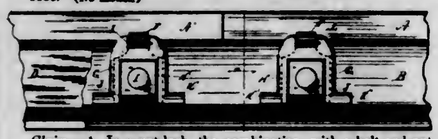
3. A crank having two fixed bearings of different radii, the said bearings being extended to a cam formed to the arc of a curve, a roller and stud operating in one bearing, and then changing to and operating in the other bearing, and mechanism connected to the stud.

4. A crank having two fixed bearings of different radii, the said bearings being extended to form a cam of two sections, an upper and a lower or recessed portion, in which is a roller of two diameters adapted to the two said sections of the cam, a stud acting in the roller, and mechanism connected to the stud, substantially as described.

5. A mechanical movement consisting of a rotating disk having a radial cam, a bearing traversing said cam, and a connection between said bearing and the object to be moved, substantially as described.

6. In a mechanical movement, the combination of a rotating disk having a radial cam or slot extending from a point opposite the end of the disk-shaft radially toward the periphery, a stud adapted to take a positive bearing at each end of the cam, and a connection between the stud and the object to be moved, substantially as described.

331,848. NUT-LOCK. John Tracy, Freeport, Ill. Filed Mar. 12, 1885. (No model.)

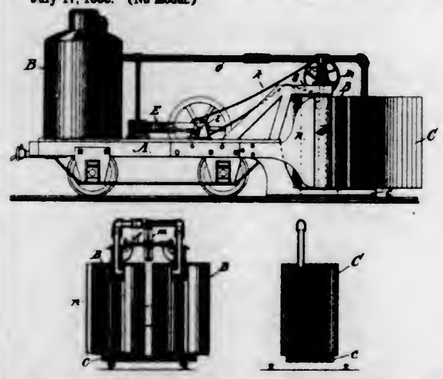


Claim.—1. In a nut-lock, the combination, with a bolt and nut, of a washer encircling the bolt in contact with the inner face of the nut, and not susceptible of rotation when in operative position, a locking-plate hinged to the washer, and adapted, when lying against the washer, to prevent rotation of the nut with reference to the washer, and a spring connecting the washer and locking-plate, and tending to rotate the plate about its hinge-joint and to hold it against the washer.

2. In a nut-lock, the combination, with a bolt and nut, of a washer encircling the bolt in contact with the inner face of the nut, and not susceptible of rotation when in operative position, a locking-plate connected with said washer by a hinge-joint, and formed with a recess adapted to receive the nut and prevent the rotation thereof with reference to the washer, and a spring connecting the washer and locking-plate, and tending to rotate the plate about said hinge-joint and to hold it in contact with the face of the washer and in position to lock the nut.

3. The combination of the nut H and bolt C, the washer J, having the barrel F, the recessed plate G, having the rod or pintle L, journaled in the barrel F, and the spring S, coiled about the pintle L, and tending to rotate the plate G about the line of the pintle L and to hold the plate and washer in contact.

331,849. SNOW-PLOW. James E. Twiname, Indianapolis, Ind. Filed July 17, 1885. (No model.)



Claim.—1. In a snow-plow, the combination of the following elements, namely: a car, a pair of hollow cylinders, each having an inclosed steam-space, and a series of exterior cutters supported upon and arranged to revolve vertically in front of said car, a hollow wedge-shaped deflector having an inclosed steam-space supported by the car and arranged in front of and between said cylinders, a motor mounted on said car, a train of belts, shafts, and gear-wheels connecting said motor with said cylinders, whereby the cylinders are revolved, and a steam-generator connected with said cylinders and deflector, whereby said cylinders and deflector are heated, all combined and arranged to co-operate substantially as and for the purpose specified.

2. In a snow-plow, the combination of a car, a hollow vertical wedge-shaped deflector supported by and arranged in front of said car and having an inclosed interior steam-space, and a steam-generator connected with said deflector, whereby the deflector is heated, substantially as and for the purpose specified.

331,850. GINGHAM-EXHIBITOR. Meyham. Umstadter, Norfolk, Va. Filed Mar. 3, 1885. (No model.)

Claim.—1. As an article of manufacture, the exhibitor for ginghams and similar goods rolled on boards, consisting of the frame A and the series of pairs of arms B, having a downwardly-inclined straight portion and recurved or bent upward at the ends, arranged to overlap one another in series, whereby the rolls of goods are exhibited and at the same time secured in place, substantially as and for the purposes set forth.

2. The board C, having slots *s s* and series of perforations *p p*, combined with a series of pairs of arms, B, recurved at B', curved at B², lower ends connected to the lever, and a link between the pulleys to equalize the distance, substantially as described.

6. In a system of cable conveyance, a cable having different portions on different planes, provided with a supporting-holder having its bearing-surface curved lengthwise of the cable, and provided with cogs, as *x*, substantially as described.

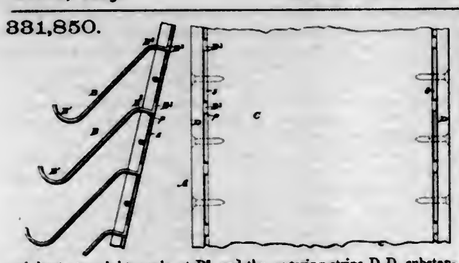
7. In a system of cable conveyance, a cable having a covering provided with cogged steps, and a holder for the cable provided with cogs corresponding to those on the steps, substantially as described.

8. In a system of cable conveyance, and as a means of supporting the cable on rocky localities, a bracket consisting of the rod 1, the brace 2, and the box 3 and 4, for clamping the two together, substantially as described.

9. In a system of cable conveyance, a cable-holder provided with cogs, substantially as described.

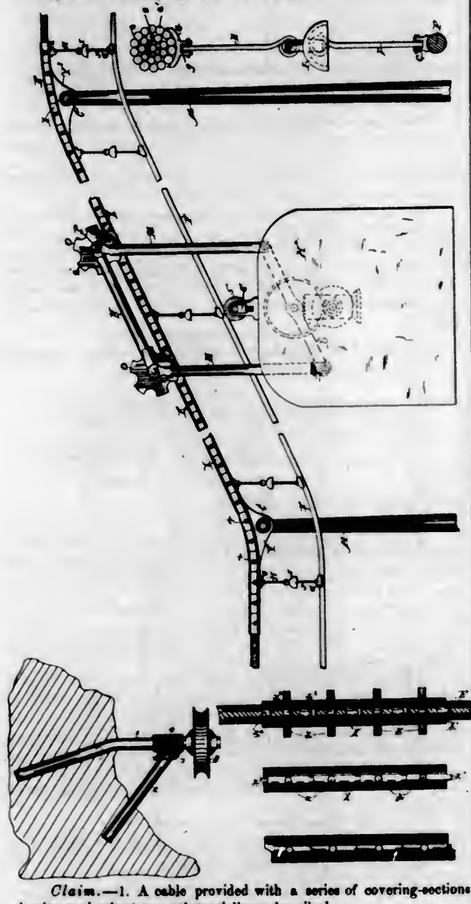
10. In a system of cable conveyance, a terminal support consisting of a base, 7, an upright, 5, and a carrying-roller, D, in combination with a cable, and a turn-buckle connected to said base and cable, substantially as and for the purpose specified.

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and bent at a right angle at B⁴, and the securing-strips D D, substantially as and for the purposes set forth.

331,851. CABLE CONVEYANCE. Charles J. Van Depoele, Chicago, Ill. Filed July 31, 1885. (No model.)



Claim.—1. A cable provided with a series of covering-sections having projecting cogs, substantially as described.

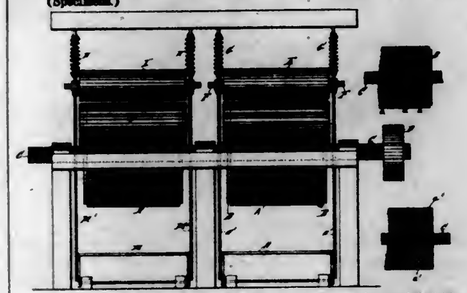
2. A cable provided with a series of covering-sections having projecting cogs, and means, substantially as described, to prevent their turning when in position on the cable, as set forth.

3. In a system of cable conveyance, a cable having covering-sections provided with cogs, in combination with a driving-pulley running thereon, and provided with teeth acting on said cogs and driven by any suitable power, substantially as described.

4. In a system of cable conveyance, a cable having covering-sections provided with cogs, in combination with a pulley running thereon provided with a groove adapted to run on the uncovered cable, and having teeth to act on said cogs, substantially as described.

5. In a system of cable conveyance, an inclined cable-way, a car supported by said cable, a lever pivoted in said car, driving-pulleys running on the cable, links forming bearings for the pulleys and having their

331,852. METHOD OF AND MEANS FOR TREATING FIBER FOR THE MANUFACTURE OF BRUSHES, &c. Ernest Vogel, New Lots, assignor to Miles Brothers & Co., New York, N. Y. Filed May 22, 1884. (Specimens.)

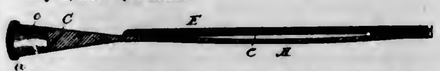


Claim.—1. The herein-described method of tapering and finishing fiber of the character herein set forth—that is to say, first grinding each filament in a bunch of the fiber upon a uniform or unbroken elastic grinding-surface, so that all shall be gradually and uniformly tapered off to a point, and then smoothing, polishing, and filling the ground fiber by application to a separate uniform elastic finishing-surface having the filling material applied thereon, substantially as set forth.

2. In an apparatus for treating fiber of the character herein set forth, the herein-described grinding roller or wheel having an elastic uniform or unbroken outer surface coated uniformly throughout its extent with sand, the said roller being combined with an independent adjustable presser, also having a uniform or unbroken surface, substantially as and for the purposes set forth.

3. In an apparatus for treating fiber of the character herein set forth, the herein-described polishing roller or wheel having an elastic uniform or unbroken outer surface coated throughout its extent with wax or analogous material, the same being combined with an independent adjustable presser, also having a uniform or unbroken surface, substantially as and for the purposes set forth.

331,853. RAZOR-STROP. James T. Warren, Le Roy, N. Y. Filed May 20, 1885. (No model.)

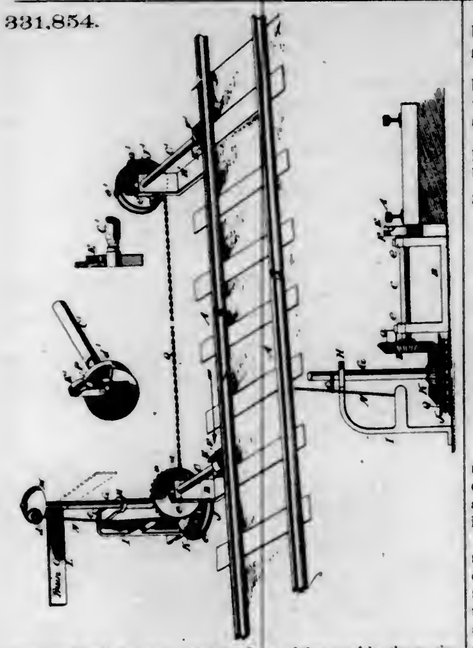


Claim.—A razor-strop consisting of the magnifying-lens, the longitudinally-curved blade, the handle, the paste-receptacle in the handle, and the leather finishing-bone secured to the thin metallic base, the same being fastened to the ends of the curved blade, upon the concave side thereof, all these parts arranged and operating substantially as shown, and herein described.

331,854. RAILROAD-SIGNAL. Lysander E. Watson, Ocean Grove, and David H. Hulit, Asbury Park, N. J. Filed May 15, 1885. (No model.)

Claim.—1. The combination of a revolving shaft having a finger or projection at one end adjacent to a rail, so as to be depressed by a passing train, a revolving staff carrying a signal located at a remote distance from said shaft and connected therewith, and provided with a gear at its lower portion, and a second shaft provided with a gear meshing with the gear of the staff, and having at one end adjacent to the rail a finger or projection to be depressed by the passing train, whereby as the projection to the first shaft is struck the signal is thrown out to give warning of the approach of a train, and at the same time the projection to

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the second shaft is raised, which is afterward depressed by the passing train, and thus moves the revolving staff to withdraw the signal and raise the projection of the first shaft, substantially as and for the purposes described.

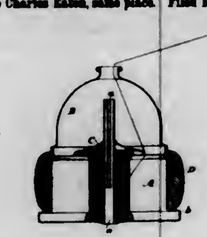
2. The combination of the revolving staff provided at its upper end with a signal and at its lower end with a gear and drum or wheel, the shaft provided at one end with the gear meshing with the staff-gear and at the other end with the projection or finger, a second shaft located at a distance from the first shaft, and provided at one end with the wheel or drum and at the other end with the projection or finger, and the cable connecting the two wheels or drums, substantially as described.

3. The combination of the revolving staff provided at its upper end with the signal and gong, at its lower end with the gear and wheel or drum, and between its ends with the lateral arm or finger, the gong-hammer and its rod adapted to be struck by the finger on the staff, the shaft provided at one end with the bevel-gear meshing with the gear of the staff and at the other end with the projection or finger, a second shaft located at a distance from the signal-staff, and provided at one end with the wheel or drum and at the other end with the projection or finger, and the cable connecting the two wheels or drums, substantially as described.

4. The combination of the signal-staff provided with the gear at its lower portion, the shaft having the gear provided with the stud and meshing with the staff-gear, and the second shaft connected with the signal-staff and provided with the wheel or drum having lugs on one of its faces, substantially as described.

5. The combination of the signal-staff, the two shafts connecting therewith, and the projections or fingers E and E' to the shafts, one of said fingers being depressed as the other is raised, and one of them being pivoted, so that it may be depressed without moving the shaft when moved in one direction, and a spring, P, to restore the pivoted finger to its normal position after removal therefrom, substantially as described.

331,855. SEWING-MACHINE ATTACHMENT FOR UNWINDING THREAD FROM SPOOLS. GEORGE WHITE, New York, N. Y., assignor of one-half to Charles Eaton, same place. Filed Mar. 12, 1885. (No model.)

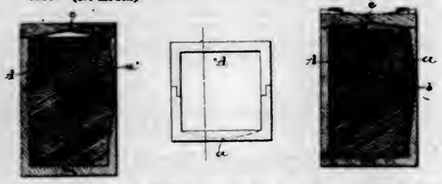


Claim.—1. As a new article of manufacture, the cylindrical spool-holder A, having spool-holding spindle *a*, thread-delivery cap B, and guard or shield C, substantially as set forth and described

2. As a new article of manufacture, the cylindrical spool-holder A, having centrally-punctured base and hollow split spindle *a*, solid cap B, with central thread-delivery opening, and guard or shield C, substantially as set forth and described.

3. As a new article of manufacture, the cylindrical spool-holder A, having spindle *a*, cap B, guard or shield C, base-rim *b*, and cushion-band D, substantially as set forth and described.

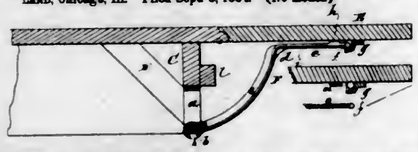
331,856. METHOD OF CASTING STEEL INGOTS. SAMUEL T. WILLIAMS, Tacony, assignor of one-half to Hamilton Disston, Horace C. Disston, William Disston, and Jacob S. Disston, Philadelphia, Pa. Filed Sept. 11, 1885. (No model.)



Claim.—1. The method of preventing pipes or cavities in casting metal, consisting, essentially, in pressing the liquefied metal from the central portion of the ingot upwardly into a hot space or chamber and allowing the same to feed back gradually into the central portion of the ingot as the latter cools, substantially as set forth.

2. The method of preventing the formation of cavities while casting metal, consisting, essentially, in applying pressure to one or more sides of the ingot after the latter is sufficiently cooled to cause the outside molecules to cohere, and forcing the molten metal from the central portion of the ingot upwardly, and allowing the same to feed back gradually into the central portion of the ingot as the latter cools, substantially as set forth.

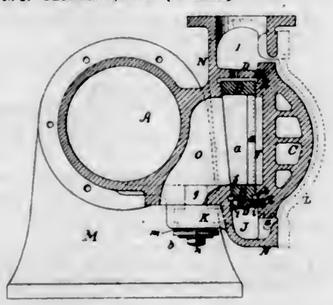
331,857. TABLE-LEAF SUPPORT. JOHN P. WOLF and GEORGE IFFLAND, Chicago, Ill. Filed Sept. 8, 1884. (No model.)



Claim.—1. The combination, with a table having a hinged leaf, E, and a side piece, C, provided with a slot, *a*, and attached piece *b*, crossing the lower end of the slot, of the leaf-support F, formed with the curved end portion, *c*, having the notched extremity *k*, and the opposite straight and flat end portion, *e*, hinged at its extremity to the leaf and formed of a reduced thickness, to produce inherent spring action in the leaf support intermediate the hinge of the latter and the curved portion thereof, substantially as shown and described.

2. The combination, with a table having a hinged leaf, E, and a side piece, C, provided with an attached piece, *b*, of the leaf-support F, having the curved end portion, *c*, provided with the notched extremity *k*, and the opposite straight and flat end portion, *e*, hinged at its extremity to the leaf and formed of a reduced thickness, to provide inherent spring action in the leaf-support intermediate the hinge of the latter and the curved portion thereof, substantially as as shown and described.

331,858. BALANCED SLIDE-VALVE. DANIEL A. WOODBURY, Rochester, N. Y. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination of a balanced slide-valve, supported upon its edge, with the supporting-piece, the passages *h*, openings *i*, and cross-channels *k*, substantially as and for the purpose described.

2. In combination with the valve B, relief-plate C, and supports D D, the wedges E E, set in grooves or channels in the relief-plate, all being constructed and operating substantially as set forth.

3. In combination with an engine bed or frame having inclined sides, and with the steam-chest overlapping the same, a trapezoidal-shaped slide-valve resting upon its narrow edge, with the inclined side toward the cylinder, substantially as and for the purpose specified.

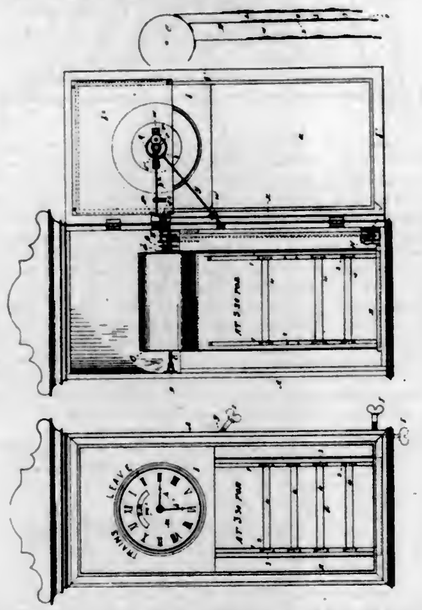
4. The combination, with a slide-valve performing the functions of both a distributing and automatic cut-off valve, of relief-valves located in the chambers K and K', these chambers communicating directly with the interior of the steam-chest, and through the passages *g* and *g'*, with the steam-passages H and H', substantially as shown and described.

5. In a slide-valve working under a relief-plate, the combination of the passages *b* and *b'*, channels or recesses F and F', passages *f* and *f'*, and plate G, substantially as shown and described, and for the purpose set forth.

6. The combination, with a slide-valve having the spindle or rod rigidly attached, of the adjustable stuffing-box P, fitted with an annular space, *w w*, around the part V, all constructed and operating substantially as shown and described.

7. In a slide-valve operated under a relief-plate, or otherwise similarly confined, the chambers C and C', arranged between the passages *b* and *j* and *b'* and *j'*, substantially as and for the purpose set forth.

331,859. RAILWAY-TRAIN INDICATOR. WM. AKIN, New York, N. Y. Filed Nov. 7, 1884. (No model.)



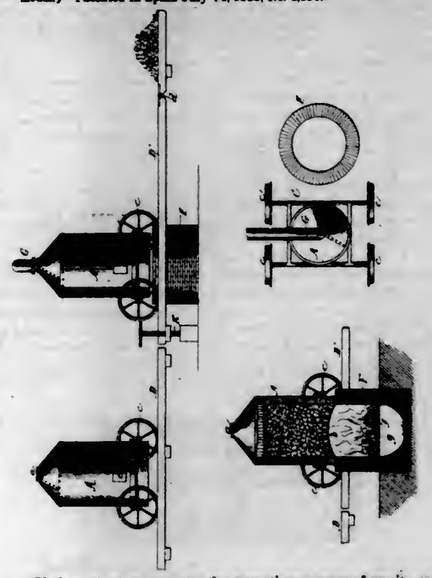
Claim.—1. A station train-indicator composed of a closed case, A, a rotating drum, C, carrying a number of sheets, B, each having marked thereon the stations at which a train will stop, a clock-dial, M, and provided with an opening, m^2, coinciding with characters marked on a rotating disk, O, located behind and parallel with said dial, hands *k k'*, and mechanism, as described, for operating the several parts by means of a key, I, the whole constructed substantially as shown and described.

2. The combination of the drum C, carrying the printed sheets B, the levers F and G, and rod *i*, the double ratchet-wheel E, pawls *g* and *m*, and bent lever I', the whole constructed as shown and described.

3. The combination, with the dial M, disk O, and hour and minute hands, of the gearing *v*, rod p^2, bevel gear-wheels s s' s^2 s^3, and rod *x*, the latter adapted to be operated by a suitable key from the bottom of the case, as shown and described.

4. In combination with the dial M, having opening m^2, the disk O, having characters printed thereon, as described, to show through said opening, the bevel-gears, gear-wheel *q*, attached concentrically to said disk, and gear-wheel *t*, attached to a rod, *y*, adapted to be operated by a key, I, as set forth.

331,860. APPARATUS FOR EXTRACTING MERCURY FROM ITS ORES. HIPPOLYTE BERRENS, Barcelona, Spain. Filed Aug. 10, 1885. (No model.) Patented in Spain July 14, 1883, No. 4,136.

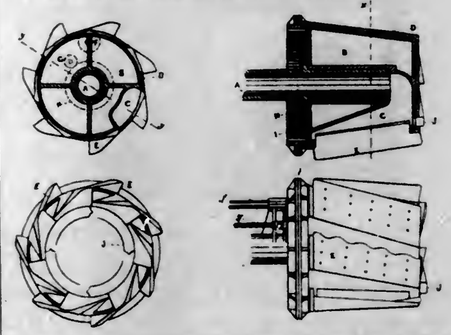


Claim.—1. An apparatus for extracting mercury from its ores, consisting of two or more furnaces supported on wheels and each provided with a perforated arch-shaped bottom, in combination with a stationary fire-pot, as set forth.

2. Furnace A, having perforated arched bottom *b* and conical top with opening *a*, and being supported on wheels *c*, in combination with the stationary fire-pot F, all substantially as and for the purpose set forth.

3. Furnace A, having perforated arched bottom *b* and conical top with opening *a*, and being supported on wheels *c*, in combination with stationary fire-pot F, built within a vertically-movable track-section, D', all substantially as and for the purpose set forth.

331,861. ROTARY CUTTER FOR DREDGES. JOHN H. BOLLES, San Francisco, Cal., assignor of one-third to John N. S. Williams, same place. Filed Oct. 16, 1884. Renewed Oct. 7, 1885. (No model.)



Claim.—1. In a rotary cutter for dredging-machines, having an inner drum, B, with a reservoir, C, communicating with the suction-pipe, and a rotating outer drum, the buckets E, carried by said drum, each bucket extending the entire length of the face of said drum, substantially as herein described.

2. In a rotating cutter for dredging-machines, having an inner drum with a reservoir communicating with the suction-pipe, and a rotating outer drum, the buckets E, carried by said drum, each bucket extending the entire length of the face of the drum, and arranged thereon spirally or at an angle with the axis of said drum, substantially as herein described.

3. In a rotary cutter for dredging-machines, having an inner drum with a reservoir communicating with the suction-pipe, and a rotating outer drum, the buckets E, carried by the outer drum, said buckets hav-

ing a broken or serrated edge and extending the entire length of the face of the drum, substantially as herein described.

4. In a rotary cutter for dredging-machines, having an inner drum with a reservoir communicating with the suction-pipe, and a rotating outer drum, the perforated spirally-arranged series of buckets E, carried by said outer drum, each bucket extending the entire length of the face of the drum, substantially as herein described.

5. In a rotary cutter for dredging-machines in which an outer rotating drum carries the buckets, an inner drum on which the outer drum rotates, and provided with a reservoir communicating with the suction-pipe, said inner drum being adapted to have a rotary adjustment, substantially as and for the purpose herein described.

6. In a rotary cutter for dredging-machines, the suction-pipe A and the outer rotating drum, D, carrying the buckets E, in combination with the inner drum, B, having a reservoir, C, communicating with the suction-pipe, said inner drum being adapted to have a rotary adjustment on the suction-pipe, substantially as herein described.

7. In a rotary cutter for dredging-machines, the suction-pipe A and the outer rotating drum, D, carrying the buckets E, in combination with the inner drum, B, having a reservoir, C, communicating with the suction-pipe, and a mechanism by which said drum is given a rotary adjustment, consisting of the gear H on the drum, the pinion G, and the shaft *g*, communicating inboard, substantially as herein described.

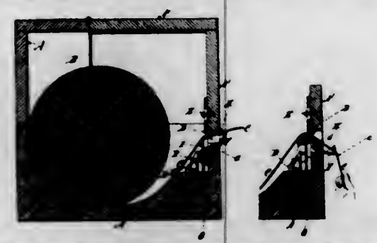
331,862. MACHINE FOR CUTTING FAT. JOHN E. BOWMAN, Boonsborough, Md. Filed Aug. 27, 1885. (No model.)



Claim.—1. In a machine for cutting fat, the combination, with a worm-shaft and a follower or plunger, of a cutter-plate and a tripping device consisting of a spiral spring encircling the end of the worm-shaft and a washer against which the spring bears, substantially as and for the purpose set forth.

2. A machine for cutting fat, consisting of a rectangular box provided at one end with a compound cutter-plate having tapering openings, a worm-shaft operating a follower or plunger, and a tripping device located between the follower or plunger and the cutter-plate, and consisting of a spiral spring and washer encircling the worm-shaft, substantially as and for the purpose described.

331,863. TICKET-REEL. ADDISON P. BROWN and MAX D. STERN, New York, N. Y.; said Brown assignor to said Stern. Filed May 9 1885. (No model.)



Claim.—1. In a case, A, for storing and handling checks or tickets or similar materials, in combination with a fixed binding-rest or bearing, a pivoted lever, the inner end of which is pressed against such bearing by force applied to its outer end, thereby clutching between such bearing and end pressed against it a strip of paper or other material, and holding the same so as to admit of the detachment of a portion of said strip lying on outside of the part clutched without disturbing that portion of said strip lying on the other side and within said case, substantially as described.

2. In combination with a fixed binding-rest or bearing, a lever secured by and turning upon a pivot, axis, or bearings, such pivot, axis, or bearings being fixed in such relation to such binding-rest so that pressure upon one arm of said lever forces the other arm thereof against such binding-rest, whereby a strip of material passing between the binding-rest and the latter arm of said lever is caught and held between the same and such binding-rest, thereby enabling a portion of that part of said strip which extends between the part thereof so clutched in the direction of that arm of said lever on which direct pressure is exerted to be detached from the remainder of the strip without disturbing the latter, substantially as described.

3. In combination with a fixed bearing or binding-rest, D, springs I I, adjusted to press upon such bearing, so as to hold against it a strip of tickets or other material and allow the latter to be drawn in one direction and check the drawing of the same in the opposite direction, substantially as described.

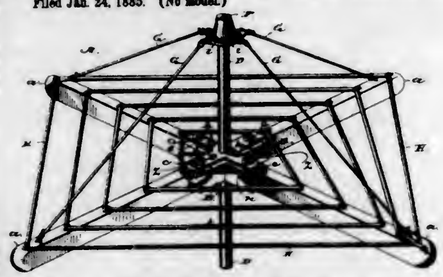
4. In combination with an opening in a box or case to contain strips of tickets or other like articles, the two-armed lever F F', suitably pivoted with fixed bearing-rest D, substantially as and for the purposes set forth.

5. In combination with an opening in a box or case to contain strips of tickets or other like articles, a fixed bearing or binding-rest, D, with springs I I, substantially as and for the purposes set forth.

6. For use in storing and handling checks or tickets, the combination of a strip of consecutively-numbered tickets, C, with case A, having suitable opening, and lever F F', binding-rest or bearing D, and springs I I, substantially as and for the purposes set forth.

7. In a case, A, in combination with the binding-rest or bearing D, a lever, F F', provided with guide-rod H and projections P P, substantially as and for the purposes described.

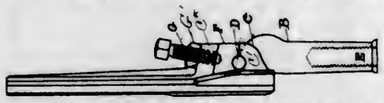
331,864. CLOTHES-DRIER. CHARLES F. BUEHLER, Spencerville, Ohio. Filed Jan. 24, 1885. (No model.)



Claim.—1. The combination, in a clothes-drier, of the rod, the thimble thereon, the rotating reel on the rod, and brace-rods connecting the reel with the thimble, the reel consisting of the radial arms *a*, the plates B and B', having the central openings for the rod, and the side flanges, *d* and *h*, for embracing the sides of the radial arms, the said flanges meeting at the inner ends of the arms, the plates being clamped upon the arms and secured together by bolts Z, passing through said plates and through the inner ends of the arms, substantially as described.

2. The herein-described clothes-drier, consisting of the reel having the upper and lower plates, B B', provided with the central openings, the radial arms having their inner ends terminating on each side of the openings, and secured by vertical bolts Z between the plates, the supporting-rod D, having an integral collar, E, and provided with a conical upper end, a conically-recessed thimble receiving the upper end of the rod, an annular flange formed around the base of the thimble, and wires G, connecting the flange with the radial arms, as set forth.

331,865. DEVICE FOR TAKING UP LOST MOTION IN PITMEN. WILLIAM J. BUTLER, Salinas, Cal. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a pitman-eye, the combination of the fixed part C', forming one side of the bearing, a movable and adjustable section, F, forming the other side of the said bearing or eye, the fixed perforate screw-threaded part C°, and the set-screw G, the said section F lying between the parts C' and C°, and being acted upon by the screw, as set forth.

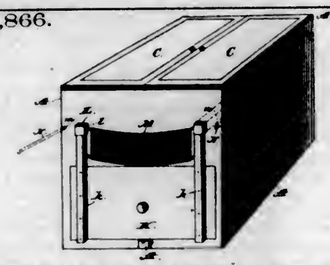
2. The combination of the portion B of the pitman, a fixed portion of the eye C', having a longitudinal slot, C, for the reception of the part B, and the adjustable section F, and set-screw G, all combined and arranged substantially as set forth.

3. The combination of the fixed portion of the eye C', a movable and adjustable section, F, forming the remaining portion of the eye, the fixed projection C°, perforated and screw-threaded as described, the set-screw G, engaging in part C°, and operating upon the section F, and the locking-nut G', placed over screw G and resting upon part C°, as set forth.

331,866. CHILD'S NURSERY-COMMODE. DANIEL A. CARTER, Camden, N. J. Filed July 3, 1885. (No model.)

Claim.—1. A child's nursery-commode consisting, essentially, of a main frame provided in its upper portion with a wash-basin, and a series of compartments for toilet articles, a pair of doors hinged to the top of

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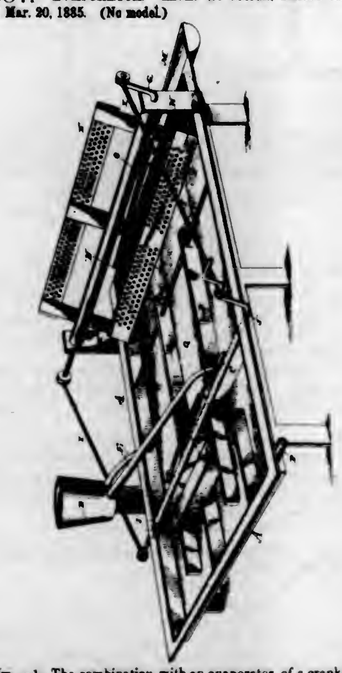


the frame and forming a cover for the basin and compartments, and adapted, when open, to form tables, a pair of doors or wings opening from the sides of the main frame and forming supports for the doors when the latter are in open adjustment, a drawer located in the lower portion of the frame and adapted to hold a child's chamber, uprights secured to the front of the drawer, and side rails secured to the uprights and having a sliding movement in the frame, substantially as set forth.

2. In a child's nursery-commode, the combination, with the main frame and casing, of a drawer adapted to hold a child's chamber, uprights secured to the front of the drawer, and side rails secured to the uprights and having a sliding movement in the casing, for the purpose substantially as set forth.

3. In a child's nursery-commode, the combination, with the main frame and casing and a sliding compartment adapted to hold a child's chamber, of the uprights, the side rails, and the front strap, for the purpose substantially as set forth.

331,867. EVAPORATOR. LEVEN W. COOPER, Smith's Mills, Ky. Filed Mar. 20, 1885. (No model.)



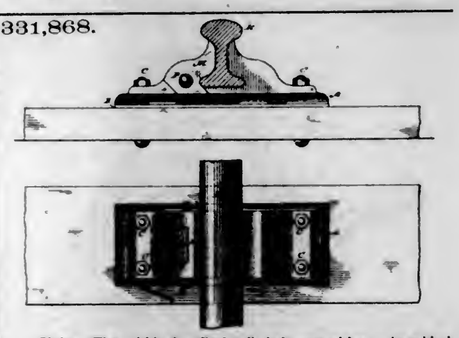
Claim.—1. The combination, with an evaporator, of a cranked shaft, a series of perforated paddles or skimmers secured to said shaft, and devices, substantially as described, for rotating said shaft.

2. The combination, with an evaporator provided with a revolving paddle or skimmer, of a lug or arm adapted to conflict with the paddle, whereby the same is vibrated or jarred, substantially as set forth.

3. The combination, with an evaporator having a trough at its forward end and an upwardly-projecting lug or arm secured thereto, of a paddle or skimmer suitably mounted on the evaporator, and means for rotating the same, substantially as set forth.

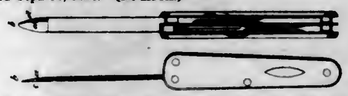
331,868. CHAIR OR RAIL FASTENER FOR RAILWAYS AND TRAMWAYS. WILLIAM CORTEEN, Sheffield, County of York, England Filed Nov. 24, 1884. (No model.) Patented in England Jan. 11, 1884 No. 1,222.

331,868.



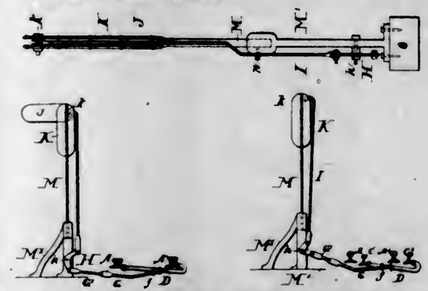
Claim.—The within-described rail-chair, comprising a base-block constructed with solid supports for the bottom and one side of the rail, and on the other side of the rail with a recess and a central projection partly within said recess, in combination with a movable part fitted to said recess and projection and to the rail, and having a pair of lugs which project underneath the rail, and a cross-pin fitted to and inserted parallel to the rail in horizontal holes formed in said movable part, and a corresponding hole made slightly lower in position through the fixed part or projection to form a "draw-joint," substantially as shown, for the purpose set forth.

331,869. NAIL-CLEANER. TERENCE F. CURLEY, Brooklyn, N. Y. Filed Sept. 30, 1885. (No model.)



Claim.—In a nail-cleaner, the surface *a*, rounded and tapering to a dull point, *b*, with a rounded edge, *d*, or junction between the surfaces *a* and *c*, substantially as described.

331,870. AUTOMATIC SWITCH-SIGNAL. SETH CURLIN, Covington, Tenn., assignor to the Curlin Switch and Crossing Company, of Kentucky. Filed Nov. 13, 1884. (No model.)



Claim.—1. The combination, with the rails A A' B B' and switch-rails C C', of the bar D, secured to said rails C C', means for moving said bar to close the switch, the signal J, the plates K, the link I, elbow-lever H, and links G G', as and for the purpose set forth.

2. The combination, with the post M', having socket, two plates, K, having shank M, signal J, and its connections with the switch, of the set-screw *n*, as and for the purpose set forth.

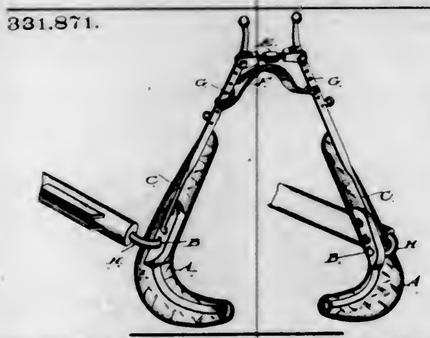
331,871. HORSE-COLLAR. SYLVESTER R. DAVIS, Eureka, Cal. Filed July 11, 1885. (No model.)

Claim.—1. In a horse-collar, the loosely-suspended independent collar-pads, in combination with the hame-irons and a means, constructed substantially as described, whereby the upper ends of the irons are adjusted toward or from each other, as herein set forth.

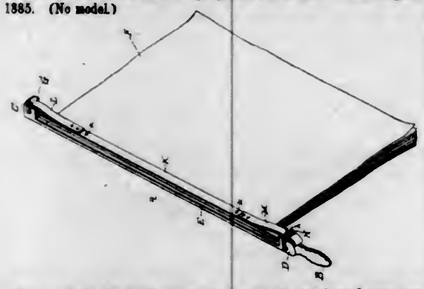
2. In a horse-collar, the loosely-suspended independent collar-pads, in combination with the hame-irons, a neck-pad connected with the hame-irons and adapted to be adjusted up or down by means substantially as shown, and suitable locking-heads on the hame-irons, whereby they may be held in place or removed, substantially as herein described.

3. In a horse-collar, the independently-suspended collar-pads, the hame-irons adjustably connected therewith, the neck-pad adjustably connected with said hame-irons, and a means, constructed substantially as described, for adjusting the upper ends of said irons to or from each other, together with the trace or draft irons swiveled to the collar-pads, substantially as and for the purpose herein described.

331,871.

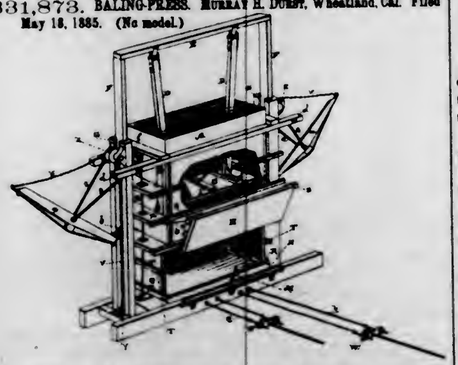


331,872. NEWSPAPER-FILE. Alexander Dow, Mount Healthy, assignor to the Globe Files Company, Cincinnati, Ohio. Filed Aug. 27, 1885. (No model.)



Claim.—A file for holding newspapers or other unbound papers or publications, consisting of staff A B, having near its respective ends lateral protuberances C D, and between said protuberances a depression, E, said protuberances having rings G H, and said depression having spikes J, the same being combined with the perforate jaw K *k*, having plate-springs L M, of which one, L, is hinged permanently to ring G and the other engages by its waved portion *i* under ring H, in the manner explained.

331,873. BALING-PRESS. Murray H. Durst, Wheatland, Cal. Filed May 18, 1885. (No model.)



Claim.—1. In a baling-press, the vertical box or case having the follower adapted to press downwardly, the side doors, B, opening outwardly at the bottom, having their upper edges hinged to the press-box, and provided with links J, and eccentric K, in combination with the transverse hinged bar N, with its lever-arm M, substantially as herein described.

2. The transverse hinged bar N, closed against the bottom of the hinged door, and having a lever-arm, M, projecting upwardly from it, in combination with a cam or eccentric connected by a link or swivel with the door, and having notches or indentations in its periphery, whereby it may engage the end of the lever M and force it downwardly, substantially as herein described.

3. In a baling-press having a vertical press-box and downwardly-projecting follower, outwardly-opening doors B at the bottom, hinged as shown, in combination with the cords or chains O and counter-weights P, substantially as herein described.

4. In a baling-press, the vertical press-box having the follower C fitted to move within it, and the suspending and actuating timbers D, in combination with the arms or braces H, whereby the follower is secured to the timbers and leveled or trued, substantially as herein described.

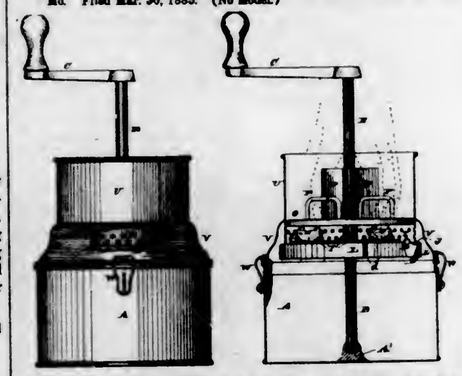
5. In a baling-press, a vertical press-box having the follower C moving within it and connected with the arms D, as shown, said arms being hinged at their upper ends to the vertical side timbers, F, in combination with the operating-chains and levers, whereby said timbers and follower are forced downward, substantially as herein described.

6. In a baling-press, the vertical press-box, with its follower, and the side timbers, F, moving in guides G, as shown, in combination with the lever arms or timbers *a*, hinged to the vertical timbers at *b*, and having the moving fulcrum-arms *c*, pivoted to the center of the timbers *a*, and also pivoted on the timber *d*, thus forming a central fulcrum, whereby the timbers *a* are balanced to facilitate their ready upward or downward movement, together with the operating-chains V, attached to the outer ends of the timbers *a*, passing over guide-pulleys, substantially as herein described.

7. In a baling-press, the vertical press-box, with its follower, vertical operating-timbers, and guide-levers, in combination with the chains *e*, passing over the pulleys at the top and connected with the bottom of the vertical timbers F, substantially as herein described.

8. In a baling-press, and in combination with the chains V and *e*, and the mechanism for raising and lowering the follower, as shown, the spiral fusee or pulley O, the pulley H, and the clutch-collar and operating-lever, substantially as and for the purpose herein described.

331,874. GRATER. August Epperts and Herman Perl, St. Louis, Mo. Filed Mar. 30, 1885. (No model.)

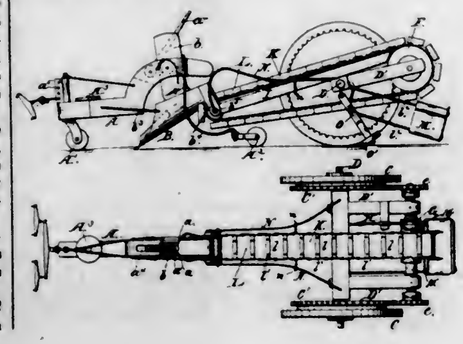


Claim.—1. The combination of vessel A, cylinder U, with flange or collar V, shaft B, feed-plate O, and disk or plate D, having scraping teeth or projections I and groove J, arranged and operating substantially as and for the purpose set forth.

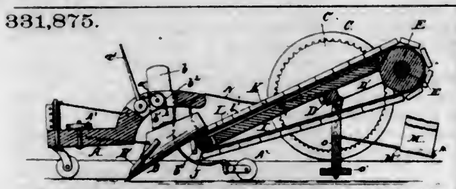
2. The combination of vessel A, cylinder U, having perforations Y, shaft B, and disk or plate D, having scraping teeth or projections arranged or formed in spiral series, substantially as and for the purpose set forth.

3. The combination of vessel A, cylinder U, having flange or collar V and perforations Y, shaft B, feed-plate O, with wires P, V-shaped frame T, and disk D, having flange L, teeth or projections I, formed in spiral series, and groove J, all arranged and operating substantially as and for the purpose set forth.

331,875. DITCHING-MACHINE. David Fisher, Gear, Iowa. Filed Apr. 30, 1885. (No model.)



331,875.



Claim.—1. In a ditching-machine, the combination of the drive-wheels, the elevator operated by said wheels, the inclined apron, and the vertically-adjustable plow pivotally secured at its rear upper end to the forward end of the frame supporting the elevator, brace-rods attached to said frame and connected to the pivotal connection between it and the plow, for the purposes set forth, and caster-wheels supporting said plow in the front and rear, substantially as specified.

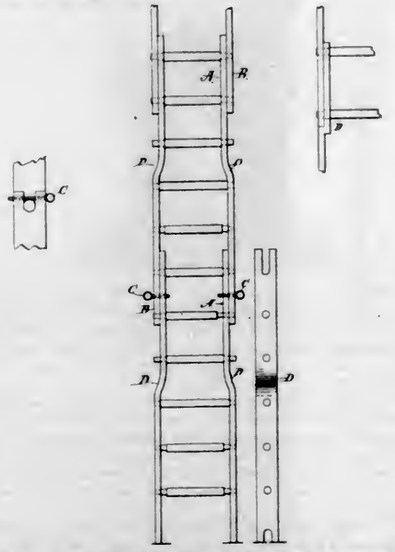
2. The combination of the drive-wheels, the elevator operated by said wheels, and consisting of the endless belt having the sections secured thereon with the ends of their upright sides overlapping, the forward ends of the sides of each successive section overlapping the rear ends of the sides of the next succeeding section, the inclined apron, and the vertically-adjustable plow pivotally secured at its rear upper end to the forward end of the frame supporting the elevator, as set forth.

3. The combination of the drive-wheels, the elevator operated by said wheels, the inclined apron, and the vertically-adjustable double plow pivotally secured to the forward end of the frame supporting the elevator, and consisting of the outer blade, and the central inner blade of a less width and length than the outer blade, as set forth.

4. In a ditching-machine, the combination of the drive-wheels, the elevator operated by said wheels, the inclined apron, the guide-wheel secured in a hinged bearing below the axle of the drive-wheels, the front beam having the friction-roller, and the vertically-adjustable double plow pivotally connected to the forward lower end of the frame supporting the elevator, as set forth.

5. The combination, with a beam centrally and vertically slotted, and provided with contiguous vertical guide-openings on either side of the slot, of a plow provided with standards passing loosely through said guide-openings, an adjusting-lever, a roller journaled within said central slot, and a chain attached to the plow at a point below the roller over which it passes on its way to the adjusting-lever, to which it is connected, substantially as and for the purposes specified.

331,876. SECTIONAL LADDER. Frank W. Gates, New York, N.Y. Filed Oct. 16, 1885. (No model.)



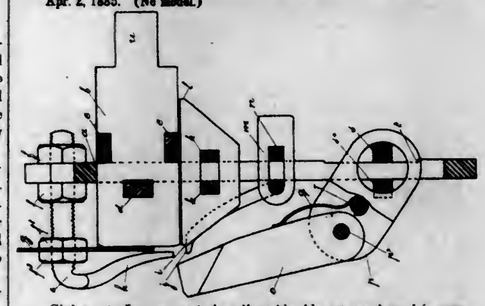
Claim.—1. In sectional ladders, the combination of two or more sections, each of which sections consists of a narrower and wider portion, and each portion having side rails parallel to each other.

2. In sectional ladders, the combination of two or more sections, a fastening device for said sections, and narrower and wider portions to each of said sections, the said rails of each of said portions being parallel to each other.

3. In sectional ladders, a section in which the side rails at and near both ends of said section are parallel and at any intermediate point are not parallel.

4. In sectional ladders, a section in which the side rails are parallel at and near both ends of said section, and in which the said side rails are at unequal distances at and near their ends, substantially as and for the purpose specified.

331,877. SAW-SET. Reuben F. Gibbs, San Francisco, Cal. Filed Apr. 2, 1885. (No model.)



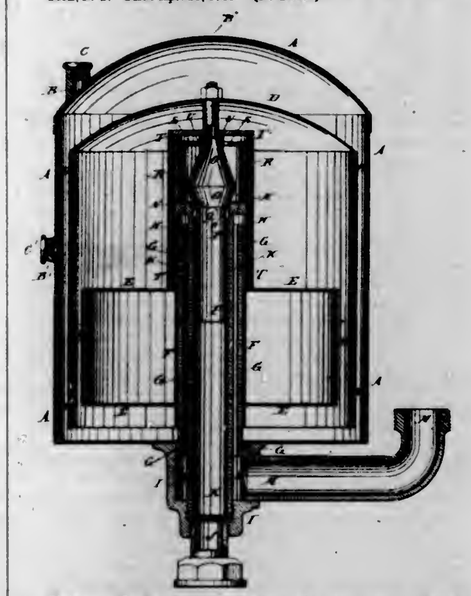
Claim.—1. In a saw-set, the adjustable side-cut regulator *l*, in combination with adjusting-keys *k*, guide *j*, and movable arm *m*, with its adjusting-key *n*, substantially as described, and for the purpose set forth.

2. In a saw-set, the adjustable hammer *o*, in combination with the movable and adjustable arm *p*, adjusting-key *s*, and adjustable spring *q*, substantially as described, and for the purpose set forth.

3. In a saw-set, the regulating and adjustable band-saw-top holder *h*, in combination with band-saw-back holder *g*, screw-bolt *e*, and adjusting-nuts *f f* and *f' f'*, substantially as described, and for the purpose set forth.

4. In a saw-set, the frame-plate *a*, in combination with anvil *b*, with its clamp *c*, and tapering key *d*, substantially as described, and for the purpose set forth.

331,878. GAS-PRESSURE REGULATOR. Robt. F. Hatfield, New York, N. Y. Filed Apr. 25, 1885. (No model.)

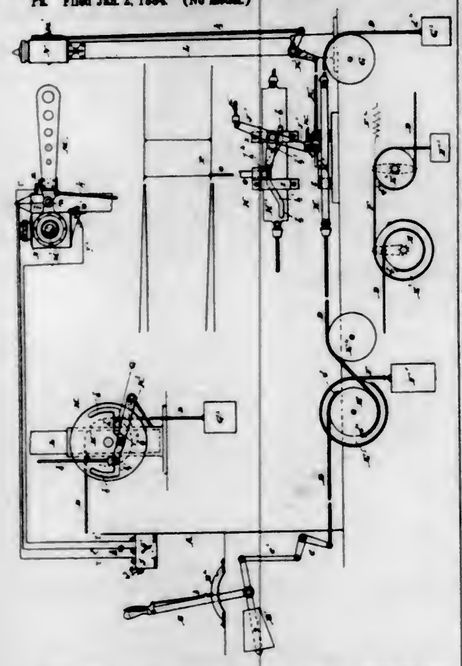


Claim.—1. In a gas-pressure regulator, the combination, with the regulator D, the double-cone valve O, attached to the said regulator, the tube K, connecting with the inlet-pipe J, and having valve-seat N, and the cap T, attached to the float E, of the cap R, having valve-opening S, and attached to the inlet-tube K, and the tube G, inclosing the said inlet-tube K, and connected with the pipe M, leading to the burners, substantially as herein shown and described, whereby the gas, while having its pressure controlled by the regulator, will not pass through the said regulator in its passage through the machine, as set forth.

2. In a gas-pressure regulator, the combination, with the double-

cone valve O, the tube K, and the valve-seat N, of the tubular guide P, having openings Q at its upper end, substantially as herein shown and described, whereby the said cone-valve is guided squarely to its seat without obstructing the passage of the gas, as set forth.

331,879. RAILWAY-SIGNAL. John W. Henderson, Philadelphia, Pa. Filed Jan. 2, 1884. (No model.)



Claim.—1. A railroad-signal provided with an actuating-cable mechanism to keep said cable under tension, and take-up devices to compensate for uniform expansion or contraction of said cable, in combination with a switch and connecting mechanism, whereby the same cable which actuates the signal also actuates the switch, substantially as and for the purpose specified.

2. A railroad signal or switch provided with an actuating-cable and mechanism to keep said cable under tension, whereby it is operated for long distances with all the effects, and the power to be exerted by the operator shall be practically only sufficient to overcome the friction of a rigid rod or tube, and cam mechanism to automatically cause the signal-arm to be thrown up to indicate the danger and close the switch should said cable break, in combination with detecting apparatus to indicate whether the arm of said signal or switch is in its extreme positions or in an intermediate position, substantially as and for the purpose specified.

3. The combination of lever B and its weight B', cable D, wheels E E', rope or chain F, weight F', pulley G, and weight G', with a signal device and switch actuated by said cable, and a detecting device to indicate the position of the signal arm or switch, substantially as and for the purpose specified.

4. The combination of lever B and its weight B', cable D, wheels E E', rope or chain F, weight F', pulley G, and weight G', with cam-plate H', having slots A A' A^2, lever K', and a danger-signal actuated by said lever, substantially as and for the purpose specified.

5. The combination of pivoted cam-plate H', having slots A A' A^2, with a switch or signal, substantially as and for the purpose specified.

6. In a railroad signal or switch, an actuating-cable, in combination with weights at each end to keep said cable under tension, an automatic weighted take-up device arranged to act upon said cable at a point between its ends, an operating-lever to act upon the cable between two adjacent weights, a switch or signal arranged to be operated by said cable at a point between the other end and middle weight, whereby said cable is operated with all the effect of a rigid rod, and devices, consisting of wheels E' E' E^2, cable F, and weight F', to allow for differential expansion or contraction in said cable without operating the said switch or signal, substantially as and for the purpose specified.

7. In a railroad signal or switch, a cable formed in two parts, in combination with mechanism to draw said parts together, weights or or their equivalent to act upon the extreme ends to draw said parts asunder, and a slotted cam-plate having slots A A' A^2, adapted to actuate said switch or signal attached to and operated by said cable, substantially as and for the purpose specified.

8. In a railroad switch and signal, the combination of a cable weights at each end to keep said cable under great tension, a weighted take-up device, substantially as described, arranged to act upon said cable at a point between its ends to compensate for expansion and contraction, a switch and a signal, connecting levers and bars to actuate said switch and signal, and cam mechanism consisting of cam-plate H', having slots A, A', and A^2, operated by said cable to actuate both the signal and switch simultaneously, substantially as and for the purpose specified.

9. In a switch and signal, the combination of a cable heavily weighted at each end, so as to be operated with all the effect of a rigid bar, and cam mechanism consisting of cam-plate H', having slots A A' A^2, actuated by said cable to simultaneously operate both the signal and switch, a switch and signal, and connecting-levers, rods, and bars by which said slots in the cam-plate actuate said switch and signal, substantially as and for the purpose specified.

10. A railroad signal or switch provided with an actuating-cable and end weights to keep said cable under tension, whereby it is operated for long distances with all the effects, and the power to be exerted by the operator shall be practically only sufficient to overcome the friction of the rod or tube, a hand-lever to operate said cable, and a cam-plate operated by said cable to actuate said switch or signal, in combination with a detecting apparatus to indicate whether the arm of said signal or switch is in its extreme positions or in an intermediate position, substantially as and for the purpose specified.

11. A railroad-signal provided with an actuating-cable and mechanism to keep said cable under tension, whereby it is operated for long distances with all the effects, and the power to be exerted by the operator shall be practically only sufficient to overcome the friction of a rigid rod or tube, cam-plate H', having slots A A' A^2, and connecting mechanism, the whole being operated to automatically cause the signal-arm to be thrown up to indicate danger the instant the actuating-lever is freed, should cable break beyond the signal, substantially as and for the purpose specified.

12. The combination of lever B and its weight B' with cable D, wheels E E', rope or chain F, weight F', pulley G, weight G', cam-plate H', having slots A A' A^2, a switch or signal, or both, and connecting mechanism, the whole being constructed and operated as and for the purpose set forth.

331,880. ELECTRIC MOTOR. Warren S. Hill, Boston, Mass. Filed Apr. 14, 1885. (No model.)



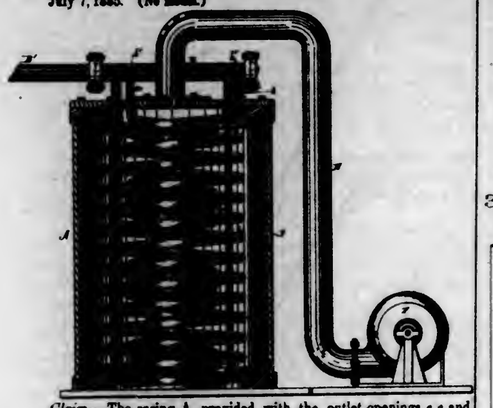
Claim.—1. A rotary armature of an electric motor, consisting of one or more pairs of electro-magnets crossing each other at right angles, each magnet being provided with two separate coils, and commutators and circuit-connections, substantially as described, whereby the magnetic axis of the armature is shifted by quadrants and the coils are united in closed circuit, substantially as described.

2. A rotary armature of an electric motor, consisting, essentially, of one or more pairs of electro-magnets crossing each other at right angles, each magnet being provided with two coils, a commutator, and branch connection to each magnet from each segment of the commutator, whereby all the coils are simultaneously energized and the magnetic axis of the armature is shifted by quadrants, substantially as described.

3. A rotary armature of an electric motor, consisting of two electro-magnets or multiples thereof, four pole-pieces therefor, each constituting a quadrant of the armature, a commutator, and multiple-arc circuits from the sections of the commutator to the coils of the magnets, whereby all the pole-pieces are continuously and uniformly energized, substantially as described.

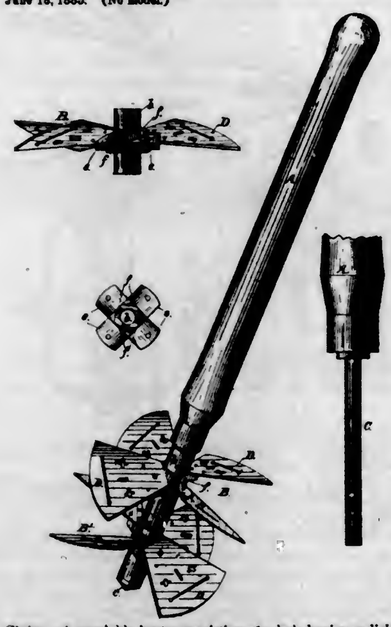
4. An armature for an electric motor, consisting of two or more magnet-cores crossing each other at right angles, pole-pieces secured to the outer ends of the magnet-cores and united at their ends to disks, substantially as described.

331,881. APPARATUS FOR COOLING AIR FOR REFRIGERATING AND OTHER PURPOSES. Horace P. Hodges, Fitchburg, Mass. Filed July 7, 1885. (No model.)



Claim.—The casing A, provided with the outlet-openings *e e* and a central opening, gas-supply pipe B B, coil-pipes *a b*, and outlet-pipe C D, in combination with the pipe E and the blower F, all constructed, arranged, and operated substantially as and for the purpose set forth.

331,882. CHURN-DASHER. Wm. H. Hook, Springdale, Ky. Filed June 18, 1885. (No model.)



Claim.—A revoluble beater consisting of a hub having radial arms integrally cast therewith and set obliquely to the bore of the hub, each arm forming a square shoulder at its junction with the hub, in combination with blades secured to the inclined face of the arms, and having their inner ends butted against the shoulders, substantially as shown and described.

331,883. GRAIN-BINDING MACHINE. George G. Hunt, Plano, Ill. Filed Feb. 16, 1884. (No model.)

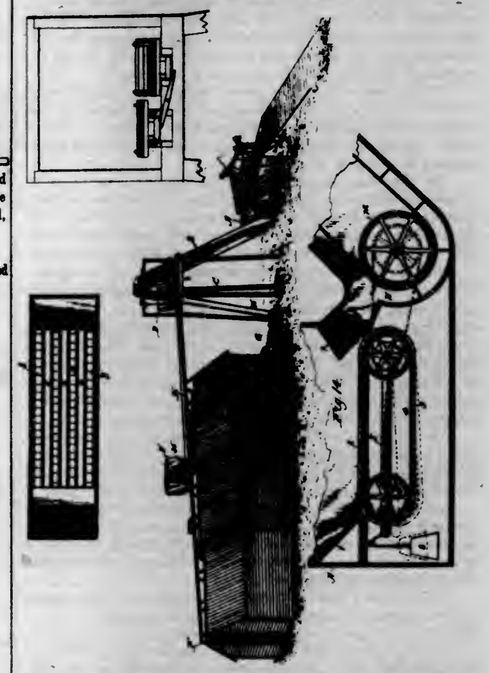
Claim.—1. In a trip mechanism for a grain-binder, the combination of the trip-arm and the supporting-plate therefor, provided with a series of holes to receive the shank of the arm, and also with a second series of holes to receive a fastening-bolt, and a bolt inserted, substantially as described, to retain the arm in place.

2. In combination with the trip-arm having the shank *d*, the pivoted supporting-plate B, provided with the openings *c* in its lower edge to receive the extremity of the arm, and with the slot and perforations in the upper edge, and the fastening-bolt applied substantially as shown.

331,883.



331,884. COMBINED ELEVATOR AND DISTRIBUTER. James H. Hunt, Chicago, Ill. Filed Oct. 20, 1885. (No model.)



Claim.—1. The elevator, the trackway, and the cars thereon, in combination with a mechanism, substantially as described, connecting and simultaneously actuating said cars and elevator, substantially as described.

2. The inclined main trackway and the cars, in combination with tilting tracks upon which said cars are supported while receiving their load, substantially as described.

3. The main trackway, the cars, and the winding-drum thereof, in combination with a connection between said trackway and drum, whereby the cars in delivering their load automatically cause the drums to return the cars to a loading position, substantially as described.

4. The cars, winding-drums, the cable-connection between said drums and cars, and the belt for actuating said drums, in combination with a belt-shifter and a cord and lever connection between said shifter and the main trackway at the point of delivery of the cars, substantially as described.

5. The cars, the winding-drums, the cable-connection between said drum and cars, and a shaft on which said drums are sleeved, in combination with fixed pulleys upon the drum and intermediate loose pulley, an actuating-belt for said pulleys, a belt-shifter, and a cable and lever connection between said shifter and the main track at the point of delivery of the cars thereon, whereby the car in delivering its load will cause the belt to be shifted to the fixed pulley of the drum and the drum to reverse its rotation, substantially as described.

6. The winding-drums, the fixed pulleys thereof, the intermediate loose pulley, the actuating-belt, and the shifting-bar 36, in combination with the bell-crank levers, and the levers 25 and 27, pivoted to the main track and constituting a connection between the lever 27 and the bell-crank levers, whereby one of said bell-crank levers may be actuated independently of the other, substantially as described.

7. The cars and the tilting track-sections thereof, the axis of which

track-sections is rearward of the center of gravity of the cars, in combination with locking devices connecting the car with the pivoted track-sections, whereby said track-sections will be locked by the loaded car moving off its track-section, and afterward unlocked by the return of said car in an empty condition, substantially as described.

8. The cars and the tilting track-sections thereof, in combination with the bell-crank levers 52 and 53, a stop-pin on said cars for engaging said levers, the locking-bars 47 and 48, and a connection between said bars and levers, substantially as described.

9. The track-sections, the tilting beams thereof, and the fixed sills on which said beams are pivoted, in combination with the locking-levers 47 and 48, the cars, and a connection between said cars and locking-levers, whereby the latter are swung in and out of the path of the beams, substantially as described.

10. The tilting beams, the track-sections supported thereon, and the pivoted locking-levers 57 and 58 at the forward end of said beams, in combination with a pivoted bar, 61, and a cord-connection between said bar and levers, whereby when one of said levers is depressed the other is elevated, and the track-sections respectively alternately locking and unlocking at their forward ends, substantially as described.

11. The track-sections, the pivoted beams thereof, the bell-crank levers 31 33, and a means for actuating said levers independent of each other, in combination with the locking-bars 47 48 at the rear end of said beams, and the locking-levers 62 and 63 at the forward ends of said beams, substantially as described.

12. The tilting track-sections and the respective cars thereof, in combination with means for alternately locking said track-sections simultaneously at their forward and rearward ends against the tilting movement, and a connection between said cars and locking mechanism, whereby they are automatically actuated by the cars, substantially as described.

13. The tilting track-sections, the cars thereof, the independent drums, a cable-connection between said drums and cars, the fixed pulley on said drums, the intermediate loose pulley, and a means for actuating said pulleys, in combination with a belt-shifting mechanism and a locking mechanism connection and a connection between said belt-shifting and locking mechanism and the cars, substantially as described, whereby a car will receive and deliver its load, and after returning to its loading position will be locked until the other car has returned to its tilting track-section after delivering its load, substantially as described.

14. The tilting track-sections and a pivoted chute, in combination with a connection between said sections and chute, whereby the chute is automatically actuated to deliver its contents first into one car and then into the other while in a loading position, substantially as described.

15. The tilting track-sections, the pivoted locking-levers at the forward ends thereof, and the vibrating chute, in combination with a cable-connection between said locking-levers and chute, whereby the chute is automatically actuated to deliver its contents alternately upon opposite sides of its axis, substantially as described.

16. The tilting track-sections, the locking-bars, the locking-levers, and the cars thereof, in combination with a pivoted chute and a connection between said chute and track-sections, substantially as described.

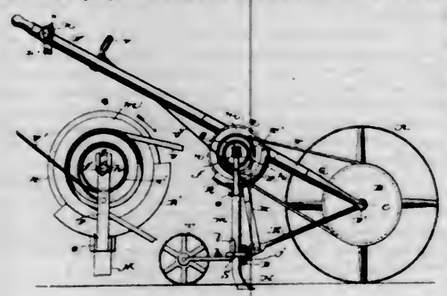
17. In an elevator and distributer, the combination therewith of a dump provided with a vibrating bottom, substantially as described, whereby when the dump is filled the materials will be discharged only at the end thereof next the elevator, substantially as described.

18. In an elevator and distributer, a dump the bottom of which is provided with open parallel bars, in combination with an endless carrier pivoted at one end and counterbalanced at its opposite end and provided with teeth or blocks projecting between the parallel slats, substantially as described.

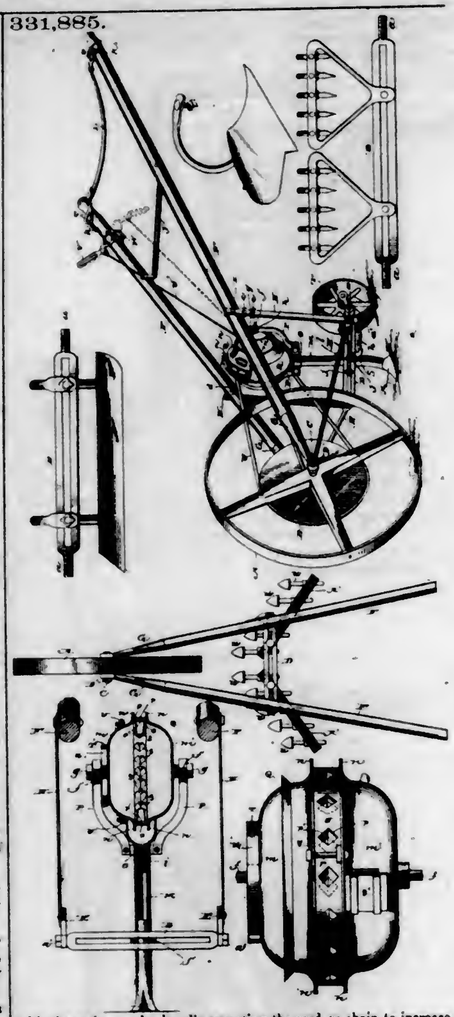
331,885. CULTIVATOR. CHRISTOPHER C. HUNTER, Concordia, Kans. Filed July 3, 1885. (No model.)

Claim.—1. The seed-drum with the flanged rim, in combination with the spring coiled around the rim, and connecting devices to draw the spring tight or loosen it as desired, as set forth.

2. The seed-drum provided with the external flange, in combination with the spring coiled around the flange, a cord or chain connected



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with the spring, and a handle operating the cord or chain to increase or decrease the tension on the spring, as set forth.

3. The slotted journaled beam, arranged to rest horizontally in attaching the cultivator or plow, and extend vertically when applying the seed-drill, as set forth.

4. The drive-wheels, in combination with the handles connected to the same, and the slotted journaled beam connected to the handles, the garden tools or implements being adjustable on the beam, as set forth.

5. The drive-wheel having the band-pulley or chain-wheel, in combination with the seed-drill supported in rear thereof, a band or chain connecting the pulley or wheel with the seed-drill, and a spring coiled around a portion of the drum and arranged to be brought in contact therewith to check the rotation of the drum, as set forth.

6. The drive-wheel, in combination with the handles, the diagonal braces E, the vertical braces H, and the slotted beam D, journaled in the diagonal braces, and to which the garden tools or implements are attached, for the purpose set forth.

7. The drive-wheel provided with the central shaft, in combination with the handles connected to the shaft, the diagonal braces also connected to the shaft, and the slotted beam journaled in the diagonal braces, and to which the garden tools or implements are attached, as set forth.

8. The slotted beam, in combination with the drill-tube, a clip for connecting the latter to the beam, a wheel or roller connected to the tube by the clip, a guard mounted in the upper end of the tube and having communication therewith, the supporting-standards, and the drum mounted in the same, for the purpose set forth.

9. The beam, in combination with the drill-tube attached thereto, supporting-standards provided at the upper end of the tube, the seed-drum mounted in the standards, and a guard communicating with the discharge-openings of the drum and arranged to deliver the seed to the tube, as set forth.

10. The beam, in combination with the drill-tube attached thereto, supporting-standards provided at the upper end of the tube, and the seed-drum mounted in the standards, as set forth.

11. The slotted beam, in combination with the drill-tube, a clip encircling the same and having its ends passing through the slot of the beam and provided with binding-nuts, and a roller having its supporting-frame clamped by the said clip to the rear face of the drill-tube, as set forth.

12. The seed-drum provided with a flange, in combination with the spring coiled around the flange, a cord connected with the spring, a handle connected with the cord, and a swinging bracket, to which the handle is pivoted, for the purpose set forth.

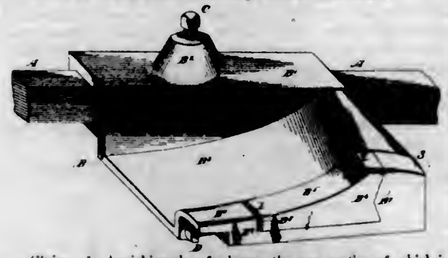
13. The seed-drum comprising two sections having overlapping rims *o*, which are slotted, the slots of one section registering with the slots of the adjacent section, flanges *n*, provided on the two sections on each side of the overlapping rims, and screws connecting the flanges of each section, for the purpose set forth.

14. The seed-drum provided with discharge openings or slots, and inclined seed-cups secured on the inner face of the drum around the openings or slots, one side of the cups being open for the entrance of the seed, and the inclined rear side of the cups coming directly on a line with the openings in the drum, as set forth.

15. The revolving seed-drum, in combination with a spring wound or coiled around a portion of the drum, said spring being normally in a loose state, and connecting devices for drawing the spring tight as desired, for the purpose set forth.

16. The handles, drive-wheel, and diagonal or inclined braces connecting with the latter, in combination with the slotted beam journaled in the braces, and connecting devices between the beam and the handles whereby the latter may be operated to control the action of the implements or garden-tools attached to the beam, as set forth.

331,886. PICKING-SHOE FOR LOOMS. JOHN L. INMAN and EDGAR H. STEVENS, Putnam, Conn. Filed Aug. 14, 1884. (No model.)



Claim.—1. A picking-shoe for looms, the cam portion of which is formed of two sections, one provided with a V-joint, B^2, and the other provided with a similar joint, B', and with a tightening-bolt, D, substantially as specified.

2. The combination of the shoe B, comprising the sleeve B', the flange B^3, and the cam portion B^4, having the V-joint B', and bolt D, with the section B^4, having the V-joint B^2, substantially as shown and described.

3. A picking-shoe for looms, provided at its cam portion with a section constructed for lateral removal, said section being provided with a V-shaped joint at one end adapted to fit a similar joint provided on the body of the shoe, substantially as specified.

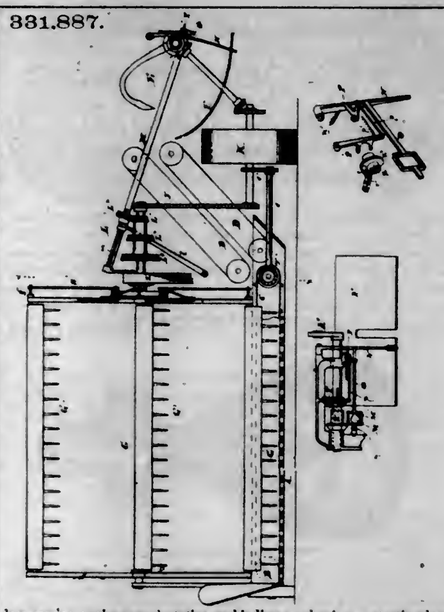
331,887. HARVESTING-MACHINE. SAMUEL JOHNSTON and GEORGE H. RAYMOND, Brockport, N. Y. Filed May 22, 1884. (No model.)

Claim.—1. In a harvesting-machine, the combination of an endless carrier with a rake or reel, stationary binding mechanism, a starting lever or arm to throw said binding mechanism into operation, and a locking and releasing mechanism for said starting-lever, controlled by the said rake or reel or its actuating mechanism, to control the time of action of said lever and make it act synchronously with the rake-arms, whereby the needle is caused to pass between the two successive gavels or beaters full of grain, substantially as and for the purpose specified.

2. In a harvesting-machine, the combination of an endless carrier with a reeling-platform located between the cutters and endless carrier, a rake or reel, stationary binding mechanism, a starting lever or arm to throw said binding mechanism into operation, and a locking and releasing mechanism for said starting-lever, controlled by the said rake or reel or its actuating mechanism, to control the time of action of said lever and make it act synchronously with the rake-arms, whereby the needle is caused to pass between two successive gavels or beaters full of grain, substantially as and for the purpose specified.

3. In a harvesting-machine, the combination of an endless carrier with an inclined reeling-platform located between the cutters and end-

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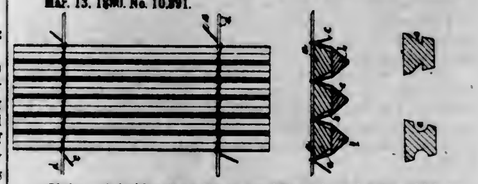


less carrier, a rake or reel, stationary binding mechanism, a starting lever or arm to throw said binding mechanism into operation, and a locking and releasing mechanism for said starting-lever, controlled by the said rake or reel or its actuating mechanism, to control the time of action of said lever and make is act synchronously with the rake-arms, whereby the needle is caused to pass between two successive gavels or beaters full of grain, substantially as and for the purpose specified.

4. In a harvesting-machine, the combination of an endless carrier, a rake or reel, stationary binding mechanism, a starting lever or arm to throw the binding mechanism into operation; a spring acting upon said lever to offer a resistance to its movement, and locking and releasing mechanism for said starting-lever, controlled by the said rake or reel or its actuating mechanism, to control the time of action of said lever and make it act synchronously with the rake-arms, whereby the needle is caused to pass between two successive gavels or beaters full of grain, substantially as and for the purpose specified.

5. In a harvesting-machine, the combination of an endless carrier, a rake or reel, stationary binding mechanism, a starting lever or arm to throw said binding mechanism into operation, and locking and releasing mechanism for starting said lever, controlled by the said rake or reel or its actuating mechanism, to control the time of action of said lever and make it act synchronously with the rake-arms, whereby the needle is caused to pass between two successive gavels or beaters full of grain, and adjustable timing mechanism by which the operation of the locking and releasing mechanism may be varied, substantially as and for the purpose specified.

331,888. MAT-WORK LATHING. HERMANN KAHLA, Chemnitz, Saxony, Germany. Filed Nov. 4, 1884. (No model.) Patented in Germany Mar. 13, 1880, No. 10,891.

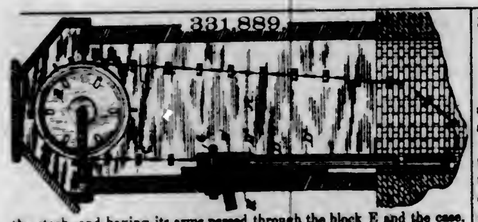


Claim.—A lathing for ceilings, consisting of wood laths, which are provided with recesses running parallel to the longitudinal axis of the wood laths, and are interlaced with each other by wires *c* and cross-bands *d*.

331,889. CHAIN-PUMP. WILLIAM KNEBLER, Bellevue, Iowa. Filed June 12, 1884. (No model.)

Claim.—The combination of the casing, the block having in its outer face a groove, F, having large wing F', extended to the upper edge of the block, smaller wing F^2, and an intermediate shoulder, F^3, the tubular stock D, having upper enlarged portion, D', fitted into the wing F' of groove F, body portion D^2, fitted into part F^2 of groove F, and a shoulder, D^3, resting on shoulder F^3, and a staple looped around

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the stock, and having its arms passed through the block E and the case, and secured by nuts, whereby the stock is held in the groove F, and the said stock and block E are secured to the casing, the enlarged portions of groove F and of the stock being uppermost, whereby, on loosening the nuts of clamp G, the stock may be drawn upward, and at the same time is held from dropping into the well, substantially as set forth.

331,890. GAS-GOVERNOR. Peter Kelly, Syracuse, N. Y. Filed Oct. 9, 1885. (No model.)



Claim.—1. In a gas-governor of the class described, a lateral entrance-pipe projected inwardly and having at its end a vertical valve-seat and guiding-lug, in combination with a vertically-sliding valve adapted to close the end of said entrance-pipe, a valve-rod, and a float secured to said rod, substantially as specified.

2. In a gas-governor of the class described, a float and a vertically-acting valve connected centrally therewith, in combination with the supply-pipe projected inwardly beneath the center of the float and forming a vertical seat for said valve, an eduction-passage, and a receptacle for the float, substantially as specified.

3. In a gas-governor of the class described, a lateral entrance-pipe provided with a vertical seat for a valve and a guide-lug for the rod of the valve, substantially as specified.

4. The combination, with a four-way coupling, an entrance-pipe extending therein and projecting to the face of a sliding valve hung in the center and seated on the inner end of said pipe, substantially as specified.

5. The combination of a four-way coupling, of an entrance-pipe extending lateral therein, a vertical valve-seat on the inner end of said pipe, a governor-tube connected with the upper branch of said coupling, a receptacle supported on said tube and branch of the coupling, and a float mounted on the valve-rod and encircling the governor-tube, substantially as specified.

6. A gas-governor comprising a four-way coupling, one branch of which is inwardly extended and provided with a vertical valve-seat, a valve-tube mounted on said coupling, a valve-rod passing within the same, one end of which is provided with a vertical valve adapted to close said inwardly-extended branch, and upon the other end of which is mounted a float having a sleeve encircling said tube, the lower end of which is apertured, and a glycerine-receptacle forming a covering for said tube and float, substantially as specified.

7. The combination of the glycerine-receptacle E, float D, sleeve D^2, having apertures D^4, the tube B, having the screw-threaded base B^2, mounted upon the coupling A, with the entrance-pipe A', having the valve-seat A^3 and guiding-lug A^4, the valve C, and the rod C', substantially as specified.

8. The combination of the receptacle E, perforated as at E^2, the float D, adjustably mounted upon the rod C, nuts D', the sleeve D^2, apertures D^4, with the valve-rod C', having the valve C secured at its lower end, said valve being perforated, as at C^2, the coupling A, and the entrance A', having the valve-face A^3 and guiding-lug A^4, substantially as specified.

9. The four-way coupling A, provided with the interiorly-screw-threaded induction-pipe A', having the guide A^4, and provided with the valve-tube B, substantially as specified.

10. The four-way coupling A, having the lateral entrance-tubes A', forming a vertical valve-seat and valve-rod guide-lug A^4, the exit-tube A^2, the valve-tube B, and the tube F, having the removable plug F^2, substantially as specified.

331,891. CARTRIDGE-PACK. John C. Kelton, San Francisco, Cal. Filed Oct. 1, 1885. (No model.)

Claim.—1. A central spindle composed of two parts, a wire or tape having one end secured to a pin in the upper and shorter portion,

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said wire being wound or twisted around the exterior of the cartridges and secured to the pin, substantially as herein described.

2. A cartridge-pack consisting of a two-part spindle having exterior grooves or channels, within which the cartridges are held by a tape or wire passing around their exterior, with the ends properly secured, in combination with a loop, by which the outer portion of the spindle may be removed to allow the cartridges to be introduced into the pistol, substantially as herein described.

331,892. CHECK-REIN ATTACHMENT. John C. Kelton, San Francisco, Cal. Filed Oct. 1, 1885. (No model.)



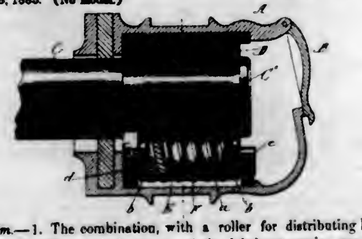
Claim.—1. The elastic coiled spring having its ends fixed in metal bulbs, to which the parts of the rein may be adjusted, in combination with an exterior rubber or elastic covering fitting this spring and extending over the bulbs, substantially as herein described.

2. In a check-rein, the elastic spiral spring having its ends secured in the heads or bulbs, and an inclosing elastic covering extending over this spring and the bulbs, in combination with heads or plates screwed into the ends of the bulbs, compressing and holding the end of the cover, substantially as herein described.

3. A check-rein comprising the elastic covered spring, with the screw-head compressing and holding the ends of the cover, and the links or attachments E, for the ends of the rein, substantially as herein described.

4. In a check-rein, the flexible elastic covered spring adapted to yield to the pull or strain, in combination with the chain having one end permanently attached near one end of the spring and the other adjustably connected to the opposite end of the spring, so as to limit its tension, substantially as herein described.

331,893. CAR-AXLE BOX. Christian H. Kock, Avoca, Iowa, assignor of three-fourths to E. F. Mulloy, Cook County, and Gustav A. Woolley, Michael McDermott, and W. D. O'Brien, Chicago, Ill. Filed June 8, 1885. (No model.)

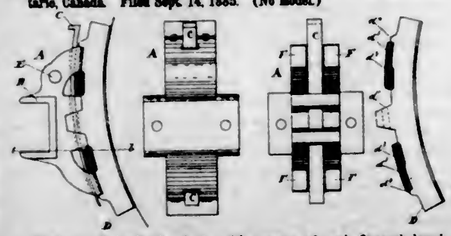


Claim.—1. The combination, with a roller for distributing lubricants, formed with a spiral groove, of the lubricant-carrier wound in such groove, as set forth.

2. The combination, with a roller mounted in spring-bearings and formed with a spiral groove, of a lubricant-carrier wound in such groove, as set forth.

3. The combination, with a roller for distributing lubricants, formed with a spiral groove, of a lubricant-carrier wound in such groove, and suitable screws and plates secured thereto for holding such lubricant-carrier in place, as set forth.

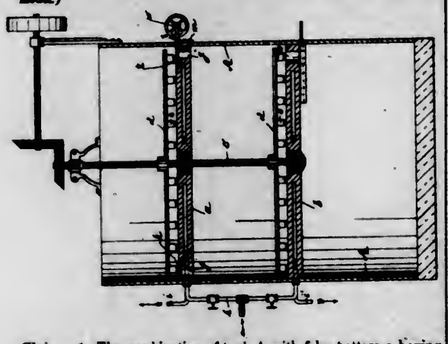
331,894. BRAKE HEAD AND SHOE. John J. Lappin, Toronto, Ontario, Canada. Filed Sept. 14, 1885. (No model.)



Claim.—A brake-head, A, with groove a^2 and flanged brackets B B, having its bearing parts F F F F enlarged and hardened upon

a chill, as specified and described, and made to fit enlarged seats d^2, with heightened snags d^3 on the back of the shoe D, to provide for the better wear of the parts and their remaining uniform, and the groove d^2, deepened and enlarged to span and fit a lengthened and enlarged rib, d^3, on the back of the shoe D, to prevent lateral motion of the shoe on the brake-head, and to relieve the key C, which keeps the brake head and shoe together, of any more than a nominal strain thereon, the whole constructed and operating substantially as set forth

331,895. STEAM HEATER OR KETTLE FOR OLEAGINOUS SUBSTANCES. John A. Lewis, Meridian, Miss., assignor to the United States Cotton Seed Cleaning Company of New York. Filed July 15, 1885. (No model.)



Claim.—1. The combination of tank A with false bottom *a*, having openings *j*, and with ring *k*, having corresponding openings, *n*, substantially as specified.

2. The combination of tank A with false bottom *a*, having openings *j*, and with ring *k*, lugs *l m*, and set-screw *w*, substantially as specified.

3. The combination of tank A with false bottoms *a b*, having tortuous steam-passages and openings from top to bottom, and with stirrers *s*, steam-inlets *h*, steam-outlets *i i'*, and ring *k*, substantially as and for the purpose specified.

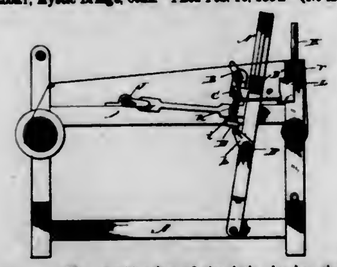
331,896. PENCIL-CASE. Charles E. Little, London, England, assignor to S. Mordan & Company, same place. Filed June 4, 1885. (No model.) Patented in England Feb. 17, 1885, No. 2,304, and in Germany Feb. 26, 1885, No. 32,734.



Claim.—1. The combination, with the spiral action and the ejector receiving motion from the same, of a tube through which the ejector passes, having a slot and scoop at one side, a magazine or holder surrounding the slotted tube, for containing leads, and a pencil case and point, substantially as specified.

2. In combination with the propelling-action of a pencil-case, a magazine or holder, and a slotted lead-tube provided with a scoop or equivalent device, the whole arranged as herein described and shown, and operating as set forth.

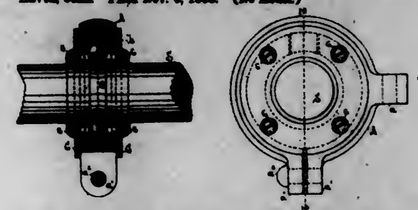
331,897. FLOAT-DETECTING MECHANISM FOR LOOMS. Amos Mallory, Mystic Bridge, Conn. Filed Feb. 16, 1884. (No model.)



Claim.—1. The combination of the lathe having the bearing-arms C C, provided with the vertical arms, with the comb having its shaft provided with rectangular portions near its ends, and thereby adapted to be received between the vertical arms of the bearing-arms C C, the angle-arm Q, the cam-shaft F, having the cams and the ratchet-wheel, the holding-pawl engaging with the ratchet-wheel, the depending arms A, hung to the comb-shaft, and having the bearing-springs *i*, the feed-pawl, tripping-lever, and shipper-handle, substantially as described.

2. The combination of the lathe having the bearing-arms C C, with the pivoted comb having the depending arms hung to its shaft, bearing-springs for said arms, and the angle-arm secured to the back of the comb, the lever L and shipper-handle, the cam-shaft having the cams and the ratchet-wheel, the holding-pawl, and the feed-pawl for moving the ratchet-wheel, substantially as described.

331,898. BALL-BEARING FOR SHAFTS. John M. Marlin, New Haven, Conn. Filed Nov. 6, 1885. (No model.)

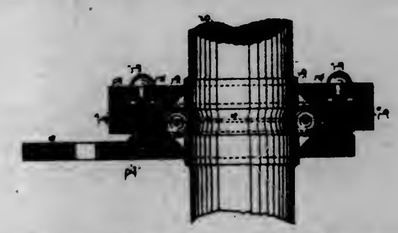


Claim.—1. In combination with the shaft S and the balls, the outer ball-bearing ring, B, provided with a slot, *b'*, the segment *b*, made shorter than said slot, and the outer clamp-ring, A, substantially as described.

2. In combination with the shaft S and the balls, the outer ball-bearing ring, B, provided with a slot, *b'*, the segment *b*, made shorter than said slot, the outer clamping-ring, A, and the face-covering rings C C, having their holes c^2 c^2 larger than the shanks of the screws *c c*, substantially as described.

3. In combination with the shaft S and the balls, the outer ball-bearing ring, B, provided with a slot, *b'*, the segment *b*, made shorter than said slot, the outer clamping-ring, A, and the outer side covering-rings, C C, overlapping the opposite faces of the rings B and A, substantially as described.

331,899. BALL-BEARING. John M. Marlin, New Haven, Conn. Filed Nov. 6, 1885. (No model.)

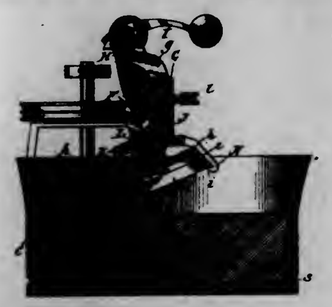


Claim.—In a ball-bearing, the combination of the bearing-ring E, the gage-ring b^2, the bearing-ring D, constructed with the portion *d*, projecting within a countersink in the part E, which meets its inclined ball-bearing face, and the adjusting-screws *b' b'*, substantially as described.

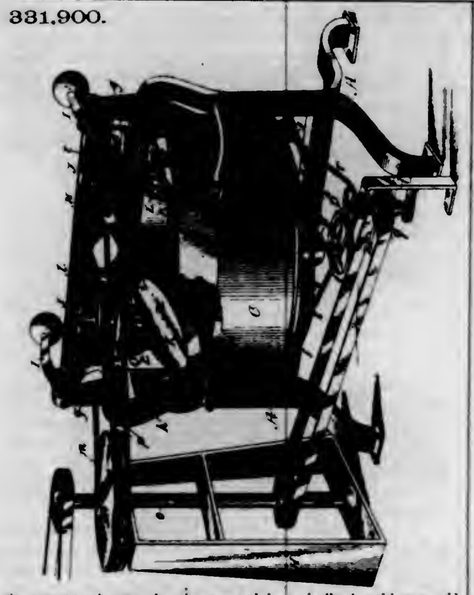
331,900. MEAT-CUTTING MACHINE. Reuben McCreery, Frankfort, N. Y., assignor of one-half to George A. Colson, Chicago, Ill. Filed Feb. 18, 1884. (No model.)

Claim.—1. The combination, with the vertical shaft, an arm projecting therefrom, and the upright pintle secured in said arm in an inclined position, of the cutter loosely mounted in an inclined position on said pintle, and the revolving block, substantially as described.

2. The vertical shaft, an arm projecting therefrom, and an upright pintle secured in said arm in an inclined position, in combination with



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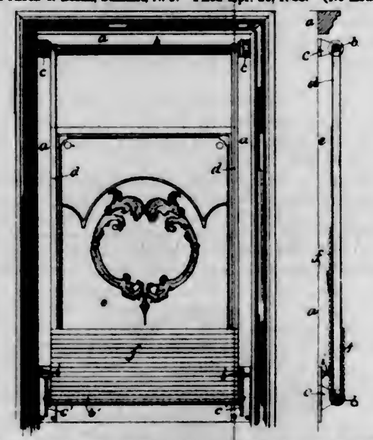
the cup-shaped cutter loosely mounted in an inclined position on said arm, and the revolving cutting-block, substantially as described.

3. The vertical shaft, the arm projecting therefrom, and an upright pintle secured in said arm in an inclined position, and the revolving cutting-block, in combination with the cutter loosely mounted in an inclined position on said arm, and having contact with the block, substantially as described.

4. The vertical shaft and the two-part arm, in combination with the pintle adjustably and removably held by said arm in an inclined position, and the cutter loosely mounted on said pintle, substantially as described.

5. The combination, with the vertical shaft, an arm projecting therefrom, the pintle secured in said arm in an inclined position, and the cutter loosely mounted on said pintle, of the cutting-block and the swinging frame journaled at its ends and extending in a line above and parallel with the cutting-block, substantially as described.

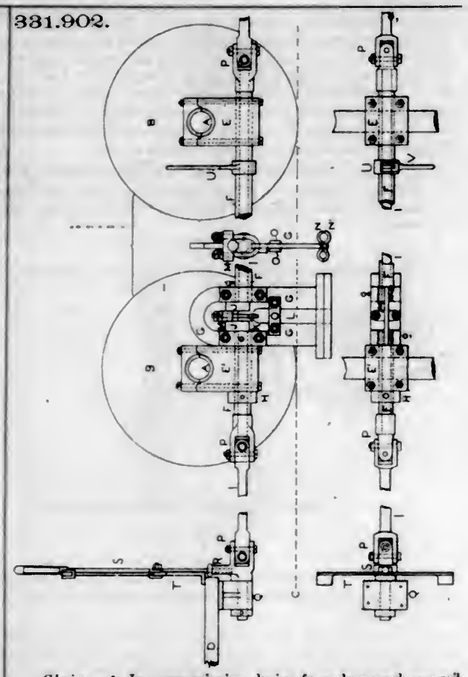
331,901. ADJUSTABLE WINDOW-CURTAIN. William McManus and Jacob C. Losee, Summit, N. J. Filed Apr. 20, 1885. (No model.)



Claim.—The combination, substantially as shown and described, consisting of the rollers *b b'*, fixed bearings *c*, adjustable tightening device *c'*, endless belts *d*, flexible material *e*, and slats *f*, the whole forming a complete working device.

331,902. GRIPPING DEVICE FOR ROPE RAILWAYS. William H Hillmer, San Francisco, Cal. Filed May 18, 1885. (No model.)

331,902.



Claim.—1. In a rope-gripping device for underground rope railways, the combination of the horizontally set over and under gripping-plates N N', and mechanism for raising and lowering the under plate separately, to lower the rope to and lift it from the main rope-carrying wheels in the act of gripping and releasing the rope, as and for the purpose herein described.

2. A rope-gripping device consisting of the combination of a grip-frame having axial supports, around which the gripper may be swung to remove it from and replace it in the rope-carrying tube, and the operating hand-lever connected with said gripper, arranged so as to be unaffected by the swinging of the main frame, substantially as and for the purpose herein described.

3. In a gripping device for rope railways, the combination of the hollow shaft F, suitably supported, and to which the grip-frame is attached, with the solid crank-shaft I, therethrough passing and operating the grip-bar L, (it being suitably connected therewith,) to give motion to open and close the gripping-jaws, as and for the purpose described.

4. In a rope-gripping device for rope railways, the combination of the gripping-plates N N', having their grooves to receive the rope on either side of the grip-frame, with suitable mechanism for operating the same, as and for the purpose described.

5. The rope-gripping device consisting of the combination of the frame G, bar L, plates N N', shafts F and I, lever S, and quadrant T, the whole suitably supported, arranged, and connected together, substantially as and for the purpose herein described.

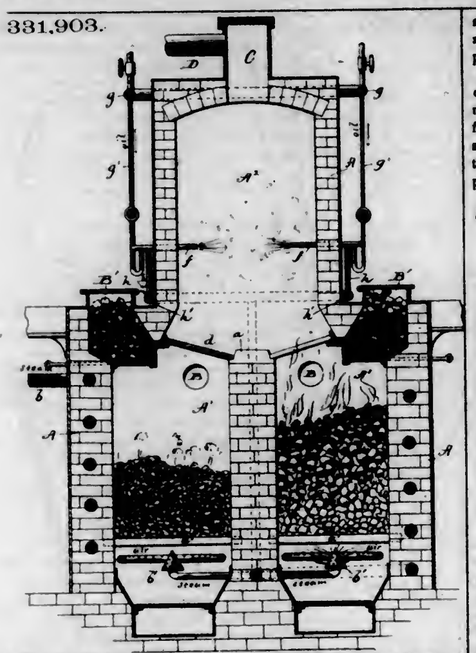
6. In rope railways, the combination of the horizontal shaft I, set lengthwise of the car, the hand-lever S thereon, secured and moved crosswise of the car, and quadrant T, as a means of operating suitably a gripping device.

331,903 PROCESS OF MANUFACTURING ILLUMINATING-GAS. John W. Mitchell, Bayonne, N. J. Filed Aug. 14, 1885. (No specimens.)

Claim.—1. In the art of continuously manufacturing illuminating-gas, the process herein described, which consists in, first, bringing a body of fuel to incandescence; second, causing the simultaneous currents of superheated steam and of air in relatively regulated volume to pass through said fuel; third, injecting superheated steam and crude petroleum to a chamber with which the water-gas generating-chamber is connected under such pressure and in such regulated quantity or volume as to maintain the temperature in said chamber at about 1600°; fourth, purifying said gas, and conducting it thence to the holder.

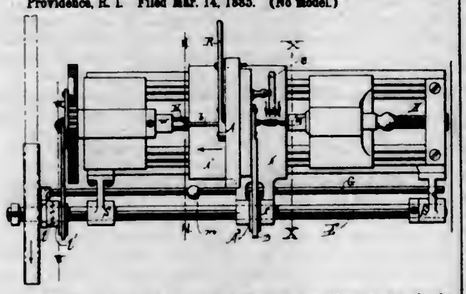
2. The process herein described for the manufacture of illuminating-gas, which consists in generating hydrogen and carbonic oxide (water-gas) by first bringing a body of fuel to incandescence in a suitable furnace, permitting the products of combustion to escape, (or utilizing the same as fuel meanwhile;) second, closing the purging-conduit, and at the same time admitting currents of superheated steam and air to the

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fuel, so regulated in relative volume as to maintain the proper degree of heat and continue combustion; third, passing said gas to a dome or chamber of the furnace; and, fourth, injecting superheated steam and crude petroleum into said dome or chamber in such regulated volume as to maintain the temperature therein at about 1600°, and thereby carburet the gas and bring it to the desired illuminating power; fifth, passing the resultant through purifiers to the holder.

331,904. MACHINE FOR MAKING TWIST-DRILLS. Samuel Moore, Providence, R. I. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a drill-twisting machine, the combination of a chuck-holder, A, provided on either face with interior flanges, *f f*, with the chucks B and C, seated in said flanges, with their inner faces parallel and a short distance apart, and their axes lying in the same horizontal right line, said chucks being capable of adjustment in their seats relatively to each other, as shown, and for the purposes specified.

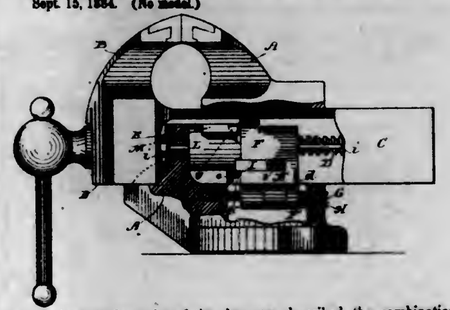
2. In a drill-twisting machine, the combination of a chuck-holder, A, provided with a series of holes, *a a a*, in its rim, as shown, with a chuck, B, radial arm R, and pin *p*, all arranged and operating substantially as shown, and for the purpose specified.

3. In a drill-twisting machine, the combination of a chuck-holder, A, with a chuck, C, crank-arm D D, cam-eccentric F, and auxiliary shaft E, all arranged as shown, and adapted to rock the chuck in its seat in the holder, as described.

4. In a twist-drill machine, the combination of the following elements, namely: a lathe-frame and its feed mechanism and mandrels, a chuck-holder gibbed to and adapted to move along the lathe-bed, a chuck, B, seated in the holder and capable of adjustment therein so as to bring the central longitudinal line of its jaws at any desired angle with the central vertical line of the holder, and a chuck, C, also seated in the holder, with its inner face parallel with the inner face of the chuck B, and the central line of its jaws parallel with the central vertical line of the holder and at a right angle to the axial line of the chuck, a crank-arm, D D, cam-eccentric F, and auxiliary shaft E, all arranged as shown and described, and combined with suitable means of conveying motive power thereto.

5. In a twist-drill machine, a die consisting of a holder having two chucks seated in its parallel faces, said chucks being capable of adjustment in their seats, whereby their jaws are caused to engage the groove-faces of the drill-blank at different angles to its axial line, and one of said chucks being after adjustment held stationary in the holder, while the other is oscillated as the die is moved along the blank, thereby imparting the twist to the same, substantially as shown and described.

331,905. VISE. William H. Northall, Bridgeport, Conn. Filed Sept. 15, 1884. (No model.)



Claim.—1. In a vise of the character described, the combination, with the body of the vise and the screw for operating the movable jaw, of the nut-sections pivoted within said body, a spring-actuated wedge arranged within said sections and capable of being forced against the latter and spread them apart, a sleeve mounted upon said screw and adapted to operate the wedge, and an abutment against which the sections and sleeve are forced, substantially as set forth.

2. The screw arranged within the body of the vise and having mounted thereon the sleeve, constructed as described, in combination with the nut-sections pivoted in said body, and adapted to be thrown in and out of engagement with said screw, and an abutment, by which the backward movement of the several parts connected with the screw is arrested, substantially as set forth.

3. In combination with the nut-sections provided with recesses having beveled front wall and rounded and beveled rear walls, as shown, the wedge arranged within said recesses and adapted to be forced against said walls, thereby opening and closing the sections, substantially as described.

4. In combination with the wedge having inclines and provided with beveled heel, as described, the nut-sections pivoted together, and adapted to be opened and closed by the action of said wedge, substantially as shown and set forth.

5. The combination with the wedge and nut sections, constructed and arranged as described, of the sleeve mounted upon the screw, and having incline notch adapted to be forced against the heel of the wedge, substantially as set forth.

6. The combination, with the sleeve having arranged therein the spring-pawl and spring-pin projecting from the side of said pawl, of a ring seated within the forward end of said sleeve and projecting slightly beyond the walls of the opening, whereby a ledge is formed to support the pin and pawl, said ring connected to the jaw-screw by a spline, and adapted to allow the pawl to drop into the trough or slot of the spline, whereby the screw and sleeve may turn in unison when the former is operated toward the left, substantially as shown and set forth.

7. In combination with the sleeve having pivoted therein the spring-pawl provided with a laterally-projecting and spring-actuated pin, nut-sections pivoted together and wedge arranged within said sections, and adapted to open and close the same, the ring having in its inner edge an opening and niche, formed as described, and having also a spline extending within an elongated slot in the screw, which operates the movable jaw, whereby a lock connection between the screw and sleeve may be effected, substantially as set forth.

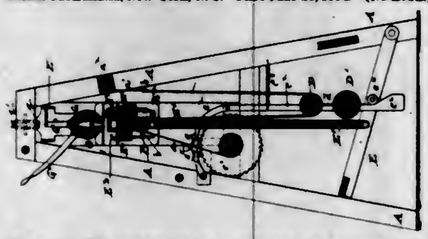
8. In combination with the sleeve mounted upon the shank of the jaw-screw, and having spring-pawl therein and spring-pin projecting laterally from said pawl, the ring provided with a spline extending within an elongated slot in the screw, and having in its inner edge an opening and a niche, and seated within said sleeve, and projecting slightly beyond the wall of the opening thereof, whereby a support for the said pin and pawl is afforded, and the latter permitted to engage with the slot in the screw within which the ring is splined, substantially as and for the purpose set forth.

9. The combination, with the nut-sections F F', pivoted within the stationary jaw or body A, and having recesses H', with bevels *a* and *a'*, of the wedge I, having inclines *b b'*, and beveled heel J, spring K, confined between projections formed on the wedge and one of the nut-sec-

tions, sleeve L, having notch T, with incline *c*, capable of being forced against the said heel by the turning of said sleeve toward the left, spring-pawl M, having projection U, against which the contiguous edges of the nut-sections may be forced, whereby the pawl is kept in an elevated position, if desired, spring-pin O, ring P, seated in the forward end of the sleeve, and having in the inner edge thereof opening Q, provided with bevel *j*, and niche S, provided with bevel *g*, the width of said opening being less than that of the niche, spline R on the inner surface of said ring, screw D, passing through the sleeve and nut-sections and mounted within the movable B, and having elongated slot *i*, within which the said spline fits, abutment E, and screw H, passing through the body against the nut-sections, all arranged and operating substantially as and for the purpose hereinbefore shown and specified.

331,906. MACHINE FOR PLUCKING BEAVER AND OTHER SKINS.

Frank Peterhahn, New York, N. Y. Filed June 21, 1884. (No model.)



Claim.—1. The combination of a knife-edge bar over which the skins are stretched and fed, a vertically-reciprocating slotted guard-frame, an oscillating laterally-reciprocating guard-comb, and oscillating and vertically-reciprocating plucking-jaws, substantially as described.

2. The combination of a supporting-frame, a knife-edge bar over which the skins are stretched and fed, a vertically-reciprocating main plate, oscillating jaws pivoted to said main plate, an auxiliary vertically-reciprocating plate provided with horizontal slots, a horizontal slotted guard-frame attached to said auxiliary plate, stops for arresting the downward movement of the main plate before the downward movement of the main plate is completed, an oscillating comb supported in said slots of the auxiliary plate, and provided with a backwardly-projecting crank-arm, a lever pivoted to said main slide-plate, one end of which extends between fixed stops, and a link connecting the end of said lever with the crank-arm of said comb, whereby the latter is oscillated during the downward movement of said main plate, substantially as described.

3. The combination of a supporting-frame, a knife-edge bar over which the skins are stretched and fed, a vertically-reciprocating main plate, oscillating jaws pivoted to said main plate, an auxiliary vertically-reciprocating plate provided with horizontal slots, a horizontal slotted guard-frame attached to said auxiliary plate, stops for arresting the downward movement of the auxiliary plate before the downward movement of the main plate is completed, an oscillating comb supported in said slots and provided with a backwardly-projecting crank-arm, a slotted cam-lever engaging said comb and pivoted to said main plate, and a fixed anti-friction roller and spring for actuating said lever to move said comb laterally within said horizontal slot of the auxiliary plate during the downward movement of the main plate, substantially as described.

4. The combination of a supporting-frame, a knife-edge bar over which the skins are stretched and fed, a vertically-reciprocating main plate, oscillating jaws pivoted to said main plate, an auxiliary vertically-reciprocating plate provided with horizontal slots, a horizontal slotted guard-frame attached to said auxiliary plate, stops for arresting the downward movement of the auxiliary plate before the downward movement of the main plate is completed, an oscillating comb supported in said slots and provided with a backwardly-projecting crank-arm, a lever pivoted to said main slide-plate, one end of which extends between fixed stops, and a link connecting the end of said lever with the crank-arm of said comb, whereby the latter is oscillated during the downward movement of said main plate, a slotted cam-lever engaging said comb and pivoted to said main plate, and a fixed anti-friction roller and spring for actuating said lever to move said comb laterally within said horizontal slot of the auxiliary plate during the downward movement of the main plate substantially as described.

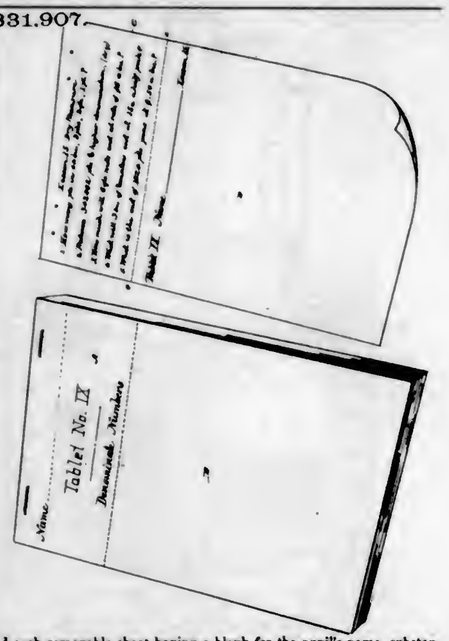
331,907. LESSON-TABLET FOR ARITHMETICAL WORK.

Arthur W. Potter and Thomas J. McConnon, Williamsport, Pa., assignors to Potter, Ainsworth & Co., New York, N. Y. Filed Aug. 13, 1885. (No model.)

Claim.—1. As an improvement in appliances for school work, a pad or tablet having stubs provided with printed questions, problems, or exercises, and removable blank sheets for the answers or solutions, substantially as described.

2. As an improvement in appliances for school work, a pad or tablet having stubs provided with printed questions, problems, or exercises, and removable sheets for the answers or solutions, the said pad or tablet

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and each removable sheet having a blank for the pupil's name, substantially as described.

3. As an improvement in appliances for school work, a pad or tablet having a blank for the name of the pupil, and also having stubs provided with printed questions, problems, or exercises, and with different lesson-numbers and removable sheets for the answers or solutions, also provided with different lesson-numbers and with blanks for a pupil's name, substantially as described.

4. As an improvement in appliances for school work, a numbered pad or tablet having a blank for the name of a pupil, and also having stubs provided with printed questions, problems, or exercises, and different lesson-numbers, and removable sheets provided with the tablet-number and with lesson-numbers corresponding to the stubs, and also provided with blanks for a pupil's name, substantially as described.

331,908. BARBED FENCE.

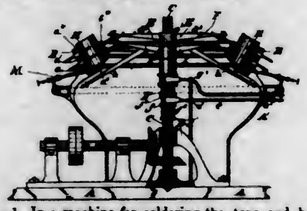
James Potter, Chicago, Ill., assignor of one-half to Lemuel H. Florsheim, same place. Filed Oct. 13, 1884. (No model.)



Claim.—As an article of manufacture, the herein-described barbed wire, comprising the two twisted strands *a b*, strand *a* being cut to form barbs, and the ends of said strand bent and interlocked, as shown, and the strand *b* provided with loop or coil *c*, which closely wraps and secures together the said bent ends of strand *a*, substantially as described.

331,909. MACHINE FOR SOLDERING CANS.

Benjamin Perin, Baltimore, Md. Filed May 23, 1885. (No model.)



Claim.—1. In a machine for soldering the tops and bottoms of metallic cans, a circular track, upon which the cans are placed, in com-

bination with a turning-wheel resting upon the cans, and arranged to roll the cans over the track, as described and set forth.

2. In a machine for soldering the tops and bottoms upon metallic cans, a circular track having a portion of its course cut away to provide an entrance and outlet for the cans, in combination with a turning-wheel resting upon the cans, and arranged to roll them over the track, as set forth.

3. In a machine for soldering the tops and bottoms upon metallic cans, a circular track over which the cans are rolled, in combination with the wheel E, provided with the sleeve F, to slip over the shaft C, and arranged to be turned by and slid upon said shaft, substantially as shown.

4. In a machine for soldering the tops and bottoms of metallic cans, the circular track and the turning-wheel E, in combination with the spring *f*, shaft C, and sleeve F, substantially as described.

5. In a machine for soldering the tops and bottoms of metallic cans, the circular track B and means for rolling the cans along the track, in combination with a brake-wheel resting upon and turned by the cans, substantially as shown and described.

6. In a machine for soldering the tops and bottoms of metallic cans, a circular track, B, and means for rolling the cans along the track, and the brake-wheel I, provided with means for arresting the movement of said wheel and turning it backward or forward, as described.

7. In a machine for soldering the tops and bottoms of metallic cans, an inclined circular track, B, and means for rolling the cans along the track, in combination with a brake-wheel resting upon and turned by the cans, and provided with means for lifting said wheel from the cans and dropping it upon them at the will of the operator, substantially as described.

8. In a machine for soldering the tops and bottoms of metallic cans, the combination of the turning-wheel E, the brake-wheel I, and circular track B, arranged and operating together substantially as described.

9. In a machine for soldering the tops and bottoms of metallic cans, the circular track B, in combination with the turning-wheel E and the brake-wheel I, provided with means for lifting and lowering said wheels in conjunction with or independently of each other, substantially as shown.

10. In a machine for soldering the tops and bottoms of metallic cans, the combination of a turning-wheel, and a circular track consisting of two or more rails, and having the rail opposite the bearing-surface of said wheel nearer to said bearing-surface than the others, substantially as described.

11. In a machine for soldering the tops and bottoms of metallic cans, a circular track provided with a flexible or elastic bearing-surface upon which the cans are rolled, in combination with the turning-wheel E.

12. In a machine for soldering the tops and bottoms of metallic cans, a circular track upon which the cans are rolled, in combination with a rolling or turning wheel provided with a flexible or elastic bearing-surface, substantially as described.

13. In a machine for soldering the tops and bottoms of metallic cans, the circular track B, in combination with means for rolling the cans on the track, the brake-wheel I, resting upon the cans, and having a flexible or elastic bearing-surface, substantially as described.

14. In a machine for soldering the tops and bottoms of metallic cans, a circular track provided with one or more armed or spoked spindles arranged with the track and cans, substantially as and for the purposes described.

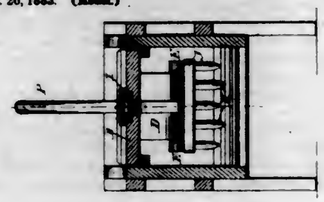
15. In a machine for soldering the tops and bottoms of metallic cans, a circular track over which the cans are rolled, said track so constructed as to leave the lower edge of the can exposed, in combination with a rolling wheel resting upon and giving motion to said cans, and a series of burners arranged to direct flames upon the seams of the cans, substantially as described.

16. The above-described track X, located between the two soldering-machines and twisted in its course, so as to turn the can end for end in its progress from one machine to the other.

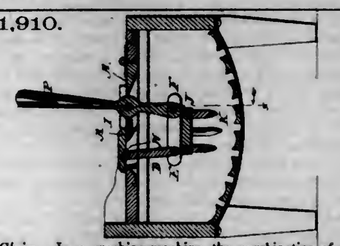
17. The combination of two soldering-machines, each having a circular track over which the cans are rolled, with a track, X, located between the machines and connecting the tracks together, the said connecting-track being curved in its course, so as to present and connect the upper rail of one machine with the lower rail of the other, substantially as shown.

331,910. WASHING-MACHINE.

George W. Ray, Tarkio, Mo. Filed Nov. 20, 1883. (Model.)



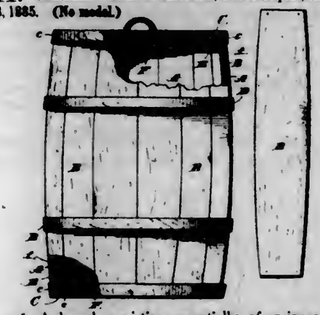
331,910.



Claim.—In a washing-machine, the combination of the board J, having pins K inserted therein, the lid A, and bars D and P, pivotally connected to board J and to lid A, bar P being extended above the lid to form an actuating-handle for said board and pins, all substantially as shown and described.

331,911. BARREL.

Silas H. Raymond, Grand Rapids, Mich. Filed Oct. 28, 1885. (No model.)



Claim.—1. A barrel consisting, essentially, of an inner and outer series of bent staves firmly secured together, the outside and inside hoops rigidly secured to the staves, the inner hoops having shoulders thereon forming seats for the heads, and the strip *e*, secured to the inner hoop outside of the lower head, for permanently securing said lower head in position.

2. A barrel consisting, essentially, of a series of inside paper staves having their edges glued or cemented together and a series of outside staves overlapping the joints of the inside series, the ends of the staves being nailed between outside and inside hoops, and thin strips of wood bent around and secured to the inside faces of the inside hoops to form stops for the head, substantially as set forth.

331,912. EXTENSIBLE SAFETY-CARTRIDGE.

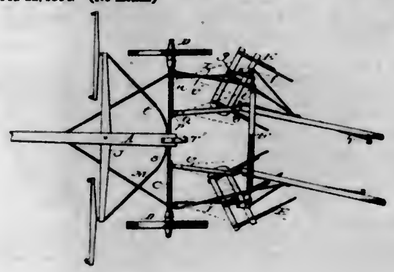
Frank P. Reade, Pittston, Pa. Filed June 13, 1885. (No model.)



Claim.—An extensible mining-cartridge consisting of two sections closed at their outer ends and fitting one within the other, the closed end of one section having a tubular receiver formed thereon and constituting a permanent part of said section, substantially as and for the purpose set forth.

331,913. CULTIVATOR.

G. Warren Rice, Brooklyn, Ill. Filed Oct. 22, 1884. (No model.)



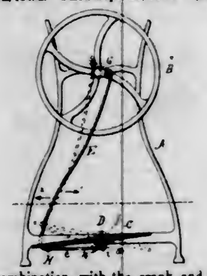
Claim.—1. In a cultivator, the combination of four parallel draw-bars, I Q and Q I, either pair of which connects one knife-bead, E, to the draft device, I connecting the knife-head at *l* with the draft device at *n*, Q connecting the knife-head at *o* with the draft device at *p*, Fig. 2, whereby each knife is made to cut its full width, whether the knife-heads are swung a little to one side or are drawing directly behind the draft device, the arrangement being substantially as specified and shown.

2. The device whereby the operator dips or raises those knives nearest the row of corn, &c., while the machine is in motion, thus adjusting all knives to a proper depth to conform to the ridge which rises on the row by repeated cultivation, or to work any uneven ground, said device consisting of the iron rod V, attached to the handle G, within reach of the operator, by the clamp, Fig. 8, said rod connecting, by means of the irons W and X, with the knife-head E at *z*, the knife-head being hinged at *f* and *g*, all substantially as specified and shown.

3. The knife *b* and curved rod *a*, bolted to said knife, as shown, to form a connection and support, in combination with the knife-head E, connecting with the draft-irons I Q and arch F, substantially as shown and described.

4. The combination of the hub P and set-screws R R R with the spokes 1 2 3, &c., as shown in Figs. 5 and 6, said hub being plain, having neither lug nor flange, said set-screws being inserted in holes *r r r*, formed by the crossing of the spokes, and serving to press alternate spokes to opposite ends of the hub, as shown, and in combination with the spokes and tire forming a wheel, D, substantially as shown and described.

331,914. DEVICE FOR OVERCOMING DEAD-CENTERS. STEPHEN T. SHORTER, Vinton, Iowa. Filed Sept. 26, 1885. (No model.)



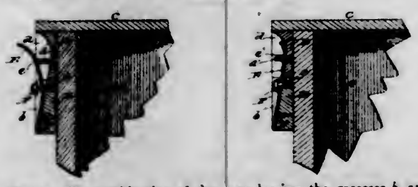
Claim.—The combination, with the crank and a treadle loosely mounted on a shaft, of an elastic rod journaled at one end to the crank, the other end bent and passed through a keeper near the forward end of the treadle, the extreme end of the bent portion being threaded, a flanged clip mounted on the treadle-shaft and secured thereto by the threaded end of said rod passing through its flanges, and nuts, one on either side of the flanges, whereby the point of contact between the keeper and rod may be relatively changed or adjusted, substantially as and for the purpose set forth.

331,915. BUTTER AND CHEESE KNIFE. JOSEPH P. SMITH, Glastonbury, Conn. Filed Oct. 8, 1884. (No model.)



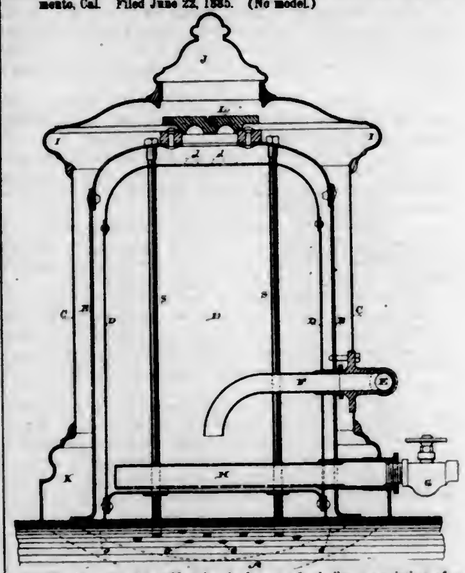
Claim.—As an improved article of manufacture, a butter or cheese knife having a blade formed of a single piece of plate metal, with an integral projection from the back of and in the plane of the blade proper, said projection being of substantially the same thickness as the blade, and having a handle at one end of the blade in the usual position, and a supplemental handle on the integral projection, all substantially as described.

331,916. COVER-FASTENER FOR EGG-CASES. WILLIAM B. SMITH, Quincy, Ill. Filed Sept. 24, 1885. (No model.)



Claim.—The combination of the case having the recesses *b*, and the spring-plates secured in the said recesses, with the cover having the recesses *d*, and with which the free ends of the spring-plates engage when the the cover is placed on the case, and the locking-screws F, having the heads adapted to bear on the spring-plates, to prevent play of the latter or to release them, substantially as described.

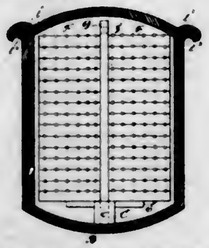
331,917. FEED-WATER PURIFIER. ANDREW J. STEVENS, Sacramento, Cal. Filed June 22, 1885. (No model.)



Claim.—1. A purifier for feed-water for boilers, consisting of an inner chamber with a closed bottom into which the water is first received, having perforations or openings in the top, an annular or surrounding chamber into which the water enters through these openings after being heated, and holes or openings at the bottom of the annular intermediate space through which the water passes into the boiler, substantially as herein described.

2. In a feed-water purifier for boilers, an outer and an inner chamber secured to or connected with the boiler, and having openings from the space between the two into the boiler, openings in the top of the inner chamber leading into the outer one, an inlet-pipe through which water is admitted to the inner chamber, and a blow-off pipe having perforations in close proximity with the bottom of the inner chamber, substantially as herein described.

331,918. UNDERGROUND CONDUIT FOR ELECTRICAL CONDUCTORS. EUGENE A. STREET and RANDALL W. FLEMING, Kansas City, Mo. Filed Oct. 27, 1884. (No model.)



Claim.—1. In an underground conduit for electrical conductors, the combination of a sectional conduit-trough having a coupling-flange at one end of each section, with a sectional cover removable in sections, having a beaded projection from the under surface of said flange and near its end, a groove made in the upper surface of the coupled end of the next section of cover and near its end to fit the aforesaid beaded projection, and two parallel grooves in the under surface of each section of cover at its sides to fit the walls of said trough and to form eaves, all substantially as described.

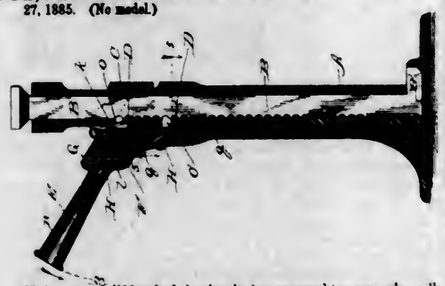
2. In a conduit for underground electrical conductors, a series of devices detachable in parts, located centrally within it and at suitable distances apart for upholding electrical conductors separate and apart from each other and in separate rows, each device being independent of the sides and top of the conduit, and consisting of a standing block placed centrally upon the bottom of the conduit-trough, a standard attachable thereto in an upright position and detachable therefrom without detaching any other part, and a series of wire-supporting arms lying horizontally and aligned one above the other, having grooves or slots for electrical conductors to rest in, each arm at its center having an opening to embrace said standard, and each one detachable therefrom and from each other without detaching any other one, for the purpose stated, and substantially as described.

3. In a conduit for underground electrical conductors, the combination of a conduit-trough with a standing block raised from the bottom thereof at its center and having a mortise in its top face, with a standard attachable in an upright position thereto by being inserted into said mortise, and with a series of wire-supporting arms lying horizontally and aligned one above the other, each arm having grooves or slots in which electrical conductors shall rest, and having at its center an opening to embrace and be detachable from said standard, and with a series of metallic upright devices placed in said conduit at suitable distances apart, so that each wire placed in said conduit shall be equally distant from said standard, for the purposes stated, and substantially as described.

4. In an underground conduit for electrical conductors, the flanged trough-section A, block C, formed integral therewith, standard D, wire-supports F, and pin E, in combination with removable cover-section O, which latter is provided with an internally-beaded flange at one extremity and an annular groove at the other for engaging the bead of a succeeding section, substantially as and for the purposes herein described.

5. A detachable arm or wire-support having grooves in its faces and an aperture in its center, for the purposes stated, and made of a non-conducting material, substantially as set forth.

331,919. LIFTING-JACK. AXEL A. STROM, Austin, Ill. Filed Oct. 27, 1885. (No model.)



Claim.—1. A lifting-jack having its bar recessed transversely, rollers to enter the recesses to raise the bar and hold it when raised, a clutch-block upon the bar and recessed to contain the lifting-roller, and means, substantially as described, for actuating the clutch, substantially as set forth.

2. A lifting-jack having its bar recessed transversely, rollers to enter the recesses to raise the bar and hold it when raised, a clutch-block upon the bar and recessed to contain the lifting-roller, means, substantially as described, for actuating the clutch, and means, substantially as described, for releasing the bar to permit its descent when raised, substantially as set forth.

3. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess, *o*, on a side adjacent to the recess in the bar, and having a slanting bottom, a loose roller within the recess *o*, a loose roller adjacent to the recesses in the bar and within a recess, *o'*, in form like the recess *o*, and provided in the standard portion of the device below the recess *o*, and means, substantially as described, for actuating the clutch, substantially as set forth.

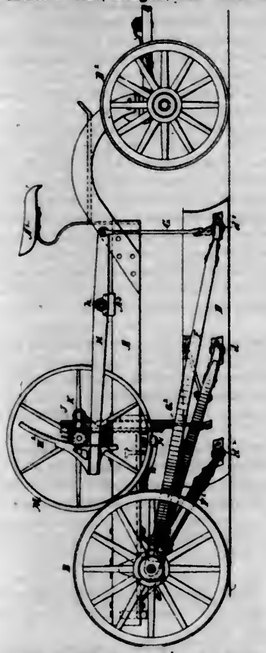
4. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess, *o*, on a side adjacent to the recesses in the bar, and provided with a slanting bottom, a loose roller within the recess *o*, a loose roller adjacent to the recesses in the bar and within a recess, *o'*, in form like the recess *o*, and provided in the standard portion of the device below the recess *o*, means, substantially as described, for actuating the clutch, and means, substantially as described, for releasing the bar to permit its descent when raised, substantially as set forth.

5. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess, *o*, on a side adjacent to the recesses in the bar, a loose roller within the recess *o*, a bifurcated lever, E, having its arms journaled to opposite sides of the clutch-block, and fulcrumed upon a shifting block, F, supported in the standard, a loose roller within a recess, *o'*, in form like the recess *o*, and provided in the standard portion of the device below the recess *o*, and means, substantially as described, for releasing the bar to permit its descent when raised, substantially as set forth.

6. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar, and provided with a recess, *o*, on a side adjacent to the recesses in the bar, a roller, D, within the recess *o*, a bifurcated rod, H, having its arms journaled upon the said roller D toward the ends of the same, and extending beyond the standard portion of the device, a roller, D, within a recess, *o'*, formed in the standard portion of the device below the recess *o*, a bifurcated rod, H, having its arms journaled upon the said roller D toward the ends of the same, and extending beyond the standard portion, and means, substantially as described, for actuating the clutch, substantially as set forth.

7. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess, *o*, on a side adjacent to the recesses in the bar, a roller, D, within the recess *o*, a bifurcated rod, H, having its arms journaled upon the said roller D toward the ends of the same, and extending beyond the standard portion of the device, a bifurcated lever, E, having its arms journaled at opposite sides of the clutch-block, and fulcrumed upon a shifting block, F, supported in the standard, a roller D, within a recess, *o'*, formed in the standard portion of the device below the recess *o*, and a bifurcated rod, H, having its arms journaled upon the said roller D toward the ends of the same, and extending beyond the standard portion of the device, the whole being constructed and arranged to operate substantially as described.

331,920. MACHINE FOR MAKING, REPAIRING, AND CLEANING ROADS. GEORGE W. TAFT, Abington, Conn. Filed May 6, 1885. (No model.)



Claim.—1. In a machine for grading and clearing roads, the combination, with a scraper bar or blade suspended from the carriage between its front and rear wheels, of thrust-bars extending from the axle or rear of said carriage, and attached to the back of said scraper near its ends by connecting-joints that permit upward and downward adjustment at each end of the scraper-blade, independent of the other, substantially for the purpose set forth.

2. In a road-grading machine, the combination of the scraper-blade, the central thrust-frame, C, connected for supporting the middle of the blade, and the push-bars F and F', connected for sustaining the ends of the blade, substantially as set forth.

3. The combination of the non-reversible scraper-blade, the triangular thrust-frame C, the push-bar F, hinged at its rear end to the carriage or axle and at its forward end to the scraper near the advance end thereof, and a lifting connection and lever, as H, for elevating and depressing the advance end of said blade and push-bar, substantially as set forth.

4. The combination, with a diagonal scraper supported in connection with a wheeled carriage and adapted for upward and downward adjustment independently at either of its ends, of an operating-wheel (or wheels) for effecting such adjustment, adapted to act as a momentum or fly wheel, as set forth, whereby the peripheral weight of said wheel is utilized to assist in the adjustment of the blade, substantially as hereinbefore explained.

5. In a machine for grading and clearing roads, the combination of a diagonally-disposed vertically-adjustable scraper-blade supported by a push-frame in rear of said blade, an elevating mechanism connected for

raising and lowering the respective ends of said blade, and a hand-wheel adapted for developing peripheral momentum carrying a pinion for imparting motion to said elevating mechanism for effecting the upward and downward adjustment of the scraper.

6. In a machine for grading, repairing, and clearing roads, the combination of a vertically-adjustable scraper-blade, a thrust-frame connected to the body or its supporting-axle in rear of said blade, a lifting-lever supported on the carriage and provided with a segment and connecting-link for raising and depressing said scraper, and a hand-wheel and pinion engaging said segment for imparting motion thereto, substantially as set forth.

7. The combination of the carriage or body mounted on front and rear wheels, the non-reversible scraper sustained by a vertically-swinging thrust-frame from the rear axle, the suspending-rod, the backwardly-extended lever provided with a gear-segment at its opposite end, the pinion meshing therewith, and the hand-wheel for operating said pinion.

8. In a machine for grading and repairing roads, the combination of a scraper-blade, push-bars for sustaining the ends of said blade hinged to permit upward and downward adjustment, blade-adjusting mechanism, with hand-wheels for imparting motion thereto, and brakes acting upon said hand-wheels for retaining said wheels and the blade at any position of adjustment, substantially as set forth.

9. In a road-grading machine, the combination, with the carriage and the hand-wheel for operating the blade-elevating devices, of the brake-lever R, fulcrumed on said carriage and provided with a presser-shoe, N, for engaging said hand-wheel, the spring *s*, and pedal P, substantially as and for the purpose set forth.

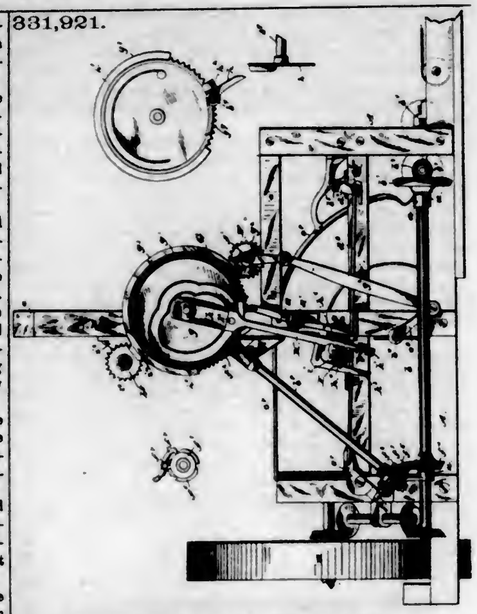
10. In a road-machine, the combination of a scraper-blade adapted for upward and downward adjustment at its respective ends, an operating hand-wheel (or wheels) connected therewith for effecting such adjustment, and a brake (or brakes) acting against said wheel to arrest movement thereof and retain the parts, substantially as set forth.

11. In a wheeled road-scraper, the combination of a scraper-blade adapted for upward and downward adjustment at its respective ends, an operating-wheel (or wheels) connected therewith for effecting such adjustment and adapted for developing peripheral momentum for throwing the blade up or down, and a brake acting against said wheel to arrest the movement thereof and retain the parts in position, substantially as set forth.

12. In a road-grading machine, the combination of the non-reversible scraper-blade, the lever H, having a gear-segment, H′, and link G, for adjusting the advance end of the said blade, the rack J, and link G′, for adjusting the rear end, and the pinions I and I′, and means of imparting motion thereto for effecting the adjustment, substantially as set forth.

13. In a road-machine, the combination, with an oblique scraper suspended beneath a carriage or body mounted on front and rear wheels, of means for imparting independent upward and downward adjustment at the respective ends of said scraper provided with hand-wheel and pinion devices for imparting movement thereto, and stops or brake devices acting in connection with said hand-wheels for retaining the parts at positions of adjustment, substantially as described.

331,921.



331,921. SELF-BINDING HARVESTER. Miles D. Taylor, Janesville, Wis., assignor of one-half to William C. Stevens, same place. Filed June 30, 1884. (Model.)

Claim.—1. In a self-binding harvester, the combination, with two horizontal shafts, each provided with one or more loose pulleys and one or more fixed pulleys, of a series of endless chains mounted on said pulleys, substantially as set forth.

2. In a self-binding harvester, the combination, with two horizontal shafts provided with sprocket-wheels carrying endless chains, some of the said sprocket-wheels being loosely mounted and others rigidly mounted on the shafts, of mechanism for revolving the shafts at different rates, and thereby driving the chains at different rates, for the purpose substantially as set forth.

3. In a self-binding harvester, the combination, with two horizontal shafts driven at different rates, of sprocket-wheels mounted in corresponding positions on the shafts, endless chains connecting each two corresponding wheels, and endless conveyers for depositing the grain within reach of the chains, substantially as set forth.

4. In a self-binding harvester, the combination, with two shafts driven at different rates of speed, one or more loose pulleys and one or more fixed pulleys mounted on each shaft, and carrying chains and provided with prongs or arms, of a floor located below the shafts, and having grooves through which the prongs on the chain pass.

5. In a grain-binding harvester, the combination, with a grain-receptacle, devices for packing the grain into said receptacle, and a spring-pressed tripping-arm adapted to be elevated by the grain as it is packed in the receptacle, of a binder-table situated in a plane above the grain-receptacle, an apron connecting the table and receptacle, lifting-arms passing through slots in the apron, and devices indirectly connecting the spring-actuated tripping-arm and lifting-arms, whereby motion is imparted to said lifting-arms, substantially as set forth.

6. In a self-binding harvester, the combination, with a grain-receptacle, a binder-platform, and a curved apron extending from the receptacle to the binder-platform, of a shaft, arms secured to said shaft, a spring-actuated shaft journaled in said arms, lifting-arms secured to the spring-actuated shaft, and guides for turning the spring-actuated shaft.

7. In a self-binding harvester, the combination, with a grain-receptacle having grooves or recesses therein, a binder-platform, and a curved apron connecting the receptacle and platform, of a shaft having laterally-projecting arms, a spring-actuated shaft journaled in said arms, guides for controlling the rotary movement of said spring-actuated shaft, and lifting-arms secured to the spring-actuated shaft, and adapted when in their lowered position to rest within the grooves or recesses.

8. In a grain-binding harvester, the combination, with a grain-receptacle, a binder-table, and a curved apron connecting the receptacle and table, of a shaft, b^3, having arms rigidly secured thereto and a spring-actuated arm movably secured thereon, a shaft, b^7, journaled in the outer ends of the rigid arms, a spring encircling the shaft b^7 and engaging one of the rigid arms, a cam secured on the shaft b^7 and adapted to engage the spring-actuated arm on the shaft b^3, lifting-arms secured to the shaft b^7, and devices, substantially as described, for controlling the rotary movement of the spring-actuated shaft.

9. In a self-binding harvester, the combination, with a receptacle provided with grooves or recesses, of a set of lifting-arms secured on a spring-actuated shaft, and means for raising the arms to the binder-platform, causing them to make a semi-revolution and then slide along the grooves to their positions therein, substantially as set forth.

10. The combination, with the grain-receptacle, spring-pressed trip-arm, and rod indirectly connecting the trip-lever and spring-pressed trip-arm, of a driving-shaft, an oblique shaft connecting the driving-shaft to the tying mechanism, the loose pinion on the lower end of the oblique shaft, and the spring-actuated dog secured to said shaft, all of the above parts combined and operating substantially as set forth.

11. The combination, with a grain-receptacle, a spring-pressed trip-arm situated within the receptacle, a trip-lever indirectly connected to the spring-actuated arm by a connecting-rod, a stop secured on said rod, a driving-shaft, tying mechanism, an oblique shaft, and gearing for transmitting the motion of the driving-shaft to the tying mechanism, of a trip-lever for moving the trigger, and the pawl for engaging the trigger and locking the lower pinion on the oblique shaft to a pinion on the driving-shaft, substantially as set forth.

12. In a self-binding harvester, the combination, with a set of lifting-arms secured on a spring-actuated shaft, said shaft being journaled in arms which are rigidly secured to a rock-shaft, of means for automatically lifting, rotating, and returning the arms to a depressed position, substantially as set forth.

13. In a self-binding harvester, a rock-shaft provided with rigid arms, a spring-actuated shaft loosely mounted in the said arms, having lifting-arms secured thereto, a spring-pressed arm secured on the rock-shaft and locking the lifting-arm shaft against rotation, a dog rigidly secured to the main frame, constructed to engage the spring-pressed arm, and thereby unlock the spring-actuated shaft, the whole arranged in the manner and for the purpose substantially as set forth.

14. The combination, with a rotary knotter, of a rotary shaft, holding-jaws located on opposite sides thereof, and devices for simultaneously moving one jaw forward and the other backward.

15. In a self-binding harvester, the combination, with a rotary knotter, of a rotary shaft, reciprocating jaws located on opposite sides of the said shaft for holding the twine, the said shaft and jaws adapted to make a semi-revolution before the tying of each knot, and thereby prevent waste of twine, and a sliding cutter located between the holding-jaws and the knotter, substantially as set forth.

16. In a self-binding harvester, the combination, with a rotary knotter, of reciprocating jaws secured in diametrically-opposite positions on a rotary shaft, and provided with end teeth which are alternately interlocked with and released from corresponding teeth on the end of a head, for the purpose substantially as set forth.

17. The combination, with a rotary knotter, of a cord-holder consisting of two diametrically-opposite toothed jaws reciprocated on a shaft by means of a cam-groove on the interior of a rotating sleeve, and rotated by means of a ratchet on the cord-holder shaft, for the purpose substantially as set forth.

18. The combination, with a knotter, of a cord-holder having upper and lower jaws, the under jaws adapted to hold the end of the cord when the needle is depressed, and the upper jaws adapted to receive the cord after it is passed about the gavel, substantially as set forth.

19. The combination, with a knotter and cord-holding jaws having a longitudinally-sliding motion on a rotary shaft, of a sector-arm adapted to move or slide the jaws when moved in one direction and rotate the shaft when moved in the opposite direction, substantially as set forth.

20. The combination, with a reciprocating sector-arm, of cord-holding jaws adapted to be rotated by the sector-arm, and a cord-cutter, also adapted to be reciprocated by the same sector-arm, substantially as set forth.

21. The combination, with a reciprocating sector-arm and sliding cord-holding jaws secured to a rotary shaft, of a sleeve having a cam-groove in contact with the sliding jaws, and a toothed rim in contact with the sector-arm, whereby the motion of the sector-arm operates the jaws, substantially as set forth.

22. The combination, with a reciprocating sector-arm, of a cord-cutter connected with the sector by an angle-lever and connecting-rod, and sliding cord-holding jaws adapted to be operated by the sector while the cutter is being returned to position, substantially as set forth.

23. The combination, with a rotary knotter and cord-holder consisting of reciprocating jaws secured on a rotary shaft, of a reciprocating knife located between the cord-holders and knotter, secured to a sliding plate, substantially as set forth.

24. The combination, with a rotary knotter consisting, essentially, of an upper jaw having a clamping under jaw pivoted thereto, and a cord-holder consisting of reciprocating toothed bars secured in grooves on a rotating shaft, of a cord-cutter reciprocated in a curved path, for the purpose substantially as set forth.

25. In a self-binding harvester, a cord-holder consisting of a shaft provided with longitudinal grooves, bars, or jaws having toothed or serrated ends and outwardly-extending lugs, said jaws being constructed to slide longitudinally in the said grooves, a loose sleeve embracing the shaft and sliding bars, said sleeve being provided with an internal cam-groove which engages the lugs on the sliding bars, and further provided with a toothed rim, a notched wheel rigidly secured on the shaft, and a head provided with toothed or serrated projections, constructed to rotate with the shaft, the whole constructed in the manner and for the purpose substantially as set forth.

26. In a self-binding harvester, the combination, with a reciprocating plate having a curved slot therein, and a twine-cutter secured to said plate, of a lug resting in the slot and adapted to cause the plate to reciprocate in a curved path, thereby bringing the edge of the knife in close proximity to the cord-holder, for the purpose substantially as set forth.

27. In a self-binding harvester, the combination, with a rock-shaft, of a needle and binder-platform secured therein in such a manner that the depression of the needle elevates the table, substantially as set forth.

28. In a self-binding harvester, the combination, with a rock-shaft, of a binder-table hinged loosely thereon, and a needle secured rigidly thereon, the table and needle being so constructed and secured upon the shaft that the needle moves independently of the table except when the table is depending, for the purpose substantially as set forth.

29. The combination, with a needle-shaft, and a needle rigidly secured thereto and provided at its heel with a projection, of a table pivoted to the shaft and adapted to be elevated by said projection, substantially as set forth.

30. The combination, with a needle-shaft and needle, of a table hinged to said shaft and adapted to be elevated by the movement of the shaft, and a spring-actuated catch for holding the free end of the table, substantially as set forth.

31. The combination, with a needle-shaft and needle, of a table pivoted to the shaft, a spring-actuated catch for holding the free end of the table elevated, and devices, operated by the mechanism which operates the tying mechanism, for releasing the catch and dropping the table, substantially as set forth.

32. The combination, with a needle-shaft, needle, and table pivoted to said shaft, of a spring-actuated catch, and devices connected to said shaft whereby the table is elevated, and devices connecting the catch to the tying mechanism whereby the table is released after the gavel is tied, substantially as set forth.

33. The combination, with a rock-shaft provided with a sleeve having a sliding motion thereon and caused to rotate therewith, and compressor-arms rigidly secured to the sleeve, of an opposing compressor having one end loosely secured on the sleeve and the other end secured in an elongated slot, substantially as set forth.

34. The combination, with a sliding frame, a rock-shaft provided with a sleeve having a sliding motion thereon and caused to rotate therewith, and compressor-arms secured to the sleeve, of an opposing compressor having one end loosely secured on the sleeve and the other end secured in an elongated slot, and devices connecting the sliding frame and sleeve whereby they are moved simultaneously.

35. The combination, with a rectangular sliding frame carrying the knot-tying mechanism, a needle-shaft having a needle secured rigidly thereon, a binder-table hinged thereon, and devices connecting the sliding frame and needle-shaft, of a shaft supporting compressor-arms, and devices connecting the sliding frame and compressor-arm shaft.

36. The combination, with the knotter mechanism, a binding-platform hinged at one end, and a yielding compressor, of mechanism connecting the knotter mechanism, yielding compressor, and binder-platform, whereby the compressor and platform are simultaneously released, substantially as set forth.

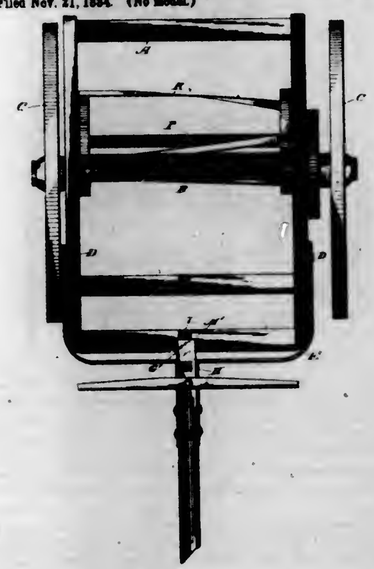
37. The combination, with a rectangular sliding frame carrying the knot-tying mechanism, and a needle-shaft having a needle secured rigidly thereon, and a binder-table hinged thereon, of devices connecting the sliding frame and needle-shaft, whereby the frame, needle, and table are moved simultaneously, substantially as set forth.

38. The combination, with a lever pivoted to the compressor-support, and compressor secured in lateral adjustment to the lower end of the lever, of an angle-bar pivoted adjacent to the lever in yielding lateral adjustment, the lower end of said angle-bar forming a lateral bearing for the compressor, substantially as set forth.

39. The combination, with a lever pivoted to the compressor-support, and the compressor secured to the lower end of the lever, of a spring-pressed yielding angle-bar pivoted in close contact with the said lever, and forming together with the lever a bearing for the compressor, substantially as set forth.

40. The combination, with a knotter-shaft terminating at its lower end in the upper jaw of the tying-bill, and a cam-grooved sliding collar secured on the shaft, of a spring-pressed sliding rod pivoted to the lower jaw of the tying-bill and adapted to follow the motion of said sliding collar, and a driving-wheel adapted to engage the cam-groove and elevate the collar, substantially as set forth.

331,922. COTTON-STALK CHOPPER. Henry Thiel, Clinton, La. Filed Nov. 21, 1884. (No model.)



331,922.



Claim.—1. In a cotton-stalk chopper, the combination of rotary cutting mechanism operating from rear to front, with fixed cutting mechanism arranged above the same, and a system of gearing for operating the same from the ground-wheels, substantially as specified.

2. In a cotton-stalk chopper adapted to straddle a row of cotton, the combination of a series of rotary knives, a fixed knife or knives arranged substantially above the same, and devices for revolving the rotary knives from rear to front, substantially as specified.

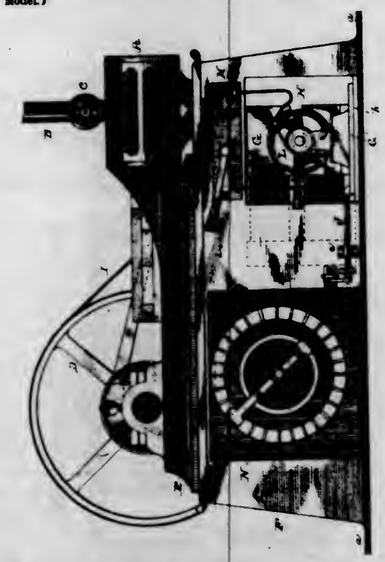
3. The combination of the frame A, standards P^1, the wheel C, axle B, master-gear B′, pinion B^2, shaft P, rotary cutters R, mounted thereon, the fixed cutter S, mounted on the frame, the combination being and operating substantially as specified.

331,923. CAN-OPENER. Robert G. Tippett, Reading, Pa., assignor of one-half to Daniel Madlem, same place. Filed Sept. 21, 1885. (No model.)



Claim.—In a can-opener, the combination of the bar B, hub C, and the disk-cutter G, revolving upon the hub-bearing C′, concentric with said bar, and secured upon said hub by the collar D being movably adjustable upon the bar by key F, in contact with surface B′, substantially as shown, described, and for the purpose set forth.

331,924. COMBINED ENGINE AND DYNAMO-ELECTRIC MACHINE. Jonathan H. Vail, New York, N. Y. Filed July 11, 1885. (No model.)



Claim.—1. The combination, with an engine and a hollow base, of a dynamo-electric machine mounted upon an extension of the base, at the cylinder end thereof, the shaft of the dynamo being arranged transversely with relation to such hollow base, and projecting clear from the opposite sides of such base, a commutator at one end of such dynamo-shaft open to access, and a pulley at the other end of such dynamo-shaft connected by a belt with the driving-wheel of engine, substantially as set forth.

2. The combination, with an engine and a hollow base upon which it is mounted, of a dynamo-electric machine within the base, driven by a belt from the engine and mounted on runners, screws adjusting the dynamo-electric machine to tighten the belt, and a mechanism turning said screws and operated from one side of base, substantially as set forth.

3. The combination, with an engine having the operating-wheel of its throttle-valve located upon the side opposite the driving-wheel, and a hollow base upon which said engine is mounted, of a dynamo-electric machine mounted upon runners on an extension of said base, at the cylinder end thereof, the shaft of the dynamo being arranged transversely with relation to said base, and projecting clear from the opposite sides of such base, a belt connecting the driving-wheel of engine and pulley of dynamo on one side of base, the dynamo-commutator open to access on other side of base, adjusting-screws for moving dynamo to tighten belt, and mechanical connections for adjusting said screws from the side of base opposite driving-belt, substantially as set forth.

331,925. SOLE-FASTENER. Albert Van Wagenen, Boston, Mass. Filed Apr. 3, 1885. (No model.)



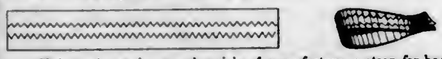
Claim.—As an improved article of manufacture, the herein-described sole-fastener, consisting, essentially, of a sheet-metal strip corrugated or indented and folded into tubular form, the corrugations or indentations appearing on the periphery of the fastener, substantially as described.

331,926. SOLE-FASTENER. Albert Van Wagenen, Boston, Mass. Filed Apr. 3, 1885. (No model.)



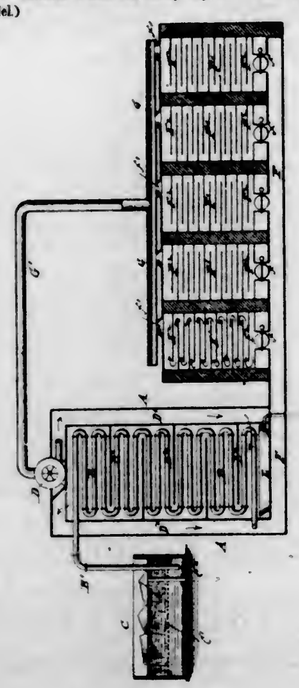
Claim.—The herein-described sole-fastening material, composed of a wire core enveloped by an indented or corrugated metallic strip, all substantially as described.

331,927. STRAP FOR BOOTS OR SHOES. Jos. Walden, Orange, N. J. Filed Apr. 4, 1885. (No model.)



Claim.—As an improved article of manufacture, a strap for boots or shoes, made from a blank of suitable material, of even width folded from each side, its edges meeting at the center and held in place by cross-stitches, either with or without a lining, all substantially as described.

331,928. APPARATUS FOR COOLING AIR FOR CONFECTIONERS' USE. Charles Weinspach, Jersey City, N. J. Filed July 25, 1885. (No model.)



Claim.—1. The combination of a closed air-cooling box, a coil or system of cooling-pipes located in the same, a cold-water tank connected to the cooling-coil, a number of refrigerating chambers or cabinets, an air-forcing apparatus, a distributing-chamber connecting the cooling-box with the cabinets, and channels for connecting the air-forcing apparatus with the cooling-box and the drying-chambers, substantially as set forth.

2. The combination of a closed air-cooling box having interior diaphragms extending alternately from opposite walls, a coil or system of pipes located in said box between said diaphragms, a cold-water tank connected with said system of pipes, an air-forcing apparatus, a channel for connecting the air-forcing apparatus with the cooling-box, a distributing-channel, a series of refrigerating chambers or cabinets having alternating shelves, a suction-chamber communicating with the top of the cabinets, and a suction-pipe leading to the air-forcing apparatus, substantially as set forth.

3. An apparatus for cooling air, a closed air-cooling box having an interior coil or system of pipes, a drip-pan at the bottom of the same, and alternately-arranged diaphragms for conducting the air in a circuitous course over the pipes, substantially as set forth.

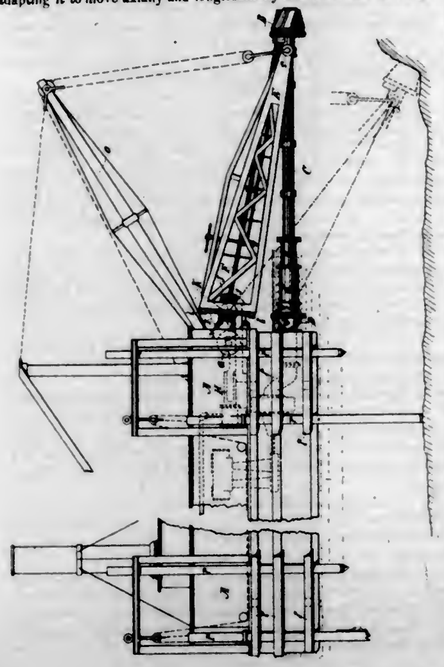
4. In an apparatus for cooling air, a cold-water tank having a grating or shelf for the ice and an adjustable overflow-pipe, substantially as set forth.

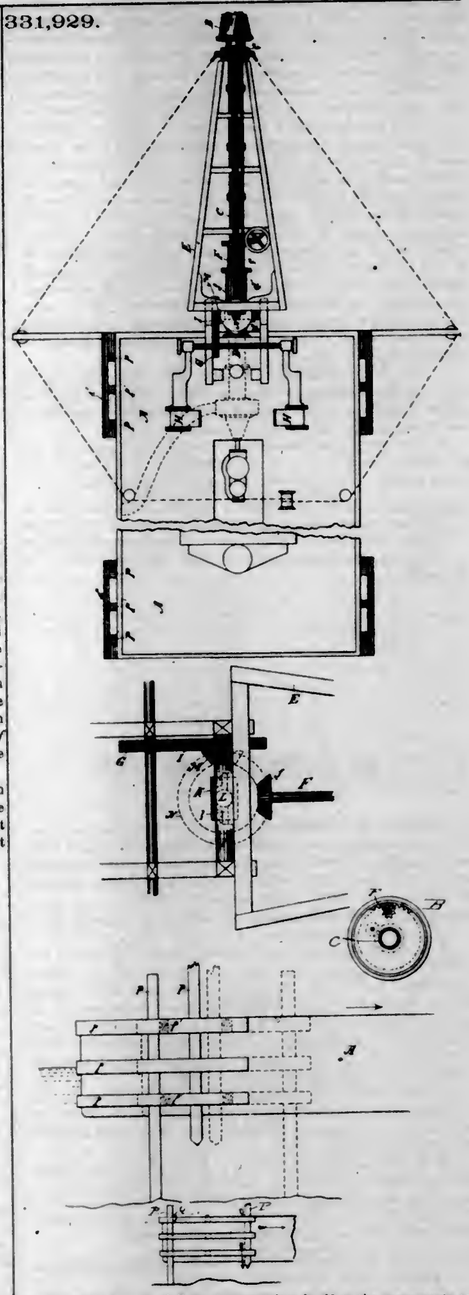
5. In an apparatus for cooling air, a refrigerating chamber or cabinet having perforated or wire shelves attached alternately to the opposite side walls, substantially as set forth.

331,929. DREDGER. John N. S. Williams, San Francisco, Cal., assignor of two-thirds to John H. Bellen, same place. Filed July 29, 1885. (No model.)

Claim.—1. In a dredger having a rotary cutter and a suction-pipe communicating therewith, the means by which the cutter is driven and its adjustments directed, consisting of the trussed boom E, pivoted at its outer end to the suction-pipe, the lay-shaft F, supported by the trussed boom and connected at its outer end by suitable gearing with the cutter, whereby it is adapted to drive said cutter, and the system of gears and shafts at the inboard end of the boom and lay-shaft, comprising the fixed intermediate shaft, J, the sleeve K, pivoted on said shaft and having a shaft, L, at right angles on which the boom is pivoted, the pinion G on the engine-shaft, the spur-gear wheel I, loose on the intermediate shaft and having beveled pinion M, the idler beveled wheel N, loose on the shaft L and meshing with the pinion M, and the beveled pinion *f* on the rear end of the lay-shaft, all arranged and adapted to operate substantially as herein described.

2. In a dredger, the rotary cutter adapted to be adjusted through arcs in vertical and horizontal planes, in combination with a suction-pipe communicating with the cutter and having a telescopic or sliding joint adapting it to move axially and longitudinally and a ball-and-socket joint





adapting it to move radially to accommodate itself to the movements or adjustment of the cutter, substantially as herein described.

3. In a dredger, the combination of a rotary cutter and a pivoted trussed boom directing said cutter and adapted to be adjusted in arcs in horizontal and vertical planes, as described, with the suction-pipe C, communicating with the cutter and having a telescopic joint, whereby it may move axially or longitudinally, and a ball-and-socket joint adapting it to move radially to accommodate itself to the movements of the cutter, substantially as herein described.

4. In a dredger having a rotary cutter, the trussed boom E, pivoted to the cutter and to the scow and adapted to be adjusted through arcs in vertical and horizontal planes to direct the cutter, and the lay-shaft F

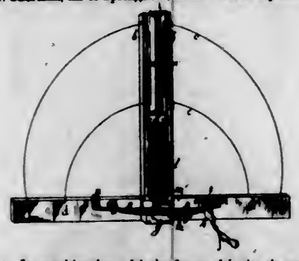
on the boom, connected at its outer end and driving the cutter through suitable gears, and a system of gears by which power is transmitted from the engine to the inner end of the lay-shaft, as described, in combination with the suction-pipe C, communicating with the cutter, said pipe having a telescopic joint and a ball-and-socket joint adapting it to accommodate itself to the adjustments of the cutter, substantially as herein described.

5. In a dredger having a rotary cutter, the means by which the cutter is driven and its adjustments directed, consisting of the trussed boom E, the lay-shaft F thereon and connecting at its outer end by suitable gearing with cutter, and the system of shafts and gears at the inboard end of the boom and lay-shaft, comprising the fixed intermediate shaft, J, the sleeve K, pivoted thereon and having shaft L, on which the boom is pivoted, the pinion G on the engine-shaft, the spur-gear wheel I, loose on the intermediate shaft and having beveled pinion M, the idler beveled wheel N, loose on shaft L and meshing with pinion M, and the beveled pinion *f* on the rear end of the lay-shaft, all as described, in combination with the suction-pipe C, communicating with the cutter, said pipe having a telescope joint and a ball-and-socket joint adapting it to accommodate itself to the adjustments of the cutter, substantially as herein described.

6. In a dredger, a double set of spuds, P, located in pairs, each in a slot, whereby one of the pair may be hoisted and moved to a fresh position in readiness to be dropped while the other holds the boat or scow, substantially as and for the purpose herein described.

7. In a dredger, the transversely-divided or double guide-slots *p* at the corners of the boat or scow, in combination with the spuds P, one in each portion of each guide-slot, substantially as herein described.

331,930. MUSIC-LEAF TURNER. Lewis E. Williams, South Deerfield, and Francis J. Miller, Springfield, Mass.; said Lewis E. Williams assignor to said Francis J. Miller, John D. Miller, Thomas D. Miller, and William G. Sherman, all of Springfield, Mass. Filed May 12, 1884. (No model.)



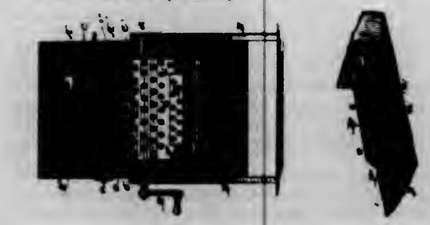
Claim.—1. In combination with the frame *d b*, the clamps *a a'*, one of which is hinged to the standard of the frame and connected to the other clamp by contractile springs *i* at the ends thereof, the angular turning-bars *l*, having their stems secured in the frame-standard, and the holding and releasing means consisting of the body *h*, the part *t*, spring-catch *s*, the bolt *p*, provided with the spring *r*, and the finger-lever *j*, substantially as described.

2. In combination, the frame consisting of the cross-piece *d*, provided with guiding-bars *m*, arranged side by side, and the standard *b*, chambered in its upper face to receive the stems of the turning-bars, the clamps comprising the plate *a*, hinged to the standard of the frame, and the plate *a'*, adjustably attached to the hinged plate by contractile springs *i*, the angular turning-bars having their stems anchored in the standard of the frame, and a holding and releasing lever, substantially as described, and for the purpose stated.

3. In combination with the frame of a music-leaf turner, and the leaf-turning bars thereof, a holding and releasing means consisting of the body *h*, the part *t*, spring-catch *s*, bolt *p*, with spring *r*, and operating-lever *j*, substantially as described.

4. In combination with the frame of a music-leaf turner, the leaf-clamping means herein described, consisting of a plate, *a*, pivotally secured to the back of the frame, and a counterpart plate, *a'*, attached to the pivoted plate by contractile springs and held in adjustable connection therewith, substantially as and for the purpose stated.

331,931. WASHING-MACHINE. John W. Woodruff, Mitchell, Dak. Filed June 12, 1885. (No model.)

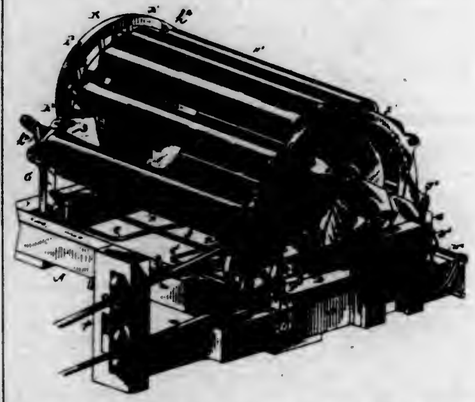


Claim.—1. A washing-machine consisting of an inclosing water-box, and a perforated cylinder to receive the clothes, and provided with a series of boxes projecting into the cylinder, and having at each end a bucket, substantially as and for the purpose set forth.

2. In washing-machine, a clothes-receiving cylinder made in two parts, the body of the cylinder having perforations *a'*, a series of inwardly-projecting boxes made V or cone shaped, their apexes having perforations, and bucket F at each end of the boxes, substantially as and for the purpose set forth.

3. In a washing-machine, a cylinder consisting of two parts, C C', the body of the cylinder having perforations for the entrance of water or steam, a series of internal and inwardly-projecting boxes, E, perforated at the apex, and buckets at each end consisting of a horizontal and vertical plate, and openings *h* from the cylinder to the boxes, substantially as and for the purpose set forth.

331,932. BALING-PRESS. Thomas M. Workman, Clinton, S. C., assignor of one-half to Joseph A. Bailey, same place. Filed June 4, 1885. (No model.)



Claim.—1. A baling-press composed of sections of rollers forming a cylindrical receptacle for the material to be pressed, the said sections hinged together, whereby the cylinder is adapted to be opened and the rollers maintained in the same circumferential line during the process of pressing, substantially as described

2. In a baling-press of the character described, the rollers arranged in sections and mounted on crank-shafts, in combination with the circular crank-lever divided into segments and hinged together, and the driving mechanism whereby all the rolls are rotated simultaneously when the press is either open or closed, substantially as described.

3. The rollers arranged in a circle to form a cylinder for the reception of the material to be compressed, in combination with the mechanism for revolving the rollers, and the revolving circular plates within said cylinder to form the flat ends of the bales, substantially as described.

4. In a press of the character described, comprising rollers forming a cylindrical receptacle for the material to be pressed, the rollers at one end set out beyond the others to form the mouth or opening into which the material is fed, and wherein bagging and ties are introduced for completing the bale, substantially as described.

5. A baling-press provided with rollers arranged in a circle to form a cylinder within and by which the material is compressed, and having the lower frame, G, provided with legs, in combination with the levers of an ordinary platform-scale, on which the legs of said frame G rest, substantially as and for the purpose described.

6. The combination, with the frame of the press, of the crank-rod carrying the latches, and the upper hinged part, whereby the press is held closed when necessary, substantially as described.

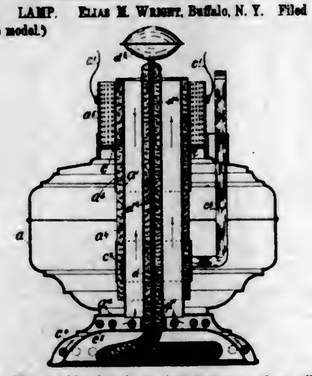
7. The baling-press herein described, comprising the rollers H and their supports, the jointed circular crank-lever J, and the crank-rods on which the rollers are mounted, in combination with the gearing and the crank-rod of one of the rollers, whereby all the rollers and the said crank-lever are given their motion from said crank-rod, substantially as described.

8. The combination, with the baling-press, of the driving-belt and pulleys, and the horizontal pivoted brace, whereby the belt is guided and maintained in a horizontal position and undue pulling strain on the press is prevented during the operation of weighing, substantially as described.

9. In combination with the press, a weighing-scale, the scale-beam of which is provided with a bell and the driven pulley O', provided with a pin, whereby, when the bale obtains the required weight, the beam is raised, the bell brought against said pin, and the signal given, substantially as described.

10. The baling-press herein described, comprising, in combination, the platform-scale on which the press is supported, the rollers H, constituting the cylinder, the frame G, the segments I, and the jointed circular crank-lever J, for supporting and driving the rolls, the hinged circular revolving plates for forming the heads of the bales, the guides for preventing the material from passing back of the said plates, the latch device for closing the cylinder, and the mechanism for driving the press, substantially as described.

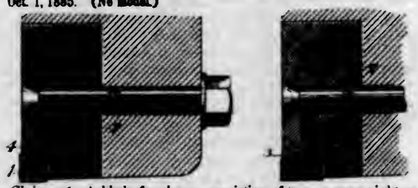
331,933. LAMP. Elias M. Wright, Buffalo, N. Y. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination, in an Argand lamp, of an oil-reservoir, a central tube extending through the same, a water-reservoir below the oil-reservoir, a capillary wick-tube extending through the central tube and communicating with the said water-reservoir, a button having a heat-transmitting stem extending through or partly through the wick in said capillary wick-tube, and a wick connecting with the oil-reservoir, substantially as and for the purposes specified.

2. An Argand lamp consisting of an oil-reservoir, a central tube extending through the same, and adapted to receive the usual tubular wick, a water-reservoir below the oil-reservoir, a capillary wick-tube extending through the central tube and adapted to receive a hollow wick and communicate with the said water-reservoir, and a button having a heat-transmitting stem adapted to pass into said wick and water-tube, as and for the purposes described.

331,934. BLADE FOR SHEARS. Henry Aiken, Pittsburg, Pa. Filed Oct. 1, 1885. (No model.)



Claim.—1. A blade for shears, consisting of two or more right-angular or approximately right-angular steel bars or shearing members united in an integral structure by a web or connecting portion, substantially as set forth.

2. A shearing-blade having in combination two or more right-angular or approximately right-angular shearing parts or members and a groove or recess back of the cutting-edge of each such member, such grooves or recesses being of like construction in each blade and in like relationship to the contiguous cutting-edge, whereby to provide a means of securing the blade to the jaws of the machine in reversed positions, substantially as set forth.

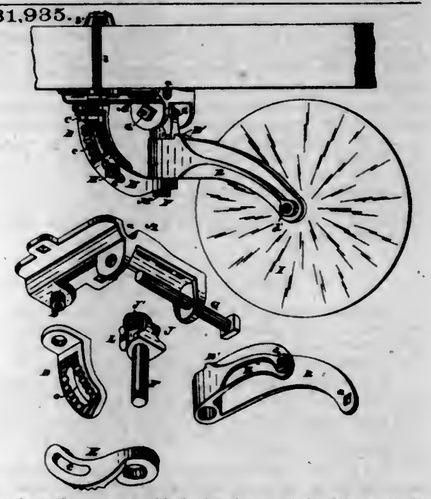
3. A shearing-blade having two or more right-angular or approximately right-angular shearing parts or members united by a web or connecting portion grooved or recessed, as described, in combination with a shoe having a supporting-flange and a clamping-plate having a retaining-rib, said flange and rib being constructed to fit the grooves or recesses in the blade, substantially as set forth

4. A shearing-blade having in combination two or more right-angular or approximately right-angular shearing parts or members united at contiguous corners in an integral structure and a groove or recess back of each part or member, such grooves or recesses being of like construction in each blade and in like relationship to the contiguous cutting-edge, substantially as set forth.

331,935. ROLLING COLTER. Lorenzo D. Ball and John T. Bender, Canton, Ohio. Filed July 29, 1885. (No model.)

Claim.—1. The combination of the frame A, provided with the attached arm B, having a segmental slot, *c*, the rotary colter having its supporting-arms connected with and laterally adjustable on the frame, the

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curved arm E, connected with the attachment of the colter-supporting arms K, the frame, and the clamping-bolt connecting the curved arm to the slotted arm, substantially as described.

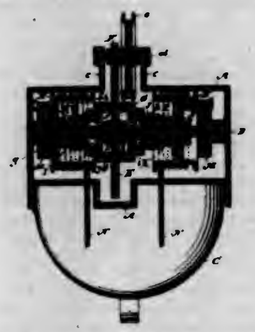
2. The combination of the frame A, having an arm, B, the king-bolt F, connected with the frame, the rotary colter having its supporting-arms mounted on the king-bolt, and the curved arm E, adjustably connected at one end with the arm on the frame and at the other end secured to the lower end of the king-bolt, substantially as described.

3. The combination of the frame A, having the transverse bolt or bar G, and pendent arm B, provided with a segmental slot, *c*, the king-bolt F, adjustable along the bolt or bar, the colter-supporting arms mounted on the king-bolt, the curved arm E, connected with the king-bolt, and the clamping-bolt H, substantially as described.

4. The combination of a frame, A, carrying a transverse bolt or bar, G, the king-bolt F, having a head, J, adjustable along said bolt or bar, a set-screw, L, for clamping the head to the bolt or bar, and the colter-supporting arms mounted on the king-bolt and movable laterally thereon, substantially as described.

5. In a rolling-colter, the combination of the curved arms B and E, of the king-bolt F, provided with the head J and having the set-screw L, of the bolt or bar G and the colter-arms K K, substantially as and for the purpose specified.

331,936. CASH-CARRIER. Thomas E. Barrow, Mansfield, Ohio. Filed May 8, 1885. (No model.)



Claim.—1. A cash-carrier consisting, essentially, of a frame mounted on wheels and a receptacle secured thereto, rotary drums located within the frame and having cords wound thereon, springs secured to the drums, and intermediate gearing for connecting the drums with the wheels and propelling the carrier in either direction, substantially as set forth.

2. The combination, with a frame mounted on wheels and a receptacle secured thereto, of drums secured in a stationary screw-threaded shaft located within the frame, springs secured to the drums and shaft, gear-wheels connecting the drums with said former wheels, and cords wrapped around said drums, substantially as set forth.

3. The combination, with a frame mounted on carrying-wheels and

a receptacle secured thereto, of drums secured on a stationary screw-threaded shaft located within the frame, springs secured to the shaft and drums, a wheel provided with an internal and external gear, sliding blocks secured to the hubs of said drums and provided with pawls adapted to engage with said internal gear, springs located between the drums and blocks, a pinion connecting the spindle of the carrying-wheel with said former wheel, and cords wound on drums, substantially as set forth.

4. The combination, with the frame A, wheels *b a*, and receptacle C, of the shaft D, drums H, blocks J, springs K M, wheels E F G, and cords N, all of the above parts combined and adapted to operate substantially in the manner and for the purpose set forth.

331,937. PERFUMER. William H. Ryder, Franklin, Pa. Filed Feb. 6, 1885. (No model.)

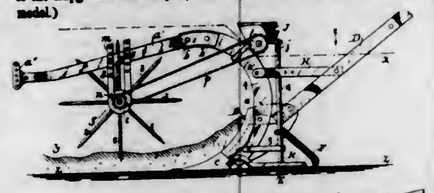


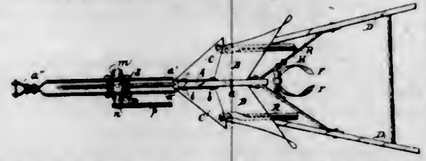
Claim.—1. A perfumer consisting, essentially, of a receptacle provided with an annular groove for securing it to the person or dress, the said receptacle being adapted to retain the liquid against spilling, and having a permanently-open mouth, substantially as set forth.

2. A perfumer consisting, essentially, of a receptacle provided with an annular groove for securing it to the person or dress, the said receptacle having a funnel-shaped depressed mouth, whereby the liquid perfume may be introduced without forcing, and is retained against spilling, substantially as set forth.

3. A perfumer consisting, essentially, of a receptacle provided with an annular groove adapting the said receptacle to use as a button, stud or charm, and having a depressed permanently-open mouth for receiving and retaining the liquid perfume, substantially as set forth.

331,938. PLANTING-PLOW. Joseph P. Black, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Aug. 10, 1885. (No model.)





Claim.—1. The beam A, its rear part consisting of a single bar bent curved and supporting the mold-board and share, its front part consisting of two bars having their front ends joined and supporting a clevis, their rear ends embracing the said rear part and rigidly attached thereto, and a suitable space between the said two bars to admit an operating-wheel, in combination with a listing-plow provided with seed-planting mechanism and an operating-wheel, all substantially as and for the purpose set forth.

2. The sprocket-wheel S, consisting of a hub provided with spokes rigidly attached thereto, and having their outer ends pointed, and the two hangers *m m*, adjustable up and down, in combination with the beam A, having its rear part of a single bar, and its front part of two bars, and with a listing-plow provided with a drill-tooth and covering-blades, all substantially as and for the purpose set forth.

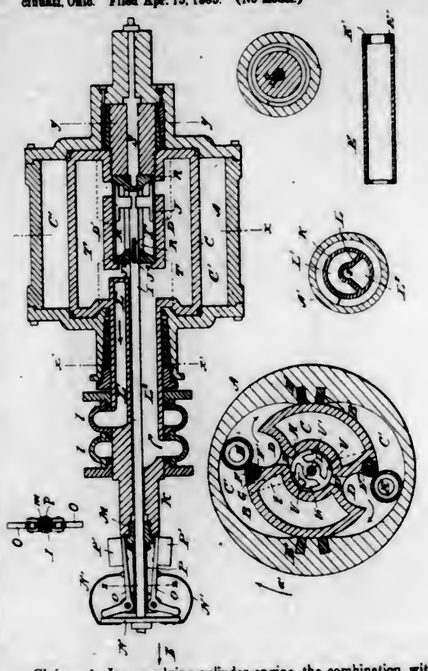
3. In a planting-plow, the combination of the sprocket-wheel S, the hangers *m m*, pulley *n*, and belt *p*, with the beam A, provided with and carrying the share C, the mold-board B, the seed-box J, seed-pipe G, drill-tooth E, covering-blades F, and handles D, all constructed and arranged to operate substantially as and for the purpose specified.

4. The runner R, consisting of a bar having its front end bent upwardly and adapted to slide upon the bottom of the furrow, and having at it front end the lug adapted to connect the share and mold-board, substantially as and for the purpose set forth.

5. The brace-frame H, consisting of two flat bars, 1 1, having their ends bent, perforated, and attached to the beam and handles, the cross-bar 2, and the cap 3, embracing the seed-pipe and connected to the said bars 1 1, all constructed, arranged, and adapted to operate substantially as and for the purpose set forth.

6. In a planting-plow, the combination of the open bar-beam A, the sprocket-wheel S, the shares C, mold-boards D, the seed-box J, seed-pipe G, drill-tooth E, and covering-blades F, the brace-frame H, and handles D, all substantially as and for the purpose set forth.

331,939. REVOLVING-CYLINDER ENGINE. John J. Blair, Cincinnati, Ohio. Filed Apr. 15, 1885. (No model.)



Claim.—1. In a revolving-cylinder engine, the combination, with a fixed piston and a revolving cylinder surrounding it, of a cylindrical chamber in the piston, a sliding valve in the said chamber, a rod connected with the revolving cylinder and the sliding valve, a sleeve surrounding one end of the rod, weighted levers on the sleeve, and a plate on the end of the said rod, against which plate the ends of the weighted levers rest, substantially as herein shown and described.

2. In a revolving-cylinder engine, the combination, with a fixed piston and a revolving cylinder surrounding it, of a cylindrical chamber in the piston, a sliding valve in the chamber, a rod connected with the sliding valve and the revolving cylinder, the plate N on the end of the rod, the sleeve P, surrounding the rod, the weighted angle-levers O, pivoted on the sleeve, and the springs N', secured to the levers and to the disk N, substantially as herein shown and described.

3. In a revolving-cylinder engine, the combination, with the piston C and the cylinder A, of the sliding valve J in the bore of the piston, the rod I, having the slot I', the frame R, connected with the cylinder, the pin J^3, held in the frame R and passed through the slot I' of the rod I, and a governor on the end of the rod I, substantially as shown and described.

4. In a revolving-cylinder engine, the combination, with the fixed piston C, having grooves D, of the revolving cylinder A and the rolling valves E, substantially as herein shown and described.

5. In a revolving-cylinder engine, the combination, with the fixed piston C, having grooves D, of the revolving cylinder A, the rolling valves E, and the rollers F, pivoted adjacent to the grooves D, substantially as herein shown and described.

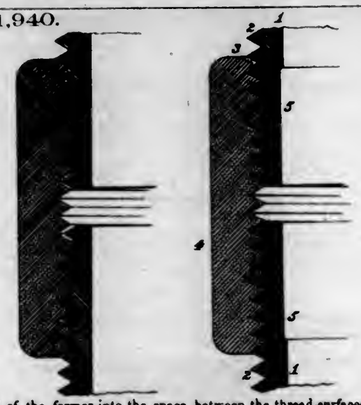
6. In a revolving-cylinder engine, the combination, with a fixed piston, C, of the revolving cylinder A, the sliding revolving valve J, having recesses U', and the cut-off valves U, placed in the said recesses, substantially as herein shown and described.

7. In a revolving-cylinder engine, the combination, with the fixed piston C, having grooves D, from which ports D' lead to the bore of the piston, of the sliding revolving valve in the bore, a rod on which the sliding revolving valve is mounted, a governor connected with the said rod, and of the rolling valves E, substantially as herein shown and described.

331,940. METHOD OF COUPLING PIPES. William A. Bole, Pittsburg, Pa., assignor of one-half to Ralph Bagaley, same place. Filed Jan. 17, 1885. (No model.)

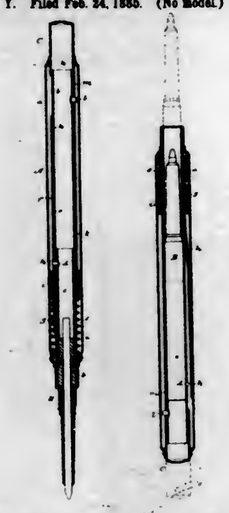
Claim.—The improvement in the method of coupling pipes which consists in first effecting the engagement of a pipe-section with a coupling-socket by screwing an external thread upon the pipe-section into an internal thread upon the socket, and thereafter forcing the helical surfaces of the pipe-section and socket into close contact by expanding the

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thread of the former into the space between the thread-surfaces of the latter by the application of internal pressure, substantially as set forth.

331,941. DROP-MOVEMENT FOR POCKET UTENSILS. Stephen M. Broughan, Brooklyn, assignor to the Standard Pencil Company, New York County, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination of a tubular casing, A, a drop, B, sliding into one end of said casing, a cap, C, arranged at the other end thereof, a locking-spring, *f*, for said drop attached to the casing and tending to spring outward away from said drop and release the latter, a locking-slide, *i*, connected to the cap C, and adapted to move longitudinally and to engage the locking-spring and press the same inward, and a spring, *g*, acting to force said slide into engagement with said spring, substantially as set forth, whereby the pressing in of said cap acts to disengage said slide from the locking-spring, and thereby to unlock the drop.

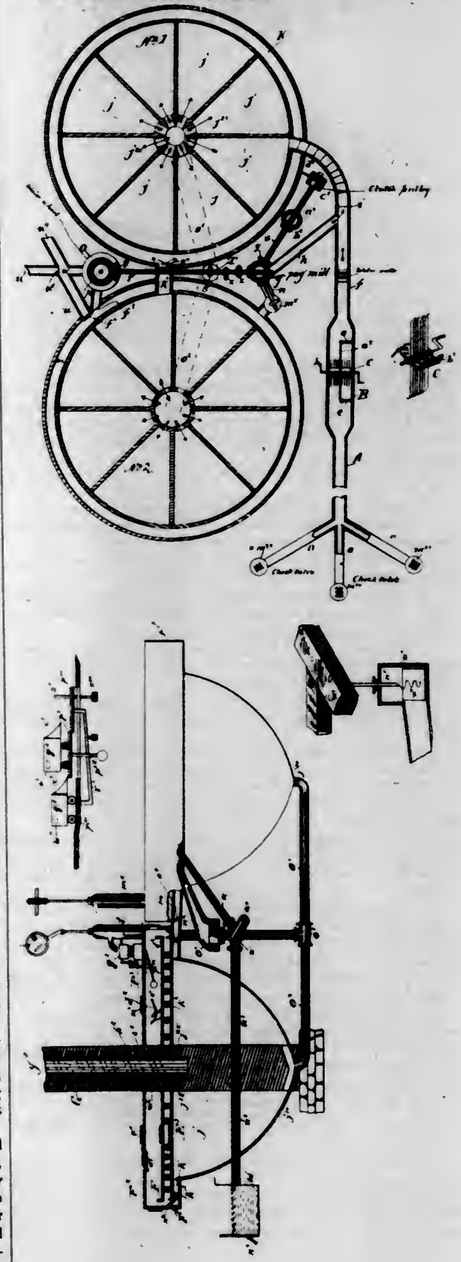
2. The combination of a tubular casing, A, consisting of outer and inner tubes, drop B, sliding into one end of said casing in said inner tube, a cap, C, arranged at the other end of said casing, a locking-spring arranged longitudinally in the space between said inner and outer tubes and normally springing outwardly, two locking provisions on said spring at a distance apart equal to the play of the drop and engaging a reciprocal provision on the drop, a slide, *i*, adapted to move longitudinally and to engage the locking-spring and force it inward to lock the drop, tube *k*, connecting said slide *i* to said cap C, and a spring, *g*, pressing said slide into engagement with the locking-spring, substantially as set forth.

3. The combination of a tubular casing, A, consisting of outer and inner tubes, drop B, sliding into one end of said casing in said inner tube, a locking-spring arranged in the space between said outer and inner tubes, and adapted to engage and lock said drop in either extreme position of the latter, a sliding tube, *k*, arranged in the space between said outer and inner tubes with one end extending out at the end of the casing and closed to form a cap, C, a disengaging device for the locking-spring connected to said tube, and a spring *g*, acting to press said tube and cap outward, substantially as set forth.

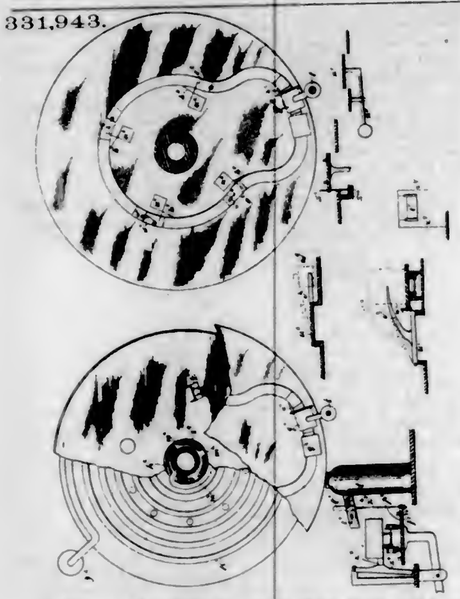
331,942. TANNING HIDES AND SKINS. Thomas R. Clark, New York, N. Y. Filed May 9, 1885. (No specimens.)

Claim.—Tanning hides and skins by the repeated application thereto of the within-described compound of carbonate of potash, water, and animal oil, to be ingrained therein and fixed and oxidized by repeated workings and intermediate exposures to the air, substantially in the manner and for the purpose herein set forth.

331,943. APPARATUS FOR COLLECTING AND DRYING SEDIMENTARY MATTER OF SEWAGE. Robert Corscaden, Providence R. I. Filed Mar. 31, 1884. (No model.)



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Claim.—1. The combination, with devices for settling, drying, and reducing the sedimentary matter of sewage, of the sewer divided by one or more parallel walls into two or more passages, said passages merging again into the sewer, gates governing the flow of the sewage therethrough, and screens for separating intractable matter from the sewage, as set forth.

2. The combination, with the sewer, of the revolving screen *b*, as set forth.

3. The screen *b*, having the discharging troughs b^3, as set forth.

4. The series of sector-formed settling-tanks, in combination with the central distributing-channel and the sewer, as set forth.

5. The combination of the radially-arranged settling-tanks, the pier, the radial ducts, and the sludge-ducts o^2, as set forth.

6. The combination of two or more series of radially-arranged catch-basins, ducts converging therefrom to the sludge-ducts o^2, the latter converging also to a connection with the pump, as set forth.

7. The combination of the radially-arranged settling-tanks, distributing-channels from one thereof to all the rest, and the circular effluent-drain surrounding the series, as set forth.

8. The effluent-drain *m*, provided with two adjacent discharges, and a gate adapted to open one and close the other, as desired, as set forth.

9. In an apparatus for treating sewage and discharging its effluent into tide-water, the combination, with the union *u'*, the reservoir and its connecting-pipe, and the pipe discharging to the bay, of the gate and its actuating-float to open one of said pipes and close the other, according to the state of the tide, substantially as set forth.

10. In an apparatus for treating sewage, the combination, with the effluent-drain *m*, of the water-wheel, the gearing and shafts connected therewith, the pumps, the mills, and the clutch-pulley, substantially as set forth.

11. The combination, with the covering-floor provided with openings and covers therefor, of the bars r^3, attached to said covers, the track running adjacent to said openings, the fixed inclined bars b^3, and the car having the nose x^3 and the latch w^4, substantially as described.

12. The combination of the pump and the car, of the overbalanced platform p^3 and holding devices, substantially as set forth.

13. The combination of the platforms p^{30} p^{31}, the tilting lever r^3, and the yielding prop, substantially as set forth.

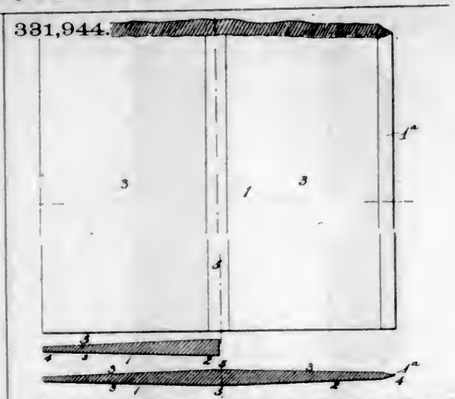
14. The combination, with the track, of the overbalanced rising and falling section thereof, and the car, substantially as set forth.

15. The combination, with the settling-tanks of the sewer, a meter therein, and mixing devices, as set forth.

331,944. NAIL-PLATE. JOHN COYNE, Allegheny, Pa. Filed Sept. 24, 1885. (No model.)

Claim.—1. A nail-plate having its side faces parallel to each other through so much or such part of the width of the plate as is necessary for the formation of the nail-head by a subsequent upsetting action, and having its sides 3 inclined toward each other from the parallel-sided portion to the edge of the plate, substantially as set forth.

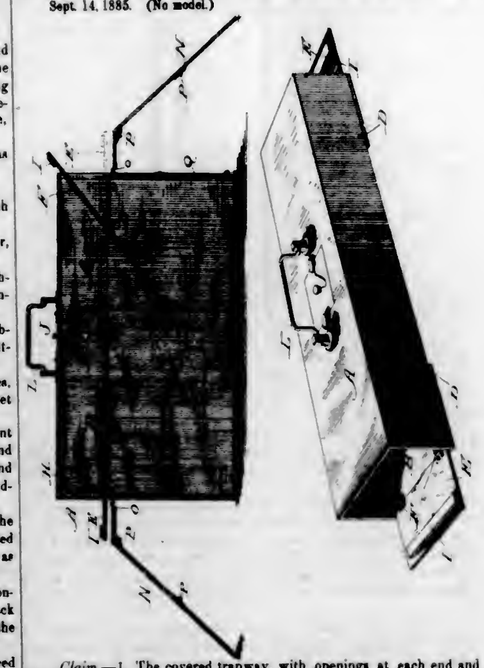
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2. A nail-plate having its middle portion, 5, formed with parallel sides, the remaining portion 3 of said sides inclining toward each other from said middle portion to the edges of the plate, substantially as set forth.

3. A nail-plate having its middle portion formed with parallel sides 3, and ribbed, as described, the sides of the plate on each side of the middle being made tapering to the edges of the plate, substantially as set forth.

331,945. ANIMAL-TRAP. CHARLES M. CROWE, Chicago, Ill. Filed Sept. 14, 1885. (No model.)



Claim.—1. The covered trapway, with openings at each end and tilting doors in the floor, said tilting doors having hinged extensions beyond the ends of the covered way, which, when turned up, will close the ends of the trapway, substantially as shown and described.

2. The covered trapway, with openings at each end and tilting doors in the floor, said tilting doors having hinged extensions beyond the ends of the covered way, which, when turned up, will close the ends of the trapway, substantially as shown and described.

331,946. FASTENING DEVICE FOR GLOVES, &c. GEORGE E. DANFORTH, Boston, Mass. Filed July 11, 1885. (No model.)



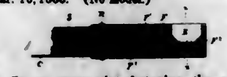
Claim.—In a glove or other fastener, the combination of base A, having receptacle *a*, slide B, having receptacle *b*, and bar D, substantially as described.

331,947. WASH-BASIN AND TRAP. WALLACE I. DEWOLF, Chicago, Ill. Filed Sept. 19, 1885. (No model.)



Claim.—In a wash basin or tub, the basin B, overflow-chamber C, arm *a*, partition A, rod R, handle *h*, stopple S, and waste-pipe *w*, and vent *v*, in combination with trap T, all arranged and constructed substantially as described, and for the purpose specified.

331,948. APRON-SLAT FASTENING. WILLIAM F. DEKINSON, Peoria, Ill. Filed Mar. 10, 1885. (No model.)

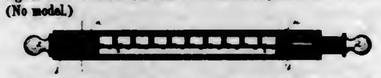


Claim.—1. In an apron-slat fastening, the combination of the apron, the apron-slat, and the strap having one end thereof secured to the slat below the apron, the medial portion thereof bent up against the end of the slat and its other end bent down upon the upper face of the slat, and provided with the ears projecting therefrom for securing it from lateral deflection, substantially as and for the purpose specified.

2. In combination, the apron, the apron-slat, and the U-shaped strap having the ears for keeping the bent portion thereof from lateral deflection, and provided with the rivet for securing its ends to the said apron-slat, substantially as and for the purpose set forth.

3. In combination with the apron and apron-slat, the U-shaped strap F, having the ears E, provided with the spurs E', and the rivet R, for holding the ends of said strap in place, as and for the purpose specified.

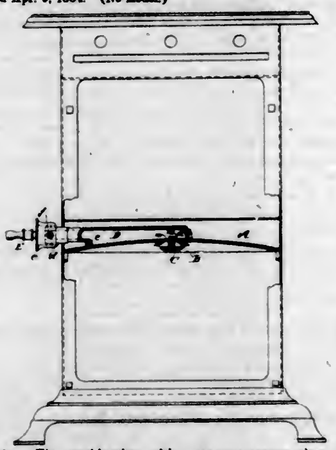
331,949. HARMONICA. MAX DOERFEL, Klingenthal, Germany, assignor to C. F. Doerfel, Steinfelse & Co., same place. Filed Apr. 16, 1885. (No model.)



Claim.—1. The combination, in a harmonica, of mortised plates *a b* and reed-plate *c*, with plugs *d*, substantially as specified.

2. The combination of mortised plates *a b* and notched plate *c* with the plugs *d*, having dovetail shanks, substantially as specified.

331,950. HEATING GAS-STOVE. ALBERT J. DOTY, Philadelphia, Pa., assignor to the Goodwin Gas-Stove and Meter Company, same place. Filed Apr. 9, 1884. (No model.)

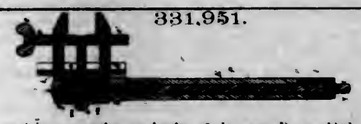


Claim.—The combination, with a concavo-convex plate, A, having a central aperture, B, of the tabulated casting D, connected to the top of the plate, and the deflecting-plate C beneath the opening, as herein specified.

331,951. WRENCH. FRANK S. DUHL, Abington, Mass. Filed Oct. 14, 1885. (No model.)

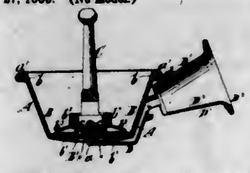
Claim.—The combination of the carrier A, having the prismatic shank *g*, together with the two jaws B and their adjusting screw-threaded

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rod *t*, and its supporting projection *f*, the gear D, provided with the flange *i*, and also with the eye *h*, the metallic disk F, fastened to the said gear by screws, the headed screw *o*, extending through the disk and screwed into the shank *g*, the tabular handle E, and the angular-pointed cylindrical rod H, and its operative spring I, such rod and spring being arranged within such handle and supported therein, essentially as described, and all being to operate substantially as set forth.

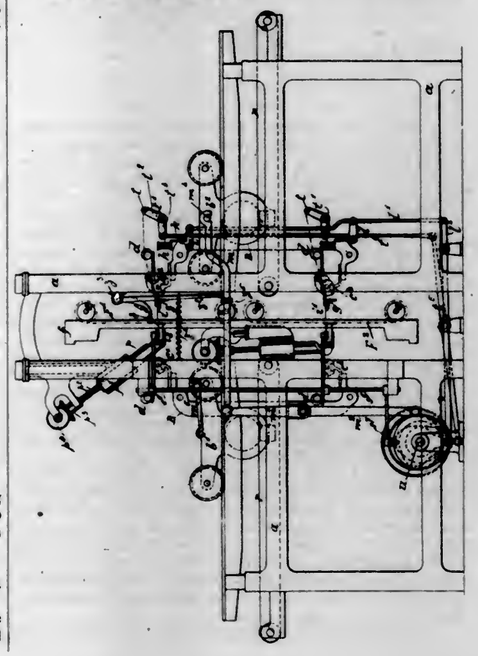
331,952. BREAST-PUMP. ALBERT A. DURAND, New York, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a breast-pump, the combination, with a pump chamber or cup and its diaphragm, of a nipple-socket made of rigid material and connected with the inlet-opening of said chamber or cup, and a reducing lining-piece of flexible material provided in the nipple-socket to adapt it to the size of a nipple, the lining-piece being of a size and shape to conform to and fit against the interior of the nipple-socket throughout the length of the lining-piece, substantially as and for the purpose herein described.

2. The combination, with the pump chamber or cup and its diaphragm, of an inlet-tube and nipple-socket forming one integral structure, said inlet-tube being secured to the exterior of the pump chamber or cup and extending along the bottom thereof to the inlet-opening, and the nipple-socket being connected directly with the outer or open end of the pump chamber or cup, substantially as and for the purpose herein described.

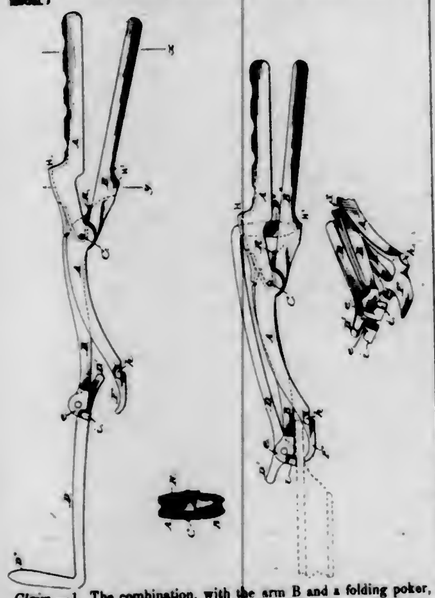
331,953. EMBROIDERING-MACHINE. JOHN J. EGGERTH, St. Gall, St. Gall, Switzerland. Filed Sept. 30, 1884. (No model.) Patented in England July 18, 1884, No. 10,307; in Belgium July 31, 1884, No. 65,801; in Italy Aug. 13, 1884, XXXIV, 105; in Austria-Hungary Oct. 8, 1884, No. 25,877 and No. 4,577; in France Dec. 3, 1884, No. 150,810, and in Germany Mar. 27, 1885, No. 30,931.



Brief.—The machine embroiders with continuous threads, when desired, by using shuttles working with eye-pointed needles, besides performing the ordinary duty ascribed to the so-called Heilmann or common hand-embroidering machine. One of the carriages bearing the pinchers in a hand-embroidering machine is provided with a special row of eye-pointed needles which are brought into action whenever the embroidery has to be done with the continuous threads. The other carriage is then fixed stationary, and the shuttle mechanism is brought down into position to co-operate with the eye-pointed needles.

Claim.—In an embroidering-machine, the combination of the carriage b^2, rods m m' m^2, pin m^4, cam-wheel m^3, rotary shaft u, bars c^3 c^4, arm B, eccentric rods d, frame f, rollers e e, bar g, arm g', pin g^3, bracket g^3, eye-pointed needles i i', bar z, arm z', fulcrum z^2, spring z^4, collar z^5, bobbin A, flat spring k, rocking arm l, rod l', lever l^2, cam-wheel l^3, rod l' and t, arms t^1 t^2, rods t^4, and lever t^5, cam-wheel t^6, angle-rail s, flat rail s', shuttles s^2, metallic plate s^3, link s^4, arm s^5, vertical rod s^6, arms s^7, cam-wheel s^8, main driving-shaft u, rods p, boxes p', screw p^2, pinions p^3 p^4, shaft p^5, and crank p^6, substantially as shown and described.

331,954. POKER, TONGS, AND STOVE-LID LIFTER. Sidell E. Fish and Charles G. King, Greenport, N. Y. Filed June 1, 1885. (No model.)

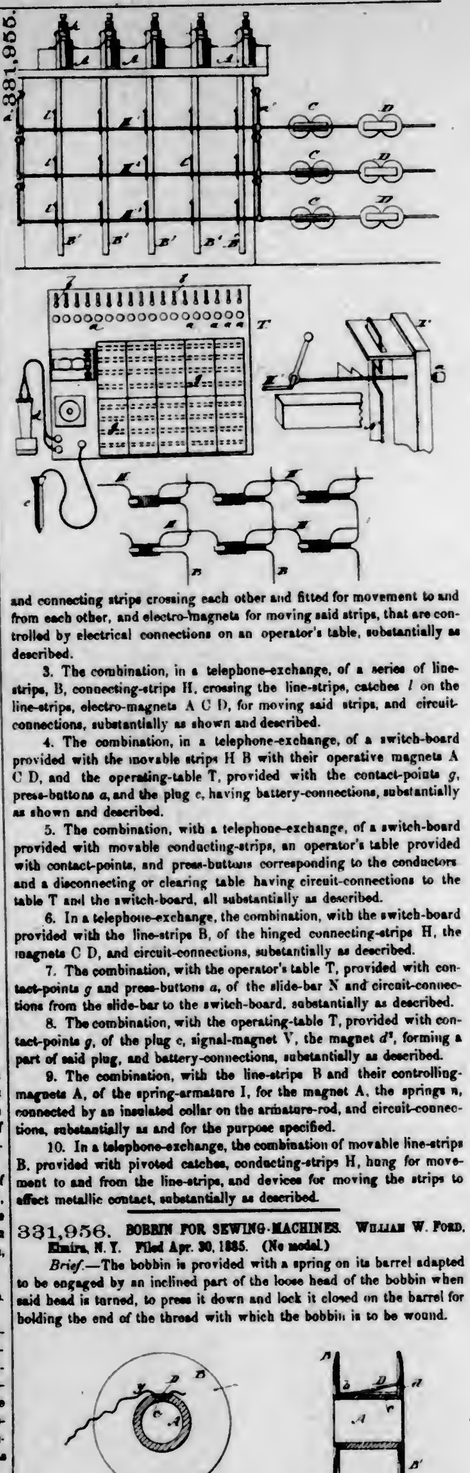


Claim.—1. The combination, with the arm B and a folding poker, D, hinged thereto and provided with an extension or projection, D', of its inner end, of an arm, A, pivoted to the arm B, to close at its outer end against said extension D', substantially in the manner and for the purpose herein set forth.

2. The combination, with the arm B, fitted with a poker, D, hinged thereto to fold back thereon, and with the arm A, pivoted to said arm B, of offsets H H', formed to project outwardly from each arm between its pivot and handle, and slotted to receive and inclose the outer end of the folded poker, whereby the hand is protected from its heat, substantially in the manner and for the purpose herein set forth.

3. The combined tool, constructed, substantially as described, of the arm A, terminating at its outer end in a lid-lifter, F, the arm B, pivoted to the arm A, so that the outer ends of the two arms shall close together, and a poker-rod, D, provided with stop extension or projection D', and pivoted to the outer end of the arm B, to fold back on said arm, substantially in the manner and for the purpose herein set forth.

331,955. TELEPHONE-EXCHANGE. William S. Ford, Denver, Colo. Filed Oct. 24, 1884. (No model.)



Claim.—1. A telephone-exchange which consists in the combination and arrangement, substantially as described, of a switch board provided with crossing, connecting, and line strips, a series of electro-magnets arranged to give movement to the strips, an operating-table provided with separate contact-points for the line-strips, and also for the connecting-strips, a plug or stylus connected with a battery, and a disconnecting-table provided with keys or buttons and having separate connections with the magnets of the connecting-strips, all for operation as specified.

2. The combination, in a telephone-exchange, of a series of line-strips, B, connecting-strips H, crossing the line-strips, catches l on the line-strips, electro-magnets A C D, for moving said strips, and circuit-connections, substantially as shown and described.

4. The combination, in a telephone-exchange, of a switch-board provided with the movable strips H B with their operative magnets A C D, and the operating-table T, provided with the contact-points g, press-buttons a, and the plug c, having battery-connections, substantially as shown and described.

5. The combination, with a telephone-exchange, of a switch-board provided with movable conducting-strips, an operator's table provided with contact-points, and press-buttons corresponding to the conductors and a disconnecting or clearing table having circuit-connections to the table T and the switch-board, all substantially as described.

6. In a telephone-exchange, the combination, with the switch-board provided with the line-strips B, of the hinged connecting-strips H, the magnets C D, and circuit-connections, substantially as described.

7. The combination, with the operator's table T, provided with contact-points g and press-buttons a, of the slide-bar N and circuit-connections from the slide-bar to the switch-board, substantially as described.

8. The combination, with the operating-table T, provided with contact-points g, of the plug c, signal-magnet V, the magnet d^2, forming a part of said plug, and battery-connections, substantially as described.

9. The combination, with the line-strips B and their controlling-magnets A, of the spring-armature I, for the magnet A, the springs n, connected by an insulated collar on the armature-rod, and circuit-connections, substantially as and for the purpose specified.

10. In a telephone-exchange, the combination of movable line-strips B, provided with pivoted catches, conducting-strips H, hung for movement to and from the line-strips, and devices for moving the strips to effect metallic contact, substantially as described.

331,956. Bobbin for Sewing-Machines. William W. Ford, Elmira, N. Y. Filed Apr. 30, 1885. (No model.)

Brief.—The bobbin is provided with a spring on its barrel adapted to be engaged by an inclined part of the loose head of the bobbin when said head is turned, to press it down and lock it closed on the barrel for holding the end of the thread with which the bobbin is to be wound.

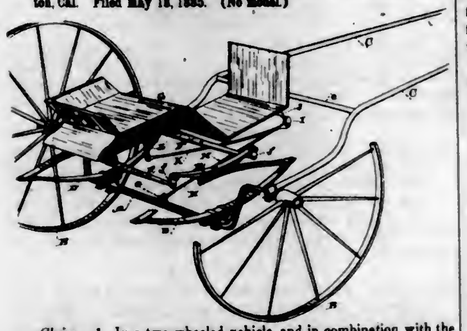


Claim.—1. The bobbin provided with a spring on the exterior of its barrel for locking or holding the thread or material to be wound upon the bobbin, and having one its heads fitted to turn upon the barrel, and constructed to close and release the spring, substantially as specified.

2. The combination, with the barrel A of the bobbin, of the spring D and the loosely-fitted or turning head B', having an aperture, d, arranged to receive the free end of the spring within it, said aperture having its one side wall constructed to close the spring, and terminating in a notch or groove to hold the spring closed when said head is turned in a given direction, and to release the spring when said head is turned in a reverse direction, essentially as and for the purpose or purposes herein set forth.

3. The barrel A of the bobbin, having a longitudinal groove, c, in combination with the spring D, and the loose or turning head B', provided with an aperture, d, having a sloping or bevel side, e, terminating in a notch or groove, s, substantially as specified.

331,957. Two-Wheeled Vehicle. John A. Gallagher, Stockton, Cal. Filed May 18, 1885. (No model.)

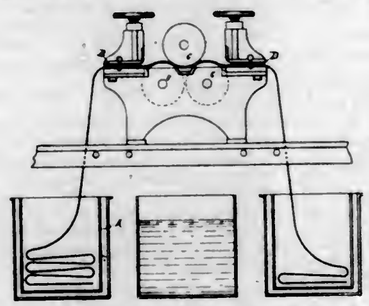


Claim.—1. In a two-wheeled vehicle, and in combination with the loosely-suspended or pivoted body, the forwardly-converging brace-bars H and K, pivoted to the axle and rigidly secured under the body respectively, and the projecting bracket I, pivoted to the forward ends of the two bars and secured solidly under the forward portion of the body, substantially as herein described.

2. In a two-wheeled vehicle, and in combination with the loosely-suspended or pivoted body G, the brace-bar H, pivoted at its rear end to the axle, the projecting bracket I, pivoted at its lower end to the forward end of the bar H, the arm J, bolted rigidly under the forward portion of the body and in the upper end of the link, the brace-bar K, pivoted in the lower end of the link, and the arm L, bolted rigidly under the body and to the rear end of the brace-bar K, substantially as herein described.

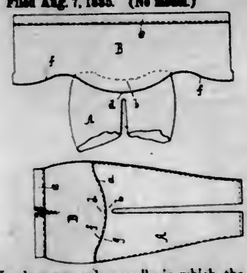
3. In a two-wheeled vehicle, the wheeled axle A, the shafts C, side springs, D, and spring-bars E, as herein described, in combination with the body G, the body bars or loops F, the links f, pivoted to the body-bars and the spring-bars, the brace-bars H, pivoted on the axle, the brace-bar K, rigidly secured to the body, and the projecting bracket I, pivoted to the forward ends of the two brace-bars and secured rigidly under the forward portion of the body, substantially as herein described.

331,958. Manufacturing Textile Belts. Maurice Gandy, Liverpool, England. Filed May 16, 1885. (No specimens.)



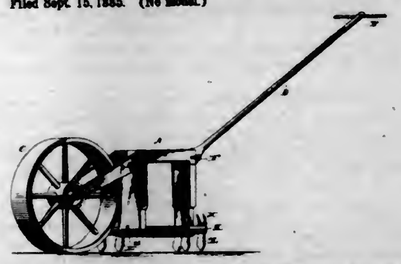
Claim.—The method substantially herein described of treating textile belts, which method consists of first submitting the belt to heating action substantially as set forth, then stretching it in a suitable apparatus, and saturating it in a suitable saturant while it is still hot and dry, substantially as described, for the purpose specified.

331,959. Drawers and Overalls. Levi Goldsmith, Baltimore, Md. Filed Aug. 7, 1885. (No model.)



Claim.—In drawers and overalls in which the body part is attached to the lower part by means of a seam extending around the hips, the lower part, A, in combination with the body part B, which is cut full in the back, in relation to the upper edge, b, of the lower part, A, whereby any desired fullness may be acquired.

331,960. Garden-Cultivator. Peter D. Graham, Corunna, Ind. Filed Sept. 15, 1885. (No model.)



Claim.—1. As an improvement in garden-cultivators, the combination, with the main frame, of the reversible arms having at their outer ends the adjustable and removable tools, arranged as described, for the purpose set forth.

2. As an improvement in garden-cultivators, the combination, with the main frame, of the reversible arms arranged in pairs of different length, and provided at their outer ends with the adjustable and removable tools, arranged as described, for the purpose set forth.

3. As an improvement in garden-cultivators, the combination, with the main frame, of the longitudinal horizontal rod, arranged as described, in the lower portion of the said frame and provided with the screw-threaded free extremity, the reversible arms having the tranverse apertures in their inner ends, and provided at their outer ends with the adjustable and removable tools, arranged as described, and means for securing the said arms in their adjusted positions, as set forth.

4. As an improvement in garden-cultivators, the combination, with the main frame, of the longitudinal horizontal rod, arranged as described, in the lower portion of the said frame and provided with the screw-threaded free extremity, the reversible arms having the transverse apertures in their inner ends, and provided at their outer ends with the adjustable and removable tools, arranged as described, the central tool consisting of a cultivator-blade and rake-teeth formed in a single piece, and having the inwardly-projecting sleeve, and the binding-nut working on the free extremity of the horizontal rod, all constructed and arranged in the manner and for the purpose herein shown and set forth.

5. As an improvement in garden-cultivators, the combination, with the main frame, of the longitudinal horizontal rod, arranged as described, in the lower portion of the said frame, and provided with the screw-threaded free extremity, the reversible arms, arranged in pairs of different length, having the transverse apertures in their inner ends, and provided at their outer ends with the adjustable and removable tools, arranged as described, and means for securing the said arms in their adjusted positions, as set forth.

6. As an improvement in garden-cultivators, the combination, with the main frame, of the longitudinal horizontal rod, arranged as described, in the lower portion of the said frame, and provided with the screw-threaded free extremity, the reversible arms, arranged in pairs of different length, having the transverse apertures in the inner ends, and provided at their outer ends with the adjustable and removable tools, arranged as described, the central tool consisting of a cultivator-blade and rake-teeth formed in a single piece, and having the inwardly-projecting sleeve, and the binding-nut working on the free extremity of the horizontal rod, all constructed and arranged in the manner and for the purpose shown and set forth.

7. As an improvement in garden-cultivators, the combination, with

the reversible arms, arranged as described, and provided at their outer ends with the vertical apertures, of the adjustable and removable tools, consisting of the cultivator-blades having the screw-threaded shank, the rake-teeth connected by the cross-head, having the central aperture, and the binding-nuts for securing the tools in their adjusted positions, as set forth.

331,961. CONVEYER. William Greener, Chicago, Ill. Filed Sept. 10, 1885. (No model.)



Claim.—1. A conveyer having flexibly-connected receptacles pivotally hung in their connecting medium in endless series, whereby they are maintained in normally-upright position, and means, substantially as described, for driving the series of receptacles, substantially as set forth.

2. A conveyer having receptacles linked together in endless series, and pivotally hung in the links, to be maintained in normally-upright position, in combination with drive-wheels C at opposite extremities of the series, to rotate and propel the receptacles, substantially as described.

3. A conveyer having receptacles linked together in endless series, and pivotally hung in the links, to be maintained in normally-upright position, in combination with drive-wheels C at opposite extremities of the series, having radial spokes *o*, provided with forked extremities, to engage with the pivotal connections of the receptacles and links, and propel the conveyer by their rotation, substantially as described.

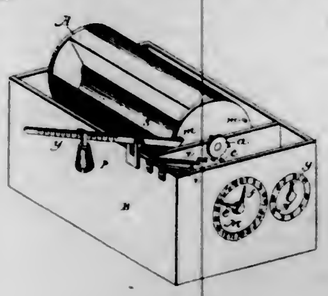
4. A conveyer having receptacles linked together in endless series, and pivotally hung in the links, to be maintained in normally-upright position, in combination with drive-wheels C at opposite extremities of the series, and between the said extremities, to rotate and propel the receptacles, substantially as described.

5. A conveyer having receptacles A, provided with lateral shafts *r'*, links *r*, flexibly connecting the receptacles at their shafts in endless series, pinions *l* upon the shafts, drive-wheels C at opposite extremities of the series, to rotate and propel the receptacles, and racks *l'*, to be engaged by the pinions and overturn the receptacles, substantially as described.

6. A conveyer having receptacles A, provided with lateral shafts *r'*, carrying guide-blocks *m*, links *r*, flexibly connecting the receptacles at their shafts in endless series, pinions *l* upon the shafts, drive-wheels C at opposite extremities of the series, to rotate and propel the receptacles, racks *l'*, to be engaged by the pinions and overturn the receptacles, and guides F, to receive the guide-blocks *m* and maintain the receptacles in their overturned position until released, substantially as described.

7. A conveyer comprising, in combination, receptacles A, provided with lateral shafts *r'*, carrying guide-blocks *m*, and wheels *q*, links *r*, flexibly connecting the receptacles at their shafts in endless series, pinions *l* upon the shafts, drive-wheels C, to rotate and propel the receptacles, track B, provided with rails for the wheels *q*, racks *l'*, to be engaged by the pinions and overturn the receptacles, guides F, to receive the guide-blocks *m* and maintain the receptacles in their overturned position until released, and guides F', to receive the guide-blocks *m* and effect tipping of the receptacles, the whole being constructed and arranged to operate substantially as described.

331,962. AUTOMATIC GRAIN-WEIGHER AND REGISTER. Isaac N. Griffith and Cary F. Griffith, Mazomanie, Ill., assignors to Alice A. Griffith and Mary B. Griffith, same place. Filed Apr. 6, 1885. (No model.)



Claim.—In automatic grain-meters, the receptacle A, divided into three apartments, *s s s*, each apartment having a semicircle bottom, wheel *a*, having three cogs, graduating beam *y*, and weight P, in combination with the registering mechanism, composed of wheel *c*, having arm *l*, attached to the wheel *n*, arm J, wheel *d*, loosely fitted to the shaft *r*, and dials M and N, substantially as shown and described, for the purpose set forth.

331,963. DRESS-SHIELD. De Witt C. Hall, New York, N. Y. Filed Apr. 15, 1884. (No model.)



Claim.—A dress-shield comprising a water-repellent lining and a textile fabric cover in each of the two flaps, provided at its lower edge upon one or both flaps with an absorbent fabric which does not reach to the line of the fold, whereby a light shield is secured, thin at the fold-line and absorbent at the lower edges of the flaps, as set forth.

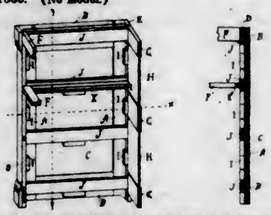
331,964. MANUFACTURE OF BENZYLATED METHYL VIOLET. Hugo Hasenclamp, Elberfeld, Prussia, Germany. Filed June 18, 1884. (No specimens.) Patented in France May 7, 1884, No. 161,967; in Germany Mar. 16, 1885, No. 31,509, and in England June 8, 1885, No. 7,645.

Claim.—The within-described coloring-matter, being a benzylated methyl violet which has been sulphonated and oxidated, as set forth, and possessing the qualities set forth.

331,965. MANUFACTURE OF BENZYLATED ACID VIOLET. Hugo Hasenclamp, Elberfeld, Prussia, Germany. Filed July 9, 1885. (No specimens.) Patented in France May 7, 1884, No. 161,967; in Germany Mar. 16, 1885, No. 31,509, and in England June 8, 1885, No. 7,645.

Claim.—The above-described process of manufacturing an acid violet, which consists in reducing the methyl violet of commerce to its leuco base, in the benzylation of the leuco base, in the transformation of the benzylated leuco base into its leuco-sulpho acid, and of finally obtaining the sulpho-acid of the dye-stuff by oxidation.

331,966. BUREAU. Edward V. Hawkins, Connersville, Ind. Filed Sept. 21, 1885. (No model.)

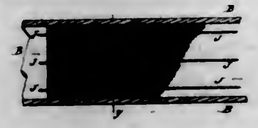


Claim.—As a new article of manufacture, a bureau carcase constructed substantially as described—that is, having its front and back stiles of the same width, and the cross-pieces J forming the side guides for the drawers, and the supporting-strip for the draw-runner K made to come flush with the inside edges of the front and back stiles, so that the end may be dressed true in the planer, and the front and back cross-rails made of the same length between tenons, for the purpose set forth.

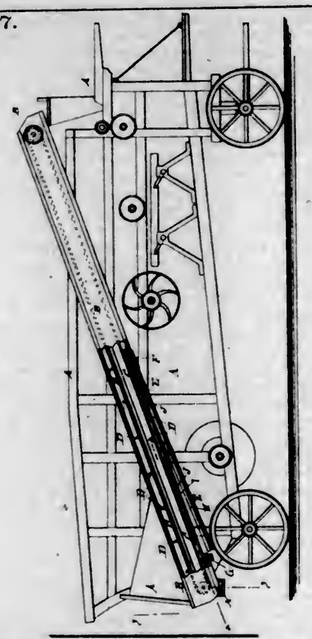
331,967. GRAIN-SEPARATOR. Andrew T. Hawley, Alton, Ill. Filed Aug. 11, 1885. (No model.)

1. The combination, with the elevator-trough B, having a bottom opening, the elevator-belt C, and lags D, of the screen I and the guard-wires J, extended longitudinally above said screen, substantially as herein shown and described, and serving to protect the screen and grain from injury, and also as tracks for the lags D.

2. The combination, with the elevator-belt C D, and trough B, having a bottom opening, and a screen, I, of the hinged bottom E, having side flanges, H, substantially as herein shown and described, whereby the fine seeds and impurities separated from the wheat can be conducted to a receiver, as set forth.



331,967.



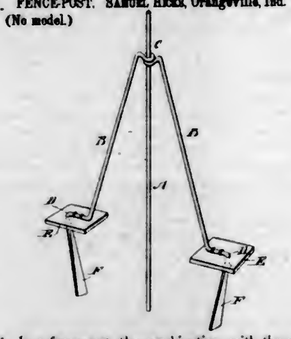
331,968. CUTTING APPARATUS FOR REAPING AND MOWING MACHINES. Elias Hazelton, Brantford, Ontario, Canada, assignor to Isaac Hazel, same place. Filed May 21, 1884. (No model.)



Claim.—1. In a mowing or reaping machine, the endless driving-chain *b*, and the downward-curved brackets *c*, secured to one side of the links, in combination with the knives *a*, secured to the under faces of the said brackets, substantially as set forth.

2. The knife-supporting bar *g*, having the tongue *e* on the front side, with rabbets *m* for the chain *b*, and also having guards *n*, in combination with the endless chain of knives *a*, substantially as described.

331,969. FENCE-POST. Samuel Hess, Orangeville, Ind. Filed July 23, 1885. (No model.)



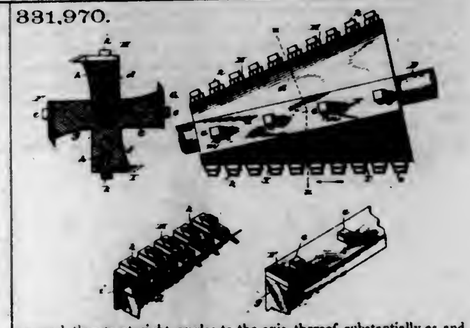
Claim.—1. In a fence-post, the combination, with the central rod, A, of a brace formed of a rod, B, bent spirally in the middle of its length, forming an eye, C, the said brace being bent downward and outward away from the rod A on each side thereof and having shoulders D and flattened ends F, substantially as herein specified.

2. In a fence-post, the combination of the central rod, A, the brace having an eye, C, shoulders D, and flattened ends F, and the bearing-plates E, arranged for supporting the shoulders D, substantially as herein specified.

331,970. CUTTER-HEAD. Abram Hoffins, Kingston, Ontario, Canada. Filed June 26, 1885. (No model.)

Claim.—1. A cutter-head of gradual taper from end to end, and carrying one or more planing-knives and one or more grooving-cutters

331,970.

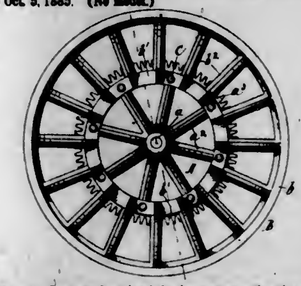


secured thereto at right angles to the axis thereof, substantially as and for the purpose specified.

2. A cutter-head having a cylindrical body and radial arms formed integral with said body and extending the entire length thereof, but gradually tapering from one end of the cylinder to the other, and one or more planing-knives and one or more grooving-cutters carried by alternate arms and adjustable thereon, and the whole adapted to serve as and for the purposes specified.

3. The cutter-head described, composed of a cylinder having radial arms, as *e f d g*, gradually decreasing in length from one end of the cylinder to the other, and said arms provided with planing-knives and grooving-cutters, said knives being removable and adjustable both laterally and longitudinally, substantially as and for the purposes specified.

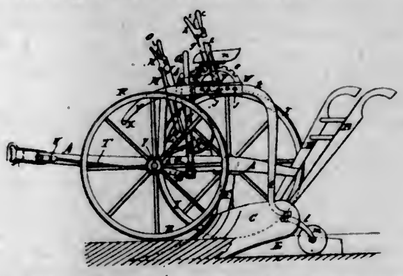
331,971. WHEEL FOR HARVESTERS. George G. Hunt, Bristol, assignor of one-half to the Plano Manufacturing Company, Plano, Ill. Filed Oct. 5, 1885. (No model.)



Claim.—1. In a main wheel for harvesters, the tire-section cast in one piece, and a separate hub and gear-section, also cast in one piece and secured by suitable fastenings to the tire-section, substantially as and for the purposes set forth.

2. In a main wheel for harvesters, the section A, composed of the hub *a* and angular gear-ring *a'*, cast in one piece, in combination with the section B, composed of the tire *b* and ring *b'*, cast in one piece, and the fastening-bolt C, securing the rings *a'* and *b'* together, substantially as for the purposes set forth.

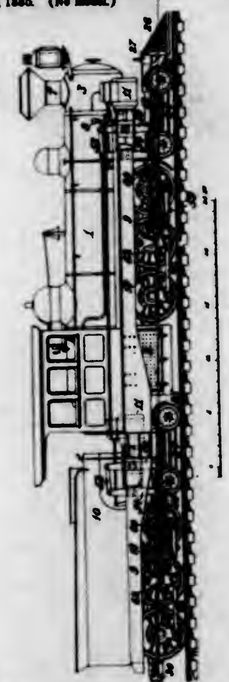
331,972. SULKY ATTACHMENT FOR PLOWS. Theodore Johnson, Petersburg, Ind. Filed July 2, 1885. (No model.)



Claim.—1. In a sulky attachment for plows, the combination, with the upright arms of the arched axle G and plow-beam A, of the frame V W X, the hinged clevis Z, the pivoted connecting-bar *b*, the lever c, and the catch-plate *e*, and spring-lever pawl *f g h i*, substantially as herein shown and described, whereby the plow can be readily raised and lowered, as set forth.

2. In a sulky attachment for plows, the combination, with the frame V W X, attached to the upright arms of the arched axle G, and connected by the hinged clevis Z, the connecting-bar *b*, and the lever c with the plow-beam, of the curved bar *k*, and the caster-wheel *l m*, substantially as herein shown and described, whereby the plow can be supported above the ground and readily drawn from place to place, as set forth.

331,973. LOCOMOTIVE. Frazer W. Johnstone, Mexico, Mexico. Filed Aug. 30, 1885. (No model.)



Claim.—1. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a water and fuel receptacle, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fix to the main frame, a pair of steam-cylinders fixed upon the main frame and having their piston-rods secured to cross-heads working in guides thereon, and lever mechanism, substantially as described, whereby said cross-heads are coupled to pins fixed on the main frame and to crank-pins on the driving-wheels, respectively.

2. The combination, substantially as set forth, of a rigid main frame, a locomotive-boiler, and a water and fuel receptacle secured, respectively, upon the forward and rear portions of said frame, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame below the boiler, a pair of steam-cylinders fixed to the main frame and having their piston-rods secured to cross-heads working in guides thereon, lever mechanism, substantially as described, whereby said cross-heads are coupled to pins fixed on the main frame and to crank-pins on the driving-wheels, respectively, and a truck or bogie adapted to move about a center bearing fixed to the main frame below the water and fuel receptacle.

3. The combination, substantially as set forth, of a rigid main frame, a locomotive-boiler, and a water and fuel receptacle, secured, respectively, upon the forward and rear portions of said frame, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame below the boiler, a pair of steam-cylinders fixed to the main frame and having their piston-rods secured to cross-heads working in guides thereon, lever mechanism, substantially as described, whereby said cross-heads are coupled to pins fixed on the main frame and to crank-pins on the driving-wheels, respectively, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame below the fuel and water receptacle, and a supplemental pair of steam-cylinders fixed to the main frame and having the cross-heads of their piston-rods coupled through lever mechanism, substantially as described, to pins fixed on the main frame and to crank-pins on the driving-wheels of the truck or bogie frame supporting the fuel and water receptacle.

4. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a water and fuel receptacle, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, a pair of steam-cylinders fixed to the main frame and having their pistons connected to crank-pins on the driving-wheels, and a subsidiary leading or guiding truck adapted to move about a center bearing fixed to the driving-wheel truck-frame.

5. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a water and fuel receptacle, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, a pair of steam-cylinders fixed to the main frame, a pair of cross-head levers, each journaled to the piston-rod cross-head of one of said cylinders, a pair of fixed fulcrum-levers journaled in bearings fixed to the main frame, tension-rods coupling the cross-head levers and fixed fulcrum-levers at their upper ends, tension-rods controlling the movements of the lower ends of the fixed-fulcrum levers, and main rods coupling the lower ends of the cross-head levers to crank-pins on the driving-wheels.

6. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a fuel and water receptacle, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, a pair of steam-cylinders fixed to the main frame, a pair of cross-head levers, each journaled to the piston-rod cross-head of one of said cylinders, a pair of fixed-fulcrum levers journaled in bearings fixed to the main frame, tension-rods coupling the cross-head levers and fixed-fulcrum levers at their upper ends, tension-rods coupling the lower ends of the fixed-fulcrum levers to bearing-pins on the driving-wheel truck-frame, and main rods coupling the lower ends of the cross-head levers to crank-pins on the driving-wheels.

7. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a water and fuel receptacle, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, a pair of steam-cylinders fixed to the main frame, a pair of cross-head levers, each journaled to the piston-rod cross-head of one of said cylinders, a pair of fixed-fulcrum levers journaled in bearings fixed to the main frame, tension-rods coupling the cross-head levers and fixed-fulcrum levers at their upper ends, and main rods coupling the lower ends of the cross-head levers and fixed-fulcrum levers, respectively, to crank-pins on the driving-wheels.

8. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, a pair of long equalising-levers, each pivoted centrally by a bearing-pin to and below one side of the truck-frame and coupled at each end to a shorter equalizing-lever, equalizing-beams coupled above the truck-frame by hangers at their ends to the driving-wheel springs, and links or hangers coupling one end of each of the short equalizing-levers to the end of a driving-wheel spring and the other end of said lever to the center of an equalizing-beam.

9. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, a subsidiary leading or guiding truck supporting one end of the driving-wheel truck-frame upon a center bearing, about which said subsidiary truck is free to move, and a spring and equalizer arrangement, as described, supporting the opposite end of the driving-wheel truck-frame upon a bearing-pin below each side thereof.

10. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler, a series of driving-wheels mounted in a truck or bogie frame, a center bearing secured to and projecting downwardly from a transverse girder connected to the main frame and having a spherical lower face, a correspondingly-recessed socket secured upon a transverse bearing-plate fixed to the truck-frame, and a center pin connecting the center bearing and the socket and its bearing-plate.

11. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler, a series of driving-wheels mounted on a truck or bogie frame, a center bearing secured to and projecting downwardly from a transverse girder connected to the main frame, a center casting or socket fitting the lower end of said center bearing and secured to a transverse bearing-plate fixed to the truck-frame, and springs fitting in guides or sockets on the truck-frame and bearing against the sides of the center bearing of the main frame.

12. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a pair of steam-cylinders, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, and having crank-pins connected with the pistons of the steam-cylinders on the main frame, valve-operating eccentrics fixed upon one of the driving-axles, and eccentric-rods connected pivotally at one end to the straps of the eccentrics and similarly connected at the other end to valve-operating links suspended from a lifting-shaft journaled on the main frame.

13. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a pair of steam-cylinders, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, and having crank-pins connected with the pistons of the steam-cylinders on the main frame, fixed-fulcrum levers secured upon shafts journaled on the main frame and coupled at their opposite ends by tension-rods to pins on the truck-frame and to levers pivoted to the cross-heads, valve rocker-shafts mounted in boxes hinged to brackets, which are fixed relatively to the main frame, and links connecting arms on the rocker-boxes with blocks fitting slots in arms on the fixed-fulcrum-lever shafts, and with arms on the lifting-shaft of the valve-links.

14. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a pair of steam-cylinders, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, and having crank-pins connected with the pistons of the steam-cylinders on the main frame, a pair of cross-head levers each journaled to the piston-rod cross-head of one of said cylinders, a pair of fixed-fulcrum levers journaled in bearings fixed to the main frame, tension-rods coupling the cross-head levers and fixed-fulcrum levers at their upper ends, tension-rods connected by pivots to boxes or brasses fitting pins on the lower ends of the fixed-fulcrum levers and to boxes or brasses fitting pins on the truck-frame, and main rods connected by pivots to boxes or brasses fitting pins on the lower ends of the cross-head levers and to boxes or brasses fitting crank-pins on the driving-wheels.

15. The combination, substantially as set forth, of a rigid main frame carrying a locomotive-boiler and a pair of steam-cylinders, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame, and a pair of steam-cylinders fixed upon the main frame and having their pistons connected to crank-pins on the driving-wheels of stroke greater than that of the pistons.

16. The combination, substantially as set forth, of a rigid main frame, a locomotive-boiler, and a fuel and water receptacle, secured, respectively, upon the forward and rear portions of said frame, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame below the boiler, a pair of steam-cylinders fixed to the main frame and having their pistons connected to crank-pins on said driving-wheels, a series of driving-wheels mounted in a truck or bogie frame adapted to move about a center bearing fixed to the main frame below the fuel and water receptacle, a pair of steam-cylinders fixed to the main frame and having their pistons connected to crank-pins on said driving-wheels, a pair of reverse-levers adapted to swing upon a common pivot and connected, respectively, with the link-lifter shafts of the forward and the rear cylinders, and a quadrant secured upon one of the reverse-levers and serving to regulate the position of the other.

17. In a locomotive-engine of the type described, the combination, substantially as set forth, of a pair of link-motions and their operating-eccentrics mounted upon a forward truck or bogie, a pair of link-motions and their operating-eccentrics mounted upon a rear truck or bogie, a pair of reverse-levers adapted to swing upon a common pivot on the main frame of the engine, reverse-bars coupling said reverse-levers with the lifting-shafts of the forward and rear link-motions, respectively, a long fixed quadrant having notches receiving the stop-latch of one of said levers, a short quadrant secured to said lever and having movable stops to engage the stop-latch of the other lever, and a guide secured to the long quadrant and having an end incline adapted to raise the stop-latch of the lever last named from the notches of the short quadrant.

331,974. WRENCH. Carl Karbch, Cleveland, Ohio. Filed Dec. 13, 1884. (No model.)



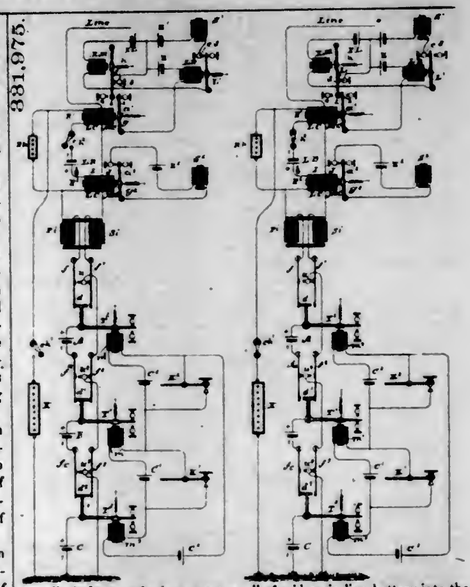
Claim.—In a sliding-jaw wrench, the combination of the recessed bar C, the rack D, which is placed in the recess in the bar and which has its upper end beveled to correspond to the shape of the upper end of the recess, the sliding jaw, and a cam for moving the rack endwise, so as to cause it to engage with the teeth on the inner side of the jaw, substantially as shown and described.

331,975. QUADRUPLEX AND DUPLEX TELEGRAPH. David H. Kelley, Ottawa, Ontario, and Aaron A. E. Garvey, Montreal, Quebec, Canada. Filed Nov. 14, 1883. (No model.)

Claim.—1. In a multiplex telegraph, a main and a local circuit extending, respectively, through different coils of a relay or receiving-instrument, a signaling-battery, and means, substantially as described, for completely transferring said battery first through one of said coils and then through the other.

2. In a multiplex telegraph, the combination of two receiving-relays, a main and local circuit extending, respectively, through different coils of said relays, a main-line battery in sections, a local battery in a closed circuit passing through both relays, and means, substantially as

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described, for transferring a part or all of said main-line battery into the first-named local and main-line circuits at will, substantially as described.

3. In a multiplex telegraph, the local neutralizing-battery L B; arranged in circuit through both receiving-relays R' R², and an adjustable shunt-resistant, RA, connected in circuit therewith, substantially as described.

4. In a multiplex telegraph, the combination of three transmitters and two keys with three electro-magnets and three batteries, two of which normally aid each other and are opposed by the third, whereby the transmitters are normally undisturbed and each is actuated by its own key, while all three are actuated when both keys are operated simultaneously, substantially as described.

5. In a multiplex telegraph-receiver, a main-line relay and two local relays under control of said main-line relay, the first of which local relays controls a local sounder, in combination with connections, substantially as described, whereby a maximum or a minimum current causes the local sounder to act, while an intermediate current causes the second of said local relays to continuously make and break a circuit through the first-named local relay, so that the sounder will not act, all substantially as described.

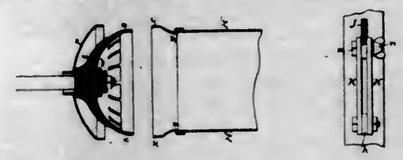
6. In a multiplex telegraph, a device for overcoming statical troubles, consisting of an induction-coil whose primary is located in a local circuit, with its secondary in the main or signaling circuit, in combination with a main or signaling battery, and means, substantially as described, for connecting said signaling-battery first to one circuit and then to the other, substantially as described.

7. In a device for overcoming statical troubles in multiplex telegraphy, an induction-coil consisting of the usual primary coil located in the branch line and secondary coil located in the main-line circuit, and means for interchanging said coils—that is, for making each coil successively a primary and a secondary to the other—substantially as described.

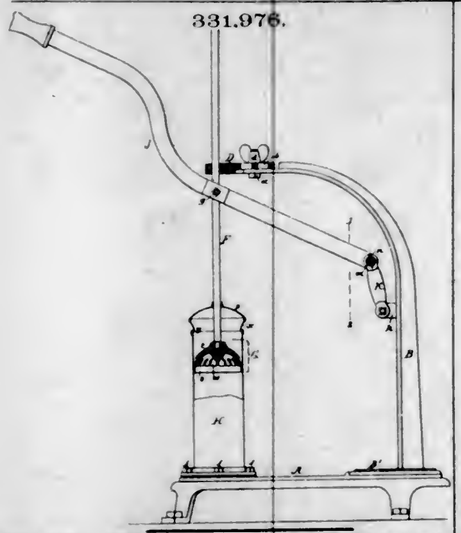
331,976. PUMP. Thomas Kennedy, Philadelphia, Pa. Filed May 28, 1885. (No model.)

Claim.—1. The combination of the base A, the pump-barrel H, and curved standard B, seated on and secured to said base, the plunger and plunger-rod, and the guide D, for the latter, said guide having a slotted connection with the upper end of the curved standard, so as to be adjustable in respect thereto, as set forth.

2. The combination of the plunger of the pump, having a flexible washer, with the pump-barrel having a flaring mouth, and an internal rib less in diameter than the barrel, as specified.



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331,977. SKATE. CHARLES W. KING, Lyndhurst, N. J., assignor to himself and Haines W. Sullivan, Brooklyn, N. Y. Filed May 13, 1885. (No model.)



Claim.—1. In a skate, a spring, as B, mounted on the upper face of the body A, so as to serve between it and the boot, as herein specified.

2. In a skate, the counter C D, in two or more parts, hinged to the body A, substantially as herein specified.

3. In a skate, the counter C D, in two or more parts, hinged to the body A by a screw or pivot, E, in combination with the body A, and with the pins M, received in slots *c d*, as herein specified.

4. In a skate, the strap G and metal counter having slotted flanges C *c* D *d* and screws M M, in combination with each other and with the body A, spring B, and confining means B', arranged for joint operation, substantially as herein specified.

331,978. SPLIT GEAR. JAMES LAWLOR, Fall River, Mass. Filed Oct. 31, 1885. (No model.)



Claim.—1. The combination, with a flanged hub, of two or more wheel-sections bolted on the flange, substantially as herein shown and described.

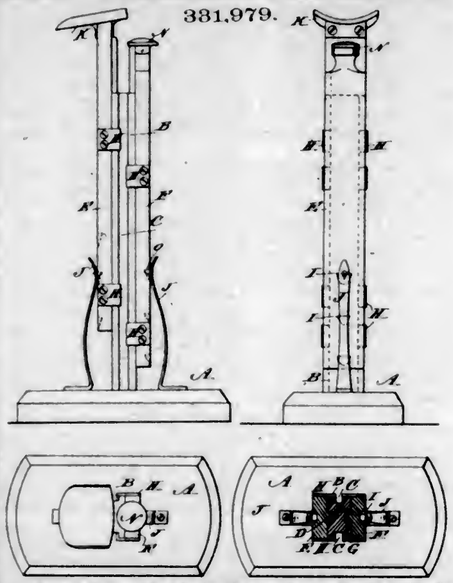
2. The combination, with a flanged hub, of two or more wheel-sections provided in the sides with recesses for receiving the flange, and which wheel-sections are bolted on the flange, substantially as herein shown and described.

3. The combination, with the hub A, having a flange, B, at one end, of two or more wheel-sections, D, each having a recess in one side, and of bolts passed through the wheel-sections and through the flange, substantially as herein shown and described.

331,979. FOOT-REST FOR SHOEING HORSES. BENJAMIN LEAR, Woodstock, Vt. Filed Sept. 17, 1885. (No model.)

Claim.—1. In a foot-rest for horse-shoeing, the combination, with a standard, of slides on the same, and devices on the upper ends of said slides for supporting the horse's leg and hoof, substantially as herein shown and described.

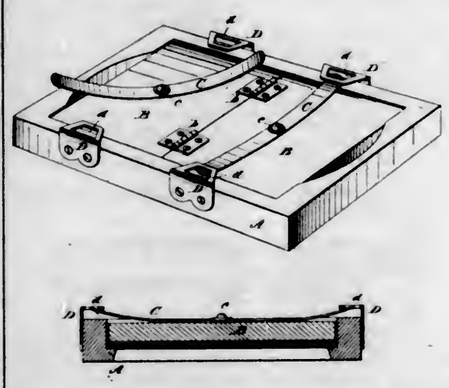
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2. In a foot-rest for shoeing horses, the combination, with the grooved standard B, of the slides E and F, the plate K on the end of the slide E, and of the button or knob N on the upper end of the slide F, substantially as herein shown and described.

3. In a foot-rest for shoeing horses, the combination, with the base A and the standard B on the same, of the slides E and F, having notches I, the plate K on the slide E, the head N on the slide F, and of the springs J, secured on the base A and having prongs O, substantially as herein shown and described.

331,980. PHOTOGRAPHIC-PRINTING FRAME. WILLIAM H. LEWIS, New York, N. Y., assignor to E. & H. T. Anthony & Co., same place. Filed May 7, 1885. (No model.)



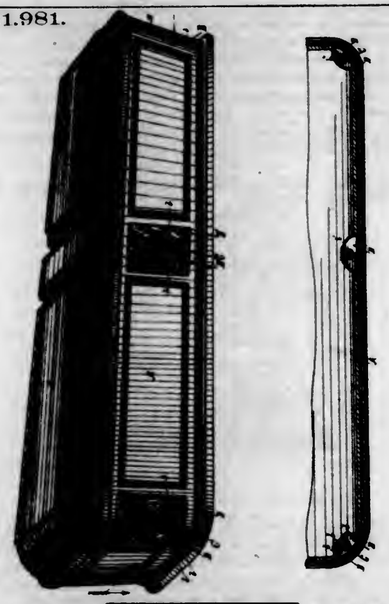
Claim.—1. The combination, with the photographic-printing frame A, of the catches, lips, or ear-pieces D, having notches or openings *d* in their backs, substantially as and for the purpose specified.

2. The combination, with the frame proper, A, and its back board, of the notched catches D and the pivoted bowed springs C, constructed to engage with said catches, essentially as and for the purpose herein set forth.

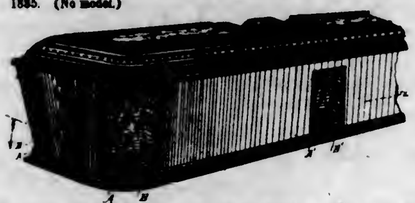
331,981. BURIAL-CASE AND COFFIN. ARTHUR S. LOVETT, Erie, Pa. Filed June 24, 1885. (No model.)

Claim.—A burial-casket or coffin constructed with recesses in the outside thereof lined with mirrors, substantially as and for the purpose set forth.

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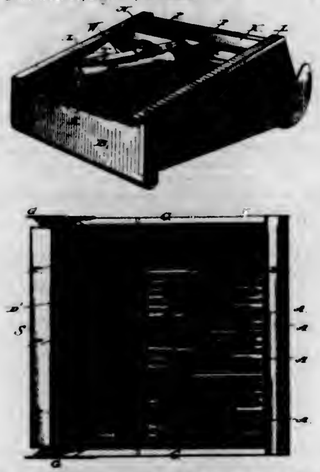


331,982. COFFIN. ARTHUR S. LOVETT, Erie, Pa. Filed Sept. 18, 1885. (No model.)



Claim.—The combination, in a burial-casket or coffin, of recesses in the corners, sides, or ends of such casket or coffin with glass or other transparent fronts or covers therefor, substantially as and for the purpose set forth.

331,983. CRANBERRY-GATHERER. DANIEL LUMBERT, Centreville, Mass. Filed Feb. 19, 1885. (No model.)

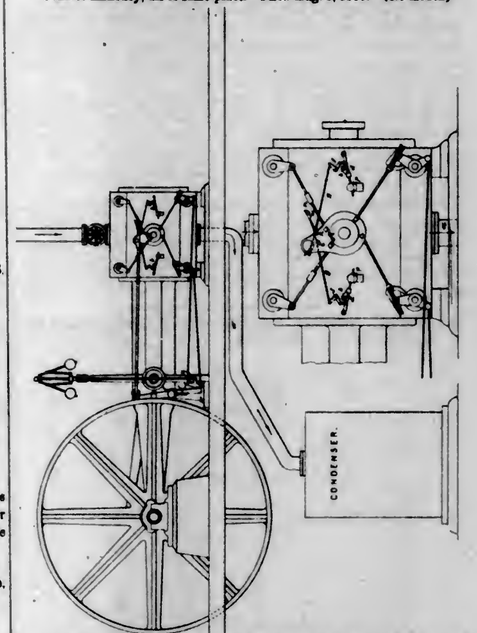


Claim.—1. The improvement in a cranberry-gatherer, which consists in the combination, with the covering-plate inclosing the rear end of the receptacle over the gathering-rods and with the oscillating plate carrying the stripping-plate at the front thereof, of a single continuous self-adjusting covering-screen extending directly from the front edge of the covering-plate to the upper edge of the oscillating plate, substantially in the manner and for the purpose herein set forth.

2. The combination, with the oscillating front plate of the stripping-frame in a cranberry-gatherer, of a continuous stripping-plate projecting inwardly from the lower edge of said front plate to present, when the plate is depressed, a continuous straight edge parallel with the front ends of the gathering-rods, substantially in the manner and for the purpose herein set forth.

3. The combination, with a continuous straight edged stripper projecting from the lower edge of the oscillating front plate in a cranberry-picker, of the series of gathering-rods of equal length, whose points project into close proximity to the edge of the stripper when the latter is depressed, said rods constituting the bottom of a receptacle whose front end is closed by the depression of the oscillating front plate, substantially in the manner and for the purpose herein set forth.

331,984. CONDENSING-ENGINE. WILLIAM F. MARTIN, Philadelphia, Pa., assignor of three-fourths to James Scott, John Albiziti, and John J. Mahoney, all of same place. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination of an engine having valved inlets, and an exhaust-chest communicating with a condenser, and having exhaust-valves, valve-gearing for operating said inlet and exhaust valves, and cut-off mechanism applied to the valves in the exhaust-chest and under control of the governor of the engine, all substantially as specified.

2. The combination of the cylinder having valved inlets and an exhaust chest communicating with a condenser, and having exhaust-valves, valve-operating gear, cut-off mechanism acting on the exhaust-valves, and air-inlet valves under control of the valve-gear, as specified.

331,985. WINDING-INDICATOR FOR TIME-PIECES. GIUSEPPE MARIANI, New York, N. Y. Filed Sept. 11, 1885. (No model.)

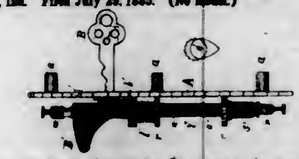


Claim.—1. The combination, with the mainspring-barrel and winding-arbor, of a disk provided with a convolute groove or way attached to the one, and an arm attached to the other and fitted with a roller or runner working in or on said groove or way, substantially as and for the purpose herein described.

2. The combination, with the disk provided with a convolute way, and the arm fitted with a roller or runner working in or on said groove

or way, the said arm and way being attached, the one to the mainspring-barrel and the other to the winding-arbor, of a stop for the roller or runner at the inner end of the way, substantially as and for the purpose herein set forth.

331,986. CIRCUIT-CONTROLLER. LEWIS H. MCCULLOUGH, Richmond, Ind. Filed July 29, 1885. (No model.)



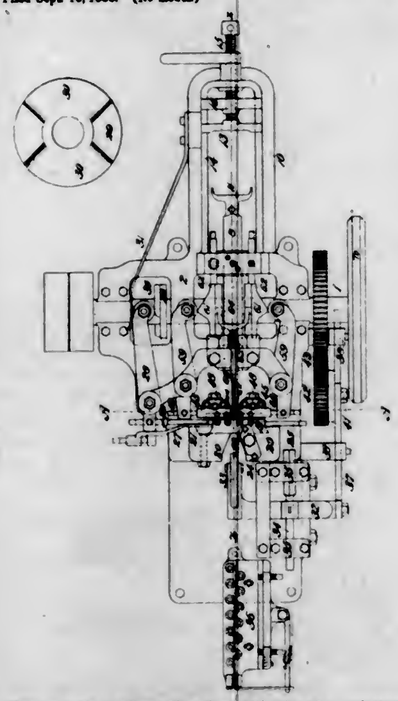
Claim.—1. In an electric signaling system, the combination, with a telegraph-key, of a removable mechanical key for operating the same, whereby any desired signal can be transmitted, but only by persons having private mechanical keys, substantially as set forth.

2. In an electric signaling system, the combination, with the spindle of a Yale or other similar lock and a removable key for turning the same, of a telegraph-key operatively connected with the spindle, whereby any desired signal can be sent, but only by persons possessed of private mechanical keys, substantially as set forth.

3. The combination, with a signal-box and a telegraph-key supported within the same, of a removable mechanical key for operating the telegraph-key, and an opening in the box for the reception of the said mechanical key, whereby any desired signal can be sent, but only by persons possessed of private mechanical keys, substantially as set forth.

4. A signal-box and circuit-controlling devices supported within the same, and a button, also located within the box, for operating the said devices, in combination with a mechanical key for operating the circuit-controller, and an opening in the box, whereby the key can be inserted to act upon the circuit-controller, substantially as and for the purpose set forth.

331,987. WIRE-NAIL MACHINE. JOHN MCILVRIED, Cleveland, Ohio. Filed Sept. 10, 1885. (No model.)

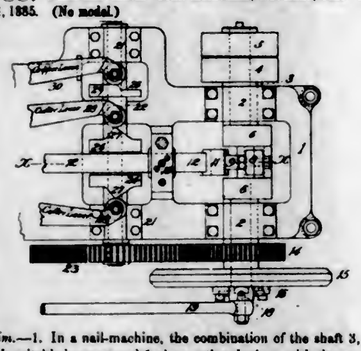


Claim.—1. In a nail-machine, the combination of a reciprocating hammer, a pair of clamping-dies, a pair of vibrating cutters, and a series of double cams constructed to operate the hammer, dies, and cutters twice during a complete revolution of the power-shaft, substantially as set forth.

2. In a nail-machine, wire-feed mechanism, in combination with a reciprocating bar or rod provided with a curved or heart-shaped slot, and a rotating pin engaging said slot, substantially as set forth.

3. In a wire-nail machine, the combination of a reciprocating hammer, a pair of clamping-dies, a pair of vibrating cutters, reciprocating feed mechanism, and cam mechanism suitably constructed and arranged to operate the hammer, dies, and cutters during a half-revolution of the power-shaft, and to operate the feed mechanism during a quarter of a revolution of said shaft, substantially as set forth.

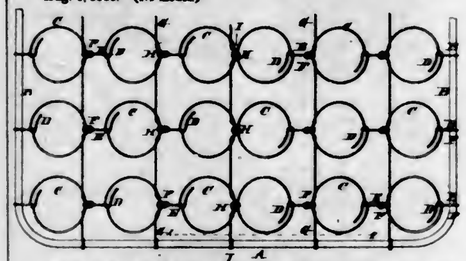
331,988. NAIL-MACHINE. JOHN MCILVRIED, Cleveland, Ohio. Filed Oct. 1, 1885. (No model.)



Claim.—1. In a nail-machine, the combination of the shaft 3, provided with suitable hammer and feed operating devices, with the countershaft 23, provided with suitable means for operating the cutters and grippers, said shafts being so geared together that the shaft 3 shall rotate at double the speed of the other shaft, substantially as set forth.

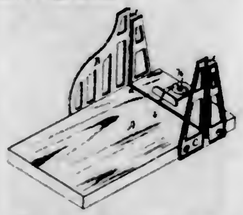
2. In a nail-machine, the combination of the shaft 3, provided with suitable hammer and feed operating devices, with the shaft 23, provided with double cams, as described, for operating the cutters and grippers, said shafts being so geared together that the shaft 3 shall rotate at double the speed of the shaft 23, substantially as set forth.

331,989. SPRING-BED. PETER H. MELLON, St. Louis, Mo. Filed Aug. 1, 1885. (No model.)



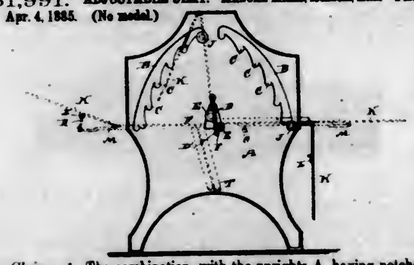
Claim.—In a bed-bottom of springs, the combination, with a row of springs and a tie-rod formed with hooked loops extending through the outer rings, of another row of springs having ends projecting at right angles to the outer rings, and formed with hooked extremities in the same plane as their rings, and engaging the loop-hooks independent of the loop-rings, the end hooks and loop-hooks forming hinge-connections intermediate of the rows of springs, substantially as set forth.

331,990. BREAD-CUTTER. NATHAN W. MERWIN, New Haven, Conn. Filed Sept. 14, 1885. (No model.)



Claim.—The herein-described device for cutting bread, consisting of a base, A, constructed with a transverse groove, *a*, a longitudinal groove, *b*, and provided with side guides, B C, each constructed with a vertical slot, *d*, arranged in the same plane as the groove *a*, combined with the adjustable stop D, constructed with a flange, *e*, at its inner end and with a stud, *f*, upon its under side adapted to slide in the groove *b*, also constructed with a transverse slot, *g*, the disk A, constructed with wings by which it may be turned, and with an eccentric boss upon its under side adapted to set into and work in the slot *g*, the said disk arranged upon a vertical axis fixed in the base, and whereby turning the disk A imparts longitudinal movement to the stop, substantially as and for the purpose described.

331,991. ADJUSTABLE SEAT. MANOAH MILES, Russell, Kan. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination, with the uprights A, having notched curved slots B, of the seat-boards G, pivoted between the end pieces, the rods H, secured to the seat-boards and passed through the slots B, and of the wings K, hinged to the swinging edges of the seat-boards, substantially as herein shown and described.

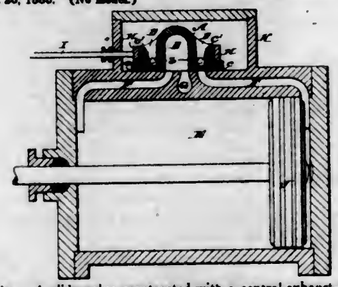
2. The combination, with the uprights A, having notched curved slots B, of the seat-boards G, pivoted between the uprights, the hinged wings K, the sliding bolts M, and the rods H, secured to the seat-boards and passed through the curved slots B, substantially as herein shown and described.

3. The combination, with the uprights A, having slots B, of the seat-boards G, the hinged wings K, the rods H, the sliding bolts M on the under sides of the seat-boards, the braces R, hinged to the same, and the stops L on the under side of the wings K, substantially as herein shown and described.

4. The combination, with the uprights A, of the seat-boards G, the wings K, the bolts M, having recesses Q, and the braces R, hinged on the ends of the bolts, substantially as herein shown and described.

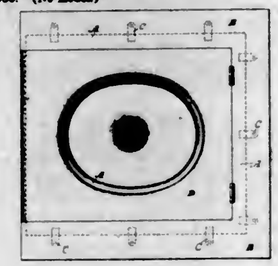
5. The combination, with the uprights A, of the swinging seat-boards G, the rods H on the same, the bolts M, and the pins O on the inner ends of the said bolts, substantially as herein shown and described.

331,992. SLIDE-VALVE. WILLIAM MITCHELL, Altoona, Pa. Filed Mar. 30, 1885. (No model.)



Claim.—A slide-valve constructed with a central exhaust-chamber, B, a steam-port, C, at each side of said chamber, and with the parts *c c* at each side of the exhaust-chamber standing back of the plane of the contact-faces of the chamber-walls, which form the valve-face, substantially as herein set forth.

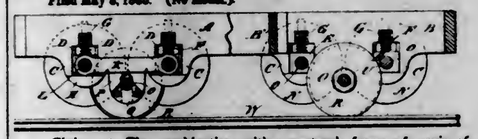
331,993. WATER-CLOSET DRIP-TRAY. CHARLES H. MOORE, Yonkers, N. Y., assignor of one-half to Wilbur F. Washburn, same place. Filed June 26, 1885. (No model.)



Claim.—1. A water-closet drip-tray with a flexible edge or rim attached to the seat-frame by clamps screwed to the frame at points where the tray and frame do not fit, so as to spring the edge even with the frame, whereby the unavoidable irregularity of thin drip-trays is overcome and a tight joint obtained, substantially as described.

2. A water-closet drip-tray having one of its edges formed with a slight downward curve, substantially as described.

331,994. CAR-TRUCK. CHARLES L. MORRISSON, Brooklyn, N. Y. Filed May 8, 1885. (No model.)



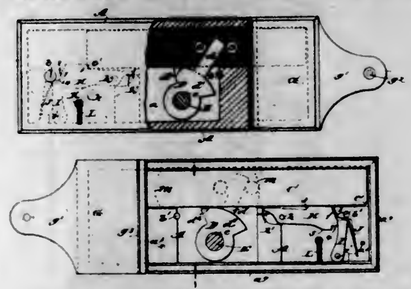
Claim.—1. The combination, with a car-truck frame, of a pair of axles journaled in boxes on the frame, bars uniting the boxes of the pair of axles at each side of the frame, a wheel on each end of each axle of each pair, an additional axle, on which the wheels of the above-mentioned axles rest, and flanged wheels on the said additional axle, substantially as herein shown and described.

2. The combination, with a car-truck frame, of the boxes E, having necks J, the link-bars K, having eyes through which the necks J can be passed, the axles M, journaled in the boxes E, the wheels N on the axles M, the axle O, on which the wheels N rest, and the wheels R on the axle O, substantially as herein shown and described.

3. The combination, with a car-truck frame having the lugs C P or pedestals on its side bars, of the boxes E, the blocks H Q, the axles M O, and the wheels N R on the same, substantially as herein shown and described.

4. The combination, with a car-truck frame, of the axles M, the wheels N, the axles O, formed of two sections, each having heads S on the inner ends, the box T, and the nuts U, screwed on the ends of the same, substantially as herein shown and described.

331,995. LOCK. WILLIAM G. MUMMA, Warrensburg, Mo. Filed Sept. 3, 1885. (Model.)



Claim.—1. The combination, with the sliding bolt, of a tumbler having a bit for throwing the bolt, and a projection or block having shoulders adapted to rest against said sliding bolt and prevent its being shaken out of place either in its thrown or retracted position, substantially as set forth.

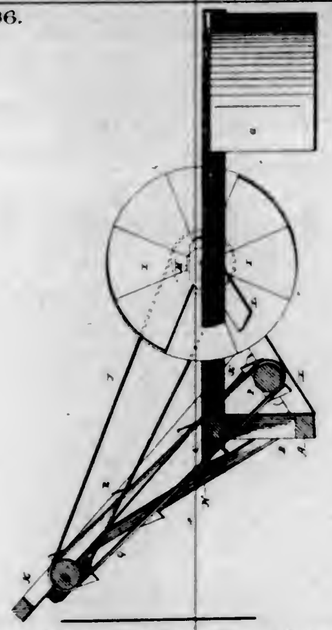
2. The combination, with the lock-case having a beveled shoulder at its rear end, of a shouldered dog pivoted at one end below the bolt for locking the same, and having its free end beveled and adapted to abut against the beveled shoulder on the lock-case, the locking-pawl below and at right angles to the said dog, and a spring acting to throw the free end of the pawl into engagement with the dog, the dog and pawl both being in the path traversed by the key to the lock, substantially as set forth.

3. The cast-metal case A of the lock, formed with its upper and lower sides inclined outward and toward each other at their outer edges, the inner edges of the said sides being beveled outward from their inner sides, as shown at a^4, the upper side having an undercut groove in its inner face, and the lower side having a rabbet, a^2, and the back plate, *a*, fitting in the undercut groove and rabbet, substantially as set forth.

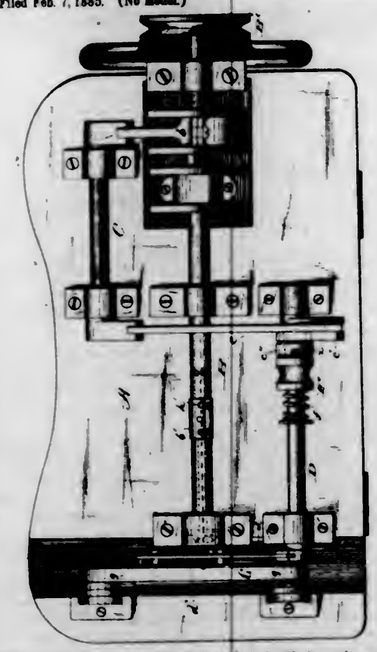
331,996. CURRENT-WHEEL. ABRAM R. NELLS, Glenn's Ferry, Idaho. Filed July 25, 1885. (No model.)

Claim.—In a water-elevator, the frame having a current-wheel mounted therein, and a deflecting-wall extending upstream and at an angle to the current, and another portion which extends up to and overhangs the embankment of the stream, the rollers mounted, the one in the upper end of the overhanging portion and the other in the frame proper, the belt, and the buckets secured thereto.

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331,997. SEWING-MACHINE. STEPHEN O'CONNOR, Bridgeport, Conn. Filed Feb. 7, 1885. (No model.)



Claim.—1. In a convertible lock-and-chain-stitch sewing-machine, the combination, with a needle, of lock-stitch mechanism consisting of the main drive-shaft, a pitman, loose arm or crank, a clutch, a counter-shaft, and a shuttle-driver, and chain-stitch mechanism consisting of a main shaft, looper-head telescopically connected therewith, and a locking device therefor, substantially as described.

2. In a sewing-machine, the combination of a main driving-shaft, a counter-shaft, a pitman, and means for connecting the pitman with the shaft, a loose arm or crank, a clutch, and a shuttle-carrier, whereby the counter-shaft may be conveniently thrown into and out of operation.

3. In combination with the bed-plate of a sewing-machine, a shuttle-race, links or swinging arms for supporting said shuttle-race, and means for locking the shuttle-race, whereby said race may be thrown out of or secured in its operative position.

4. In a sewing-machine, the combination of a needle, a main drive-shaft, a looping-head telescopically connected with said shaft, and a catch or lock for holding the looper in its working or its idle position, substantially as described.

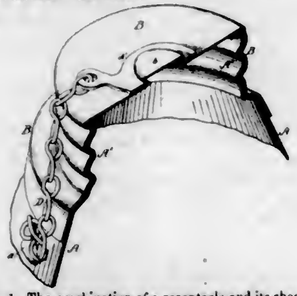
331,998. HOSE-COUPLING. WILLIAM C. PARSELS, Ellenville, N. Y. Filed May 7, 1884. (No model.)



Claim.—1. In a hose-coupling, the combination of the heads B B, projecting flanges A A, mounted on said heads and extending half-way across the same, and having slots C C, entering flanges D D, and key G, entering holes K K, for securing the two parts together, whereby when the parts are secured in place a joint is formed having a direct longitudinal alignment with the center line of the heads, substantially as described.

2. As an article of manufacture, a hose-coupling consisting of heads B B, having projecting flanges A A, provided with slots C C, said flanges extending half-way across said heads and forming a joint in direct alignment with the center line thereof, entering flanges D D, and a key, G, for securing the parts together, substantially as described.

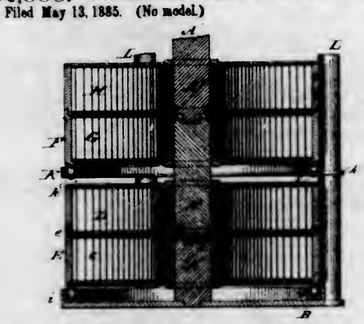
331,999. SHEET-METAL CAP. FRANK W. PERRY, Philadelphia, Pa. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination of a receptacle and its sheet-metal cap with a securing-chain having a ring, d', said cap having a projection, b, with its outer edge pressed down onto the ring, substantially as set forth.

2. A receptacle having a securing-chain attached thereto, provided with a sheet-metal ring, d', at its end, in combination with a screw-cap having a central projection, b, with its upper edge bent over said sheet-metal ring, as set forth.

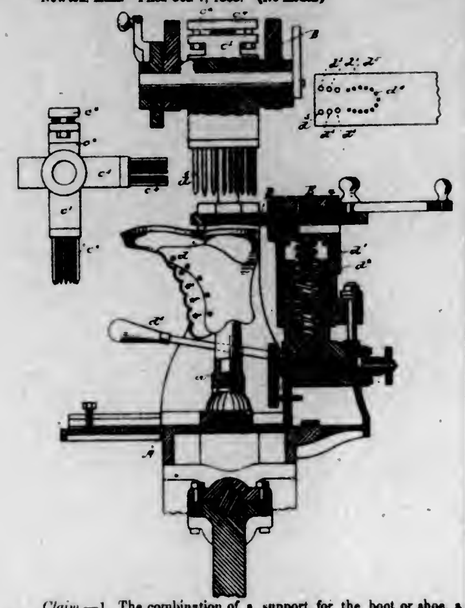
332,000. SPRING-MOTOR. WILLIAM H. POWELL, Philadelphia, Pa. Filed May 13, 1885. (No model.)



Claim.—1. A spring-motor comprising a central sectional shaft, right and left wound springs, with boxes and a support for said springs, and boxes external to said shaft, substantially as shown and described.

2. The combination, in a spring-motor, of a central sectional shaft right and left wound springs having their inner ends respectively connected to different sections of said shaft, boxes or casings for said springs, and anti-friction rollers having bearings on supports external to said shaft, substantially as shown and described.

332,001. HEEL-NAILING MACHINE. FREEBORN P. RAYMOND, 2d, Newton, Mass. Filed Oct. 7, 1885. (No model.)



Claim.—1. The combination of a support for the boot or shoe, a templet having the holes d^4 d^5, and the nail-driving devices, all substantially as described.

2. The combination of a support for the boot or shoe, a templet having the holes d^4 d^5, a sliding nail-holder having the holes corresponding to those of the templet, and the nail-driving devices, all substantially as described.

3. The combination of a support for the boot or shoe, a templet having small holes d^5, and the comparatively large holes d^6, arranged in front of the holes d^5, and a gang or group of drivers of a size to fit the holes d^5, and a gang or group of larger drivers to fit the auxiliary holes, all substantially as specified.

4. In a heel-nailing machine, the combination of a support for the boot or shoe, a templet having the cavity d and the holes d^4, and enlarged holes d^5, entering said cavity, all substantially as specified.

332,002. INJECTOR. JOSEPH REICHMANN, Chicago, Ill. Filed Mar. 18, 1885. (Model.)

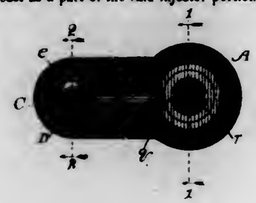
Claim.—1. In an injector, the combination of a movable delivery-tube and a self-adjusting combining-tube supported independently of the delivery-tube by means of supports p and l.

2. In an injector, the combination of a self-adjusting combining-tube and a movable delivery-tube operating to discharge the jet into a tube wherein the initial velocity of the jet is maintained throughout most of its length.

3. In an injector, an adjustable combining-tube carrying and incasing a movable delivery-tube, in combination with a tube, n, into which the delivery-tube extends, substantially as and for the purpose set forth.

4. In an injector, the combination of an adjustable combining-tube carrying and incasing a movable delivery-tube, and a guide-tube extending into the said combining-tube around the said delivery-tube, as and for the purpose set forth.

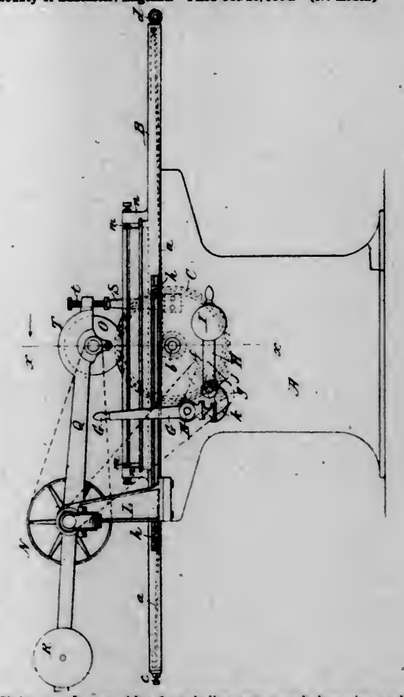
5. An injector comprising the injector portion G, having the adjustable combining-tube l, carrying and incasing the movable delivery-tube o, and supported toward one end by a guide-tube, n, secured within the said injector toward its forward extremity and extending backward into the said combining-tube around the said delivery-tube, and the ejector portion C, cast as a part of the said injector portion, substantially as described.



332,002.



332,003. GRINDING-MACHINE. GEORGE RENARDS, Manchester, County of Lancaster, England. Filed Oct. 20, 1884. (No model.)



Claim.—1. In a machine for grinding cutters or knives, the combination of the table B, having adjustable knife-holder J and tappets h h, the drum b, cord or band a, shaft e, friction-gears C, f, and g, rock-shaft E, having a bracket for supporting the small gears f g, the reversing-lever G, having a spring, i, the counterbalance-lever H, and means, substantially as described, for actuating the gears, whereby a rapid automat-

ically-reciprocating movement is imparted to the table, substantially as shown and set forth.

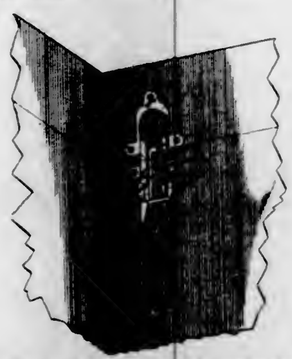
2. In a machine for grinding cutters or knives, the combination, with the main driving-shaft F and the grinding-wheel O, mounted on a spindle or shaft, P, that is actuated from said driving-shaft, of the movable frame Q, mounted on the main shaft and having a counterbalance-weight, R, adjusting-screw *t*, and a hood, T, substantially as described.

3. In a machine for grinding cutters or knives, the combination of the main frame A, having standards L L, the main driving-shaft F, the movable frame Q, carrying the grinding-wheel O, and means, substantially as described, for imparting a constant lateral movement to said grinding-wheel during its rotation, substantially as described.

4. In a machine for grinding cutters or knives, the combination of the main frame A, movable frame Q, grinding-wheel O, mounted in said movable frame, driving-shaft F, worm *v*, and eccentric wheel *v2*, connected to the end of said shaft, and the links *r r*, whereby a lateral reciprocation is imparted to the frame Q and its accompaniments, substantially as described.

5. In a machine for grinding cutters or knives, the combination of the main frame A, reciprocating table B, knife-holder J, mounted adjustably on said table, main driving-shaft F, having pulleys M N and worm-gear *v w*, the movable frame Q, and the grinding-wheel O, mounted in said movable frame, substantially as described.

332,004. TRUNK-CATCH. Thomas L. Rivers, Montclair, N. J. Filed July 25, 1885. (Model.)



Claim.—1. In a trunk-fastening device, the combination of a lid-plate having a locking-shoulder, a trunk-plate having rabbeted edges b^3 b^4, a pivoted locking-latch carried by said trunk-plate, and springs D, seated in the rabbeted edges of a trunk-plate, and adapted to keep the locking-plate in contact with the lid-plate, as set forth.

2. In a trunk-fastening device, the combination of a skeleton-shaped trunk-plate, having a notch, *c*, a spring-actuated locking-latch pivoted within the side bars of the trunk-plate and normally depressed flush therewith, a lid-plate having a beveled locking-shoulder with which the locking-latch engages, and a V-shaped projecting lug, h^3, adapted to fit in the notch *c* of the trunk-plate, as set forth.

3. In a trunk-fastening device, the combination of a skeleton-shaped trunk-plate, having bearings f^4, and rabbeted edges b^2 b^4, springs D, seated in said rabbeted edges, a locking-latch, E, having lugs seated in the bearings f^4, and normally depressed within the trunk-plate by the said springs, and a lid-plate having a projecting beveled locking-shoulder, *h'*, whereby when the lid descends the locking-shoulder will automatically engage the pivoted locking-latch, which lies within the plane of the lid-and trunk-plates when the said plates are locked together, as set forth.

332,005. VELOCIPEDE. Beverly Roper, Atlanta, Ga. Filed May 15, 1885. (No model.)

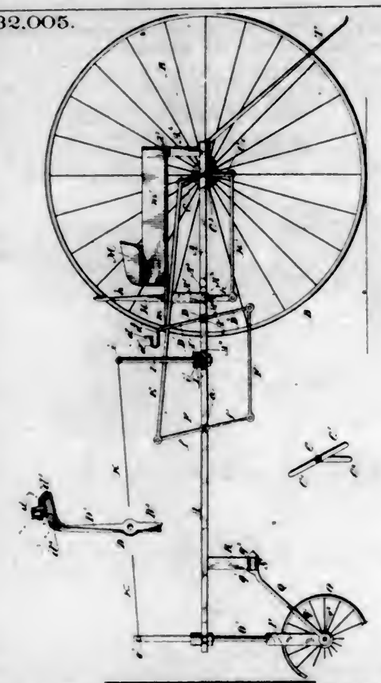
Claim.—1. The combination of the crank-shaft C, having cranks C' C^2 C^3, of the foot-levers D, levers F, and connecting-rods F' E, the hand-levers H, and connecting-rods H', as described.

2. The combination, with the steering-wheel O and the forked bar Q, the arms *q* of which are mounted on the wheel-axle, said bar having at its end shoulders q' q^2, of the slotted segmental guide-plate R, as described, for the purpose specified.

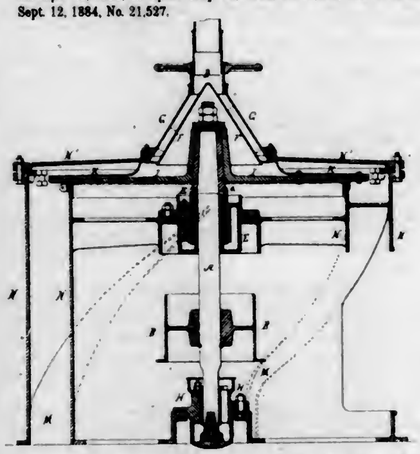
3. In a velocipede, a foot-lever, D, having a stirrup, *d*, and constructed to form a heel-rest, d^2, as described, for the purpose specified.

4. The combination, with the frame A, springs M', and seat M, of a receptacle, *m*, (basket or other,) suspended from said seat, as shown, and for the purpose specified.

332,005.



332,006. MACHINE FOR THE REDUCTION OF GRAIN. Henry F. Saint Requier, Asnières, assignor to La Société Anonyme pour le Procédés Brevetés de Farinerie Saint Requier, Paris, France. Filed June 25, 1884. (No model.) Patented in France Feb. 1, 1882, No. 147,163; in Germany Feb. 11, 1882, No. 20,302; in Belgium Mar. 31, 1884, No. 64,688; in England Apr. 2, 1884, No. 5,837; in Italy Apr. 12, 1884, No. 16,714; in Russia Apr. 12, 1884; in Spain July 30, 1884, No. 6,168, and in Austria Sept. 12, 1884, No. 21,527.



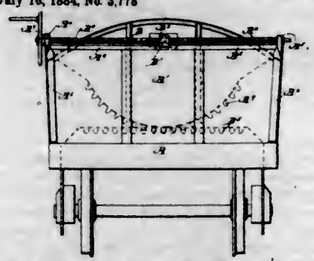
Claim.—1. The combination of the casing of a grain-reducing machine having a bearing-box, E, with a horizontal disk, and a vertical driving-spindle, A, carrying a sleeve adapted to said bearing-box and having a conical portion on which the hub of the said disk is secured, substantially as set forth.

2. The combination of the casing, the feed-spout, and a ring carrying cutting-knives, with a rotary grooved table in line with said knives and carrying a cover, K, substantially as described.

3. The combination of the rotary table with a casing, N, and cover N', and the knife-ring J, secured between the said casing and cover, substantially as specified.

4. The combination of the knife-ring and knives having enlarged ends with spacing-washers and securing bolts and nuts, as set forth.

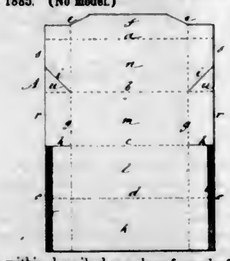
332,007. DUMPING-CAR. Robert Savage, South Melbourne, Victoria, assignor of one-half to Frederick York Walmsley, Eureka Walgott, New South Wales. Filed June 25, 1885. (No model.) Patented in Victoria July 16, 1884, No. 3,778.



Claim.—1. In a dumping-car, the combination, with the truck-frame, of the car-body having a curvilinear or concave bottom, mechanism, substantially such as described, for imparting to said body a rolling motion on the truck-frame, and a lock for locking said body into position, substantially as and for the purpose specified.

2. In a dumping-car, the combination, with the truck-frame, of a car-body formed in two sections having curvilinear or concave bottoms, and mechanism, substantially such as described, for imparting to said body-sections a rolling motion on the truck-frame toward and from each other, and a lock to lock the same into position, substantially as and for the purpose specified.

332,008. MONEY-ENVELOPE. Patrick Scanlan, Ida Grove, Iowa. Filed July 15, 1885. (No model.)



Claim.—The within-described envelope formed of or from a sheet, A, having transverse creases *a b c d*, longitudinal or side creases, *g g*, and side cuts, *h h* and *i i*, leaving or forming body parts *k l m n*, and end and side flaps, *f o r s*, and having two of its body parts, *k l*, and side flaps, *o o*, folded and cemented to constitute a pocket, and the whole adapted to be subsequently folded and sealed, essentially as herein shown and described, and for the purposes set forth.

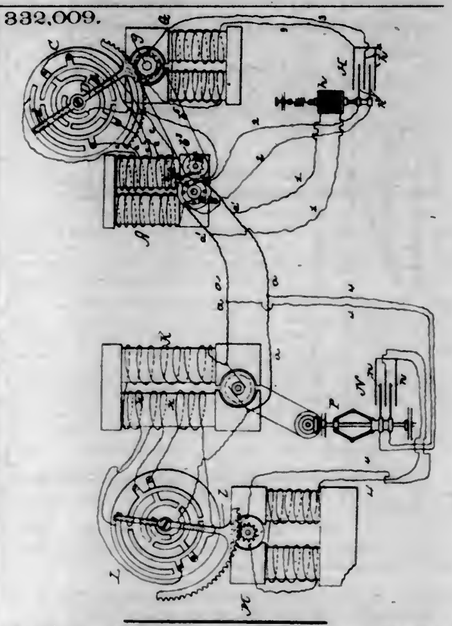
332,009. ELECTRICAL TRANSMISSION OF POWER. William M Schlesinger, Philadelphia, Pa. Filed Sept. 19, 1885. (No model.)

Claim.—1. The combination of a line-circuit, a generator having its field-magnets wound in sections, a circuit-reverser for said sections, having a movable handle or lever, a derived or shunt circuit from the generator, having a circuit-reverser and an electric motor, power transmitting devices interposed between the armature-shaft of the motor and the movable handle of the circuit-reverser for the generator field-magnet sections and between said shaft and the generator commutator-brushes, and a shunt or derived circuit from predetermined points along the line-circuit having an electro-magnet provided with an armature in engagement with the movable part of the circuit-reverser in said motor-circuit whereby the strength of the generator field-magnets is automatically controlled to maintain a constant electro-motive force at said predetermined points on the line-circuit.

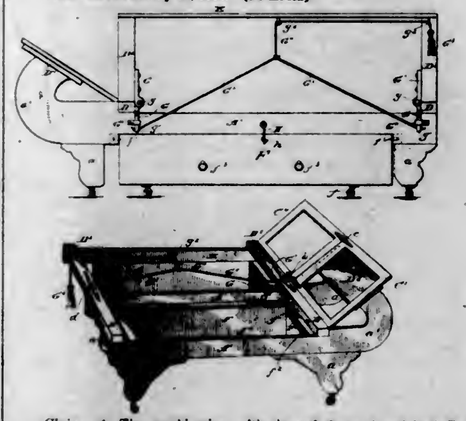
2. The combination, with an electric circuit having a generator and automatically-acting devices for maintaining a constant electro-motive force at two points on said circuit, of an electro-motor having a circuit-reverser for its field-magnet sections, a shunt-circuit from the line-circuit having an electro-motor and a circuit-reverser provided with a governor attachment operated by the armature-shaft of the motor in the line-circuit, and transmitting mechanism interposed between the armature-shaft of the electro-motor in the shunt-circuit and the circuit-reverser for the field-magnet sections of the motor in the line-circuit, substantially as and for the purpose set forth.

3. The combination of an electric circuit, a generator and a motor in said circuit and whose field-magnets are wound in sections, circuit-reversers for said sections, and shunt-circuits having electro-motors, circuit-reversers, and regulating devices for automatically-operating the circuit-reversers of the field-magnet sections of the motor and the generator in the line-circuit, as and for the purpose set forth.

332,009.



332,010. SOFA-BED. Amos Schrock, Chicago, Ill. Filed Aug. 10, 1883. Renewed July 27, 1885. (No model.)



Claim.—1. The combination, with the sofa-frame A and back B, hinged to said frame, of dogs G, loosely pivoted to the lower edge of the back upon pivots at right angles to the plane of the back, and cords connected with the free ends of said dogs and extended to a single point upon the said back, substantially as and for the purposes set forth.

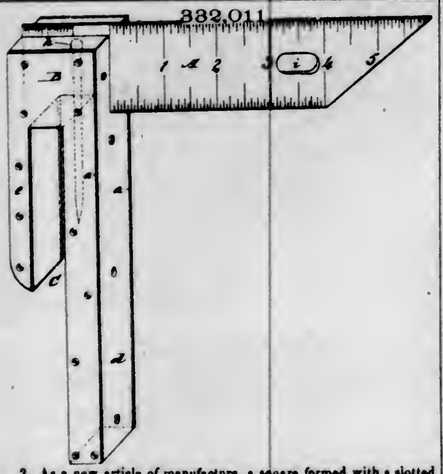
2. The combination, with the sofa-frame A and back B, hinged to said frame, of dogs G, loosely pivoted to the lower edge of the back upon pivots at right angles to the plane of the back, catches G^2 on the frame, and cords connected with the free ends of said dogs and extended to a single point upon the said back, substantially as and for the purposes set forth.

3. The combination, with a sofa-frame, A, and hinged skeleton back B, comprising the longitudinal top and marginal rail, E, and end rails, D^2 D^3, of dogs G, loosely pivoted to the inner faces of the lower ends of the said end rails upon pivots at right angles with the plane of the back, and lifting-cords connected with said dogs and extending to a common point upon the back, substantially as described, and for the purposes set forth.

332,011. SQUARE. William F. Seargeant, Marshall, Mo. Filed July 20, 1885. (No model.)

Claim.—1. A square in which the stock is provided with a slot, as C, of which the upper face is at right angles to the face of the stock, substantially as described, and for the purpose set forth.

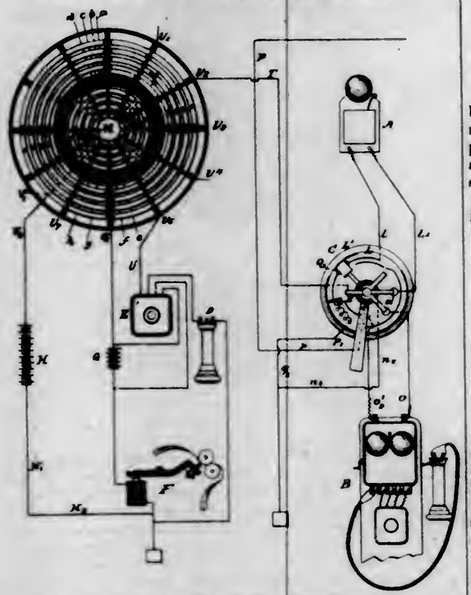
332,011.



2. As a new article of manufacture, a square formed with a slotted stock and a graduated blade having a miter-bevel at its end, substantially as described.

3. As a new article of manufacture, a square formed with a slotted stock and a graduated blade having a miter-bevel at its end and provided with an elongated hole, as i, substantially as described.

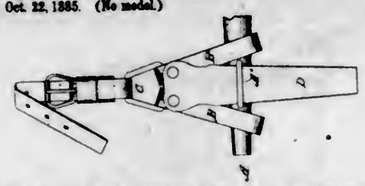
332,012. TELEPHONIC AND TELEGRAPHIC SIGNAL SYSTEM. J. A. Seely, New York, N. Y. Filed Sept. 28, 1883. (No model.)



Claim.—1. In a combined telephonic and telegraphic signal system, a signaling device comprising concentrically-arranged contact strips and buttons, substantially as shown, circuit-completing pieces J' J^2, electrically connected, and circuit-completing pieces I, K', K^2, and c^2, insulated from each other, all of said pieces being secured to a common handle, substantially as shown and described.

2. A combined telephonic and telegraphic system comprising a call-bell and telephonic apparatus, each having suitable electrical connections to the switch device C, the said bell, telephonic apparatus, and switch being located at the subscriber's station, a register for indicating the number or sign of the subscriber's station, telephonic apparatus in communication with the subscriber's station, a switch-board, M, a main-circuit battery, and a special battery for calling subscribers, said register telephonic apparatus, which is in communication with the subscriber's station and the said batteries, being located at the central station, substantially as described.

332,013. NECK-YOKE. Peter Shatter, New Athens, Ohio. Filed Oct. 22, 1885. (No model.)

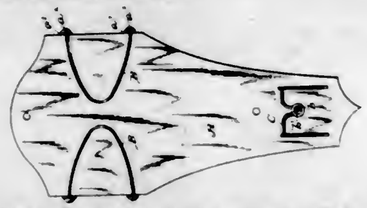


Claim.—1. A safety-hitch for neck-yokes, comprising two loops of suitable material passed around the neck-yoke, and means for preventing the loops slipping off the neck-yoke, substantially as set forth.

2. The combination of the neck-yoke, the loops passed around the neck-yoke and held at their upper ends by a ring, and a connecting-strip or its equivalent secured to the rear sides of the loops, substantially as and for the purposes specified.

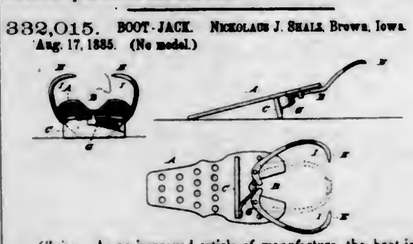
3. The combination of the neck-yoke provided with a staple near its end, two loops passed around the neck-yoke with the staple between them and held at their upper ends by a ring, a connecting-strip or its equivalent secured to the rear sides of the loops, and a depending tongue, (which, together with the loops, may be made of one piece of material,) secured to the front sides of the loops and passed through the staple in the neck-yoke, substantially as described.

332,014. BROOM-SUPPORT. William T. Shaffer, Evanston, Wyo. Filed Sept. 19, 1884. (No model.)



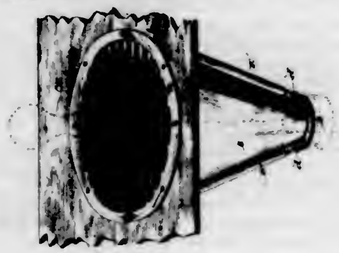
Claim.—In a broom-holder, the combination, with the back or board, of the overhanging arms with their rear ends let into sockets or recesses in the side edges of said board or back, and the bracket or support with its central portion let into a cavity in said board or back, said arms and bracket being removably held in place by screws and washers, substantially as shown and described.

332,015. BOOT-JACK. Nickolaus J. Smals, Brown, Iowa. Filed Aug. 17, 1885. (No model.)



Claim.—As an improved article of manufacture, the boot-jack described, consisting of the sole-plate having its forward edge notched, the transverse bridge beneath, the similar curved arms, I I, pivoted at their inner ends to the under side of the sole-plate, the stops for the arms on the under side of the said plate, and the spring G, secured to the bridge and pressing at its opposite end on the inner ends of the said curved arms, all adapted for joint operation, substantially as specified.

332,016. CUSPIDOR. Orson W. Smith, Charlevoix, Mich., assignor of one-half to Forrest S. Blanchard, same place. Filed Dec. 11, 1884. (No model.)



Claim.—1. The combination, with a cuspidor having an opening at its lower end, of a valve and inclosed spiral springs arranged on opposite sides of said cuspidor, connecting and holding the valve against the opening, as set forth.

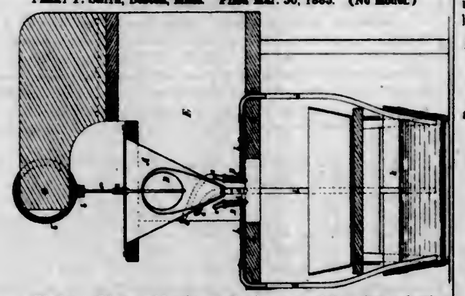
2. The combination, with the cuspidor, substantially as described, of a valve held against the lower end thereof by means of spiral springs inclosed in tubes on the opposite side of said cuspidor, as set forth.

3. The combination, with a railway-car or the like, of the cuspidor having an opening at its lower end, and a valve held against said opening by spiral springs connected therewith and arranged on opposite sides of said cuspidor, substantially as described.

4. The combination, with a cuspidor having an opening at its lower end, of a valve and spiral springs arranged on opposite sides of said cuspidor, and connecting said cuspidor and valve, substantially as set forth.

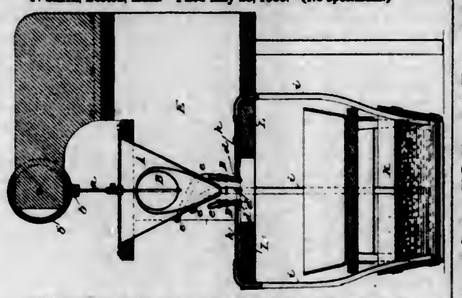
5. A rod having a flattened end and a spring-plate having an outwardly-turned end, substantially as set forth.

332,017. MECHANISM FOR CONVERTING FLOUR INTO DOUGH. Percy F. Smith, Boston, Mass. Filed Mar. 30, 1885. (No model.)



Claim.—The combination of the hopper and its agitator, having mechanism for revolving it, as described, with four or other suitable number of atomizers arranged immediately below the educt of such hopper, and provided with means of forcing air through their vents and of supplying water thereto, whereby when the hopper is charged with flour and such flour is stirred by the agitator and caused to fall in a divided state from the hopper the particles of such flour shall be subjected to downward currents of air and spray or vapor thrown upon them by the atomizers, all being so as to cause such particles on falling together to be reduced to a spongy mass or dough, as set forth.

332,018. METHOD OF CONVERTING FLOUR INTO DOUGH. Percy F. Smith, Boston, Mass. Filed May 20, 1885. (No specimens.)



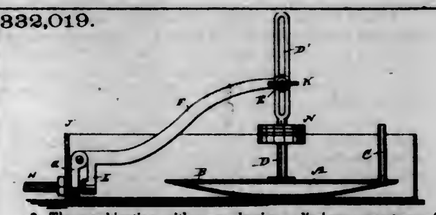
Claim.—The mode or process, substantially as described, of treating flour for converting it into a spongy mass or dough, such consisting in forcibly separating the particles asunder and causing them, in a divided state or cloud, to pass or fall through the air, and while so passing or falling discharging upon them air and vapor or spray in a manner to moisten them and cause them when coming or falling together to adhere to each other and the mass to be permeated with air.

332,019. AUTOMATIC DISCHARGER FOR EVAPORATING-PANS. Myron E. Sprague, Plymouth, Vt. Filed June 5, 1885. (No model.)

Claim.—1. The combination, with a pan having a discharge-aperture, of a pivoted lever carrying a valve for closing said aperture, a float connected to said lever, and weights for holding the float submerged in the liquid, substantially as and for the purpose set forth.

2. The combination, with a pan having a discharge-aperture, of a pivoted lever carrying a valve for closing said aperture, a hollow float connected with the lever, which float has a convex bottom and an air-outlet tube, and weights for holding the float submerged in the liquid, substantially as herein shown and described.

332,019.

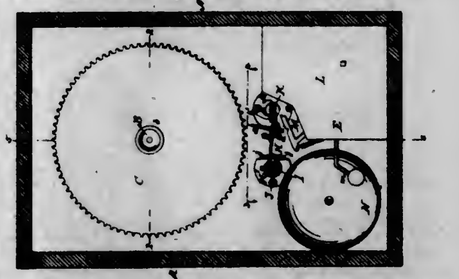


3. The combination, with a pan having a discharge-aperture, of a pivoted lever carrying a valve for closing said aperture, a float, a standard in the pan pivotally connected with the above valve-lever, and of weights on a stem projecting upward from the float, substantially as herein shown and described.

4. The combination, with a pan having an outlet-pipe, of a pivoted lever having a valve for closing the pipe, the float A, the stem D, having the slotted part D', and of a screw and nut for holding the valve-lever on the slotted part D', substantially as herein shown and described.

332,020. ALARM TIME-RECORDER FOR RAILWAYS, &c. Geo. H. Stout, Philadelphia, Pa., assignor of one-half to Warren H. Paley, same place. Filed Apr. 22, 1885. (No model.)

Brief.—The record-strip is divided in one direction into hour-spaces and into minute-spaces at right angles to the hour-spaces.



Claim.—1. The herein-described time-detector, comprising a clock mechanism and a record-card moved thereby, in combination with a spring indenting-punch, a cam acting to draw the spring-punch back from the card and release it again, and an alarm operated by the said cam.

2. The herein-described time-detector, comprising a time mechanism, a disk operated thereby and carrying a record-card, with a spring indenting-punch, and a cam adapted to draw the said punch away from the card and release it again, substantially as set forth.

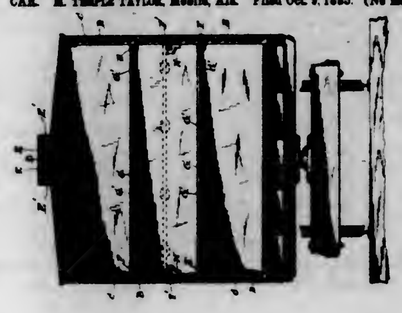
3. The herein-described time-detector, comprising a time mechanism and a rotary disk, C, operated thereby and carrying a record-card, in combination with a fixed support, F', within the card carried by the disk, a spring-punch, and a cam for withdrawing the punch and releasing it again.

4. The combination of the time mechanism and rotary disk carrying the record-card with a laterally-adjustable spring-punch and cam-shaft K, adapted to withdraw the spring-punch from the card and release it again, substantially as specified.

5. The combination of the time mechanism, a record-card operated thereby, with a screw-shaft geared to said time mechanism, a spring-punch and collar mounted on the screw-shaft, and a cam for acting on the spring-punch, substantially as set forth.

6. The combination of the time mechanism and a record-card operated thereby with a screw-shaft, a spring-punch and collar mounted on the screw-shaft, and a cam for acting on the spring-punch.

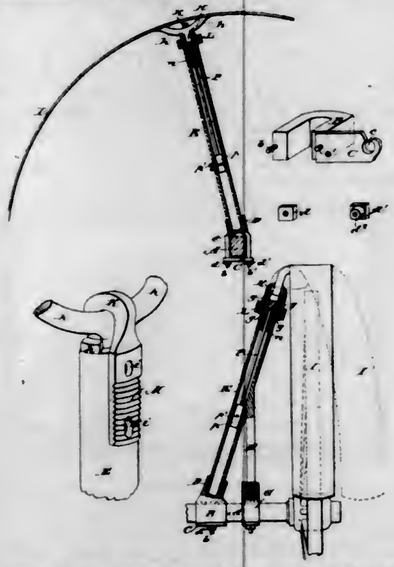
332,021. COMBINED VENTILATED VEGETABLE AND STOCK CAR. M. Temple Taylor, Mobile, Ala. Filed Oct. 9, 1885. (No model.)



Claim.—1. The combination, in a ventilated car having its sides constructed of overlapping slats, of the bottom, constructed of slats separated from each other by spaces equal to the width of said slats, and the battened sections, constructed of slats similarly spaced and adapted to fit into the spaces between the slats of the floor, to form a close solid floor, substantially as and for the purposes specified.

2. The combination, with the car having ventilated sides, and the running-board on top of the car, of the outwardly-inclined slats E, extending from the longitudinal opening in the top of the car, and the inwardly-inclined slats E', depending from the top of the running-board and overlapping the slats E, whereby a ventilating-passage which will exclude snow and rain is secured, substantially as set forth.

332,022. WHEEL-FENDER FOR CARRIAGES. JAMES M. TODD, Albert Lea, Minn. Filed May 1, 1885. (No model.)



Claim.—1. The combination, with the forward axle of a vehicle, of a fender adapted to be rotated by the body of the vehicle when, by the swinging of the said axle upon the king-bolt, the fender is brought against the said body, as set forth.

2. The combination, with the forward axle of a vehicle, and with a support held thereon, of a shaft held to rotate in the outer end of said support and of a fender attached on said shaft, as set forth.

3. The combination, with the forward axle of a vehicle, and with a support held thereon, of a fender attached to a shaft held to rotate in the outer end of said support and of a spring for retaining the said shaft in its normal position, as set forth.

4. The combination, with the forward axle of a vehicle, of the support E, held thereon, the shaft H, held to turn in the outer end of the support and carrying the fender I, and of the rod P, held in the support E and to the shaft H, as set forth.

5. The combination, with the forward axle of a vehicle, of the support E, held thereon, the shaft H, carrying the fender, the clip K, and the rod P, attached to the shaft H and to the support E, as set forth.

6. The combination, with the axle A, of the fender-support E, having brace F, and of the clasps B and G, as set forth.

7. The combination, with the support E, attached to the axle of a vehicle, and provided with studs *g*, of the shaft H, carrying the fender and having lugs *h*, the clip K, having apertures *i* and screw-threaded on the outer faces of its ends, and of the nut L, as set forth.

8. The combination, with a support held on the forward axle of a vehicle, and with a shaft held in the outer end of said support and carrying a fender, of the rod P, having one end held to said support and its other end held to said shaft, as set forth.

9. The combination, with the clasp B, having an internally-screw-threaded socket, D, and the studs *b b'*, of a tie-plate apertured at one end for a stud and having at its other end the aperture *c*, open at one side, and of the nuts *d d'*, as set forth.

10. The combination, with the fender-support E, axle A, and clasp B, of the rubber *e*, as set forth.

332,023. SELF-WINDING WATCH. HERMANN VON DER HEYDT, Chicago, Ill. Filed Dec. 17, 1884. (No model.)

332,023.



Claim.—1. In a self-winding watch, the combination, with a vibrating pendulum, of a spring-actuated detent adapted to normally engage said pendulum, means for holding said detent out of engagement with the pendulum against the action of the spring, and means actuated by part of the watch mechanism which is moved in winding, constructed to release the detent, so as to permit its prompt engagement with the pendulum when the watch is wound to a desired extent, substantially as described.

2. In a self-winding watch, the combination, with a vibrating pendulum, of a spring-actuated detent adapted to normally engage said pendulum, means for holding said detent out of engagement with the pendulum against the action of the spring, and means actuated by a part of the watch mechanism which is moved in winding, constructed to release the detent, so as to permit its prompt engagement with the pendulum when the watch is wound to a desired extent, and means constructed to disengage the said detent from the pendulum at the end of a desired time after such engagement, substantially as described.

3. In a self-winding watch, the combination, with a vibrating pendulum, of a spring-actuated detent adapted to normally engage the pendulum, a notched or serrated wheel, as J, engaged with the detent, means connecting the said wheel with the mainspring-barrel, whereby the wheel is caused to rotate with the barrel in a direction to hold the detent out of engagement with the pendulum, and means operated by a part of the watch mechanism which is moved in winding, constructed to disengage said wheel from the barrel when the watch is wound to a desired extent, whereby said detent is caused to promptly engage the pendulum, substantially as and for the purpose set forth.

4. In a self-winding watch, the combination, with a vibrating pendulum, of a spring-actuated detent adapted to normally engage the pendulum, a notched or serrated wheel, as J, mounted concentrically with the mainspring-barrel and engaged with the detent, a movable part or projection upon the mainspring-barrel adapted to engage a tooth or projection upon said wheel J, and means operated by a part of the mechanism which is moved in winding, constructed to move said part or projection when the spring is wound to a desired extent, so as to release the wheel and permit the prompt engagement of the detent with the pendulum, substantially as and for the purpose set forth.

5. In a self-winding watch, the combination, with the mainspring, mainspring arbor and barrel, and a vibrating pendulum, of a spring-actuated detent adapted to engage the pendulum, a notched or serrated wheel, J, mounted to rotate freely concentrically with the mainspring-arbor and engaged with the detent, a pawl pivoted upon the mainspring-barrel and engaged with the wheel J, and a projection, *g*, upon the mainspring engaged with the said pawl, substantially as and for the purpose set forth.

6. In a self-winding watch, the combination, with the mainspring, a mainspring arbor and barrel, and a vibrating pendulum, of a spring-actuated detent adapted to normally engage the pendulum, a piece, G', of spring metal attached to the end of the mainspring and connecting the latter with the barrel, a projection, *g*, upon the mainspring, means engaged with the detent, constructed to hold the latter free from engagement with the pendulum, and means actuated by the inward movement of the projection *g* when the spring is fully wound, constructed to release the said detent, so as to permit its engagement with the pendulum, substantially as described.

7. In a self-winding watch, the combination, with the mainspring, mainspring arbor and barrel, and a vibrating pendulum, of a spring-actuated detent adapted to engage the pendulum, a notched or serrated wheel, J, mounted concentrically with the mainspring-arbor and engaged with the detent, a pawl, L, pivoted upon the barrel and engaged with the said wheel, and a piece, G', connecting the end of the mainspring with the barrel and provided with a projection, *g*, engaged with the said pawl, substantially as and for the purpose set forth.

8. In a self-winding watch, the combination of a mainspring provided with a slot, *g'*, near its outer end, a mainspring arbor and barrel,

a vibrating pendulum, a spring-actuated detent adapted to engage the pendulum, a piece, G', of spring metal attached to the end of the mainspring and connecting the latter with the barrel, a projection, *g*, upon the mainspring, means constructed to hold the detent free from engagement with the pendulum, and means actuated by the inward movement of the projection *g* when the spring is fully wound, constructed to release the said detent, so as to permit its engagement with the pendulum, substantially as described.

9. In a self-winding watch, the combination, with the vibrating pendulum, of a single spring, N, and stops *n n* upon the watch-plate and pendulum, substantially as and for the purpose set forth.

10. In a winding mechanism comprising a vibrating pendulum and a pendulum-arm, a ratchet-wheel, and a pawl upon the arm and a detent upon the watch-plate engaged with the said ratchet-wheel, said detent being located in such position that when released from the ratchet-wheel it will be encountered by the pawl, so as to free the latter from the ratchet-wheel in the upward movement of the pendulum, means engaged with the detent, whereby the latter may be moved from the outside of the plates, substantially as and for the purpose set forth.

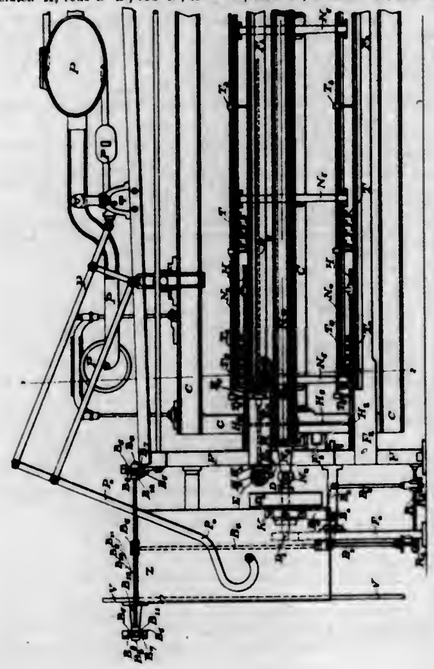
11. In a winding mechanism comprising a vibrating pendulum and pendulum-arm, a ratchet-wheel, a pawl upon the arm, a detent upon the watch-plate engaged with the said ratchet-wheel, and a spring-supported plate, O, provided with a pin, *o*, adapted to engage the said detent, substantially as and for the purpose set forth.

332,024. EMBROIDERING-MACHINE. FRIEDRICH VON MARTINI, Frauenfeld, Switzerland. Filed July 10, 1883. (No model.) Patented in England May 21, 1883, No. 2,530; in France Aug. 23, 1883, No. 155,238; in Germany Apr. 9, 1884, No. 27,347, and in Austria-Hungary Sept. 17, 1884, No. 6,743 and No. 42,324.

Brief.—A brake is connected with the pantograph for causing the handle thereof to be tightly clamped or let free at intervals. A cloth-presser is composed of two or more horizontal rails of angle-iron. A take-up, shuttle, and punching apparatus, each of particular construction, are used.

Claim.—1. In an embroidering apparatus, the combination, with the stitch-forming mechanism and the pantograph, of a clutching and unclutching mechanism, as K and D^9, and means for operating the same, as treadles R' R^2, rods B' B^3, and lever B^3, and connecting-rods, lever and brake slides, as B^4, B^5, B^6, B^7, B^9, B^{10}, and B^{11}, and pantograph-handle, as P^9, whereby the clutching and unclutching of the stitch-forming mechanism from the driving-power will automatically apply the brake to or release the same from the pantograph, as set forth.

2. In an embroidering-machine, the combination, substantially as shown and described, with a stitch-forming mechanism, a brake for the pantograph, consisting of the foot-treadles R' R^2, T-shaped lever B^3, clutch K, rods B' B^3, rod B^4, lever B^6, shaft B^8, levers B^7 B^6, connecting-rods B^5 B^9, brake-slides B^{10} B^{11}, bracket B^{12}, frame F and F^9, stand V, shaft D, pulley D^9, and the pantograph-handle P^9.



3. In an embroidering apparatus, the combination, with the stitch-forming mechanism, of a cloth-presser consisting of two or more horizontal rails of angle-iron mounted on angular levers fulcrumed on brackets forming a part of the machine, and connecting-rods connecting said angular levers and linked to fulcrumed levers having friction-rollers at the ends thereof working in contact with the connecting-rods, which transmit motion from the driving-shaft to the needle-carriage.

4. In an embroidering-machine, the combination, substantially as shown and described, with the stitch-forming mechanism, of the cloth-presser consisting of the horizontal angle-rails H^8, levers H' H^9, pins H, brackets H^3, connecting-rods H^4, connected with levers H^9, small shafts H^2, levers H^8, rollers H^7, and connecting-rods N', which transmit motion from the driving-shaft to the needle-carriage.

5. In an embroidering-machine, the combination, with the stitch-forming mechanism, of a take-up consisting of two or more horizontal shafts, angular levers which are suitably connected by rods, perforated blades secured to the ends of said levers, journaled friction-rollers attached to said levers, eccentric segments each with two hollows, and adjustable screw-bolts on brackets attached to the reciprocating needle-carriage, the whole to operate as set forth.

6. In an embroidering-machine, the combination, with the stitch-forming mechanism, substantially as shown and described, of a take-up consisting of the hollow beams F' F^2, pulley-guides T for the needle-thread, bobbins T^9, angular levers T^6, connecting-rods T^5, perforated blades T^4, shafts T', bearings T^3, cam-rollers T^7, eccentric segments A, hollows A^1 A^2, said segments fulcrumed on brackets A^3, and brackets A^4, with adjustable screw-bolts A' A^5, said brackets A^3 attached on brackets N^5 of needle-carriage.

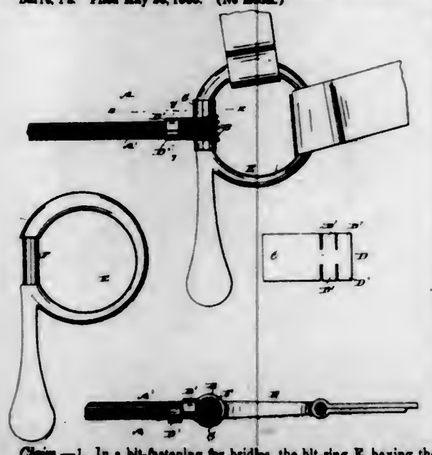
7. In combination with a needle and shuttle carriage of an embroidering-machine, and a driving-shaft provided with crank and eccentric-disk and connecting-rods, mechanism forming the shuttle-movement, consisting of a slotted crank-lever fulcrumed to a pin fixed onto the machine-frame, a guide-rod in a guiding-sleeve with a slotted cross-head thereon, a connecting-link, a transverse double-crooked crank-shaft journaled near its ends, one or more levers mounted thereon, horizontal slide-bars connected to said levers by means of adjustable rods, shuttle-bars provided with recesses or holes, parallel links connecting the latter with said slide-bars, crank-shafts journaled within said recesses or holes, links connecting the cranks to said slide-bars, fixed collars, each with a projection and a pin at the top of said crank-shafts, and circular shuttles, such as described, the whole to operate as and for the purpose set forth.

8. The combination, substantially as shown and described, with the needle and shuttle carriage of an embroidering-machine, of the driving-shaft D, with crank part D^{14}, eccentric-disk D^{12}, and connecting-rods N', the mechanism forming the shuttle-movement consisting, substantially as shown and described, of pin D^{16}, slotted crank-lever D^9, pin D^2, connecting-link D^4, slotted cross-head D^5, guide-rod D^{13}, guide-head D^{11}

transverse crank-shaft D^2 D', journals D^2 D^2, levers D^2, rods S^{20}, pin S^{21}, slide-bars S', parallel links S^{22} S^{22}, pins S^{23} S^{17}, straight bars S^2, with recessed holes S^2, and plates S^{12} and S^{13}, needle-sheet S^{14}, angle-pieces S^2 S^2, brackets S^2, connecting-links S^{15}, cranks S', pins S^{16}, crank-shafts S^2, head-pieces S^2, with pin S^{19}, and projection S^2, and shuttles S, all to operate as and for the purpose set forth.

9. In an embroidering-machine, the combination consisting of the brackets O' O', angle-iron bars O^2, straight bars S^2, awls O^2, rail of angle-iron H^2, provided with holes O^2, supported by the upper arms of angular levers secured to the frame of the machine, and the shaft E', crank E^2, and connecting-gear mechanism, substantially as shown and described.

332,025. BIT-FASTENING FOR BRIDLES. Daniel Waters, Wilkes-Barré, Pa. Filed May 26, 1885. (No model.)



Claim.—1. In a bit-fastening for bridles, the bit-ring E, having the annular recess F, in combination with the cylinder-shaped piece C, the extension-plate D, the clamping-plates D^1, and the bit-wires A', substantially as shown and described.

2. In a bit-fastening for bridles, the cylinder-shaped piece C, the extension-plate D, and the clamping-plates D', in combination with the wires A', forming a loop, B, substantially as shown and described.

3. In a bit-fastening for bridles, the combination, with the bit-rings E, having annular recesses F, of the cylinder C, fitted loosely on the bit-rings, and the wires A', looped around said cylinder, substantially as herein shown and described.

332,026. IRONING-MACHINE. Lewis H. Watson, Chicago, Ill. Filed Dec. 6, 1884. (No model.)



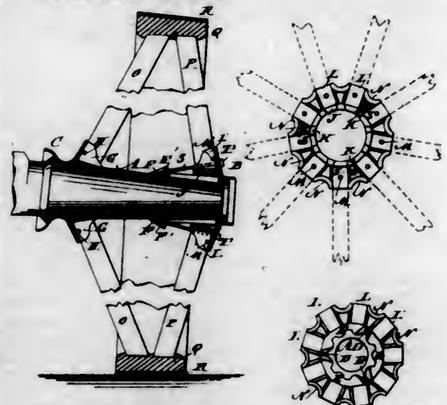
Claim.—1. The combination of the flanged padded roller, the vibrating iron, the yoke therefor, pivoted at one end, and means, substantially as described, for actuating said roller.

2. The padded roller provided with a turning-up flange at its outer end, the fixed bearings thereof, and means, substantially as described, for rotating said roller, in combination with the iron, the pivoted yoke supporting the iron, and means, substantially as described, for vertically adjusting said yoke to shift the position of the iron relative to the roller, substantially as described.

3. The combination, with the flanged padded roller, the vibrating iron, the yoke thereof, pivoted at one end, and the treadle, of a connecting-rod, a spring actuating said rod and normally elevating the iron above the roller, and means, substantially as described, for increasing or diminishing the tension of said spring, for the purpose set forth.

4. The vibrating iron, flanged padded roller, and treadle, in combination with a connecting-rod and a nut adjustable on said rod to increase or diminish the length of rod-connection between the iron and treadle, substantially as and for the purpose described.

332,027. VEHICLE-WHEEL. Henry B. Wemstock, Fall Creek, Wis. Filed May 9, 1885. (No model.)



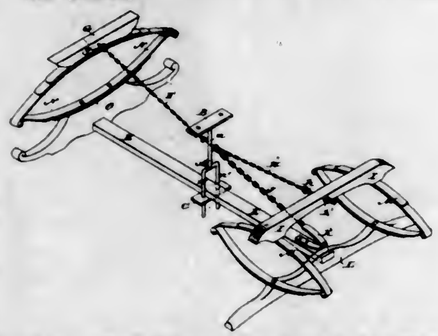
Claim.—1. The combination, with the thimble A, having the pockets G at the rear end, the recessed lugs F, and the splines D, of the ring J, having grooves K and pockets L, and of the bolts S and nuts T, substantially as herein shown and described.

2. The combination, with the thimble A, having pockets G, recessed lugs F, and splines D, of the ring J, having grooves K, pockets L, and webs N, the bolts S, nuts T, spokes O P, and the felly Q, substantially as herein shown and described.

332,028. POLISHING-PAPER. Robert J. White, West New Brighton, N. Y. Filed May 13, 1884. (No specimens.)

Claim.—As an improved article of manufacture, the polishing-paper made as herein described, the same consisting of paper sheets covered with polishing material adapted to be given off from and spread over the surface to be polished when the paper is used, as set forth

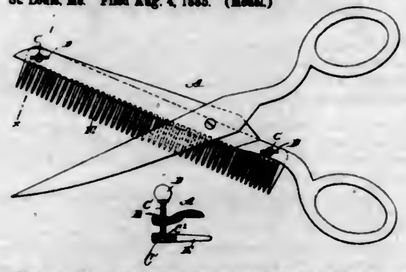
332,029. RUNNING-GEAR FOR VEHICLES. Robert Wimble, William Lorey, Jr., and Christian Feuchter, Ironton, Ohio. Filed Sept. 24, 1885. (No model.)



Claim.—1. In a vehicle running-gear, the combination, with the body-springs, of a guide, A, adapted for attachment to the body and fitted to move vertically therewith, and with the upper sections of the springs, chains, as at F H, connecting the guide A with the upper sections of the springs or with blocks secured thereto, and an elastic stay comprising a chain, J, and spring K, connecting the guide A with the lower part of the running-gear, substantially as and for the purposes herein set forth.

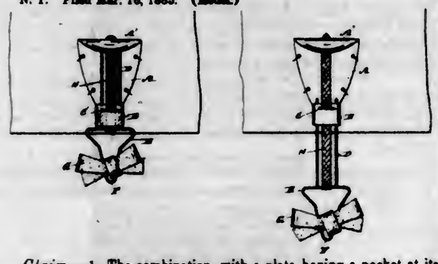
2. The combination, in a vehicle running-gear, of the guide A, fitted to slide in a plate, C, secured to the reach, and provided with a plate, B, adapted for attachment to the vehicle-body, stay-chains F H, connecting the guide A with the upper sections of the springs or with blocks secured thereto, and an elastic stay, comprising a chain, J, and spring K, connecting the guide A, with the lower part of the running-gear, substantially as herein set forth.

332,030. COMB ATTACHMENT FOR SHEARS. Daniel M. Young, St. Louis, Mo. Filed Aug. 4, 1885. (Model.)



Claim.—The combination, with the scissors-blade having screw-threaded apertures near its opposite ends, of the thumb-screws C, passed through said apertures, and the comb E, having apertures in its back, in which apertures the lower ends of the screws are swiveled, as shown at C', substantially as set forth.

332,031. HAT AND BONNET FASTENER. Clara Abell, Geddes, N. Y. Filed Mar. 10, 1885. (Model.)



Claim.—1. The combination, with a plate having a pocket at its lower part, of a hair-pin passed through the pocket, and an elastic band or spring secured to the plate and to the hair-pin, substantially as herein shown and described.

2. The combination, with a plate having a flange at its upper end and a pocket at its lower end, of a hair-pin passed through the pocket, and an elastic band secured to the top of the plate and to the hair-pin, substantially as herein shown and described.

3. The combination, with plate A, having a pocket, B, provided with the slot C, of the hair-pin D, and the elastic band H, secured to the top of the plate and to the hair-pin, and passed through the slot C, substantially as herein shown and described.

332,032. NAILING-MACHINE FOR BOOTS AND SHOES. Edward B. Allen, Portland, Me., assignor to James W. Brooks, trustee, Cambridge, Mass. Filed Nov. 24, 1884. (No model.)

Claim.—1. The top-lift carrier and its slide-rod, combined with the lever s^3, to engage and move the said rod and carrier forward, substantially as described.

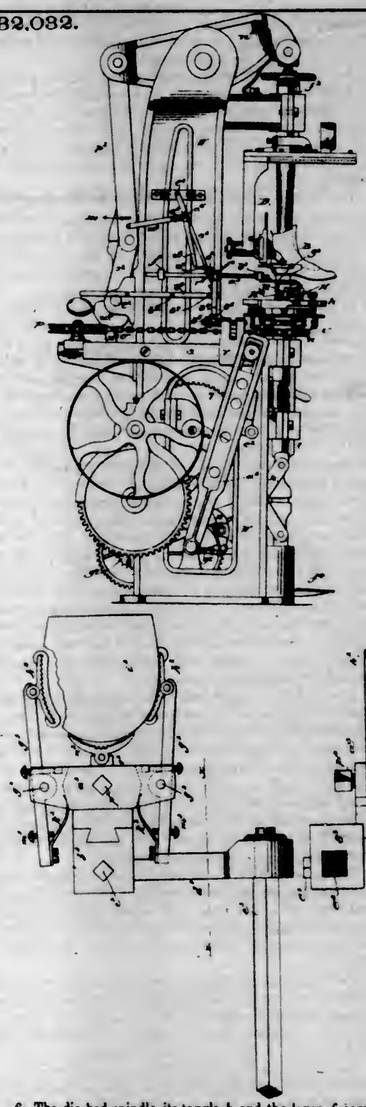
2. The top-lift carrier and its slide-rod, and the lever s^3, combined with the connecting and locking lever, and with means to actuate the same at the proper times, substantially as described.

3. The top-lift carrier, its slide-rod and pin r^3, and lever s^3 and means to operate it, combined with the latch and the carriage on which the same is mounted, the latch causing the backward movement of the slide-rod, substantially as described.

4. The top-lift carrier, its slide-rod and pin r^3, and lever s^3 and means to operate it, and the latch and the carriage r, on which the same is mounted, the latch causing the backward movement of the slide-rod, combined with the track b^3, having the incline to operate the latch, substantially as described.

5. In a heeling-machine, the arm e^3, the shoe e^4, and the rod e^5, combined with a cam-gear and a treadle to control the position of the said shoe, substantially as described.

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6. The die-bed spindle, its toggle k, and the lever f, combined with the trip-cam and with the lever l^2, and adapted to be operated in succession, as described, to break or spring the said toggle, substantially as described.

7. In a heeling-machine, the shaft 8, and pin or projection moved thereby, and lever l^2, combined with the lever f, its connected toggle, and the die-bed spindle, substantially as described.

8. In a heeling-machine, the die-bed spindle, the toggle, the lever f and cam z, and the shaft d^3, combined with the rod g^2, to operate substantially as described.

9. In a heeling-machine, the positively-rotated gear g^2, provided with a cam, and the shoe b^3, combined with intermediate mechanism, substantially as described, to automatically effect the movement of the said shoe to start the shaft 8.

10. In a heeling-machine, the shafts 8 and d^3, the dogs 11 and d^9, connected therewith respectively, the shoes b^3 and e^4, and the continuously-driven loose gears 7 and d^3, combined with a suitable cam, h^2, and with means, substantially as described, intermediate the said shoes and cam, to control the movement of the shoes in the proper order, as and for the purposes set forth.

11. In a heeling-machine, the shafts 8 and d^3, the dogs 11 and d^9, connected therewith respectively, the shoes b^3 and e^4, and the continuously-driven loose gears 7 and d^3, combined with a cam and with

means, substantially as described, intermediate the said shoes and cam, to control the movement of the shoes in the proper order, and with a single treadle, as and for the purposes set forth.

12. The shoe-carrying arm c^4 and its guide and slide-rod, combined with the treadle and intermediate lever, f^4, substantially as described.

13. In a heeling-machine, the top-lift carrier and the die-bed spindle, combined with intermediate connecting mechanism, substantially as described, it consisting of the lever y^3, moved from the die-bed spindle, joint c^3 p^3, and levers w^3 r^3, to operate the top-lift carrier through the die-bed spindle.

14. In a heeling-machine, the top-lift carrier, the die-bed spindle, and intermediate mechanism, substantially as described, to actuate the top-lift carrier from the die-bed spindle, combined with a cam and with means, substantially as described, to actuate the said cam and die-bed spindle, the said cam determining the time of the ascent and descent of the said spindle, for the purposes set forth.

15. In a heeling-machine, the die-bed spindle, its toggle, the toggle-moving lever f, the crank or projection i, to actuate the said lever to straighten the toggle, the intermittingly-operated shaft d^4, to lift the lever f, a trip-cam actuated from the said shaft, a loose gear thereon, a clutch, and a shoe to control its engagement and disengagement to start and to stop the said shaft, combined with a treadle to move the said shoe, and with a cam and intermediate mechanism to maintain the said shoe in position to effect two rotations of the said shaft d^4, substantially as described.

16. The continuously-rotated gear 7, shaft 8, its crank to effect the movement of the trimming mechanism, clutch mechanism between the said shaft and gear, a shoe, b^3, to effect the engagement and disengagement of the said clutch, the die-bed spindle, its toggle, and connected lever f, and means actuated by the shaft to spring or make the toggle, the continuously-rotating gear d^3, shaft d^4, provided with a cam or projection to lift the lever f preparatory to straightening the toggle, a clutch to connect the said gear with the said shaft, a shoe, c^4, to effect the engagement and disengagement of the said clutch, and means to actuate the trip-cam from the shaft d^4, combined with a treadle to move the shoe c^4 to engage the clutch and rotate shaft d^4, and with a cam to continue to hold the shoe c^4 in place while the shaft d^4 makes two full rotations, as and for the purposes described.

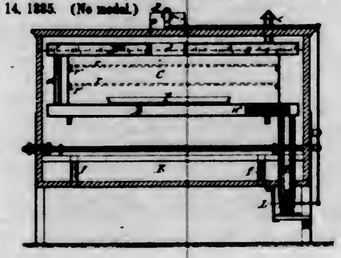
17. In a machine to attach heels to boots and shoes, and then to automatically trim the same, the clutch mechanism and its shoe b^3, to control the starting and stopping of the trimming mechanism, and the clutch mechanism to control the starting and stopping of the die-bed spindle, combined with a single treadle to place in position the shoe to engage the latter clutch mechanism, and with cams and mechanism actuated thereby to maintain the said clutch engagement during the ascent, descent, and second ascent of the die-bed spindle, and to thereafter actuate the shoe b^3, to engage the clutch, such engagement starting the heel-trimming mechanism, substantially as described.

18. The die-bed spindle, its connected toggle, and lever f, provided with two projections, combined with means to strike the said projections in succession and automatically move the said lever in the direction to spring or break the said toggle and lower the die-bed spindle preparatory to blinding the top lift on the heel and to release the trimmed heel, as described.

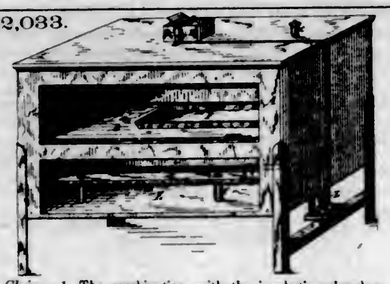
19. The die-bed spindle, its toggle, and connected lever f, and the shaft e, and its crank or projection to move the said lever to raise the die-bed spindle, combined with the shaft d^3, and a crank or projection actuated thereby to automatically lift the lever f and place it in position to be actuated by the crank or projection of the shaft e.

20. The die-bed spindle, its toggle, and connected lever f, the shaft e, provided with a crank or projection, i, to move the said lever to lift the die-bed spindle, and the shaft d^3, provided with a crank or projection to lift the said lever f into position to be engaged by the said crank or projection i, combined with a clutch to effect the rotation of the shaft d^3 at the proper time, a shoe, c^4, to cause the engagement of the said treadle to move the said shoe, and a cam and intermediate devices to hold the said shoe in position to keep the clutch engaged while the shaft d^3 makes two rotations to thus aid in lifting the die-bed spindle twice in succession, as set forth.

332,033. INCUBATOR. Edwin W. Andrews, Elmira, N. Y. Filed May 14, 1885. (No model.)



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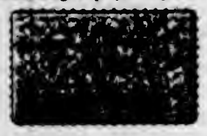
Claim.—1. The combination, with the incubating-chamber A, of the flat metallic heating-chambers B B′, extended horizontally across the chamber A, and having air-passages around their ends and sides, and constituting the bottom and top of the intermediate egg-chamber, C, the flue *a*, connecting the heating-chambers at one end, the heater communicating with the lower chamber, B, at the opposite end, and the exit-pipe *c*, connected with the upper chamber, B′, at the same end, substantially as described and shown.

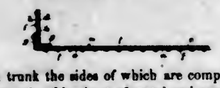
2. In combination with the incubating-chamber A, having the air-space E and air-inlets *f* at the bottom, the heating-chambers B B′, constituting the bottom and top of the egg-chamber C, and having around their sides and ends air-passages communicating with the air-space E, the heating-pipe H, terminating in the lower chamber, B, at one end, the exit-pipe *c*, connected to the upper chamber, B′, at the same end, the flue *a*, connecting said heating-chambers at the opposite end, the water-pan F on top of the lower chamber, B, the ventilating-port *d* through the central portion of the upper chamber, B′, and the ventilator D on top of the chamber A, substantially as described and shown.

3. In combination with the lower heating-chamber, B, and the upper heating-chamber. B′, the flue *a* and exit-pipe *c*, communicating with the upper chamber, B′, respectively, at the center of opposite ends of said chamber, and the longitudinal partition *e*, arranged in the center of the chamber B′ and across the center of the openings of the pipes *a c*, substantially as described and shown.

4. In combination with the heating-chamber B and lamp L, the chimney H, extending into said chamber, and the jacket I, provided with apertures *i i* in its sides, and having its upper end communicating with the interior of the heating-chamber, substantially as and for the purpose set forth.

332,034. TRUNK. Ebery Andrews, Kennebeck, Me., assignor to the Leatheroid Manufacturing Company, same place. Filed Apr. 16, 1885. (No model.)



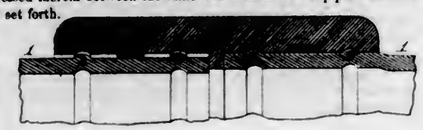


Claim.—1. A trunk the sides of which are composed of laminated plates, each made up of a thin sheet of metal and one or more sheets of leatheroid or other similar chemically-treated paper material, said sheets being secured together by riveting at short intervals over their entire surface, substantially as described.

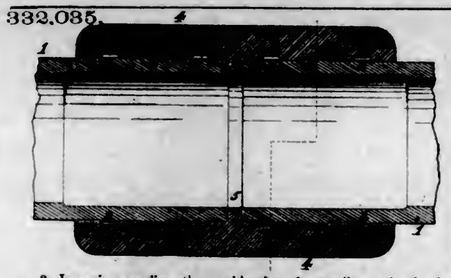
2. A trunk the sides of which are composed of laminated plates made up of a thin sheet of metal and one or more sheets of leatheroid or other similar material, riveted together, as set forth, each side having a portion of one or more of its sheets at each end thereof bent at right angles to its main body and overlapping an adjacent side, and secured thereto by riveting or cementing and riveting.

332,035. PIPE-COUPLING. Ralph Bagaley, Pittsburg, Pa., assignor of one-half to William A. Bole, same place. Filed Jan. 27, 1885. (No model.)

Claim.—1. In a pipe-coupling, the combination of a coupling-socket having a circumferentially-recessed bore, a pipe fitting in said socket engaging the recesses thereof by peripheral enlargements, and a packing-ring inserted in a recess of the bore of the socket and compressed therein between the same and a collar of the pipe, substantially as set forth.

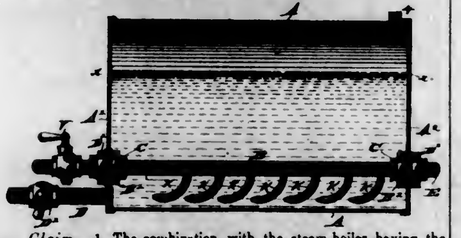


332,035.



2. In a pipe-coupling, the combination of a coupling-socket having tapered circumferential recesses adjacent to the middle of its bore, and a pair of pipes fitting in said bore and engaging the recesses by tapered or conical enlargements upon the ends of the pipes, substantially as set forth.

332,036. STEAM-BOILER CLEANER. Henry B. Baker, Hull's, Ohio. Filed Sept. 21, 1885. (No model.)

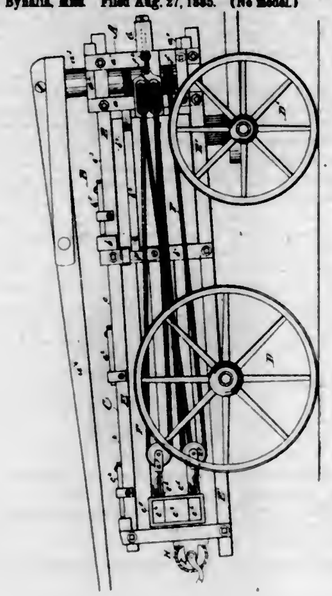


Claim.—1. The combination, with the steam-boiler having the blow-off pipe D and the short pipe *m*, of the horizontal pipe B, with the curved pipes *k*, the sectional pipe H, the three-way pipe F, cap-nut G, conductor-pipe S, check-valve P, and the pipe connecting with the pump or inspirator, substantially as specified.

2. The combination, with the boiler and the horizontal pipe B, with downwardly-curved jet-pipes *k*, of the sectional pipe H, the three-way pipe F, and the conductor-pipe S, the short pipe *m*, and the stop-cocks or valves n' n^2, substantially as specified.

3. The combination, with the boiler having the blow-off pipe D, with cock or valve D′, and the horizontal pipe B, with curved pipes *k* and stop-cock or valve V, of the three-way pipe F, the sectional pipe H, connecting the boiler with the three-way pipe, the conductor-pipe S, the check-valve, and the supply-pipe, substantially as specified.

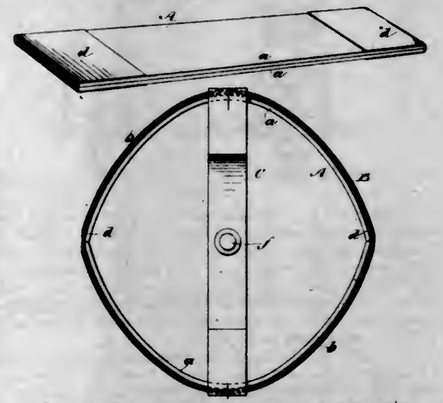
332,037. PORTABLE HAY AND COTTON PRESS. Charles L. Barnard, Byhalia, Miss. Filed Aug. 27, 1885. (No model.)



Claim.—1. A cotton or hay press consisting of a front frame, A, having a vertical windlass provided with an arm or sweep, a middle portion, B, forming the press-box and provided with detachable doors, and the rear part, C, also provided with detachable doors at the top, and having slots or open spaces at its sides, and a follower arranged within the section C, and having extensions protruding through the slots in the sides, and ropes and pulleys connecting the follower to the windlass, the said ropes from the opposite ends of the follower being led up to the windlass upon opposite sides of the same, to permit them to be simultaneously wound and their strain on the bearings neutralized, substantially as shown and described.

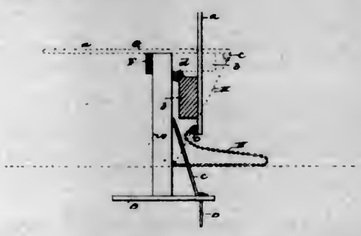
2. The combination of the press-body A B C, having a vertical windlass in its front end, A, and a follower in its rear end, C, the said follower having extensions protruding through the sides of the press, the pulleys c^3, pulley-block f'', cross-beam G, pulleys f f, and cord F, passing around said pulleys and attached to the windlass, the sections of cord F being led to the windlass from opposite sides and attached to the same for simultaneous winding, substantially as and for the purpose described.

332,038. BRAID-BOARD. Charles E. Barber, Paterson, N. J. Filed Apr. 22, 1885. (No model.)



Claim.—As a new article of manufacture, the braid-board A, made of two flexible parts *a*, attached at the parts *a*, being adapted to be spread and placed on the reel ends, substantially as for the purposes set forth.

332,039. FLOOD-GATE. Robert A. Barnes, Berry, Ill. Filed July 20, 1885. (No model.)

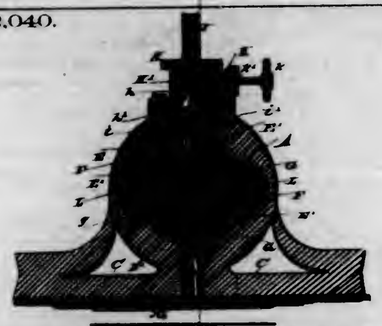


Claim.—In a flood-gate, the combination of the posts connected at their upper ends by the rails F, with the gates composed of the pickets and the tie-beams, the latter being hinged horizontally to the upstream sides of the posts at a distance from the tops of the posts corresponding to the thickness of the beams, whereby the gates may be tilted to a horizontal position, with the pickets resting on the upper sides of rails F and the tie-beams bearing against the upper ends of the posts to relieve the hinges of strain, substantially as described.

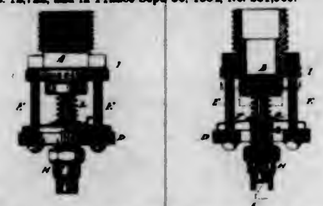
332,040. ROTARY STEAM-ENGINE. Louis N. Bibin, Faribault, Minn. Filed Sept. 18, 1885. (No model.)

Claim.—In a rotary engine, the combination of the casing F, having the steam-ports above and the exhaust-ports below, the disk E, secured on the shaft and rotating therewith, the piston-blocks E′, secured to the periphery of the disk and moving in the steam-chamber G, and the opposite steamways, L L, on the sides of the chamber G, and communicating at both ends therewith, substantially as specified.

332,040.



332,041. **FIRE-EXTINGUISHER.** JOHN W. BUNCH, New Haven, Conn. Filed Feb. 24, 1885. (No model.) Patented in England Sept. 23, 1884, No. 12,722, and in France Sept. 30, 1884, No. 251,969.



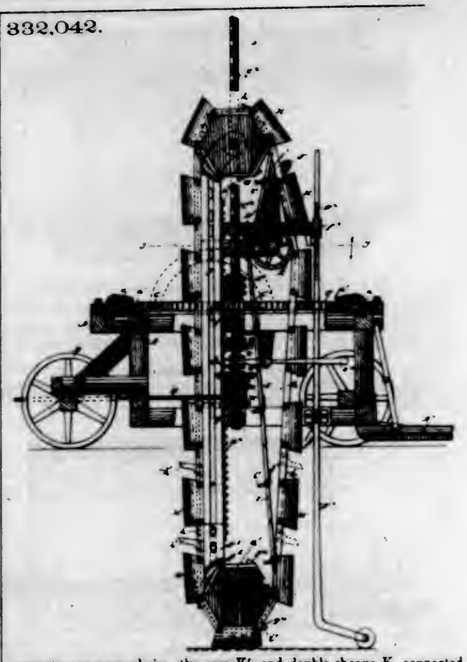
Claim.—1. In a fire-extinguisher, the combination of a valve adapted to close the water-way, an elastic disk arranged outside of and in a plane substantially parallel with the said valve, the disk provided with a screw-threaded sleeve, G, the valve having a central spindle arranged to work through said sleeve, and a nut on said sleeve, with a bearing in said nut fusible at a low temperature, the said bearing adapted to support said valve in its closed position, and under the force of the elastic disk, substantially as described.

2. In a fire-extinguisher, the combination of the valve B, forming a water-deflector, an elastic disk arranged outside said deflector, and substantially parallel therewith, the said disk provided with a sleeve extending through it, the said valve provided with a spindle, C, corresponding to said sleeve, and so as to work through it as a guide, the said sleeve externally screw-threaded, and a nut upon said sleeve, provided with a fusible bearing adapted to bear upon the end of said spindle and support the valve in its closed position, substantially as described.

3. In a fire-extinguisher, the combination of the valve adapted to close the water-way, an elastic disk arranged outside of and in a plane substantially parallel with said valve, the disk provided with a sleeve extending through it, the said valve provided with a spindle corresponding to said sleeve, and so as to work through it as a guide, and a fusible bearing between said spindle and disk, substantially as described, and whereby said disk becomes a support to hold the said valve in its closed position.

4. The combination of the spindle C, by which the flow of water is held in suspense, the elastic disk F, screw-threaded sleeve G, supported by said disk, and through which said spindle extends, the cap H, screw-threaded onto said sleeve and provided with a fusible support, *b*, against the end of the spindle, and the spring L, between said disk and spindle, substantially as described.

332,042. **EXCAVATING-MACHINE.** GEORGE C. BLEKKENDERFER, Erie, Pa. Filed July 25, 1884. (No model.)



Claim.—1. In an excavating-machine, a scoop or bucket having its back and bottom separable from its front and side walls, substantially as and for the purposes mentioned.

2. In an excavating-machine wherein the scoops or buckets are operated in the manner of an endless-belt conveyer, the combination of a conveyer-chain which carries the backs and bottoms of the buckets with a second chain which carries a series of shells which form the remaining sides of the buckets, substantially as shown and described.

3. In an excavating-machine, the combination, substantially as shown, of the following elements: a leg-beam, sprocket-wheels at each end of said leg-beam, having faces for two separate conveyer-chains, and two conveyer-chains running on said sprocket-wheels, one of which carries shells which form the front and side walls of the buckets or scoops, and the other the bottoms and back walls of the buckets or scoops.

4. In an excavating-machine, the combination, substantially as set forth, of the following elements: a supporting frame-work, a leg-beam guided in said frame-work and movable vertically, sprocket-wheels at each end of said leg-beam, having means, as described, for carrying two separate conveyer-chains, the arm K′, and double sheave K, connected with said leg-beam, the conveyer-chain formed of the shells H, and links *k* passing over said sprocket-wheels and outwardly over the sheave K, the conveyer-chain formed of the links I, and having the shelves I′ pivoted thereon, passing over said sprocket-wheels and inwardly over the sheave K, and finally the chute J, adjusted, as described, above the sheave K and in position to have its nose pass through the shells H as they descend.

5. In an excavating-machine, the combination, substantially as set forth, of the following elements: a supporting-frame, a driving-gear consisting of the internally-toothed rotating rim C, and a scoop-conveyer and its operating mechanism, arranged, substantially as set forth, within and vertically adjustable through said driving-gear on the line of its axis.

6. In an excavating-machine, the combination, as described, of the drive-gear C, the upright shaft C^2, arranged within and operated from the drive-gear C, a vertically-adjustable scoop-conveyer arranged within said gear C, and operated from gearing, substantially as described, on said shaft C^2, and vertically adjustable through said driving-gear C on the line of its axis.

7. In an excavating-machine, the combination, substantially as herein set forth, of a vertically-adjustable scoop-conveyer, an arm extending back from the leg-beam of said conveyer, and a gage-staff sliding loosely in an opening at the end of said arm, and having a foot trailing on the bottom of the excavation.

332,043. **PAINT-PAIL.** JAMES T. BRIEN, Hoosick Falls, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination of a pail or cup with a cylindrical drip-rim, substantially as and for the purpose described.

2. The combination of a pail or cup the upper part of which has an outward flare with a cylindrical drip-rim, as and for the purpose specified.

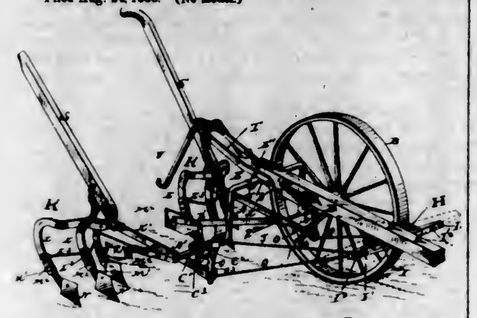
3. The combination of a cylindrical rim on the inner side of a cover, with a pail or cup having a drip-rim attachment, as and for the purpose set forth.

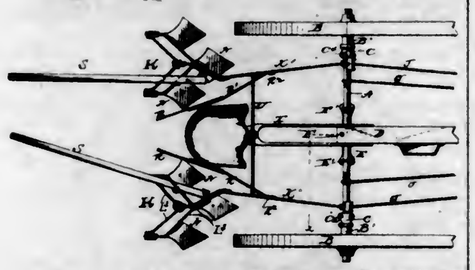
4. The drip-rim B, attached to a paint pail or cup, substantially as and for the purpose set forth.

5. The pail or cup A, having the drip-rim B attached on the inner side thereof, substantially as and for the purpose set forth.

6. The combination of the pail A and the drip-rim B with the cover G, having the cylindrical rim H, as and for the purpose set forth.

332,044. **CULTIVATOR.** THEODORE L. BROOKS, Port Byron, N. Y. Filed Aug. 24, 1885. (No model.)





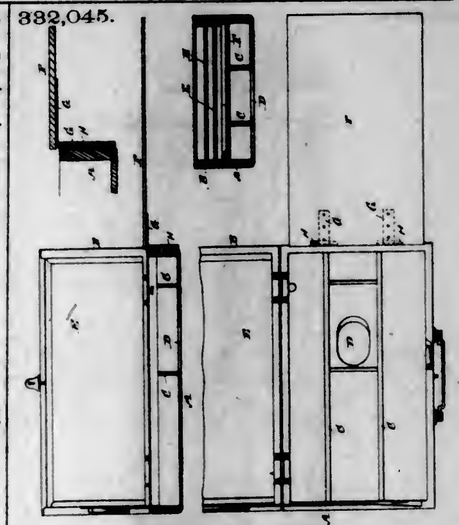
Claim.—1. As an improvement in cultivators, the combination, with the axle, of the laterally-adjustable spindles, arranged as described and formed with the transverse grooves, the cultivator attachments having pivotally secured to the forward ends of their beams the collars having the vertical apertures and the horizontal slots, and the draft-rods having at their rear ends the eyes adapted to be inserted in the said horizontal slots, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

2. The combination, with the axle, of wheels having formed on the inner ends of their hubs the annular beads or projections and the laterally-adjustable combined clutches and sand-caps formed of a single piece of metal and adjustably secured upon the horizontal ends of the said axle, substantially as set forth.

3. The combination, with the axle, of the laterally-adjustable spindles having the rounded lower portions circular in cross-section and formed with the transverse grooves, the cultivator attachments having pivotally secured to the forward ends of their beams the collars having the vertical apertures, circular in cross-section, and the horizontal slots, and the draft-rods having at their rear ends the circular eyes adapted to be inserted in the said slots, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

4. The combination, with the axle, of the laterally-adjustable spindles formed on one side, near their upper ends, with the carved recess in which the axle fits, as described, and formed with the transverse grooves, the cultivator attachments having pivotally secured to the forward ends of their beams the collars having the vertical apertures and the horizontal slots, and the draft-rods having at their rear ends the eyes adapted to be inserted in the said horizontal slots, as and for the purpose shown and set forth.

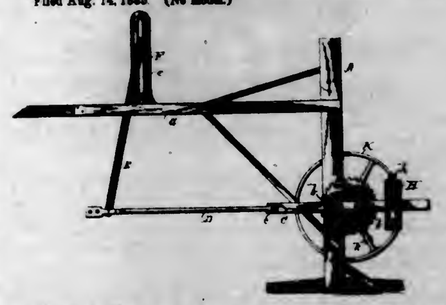
332,045. **ARTIST'S SKETCH-BOX.** WILLIAM T. BRUNDAGE, Brooklyn, N. Y. Filed May 18, 1885. (No model.)



Claim.—1. An artist's sketch-box provided on one end or side with devices for detachably holding a palette on the sketch-box, the said palette projecting from the side or end of the sketch-box in a plane parallel with that of the box, substantially as herein shown and described.

2. The combination, with the artist's sketch-box A, having the socket-pieces H on one end, of the palette F, fitting within the box, and provided at one end with hook-clips, which can be passed into the socket-pieces on the end of the box, substantially as herein shown and described.

332,046. **MECHANICAL MOTOR.** PHILETUS F. BOSSER, Cleary, N. Y. Filed Aug. 14, 1885. (No model.)



Claim.—1. The combination, with the pinion B, provided with bolts *b b*, of the adjustable crank C, provided with counterbalance-weight H and slots *a a*, as and for the purpose set forth.

2. The combination, with the balance-wheel and gear-wheel J, mounted on the shaft I, journaled in adjustable bearings *i*, of the pinion B, having bolts *b b*, and the crank C, provided with slots *a a* and weight H, as and for the purpose set forth.

332,047. **APPARATUS FOR MOLDING THE SECTIONS OF CONDUITS FOR UNDERGROUND CONDUCTORS.** JOHN R. BURDICK, Chicago, Ill., assignor of one-half to Daniel H. Dorsett, same place. Filed Aug. 6, 1885. (No model.)

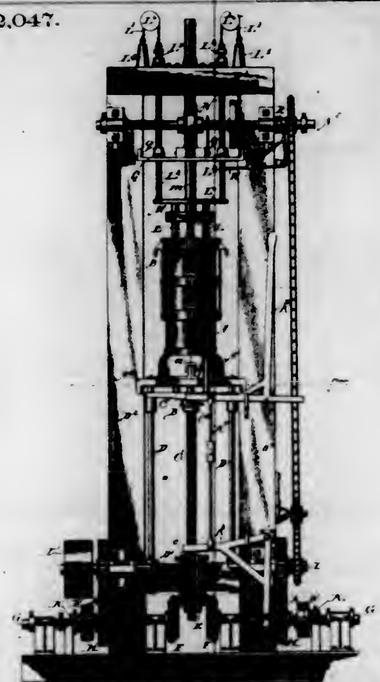
Claim.—1. In an apparatus for forming conduit-sections for underground conductors, the combination, with the mold provided with a perforated bottom, of the core-rods arranged to enter and leave the mold from below, and means for raising and lowering the core-rods to an extent whereby they can be run up into the mold or drawn down and out from the same, substantially as described.

2. The combination, with the mold provided with a perforated bottom, of a reciprocating carrier provided with a set of upright core-rods arranged to enter and leave the mold through its perforated bottom, and a screw and nut, substantially as described, for raising and lowering the core-rod carrier.

3. The combination, with the mold provided with a perforated bottom, of the reciprocating core-rod carrier provided with a set of upright core-rods arranged to enter and leave the mold through its perforated bottom, a threaded stem appended to the carrier, a rotary gear-nut applied to raise and lower the threaded stem, and a system of gearing and clutch devices, such as described, for operating the nut in opposite directions and arresting the motion thereof when the core-rod carrier has reached the proper extent of its stroke in either direction, substantially as described.

4. The combination, with the mold, of the reciprocating core-rod carrier provided with a series of core-rods arranged to enter and leave the mold, a mechanism for reciprocating the core-rod carrier, and an au-

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tomatic stop mechanism for automatically arresting the motion of the core-rod carrier at the desired extent of stroke in either direction, substantially as described.

5. The combination, with the mold, of the reciprocating core-rod carrier provided with a set of core-rods arranged to enter and leave the mold, a mechanism for reciprocating the core-rod carrier, clutch devices for controlling said reciprocating mechanism, a stop projection carried with the core-rod carrier, and a pair of connecting-levers applied to control the clutch devices and standing in the path of the stop projection of the core-rod carrier, respectively at one and the other of the two points proper for the limitation of the up-and-down stroke of the core-rod carrier and core-rods, substantially as described.

6. The combination, with the mold provided with a perforated bottom, of the core-rods supported upon a reciprocating carrier which is operative below the mold, a tamping device for tamping the material within the mold, and means for operating the tamping device, substantially as described.

7. The combination, with the mold, of the reciprocating core-rods arranged to enter and leave the mold from below, a tamping device, means suitable for operating the tamping device to tamp the material at any height within the mold, and means suitable for raising and holding the tamping device above the mold when not in use, substantially as described.

8. The combination, with the mold and the reciprocating core-rods arranged to enter and leave the mold from below, of a set of upper rod-sections arranged to descend and connect with the upper ends of the core-rods when the latter are extended up through the mold, and to be raised from their connection with the core-rods at will, substantially as and for the purpose described.

9. The combination, with the mold and the reciprocating core-rods arranged to enter and leave the mold from below, of the sliding carrier provided with a set of depending rods adapted to be connected with and disconnected from the upper ends of the core-rods, substantially as described.

10. The combination, with the mold and the reciprocating core-rods, of the tamping device constructed with a perforated head having an upright sliding stem, and a pair of rotary cams or segment-wheels applied to alternately engage and release the stem of the tamping-head, substantially as described.

11. The combination, with the mold and the reciprocating core-rods, of the tamping device, the rotary cams or segment-wheels for alternately engaging and releasing the same, and a brake arranged to be applied to check the drop, but to permit the ascent of the tamping device, substantially as described.

12. The combination, with the mold, of the tamping device, the rotary cams or segment-wheels for operating the same, and a brake, P, having its shoe pivotally connected with a swinging link-lever, substantially as and for the purpose described.

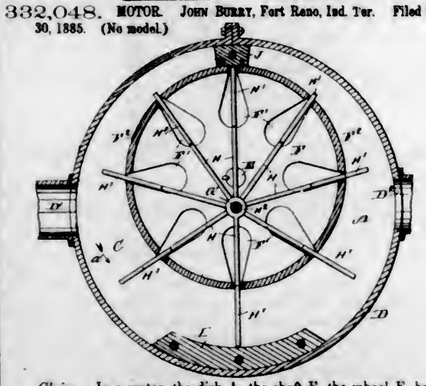
13. The combination, with the mold and the reciprocating core-rods arranged to enter and leave the mold from below, of an upper sliding carrier provided with a set of pendent rods, L, to connect with and steady the core-rods when the latter are extended up within the mold, a perforated tamping-head fitted to slide upon said connected rods, means for operating the tamping-head, and means for raising it out from the mold, substantially as described.

14. The combination, with the mold, of the reciprocating core-rods, the upper sliding carrier provided with a set of pendent rods, L, the tamping device, mechanism suitable for raising the tamping device above the mold, and a clutch device adapted for controlling said mechanism, and provided with a lever normally standing over and in the path of the carrier for the rods L, substantially as and for the purpose described.

15. The combination, with the main frame, of a perforated base, A^3, for the mold, the reciprocating core-rod carrier arranged to operate below said base and provided with a set of upright core-rods, and means, substantially as described, for reciprocating the core-rod carrier, for the purpose set forth.

16. The combination, with the mold, of the reciprocating core-rods arranged to enter and leave the mold from below, the vertically-operating tamping device, and means, substantially as described, for operating the same, and the sliding carrier provided with one or more depending rods, L, and suspended by means whereby it is counterbalanced, for the purpose set forth.

332,048. MOTOR. JOHN BURRY, Fort Reno, Ind. Ter. Filed Sept. 30, 1885. (No model.)

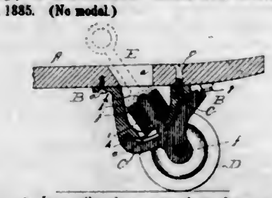


Claim.—In a motor, the disk A, the shaft E, the wheel F, having the recesses F' and the rim F^2, in combination with the disk B, the stud G, the arms H, the cross-pieces I and J, and the casing D, substantially as shown and described.

2. In a motor, the disks A and B, the shaft E, the wheel F, having the recesses F' and the rim F^2, the stud G, and the arms H, in combination with the cross-pieces I and J and the casing D, having the openings D' and D^2, substantially as shown and described.

3. In a motor, the disks A and B, the casing D, having the openings D' and D^2, and the cross-pieces I and J, in combination with the shaft E, the crank-arm E', the wheel F, having the slots F' and the rim F^2, the stud G, having the bearing G', and the arms H, of which the upper part, H', has its bearing in the respective recesses F' of the wheel F, substantially as shown and described.

332,049. ROLLER-SKATE. MARTIN BYE, Worcester, Mass. Filed July 27, 1885. (No model.)



Claim.—1. In a roller-skate, a truck or frame composed of the bracket B, hanger C, provided with the pin or stud *h*, the case *j*, spring *i*, and follower *l*, combined together substantially as described and shown.

2. In a roller-skate truck or frame, the combination, with the bracket B, case *j*, and spring *i*, of the hanger C, provided with a threaded stud or pin, *h*, and the follower *l*, substantially as set forth, and for the purpose stated.

3. In a roller-skate truck or frame, the bracket B, case *j*, and spring *i*, in combination with the hanger C, threaded pin or stud *h*, follower *l*, and means for regulating the tension of the spring *i*, substantially as set forth, and for the purpose stated.

332,050. DECORATED SLATE. ELI C. CARTER, New York, N. Y. Filed Aug. 11, 1885. (No model.)



Claim.—1. As a new article of manufacture, a tablet of slate having one face undressed or artificially roughened and suitably ornamented, and the other side dressed for the reception of pencil-marks, as specified.

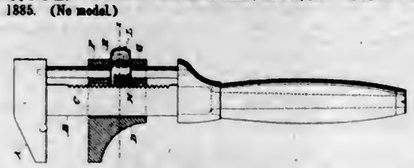
2. As a new article of manufacture, a tablet of slate having one side left in its natural or undressed state to form the background of a device or picture in oil, and the other side dressed and finished to form a writing-surface, as herein specified.

3. As a new article of manufacture, a record-tablet having one side dressed to receive the marks of a pencil, and the other side left in its natural or undressed condition and ornamented by a picture or other design in oil or other colors, as specified.

4. As a new article of manufacture, a record-tablet of slate having the natural grain exposed on one side to form the ground of an ornamental picture, and the other side dressed and finished for the reception of pencil-marks, substantially as specified.

5. As a new article of manufacture, a record-tablet composed of a sheet of slate having one side in its natural condition, so as to expose the grain, the said side being ornamented by a picture or device in oil, and the other side dressed and finished for the reception of pencil-marks, the said side forming the record-face of the tablet, the sheet being surrounded by a suitable ornamental frame, substantially as specified.

332,051. WRENCH. GEORGE J. CLINE, Goshen, Ind. Filed Mar. 23, 1885. (No model.)



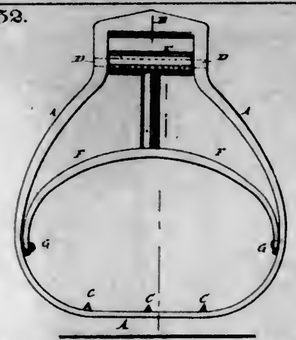
Claim.—In a wrench, the combination, with the fixed jaw and rack-shank, of the sliding jaw D, having the back recess, E, opening into the longitudinal recess, the pivoted rod arranged parallel to the rack-shank and passing through the rear of the movable jaw and having a bearing at one end in a collar on the shank and at the other in the fixed jaw, and the grooved cam having a short thumb-leg journaled on the pivoted rod and within the recess of the movable jaw, whereby the thumb may move the lever laterally to engage, adjust, and secure the sliding jaw to the rack-shank, substantially as specified.

332,052. SAFETY-STIRRUP. HENRY COATES, Newark, N. J. Filed Sept. 7, 1885. (No model.)

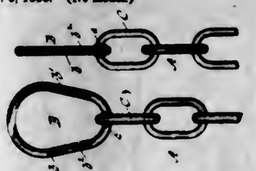
Claim.—1. The combination, with the stirrup A, having the loop portion B and the stops G G, of the guard consisting of the cross-piece E, pivoted within and forming the bottom of the loop, and the arched bar F, connected to the cross-piece E, and abutting at its ends against the stops, substantially as described.

2. As an improved article of manufacture, a safety-stirrup consisting of the stirrup A, formed with the loop portion B and the stop-lugs G G, the guard consisting of the cross-piece E, pivoted at D within the loop portion of the stirrup, and the arched bar F, of elastic material, connected between its ends to the cross-piece, and constructed to spring within the sides of the stirrup and be held securely therein against accidental displacement, substantially as set forth.

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332,053. CHAIN FOR BRACELETS. ISAAC COLE, Brooklyn, N. Y. Filed Aug. 6, 1885. (No model.)



Claim.—1. As a new article of manufacture, an attachment-chain having an end link or links rigidly secured thereto, substantially as shown and described.

2. As a new article of manufacture, an attachment-chain having a link or links rigidly secured to the end of the chain and provided with a side opening, substantially as described.

3. As a new article of manufacture, an attachment-chain provided with end links rigidly secured thereto, said end links having side openings, substantially as shown and described.

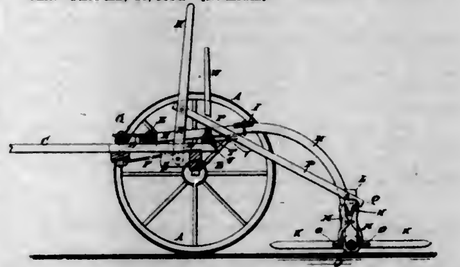
4. As a new article of manufacture, an attachment-chain provided with oval end links, which links are rigidly secured thereto, and each of which is provided with a side opening near its smaller end, substantially as shown and described.

332,054. WALL-PAPER. ALEXANDER COLLIER, Tarkio, Mo. Filed Oct. 1, 1885. (Specimens.)

Claim.—1. The improved wall paper or hanging herein described, consisting of a paper or fabric backing provided on one side with a coating of water-proof material laid on the same so as to have a stippled surface, substantially as described.

2. The improved wall-paper herein described, treated on one side with a composition consisting of paraffine-wax, benzine, resin, or its equivalent, starch, and pigments, applied to one surface of the paper in a stippled or uneven manner, for the purpose set forth.

332,055. REVOLVING SULKY HAY-RAKE. BYRON COLLINS, Galion, Ohio. Filed May 21, 1884. (No model.)

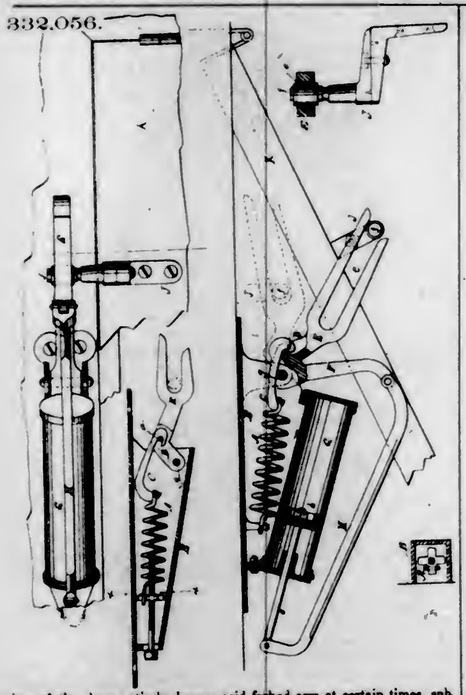


Claim.—The combination, with the rake-head J K and the sulky-frame, of the standards L, the pawls M, arranged to straddle the rake-head, the spring N, interposed between the upper arms of said pawls, the pins O, projecting from the front and rear sides of the rake-head, the connecting-bar P, having a shoulder, Q, upon its lower rear end, and the lever R, substantially as and for the purpose set forth.

332,056. DOOR CHECK AND CLOSER. THOMAS B. COMBS, Jr., New York, N. Y. Filed June 19, 1885. (Model.)

Claim.—1. A door check and closer comprising a bell-crank lever, D, the forked arm E of said lever pivoted at *g* to a suitable base, the spring A, connected at *a* to said lever, and a bracket, J, which in the opera-

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tion of the door entirely leaves said forked arm at certain times, substantially as and for the purpose described.

2. In a door check and closer, in combination, a bell-crank lever, D, with slotted arm E, and arm F, pivoted to connecting-link H, cylinder G, piston *b*, piston-rod *c*, spring A, and bracket J, as and for the purpose described.

3. In a door check and closer, in combination, a spring, A, a bell-crank lever, D, and a slotted bracket fixed to the door and engaging with said bell-crank lever, substantially as and for the purpose described.

332,057. **WATER-WHEEL.** HERVEY COOPER, Westfield, Mass. Filed Sept. 2, 1885. (No model.)



Claim.—1. In a water-wheel, the combination of a wheel or disk having a peripheral groove or recess, a tire fitted around the said wheel or disk and provided with suitably-constructed buckets, and perforations in the said tire registering with the said buckets and connecting the same with the annular groove or recess, substantially as and for the purpose herein set forth.

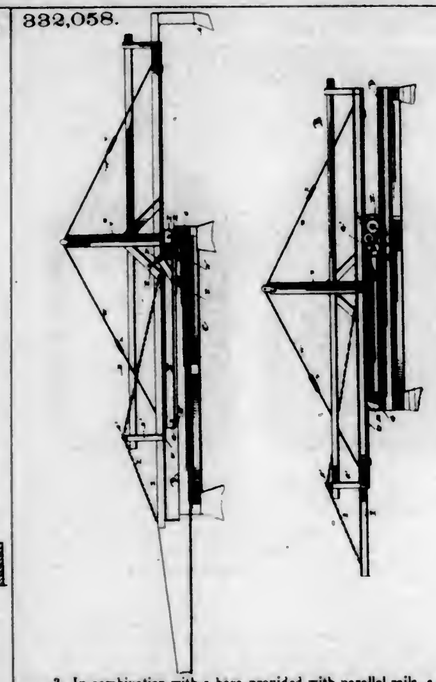
2. In a water-wheel, the combination of an annularly-grooved wheel or disk with a rim or tire having perforations communicating with the said annular groove, and a series of buckets secured to said rim, substantially as and for the purpose herein set forth.

332,058. **BRIDGE.** MARCELIN DANIEL, Houma, La. Filed Oct. 3, 1885. (No model.)

Claim.—1. In a draw-bridge, the combination of a base provided with parallel track-rails, a carriage having flanged rollers or wheels traveling upon the said rails, a draw having parallel rails traveling upon the rollers, and means for revolving the rollers, as and for the purpose shown and set forth.

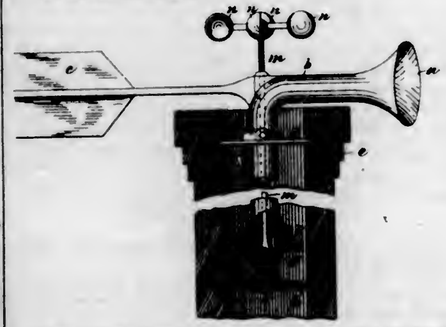
2. In a draw-bridge, the combination of a base provided with parallel track-rails, a carriage provided with transverse bearings in its outer and inner ends, a shaft journaled in the inner bearings, and provided with flanged rollers or wheels traveling upon the base-rails, two shafts journaled in the forward bearings, and provided each with a cog-wheel at their middles and with flanged rollers or wheels traveling upon the track, a shaft provided with a pinion meshing with the cog-wheels and having means for revolving it, and a draw traveling with parallel rails upon the rollers or wheels, as and for the purpose shown and set forth.

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3. In combination with a base provided with parallel rails, a draw provided with corresponding parallel rails, and carriage having transverse shafts at its ends, provided with rollers traveling upon the base-rails and having the draw-rails traveling upon them, the shafts of the two pairs of front rollers being provided with cog-wheels, of a flap hinged to the rear end of the draw, and having chains secured to its outer ends and passing over pulleys upon posts at the rear end of the draw, and formed with eyes at their inner ends, a shaft journaled transversely in the front end of the carriage, and provided with a pinion turning upon it and meshing with the cog-wheels upon the forward transverse shafts, and provided with drums at its ends having hooks for the reception of the eyes of the chains, means for revolving the said shaft, a clutch turning with and sliding upon the shaft and engaging a clutch upon the pinion upon the shaft, means for sliding the said pinion, and means for supporting the flap when the chains are removed from the drums, as and for the purpose shown and set forth.

332,059. **VENTILATOR.** ADOLPH DAUB, Milwaukee, Wis. Filed May 22, 1885. (No model.)

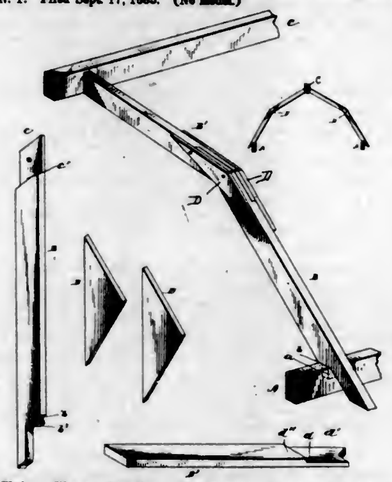


Claim.—1. The automatic ventilator, consisting of the funnel *a*, the bent tube *b*, continuing rearwardly and downwardly from the funnel, and the vane *c*, rigid to the tube *b*, in combination with the upturned cap *g* provided with the perforated tubular arms *k k*, the upwardly-extending centrally-located stem *m*, rigid to cap *g*, and the cup-fans *n n*, rigid to stem *m*, substantially as set forth.

2. In automatic ventilators, the funnel *a*, tube *b*, and vane *c*, rigid to each other and supported on bracket *d*, in combination with the upturned cap *g*, adapted to receive and rotate around the end of the tube

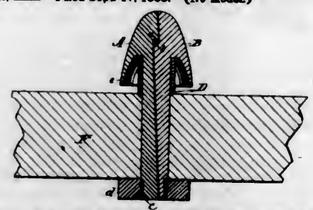
b, the tubular perforated arms *k k*, and a supporting-bracket for cap *g*, substantially as and for the purpose set forth.

332,060. **JOINT FOR RAFTERS.** NATHANIEL S. DAVIS, Brockport N. Y. Filed Sept. 17, 1885. (No model.)



Claim.—The combination, with the beam A, having the socket *a*, and the beam B, having shoulders *b c'*, tongue *b'*, and reduced portion *c*, of the beam B', having shoulders *d' d''* and reduced portion *d*, and the plates D, formed to accord with the angular joint between beams B B', as described.

332,061. **TELEGRAPH-INSULATOR.** BENJAMIN N. DESLIEUX, Bay St. Louis, Miss. Filed Sept. 17, 1885. (No model.)



Claim.—1. A telegraph-insulator made in two parts, A and B, in combination with ring or collar D, for binding the faces of the two parts firmly together and holding the water-shed *e* above the support, substantially as shown and described.

2. The male part A, with a screw-thread upon its extremity, in combination with female part B, having no screw-thread, substantially as and for the purpose set forth.

3. The combination, with the two-part insulator and its supporting-arm, of a device for moving one of the insulator parts, and causing them to grasp and firmly hold the wire, substantially as herein shown and described.

4. The combination, with the two-part insulator and the supporting-arm, of a nut arranged to operate upon the thread of the male part and draw it down upon the female part by pressure of the nut against the under surface of the arm, substantially as described.

5. The male part A, constructed with inclined faces and with a hook to engage the wire, in combination with the female part B, having inclined faces and shoulder *b*, substantially as described.

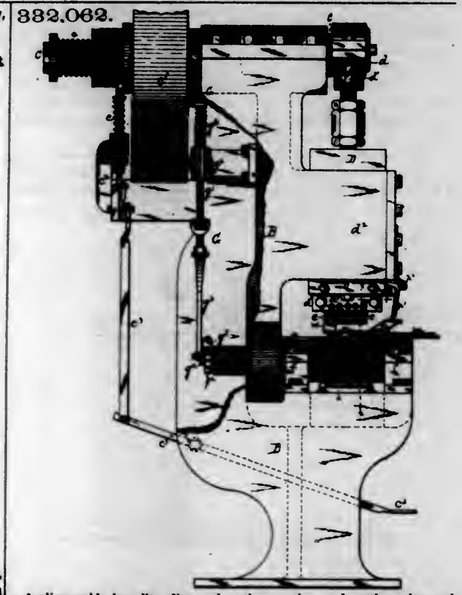
6. A telegraph-insulator consisting of two parts, one of which is provided with inclined faces, a hook to engage the wire, a shank to fit the supporting-arm and screw-thread, the other part provided with inclined faces, a shoulder to receive the wire, and shank ring or collar and nut, all substantially as described.

332,062. **NAIL-MACHINE.** JOHN S. DERBOW, Pittsburg, assignor to the Pittsburg Hob Nail Manufacturing Company, Bridgewater, Pa. Filed Aug. 12, 1885. (No model.)

Claim.—1. In apparatus for the manufacture of nails, the combination, with a reciprocating punch, of a shearing-plate having cutting edges at right angles to each other and acting to shear two sides of the nail-head at each operation of the apparatus, substantially as and for the purposes set forth.

2. In apparatus for the manufacture of nails, the combination, with a series of punches, of a shearing-plate having a zigzag cutting-edge, and

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a feeding-guide in a line diagonal to the punches and cutting-edge, substantially as set forth.

3. In apparatus for the manufacture of nails, the combination of a shearing-edge and a punch having a hole therein to receive the shank of the nail during the shearing of the nail-head, substantially as and for the purposes set forth.

4. In apparatus for the manufacture of nails, the combination of a punch having a hole therein to receive the shank of the nail, a shearing-edge, and an anvil-seat in line with the punch to receive the head of the nail, substantially as and for the purposes set forth.

5. The combination of the punch, the shearing-edge, and the rotating anvil, substantially as and for the purposes set forth.

6. In apparatus for the manufacture of nails, the combination of a punch, a shearing-edge, a rotating anvil having dies to receive the nail-heads, and stripping apparatus to withdraw the nails therefrom, substantially as set forth.

7. In apparatus for the manufacture of nails, the combination of the rotating anvil having dies to receive the nail-heads and the stripping-bar adapted to withdraw the nails, substantially as set forth.

8. In apparatus for the manufacture of nails, the combination of a punch having a hole therein to receive the nail-shanks, an intermittently-rotating anvil having a seat to receive the nail-head, and apparatus for imparting motion to said anvil, substantially as and for the purposes set forth.

9. The anvil *f*, mounted in bearings, and having the ratchet-wheel f^2, in combination with the cam *g*, sliding bar *g'*, connecting-rod g^2, lever g^4, and spring-pawl g^3, substantially as set forth.

10. In apparatus for the manufacture of nails from nail-sheets, the combination of a shear, an anvil-die, and a reciprocating punch adapted in co-operation with the shear to sever the nail from the sheet, and in co-operation with the anvil-die to shear off waste metal on the edges of the nail-head, substantially as and for the purposes set forth

11. In apparatus for the manufacture of nails from nail-sheets, the shearing-plate having a lip along the shearing-edge to fit within a crease on the sheet and hold it in place, substantially as set forth.

12. In apparatus for the manufacture of nails from nail-sheets, the combination of a line of punches, a shearing-plate having a shearing-edge, a guide extending back from said shearing-edge, and reciprocating feeding apparatus operating within said guide, substantially as and for the purposes set forth.

13. In apparatus for the manufacture of nails from nail-sheets, the combination of the line of punches *e*, the shearing-plate K, a guide extending back from the edge of said plate, and the reciprocating feeding-plate *p*, adapted to catch against the nail-shanks and push the sheet forward, substantially as set forth.

14. In feeding apparatus for nail-machines, the combination of the guide *m*, feeding-plate *p'*, bracket p^2, and the reciprocating slide D, having the lug *r*, substantially as and for the purposes set forth.

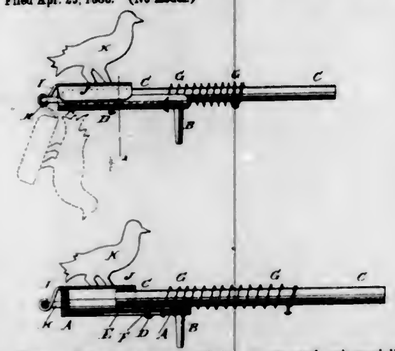
15. In feeding apparatus for nail-machines, the combination of the guide *m* and guard-plate having guide lip or lips m^2, substantially as set forth.

16. In feeding apparatus for nail-machines, the combination of the shearing-plate having the lip *l* along its shearing-edge, the guide *m*, feeding-plate *p*, and spring guard-plate *n*, substantially as and for the purposes set forth.

17. In feeding apparatus for nail-machines, the combination, with the guide *m*, of the guard-plate *n*, extending over the guide, and supported on the bent arm secured to the body of the machine, substantially as and for the purposes set forth.

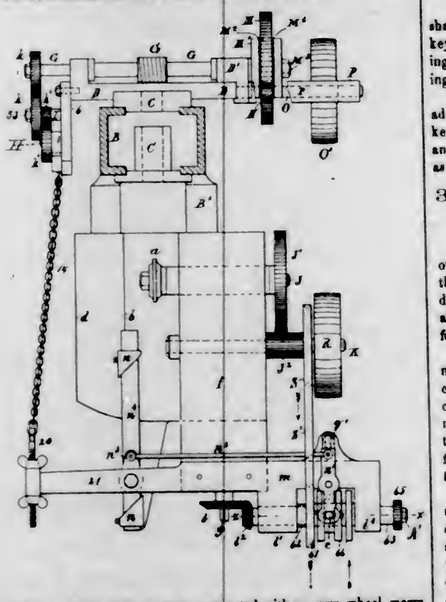
18. In nail-machines, the combination, with the reciprocating slide D, carrying one or more punches, of the guard-plate *n*, having the spring n^2 in the course of the slide, substantially as and for the purposes set forth.

332,063. TOY CAP-EXPLODER. HENRY M. DIXON, New York, N. Y. Filed Apr. 29, 1885. (No model.)



Claim.—A toy paper-cap exploder, constructed substantially as herein shown and described, and consisting of the semi-tubular holder A, having closed forward end, a handle, B, a slot, E, and recess F, the rod C, having guide-pin D, working in the slot E, and provided with a spring, G, attached to it and to the said holder, and the bird K, having semi-tubular base J, hinged to the forward end of the said holder, as set forth.

332,064. GEAR-CUTTER. ULRICH EBERHARDT and HENRY E. EBERHARDT, Newark, N. J. Filed Oct. 18, 1884. (No model.)



Claim.—1. In a gear-cutter constructed with a worm-wheel, worm, and worm-shaft for shifting the blank L, the combination, with the said worm-shaft, of a friction driving gear or pulley applied directly to the said shaft and adapted to slip when the shaft is locked, as and for the purpose set forth.

2. In a gear-cutter in which the mechanism for shifting the gear-blank is operated by a friction-driver, a worm and a worm-wheel, the locking device connected with the worm-shaft by change-wheels, as described, and consisting in the combination of the disk I, the pivoted catch adapted to engage with or lock such disk, the swinging arm 51, provided with spring 52, and carrying the latch 10, provided with spring 18, and connected with the cutter-slide, as by chain 14, the whole arranged and operated substantially as and for the purpose set forth.

3. In a gear-cutter, the means for varying the rotations of the worm-shaft for each rotation of the locking-disk, consisting in the combination, with such worm-shaft and disk, of a movable intermediate stud, 53, and four gear-wheels, *k k'*, arranged in two planes to form independent pairs of wheels, the intermediate stud, 53, carrying two of said wheels secured together, but turning loosely on the stud, the whole arranged and operated as herein shown and described.

4. In a gear-cutter, the combination of the shaft 60, the sleeve *r*, provided with the pinion 62, and driven continuously in one direction upon said shaft, a rotary sleeve, 63, mounted upon the said shaft and connected with the pinion 62 by a back gear-shaft, 64, and change-wheels, as described, and a shifting-clutch hub, 66, adapted to engage alternately with the pulley 61 and the sleeve 63, the whole arranged and operated to reverse the movement of the cutter-slide, substantially as herein set forth.

5. The means for varying the speed of the cutter-slide in its feeding movement only, consisting in the combination of the shaft 60, the sleeve *r*, provided with the pinion 62, and driven continuously in one direction upon said shaft, a rotary sleeve, 63, mounted upon the said shaft and connected with the pinion 62 by a back gear-shaft, 64, and change-wheels, as described, and a shifting-clutch hub, 66, adapted to engage alternately with the wheel 61 and the sleeve 63, the shaft 64 and the sleeve 63 being provided with the similar studs, A' and A^2, for the application of change-wheels thereto, the whole arranged and operated to reverse the movement of the cutter-slide, substantially as herein set forth.

332,065. BORING-TOOL FOR LATHES. DAVID EVANS, Sharpsburg, Pa. Filed Feb. 24, 1885. (No model.)



Claim.—1. In combination with an engine-lathe, the centering-shaft adapted to be supported by the centers of the lathe, the tool-head keyed to and sliding on said centering-shaft, the boring-tool *g'*, the feeding-bar *k*, having the beveled face *l'*, and means for adjusting the feeding-bar longitudinally, substantially as and for the purposes set forth.

2. In combination with an engine-lathe, the centering-shaft *f*, adapted to be supported by the centers of the lathe, the tool-head *g*, keyed to and sliding on said shaft, the bar *n*, secured to the slide-rest, and the link-rod *p*, pivoted to the tool-head *g* and bar *n*, substantially as and for the purposes set forth.

332,066. ELECTRIC REGULATOR FOR DAMPERS. WILSON E. FACER, Cleveland, Ohio, assignor to himself, Thomas Malley, and Patrick Malley, same place. Filed July 14, 1885. (No model.)

Claim.—1. The combination, with a flue and its damper, of a pair of magnets and armatures operating upon the damper to open and close the same, and a battery and thermostat provided with contact-points for directing an electric current through either of the magnets to automatically open and close the damper for the purpose of maintaining a uniform temperature, as described.

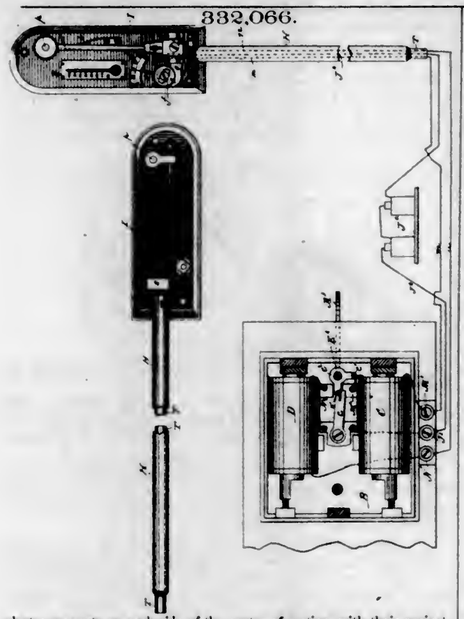
2. The combination, with the damper and its electrical operating mechanism, consisting of separate magnets with armatures and a direct connection with the damper-shaft, of a thermostat having an automatically-adjustable arm, a pair of contacts having independent electrical connection with the damper mechanism and arranged upon opposite sides of the normal position of said arm, and an adjustable carrying arm or block for said contacts, to adapt the thermostat to work at any given temperature, as described.

3. The combination, with the damper and its electrical operating mechanism, consisting of separate magnets with armatures and a direct connection with the damper-shaft, of a thermostat having an automatically-adjustable arm, a pair of contacts having independent electrical connection with the damper mechanism and arranged upon opposite sides of the normal position of said arm, an adjustable carrying-arm for said contacts, a graduated scale and pointer, and means, substantially as described, for effecting a commensurate adjustment of the pointer on the scale and of the contacts with respect to the thermostat-arm, as described.

4. The combination, with the damper and its double set of operating electro-magnets, of a thermostat with contacts and conducting-wires, the said thermostat consisting, primarily, of two metal tubes having a differential rate of expansion for the double purpose of operating the thermostat-contacts and carrying their wires, substantially as described.

5. The combination, with the damper, having an axial shaft, of

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electro-magnets on each side of the center of motion, with their projecting poles cut away and armatures arranged to operate the damper-shaft, as and for the purpose described.

6. The combination, with the damper and its working magnets, of a locking device consisting of pivoted lever F', with pin *a*, armature F, operated by either set of magnets, and disk G, with slots *b*, fastened to damper-shaft, substantially as set forth, for the purpose described.

7. In combination with the damper and its electric mechanism, consisting of conducting-wires, battery-magnets, and armatures, as described, a thermostat composed of a zinc tube, an iron pipe, and a metal containing-case provided with a long lever, J, having short arm J', spring-contacts M N, and eccentric adjustment for the same, all arranged as herein set forth, and for the purpose described.

332,067. SPINDLE-BOLSTER. RIBBON C. FAY, Hopedale, Mass., assignor to George Draper & Sons, same place. Filed Nov. 24, 1884. (No model.)

Brief.—The spindle-support consists of a rigidly-held tube slotted from its top downward and tapered from the bottom upward, the arms formed by the slotting being surrounded by a yielding holder fitting in a thread cut externally, and tending to retain the arms in a yielding manner and to make them fit the spindle more or less snugly.



Claim.—1. A spindle-support containing a tube or sleeve slotted entirely through its vertical wall to form independent arms, combined with a yielding spring-like holder embracing the said arms externally, but permitting the arms to yield laterally, substantially as described.

2. A spindle-support containing a tube or sleeve slotted entirely through its vertical wall to form independent arms, and made tapering from its bottom upward toward its top, combined with the yielding spring-like holder, to operate substantially as described.

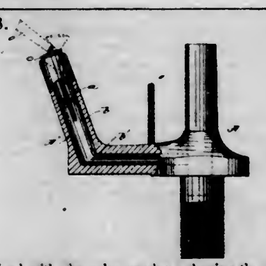
3. A spindle-support containing a tube or sleeve slotted entirely through its vertical wall to form independent arms, and made tapering from its bottom upward toward its top, and provided externally with a thread or groove, combined with a yielding spring-like holder, to operate substantially as described.

332,068. SPINDLE-SUPPORT. RIBBON C. FAY, Hopedale, Mass., assignor to the Hopedale Machine Company, same place. Filed May 18, 1885. (No model.)

Brief.—The conical plug closing the upper end of the oil-receiving leg of the spindle-support is held from removal and loss by a hooked stem, which engages with a hooked check-piece secured within the leg.

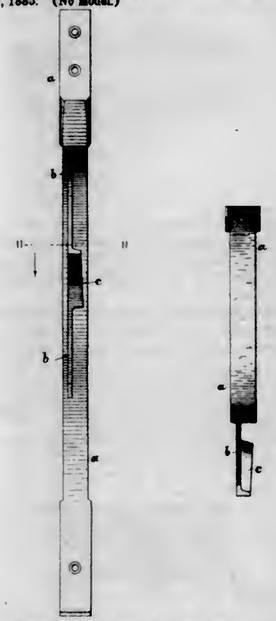
Claim.—The spindle support or case provided with an oil-receiving leg, A', and the check-piece *b*, provided with a hook, *b'*, to retain it in

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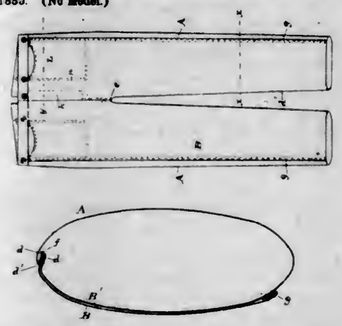
said leg, combined with the valve or plug *c*, having the hooked stem *a* in engagement with said check-piece, substantially as shown and described.

332,069. RIB FOR COTTON-GINS. FERDINAND C. GAMBONS, Bridgewater, Mass., assignor to the Eagle Cotton Gin Company, same place. Filed Sept. 21, 1885. (No model.)



Claim.—A rib for cotton-gins, having a flange joined thereto between the center and edge thereof, substantially as and for the purpose set forth.

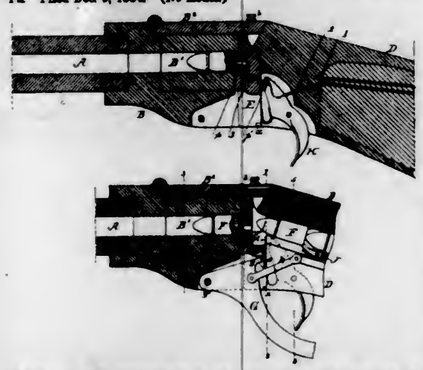
332,070. OVERALLS. GEORGE GASTON, Baltimore, Md. Filed July 15, 1885. (No model.)



Claim.—1. Overalls or pantaloons having the material in the back single and that of the front double thick, and having the edge of each front thickness at the fly folded inward, and a line of stitches which pass through both thicknesses and both inward-folded edges, whereby an extra facing-piece for the fly is dispensed with, as set forth.

2. Overalls or pantaloons having the back A and front B′ of each leg in one piece of fabric, the two edges of which are united by a seam, *d*′, at the inner side of the leg, an outside or extra thickness, B, covering the leg-front, and having one edge, *f*, entered in the said seam at the inner side of the leg, and the other edge, *g*, secured against the outer side of the said leg-front, and one or more rows, *n*, of stitches which pass through the fabric of the said leg-front and outside thickness and extend in a direction to give form to a pocket located between the leg-front and said outside thickness, as set forth.

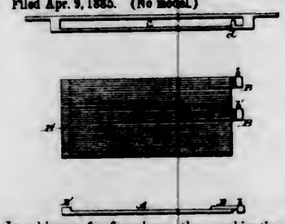
332,071. ELECTRIC FIRE-ARM. JAMES K. G. GAVITT, Philadelphia, Pa. Filed Dec. 9, 1884. (No model.)



Claim.—1. The combination of the stock and breech-chamber of a magazine-gun and an electric battery carried thereby with a sliding breech-block carrying the igniting points or wire to come into contact with the explosive charge of each cartridge, and a circuit-closing trigger, substantially as set forth.

2. The combination of the stock and breech-chamber of a magazine fire-arm and battery carried thereby with a circuit-closing trigger, and a sliding breech-block carrying on its face a cutter to make an incision in the end of the cartridge, and having behind said cutter the igniting points or wire, substantially as described.

332,072. FIRE-PLACE BLOWER. GEORGE W. GERSHNAHNER, Pittsburg, Pa. Filed Apr. 9, 1885. (No model.)



Claim.—In a blower for fire-places, the combination of the frame provided with a recess on its inner side, and a strip within said recess, with the blower provided with clamping-lugs to catch upon the strip, substantially as shown.

332,073. PROCESS OF PREPARING FLAKED CEREALS. ALEXANDER W. GILLMAN and SAMUEL SPENCER, Southwark, County of Surrey, England. Filed Apr. 15, 1885. (No specimens.)

Claim.—Treating grain for brewing, distilling, and vinegar-making by the combined process of soaking it in hot water at about the temperatures stated, then steaming it at about the pressures and temperatures named, then partially drying it, then flattening it by passing it through rolls or otherwise, and then further drying it, if required, substantially as herein described, and for the purpose stated.

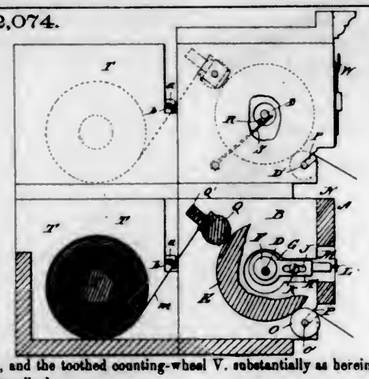
332,074. RIBBON AND LACE EXHIBITOR AND MEASURER. W. R. GLEASON and MILO J. HARRINGTON, Albion, Pa. Filed Mar. 3, 1885. (Model.)

Claim.—1. The combination, with a drum or roller having an eccentric hub on one end, of a reciprocating and swinging arm operated by the said hub, and a toothed counting-wheel acted upon by the said arm, substantially as herein shown and described.

2. The combination, with the drum or roller E, having the eccentric hub F, of the reciprocating and swinging arm H, operated by the hub F, the toothed counting-wheel V, the pin R, and the spring S, substantially as herein shown and described.

3. The combination, with the drum or roller E, having the eccentric hub F, of the arm H, having the slot J, the screw or pin K, the

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pin L, and the toothed counting-wheel V, substantially as herein shown and described.

4. The combination, with the drum or roller E, having the eccentric hub F, of the reciprocating and swinging arm H, the toothed counting-wheel V, and of the hand W on the same, substantially as herein shown and described.

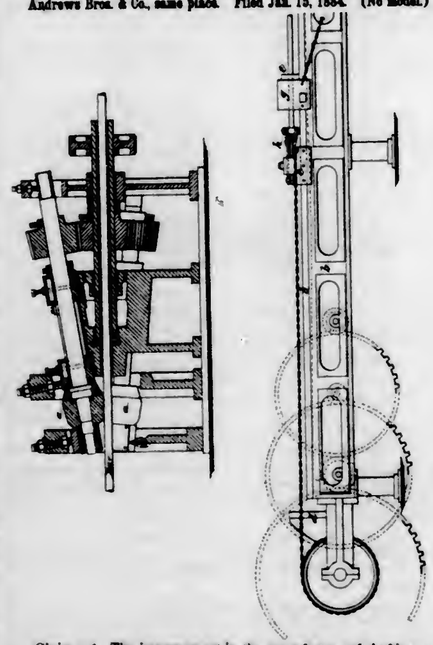
5. The combination, with the toothed counting-wheel V, of an arm for moving the counting-wheel, a hand held frictionally on the counting-wheel, and a pointer held rigidly on the said counting-wheel, substantially as herein shown and described.

6. The combination, with the box A, having a slot, M, in its front, of the toothed counting-wheel V on the front of the box, the roller or drum E, the arm H, operated from the said roller and projected through the slot M, to engage the teeth of the counting-wheel, substantially as herein shown and described.

7. The combination, with the drum or roller E, of the arm H, operated thereby, the toothed counting-wheel V, rotated by said arm, the roller O, the roller Q, and the springs Q′, substantially as herein shown and described.

8. The combination, with the drawer A, provided with a counting mechanism, of the box T, held on the back of the drawer, and serving to hold a roll or ribbon passed over the counting mechanism, substantially as herein shown and described.

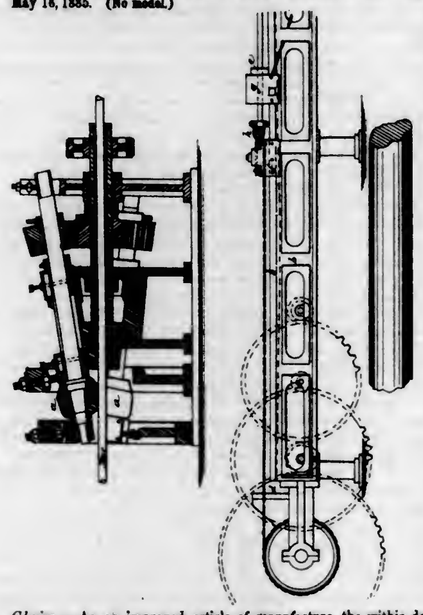
332,075. ART OF MANUFACTURING ROLLED AND POLISHED SHAFTING. PHILIP M. HAAS, Youngstown, Ohio, assignor of one-half to Andrews Bros. & Co., same place. Filed Jan. 15, 1884. (No model.)



Claim.—1. The improvement in the manufacture of shafting, substantially as hereinbefore described, which consists, first, in spirally rolling a round bar of suitable metal at substantially a cherry-red heat, and, secondly, in die-drawing said bar when substantially free from heat, whereby said rod or bar is converted into shafting uniform in diameter, and having a highly-finished and well-condensed surface.

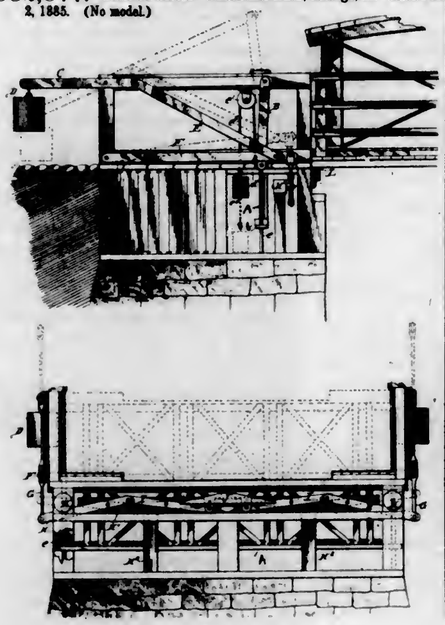
2. The improvement in the art of surface-finishing shafting, substantially as hereinbefore described, which consists, first, in cleansing and partially condensing the surface of a rod or bar of metal by rolling pressure applied thereto in peripheral lines, and, secondly, die-drawing said metal.

332,076. SHAFTING. PHILIP M. HAAS, Youngstown, Ohio. Filed May 16, 1885. (No model.)



Claim.—As an improved article of manufacture, the within-described shafting, uniform in roundness and in diameter, and having its surface metal condensed, free from pits, checks, and scars, and having a bluish surface color.

332,077. BRIDGE-GATE. FERDINAND HACK, Chicago, Ill. Filed Feb. 2, 1885. (No model.)

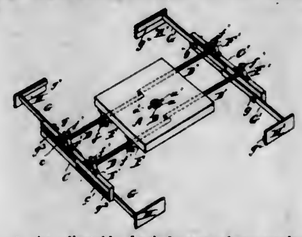


Claim.—1. A vertically-sliding gate, the yielding abutment-block separate from said gate, and a lever-connection between said gate and block, in combination with a weight connected with and overcoming the gravity of said gate to elevate it above the bridge approach, substantially as described.

2. The gate provided with the elongated slot *c* and a top rail constituting a portion of the bridge approach when the bridge is closed, in combination with the abutment-block, the levers H and I, pivoted thereto and to each other, and a link-connection between said levers and the gate, substantially as described.

3. The combination of the bridge approach having its floor slotted at a point removed from its end, the vertical-sliding gate moving in said slot, and when lowered forming a part of said floor, the yielding abutment-block separate from said gate, a yielding connection between the gate and block, connected with the gate and overcoming the gravity thereof to elevate it above the bridge approach or floor, as and for the purpose set forth.

332,078. ADJUSTABLE BOX-BLOCK FOR PAPER-BOX-COVERING MACHINES. PHILIP HAUCK, Philadelphia, Pa. Filed Nov. 28, 1883. (No model.)



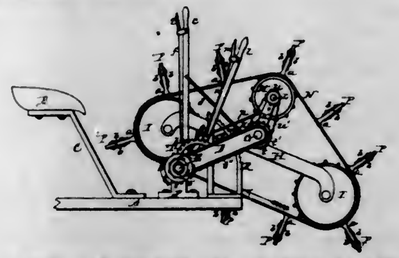
Claim.—1. An adjustable chuck for paper-box-covering machines, comprising a stock or center with extensible bars or ends connected to said stock and carrying adjustable bars or sides, substantially as shown and set forth.

2. An adjustable chuck for paper-box-covering machines, having bars which are adjustable toward and from the stock or center, and which carry other bars adjustable on their supports, substantially as shown and described.

3. The combination, with stock or center A, of bars C C′, secured to said stock by adjustable rods D D′, and L-shaped bars G G′, said bars C C′ being longitudinally slotted, and the bars G G′ being secured on said bars C C′ by bolts *g g*, fitting in slots, substantially as shown and set forth.

4. In a chuck or box-block for paper-box-covering machines, the combination, with a center or stock, A, having extensible bars forming sides or ends, of adjustable rods for connecting said stock and bars, said rods being arranged parallel with each other, so as to permit those on one side of said stock to pass or rest beside those on the other side, substantially as shown and set forth.

332,079. HARVESTER-REEL. HOWARD H. HEBER, Rockford, Ill. Filed Apr. 14, 1884. (No model.)



Claim.—1. The combination, with a seat-support, of reel-supporting arms having a pivotal connection therewith, and capable of an up-and-down movement on their pivotal support, a reel-supporting shaft capable of an oscillatory movement in its connection with the reel-supports, and provided with bracket-supports for the reel-driving shaft, substantially as and for the purpose set forth.

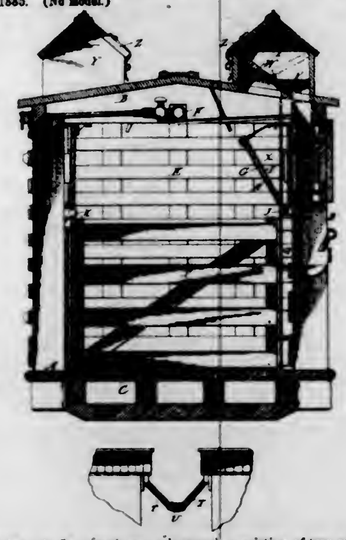
2. The herein-described reel-frame, consisting of a reel-supporting shaft, transverse sprocket-wheel-supporting arms fixed to the shaft, a driving-shaft, and shaft-supporting brackets fixed to the reel-supporting shaft, these several parts constructed and arranged substantially as and for the purpose set forth.

3. The combination, with the herein-described reel-frame, consisting of the reel-supporting shaft, the transverse arms, vertical brackets, and driving-shaft, of sprocket-wheels supported in the transverse arms,

sprocket-wheels mounted upon the driving-shaft in the vertical plane of the wheels in the transverse arms, and chain-belts with reel-bats connected therewith, mounted upon the sprocket-wheels, substantially as and for the purpose set forth.

4. The combination, with a seat-support, of reel-supporting arms, and a shaft, E, upon which the latter are pivoted, the reel-supporting shaft, a reel-driving shaft supported in brackets projecting from the reel-supporting shaft, a power-wheel mounted on the shaft E, a gear-train and belt, a lever having a link-connection with the supports of the driving-shaft, and ratchet-and-detent mechanism, substantially as set forth.

332,080. STOCK-CAR. Robert E. Isbond, Chicago, Ill. Filed Aug. 22, 1885. (No model.)



Claim.—1. In a stock-car, a hay-rack consisting of two systems of slats, one reciprocating on the other, and both pivoted so as to fold up together against the inner surface of the car.

2. In a stock-car, a combination of hinged stall-partitions, as described, with hay-racks, pivoted as described, whereby the hay-racks composed of two systems of reciprocating slats and stall-partitions may be folded against the upper interior surface of the sides of the car when the car is not in use for the transportation of stock.

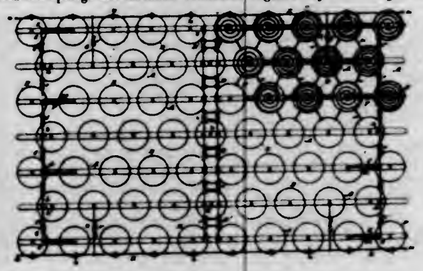
3. In a stock-car, a feed-bin having a hinged inner portion, as shown, in combination with a hay-rack beneath the hinged portion, whereby both hay and grain may be introduced into their respective compartments through the cover of the bin.

4. In a stock-car, the combination of a hay-rack with a grain-bin provided with a hinged bottom, which, when raised, connects the bin-space with the space in the hay-rack, so that the bin-space can be used for carrying grain or hay.

5. In a stock-car, a flexible connection for the water systems of adjacent cars, consisting of hose coupling-pieces secured each to the downwardly-curved end of a car system of water-pipes, and both connected by a curved metallic piece, S, so as not to kink as the distance between the cars varies.

332,081. SPRING BED OR BED-BOTTOM. Edwin A. Jeffery and Frank M. Jeffery, Jersey City, N. J. Filed Feb. 24, 1885. (No model.)

Claim.—1. A spring bed or bed-bottom having the slats upon which the springs are mounted connected together by distancing-links,





the said links being made in two parts hinged to the slats and detachably coupled together between the slats, whereby the slats may be rigidly distanced when the bed is in use, and yet be readily separated, substantially as described.

2. The coupling *e*, for the slat-connecting link, comprising the plate 5, provided with corrugations 10, a loop, 11, and a hook, 6, and the plate 7, provided with corrugations 10′, and a slot, 11′, said plates being also provided with means, substantially as described, for attaching them to the wires of the link, all substantially as set forth.

3. The combination, to form a slat-connecting link for a spring-bed, of the wire semi-links *b b*, having hinging and attaching branches bent on their ends, the plate 5, provided with the loop, 11, a hook, 6, a corrugated face, and means, substantially as described, for securing it to the link, and the plate 7, provided with a slot, 11′, for the loop 11, a corrugated face, and means, substantially as described, for attaching it to the link, said plates being secured rigidly to the links to form an extensible but rigid coupling, substantially as and for the purposes set forth.

4. The combination, to form a broad or double slat-connecting link for a spring-bed, of the U-shaped semi-links of wire, of which the portions *c″ c″* form the connecting tie-pieces, and the two couplings which unite the semi-links between the slats, substantially as set forth.

5. An extensible slat-connecting link for a spring-bed, comprising the semi-links of wire *b′ b′*, and the coupling uniting said semi-links, consisting of the plates 14 and 15, provided with the forked recesses 17, to receive the attaching branches on the semi-links, and studs and holes for riveting the plates together, substantially as described.

6. The combination, with the marginal slat and a slat-connecting link, *b′*, having an attaching branch bent on its end, of the securing-clip *g*, provided with a groove, 18, in its lower face to receive the end of the link, and a riveting-stud, 19, substantially as shown and described.

7. The combination, with slat and the links provided with hinging branches formed on their ends, of the hinging-clip *d*, provided with a stirrup or keeper, 1, to take over the hinging-branches *c*, bent on the links, and a riveting-stud, 2, substantially as shown and described.

8. The combination, with the slat and the link provided with hinging branches, of the hinging-clip provided with a stirrup or keeper to take over said hinging branches, and a riveting-stud the head of which is constructed and arranged, as shown, to take behind the bend or shoulder of the link and prevent the hinging branch from drawing out of the clip, as described.

9. The combination, with the side row of springs of the bed, of the cylindrical bar E, mounted on the tops of the said springs, substantially as described, and the clip 21, provided with clinches 22 and 23, for securing the said bar to the springs, substantially as set forth.

10. In a spring-bed, the combination, with the top side bar and a slat, A, of the extensible brace G, comprising two wires or rods and a coupling, *e′*, constructed substantially as described, whereby said brace may be conveniently lengthened and shortened, as set forth.

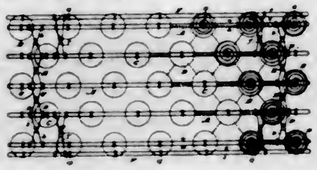
11. The combination, to form a link for connecting the slats of a spring-bed, of the bent wire semi-links *b b*, the plate 5, provided with a hinged hook, 6, a recess, 8, clips 9 9, corrugations 10, loop 11, and side flange 13, and the plate 7, provided with the recess 8′, clips 9′ 9′, corrugations 10′, slat 11′, and side flange 13′, all constructed and arranged to operate as set forth.

12. A spring-bed wherein the slats which bear the springs are connected at or near their ends by narrow extensible and separable links C, constructed substantially as described, and at or near their middles by broad extensible and separable links D, constructed substantially as described.

13. The combination, in a spring-bed, of the slats A, the non-separable links C′ and D′, arranged to connect the marginal slats with those next adjacent, and the separable links C and D, arranged to connect the intermediate slats, said links being hinged on the intermediate slats and fixed rigidly to the marginal slats, substantially as herein set forth.

332,082. SPRING BED OR BED-BOTTOM. Edwin A. Jeffery and Frank M. Jeffery, Jersey City, N. J. Filed Mar. 6, 1885. (No model.)

Claim.—1. In a spring bed or bed-bottom, the combination, with



the springs, of the slat A, composed of two parallel cylindrical rods, and the clips C, provided with clinches for securing the springs thereto, and with eyes 1 1, to embrace the rods of the slat, whereby the said rods are distanced and rigidly held in position and the springs are mounted thereon at a point midway between said rods, substantially as set forth.

2. The combination, in a spring bed or bed-bottom, of the side row of springs, the top side bar, F, formed of two parallel rods and mounted on the tops of said springs, as shown, and the clip G, provided with clinches or eyes at its ends to embrace and hold the two rods forming the bar, and clinches 16 between its ends for securing it to the upper convolution of the spring, substantially as set forth.

3. The combination, in a spring bed or bed-bottom, of the side row of springs, the top side bar, F, composed of two parallel rods, *e e*, mounted on the tops of said springs, and the clip G, for securing said bar to the tops of the springs and rigidly distancing the rods *e e*, said clip having eyes or clinches at its ends to embrace said rods, and clinches 16 between its ends, as shown, to embrace the wire of the spring, substantially as set forth.

4. The clip C, for securing the spring to the slat, provided with eyes 1 1, to embrace the members of the slat, and with a T-head, 2, on its upper side to embrace the wire of the spring, substantially as set forth.

5. In a spring bed or bed-bottom, the slat-connecting link comprising the semi-links *b b′*, and the lock-hinge *d*, the said lock-hinge provided with the lateral recesses 13 13, to engage the branches of the semi-link, substantially as set forth.

6. The combination of the hinge-lock *d*, constructed of the two plates 7 and 8, provided with grooves 10 10, to receive the bight of the semi-link *b*, with grooves 11 11, to receive the semi-link *b′*, and with the recesses 13 13 and the said semi-links, substantially as described.

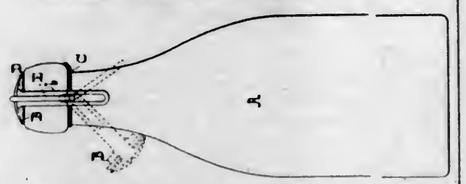
7. The clip G, for securing the top side bar to the spring, provided with eyes 15, to embrace the rods of the bar, and with clips 16, to clinch onto the spring, substantially as set forth.

8. The combination, with the slat formed of two rods, as described, and the spring provided with a loop, 3, at its bottom, of the clip C, provided with a T-head, 2, and eyes 1 1, substantially as set forth.

9. A brace, I, for the top side bar of a spring-bed, provided with a lock-hinge, *d*, at its middle, substantially as described.

10. A top side bar, F, for a spring-bed, composed of two rods, *e e*, and socket-pieces H, for securing said rods together at their ends, and distancing them, substantially as set forth.

332,083. BOTTLE-STOPPER FASTENING. Lewis Kalling, Jr., Baltimore, Md. Filed Oct. 26, 1885. (No model.)



Claim.—In combination with a bottle and its stopper, a cap attached to the said stopper, slotted straps extending from the cap, a wire fastened around the neck of the bottle having eyes therein, and a clamp to hold down the cap, having its ends turned in so as to pass through the slotted straps and into the eyes in the neck-wire, substantially as specified.

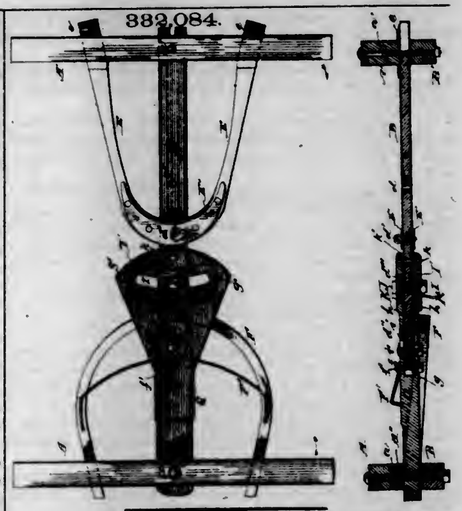
332,084. REACH FOR WAGONS. Milton Keech and Joseph Lardner, Gouverneur, N. Y. Filed Aug. 27, 1885. (No model.)

Claim.—1. In a reach-coupling for vehicles, the portion G, having its rear end enlarged and provided transversely with a segmental slot, I′, and in front of said slot with a longitudinal slot, *i*, in combination with the reach D, provided with pins which extend through the slots *i* and I′, substantially as shown, and for the purpose specified.

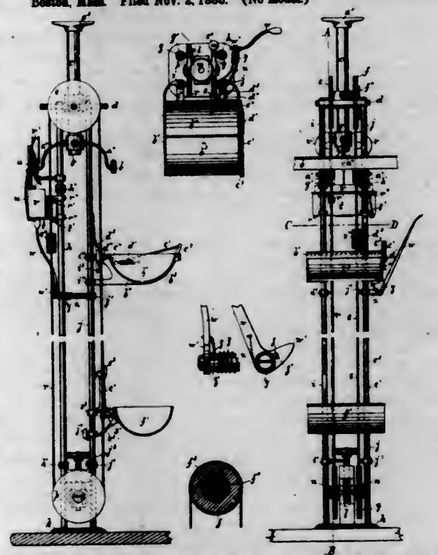
2. In a reach-coupling for vehicles, the forward portion, G, with longitudinal and transverse slots, as shown, said portion being adapted to be secured removably to the forward axle, the reach D, attached to the hind axle and braced thereto by hounds E, the portions G D of the reach being pivotally connected to each other by bolts J and *i*, substantially as shown, and for the purpose set forth.

3. In a reach-coupling for vehicles constructed substantially as shown, the portion G, made of a single casting and provided at its front end with a perforation through which passes the king-bolt, a rearwardly-enlarged portion having at its greatest width a recess, I, and curved slot I′, a perforation, *k*, in rear of said slot, a central slot, *d″*, and adjacent thereto, nearer its forward end, a perforation, in combination with the rear portion, D, of the reach, said portion having attached thereto bolts *i* and J, the bolt J being provided with disks K, and pin *f″*, which passes through an eye formed in the bar F′, the parts being organized as described.

332,084.



332,085. ELEVATOR FOR CASH-CARRIERS. Daniel K. Kimpster, Boston, Mass. Filed Nov. 2, 1885. (No model.)



Claim.—1. The combination of the track *a*, the inclined guides *a′*, the elevating-receptacle *t*, having a spring, *u*, and a carrier, *v*, having grooved wheels *v′*, substantially as described.

2. The elevating-receptacle *t*, adapted to permit the carrier to yield in a direction crosswise of the track, then be elevated, and then press said carrier back into position, so its wheels will be above and also on a line with the track, as set forth.

3. The forwarding-track *a*, the elevating-receptacle *t*, having the spring *u*, the carrier *v* within the same, and means, substantially as described, for pressing the carrier *v* over to one side of the track, and deflecting the spring *u*, combined with means, substantially as described, for elevating the carrier and admitting the spring *u* to throw back said carrier with its wheels *v′* over the track, all substantially as shown and described.

4. The combination of the unbroken track *a* with the elevating-receptacle *t*, adapted to yield laterally, so as to admit of the carrier-wheels passing up the side and over onto the track, and means for operating the same, substantially as set forth.

5. The combination, in an elevating device, of the receptacle *t*, spring *u*, ears *r″*, guide-rods *g h*, collars *g′ h′*, wheels *e p*, endless cord or band *r*, carrier *v*, and guides *a′*, all arranged substantially as and for the purpose set forth.

6. The lever *w*, combined with the elevating-receptacle, and so arranged as to give the carrier *v* an impetus on the track toward its destination, as set forth.

7. The vertically-moving receptacle *t*, having means for operating the lever *w* on the descent of the former, but will not so operate when it is ascending, as set forth.

8. The combination of the guide-rod *j*, the lever *w*, pivoted thereon, the vertically-reciprocating receptacle *t*, and means thereon, substantially as described, for engaging and operating said lever *w*, for the purpose set forth.

9. The combination of the track *b* with a receiving-receptacle or basket, *b'*, beneath the same, and adapted to receive and automatically deliver the carrier to an automatically-transferring basket, *f'*, vertically reciprocating beneath said basket *b'*, as and for the purpose set forth.

10. The stationary receiving-basket *b'*, having a hinged or pivoted bottom, and adapted to be locked in a closed position, combined with the vertically-reciprocating basket *f'*, adapted to unlock said hinged bottom, substantially as and for the purpose set forth.

11. In combination, the return-track *b*, the stationary basket *b'*, located beneath the same and so arranged that it will automatically deliver its contents into the basket *f'* when the latter is elevated contiguous thereto, but will not so deliver its contents when the basket *f'* is down, all substantially as specified and set forth.

12. In a cash-carrier elevator, the combination of a stationary basket, *b'*, having a hinged bottom, and means, substantially as described, for closing and locking said bottom, the lower basket, *f'*, having means, substantially as described, for unlocking and opening the bottom of basket *b'*, and mechanism, substantially as described, for vertically operating the basket *f'*, as set forth.

13. The basket *b'*, having the hinged leaves b'' b^2, connected so as to operate together, spring *d'*, and latch d^2, adapted to engage the arm d'' and lock the leaves in a closed position, combined with the basket *f'* and means thereon for unlocking said leaves, substantially as set forth.

14. In a cash-carrier elevator, the guide-rods *i j*, the basket *b'*, fixed thereon, and the basket *f'*, sliding vertically thereon, and having means adapted to unlock the removable bottom b'' b^2 of the basket *b'* and permit the contents to gravitate through into the basket *f'*, as specified and shown.

15. In a cash-carrier elevator, the combination of the rods *i j*, having collars *i' j'*, one of which is provided with a pin or projection, j^2, the vertically-reciprocating basket *f'*, having ears f^2 f^2, embracing said rods, and a gong, j''', attached to said basket, substantially as described.

16. In a cash-carrier elevator, the rods *i j*, the basket *f'*, adapted to slide thereon, and the endless cord or band *s*, for operating the same, combined with the wheels *p q*, and means for revolving them to elevate the basket, substantially as set forth.

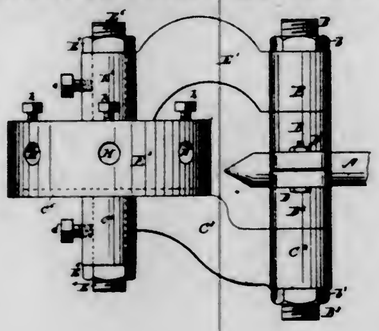
17. In a cash-carrier elevator, the combination of a fixed basket, *b'*, having a removable bottom, a vertically-sliding basket, *f'*, adapted to operate as specified, the cord *s*, attached thereto, the wheels *p q*, the counter-weight *s''*, and a vertical way or guide

18. The combination, in a cash-carrier elevator, of the standard *c*, plate *d*, wheels *e f*, pivoted thereon, vertical way or guides, elevating-receptacle *t*, fixed receiving-basket *b'*, having a removable bottom, vertical reciprocating basket, means for operating the movable bottom, as specified, means for starting and propelling the carrier on the track, as specified, the wheels *p q*, bands or cords *r s*, means for adjusting them as specified, and means for placing the carrier on the track, all combined and operating as specified and set forth.

19. In combination with the forwarding-track *a* and return-track *b*, arranged on each side of the standard *c*, the herein-described elevator, constructed and operating substantially as described and set forth.

332,086. TOOL-HOLDER FOR LATHES. Benjamin B. Keyes, Chelsea, Mass. Filed Jan. 26, 1885. (No model.)

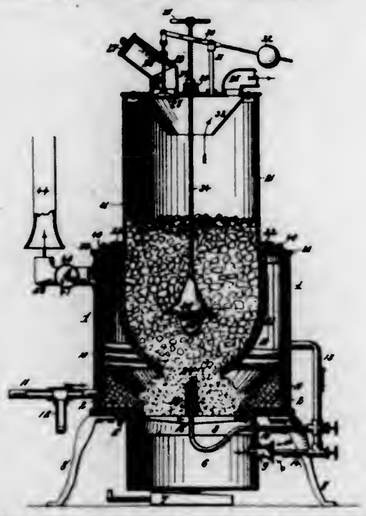
Claim.—1. In a lathe-tool holder, the combination of the stem A, clamp-standard B B' B^2 B^3, and lower arm and table, C^2 C^3 C^4 C^5, with



the upper arm, E E' E^2, and turret-head E^3, all operating together as described, and for the purpose set forth.

2. In a lathe-tool holder, the combination of the clamp-standard B B' B^2 B^3 and lower arm and table, C^2 C^3 C^4 C^5, with the clamping-stud K K' and tool-holding block L Z Z, all substantially as described, and for the purpose set forth.

332,087. APPARATUS FOR MANUFACTURING NON-LUMINOUS HEATING-GAS. Joshua Kidd, Fern Bank, Wandsworth Common, County of Surrey, England. Filed July 22, 1885. (No model.)



Claim.—1. In an apparatus for making gas, the combination, with a fire-box having a grate, a valved outlet for the products of combustion, and openings for introducing fuel, of a gas-generator having its lower open end inclosed in said fire-box and provided at the top with a gas-exit and a steam-nozzle projecting vertically beneath the lower open end of said gas-generator, substantially as described.

2. The combination of a fire-box having an outlet provided with a valve, an ash-box provided with an air-nozzle, a gas-generator having its lower open end inclosed in the fire-box and provided at the top with a gas-exit, and a steam-nozzle projecting vertically beneath the lower open end of the gas-generator, substantially as described.

3. The combination of a fire-box, an air-nozzle, a gas-generator having its open lower end inclosed in said fire-box, a steam-coil inclosed in the fire-box, and steam-nozzles connected with said coil, one of said nozzles being arranged to inject steam through the air-nozzle and the other arranged to inject steam directly into the fire-box, substantially as described.

4. The combination, with a fire-box and a steam-coil located therein, of a feed-pipe having a drop, as 12, to hold water or steam, substantially as described.

5. The combination, with a fire-box and a gas-generator having its lower open end inclosed therein, of a rotary stirrer located in said generator and consisting of an irregular weighted body attached by a rod passed through the upper end of the generator, substantially as described.

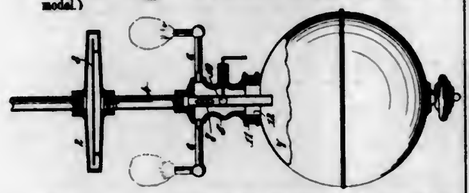
6. The combination of a fire-box, a gas-generator having its lower end bowl-shaped, provided with a central opening, the lower end of said generator being inclosed in the fire-box, and an irregular conoidal stirrer suspended in said generator, substantially as described.

7. The combination of a fire-box, a gas-generator having its lower open end inclosed in said fire-box, said generator being provided at the top with an outlet or delivery pipe, a conoidal deflector arranged in the upper end of said generator, and a rotary stirrer located in the lower part of the generator, substantially as described.

8. The combination, with the fire-box 1, having a grate, 4, valved outlet 23, and fuel-openings 40, of the gas-generator 21, having its lower end inclosed in said fire-box and provided at the bottom with an opening, 24, and at the top with a hopper, 26, and gas-exit 25, a rotary stirrer, 36, suspended in said gas-generator, and a steam-nozzle, 16, projecting vertically beneath the lower open end of the generator, substantially as described.

9. The combination of a fire-box, 1, having fuel-openings and valved outlet, a gas-generator, 21, having its lower open end inclosed in said fire-box and provided at the top with a gas-exit, 25, an ash-box, 6, removably secured beneath the fire-box grate and provided with an inlet air-nozzle, 9, a steam-coil, 10, located in the fire-box and surrounding the lower end of the gas-generator, a steam-nozzle, 14, leading from said coil to the ash-box air-nozzle, and a steam-nozzle, 15, leading from said coil into the fire-box and projecting vertically beneath the lower end of the gas-generator, substantially as described.

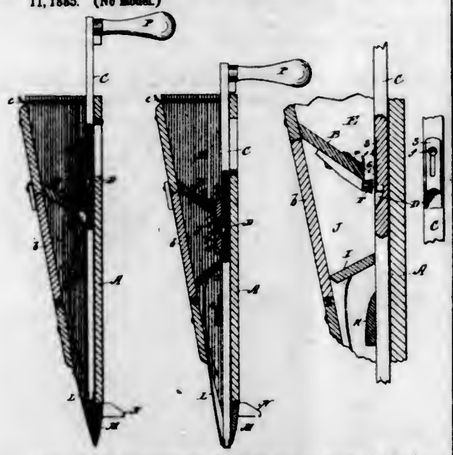
332,088. APPARATUS FOR REGULATING THE ADMIXTURE OF CARBURETED AND UNCARBURETED GAS FOR ILLUMINATING PURPOSES. Walter J. Kidd, Newark, N. J. Filed Sept. 29, 1885. (No model.)



Claim.—1. In an apparatus for enriching gas, the combination, with a gas-burner, a carbureting-vessel, and a tubular chamber or casing for connecting and supporting said burner and vessel, of a gas-supply tube passed through said casing into the carbureting-vessel and provided with one or more side openings for admitting gas direct to the burner, and with a valve located below said openings for the purpose of regulating the flow of gas to the carbureting-vessel, substantially as described.

2. The combination, with the chamber or casing 5, gas-burner 6 and carbureting-vessel 7, of the pipe 4, having side openings, 8, and provided with a valve, 10, located beneath said opening, substantially as described.

332,089. PLANTER. Charles C. Kierulff, Starke, Fla. Filed July 11, 1885. (No model.)

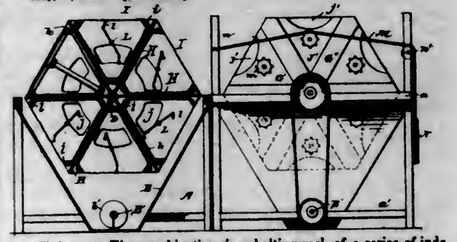


Claim.—1. The combination, with the box A, grooved in the inner face of its back and provided with a partition, B, secured within the box, and having an aperture, G, at one edge registering with the said groove, and a chute, J, of a gate, C, provided with a pocket, D, and adapted to extend entirely through and project from the box A at each end thereof, the brush F, fitted to cover the said aperture G in the partition B, the door I, pivoted across the chute J and provided with a closing-spring, the wedge K, secured upon the gate C, to act upon the door I, and the door L, attached at its upper edge to the box and adapted to be opened by the gate C, and provided with a closing-spring, substantially as shown and described.

2. The combination of the box A, grooved in the inner face of its back, and provided with a partition having the aperture G against the said slot, the gate C, fitted to slide in the said slot, the block H, removably secured upon the gate and having the pocket D', substantially as shown and described.

3. The combination of the box A, grooved in the inner face of its back and provided with a partition having the aperture G, the block H, removably secured upon the gate and having the pocket D', and the thin lip *a*, secured to the partition directly over the said aperture, substantially as shown and described.

332,090. BOLTING-REEL. Charles F. Kirk, Covington, Pa. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination, in a bolting-reel, of a series of independent bolting-frames, and devices—such as a shaft, L—passing through each, beaters *l*, pinions *m*, and chain M, for successively agitating the upper portion of each frame, substantially as set forth.

2. The combination, in a bolting-reel, of a series of bolting-frames, shafts L, provided with beaters *l* and passing through each frame, pinions *m*, chain M, and weight N, substantially as set forth.

3. The combination, in a bolting-reel, of a rotating frame comprising perforated heads and a series of bolting-frames, a circular distributing-chamber, F, adapted to revolve with said frame, a supply-funnel, stationary relative to said frame, and a shaft, L, passing through each frame, beaters *l*, pinions *m*, and chain M, for successively agitating the upper portion of each frame, substantially as set forth.

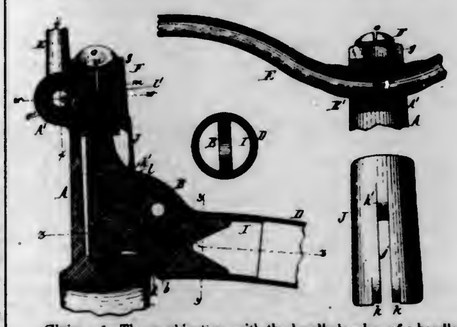
332,091. ANTI-FRICTION ROLLER-BEARING. Reba B. Lake, Ocean City, N. J. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a roller-bearing, the combination of a box or casing, rolls which form the bearings for a central shaft or spindle, separator-rolls located between the bearing-rolls, and two rings, one at either end of the bearing-rolls and between the latter and the heads of the casing, substantially as shown and described.

2. An anti-friction roller-bearing consisting of box or case A, having heads B B, with central flanged openings, *b b*, rollers D D, having journals *d d*, separator-rollers E E, occupying position between said journals, and ring F, encircling the separator-rollers, maintaining the latter in position, and forming a rolling divider between said separator-rollers and the wall of the box or casing, substantially as shown and described, and for purpose set forth.

332,092. VELOCIPEDE. Ernst G. Latta, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed May 12, 1885. (No model.)



Claim.—1. The combination, with the handle-bar lug, of a handle-bar having curved end portions capable of being freely passed through the lug, and an enlarged central portion which supports the bar in the lug, substantially as set forth.

2. The combination, with the handle-bar lug provided with an opening curved lengthwise, of a curved handle-bar seated in said opening, substantially as set forth.

3. The combination, with the handle-bar lug, of a tubular handle-bar provided with a central tubular enlargement which is seated in the handle-bar lug, substantially as set forth.

4. The combination, with the steering-head and handle-bar lug, of a handle-bar seated in said lug, a key whereby the handle-bar is secured in said lug, and a screw-nut applied to the steering-head, whereby the key is concealed, substantially as set forth.

5. The combination, with the steering-head A, handle-bar lug A', and center screw, F, of the handle-bar E, key *e*, and the screw-nut *g*, applied to the upper end of the steering-head and concealing the key, substantially as set forth.

6. The combination, with the spindle C and flat neck B, of the tubular backbone D, provided with a contracted front end, *b*, which is secured to the sides of the neck, substantially as set forth.

7. The combination, with the spindle C and flat neck B, of the tubular backbone D, provided with a contracted front end, *b*, and a tubular lining interposed between the front end of the backbone and the neck, substantially as set forth.

8. The combination, with the steering-head and neck, of a dust-shield composed of spring metal, and provided at its lower end with springs *k*, formed integral with the shield, and engaging with the neck to hold the shield against upward movement, substantially as set forth.

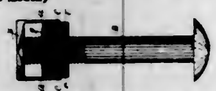
9. The combination, with the steering-head and neck, of a dust-shield composed of spring metal, and provided above the neck with a spring, *k'*, formed integral with the shield and engaging in the neck, substantially as set forth.

10. The combination, with the steering-head and neck, of a dust-shield composed of spring metal and bearing against the neck, whereby the shield is held in position, substantially as set forth.

11. The combination, with the steering-head, of a spindle provided at its upper end with a conical recess, *l*, a hollow center screw, F, provided at the upper end of its bore with a conical center, *m*, seated in said recess, substantially as set forth.

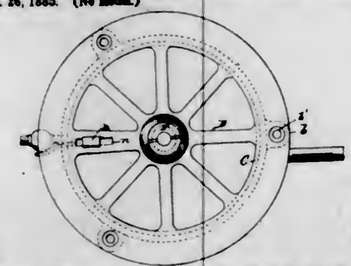
12. The combination, with the steering-head, of a spindle provided at its upper end with a conical recess, *l*, and a center screw, F, provided with a conical center, *m*, a central oil-duct, *n*, and a slot, *o*, depressed toward the oil-duct, substantially as set forth.

332,093. NUT-LOCK. Stephen T. Lockett, Big Rapids, Mich. Filed Sept. 7, 1885. (No model.)



Claim.—The combination of a bolt provided with the transverse slot in the end, a nut having series of gains in each side, and the lock-bow adapted to enter the bolt-slot and to engage the series of gains in the nut, substantially as set forth.

332,094. CUSPIDOR. Newark H. Leveille, Worcester, Mass. Filed Sept. 26, 1885. (No model.)



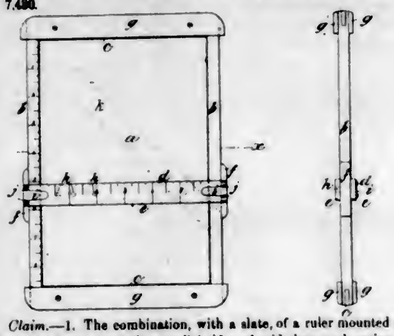
Claim.—1. In a cuspidor of the class described, the top C, having a depending central portion which is hollow, and provided at its upper portion with a straight edge terminating in a flange or offset, *f*, for the reception of a cylindrical nut, F, and at its lower portion with a flange, *e*, the depending body portion B, and bottom G, having bolt H attached thereto, and spiral spring I, adapted to bear upon the flange *e*, and nut F, the parts being combined and organized substantially as shown, and for the purpose set forth.

2. In a cuspidor, the combination, with the upper grating carrying a spring for holding the bottom against the body portion, of a lever pivoted to the body portion, so as to extend above the top grating, and provided with an arm which rests upon the bottom portion, substantially as shown.

3. In a cuspidor, the upper grating, body portion, and bottom, constructed substantially as set forth, in combination with a water-supply pipe, with stop-cock and lever connected thereto, so that when the bottom is opened the stop-cock will be turned so as to admit water to the interior of the cuspidors.

4. In a cuspidor, the combination, with the upper grating, the body portion, and the bottom, of the receptacle K, having outlet *k*, a packing-ring located between the body portion and the bottom, a water-supply pipe entering the body portion, and the lever connected to the supply-cock, so as to turn the stop-cock by operating the bottom portion, as specified.

332,095. SCHOOL-SLATE. John Manger, London, England. Filed Aug. 18, 1885. (No model.) Patented in England June 19, 1885, No. 7,490.



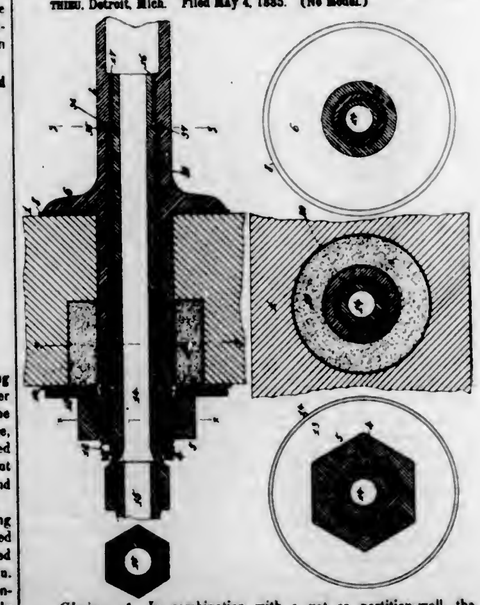
Claim.—1. The combination, with a slate, of a ruler mounted upon slides which move upon the parallel sides of said slate, and spring-clips mounted upon both ends of said ruler and substantially in the central longitudinal line thereof, and bearing upon the flat surface thereof, whereby a copy may be held flat upon and moved with said ruler, substantially as described.

2. The combination, with a slate having a scale of measurement marked upon one of its parallel sides, of a ruler consisting of a double strip united at both ends and sliding upon the parallel sides of the slate, and clips mounted upon each end of the ruler to receive and hold a copy, substantially as described.

3. The combination, with a slate having a ruler, *d*, sliding upon its parallel sides, of a strip, *k*, pivoted upon said ruler near one end, substantially as described.

4. The combination of the slate *a*, having a scale of measurement marked upon the frame thereof, the strips *g*, with the ruler *d*, having a scale of measurement marked thereon, and the clips *i*, substantially as described.

332,096. PIPE-COUPLING FOR WOODEN TANKS. Jean A. Mathieu, Detroit, Mich. Filed May 4, 1885. (No model.)

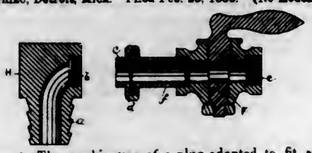


Claim.—1. In combination with a vat or partition-wall, the outer steam-pipe having a screw-threaded end and a flange, the inner steam-pipe connected with said outer pipe, and the non-conducting packing arranged between the two pipes, and the screw-nut applied to the outer pipe, substantially as described.

2. The combination, with a vat or partition-wall, of an exterior steam-pipe, 2, an interior steam-pipe, 14, the non-conducting packing 10, encircling the exterior pipe, and a non-conducting packing interposed between the two pipes, substantially as described.

3. The combination of the inner steam-pipe having a collar or flange, 35, and a screw-threaded end, the outer steam-pipe having a shoulder and screw-threaded socket, and the packing-gasket, with a vat or partition-wall traversed by said steam-pipes, substantially as herein set forth.

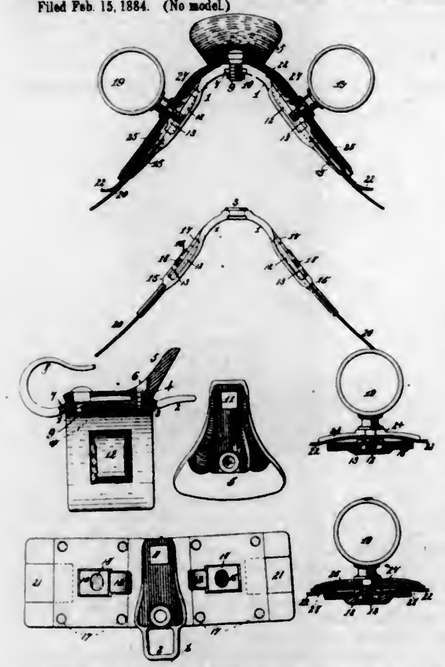
332,097. APPARATUS FOR PRESERVING RAILWAY-TIES. Jean A. Mathieu, Detroit, Mich. Filed Feb. 28, 1885. (No model.)



Claim.—1. The combination of a plug adapted to fit an opening formed in the timber to be hardened and preserved, with a distributing-pipe, and a tube or coupling having a valve and having a detachable screw and socket connection with a lateral opening in one side of the plug, substantially as described.

2. The combination of the pipe B and the distributing-pipe C, having a series of nipples, D, with the tube or coupling *f*, having the valve F and the tubular plug H, connected with the tube or coupling, substantially as described.

332,098. HARNESS-SADDLE. Edward L. McClain, Greenfield, Ohio. Filed Feb. 15, 1884. (No model.)



Claim.—1. A saddle-tree having its center piece provided on the under side with a recess for reception of the check-rein hook, and on the upper surface of its rear end with a boss, 3, in combination with a detachable saddle-seat having a boss, 4, and a fixed attaching-screw, 6, the check-rein hook 8, bolt 9, and nut 10, substantially as described.

2. The combination, with a saddle-tree, 1, having an opening in the front end of its center piece and a recess formed in its under side beneath said opening, of a detachable saddle-seat, 5, having a perforated boss, 4, and fixed screw 6 at its rear end, and a rectangular opening, 11, at its front end, a check-rein hook, 8, set in the recessed under side of the saddle-tree, a bolt, 9, passed down through the saddle-seat, tree, and check-hook, and having a squared upper end fitting the rectangular opening 11 in said saddle-seat, and a nut, 10, on the lower end of said bolt, substantially as described.

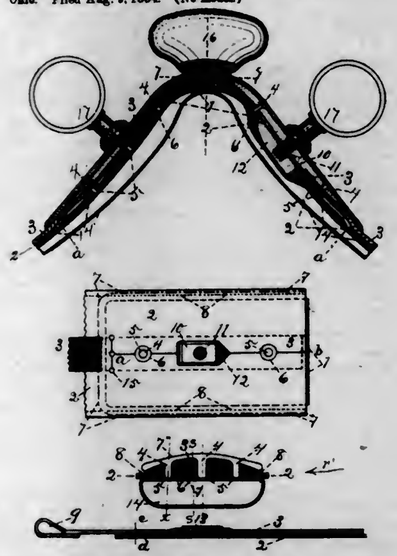
3. A saddle-tree plate having a pocket, 12, on its under side and a depression, 14, and recess 21 on its outer side, in combination with a stay, 20, bridge-plate 15, having a bridge, 16, provided with opening 18, a terret-burr, 13, and a terret, 19, substantially as described.

4. The combination, with a saddle-tree plate recessed on its outer side and a bridge-plate set in the recessed outer surface of said tree-plate, of a stay, 20, secured between the lower ends of said plates, substantially as described.

5. The combination, with a saddle-tree having pockets 12 on its under side for receiving terret-nuts and bridge-plates 15, stay 20, secured between the saddle-plate and bridge-plate, and skirts 22, secured to said tree, of a jockey placed over the skirts and bridge-plate, terrets 19, adapted to secure the jockey, and terret-nuts 13 for engaging the screw ends of the terrets, substantially as described.

6. The combination of a saddle-tree having pockets 12 and bridge-plates 15, the stays 20, skirts 22, jockeys 25, leather covering 27, connecting-strips 26, terret-nuts 13, and terrets 19, substantially as described.

332,099. HARNESS-SADDLE. Edward L. McClain, Greenfield, Ohio. Filed Aug. 9, 1884. (No model.)



Claim.—1. The combination, with a saddle-tree and a metallic jockey, one of which is provided on its upper side with recessed bosses, of a skirt and a back-band adjustably located between said tree and jockey, and pins or studs passed through said skirt and back-band and engaged in said bosses, substantially as described.

2. The combination of a saddle-tree having studs projecting from its upper side, a jockey provided on its upper side with recessed bosses for receiving said studs, and a skirt and back-band located between said tree and jockey, and provided with perforations for the passage of said studs, substantially as described.

3. The combination, with a harness-saddle tree and its pad, of skirts permanently attached near their edges to the pad and split down the middle, and cut out to accommodate the tree and its trimmings and facilitate attachment to the tree-plate, substantially as described.

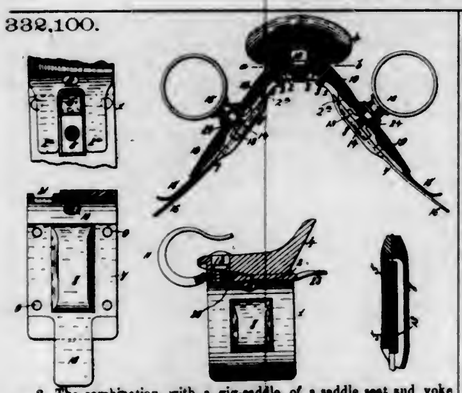
4. The combination of the saddle-tree 1, the jockey 7, pad 14, skirts 2, stitched to said pad and passed between the tree and jockey, the back-band 3, and tug-loop 9, made in common, and the pins 4, connecting said back-band, skirts, and jockey to the saddle-tree, substantially as described.

5. The combination, with the saddle-tree 1 and the jockey 7, one of which is provided on its upper side with recessed bosses 6, of the back-band 3, and the split skirts 2, located between said jockey and tree, and the pins or studs 4, passed through said skirts and back-bands and engaged in said bosses, substantially as described.

332,100. HARNESS-SADDLE. Edward L. McClain, Greenfield, Ohio. Filed Aug. 30, 1884. (No model.)

Claim.—1. A gig-saddle tree having its center provided on the upper surface of its forward end with a recess for the check-rein book and on its lower surface in front with a nut-incasing and locking recess, in combination with a bifurcated tree-yoke and saddle-seat cast together and recessed on the under side, a check-rein book, and a screw bolt and nut for connecting the check-rein hook to the yoke and seat, substantially as described.

332,100.



2. The combination, with a gig-saddle, of a saddle seat and yoke cast together, said yoke being provided with forked branches 2*, extending down upon the sides of the tree, substantially as described.

3. In a harness-saddle, a bifurcated tree-yoke and a saddle-seat cast in one piece, provided on each side with a deep recess, 17, dovetailed both vertically and horizontally to facilitate casting, and having the sides of the seat portion of said recesses extended over the sides of the yoke, in combination with a saddle-tree, jockeys, and jockey-skirts, the upper ends of said jockeys and skirts being fitted into the dovetailed recesses, substantially as described.

4. In a harness-saddle, the combination of a saddle-tree, an integral saddle-seat and tree-yoke, and a check-rein hook, a recess for the reception of said hook being formed partly in the under side of the tree-yoke center and partly in the upper side of the saddle-tree center, substantially as described.

5. The combination, with a saddle-tree having terret-nut pockets and bridges, of a combined seat and yoke having bifurcated branches adapted to rest on each side of said bridges, substantially as described.

6. In a harness-saddle, the combination, with the saddle-tree 1, recessed on its upper surface, and having a square opening, 21, of a saddle-seat, 4, and yoke, 2, cast in one piece, and having a square opening through the front end, a check-rein hook, 11, having its attaching end placed between said tree and seat, a screw-bolt, 12, and a nut, 20, substantially as described.

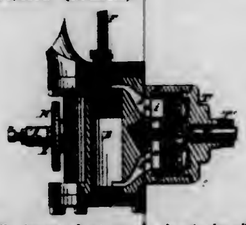
7. In a harness-saddle, the combination of a saddle-tree having pockets 8, a saddle seat and yoke cast together, and provided with recesses 17, the skirts 18, metal jockey 19, having bosses 24, the terret-barrs 13, and the terrets 15, substantially as described.

8. In a harness-saddle, the combination, with the saddle-tree plates 1, having openings 6 and raised bridges 5, formed on the outer sides of said plates, of the pocket-plates 7, having pockets 8, and secured to the under side of the tree-plates, whereby a pocket or recess for the terret-barrs is formed partly in each of said plates, the terret-barrs 13, jockeys 19, and terrets 15, substantially as described.

9. In a harness-saddle, the combination, with the tree-plates 1, having openings 6 and bridges 5, of a pocket-plate, 7, provided with a pocket, 8, and a stay, 16, and secured to the under side of the tree-plate, the skirts 18, jockey, terret-barrs, and terrets, substantially as described.

10. In a harness-saddle, the combination of the saddle-tree having barr-pockets 8 and bridges 5, the yoke 2, having bifurcated branches 2* extended down on the saddle-tree and resting at the sides of said bridges, the skirts, jockeys, terret-barrs, and terrets, substantially as described.

332,101. ROTARY CUT-OFF VALVE. Alfred Nelson, Rockford, Ill. Filed Dec. 9, 1884. (No model.)



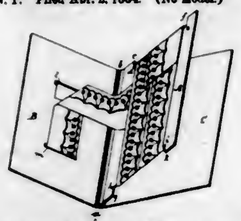
Claim.—1. The improved rotary valve herein described, made as a single disk, having on one side a series of non-communicating live-steam chambers, each having ports of less width than the said chambers, and the exhaust-chambers communicating with a central exhaust in the valve-seat, substantially as shown and described.

2. The combination, with a valve-seat provided with ports communicating with the cylinder and with a central exhaust, of the improved rotary valve herein described, made as a single disk, having on one side a series of non-communicating steam-chambers, each having ports of less width than the said chambers, and the exhaust-chambers communicating with a central exhaust in the valve-seat, substantially as described.

3. In a steam-engine, the combination of the improved rotary valve herein described, made as a single disk, having on one side a series of non-communicating steam-chambers, each having ports of less width than the said chamber, the exhaust-chambers, as described, and an oscillatory cut-off, operating as set forth.

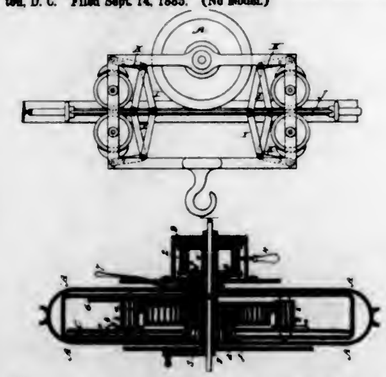
4. In a steam-engine, the combination, with a cut-off and lever therefor, of a segment, an index-finger, and means for clamping all together, substantially as described.

332,102. SHOW-CARD FOR EMBROIDERY. Isidor Neuburger, New York, N. Y. Filed Aug. 2, 1884. (No model.)



Claim.—A show-card for exhibiting embroidery and other goods, consisting of three hinged sheets, A, B, and C, two of which constitute covers for the other sheet, on which the goods are wound, and one of the cover-sheets being recessed at two points for exhibiting the end portion of the goods, substantially as described.

332,103. REVERSIBLE MOTOR-WHEEL. Enoch Osgood, Washington, D. C. Filed Sept. 14, 1885. (No model.)



Claim.—1. A reversible motor-wheel propelled by a spring or springs, with gears, pinions, and a reversible device, all arranged inside of the wheel, which can be governed and reversed at the center, substantially as and for the purposes herein set forth.

2. A self-propelling motor-wheel with a spring or springs, gear, pinions, and a reversing device, all arranged inside in such a manner that their action can be reversed in an instant by a small arm at the center on the outside, causing the wheel to run the other way, for any and all purposes, substantially as herein set forth.

3. A reversible motor-wheel made with a reversing device, and with one or more springs, gears, and pinions, also with one or more loose wheels, C, made so as to run loose on the pinion *b*, arbor, and is connected to the pinion *b* by a ratchet-wheel and pawl in such a manner that a part of the machinery can run correctly after the power of the spring is spent or stopped, all arranged inside of the wheel, substantially as herein set forth.

4. A reversible motor-wheel made with a reversing device, also gears, springs, and pinions, all arranged in or out side of the wheel, so that the motive power can be reversed while in rapid motion, causing the wheel to run the other way without injury or letting the machinery run down when the full power of the spring is on, substantially as and for the purposes herein set forth.

5. A reversible motor-wheel or motive power that can be reversed in an instant when applied to any and all kinds of machinery, wheel or wheels, inside or out, for their propulsion, substantially as herein set forth.

6. A reversible motor-wheel or motive power with a reversing device arranged with gears and pinions in or outside or on the axle of the wheel for their propulsion that can be reversed when in rapid motion or otherwise, and adapted to be applied directly or indirectly to or in one or more wheels, to cars, carriages, bicycles, tricycles, or any other kind of a vehicle for their propulsion, substantially as herein set forth.

7. A winding apparatus arranged on the center tube or tubular arbor with cylinders, ratchet-wheels, pawls, and a small spring, all arranged so that they can be wound up by pulling a cord or any other suitable material or device, substantially as herein set forth.

8. A reversing device made with a right-angle flat surface, *f*, firmly secured to the round part *g*, that extends out through the side of the wheel through the outside frame sufficient to apply an arm to it, all arranged so as to reverse the running of the wheel in either direction, when desired, substantially as described.

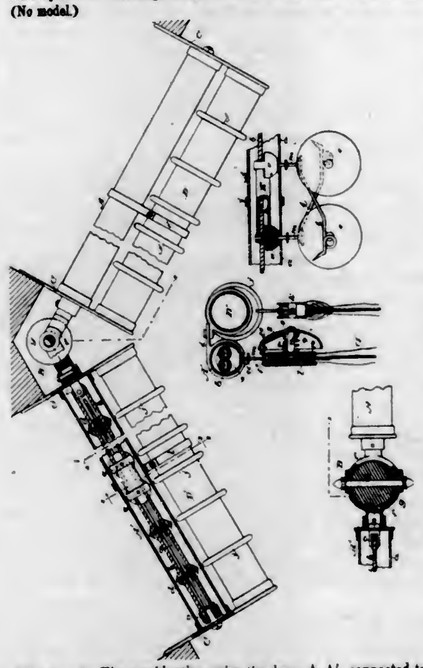
9. A round rail or track made of wood or metal with the round track on the outer edge of the horizontal flange of the rail, so that a wheel or wheels can run on either side of the rail above or below it when suspended or otherwise, substantially as and for the purposes herein set forth.

10. The automatic reversible double-acting knuckle-jointed lever-brake, consisting of levers *k k*, round-faced circular shoe L, levers I I, and rod or bar J, arranged and adapted to stop the motor-wheel or motive power suddenly by pushing the rod J in at either end, as and for the purposes substantially as herein set forth.

11. The manner of rigidly connecting the inside and outside frame-work together by a tube or otherwise, to prevent the inside frame and machinery from revolving, substantially as and for the purposes herein set forth.

12. The manner of rigidly connecting the heavy end down of the inside frame to the outside frame to obviate the lateral strain on the connecting-tubes, balancing it, substantially as and for the purposes as herein set forth.

332,104. CURTAIN-FIXTURE. Louis Page and Louis Weber, Brooklyn, N. Y.; said Page assignor to said Weber. Filed May 3, 1884. (No model.)



Claim.—1. The combination, with the bars A A', connected together by a hinge-joint, as shown, of the auxiliary bars D D', and the brackets C, provided with sockets to receive the ends of both sets of bars, substantially as described and shown.

2. The combination, with the tubular slotted curtain-bar and the curtain-operating mechanism, substantially as described, arranged within said bar, of the check-piece E, threaded or strung on the operating-cord between the travelers, substantially as and for the purposes set forth.

332,105. ATTACHMENT FOR FLOUR-BARRELS. Joseph R. Patson, Jr., Chicago, Ill. Filed Apr. 3, 1885. (No model.)

Claim.—1. As a new manufacture, a combined gated flour-barrel head and stand adapted to be applied to the barrel before it is inverted and to support it after inversion, substantially as and for the purpose set forth.

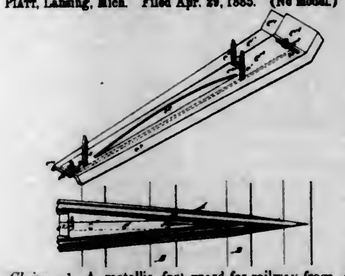
2. As a new manufacture, a combined gated flour-barrel head and stand adapted to be applied to the barrel before it is inverted and to support it after inversion, and provided with a sifter, substantially as specified.

3. As a new manufacture, a gated flour-barrel head and stand provided with a measuring device, substantially as specified.

4. As a new article of manufacture, an improved barrel-head provided with means for securely attaching it to the barrel, and having a gated opening and supports, the whole being adapted to be applied as a barrel-head to an open flour-barrel before inversion, and to permit the barrel to be inverted without spilling the contents, substantially as specified.

5. A united barrel-head, sifter, and barrel-stand adapted to be securely attached to an open barrel before inversion, substantially as specified.

332,106. FOOT-GUARD FOR RAILWAY-FROGS, &c. Frederik B. Platt, Lansing, Mich. Filed Apr. 29, 1885. (No model.)



Claim.—1. A metallic foot-guard for railway-frogs, &c., provided with fixed spikes, whereby it may be supported above the road-bed, substantially as described.

2. A metallic foot-guard for railway-frogs, &c., said guard laterally adjustable and supported horizontally above the road-bed, substantially as described.

3. A metallic foot-guard for railway-frogs, &c., consisting of two plates made laterally adjustable and supported above the road-bed, substantially as described.

4. A metallic foot-guard for railway-frogs, &c., consisting of two plates made narrower at one end than at the other, said plates made laterally adjustable and provided with fixed spikes, whereby they may be supported horizontally above the road-bed, substantially as described.

5. A foot-guard for railway-frogs, &c., consisting of two metallic plates made narrower at one end than at the other, one of said plates provided with spikes, elongated slots near its ends, and a slot projecting inwardly from one of its edges, the other plate provided with a spike to engage in said inwardly-projecting slot, the said plates adjustably united by bolts or rivets passed through said elongated slots, substantially as described.

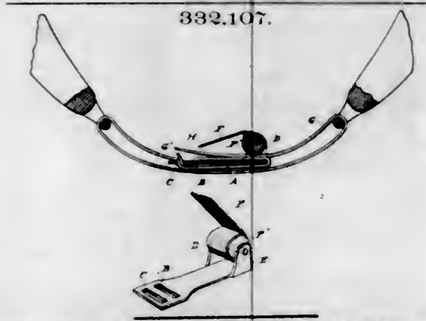
6. A metallic foot-guard for railway-frogs, &c., supported horizontally above the road-bed, said guard consisting of two plates laterally adjustable, each of said plates provided with a longitudinal flange, substantially as described.

7. A metallic foot-guard for railway-frogs, &c., said guard constructed of adjustable plates made narrower at one end than at the other and supported horizontally above the road-bed, each of said plates bent at their broader ends, substantially as described.

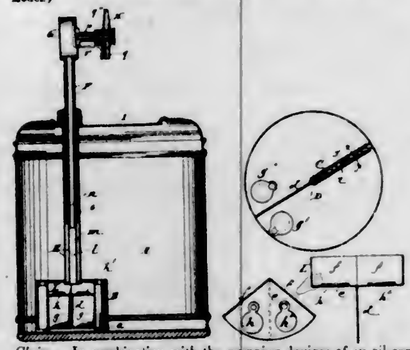
332,107. HAME-FASTENER. Frank N. Rankin, Shelbyville, Tenn. Filed Aug. 3, 1885. (No model.)

Claim.—The combination, with the hames, of the base-plate A, having the parallel slots at one end and the lugs D E at the opposite end, the cam-lever F, journaled in the said lugs, and the strap connected to the ends of the hames in loop form, with one end carried longitudinally around the said plate and through the parallel slots and detachably secured to said plate, and the opposite end secured to the plate by means of the cam-lever, substantially as shown and described.

332,107.

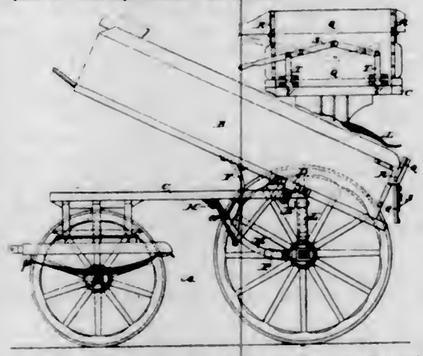


332,108. OIL-CAN AND PUMP COMBINED. Marcius C. Richards, Aurora, and Julius F. Richards, Oswego, Ill. Filed July 6, 1885. (No model.)



Claim.—In combination with the pumping devices of an oil-can or other fluid-receptacle, a delivery-tube, E, consisting of an inner tube, *l*, open at both ends, and an inclosing-case forming a chamber, *m*, closed at its lower end and open at its upper end, in combination with a sliding double tube, F, air-chamber G, and delivery-tube *p*, substantially as and for the purpose specified.

332,109. DUMPING-WAGON. Leonhard Rodenhausen, Philadelphia, Pa. Filed Sept. 14, 1885. (No model.)



Claim.—1. In a dumping-wagon, the body B, having the bracket F secured thereto, in combination with the chain G and gearing J H K, the said gearing having bearings secured to the reach C, substantially as described.

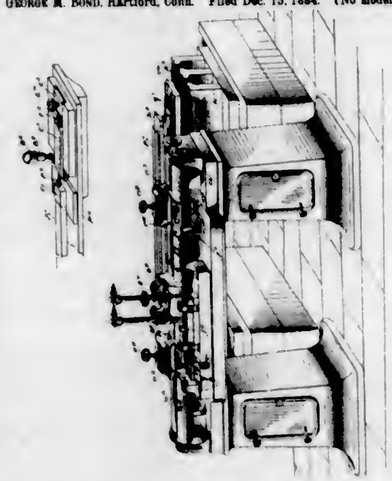
2. In a dumping-wagon, the segmental brace M, in combination with bracket N and clip P, said bracket being secured to the reach of the wagon, and the said clip secured to the axle thereof, substantially as and for the purpose set forth.

3. A dumping-wagon having a body provided with means, substantially as described, for tilting said body, a cross-spring, L, beneath the rear part of the reach C, brace M, bracket N, and clip P, said parts being arranged and combined substantially as and for the purpose set forth.

4. A wagon-body with the straps K, in combination with a tail-gate composed of two or more sections, the lower thereof being hinged and having the toggle-lever S secured thereto, and bolts T, fastened to said lever and guided in ways attached to said tail-gate, substantially as described.

5. A wagon-body with hook-shaped straps R secured to the ends of the sides thereof, and a hinged sectional end-gate, Q, having pivots resting in said straps and provided with fastening devices, substantially as described.

332,110. COMPARATOR. William A. Rogers, Boston, Mass., and George M. Bond, Hartford, Conn. Filed Dec. 15, 1884. (No model.)



Claim.—1. In a comparator, the combination, with ways, of a microscope-carriage having a substantially-rectilinear movement on the said ways, and a microscope having a determinate field fastened upon said carriage, and stops for the said carriage movable on the said ways, and adapted to be fixed or fastened on the said ways at any desired point, whereby the space passed over by the carriage may be limited to any desired amount, substantially as described.

2. The combination, with the ways and microscope-carriage movable thereon, of the stops for the said carriage, and electro-magnetic holding devices, whereby the said carriage is retained in engagement with the said stops with a definite pressure exerted between them, substantially as described.

3. The microscope-carriage having a rectilinear movement and a microscope fixed thereon having a determinate field, combined with a stationary stop and a co-operating stop on the microscope-carriage movable therewith, whereby the said carriage may be stopped in positions distant from one another by the length of an object interposed between the said stops, substantially as described.

4. A comparator having in combination a table or support for the measures, a way, and microscope-carriage provided with a microscope having a free rectilinear movement on the said way, a block of known length having a graduation about midway between its ends, an end-measure bar supported on said table in contact with the said block, and means for measuring the movement of the microscope, substantially as described.

5. A comparator having in combination a table or support for the objects to be measured, a fixed stop, a co-operating stop having a rectilinear movement, the said stops having plane terminal faces at right angles to the line of movement of the movable stop, and a movable microscope, the movement of which is made equal to that of the movable stop, and is referred to a standard linear measure, substantially as described.

6. A comparator having in combination a bed with a stationary table or support for the measures, ways, and a microscope-carriage movable on the said ways, a stationary stop, and a movable stop at the side of the ways, the said movable stop having a graduation, by observing which in its different positions the movement of the microscope-carriage may be made equal to that of movable stop, substantially as described.

7. The fixed and movable stops for calipering an object, combined with the spring and plunger acting on the said movable stop, whereby the pressure of the latter on the object may be adjusted as desired, substantially described.

8. The combination, with the ways and microscope supported thereon, with the table for supporting the objects to be investigated, and fast and slow motion devices, whereby the said table may be moved vertically and longitudinally and transversely with relation to the said ways, substantially as described.

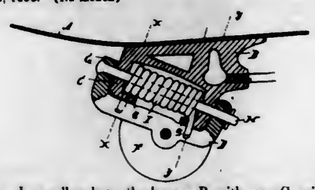
9. The combination, with the ways and microscope supported thereon, with the table for supporting the objects to be investigated, and fast and slow motion devices, whereby the said table may be moved vertically and longitudinally and transversely with relation to the said ways, and the eccentric bar supporting cylinder r^3, substantially as described.

10. The combination, with apparatus for supporting one or more microscopes, of the ways *m*, carriage having a quick motion thereon, slide having a slow motion on said carriage, and plate p^4, supported on said slide and having lateral and vertical slow movement at each end independently, substantially as described.

11. The combination, with apparatus for supporting one or more microscopes, of the ways *m*, carriage having a quick motion thereon, slide having a slow motion on said carriage, provided with sockets near its end, levers provided with fulcrum-studs to enter said sockets, and vertically-movable arms pivoted on said levers and provided with pins eccentric to said fulcrum-studs, and a plate supported near its ends on said pins and adjusted by said arms and levers, substantially as described.

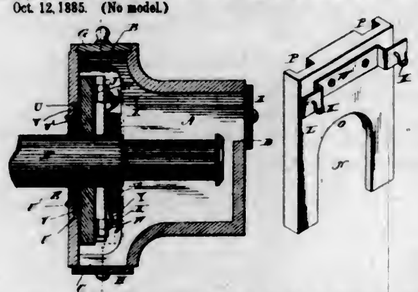
12. Two movable spring-pressed stops or contact-pieces, as i^3, arranged to engage the ends of an end-measure bar, the said stops being provided with graduations movable therewith, substantially as described.

332,111. ROLLER-SKATE. Dexter A. Root, Bay City, Mich. Filed May 13, 1885. (No model.)



Claim.—In a roller-skate, the hanger B, with ears C, said ears being provided with lugs *a*, in combination with a truck, D, the rock-shaft H, journaled to the ears of said hanger and truck, and a coil-spring I, placed around said shaft and between the ears of the hanger, and arranged to compel said truck to automatically assume its normal position by the torsional action of the spring, substantially in the manner and for the purposes specified.

332,112. CAR-AXLE BOX. John Sagmeister, Omaha, Nebr. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination of the box having an oblong aperture in its inner end surrounded upon the inside by a groove having a packing-ring laid into it, a journal projecting through the aperture in the box, and a set of dust-plates fitting tightly around the axle and against the inside of the inner end of the box, as and for the purpose shown and set forth.

2. A journal-box having an aperture in its upper and lower side and an aperture for the axle in its inner end, and having an aperture in its outer end for the insertion of the bearing-block, the apertures at the upper and lower side and at the outer end having tightly-fitting covers, as and for the purpose shown and set forth.

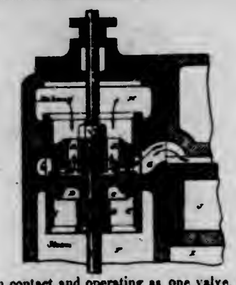
3. The combination of a journal-box having apertures at its upper and lower sides, an axle passing through an aperture in the inner end of the box, and dust-plates bearing with the ends of their slots against the journal and having springs for drawing them together, the said plates being inserted through the apertures in the box, as and for the purpose shown and set forth.

332,113. PISTON-VALVE. John W. Sargent, Scranton, Pa. Filed Aug. 10, 1885. (No model.)

Claim.—1. In combination with the cylinder and steam-chest of an engine, a valve composed of two parts normally in contact and operating as one valve, but capable of being separated by pressure, substantially as described, and for the purpose set forth.

2. In combination with the cylinder and steam-chest of an engine, a valve composed of two parts mounted upon a single valve-stem,

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and normally in contact and operating as one valve, but capable of being separated by pressure, substantially as described, and for the purpose set forth.

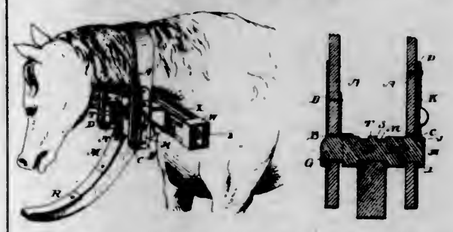
3. In combination with the cylinder and steam-chest of an engine, a valve composed of two parts mounted upon a single valve-stem, one part being fixed upon said stem and the other part loose thereon, such parts being held normally in contact to operate as one valve, but capable of being separated by pressure, substantially as described, and for the purpose set forth.

4. In combination with the cylinder and steam-chest of an engine, a valve composed of two parts, one fixed and one loose upon a single stem, a pressure-spring for holding such parts in contact, and an annular space between the two parts communicating with the cylinder, whereby an excess of pressure in the cylinder will cause a separation of the two parts of the valve against the steam nd spring pressure, substantially as described, and for the purpose set forth.

5. In combination with the cylinder and steam-chest of an engine, a piston-valve composed of two parts, one fixed and one loose upon a single stem, a spring for holding such parts in contact, an annular space between the two parts, and passages in one of said parts to permit the escape of water after their separation, as hereinbefore described.

6. The combination of the cylinder and steam-chest, the fixed valve-section A, having passages *c*, the loose section B, the spring E, and the annular space or chamber *b* in the valve-section A, all substantially as and for the purpose set forth.

332,114. ANIMAL-POKE. David R. Saunders and John E. Well ing, Leesburg, Ky. Filed Sept. 23, 1885. (No model.)

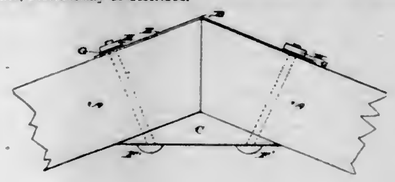


Claim.—1. The combination of the yoke having longitudinal slots in its ends, the cross-piece having one hooked end passing through the slot and engaging one end of the yoke, and the other end formed with a downwardly-projecting lip and with a notch in its upper edge, and a locking-plate or turn-button pivoted upon the opposite end of the yoke and entering the notch, as and for the purpose shown and set forth.

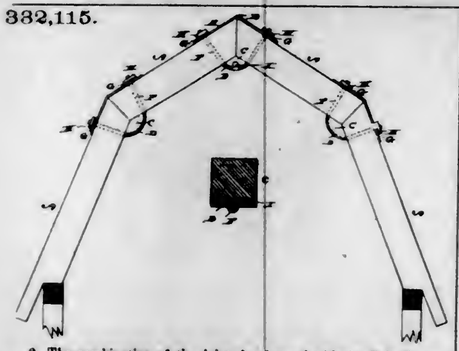
2. The combination, with the yoke having longitudinal slots in its ends, of a cross-piece having notches near its ends, and means, as described, for retaining said cross-piece in said slots, substantially as and for the purpose set forth.

332,115. SELF-SUPPORTING ROOF. John Schindler, Coldwater, Mich. Filed Aug. 11, 1885. (No model.)

Claim.—1. The combination, with the jointed rafters, of the straps on the upper sides of the joints, the blocks in the angles formed by the joints, and the bolts securing the blocks, the rafters, and the straps together, substantially as described.

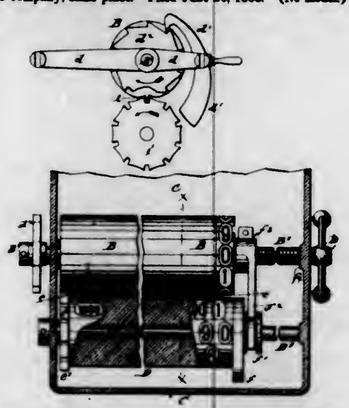


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2. The combination of the jointed rafters, the blocks C in the angles formed by the joints, said blocks having the grooves D, and the U-shaped bolts having the curved portions in the grooves and the arms extending through the rafters, and the nuts for clamping the blocks to the rafters, substantially as described.

332,116. STOP-MOTION FOR GRAIN-WEIGHING APPARATUS. Charles Semmle, New York, N. Y., assignor to the New York Automatic Scale Company, same place. Filed June 26, 1885. (No model.)



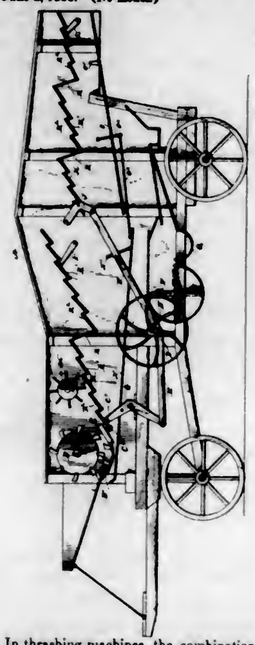
Claim.—1. The combination, with a scale-beam and suitable transmitting mechanism, of a stop-register consisting of an axially-turning cylinder and intermittingly-rotating and laterally-sliding cylinder, said cylinder having a projecting nose, a guided and spring-cushioned pusher-rod actuated by said nose, a supply-valve, and a lever mechanism actuated by the pusher-rod for stopping said supply-valve and arresting the motion of the weighing apparatus, substantially as set forth.

2. The combination, in a grain-weighing machine, of a scale-beam, transmitting mechanism, a stop-register consisting of an intermittingly-rotating cylinder keyed to a threaded shaft, a second intermittingly-rotating and laterally-sliding cylinder having numerals arranged in a spiral on its perimeter, a fixed guide-shaft for said cylinder, a laterally-traversing arm operated by the threaded shaft and engaging the laterally-sliding cylinder, a projecting nose at one end of the cylinder, a guided and spring-cushioned pusher-rod, a fulcrumed lever, a drop-lever having stop-pawls, a supply-valve, and an arm keyed to the supply-valve of the weighing-machine, said arm having a central stop-tooth for the pawls, substantially as set forth.

3. The combination, in a stop-motion for grain-weighing machines, of an intermittingly-rotating shaft threaded at one end, a cylinder keyed to said shaft, a grooved collar fixed to said cylinder and having a longitudinal tooth, a second cylinder having a gear-wheel meshing with the tooth and sliding on a fixed guide-shaft, and a laterally-traversing arm having a forked end and engaging a grooved collar of the sliding cylinder, substantially as set forth.

4. The combination of a transmitting pawl-and-ratchet mechanism operated by the scale-beam of a grain-weighing machine, an intermittingly-rotating shaft, being threaded at one end, and having a handle at the outer end, a cylinder keyed to the smooth end of said shaft and having a longitudinal tooth, a second cylinder having a gear-wheel meshing with said tooth, and a grooved collar, a fixed shaft for guiding said cylinder, and a laterally-traversing arm moving by a screw-nut on the threaded shaft, and having a forked end for engaging the collar of the traversing-cylinder, substantially as set forth.

332,117. THRASHING-MACHINE. William H. Smith, La Crosse, Wis. Filed June 2, 1885. (No model.)



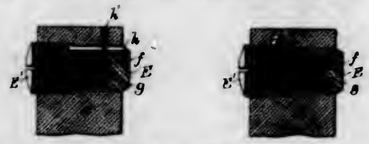
Claim.—1. In thrashing-machines, the combination of the operating crank-shaft having one or more wrists, the pitmen arranged on opposite sides of the crank-shaft, the elbow-levers connected at their lower ends to the pitmen, and the straw-carrier tables pivotally connected to the said elbow-levers above and below their fulcrums, respectively, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

2. The combination, with the thrashing-cylinder and straw-carriers, of the pivoted adjustable grating and the vertically-adjustable beater, arranged as described, for the purpose set forth.

3. As an improvement in thrashing-machines, the combination of the operating crank-shaft, the pitmen arranged to operate on opposite sides thereof, the elbow-levers, arranged as described, the straw-carrier tables pivotally connected to the said levers above and below their fulcrums, respectively, as described, and the grain-tables arranged to be operated through the forward elbow-levers, substantially as shown and described.

4. The combination of the thrashing-cylinder, the pivoted adjustable grating, the straw-carrier tables and their operative mechanism, arranged to operate as described, the vertically-adjustable beater, and the grain-tables, arranged as described, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

332,118. ADJUSTABLE ANVIL FOR MICROMETER-GAGES. F. Spaulding, Providence, R. I., assignor to the Brown & Sharpe Manufacturing Company, same place. Filed Apr. 9, 1885. (No model.)



Claim.—1. The combination, with the arm having the graduated shank and sliding scale portions, of the co-operating socketed arm provided with an adjustable anvil consisting of a face part longitudinally operated in said socket by a screw part connected to said face part and taking into said socket, for the purpose described.

2. The combination, with the arm having the graduated shank and sliding scale portions, of the co-operating socketed arm provided with an adjustable anvil consisting of a slotted face part longitudinally operated in said socket by a screw part connected to said face part and taking into said socket having therein a guide-piece, for the purpose described.

3. A micrometer-caliper having a socketed arm provided with an adjustable anvil consisting of a face part longitudinally operated in said socket by a screw part having two different diameters reversely screw-threaded, the part having one diameter taking into said socket, and the part having the other diameter taking into said face part, for the purpose described.

4. A micrometer-caliper having a socketed arm provided with an adjustable anvil consisting of a slotted face part longitudinally operated in said socket, which is provided with a guide-piece, and of a screw part having two different diameters reversely screw-threaded, the part having one diameter taking into the said socket, and the part having the other diameter taking into the said face part, all for the purpose described.

5. The combination, with the arm a, bearing the graduated shank c, incasing the stem B, which has the scaled sleeve D, of the arm a', having the anvil-face part E, connected to the anvil screw part E', for the purpose described.

6. The combination, with the socketed arm a', of the anvil-face part E, connected to the anvil screw part E', which has the reversely-screw-threaded diminished portion g, for the purpose described.

7. The combination, with the socketed arm a', having the guide-piece h', of the anvil-face part E, having the slot h, and connected to the anvil screw part E', which has the reversely-screw-threaded diminished portion g, for the purpose described.

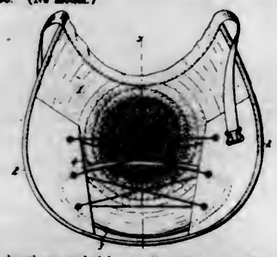
332,119. CAR-WHEEL. James F. Thorn, Three Rivers, Mich., (administrator of John A. Hagan, deceased,) assignor to the Sheffield Velocipede Car Company, same place. Filed May 6, 1885. (No model.)



Claim.—1. In a car-wheel, the combination, with the hub A and the flanged disks B B, of the tire D, having cylindrical offsets or annular grooves E E at the outer portions of the inner surface, forming shoulders, the rings F F, fitting into such shoulders, and the rivets or bolts connecting the parts, substantially as set forth.

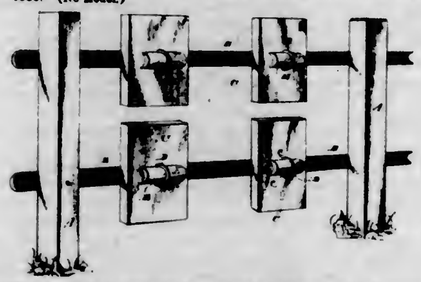
2. In a car-wheel, the combination, with the hub and disks B, having inwardly-turned flanges, of a tire, D, having cylindrical offsets or annular grooves E E at the outer portions of the inner surface, and undercut shoulders, and the dovetailed rings fitting such shoulders, and the rivets or bolts G, connecting the respective parts, substantially as set forth.

332,120. BUSTLE. John M. Van Orden, New York, N. Y. Filed July 22, 1885. (No model.)



Claim.—A bustle provided internally with an endless elliptical or approximately circular spring located in and extending continuously upward and across the concavity of said bustle, and secured thereto without metallic fastenings, substantially as described.

332,121. FENCE. Phil. J. Wagner, Enders, Kans. Filed July 9, 1885. (No model.)

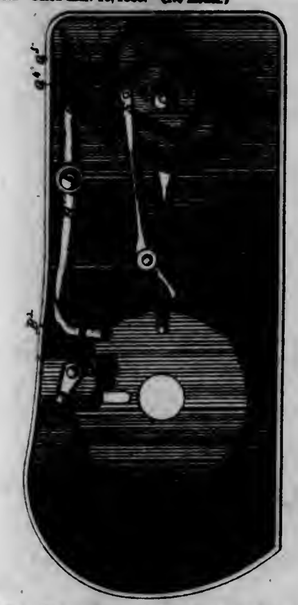


Claim.—1. In a fence, the combination, with a metal rail secured to posts and having a curved face and a bearing-face constructed to prevent the paling from turning on the rail, of a paling secured against the bearing-face of the rail by a staple, the prongs of which are bent around the curved face of the rail, substantially as set forth.

2. In a fence, the combination, with a metallic rail secured to posts, of a paling located transversely to the rail, a staple extending through the paling and embracing the rail, and a key inserted between the loop of the staple and the face of the paling, substantially as set forth.

3. In a fence, the combination, with a metallic rail crescent-shaped in cross-section of a paling secured against the side edges of the rail by a staple embracing the curved face of the rail, substantially as set forth.

332,122. BUTTON-HOLE SEWING-MACHINE. John L. Walsh, Chicago, Ill. Filed Mar. 18, 1885. (No model.)



Claim.—1. In a sewing-machine, the combination of a cam having inner and outer grooves, the spreader-arm connected with the inner groove, the feed-lever having the arm B' adjustable thereon and connected with the outer groove of the cam, the feed-wheel, and intermediate connecting devices, substantially as described.

2. In a sewing-machine, the combination of the feed-lever having the pawl pivoted thereto, the drive-wheel, the cam-plate pivoted to the machine-bed, and having the roller d', and the feed-wheel having in its under side the irregular groove C' for the roller d', substantially as described.

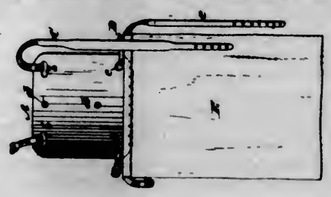
3. In a sewing-machine, the combination, with the cam A, having groove B, the adjustable connecting-arm B', the feed-lever A', having the pawl B^2, the ratchet drive-wheel, the feed-wheel having the irregular groove and geared with the drive-wheel, and the rocking plate C, having the roller d', substantially as described.

332,123. TOBACCO-CARRIER. Edward Walton, Cartersville, Va. Filed Sept. 19, 1885. (No model.)

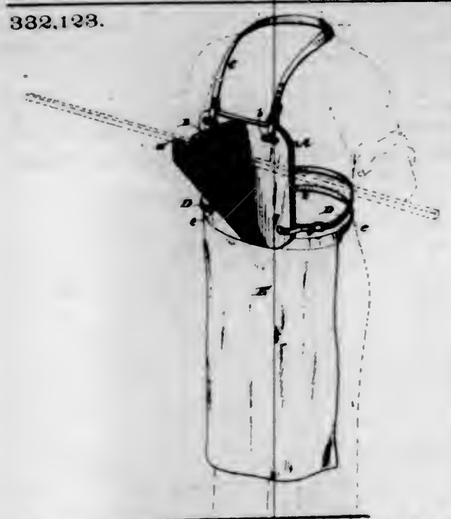
Claim.—1. A tobacco-carrier consisting of a body portion adapted to be attached to the person in front of the chest, and having a forward-projecting arm or bracket for supporting a tobacco-stick, substantially as described.

2. A tobacco-carrier consisting of a body portion or plate having straps for attaching it to the person in front of the chest, and provided with a forward-projecting arm or bracket, having a notch or recess for receiving and supporting a tobacco-stick, substantially as described.

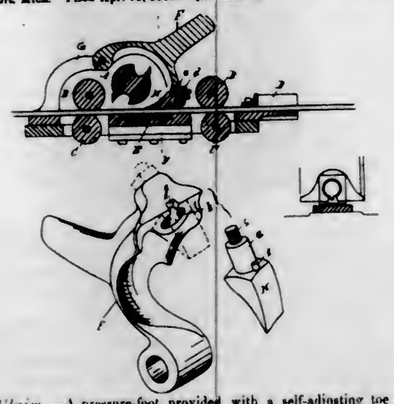
3. The combination, with a tobacco-carrier adapted to be attached to the person, and having an arm or bracket for supporting a tobacco-stick, of an apron attached to said carrier, substantially as described.



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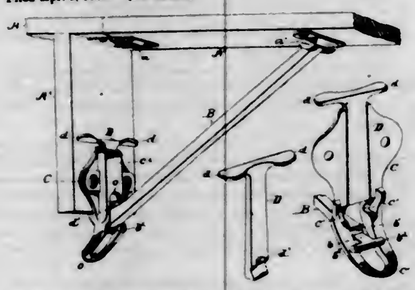


332,124. HOOP-PLANING MACHINE. ALEXANDER F. WARD, Detroit, Mich. Filed Apr. 15, 1885. (No model.)



Claim.—A pressure-foot provided with a self-adjusting toe and means, such as the recess *f* in the presser-foot and pin *e* on the toe, for preventing accidental displacement, substantially as described.

332,125. TABLE-LEAF SUPPORT. LOUIS WELKE, Williamsport, Pa., assignor to the National Furniture Company, (Limited,) same place. Filed Apr. 8, 1884. (No model.)

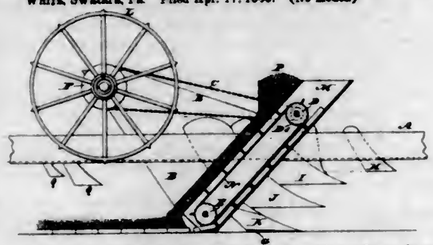


Claim.—1. The combination, in a table-leaf support, of the vertically-sliding bolt D, with beveled lower end, and the straight and rigid arm or brace B, having shoulder *b'*, with beveled face, substantially as and for the purposes set forth.

2. The combination, with the arm or brace B, having shoulder *b'*, of the curved plate C, having slot *c* and closed guide c^2, and the locking-bolt D, having thumb-pieces *d* and pin *d'*, and made wider at its lower end, to correspond with the size of said guide c^2, in which it has vertical movement, substantially as and for the purposes set forth.

3. A table-leaf support consisting of the straight and rigid arm or brace B, pivoted to the table-leaf, and having a seat, *b*, shoulder *b'*, and a pair of lugs, b^2, on its free end, a guide-plate, C, secured to the table-frame and having a curved slotted lower end, with a pair of recesses, *c'*, and a locking-bolt, D, having vertical movement in said guide-plate, and made with a pin, *d'*, and thumb-pieces *d*, all constructed and combined substantially as described.

332,126. DITCHING AND TILE-LAYING MACHINE. J. CLAUDE WHITE, Swatara, Pa. Filed Apr. 17, 1885. (No model.)



Claim.—1. In a ditching and tile-laying machine, a frame, in combination, with a tile-conveyer and layer and an earth-hopper, substantially as described.

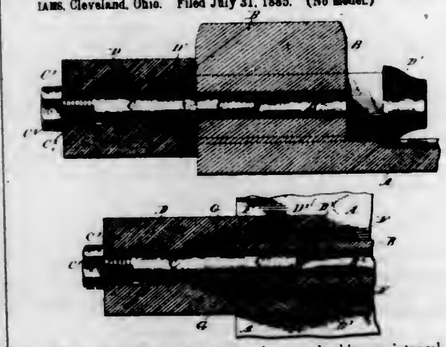
2. The combination, with a frame, of a tile-conveyer and layer, an earth-hopper, and a covering-plow, substantially as described.

3. In a machine of the character named, the combination, with a tile-conveyer actuated from the driving-wheels of an earth-hopper and a covering-plow, substantially as described.

4. In a ditching and tile-laying machine, the beam A, provided with a plow or plows, in combination with the frame B, wheels L, pulley F, mounted on the axle of said wheels L, endless belt C, pulleys D, D', and E, and conveyer N, substantially as and for the purpose set forth.

5. In a ditching and tile-lying machine, the beam A, provided with one or more plows, in combination with the frame B, wheel L, a tile-conveyer, means whereby the rotation of the wheel L actuates the tile-conveyer, a dirt-hopper and chute, and a covering-plow, substantially as and for the purpose set forth.

332,127. DIE FOR MAKING TURN-BUCKLES. CHARLES H. WILLIAMS, Cleveland, Ohio. Filed July 31, 1885. (No model.)



Claim.—1. In a machine for forming turn-buckles, an integral inner die or anvil conforming to the interior of the head portion of a turn-buckle, substantially as specified.

2. In a machine for forming turn-buckles, an integral inner die or anvil and a header operating longitudinally against the turn-buckle blank mounted on said anvil, substantially as specified.

3. The combination of a fixed inner die or anvil, a header, and side-retaining devices, substantially as specified.

4. A header provided with side-retaining extensions conforming to the sides of a turn-buckle, substantially as specified.

5. An integral inner die or anvil and a header, in combination with side-retaining devices adapted to bear against said inner die or anvil, substantially as specified.

6. The combination of a fixed integral inner die or anvil, a movable header operating to force metal inwardly, and a mandrel operating to limit the inward movement of the metal, substantially as specified.

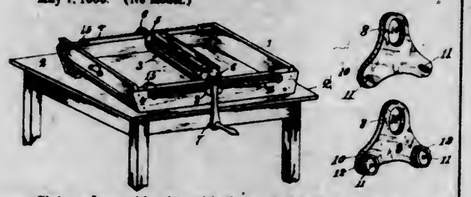
7. A fixed undivided inner die or anvil conforming to the interior outline of a turn-buckle, in combination with an undivided heading-die having a concavity circular in all of its cross-sections, and having a mandrel whereby longitudinal fins on the sides and head of a turn-buckle, either interiorly or exteriorly located, are obviated, substantially as specified.

8. An integral undivided heading-die having a concavity circular in all of its cross-sections, and a concentric mandrel, whereby the formation of insects, recesses, and fins by said die upon the head of a turn-buckle is prevented, substantially as specified.

9. The combination of the die D, having the concavity *D'*, circular in all of its cross-sections, the mandrel C, and extensions D^2, with the fixed die B, having the aperture B^2, substantially as specified.

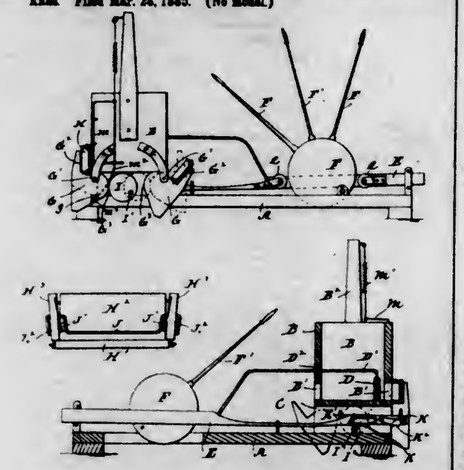
10. The combination of the bed-plate A, having the groove A', the removably-fixed inner die, B, having the aperture B^2, and the head D, having the mandrel C, substantially as specified.

332,128. BUTTER-WORKER. NATHAN G. WILLIAMS, Bellows Falls, Vt., assignor to the Vermont Farm Machine Company, same place. Filed May 7, 1885. (No model.)



Claim.—In combination with the track 13 of a butter-worker, the pendent tri-armed retainer-frame 8, provided with an opening, 14, and with anti-friction rollers, the gear-wheel 6, and the shaft 5, as set forth.

332,129. BRICK-MAKING MACHINE. JAS. H. WILLIAMSON, Topeka, Kans. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination of the hopper, the plunger operating therein, the reciprocating bar for operating the plunger, the pivoted carrier adapted to support the mold and latch devices, whereby to clamp the carrier in position, said latch devices being operated by the reciprocating bar, substantially as set forth.

2. In a brick-machine, the combination of a hopper, a carrier pivoted on opposite sides of said hopper and adapted on one side of their pivots to support a mold and provided on the other side of such pivots with a carrier-extension, an operating-shaft having a cam or cams whereby to operate the carriers, a plunger, a bar for operating said plunger, and devices whereby to communicate the motion of said bar to the operating-shaft, substantially as set forth.

3. The combination, in a brick-machine, of a hopper, carriers pivoted to opposite sides thereof, an operating-shaft extended between said carriers, and a cam-latch supported on said shaft and movable alternately into engagement with the opposite carriers, whereby one carrier is released as the other is clamped in position, substantially as set forth.

4. The combination of the clay-hopper, the pivoted mold-carriers, an operating-shaft having latch-cams, whereby to operate the said carriers, gear-teeth on the shaft, a reciprocating bar for operating the plunger, and a plurality of sets of teeth on the bar, one set being geared with the operating-shaft with each motion of the bar, substantially as set forth.

5. The combination of a hopper, a knife movable over the discharge-opening of such hopper, a spring for retracting the knife, a pivoted mold-carrier having a stud or bar connected with the knife and having a hook by which to engage the stud on the carrier, and a trip for detaching said hook from said stud, substantially as set forth.

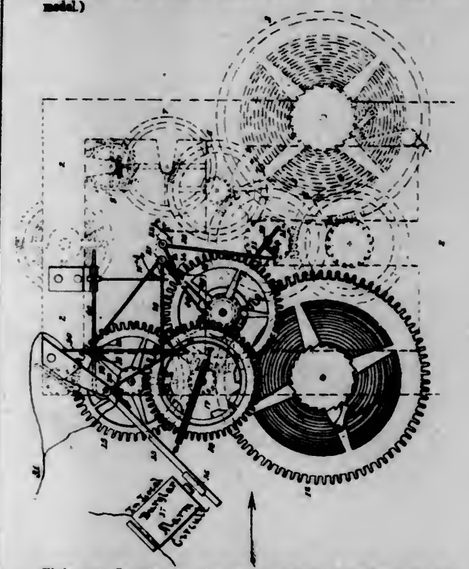
6. A brick-mold having its sides hinged at their lower edges, combined with a bar connecting the upper edges of said sides and having cranks set at an angle, substantially as set forth.

7. The combination of a hopper provided with discharge-openings in two of its opposite sides and a reciprocating plunger whereby clay is forced alternately out of the opposite openings, substantially as set forth.

8. The combination of the hopper having discharge-openings in two of its opposite sides, the plunger operating between each opening and a reciprocating bar provided with rods or arms extended above the discharge-opening in the hopper and connected with the plunger, substantially as set forth.

9. The combination, with the hopper, the plunger, and the reciprocating bar, of two anti-friction rollers secured on the reciprocating bar and a disk pivoted eccentrically and bearing between such anti-friction rollers, substantially as set forth.

332,130. AUTOMATIC CIRCUIT-BREAKER FOR BURGLAR-ALARMS. JAMES R. YEAKLE, Baltimore, Md. Filed May 14, 1885. (No model.)



Claim.—1. In a burglar-alarm, the combination, with a main electric circuit connecting a place to be guarded with a distant station, of an automatic circuit-breaker in the main circuit, a time mechanism arranged to trip said circuit-breaker into action at predetermined intervals, an electro-magnet disconnected from the main circuit and arranged to be included in a local-battery circuit, and tripping devices controlled by said electro-magnet for tripping the circuit-breaker into action independently of the time mechanism, essentially as set forth.

2. The combination, with the automatic circuit-breaker train having a break-wheel upon one of its shafts and upon another the wheel with a detent-pin projecting upon both sides thereof, of the longitudinally-shifting shaft carrying the hooks 19 and 20, the time mechanism and intermediate devices arranged to partially turn said shaft, and the electro-magnet and intermediate devices for shifting said shaft endwise, substantially as described.

3. The combination of the circuit-breaker train having the break-wheel and lift-wheel 27 upon one of its shafts, upon another the wheel 15, having a detent-pin projecting on both sides thereof, and upon another the shifting grooved sleeve and its attached lift-disk 43, provided with one portion of a clutch, the other portion of which is fixed upon the shaft, with the longitudinally-shifting shaft carrying detent-hooks 19 and 20, and arm 26, projecting into the groove of said sleeve, and arm 48, having its end hooked to engage the lift-wheel 43, and hook 28, arranged to engage the lift-wheel 27 on the break-wheel shaft, the time mechanism having a shaft provided with one or more tripping-hooks, 11, the intermediate tripping devices between said hooks, and the arm 23, the bell-crank-lever having one of its arms loosely engaged with a projection of the shifting-shaft, and the electro-magnet and its armature having a projecting portion loosely engaged with other arm of said bell-crank lever, the whole constructed and arranged to operate essentially as set forth.

4. The combination, with a main-line terminal, of the two break-wheel contact-springs connected thereto, and the break-wheel connected with the opposite line-terminal, and provided with a break or insulating-space to receive one of said springs when the wheel is at rest, and an electro-magnet in a local circuit arranged to hold the other spring in po-

sition to make electric contact with the break-wheel only when said magnet is charged, substantially as described.

5. The combination, with the automatic circuit-breaking mechanism and time mechanism for tripping it into action at predetermined intervals, of the regulating mechanism for determining the specific character or number of repetitions of the signal when caused to be sent by said time mechanism, the electro-magnetic devices for tripping said circuit-breaking mechanism independently of the time mechanism, and the regulating mechanism which determines the specific character or number of repetitions of the signal when sent by said electro-magnetic tripping mechanism, and independently of the further action of the same, essentially as set forth.

332,131. CHILD'S VEHICLE. JOHN S. ARTHUR, Berlin, Ontario, Canada. Filed Apr. 30, 1885. (No model.)

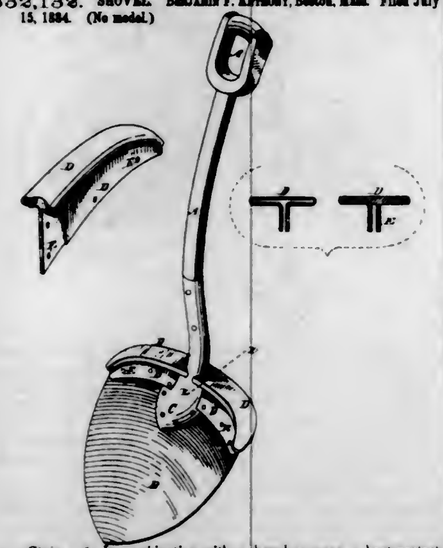


Claim.—1. A sleigh-knee, A, having the feet *a a*, arm *b*, slot *c*, and bolt-hole *d*, substantially as herein shown and described.

2. The hub-bracket D, provided with the bolt-hole *h*, nipple *i*, and hub *j*, substantially as specified.

3. A sleigh-knee, in combination with a detachable bracket provided with a fastening device for securing it to said knee, in the manner and for the purposes set forth.

332,132. SHOVEL. BENJAMIN F. APTHORP, Boston, Mass. Filed July 15, 1884. (No model.)



Claim.—1. In combination with a shovel or scoop, a boot-protecting step-piece, as D, on the top of the blade and extending from the handle toward the side of the blade, but independent of said handle, said piece having a flange which is secured to the blade, substantially as described.

2. The combination, with the blade of a shovel or scoop, of a boot-protecting step-piece having a flat top and flanges extending down in contact with the face and back of the blade, said step-piece being secured independently of the handle, substantially as described.

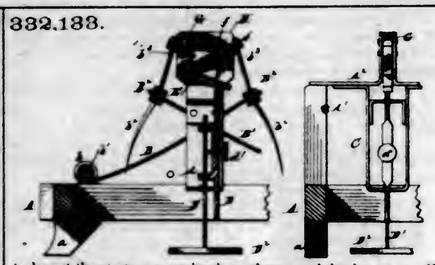
332,133. MOLE-TRAP. ELIAS BELLA MACY, Ind. Filed Sept. 23, 1885. (No model.)

Claim.—1. The combination, in an animal-trap, of two sets of spears arranged to approach a given point from different directions, and their impelling spring-arms overlapping each other and extending past the center of the main frame in opposite directions to the spear-heads, with means for holding said arms in a set position, a main trigger, as E, and means for tripping said main trigger, as set forth.

2. The combination, with the spring-frames B B', their cross-heads B^2, spears b^2, and loops b^3, of the trigger D, the trigger F, having hook *f*, the main trigger E, having hook *e*, and means for tripping the several triggers simultaneously, as set forth.

3. The mole-trap described, having the spring-frames B B', each frame extending past the center of the machine from the point of its attachment thereto to a spear-head, as shown; and having spears b^2 and loops b^3, the triggers E F G, the slides D D', having adjusting-screw *d'*, and the disk D^2, all combined and operating as and for the purpose set forth.

332,133.



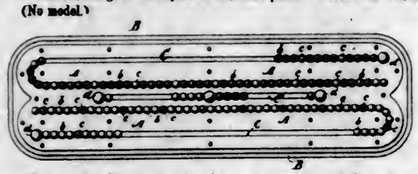
332,134. ICE-CREAM SODA. JAMES W. BLACK, Berwick, Nova Scotia, Canada. Filed Aug. 3, 1885. (No specimens.)

Claim.—1. A confectionery composition or sirup for making ice-cream soda, consisting of white of eggs, sugar, water, lime-fruit juice, lemon, and an acid, suitably mixed, as described.

2. The acidulated cream-sirup for making ice-cream soda, composed of beaten white of eggs, sugar, water, lime-fruit or lemon juice, tartaric acid, and a flavoring-extract.

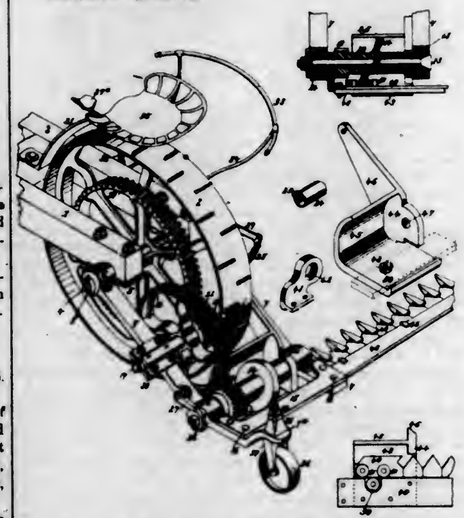
3. The mixture of sirups for making ice-cream soda, consisting, first, of beaten whites of eggs, sugar, water, one or more kinds of fruit-juice, and tartaric acid, forming the acidulated sirup, and, second, a sirup containing bicarbonate of soda, forming the carbonated sirup.

332,135. GAME-COUNTER FOR CRIBBAGE. JAMES F. BOGAN, Boston, Mass., assignor to Flynn & Co., same place. Filed June 29, 1885. (No model.)



Claim.—A cribbage-board and game-counter consisting of a metal plate, A, attached to a suitable back, B, and provided with two or more continuous parallel slots, C, in combination with the movable studs *b c*, substantially as and for the purpose set forth.

332,136. HARVESTER. FRANCIS CORDREY, Fort Wayne, Ind. Filed Jan. 8, 1885. (No model.)



Claim.—1. In a harvester, the combination of the drag-shoe or hanger frame consisting of the bottom plate, front wall, apertured side flange, and forwardly-projecting arm, and the detachable bracket with the finger-bar secured to said drag-shoe, and the gearing-frame adapted to support the same, substantially as described.

2. In a harvester, the combination of the gearing-frame, the axle or stationary bolt fitted therein, the adjustable sleeve surrounding said bolt or axle, a spiral cam-wheel having a hub or collar provided with a pinion and fitted loosely on said bolt, a nut on the end of said axle or bolt for adjusting the sleeve, the cutter and finger bars, the power-transmitting gearing, the traction-wheel, and the draft-frame, substantially as described.

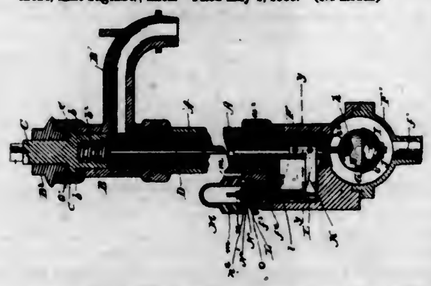
3. In a harvester, the combination of the gearing-frame 7, the shaft or stationary bolt 22, fitted in said frame, the spiral cam-wheel comprising the cam 14, projecting from its hub 20, said hub being mounted loosely on the stationary bolt or shaft 22, and provided with a pinion, 13, the finger-bar 40, the cutter-bar 49, having rollers 50 51, the power-transmitting gearing, the traction-wheel, and the draft-frame, substantially as described.

4. In a harvester, the combination of the traction-wheel 2, having an elongated hub, 2^a, mounted on a shaft, 4, and provided with a spur-gear, 10, a gearing-frame having arms 7, mounted in front on the traction-wheel shaft and connected at their rear ends by a cross-tie, 15, a stationary shaft, 22, supported in said gearing-frame, a hub or collar, 20, mounted on said stationary shaft and having a pinion, 13, and a spiral cam-wheel, 14, a short shaft, 17, journaled in a box attached to one arm of the gearing-frame and carrying a pinion, 11, and ratchet-gear 18, the spur-gear wheel 12, having pawls 19, the finger-bar 40, cutter-bar 49, and rollers 50 51, substantially as described.

5. In a harvester, the combination, with the traction-wheel 2, having a spur-gear, 10, mounted on its hub, and the gearing-frame 7, pivotally connected to the shaft of said traction-wheel, of the finger-bar 40, cutter-bar 49, rollers 50 51, stationary shaft 22, supported in the gearing-frame, hub 20, mounted on said shaft and having a pinion, 13, and a spiral cam-wheel, 14, the ratchet-nut 26, pawl 27, shaft 17, carrying pinion 11, and ratchet-gear 18, and the power-transmitting gear 12, having pawls 19, pivoted to its spokes or arms, substantially as described.

6. In a harvester, the combination of the gearing-frame 7, the stay-piece 41, having an eye, 42, the base-plate 43, having a perforated vertical shoulder, 44, front wall 45, and arms 46, the finger-bar 40, cutter-bar 49, rollers 50 51, the bushing 24, supported in one arm of the gearing-frame, the stationary shaft 22, hub or collar 20, having pinion 13, and spiral cam-wheel 14, the traction-wheel, draft-frame, and power-transmitting gearing, substantially as described.

332,137. HYDRANT AND STREET-WASHER. BENJAMIN F. COURTRIGHT, East Saginaw, Mich. Filed May 1, 1885. (No model.)



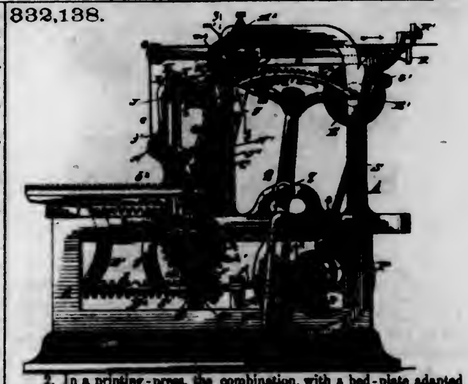
Claim.—1. In a hydrant and street washer having a suitable upper part, the combination, with a tube-shaped lower part having a perforation through its side, and an inner recessed longitudinal projection at one side above the valve-chamber, said projection also being provided with a perforation through its side, and an opening at the upper end of said recess, means for closing the perforations in the sides of the tubular lower part and the side of the recess, a horizontal arm extending from the valve-rod into said recess, an upwardly-extending rod secured to said arm, the upper end of which rod is screw-threaded, and provided with a suitable waste-valve, and passes through said opening in the upper part of said recess, substantially as and for the purpose set forth.

2. In a hydrant and street washer having a waste-valve, as described, the combination, with the upper part of a longitudinal projection on the side of the lower part, of an inverted cup-shaped cover secured thereto by means of set-screws, and provided with downwardly and outwardly extending perforations, substantially as and for the purpose set forth.

332,138. CYLINDER PRINTING-MACHINE. JOSEPH L. COX, Lafayette, Ind., assignor to the Duplex Printing Press Company, Battle Creek, Mich. Filed Nov. 6, 1883. (No model.)

Claim.—1. In a printing-press, the combination, with a reciprocating bed-plate and an impression-cylinder, of vertically-moving and alternately-reciprocating rollers adapted to form a loop of paper in connection with the impression-cylinder, substantially as specified.

332,138.



2. In a printing-press, the combination, with a bed-plate adapted to have the form secured thereto and reciprocating on the main frame of the press, and impression-cylinder rotated alternately in opposite directions by the motion of the bed-plate, of two rollers situated at equal distances on each side of the impression-cylinder, reciprocating vertically in opposite directions to each other, actuated by the reciprocations of the bed-plate, and adapted to form a loop of paper from the feed mechanism around themselves and the impression-cylinder, and pass the said loop between the impression-cylinder and bed-plate, substantially as specified.

3. In a printing-press, the combination, with the reciprocating bed-plate, the impression-cylinder rotated alternately in opposite directions by the motion thereof, and the rollers reciprocating alternately in opposite directions and actuated by the reciprocations of the bed-plate, of the vibrating lever provided with the curved rack-bar, and the feed-roller provided with the ratchet and loose gear-wheel on its end, and adapted, by means of the oscillation of the said curved rack-bar, loose gear-wheel, and ratchet, to feed the paper intermittently into the machine and at the times when the cylinder and bed-plate are not printing, substantially as specified.

4. In a printing-press, the combination, with the reciprocating bed-plate, the impression-cylinder actuated thereby, the reciprocating rollers actuated by the bed-plate, and the feed mechanism acting intermittently and only when the bed-plate and cylinder are not printing, of the automatically-reciprocating bar carrying a transverse cutter at its upper end which acts with a stationary cutter secured to the main frame, substantially as specified.

5. In a printing-press, the combination of the bed-plate provided with the longitudinal racks b^2 and b^3, the impression-cylinder provided with the gear-wheel *c*, the reciprocating rollers J J', the stationary rollers K K', the shaft I, provided with the pulley i^2 and pinion *i*, and the cords L L', with the lever G, provided with the curved racks *g g'*, the segmental gear *h*, the disk h^2, spring-detent h^3, and pinion h^4, substantially as specified.

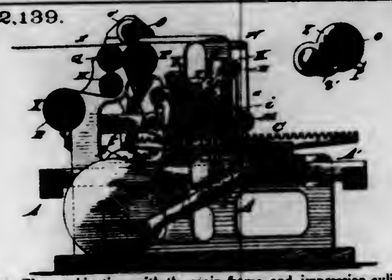
6. The combination, with the reciprocating bed-plate provided with the racks *b b'*, and the driving-shaft D, composed of the tumbling-shaft D', provided with the gear-wheel d^4, meshing with the racks *b b'*, and the shaft D, provided with the beveled gear d^3, of the shaft *f*, having a bevel-gear, *f'*, of the same size as and meshing with the gear d^3, and a bevel-gear, f^2, which meshes with a bevel-gear, f^3, of double its diameter, and the shaft F, which carries the bevel-gear f^3, and is thus adapted to actuate the feed and cutting mechanism at double the rate at which the main shaft actuates the base-plate, substantially as set forth.

7. The combination, with the reciprocating bed-plate, impression-cylinder actuated thereby, the vertically-reciprocating loop-rollers, and feed-actuating mechanism constructed substantially as described, of the feed-rollers M, M', and M^2, the feed-rollers M' and M^2 being of equal diameter and both coacting with the roller M, the former to draw the web from the roll, the latter to draw the same out of the machine, the three rollers thus forming an automatically-compensating tension mechanism for the web.

332,139. CYLINDER PRINTING-MACHINE. JOSEPH L. COX, Lafayette, Ind., assignor to the Duplex Printing Press Company, Battle Creek, Mich. Filed May 7, 1885. (No model.)

Claim.—1. In a printing-press, the combination, with the reciprocating bed-plate adapted to have a form secured thereto, and provided with a horizontal rack, and the impression-cylinder having a gear-wheel secured upon it, which gear-wheel meshes with and is actuated by the rack of the bed-plate, of the four vertically-reciprocating rack-bars actuated by pinions on the ends of the impression-cylinder, and the two rollers which have bearings in and reciprocate with the rack-bars on each side of the impression-cylinder, and are adapted to form a loop of paper with the latter, which loop passes between the bed-plate and cylinder when the same are actuated, substantially as described.

332,139.

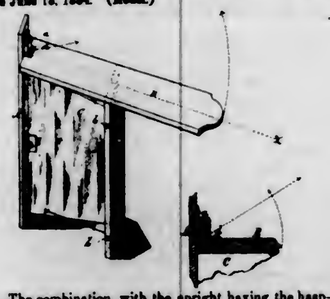


2. The combination, with the main frame and impression-cylinder I, of the fixed rollers E F G H M M', the adjustable guide-bar or roller N, and shaft O, provided with the collars o', the reciprocating rollers L L', and the rack-bars K, reciprocated by the pinions i' i' on the ends of the impression-roller, substantially as specified.

3. In a printing-press, the combination of the reciprocating bed-plate provided with a horizontal rack, the impression-cylinder provided with the pinion *i*, meshing with the said rack, the vertically-reciprocating rack-bars, and the rollers L L', with the rollers E F G H M M', the adjustable guide-bar or roller N, and the shaft O, provided with the disks *o'*, substantially as specified.

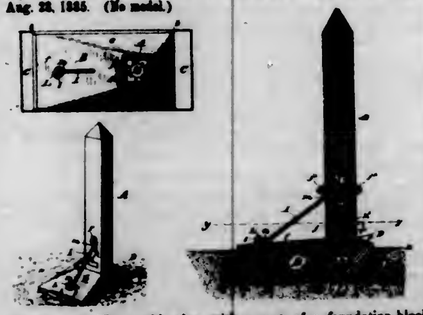
4. In a printing-press, the combination of the reciprocating bed-plate provided with a horizontal rack, the impression-cylinder having a gear-wheel upon it actuated by said rack, and provided at its ends with pinions of equal size, the four reciprocating rack-bars actuated by said pinions, the reciprocating rollers having bearings in the rack-bars, and mechanism, substantially as described, whereby the web of paper may be intermittently fed to the impression-cylinder, and adapted to feed equal quantities of the web at or near the ends of the reciprocations of the bed-plate.

332,140. IRONING-TABLE. BELVIDERE C. DAWSON, Bloomington, Ill. Filed June 18, 1884. (Model.)



Claim.—The combination, with the upright having the hasp-socket and counter-facing angle-lugs, of the attachable angle-board and bracing back board, to the former of which the latter is hinged and hooked, and of the ironing-board having the coupling angle-tongue, substantially as and for the purposes herein specified.

332,141. FENCE-POST. JOHN E. DONALDSON, Montezuma, Ind. Filed Aug. 28, 1885. (No model.)

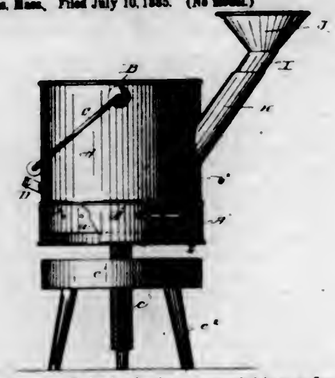


Claim.—1. The combination, with a post, of a foundation-block detachably secured to said post and having a plane portion and downwardly-sloping surfaces and projecting tongues C, arranged at each end thereof, substantially as described.

2. The combination, with a fence-post, of a foundation or base block composed of vitrified earth and detachably secured to said post, said block having a plane portion, D, for the post, downwardly-sloping upper surfaces from said plane portion to the sides and ends thereof, and projecting tongues C at each sloping end wall thereof, substantially as described.

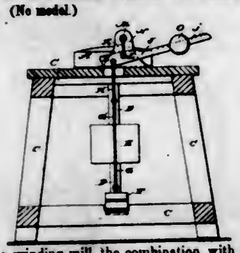
3. The combination of a fence-post having a bore and a transverse recess, a base-block, a bolt fitted in an aperture or hole in said block and rigidly held in position by a lead filling, and a serrated nut fitted in the transverse recess of the post and engaging the threaded end of the bolt, to lock said base-block and post together, substantially as described.

332,142. MILK BUCKET AND STOOL. EDWARD F. DRAKE, Miller's Falls, Mass. Filed July 10, 1885. (No model.)



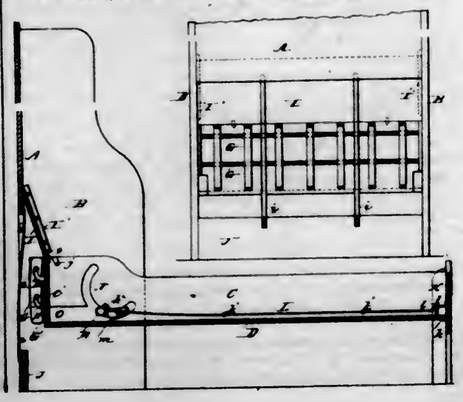
Claim.—A milk-bucket having an extended bottom flange or ring, a combined cover and seat, and pin *b'*, combined with the stool *c' c²* and an interposed disk or head, *a*, engaged by the bottom flange of the bucket, and having holes 2, and with the screw-threaded spindle *c* rigidly connected with the disk or head and turning in the stool, all substantially as described.

332,143. GRINDING-MILL. BENJAMIN J. DU BOSE, Lisbon, Ga. Filed Aug. 3, 1885. (No model.)



Claim.—In a grinding-mill, the combination, with the bed-stone B, bridge-tree F, spindle D, and upper runner, A, of a lever, J, a link, K, and pins I L M, an adjustable weight, O, on said lever, and a link-and-rod connection, H G, between the pin I on the lever and the bridge-tree, said link K connecting with a support of the mill-frame and with the pin L of the lever J, substantially as herein set forth.

332,144. WARDROBE OR FOLDING BEDSTEAD. ELISHA E. EVERITT, Philadelphia, Pa. Filed Mar. 14, 1885. (No model.)



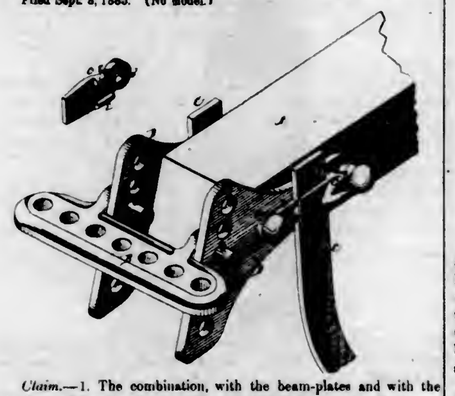
Claim.—1. In a wardrobe or folding bedstead, the combination, with the stationary side boards, B B, having anti-friction rollers journaled thereon, of the side rails, C C, having each a curved slot or way, N, said rollers forming the fulcra for said side rails, and traversing the curved ways therein as the latter are raised and lowered, substantially as shown and described.

2. The combination, with the upright boards B B and the side rails, C C, having curved bearing-surfaces N N', of the plates M, secured to said upright boards, and the rollers P, all constructed and arranged substantially as described.

3. In a folding bedstead, the combination, with the side rails, C C, and the cross-bars G G at the ends thereof, of the weights G' G', having the slots H H, which receive said bars, substantially as described.

4. In combination with the folding side rails and hinged pillow-board I, a button or buttons, *j*, substantially as and for the purpose set forth.

332,145. PLOW-CLEVIS. ALEXANDER D. FORBES, Rockford, Ill. Filed Sept. 8, 1885. (No model.)

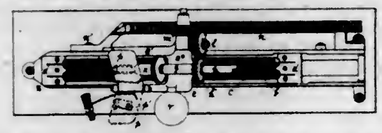


Claim.—1. The combination, with the beam-plates and with the yoke-bars, of clamping-jaws, to clamp and hold the yoke to the beam-plates, said yoke-bars made adjustable in their connection with the beam-plates, substantially as and for the purpose set forth.

2. The combination, with the beam-plates provided with steady-ribs, of clamping-jaws to engage the steady-ribs of the plates, said clamping-jaws made interchangeable and capable of use in connection with either the forward or rear clamping and holding bolts, as and for the purpose set forth.

3. The combination, with the yoke-bars and the beam-plates provided with steady-ribs, of independent removable clamping-jaws formed with edge ribs to embrace the ribs of the beam-plates, substantially as described.

332,146. PENCIL-SHARPENER. SAMUEL FORRESTER, Allegheny, Pa. Filed Dec. 12, 1884. (No model.)



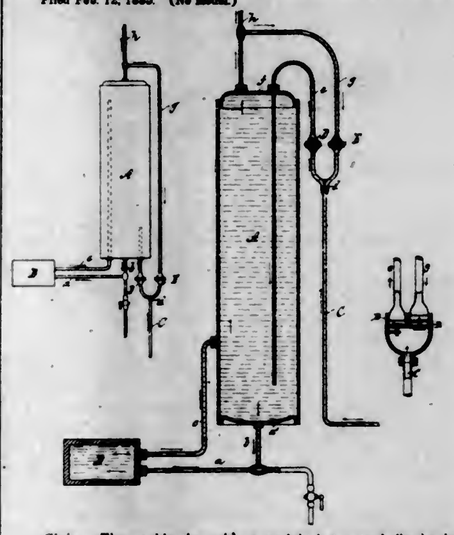
Claim.—1. In a pencil-sharpener having a grinding-surface, the combination of a rotary holder mounted longitudinally on a reciprocating carriage over the grinding-surface, a rack situate parallel to the grinding-surface, and a pinion and gearing, substantially as described, for imparting a rotary movement to the holder from the reciprocating movement of the carriage, substantially as and for the purposes specified.

2. The combination, with the reciprocating carriage of a pencil-sharpener, of a rotatory pencil-holder mounted thereon, a stationary rack, and a pinion mounted on said carriage and geared to said holder for imparting a rotary motion thereto, substantially as and for the purposes described.

3. The combination, with the reciprocating carriage of a pencil-sharpener, of a pencil-holder mounted on said carriage and capable of a vertical oscillatory motion thereon, and the movable plate *p*, arranged on said carriage, for the purpose of depressing the pencil, substantially as described.

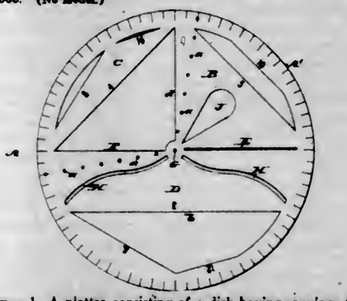
4. The combination, with the carriage of a pencil-sharpener, capable of a reciprocating movement over a suitable grinding-surface, of a brush attached to said carriage and capable of bearing on said grinding-surface during the motion of the carriage, substantially as and for the purposes described.

332,147. HOT-WATER BOILER. JACOB GOEBEL, New York, N. Y. Filed Feb. 12, 1885. (No model.)



Claim.—The combination, with an upright hot-water boiler having a hot-water pipe rising from its upper head, of a single cold-water pipe having two branches at its upper end, one of which communicates with the interior of the boiler, adjacent to the lower head thereof, and the other of which connects with the hot-water pipe above the boiler, an upwardly-opening check-valve in the branch communicating with the boiler, and a downwardly-opening relief-valve in the other branch, substantially as described.

332,148. DEVICE FOR LAYING OFF GEOMETRIC FIGURES. EDWIN M. GOLDSMITH and EMILE REICHSTEIN, Philadelphia, Pa. Filed June 19, 1885. (No model.)



Claim.—1. A plotter consisting of a disk having openings therein, the sides of which are bounded by right lines of different lengths, forming sides of regular polygons whose centers are coincident with the center of the disk, and portions of a circle concentric with the circumference of the disk, also having several series of perforations extending radially, substantially as described.

2. A disk having openings forming the outlines of figures B, C, and D, of the shape substantially as described.

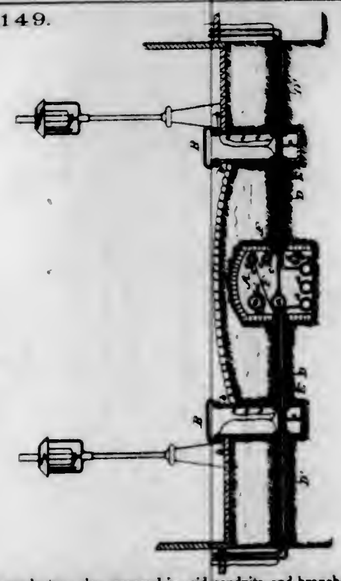
3. A disk having a graduated rim, and having openings, substantially as described, forming figures B, C, and D, the said figures B and D each having a series of perforations, substantially as described.

4. The disk A, having openings forming figures B, C, and D, the said figures D having scroll-shaped openings H, and said figure B having opening J, substantially as described.

332,149. SYSTEM OF PIPES FOR CONVEYING GAS, WATER, AND ELECTRICITY. WILLIAM A. HOSEVELT, Springdale, Pa. Filed Sept. 12, 1885. (No model.)

Claim.—1. In a system of mains for conveying gas and electricity, the combination, with a conduit, A, hollow curbs B B, arranged in proximity thereto, and safety-pipes D D, connecting the interior of said conduit with the interiors of the said hollow curbs, of gas-mains or a gas-main arranged in said conduit, branch pipes E E, leading from said mains through the pipes D D into the hollow curbs, branch pipes connected to the pipes E E and leading along through the curbs, and an electric con-

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doctor or conductors, also arranged in said conduits, and branches therefrom leading through the pipes D D and along through the curbs, all constructed and arranged substantially as described.

2. In a system of mains for conveying gas and electricity, the combination, with conduit A, hollow curbs B B, safety-pipes D D, leading from said conduit to said curbs and open at both ends, safety-pipes D′ D′, leading from the hollow curbs to the buildings to be supplied, of gas-mains arranged in the interior of the conduit, and branches therefrom leading through the pipes D D′ to the point of consumption, the pipes D′ being sealed around said branch pipes at or near the building-line, and opening into the hollow curb at the other end, substantially as and for the purpose described.

3. In a system of mains for conveying gas, water, and electricity, the combination, with a main conduit arranged in the street and containing properly-disposed gas and water mains and electric cables, hollow curbs at each side of said conduit having removable tops to permit of ready access to their interiors, safety-pipes connecting said conduit and hollow curbs and open at both ends, and safety-pipes connecting said hollow curbs with the buildings to be supplied, said last-named pipes being open at one end and seated around the gas or water pipes or electric conductors at the other end, of branches from the gas and water mains and from the electric cable, said branches passing through the safety-pipes to the buildings to be supplied, and being provided with branches which traverse the hollow curbs in the direction of their lengths.

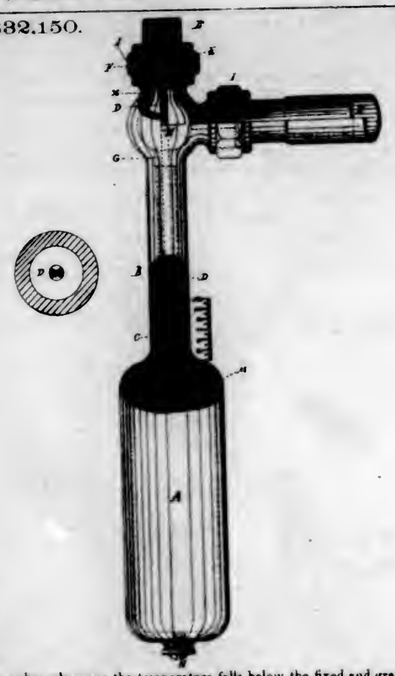
4. In a system of mains for conveying gas, water, and electricity under ground, the combination, with a main conduit adapted to receive the gas and water mains and electric cables, of hollow curbs adapted to receive a branch or branches from each, and safety-pipes leading from the conduit to the hollow curbs, and from the latter to the buildings to be supplied, the system of conduit, hollow curbs, and safety-pipes communicating freely with one another, and escape-openings for the escape of gas being provided at intervals, all communication being shut off between the safety-pipes and the buildings to which they lead, substantially as described.

332,150. INSTRUMENT FOR REGULATING THE FLOW OF GASES AND LIQUIDS IN REFRIGERATORS AND OTHER STRUCTURES. Jos. R. Holmes, Washington, D. C. Filed May 29, 1885. (No model.)

Claim.—1. The combination of a closed receptacle for containing an expansible liquid with a conduit for the passage of compressed gases or liquids from a suitable reservoir and an adjustable valve, as specified, whereby the valve is opened by the expansion of the liquid in the receptacle to any fixed degree of temperature desired, and closed by the joint action of the compressed gas and atmospheric pressure acting upon the valve and piston whenever the temperature surrounding the instrument falls below the fixed degree.

2. The combination of a closed receptacle containing an expansible liquid, an adjustable valve with a closely-fitting stem or piston, and a conduit or pipe connecting with any suitable reservoir of compressed gas or fluids, whereby an increase of temperature of the air surrounding the instrument, acting on the expansible liquid in the receptacle, opens the valve when above the fixed and graduated temperature, and closes

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the valve whenever the temperature falls below the fixed and graduated degree suitable for the required work, substantially as herein described and set forth.

3. The combination of a closed receptacle for containing an expansible liquid with a conduit for the passage of compressed gases or liquids from a reservoir, and an adjustable valve arranged as specified, whereby said valve is opened by the expansion of the liquid in the receptacle, and closed by the joint action of the compressed gas and atmospheric pressure acting on the valve and piston, as and for the purpose specified.

4. The combination of a closed receptacle containing an expansible liquid, a valve with a closely-fitting stem or piston, and a conduit or pipe connecting with a suitable reservoir of compressed gas or fluids, whereby an increase or decrease of temperature of the air surrounding the instrument opens and closes the valve and indicates the temperature, as shown and herein specified.

5. The thermometric governor herein described, consisting of a receptacle for containing an expansible liquid and having a conduit for the passage of compressed gases or liquids from a reservoir, and a valve provided with a stem or piston operating as specified, whereby an increase of temperature of the surrounding air, acting on the receptacle, operates the valve in the manner and for the purpose set forth.

332,151. LAST. Charles W. Horsey, Brooklyn, N. Y. Filed Oct. 15, 1885. (No model.)



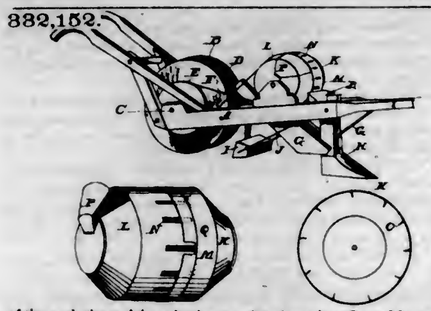
Claim.—The combination, with the sole A, of the instep-support B, the heel-casing C, the leg-expander D, the screw E, the nuts *d e*, and the levers *f f′ g g′*, substantially as herein shown and described.

332,152. COTTON-PLANTER. Henry C. Howell, Baton Rouge, La. Filed May 29, 1885. (No model.)

Claim.—1. In a cotton-planter, a cylindrical seed-drum having therein at one end a hinged lid, the periphery formed with a series of openings flanged inwardly, and an imperforted laterally-adjustable band for regulating the feed of the seed, the said cylinder rotated by means of a belt connecting with a grooved pulley at the sides of the beveled wheels, substantially as herein set forth.

2. The combination of the rotary seed-cylinder, the ends formed beveling and provided with a hinged door at the end for the admission

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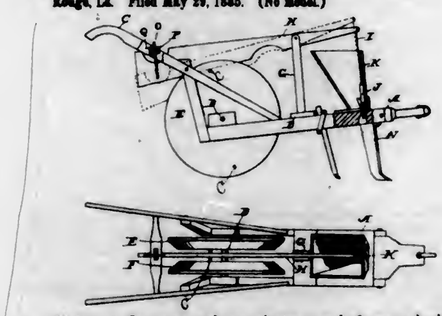


of the seed, the periphery having a series of openings flanged inwardly, the passage of the seed therefrom being regulated by an imperforated laterally-adjustable band, and operated by means of a belt, with a pair of beveled wheels, one of them having outwardly a grooved pulley, substantially as herein set forth.

3. The combination of the rotary cylinder formed with a series of openings on its periphery, having each of them inwardly a flange to separate and discharge the seed evenly therefrom, and an imperforated laterally-adjustable band to regulate the quantity of seed, with the chute, the furrowing-drill, and the self-adjusting cover rearwardly from the furrowing-drill, substantially as herein set forth.

4. The combination of the beveled wheels and grooved pulley, the belt, the rotary seed-cylinder, the flanged slots and adjustable band, the chute, the furrowing-drill, and the self-adjusting cover, the whole arranged as and for the purpose substantially as herein set forth and described.

332,153. CORN AND PEA PLANTER. Henry C. Howell, Baton Rouge, La. Filed May 29, 1885. (No model.)



Claim.—1. In a corn and pea planter, a main frame and wheels, in combination with a rocking lever engaging intermittently with fulcrum-pins between a pair of beveled wheels, and forwardly with a dropper, so as to feed the seed into the furrowing-drill, substantially as herein set forth.

2. In a corn and pea planter, a main frame and wheels, in combination with a rocking lever hinged centrally, and connected at its forward end by means of a rod with the stem of the dropper within the seed-box, and so disposed as to feed seed into the furrowing drill intermittently by engaging rearwardly with fulcrum-pins located between the beveled wheels, and also arranged to be thrown out of gear by means of a vertical piece and pin connecting with the handles, substantially as herein set forth.

3. The combination of the rocking lever, connecting forwardly with the dropper and rearwardly with the handles, so disposed as to engage with pins between the wheels, with the beveled wheels disposed upon the axle and connected together by means of transverse pins, substantially as herein set forth.

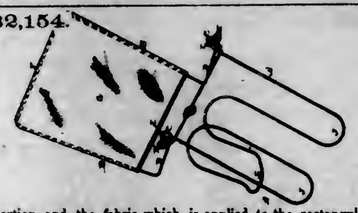
4. The combination of the rocking lever, hinged somewhat centrally, engaging with the wheels rearwardly, so as to produce a rocking motion, with the seed-box, the furrowing-drill, and the adjustable dropper having the lag *m*, substantially as herein set forth.

5. The combination of the furrowing-drill N, the adjustable dropper L, provided with the lag *m*, the rocking lever H, and the beveled wheels, the whole arranged as and for the purpose substantially as herein set forth and described.

332,154. HEAD-REST. Thomas B. Jewett, Steubenville, Ohio, assignor to William B. Jewett, same place. Filed Apr. 1, 1885. (No model.)

Claim.—1. The combination of the part A, having the prongs to catch over the top of the back of a seat, and the hooks upon its ends, with the part B, having the loops, the forward bends D, and the rectangular portion, and the fabric which is applied to the rectangular portion of the part B, substantially as shown.

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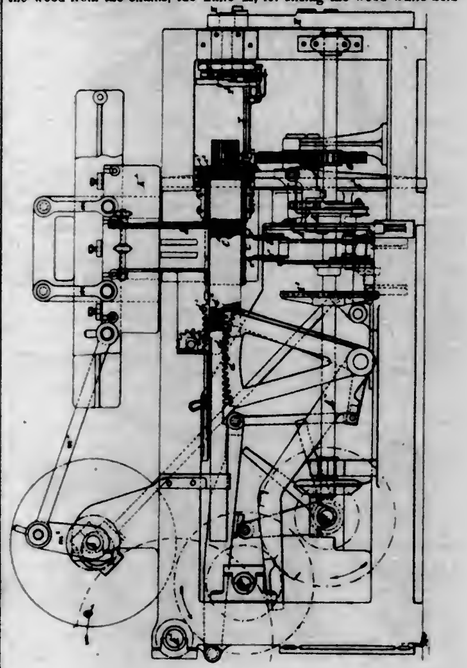
2. A head-rest composed of the two parts or frames A B, each one of which is formed from a single piece of wire which is bent into the shape shown, and which frames or parts are detachable from each other for the purpose of being folded together, substantially as set forth.

332,155. MACHINE FOR CUTTING, BUNDLING, AND TYING WOOD. Frank Kingston, St. Johns, County of Kent, England. Filed Aug. 4, 1885. (No model.) Patented in England Nov. 7, 1884, No. 14,716.

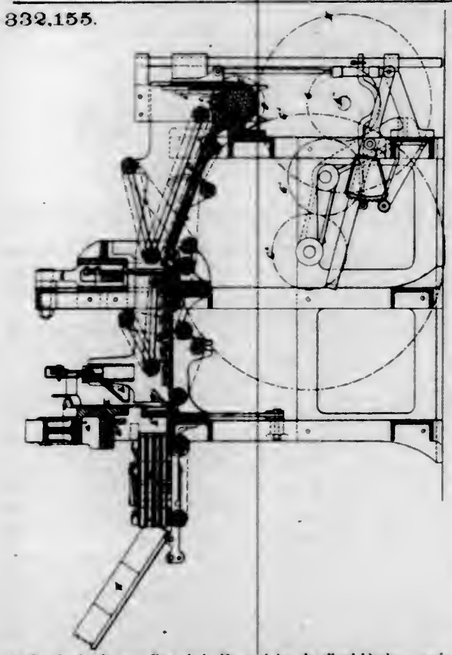
Claim.—1. The combination, in a machine for cutting, bundling, and tying fire-wood, of intermittently-traveling chains for receiving and carrying a block of wood, a gripper receiving and holding the block as advanced by the chains, a slicing-knife for slicing the gripped block into slices, a knife for subdividing the sliced blocks, a carrier interposed between said knives for carrying the sliced blocks to the subdividing-knife, a bundle-forming cylinder receiving the severed slices from the subdividing-knife, a plunger acting in the cylinder for partially ejecting the bundle, and mechanism for winding a cord or string around the bundle while held in the cylinder, substantially as described.

2. The combination, in a machine for cutting, bundling, and tying fire-wood, of intermittently-traveling chains for advancing a block of wood, a gripper for holding the block in advance of the chains, a slicing-knife for severing the gripped block into slices, a knife for subdividing the sliced block, a carrier between the said knives for carrying the sliced blocks to the subdividing-knife, a bundle-forming cylinder having an opening for receiving the subdivided blocks, a slide for covering and uncovering said opening, a plunger acting in the cylinder to partially eject the bundle, means for contracting the ends of the cylinder upon said partially-ejected bundle, a string-carrying arm for moving around the held bundle and winding thereon a string, and means for revolving the cylinder while the string-carrying arm remains stationary, substantially as described.

3. The combination, in a machine for cutting, bundling, and tying fire-wood, of the intermittently-moving lower chain, *b*, and side chains, *b′*, for moving the wood step by step, the clamping-cheek b^2, receiving the wood from the chains, the knife K, for slicing the wood while held



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by the cheek, the traveling chain b^2, receiving the sliced blocks, a reciprocating knife, K', at the end of the latter chain for severing the sliced blocks into separate parts, a bundle-forming cylinder, C, having an opening for receiving the severed pieces from the reciprocating knife, a plunger, C', acting in the cylinder to partially eject the formed bundle, a slide, *c*, for covering and uncovering the opening in the cylinder, means for contracting the cylinder on the bundle and revolving said cylinder, and a tying-arm, T, arranged at one end of the cylinder and having clamps *t t'*, provided with cutters, substantially as described.

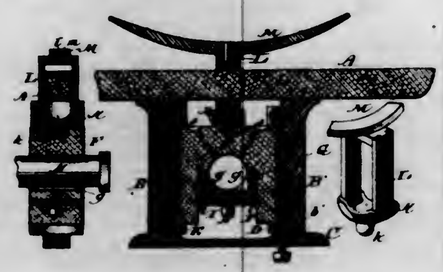
332,156. CULTIVATOR-SHOVEL. WILLIAM KENNE and JOSEPH KASTNER, Helton, Kans. Filed Aug. 23, 1885. (No model.)



Claim.—1. A cultivator-shovel made in two parts, the upper part having a projecting lug on each side at its lower edge or end, and the lower part provided with a central slotted or forked lug projecting above its upper edge or end, and both parts united by bolt and nut, all as described and set forth.

2. In a cultivator-shovel, the combination of the upper part, B, having lugs *b* at its lower end, and opening *d*, with the point C, having at its upper end or edge the slotted or forked lug *e* and the bolt *f*, washer *g*, and nut *h*, all as and for the purposes set forth.

332,157. LOCOMOTIVE JOURNAL-BOX. GEORGE H. KIDDER, Grant's Pass, Oreg. Filed June 2, 1885. (No model.)



Claim.—1. A journal-box for locomotives, having convex concentric bearings, corresponding concave shoes, one of which is tapering and vertically adjustable, in combination with the pedestal, substantially as described.

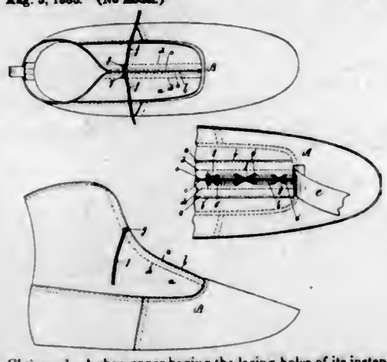
2. The bearing-block having convex vertical sides and a socket in its top surface, the shoes having concave vertical bearings to receive said convex sides, the stirrup having ball to engage the socket, and the spring surmounting the stirrup, all combined as set forth.

3. A journal-box having convex bearings and concave shoes, adapted to work in a pedestal-block, said box being also provided with a socket-bearing and oil-wells in its top and oil-channels, for the purpose described, in combination with the spring-stirrup having a saddle to work in said socket in the manner shown.

4. A combined journal-box and spring-bearing having convex bearings, in combination with concave shoes, one of which is rigid, the other tapering and adjustable, the tie-plate, and set-screw, substantially as set forth.

5. A journal-box for locomotives, having convex bearings, concave shoes, one of which is tapering and adjustable, in combination with a pedestal having one tapering jaw, a tie-plate, and set-screw, said box having a socketed bearing for the spring, the whole being arranged to yield to the irregular movement of the engine and to preserve the axles in line, substantially as set forth.

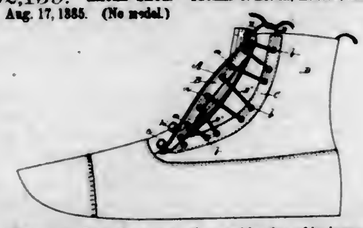
332,158. LACED SHOE. THOMAS J. LYNCH, Milford, Mass. Filed Aug. 3, 1885. (No model.)



Claim.—1. A shoe-upper having the lacing-holes of its instep-opening or lacing-slit arranged in the lining without extending through the outer leather of such upper, such lining being fixed or stitched to the outer leather along the edges of the instep-opening or lacing-slit, or between each of such edges and the range of lacing-holes next adjacent thereto.

2. A shoe-upper having the uppermost lacing-holes of its instep-opening or lacing-slit arranged in the lining and outer leather of such upper, and the remainder of the lacing-holes arranged in the lining without extending through the outer leather of such upper, such lining being fixed or stitched to the outer leather along the edges of the instep-opening or lacing-slit or between each of such edges and the range of lacing-holes next adjacent thereto, all being substantially as set forth.

332,159. LACED SHOE. THOMAS J. LYNCH, Milford, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—1. In a shoe-upper, the combination of its instep-opening-covering fly having on its inner side a strip attached at or near its opposite edges to the said fly, and furnished with a series of lacing-holes extending only through it, (the said strip,) with another such strip provided with a like series of lacing-holes and attached at or near its two opposite longer edges to the part of the upper that is overlapped by the first-named strip when the fly is closed, all being substantially as described, and such two strips having a lacing applied to their holes, as set forth.

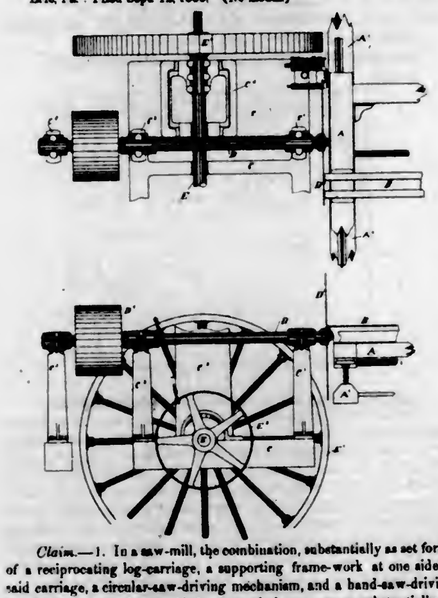
2. In a shoe-upper, the combination of its instep-opening-covering fly, having fixed in its inner side a strip of leather or other suitable material, provided with a series of lacing-holes arranged in it, and secured at or near each of its two longer edges to the fly, another such strip having a like set of lacing-holes and secured in like manner to the part of the upper that is overlapped by the first-named strip when the fly is closed, a lacing run through the holes of the two strips, and the auxiliary lacing or cord fixed or applied to the fly, and for use with the primary lacing, substantially as represented.

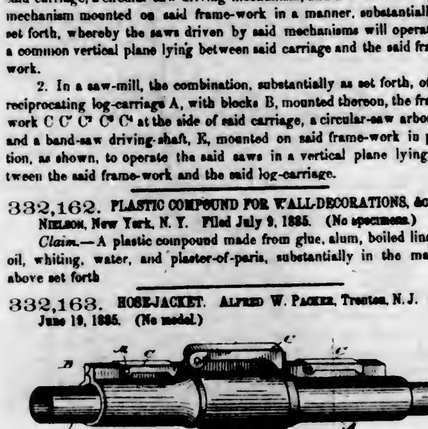
332,160. COATING OR LINING VESSELS. LEVERETT L. MAYFIELD, New York, N. Y., assignor to Jacob Wallace, trustee, same place. Filed May 23, 1885. (No specimens.)

Claim.—1. As a saturating or coating material for vessels and utensils to render them water-repellent and incapable of absorption, the natural wax known as "ozocerite."

2. A vessel or utensil saturated or coated with the natural wax known as "ozocerite," substantially as described.

332,161. SAW-MILL. JAMES S. MILLER, Erie, Pa., and EDWARD LAPHAM, Cadillac, Mich., assignors to the Stearns Manufacturing Company, Erie, Pa. Filed Sept. 12, 1885. (No model.)





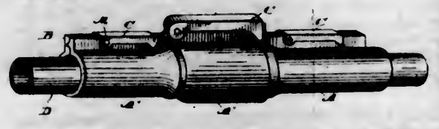
Claim.—1. In a saw-mill, the combination, substantially as set forth, of a reciprocating log-carriage, a supporting frame-work at one side of said carriage, a circular-saw-driving mechanism, and a band-saw-driving mechanism mounted on said frame-work in a manner, substantially as set forth, whereby the saws driven by said mechanisms will operate in a common vertical plane lying between said carriage and the said frame-work.

2. In a saw-mill, the combination, substantially as set forth, of the reciprocating log-carriage A, with blocks B, mounted thereon, the frame-work C C' C^2 C^3 C^4 at the side of said carriage, a circular-saw arbor, D, and a band-saw driving-shaft, E, mounted on said frame-work in position, as shown, to operate the said saws in a vertical plane lying between the said frame-work and the said log-carriage.

332,162. PLASTIC COMPOUND FOR WALL-DECORATIONS, &c. W. NIELSON, New York, N. Y. Filed July 9, 1885. (No specimens.)

Claim.—A plastic compound made from glue, alum, boiled linseed-oil, whiting, water, and plaster-of-paris, substantially in the manner above set forth.

332,163. HOSE-JACKET. ALFRED W. PACKER, Trenton, N. J. Filed June 19, 1885. (No model.)



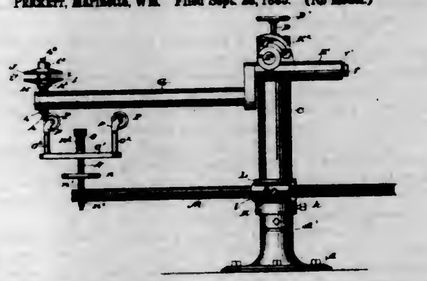
Claim.—1. The combination, with a fire-hose, of a flexible jacket loosely encircling the same, the internal diameter of the jacket being greater than the external diameter of the hose throughout their whole extent, whereby a free passage is left between the hose and jacket for conducting off leakage from the hose, substantially as described and shown.

2. The combination, with a fire-hose, of a flexible jacket loosely inclosing the same and composed of separate detachable sections, substantially as described and shown.

3. A hose-jacket of the kind described, consisting of a longitudinally-divided flexible pipe and similarly-divided projecting flange, the pipe being composed of sections detachable one from the other, and clamps for uniting the divided flange and section ends, substantially as described and shown.

4. A hose-jacket of the kind described, composed of detachable sections, one end of each section being enlarged and provided with annular grooves and the proximate end of the adjoining section being provided with corresponding annular ribs or flanges and a clamp for joining the said ends, substantially as described and shown.

332,164. DEVICE FOR HOLDING CIRCULAR SAWS. JOSHUA PERKETT, Marinette, Wis. Filed Sept. 28, 1885. (No model.)



Claim.—1. In a machine of the class described, the combination of a fixed standard, A, a sleeve, C, mounted thereon, and a saw-supporting arm, G, mounted in a bearing secured to the sleeve, and adapted to be rotated in a vertical plane to present the saw at different angles to an anvil, substantially as described.

2. In a machine of the class described, the combination of a fixed standard, A, a sleeve, C, mounted thereon, and a saw-supporting arm, G, rotatably mounted in a tubular bearing adjustably secured to the sleeve, substantially as described.

3. In a machine of the class described, the combination, with a fixed standard, A, a vertically-adjustable sleeve, C, mounted thereon, a tubular bearing, E, pivoted to the sleeve, and a saw-supporting arm, G, rotatably mounted in said tubular bearing, substantially as described.

4. In a machine of the class described, the combination of a standard, A, a vertically-adjustable sleeve, C, mounted thereon, a supporting-sleeve, E, pivotally connected to said adjustable sleeve, and a saw-supporting arm, G, mounted and free to rotate in said supporting-sleeve, substantially as described.

5. In a machine of the class described, the combination of a fixed standard, A, a sleeve, C, mounted thereon, a bearing-sleeve, E, pivotally and adjustably connected to said sleeve C, and a saw-supporting arm journaled in said pivoted sleeve E and free to rotate therein, substantially as described.

6. In a machine of the class described, the combination of a standard, a vertically-adjustable sleeve mounted thereon, a hollow bearing or sleeve pivotally and adjustably connected to said adjustable sleeve, and a saw-supporting shaft or arm mounted in said pivoted sleeve or bearing and adapted to be rotated in a vertical plane therein, substantially as described.

7. The combination of a fixed standard, a vertically-adjustable sleeve thereon, a bearing pivotally connected to the sleeve, a saw-supporting crank-arm rotatably mounted in the bearing, and devices for detachably connecting the saw to the supporting-arm, substantially as described.

8. In a machine of the class described, the combination of a standard, A, a vertically-adjustable sleeve, C, mounted thereon, an adjusting-screw, D, working in said standard and having the sleeve connected thereto, a tubular bearing or sleeve, E, pivotally connected to the adjustable sleeve C, and a saw-supporting crank-shaft, G, rotatably mounted in said pivoted tubular bearing or sleeve, substantially as described.

9. In a machine of the class described, the combination of a standard, A, a vertically-adjustable sleeve, C, mounted thereon, a saw-carrying arm, G, mounted in a bearing secured to the sleeve C, and a supporting-arm, M, mounted on a bearing secured to the sleeve C below the plane of the saw-carrying arm G, and having devices for supporting the saw at its edges, substantially as described.

10. In a machine of the class described, the combination of a supporting-standard, a vertically-adjustable sleeve, C, mounted thereon, a saw-supporting arm, G, mounted in a bearing secured to said sleeve C, and a vertically-adjustable independent supporting-arm mounted in a bearing secured to the adjustable sleeve C, below the plane of the saw-supporting arm, substantially as described.

11. In a machine of the class described, the combination of a standard, A, a sleeve, C, mounted thereon, a bearing, E, pivotally connected to the sleeve C, a saw-supporting arm, G, rotatably mounted in the

bearing, a supporting-arm, M, arranged below the arm G, and a bearing, L, for said arm M, whereby the latter arm may be adjusted vertically and horizontally independently of the saw-supporting arm, as set forth.

12. In a machine of the class described, the combination of a standard, A, an adjustable sleeve, C, a tubular bearing, E, pivoted to the sleeve C, a saw-supporting arm journaled in the bearing E, a supporting-arm, M, mounted in a bearing adjustably secured on the sleeve C, and a vertically-adjustable standard, N, carrying frictional rolls and mounted in the arm M, substantially as described.

13. The combination of a standard, a vertically-adjustable sleeve mounted thereon, a hollow bearing or sleeve pivotally and adjustably connected to said sleeve C, a saw-supporting crank-arm rotatably mounted in said hollow sleeve E, a vertically-adjustable supporting-arm arranged out of the plane of the crank-arm, a bearing, L, for the said supporting-arm, and an adjustable standard, N, carrying independent friction-rolls, substantially as described.

14. The combination of a standard, a vertically-adjustable sleeve mounted thereon, an adjustable bearing, E, pivotally secured to the adjustable sleeve C, a crank-arm journaled in said bearing E, a vertically and laterally adjustable supporting-arm arranged below the plane and out of the vertical line of the crank-arm, and a bearing, L, in which the supporting-arm is mounted, substantially as described.

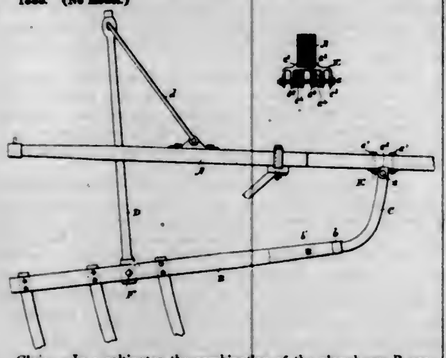
15. The combination of a fixed standard, A, a sleeve, C, mounted thereon, crank-arm G, a shaft, H, mounted thereon, a collar, I, having a sleeve loosely mounted on said shaft H, and a collar, J, mounted on said sleeve, the two collars adapted to receive and loosely mount a circular saw thereon, substantially as described.

16. The combination of a standard, A, a sleeve, C, mounted thereon, a bearing secured to the sleeve, the crank-arm G, a shaft, H, bearing therein and having an abutment, and a reduced threaded end, a collar, I, having a sleeve loosely mounted on said shaft, and bearing against the abutment thereof, a nut, i^2, fitting the threaded end of the shaft and bearing against the sleeve, and a collar, J, fitting a thread on the sleeve, substantially as described.

17. The combination of a standard, A, an adjustable sleeve, C, mounted thereon, an adjustable bearing, E, secured to the sleeve, a saw-supporting arm, G, journaled in the bearing, the supporting-arm M, a vertically-adjustable shaft, N, mounted thereon, and a horizontal cross-bar rotatably mounted on the shaft and carrying independent friction-rolls, substantially as described.

18. The combination of a fixed standard, A, a sleeve, C, a crank-arm, G, journaled in a bearing secured to the sleeve, the supporting-arm M, a shaft, N, having a threaded portion and a band-wheel adjustably mounted in said arm, a horizontally-rotatable bar, O', loosely mounted on a pintle of said adjustable shaft, and standards O^2, carrying frictional rolls and secured to said rotatable bar, substantially as described.

332,165. CULTIVATOR. John C. Rosbaugh, Fremont, Ohio, assignor to the Fremont Cultivator Company, same place. Filed Sept. 9, 1885. (No model.)

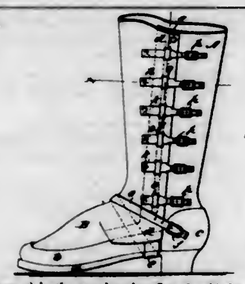


Claim.—In a cultivator, the combination of the plow-beam B, provided with the curved draw-bar C, the side bar, A, and the bracket E, securely fastened to the said side bar, and provided with the pin *e*, the vertical flanges e^2, and the distance-pieces e^3, forming separate bearing places for the attachment of the said draw-bar, substantially as and for the purpose set forth.

332,166. COMBINED OVERSHOE AND LEGGIN. Henry Rudolph and Henry Schwenk, Rico, Colo. Filed Aug. 14, 1885. (No model.)

Claim.—1. A combined shoe and leggin in which the overlapping flap is secured in closed position by a strap, *e*, which passes beneath the sole and over the instep of the shoe to engage with a buckle, *f*, that is fixed to the counter *c*, substantially as described.

2. A combined shoe and leggin in which the underlying flap carries buckles *p p*, and a metallic strip, A, formed with loops *i i*, that pass through



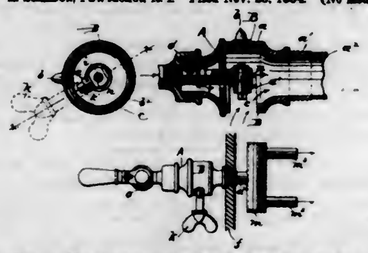
openings *o o*, formed in the overlapping flap *d*, said flap *d* carrying straps *k k*, that are arranged to pass through the loops *i i* and engage with the buckles *p p*, substantially as described.

332,167. ATTACHMENT FOR MAPS OR CHARTS. Geo. F. Schild, Vallejo, Cal. Filed July 17, 1884. (No model.)



Claim.—The combination of map and scale, the map having a hook-plate on its upper left-hand corner and showing the letters of the alphabet in running order along the right-hand and lower margin, the scale, with which distances may be measured upon the map, being on one side of a ruler, which is attachable to the hook-plate, of a length equal to the diagonal line of the map, and which shows upon its other side the running numbers adapted to be used in connection with an index containing the names of all places upon the map, with letters and numbers facilitating the search for such places as are to be determined upon the map, all substantially as shown, for the purpose specified.

332,168. DAMPER-COCK FOR ATMOSPHERIC BURNERS. Henry H. Sheldon, Pawtucket, R. I. Filed Nov. 26, 1884. (No model.)

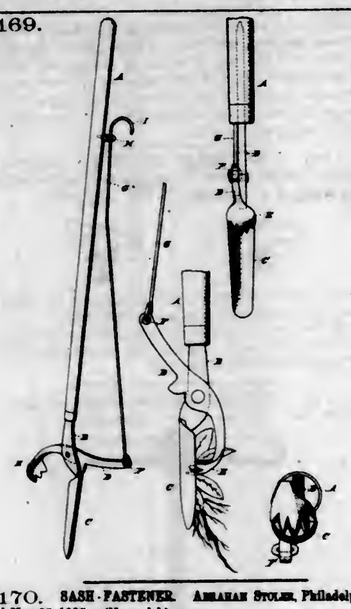


Claim.—The damper-cock *e* herein described, having the central web, *i*, provided with an opening, *h*, and means for operating the cock mounted at the free end of the internal gas-tube, *r*, opposite the air-inlet passage, in combination with the atmospheric burner-head A, having an air-inlet, *c*, an annular damper, B, for regulating the air-supply, and the gas stop-cock *o*, connecting said head with the gas-supply pipe, substantially as shown, and for the purposes hereinbefore set forth.

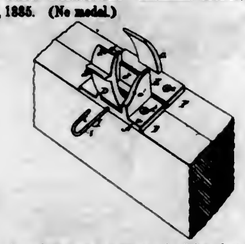
332,169. WEED-PULLER. Rambler V. Stocking, Morrison, Ill. Filed Aug. 17, 1885. (No model.)

Claim.—As an improved article of manufacture, a hand implement for pulling weeds, consisting of a handle having secured at one end a blade provided with a chisel-point, and concavo-convex in cross-section, a pivoted lever having a twisted and serrated free end arranged to turn into the concavity of the said blade, and provided at its opposite end with a pull-rod to operate the same, substantially as specified.

332,169.



332,170. SASH-FASTENER. Abraham Stoler, Philadelphia, Pa. Filed May 25, 1885. (No model.)



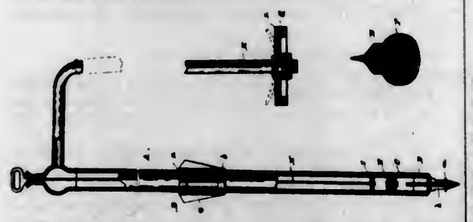
Claim.—1. A sash-fastener composed of bracket A, lever D, and plate E, having segmental or concave-sided standard G, said lever, when the fastening is effected, fitting beneath the standard, substantially as shown and described.

2. In a sash-fastener comprising a bracket, a lever, and a standard, the bracket A, having a slot, C, and recesses a^4, in combination with lever D, having trunnions *d d*, substantially as shown and described.

3. In a sash-fastener, the combination, with oscillating lever D, fulcrumed in bracket A, of locking-pin I, fitting in an opening in said lever, substantially as described.

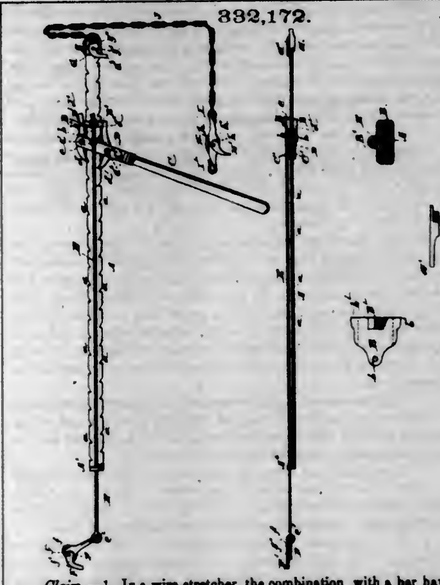
4. In a sash-fastener, the combination, with bracket A, having groove H and recess *h*, and oscillating lever D, fulcrumed therein and having opening d^3, of locking pin or staple I, having a head, i^3, on one of its legs, i^1, substantially as shown and described.

332,171. LIQUOR-PUMP. John H. Thorn, Youngstown, Ohio. Filed Nov. 28, 1884. (No model.)



Claim.—The combination, with the pump-barrel, of the clamping-bung consisting of two rings connected by tapering wings split at one side, so as to clamp the tube in any desired position when inserted in the bung, substantially as specified.

332,172. WIRE-TIGHTENER. Andrew J. Upham, Sycamore, Ill., assignor to Abram Ellwood, same place. Filed Apr. 29, 1884. (No model.)

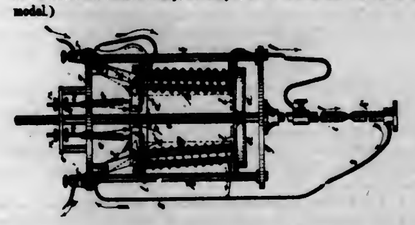


Claim.—1. In a wire-stretcher, the combination, with a bar having two opposite and alternating ratchets, of a slide-plate moving on said bar, a lever having its fulcrum upon said slide-plate and in the central line of the bar, pawls pivoted upon said lever and engaging with the opposite ratchets, and a draw-rod attached to the slide in the same line with the lever-fulcrum and having support in the extreme end of the ratchet-bar, substantially as described.

2. In a wire-stretcher, a clamp mounted upon one end of a bar having opposite ratchets, in combination with a clamp attached to the draw-rod, a slide moving upon the ratchet-bar and carrying one end of the draw-rod, a support for its opposite extremity upon the end of the ratchet-bar, and an operating-lever and pawls, substantially as described.

3. A wire-stretcher composed of a bar having opposite alternating ratchets, a slide moving thereon and having projections or fulcra, a lever pivoted to said slide and carrying pawls which are thrown into engagement with the opposite ratchets by the fulcra upon the slide, a draw-rod connected to the latter, an attaching-chain connected to one end of the ratchet-bar, and wire-clamps attached to the latter and to the draw-rod, substantially as described.

332,173. ELECTRIC-ARC LAMP. Thomas L. Willson, Ilion, assignor of one-fourth to James Brady, Brooklyn, N. Y. Filed Mar. 13, 1885. (No model.)



Claim.—1. In an electric-arc lamp, the combination, with the carbon-holder, of an electro-magnet having its poles directed toward the holder, one of said poles being formed to constitute a portion of a clutch, while the other pole is formed so as to closely approach the carbon-holder, substantially as herein set forth.

2. In an electric-arc lamp, the combination, with the carbon-holder, of two magnets, one arranged on each side of the carbon-holder, and having their poles directed toward said holder, one set of poles in each magnet being formed to constitute a clutch, while the other set of poles is formed so as to closely approach each other, substantially as herein set forth.

3. The combination, in an electric-arc lamp, with the carbon-holder, of two magnets arranged with poles facing each other, one of said magnets being wound with a coil in the arc-circuit and the other with a coil in a shunt around the arc, and so arranged that the attraction of one set of poles clutches the carbon-holder while the attraction of the opposite poles lifts the clutched holder, substantially as set forth.

4. The combination, in an electric-arc lamp, with the carbon-holder, of a direct-wound magnet, A, arranged on one side of the carbon-holder, and a shunt-wound magnet, B, arranged on the opposite side, with their poles *a a b b* directed toward each other and toward the carbon-holder, and so arranged that the attraction of the lower poles directly clutches the carbon-holder between them, while the attraction of the upper poles lifts the clutched holder, substantially as herein shown and described.

5. In an electric lamp, the combination, with a carbon-holder, of an electro-magnet hung pendulous by a toggle-link adjoining the carbon-holder, with its poles directed thereto, and so arranged that the attraction of its lower pole toward the carbon-holder clutches the same, while the attraction of its upper pole lifts the same, and vice versa, substantially as shown and described.

6. In an electric-arc lamp, the combination, with the carbon-holder, of a primary magnet and an armature-magnet, each of substantially horseshoe form, and suspended pendulous, in the manner of toggles, with their poles facing each other, the lower poles approaching closely while the upper poles are separated, and so arranged that on the energization of the magnets the lower poles are first attracted together and act to clutch the holder, following which the upper poles approach, and with a toggle action lift the magnets and holder, and vice versa, substantially as herein set forth.

7. In an electric-arc lamp, the combination, with the carbon-holder *c*, of the magnets A B, with notched clutching-poles *a a* and lifting-poles *b b*, and with the suspending toggle-links *d d*, arranged and operating substantially as and for the purpose set forth.

8. In an electric-arc lamp, the combination, with the carbon-holder *c*, of a pendulous magnet, A, with poles directed toward the carbon-holder, with the retractile spring *e* and toggle-link *d*, clutching-pole *a*, and lifting-pole *b*, substantially as and for the purpose set forth.

9. In an electric-arc lamp, the combination, with the central carbon-holder, of the main magnet A and armature-magnet B, with recessed clutching-poles *a a*, embracing the carbon-holder, and lifting-poles *b b*, facing each other, but free from the holder, and with the toggle-links *d d*, suspending said magnets, arranged and operating substantially as shown and described.

332,174. CIGAR-MACHINE. MARTIN A. WINGET, Columbus, Ohio, assignor to J. S. Winget, same place. Filed Oct. 20, 1884. (No model.)



Claim.—1. The combination of the base having a roughened bearing-surface secured to it, the slide, and the belt, substantially as described.

2. The combination of a suitable bearing-surface, a slide which is made to move back and forth thereon and which is provided with a roller, H, the belt, and suitable rollers on the slide for shaping the ends of the bunch while it is being formed, the rollers being made to bear on the bight of the apron, substantially as specified.

332,175. ANIMAL-TRAP. FERDINAND WOLFF, Banff, Ma. Filed July 29, 1885. (No model.)



Claim.—1. In an animal-trap, the combination, with the stiletto provided with the shoulder *h*, core F, and spring K, of the housing A, arranged and formed in the manner described, to conceal the said stiletto, rest G, and pivoted latch H, united as one, and pivoted catch I, as and for the purpose set forth.

2. The combination, with the operating parts of the trap, consisting of the combined rest G and latch H, catch I and spring K, and housing A, of the bail or hold *i*, as and for the purpose set forth.

332,176. COMPOUND FOR TREATING TOBACCO. GEORGE S. YINGLING, Tiffin, Ohio. Filed Sept. 22, 1885. (No specimens.)

Claim.—A compound for treating tobacco, consisting of gallic acid, tonka-bean, and valerian-root, combined and applied as described, whereby the injurious effects of the nicotine upon the human system are obviated, substantially as specified.

332,177. SUSPENDER-BUCKLE. GEORGE F. ATWOOD, Swanton, Vt., assignor of one-half to Jedediah D. Beeman, Moriah, N. Y. Filed Sept. 21, 1885. (No model.)



Claim.—As an improved article of manufacture, the suspender-buckle herein described, consisting of a single piece of wire formed with parallel loops A B, the loop B having its ends forming the arms C C, carried straight in the plane of the buckle, and at a relatively great distance from the cross-bars E, to increase the leverage or biting-power, and the said branches having terminal teeth D D, bent rearwardly, substantially as shown and described.

332,178. WIRE TUBULAR BEARING FOR SUSPENDER-ENDS. GEORGE F. ATWOOD, Swanton, Vt., assignor of one-half to Jedediah D. Beeman, Moriah, N. Y. Filed Sept. 21, 1885. (No model.)



Claim.—1. A cord-loop for suspenders, having the coiled wire tubular bearing D for the cord, substantially as specified.

2. A cord-loop for suspenders, having the spirally-coiled tubular bearing for the cord, and an attaching-loop formed entire from a single piece of wire, substantially as specified.

332,179. DEVICE FOR LOOSENING SUGAR, &c. SILAS S. AUGER, Dayton, Ohio. Filed May 19, 1885. (No model.)



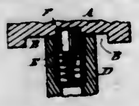
Claim.—1. A tool composed of a screw-pointed shank or body provided with a suitable handle, a hub or sleeve adjustable longitudinally on such shank, and blades adjustably attached to the hub or sleeve and extending out from opposite sides thereof, substantially as and for the purpose described.

2. In combination with the auger-pointed shank A and the hub C, adjustable along the same, the arms attached thereto and extending therefrom substantially parallel to but on opposite sides, of the same diameter of the hub, and the curved blades attached to the forward sides of such arms, substantially as and for the purpose described.

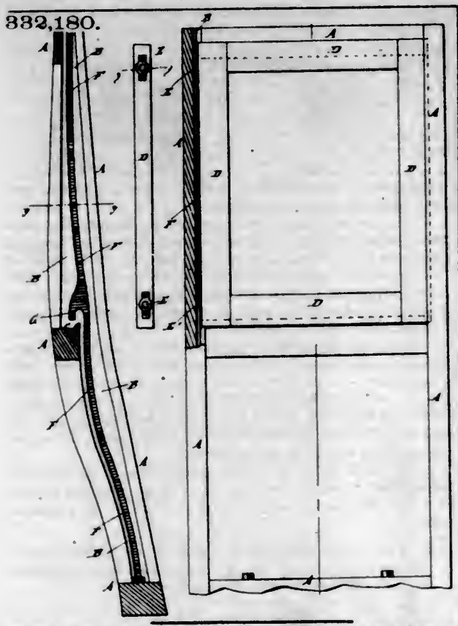
3. The hub C and the arm *c*, provided with the longitudinal slot *c'* and lug *c²*, in combination with the blade E on the forward side of the arm, the bolt F, and the nut *f*, substantially as and for the purpose described.

332,180. SASH FRAME, HOLDER, AND CASING FOR CARRIAGES, CARS, AND OTHER USES. ALBERT AYERS, Rahway, assignor to himself, and William R. Wilson, Elizabeth, N. J. Filed Sept. 30, 1885. (No model.)

Claim.—The combination, with the frame or casing A, having a curved groove, F, provided with a throw-over, G, in the bottom of its throw-over sash-groove B, of a sash-frame, D, provided with spring friction-holders E, sliding in the said grooves F, substantially as herein shown and described, whereby the sash will be kept from rattling and rubbing, and will be held securely in any position, as set forth.



332,180.

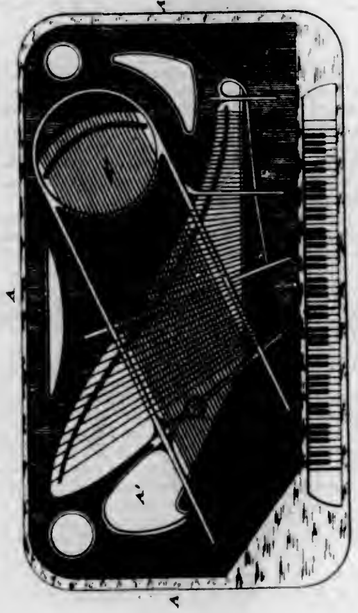


332,181. ROLLER-SKATE. FRED A. BAILEY, Oakland, Maine, assignor to the Oakland Roller Skate Company, same place. Filed Feb. 28, 1885. (No model.)



Claim.—In a roller-skate, the notched roll-carrier A, working in the inclined guide or box B and supported by the springs C' C, substantially as set forth and described.

332,182. SQUARE PIANO. KIEL V. BARNEKOV, Newburg, N. Y., assignor to Cerinda R. Irwin and Jennie May Barnekov, same place. Filed July 12, 1884. (No model.)



Claim.—The combination, in a square piano, of a supporting-case, A, an open-bottom frame composed of intersecting base-timbers *a a'*, diagonal braces *b b*, and rim-pieces *d d*, a sounding-board, A', resting thereon, a wrest-plank, B', at the front of the piano, a string-frame, B, secured to the rim-pieces, the treble and middle strings of the string-frame running from the right to the left, while the overstrung bass strings extend diagonally from the left front corner to the right rear corner of the string-frame, substantially as set forth.

332,183. JEWEL-SETTING. GEORGE BERRIER, Providence, R. I., assignor to Hancock, Becker & Co., same place. Filed Jan. 2, 1885. (No model.)

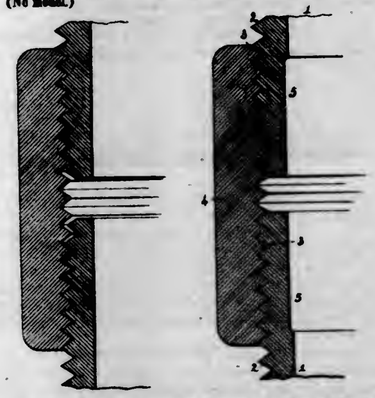


Claim.—1. An improved jewel-setting, consisting of the rim and prongs, drawn up into form from sheet metal to conceal the base metal, as described.

2. An improved jewel-setting, consisting of a series of prongs united at their base, formed by dies, substantially as described, from a sheet of plated stock, and having the base metal concealed, as described.

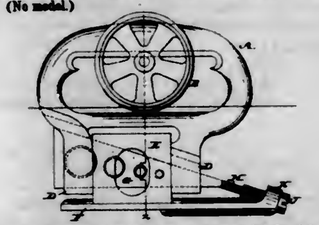
3. An improved setting, consisting of the body A, having the prongs *a*, the inwardly-turned margin *a'*, and the central opening, *a²*, as specified.

332,184. PIPE-COUPLING. WILLIAM A. BOLE, Pittsburg, Pa., assignor of one-half to Ralph Bagaley, same place. Filed Mar. 24, 1885. (No model.)



Claim.—In a pipe-coupling, the combination of the internally-screw-threaded socket and contiguous externally-screw-threaded and radially-enlarged or internally-expanded pipe ends, substantially as set forth and described.

332,185. DOOR-HANGER. JOHN BRAUN, Philadelphia, Pa., assignor to the American Manufacturing Company, same place. Filed Sept. 26, 1885. (No model.)

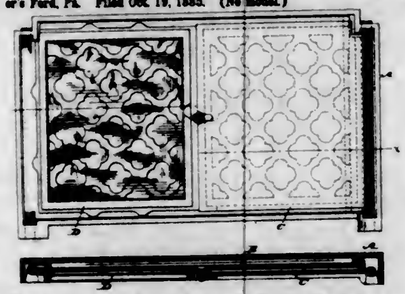


Claim.—1. A door-hanger having a frame with fixed boxes, a rising and falling box, a door-plate connected with the latter, and a movable wedge, said wedge passing through the several boxes and having its upper edge bearing against the movable box, substantially as described.

2. A frame with fixed boxes, a plate attachable to a door connected with a rising and falling box, and a movable wedge passing through the several boxes and bearing against the movable box, said plate having a boss, and said wedge a threaded end or shank on which is fitted an adjusting-nut, which bears against the boss, substantially as and for the purpose set forth.

3. In a door-hanger, a frame having depending boxes fixed thereto, a rising and falling box, and means for moving the latter, said box being connected with the door-plate and located between the fixed boxes, whereby the space below the frame is closed and the displacement of the sheaves thereby prevented, substantially as described.

332,186. **WINDOW-GRATING.** Isaac Brooks, Pottstown, assignor to himself, Casper S. Francis, Spring City, and Samuel B. Shalkop, Royer's Ford, Pa. Filed Oct. 19, 1885. (No model.)



Claim.—1. A swinging grating provided with a light of glass and a swinging door, said glass and door occupying opposite sides of the grating, the parts being combined and operating substantially as described.

2. A pivoted grating, in combination with a light of glass and a pivoted imperforate door, substantially as described.

332,187. **TOOL-SHARPENER.** Philo E. Comstock, Ascutneyville, Vt., assignor of one-half to John Gardner Pellard, Worcester, Mass. Filed Dec. 3, 1884. (No model.)

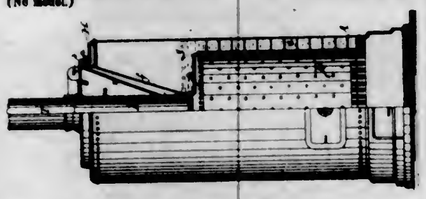


Claim.—1. In a two-disked sharpener, the combination, with the shaft and disks, of the guard-block F, arranged on the shaft and between the disks, as and for the purpose specified.

2. The combination, with the two disks D D', having the opposite cavities, the shaft-carrying guard-block F, and the spiral spring arranged to keep the two disks together and automatically take up wear, substantially as described.

3. The combination, with a handle or other suitable holder, of an end-threaded shaft, B, one or more set-nuts, the two disks D D', the spiral spring, the guard F, and the washers, as and for the purpose set forth.

332,188. **UPRIGHT BOILER.** Matthew Crider and Thomas H. Carlin, Allegheny, Pa., assignors to Thomas H. Carlin. Filed Nov. 29, 1884. (No model.)



Claim.—1. In a vertical central-flue boiler comprising the shell A, fire-box B, water-space c, crown D, flue E, and flaring or expanding steam-space, sheets f, the flue E, flaring wall n, and top O, cast integral and inclosing the water-space m, substantially as described.

2. In a vertical central-flue boiler, the combination, with the single casting constituting the flue E, flaring wall n, and top O, having depending flange p, of the head H, having upturned flange i, bolted or riveted to the flange p, substantially as described.

332,189. **ROLLER-SKATE.** Joseph C. Cropper, Cedar Falls, Iowa. Filed Apr. 27, 1885. (No model.)

Claim.—1. In a roller-skate, the combination, with the hanger c, having the side lips c'' c'' and downwardly-projecting ears c^3 c^3, hinged by pin g to the rocker h, of the lower dish-plate, i, with upwardly-projecting side lips i'' i'', the upper plate, e, having guide-pins e' e', fitting

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in corresponding recesses in the body of the hanger, and the interposed elastic cushion d, substantially as described.

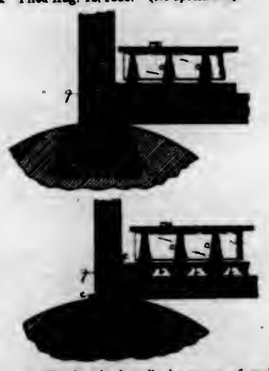
2. In a roller-skate, the combination, with the hanger having downwardly-projecting side lips c'' c'' and end ears, c^3, forming a box or receptacle for an elastic cushion, d, said ears projecting below the lips c'' c'', of the rocker h, having a plain upper side bearing against the cushion d, and semicircular or curved end lips, h' h', adapted to serve as rests for the ears c^3 c^3, and the hinge-pin g, passing through ears c^3 c^3 and rocker h, substantially as described.

3. In a roller-skate, the hanger c and rocker h, hinged together, as described, and having the yielding cushion d interposed between them, in combination with the dish-plate i i'' i'', upper plate, e, having guide-pins e' e', and the regulating-screw f, as and for the purpose set forth.

4. In a roller-skate, the rocker h, combined with the internal loosely-fitted anti-friction bearing-sleeve H, having annular groove H' and perforation H'', as and for the purpose set forth.

5. In a roller-skate, the herein-described roller l and its central bearing-sleeve l', combined with the loosely-fitted anti-friction sleeve l^2, having annular groove l'' and perforation l^3, as and for the purpose set forth.

332,190. **MANUFACTURE OF NAILS.** John S. Dickson, Pittsburg, assignor to the Pittsburgh Hob Nail Manufacturing Company, Bridgewater, Pa. Filed Aug. 12, 1885. (No specimens.)

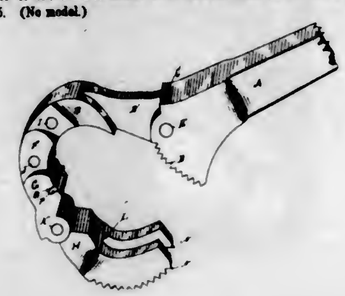


Claim.—1. The herein-described process of making nails, consisting in casting the nails so that the heads form a sheet, in decarburizing the sheet of nails, and in separating the nails from the decarburized sheet, substantially as specified.

2. The herein-described process of making nails, consisting in casting the nails so that their heads form a sheet, in decarburizing the sheet of nails, in separating the nails from the decarburized sheet, and in finishing the nail-heads, substantially as specified.

3. As steps in the method of making nails, separating the nails from a sheet formed by the heads of the nails, shearing any waste from the heads, and finally compressing the heads, substantially as and for the purposes set forth.

332,191. **PIPE-WRENCH.** Charles L. Dunham, Union City, Pa., assignor of one-third to Emma G Diefenderf, same place. Filed Oct. 31, 1885. (No model.)

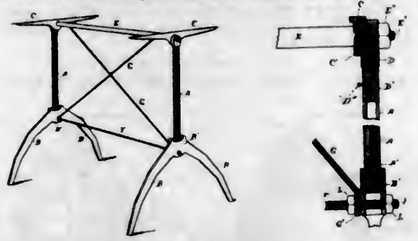


Claim.—1. The combination, in a pipe-wrench, of a handle having segmental rack-bars thereon with a series of sections hinged together, one end section of the series being hinged to the said handle and the other end section provided with segmental rack-bars intermeshing with rack-bars on the handle, said sections being adapted to clasp and grip a pipe, substantially as and for the purpose set forth.

2. The combination, in a pipe-wrench, of a handle slotted at the end and having segmental rack-bars thereon, with a series of sections hinged thereto and to each other by means of stop-hinges, so that they can only be opened back far enough to hook around a pipe, one of which sections is provided with a bit adapted to bite into the pipe, and the end section of said series being provided with segmental rack-bars intermeshing with the rack-bars on the handle, said hinged sections being adapted to clasp and grip a pipe, substantially as and for the purpose set forth.

3. The combination, in a pipe-wrench, of the handle A, having thereon segmental rack-bars D and a slot, C, with the section B, hinged thereto, and a series of sections, F, G, and H, hinged to the section B, the section G being provided with a bit, P, and the section H having the slot L therein and the segmental rack-bars N thereon, substantially as and for the purpose set forth.

332,192. **SHOW-CASE STAND.** John S. Dunlap, Peoria, Ill., assignor to Edward Gale, same place. Filed Mar. 7, 1884. (No model.)



Claim.—1. In a show-case stand, as a means whereby to vertically adjust the show-case, the cylindrical projection capable of being rigidly secured to the under side of the show-case, the tubular standard screw-threaded at its lower extremity and fitted to receive said cylindrical projection in its upper end, and means, substantially as described, for preventing relative rotation of said standard and projection, in combination with the bifurcated legs having screw-socket adapted to receive the threaded end of said standard.

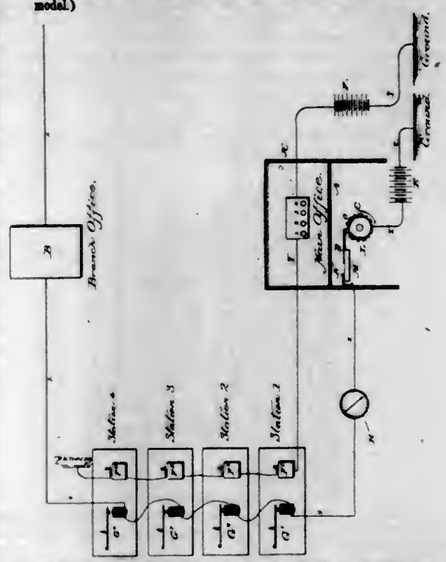
2. In a show-case stand, the cylindrical projection, and means for rigidly securing it to the under side of the show-case, the tubular standard screw-threaded at its lower extremity and fitted to receive the said projection, and the set-screw for binding said projection and standard fast together, in combination with the bifurcated legs having the screw-socket adapted to receive the threaded end of said standard, whereby on loosening said set-screw the standard can be revolved to screw it and the show-case up or down, and then when suitably adjusted the set-screw may be tightened to hold the same secure, as set forth.

3. The combination, with a show-case, of the T-bars C, secured to the under side of said show-case and having the plates C', the standards A, having the bifurcated legs B and having the plates D projecting from the upper ends thereof, the tie-rod E, having bolt ends E' passing through said plates C' and D, nuts fitting upon said bolt ends for binding together said plates, the tie-rod F, screw-threaded at its ends and adapted thereby and by suitable nuts to be secured to the lower portion of said standards, and the diagonal brace-rods G, secured at their upper ends to the tie-rod E and having the eyes G' at their lower ends, through which passes said tie-rod F, as and for the purpose set forth.

4. In a show-case stand, the combination of the cylindrical projections D', having means for securing them to the under side of the show-case, the tubular standards A, screw-threaded at their lower extremities and fitted to receive said projections in their upper ends, the set-screw D'', for binding fast together said projections and standards, the bifurcated legs B, having screw-sockets B', adapted to receive said threaded ends of the standards, the tie-rod F, and means, substantially as set forth, for joining its ends to said screw-socket, and the diagonal brace-rods G, having eyes at their ends, by which they are secured to the said standards and legs.

5. The T-bars C, having plates C', and the tie-rod E, having bolt ends E' and suitable nuts, in combination with the plates D, having cylindrical projections D', the tubular standards A, adapted to receive said projections in their upper ends and being screw-threaded at their lower extremities, the legs B, having screw-sockets B', for receiving said standards, the tie-rod F, terminally threaded and provided with nuts for securing it to said screw-sockets, and the diagonal brace-rods G, secured at their upper ends to said tie-rod E, and having eyes G' at their lower ends, through which passes said tie-rod F, as set forth, for the purposes described.

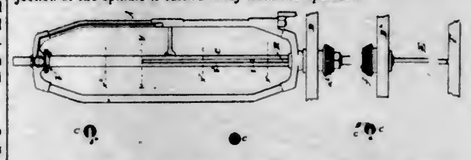
332,193. **TELEGRAPHIC-SERVICE SYSTEM.** Mortimer Dufresne, Washington, D. C. Filed Nov. 12, 1884. Renewed Nov. 11, 1885. (No model.)



Claim.—The combination of a normally-closed telegraphic circuit, a continuously-operated circuit-breaker located within said circuit, a sounder at each of a number of circuit-stations, and a separate call-box near each of said sounders, the circuits of said call-boxes extending to an annunciator located at a main office, substantially as shown and described.

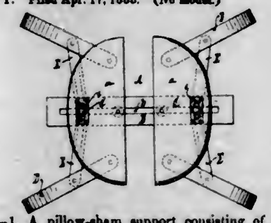
332,194. **SPEEDER FOR SPINNING.** Frank J. Dutcher, Hopedale, Mass., assignor to the Hopedale Machine Company, same place. Filed Apr. 14, 1884. (No model.)

Brief.—The quill is made from a solid bar of stiff steel grooved at one side for a part of its length, and slotted completely through for another part for the reception of a flat spindle and to permit the quill to be turned outward from the flier even when the bobbin-driving projection of the spindle is turned away from the operator.



Claim.—The flier and flat spindle provided with a bobbin-engaging projection, 8, combined with a solid quill grooved at one side for a part of its length and slotted from side to side for another part of its length, as and for the purpose set forth.

332,195. **PILLOW-SHAM SUPPORT.** Diederik F. Fuller, New York, N. Y. Filed Apr. 17, 1885. (No model.)



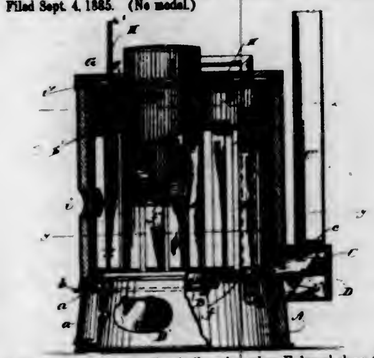
Claim.—1. A pillow-sham support consisting of a guide-bar, B, sections *a a*, adjustable along the length, of the bar, legs D, pivoted to swing on the sections for adjusting the legs to the breadth of the pillow-sham, and means, substantially as described, for holding the parts in their adjusted position.

2. The combination, with the divided body, of the legs secured to the body, the slotted guide-bar, the guides on the body engaging the slot in the guide-bar, the slots formed in the body, and the set-screws

extending through the slots in the body and the slot in the guide-bar, for adjustably securing the body, substantially as shown and described.

3. The combination, with the divided body, of the slotted guide-bar, guides on the bar engaging the guide-bar, the slots formed in the body, the legs pivoted to the body, the slotted arms attached to the legs and pivoted to the frame in the slotted portion, and the set-screws extending through the slots in the body, the slot in the guide-bar, and the slots in the arms, for adjustably securing the body and the legs, substantially as shown and described.

332,196. STEAM-GENERATOR. Fredric J. Furman, Geneva, N. Y. Filed Sept. 4, 1885. (No model.)

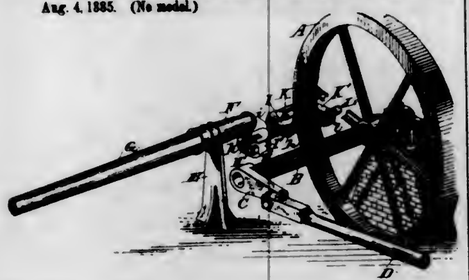


Claim.—1. In a magazine-boiler, the tubes E, beveled on the inner side below the base of the magazine, substantially as shown, and for the purpose set forth.

2. In a furnace, a steam-generating device, the base A, constructed substantially as shown, and provided with perforations for the reception of lugs formed upon the ends of the depending tubes E, said tubes being attached to a water-receptacle which surrounds the upper portion of the magazine F', the tubes I and I', forming a compartment near the rear portion of the outer casing, substantially as shown, and for the purpose set forth.

3. The combination, with the tubes E, beveled on their inner sides below the base of the magazine, and attached to the water-receptacle, and also provided with central openings, of the inner tubes bifurcated at their lower portion, substantially as and for the purposes specified.

332,197. ENGINE-STARTER. George J. Goodhue, Stevens Point, Wis., assignor of one-third to Harvey M. Wadleigh, same place. Filed Aug. 4, 1885. (No model.)



Claim.—1. An engine-starter consisting of a lever and socket and a bearing-cam with a yielding connection, and a yoke pivoted to said cam and provided with an adjustable screw for gripping the rim of the fly-wheel of the engine between said cam and the screw of the yoke, substantially as set forth.

2. In an engine-starter, the combination of the lever and socket and bearing-cam, connected by a union-ball with a yoke pivoted to said cam, and having an extension provided with an adjustable screw, and a guard adapted to bear against the inner periphery of the fly-wheel of the engine, substantially as set forth.

3. In an engine-starter, the combination of the lever and socket and bearing-cam, connected by a union-ball with a yoke pivoted to said cam, and having a sliding extension secured thereto, provided with an adjustable screw and a rim-guard, substantially as set forth.

4. An engine-starter consisting of a lever and bearing-cam, united by a yielding connection, in combination with a yoke pivoted to said cam and adapted to bear against the rim of a wheel on the side opposite to that surface which comes in contact with the cam, substantially as set forth.

332,198. PICTURE-HANGER. Dwight Gridley, Newark, N. J. Filed June 3, 1885. (No model.)



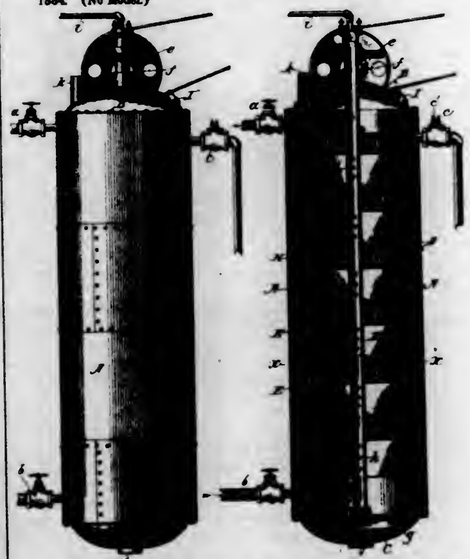
Claim.—1. The combination, in a picture-hanger of an integral suspending or supporting portion, a hook located on said portion at right angles thereto for the reception of the picture-cord, and a portion, C, pivoted on said first-named portion, and adapted to be moved over and engage said hook so as to close the same, substantially as set forth.

2. The combination, in a picture-hanger, of a base portion having a slot adapted to receive a nail-head, and a second portion, C, adapted to lock said nail-head in said slot, substantially as set forth.

3. The combination, in a picture-hanger, of a base portion having a slot adapted to receive a nail-head, a lug for the reception of the picture-cord, and a portion, C, adapted to lock said nail in said slot and said cord on said lug, substantially as set forth.

4. The combination, in a picture-hanger, of a base portion having a slot, *a*, recess *e*, and lug *d*, and a portion, C, pivotally secured and provided with an ear, *f*, and adapted to lock the nail in position, substantially as set forth.

332,199. DRIER. Duncan Henderson, Chicago, Ill. Filed Dec. 13, 1884. (No model.)



Claim.—1. The combination of the perforated shelves, rotating shaft, and rakes for agitating the materials thereon, with a series of cone-shaped deflectors suspended from below said shelves, substantially as described.

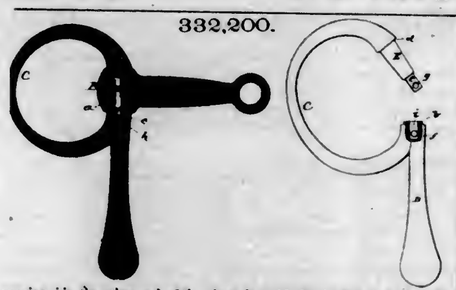
2. The combination, with a drying-chamber, a surrounding steam-jacket therefor, and a series of distributers therein, of a hollow shaft extending through said drying-chamber and provided with a series of perforations directing currents of air through the materials to be dried and at a right angle to their line of travel, substantially as and for the purpose described.

3. In a drier, the surrounding steam-jacket, the hollow and perforated air-shaft, and means for rotating the same, in combination with the rakes secured to said shaft, the perforated shelves, and the cone deflectors, substantially as described.

332,200. BRIDLE-BIT. George M. Hubbard, New Haven, Conn., assignor to W. & E. T. Fitch, same place. Filed Oct. 12, 1885. (No model.)

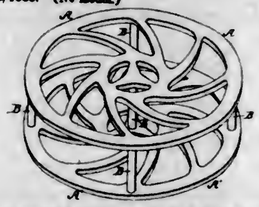
Claim.—In a bridle-bit, the bit-bar A, having the vertical opening through its outer end, combined with a divided ring, C, one end constructed with a projection, *b*, to enter the opening in the head of the bit-bar, and also constructed with a recess, *i*, the other end of the ring constructed with a shank, E, corresponding to the opening through the bit-bar, and the said shank constructed with a stud, *e*, corresponding to the

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opening *i* in the other end of the ring, the said shank extending through the opening in the head, and into said recess in the other end of the ring, and there secured by a transverse pin through that end of the ring and stud, substantially as described.

332,201. KITCHEN UTENSIL. Joseph P. Hurley, Philadelphia, Pa. Filed June 22, 1885. (No model.)



Claim.—As a new article, the herein-described metallic stand for kitchen utensils, consisting of two plates, A and A', with connecting-legs B, all cast in one piece, substantially as described.

332,202. CORSET. Mary M. Jones, Menomonee, Wis. Filed July 24, 1884. (No model.)



Claim.—The combination, in a corset, of the front portion, A', and section B, provided at their upper ends with the shoulder-section F, the front portion being provided at its front edge with a pocket containing a steel, and at its inner edge with a series of stiffening-cords, the intermediate sections provided with pockets containing steels retained in position by rivets, as described, and with stiffening-cords flared at their lower parts and slit, eyelets and lacing-cord to adjust said hip portion, and a rear section provided with a pocket containing a steel riveted therein, and extended up, as specified, to form the other shoulder portion, both shoulder portions being connected by an elastic band, substantially as set forth.

332,203. MAGAZINE FIRE-ARM. Franklin F. Knox, Hartford, Conn., assignor to the Colts Patent Fire Arms Manufacturing Company, same place. Filed Sept. 14, 1885. (No model.)

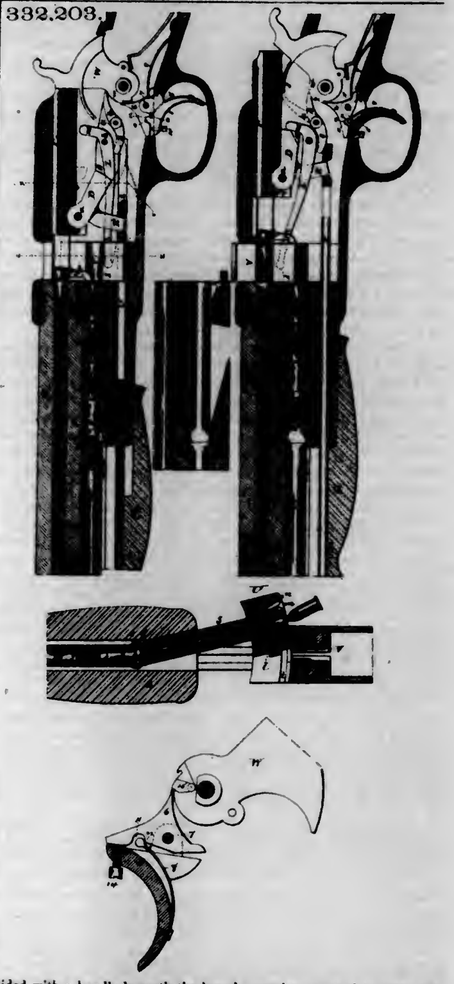
Claim.—1. In a magazine fire-arm in which the breech-piece is arranged to move longitudinally in axial line with the barrel, the combination therewith of a vertically-sliding carrier, a brace hung to the breech-piece and arranged to drop forward of an abutment in the receiver when the breech-piece is in its closed position, and a lever hung in rear of said abutment, one arm extending forward into engagement with the carrier, the other arm turned upward into the path of one of the moving parts of the arm in opening the breech-piece, the said brace arranged to engage the forward arm of the said lever in its locking movement, substantially as described.

2. In a magazine fire-arm, the combination of the longitudinally-movable breech-piece, a brace hung to said breech-piece, and so as to swing in a vertical plane, an abutment in the receiver, against which said brace may turn when the breech-piece is in its extreme closed position, a slide in connection with said brace and extending forward, provided with a handle beneath the barrel, a carrier arranged to move vertically in the receiver, and a lever hung in the receiver in rear of the brace, one arm extending forward into engagement with the carrier and beneath said brace, the other arm turned upward into the path of one of the moving parts of the arm in opening the breech-piece, the said brace arranged to engage the forward arm of the said lever in its locking movement, substantially as described, whereby, in the opening movement of the breech-piece, the carrier is raised, and on the locking movement of the breech-piece the carrier descends.

3. In a fire-arm, the combination of a longitudinally-movable breech-piece, a brace hung to said breech-piece, an abutment in the receiver against which said brace is arranged to engage when the breech-piece is in its closed position, a hammer hung in rear below said breech-piece, a lever hung in the receiver between said brace and hammer, the forward arm extending toward the brace and the rear arm toward the hammer, the hammer constructed with a bearing corresponding to the rear end of said lever, and mechanism, substantially such as described, between said brace and lever, whereby, as the brace is turned to its locking position, the rear end of said lever is thereby turned out of the path of the bearing on the hammer, and on the raising of the brace from its locking position the rear end of the said hammer is permitted to come into the path of said bearing on the hammer, substantially as described.

4. In a magazine fire-arm, the combination of a longitudinally-movable breech-piece, a brace hung to said breech-piece, an abutment in the receiver against which said brace may be turned when the breech-piece is in its extreme closed position, a carrier-lever hung in rear of said brace, and extending forward beneath said brace into connection with the carrier, the said brace constructed to bear upon said lever when the brace is in its locked position, a hammer hung in the receiver at the rear of

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the breech-piece, and a lever hung in the receiver between the brace and hammer, the rear arm of said lever adapted to engage a bearing on the hammer, the other arm extending forward beneath the carrier-lever, substantially as described, whereby, as the carrier-lever descends, the said brace will be turned out of the path of the said bearing on the hammer.

5. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the magazine constructed in two parts, the forward part fixed to the barrel, the rear part hung to the forward part, so as to swing therefrom without movement of the forward part, and so as to expose the mouth of the rear part outside the receiver for the purpose of charging, substantially as described.

6. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the said magazine constructed in two parts, the forward portion fixed and the rear portion jointed to the fixed portion, so as to swing in a horizontal plane, a transversely-sliding block in the receiver forward of the carrier, the said block fixed to the rear end of the said hinged part of the magazine, substantially as described, whereby said block may be turned from its place in the receiver to expose the open end of the magazine, and returned to close the magazine.

7. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the magazine constructed in two parts, the forward part fixed to the barrel and the rear portion hinged to the forward part, so as to swing in a horizontal plane, a block arranged in the receiver in transverse guides, the said hinged part of the magazine terminating in said block, and so that by turning said block from the receiver the rear end of the hinged portion of the magazine will be exposed outside the receiver, and a spring-catch in the said block arranged to fall in rear of the magazine as the said block is turned from the receiver, and so as to serve as a catch for the column of cartridges, substantially as described.

8. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the said magazine constructed in two parts, the forward portion fixed and the rear portion jointed to the fixed portion, so as to swing in a horizontal plane, a transversely-sliding block in the receiver forward of the carrier, the said block fixed to the rear end of the said hinged part of the magazine, substantially as described, whereby said block may be turned from its place in the receiver to expose the open end of the magazine, and returned to close the magazine, and a latch on said block adapted to lock said block to the receiver when in its closed position, substantially as described.

9. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the magazine constructed in two parts, the forward part fixed, the rear part hung to the forward part, so as to swing therefrom without movement of the forward part, and so as to expose the mouth of the rear part outside the receiver for the purpose of charging, and a follower in said magazine of substantially spool shape, substantially as and for the purpose described.

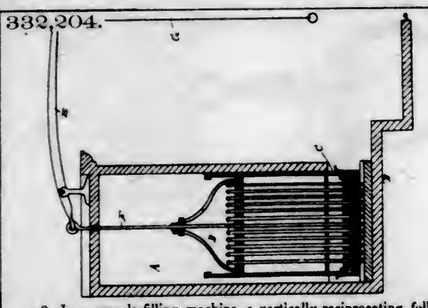
10. In a magazine fire-arm, the combination therewith of a longitudinally-movable breech-piece, and a carrier arranged to move vertically in said receiver to transfer a cartridge from the magazine to a position forward of the front face of the open breech-piece, the said carrier constructed with a cartridge-chamber in line with the magazine when the carrier is in its down position, and through which the breech-piece passes when the carrier is in its up position, the said breech-piece constructed with a downwardly-projecting finger extending down into and so as to work through said cartridge-chamber when the carrier is in its down position, the said carrier constructed with a recess below said cartridge-chamber, through which said projection will pass when the carriage is in its up position, substantially as described.

11. A set trigger for fire-arms composed of two parts, 5 6, hung upon the same pivot and in substantially the same plane, the part 5 forming the finger-piece and the part 6 adapted to engage the notch of the hammer, both parts extending forward of and also in rear of the pivot, the forward extension of the part 6 constructed with a transverse notch, 11, and the spring 8 on said part 5, its free end adapted to bear upon the under face of the part 6, adjacent to the said notch, and a trigger-spring, substantially as described.

12. A set trigger for fire-arms composed of two parts, 5 6, hung upon the same pivot and in substantially the same plane, the part 5 forming the finger-piece and the part 6 adapted to engage the notch of the hammer, both parts extending forward of and also in rear of the pivot, the forward extension of the part 6 constructed with a transverse notch, 11, and the spring 8 on said part 5, its free end adapted to bear upon the under face of the part 6 adjacent to the said notch, with an adjusting-screw, 14, between the two parts, and a trigger-spring, substantially as described.

332,204. CAPSULE-MACHINE. JOHN KREMERS, Detroit, Mich., assignor to the Globe Drug and Capsule Company, same place. Filed May 13, 1885. (No model.)

Claim.—1. In a capsule-filling machine, a vertically-reciprocating follower consisting of two parts secured together and constructed to slide one toward the other, and having a series of follower-pins of proper length to normally stand above the bottom plate of the lower part and to project through suitable holes in said bottom plate when the movable parts descend, substantially as described.



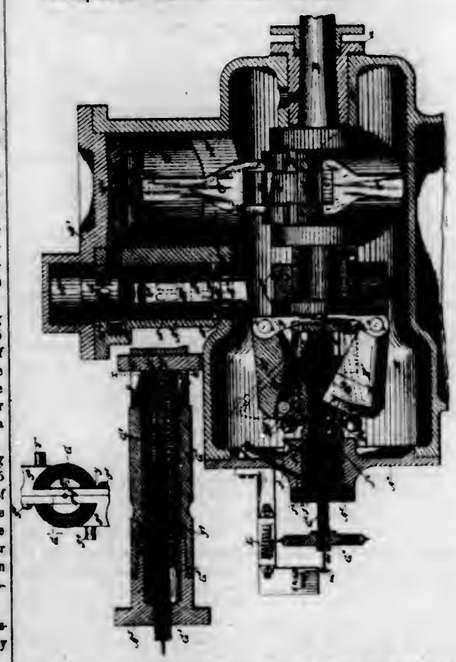
2. In a capsule-filling machine, a vertically-reciprocating follower consisting of two parts secured together and constructed to slide one toward the other, and having a series of follower-pins loosely hung from the upper part, and of suitable length to project through holes in the bottom of the lower part when the parts are brought together, substantially as specified.

3. In a capsule-filling machine, the vertically-reciprocating follower D, having loose top plate, H, guide-plates I, K, and L, in combination with the follower-pins M, having heads *b*, and passing loosely through corresponding perforations in the plates, arranged substantially as set forth.

4. In a capsule-filling machine, the combination of the following elements: a vertically-reciprocating follower having follower-pins, a chamber inclosing the follower, a lever and a suitable connection for reciprocating the follower, a receptacle having a perforated bottom and registering with the follower-pins, and a perforated plate registering with the bottom side of the receptacle and serving as a holder for the capsule-bodies, constructed, arranged, and operating substantially as described.

5. In a capsule-filling machine, the receptacle U, having a perforated bottom and partition-walls, the sliding plate *g*, having holes *i*, and the lever *k*, substantially as and for the purposes set forth.

332,205. VALVE-GEAR FOR STEAM-ENGINES. MIRABEAU N. LYNN, Rising Sun, assignor to the American Electric Headlight Company, Indianapolis, Ind. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a rotary governor, the weights in the form of longitudinal sections of a frustum of a cone, suspended on transverse pivots applied to the rotary shaft, and with their outer or free ends hollowed to embrace the said shaft, substantially as and for the purpose described.

2. In a steam-engine wherein the working mechanism is contained within an inclosing-case, and in combination with the driving-shaft, a rotary governor applied to said shaft and provided with the segmental frusto-conical weights pivoted at or near the apex, said weights embracing the shaft toward their free ends, substantially as described.

3. In combination with the governor-weights, the toggle-pins and the sleeve embracing the driving-shaft and attached to the movable eccentric, the yoke connected to and moving with the weights located in a transverse slot in the shaft, and a tension device applied to said yoke, substantially as described.

4. In combination with the movable yoke connected to and actuated by the governor-weights, an extensible spring-pressure device located within the shaft and pivotally supported at one end by the yoke and at the other by an adjustable bearing, substantially as described.

5. In a steam-engine such as described, wherein the working mechanism is contained within an inclosing-case, and in combination, the direct-acting steam-valve, the cut-off, the governor for controlling the position of the cut-off, and the tension-regulator for the governor, and an adjustable spindle acting upon said tension device and carrying a pointer for indicating the speed, substantially as described.

6. In combination with the movable eccentric for actuating the cut-off, the valve-actuating eccentric slotted for the passage of the pin attached to the movable eccentric and carrying the brackets for the governor-weights, said weights being arranged to actuate the sleeve carrying the before-mentioned pin, substantially as and for the purpose set forth.

7. In combination with a direct-acting valve and a cut-off mechanism, such as described, for actuating and controlling the position of the cut-off, an adjustable regulator for said cut-off-actuating mechanism, an indicator whose position is controlled by the regulating mechanism to indicate the speed, and a second indicator controlled by the cut-off-valve-actuating mechanism to indicate the point of cut-off, substantially as described.

8. In combination with the slotted tubular portion of the driving-shaft, the yoke connected to the governor-weights, and the sleeve and spindle carrying the spring and pivotally supported, the one in the yoke and the other in the end of an adjustable screw or spindle passing through the end bearing for the shaft, substantially as described.

9. In combination with the slotted shaft, the bracket formed in two sections, each of the latter composed of a straight portion with lateral bracket embracing the shaft, the two sections being inserted from opposite sides and fastened together by bolts, substantially as described.

10. In combination with the main driving-shaft having a tubular extension, as described, the pivoted weights, the yoke passing through a slot in the shaft and connected to the weights, and a spring-tension device within the shaft bearing against the yoke and free to rotate independently of the shaft, substantially as described.

11. In combination with the main driving-shaft having the tubular extension, as described, the governor-weights pivoted to said shaft and actuating the movable eccentric, the yoke passing through said shaft and connected to the governor-weights, and the tension device bearing at one end against the yoke and at the other against an adjustable stationary bearing, substantially as described.

12. In combination with the shaft, the governor-weights for actuating the movable eccentric, pivoted at one end upon said shaft and extending longitudinally thereof, the yoke passing transversely through the shaft, the links connecting the yoke to the weights at or near their free ends, and the adjustable tension device applied to the yoke, substantially as described.

13. In combination with the main shaft and the governor-weights pivotally secured thereto and connected to the movable cut-off eccentric, the yoke, the telescopic support pivotally supported at one end upon said yoke, and the spring surrounding the said telescopic support and engaging the flanges or heads thereof, substantially as described.

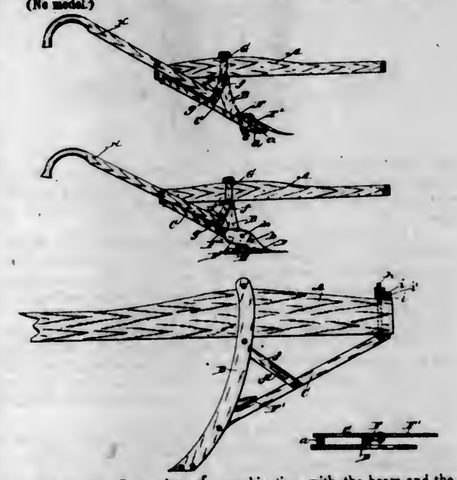
14. In combination with the main shaft, the fixed eccentric provided with bearings to receive the governor-weights, the movable cut-off eccentric, the sleeve mounted upon the shaft, the pin passing through a slot in the fixed eccentric and uniting the sleeve and movable eccentric, and the toggle-pins extending from the sleeve to the heavier ends of the governor-weights, substantially as described.

15. In combination with the main shaft, the movable cut-off eccentrics, and the pivoted governor-weights borne by said shaft, the sleeve for actuating the movable eccentric, the yoke, and tension device applied thereto, both the said sleeve and the yoke being connected to the governor-weights at or near their free ends, substantially as described.

16. In combination with the main shaft, the segmental frusto-conical governor-weights pivotally supported upon said shaft and extending longitudinally thereof, and the sleeve mounted upon the shaft between the governor-weights and connected to the outer or free ends of the governor-weights and to the movable cut-off eccentric, substantially as described.

17. In combination with the main shaft and the governor-weights for actuating the cut-off, pivotally supported at one end and extending parallel with the shaft, the yoke located between the pivots of the governor-weights and connected to the latter near their outer or free ends, and the tension device applied to said yoke, whereby the pressure of the tension device is applied more nearly in line with the movement of the weights in proportion as the latter swing outward upon their pivots, substantially as described.

332,206. PLOW. THOS. M. MOORE, Rusk, Tex. Filed Mar. 25, 1885. (No model.)



Claim.—1. In a plow, the combination, with the beam and the standard, of the inclined brace and the sectional or jointed bar arranged to fold upon the lower part of the said brace, substantially as and for the purpose set forth.

2. In a plow, the handles having a round thereof secured between two grooved clamp-plates held by a nut on a bolt, and their lower convergent ends connected and capable of vertical adjustment by a bolt passed through a slot of the counter brace-bar, substantially as shown and described.

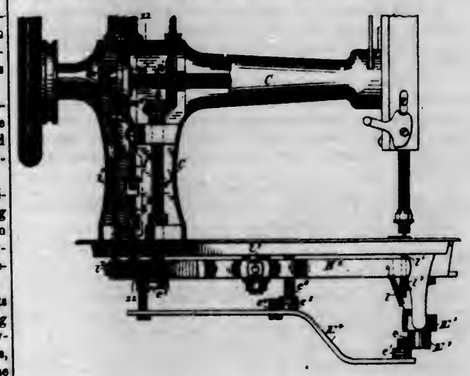
3. In a plow, the combination, with the beam, the handles, the brace-bar, and the slotted counter-brace, of the grooved clamp-plates and the round connected to the handles, together with adjusting and holding bolt passed through the lower convergent ends of the handles and the slot of the counter brace-bar, substantially as and for the purpose specified.

4. In a plow, the sectional or jointed bar connected between the standard and the inclined brace-bar, and arranged to fold upon the lower part of said brace-bar, substantially as shown, and for the purpose set forth.

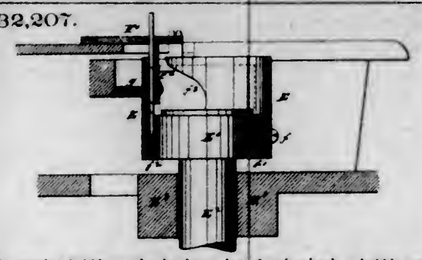
332,207. SEWING-MACHINE. CARL A. MUDGE, New Brunswick, N. J., assignor of one-half to William M. House, New York, N. Y. Filed Apr. 19, 1884. (Model.)

Brief.—A horizontally-rotating cup-shaped bobbin-carrier is provided with a recess and with an exterior projecting loop-hook. The throat-plate is provided with a downwardly-extending needle-guard notched at its lower end. The bobbin rests on a horizontal disk of the carrier, and has projecting lugs that engage the needle-guard. The bobbin-case is provided with one or more tension-holes.

Claim.—1. The combination of a vertically-reciprocating needle, a throat-plate having a downwardly-extending needle-guard, a horizon-



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tally-rotating bobbin-carrier having a loop-forming hook, a bobbin-case having heels or projections adapted to engage said needle-guard, and means for imparting rotary motion to the carrier, substantially as set forth.

2. The combination of a vertically-reciprocating needle, a throat-plate having a downwardly-extending needle-guard, a cylindrical bobbin-carrier having a curved recess and an exterior loop-forming hook and means whereby the bobbin-carrier is rotated twice for each up-and-down stroke of the needle, substantially as specified.

3. The combination of a horizontally-rotating bobbin-carrier provided with a curved downwardly-extending recess, as f^3, extending below the top of the head or disk of the carrier, and an exterior horizontal hook, a vertical shaft having a disk-shaped head connected to said carrier, and mechanism for imparting rotary motion to said shaft, substantially as set forth.

4. The combination of a vertically-reciprocating needle, a throat-plate having a semicircular needle-guard notched at the lower end, a bobbin-carrier having a curved recess and an exterior hook, a vertical shaft having a disk-shaped head connected to the bobbin-carrier, and means whereby rotary motion is imparted to the carrier-shaft, substantially as described.

5. The combination of a vertically-reciprocating needle, a throat-plate having a downwardly-extending needle-guard, a horizontally-rotating bobbin-carrier having a curved recess and an exterior horizontal hook, a vertical shaft having a disk-shaped head, a bobbin-case resting on the disk-shaped head and having exterior heels for engaging said guard, and means whereby rotary motion is imparted to the carrier-shaft, substantially as set forth.

6. The combination of a vertically-reciprocating needle, a throat-plate having a downwardly-extending needle-guard notched at the lower end, a bobbin-carrier having a curved recess and exterior loop-forming hook, a vertical shaft having a disk-shaped head, means to connect the bobbin-carrier to said head, so as to leave a ring-shaped space between it and the carrier, and means whereby rotary motion is imparted to the carrier-shaft, substantially as set forth.

332,208. TIME DOSE-INDICATOR FOR BOTTLES. J. SNIDER NOEL, Washington, D. C. Filed Jan. 23, 1885. (No model.)



Claim.—1. In a time dose-indicator for bottles, the combination of a dial-plate, a movable notched disk, a pivot, and a securing-cap, substantially as and for the purpose set forth.

2. In a time dose-indicator for bottles, the combination of a dial-plate, a movable notched disk, and a pivot or core formed of paper and a securing-cap, substantially as and for the purpose set forth.

3. The combination, in a time dose-indicator, of a flat circular core formed of paper, a dial-plate, and an overlapping cap, said core adapted to operate as a pivot and secure said dial-plate and cap in position, substantially as described.

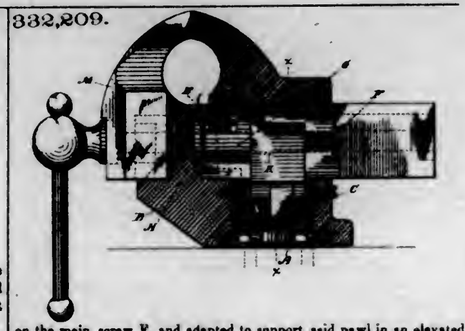
4. As a new article of manufacture, the time dose-indicator for bottles, consisting of a dial-plate having its reverse side covered with an adhesive compound, a paper core or pivot secured to the face of said dial, a movable notched disk covering the dial and surrounding the core, and the securing-cap gummed to the core and overlapping the notched disk, as set forth.

332,209. BENCH-VISE. WILLIAM H. NORTHALL, Bridgeport, Conn. Filed Feb. 20, 1884. (Model.)

Claim.—1. In a vise, as described, the plate secured to the bench, and beveled downward and inward, as shown, in combination with the independent block having its inner edge conformed to the beveled edge of the plate, the vise-body having a lateral extension and adapted to fit over and inclose said plate and block, and the set-screw passed through said extension into the block, substantially as shown and set forth.

2. In a vise, as described, the combination, with the outside collar, G, splined collar D, and pawl E, of the independent collar H, arranged

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on the main screw F, and adapted to support said pawl in an elevated position and out of contact with said splined collar, substantially as described.

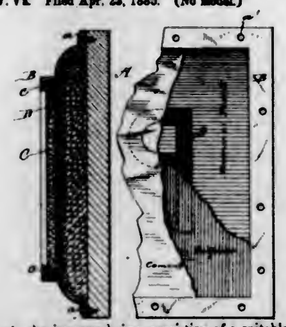
3. In a vise, as described, the outside collar, G, recessed and inclined as set forth, and means for rotating the collar G, in combination with the wedge and nut, substantially as shown and specified.

4. In a vise, as described, the jaws of the nut having grooves interior thereof, in combination with the wedge adapted to be forced between said jaws by the action of the outside collar, and means for operating the wedge, substantially as set forth.

5. The combination of the nut K, wedge J, having incline N, outside collar, G, recessed and having incline L, pawl E, splined collar D, and main screw F, substantially as shown and described.

6. In a vise, as described, the jaws of the nut having spring O between the lower extremities thereof, in combination with the wedge J, outside collar, G, and means for operating the same, substantially as set forth.

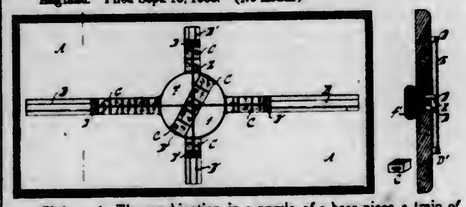
332,210. LUMINOUS SIGN. CHARLES H. PROSSER, Jackson Court-House, W. Va. Filed Apr. 23, 1885. (No model.)



Claim.—1. An improved sign, consisting of a suitable frame for retaining a transparent front, to which is attached opaque letters, the rear portion of the said front being covered by a coating of luminous paint, which is backed by a coating of sulphur, to protect said paint from dampness or moisture, and a further backing of cement or filling to retain the sulphur and other parts in position, substantially as set forth.

2. The improved sign-board herein described, consisting of a supporting-board, A, and a metallic frame, which is attached in one side thereof, a glass, C, having opaque letters and held in position by said frame, the rear surface of the glass being coated with luminous paint, said paint being completely covered or protected by a coating of sulphur, said sulphur being backed by cement, substantially as shown and described.

332,211. PUZZLE. PETER PROTHEROE, Surbiton, County of Surrey, England. Filed Sept. 18, 1885. (No model.)



Claim.—1. The combination, in a puzzle, of a base-piece, a train of characterized blocks held upon and capable of moving in a definite path on said base, and a rotating device intersecting the said train and provided with means to receive at one side two or more of the blocks comprising the aforesaid train and to deliver at the other side one or more of said blocks, substantially as described.

2. The combination, in a puzzle, of a base provided with a track, a train of characterized blocks fitted to and movable along said track, and a turn-table having a track and intersecting the track of the base, substantially as described.

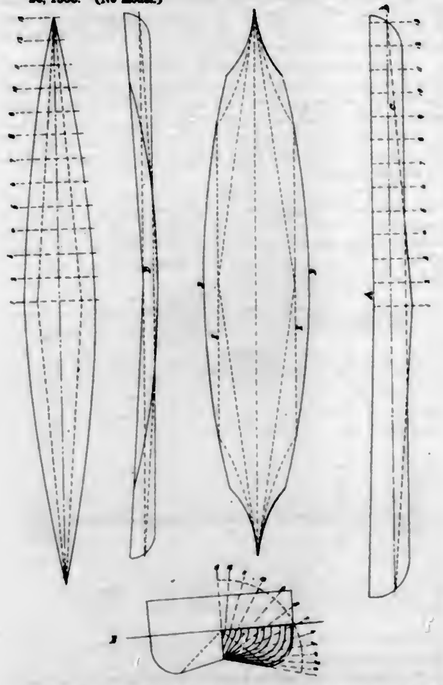
3. The combination, with the base A and the track thereof, of the blocks on the track, the followers and rods for holding the blocks together in line, and the turn-table, located in the length of the track, for receiving two or more of the blocks from one side of the track to reverse the same and deliver the same from its opposite side, substantially as shown and described.

4. The combination of a base having a track, a train of characterized blocks movable along said track, a rotating disk having a diametrical track and intersecting the track of the base, and followers for moving the train of blocks, substantially as described.

5. The base A, provided with two or more intersecting tracks, blocks arranged in trains in the tracks, a turn-table situated at the intersection of the tracks and provided with a diametrical track, and means for holding the blocks in trains, substantially as shown and described.

6. The combination of a base having a track and a circular recess intersecting the track, a train of characterized blocks movable along the track, and a turn-table having a track and located in said recess, substantially as described.

332,212. BOAT-HULL. LEMAN P. RIDER, Pittsburg, Pa. Filed May 26, 1885. (No model.)



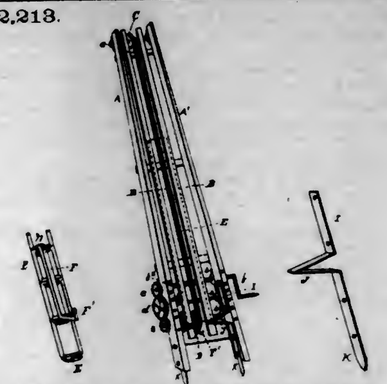
Claim.—1. A boat-hull having a horizontal keel, with straight lines extending fore and aft from the center of the hull or construction-line to the bow and stern, and transverse deflecting curves extending from the keel to the water-line, substantially as shown and described.

2. A boat-hull having a horizontal keel, with straight lines at the cut-water and deflecting lines, and gradually-curving degrees of the hull between the longitudinal center thereof and the point of the bow and stern at the water-line and the bottom of the hull at the construction-line, substantially as described.

3. A boat-hull having a horizontal keel, with straight lines, as C, extending fore and aft from the construction-line, as 1, to the bow and stern, deflecting lines, as D D, and provided with the curvatures indicated by the transverse lines, as 1 to 13, and sectional contours, as 1 and 4, substantially as shown and described.

332,213. LUMBER-ELEVATOR. HARRY T. RUNYAN, Chicago, Ill. Filed Oct. 20, 1885. (No model.)

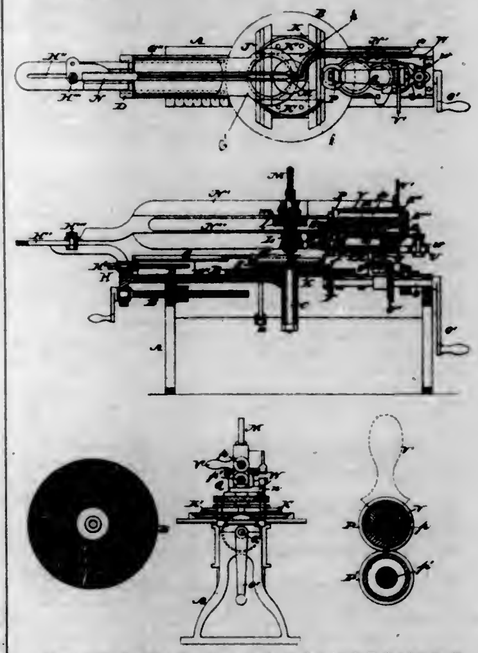
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Claim.—1. In lumber-elevators, the combination of the frame A A', slides B, chain E, and hook F' with the gearing c d e, for giving different motions to the chain, as specified.

2. The lumber-supports J, combined with the elevating chain and hooks F', frame A A', slides B, and the gearing for running the chain, as and for the purpose specified.

332,214. MACHINE FOR OVAL-CUTTING SHEET METAL. JACOB RUPERTUS, Philadelphia, Pa., assignor, by direct and mesne assignments, to Frank Higel and John Malle, both of same place. Filed Sept. 24, 1884. (No model.)



Claim.—1. In an oval-cutting machine, the chuck B, having on its under side differential gears, and on two diameters at right angles across the same side thereof gearing uniform with said differential gearing, whereby a pinion may readily pass from one of the differential gears to another thereof, substantially as and for the purpose set forth.

2. In an oval-cutting machine, the rotating chuck B, having on its upper face parallel bars for the working therein of a slide, substantially as described.

3. In an oval-cutting machine, a vibrating and reciprocating bar carrying the material to be cut, in combination with knives or cutters suitably mounted on revolving shafts having bearings in a pivoted vibrating casing, substantially as and for the purpose set forth.

4. In an oval-cutting machine, a vibrating and reciprocating bar, in combination with knives or cutters suitably mounted on revolving shafts connected by gearing to the main driving-shaft and a pivoted cas-

ing, the said revolving shafts having bearings in said pivoted casing, which are connected to the said vibrating bar, substantially as and for the purpose set forth.

5. Means substantially as described for describing an elliptical form, in combination with a holding device, a cutting device, and a pivoted casing, the said cutting device being mounted on shafts having bearings in said pivoted casing, and the said pivoted casing being properly connected with the said holding device, whereby a cut tangential to the line presented is made, substantially as described.

6. The frame D, in combination with the rotating chuck B, plate K, having gibs K' K', and an adjustable frame, G, having flange G', substantially as described.

7. The rotating chuck B, in combination with plate K and frame G, having flange G', substantially as described.

8. The sliding frame D, in combination with chuck B, means for rotating said chuck, plate K, adjustable frame G, and forked bar N, pivotally secured in slot of projection H, substantially as described.

9. The frame A, in combination with sliding frame D and chuck B, having on its under side differential gears and on two diameters at right angles across the same face gearing uniform with the differential gearing, substantially as described.

10. In an oval-cutting machine, the forked bar N, having a groove, *n*, in one of its forks, in combination with block W, having slotted attachment *w*, and casing Q, having arm U, substantially as described.

11. In an oval-cutting machine, the chuck B, in combination with slide K, adjustable frame G, having flange G', and pivoted forked bar N, having shaft L, journaled in the lower fork, N'', the lower end of said shaft L being rigidly secured in the center of the plate K, substantially as described.

12. In an oval-cutting machine, the frame A, in combination with chuck B, frame D, slide K, adjustable frame G, having flange G', pivoted forked holding-bar N, a cutting device, means for presenting the edges of cutting shears or knives of the cutting device tangentially to the lines of the ovals to be cut, and means for operating said chuck and cutting device, substantially as described.

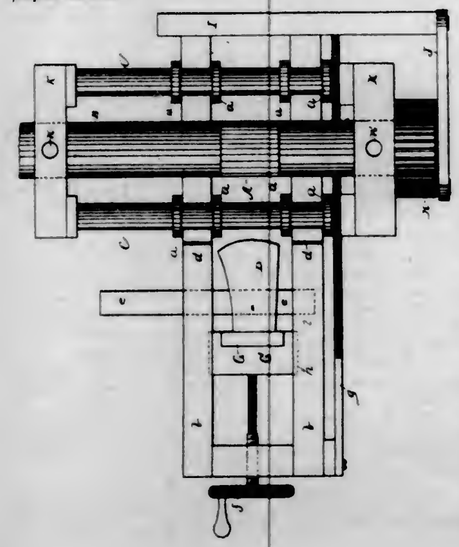
13. In an oval-cutting machine, a vibrating and reciprocating bar having a groove therein, in combination with a block sliding in said groove and provided with a slotted portion, and a pivoted case carrying rotary knives, the case having an arm which is adjustably clamped to a projection of the said block, whereby a cut tangential to the oval described may be made, substantially as described.

332,215. MACHINE FOR FINISHING AX-POLLS. THOMAS RYAN, Cohoes, N. Y. Filed Apr. 14, 1885. (No model.)

Claim.—1. In an ax-shaping machine, a sectional reciprocating frame adapted to receive and carry an ax-supporting mandrel; in combination with frame guiding and locking rollers, and revoluble shaping-dies, substantially as described, and for the purposes set forth.

2. In an ax-shaping machine, a reciprocating ax-supporting frame having thereon an adjustable abutment, in combination with revoluble ax-finishing dies, substantially as and for the purposes set forth.

3. The combination, with the rolls C, of the frame I, and mechanism adapted to carry it back and forth between said rolls, as and for the purpose set forth.

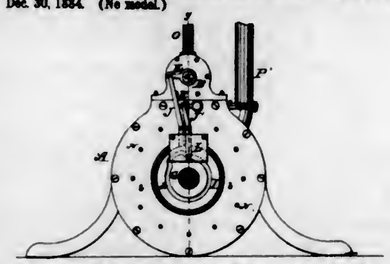


4. The combination, with the frame I, of the crank and link J, the gear H, and the shafts B B, as and for the purpose specified.

5. The frame, constructed with hinged section *b* and seat *i*, in combination with an ax-supporting mandrel, *s*, as shown and described.

6. The frame I, carrying rack *g*, in combination with rolls C, having pinions and collars, as and for the purpose specified.

332,216. ROTARY STEAM-ENGINE. GEORGE W. STINEBAUGH, Columbus, Ohio, assignor of one-half to John C. Dalton, same place. Filed Dec. 30, 1884. (No model.)

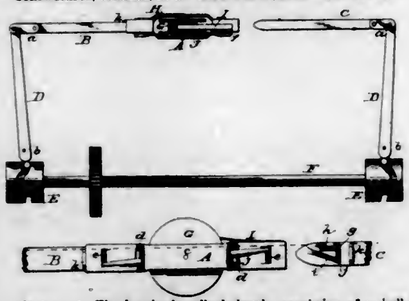


Claim.—1. The combination of cylinder A, formed with recess P, and having abutment H, hinged adjacent to said recess, plate C, provided with piston-head E, steam-chest B, communicating with cylinder A and provided with valve *a*, wheel I, formed with cam-grooves *d*, and rods J J', connecting with said grooves and with valve *a* and abutment H, substantially as and for the purposes described.

2. The combination of cylinder A, formed with flanges *b* and recess P, and having abutment H, hinged adjacent to said recess, shaft G, plates C, provided with piston E and secured to shaft G by flanges F, steam-chest B, communicating with cylinder A and provided with valve *a*, wheel I, formed with cam-grooves *d*, and rods J J', connecting with said grooves and with valve *a* and abutment H, substantially as and for the purposes described.

3. The combination of cylinder A, formed with recess P, and provided with hinged abutment H, plate C, provided with piston-head E, steam-chest B, communicating with cylinder A and having valve *a*, wheel I, having cam-grooves *d*, guide-block L, and rods J J', passing through said block and connecting with said grooves and valve *a* and abutment H, substantially as described.

332,217. POSITIVE SHUTTLE-MOTION FOR LOOMS. CLARENCE S. STROWBRIDGE, Cortland, N. Y. Filed Dec. 13, 1884. (No model.)



Claim.—1. The herein-described shuttle, consisting of a shell having hollow ends, and having an elastic bar pivoted within the body of the shuttle, and having its free ends bent inward and extending through slots in the walls of the hollow ends, whereby said free ends of the bar are adapted to ride into and swing out of engagement with the actuating or carrying arms of a loom, substantially as explained.

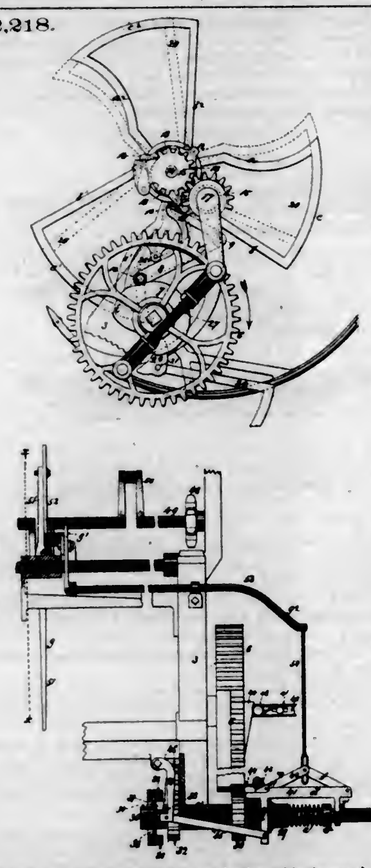
2. The combination, with a shuttle body or shell having hollow ends and provided with slots *d e*, of a spring-bar, J, pivoted to the shell at a point between its ends, extending through the slots *d*, and having its ends bent inward through slots *e* and projecting into the hollow ends, substantially as shown and described.

3. The combination, with carrying-arms B C, each provided with transverse recess *g*, grooves *h i*, and shoulder *j*, of means for reciprocating said arms B C, and shuttle A, provided with pivoted elastic bar J, having inwardly-turned ends extending into the hollow ends of the shuttle, substantially as shown.

332,218. GRAIN-BINDER. DANIEL STRUNK, Minneapolis, Minn. Filed Nov. 24, 1884. (No model.)

Claim.—1. The herein-described compressor and discharger, composed of a series of compressor-arms and a series of discharging-arms mounted upon the shaft 14, having affixed to it the ratchet-wheel 13, pro-

332,218.



vided with the projections 12, in combination with the pawl-carrying pinion 15, loosely mounted upon the shaft 14, the segmental gear 16, affixed to the needle-shaft 17, the main gear 6, connected by a suitable pitman with the needle-arm, the cam 7, affixed to the main gear, and the bell-crank lever 8.

2. The rotary compressor and discharger and means, substantially such as described, for imparting step-by-step rotation thereto, in combination with a vibrating discharger, the axis of which is parallel with the axis of the rotating compressor and discharger, and means for swinging the vibrating discharger upon its axis concurrently with the discharge movement of the rotating compressor and discharger, for the purpose of effecting the discharge of a bundle of grain from a gavel-receptacle situated between the axis of the rotating compressor and discharger and the axis of the vibrating discharger, the said axes being located on opposite sides of the binding-table.

3. The vibrating discharger 24 and the cam-shaped lever affixed to the rock-shaft 21, in combination with the rollers 26 and 27, carried by the main gear 6, for operating the discharger 24, substantially as set forth.

4. In a grain-binder in which the binding mechanism is tripped into gear by the resistance opposed by the collected gavel to the continued forward movement of the packers, mechanism, substantially such as herein described, for preventing the tripping of the binding mechanism into gear, except when the packers have reached prescribed positions, the same consisting of the link 52, connecting the packer trip-arm *g* with the crank-arm *g'* of the trip rock-shaft 53, and the projection 55 from the binder-frame, in front of which the shoulder g^3 is carried during a portion of the stroke of the packer trip-arm *g*, and the adjustable spring-holder 56, for regulating the stress required to effect the tripping operation.

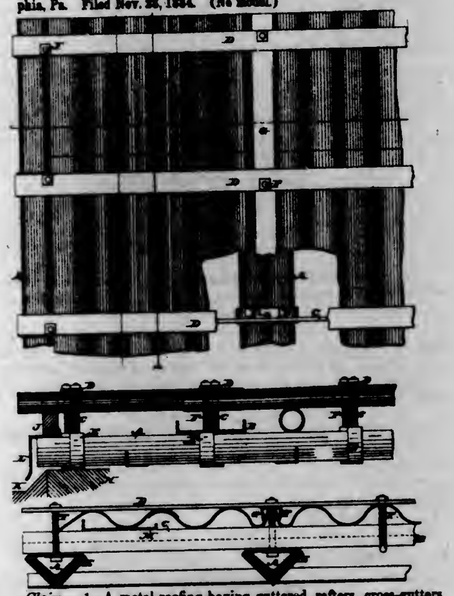
5. Mechanism, substantially such as herein described, for holding the packers in position out of operation while the bundle is being bound, the same consisting of the swinging arm 37, provided with the projection 38, and carrying the spring-latch 39, and the gear 32, loosely mounted upon the binder-shaft 28 and provided upon its face with the projection 33, and having pivoted to it the bell-crank lever 34, the long arm of which lodges upon the projection 38 when the arm 37 is swung forward by the forward movement of the clutch-shifter 41, whereby the short arm of the bell-crank lever is swung toward the axis of the main shaft and within the path of movement of the rollers 36 on the driving cross-head 35, and the gear 32, thus released from the driving action of the cross-head and prevented from continuing its rotation with the cross-head by the lodging of the long arm of the bell-crank lever 34 upon the projection 38, is, in addition, prevented from any reverse movement by the snapping of the latch 39 over the projection 33.

6. In a grain-binder, the combination of the knotting-bill with a tucker vibrating upon an axis perpendicular to the axis of the knotting-bill, and having, in addition to its vibrating motion, a reciprocating endwise motion, as and for the purpose set forth.

7. The vibrating tucking-arm k^3, affixed to the shaft *k*, in combination with the spiral cam *m* and cam-pins for engaging the said cam and imparting reciprocating endwise movement to the said shaft *k* during its rocking movement, as and for the purpose described.

8. The combination of the vibrating tucker-arm k^3 with the shield O, as and for the purpose set forth.

332,219. METALLIC ROOFING. J. FRANKLIN STOCKBRIDGE, Philadelphia, Pa. Filed Nov. 26, 1884. (No model.)



Claim.—1. A metal roofing having guttered rafters, cross-gutters, cross-bearings, and staying-bars, said parts being combined and arranged as and for the purpose set forth.

2. The guttered rafter A, in combination with cross-gutters B, resting thereon, bearings C, metallic roofing resting on said bearings C, and means, substantially as described, for securing together said roofing and rafters, substantially as stated.

3. The guttered rafters A, in combination with the cross-gutters B, cross-bearings C, and staying-bars D, the said staying-bars being secured to the said guttered rafters or cross-bearings C, substantially as and for the purpose set forth.

4. A metallic roofing having guttered rafters and cross-gutters resting on said rafters, and provided with cross-bearings, and staying-bars securing said roofing to said rafters, and a flashing covering the opening in the end of said guttered rafters, substantially as described.

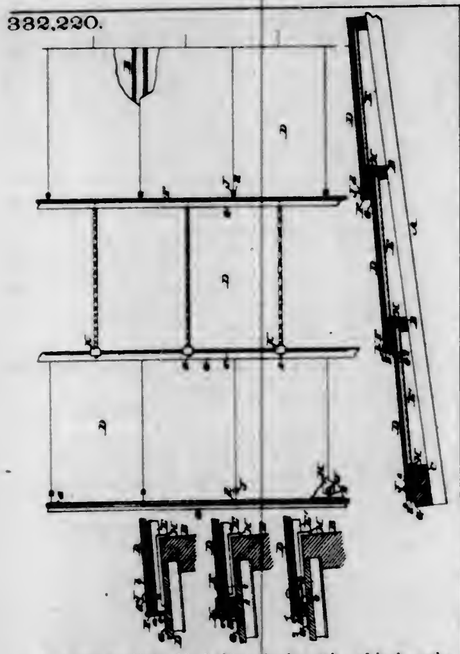
5. In a metallic roofing, guttered rafters, in combination with a wall-plate, a cross-bearing, a corrugated flashing, and a plain flashing, substantially as and for the purpose set forth.

332,220. PLATE-ROOFING. J. FRANKLIN STOCKBRIDGE, Philadelphia, Pa. Filed Dec. 30, 1884. (No model.)

Claim.—1. A roofing composed of plates and having bearing-pieces connected with the frame or rafters, and flashings composed of angular parts having one limb thereof in contact with the lower edge of the plates, and another limb rigidly secured to the bearing-pieces by fastening devices separate from the said flashings, substantially as described.

2. Roofing-plates and the frame or rafters, in combination with bearing-pieces E, flashings F, hooks H, and fastening-screw, substantially as and for the purpose set forth.

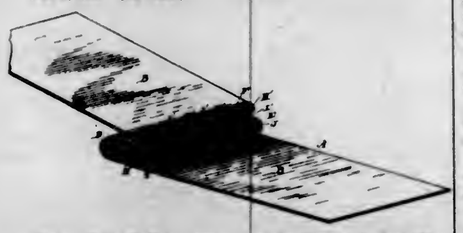
332,220.



3. A roof provided with flashings, having strips of lead or other soft material interposed between the same and the roofing-plates, substantially as and for the purpose set forth.

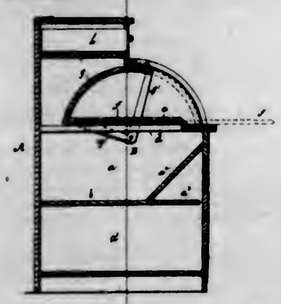
4. A roofing composed of plates and having bearing-pieces connected with the rafters, and flashings having a part thereof in contact with the lower edge of the plates, and another part rigidly secured to the bearing-pieces by fastening devices separate from the said flashings, substantially as described.

332,221. BILL-FILE. Joseph B. Sweney, East Patchogue, N. Y. Filed June 5, 1885. (No model.)



Claim.—In a bill-file or temporary binder, the combination, with a cover consisting of sides connected by a flexible back with the clamp or holder, the jaws of which are secured to the flexible back between the sides of the cover, substantially as and for the purpose set forth.

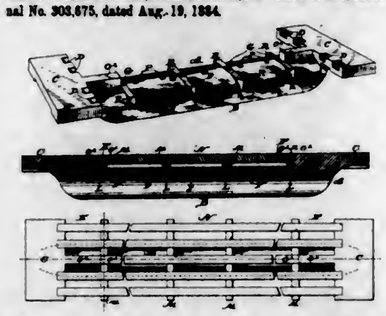
332,222. KITCHEN-CABINET. Hulas Wood, Marysville, Ohio. Filed Mar. 17, 1885. (No model.)



Claim.—The herein-described kitchen-cabinet, comprising the following elements: compartments a' a^3, closed by the doors c c, the compartment a, open at its top and covered by sliding kneading-board f, the inclined partition a^2, arranged between the compartments a and a^3, and the cylinder-top g, all constructed and arranged substantially as shown and described, and for the purpose specified.

REISSUES.

10,670. GRATE-BAR. William Sole, Sr., Freeland, assignor of one-half to William D. Kline, South Heberton, Pa. Filed Oct. 30, 1885. Original No. 302,675, dated Aug. 19, 1884.



Claim.—1. The channeled bar A, consisting of the side walls, B B, connected together at the top, the bearing-plates C C at the ends, and the integral finger O^2, all cast in one piece, as set forth.

2. The bar A, substantially U-shaped in cross-section and provided with mortises in its top, in combination with the detachable grate-sections having tenons to fit in the mortises, as set forth.

3. The herein-described detachable grate-sections having their ends curved, for the purpose set forth.

4. The bearing-bar having end plates, C C, provided with seats D, in combination with the detachable grate-sections having their ends received in the seats, as set forth.

5. The grate or bearing bar, consisting of side walls, B, connected together at the top and cast in one piece, and ventilating perforations or openings in the top of the bar, in combination with the detachable grate-sections having depending tenons or lugs to fit in mortises or openings in the top of the bearing-bar, as set forth.

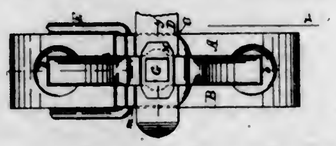
6. The channeled and perforated grate-bar A, provided with the end plates, C C, having seats D, and the mortises and laterally-extending shoulders, in combination with the detachable finger-sections having their transverse bars provided with tenons, as set forth.

7. The combination, with the channeled and perforated grate-bar A, having the middle finger-sections, O^2, cast thereon, of the end sections provided with a section of the middle finger, as set forth.

8. The grate or bearing bar, consisting of side walls, B, connected together at the top and cast in one piece, in combination with the grate-sections detachably fitted to the bearing-bar, as set forth.

9. The grate or bearing bar, consisting of side walls, B, connected together at the top and all cast in one piece, in combination with the detachable grate-sections provided with depending tenons, to fit in mortises or openings provided along the top of the grate or bearing bar, as set forth.

10,671. CAR-BRAKE. Charles F. Woolfarth and Clovis W. Wakefield, Norwich, Conn., assignors, by direct and mesne assignments, to William Fitzpatrick Collins and Thomas Milburn, both of Toronto, Canada. Filed Mar 17, 1885. Original No. 229,510, dated June 29, 1880.



Claim.—1. A brake-shoe cast in one piece having its wheel-engaging surface formed of alternating soft and chilled portions integral with the body of the shoe.

2. In a brake-clog, the combination, with the shoe A, provided with loop c, of the right-angled brake-guide F, substantially as herein shown and described.

3. The combination, with the shoe A and yoke B, of the screw-bolt G and brake-guide F, substantially as herein shown and described, whereby the said shoe and yoke are held together, as set forth.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISION OF THE ACTING SECRETARY OF THE INTERIOR.

1. Title by grant of letters patent for inventions is title by matter of record, and requires no delivery of the instrument to perfect the grant.
2. The grant of letters patent for inventions is not complete, nor does the title pass, until the instrument has been fully recorded.
3. Although the grant has been executed in due form, the instrument signed, sealed, countersigned, and passed to the recording-clerk and partially entered on the record, it does not pass title, nor does it become a patent, until the recording has been completed.
4. Until the title to the grant of letters patent for inventions has been invested in the grantee by the recording of the instrument the application is a "pending application" within the meaning of section 4904 Revised Statutes, and may be withdrawn from the issue and placed in interference with an application filed before the recording of the grant had been perfected.

Department of the Interior,
Washington, November 24, 1885.

Sir: I return herewith the papers submitted 9th March last upon the appeal of E. P. Osgood from the action of your predecessor of 24th February, 1885, in withholding from issue and refusing to deliver a patent, alleged to have been completed and perfected on that day, for an improvement in store-service apparatus, said refusal having been declared for the purpose of putting in interference the claim presented by the applicant with a pending application of Joseph C. Martin, filed on that day, alleging improvements covering the same invention.

The only question necessary to be considered in relation to this appeal is whether or not the alleged patent to Osgood had reached such status prior to the filing of the application of Martin as to take it out of the class designated as "pending applications" and constitute it an "unexpired patent" within the meaning of section 4904 Revised Statutes relating to proceedings in interference.

It is conceded that the instrument was executed in due form, having been signed, sealed, countersigned, and passed to the recording-clerk for record and issue. It is also conceded that it had not been completely recorded, but only partially entered, the signature and seal not having been carried into record at date of suspension and have never been so entered in the proper book of record provided for your Office. That title by grant of Letters Patent is title by matter of record, and requires no delivery of the instrument to perfect the grant, is fundamental law, and has recently been declared in *United States* v. *Schurz*, (102 U. S., 378.) This was a title to public lands; but I apprehend there is no essential difference in the nature of title, which is the grant itself, and must exist from the moment the same is created, although such grant in the case of an invention is one of personalty instead of realty. In that case the court held that, as under the English law the enrollment "is the last act in the process of issuing a patent which is essential to its validity," so, under the acts of Congress which "provide for the record of all patents for land in an office, and in books kept for that purpose," this final record of the transaction is "the legally-prescribed act which completes what Blackstone calls 'title by record'; and when this is done," and not till then, "the grantee is invested with that title." The provisions of section 4883 Revised Statutes respecting the record of patents for inventions are identical with those of section 458, relating to public lands, and the decision of the court would seem to have exact application, and must be held conclusive of the question.

The appeal is accordingly dismissed.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The Commissioner of Patents.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

Eachus *v.* Broomall.

Decided November 16, 1885.

1. Reissued Patent—How Compared with the Original.
   A comparison of the original patents, for the purpose of determining the question as to the identity of inventions described in them, requires an interpretation of the original patent in the light of the state of the art at the date when the application for it was filed.
2. Same—State of the Art—Pleadings.
   Although the prior use or knowledge of the invention claimed in a reissued patent is not specifically set up in the answer as a defense, it is nevertheless admissible to consult the evidence on that point contained in the record for the purpose of defining the limits of the grant in the original patent and the scope of the invention described in the specification.
3. Same—Case Stated.
   Where the original patent was for the particular organization of a *machine* for cutting paper-boards whereby the various parts were combined and adjusted so as to fit it to accomplish the specific result of cutting heavy paper in large sheets, and in a wet condition, as received from a paper-making machine, and the reissued patent was for the *process* of sawing paper-boards, consisting in sawing the paper-board in the wet state in which it was taken from the paper-making machine, *Held*, that the reissued patent was not for the same invention as the original, and was therefore void even when restrained by construction to include only the process described when performed by means of the particular devices described, as it would still be broad enough to cover every arrangement, combination, and adjustment in which these devices may be found, and that is not the same invention which was described in the original patent.
4. Reissued Letters Patent No. 6,315 Examined and Held to be Void.
   Reissued Patent No. 6,315, March 2, 1875, compared with the original and found to be not the same invention and void.

Appeal from the Circuit Court of the United States for the Eastern District of Pennsylvania.

Mr. Wayne MacVeagh and *Joseph C. Fraley* for the appellant.

Mr. Charles H. Pennypacker for the appellee.

Mr. Justice MATTHEWS delivered the opinion of the Court.

The bill in equity, which was dismissed on the merits by the decree appealed from, was filed by the appellant to restrain the alleged infringement of Reissued Letters Patent No. 6,315, dated March 2, 1875, based on the original patent, No. 142,154, dated August 26, 1873, issued to James Eachus, the complainant.

The specification forming part of the original patent, as set out in the record, is as follows:

Be it known that I, JAMES EACHUS, of Coatesville, in the county of Chester, State of Pennsylvania, have invented a new and useful Machine for Cutting Paper Boards, of which the following is a specification:

The nature of my invention consists in combining six adjustable circular saws upon two shafts, set at any angle to each other, and a two-way carriage supported by a frame, and provided with guides so as to work easily and carry the material to be cut.

The object of the invention is to trim and cut heavy paper used in the manufacture of books and boxes.

Figure 1 is a front view of my invention; Fig. 2, a side elevation; and Fig. 3, a ground plan.

In Fig. 3, E is the frame, which should be strongly constructed and in the form of an L. B B and T T are guides on frame E. A is a two-way carriage, constructed in such a manner as to play freely upon guides B B and T T. D and F are saw-shafts mounted upon adjustable bearings bolted to frame E. C C C and S S S are circular saws, secured upon shafts D and F by adjustable collars.

For the purpose of operating my machine, shafts D and F are provided with pulleys P P. Rotation is communicated by belts H H. Fig. 2, from a shaft, G, on which are pulleys P' P'.

Upon carriage A, Fig 3, is placed the wet paper to be cut. The pile is composed of a number of large sheets, as they are taken from the paper-machine. The carriage is then drawn upon the guides B B, saws S S S cutting through the paper; thence at right angles to the first direction upon guides T T, saws C C C cutting through the pile in the new direction, the result of the operation being to trim the edges and cut each sheet in four.

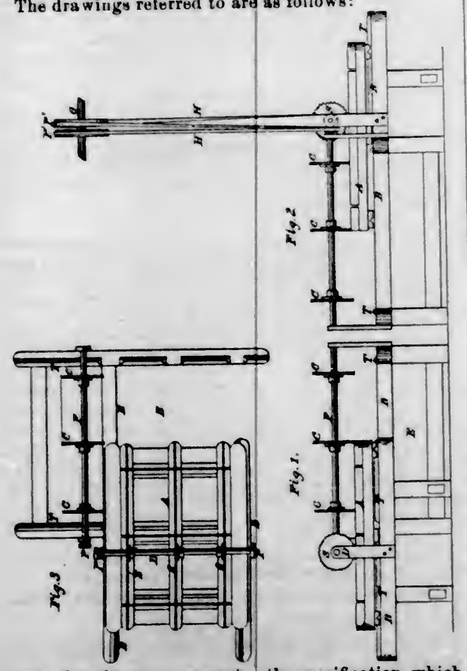
The saws can be adjusted up on shafts D and F, so as to trim and cut the sheets to any desired size.

I make no claim to the arrangement of circular saws and carriages working upon guides for the purpose of cutting logs, blocks of wood, wood of any kind, or any other material except paper; but

I claim—

The combination of shaft D, shaft F, saws S S S and C C C, carriage A, and frame E, for the purpose of cutting binder's and box-maker's paper substantially as shown and described.

The drawings referred to are as follows:



The drawings accompanying the specification, which form part of the reissued patent, are the same as the original, except one described as figure 4, which was added, but is unimportant. The specification of the reissued patent is as follows:

Be it known that I, JAMES EACHUS, of Coatesville, in the county of Chester and State of Pennsylvania, have invented a new and Improved Process of Cutting Paper Boards, of which the following is a description, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of a machine for conducting my process. Fig. 2 is a side elevation of such machine. Fig. 3 is a top view, and Fig. 4 is a detail of a saw in the act of cutting.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to trim and cut heavy paper used in the manufacture of boxes and books; and it consists in subjecting the paper, while in a wet state, as it is taken from the paper-making machine, to the action of circular cutters having serrated edges, whereby the sheets are cut evenly and economically, and the trimmings can be returned to the paper-machine without regrinding or other treatment.

In the annexed drawings I have represented one practical form of a machine for conducting my process; but I desire to be understood as not confining myself to the precise construction of such machine, nor to the number of serrated cutters shown.

In Fig. 3, E designates the frame, which should be strongly constructed. B B and T T are guides on frame E. A is a two-way carriage, which is constructed in such manner as to play freely on the guides B B and T T. D and F are saw-shafts, which are mounted upon adjustable bearings bolted to frame E. C C C and S S S are circular saws or cutters having serrated edges, adapted for the purpose intended, which saws are secured upon shafts D and F by adjustable collars.

For the purpose of operating this machine, shafts D and F are provided with pulleys P P. Motion is communicated by belts H H, Fig. 2, from a shaft, G, on which are pulleys P' P'.

The paper to be cut is put upon the carriage A. The pile is composed of a number of large sheets as they are taken from the paper-making machine in a very wet condition. The carriage is then drawn upon the guides B B, saws S S S cutting through the paper, thence at right angles to the first direction upon guides T T, saws C C C cutting through the pile in the new direction, the result of the operation being to trim the edges of the sheets and cut each sheet into four parts.

The saws can be adjusted on shafts D and F, so as to trim and cut the sheets any desired size.

It will be seen from the above description that I take sheets of paper, while they are in a wet condition, directly from the paper-making machine, and pass the saws over them, thereby trimming their edges and leaving them of an equal thickness throughout, and dividing them into smaller sheets. This process of sawing cannot be performed successfully and without tearing the surfaces of the sheets unless the sheets are wet, and in the condition in which they leave the paper-making machine.

I make no claim to the arrangement of circular saws and carriages for the purpose of sawing logs or any kind of wood; nor do I broadly claim the machine herein described for sawing wood.

I am aware that paper-board has heretofore been sawed when in a dry state, and I therefore lay no claim to such invention, which leaves the edges of the paper thus sawed in a jagged condition, the action of the saw-teeth tending to separate the fibers of the paper board in the line of the kerf; whereas when the paper-board is sawed in a wet state, directly after leaving the paper-machine, the edges are left smooth, the saws causing an interlocking of the fibers in its path through the paper, and the trimmings of the paper being in a condition to be returned to the vat without regrinding, which would not be the case with trimmings of paper-board sawed in a dry state.

What I claim as new, and desire to secure by Letters Patent, is—

The process of sawing paper-board as herein described, consisting in sawing the paper-board while it is in the wet state in which it is taken from the paper-making machine, substantially as described, and for the purpose set forth.

The only defenses set up in the answer are a denial of the validity of the reissued patent and a denial of the alleged infringement.

A comparison of the two patents, for the purpose of determining the question raised as to the identity of the inventions described in them, requires an interpretation of the original patent in the light of the state of the art at the date when the application for it was filed; and we have the material for ascertaining its meaning, in that view, by means of the evidence on that point contained in the record, which, although objected to on the ground that no prior use or knowledge of the invention claimed had been specifically set up in the answer as a defense, was nevertheless admissible for the purpose of defining the limits of the grant in the original patent and the scope of the invention described in its specification. (*Vance* v. *Campbell*, 1 Black, 427; *Brown* v. *Piper*, 91 U. S. 37.) From that

evidence it appears that at the time of the alleged invention of the appellant, and for many years prior thereto, paper-boards for book-binding or for making boxes were cut, trimmed, or separated while in a wet or moist state, as the paper in sheets came from the mill, by means of a hand-saw, sometimes with teeth and sometimes ground with a curved line to a sharp edge. This was the mode or process in universal use. Heavy paper coming from the machine in a dry condition was cut for similar purposes in one direction by means of rolling shears—that is, revolving circular disks operated on a shaft, their edges ground to an angle of about sixty degrees, the same as a pair of scissors—and in the other direction by straight shears acting like ordinary scissors.

It is manifest from this state of the art that it was not open to the appellant at the time he applied for his patent to claim as his invention the discovery that heavy paper intended for the use of book-binders and box-makers could best be cut into proper shapes and sizes while in wet sheets as they came from the machine, nor that the cutting could best be performed by cutters with serrated edges, for this was matter of general knowledge and common practice. Accordingly, in the specification to the original patent he declared the nature of his invention to consist

in combining six adjustable circular saws upon two shafts, set at any angle to each other, and a two-way carriage supported by a frame, and provided with guides so as to work easily and carry the material to be cut.

Then follows a description of the machine which contains this combination, and of the mode of operating it so as to effect the result of cutting the large wet sheets of heavy paper, placed on the frames for that purpose, in both directions into smaller sheets of any desired sizes. This description refers to the drawings, which show the machine with all its parts and their relations to each other in their combination; but none of these parts, either in their construction or mode of operation, or general function, are novel, for saws and shafts and frames for carrying material to be cut had been in common use for cutting other material, and were well known. Accordingly the appellant, in his specification, enters an express disclaimer as to all such uses and the combinations and arrangements of well-known machinery by which they had been effected. He says:

I make no claim to the arrangement of circular saws and carriages working upon guides for the purpose of cutting logs, blocks of wood, wood of any kind, or any other material except paper.

And thereupon states his claim precisely as follows:

The combination of shaft D, shaft F, saws S S S and C C C, carriage A, and frame E, for the purpose of cutting binders' and box-makers' paper, substantially as shown and described.

It is plain, then, that the only invention exhibited in the drawings or described in the specifications of the original patent consists in the particular organization of the machine described, whereby the various parts are combined and adjusted so as to fit it to accomplish the specific result of cutting heavy paper, when in large sheets and in a wet condition, as received from the paper-making machine, into smaller sizes and other shapes for use as boards in book-binding and box-making.

Whether the particular construction and arrangement of the parts forming the combination and adjustment described was, of itself, something novel, requiring invention, or whether the adaptation and application of such a combination to the particular use declared was an invention by reason of the novelty of the use and the new result obtained within the principle of the cases of *Stimson* v. *Woodman* (10 Wall., 117;) *Tucker* v. *Spalding*, (13 Wall., 453;) *Brown* v. *Piper*, (91 U. S., 37;) *Roberts* v. *Ryer*, (91 U. S., 157;) *Heald* v. *Rice*, (104 U. S., 754;) *Hall* v. *MacNeale*, (107 U. S., 90;) *Atlantic Works* v. *Brady*, (107 U. S., 192;) and *Pennsylvania Railroad* v. *Locomotive Truck Company*, (110 U. S., 490) are questions not before us. It is sufficient to say that, whether for such an alleged invention the original patent could or could not be upheld, it cannot be construed as good for anything more or other than that.

We turn now, for the purpose of comparison, to the reissued patent. In the specification thereto the patentee declares that he has invented not a machine, but "a new and improved process of cutting paper-boards," of which a description follows; that the drawings referred to are views of "my machine for conducting my process;" that the invention consists

in subjecting paper, while in a wet state, as it is taken from the paper-making machine, to the action of circular cutters having serrated edges, whereby the sheets are cut evenly and economically, and the trimmings can be returned to the paper-machine without regrinding or other treatment.

That in the annexed drawings

I have represented one practical form of a machine for conducting my process; but I desire to be understood as not confining myself to the precise construction of such machine, nor to the number of serrated cutters shown.

After describing the construction and operation of the machine by reference to the drawings, the specification proceeds:

It will be seen from the above description that I take sheets of paper, while they are in a wet condition, directly from the paper-making machine, and pass the saws over them, thereby trimming their edges and leaving them of an equal thickness throughout, and dividing them into smaller sheets. This process of sawing cannot be performed successfully and without tearing the surfaces of the sheets unless the sheets are wet and in the condition in which they leave the paper-making machine.

Then follow these disclaimers:

I make no claim to the arrangement of circular saws and carriages for the purpose of sawing logs or any kind of wood; nor do I broadly claim the machine herein described for sawing wood.

I am aware that paper-board has heretofore been sawed when in a dry state, and I therefore lay no claim to such invention, which leaves the edges of the paper thus sawed in a jagged condition, the action of the saw-teeth tending to separate the fibers of the paper-board in the line of the kerf; whereas when the paper-board is sawed in a wet state, directly after leaving the paper-machine, the edges are left smooth, the saws causing an interlocking of the fibers in its path through the paper, and the trimmings of the paper being in a condition to be returned to the vat without regrinding, which would not be the case with trimmings of paper-board sawed in a dry state.

The specification then concludes with the claim, as follows:

What I claim as new, and desire to secure by Letters Patent, is—

The process of sawing paper-board as herein described, consisting in sawing the paper-board while it is in the wet state in which it is taken from the paper-making machine, substantially as described, and for the purposes set forth.

A comparison of the two patents makes it very clear that if the patentee had, in fact, conceived the idea of enlarging the scope of his invention by development from a machine into a process he has taken no pains to conceal or disguise his purpose, for he entitled his original patent as for a new and useful machine for cutting paper-boards, while with equal explicitness in his reissue he declared that he had invented a new and improved process of cutting paper-boards. This is at least a *prima facie* departure from the original grant, which would seem to be serious, if not fatal, under a law that limits the power of the Commissioner of Patents so as to issue a new patent only for the same invention when the original has been surrendered as inoperative or invalid, by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention. If there had been any doubt as to how the matter was understood by the

patentee himself, it has been removed by his testimony in the case, in which, in answer to the question, "For what purpose did you ask a reissue of your patent?" he said, "I was told that a process would cover more than a mere machine, and so I applied for a process." Taken in this obvious sense the reissued patent falls directly under the condemnation of the law as declared in *Powder Company* v. *Powder Works*, (98 U. S. 126,) and other similar cases not necessary to be cited.

The attempt is made, in argument on behalf of the appellant, by construction to convert the original patent into a patent for a process, in which the real invention described "consisted in operating upon a peculiar kind of material with a peculiar kind of cutter," and in which the claim was inadvertently framed so as to cover merely the machine itself, and not the process in which it was one only of the factors; but we have already shown by reference to the state of the art according to which heavy paper in a wet condition was cut by means of a saw; that the original patent could not be construed as including such a process without invalidating it, and, from the terms of the specification itself, that no such process is described as the invention intended to be claimed. The patent is plainly limited by its language to the combination, arrangement, and adjustment of the particular parts of the very machine described for the uses to which it is declared to be applicable. On the other hand, the claim of the reissued patent is broad enough to cover the process of sawing paper-boards in a wet state by means of a handsaw, and, if for the purpose of saving it from the necessary consequences of such a claim, it is restrained by construction, so as to include only the process described when performed by means of circular cutters having serrated edges—terms of limitation to be found in the specification—it is still broad enough to cover every arrangement, combination, and adjustment in which these elements may be found, and this surely is not the same invention as that described in the original patent.

The decree of the circuit court dismissing the bill is affirmed.

U. S. Circuit Court—Southern District of New York

BOGART *et al. v.* HINDS.

Decided November 14, 1885.

1. The weight of authority is in favor of the proposition that where profert is made of a paper in the complaint it is for all purposes presented to the court as part of the pleading, and objection may be taken by demurrer.
2. A transfer of a right to use a certain invention for only a specific purpose constitutes a mere license, and a suit for infringement of that right must be brought in the name of the legal owner of the patent, and not in the name of the licensee.
3. An objection that a certain company through which complainant derived title ever existed cannot be made by the latter; and, moreover, if they proposed to rely upon such a proposition, they should have introduced it by proper averments in the complaint.

Mr. Walter D Edmonds for the complainants.
Mr. W. C. Hauff for the defendant.

COXE, *J.*:

The complaint alleges that the complainant Smith was the original and first inventor of certain new and useful improvements in electrical machines for which letters patent were duly issued to him; that, thereafter, on the 13th day of May, 1873, he assigned to the complainant Bogart the full and exclusive right and liberty to make, use, and sell the patented machine for the specific purpose of lighting gas jets,

which said instrument was duly recorded on the 21st day of May, 1873, in the Patent Office of the United States in Liber W., 16, page 31, as by said instrument, with the certificate of recording thereto affixed, or a duly certified copy thereof, in court to be produced, will more fully and at large appear.

A copy of this instrument is produced in court by both parties. It recites that Smith obtained letters patent for his improved machine August 10, 1869, and on the 7th of October, 1871, assigned all his right, title, and interest therein to the Laflin & Rand Powder Company; that the company on the 8th of May, 1873, reconveyed to Smith and his assigns all its right to apply the invention to the purpose of lighting gas-jets. Then follows the conveyance to Bogart of all the right which Smith had "under said instrument."

The infringements complained of are alleged to have taken place after the 1st day of January, 1876. The defendant demurs, insisting, first, that the Laflin & Rand Powder Company is a necessary party, and, second, that the complainant H. Julius Smith, having no interest in the patent, is an unnecessary and improper party.

Upon the argument it was thought that a demurrer might not be the proper remedy, for the reason that the objection did not appear upon the face of the complaint. The formality with which profert and oyer are tendered was not at that time fully appreciated. A somewhat extended examination of this subject leads to the conclusion that, though the authorities are by no means unanimous, the weight of opinion is in favor of the proposition that where profert is made of a paper in the complaint it is for all purposes presented to the court as part of the pleading, and an objection thereto may be taken by demurrer. (*Knott* v. *Burleson*, 2 Greene, (Iowa,) 600; *Wilder* v. *McCormick*, 2 Blatchf., 31, 35, Chitty on Pleading, vol. 1, 415–416; *Cooke* v. *Graham's Adm'r* 2 Cranch 235; *Douglass* v. *Rathbone*, 5 Hill, 143; *Rantin* v. *Robertson*, 2 Strob., L., 366.)

If, then, this assignment is to be regarded as part of the complaint, it appears upon its face that Smith, on the 7th of October, 1871, assigned the entire patent to the Powder Company. He then had no interest of any kind until the 8th of May, 1873, when the company reconveyed to him the right to apply the invention to the lighting of gas-jets. By conveying this right to Bogart, Smith again divested himself of all interest in the patent. The only interest Bogart has is by virtue of the assignments from Smith, and the only interest Smith had was by virtue of the assignment from the Powder Company. Bogart therefore necessarily derives his title direct from the Powder Company. Smith simply conveyed to Bogart what he had obtained from the Powder Company. In legal effect it is as if Smith had transferred to Bogart the written paper he received from the company, or, as if the company had assigned directly to Bogart. Smith is not the owner of the letters patent and he could not assign any rights except such as he received from the Powder Company. Any other interpretation of the assignment would be strained and unnatural.

It is suggested in the complainants' brief that there is nothing to show that the Powder Company ever existed or that the assignment to it became operative. Three answers suggest themselves: First, the instrument must be taken in its entirety, and the complainants, having alleged that the company had sufficient vitality to receive an assignment of the letters patent and reconvey to Smith a right thereunder, are hardly in a position to raise such an issue; second, if the company never received title, Bogart received none, for he has only what Smith took from the company; and, third, it is incumbent upon the complainants, if they propose to rely upon such a proposition to introduce it by proper suggestions and averments in the complaint.

The conclusion cannot be resisted that the action in its present form is not maintainable. The complainant Bogart is a mere licensee The legal owner of the patent is not a party. The case is clearly within the doctrine enunciated in the following authorities: *Gamewell Fire Alarm Telegraph Company* v. *City of Brooklyn*, (14 Fed. Rep., 255;) *Wilson* v. *Chickering*, (Id., 917;) *Ingalls* v *Tice*, (Id., 297;) *Gaylor* v. *Wilder*, (10 How., 477:) *Nellis* v. *Pennock Co*, (13 Fed. Rep., 451;) *Nelson* v. *McMann*, (16 Blatchf., 139;) *Moore* v. *Marsh*, (7 Wall., 520.)

The objection that the defect in the complaint cannot be taken advantage of by demurrer is purely technical, for sooner or later the complainants must meet this question upon the merits. It is thought to be for the advantage of all parties that it should be met and disposed of at the threshold of the litigation.

The demurrer is sustained. Complainants have twenty days in which to amend.

In *Bogart and Smith* v. *Mitchell, Vance & Co.*, there should be a similar order.

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[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of December 15, 1885.

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States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
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Connecticut	19	3	New York	108	10
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Kansas	6	.....	Virginia	2	1
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Massachusetts	41	4	United States Army	.....	.....
Michigan	15	1	United States Navy	.....	.....
Minnesota	2	.....			
Mississippi	1	.....	Total to citizens of the United States	460	38
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Bermuda	.....	.....	Peru	.....	.....
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Colombia, U. S. of	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	21	4
England	12	3			
France	2	.....			

DESIGNS.

16,413.—PARLOR-STOVE.—*H. Clay Bascom*, Troy, N. Y. Application filed November 16, 1885. Serial No. 183,051. Term of patent 7 years.

16,414.—DISH.—*Emile Gérard*, Limoges, France, assignor to *Oliver A. Esger*, Brooklyn, N. Y. Application filed July 9, 1885. Serial No. 171,140. Term of patent 7 years.

16,415.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Mantey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,718. Term of patent 7 years.

16,416.—MOLDING.—*Frederick Mantey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,722. Term of patent 7 years.

16,417.—KNOT FOR SCARF, &c.—*Charlotte E. Page*, Chicago, Ill. Application filed September 22, 1885. Serial No. 177,872. Term of patent 14 years.

16,418.—ORNAMENTATION OF BURIAL-CASKETS.—*Henry E. Quint* and *John H. Mowen*, Brooklyn, N. Y. Application filed October 1, 1885. Serial No. 178,778. Term of patent 7 years.

16,419 and 16,420.—LAMP GLOBE OR SHADE.—*Joseph Webb*, Beaver, Pa. Applications filed November 4, 1885. Serial Nos. 181,866 and 181,865. Term of patents 7 years.

16,421 and 16,422.—COOKING-STOVE.—*H. Clay Bascom*, Troy, N. Y. Applications filed November 16, 1885. Serial Nos. 183,047 and 183,048. Term of patents 7 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,837.—SECTIONAL METALLIC PROTECTORS FOR SOLES AND HEELS OF BOOTS AND SHOES.—*John Blakey*, Leeds, county of York, England. Application filed October 21, 1885.
"The conventionalized representation, in outline, of a boot-bottom, with the sides of the heel in solid color, and with the sectional protectors affixed to the boot-bottom."

12,838.—DENTAL RUBBER.—*Boston Rubber Company*, Boston, Mass. Application filed November 13, 1885.
"The word 'IMPERIAL.'"

12,839.—BAKING-POWDER.—*George B. Burlingame*, Chicago, Ill. Application filed November 13, 1885.
"The word-symbols 'JACK-KNIFE, POCKET-KNIFE, OR PEN-KNIFE,' and a picture of a knife having two blades, both partly open."

12,840.—CHRISTMAS, NEW-YEAR, EASTER, BIRTHDAY, SCRIPTURAL, AND OTHER CARDS.—*John Dorrell* and *Henry Castell*, London, England. Application filed October 5, 1885.
"The word 'PEARL.'"

12,841.—WATCH-CASES.—*Crescent Watch Case Company*, Brooklyn, N. Y. Application filed October 3, 1885.
"The word 'CRESCENT' or a representation of a crescent."

12,842.—WRITING-PAPER.—*The East Hartford Manufacturing Company*, East Hartford, Conn. Application filed November 9, 1885.
"The words 'DAMASK LINENE.'"

12,843.—ESSENCES AND TOILET-SOAP.—*Eastman & Brother*, Philadelphia, Pa. Application filed November 11, 1885.
"The words 'BLUE BELLS OF SCOTLAND.'"

12,844.—IMITATION SILVER-WARE FOR TABLE USE, WATCH-CASES, &c.—*The Holmes & Edwards Silver Company*, Bridgeport, Conn. Application filed August 18, 1885.
"The three characters 'H & E.'"

12,845.—CANVAS HOSE.—*John Mathegor*, Mid-Street Works, Dundee, Scotland. Application filed November 13, 1885.
"The words 'ROB ROY.'"

12,846.—IMITATION DIAMOND JEWELRY.—*H. Muhr's Sons*, Philadelphia, Pa. Application filed November 12, 1885.
"The representation of a crown with a Maltese cross thereon."

12,847.—FILLED FINGER-RINGS AND THIMBLES.—*H. Muhr's Sons*, Philadelphia, Pa. Application filed November 12, 1885.
"A crown with a Maltese cross thereon, a lion, and the number '18.'"

12,848.—LAUNDRY-SOAP.—*Oberne, Hosick & Co.*, Chicago, Ill. Application filed November 17, 1885.
"Arbitrary symbols consisting of the picture of a girl and a pump with water flowing therefrom into a partially-filled tub, together with trees, shrubbery, grass, a fence, and a clothes-line with articles of apparel depending therefrom, and the words 'HARD WATER.'"

12,849.—CUT SMOKING AND CUT CHEWING TOBACCO.—*E. Payn's Son's Tobacco Company*, Albany, N. Y. Application filed November 14, 1885.
"The words 'BLUE LINE' on the side of the figure of the freight-car."

12,850.—SALT.—*Phillips, Henry & Co.*, Norfolk, Va. Application filed November 9, 1885.
"The word 'MAGIC.'"

12,851.—MAGIC LANTERNS.—*John Scheidig & Co.*, New York, N. Y. Application filed November 18, 1885.
"The arbitrarily-selected word 'DUPLEX.'"

12,852.—OPERA-GLASSES.—*John Scheidig & Co.*, New York, N. Y. Application filed November 18, 1885.
"The words 'COLLEGE D'OPTIQUE.'"

12,853.—COOKING STOVES AND RANGES.—*Western Stove Manufacturing Company*, St. Louis, Mo. Application filed May 8, 1885.
"The word 'BAKEWELL.'"

12,854.—DISTILLATION FROM ABIETINE-GUM, AND SALVES, OINTMENTS, AND OTHER COMPOUNDS MADE THEREFROM.—*Abietine Medical Company*, Oroville, Cal. Application filed November 12, 1885.
"The word 'BUTTE-TINE,' with a hyphen between the syllables."

12,855.—CONDENSED MILK.—*Boden Condensed Milk Company*, Detroit, Mich. Application filed October 26, 1885.
"The word 'CLOVER.'"

12,856.—LAUNDRY AND TOILET SOAP.—*N. K. Fairbank & Company*, Chicago, Ill. Application filed November 16, 1885.
"The arbitrary words 'WHITE FAIRY.'"

12,857.—LAUNDRY AND TOILET SOAPS.—*N. K. Fairbank & Company*, Chicago, Ill. Application filed November 16, 1885.
"The arbitrary single word 'FAIRY.'"

12,858.—CORN MEDICINE.—*E. E. Howard*, Heuvelton, N. Y. Application filed November 14, 1885.
"The words 'HOWARD'S PAINLESS' and the fac-simile signature of the proprietor and the wrapper in light green and red colors."

12,859.—CORN MEDICINE.—*E. E. Howard*, Heuvelton, N. Y. Application filed November 14, 1885.
"Pictures representing a man suffering with corns, his feet wrapped in cloth, and standing with the aid of crutches, with a youth offering him a package of Howard's painless corn-cure, and the picture of the same man when cured."

12,860.—BLOOD-PURIFIER AND CANCER-CURE.—*Rufus Gideon Jones*, Dawson, and *Sallie Hill* and *Newton T. Jones*, Oglethorpe, Ga. Application filed October 10, 1885.
"The words and letters 'GA., C. C.'"

12,861.—GOLD, SILVER, AND OTHER SOLID THIMBLES.—*H. Muhr's Sons*, Philadelphia, Pa. Application filed November 12, 1885.
"The combined representation of a crown with a Maltese cross thereon."

12,862.—FILLED WATCH-CASES.—*H. Muhr's Sons*, Philadelphia, Pa. Application filed November 12, 1885.
"The combined representation of a crown with a Maltese cross thereon."

12,863.—GLYCERINE SOAP.—*Mülhens & Kropff*, New York, N. Y. Application filed October 24, 1885.
"Two parallel bars or gutters having rounded ends and impressed on the surface of a cake of soap."

12,864.—PLUG-TOBACCO.—*Perkins & Ernst*, Covington, Ky. Application filed November 13, 1885.
"The word 'GARLAND.'"

12,865.—AN OIL PREPARATION FOR ALLEVIATING PAIN CAUSED BY NERVOUS DISEASES.—*Isabella E. Porter*, Boston, Mass. Application filed November 18, 1885.
"The figures of two arrows, arranged one under the other, and each with its point opposite the head of the other."

12,866.—ALE AND STOUT.—*Read Brothers*, London, England. Application filed November 6, 1885.
"The designation 'DOG'S HEAD,' whether expressed pictorially or by words."

12,867.—WOOD-STAINS, VARNISHES, &c.—*D. Rosenberg & Sons*, New York, N. Y. Application filed November 6, 1885.
"The word 'VIENNA.'"

12,868.—VARNISHES, JAPANS, WOOD-STAINS, &c.—*D. Rosenberg & Sons*, New York, N. Y. Application filed November 6, 1885.
"The word 'ELASTICA.'"

12,869.—BOTTLED CONDIMENT.—*The S. F. Beer Company*, Norwich, Conn. Application filed October 14, 1885.
"The word 'BEER S.'"

12,870.—BAKING-POWDER.—*Thomson & Taylor Spice Company*, Chicago, Ill. Application filed October 29, 1885.
"The words 'LADY OF THE LAKE.'"

LABELS.

4,667.—Title: "BERRY'S NOURISHING STOUT."—*Thomas Berry*, Portland, Oreg. Application filed October 27, 1885.

4,668.—Title: "GEO. H. HOOD'S IMPERIAL FLESH COLOR RUBBER FOR DENTAL PLATES."—*Boston Rubber Company*, Boston, Mass. Application filed November 9, 1885.

4,669.—Title: "GEO. H. HOOD'S IMPERIAL GUM COLOR RUBBER FOR DENTAL PLATES."—*Boston Rubber Company*, Boston, Mass. Application filed November 9, 1885.

4,670.—Title: "PHORACID, A NERVE TONIC AND STIMULANT."—*Martin Kalbfleisch's Sons*, New York, N. Y. Application filed August 5, 1885. (Trade-Mark Registered.)

4,671.—Title: "PROF. LISTON'S FLUID EXTRACT OF BEEF."—*Liston Beef Company*, Chicago, Ill. Application filed November 20, 1885.

4,672.—Title: "LISTON'S EXTRACT OF CHICKEN."—*Liston Beef Company*, Chicago, Ill. Application filed November 20, 1885.

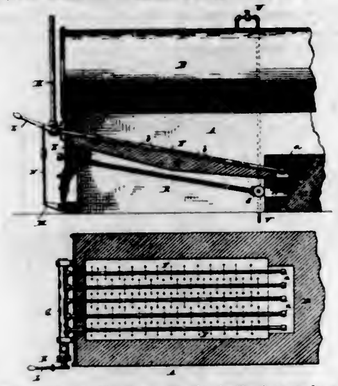
4,673.—Title: "CUBEB COUGH CURE."—*Norman Lichty*, Des Moines, Iowa. Application filed November 20, 1885.

4,674.—Title: "BALSETTO" (FOR A MEDICAL COMPOUND.)—*Charles Speicher*, Scranton, Pa. Application filed June 18, 1885. (Trade-Mark Registered.)

PATENTS

GRANTED DEC. 15, 1885.

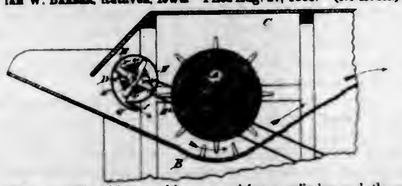
332,223. **DEVICE FOR BURNING GAS IN FURNACES.** JOHN ASHCROFT, New York, N. Y. Filed Mar 23, 1885. (No model.)



Claim.—1. In combination with the inclined grate-bars, grooved longitudinally at their upper edges, the laterally-perforated pipes supported in said grooves, the gas-connection from which said pipes extend into the furnace, and the valve and operating-lever, all arranged substantially in the manner specified.

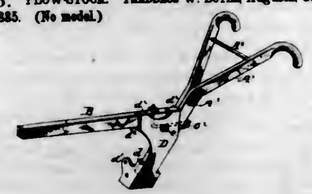
2. The combination, with the inclined grooved grate-bars, of the laterally-perforated gas-distributing pipes supported thereon, the steam-pipes located in the furnace below the grate-bars, the gas-regulating valve and its lever, and the adjustable draft-regulator connected to the lever by a suitable rod, whereby the flow of gas and the draft of air are regulated in unison, substantially as specified.

332,224. **DUST-PROTECTOR FOR THRASHING-MACHINES.** WILLIAM W. BARBER, Rathven, Iowa. Filed Aug. 27, 1885. (No model.)



Claim.—A thrashing-machine comprising a cylinder and the concave, a fan arranged parallel with the cylinder and in front of the same within the inclosing-casing thereof, a casing encompassing said fan and having a discharge-throat arranged above the plane of motion of the grain fed to the thrashing-cylinder, screens secured over the heads of the fan-casing, and regulating-boards pivoted to the casing-heads to vary the quantity of air entering therein, as set forth.

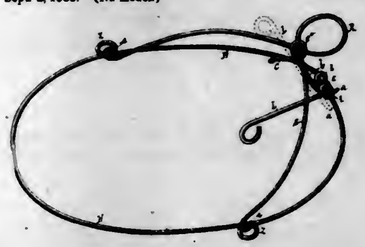
332,225. **PLOW-STOCK.** THADDEUS W. BOYLE, Augusta, Ga. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a plow-stock, the wooden standard A, having its upper end split or sawed longitudinally to form handles A', in combination with the beam B and the L-shaped bolt C, screw-threaded at both ends, substantially as and for the purpose described.

2. The combination of the mortised wood standard A, having handles A' formed integral therewith, and the beam B, with the metal standard D, having a pocket, *d*, to receive the end of the standard A, and lugs d^2 and a mold-board seat, d^3, substantially as and for the purpose described.

332,226. **BAG-HOLDER.** JAMES S. BRAILEY, Wauseon, Ohio. Filed Sept. 2, 1885. (No model.)



Claim.—1. In a bag-holder, the combination of the main wire, the bail attached thereto, the brace-wire joining said wires, and the lever-wire pivoted at one end to the main wire and adapted to be engaged with and disengaged from the said brace-wire, whereby the fold of the bag may be securely held or released, substantially as specified.

2. In a bag-holder, the combination of the main wire having loops Z Z, and ends joined, as specified, the bail S, having the supporting-ring R, its ends being hooked into the loops of the main wire, the brace *b*, attached to the main wire and to the bail, and having the arm *c* formed integrally therewith, and the locking-lever L, pivoted on the inner end portion of the main wire and having the arm *a* formed integral therewith, said arm *a* being adapted to engage with the outer end portion of the main wire, as and for the purposes specified.

332,227. **EXCAVATOR.** MORRIS F. BRAINARD, Brooklyn, N. Y. Filed Jan. 23, 1885. (No model.)

Claim.—1. In an excavator-scow, the bins or pockets covered with wire screen or netting, and provided with a solid cone-disk, 23, upon which the material is discharged, substantially as and for the purpose specified.

2. In an excavating-scow, the guide-rolls 25, erected upon the false deck thereof, and in combination with suction-pipe 7 and frame 14, substantially as and for the purpose specified.

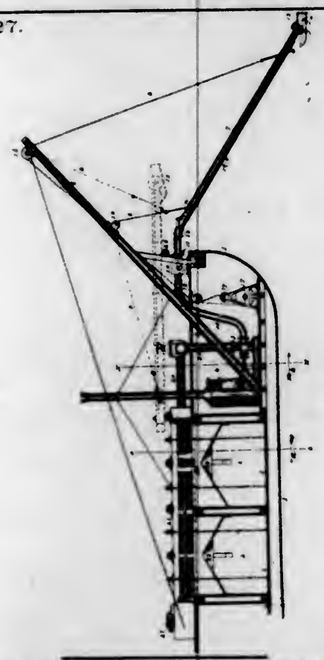
3. In an excavator, the swivel or socket joint 10, consisting of the ball *a*, pipe-connections 11 and 12, protruding lugs *c*, link 13, and case or frame *b*, in combination with the pipe 7 and frame 14, substantially as and for the purpose specified.

4. In an excavator, the pipe 7 and frame 14, in combination with links 13 and swivel-joint 10, substantially as and for the purpose specified.

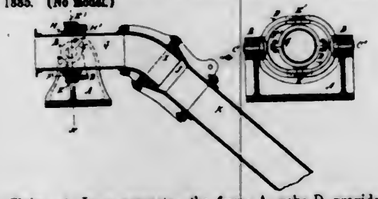
5. In an excavator, the oscillating shoe 15, consisting of the cylinder *d*, case or frame *g*, suction-chamber *h*, valve *m*, and runners J, in combination with frame 14 and pipe 7, substantially as and for the purpose described.

6. In an excavator, the scow 1, bins 2, compartment 4, pump 5, swivel-joint 10, suction-pipe 7, frame 14, oscillating shoe 15, adjusting-chains 8 9, booms 6, guide-rolls 25, cone-disk 23, and overflow-holes 24, covered with wire screen, all constructed substantially as described.

332,227.



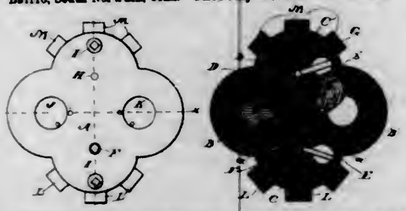
332,228. UNIVERSAL SWIVEL AND PIPE CONNECTION FOR EXCAVATORS. MORRIS F. BRAIMARD, Brooklyn, N. Y. Filed July 11, 1885. (No model.)



Claim.—1. In an excavator, the frame A, yoke D, provided with trunnions C C', and the swivel-band F, with trunnions E and E', in combination with the pipe G and bands H and H', substantially as and for the purpose specified.

2. In an excavator, the pipe G, provided with a cone-connection, I, and cone-sleeve J, in combination with section-pipe K, substantially as and for the purpose specified.

332,229. CHEMICAL FIRE-EXTINGUISHING APPARATUS. JOHN BRITTO, South Norwalk, Conn. Filed July 22, 1885. (No model.)

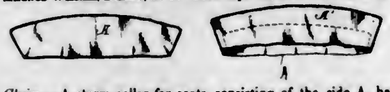


Claim.—1. In a fire-extinguishing apparatus, two more reservoirs containing suitable chemicals, each reservoir having inlet and exit openings connected directly with water supply and discharge pipes, in combination with controlling-valves adapted to close all but one of said inlets, and automatic valves at the exit-openings adapted to be opened by pressure inside of the reservoirs and be closed by pressure outside thereof, whereby a single direct and continuous passage is afforded for the water through but one reservoir at a time, thereby enabling the renewal of the chemicals to be accomplished as fast as they are exhausted and without loss of time, substantially as shown and set forth.

2. In an apparatus as described, the reservoirs B B', having valves J J' and K K', in combination with the controlling-valve E, automatic valve G, and compartments C C', for the purpose specified.

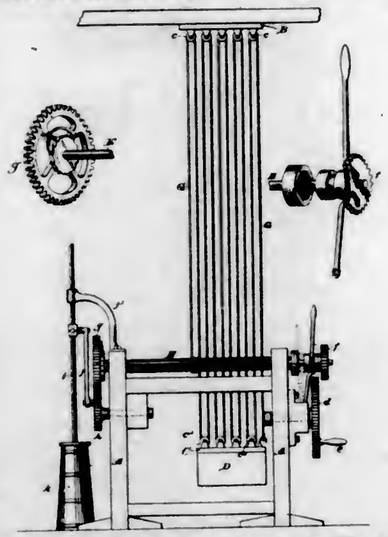
3. The herein-described combination of the inlets L, controlling-valve E, arranged within the compartment C, passages *a a'*, reservoirs B B', passages *b b'*, automatic valve G, arranged within the compartment C', outlets M, and valves J J' and K K', all combined to operate as described.

332,230. STORM-COLLAR FOR OVERCOATS. LOUIS M. BROCK and MAGNUS WIEDER, Buffalo, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—A storm-collar for coats, consisting of the side A, having button-holes or analogous fastening means, and the side A', secured to the side A along the top edge and ends, but free and disconnected therefrom along the base or lower edge, and of sufficiently shorter width along this edge to enable the collar to be turned down with only the one thickness at the bend, and to be placed over the permanent collar, in the manner set forth.

332,231. MOTIVE POWER. WILLIAM A. BROWN, Terrell, Tex., assignor of one-half to James A. Hicks and John S. Wyche, same place. Filed Oct. 31, 1885. (No model.)



Claim.—1. In a motor, the frame, in combination with a windlass or drum, a rope adapted to be wound thereon, a pulley-block, B, provided with a series of pulleys, a weight, D, also provided with pulleys, the rope being passed through the respective pulleys, devices for winding the windlass, and mechanism for transmitting the movement of the windlass while the rope is being unwound, as set forth.

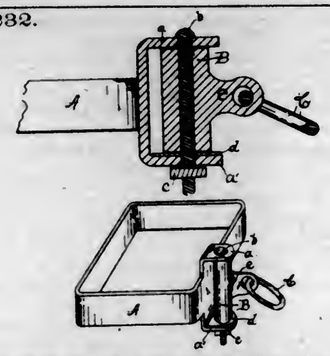
2. In a motor, the main frame A, provided with a windlass or drum, E, a gear-wheel, *f*, loose on the windlass, devices for retaining said gear-wheel tight, as desired, a gear-wheel, *g*, also loose on the windlass, and provided with mechanism for holding it from turning when the windlass is worked in one direction and causing it to turn therewith when the windlass is operated in the reverse direction, a rope adapted to be wound and unwound on the windlass, and a weight connecting with the free end of the rope, as set forth.

3. In a motor, the main frame A, provided with a drum or windlass, E, a gear-wheel, *f*, on one end of the windlass, devices for operating the gear-wheel to wind up the windlass, a gear, *g*, on the other end thereof, a rope, G, wound at one end around the windlass, a pulley-block, B, provided with pulleys *c*, and a weight, D, provided with pulleys *c'*, the rope being passed through the respective pulleys alternately up and down, so as to connect the weight with the pulley-block, all substantially as and for the purpose set forth.

332,232. WITHE-BAND STAY FOR MASTS. RICHARD B. CHUTE, New London, Conn. Filed Apr. 30, 1885. (No model.)

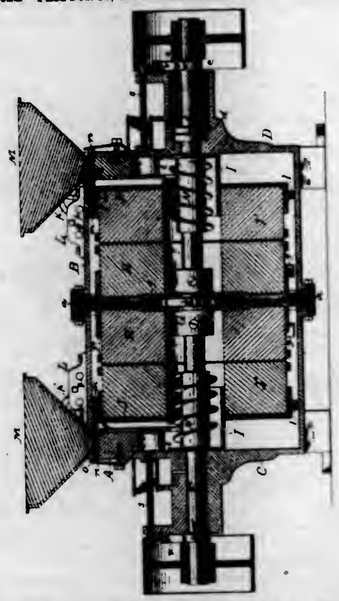
Claim.—1. A stay or strap adapted to encircle the mast, provided with angular perforated brackets *a a'*, in combination with a tubular piece adapted to enter loosely between said brackets, and provided with an integral perforated lug and a pin, which, passing through the perforated brackets and tubular piece, forms a swivel-connection with said stay or strap, substantially as described, and for the purpose specified.

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2. In combination with a mast-stay having integral brackets *a a'*, the tubular piece B, provided with perforated lug *e*, link C, washer *d*, and pin *b*, all being connected and used substantially as herein described, and for the object set forth

332,233. VERTICAL DISK GRINDING-MILL. JOEL T. CASE, Bristol, Conn. Filed Feb. 16, 1885. (No model.)



Claim.—1. The herein-described case for grinding-mills, divided transversely near the middle of its length and provided with flanges for bolting the parts together, in combination with the hard-wood filling-strips *a*, secured between said parts and cut short to form ventilator-openings, substantially as described, and for the purpose specified.

2. The herein-described case for mills, divided longitudinally into halves, one of which is recessed at its front and rear edges, and provided with wood packing-strips *b*, secured within said recessed edges, substantially as described, and for the purpose specified.

3. The main shaft E, provided with the rigid collar *c* and the loose collar *d*, in combination with the bearing in which said collars are inclosed, and set-screws for pressing the collars together, substantially as described, and for the purpose specified.

4. The combination of the case provided with hollow bearings I I and the bed-stone frames J J, fitted to partially revolve on said bearings for longitudinal adjustment, substantially as described, and for the purpose specified.

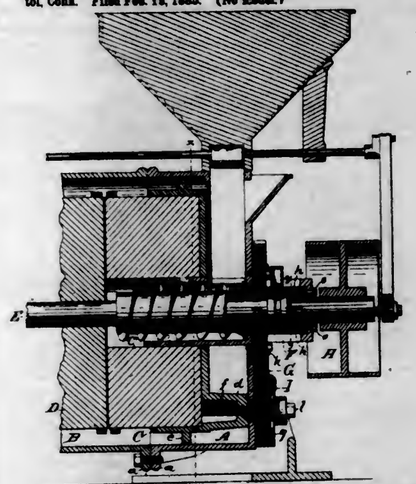
5. The partially-revolving cylindrical bed-stone frame J, provided with inclined flanges on its periphery, the cylindrical case, the rigid stops secured to said case, with that side of the flanges which face the runner bearing against said stops, the yielding stops bearing against the opposite side of said flanges, and mechanism for partially revolving said bed-stone frame, substantially as described, and for the purpose specified.

6. The combination of the runner, the bed-stone, the bed-stone frame provided with the inclined flanges, rigid stops upon that side of said flanges which face the runner, and yielding stops upon the opposite side, substantially as described, and for the purpose specified.

7. The runner-frame divided into halves, in combination with the separately-formed hub provided with a flange which is inclosed by the halves of said frame, substantially as described, and for the purpose specified.

8. The combination of a double hopper, a single agitator-shaft underneath the division of said hopper, and a double shelf-like arm secured upon said shaft underneath the throats of said double hopper, substantially as described, and for the purpose specified.

332,234. VERTICAL DISK GRINDING-MILL. JOEL T. CASE, Bristol, Conn. Filed Feb. 19, 1885. (No model.)



Claim.—1. The combination of the bed-stone frame, the set of adjusting-screws, means for holding said screws against movement in an axial direction, the set of pinions, and an intermediate gear-wheel meshing into the several pinions, substantially as described, and for the purpose specified.

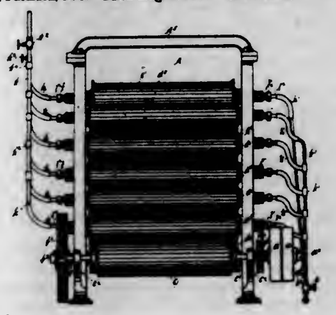
2. The combination of the bed-stone frame, the set of adjusting-screws, the set of pinions, the yokes I for holding said pinions in place and covering their edges, and the intermediate gear-wheel, G, substantially as described, and for the purpose specified.

3. The combination of the bed-stone frame having the bored and threaded hubs *d d d*, the screws *f f f*, fitted to the holes in said hubs, the pinions rigidly connected to said screws, and means for securing said pinions against movement in an axial direction, and the intermediate wheel, G, substantially as described, and for the purpose specified.

4. The combination of the bed-stone frame, the adjusting-screws, the pinions, the intermediate gear-wheel, G, the yokes I, having sockets, the cushions *m*, and the bolts *l* for securing said yokes over said pinions, substantially as described, and for the purpose specified.

5. The combination of the frame or case of the mill, the main shaft E, the shoulder or collar *n*, the sliding boxes A A, inclosing said shoulder *n*, and means for separately adjusting said boxes longitudinally one upon the other, substantially as described, and for the purpose specified.

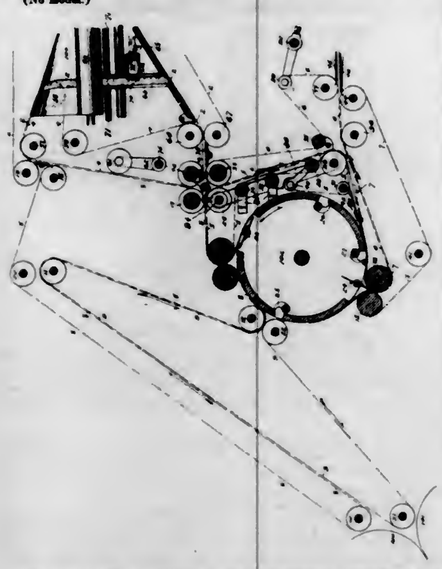
332,235. MACHINE FOR FINISHING SILK FABRICS. ALFRED CREW, Paterson, N. J. Filed Aug. 9, 1884. (No model.)



Claim.—1. The combination, with the series of steam-rollers d', d^2, d^3, d^4, and d^5, as described, of the frame A', having the slots A^4, for guiding the rollers, the roller *d*, for rotating and supporting the series of rollers, the gear-wheel *b'*, the pinion *b*, the shaft a^2, shaft b^2, the pulleys *a* of the roller *c*, the roller *c'*, for carrying the goods to the series of rollers, the steam-pipe *k*, the flexible tubes *h*, the packing-joints f' f^3 f^5, as described and shown, the T connecting-joints k^4, for introducing the steam into the rollers, the valve k^2, exhaust-pipe *k'*, the tubes h^4, connections f' f^3 f^5, connection-valve k^3, for carrying from the rollers the water of condensation, the bearings A^2, the bearings A^6, and bearings b^2, substantially as described.

2. The combination, with the series of steam-rollers, frame A', having slots A^4, and roller *d*, of the roller *c*, for receiving the goods, the grooved pulleys a^2 a^4, the band a^3, for actuating roller *c*, the shaft a^2, for actuating pulley a^3, the pulleys *a*, the gear-wheel *b'*, the shaft b^2, the pinion *b*, for rotating the wheel *b'* and roller *d*, the brackets c^3, for supporting and journaling the shaft *c'*, the shaft *c'*, the bearings A^6, the bolts A^3, for securing the side frames, A, together, substantially as described, and for the purpose set forth.

332,236. SHEET-DELIVERY APPARATUS. LOTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Oct. 23, 1884. (No model.)



Claim.—1. The combination, with a transverse, a longitudinal, and a second transverse folding mechanism arranged to act upon the sheets in the order named, of a sheet-conveying mechanism arranged to deliver the sheets from the first to the second and thence to the third folding mechanism, or from the first directly to the third folding mechanism, all substantially as described.

2. The combination, with two mechanisms arranged to impart parallel folds to the sheets, of a mechanism located between the two and arranged to impart a fold at right angles to the other two, and a sheet-conveying mechanism arranged to deliver the sheets from the first to the second and thence to the third folding mechanism, or from the first directly to the third folding mechanism, substantially as described.

3. The combination, with two parallel transverse folding mechanisms, of a longitudinal folding mechanism arranged to act upon the sheets after the first and before the second of said transverse folding mechanisms, and a sheet conveying and turning mechanism arranged to deliver the sheets from the first to the second and thence to the third folding mechanism, or from the first directly to the third folding mechanism without turning, all substantially as described.

4. The combination, with the cylinder 102, provided with two sets of folding mechanisms arranged to act alternately, of a sheet-conveying mechanism arranged to deliver the sheets folded off the cylinder by one of said mechanisms back to the cylinder in position to be associated with those folded off by the other of said mechanisms, all substantially as described.

5. The combination, with the cylinder 102, provided with two sets of folding mechanisms arranged so as to be made to act alternately or successively at pleasure, of a sheet-conveying mechanism arranged to deliver the sheets folded off the cylinder by the first of said mechanisms back to the cylinder in position to receive a second fold by the second of said mechanisms, all substantially as described.

6. The combination, with the cylinder 102, provided with two sets of folding mechanisms arranged so as to be made to act alternately or successively at pleasure, of a sheet-conveying mechanism arranged to deliver the sheets folded off the cylinder by the first of said mechanisms back to the cylinder in position to receive a second fold by the second of said mechanisms, or to be associated with those folded off by the second mechanism, all substantially as described.

7. The combination, with the cylinder 102, provided with two sets of folding mechanisms, of an adjustable sheet-conveying mechanism, by which the sheets folded off the cylinder by one of said mechanisms are delivered back to the cylinder in position to be operated upon by the other of said mechanisms, and by which the travel of the sheets between said mechanisms is varied, all substantially as described.

8. The combination, with the cylinder 102, provided with two sets of folding mechanisms, of an intermediate folding mechanism arranged to act upon the sheets after the first and before the second of said mechanisms upon said cylinder, and a sheet-conveying mechanism, by which the sheets are delivered from the first mechanism of the cylinder to the intermediate folding mechanism, and thence to the second mechanism of the cylinder, or directly from the first to the second mechanism of the cylinder, all substantially as described.

9. The combination, with the cylinder 102, provided with two sets of folding mechanisms, of the longitudinal folder 104 and a sheet-conveying mechanism, by which the sheets are delivered from the first mechanism of the cylinder to the folder 104, and thence to the second mechanism of the cylinder, or directly to the second mechanism of the cylinder, all substantially as described.

10. The combination, with the cylinder 102, provided with two sets of folding mechanisms, of the longitudinal folder 104 and a sheet-conveying mechanism arranged to deliver the sheets from the first mechanism of the cylinder to the folder 104, and thence to the second mechanism of the cylinder, all substantially as described.

11. The rotating carrier or fly 103, having the grippers 51, provided with the projections 55 upon their backs, substantially as described.

332,237. RECLINING-CHAIR. MARSHALL S. CURTISS, Chicago, Ill. Filed Apr. 25, 1884. (No model.)



Claim.—1. In a chair, a base, a back-frame, and a flexible connection between said base and back-frame, secured to the back-frame toward its lower end, in combination with a back connected with the back-frame by shifting bearing, substantially as described.

2. A supporting-base, a back, and an intermediate shifting bearing, in combination with the seat flexibly connected with the back and base, substantially as described.

3. A back-frame, a supporting-base, a back pivoted in the back-frame, and a pivoted standard directly connecting said base and back-frame, in combination with a seat flexibly connected to said back-frame, and devices, substantially as described, connecting the seat with the base and back-frame, as and for the purpose set forth.

4. In a chair, the combination, with a supporting-base, a back-frame, and a flexible connection between said base and frame, of a back, a shifting bearing-connection between the back and back-frame, and a fixed connection between said back and the supporting-base, substantially as described.

5. A supporting-base, a back-frame, and a seat flexibly connected together and with the base, in combination with a back, and a fixed support for and connecting the back with the base, substantially as described.

6. The combination, with a supporting-base, a back-frame, and a flexible connection between the base and frame, said back-frame being provided with oblique guideways or bearings, of a back and a pivoting-support therefor, said back having pins working in said guideways, whereby the back is caused to automatically move, substantially as described.

7. The combination, with a back-frame, a base, and links pivoted to the base and supporting the back-frame, of a back, a shifting bearing between the back-frame and the base, and a flexible connection between the back-frame and seat, substantially as described.

8. The combination, with the base, the back-frame and seat flexibly connected together, of the front and rear standards, the arm-rests and flexible connections between the standards and arm-rests, and between said standards and the base, back-frame, and seat, substantially as described.

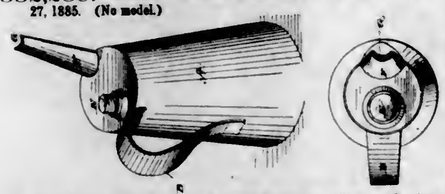
332,238. CABINET FOR BOOTS AND SHOES. WHITLEY DENTON, Little Falls, N. Y. Filed Sept. 21, 1885. (No model.)



Claim.—1. The combination, with the case A, of the metallic frame *d*, arranged in said case removably therefrom, and the shelves *a*, supported inclining in said frame, and each formed with the gutter *c* on its lower edge, substantially as described and shown.

2. The combination of the case A, the metallic frame *d* in said case, and the shelves *a*, arranged removably and inclining in said frame, and formed with marginal flanges *b*, and with gutters *c* at their lowest edges, substantially as described and shown.

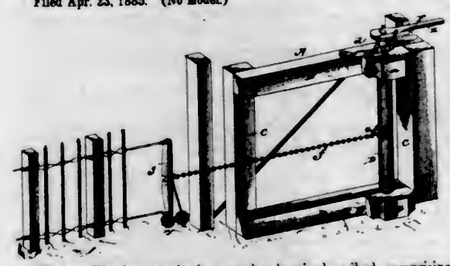
332,239. OIL-CAN. WINFIELD S. DENTON, Dallas, Tex. Filed Apr. 27, 1885. (No model.)



Claim.—1. As an article of manufacture, an oiling-can having a spout provided with a crescent-shaped orifice, substantially as and for the purpose set forth.

2. An oiling-can consisting of a suitable vessel or receptacle having a handle and a filling-opening provided with a cap or cover, and having a spout semicircular at the base and tapering to the point, the front side of said spout being gradually curved, so as to form a crescent-shaped orifice, substantially as and for the purpose herein set forth.

332,240. WIRE-STRETCHER. LORENZO D. DRAKE, Nashville, Tenn. Filed Apr. 23, 1885. (No model.)



Claim.—The improved wire-stretcher herein described, comprising a vertical frame, a vertical power-shaft journaled at its ends in said frame, a ratchet-wheel received on said shaft at the upper end thereof exterior to the frame, a spring-pawl pivoted to the frame and adapted to engage the ratchet, hook-shaped brackets F F, secured to the rear upright bar of the frame at the ends thereof, and adapted to engage a fence-post to support the frame, a bar arranged in front of the frame and having wire couplings on its ends, a chain rigidly secured to the power-shaft and connected to the bar at the middle thereof, and a horizontal operating-lever secured upon the squared end of the power-shaft, all arranged and adapted as set forth.

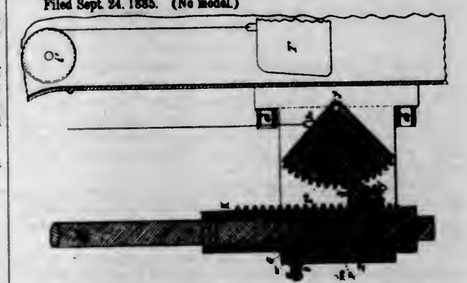
332,241. LUMBER-DRIER. ORHAN A. DUKE, Clanton, Ala. Filed Feb. 26, 1885. (No model.)

Claim.—1. In a lumber-drying kiln, the combination of the flue H, connected with the furnace at its lower end, the hood J, and pan I, containing water, so that the hot air and gases are allowed to pass upward into the kiln, while the sparks fall into the water and are quenched, substantially as described and shown.

2. In a lumber-drying kiln, the combination of flue H, connected with the furnace at its lower end, the hood J, pan I, containing water, and guard-plate *j*, substantially as described and shown, and for the purpose set forth.

3. The combination of a lumber-drying kiln provided with smoke-flues E and cold-air flues D, a furnace situated in the lower part of said kiln and provided with plates G and *g'*, forming the space *g* between them, flue H, hood J, and pan I, containing water, substantially as described and shown, and for the purpose set forth.

332,242. DRILL-PRESS. WILLIAM EVANS, Philadelphia, Pa., assignor of two-thirds to John H. Evans and Robert Evans, same place. Filed Sept. 24, 1885. (No model.)



Claim.—1. The sector J, hung upon the fulcrum-pin *f*, in combination with the pinions *z z'*, rack z^2 of the sleeve K, and head H, all balanced by the counter-weight T, substantially in the manner shown and described.

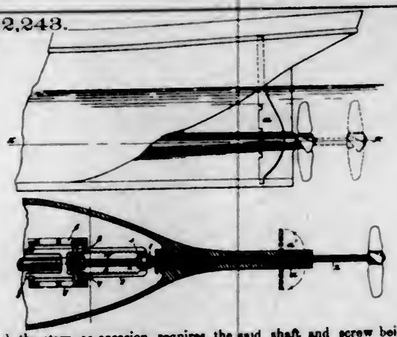
2. The table N and bracket N', in combination with stud-shaft O, screw-rod *n*, connected by the miter-wheels *u u'*, and nut *p*, provided with the threaded lug *q*, all arranged within the cove *o* of the column I, for regulating the altitudinal position of the table and bracket, and permitting horizontal rotary movement of the same, substantially in the manner shown and described.

3. The gage P and piece *w*, provided with the hollow horn *x*, for the reception of the spring *y*, and the cover R, in combination with head H, provided with dovetailed groove *v*, the gage P and piece *w* riveted together, and the cover R rigidly connected to the lower end of the sleeve K, substantially in the manner and for the purpose shown and described.

332,243. SCREW-PROPELLED VESSEL. CYRUS W. FIELD, Jr., New York, N. Y. Filed Apr. 20, 1885. (No model.)

Claim.—1. In a screw-propeller, a screw mounted on an extensible shaft and arranged to operate in a position wholly back of the rudder, with a projecting and retracting device to project the shaft and screw back into clear water aft of the rudder and stern and to retract the same

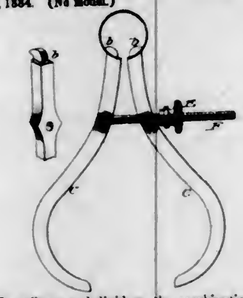
332,243.



toward the stern as occasion requires, the said shaft and screw being capable of continuous revolution in either of said positions, substantially as and for the purpose set forth.

2. In a screw-propeller, the combination of a rudder composed of two rudder-leaves mounted in the dead-wood or narrow part of the stern, with a longitudinally extensible or movable screw-shaft passing out of the stern between said rudder-leaves, a screw mounted on the end of said shaft aft of the rudders, and a shaft projecting and retracting device for projecting the shaft into clear water aft of the stern and rudders and retracting the same toward the stern and rudders, substantially as herein shown and described.

332,244. SPRING-CALIPERS. EDWIN S. FIELD, Springfield, assignor of one-half to Joseph M. Davis and John G. Soderberg, Worcester, Mass. Filed Sept. 17, 1884. (No model.)

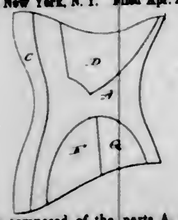


Claim.—1. In calipers and dividers, the combination of the spring A, provided with apertures *d d*, with the legs C C, formed with hooks *b b* to enter said apertures, substantially as described.

2. In calipers and dividers, the combination of the legs C C, formed with hooks *b b*, and the interlocking spring A, provided with apertures for the reception of the hooks *b b*, with the screw F and nut E, substantially as described.

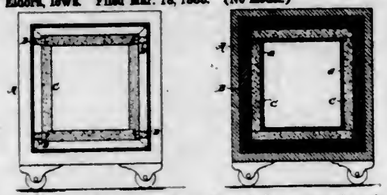
3. In calipers and dividers, the combination of interlocking spring A with the legs C C, formed with hooks *b b*, entering apertures in the spring, whereby said legs may be removed and others substituted therefor, substantially as described.

332,245. CORSET. THOMAS S. GILBERT, New Haven, Conn., assignor to Albert R. Coltes, New York, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—A corset composed of the parts A, C, D, F, and G, the said part A extending in a continuous piece from the rear to the breast-line, the upper portion of the front edge curved to give one-half the swell for the breast, the upper edge having a recess, B, extending in a convex curve from near the rear edge downward and forward to near the waist-line, there intersecting with a convex curve extending downward from the front edge of the recess, and the lower edge of the part A having a recess, E, formed therein, starting in a concave curve from near the rear up over the hip and down toward the front edge, the part C forming the front and having its rear edge cut with the convex swell at the top to form the second half of the breast, the part D cut in shape to fill the recess B and give the requisite swell to the upper portion of the body of the corset, and the parts F G adapted to fill the recess E in the lower portion of the corset, and give the requisite swell thereto, substantially as described.

332,246. FIRE-PROOF SAFE AND VAULT. CHARLES C. GILMAN, Eldora, Iowa. Filed Mar. 18, 1885. (No model.)



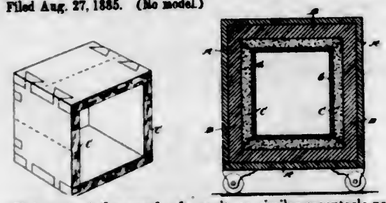
Claim.—1. A fire-proof safe, vault, or similar receptacle embracing in its construction a porous fire-proof material charged with a liquescent salt, substantially as described.

2. A fire-proof safe or vault provided with a lining consisting of a porous burned brick material saturated with alum, substantially as described.

3. A fire-proof safe or vault provided with a lining consisting of slabs of porous burned brick material saturated with alum, the said slabs being rabbeted and fitted together, so as to remain in place, substantially as described.

4. A fire-proof safe or vault provided with a lining consisting of slabs of porous burned brick material saturated with alum, the said slabs being rabbeted and fitted together and prevented from sliding forward by stops, substantially as described.

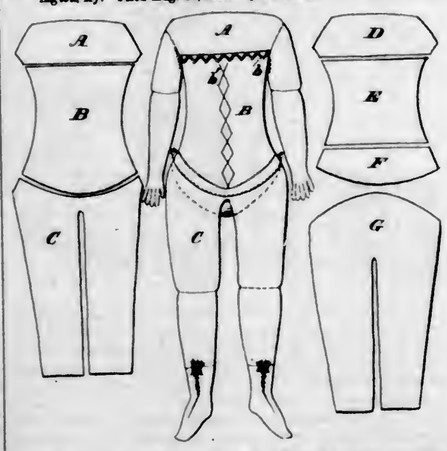
332,247. FIRE-PROOF VAULT. CHARLES C. GILMAN, Eldora, Iowa. Filed Aug. 27, 1885. (No model.)



Claim.—1. A fire-proof safe, vault, or similar receptacle provided with a lining consisting of a porous burned brick material, substantially as described.

2. A fire-proof safe, vault, or similar receptacle provided with a lining formed of slabs of a porous burned brick material fastened together, substantially as described.

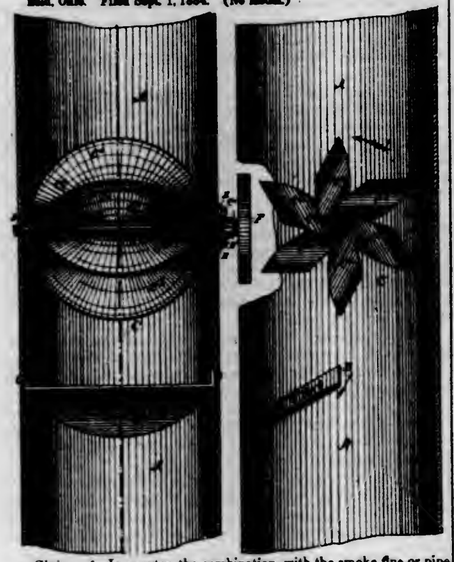
332,248. DOLL-BODY WITH CORSETS. PHILIPP GOLDSMITH, Covington, Ky. Filed Aug. 27, 1885. (No model.)



Claim.—1. A doll-body composed of a front portion composed of the upper piece, A, middle piece, B, and lower piece, C, secured together, and a back portion composed of the upper piece, D, middle piece, E, rump-piece F, and lower portion, G, secured together, the said front and back portions being likewise secured together, substantially as and for the purposes specified.

2. A doll-body composed of a front portion consisting of the upper piece, A, middle piece, B, and lower piece, C, secured together, and a back portion composed of the upper piece, D, middle piece, E, rump-piece F, and lower portion, G, secured together, the pieces B and E being made of a different colored material from the other parts, and the said front and back portions being secured together, substantially as and for the purposes described.

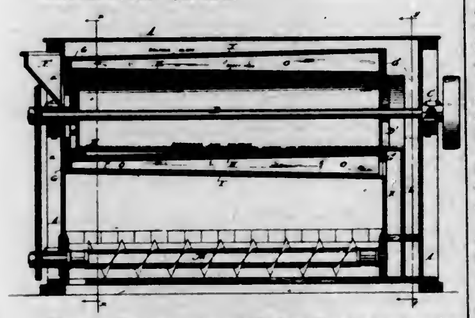
332,249. MOTOR. MARTIN F. GRAHAM and OWEN E. NORTH, Springfield, Ohio. Filed Sept. 1, 1884. (No model.)



Claim.—1. In a motor, the combination, with the smoke flue or pipe A, of the motor-wheel C, having air-sails C', the shaft C', upon which said wheel is mounted, said shaft having bearings in the sides of the flue and being provided at its end with the pulley F, as described, and the deflector B, to direct the current of air to certain of the sails of the wheel C, all constructed and arranged in the manner and for the purpose set forth.

2. The combination, with a stove-pipe or other flue provided with a motor or wheel arranged and located substantially as described, of the deflector B, to direct the air to the desired place upon the motor-wheel, substantially as and for the purpose set forth.

332,250. SCALPING-MACHINE. WILLIAM D. GRAY, Milwaukee, Wis. Filed Jan. 19, 1885. (No model.)



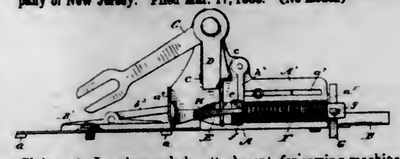
Claim.—1. In combination with the internal and external pervious cones, the intermediate imperforate cone and the longitudinal blades or wings.

2. In combination with the external conical reel and the internal imperforate cone tapered in the opposite direction, the longitudinal blades secured externally to the cone, their outer edges being parallel with the surface of the reel.

3. In a scalping-machine, the receptacles K and L, located in one end of the machine, in combination with the outer screen, communicating directly with the receptacle K, the inner screen, E, extended to communicate directly with the receptacle L, and the intermediate imperforate cone, as described and shown.

4. The two annular heads G G' and skeleton wheels D D', in combination with the two conical screens, and the intermediate cone, H, having the imperforate body portion, and provided at one end with openings *a*, whereby the material is permitted to pass from its interior to the inner surface of the outer reel.

332,251. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JOHN M. GRIEST, Chicago, Ill., assignor to the Singer Manufacturing Company of New Jersey. Filed Mar. 17, 1885. (No model.)



Claim.—1. In a button-hole attachment for sewing-machines, the combination, with a feed-plate and a cloth-clamp, of a double screw, a reversible switch, a slide in which said switch is pivoted, an arm or projection on said slide for engaging said feed-plate, and mechanism for intermittingly rotating said screw, substantially as set forth.

2. In a button-hole attachment, the combination, with a cloth-clamp and a feed-plate, of a double screw connected with said feed-plate, a spiral shaft having a pawl-and-ratchet connection with said screw, and mechanism adapted to operate said spiral shaft from the needle-bar of a sewing-machine, substantially as set forth.

3. In a button-hole attachment, the combination, with a cloth-clamp and a feed-plate, of a double screw connected with the latter, a three-pointed cam operated by said screw and connected with said feed-plate, and mechanism for intermittingly rotating said screw, substantially as described.

4. In a button-hole attachment, the combination, with a cloth-clamp and a feed-plate therefor, of a double screw, a slide carrying a switch engaging said screw, a three-pointed cam connected with said feed-plate, a ratchet-wheel, a spiral shaft, a pawl movable with said shaft and engaging said ratchet-wheel, and a lever for actuating said spiral shaft, substantially as set forth.

5. In a button-hole attachment, the combination, with a cloth-clamp and its feed-plate, of a double screw connected with said feed-plate, a spiral shaft having a pawl-and-ratchet connection with said screw, a driving-lever forked to engage said spiral shaft, and a bell-crank lever loosely connected with said driving-lever, substantially as set forth.

6. In a button-hole attachment, the combination, with a cloth-clamp and a feed-plate therefor, of a screw-shaft, mechanism for intermittingly rotating said shaft, a three-pointed cam, a yoke connecting the latter to said feed-plate, a vibrator operated by said yoke, and an operating-plate adapted to receive motion from said vibrator and to oscillate said feed-plate, substantially as set forth.

7. The combination, with the cloth-clamp and its feed-plate, of the vibrator I, having the irregular slot i^7, the operating-plate K, adapted for endwise movement and having the lug *k*, the slide M, and the bar L, attached to said slide and having a frictional connection with said operating-plate, substantially as set forth.

8. The combination, with the cloth-clamp and its feed-plate, of the double screw and mechanism for operating the latter, a slide connected with said feed-plate, a reversible switch carried by said slide, a reversing-lever connected with said switch, and stops for operating said lever, substantially as set forth.

9. The combination, with the cloth-clamp, the feed-plate, and the slide M, provided with the projection m^4, of the reversing-lever m^3, pivoted to said slide and having the finger m^2, and stops for changing the position of said lever relative to said projection, substantially as set forth.

10. The combination, with the cloth-clamp and its feed-plate, of the slide M, the switch *m*, the reversing-lever *m'*, and fixed and adjustable stops for changing the position of said lever to reverse the said switch, substantially as set forth.

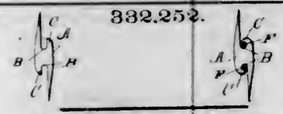
11. The combination, with the cloth-clamp, the feed-plate, the standard A', having the slot a^{11} and the rack a^{12}, of the adjustable lever A^3, having the stop a^{10}, and the lug a^{13} for engaging said rack, substantially as set forth.

12. The combination, with the feed-plate B, having the flanges b^7, of the spring-arms b^8, attached to said flanges, and the upper clamping-jaw, B', connected with said arms, substantially as set forth.

13. The combination, with the base-plate A, having a spring-tongue, a^3, provided with the T-shaped or overhanging lug a^5, of the feed-plate B, yieldingly attached to said base-plate by said lug, substantially as set forth.

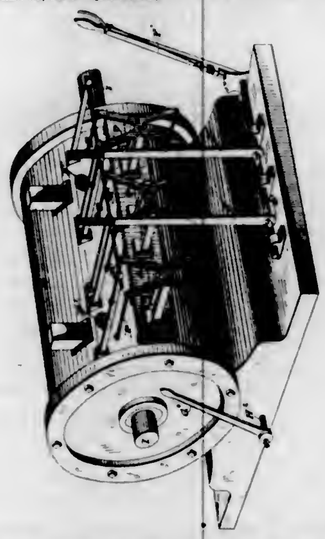
332,252. BARB FENCE-WIRE. JACOB HAHN, De Kalb, Ill. Filed Feb. 16, 1882. (No model.)

Claim.—A barb for wire fences, provided at each end with a point and a short projecting lip parallel thereto, the lips serving to clasp the strands of the fence-cable and hold them respectively against the ends of the body of the barb.



332,252.

332,253. ROTARY ENGINE. JOHN HARRINGTON, Caldwell, Kans. Filed Mar. 18, 1885. (No model.)



Claim.—1. In a rotary engine, a single driving-shaft and a series of eccentric pistons of the same diameter, but of unequal weight, secured to said shaft in a manner to cause the balancing of the heavier piston or pistons by two or more of the lighter pistons, in combination with chambers in which the pistons work, and sliding abutments co-operating with said pistons and supported by the walls of the piston-chambers, substantially as described.

2. In a rotary engine, the combination of a middle rotary eccentric piston having an elongated hub and two other eccentric pistons secured rigidly to said elongated hub on opposite sides of said middle portion, substantially as described.

3. In a rotary engine, the combination of a middle rotary eccentric piston having an elongated hub and two other eccentric pistons rigidly secured to said elongated hub on opposite sides of the said middle piston, and having an aggregate weight equal only to the weight of the middle piston, substantially as described.

4. In a rotary engine, the combination of an inner casing containing the piston-chambers, the rotary pistons, and the valves for controlling the admission of steam to said piston-chambers, with an outer casing, between which and the inner casing the steam for running the engine is first admitted before passing into the inner casing, substantially as described.

5. In a rotary engine, the combination, with a stationary piston-chamber, of an eccentric piston operating therein and a sliding abutment guided in the walls of the piston-chamber and moved positively in and out by direct contact with the surface of the piston, substantially as described.

6. In a rotary engine, the combination, with a stationary piston-chamber, of an eccentric piston operating therein, a sliding abutment, and a sliding false abutment guided in the walls of the piston-chamber, connected together and bearing upon opposite portions of the surface of the piston, substantially as described.

7. In a rotary engine, the combination, with a stationary piston-chamber, of an eccentric piston operating therein and the sliding abutment supported at its lateral edges in the walls of the chamber and actuated by direct contact of its end with the periphery of the eccentric piston, substantially as described.

8. In a rotary engine, the combination, with a stationary casing having a series of piston-chambers and a series of eccentric pistons arranged in said chambers and mounted upon a common shaft, of a series of sliding abutments, one for each piston-chamber, said abutments being supported in the walls of the stationary casing and bearing upon the peripheries of their respective pistons and receiving positive motion therefrom, substantially as described.

9. In a rotary engine, the combination, substantially as described, of the stationary outer casing and the stationary inner casing, having the steam-space between them, with the middle piston, its elongated hub, and the two smaller pistons secured to said hub, all said pistons and said hub having internal passages for steam in communication with the steam-space between the inner and outer pistons, for the purpose specified.

10. In a rotary engine, the combination of a stationary inner casing formed with piston-chambers, rotary eccentric pistons arranged in said piston-chambers, and valves for controlling the inlet of steam to said piston-chambers, also contained within said inner casing, with an outer casing, between which and the inner casing is a live-steam space surrounding the inner casing at both sides and ends, whereby the inner casing and all its contained parts are kept at all times at a substantially uniform temperature, and are permitted to uniformly expand without liability of binding.

11. The combination, with the inner and outer casings, having the steam-space between them, of the piston-chambers within the inner casing, the rotary eccentric piston, the sliding abutments, and the reciprocating valves for simultaneously opening the steam-induction ports and closing the exhaust-port on one side of the abutments, and closing the steam-induction ports and opening the exhaust-port on the opposite side of the abutments, substantially as described.

12. The combination, with the inner and outer casings, having the steam-space between them, of the circular packing-rings interposed to form part of the exhaust-passages, substantially as described.

13. The combination, with the inner casing and its piston-chamber and rotary pistons, of the series of reciprocating slide-valves and the handle, crank-shaft, and shifting-bars for simultaneously operating said valves, substantially as described.

14. The combination of the rotary eccentric pistons, sliding abutments, and the inner casing having piston-chambers in which the rotary pistons work, and provided with two opposite steam-inlet ports on each side of the abutments, substantially as described.

15. The combination, with the eccentric piston, having the transverse slot in its periphery for the reception of packing, of the split rings let into the sides of the piston, and having the offsets or lugs for holding the packing in position, substantially as described.

16. The combination, with the casing having the piston-chambers, of the rotary eccentric pistons, the sliding abutments, and the rotary cut-off valves having the inner and outer elongated ports co-operating with the steam passages or ports in the casing, substantially in the manner described.

17. The combination, with the casing having the piston-chambers, of the rotary eccentric pistons, the sliding abutments, and the rotary cut-off valves arranged in pairs, one on each side of every piston-chamber, and controlling the admission of steam to such piston-chambers, substantially as described.

18. The combination, with the casing having the piston-chambers, of the rotary eccentric pistons, the sliding abutments, the rotary cut-off valves arranged in pairs, one on each side of every piston-chamber, and controlling the admission of steam to the piston-chambers, and the reciprocating cut-off valves co-operating with the steam supply and exhaust ports on opposite sides of the abutments, in the manner described, and for the purpose specified.

19. The combination, with the casing having the piston-chambers therein, of the rotary cut-off valves having the elongated segmental ports, and their adjustable governing-valves having inner and outer ports co-operating with the ports of the rotary cut-off valves, substantially in the manner specified, and for the purpose described.

20. The combination, with the inner casing and its steam ports or passages, of the rotary cut-off valves having the elongated ports, and the packing surrounding said ports on both sides of the valves, and the adjustable governing-valves, substantially as described.

21. The combination, with the inner casing and its ports, of the rotary cut-off valves and the governing-valves, constructed as described, and pressed against the cut-off valves by means of springs, substantially as described.

22. The combination, with the inner casing and its steam-ports, of the rotary cut-off valve, the governing-valve, and the reciprocating cut-off valves, all constructed and arranged substantially as described.

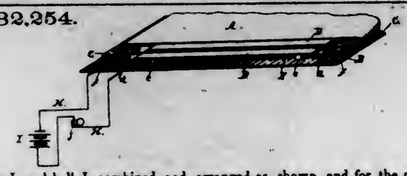
23. The combination, with the inner casing and its steam-passages, of the rotary cut-off valves, the governing-valves, and the described means for simultaneously adjusting the governing-valves, so as to cause them to cut off the steam sooner or later for all the piston-chambers, substantially as described.

24. The combination, with the elongated hub rendered adjustable in the inner casing, as described, of the shaft to which the hub is secured, the bearings for said shaft having a slight play in the outer casing, and the outwardly steam-pressed packings for preserving the joint between the said bearings and the outer casing, substantially as described.

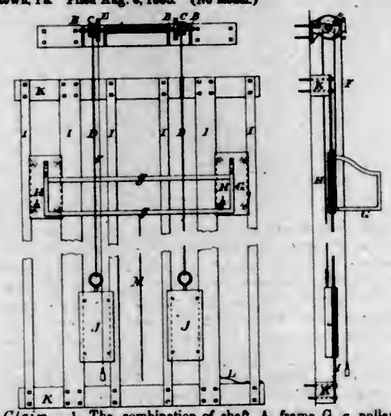
332,254. ELECTRIC HAT. HARVEY H. HOFFMAN, New York, N. Y. Filed July 17, 1885. (No model.)

Claim.—The spring-piece D, forming one pole of an open electric circuit, connecting-wires *d*, attached thereto, the rod E, forming the opposite pole, connecting-wires *g*, attached thereto, insulating-pieces *e*, battery I, and bell J, combined and arranged as shown, and for the purpose described.

332,254.



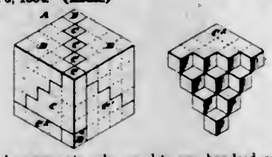
332,255. FIRE-ESCAPE. PETER S. KERR and JOHN J. SCHADT, Allentown, Pa. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination of shaft A, frame G *g*, pulleys C, weights J, having rollers *h*, guides I I, brackets B B, wheel E, springs *e e*, and cords D and F, substantially as shown and described.

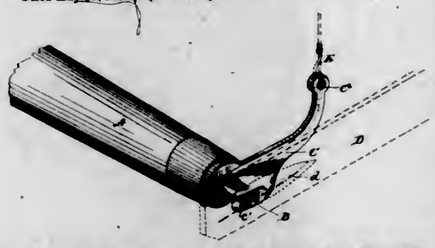
2. The combination of the shaft A, pulleys C E, weights J, slide H, guides I, bars K, brackets B, springs *e*, and weighted brake-rope F, secured to the lower spring and passed over the upper spring, ropes D and frame G *g*, substantially as specified.

332,256. AGGREGATE CUBE. HENRY KEELER, Oskaloosa, Kans. Filed Nov. 8, 1884. (Model.)



Claim.—An aggregate cube equal to one hundred and twenty-five smaller cubes, the cubes being divided into three corner-sections, B^2 B′ B, equal to twenty cubes each, three intermediate sections, C^2 C′ C, equal to twenty cubes each, and five individual cubes, D D′ D^2 D^3 D^4, in a diagonal line, substantially as shown and described.

332,257. HORSE-DETACHER. THOMPSON W. LAMBERT, Avis, Va. Filed May 19, 1885. (No model.)



Claim.—1. As an improvement in horse-detachers, the combination, with the pivot-pin, of the detacher-block having the rearwardly-extending wing and the inclined wedge-shaped portion, adapted to operate in the manner set forth.

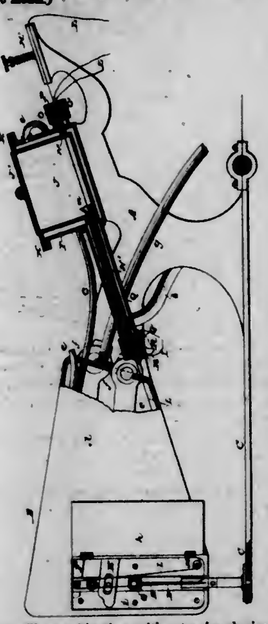
2. As an improvement in horse-detachers, the combination, with the pivot-pin, of the detacher-block having the rearwardly-extending wing, the flat lower side, the inclined wedge-shaped portion, and the upwardly-curved forward end, to which the operating cord or strap is attached, as set forth.

332,258. STEAM-PIPE COVERING. CHARLES LARSEN, Batavia, N. Y. Filed Oct. 20, 1885. (Model.)



Claim.—The combination of the mineral wool, the indented wrapper, the re-enforce paper, and the non-combustible paper secured between the inner ends of the outer wrapping and the re-enforce paper, substantially as described, and for the purpose set forth.

332,259. THREAD WAXING AND HEATING DEVICE FOR SEWING-MACHINES. BENJAMIN F. LANDIS, St. Joseph, Mo. Filed Mar. 18, 1885. (No model.)



Claim.—1. The combination, with a tension device, H, and the delivery-stud M of a sewing-machine, of a wax-pot having holes through its two sides in the path of the thread, stuffing-boxes around said holes and elastic stuffing therein, substantially as shown and described.

2. The combination of the flanged wax-pot J, the pipes N N′, secured in line with each other at opposite sides of the said pot, the steam-jacket I, surrounding the said pot and secured to the flanges thereof, the pipe Q, surrounding the pipe N′, and secured at one end in the jacket I, the ring R, connecting the pipes N′ and Q, and steam-passages *b c* to and from the steam-chamber, substantially as shown and described.

3. The combination of the steam chamber or jacket I, the wax-pot J, secured at its upper edges therein, the stuffing-box O at the side of the jacket, the perforated cap O′ therefor, the pipe N, connecting the wax-pot with the jacket, the pipe N′ in the wax-pot opposite to the pipe N and in line therewith, the pipe Q, surrounding the pipe N′, and secured at one end in the jacket I, the ring R, connecting the pipes N′ and Q, steam-passages *b c* to and from the steam-chamber, and the perforated stuffing-box cap Q′ on the end of pipe Q, substantially as shown and described.

4. The combination of the steam-chamber I, the wax-pot J within it, pipes passing from opposite sides of the wax-pot out through the chamber and connected therewith, and stuffing-boxes provided with perforated caps upon the ends of the pipes, and pipes leading to and from the steam-chamber, substantially as shown and described.

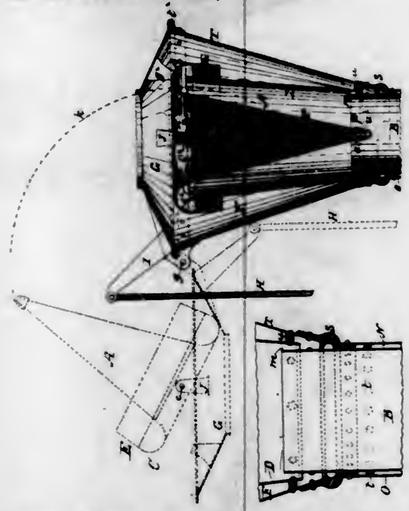
5. The combination, with the wax-pot, the steam-chamber and their adjuncts (described) secured upon a sewing-machine between the tension and the needle, of the shield *d*, fitted upon the head of the machine, and a heat-pipe leading thereto, substantially as shown and described.

6. The combination, with the overhanging head B of a sewing-ma-

chine, of the shield *d* and the back secured thereto, covering the thread-carrying parts thereon, and an inlet-pipe, *g*, substantially as shown and described.

7. The combination, with the sewing-machine head B, of the shield *d*, secured thereon, heat-conductors therefor, and the aperture *i* and door *h*, substantially as shown and described.

332,260. SPARK-ARRESTER. FRANK F. LANDIS, Waynesborough, Pa. Filed Oct. 1, 1885. (Model.)



Claim.—1. The combination of the stack B, the outer cone, T, the inner cone of netting, and the intermediate flue, D, independent from the flue B, with the deflecting-ring C, located above the edge of the flue D, and the pendent netting-band E of said ring, substantially as and for the purpose described.

2. The combination of the cap G, having hangers J, with the deflecting-ring C, pivoted to the latter, substantially as and for the purpose described.

3. The combination of the cone T, the cap G, hinged to the latter, the deflecting-ring pivotally supported from the cap, and a cone of netting secured to the deflecting-ring, substantially as and for the purpose described.

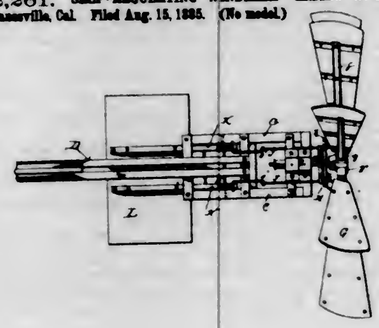
4. The combination of the deflecting-ring, its cone netting and transverse bar C^3, with the internal cone, *a*, external cone a^3, and the central rod the whole length of the cone netting, substantially as and for the purpose described.

5. The combination of the flue-jacket O, the conical inner flue, D, the outer cone, T, and connecting-ring S, with the removable stack-flue B, substantially as and for the purpose described.

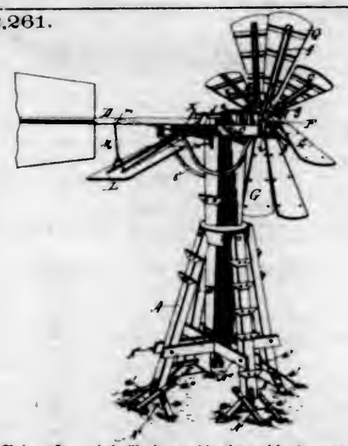
6. The combination of the stack B, the outer cone, T, and the inner cone of netting having a concavo-convex deflecting-ring secured to its upper edge, with the flue D, having a smoke-passage above its upper edge and a spark-passage under its lower edge, substantially as described.

7. The combination of the conical flue D, the internal cone netting, the deflecting-ring, and steadying-leg c^3, with the cap G, hinged to one side of the outer cone of the smoke-stack, substantially as and for the purpose described.

332,261. SELF-REGULATING WINDMILL. ANDREW W. LANE, Jeansville, Cal. Filed Aug. 15, 1885. (No model.)

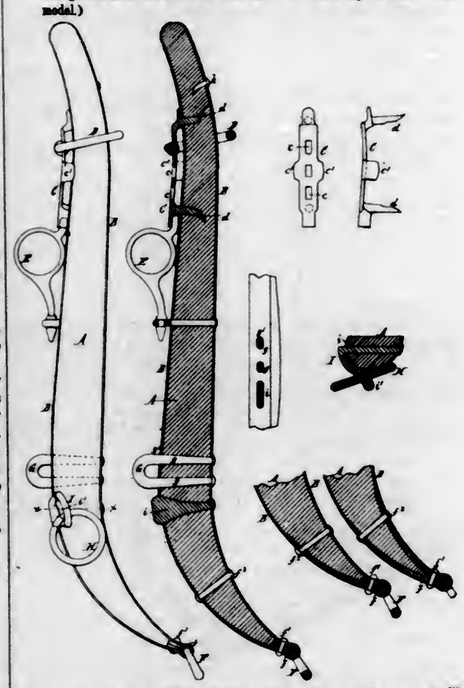


332,261.



Claim.—In a windmill, the combination, with the movable blades and spider connected and revolving therewith, of the collar described, consisting of two parts forming the eye and arms, one part being the complement of the other on each side and bolted together over the sleeve of the spider, and the wind-board having connections to the collar by means of rods, as described, and clamp-nuts placed over the ends of said rods to hold them in the collar and afford ready means for adjusting the rods, as set forth.

332,262. HAME. EMMET G. LATTA, Friendship, N. Y., assignor of five-sixths to Adrian C. Latta, same place, and Harvey D. Blakeslee and George J. Letchworth, both of Buffalo, N. Y. Filed Apr. 7, 1883. (No model.)



Claim.—1. A wooden hame bound with a continuous metallic strip, B, having its ends secured to the wooden body and protected by a metallic plate, substantially as set forth.

2. The combination, in a hame, of a wooden body, a movable hame-strap loop, F, a metallic binding, B, and an auxiliary fastening, *f*, bent around the inner bar of the loop F, between the latter and the binding B, substantially as set forth.

3. In a hame, the combination, with a wooden body, of a movable loop, F, a metallic binding, B, and an auxiliary fastening, *f*, bent around

the inner bar of the loop F, and having one end secured between the wooden body and the binding B, for strengthening the lower end of the hame, substantially as set forth.

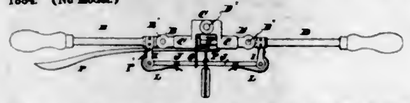
4. The combination, with a wooden body, A, of a continuous metallic binding-strip, B, and a plate, C, provided with clinch-pins *d*, whereby the plate and the ends of the binding-strip are secured to the wooden body, substantially as set forth.

5. The combination, with a wooden body, A, and a metallic binding-strip, B, of a staple, G, constructed with oval or flat-sided legs seated in vertically-elongated holes in the wooden body, and metallic binding, substantially as set forth.

6. The combination, with the hame-body, of a loop, I, bent against the front side of the hame-body and projecting forwardly therefrom, and provided with a shank, *i*, extending through the hame-body parallel with the draft-staple, and a breast-ring, H, hung in the loop I, substantially as set forth.

7. The combination, with a wooden body, A, of a continuous binding, B, and a plate, C, constructed with side flanges, *c'*, whereby the joint in the binding is covered, substantially as set forth.

332,263. BICYCLE. JULIAN LAUGHLIN, St. Louis, Mo. Filed May 1, 1884. (No model.)



Claim.—1. A bicycle having hinged handles and a hinged brake-lever adapted to be folded, as set forth.

2. In a bicycle, the combination, with the hinged handles, of a folding bar, springs to fold the bar, and a pawl to engage the bar, as set forth.

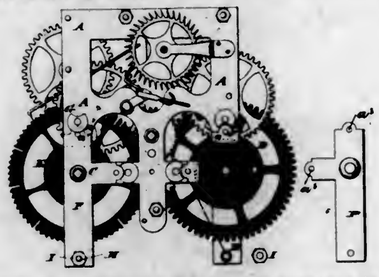
3. In a bicycle, the combination of the hinged handles, folding bar connecting the handles, springs to fold the bar, a pawl to engage the bar, and a counterbalance-weight to control the pawl, as set forth.

332,264. PIN-STEM. CHARLES I. LOVERIN, Brooklyn, N. Y. Filed Jan. 27, 1885. (No model.)



Claim.—The within-described improved pin-stem, of wrought metal, having a cylindrical or nearly cylindrical shaft with a sharp point at one end thereof, a broad heel end integral with said shaft, and a seamless hinge tube or barrel on the back of said heel end, integral therewith, and without solder, substantially as herein set forth.

332,265. CLOCK-FRAME. RUDOLPH W. LUCIUS, Mascoutah, Ill. Filed Nov. 26, 1883. (No model.)



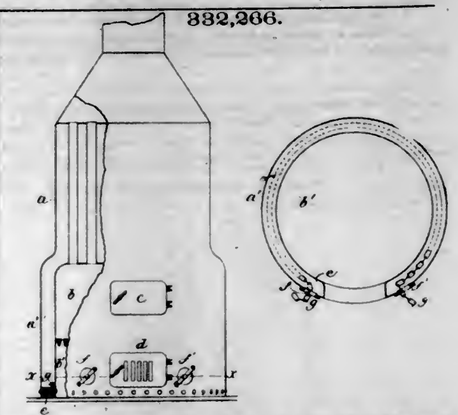
Claim.—1. In clock-movement, a main plate having lugs *a*, leaving shoulders a^3, a detachable portion, F, surrounding a spring-shaft and fitting against the shoulders, and a stud and button by which the detachable portion is secured to the main plate, as set forth.

2. In a clock-movement, the combination of a main plate having lugs *a*, leaving shoulders a^3, and studs *a'* on said lugs, detachable portion F, having eyes a^3 to receive the studs, and fitting against the shoulders, and a turn-button, G, on the main plate, to lock the detachable portion to the main plate, as set forth.

332,266. DEVICE FOR CLEANING WATER-LEGS OF BOILERS. CHARLES H. MANNING, Manchester, N. H. Filed Nov. 9, 1885. (No model.)

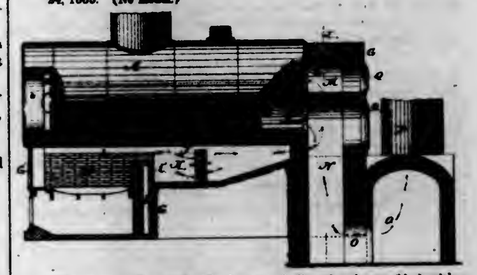
Claim.—A boiler provided with an opening and removable cover or plate therefor, and a flexible cleaning device contained within the boiler having its ends accessible through the said opening when the cover is removed, and of sufficient length to extend at both ends some

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distance outside the boiler, whereby it may be moved to and fro along the bottom of the boiler, substantially as and for the purpose set forth.

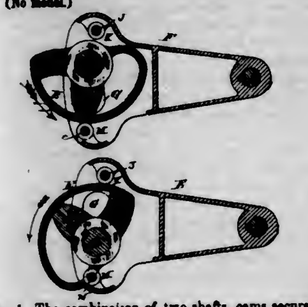
332,267. STEAM-BOILER. JOHN H. MABB, Albany, N. Y. Filed July 24, 1885. (No model.)



Claim.—1. In a cylindrical steam-boiler that is provided with a front connection, B, and a back connection, E, both being contained within said boiler, the combination, with an upper system of tubes, C, which have one end secured in the back head and the opposite end communicating with the front connection, B, of the lower system of tubes, D, which form a communication between the front connection, B, and back connection, E, all constructed and arranged to operate as herein specified.

2. The combination, with a cylindrical steam-boiler, A, having contained therein a front connection, B, upper system of tubes, C, lower system of tubes, D, and back connection, E, all as herein described, of the boiler-setting G, containing the two side flues, L, and rear flue, M, which form a communication between the combustion-chamber K and upper tubes, C, and the central flue, N, which forms a communication between the back connection, E, and the escape-flues, as and for the purpose herein specified.

332,268. CAM. PETER B. MATHIASON, St. Louis, Mo. Filed Nov. 12, 1885. (No model.)



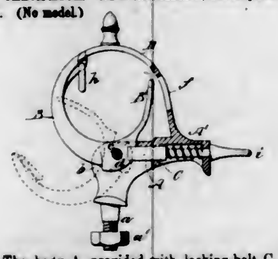
Claim.—1. The combination of two shafts, cams secured to one of the shafts and an arm secured to the other shaft and made hollow at its free end to receive the said cams and provided with friction-rollers, substantially as and for the purpose set forth.

2. The combination of the shafts A and B, arm F, and cams D and E, the arm being made hollow to receive the cam, substantially as and for the purpose set forth.

3. The combination of shafts A and B, arm F, secured to the shaft B, cams D and E, secured to the shaft A, and friction-rollers on the arm against which the cams bear, substantially as and for the purpose set forth.

4. In combination with an arm having a central bearing and bearings each side of the central bearing, a cam for pressing against the central bearing and cams for pressing against the side bearings, said cams being secured to an operating-shaft, substantially as and for the purpose set forth.

332,269. CHECK-HOOK. NEAL MCGOLDRICK, Brooklyn, N.Y. Filed Apr. 23, 1885. (No model.)



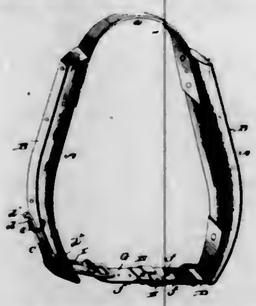
Claim.—1. The body A, provided with locking-bolt C, in combination with the hook B, pivoted to the body and formed with notch *d*, and provided with means, substantially as described, for attaching the line *g* to the point of the hook, substantially as described.

2. The hook B, pivoted in the body A, in combination with the plate D and locking-bolt C, substantially as described.

3. The hook B, formed with loop H and notch *d*, and pivoted in the body A and provided with the ring 4, in combination with locking-catch C and apertured plate D, substantially as described.

4. The plate D, notched at *e*, in combination with pivoted hook B and locking-bolt C, the hook being pointed, as at *e'*, substantially as and for the purposes set forth.

332,270. HAME-FASTENER. MURDOCK M. MCKINNON, Laurinburg, N. C. Filed Sept. 30, 1885. (No model.)



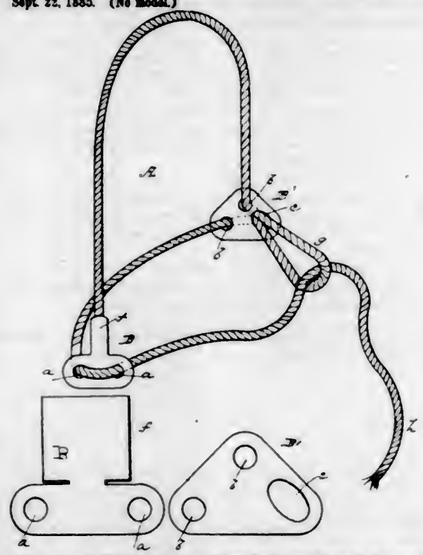
Claim.—1. In combination with the hame-sections and the operating-lever pivoted to one of the sections, a connecting-link pivotally connected to one of the hame-sections and made in two sections, one of which comprises two arms, a perforated plate fitted between said arms, and a sliding sleeve fitted over the arms of the sectional link, substantially as described.

2. In a hame-fastening, and in combination with the hame-sections a pivoted operating-lever, C, a pivoted loop, *e*, to engage said lever, a loop, D, pivoted to one of the hame-sections, a link, E, comprising a plate, F, having two spring-arms, having a stud and aperture, an apertured plate having a loop, I, and fitted between the spring-arms, and a sliding sleeve fitted over the spring-arms of the plate, all arranged and adapted to serve substantially as described.

3. The combination, with the hame-sections and an operating-lever, C, pivoted to one of the same, of a sectional connecting-link, E, pivoted to the other hame-section, one of the sections of said link having two clamping-arms, *f*, and the other section of the link adjustably held in position between the clamping-arms of its fellow section, substantially as described.

4. The combination, with the hame-sections and an operating-lever, C, pivoted to one of the sections, of a sectional connecting-link, E, pivotally connected to the free hame-section and detachably connected to the lever, one of the sections of said link having two spring-arms, *f*, and a sliding sleeve, H, fitted over the arms, and the other section of the link being adjustably clamped between the spring-arms and sleeve of its fellow section, substantially as described.

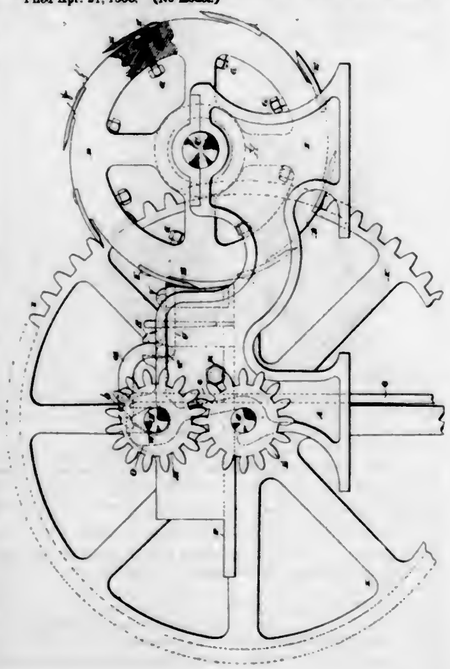
332,271. HALTER. ERNEST R. MICHAELIS, Sycamore, Ohio. Filed Sept. 22, 1885. (No model.)



Claim.—1. The halter herein described, consisting of the cheek-plates B B', the latter having the two openings *b b* and slot *c*, and the former provided with the holes *a a*, the rope arranged in the manner shown to form a halter and secured at its end to the cheek-plate B by means of the tubular extension *f*, the whole constructed and arranged as shown and described.

2. The combination and arrangement of the cheek-plates B B', the former provided with the holes *a a* and tubular extension *f*, and the latter with slot *c* and holes *b b* in the cheek-plate B', and the rope halter portion *h*, whereby the loop *g* is formed, all constructed as herein shown and specified.

332,272. STRAW-CUTTER. FREDERICK W. MILLER, Muskegon, Mich. Filed Apr. 21, 1885. (No model.)



Claim.—1. In a straw-cutter, the combination, with feed-rollers and a pivoted trough, substantially as described, of a drum having raised seats and shoulders on its peripheries, the cutters secured on said seats and bearing against the shoulders, and the screws for adjusting the cutters, all of the above parts combined and operating substantially as set forth.

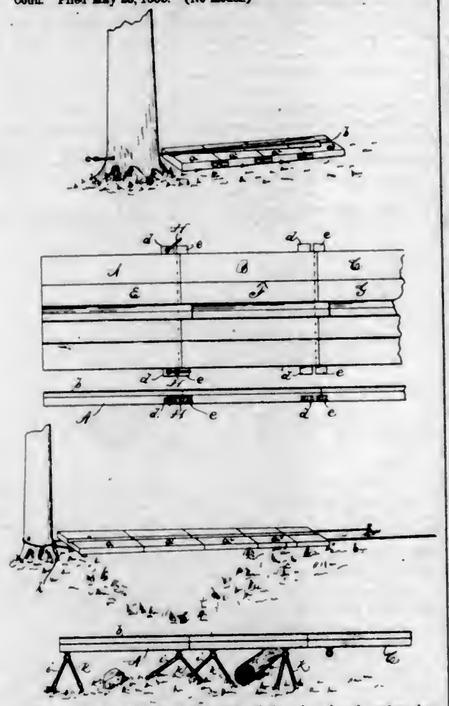
2. In a straw-cutting machine, the combination, with feed-rollers, of a trough pivoted beneath the upper roller, the cutter end of the trough being provided with a hinged apron for compressing the straw, substantially as set forth.

3. In a straw-cutting machine, the combination, with a vertically-yielding feed-roller and a vertically-yielding apron located at the cutter end of the trough, of a weighted bar for holding said roller and apron in depressed adjustment, substantially as set forth.

4. In a straw-cutter, the combination, with a cutter and a tilting feed-trough, of a vertically-movable apron secured to the trough.

5. In a straw-cutter, the combination, with a cutter and a feed-trough, of a vertically-movable feed-roller, a vertically-movable apron, levers bearing on the roller and apron, and a weighted rod secured to said levers, substantially as set forth.

332,273. GUIDE-TRACK FOR SAWS. PHILIP MILLER, Norwich, Conn. Filed May 23, 1885. (No model.)



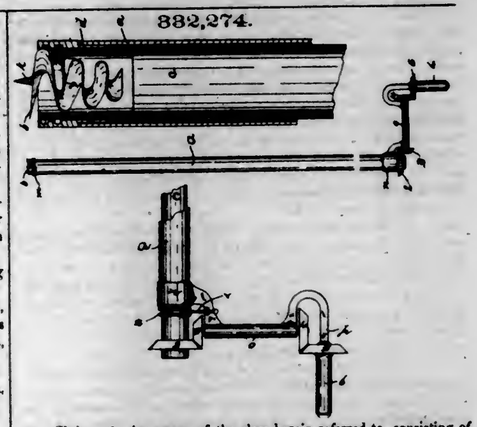
Claim.—1. A guide-track for saws of the class herein referred to, consisting of two or more sections detachably connected to each other and having a groove or channel formed through the longitudinal center of the complete track, substantially as described, and for the object set forth.

2. In combination with a guide-track formed of sections detachably connected to each other, an angle-iron or metallic groove formed in sections and secured to said sectional track in its longitudinal center, said metallic groove being extended at one end to overlap the track-section next adjoining, as herein described, and for the object specified.

3. As a support for guide-tracks of the class herein referred to, and in combination with such a track, a rope whose ends are so secured that a double support is formed extending outward from the tree to be cut, on which support the guide-track may be suspended, substantially as described.

4. In combination with a guide-track formed of a series of sections detachably connected to each other and grooved throughout its longitudinal center, a series of legs hinged to said track and capable of adjustment to uneven surfaces, as herein described.

332,274. HOLLOW AUGER. PHILIP MILLER, Norwich, Conn. Filed Sept. 14, 1885. (No model.)



Claim.—1. An auger of the class herein referred to, consisting of an outer barrel or shell, to which is secured a cutting or boring head, and an inner non-rotatable tube adapted to receive the chips from said cutting or boring head and discharge the same through its free end, substantially as described.

2. In combination with an outer shell and a cutting-head of the form described, an inner removable tube concentric with said outer shell, said inner shell being held from rotating by a system of gears and crank, substantially as described, and for the object specified.

3. In combination with an outer shell having secured thereto a cutting-head of the form described, an inner removable tube concentric with said outer shell and having the end which enters the cutting-head slightly reduced in diameter, as described, to form a throat, through which the core of chips enters said inner tube.

4. In combination with the outer shell, *a*, a cutting-head of the form described, secured to said outer shell, and the inner removable tube, *c*, having the throat-section *d*, said throat-section being provided with a series of internal longitudinal V-shaped ribs, as described, and for the purpose specified.

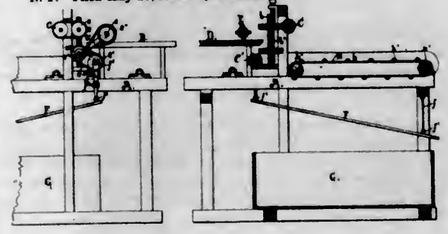
5. The tube *a*, having secured to one end a suitable cutting-head and to the opposite end a fixed collar, *n*, having an integral crank-frame, *o p*, as described, an inner tube, *c*, concentric with tube *a*, carrying on its free end a beveled gear, 2, a shaft adapted to rotate within section *o* of the crank-frame, carrying at one end a gear, which engages gear 2, and at its opposite end a beveled gear, 4, as described, and a tube adapted to rotate on section *p* of said crank-frame, carrying a gear, 5, adapted to engage said gear 4, all of said elements being combined substantially as and for the object specified.

6. In combination with the outer shell, *a*, and a cutting-head, substantially as described, secured to said shell, a counterbored collar secured to said shell at the end opposite to said cutting-head, and an inner tube of the form described, having a flange capable of engagement with said counterbored collar to hold the inner tube concentric with the outer shell.

7. In combination with shell *a*, collar *n*, frame *o p*, and a latch pivoted in said frame, substantially as described, the inner tube, *c*, having at its free end a flanged collar capable of engagement with said latch, in the manner specified, and for the purpose stated.

8. An outer shell forming the barrel of the auger, a cutting-head secured thereto, having both a cutting-lip, *b*, and twist for conveying the chips into the tube, as described, and provided, also, with a pod-cutter capable of producing a cut whose diameter is slightly greater than the diameter of the shell *a*, and whose inner wall is so formed that the chip thus cut is forced inward and sandwiched between the folds of the flat chip produced by lip *b*, all being combined substantially as and for the objects set forth.

332,275. HOP-STRIPPING MACHINE. E. DELOSS MILLS, Clinton, N. Y. Filed May 23, 1885. (No model.)



Claim.—1. The combination of two strippers, each constructed with wings and brushes at their outer edges, with means whereby they are rotated at the same peripheral speed, and the brushes brought substantially in contact with each other at each revolution of the same.

2. The combination of two strippers constructed with an equal number of wings and brushes at their outer edges, and adapted to be rotated in opposite directions, and so arranged that the brushes contact at each revolution.

3. In a hop-picking machine, the strippers provided with brushes, said strippers rotating in opposite directions and practically contacting with each other as the machine is operated, in combination with clearers for keeping the brushes clean.

4. The combination, with two strippers constructed with brushes rotated in opposite directions, substantially in contact with each other, as described, of two clearing-rolls each constructed and rotated in the opposite direction from its companion stripper and in contact therewith.

5. The combination, with the rotating strippers constructed substantially as described, of the clearing-rolls, with wire-cloth held rigidly thereto, each clearing-roll rotating in an opposite direction from its companion stripper and in contact therewith.

6. The combination of two strippers constructed and mounted to be rotated in opposite direction, substantially in contact with each other, with a feeding device in front of the stripping-rolls constructed to feed the vine to the strippers, the feeding device moving the vine in the same direction of the strippers and retaining the same in continuous motion at a lower speed than the strippers.

7. A hop-stripping machine comprising the strippers, the clearing-rolls, an endless carrier for receiving the vines from the strippers and carrying the same from the machine, the vibrating screen, and mechanism for moving the same.

332,276. BUTTON. Lewis Morse, North Attleborough, Mass. Filed Sept. 23, 1885. (No model.)



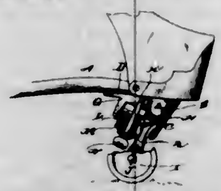
Claim.—1. The combination, with a button-head having a post and spring, of a shoe pivoted at one end to the post and divided transversely from end to end, as specified, into two shoe-sections, each adapted to turn on their common axis and pass the other in either direction, substantially as and for the purpose set forth.

2. A button-head having a hollow post containing a spring and block or follower, combined with a shoe pivoted at one end to the post and divided transversely from end to end into two shoe-sections, each adapted to turn on their common axis and pass the other in either direction, as and for the purpose set forth.

3. A button-head having a substantially straight hollow post and a shoe pivoted to said post, combined with a spring substantially of C form, and arranged with its ends adjacent to each other within the hollow post to act on the shoe, as and for the purpose set forth.

4. A button-head having a hollow post and a shoe pivoted to said post, combined with a block located within the hollow post to bear against the shoe, and a spring, substantially of C form, said spring arranged in the hollow post, with its center bearing against the head of the buttons and its ends abutting the block, substantially as set forth.

332,277. ROLLER-SKATE. Thomas Mulvin, Union City, Pa. Filed Oct. 10, 1884. (No model.)



Claim.—1. In a roller-skate, the combination, with the foot-rest, of the trucks secured to the same, and comprising a base portion, a pivoted roller-carrier, a rubber block or cushion, and a swinging link arranged and adapted, substantially as described, to hold the carrier in place, as set forth.

2. In a roller-skate, the herein-described truck, comprising the main portion or base having a depending hanger and slotted post, the roller-carrier having pivots fitted in the hanger and post, a cushion interposed between the carrier and the base, a swinging link for inclosing the front end of the carrier, and a cushion interposed between the link and the carrier, as set forth.

3. In a roller-skate, the herein-described truck, comprising a roller-carrier pivoted in the main portion thereof, a rubber block interposed between the carrier and the said main portion, a swinging link for holding the front end of the carrier in place, and a rubber block interposed between the link and the carrier, as set forth.

4. In a roller-skate, the herein-described truck, comprising a pivoted roller-carrier, a cushion for each end of the same, and a swinging supporting-link, as set forth.

5. In a roller-skate, the herein-described truck, comprising a pivoted roller-carrier, a cushion for the same, and a supporting-link, the latter being adapted to be swung outward, for the purpose set forth.

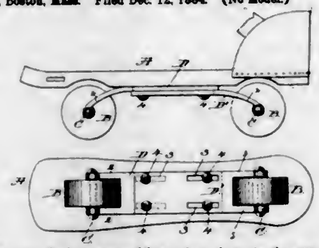
6. In a roller-skate, the herein-described truck, comprising a pivoted roller-carrier, a cushion for the same, and a supporting-link, the latter having suitable means for holding it in position, and yet capable of being detached or swung outward, as set forth.

7. In a roller-skate, the herein-described truck, comprising a pivoted roller-carrier having one of its pivots fitting in open slotted bearings, a cushion for the rear end of the carrier, a cushion for the front end, and a swinging link arranged to hold the carrier in position and prevent the displacement of the cushions, as set forth.

8. In a roller-skate, the herein-described truck, comprising the main or base portion having a depending hanger and an open slotted post, the roller-carrier having its pivots fitting, respectively, in said hanger and post, a cushion interposed between the carrier and the base or main portion, and means, substantially as described, for holding the pivot of the carrier in the slotted bearing, for the purpose set forth.

9. In a roller-skate, the herein-described truck, comprising the main or base portion having a depending hanger and slotted post, the roller-carrier having its pivots fitting, respectively, in said hanger and post, a cushion interposed between the rear end of the carrier and the base, a cushion at the front end of the carrier, and means, substantially as described, for holding the cushion and carrier in position, as and for the purpose set forth.

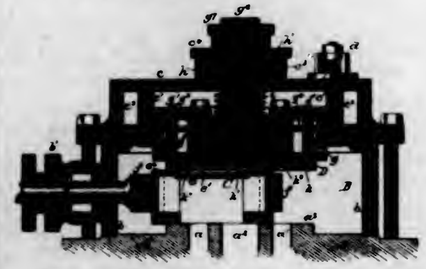
332,278. ROLLER-SKATE. Francis J. Nelson and Patrick C. Donovan, Boston, Mass. Filed Dec. 12, 1884. (No model.)



Claim.—1. A skate comprising a foot-plate, A, the attached metal plate or spring having its ends provided with arms 2 2 to form bearings for the axles of the rollers, the axles C, provided with the squared portions 8 to engage the bearings in the arms and prevent rotation of said axles, and the rollers B, rotating on said axles and arranged in the longitudinally-central line of the skate, substantially as shown and described.

2. The combination, with the foot-plate, of the rollers and the bifurcated spring made in two parts, each made adjustable longitudinally with relation to the other, substantially as described.

332,279. BALANCED SLIDE-VALVE. John D. Olds, Fort Wayne, Ind. Filed Mar. 25, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a balance-plate having a packed cylindrical piston at its back within a cylinder, non-accessible either to live or to exhaust steam, a slide-box valve, steam spaces or chambers between said valve and plate, and passages extending through the valve toward its face and communicating with said chambers during the sliding movement of the valve.

2. The combination, substantially as hereinbefore described, of a balance-plate having at its back a packed cylindrical piston within a cylinder, and also having at its face three recesses to serve as parallel steam spaces or chambers, a three-port valve-seat, and a slide-valve recessed at its back and provided with one or more passages from its back recess to its interior, and one or more passages from its face to its back outside of its back recess.

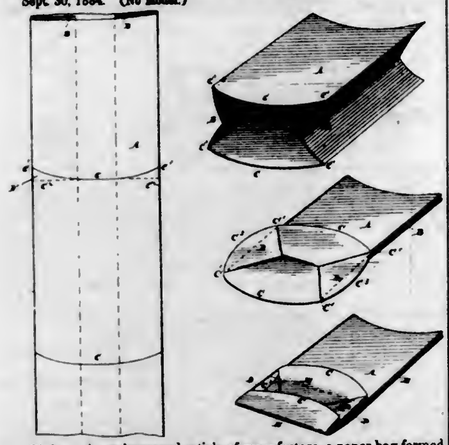
3. The combination of a steam-chest having a circular chamber or cylinder, a slide-valve, and a balance-plate having a piston provided with metallic packing, and with steam-spaces back of said packing which communicate with the interior of the steam-chest, substantially as described, whereby the pressure of the packing is graduated to the pressure of steam in the chest, and said balance-plate enabled to freely tilt or rock during its adjustment, as set forth.

4. The combination, with a box-slide valve, a steam-chest having a suitable cylinder in its side or cover, and a balance-plate having a steam-packed piston within said cylinder and capable of tilting in all directions therein, of a partially-threaded central rigid stem on said piston, which extends loosely through the side or cover of the steam-chest, and is provided with a packing-gland, and a nut, substantially as described, whereby the pressure of the plate upon the valve is limited without impairing its capacity to tilt in all directions in adjusting itself to the coincident surface of the valve, as set forth.

5. The combination, with a steam-chest containing a balance-plate piston and metallic packing, of one or more normally-open check-valves, which will close under the working-pressure of steam, substantially as described, whereby air is readily discharged from the chest and the metallic parts therein speedily heated and expanded with uniformity, as set forth.

6. The combination, with a steam-chest and a cylinder therein for receiving the piston, of a balance-plate and an outer shell for affording an annular steam-space between it and said cylinder, substantially as described, whereby said cylinder and its contents can be maintained at a high temperature and condensation obviated therein, as set forth.

332,280. PAPER BAG. John P. Onderdonk, Philadelphia, Pa. Filed Sept. 30, 1884. (No model.)



Claim.—As an improved article of manufacture, a paper bag formed from a tube having bellows-folds, in which the bottom end of the tube has its outer longitudinal edges severed by a cut which inclines from said edges toward the center of the tube and the opposite free edges thus formed folded over toward each other, the edges corresponding with the two faces of the tube lapping over each other, and secured by paste or its equivalent, substantially as and for the purpose specified.

332,281. NOZZLE FOR BOTTLES. Stacy B. Opdyke, New Haven, Conn. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination of a cork tube adapted to fit the mouth of a bottle with a nozzle having its lower end embedded in the upper end of said tube, substantially as set forth.

2. A nozzle having an external annular flange for resting on the mouth of a bottle and a cylindrical part below said flange, in combination with a tube which is grooved to receive said cylindrical part of the nozzle, said tube fitting within the neck of the bottle, substantially as set forth.

3. The combination of collar B and nozzle C, inserted in the upper end thereof, with stopper E, having a cork washer for resting on the edge of said nozzle, and a stem extending down within said tube, substantially as set forth.

4. The stopper E, provided with a plate, H, having a peripheral flange, *h*, and a cork washer or disk, G, which fills the space within said flange and is adapted to rest on the upper edge of the nozzle, substantially as set forth.

5. A cork tube provided with a slot or groove, *b*, in its upper end, in combination with a nozzle inserted into said groove or slot.

332,282. VEHICLE-DASH. Abijah S. Parker, Cincinnati, Ohio. Filed May 18, 1885. (No model.)

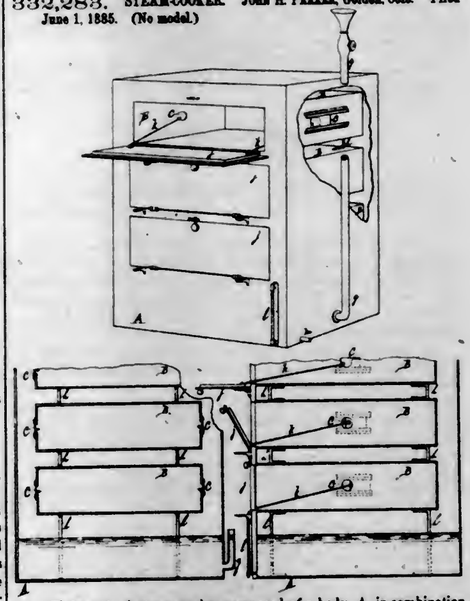


Claim.—1. The combination, with the lower rail of a dash and its attaching-foot, of a locking-nut recessed in said lower rail and covered by the leather covering of the dash, substantially as described.

2. The combination, with the slotted lower rail of a dash and its attaching-foot, of an adjustable locking-nut recessed in said lower rail and covered by the leather covering of the dash, substantially as described.

3. The combination of the lower rail, B, provided with slots D and ribs *a*, the nut C, provided with recesses *b*, bolt E, and foot F, substantially as described.

332,283. STEAM-COOKER. John H. Parker, Golden, Colo. Filed June 1, 1885. (No model.)



Claim.—1. A steam-cooker composed of a body, A, in combination with the ovens B, the valves C, the valve-rods *k*, the doors *j*, and the pipe *g*, all substantially as described, and for the purposes set forth.

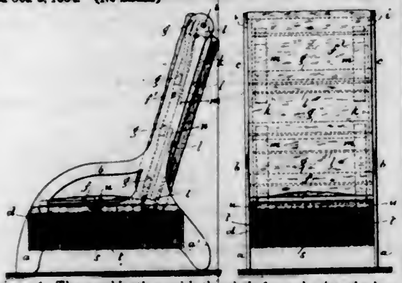
2. The valves C in a steam-cooker, working in combination with the valve-rods *k*, the doors *j*, the ovens B, the body A, and the pipe *g*, substantially as described, and for the purposes set forth.

332,284. TOBACCO HOLDER AND SHAVER. Samuel R. Parks, Pawtucket, R. I. Filed June 25, 1884. (No model.)



Claim.—A plug-tobacco cutter consisting of an upper chamber, *a*, for holding the cut tobacco, having the movable lid *c*, adjustable knife *h*, and rigid connecting threaded rod *k*, in combination with a lower chamber, *b*, for carrying the plug, having the described shoulder and socket for the rod *k*, and carrying within it and upon said rod the attached follower *m*, all constructed in the manner and used for the purposes substantially as set forth.

332,285. CONVERTIBLE CHAIR. JOHN K. PERLEY, New York, N. Y. Filed Oct. 3, 1884. (No model.)



Claim.—1. The combination, with the chair-frame having the legs and back, of the seat-frame adjustable to form an incline head-rest, the extension-frame, the supporting leg-frames, and the pivots by which the respective parts are connected, substantially as set forth.

2. The receptacle for bedding, formed of open wire-work, in combination with the chair-frame, to which it is connected, and the removable seat-frame, substantially as set forth.

3. The chair-frame, in combination with the receptacle formed of open wire-work, the removable seat-frame, and the swinging ledges for supporting the seat-frame, substantially as set forth.

332,286. ELECTRIC SAFETY-FUSE. GUSTAV FRANKENICHER, Hartford, Conn., assignor to the Schuyler Electric Light Company. Filed July 3, 1885. (No model.)



Claim.—1. A flexible and fusible conductor for electric circuits, mounted upon and bent around under the edges of a non-conducting strip.

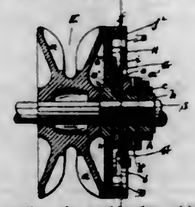
2. The combination, with the mica base, of the fusible conducting-strip having its ends bent around under the mica sheet.

3. The combination, in a safety electric-fuse box, of contact-terminals in the bottom of the box, a fusible conductor resting upon and with its ends in contact with said terminals, and a box-cover pressing directly or indirectly upon the ends of the fusible conductor.

4. In a safety electric-fuse box, a cover-plate having an opening at its center over the fuse, in combination with the glass cap covering the fuse and projecting up into the opening.

5. The combination of the contact-terminals on the box, the fuse having its ends turned down under the edges of the non-conducting strip, the glass cap-piece or cover, and the box-cover pressing the parts into contact, as described.

332,287. LOCKING-GEAR FOR WINDLASSES. CHARLES A. POTTER, Providence, R. I. Filed July 1, 1885. (No model.)



Claim.—1. In a windlass, the combination, with a wild-cat loosely mounted on the driving-shaft, of a driving-head rigidly secured to the shaft and having one or more locking-blocks, each connected with a strap or band encircling an eccentric loosely mounted on the main shaft or hub of the driving-head, said eccentric or eccentrics being provided with means for rotating or operating the same, whereby the blocks are forced outwardly or radially, substantially as shown, and for the purpose hereinbefore set forth.

2. In a ship's windlass having a loosely-mounted wild-cat and a driving-head rigidly secured to the main shaft, the combination therewith of one or more locking-blocks mounted within the head, each block being connected with and adapted to be operated by means of an eccentric loosely mounted on said shaft, substantially as shown and set forth, and means, substantially as shown and described, for operating the eccentrics.

3. The casting or piece A, substantially as herein shown and described, the same consisting of the oppositely-arranged eccentrics *e' e* and circular rim or ring *a'*, provided with openings A^4, the whole adapted to be loosely mounted on the shaft or driving-head of a windlass, as set forth.

4. The locking device for ship's windlasses herein described, consisting of one or more locking-blocks, B, each having a stem, *b*, one or more loosely-mounted eccentrics provided with an apertured rim, *a'*, and straps G, each connecting with said stem by means of the pin or bolt *i*, the whole combined and arranged within the driving-head of the windlass, whereby said eccentrics, &c., are adapted to move the blocks B in an outward or radial direction, substantially as and for the purpose hereinbefore set forth.

5. The improved locking device herein described, substantially as shown in Fig. 7, consisting of one or more locking-keys, B^4, one or more eccentrics loosely mounted on the hub of the driving-head H, said eccentric being provided with an apertured rim, *a'*, and straps or links, each connecting with said keys B^4, the whole combined and arranged within the driving head of the windlass, whereby said eccentrics are adapted to move the locking keys or blocks in an outward or radial direction, for the purpose of interlocking with lugs formed on the rim or edge of the loosely-mounted wild-cat, as set forth.

6. In a ship's windlass, the combination, with the loosely-mounted wild-cat provided with the projecting circular flange, of a driving-head secured to the shaft, two oppositely-arranged eccentrics (having equal throw) provided with a series of pockets, A^4, and loosely mounted on said shaft or hub of the driving-head, a strap encircling each eccentric, and friction blocks or keys connected with or forming a part of the strap, said blocks or keys being fitted into pockets or grooves formed in the driving-head, the whole arranged and adapted for use, substantially as shown, and hereinbefore set forth.

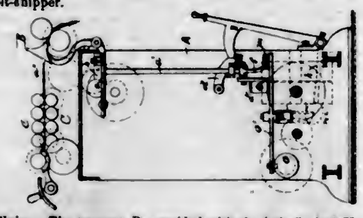
332,288. NUT-LOCK. GEORGE P. ROSE, Fentonville, Mich. Filed Mar. 7, 1885. (No model.)



Claim.—The combination of the fish-plate, provided around its bolt-apertures with a series of depressions having an inclined base-wall and a straight lateral wall, as set forth, the nut B, having around its inner edge a series of ratchet-teeth decreasing in thickness from base to point, and the metallic washer having one side provided with corrugations to enter the depressions of the fish-plate and its opposite side provided with perforations to receive the teeth of the nut, the whole adapted to serve in connection with railway-rails, substantially as specified.

332,289. STOP-MOTION FOR RAILWAY-HEADS, &c. ARNOLD SCHAER, Phœnix, R. I. Filed Jan. 9, 1884. (No model.)

Brief.—By any material variation in the thickness of the sliver, the end of a lever swinging horizontally upon and pivoted to the top of a lever which is constantly reciprocated vertically is brought under a projection on a latch-lever, which, being raised, releases the weight-actuated belt-shipper.

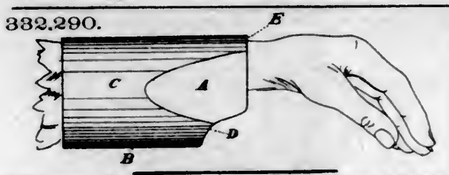


Claim.—The trumpet B, provided with the hub *j'*, shaft V, collar *j*, and lever *a*, having the arm *a'*, in combination with the lever *c*, lever *d*, having projections *f''* and *g'*, knee-lever *f*, bar *m*, cam *o*, lever *o'*, arm *g*, lever *h*, weight n^2, and shipper *g'*, substantially as and for the purpose set forth.

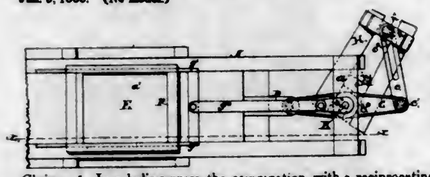
332,290. EXERCISING DEVICE FOR MUSICIANS. AUGUST P. SCHUERMAN, Kansas City, Mo. Filed Mar. 9, 1885. (No model.)

Claim.—As a new article of manufacture, an exercising device for musicians, consisting of a cylinder of described construction having flattened sides on one end thereof, with a recess on the bottom thereof at the same end, substantially as shown and described.

332,290.



332,291. BALING-PRESS. WILLIAM W. SEELEY, Albany, N. Y. Filed Jan. 5, 1885. (No model.)



Claim.—1. In a baling-press, the combination, with a reciprocating plunger, E, of the vertical rocking shaft B, having the working-beam C secured thereto, the said rocking shaft also forming a pivotal center for the operating-sweep H, which has a free motion thereon, one end of the working-beam C being connected by the rod D to the plunger E, and the opposite end being constantly connected by the slotted link c to the sweep H, all being constructed and arranged to operate as and for the purpose herein specified.

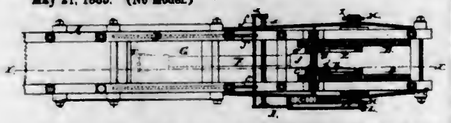
2. The combination, with the shaft B, provided with the arm b^3, of the roller G, journaled in the jointed levers *g*, as herein described, the slides *g'*, and rods g^2 and g^3, constructed and arranged to operate as herein specified.

3. In a baling-press, the roller G, arranged in the rearmost end of the feeding-opening *a'*, and adapted to be reciprocated vertically by means of a positive motion, as and for the purpose specified.

4. The detachable sweep H, provided with a tie-plate, *h*, having a notch, *h'*, fitted to engage with the driving-shaft of the press, and having a segmental flange, h^3, which engages with a fixed segmental flange, *b'*, for the purpose of securing said sweep to the press, as herein specified.

5. In a baling-press, the combination, with a horizontal pressing-chamber and a horizontally-reciprocating plunger, of a vertical rocking shaft having a working-beam secured thereto, as herein described, one end of said working-beam being connected by a pitman to the said reciprocating plunger, and the opposite end of said working-beam being constantly connected, by means of a slotted link, to the sweep for operating the press, the said sweep being freely fulcrumed on the rocking shaft, which carries the aforesaid working-beam, all being constructed and arranged to operate as herein specified.

332,292. BALING-PRESS. WILLIAM W. SEELEY, Albany, N. Y. Filed May 21, 1885. (No model.)



Claim.—1. In a baling-press, the combination, with the driving-wheels D, loosely fitted on the shafts *d*, and the cranks E, secured to the inner ends of said shafts, so that said wheels and cranks will rotate on the same axial centers, the wheels D being provided with snugs *d''*, that are adapted to engage with the cranks E and move them, as herein described, of one or more ratchet-wheels, H, and corresponding pawls, I, all being constructed and arranged to operate as herein specified.

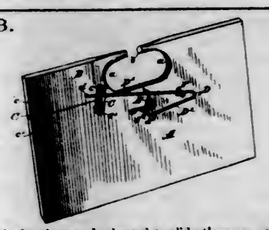
2. In a baling-press, the combination, with the driving-wheels D and cranks E, that are all arranged to rotate on the same axial center line, with either one or both of said wheels fitted to turn freely on the shafts *d*, the said wheels being provided with snugs *d''*, which are adapted to engage with the cranks E, as herein described, of the reciprocating plunger G, connected by the pitman F to the cranks E, one or more ratchet-wheels, H, and a pawl or pawls, I, all constructed and arranged to operate as herein specified.

3. In a baling-press, the combination, with the gear-wheels D, shafts *d*, and cranks E, of the crank L, rocker-shaft K, toggle-joint *j'*, and reciprocating bar J, all being connected and arranged to operate as herein specified.

332,293. DEVICE FOR WEANING CALVES. HENRY SHANK and WILLIAM E. MEEK, Colorado Springs, Colo. Filed Aug. 13, 1885. (No model.)

Claim.—1. In a device for weaning calves, the combination of a body-piece having a rigid jaw formed therewith, a block pivotally connected to the body-piece and adapted to slide thereon, and a spring having two arms, one connected to the sliding block and the other free to slide upon the body-piece and exerting pressure on said block to hold it normally in its closed position, substantially as described.

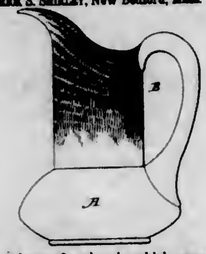
332,293.



2. In a device for weaning calves, the combination of a body-piece having a cut-away portion to form a jaw, *b*, a block, B, adapted to slide on the body-piece A, and carrying a jaw, *b'*, links C, pivotally connected to the block and body-piece, a spring, D, having two arms, D' D^2, and a guide, E, substantially as and for the purpose described.

3. In a device for weaning calves, the combination of a body-piece having a rigid jaw, a block, B, provided with a similar jaw mounted on the said body-piece and pivotally connected thereto, a sprig having two arms, the longer, D', thereof being connected at its forward end to the block B and held to slide in an inclined position upon the body-piece by the staple F, the shorter arm, D^2, thereof being bent to provide a catch, *d''*, and a finger-piece, d^2, and a guide, E, attached to the body-piece and embracing the arms of the said spring, substantially as described.

332,294. MANUFACTURE OF GLASS AND ARTICLES THEREFROM. FREDERICK S. SHIRLEY, New Bedford, Mass. Filed Sept. 30, 1885. (Specimens.)



Claim.—1. A mixture for glass in which uranium oxide or its described equivalent coloring agents and prepared gold are both added to glass batch containing alumina or its equivalents, for producing a translucent glass, substantially as described.

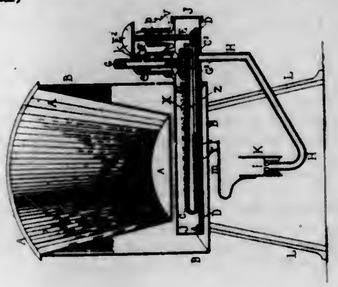
2. A mixture for producing colored translucent glassware, in which prepared gold and two or more distinctive coloring agents are used, in combination with alumina or its equivalents, substantially as specified.

3. As a new article of manufacture, an article of glassware of a translucent material having a body-color due to a coloring agent, such as is above described, and a developed color shading into the original body-color, substantially as described.

4. As a new article of manufacture, an article of glassware formed from translucent material having a body-color due to a coloring agent such as is above described, and a developed color shading into the original body-color and having a roughened or lusterless surface, substantially as described.

5. As a new manufacture, an article of glassware having one portion of a given color or tint shading into another color or tint, and having a roughened or lusterless surface, similar to a peach-skin, substantially as shown and described.

332,295. AUTOMATIC HEAT-REGULATOR FOR COOKING-VESSELS, &c. ANDREW J. SIMPSON, Lowell, Mass. Filed Apr. 21, 1885. (No model.)



Claim.—1. The automatic gas-supplying and heat-regulating device consisting of the tube G G^2, screw-plug F, and cap *e*, in combination with the laminated cut-off bar C C^2 and seat *g*, chamber J, the outlet-pipe H, and the burning-orifice I, operating as described, and for the purpose or purposes specified.

2. In a cooking or warming vessel, the combination of the adjustable bar D, laminated cut-off bar C C^2, and the adjusting and index stem E E^2, operating as described, in combination with the passages G, G^2, J, and H, and burner I, and for the purpose or purposes specified.

3. The automatic heat-regulating cooking and warming vessel consisting of the vessel B, in combination with the chamber J, adjustable bar D, laminated cut-off bar C C^2, seat *g*, adjusting-stem and index E E^2, nipple V, cap *b*, tube G G^2, cap *e*, screw-plug F, outlet-pipe H, and burning-orifice I, operating as described, and for the purpose or purposes specified.

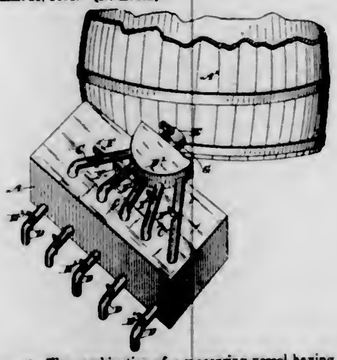
4. The automatic heat-regulating double cooking and warming vessel, consisting of the vessel A and B, in combination with the chamber J, adjustable bar D, laminated cut-off bar C C^2, seat *g*, adjusting-stem and index E E^2, nipple V, cap *b*, tube G G^2, cap *e*, screw-plug F, outlet-pipe H, and burning-orifice I, operating as described, and for the purpose or purposes specified.

332,296. COTTON-GIN RIB. James A. Smiley, Memphis, Tenn., assignor to Smiley, Smith & Co., same place. Filed Oct. 2, 1885. (No model.)



Claim.—A cotton-gin rib provided on its upper surface, at the point where the cotton passes between the ribs, with an enlargement extending the entire width of the rib, the said enlargement having slightly-rounded side edges, substantially as set forth.

332,297. MEASURING-VESSEL. Emil R. Starch, Corning, N. Y. Filed Mar. 25, 1885. (No model.)



Claim.—1. The combination of a measuring-vessel having a series of different-sized measuring-cans, each connected by a separate pipe to a reservoir and provided with a stop-cock, with the main pipe leading from the reservoir to the tank or barrel, substantially as shown and described.

2. In a measuring-vessel, the tank or barrel connected by a main pipe to and in combination with a reservoir, having a series of pipes provided with stop-cocks radiating therefrom and entering the measuring-cans, each of the latter having an emptying-pipe, substantially as shown and described.

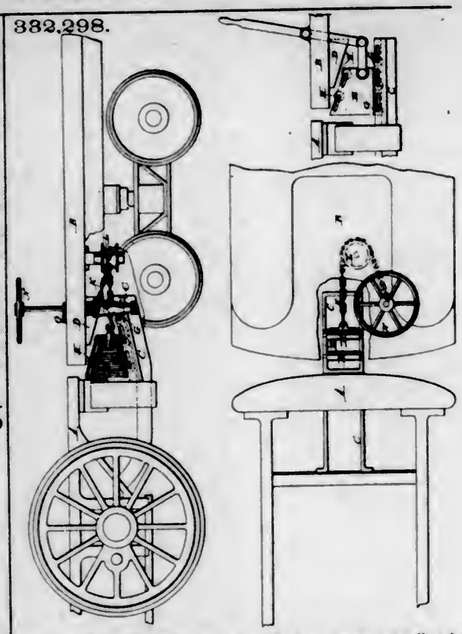
332,298. TRACTION-INCREASER FOR LOCOMOTIVES. John J. Steber, Peoria, Ill. Filed June 23, 1885. (No model.)

Claim.—1. The combination of the engine and the tender having overlapping surfaces, an intermediate wedge, and means, substantially as described, for effecting the longitudinal adjustment of said wedge.

2. In combination with the engine and tender provided with inclined arms, the intermediate wedge, and means, substantially as described, for effecting the longitudinal adjustment thereof.

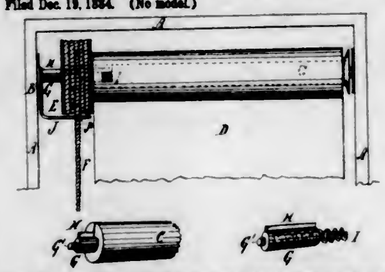
3. The combination of the engine-frame with the rearwardly-projecting arm C, the tender-frame having the overlying plate or arm D, the intermediate wedge, E, the adjusting-chain, and a winding device for said chain, substantially as described.

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4. The engine-frame, provided with a rearwardly-extending inclined arm, C, having anti-friction rollers G therein, the wedge E, mounted upon said rollers and provided with rollers H, the tender, provided with plate D, the conical winding-drum, and the chain extending from said drum to the wedge.

332,299. AUTOMATIC SHADE-ROLLER. George W. Stewart, New York, N. Y., assignor of two-thirds to Stephen J. Cox, same place. Filed Dec. 19, 1884. (No model.)



Claim.—1. The combination of the hollow cylinder-lengthening device G, provided with flange H, and having its outer end closed, and there provided with pivot or spindle G', the coiled spring I, fitting into cylinder G, its one end abutting against the closed end or head thereof, and the pulley E and roller C, into the center of which the device G is inserted, they being both held by flange H thereto, essentially as shown and described.

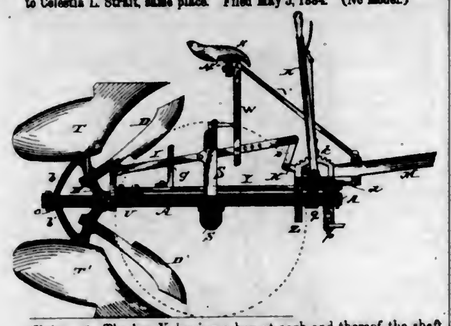
2. In combination with roller C, having one end provided with pulley E, the hollow cylinder-lengthening device G, inserted lengthwise through pulley E and into roller C, and provided with flange H outside and coiled spring I inside, its outer end covered and provided with spindle G', and arranged to operate substantially as shown and described.

332,300. BRANDING-IRON. August Stollstorff, Chicago, Ill. Filed May 23, 1884. (No model.)



Claim.—Branding-iron A, provided with branding-letters on its top and bottom faces, and with sockets *a* in its side faces, as and for the purpose set forth.

332,301. SULKY-PLOW. William Strait, Elmira, N. Y., assignor to Celestia L. Strait, same place. Filed May 5, 1884. (No model.)



Claim.—1. The bar Y, having a box at each end thereof, the shaft A, and draw-head *p*, all oscillating vertically, substantially as set forth.

2. In a side-hill or revolving plow, the standards B B', provided with means for separate or independent lateral adjustment upon their shaft or axle, whereby either plow may be set with its point to or from the land, substantially as set forth.

3. In a revolving plow, the standards B B', in combination with the axle and wheels, and an adjustable locking device, whereby the plow-standards may be locked in a vertical position while either wheel runs in the furrow, substantially as set forth.

4. In a revolving plow, the adjustable notch or lever-lock *f* upon the slotted arch F, in combination with the standards, for the purpose of stopping the lever U in proper position when the plows are reversed, substantially as set forth.

5. The rocking lever or bar I, pivoted upon the arch of the axle S, in combination with the seat-support W and seat-bar N, for the purpose of bringing the weight of the driver to assist in raising and lowering the plows, substantially as set forth.

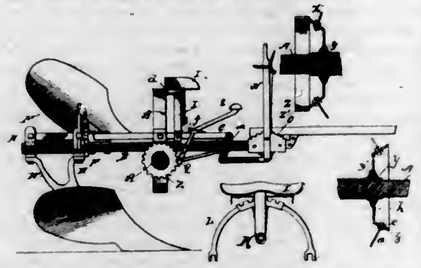
6. The combination of the crank-lever K, having arm K', connected by link *i* to lever I, which is pivoted to arch S of the axle and also to the seat-support W, for the purpose of raising and lowering the plows and holding them in working position, substantially as set forth.

7. The combination, with the bar Y and rocking lever I, of the slotted guide *g* and plow-shaft A, for the purpose of holding the plows and preventing them from twisting, substantially as set forth.

8. In combination with a side-hill plow, the inclined wheel-spindles, for the purpose of inclining the wheels inward at the bottom, substantially as and for the purposes set forth.

9. In combination with a revolving plow, the tilting seat, for the purpose of adjusting the same when one wheel is taken from the furrow and the other is put into the furrow, substantially as set forth.

332,302. PLOW. William Strait, Elmira, N. Y., assignor to Celestia L. Strait, same place. Filed Nov. 24, 1884. (No model.)



Claim.—1. The combination, with the plow-shaft B and the plow-standards E E', of the eyes or collars G H, having the offsets F F', for the purpose of attaching the plow-standards to one side of the center of said shaft to prevent the plow from tipping over, substantially as set forth.

2. The combination, with the shaft and plow-standards, of the eye-lever G G' and the eye H, both provided with offsets F F', for the attachment of the plows, substantially as set forth.

3. The eye-lever G and eye H, both provided with offsets for the purpose of revolving the plows upon the shaft, substantially as set forth.

4. In a rotating plow, the described power-lift, embracing the double lever C C, the rocking lever P, the foot-lever S, the two segments Q, and the gear-wheels *z'* on the hubs, all arranged to operate together in raising the plows as the machine moves forward, substantially as described.

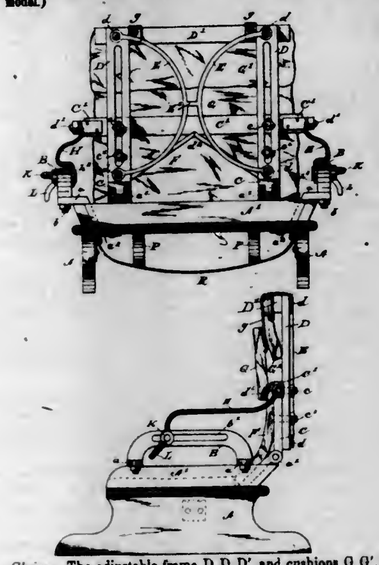
5. The combination, with the double lever C and the described power-lift, of the seat-supporting arch L and seat I, whereby the weight of the driver is made to assist in raising the plows, substantially as described and shown.

6. The double seat I on the raised arm of the pivotal support K, the arch L, and means for laterally rocking or adjustment for the purpose of swinging the seat and transferring the weight to the uphill side, and thus preventing the plow from tipping over, substantially as set forth.

7. In a reversible sulky-plow, the seat having mechanism for an independent lateral adjustment to either side of the center, whereby said seat may be both made level and thrown to the uphill side or to the land side of the plow, substantially as set forth.

8. In a rotating plow, the wheel constructed as shown, and having the box *y*, the flanged disk *e*, the combined flanged disk and gear-wheel *z* and *z'*, rim *g*, and bracing-spokes, all arranged to operate as and for the purposes set forth.

332,303. ADJUSTABLE BACK FOR VEHICLE-SEATS. Conrad Straubel and Peter Hessel, Cochecton, N. Y. Filed Sept. 15, 1885. (No model.)



Claim.—The adjustable frame D D D' and cushions G G', in combination with the lazy-back, for the purpose set forth.

332,304. DEVICE FOR PACKING COTTON. Dewitt C. Summers, Summer's Mills, Tex. Filed May 21, 1885. (No model.)

Claim.—1. The press-box, in combination with the packer or follower, provided on its under side with a continuous depending flange, beveled on its inner side and sharpened at the lower edges, and tampers provided at the corners of the packer or follower, said tampers being pointed at their ends and extending below the horizontal line of the flange, as and for the purpose set forth.

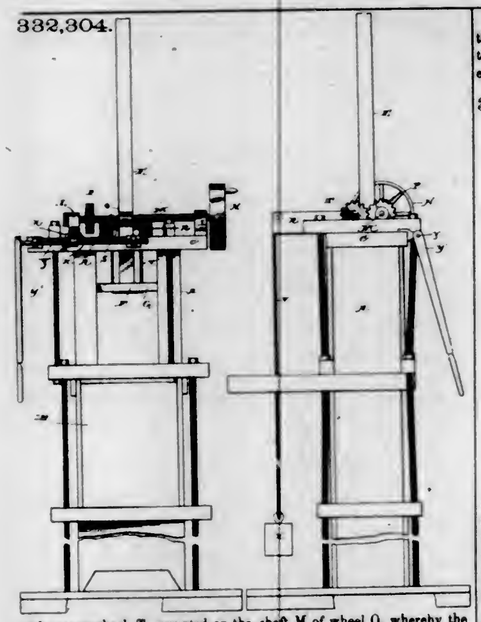
2. The press-box, in combination with the packer or follower, having depending flanges on its under side around the sides and ends, and tampers depending from the corners of the follower and extending below the horizontal line of the flanges, as and for the purpose set forth.

3. The press-box, in combination with the packer or follower, having the vertical plain bar E, a friction-wheel, S, bearing against the rear side of the bar, a friction-wheel, O, adapted to bear against the front side of said bar, and the shaft M, on which said wheel O is mounted, the rotation of said shaft effecting the vertical movement of bar E, as set forth.

4. The press-box, in combination with the packer or follower, having the bar E, and means, substantially as described, for operating the same, the friction-wheel S, working against one of the faces of bar E, a pulley, W, and cords V, connected to the follower, extending up through the press-box, passing over the wheel S and pulley W, and provided with a weight, for the purpose set forth.

5. The press-box, in combination with the packer or follower, having the plain vertical bar E, the friction-wheel S, working against one of the sides or faces of the bar, the friction-wheel O, operating against the opposite side or face, the shafts on which said wheels are mounted,

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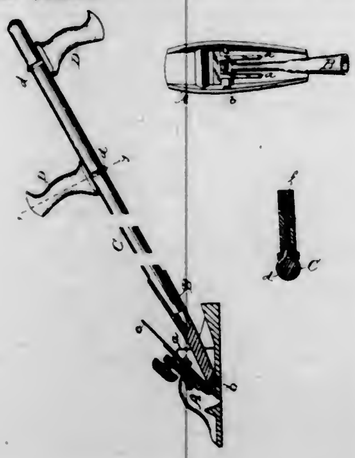
and a gear-wheel, T, mounted on the shaft M of wheel O, whereby the said friction-wheels are caused to work together at the same rate of speed, and thus feed the bar E downward without undue pressure or strain on either side of said bar, as set forth.

6. The press-box, in combination with the packer or follower, having the vertical plain bar E, the friction-wheel S, gear T, shaft M, friction-wheel O, gear P, and mechanism for working the shaft M laterally to throw the wheel O out of contact with the bar E, the pulley W, and the cords V, attached to the packer or follower, extending up through the press-box, passing over the wheel S and pulley W, and provided with a weight, as and for the purpose set forth.

7. The press-box, in combination with the packer or follower, having the vertical plain bar E, the friction-wheel S, gear T, the shaft M, sliding block L, gear P, friction-wheel O, rock-shaft Y, connecting-rod Z, and operating-lever y', as set forth.

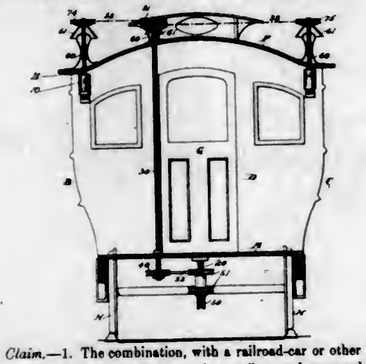
8. The press-box, in combination with the packer or follower, having the vertical plain bar E, the friction-wheel S, pulley W, cords V, connected to the packer or follower, passing over the wheel S and pulley W, and provided with a weight, gear T, laterally-moving shaft M, friction-wheel O, gear P, connecting-rod Z, rock-shaft Y, and handle or lever y', as set forth.

332,305. **FLOOR-PLANE.** Justus A. Traut, New Britain, Conn., assignor to the Stanley Rule and Level Company, same place. Filed July 27, 1885. (No model.)



Claim.—The herein-described floor-plane, consisting, essentially, of the plane A and the socket B, pivoted to the stock of said plane close to its bottom, underneath the cutting-bit, and just back of the cutting-edge of said bit, substantially as described, and for the purpose specified.

332,306. **TRAVELING SIGN FOR RAILROAD-CARS.** George M. Traylor, Atlanta, Ga. Filed Sept. 26, 1884. (No model.)



Claim.—1. The combination, with a railroad-car or other carriage, and an endless apron or belt mounted on pulleys and arranged to travel along the car-side within the car-body, of a vertical shaft mounted at or near the car end and provided with a pulley and connections for communicating motion to a driving-pulley mounted on the apron-pulley shaft, both of which pulleys being arranged over the car-roof, substantially as described.

2. The combination, with an endless apron or belt mounted on pulleys and arranged to travel along the car-sides within the car-body, the driven shafts of which apron-pulleys extend through openings in the car-roof, and there provided with pulleys extending over the car-roof, with connections for driving the same from pulleys mounted upon a vertical shaft extending through an opening in the car-roof, of the car-axle and connections by which motion is communicated to said vertical shaft, substantially as described.

3. The combination, with an endless apron or belt mounted on pulleys and arranged to travel along the side of a car, the shaft of one of said pulleys extending through an opening in the car-roof, and provided with a pulley mounted thereon over the car-roof, of a shield provided over the opening in the car-roof and arranged around the shaft of said apron-pulley, and a deflector carried by said shaft or pulley over said shield, substantially as described.

4. The combination, with an endless apron or belt and its pulleys 11 12, the former being provided with a shaft projecting through an opening in the car-roof, of the shield 60, mounted over the opening in said roof and around said pulley-shaft, and a deflector carried by said shaft over said shield, substantially as described.

5. The combination, with the vertical shaft 30, mounted at the car end and extending through an opening in the car-roof, and provided with duplex pulleys 31, of the endless aprons or belts mounted upon pulleys arranged to travel along the car ends, and provided with shafts extending through openings in the car-roof, and having the pulleys 74 75, and connections for driving the same from said vertical shaft, said latter pulleys and connections being arranged over the car-roof, and each of said openings in the car-roof being provided with the shields 60 and the shafts with the deflectors 61, substantially as described.

6. The combination, with the vertical shaft 30, mounted at or near the car end, and provided with the pulley 40 under the platform of the car, of the stud 20, carrying the pair of pulleys 51, and connections with the car-axle by which motion is communicated to said vertical shaft, substantially as described.

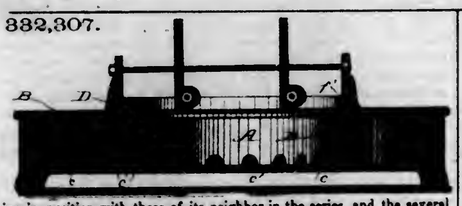
7. The combination, with the vertical shaft 30, provided with a pulley under the platform of the car, of the adjustable stud 20, carrying the pair of pulleys 51, and connections with the car-axle by which motion is communicated to said vertical shaft, substantially as described.

8. The combination, with the endless advertising-apron mounted on pulleys and stretched along the side of a car or other carriage, of the idler-pulleys 5 6, arranged within the length of said advertising-apron, the latter pulley being mounted in adjustable bearings, substantially as described.

332,307. **OIL-BURNING STOVE.** John F. Trout, Chicago, Ill., assignor of one-half to Robert Barry, same place. Filed May 26, 1884. (No model.)

Claim.—1. In an oil-burning stove, the combination, with the oil-reservoir, of a series of oil-brake partitions perforated at their lower portions and imperforate above, the perforations of each partition alternating in position with those of its neighbor in the series, and the several partitions extending from the bottom of the oil-reservoir nearly to its top, substantially as shown and described.

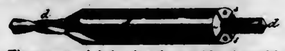
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2. In an oil-burning stove, the combination, with the oil-reservoir, of a series of oil-brake partitions perforated at their lower portions and imperforate above, the perforations of each partition alternating in position with those of its neighbor in the series, and the several partitions being arranged concentrically to each other, and extending from the bottom of the reservoir nearly to its top, substantially as shown and described.

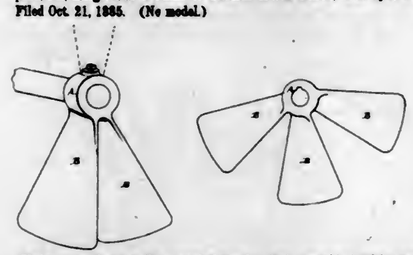
3. In an oil-burning stove, the combination, with the oil-reservoir, of a series of oil-brake partitions perforated at their lower portions and unperforated above, the several partitions extending from the bottom of the oil-reservoir nearly to its top, the said reservoir being provided with an air-vent, substantially as shown and described.

332,308. **COUNTERSINK.** George R. Valentine, New Bedford, Mass. Filed Oct. 1, 1884. (No model.)



Claim.—The countersink having, in combination with its drill-holding tube-bore, the semi-elliptic and countersinking grooves, and the diametrically-crossing strip-slots, substantially as and for the purposes herein specified.

332,309. **SCREW-PROPELLER.** Alexander Voghaang, Philadelphia, Pa., assignor of one-half to Thomas Irwin Dixon, Brooklyn, N. Y. Filed Oct. 21, 1885. (No model.)

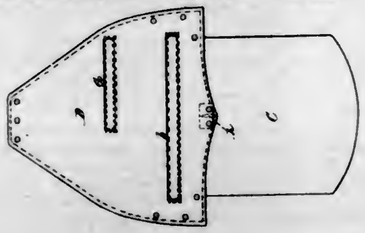


Claim.—1. A propeller consisting of a hub provided with two or more blades or wings grouped upon but one side and unequally distributed about said hub, but in which the distance between the blades is not uniform, and in which no two blades are diametrically opposite, substantially as and for the purpose specified.

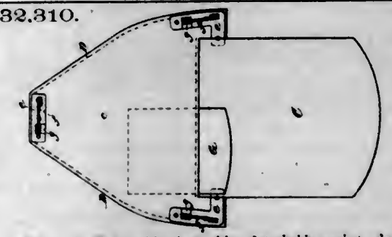
2. A propeller having its blades grouped upon one side of the hub or shaft only, and in which no two blades are diametrically opposite, and in which the distance between the blades is not uniform, and a non-propulsive counter-balance arranged upon the side of the hub or shaft opposite to that on which the blades are located, substantially as and for the purpose specified.

3. A propeller consisting of a boss or hub provided with two or more blades grouped upon one side only of the said hub, and in which no two blades of the group are arranged diametrically opposite, and a single blade arranged opposite to the group of blades, but in which the distance between the blades is not uniform, substantially as and for the purpose specified.

332,310. **DETACHABLE POCKET AND PROTECTOR.** Alexander Warmoar, Boston, Mass. Filed Apr. 27, 1885. (No model.)



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Claim.—1. The combination, with a detachable pocket adapted to fit within an ordinary coat-pocket, of an upwardly-extending shield or protector attached to said detachable pocket, and provided with one or more smaller pockets, and having suitable fastening devices for securing it to the coat above and around the pocket, substantially in the manner and for the purpose described.

2. The combination, with the detachable pocket C, of the shield or protector D, secured to its upper end, and having the pocket-opening *b*, and adapted to cover and protect the cloth immediately above the coat-pocket, the plates *e*, with their guarded pins *f*, secured to the inner side of the protector D at the edges thereof, and the hook A at the center of the lower edge of the protector, all constructed substantially in the manner and for the purpose set forth.

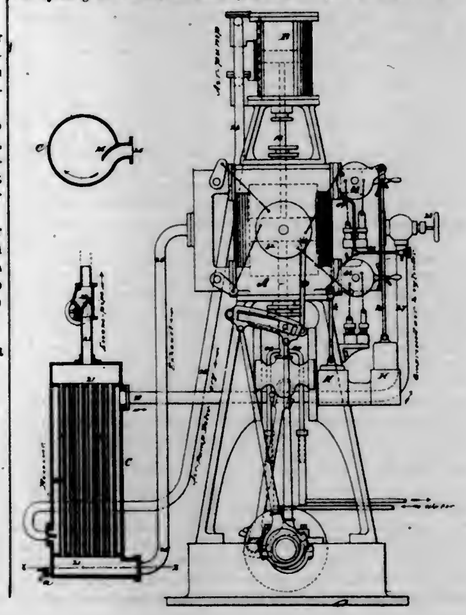
332,311. **DRIVE-CHAIN.** James H. Weaver, Chicago, Ill., assignor, by direct and mesne assignments, to the Ewart Manufacturing Company, same place. Filed July 12, 1883. (No model.)



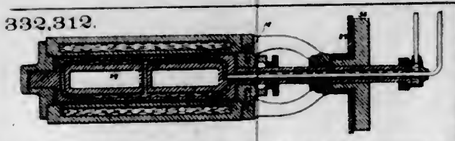
Claim.—A drive-chain link having a divided end bar at one end thereof, a lug mounted on each part of said end bar, a hook with a central rib at the other end and recesses adjoining said hook and outside thereof, corresponding with and adapted to receive the lugs on an adjacent link and engage therewith, whereby spread of the divided end bar under strain is prevented, substantially as described and shown.

332,312. **AIR AND GAS ENGINE.** Stephen Wilcox, Brooklyn, N. Y. Filed Dec. 16, 1884. (No model.)

Claim.—1. In combination with an air or gas engine in which combustible gases are fired in the working-cylinder, a charging device for injecting an inflammable fluid, operated and adjusted, substantially as



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described, to deliver said inflammable fluid at the latest movement of the induction-valve, so that mixture with the admitted air takes place within the cylinder coincident with or subsequent to the closing action of said valve.

2. In combination with an air or gas engine in which combustible gases are fired in the working-cylinder, a charging device for injecting an inflammable fluid, operated and adjusted, substantially as described, to deliver a small quantity of the same during the opening movement of the induction-valve, and to rapidly deliver a greater quantity or full supply during the closing movement of said valve, whereby the greater quantity of inflammable fluid entering the cylinder at the latest movement of the valve is mixed with the preceding air admitted within the cylinder subsequent to the closing of said valve.

3. In combination with an air or gas engine in which combustible gases are fired, two charging-pumps operated by a mechanism of differential movement, one of said pumps being adjusted to deliver a small quantity of inflammable fluid during the opening movement of the induction-valve, and the other pump adjusted to rapidly deliver a greater or full supply during the closing movement of said valve, whereby the greater quantity of inflammable fluid entering the cylinder at the latest movement is mixed with the preceding admitted air after the induction-valve closes.

4. A receiver for air or gas engines, provided with a series of internal tubes connected with the exhaust pipe or passages of the working-cylinder, the air-space communicating with the delivery of the air-compressing pump and directly with the induction-passage of the working-cylinder, whereby said tubes serve to heat the passing current of compressed air and as stays to strengthen the construction.

5. A working-cylinder or valve-chest head for gas-engines, made hollow and fitted with stuffing-boxes and hollow piston or valve rods, said hollow head forming a water space or jacket between the cylinder and stuffing-box, whereby the packing is kept cool and protected from burning by an escape of the hot gases around said rods.

6. In combination with an air or gas engine in which combustible gases are fired in the working-cylinder, an induction-valve adapted to be disconnected from its opening mechanism at any desired part of the stroke and suddenly closed by an independent auxiliary device, and a charging-pump for injecting an inflammable fluid operating coincident with the closing movement of said valve.

7. A double-seated induction-valve located between the receiver and cylinder, to close the communication and resist the action of a preponderating pressure from either direction.

8. An induction-valve of the type or kind described, having its port extended directly through it, and its circumferential faces fitted to close the communication between both the cylinder and receiver, and to be cooled by exposure to the adjacent water-jacket when in an open position.

9. An air or gas engine having its burner secured between the nozzles or flanges of the working-cylinder and valve-box, whereby it may be easily removed and replaced without disturbing other parts of the engine.

10. An air or gas engine provided with a sliding igniter operated by a motion coincident with the valve-motion, and having its inclosing-port between the burner and cylinder, whereby it is sure to encounter and fire the issuing vapor, and made capable of adjustment, to act simultaneously with the closing of the cut-off at any desired point of the stroke.

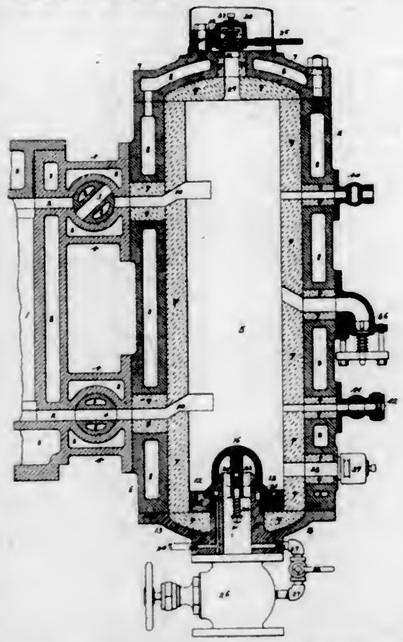
11. A double-acting air or gas engine in which atmospheric air and an inflammable fluid are mixed and fired in successive charges, consisting of a working-cylinder, an air-compressing pump, a reservoir containing atmospheric air under pressure, arranged between said pump and cylinder, and a charging device for injecting an inflammable fluid, said cylinder being fitted with suitable induction and exhaust valves, combined with a link-motion for operating and reversing the same, and also operating said charging device.

12. A double-acting air or gas engine in which atmospheric air and an inflammable fluid are mixed and fired in successive charges, consisting of an air-compressing pump, a reservoir containing atmospheric air under pressure, arranged between said pump and cylinder, and a charging device for injecting an inflammable fluid, said cylinder being fitted with suitable induction and exhaust valves combined with a link-motion for operating and reversing the same, and the charging device operated by mechanism independent of said link-motion.

13. An engine in which the agent of force is saturated air fired in successive charges in the working-cylinder, provided with an air-compressing pump, a reservoir or receiver for containing air under compression, and a device for saturating the air with an inflammable fluid, the working-cylinder of said engine having suitable induction and exhaust valves, the induction-valve being adjusted to open at a predetermined period of each stroke of the piston, to admit air separately or with an inflammable fluid in such measured quantity to saturate a portion of the accompanying air, to close at a predetermined period of each stroke, and during said closing movement to admit the required remaining portion of air and inflammable fluid or the entire required supply of inflammable fluid separately, whereby a complete saturation of the air and inflammable fluid is delayed to take place within the working-cylinder coincident with or subsequent to the closing of said induction-valve.

14. In combination with an air or gas engine in which combustible gases are fired, a moistening receptacle or chamber with interior spraying attachment arranged to saturate the entering air preparatory to compression, for the purposes explained.

332,313. GAS-ENGINE. STEPHEN WILCOX, Brooklyn, N. Y. Filed May 22, 1885. (No model.)



Claim.—1. A gas-engine containing a working-cylinder, a combustion-chamber separated therefrom, and an intermediate induction-valve chest to which said parts are connected, whereby the valve is independently located so that it may be removed without disturbing the adjacent parts, and also water-jacketed for its special protection.

2. In a separate combustion-chamber of a gas-engine, the combination of the main or the auxiliary air-supply with an auxiliary gate, whereby combustion is maintained while the engine is still.

3. A burner for gas-engines, consisting of a head having a central air-passage, an annular oil-passage, a cap covering said passages, and an external absorbent, said cap being capable of automatic action by the the pressure of the air.

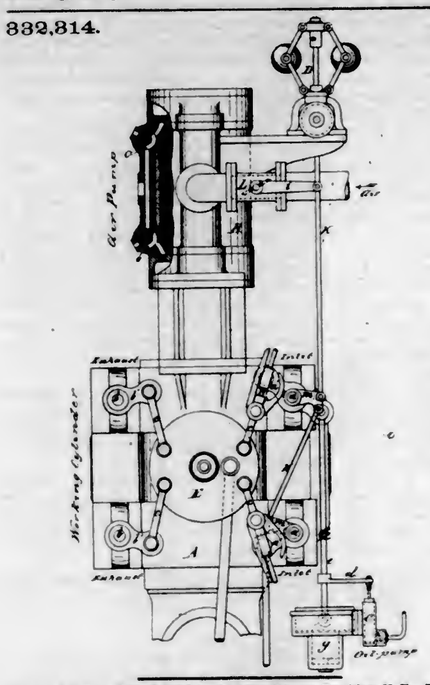
332,314. GAS-ENGINE. STEPHEN WILCOX, Brooklyn, N. Y. Filed Sept. 17, 1885. (No model.)

Claim.—1. In a gas-engine, an air-pump provided with a valve adjusted to operate coincident with the cut-off mechanism, whereby the effective capacity of the air-compression pump is adapted to the point of cut-off to suit the varying load.

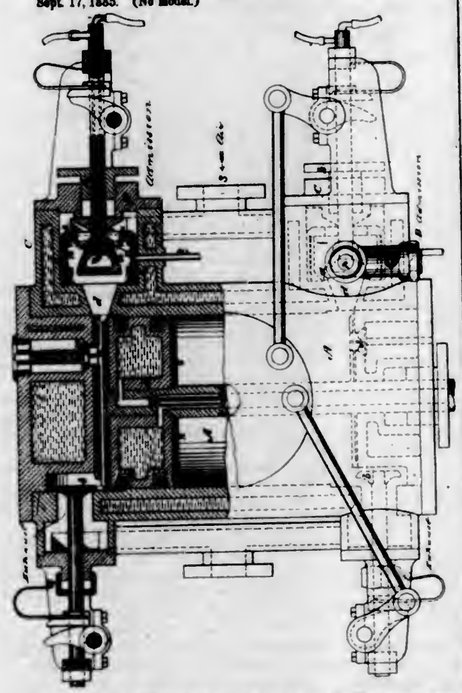
2. In a gas-engine, an air-supply and an oil-feeding device operating coincident with the cut-off mechanism, whereby the quantity of each admitted to the cylinder and the quantity of air delivered by the air-pump is controlled correspondingly with the adjustment of said cut-off mechanism.

3. In an air-pump of a gas-engine, an auxiliary air-passage communicating with the source of air-supply and with the opposite sides of the piston, and the latter with the atmosphere, said passage being fitted with suitable valves, whereby the air-pressure upon either side of the piston may be reduced or increased upon the opposite sides of said piston, for the purpose set forth.

332,314.



332,315. GAS-ENGINE. STEPHEN WILCOX, Brooklyn, N. Y. Filed Sept. 17, 1885. (No model.)



Claim.—1. A double-acting gas-engine provided with separate combustion-chambers, communicating, respectively, with the opposite sides of the cylinder-piston through independent induction-valves actuated by the engine mechanism.

2. In a gas-engine, a combustion-chamber provided with a suitable lining, and an oil-passage between said lining and the adjacent wall or shell.

3. In a gas-engine, a combustion-chamber constructed with an inwardly-projecting flange or annular ring arranged above the point of combustion and intermediate of the same and the entering air, for the purposes set forth.

4. A gas-engine having its interior surfaces exposed to the action of the heated gas covered with metallic plates, said plates or adjacent parts having a recessed inner surface filled with a non-conducting material.

332,316. CAR-COUPLING. JOHN H. WILKIN, Leveville, Pa. Filed Oct. 9, 1885. (No model.)



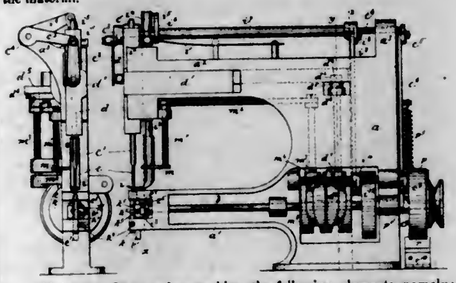
Claim.—1. In a car-coupling, the combination of the draw-head having a locking-shoulder, a coupling-link, a pivoted tongue, and a pivoted operating-lever connected to said tongue, substantially as described.

2. In a car-coupling, the combination of the draw-head having the locking-shoulder, a coupling-link, a tongue arranged in said draw-head and having its front end pivoted thereto and a spring-actuated pin at its rear end, and a pivoted lever connected to the pin of the tongue, substantially as described.

3. In a car-coupling, the combination of a recessed draw-head having a locking-shoulder, a hooked coupling-link to engage the shoulder, a tongue pivoted in said draw-head at its front end, having a spring-actuated pin to keep its rear end elevated and in engagement with a limiting shoulder, a lever, G, pivoted on a bolt, and a connecting-link pivotally connected to the lever G and the pin of the pivoted tongue, substantially as described.

332,317. SEWING-MACHINE. HOSEA P. ALDRICH, Boston, Mass. Filed July 19, 1884. (No model.)

Brief.—The awl has a lateral as well as longitudinal movement. The awl is first forced through the material being operated upon, and then partly withdrawn when its lateral movement takes place to feed the material.



Claim.—1. In a sewing-machine, the following elements, namely: the main shaft, awl, and actuating mechanism for the latter, and the presser-foot and its actuating rock-shaft independent of the awl-actuating mechanism, and provided with two arms, one of which is connected with the presser-foot and operates to lift the same from the work, and the other of which arms is connected with the main shaft, substantially as described.

2. The presser foot and bar having an engaging projection, combined with the sleeve, having a free longitudinal movement on said bar below said projection, the arm connected with the said sleeve, the rock-shaft connected with the said arm and having a second arm, and the actuating cam and rod connected with the said arm, substantially as described.

3. In a sewing-machine, the main shaft, work-support, awl, and actuating mechanism for the latter by which the said awl has a longitudinal movement toward the work-support, in which movement it pierces the stock or material followed by partial movement away from the work-support insufficient to withdraw it from the material, and a lateral feeding movement while in this position, followed by a longitudinal movement by which it is wholly withdrawn from the material, substantially as and for the purpose described.

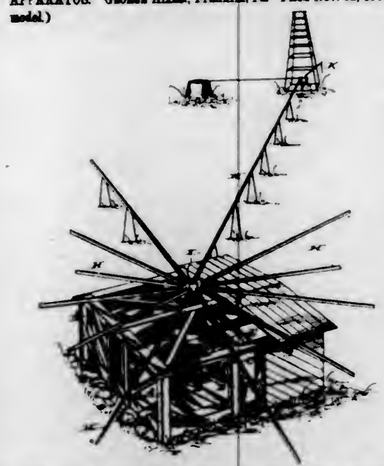
4. The awl having a longitudinal movement and its guide-piece having a lateral movement, combined with the slide-bar connected with the said guide-piece and actuating-cam, whereby the awl is caused to have a lateral movement, substantially as described.

5. The awl and awl-guide having a sliding movement, combined with the slide-bar, the rock-shaft having two arms, one connected with

the said slide-bar, and an actuating-cam engaging the other arm of the said rock-shaft, substantially as described.

6. A sewing-machine having a slender work-supporting arm, main shaft passing longitudinally therethrough, and needle operating transversely in the said arm, as described, and an upper-arm awl and awl-guide having a sliding movement lengthwise of the said upper arm, and actuating mechanism, substantially as described.

332,318. DEVICE FOR TRANSMITTING MOTION IN OIL-PUMPING APPARATUS. George Allen, Franklin, Pa. Filed Nov. 12, 1885. (No model.)



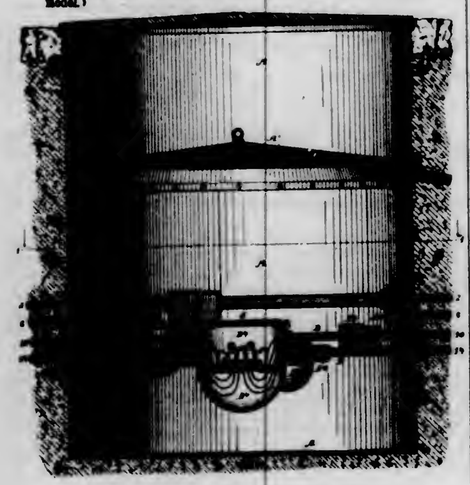
Claim.—1 A pump-driving shaft extending through the roof of a house, and having the pump-actuating rods attached thereto above the roof, substantially as set forth.

2. A supporting-frame for the engine, engine-shaft, and pump-driving shaft, adapted at the same time to form a house-frame, the end of the pump-driving shaft extending above the roof of the frame, for the purpose substantially as set forth.

3. The combination, with a supporting frame-work adapted to be covered by a roof and siding, and an engine located within the frame-work, of an upright shaft adapted to be driven by the engine, the said upright shaft extending outwardly through the roof, and a crank or its equivalent secured to the upper end of the shaft, adapted to actuate pump-operating rods, substantially as set forth.

4. The combination, with a supporting-frame for the engine-shaft and pump-driving shaft, adapted at the same time to form a house-frame, the end of the pump-driving shaft extending above the roof of the frame, of pump-actuating rods connected with the shaft through the medium of an oscillatory wheel, substantially as set forth.

332,319. CONDUIT FOR SUBTERRANEAN ELECTRICAL CONDUCTORS. John A. Barrett, Brooklyn, N. Y. Filed Dec. 6, 1884. (No model.)



Claim.—1. The combination, substantially as herein set forth, of a main-line conduit, two closed coupling-boxes (with removable caps) interposed in said conduit, a transfer-pipe uniting the coupling-boxes, and electrical conductors passing through said conduit, coupling-boxes, and transfer-pipe to render the conductors easy of manipulation, while protecting them from unauthorized interference.

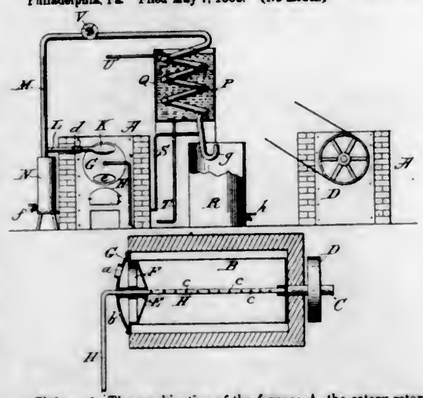
2. The combination, substantially as herein set forth, of a series or group of main-line conduits, two closed coupling-boxes (with removable caps) interposed in said conduits and common to all of them, a transfer-pipe uniting the coupling-boxes, and electrical conductors passing through said conduits, coupling-boxes, and transfer-pipes, so as to render all the conductors of the various conduits accessible from a single coupling-box.

3. The combination, substantially as herein set forth, of a working-chamber, a series or group of main-line conduits connected therewith, a series of closed coupling-boxes (with removable caps) interposed in said conduits within said working-chamber, a transfer-pipe uniting each pair of coupling-boxes, and electrical conductors passing through said conduits, coupling-boxes, and transfer-pipes, these members being organized as described to permit easy manipulation of each group of conductors without disturbing the others, while each group is protected from unauthorized interference.

4. The combination, substantially as set forth, of several separate conduits or groups of conduits, (each containing a distinct class of wires,) with transfer-pipes connected laterally with the conduit or conduits, or at the side or sides thereof, and forming closed continuations of the respective conduits united by them.

5. The combination, substantially as herein set forth, of a working-chamber, a series or group of main-line conduits connected therewith, closed test-boxes which permit access to the wires located out of the line of the conduit, and closed continuations of the conduits or transfer-pipes connecting with the closed boxes.

332,320. APPARATUS FOR DISTILLING WOOD. Thos. H. Berry, Philadelphia, Pa. Filed May 1, 1885. (No model.)



Claim.—1. The combination of the furnace A, the rotary retort B, journaled in said frame, a stationary head, G, having ports communicating with said retort, a detachable hood, K, for one of said ports, the hood being removably connected to a stationary pipe, L, the conduit M, communicating with the pipe L, the receivers N R, condenser Q, and a fan, V, located in the conduit, substantially as described.

2. The rotary cylindrical retort B, open at one end and provided with spider-frame F, in combination with the stationary head G, having ports *a b*, and the hood K and connections for conveying the products of distillation, substantially as described.

3. The combination of the rotary cylindrical retort B, open at one end and provided with spider-frame F and tubular shaft E, the stationary head G, having ports *a b*, the perforated injector-pipe H, and the hood K, substantially as described.

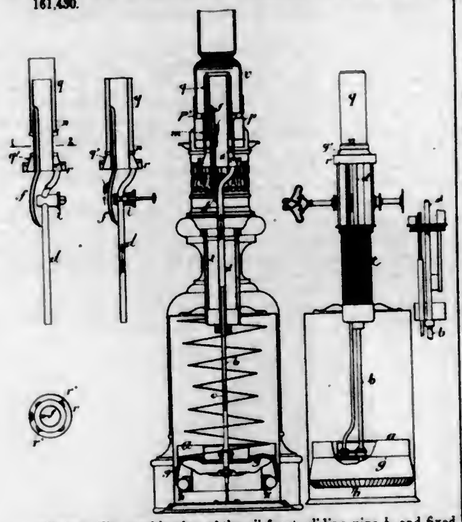
4. The combination, with a furnace, a rotary cylindrical retort, B, open at one end and provided with a spider-frame, F, the condenser Q, receiving-tanks N and R, conduit M, and pipe L, of the stationary head or cover G, having ports *a b*, and the detachable hood K, for connecting the pipe L and port *a*, substantially as described.

332,321. METHOD OF PREPARING WIRE FOR DRAWING. Chas. Booth and Robert W. Ney, Worcester, Mass. Filed Aug. 29, 1885. (No specimens.)

Claim.—1. The method hereinbefore described of preparing wire for drawing, the same consisting in immersing the wire in a hot solution or bath of lime, and then afterward immersing it in a hot flour or paste bath, substantially as set forth.

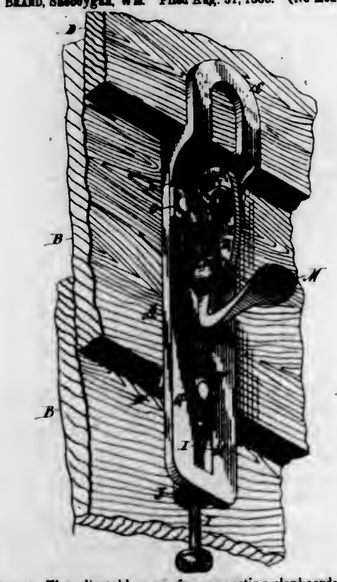
2. The method hereinbefore described of preparing wire for drawing, the same consisting in immersing the wire in a hot solution or bath of lime, and then afterward immersing it in a hot flour or paste bath one or both of the said hot baths containing a quantity of potash, substantially as set forth.

332,322. MODERATOR-LAMP. Ernest Bourdon, Paris, France. Filed May 29, 1885. (No model.) Patented in France Apr. 5, 1884, No. 161,430.



Claim.—The combination of the oil-fount, sliding pipe *b*, and fixed tube *d* with the spring-pressed piston *a*, chamber *e*, wick-tube, and overflow-pipe *f*, substantially as herein shown and described.

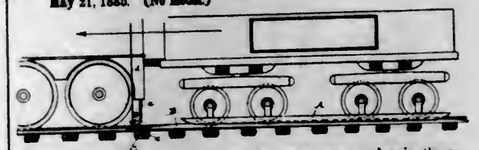
332,323. ADJUSTABLE GAGE FOR SUPPORTING CLAPBOARDS. Henry Brand, Sheboygan, Wis. Filed Aug. 31, 1885. (No model.)



Claim.—1. The adjustable gage for supporting clapboards, herein described, consisting in the combination of the plate A, provided with an adjustable bracket, E, supporting-bracket C, and rearward-projecting pointed lever K, secured to said plate A upon a pivotal support, and angular lever M, pivoted to the long arm of said lever K, and interposed between and bearing against said plate A, substantially as and for the purpose specified.

2. In an adjustable gage for supporting clapboards, the combination of the plate A, provided with lug J, hand-screw I, having a screw-bearing in said lug J, adjustable bracket E, provided with bolt F, operating in slot H of said plate, and adjusted by the action of said screw I outward and upward, projecting bracket C, bracket O, lever K, secured to said bracket by pivot P, angular lever M, secured to said lever K by pivot N, and spring R, as connected with said lever K by pivots N and P, all substantially as and for the purpose specified.

332,324. CAR-BRAKE. William M. Brimhall, Philadelphia, Pa. Filed May 21, 1885. (No model.)

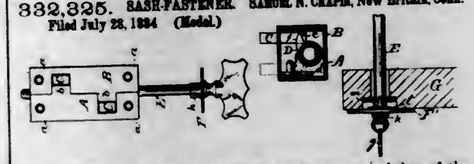


Claim.—1. A system of brakes for railway-cars, wherein the resistance to overcome the movement or momentum on the rolling stock on a railway is effected by the application of friction imparted by a skid, A, attached to the under side of a car-truck's axle or frame, in combination with a skid, B, fixed to the road-bed, substantially as herein described.

2. In a system of car-brakes on a railway-car, a tripping-plate, D, in combination with arm C, substantially as and for the purpose described.

3. The combination of the cushion or spring S with the double skid A' A, substantially as and for the purpose described.

332,325. SASH-FASTENER. Samuel N. Chapin, New Britain, Conn. Filed July 23, 1884. (Model.)

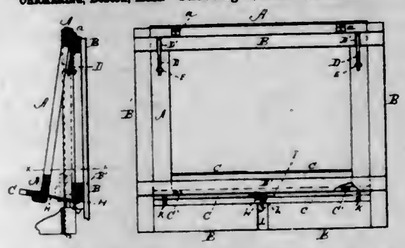


Claim.—1. The herein-described sash-fastener, consisting of the case made in two companion parts of box-like form, having bearings upon their inside walls for the spindle-hub, the spindle-lug D, having lugs *f f*, the bolts C C, having lugs *c*, and the springs *d*, the whole, except the outer ends of the bolts C C, being within the two-part case, all substantially as described, and for the purpose specified.

2. In a sash-fastener, the combination of the two bolts C C and the case, consisting of the two like companion parts A B, divided vertically, and having a bolt-mortise and projection, *b*, in and on the front plate of each part, all substantially as described, and for the purpose specified.

3. The combination of the spring-pressed bolts C C, the spindle E, suitable mechanism for operatively connecting said spindle and bolts, the escutcheon F, having stop-slide *k*, and the notched flange *m* upon the spindle, substantially as described, and for the purpose specified.

332,326. MUSIC-DESK FOR PIANOS AND ORGANS. Samuel G. Chickering, Boston, Mass. Filed Aug. 3, 1885. (No model.)



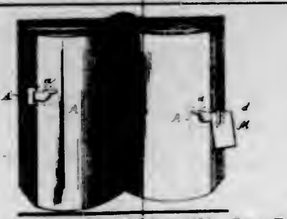
Claim.—The hinged desk A, provided with the hinged fly C, and latch H, rigidly secured to said fly, in combination with the frame B, provided with the posts or blocks K, and a suitable device for engaging said latch, said desk being held normally closed or against the frame by means of suitable springs, substantially as and for the purpose set forth.

332,327. BOOK-MARK. William F. Clark, San Francisco, Cal., assignor of one-half to Frederic M. Dickerhoff, same place. Filed Sept. 11, 1884. (No model.)

Claim.—1. The combination of the tongue *a*, and the surrounding rim A, having the portion A', to project beyond the edge of the leaf when the device is applied for operation, as set forth.

2. The herein-described device, for use as set forth, consisting of the plate having the pointer or index *a*, and the clamping-tongue *d* on the margin.

332,327.



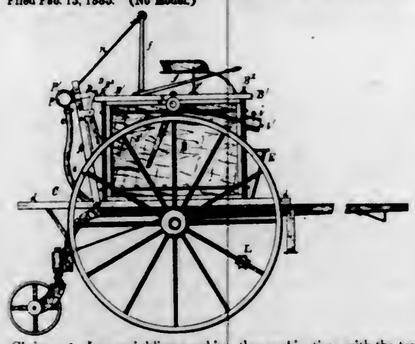
332,328. ART OF SETTING SPINDLE-STEPS. FRANK H. COLONY, Wilton, N. H. Filed Jan. 31, 1885. (No model.)

Brief.—When the step becomes loose in its seat, the step is removed and the hole in which it stood enlarged and filled with a paste of plaster-of-paris. The step is then embedded therein and centered by stepping the spindle and revolving it until the plaster sets.



Claim.—The method of setting spindle-steps, which consists in forming a hole or socket in the rail larger than the step to be set, then filling or partially filling said hole with a paste of plaster-of-paris, then embedding the step in said paste, then inserting the spindle in said step before the paste becomes set, and finally rotating said spindle in said step until said paste becomes hard or set, substantially as described.

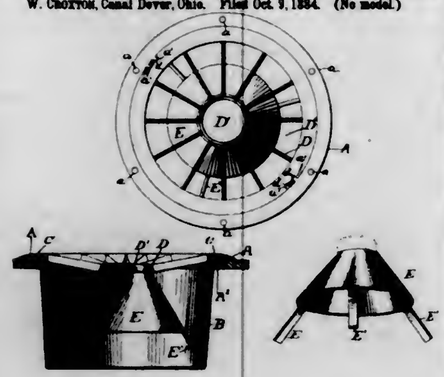
332,329. SPRINKLING-MACHINE. JOHN DAHN, East Toledo, Ohio. Filed Feb. 13, 1885. (No model.)



Claim.—1. In a sprinkling-machine, the combination, with the tank B and transportation-wheels C, of the oscillating stirrers J', arms J^3, bars J, weight-rods i', provided with weights i, bumping-arms h, rollers h', and roller-wrists L, substantially as shown, and for the purpose specified.

2. The combination, in a sprinkling-machine, of the slotted discharge-pipe P, connected with tank B by rubber hose e, metal elbows e', and nipples e^2, and provided with the perforated shell P^2, links D, and ratchet-levers D', with the hoisting-frame A, provided with a suitable hoisting-lever connected therewith by a rope or chain, substantially as shown, and for the purpose specified.

332,330. CUSPIDOR AND DUST-TRAP. PHILIP H. DEBS and SAMUEL W. CROXTON, Canal Dover, Ohio. Filed Oct. 9, 1884. (No model.)



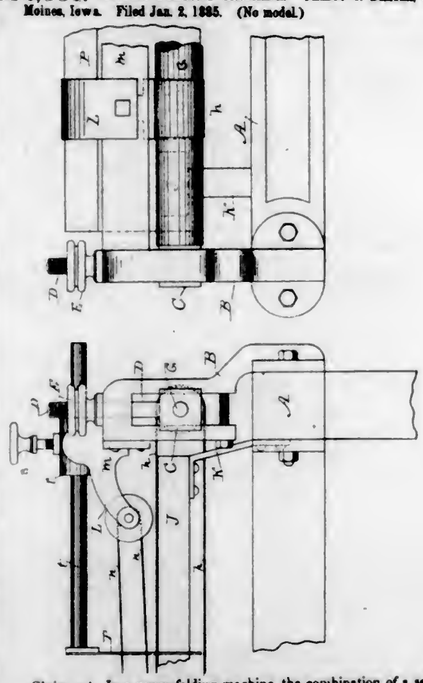
Claim.—1. A cuspidor consisting of the following elements in combination: a main support rabbeted on its inner side, a removable receiver provided with means, substantially as described, for lifting and carrying it, and having its rim turned outward and suspended on the flange of the support, a grating seated on the rabbet of the said support and having a central opening, and a shield arranged in the receiver and having its upper end open and held close to and registered with the central opening through the grating, substantially as and for the purposes set forth.

2. In a cuspidor, the combination, with a grating having knife-edge bars and central opening, of a truncated shield or deflector arranged in the spittoon and having its upper edge held close to and surrounding the central opening through the grate, substantially as set forth.

3. In a cuspidor, the combination of a perforated top having a central opening and provided around said opening with a depending annular flange, and the shield or deflector having its upper end open, and provided at such end with a tubular extension fitted and held on the annular flange of the top, substantially as set forth.

4. The combination, in a cuspidor, of the perforated top having a central opening, D^5, and provided with a depending annular flange surrounding the said opening, and the shield or deflector having its upper end open and fitted over the flange D^5 and provided with supporting-legs, substantially as set forth.

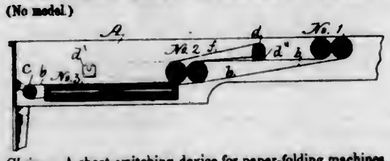
332,331. PAPER-FOLDING MACHINE. TALBOT C. DEXTER, Des Moines, Iowa. Filed Jan. 2, 1885. (No model.)



Claim.—1. In a paper-folding machine, the combination of a series of fixed rigid slats and an adjustable roller carrying a series of carrying-tapes with a gage or sheet-stopping device, for the purpose stated.

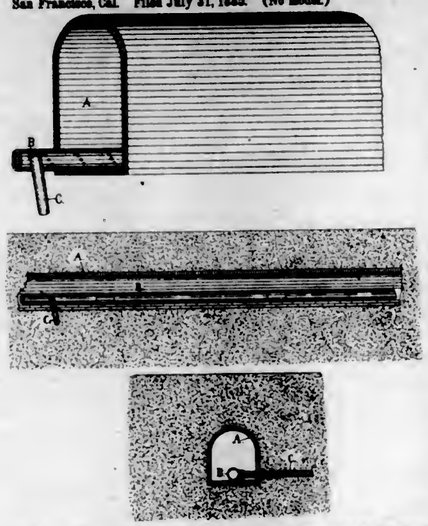
2. A pair of auxiliary frames, B, adjustable roller-bearers C D, a roller, G, carrying a series of tapes, h, and a series of fixed slats, J, in combination with a stop or gage in a paper-folding machine, substantially as and for the purposes shown and described.

332,332. SHEET-SWITCHING DEVICE FOR PAPER-FOLDING MACHINES. TALBOT C. DEXTER, Des Moines, Iowa. Filed Mar. 5, 1885. (No model.)



Claim.—A sheet-switching device for paper-folding machines, composed of a roller, d, a series of endless tapes, f, and two pairs of roller-bearings, d' and d'', in combination with pairs of folding-rollers No 1, No. 2, and No. 3, a series of endless sheet-carrying tapes, b, and a series of pulleys or a roller, c, to support the tapes b, to operate in the manner set forth, for the purposes stated.

332,333. DEVICE FOR FLUSHING SEWERS. ALFRED T. ELFORD, San Francisco, Cal. Filed July 21, 1885. (No model.)

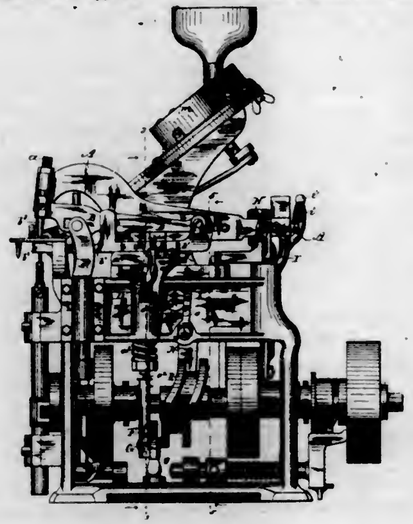


Claim.—The combination, with a sewer, of a continuous or practically-continuous pipe located and extending along the bottom thereof, and a service-pipe, C, connecting with the pipe B at each street-crossing, substantially as described.

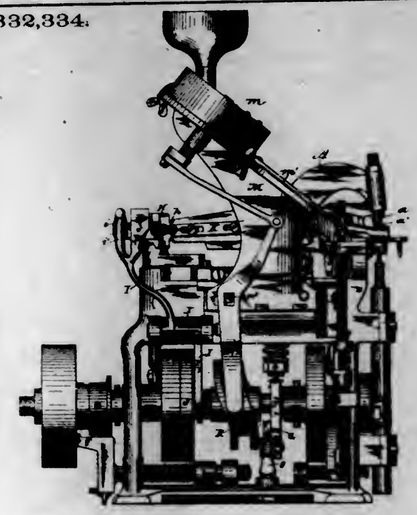
332,334. EYELETING-MACHINE. LORENZO C. EMERSON, North Grafton, Mass., assignor of one-half to Charles H. Nelson, same place. Filed Sept. 21, 1885. (No model.)

Claim.—1. In an eyeleting-machine, the combination, with the top set or feeding-lever, of a punch, a lever by which the said punch is carried, a support for the said punch-lever, a sustaining block or standard, and a vertical pivot, as screw b, on which the said support for the said punch-lever is loosely pivoted, whereby the punch is adapted to be moved toward or from the top set or feeding device during the operation of the machine to effect an unequal spacing of the holes made by the punch without stopping the machine, substantially as set forth.

2. In an eyeleting-machine, the combination, with the eyelet-setting and work-feeding devices, of a punch-lever which in operation moves laterally in unison with the top set or feeding-lever, a carrying block or standard, as a^4, a support to which said punch-lever is pivoted, and which



332,334.



is in turn loosely pivoted to said carrying-block, a movable device, as slide C, for holding said support rigid with said carrying-block and for shifting the same on its pivot when desired, and mechanism, substantially as described, whereby the operator may shift the said movable device to change the position of the punch relative to the top set, and thus vary the distance between the holes made by the former without stopping the machine, as set forth.

3. In an eyeleting-machine, the combination, with the eyelet-setting and work-feeding devices, comprising a laterally swinging or feeding lever, of a punch-lever which in operation moves laterally with the said feeding-lever, but which is loosely pivoted to its carrying-block, a treadle, a sliding bar, as K, a slide, as C, for varying the position of the punch-lever, a lever, as G, adapted to be operated by a treadle, and connections, substantially as described, between the latter lever and the said slide and sliding bar, as set forth.

4. In an eyeleting-machine, the combination, with the top set and the lever by which said set is carried, of a punch-lever, a pivoted carrying-bar to which said punch-lever is pivoted, a treadle-operated lever, and connections, substantially as described, between the latter and the said carrying-bar, whereby the distance between the top set and punch may be instantly varied by the operator.

5. In an eyeleting-machine, the combination, with the top set or feeding-lever, of a punch-lever loosely pivoted to its carrying-block, a slide by which the said punch-lever may be adjusted laterally without stopping the machine, and stops for limiting the lateral adjustment of the said punch-lever, substantially as set forth.

6. In an eyeleting-machine, the combination, with the punch-lever and its carrying support or bar, of a block or support to which said bar is pivoted, a slide work in said bed and having lugs engaging said bar, an elbow or bell-crank lever connected with said slide, and appliances, substantially as described, whereby the operator may vibrate said bell-crank lever to adjust the punch-lever.

7. In an eyeleting-machine, the combination, with the laterally-vibrating top set or feeding-lever and the stop by which the return movements of the said lever are limited, of a slide or abutment, as bar K, normally interposed between said stop and lever, but adapted to be suddenly withdrawn to increase the throw of the latter.

8. In an eyeleting-machine, the combination, with the punch-lever B, its supporting-bar b', the horizontally-oscillating support or block a^4, to which said bar is pivoted, the slide C, having lugs c, the lever D, rod E, yoke F, and lever G.

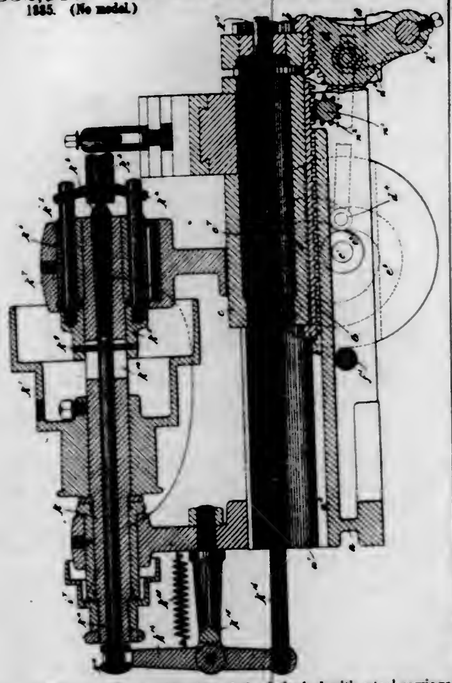
9. In an eyeleting-machine, the combination, with the lever A, and its stop-screw h, of the sliding bar or abutment K, the rod k, the lever k', link k^2, elbow or bell-crank lever D, and appliances for vibrating the latter.

10. In an eyeleting-machine, the combination, with the sliding standard carrying the eyelet-box and the eyelet roadway or chute, of the operating-lever for said standard, having a sliding pivot, thereby adapting the said lever to be moved laterally to disengage the pin or roller at the lower end thereof from the cam by which said lever is vibrated, to suspend the feeding of the eyelets.

11. In an eyeleting-machine, the combination, with the sliding standard M and the eyelet-box and eyelet roadway or chute carried thereby, of the lever N, provided with the fulcrum-sliding pin n, having an angular groove or recess, n', the rock-shaft O, having arms o and o',

the link o^3, the lever G, and appliance whereby the operator may vibrate the latter to suspend the feeding of the eyelets.

332,335. LATHE. RIBBON C. FAY, Hopedale, Mass. Filed June 1, 1885. (No model.)



Claim.—1. The combination of the lathe-bed with a tool-carriage having a longitudinal and rocking movement thereon, the rack engaging said carriage, toothed segment meshing therewith, and feed-cam and actuating mechanism therefor, substantially as described.

2. The bed having a cylindrical way provided with a longitudinal groove, combined with a tool-carriage having a longitudinal and rocking movement on said way, and a rack engaged with said carriage and movable in said groove, and actuating mechanism therefor, substantially as described.

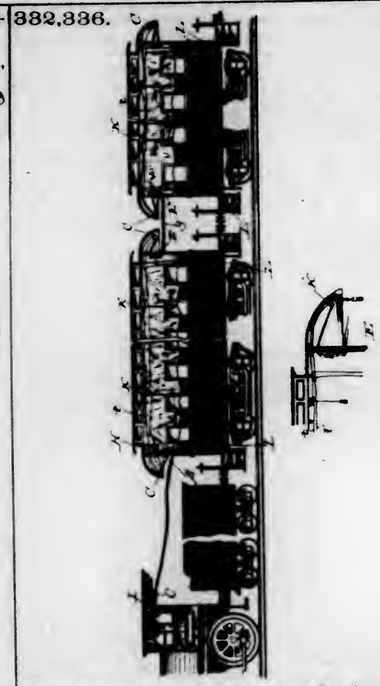
3. The combination of a cam and stud actuated thereby with an adjustable guide for said stud, which determines the path or direction of movement of the stud when actuated by the cam, substantially as described.

4. The cam having portions which throw in opposite directions, and a shoulder or stop combined with actuating mechanism for the said cam, and a friction-clutch which yields when the said cam is stopped, substantially as described.

5. The lathe-spindle and longitudinally-movable pins rotated therewith, which engage the work or piece to be turned, combined with the tool-carriage, feed mechanism therefor, and connecting mechanism between said carriage and the work-engaging pins, by which the latter are disengaged from the work at the end of the movement of the tool-carriage, substantially as described.

6. The lathe-bed and tool-carriage movable thereon, combined with the lathe-spindle, and longitudinally-movable work-engaging pins connected with the said spindle, and longitudinally-movable rod in the said spindle connected with said pins, a lever having one arm connected with the said rod, and a rod provided with a projection engaged by the tool-carriage and connected with the other arm of the said lever, substantially as described.

332,336. SIGNALING DEVICE. JOHN D. FEE, Chicago, Ill. Filed Oct. 13, 1884. (No model.)



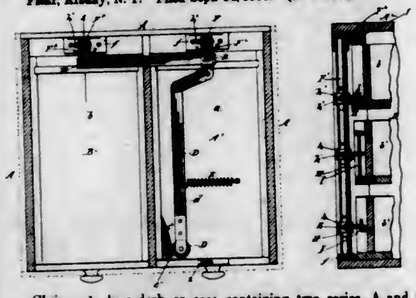
Claim.—1. A signaling device comprising in combination the following elements in a normally-open electric circuit, viz: a signal-producer, H, a signal-producer, I, an automatic circuit-closer, C, a combined circuit-opener and automatic circuit-closer, E, and means, substantially as described, for closing at will the normally-open electric circuit, the whole being constructed and arranged to operate as and for the purpose set forth.

2. In a signaling device for railroad-cars, an automatic circuit-closer, C, comprising a block, *s*, of non-conducting material, having a suitable stop, *y*, and side piece, *q q'*, and metallic stripe *r r'*, secured to the inner sides of the said side pieces, the said stripe being bent toward their extremities inward toward each other to form springs D D', normally in contact with each other, substantially as described.

3. In a signaling device for railroad-cars, the combination, with the automatic circuit-closer C, of a combined circuit-opener and automatic circuit-closer, E, comprising a block, *p*, of non-conducting material, beveled on each edge toward one extremity to provide an extension, *p'*, made concave on each lateral edge toward its extremity, which is provided with a head, *o*, and metallic strips *m m'*, secured longitudinally upon the lateral edges of the said block *p* and bent toward their extremities to conform to the said concave portions, and provide springs G G' and metallic springs F F', pivotally secured upon the said extension to lie over the springs G G', whereby their forward extremities are maintained normally in contact with each other, the whole being constructed and arranged to operate substantially as described.

4. A signaling device for railroad-cars, comprising in combination the following elements in a normally-open electric circuit, viz: a single-tap electric bell, H, a vibrating electric bell, I, an automatic circuit-closer, C, a combined circuit-opener and automatic circuit-closer, E, means inside and upon the external sides of each car for closing at will the said normally-open electric circuit, and a hand circuit-closer, K, underneath the hood of each car, provided with means for the attachment of a bell-rope to it, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

332,337. DEVICE FOR SECURING A SERIES OF DRAWERS. M. FREY, Albany, N. Y. Filed Sept. 14, 1885. (No model.)

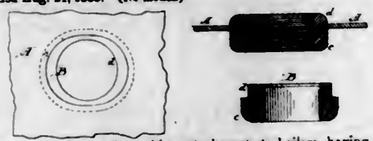


Claim.—1. In a desk or case containing two series, A and B, of drawers, the combination, with the same and holding-pins 1, secured to said drawers, except the master-drawer, of shafts F F', provided with catches H, and connected by bar J and lever D, connected with an arm of one of said shafts, and the master-drawer *a*, provided with switching device C, and the spring E between lever D and the desk or case, substantially as and for the purposes set forth.

2. The combination, with holding devices I, secured to the drawer, and vertical shaft F, (or F',) of the adjustable catch H, having sleeve *h* and set-screw *h'*, substantially as and for the purposes set forth.

3. The combination, with shaft F (or F') and lever D, and link G, connected with the latter, of the adjustable arm F^2, having sleeve *e* and set-screw *e'*, substantially as and for the purposes set forth.

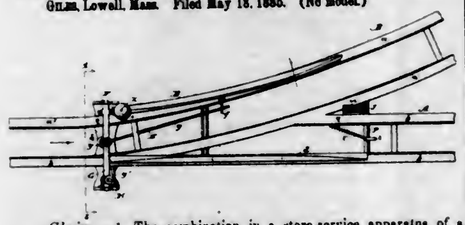
332,338. SPUT FOR BOILERS. HENRY P. FOLSOM, Brooklyn, N. Y. Filed Aug. 21, 1885. (No model.)



Claim.—1. A spot for making attachments to boilers, having a circular inner circumference, an irregular outer circumference fitted to closely fill the aperture in the boiler, and provided with a flange or collar on one end thereof, substantially as described.

2. A spot for making pipe attachments to boilers, having a circular inner circumference and an outer circumference other than circular to be fitted into an aperture in the boiler of like shape, which sput is provided with a collar on one edge and has the other edge so constructed that it may be struck down to rivet the sput firmly in its position, substantially as described.

332,339. SWITCH FOR STORE-SERVICE APPARATUS. EDWIN L. GILES, Lowell, Mass. Filed May 18, 1885. (No model.)



Claim.—1. The combination, in a store-service apparatus, of a main track having continuous rails, a branch track, and an adjustable switch-rail connected to be thrown into line with the inner rail of the branch track across the outer rail of the main track, and to constitute a bearing for the carriers over and above the outer rail of the main track, substantially as set forth.

2. The combination, with the continuous main track, branch track, and movable switch-bridge rail, of a branch-track rail elevated at that portion opposite the switch-rail, substantially as and for the purpose described.

3. The combination of the continuous main track, branch track, movable bridge-rail, arm arranged to be operated by graduated carriers and connected to the movable rail, detent constructed to hold the rail in position in line with the branch rail, and arm arranged to be struck by the carrier after it passes from the switch-rail to operate the detent, substantially as described.

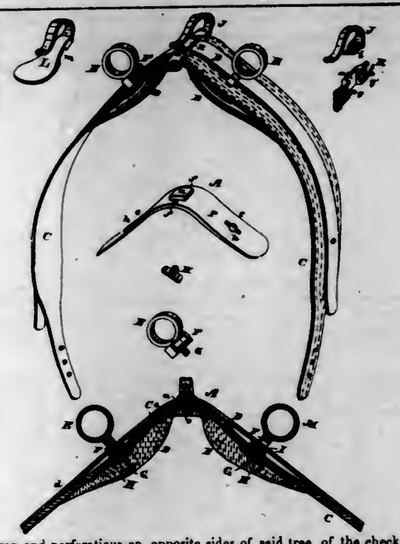
4. The combination, with the continuous main track, branch track, and movable bridge-switch rail, of the arm *k*, arranged to be struck by graduated carriers and connected to operate the switch-rail, and detent J, constructed to lock the switch-rail and to be operated by the carriers passing to the branch track, substantially as set forth.

5. The combination, with the main and branch tracks, of a switch-rail pivoted at the end which is opposite the point of junction of the tracks, substantially as described.

6. The combination of the unbroken main track, branch track, and switch-rail pivoted at the end opposite the point of junction of the tracks, substantially as described.

7. The combination of the inclined main track, branch track, and switch-rail pivoted at its highest end, substantially as described.

332,340. HARNESS-SADDLE. ALGERNON GILLIAM, Canton, Ohio. Filed July 27, 1885. (No model.)

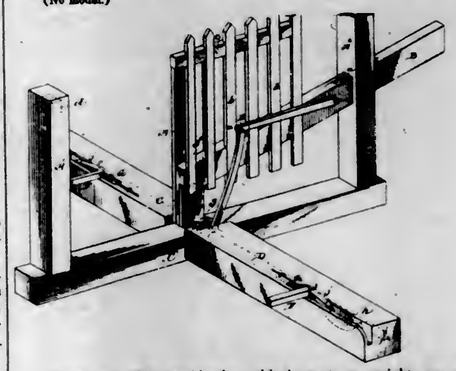


Claim.—1. The combination, with a tree having a raised seat, the skirt having an opening therein corresponding with said raised seat, and the nuts secured against the lower face of the tree, of the check-hook consisting of a hook and a seat, the latter having the depression in its lower face, forming a way or loop for the back-strap, and the terrets, constructed substantially as described and secured to the nuts.

2. The combination, with a tree having a raised seat for the back-strap and perforations on opposite sides of said tree, of the check-hook consisting, essentially, of a hook and a seat, the latter being provided on its lower face with a depression corresponding with the raised seat on the tree, and with pins for securing the hook to the tree, substantially as set forth.

3. In a harness-saddle, a check-hook composed of the following parts: the hook J, having the neck *i*, and the seat K, having socket *j* and recess *m*, substantially as set forth.

332,341. GATE. HORATIO GREEN, Clinton, Mo. Filed Apr. 23, 1885. (No model.)



Claim.—1. The combination, with the posts or uprights, one of which is provided with a slot, of the gate having the inclined bar working in the slot and grooved on its under side, an upright having its end located in the groove of said bar, a roller bearing against the lower inner edge of the bar, and a pin, *f*, for the purpose set forth.

2. The posts or uprights, in combination with the sliding gate, a rock-shaft located below the gate and connecting therewith, a lever for partially rotating the rock-shaft, and a catch for holding the lever down to retain the gate in its open position, as set forth.

3. The combination, with the posts or uprights, of a sliding gate, a rock-shaft located below the gate and connected therewith by a jointed arm, pins extending outwardly from the rock-shaft, and pivoted levers to bear against the pins, whereby the rock-shaft can be partially rotated, as set forth.

4. The combination, with the posts or uprights, of a sliding gate, a rock-shaft located below the gate, a jointed arm connecting the rock-shaft and gate, pins extending outwardly from the rock-shaft, levers for raising the pins, and thereby turning the rock-shaft, said levers having bent upper ends, and catches to engage said bent ends of the levers, for the purpose set forth.

5. The combination, with posts or uprights, of a sliding gate, a rock-shaft, a jointed rod connecting the rock-shaft and gate, pins projecting outwardly from the rock-shaft, pivoted levers to engage with said

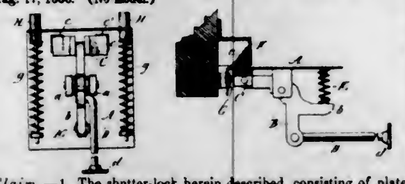
pins, spring-catches to engage the bent upper ends of the levers, and springs bearing against the inner sides of the levers, as set forth.

332,342. FOLDING CHAIR. ADOLPH HORN and HERMANN GUNDLACH, Chicago, Ill. Filed Apr. 13, 1885. (No model.)



Claim.—The combination, with legs A A' and their connecting cross-rods *b* and *f*, of the seat C, pivoted at its front end to rod *b*, and provided with side strips, *d d*, having hook-shaped rear ends, *e e*, bent downward and outward and engaging with the rod *f* and upright piece B of the chair, substantially as described.

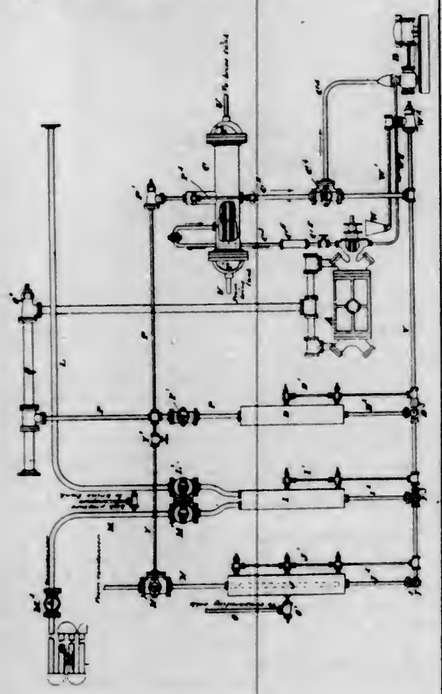
332,343. COMBINED SHUTTER-FASTENER AND SHUTTER-OPENER. ADOLPH HORN and MATHIAS J. LENK, Chicago, Ill. Filed Aug. 17, 1885. (No model.)



Claim.—1. The shutter-lock herein described, consisting of plate A, bell-crank B, double-headed bolt C, rod D, and spring E, all constructed and arranged to operate as specified.

2. The combination, with shutters and suitable locking devices therefor, of lock-plate A and spring-actuated bolts H, the parts arranged as and for the purpose set forth.

332,344. OIL-DRIP AND SEPARATING-TANK FOR AMMONIA-GAS PUMPS. EDMUND JUNGENFELD and HERMANN RASSBACH, St. Louis, Mo., assignors to the Empire Refrigerating Company, same place. Filed Nov. 17, 1884. (No model.)



Claim.—1. The combination, with the tanks or cylinders D, I, and J, the pipes D^2, I^2, and J^2, having valves D^3, I^3, and J^3, of the pump B, and the pipes V C^2, connecting said cylinders with the suction side of said pump, whereby either of said cylinders may be evacuated, substantially as set forth.

2. The combination, with the tanks D and I and the pipes D^2 and I^2, having the cocks D^3 and I^3, of the pump B, the pipes V and C^2, connecting said pipes D^2 and I^2 with the suction side of said pump, the cooler C, and the circulating-pipes C^2 C^3, substantially as set forth.

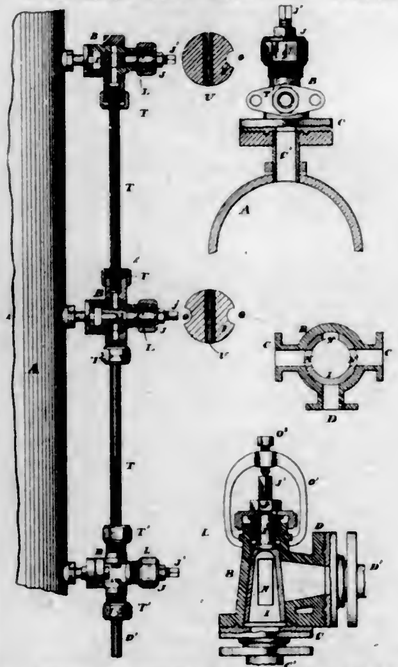
3. The combination of the high-pressure drip-tank and pipes L and M, provided with three-way cocks or valves, whereby a circulation of gas is had either through the tank or direct to the condenser, substantially as specified.

4. The combination, with the cooler C and the compressor A, of the pipes P Q, connecting said cooler with the suction side of said compressor, and the low-pressure cylinder D.

5. The combination of the condenser and liquid-receiver J, connected by a pipe, N, provided with a three-way valve, whereby a vacuum may be pumped on the condenser for connecting it to the suction side of the compressor, with which it is connected by pipes, substantially as set forth.

6. The combination, with the cooler C and the compressor A, of the pipes P Q, connecting said cooler with the suction side of said compressor, the low-pressure drip-cylinder D, the pump B, the pipes D^2, V, and C^2, connecting said cylinder with the suction side of said pump, and the circulating-pipes C^2 C^3, all constructed and arranged to operate substantially as set forth.

332,345. STOP-COCK FOR AMMONIA-GAS. EDMUND JUNGENFELD and HERMANN RASSBACH, St. Louis, Mo., assignors to the Empire Refrigerating Company, same place. Filed Nov. 17, 1884. (No model.)

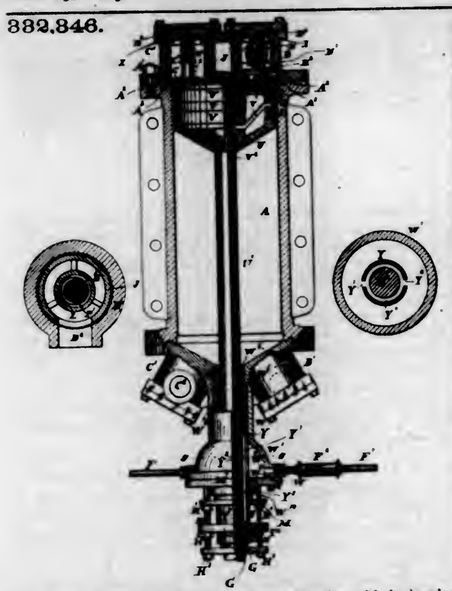


Claim.—1. The combination, with a barrel having a hollow tapering bore, a port in the base thereof, and a second port in the side, of a hollow tapering plug open at its base and side for communicating with said ports, respectively, and a screw bearing against the smaller end of the said plug in opposition to the steam-pressure, substantially as and for the purpose set forth.

2. The combination of the barrel B, having a tapering bore, the tapering plug I, pressed to its seat within said barrel by the fluid, the stem I', projecting from the smaller end of said plug, the yoke O', engaging a flange on the barrel, and the screw O^2, threaded into the yoke O' and bearing upon the stem I' in opposition to the pressure of the fluid, as and for the purposes set forth.

332,346. GAS-COMPRESSOR. EDMUND JUNGENFELD and HERMANN RASSBACH, St. Louis, Mo., assignors to the Empire Refrigerating Company, same place. Filed Nov. 17, 1884. (No model.)

332,346.



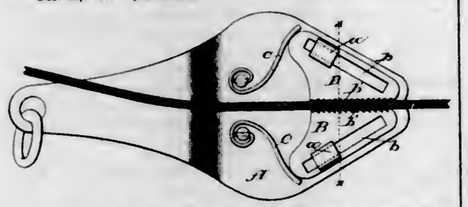
Claim.—1. In a gas-compressor, the combination, with the housing B' and the suction-valve B, having the hollow stem B^3 projecting therefrom, of the casing J, upon the lower end of which the valve seats, said casing having the spider L and hub through which said valve-stem passes, the disk D, bearing upon the upper end of the casing J, and having the pin D', fitting within the hollow stem of the valve, the screw-cap N on the valve-stem, and the spring surrounding said stem and exerting its pressure in opposite directions against the hollow hub and screw-cap, substantially as set forth.

2. In a gas-compressor, the combination of the neck having a bell-mouth forming a chamber, W^3, slotted sleeve forming a chamber, Y', packing W^4, means for tightening the sleeve on the packing, and pipes F F', all arranged and operating substantially as shown and described, for the purpose set forth.

3. In a gas-compressor, the combination of the neck W, head W^2, sleeve Y, packing W^4, collars M and G, packings Y^2 and Y^4, rods H, and nuts H' H^2 H^3, all arranged and operating substantially as shown and described, for the purpose specified.

4. The combination of the valve-case, the spider L, secured therein and having the hollow hub, the enlargement P, and inturned flange L', the valve B, having the stem B^3 projecting through said hub, the screw-cap N on said valve-stem, and the spring N' and P', surrounding the stem and coiled in opposite directions, substantially as set forth.

332,347. WIRE-CLAMP. PETER F. KEELYN, Racine, Wis. Filed Feb. 24, 1885. (No model.)



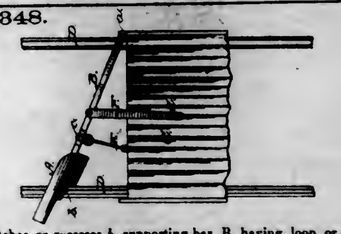
Claim.—1. In a wire-clamp, the slotted triangular jaws having teeth on their adjacent edges, in combination with springs for forcing them toward each other, and headed guides, the shanks of which extend from the clamp-plate through the slots of the jaws, fitting loosely in the latter, substantially as described.

2. The combination of plate A, jaws B, having teeth *b'* on their adjacent edges, which teeth are concaved to better hold the wire, and which jaws are slotted to receive the shanks of the headed guides, the guides *a*, and springs, substantially as described.

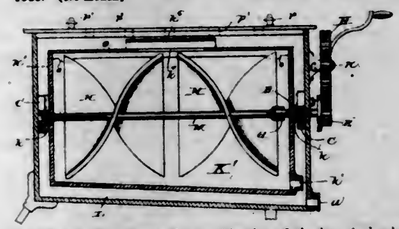
332,348. SNOW-PLOW FLANGE. ISAAC P. KILGORE, West Point, Ill. Filed Oct. 15, 1885. (No model.)

Claim.—The herein-described device for removing snow from railroad-tracks, consisting of the flange or mold-board A, provided with the notches or recesses *b*, supporting-bar B, having loop or thimble *a*, rod E, and lever or handle F, all co-operating, substantially as and for the purpose specified.

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332,349. CHURN. HOWARD R. KNOX, Bruce, Mich. Filed July 30, 1885. (No model.)

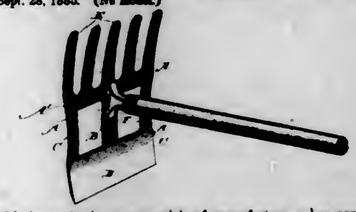


Claim.—1. In a churn, the combination of the box A, having the seats C on the inner sides of its ends, said seats having the vertical open recesses, and the box K', having the projecting lugs *k* on its ends adapted to enter the recesses in the seats and suspend the box K' in the box A, and permit it to be readily lifted out of box A, substantially as described.

2. A churn comprising the outer box, A, having the seats C on the inner sides of its ends, said seats having the vertical open recesses, the box K', having the projecting lugs *k* on its ends, adapted to enter the recesses in the seats to suspend the box K' in box A, the dasher-shaft having one end journaled in an opening in one of the studs or lugs *k* and a socket at its other end, and the shaft D, journaled in an opening in the remaining lug *k*, one end of said shaft fitting in the socket of the dasher-shaft, and means for rotating the shaft D, substantially as described.

3. The combination, with the inner box, K', having projecting hollow lugs or trunnions *k*, of the outer box, A, having seats for the lugs or trunnions, the dasher-shaft M, having one end journaled in one of the lugs or trunnions and provided with a socket at the outer end, and the shaft D, passing through the box A and journaled in the other lug or trunnion, one end of the shaft D fitting in the socket of the dasher-shaft and the other end connecting with the operating means, as set forth.

332,350. HOE. FREDERICK S. KREYDINGER, Fort Madison, Iowa. Filed Sept. 28, 1885. (No model.)



Claim.—1. As a new article of manufacture, a hoe comprising a body, blade, and teeth formed integrally, the body being cut away above the blade, and having the rivet-holes for the handle-socket directly beneath the base of one or more of the teeth, substantially as described.

2. As a new article of manufacture, a hoe having its body cut away above the blade, and having formed integral with its body a series of teeth or prongs of an uneven number, so that one of said teeth shall occupy the central position, and having a handle-shank riveted to said body near the base of the middle tooth of the series, substantially as described.

3. As a new article of manufacture, a hoe having its body, blade, and teeth formed of a single piece of metal, the body being cut away and provided with a central downwardly-extending portion to afford strengthening stock for the rivet-hole, substantially as described.

332,351. PEANUT-ROASTER. THOMAS LEE, Cincinnati, Ohio. Filed Aug. 19, 1885. (No model.)

Claim.—1. A coffee-roaster consisting of a casing provided with

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upper and lower openings to receive the roasting-cylinder and fire-pan, respectively, ways in the casing leading from said openings, and a fire-pan interchangeable in said ways.

2. In a peanut-roaster, the main casing provided with ways E and G, the fire-pan formed centrally with a depression, having a perforated bottom and laterally inclined sides terminating in wings, and interchangeable within the upper and lower ways, substantially as herein set forth.

3. The combination, in a peanut-roaster, of the main casing provided with a circular opening, and also having ways, as set forth, and a warmer in the top of said casing, the fire-pan adjustable within the ways beneath the warmer, having forwardly the shield removably connected with the forward part of the pan, substantially as herein set forth.

4. The combination of the main casing having the ways E and G, the warmer B, and reservoir N in the top of said casing, the cylinder C, journaled in the frame D, and the fire-pan H, interchangeable within the ways, substantially as herein set forth.

5. The combination of the casing A, having the flue L, and at the top a flange, K, the warmer B, resting on the flange K, and having the reservoir N, the ways E and G, the cylinder C, journaled within the frame D, the fire-pan H, having the wings J, said pan adjustable and interchangeable within the ways, the whole arranged substantially as herein set forth.

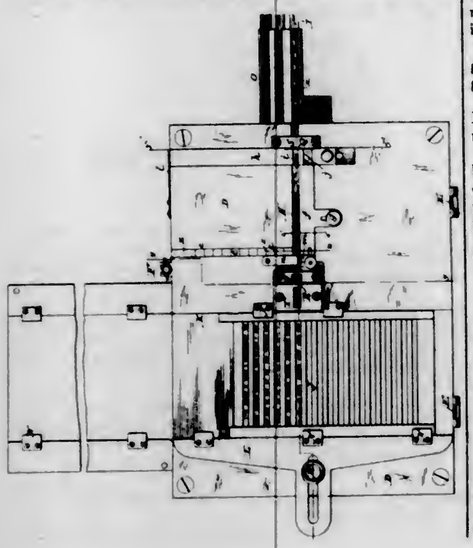
6. A roaster of the character described, consisting of the main casing provided with suitable ways, and the corner-stays O O, provided with the recesses or grooves O' O', which form a part of the ways, substantially as and for the purposes set forth.

7. In a combined roaster and warmer, the main casing provided with suitable ways, the opening in the upper portion of the casing for the cylinder and lower opening for the fire-pan, in combination with the fire-pan, the warmer, and the cylinder, said fire-pan provided with a removable shield which closes the upper portion of the cylinder-opening, said cylinder and fire-pan being interchangeable in the upper ways, substantially as and for the purposes set forth.

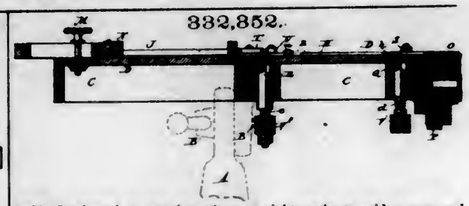
332,352. **MACHINE FOR JUSTIFYING MATRICES FOR PRODUCING PRINTING-SURFACES.** FRANK D. MALTBY, Washington, D. C., assignor, by mesne assignments, to the National Typographic Company, same place. Filed Oct. 24, 1884. (No model.)

Claim.—1. In combination with the bed or support grooved to receive the matrix-strip, the rotary guide provided with a series of grooves or channels to register with that in the bed.

2. The support containing the groove H, in combination with the



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guide O, pivoted to turn in a plane at right angles to said groove, and provided in its periphery with a series of grooves extended in lines parallel thereto and all adapted to register therewith.

3. In combination with the grooved bed-plate and the pivoted guide O, grooved as described, the automatic spring-locking device to hold the guide in position.

4. In a matrix-justifying machine, the combination of the matrix-guide and a dividing-knife acting in an inward direction or from the back of the matrix, whereby sharp clean edges are produced at the face of the matrix, so that its sections may be jointed closely together.

5. In a justifying-machine, the bed provided with the matrix-guide and a dividing-knife, in combination with a standard or support to which the bed is jointed, substantially as described, to admit of its inclination being changed at will.

6. In a machine for justifying strip-matrices, the combination of a grooved bed or guide, through which to pass the matrix in an endwise direction, and a two-edged knife acting transversely of the groove at an intermediate point in the length of the same, substantially as described, whereby sections may be removed from the strip and the remaining portions permitted to continue their advance end to end beyond the knife within the groove.

7. In a machine for justifying strip-matrices, the combination, substantially as shown, of a grooved bed or guide, through which to pass the matrix in an endwise direction, the two-edged knife acting transversely of the groove at an intermediate point in the length of the same, the operating-arm V'', and the interposed spring *c*, whereby sections may be removed at intermediate points in the strip and automatically ejected, and the remaining portions are permitted to continue their advance beyond the knife within the groove.

8. The combination of the two knives, their actuating-arms, and the lever connected to said arms, whereby the lever is caused to actuate the knives simultaneously.

9. In combination with the bed or guide and the knives Q and R, the rock-shaft, the arm V'', having a limited movement in relation to knife R, the lifting-spring *c*, the arm V', and the depressing-spring *d*, whereby the shaft is caused to actuate both knives and the spring *d* caused to restore the parts to their normal positions.

10. In a justifying-machine, a bed or support provided with the main matrix groove or guide H, and the secondary groove or guide Z, at right angles thereto, whereby the introduction of spacing-pieces, quads, or characters is permitted.

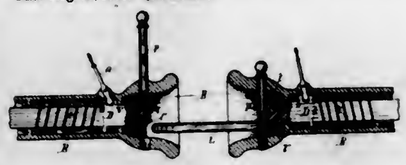
11. In combination with a bed provided with a main matrix groove or guide, a severing-knife, and a grooved slide, Z, moving across the main groove, whereby the removal of severed portions of the main strip is permitted.

12. In combination with the bed provided with the matrix guide or groove H, the severing-knife Q, and the transverse slide containing the grooves *i* and *j*, of the form shown and described.

13. In a matrix-justifying machine provided with a groove or guide, H, and a severing-knife, a stop-arm, *n*, to arrest the advance of the matrix-strip.

14. In a matrix-justifying machine, and in combination with the bed grooved to receive the matrix, two knives located near opposite ends of said groove, one adapted, as described, to sever the strip at a single point and the other to sever it at two points and remove the intervening portion.

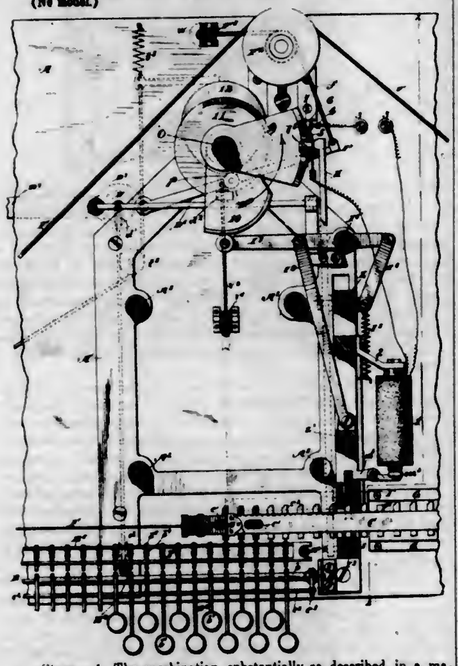
332,353. **CAR-COUPLING.** CHARLES S. MAYNARD, Paw Paw, Mich. Filed Aug. 29, 1885. (No model.)



Claim.—In a car-coupling employing the ordinary draw-head, coupling-pin, and link, a sliding block which is forced forward under spring-pressure, having in its forward end an open transverse recess to receive and sustain the link in a horizontal position by the clamping of the end of the link between the pin and the walls of the recess, and a

lever to release said clamping of parts to free the pin, substantially as set forth.

332,354. **MACHINE FOR FORMING TYPE-MATRICES.** OTTMAR MERGENTHALER, Baltimore, Md., assignor, by mesne assignments, to the National Typographic Company, Washington, D. C. Filed June 27, 1883. (No model.)



Claim.—1. The combination, substantially as described, in a machine for producing type-impressions, of type-selecting devices, a series of type-carrying strips, mechanism for shifting said strips into engagement with the selecting devices and to bring the selected types into alignment, and locking-bars for supporting the latter, one of said bars having a projecting flange with which the selected types engage as the strips are shifted, arresting the motion of the latter, substantially as described.

2. The combination, with keys and the type-carrying strips arranged one above another, of intermediate type-pins carried in a frame having vertical adjustment, and mechanism, substantially as described, for moving said frame after each type-selection to bring it opposite the succeeding type-strip, substantially as described.

3. The combination, with the type-strips, of bars between which said strips pass, by which both ends of the selected type are locked, a clamping-bar moving vertically and compressing the line of selected type, and mechanism, substantially as described, whereby the locking-bars and the clamping-bar are engaged with and disengaged from the selected types, substantially as described.

4. The combination, with the selecting mechanism, of the type-strips, devices, substantially as described, for shifting said strips, locking-bars for supporting and a clamping-bar for compressing the selected types, and mechanism, substantially as described, for impressing a plastic strip upon the types.

5. The combination, with the type-strips, of movable types and quadrats arranged therein, and elastic connections intermediate between each quadrat and the strip by which it is carried, substantially as described.

6. The combination, with the type-strips having movable types and quadrats connected therewith in the manner set forth, of mechanism, substantially as described, for bringing the selected types into alignment, and a clamping-bar whereby they are compressed by the yield of the elastic connections of the quadrats into a line of a given length, substantially as described.

7. The combination, with the type-strips, of cords attached to each end, sheaves over which said cords pass to an actuating-roll, and devices, substantially as described, for rotating said roll alternately in opposite directions, substantially as described.

8. The combination, with the type-pins, of a supporting-frame, a rod carrying said frame, and provided with opposite alternately-arranged serrations at its upper part, devices, substantially as described, for raising said rod vertically, and escapement-pawls which are operated by the type-selecting keys, and which engage alternately with the serrations in the rod and limit and time its upward movement, substantially as described.

9. The combination, with the type-strips carried by cords, of the sheaves guiding and supporting said cords, and a traveling guide having a vertical post through which the cords pass, with transverse channels registering with said perforations and adapted to support one end of the strips during the process of selecting the type, substantially as described.

10. The combination, with the type-strips, of the shifting-roll, a weighted cord actuating the same, a lever operating said cord, a cam actuating said lever in both directions, and mechanism, substantially as described, for arresting the movement of said cam when it has thrown the lever in one direction.

11. The combination, with the type-carrying strips, of the locking-bars I and I', mounted upon frames L and L', sliding in opposite directions, the lever I², having rods pivoted upon each side of its fulcrum and to said frames, and a cam operating said lever at stated intervals, substantially as described.

12. The combination, with the type-strips and their shifting mechanism, of the bar I', having the plates i^9 and i^8, provided with the flanges i^{10} and i^{11}, respectively, the bar I, carrying the clamping-bar I^3, having channel i^{12}, and mechanism, substantially as described, for operating the same, as set forth.

13. The combination, with the type-strips, of types arranged at intervals thereon, quadrats connected with each strip by an elastic plate *n*, whereby said quadrats are suspended from each strip with a space between, and a clamping-bar adapted to compress the selected types against the tension of said elastic quadrat-connections, substantially as described.

14. The combination, with the frame L', carrying the bar I', within which the matrix-strip is fed, of compressing mechanism, substantially as described, acting upon the rear face of the matrix-strip by a series of impactions thereon applied to the entire surface simultaneously, substantially as described.

15. The combination, with the type-strips C, having slots *c'* in one end, of the clamping-bar I^3, having arm I^4, with downwardly-extending stud i^3, substantially as described.

16. The combination, with the type-strips C, having plates provided with nibs *c c*, attached at regular intervals, of the types c^2, having grooves c^3 in their upper and lower sides to receive said nibs, substantially as described.

17. The combination, with the block I', of an impressing device mounted upon a lever pivoted to the frame L', said lever having an armature, an electro-magnet having its poles arranged to attract said armature, and devices, substantially as described, for successively interrupting the current which vitalizes the magnet, substantially as described.

18. The combination, with the type-pin frame B^3, of the rod B^5, having serrations b^3, formed upon opposite sides and alternating with each other, the bell-crank levers E and E', both coupled to a single connecting-rod, *e*, and having toothed ends which engage with the serrations b^3, and the rod e^2, arranged beneath the keys B^2, substantially as described.

19. The combination, with the vertically-adjustable type-pin frame having a supporting-rod, B^5, of the cord D, weight D', lifting-arm D^4, cord D^5, lever D^6, and cam 11, substantially as described.

20. In combination, substantially as described and shown, of a series of type adapted to be placed in line, a series of yielding quads or spacing devices adapted for introduction between the aligned type, clamps acting against the ends of the line to confine the type between them, and mechanism, substantially as described, for approximating said clamps, whereby the line is justified or reduced in length to the predetermined limit.

21. In a machine of the type herein described, the type and their carrying devices, the yielding quads and their carrying devices, clamps acting to compress the selected and aligned type lengthwise of the line, and mechanism, substantially as described, for operating said clamps subsequent to the alignment, whereby the types and quads are left free during the process of alignment and subsequently compressed to reduce the length of the line.

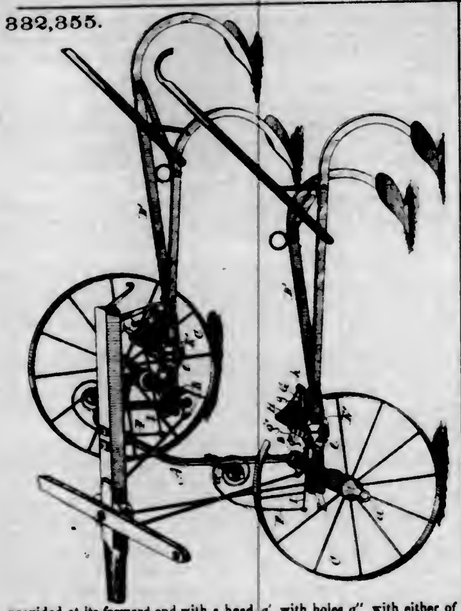
22. In combination with longitudinally-movable bars, each provided with a series of transversely-movable type, clamps, as I^2 and I^4, to confine the aligned type in one direction, and clamps, as I' and I^2, to confine them in a different direction.

332,355. **CULTIVATOR.** JOSEPH B. MORRISON, Fort Madison, Iowa. Filed Dec. 26, 1884. (No model.)

Claim.—1. In a cultivator, in combination with an axle, plow-gang hinged thereto to swing vertically and horizontally, and a spring, a head, *g'*, provided with a series of holes, *g''*, with either of which the spring may be connected, substantially as and for the purpose specified.

2. In a cultivator, in combination, an axle, a plow-gang hinged to swing vertically and horizontally with reference to said axle, a spring, and a swinging link hinged to the plow-gang in rear of its couplings and adapted to swing vertically, while it is held from swinging laterally, and

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provided at its forward end with a head, g', with holes g'', with either of which the spring may be connected, substantially as and for the purpose specified.

3. The combination, with a vertically and laterally swinging plow-beam, of a spring connected with the plow-beam by a link, the rear end of which link is hinged to the plow-beam in rear of the pivot-bolts on which said plow-beam swings, and the forward end of said link connected with said spring at a point immediately over the pivot-point on which the plow-beam swings laterally, and a guide or fin projecting from the plow beam or gang for preventing lateral deflection of said link, while it permits it to swing freely in a vertical plane, substantially as and for the purpose specified.

4. The combination, with a vertically and laterally swinging plow-beam, of a spring connected with the plow-beam by a link, the rear end of which link is hinged to the plow-beam in the rear of the pivots on which said plow-beam swings, and the forward end of said link connected with said spring at a point immediately over the pivot-point on which the plow-beam swings laterally, and a guide or fin projecting from the plow beam or gang for preventing lateral deflection of said link while it permits it to swing freely in a vertical plane, and which guide is located in rear of the vertical pivot-bolt on which the plow gang or beam swings laterally, substantially as and for the purpose specified.

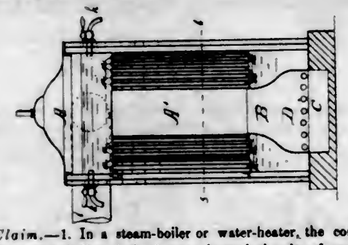
5. The combination, with a vertically and laterally swinging plow-beam, of a lifting-spring connected with the plow-beam by a link, the rear end of which link is hinged to the plow-beam in rear of the pivots on which said plow-beam swings, and a guide or fin for preventing lateral deflection of said link while it permits it to swing freely in a vertical plane, and which guide is located on the plow beam or gang in rear of the vertical pivot-bolt on which said plow beam or gang swings laterally, substantially as and for the purpose specified.

332,356. BAND FOR STRAPPING BOXES, &c. GRANVILLE NICHOLSON, New York, N. Y. Filed Feb. 24, 1885. (No model.)

Claim.—1. The band for strapping boxes and bales, consisting of a single wire having at intervals in its length eyes, which are formed complete from the single wire and are of a size to receive the bodies and exceed the heads of securing devices, the wire being deflected or set down at the point of crossing to form the eye, so that one side or face of the band will be flat with the eyes coincident with the wire, substantially as herein described.

2. The band for strapping boxes and bales, consisting of a single continuous wire having at intervals eyes a, formed complete from the wire and each having a twist, a^2, at its junction with the wire, the wire being straight between the eyes and deflected at its points of crossing a to form the eyes, and the wire being continuous in and between the eyes, substantially as herein described.

332,357. STEAM-BOILER. VASSILI P. ORLOFF, Moscow, Russia. Filed June 19, 1885. (No model.)



Claim.—1. In a steam-boiler or water-heater, the combination, with the outer shell and the furnace located therein, of partitions arranged to subdivide the interior of the shell into a series of contracted or narrow continuous passages and form an axial draft-flue, A', for the circulation of the water and the products of combustion, the former enveloping or surrounding the latter and the furnace, said passages constituting independent circuits having their initials connected with the feed-water pipe and axial draft-flue, respectively, and their terminals with a discharge-pipe and chimney, respectively, substantially as and for the purpose specified.

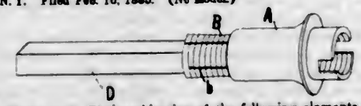
2. In a steam-boiler or water-heater, the combination, with the outer shell, a furnace in the base of said shell, a feed-water heater connected with the steam-space of the shell, of partitions arranged to subdivide the interior of said shell into a series of contracted or narrow continuous passages and form an axial draft-flue, A', for the circulation of the water and products of combustion, the former enveloping or surrounding the latter and the furnace, said passages constituting independent circuits having their initials connected with the feed-water heater and the axial flue, respectively, and their terminals with a discharge-pipe and chimney, respectively, substantially as and for the purpose specified.

3. The combination, with the inclosing-shell of a boiler, the furnace, the chimney, and partitions arranged to form an axial flue and a series of continuous concentric passages for the circulation of the water and the products of combustion, the former enveloping or surrounding the latter, of the partitions f g h, said parts being arranged substantially as and for the purpose set forth.

332,358. PRODUCING CHLORIODINE DOUBLE COMBINATIONS FROM PYRIDINE AND CHINOLINE BASES. EUGEN OSTERMAYER, Bieberath, and MAX DITTMAR, Königsberg, Germany. Filed June 20, 1884. (Specimens.)

Claim.—The herein-described process of producing double combinations of chloriodine with pyridine, chinoline, tetrahydrochinoline or chinoline methylate by treating these bases with chloriod-hydrochloric acid, substantially as set forth.

332,359. DOOR-KNOB ATTACHMENT. JOHN A. PADEN, Tarrytown, N. Y. Filed Feb. 10, 1885. (No model.)



Claim.—1. The combination of the following elements: a door-knob spindle having plain or milled bearing-surfaces, a door-knob shank having internal tapering and threaded surfaces, and bearing-pieces located between the spindle and the shank, having parallel bearing-surfaces next the spindle and tapering and threaded bearing-surfaces next the shank, with a capacity for parallel movement to and from the spindle through its entire length, substantially as described.

2. The combination of the spindle and the threaded and tapering shank with the threaded and tapering sleeve slitted alternately from each end, as described.

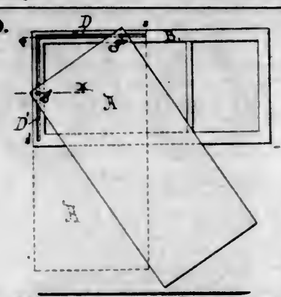
332,360. DESK, WASH-STAND, AND OTHER FURNITURE. JOSEPH PERNEY, Grand Rapids, Mich. Filed Mar. 27, 1884. (No model.)

Claim.—1. In a wash-stand, toilet-case, or equivalent article of furniture, the combination of a stand or body provided in its top with two grooves, and a horizontally-swinging top attached thereto at one end by studs arranged to slide in said grooves, substantially as described.

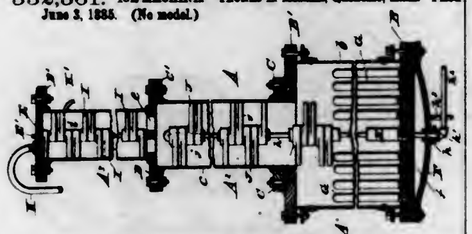
2. The body B, having a chamber or compartment in its top, and the grooves D D' in its upper edges, in combination with the horizontally-swinging top A, provided at one end with the two studs entering the respective grooves, as shown.

3. In combination with the oblong body, the oblong top attached thereto at one end by two horizontal sliding connections at right angles to each other.

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332,361. ICE-MACHINE. THOMAS L. RANKIN, Quenemo, Kans. Filed June 3, 1885. (No model.)



Claim.—1. The combination, in the still of an ice or refrigerating apparatus, of the steam-pipes closed at top and opening through the base-plate of the still into a steam-space thereunder, the central steam-pipe rising in the axis of the still having its top closed and opening into the steam-space below the base of the still, the steam-pipe running centrally through said space and former steam-pipe and having its top open, and the dish-shaped quadrants arranged on the central steam-pipe and adapted to receive the water of ammonia from the upper part of the still and allow it to drip gradually downward from one to the other, substantially as specified.

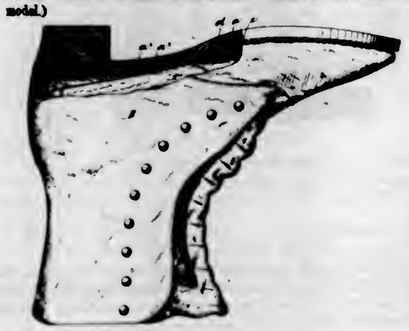
2. In a still for an ice-machine, the combination, with the section A', base-plate B, and dish-shaped plate F, of the steam-space f, steam-pipes G, central steam-pipes, H and h, and means, substantially as described, to cause the ammonia-water to descend slowly around the central steam-pipe.

3. In a still for an ice-machine, the combination, with the casing A, made in three sections, A', A^2, and A^3, respectively, and provided with the base-piece B, ammonia-water inlet K, and gas-outlet K', of the dish-shaped plate F, forming a steam-space below the base-plate, steam-pipes G, H, and h, and quadrant-shaped shallow dishes I and J, arranged substantially as described, to cause the water-ammonia to drip gradually from one to the other as it descends, substantially as described.

4. In ice-making apparatus, the combination, with a proper still, of the condenser L, composed of the return-bend coils l; the supplementary cooling-coils M, connecting with the coils l and with the pipe N, the three-pipe couplings m', provided with the diaphragms m^3, having the small openings m^4, and the water-trough N', situated on the opposite side of the condensing-coil to the gas-entrance pipe m^3, substantially as specified.

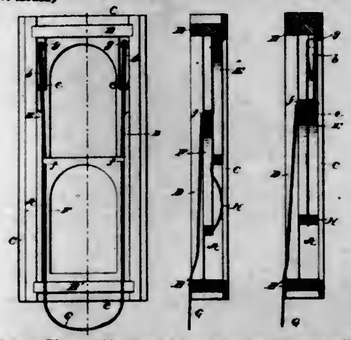
5. In ice-making apparatus, the combination, with the brine-tank O' and water-cans O, arranged to stand vertically and move freely therein, of the oscillating shafts o, double-armed levers o', and levers P, vibrated by means substantially as described.

332,362. ART OR METHOD OF MANUFACTURING BOOTS OR SHOES. JOHN G. ROSS, Wakefield, Mass. Filed Oct. 21, 1885. (No model.)



Claim.—The herein-described improvement in the art or method of manufacturing boots and shoes, which consists in first splitting the inner sole from the heel to the ball, thereby forming an outer face and a tread-face, as described, then inserting a metallic plate between the outer face and tread-face, securing the inner sole with the interposed plate to the bottom of a last, lasting the upper and securing a welt in the usual manner, applying the outer sole, removing the last and metallic plate, securing the outer sole to the welt around the fore part, uniting the outer sole, upper, and outer face of the inner sole around the heel and shank portion, the tread-face of the inner sole at such time being temporarily turned back, and, lastly, securing the tread-face of the inner sole down upon the outer face of the inner sole, thereby concealing the stitches and leaving a smooth surface for the tread of the foot, substantially as described.

332,363. SASH-BALANCE. JOHN A. ROGERS, Hartsell's, Ala., assignor of one-half to James M. Echols, same place. Filed Sept. 29, 1885. (No model.)



Claim.—The combination of a frame, a pair of vertically-sliding sashes, a pulley-bracket pendent from the top of the frame and located within the path of the top sash, which is grooved to receive it, a bow-spring attached to the lower sash, and a cord passed over the pulley in the pendent bracket and adjustably connected with one sash and rigidly attached to the other, substantially as set forth.

332,364. PROCESS OF PRODUCING PHOTOGRAPHS IN PERMANENT PIGMENTS. WILLIAM W. SHERMAN, Milwaukee, Wis. Filed July 1, 1884. (No specimens.)

Claim.—1. In the process of producing photographs, the application, in the form of a fine spray, of pigments suspended in a gelatine solution or other suitable vehicle capable of being sensitized, to the surface designed to receive the photographic impressions, and producing thereon a dotted or stipple effect, substantially as set forth.

2. In the process of producing photographs, the several steps described, consisting of, first, coating the surface of the paper or other suitable material with a sizing of suitable solubility; secondly, the application, in the form of a fine spray, to said surface of the pigments suspended in a vehicle made sensitive to the action of light; thirdly, the exposure to the light; and, fourthly, the development of the image by washing away the parts not acted upon by the light, leaving a dotted or stipple effect upon the print, substantially as set forth.

332,365. BAND-SAW MILL. SAMUEL STEPHENS, Indianapolis, Ind. Filed Sept. 3, 1885. (No model.)

Claim.—1. The combination, in a band-saw mill, of the post A, the lower band-wheel, B, a shaft therefor, the upper band-wheel, C, the hollow shaft D therefor, the yoke G, in which said shaft is mounted, and a rod, G', which passes through said hollow shaft and secures the upper ends of the yoke together, substantially as and for the purposes set forth.

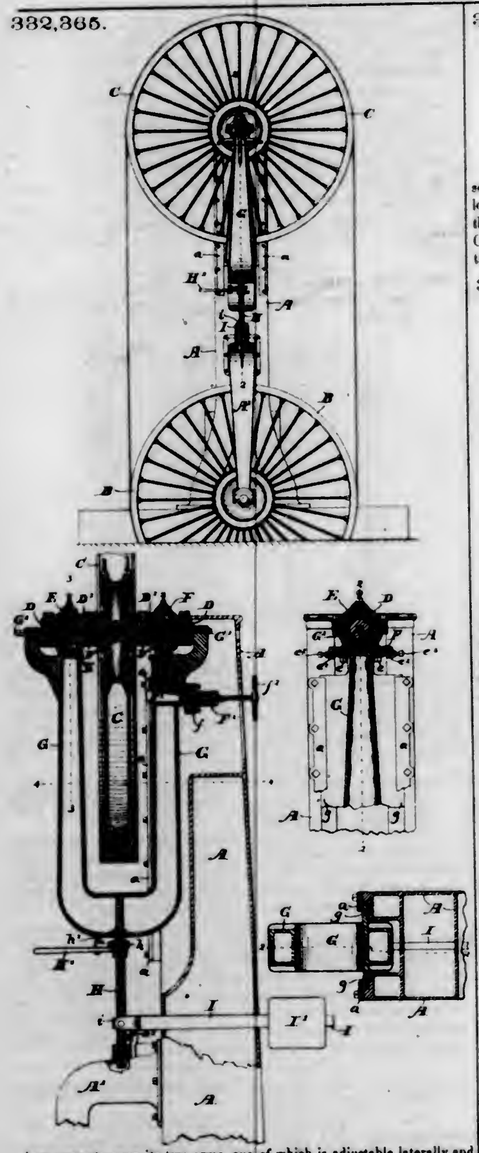
2. The combination, in a band-saw mill, of a yoke, G, adjustable box-supports mounted thereon, a hollow shaft mounted in boxes, supported thereby, and a rod or bolt passing through said hollow shaft and securing the upper ends of said yoke together.

3. The combination, in a band-saw mill, of a yoke, a shaft mounted in boxes thereon, and a box-support, E, for one end of said shaft, mounted on a horizontal way on the upper end of one arm of said yoke, and provided with lips e' and adjusting-screws e^4, whereby said box-support and the box and shaft end carried thereby may be adjusted laterally.

4. The combination, in a band-saw mill, of the yoke, a shaft mounted in boxes thereon, a box-support, F, for one end of said shaft, mounted in a vertical socket in the upper end of one of the arms of the yoke, a wedge mounted in a way in said yoke and supporting the stem of said box-support, and means for driving said wedge back and forth, whereby said box-support and the box and shaft end carried thereby may be adjusted vertically.

5. The combination, in a band-saw mill, of the yoke G, carrying

332,365.



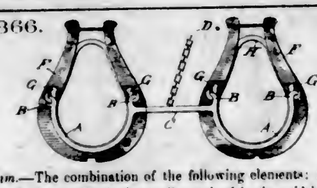
box-supports upon its two arms, one of which is adjustable laterally and the other of which is adjustable vertically, substantially as described, and for the purposes specified.

6. The combination, in a band-saw mill, of a vertically-adjustable yoke mounted in slides on the frame-work, means of adjusting the same, two box-supports, one mounted upon the upper end of each arm of the yoke, and one of which is adjustable laterally and the other of which is adjustable vertically, and means for effecting said several adjustments.

7. The combination, in a band-saw mill, of the main post or standard, a yoke mounted and adjustable in slides therein, a box-support, E, mounted upon the upper end of one arm of said yoke, means for adjusting the same laterally, a box-support, F, mounted upon the upper end of the other arm of said yoke, means of adjusting the same vertically, boxes mounted in said box-supports by means of a ball-and-socket formation, a hollow shaft mounted in said boxes, and a rod or bolt passing through said hollow shaft and connecting the upper ends of the yoke together.

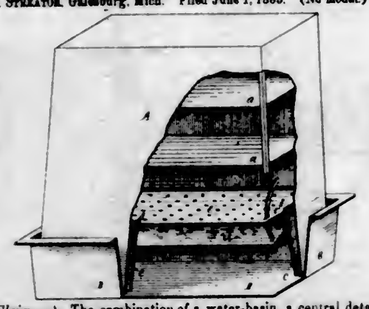
332,366. DRAFT YOKE OR BAR FOR DOUBLE TEAMS. WILLIAM W. STOCKTON and GEORGE PHELPS, San José, Cal. Filed July 29, 1885. (No model.)

332,366.



Claim.—The combination of the following elements: the hooks G, secured to the hames F, the hooks B, retained in the said hooks G, and located at the ends of the semicircular pieces A, the bar C, connecting the said semicircular pieces A, and the chain D, secured to the said bar C, substantially as and for the purpose set forth in the annexed specification and shown in the accompanying drawings.

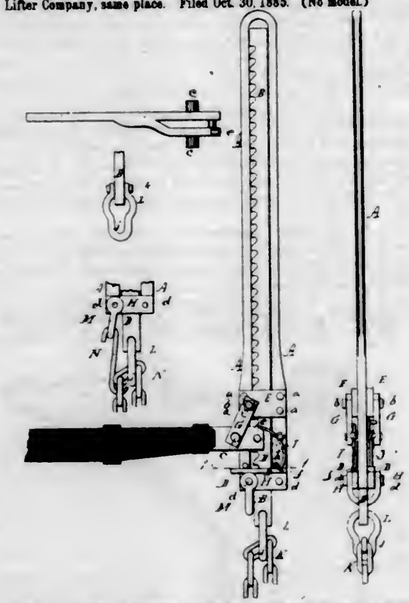
332,367. REFRIGERATOR-SAFE FOR BREAD, CAKE, &c. HENRY D. STREATOR, Galesburg, Mich. Filed June 1, 1885. (No model.)



Claim.—1. The combination of a water-basin, a central detachable water-cover in said basin, of a size to leave a space between it and the side wall of the basin, and having a perforated top and a gate to close said perforations and open them to control the degree of moisture passing through them, and the case detachably setting into the basin and over the central water-cover, substantially as set forth.

2. The combination of the basin, the water-cover having the perforated top and packing around said cover, and the case setting over the cover and into the basin and engaging the packing of said water-cover, substantially as set forth.

332,368. STUMP-EXTRACTOR AND STONE-LIFTER. WILLIAM O. WHITE, Lake Village, N. H., assignor to the American Rock and Track Lifter Company, same place. Filed Oct. 30, 1885. (No model.)



Claim.—1. In combination with the bow-frame A and ratchet-bar B, sliding therein, the cross-bars E E, connected at each end thereof to the bow-frame by two bolts, *a a*, laterally separated from each other, substantially as and for the purpose herein specified.

2. The lever C, provided with suspension-trunnions *c c*, formed solidary therewith, in combination with the suspension-straps G G, substantially as and for the purpose herein specified.

3. The combination of the spring-lever I, the actuating-lever C, having a slot, *e*, in its short end to receive the upper end of the spring-lever, and the pawl-latch D, having a slot, *f*, in one end to receive the lower end of the spring-lever, substantially as and for the purpose herein specified.

4. In combination with the ratchet-bar B and lifting-chain K, the clevis-link L, enlarged at its upper end and narrowed at its lower end to receive links of the chain edgewise, substantially as and for the purpose herein specified.

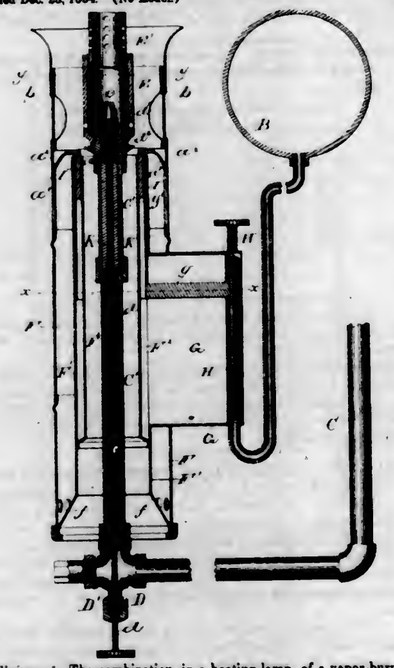
5. The combination of the clevis-link M, suspended from the lower end of the bow-frame A, the double hook N, and the lifting or supporting chain, substantially as and for the purpose herein specified.

332,369. HAMMOCK-SUPPORT. JAMES A. WOODWORTH, Highland Park, Ill. Filed Aug. 25, 1885. (No model.)



Claim.—As a new article of manufacture, a hammock-support consisting of the plate B, provided with the spurs *b* and eye *b'*, substantially as shown and described.

332,370. HEATING-LAMP. AUGUST F. ZIMMERLING, Milwaukee, Wis. Filed Dec. 23, 1884. (No model.)



Claim.—1. The combination, in a heating-lamp, of a vapor-burner free from any wick, and a wick-burner surrounding the latter, and a draft-tube surrounding the wick-burner and below the vapor-burner, substantially as set forth.

2. The combination, in a heating-lamp, of a vapor-burner free from any wick, and a wick-burner surrounding the latter, and an outer draft-tube with a deflector parallel with the top of the wick, and an air-shield above said wick, but below the top of the vapor-burner, substantially as set forth.

3. The combination, in a heating-lamp, of draft and wick-tubes F F' F², with the chamber G, reservoir B, and pipe from reservoir to chamber, wick-raiser *g'*, with shank *g*, and screw-bolt H, passing through shank *g*, substantially as set forth.

4. In a heating-lamp, the combination of the tubes F F' F², one within the other, and of diminishing length, upright tube C', coupling D, reservoir A, tube C, valve-shaft *d*, packing K, needle-valve *d'*, bushing *a*, housing *d²*, and tip *e*, with shield E and burner E', substantially as set forth.

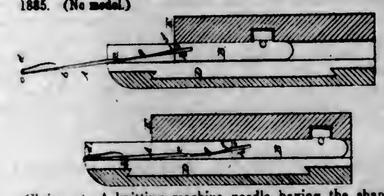
332,371. NON-CONDUCTING FABRIC. WILLIAM P. ADAMS, Brooklyn, N. Y. Filed June 16, 1884. (No model.)

Brief.—The compound fabric is formed of a layer of asbestus felt, lined or faced on one side by pliable canvas which has been rendered fire-proof by saturation in a solution of tungstate of soda, and on the other side by a facing of asbestus cloth. Upon the canvas backing a layer of close but pliable felt is laid, and over this is placed a facing of durable canvas, rendered fire-proof, also, by saturation in a solution of tungstate of soda. These are basted and quilted together to unite them in an integral fabric.



Claim.—A compound flexible fire-proof fabric composed of a layer of asbestus felt faced outwardly with a fire-proof cloth, and lined on the inner side with canvas overlaid with wool felt protected by an outer covering of textile material, substantially in the manner and for the purpose herein set forth.

332,372. KNITTING-MACHINE NEEDLE. JOSEPH J. ADGATE and SAMUEL P. LITTLE, New York, N. Y., assignors to the Adgate Rotary Loom Company, same place. Filed Nov. 13, 1883. Renewed May 20, 1885. (No model.)



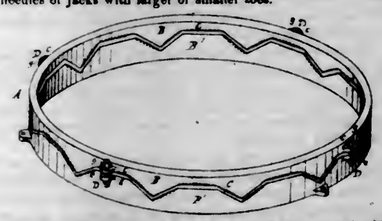
Claim.—1. A knitting-machine needle having the shank A provided with the reduced spring portion *g*, as described, and for the purposes set forth.

2. A knitting-machine needle having the shank A provided with the reduced spring portion *g* and the inclined back portion, *b c*, as described, and for the purposes set forth.

3. A knitting-machine needle having the shank A provided with the reduced spring portion *g*, the inclined back portion, *b c*, and the straight forward edge behind the beard for the yarn to slide upon, all substantially as set forth.

332,373. CAM-CYLINDER FOR KNITTING-MACHINES. JOSEPH J. ADGATE, New York, N. Y., assignor to the Adgate Rotary Loom Company, same place. Filed Nov 9, 1883. Renewed May 20, 1885. (No model.)

Brief.—By the invention the parts of the cam-cylinder may be adjusted to regulate the width of the needle-operating cam-race to adapt it to needles or jacks with larger or smaller toes.



Claim.—1. The combination of the parts B B', provided with lugs c and screw-threaded lugs *e*, with the screw-threaded studs D, provided with the shoulders *d*, for connecting and adjusting said parts, substantially as and for the purposes set forth.

2. The combination of the parts B B', provided with lugs c and screw-threaded lugs e, with the screw-threaded studs D, provided with

the shoulders *d*, for securing and adjusting said parts, and the nuts *g*, substantially as and for the purposes set forth.

3. The combination of the parts B B', provided with lugs *c* and screw-threaded lugs *e*, with the screw-threaded lugs D, provided with the shoulders *d*, for securing and adjusting said parts, and nuts *g*, for securing, and dowel-pins *h*, for steadying, the parts, all substantially as and for the purposes set forth.

332,374. WEFT-THREAD KNITTING-MACHINE. JOSEPH J. ADGATE, New York, N. Y., assignor to the Adgate Rotary Loom Company, same place. Filed Jan. 11, 1884. Renewed May 20, 1885. (No model.)



Claim.—1. The needle C, having its lower portion or jack, E, formed with a straight portion, *f g*, and with inclined portions *a e* and *e f* on the rear side thereof, substantially as described and shown, and for the purpose set forth.

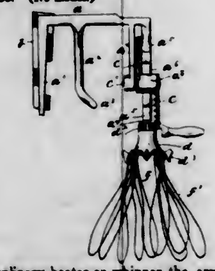
2. The needle C, having its lower portion, consisting of the needle-jack E, formed with a straight portion, *f g*, and with inclined portions *a e* and *e f* on the rear side thereof, and with the front side thereof straight from *k* to *m*, substantially as described and shown, and for the purpose set forth.

3. A needle-cylinder, A, having a series of needle-channels, D, therein, the bottoms of which are formed of straight portions *n j* and *i h*, and of the inclined portion *j i*, and with a second series of needle-channels therein, the bottoms of which are straight throughout, substantially as described and shown.

4. The combination of a series of needles, C, each having its lower portion or needle-jack formed with a straight portion, *f g*, and with inclined portions *a e* and *e f* on the rear side thereof, with the cam-cylinder, substantially as described, and with a needle-cylinder, A, having a series of channels, D, therein, the bottoms of which are formed of the straight portions *n j* and *i h*, and of the inclined portion *j i*, substantially as shown and specified.

5. The combination of a series of needles, C, each having its lower portion or jack formed with a straight portion, *f g*, and with inclined portions *a e* and *e f* on the rear side thereof, with the cam-cylinder, substantially as described, and with a needle-cylinder, A, having a series of needle-channels, D, therein, the bottoms of which are formed of the straight portions *n j* and *i h*, and of the inclined portion *j i*, and with a second series of needle-channels therein, the bottoms of which are straight throughout, substantially as shown and specified, and for the purpose set forth.

332,375. CULINARY BEATER. EDWIN BALSLEY, Washington, D. C. Filed Mar. 25, 1885. (No model.)



Claim.—1. A culinary beater or whipper the arms of which are expanded outward and held in their expanded positions by centrifugal force, whereby the said beater or whipper is enlarged in its diametric length, substantially as set forth.

2. The combination of the revolving beater-head having notches or openings formed around its rim, and a whipper composed of depending arms, two or more of said arms being formed from a single rod or wire bent at its middle portions and interlocked in the peripheral notches or openings, whereby the arms are rigidly attached to the revolving beater-head, substantially as set forth.

3. The combination, with the revolving beater-head having peripheral notches or openings, whereby means are provided for attaching the whipper-arms, of the flexible whipper-arms having their upper ends bent and interlocked in the peripheral notches or openings and arranged in groups, the shanks of the wires composing each group being secured in close contact, whereby the one wire or rod is strengthened or stiffened by its contact with another, substantially as set forth.

4. In a culinary beater, the combination of a revolving beater-head and a series of flexible or elastic springing whipper-arms having their upper ends secured to the rotary beater-head and their lower ends detached, whereby they may bend independently of each other, substantially as set forth.

5. The improved beater hereinbefore described, composed of a revolving beater-head and a series of loop-shaped double whipper-arms depending from the beater-head, and having their lower ends disposed in a circular row surrounding and inclosing a central open space, the said space being in line with the axis of the beater-head, substantially as and for the purposes set forth.

6. In a culinary beater, the combination, with the revolving beater-head, of a series of depending whipper-arms detached at their lower ends and having their upper ends disposed in two or more circular rows concentric with the axis of the beater-head, substantially as set forth.

7. In a culinary beater, the combination of a revolving beater-head and a series of whipping-arms depending from and revolving with the beater-head, and having their lower ends flared outward, substantially as set forth.

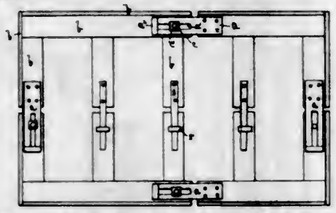
8. The combination of the revolving beater-head having notches or openings formed around its rim, and provided with hooked projections arranged between each two adjacent notches or openings, and the whipper-arms, two or more of which arms being formed from a single rod or wire having its middle portions bent or twisted around the said hooked projections, whereby the said arms are secured rigidly to the beater-head, substantially as shown and described.

9. The hereinbefore-described beater-head for revolving whippers, provided with a series of hooked projections on its periphery, and arranged transversely to the rim thereof, and having notches or openings formed between the adjacent projections to receive the upper ends of the flexible whipper-arms, substantially as set forth.

10. The combination, with the revolving beater-head and the gearing for operating the beater-head, of a frame adapted to carry the said beater-head and gearing, and having the rear extension provided with the depending shank *a'*, and a depending arm, a^3, arranged near to the shank *a'*, as shown, substantially as and for the purposes set forth.

11. The combination, with the revolving beater-head and the gearing for operating the said head, of the supporting-frame provided with an outer arm, a^3, bent laterally midway its ends, and with the depending arm a^5, arranged near to and parallel with the outer arm, a^3, the said beater-head being supported on the outer arm, a^3, and the operating gearing supported on the inner arm, a^4, substantially as and for the purposes set forth.

332,376. CRATE. EDWARD F. EARTON, Ravenna, Ohio, assignor of one-half to Theodore Grundel, same place. Filed July 15, 1885. (No model.)



Claim.—1. A crate formed in sections, each including a corner of the crate, the sections being adjustably connected by means of clamps, substantially as described.

2. A crate composed of sections provided with bars *a*, formed with slots *a'* and lugs a^2, and bolts *c* and nuts *c'*, substantially as described.

3. A crate in sections, each including a corner of the crate, and provided with bars *s*, staples *s'*, and clamps to hold the sections together, substantially as described.

332,377. PROCESS OF MAKING PRINTING ROLLERS OR BLOCKS. FREDERICK BECK, New York, N. Y. Filed Jan. 22, 1885. (No specimens.)

Claim.—1. The described process of making printing rollers or blocks, consisting in coating the base with a layer of papier-maché, lincrusta, wood, felt, rubber, or the like material, then cutting out the desired design therefrom in relief, then depositing metal by electro-deposition on the base and on the relief, then removing the metal from the printing-surface of the relief, substantially as and for the purposes set forth.

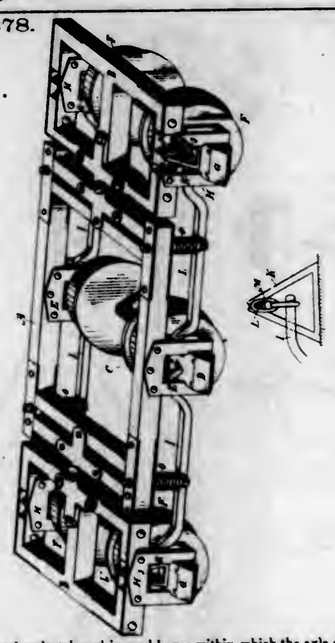
2. The described process of making printing rollers or blocks, consisting in coating the base with a layer of papier-maché, lincrusta, wood, felt, rubber, or like material, then cutting out the desired design in relief, the relief being broader at its junction with the base, then at its printing-surface, depositing metal by electro-deposition on the base and on the relief, then removing the metal from the printing-surface of the relief, substantially as and for the purposes set forth.

332,378. CAR-TRUCK. WILLIAM T. BROWNE, Stockton, Cal. Filed Sept. 24, 1885. (No model.)

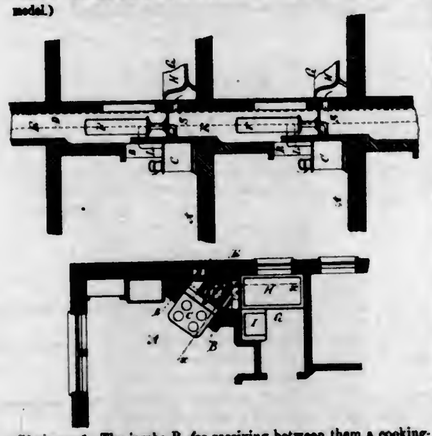
Claim.—1. In a railway-car, the main truck-frame having centrally located pedestals and journal-boxes within which the axle of a pair of wheels turn, supplemental truck-frames hinged or pivoted at each end of the main frame, and each having a pair of wheels turning in journal-boxes beneath it, in combination with equalizing-levers, the inner ends of which rest upon the journal-boxes of the central pair of wheels and the outer ends loosely suspended above the boxes of the outer wheels by links supported by standards on the journal-boxes of the outer pairs of wheels, the truck-frame being supported upon the equalizing-bars by intermediate elastic springs, substantially as herein described.

2. A car-truck composed of hinged sections, with a pair of wheels beneath each section, equalizing-bars extending from the boxes of the central pair of wheels to points above the boxes of the outer wheels, links by which the ends of the levers are suspended, and standards extending upward from the boxes and having supports at their upper ends from which the links depend, substantially as herein described.

332,378.



332,379. VENTILATOR FOR COOKING AND OTHER APARTMENTS. DANIEL BURGESS, New York, N. Y. Filed Nov. 2, 1885. (No model.)

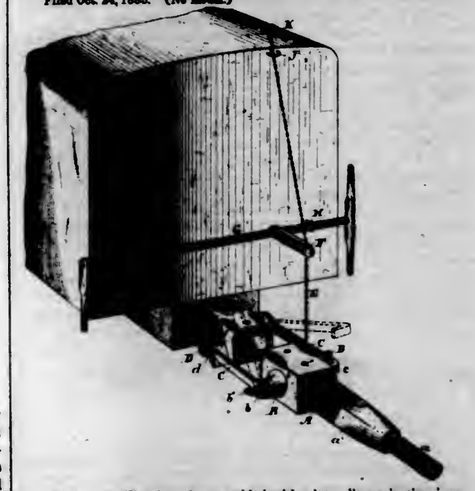


Claim.—1. The jambs B, for receiving between them a cooking-range, and the flue E, behind the chimney-breast, and an opening over the range into the said flue E, in combination with the hot-water boiler placed within the flue E to warm the atmosphere therein and promote ventilation, substantially as set forth.

2. The jambs B B, adapted to receive between them the cooking-range, and the flue E, behind the chimney-breast, there being an opening above the cooking-range into said flue E, in combination with the hot-water boiler F, within the flue E, and a grating to support the boiler, substantially as set forth.

3. The jambs B B, between which the cooking-range is received, the flue D, for the escaping products of combustion, and the flue E, behind the breast, there being an opening into the same above the cooking-range, in combination with the hot-water boiler F, within the flue E, and acting to heat the air therein, the bath-room G, behind and adjoining the breast and chimney, and a partition having an opening between the bath-room and the flue E, substantially as set forth.

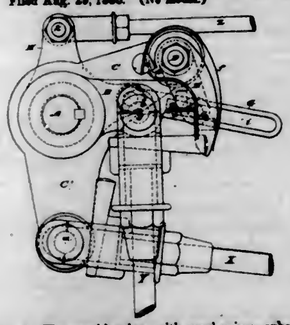
332,380. CAR-COUPLING. COURTLAND A. CHAMBERLAIN, Canton, N. Y. Filed Oct. 24, 1885. (No model.)



Claim.—1. The draw-bar provided with a laterally-projecting journal upon one side of the head, in combination with a vertically-swinging link provided with a laterally-projecting jaw at its forward extremity, the said head being provided upon its diametrically-opposite side with a projecting engaging-jaw whose front face is inclined to an apex and whose rear face is vertical, as set forth.

2. The draw-bar provided with a laterally-projecting arm or bearing upon the one side of its head and with a right-angularly projecting jaw upon its opposite side, all cast in a single piece, the arm or bearing being provided with a steel journal keyed therein and with a shoulder or fulcrum also keyed therein, in combination with a vertically-swinging coupling-link pivoted upon the said journal and having a laterally-projecting engaging-jaw at its forward extremity, as set forth.

332,381. CUT-OFF-VALVE GEAR. JOSEPH D. CRAY, Fishkill-on-the-Hudson, N. Y., assignor to the Fishkill Landing Machine Company, same place. Filed Aug. 29, 1885. (No model.)



Claim.—1. The combination, with mechanism, substantially as described, for opening the valve, of the toggle-like mechanism, substantially as described, for liberating the valve-lever, whereby the point of cut-off may be controlled by the governor without any appreciable strain being thrown on the governor at the moment of liberation of the valve, as set forth.

2. The combination of the valve-lever, the operating-arm mounted on the same axis of vibration as the valve-lever, the rock-shaft mounted in the operating-arm, the swinging catch, to engage the valve-lever,

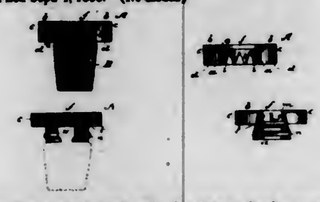
fixed to said rock-shaft, the crank fixed to the rock-shaft and provided with a wrist-pin, the link provided with a slot, which engages said wrist-pin, and the bell-crank to which said link is coupled, all arranged to operate substantially as set forth, whereby the governor may control or indicate the point of cut-off without being disturbed by the strain necessary to effect the liberation of the valve-lever, as set forth.

3. The combination of the valve-stem A, the valve-lever B, fixed to said stem, the operating-arm C, mounted to vibrate on the same axis with lever B, the rock-shaft D, mounted in arm C, the catch E, fixed on the rock-shaft D in the same plane with the lever B, the crank F, fixed to the shaft-rock D and provided with the wrist-pin A, the bell-crank H, mounted to vibrate on the same axis with the operating-arm C, and the slotted link G, coupled at *j* to the bell-crank H and its slot engaging the wrist-pin A, substantially as and for the purposes set forth.

4. In a valve-gear wherein the valve-lever is actuated by a catch, substantially as described, the catch-plate which takes the wear made square and secured in place by a centrally-arranged screw, substantially as and for the purposes set forth.

5. The combination, with the valve-lever, operating-arm, rock-shaft, catch, crank, and bell-crank, all arranged to operate substantially as described, of the slotted link G, connecting the bell-crank with the crank F, and a stop device, as described, for limiting the movement of the link in one direction, whereby, when the governor ceases to revolve, it will still continue to act on and stop the engine, as set forth.

332,382. **CAPSULE FOR BOTTLES.** WILLIAM R. CLOUGH, Brooklyn N. Y. Filed Sept. 1, 1885. (No model.)



Claim.—1. A capsule and cork, the former firmly encompassing the latter at or near the top and having a flange projecting therefrom, the upper end of the cork being exposed, substantially as and for the purposes set forth.

2. A capsule and cork, the former firmly encompassing the latter at or near the top and having a shoulder over which the adjacent portions of the cork may expand, and a flange projecting therefrom, the upper end of the cork being exposed, substantially as and for the purposes set forth.

3. A capsule and cork, the former being open at the center to receive the cork and having a flange projecting therefrom, and engaging devices to insure the firm union of the cork and capsule, substantially as set forth.

4. A capsule and cork consisting of the dependent flange *a*, closely encompassing and binding the cork, and the projecting flange *b*, the outer edges of which form surfaces enabling the capsule and cork to be handled, the top of the latter being exposed, substantially as and for the purposes set forth.

5. A capsule and cork consisting of the dependent flange *a*, having engaging devices closely encompassing and binding the cork, and provided with the projecting flange *b*, the outer edges of which form handling-surfaces, substantially as set forth.

6. A capsule for corks, consisting of the dependent toothed flange *a*, adapted to closely encompass and engage the cork, and the projecting flange *b*, substantially as and for the purposes set forth.

7. A capsule and cork, the former having engaging devices which firmly bind the latter at or near the top, and having, also, a flange extending from said devices, the top of the cork being exposed, substantially as set forth.

332,388. **LIGHTNING-ROD STANDARD.** JAMES W. COLE and HENRY KNUDSEN, Greencastle, Ind., said Knudsen assignor to said Cole. Filed June 24, 1885. (Model.)

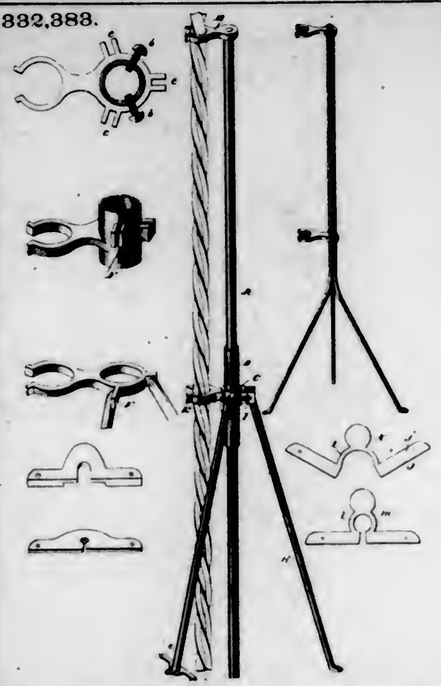
Claim.—1. A lightning-rod standard composed of the ring having the legs attached thereto, and the vertically-adjustable rod provided with the holder.

2. A lightning-rod standard composed of the ring having the legs pivotally connected thereto, the rod adapted to slide vertically in the ring, and secured in position by the set-screws.

3. A lightning-rod standard consisting of the ring or collar, the sleeve, a tube secured therein, the vertically-sliding rod, and the retaining-screws, substantially as described.

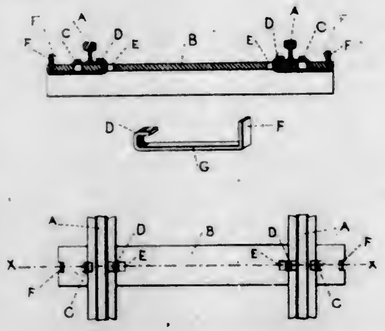
4. The combination, with a lightning-rod standard consisting of the pivoted legs having upturned lower ends, the rod supporting the holder, and suitable means for securing the same together, of the feet secured down over the upturned ends of the said legs.

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5. In combination with a lightning-rod standard consisting of the pivoted legs having upturned lower ends, the rods supporting the carrier, and suitable means for connecting the said rod and legs, and the foot-pieces bent around and fastened down upon the upturned ends of the legs.

332,384. **FASTENING RAILS TO METAL SLEEPERS.** JOHN COMLEY, Grand Rapids, Mich. Filed Jan. 14, 1885. Renewed Oct. 3, 1885 (No model.)



Claim.—1. The bar G, having the hook D and bend F, when used to secure rails to metal sleepers.

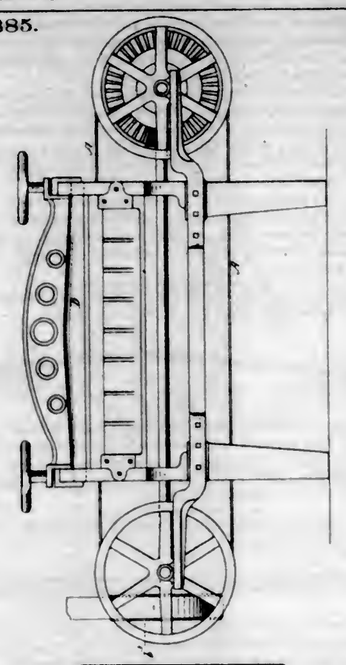
2. The bar G, having the hook D and bend F, in combination with the rail A and the sleeper B, having the lug C.

332,385. **LEATHER-SPLITTING MACHINE.** EUSTACE CUMMINGS, Woburn, Mass. Filed May 1, 1885. (No model.)

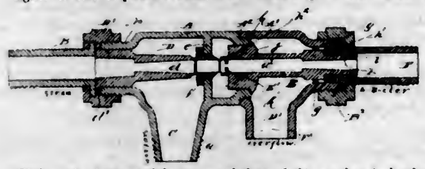
Claim.—1. In a leather-splitting machine, in combination with the feed and gage rolls b' b^2 and the belt-knife A, the rounded straining bar or support D, all substantially as and for the purposes described.

2. In a leather-splitting machine, in combination with the feed and gage rolls b' b^2 and belt-knife A, the rounded straining or bearing support for the section *c* of the side having a surface inclined from its center toward both ends, all substantially as and for the purposes described.

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332,386. **STEAM-INJECTOR.** JOHN DESMOND, Cleveland, Ohio, assignor to Roe Stephens, Detroit, Mich. Filed Aug. 11, 1885. (Model.)



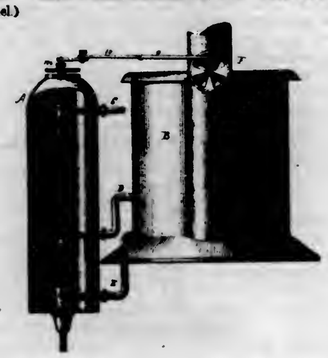
Claim.—1. A steam-injector consisting of the section A, having suction-pipe C, steam-tube *d*, and nipple *f* in wall *e*, and section A', having wall *g*, slide-valve E, and overflow-pipe F', substantially as shown, and for the purpose described.

2. In a steam-injector, the slide-valve E, having washer *h*, and metallic disk *j*, disposed on either side of wall *g*, substantially as shown, and for the purpose described.

3. The combination of slide-valve E, threaded extension A^2 of section A, and chamber D', having apertured wall *g*, substantially as shown, and for the purpose described.

4. The combination of section A, having threaded extension A^2, slide-valve E, disposed in apertured wall *g* of chamber D', and nipple *f* in wall *e*, substantially as shown and described.

332,387. **ANTI-FREEZING, NON-EXPLODING CUT-OFF FOR BATH-BOILERS.** WILLIAM C. ELLIS, Marshalltown, Iowa. Filed Feb. 26, 1885. (No model.)



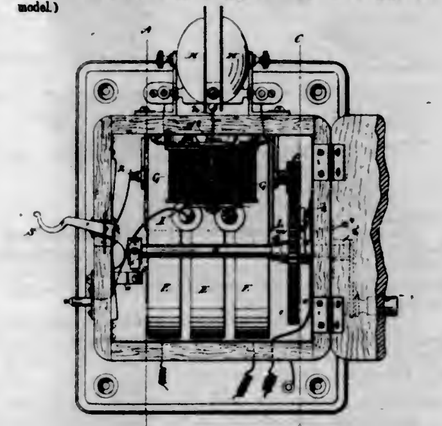
Claim.—1. The combination of a stand-boiler with a supply-pipe extending into the boiler and provided with a valve within the boiler a drain-pipe extending into the boiler and provided with a valve within the boiler, a connection between the two valves rigidly uniting them, and an extension from the stem of one of said valves passing outside the boiler, substantially as and for the purposes shown and described.

2. The combination of a stand-boiler, a supply-pipe extending into the boiler and provided with a valve within the boiler, a drain-pipe extending into the boiler and having a valve within the boiler, with pipes communicating with the water-back, one of which extends into the boiler and is provided with a valve within the boiler, a connection rigidly uniting all of the valves, and an extension from one of the valve-stems passing outside of the boiler, substantially as described.

3. The combination of a stand-boiler, a supply-pipe extending into the boiler and provided with a valve having a hollow plug connected with the pipe within the boiler, pipes communicating with the water-back, the upper one of which extends into the boiler, and is provided with a valve within the boiler, a pipe connected to the hollow plug of the supply-pipe valve and to the stem of the water-back valve, rigidly uniting the same, said pipe being provided with perforations near to its lower end, and an extension from the other valve-stem passing outside of the boiler, substantially as described.

4. The combination of a stand-boiler, a supply-pipe extending into the boiler and provided with a valve having a hollow-plug connection with the pipe within the boiler, pipes communicating with the water-back, the upper one of which extends into the boiler, and is provided with a valve within the boiler, a pipe connected to the hollow plug of the supply-pipe valve and to the stem of the water-back valve, rigidly uniting the same, said pipe being provided with perforations near the lower end, and an extension from the other valve-stem passing outside the boiler, and the damper of a range connected with a crank attached to the plug of the supply-pipe outside the stand-boiler by two links, substantially as described.

332,388. **MAGNETO-ELECTRIC CALL-BELL.** HARRY T. O. FRASER, Clerkenwell, County of Middlesex, England. Filed Jan. 29, 1885. (No model.)



Claim.—1. In magneto-electric call-bells, the combination, with the driving-wheel loosely mounted on the shaft, of contact-spring *k*, carried by the wheel, arm *j* on the crank-shaft A, and disk *o*, all operating substantially as and for the purpose set forth.

2. In magneto-electric call-bells, the combination, with the generator and driving-shaft *d*, of a driving-wheel, *e*, loosely mounted on the shaft, the spring-contact *k*, carried thereby, arm *j*, rigidly connected to the shaft, spring *i*, stop *m*, and disk *o*, substantially as described.

332,389. **ENCAUSTIC TILE.** FRANZ J. FRENZEL, Jr., New York, N. Y. Filed June 1, 1885. (No model.)

Claim.—1. An encaustic tile having a face made in helio-relief, or in a relief that is a negative of a diaphanous intaglio of the design, substantially as set forth.

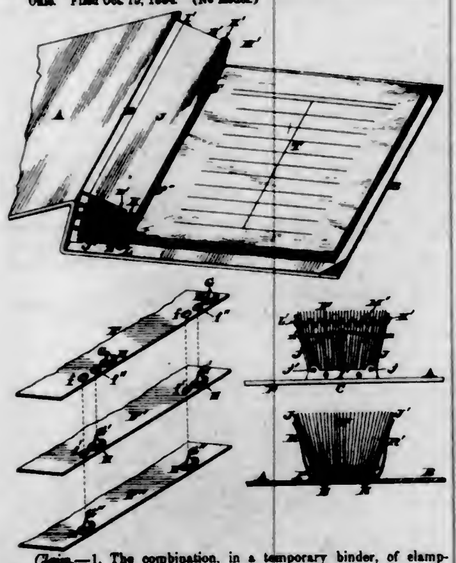
2. An encaustic tile having a face made in helio-relief, or in a relief that is a negative of a diaphanous intaglio of the design, said relief being coated with enamel, substantially as set forth.



332,389.



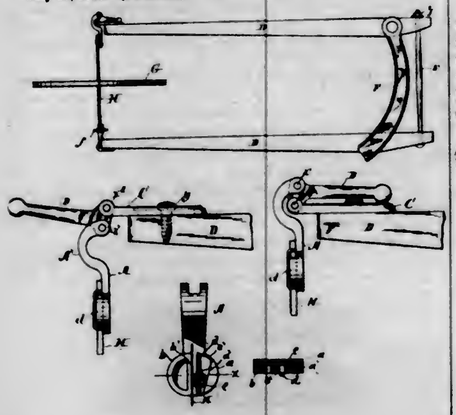
332,390. TEMPORARY BINDER. HENRY GOODCHILD, Cincinnati, Ohio. Filed Oct. 15, 1884. (No model.)



Claim.—1. The combination, in a temporary binder, of clamp-plates J J', springs M M', and stubs F, the latter being provided with a series of perforations and spurs arranged substantially as herein described, said clamp-plates and stubs being applied to back of the binder, for the purpose described.

2. In combination with a temporary binder consisting of the clamp-plates J J', springs M M', and stubs F, arranged substantially as herein described, a stop or tie composed of the jointed links N n N' n', bearings S S', and coupling s, for the purpose stated.

332,391. SCROLL-SAWING MACHINE. ALBERT D. GOODELL, Miller's Falls, Mass., assignor to the Miller's Falls Company, same place. Filed July 27, 1885. (No model.)

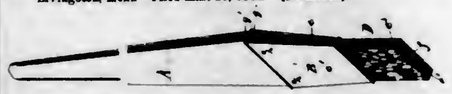


Claim.—1. In combination with a strip of sheet metal for fencing, a doubled-kneed barb attached thereto by bending in the edges of the strip between the knees of the barb, substantially as described.

2. In combination with a concave metal strip for fencing, a double-kneed barb attached thereto by bending in the edges of the strip between the knees of the barb, whereby the barb is firmly held in position and lateral movement thereof is prevented, substantially as shown and described.

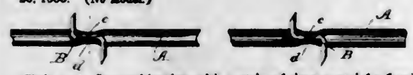
3. In combination with a strip of sheet metal for fencing, a barb formed with projecting parts, substantially as described, attached thereto by bending in the sides of the strip between the projecting parts of the barb, whereby lateral motion of the barb is prevented.

332,392. BRUSH FOR LINING BRICK HOUSES. WILLIAM C. GREEN, Livingston, Mont. Filed Mar. 29, 1884. (No model.)



Claim.—A brush for lining brick buildings, and for making straight lines on other structures, which comprises in its construction a pack of bristles having an oblique or beveled working-face, *f*, and with the elastic or operative length of the bristles the same above the face *f*, substantially as and for the purpose described.

332,393. BARBED FENCE. JACOB HAHN, De Kalb, Ill. Filed Apr. 20, 1883. (No model.)

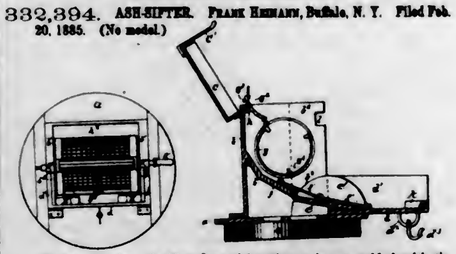


Claim.—1. In combination with a strip of sheet metal for fencing, a doubled-kneed barb attached thereto by bending in the edges of the strip between the knees of the barb, substantially as described.

2. In combination with a concave metal strip for fencing, a double-kneed barb attached thereto by bending in the edges of the strip between the knees of the barb, whereby the barb is firmly held in position and lateral movement thereof is prevented, substantially as shown and described.

3. In combination with a strip of sheet metal for fencing, a barb formed with projecting parts, substantially as described, attached thereto by bending in the sides of the strip between the projecting parts of the barb, whereby lateral motion of the barb is prevented.

332,394. ASH-SIFTER. FRANK HERMANN, Buffalo, N. Y. Filed Feb. 20, 1885. (No model.)



Claim.—1. An ash-sifter comprising the casing provided with the fixed portions *b b' b'*, the hinged cover *c*, the hinged front wall, *d*, having the side wings, *d' d'*, the cross-board *e*, having the semicircular portions *e' e'*, the extensions b^2 b^2, having the curved ends b^3 b^3, against which the semicircular portions *e' e'* have guiding contact, the hinged board *f*, the links *f' f'*, and the pivoted cylindrical drum or sifter *g*, all operating substantially as shown and described.

2. In an ash-sifter, the combination, with the sifter *g*, hinged board *f*, and links *f' f'*, of the fixed board *e*, and hinged wall *d*, to which the board *e* is attached, substantially as shown and described.

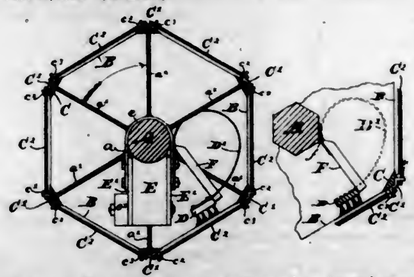
332,395. INKING-PAD. BENJAMIN B. HILL, Philadelphia, Pa. Filed May 10, 1884. (No model.)



Claim.—1. A case for inking-pads, consisting of the base A and removable cover E, carrying the rack G and handle J, in combination with the removable pad-receptacle D, substantially as described.

2. A case for inking-pads, consisting of the base A, having a ledge or shoulder, C, and a removable cover, E, in combination with two pads contained within said base, one of which is in a removable receptacle, substantially as described.

332,396. BOLTING-REEL. JOHN W. HILL, Sandborn, Ind. Filed June 16, 1885. (No model.)



Claim.—1. The combination of a bolting-reel, an internal non-revoluble portion, springs secured to said portion, and brushes mounted on said springs.

2. The combination, with a bolting-reel, of a weighted bearing supported by the reel-shaft, springs secured to said weighted bearing, and brushes secured to said springs and adapted to operate against the internal surface of the reel.

3. The combination of the reel-shaft, the reel, the weights, and the spring-mounted brushes secured thereto.

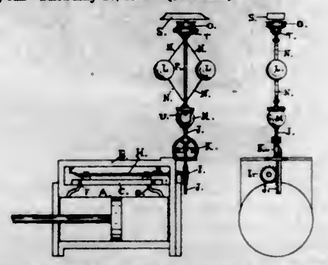
4. The combination, with a bolting-reel, of internal brushes and knockers hinged to the shaft and adapted to fall upon and jar said brushes.

5. The combination, in a bolting-reel provided with ribs having flat inner sides, of an internal spring-mounted brush and means for holding the same in position.

6. The combination of a bolting-reel, an internal brush therefor, means for holding the same in position, and a knocker for jarring material free from said brush.

7. The combination of a bolting-reel, an internal brush, spring-arms on which the brush is mounted, means for holding the same in position, and knockers for freeing the brush of material which may adhere thereto.

332,397. CUT-OFF-VALVE GEAR. JOHN J. HOLLAND, San Francisco, Cal. Filed May 20, 1884. (No model.)

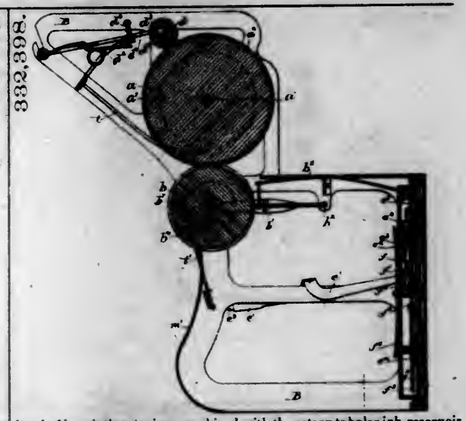


Claim.—The combination, with the steam-chest having the openings communicating with the cylinder and the slides to close said openings, of the right-and-left screw passing through the slides, the spur-wheel I on the outer end of the screw-rod, the rack J, working in the frame K and meshing with the spur-wheel I, the wings R on the rack J, the weighted swivel M, the rod P, connected with the swivel M, the collar T, the levers N, the balls L, and the pulley O, substantially as set forth.

332,398. REGISTERING AND CANCELING BALLOT-BOX. SILAS J. HOWELL, Boston, Mass., assignor to the American Ballot Box Association, of Massachusetts. Filed Aug. 4, 1884. (No model.)

Claim.—1. The ballot-feeding roll provided with a circumferential band of imprinting devices projecting beyond the periphery of the roll, combined with the co-operating roll having a circumferential groove co-operating with the said band, the said groove being deeper than the amount of projection of the band, whereby the main portion of the rolls may come in contact without contact between the printing devices and grooved portion of the roll, substantially as described.

2. The ballot-feeding roll or drum provided with a circumferential band of imprinting devices, combined with the rotary tubular ink-reservoir provided with flanges and perforated between said flanges, and an absorptive pad on said reservoir between said flanges supplied with ink through the said perforations, and a flexible cover for an ink-supplying passage in said reservoir, substantially as described.



3. The rotary ballot-feeding drum or roll *a*, having the grooves a^1 and fixed bearings, and roll *b*, having grooves b^1, and the stripping rods or wires *t t'*, engaging the said grooves, respectively, as shown, combined with the frame *b'*, in which the roll *b* has fixed bearings, the said frame being pivoted at b^4 and supported by spring b^5, so that the said roll *b* can and must move on the pivot b^4 in parallelism with the roll *a*, and not otherwise, substantially as described.

4. In a ballot-box, the ballot-feeding drum or roll *a*, having the shaft *a'*, combined with the socket-piece a^2, having a shouldered flange or disk, a^3, turning freely between connected flanges a^4, fixed on said shaft and provided with a pawl, a^5, and means to lock a turning-crank in connection with said socket-piece, substantially as shown and described.

332,399. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. CHARLES D. JEHNEY, Indianapolis, Ind. Filed July 20, 1885. (No model.)



Claim.—1. The combination of a commutator in which the conducting parts are slotted, an armature the ends of the wires of which lead to and enter said slots, and a non-conducting covering wound over the outside of said ends of wires, substantially as set forth.

2. The combination, in a commutator, of numerous insulated parts, each of which has a projecting portion, the end of which is slotted, said slots being of slightly less diameter than the armature-wires, whereby said armature-wires when placed therein will be flattened and held into close and permanent contact therewith.

3. The combination, in a dynamo-electric machine, of the armature and the commutator, said commutator being constructed substantially as specified and provided with slots to receive the ends of the wires of the armature, and a wrapping or covering over the ends of said wires, whereby dirt is kept therefrom and from the interior of the armature.

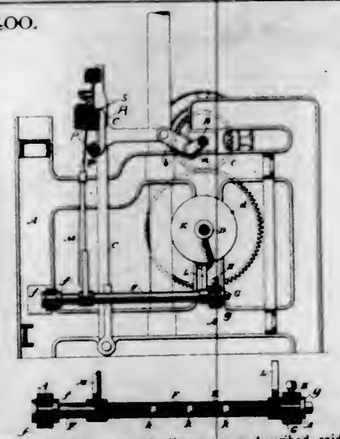
4. The combination of the shaft B, metallic plates or disks *a'* and a^2, securely mounted on said shaft, insulating-disks a^3, numerous metallic parts, a^4, secured between said insulating-disks and separated by sheets of insulating material, each having a tooth-like projection which enters said insulating-disks, and the bolts a^5, passing through from one of said metallic plates to the other and securing the whole together.

332,400. SHUTTLE-DRIVING MECHANISM FOR LOOMS. FREDERICK KNOBLAUCH, Athenia, N. J., assignor to Crawford McCreery, New York, N. Y. Filed May 23, 1884. (No model.)

Claim.—1. The combination, with the picker-stick of a loom, of a torsional spring connected to said picker-stick and straining and releasing mechanism, substantially as and for the purposes set forth.

2. The combination, with the picker-stick of a loom, of a torsional spring connected to said picker-stick, straining and releasing mechanism,

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and a fixed plug having means of adjustment, as described, said spring being connected to the straining and releasing mechanism and mounted in said plug, substantially as and for the purposes set forth.

3. The combination, with the picker-stick of a loom, of the plate torsional spring K, having protecting-tube F and connected to said picker-stick, and straining and releasing mechanism, substantially as and for the purposes set forth.

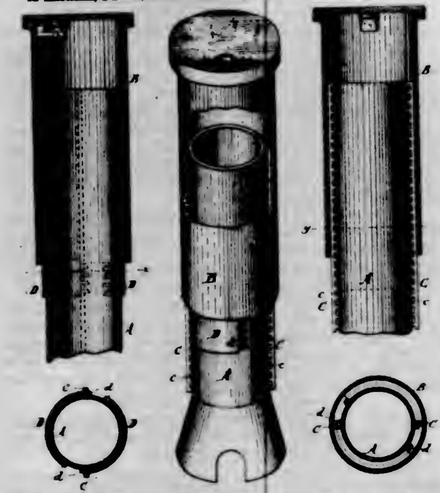
4. The combination, with the picker-stick of a loom, of the plate torsional spring K, having protecting-tube F, and straining and releasing mechanism, and a fixed plug having means of adjustment, as described, said spring being connected to the picker-stick and to the straining and releasing mechanism, and mounted in said plug, substantially as and for the purposes set forth.

5. The combination, with the picker-stick M, tube F, arm L, cam E, and shaft D, of a torsional spring, K, and plug G, substantially as and for the purposes set forth.

6. The combination, with the picker-stick M, tube F, arm L, cam E, and shaft D, of a torsional spring, K, plug G, and means, as described, of adjustably fixing said plug, substantially as and for the purposes set forth.

7. The combination, with the picker-stick of a loom, of a torsional spring connected to said picker-stick, and straining and releasing mechanism, and the pivoted lay having links *b*, and the shaft B, situated nearer the horizontal line of the pivot of the lay than is the lay end of the links *b*, and having cranks *a*, all connected substantially as and for the purposes set forth.

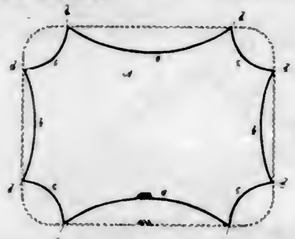
332,401. STOP-COCK BOX FOR WATER AND GAS PIPES. ALONZO R. KINSMAN, Buffalo, N. Y. Filed May 12, 1885. (No model.)



Claim.—1. The combination, with the inner tube, A, provided with vertical ribs C, having openings *c*, of the outer tube, B, provided with segments D, having teeth *d*, substantially as set forth.

2. The combination, with the inner tube, A, provided with vertical ribs C, having openings *c*, of the outer enlarged tube, B, which clears the ribs C and tube A, and which is provided with segments D, bearing against the tube A, and having teeth *d*, substantially as set forth.

332,402. CONDUCTOR-PIPE. JOHN LEADLEY, Detroit, Mich. Filed Oct. 8, 1885. (No model.)

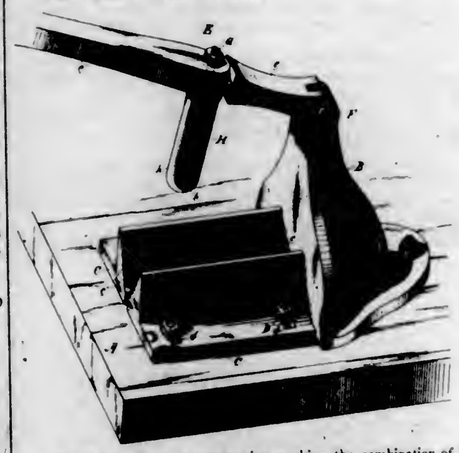


Claim.—1. A sheet-metal conductor-pipe substantially rectangular in cross-section, with its sides and ends inwardly curved and its corners concave-chamfered, substantially as and for the purposes set forth.

2. As a new article of manufacture, a sheet-metal conductor-pipe, A, provided with the inwardly-curved sides and ends *a b*, respectively, concave-chamfered corners *c*, and longitudinal ribs *d*, substantially as set forth.

3. As an improved article of manufacture, an octagonal sheet-metal conductor-pipe, each side of which is bent inward, and each two adjacent sides forming two sides of a triangle, substantially as and for the purpose specified.

332,403. OYSTER-OPENING MACHINE. CONSTANT LEDOC, Denver, Colo. Filed Oct. 1, 1885. (No model.)



Claim.—1. In an oyster-opening machine, the combination of a bed for holding the oyster with a pivoted jointed lever and a knife carried by said lever, and adapted to be inserted in the shell of the oyster and turned at right angles to pry it open, substantially as described.

2. In an oyster-opening machine, the lever E, consisting of the link portion e, pivoted and adapted to move through an arc in a vertical plane, and the handle portion e', pivoted to the link portion e and adapted to move in an arc in a horizontal plane or at right angles to the plane of the movement of the link e, and a knife carried by said handle portion, substantially as described.

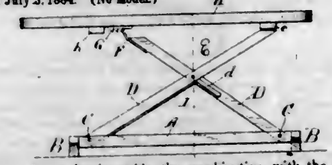
3. In an oyster-opening machine, the pivoted link e, adapted to move through an arc in a vertical plane, and the handle e', pivoted to the link and adapted to move with said link, and also at right angles thereto, said link and handle constituting the lever E, in combination with the knife H, seated in the handle, and having a securing-stem, G, which forms the pivot bolt or pin between the handle and the link, substantially as described.

4. In an oyster-opening machine, the bed C, consisting of two independent pieces placed horizontally upon the bed and forming a groove, c, between them, the ledges or shoulders c', for holding the oysters at different heights, and the means for adjusting said pieces for different sizes of oysters, consisting of the bolts D, passing through slots or enlarged openings *d* in the pieces, in combination with the operating-knife for opening the oysters, substantially as described.

5. An oyster-opening machine comprising the adjustable grooved bed C, the standard B, the pivoted and jointed lever E, and the knife H, carried by said lever and adapted to be inserted between the halves of the shell of the oyster and to be turned at right angles to pry them apart, substantially as described.

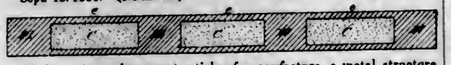
6. The pivoted and jointed lever E of an oyster-opening machine, in combination with the knife H, having sharpened edges *h*, substantially as described.

332,404. IRONING-TABLE. FELIX A. LERCH, Mount Carmel, Pa. Filed July 3, 1884. (No model.)



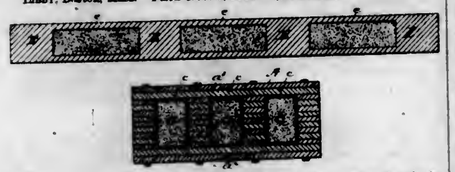
Claim.—In an ironing-table, the combination, with the table-top H, provided upon its under side with the rack-bars G, of the slotted braces D', legs or braces D, cross-bar E, plate F, cross-bars C, and frame A, all constructed and arranged as shown and described.

332,405. COMPOSITE BAR. ROBERT H. LIBBY, Boston, Mass. Filed Sept. 18, 1885. (No model.)



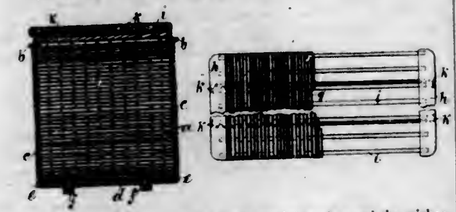
Claim.—As an improved article of manufacture, a metal structure for shafting, axles, &c., having solid metal sections united by an integral metal section or sections in the form of a tube, cylinder, or continuous shell, all substantially as and for the purposes described.

332,406. METHOD OF MAKING COMPOSITE BARS. ROBERT H. LIBBY, Boston, Mass. Filed Nov. 9, 1885. (No model.)



Claim.—The art of manufacturing rolled metal structures for shafting, axles, &c., having solid metal sections united by integral metal sections in the form of a tube, cylinder, or shell, comprising, first, the forming of a box-pile of alternating sections of metal and sand, or other equivalent refractory material, inclosed in the pile and disposed in relation to the metal as may be desired; second, in heating the box-pile to a welding heat, and, third, in reducing the heated pile thus made by rolling to the required form, all substantially as and for the purposes described.

332,407. BASKET AND SKIP. JOHN P. MILBOURNE and THOMAS HUMPHREYS, Manchester, County of Lancaster, England; said Thomas Humphreys assignor to said John P. Milbourne. Filed May 25, 1885. (No model.) Patented in England Sept. 5, 1884, No. 12,031.

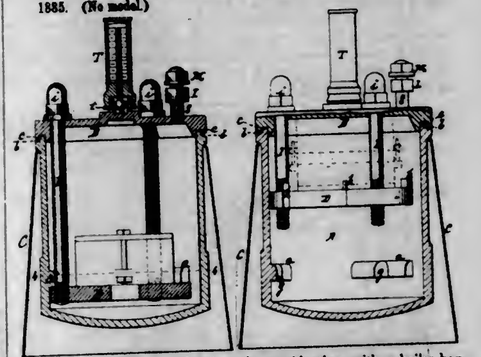


Claim.—1. The combination of the upright rods c and the wicker-work, which is built thereon, with the clogs *f* at the bottom of the basket and the rail *b* at the top thereof, said rail being perforated to receive the upper ends of said rods, and said clogs being recessed to receive the lower ends thereof, substantially as set forth.

2. A basket-lid consisting of the rods or sticks i, the wicker-work built thereon, and the rails *h*, which are recessed to receive the ends of said rods, substantially as set forth.

3. The combination of the metal rods *k* and sticks i with the rails *h*, which are recessed to receive the ends of said sticks and rods, and the wicker-work built on said sticks, the whole forming the cover of a basket or similar article, substantially as set forth.

332,408. APPARATUS FOR VULCANIZING RUBBER AND FOR OTHER PURPOSES. HERBERT C. MILLER, St. Louis, Mo. Filed July 13, 1885. (No model.)



Claim.—1. In a vulcanizer, the combination, with a boiler having a false bottom secured therein, of a detachable cover and bolts which connect the cover with the fixed false bottom of the boiler, substantially as and for the purposes specified.

2. In a vulcanizer, the combination, with a boiler having a false bottom secured therein, of a detachable cover and bolts for connecting the cover with the false bottom of the boiler, said bolts being of a metal of a less expansible character than the boiler for given increments of heat, substantially as and for the purposes specified.

3. In a combined vulcanizer and celluloid-press, the combination of a boiler having lugs on its interior for securing a false bottom, a detachable false bottom, a cover, and threaded bolts for connecting the cover and false bottom, substantially as and for the purposes specified.

4. In a vulcanizer, the combination, with the steam-escape pipe, of a vent-nut having an axial orifice and lateral vents, and adapted for the attachment of a steam-pressure gage, substantially as and for the purpose set forth.

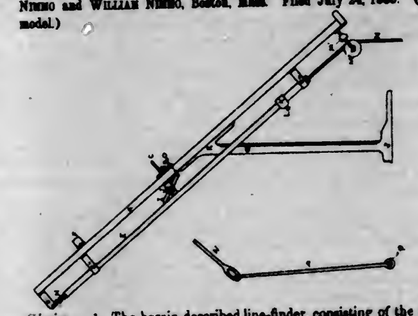
5. In a vulcanizer, the combination, with the steam-escape pipe, of a vent-nut having an axial orifice and lateral vents, and a perforated cap-nut adapted to secure a thin sheet of metal over the axial orifice of the vent-nut, substantially as and for the purposes specified.

332,409. HAME-FASTENER. HENRY NADORFF, Louisville, Ky. Filed Oct. 27, 1885. (No model.)



Claim.—As an improved article of manufacture, the hame-fastener herein described, consisting of the section A, having its under wall longitudinally slotted, its upper wall extended at one end for attachment of the spring and provided at its opposite end with a hook, and its side walls cut away longitudinally at their upper edges and provided with the teeth, and the section L, provided at its outer end with a hook, its inner end having a downward branch passing through the slot in the under side of the section A, and lateral lugs to engage the teeth of the said section, substantially as specified.

332,410. LINE-FINDER FOR STENOGRAPHERS' USE. ANDREW NIEMO and WILLIAM NIEMO, Boston, Mass. Filed July 24, 1885. (No model.)

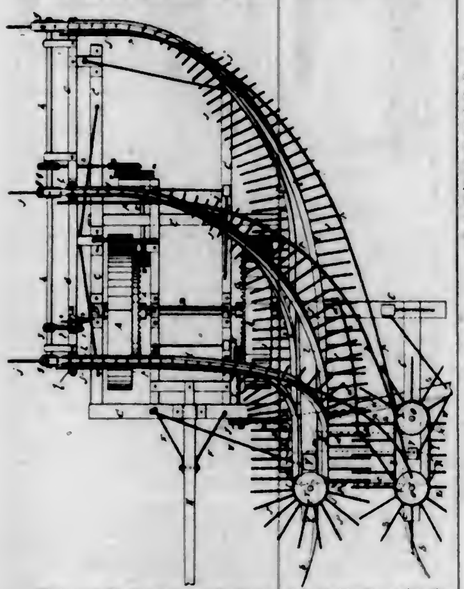


Claim.—1. The herein-described line-finder, consisting of the stationary rest A, having slot B' for the movable block B, to which is attached the indicator C, said block having hinged to it the pawl I, with spring J, and adapted to engage in the toothed ratchet-bar E, the latter being

guided in the parts O'' O''', and operated by means of treadle P and strap N against the influence of spring H, and provided with the adjustable stop K, as and for the purpose set forth.

2. In a line-finder, the stationary plate A, the block B, movable thereon, with indicator C attached to it, and having pawl I, spring J, and press-button D, as described, combined with the reciprocatory ratchet-bar E, for operating the block B and its indicator C, substantially as and for the purpose set forth.

332,411. SUGAR-CANE HARVESTER. CHARLES H. LEE, Centralia, Kans. Filed Sept. 19, 1884. (No model.)



Claim.—1. In a sugar-cane harvester, the combination, with the wheels A and axle B and the frame C, of the endless chain of knives P Q, the vertical shafts O O T, having chain-wheels X *e*, the horizontal shaft *h*, having chain-wheels *g*, the endless chains Y *f*, having arms Z *j j'*, the guides *l*, and a driving mechanism, substantially as herein shown and described, whereby the cane is cut and the stalks raised, brought into a horizontal position, and discharged from the machine, as set forth.

2. In a sugar-cane harvester, the combination, with the vertical shafts O O T and the vertical posts V, of the arms U, having bearings at their outer ends, substantially as herein shown and described, whereby the said shafts are held in position, as set forth.

3. In a sugar-cane harvester, the combination, with the links of the endless chains *f*, having U-flanges *i*, of the arms *j* and the pins or bolts *k*, the lower portions of said arms being looped around said pins and having their extreme lower ends resting upon the chain-links, substantially as herein shown and described, whereby the said chains are adapted to carry the stalks, as set forth.

4. In a sugar-cane harvester, the combination, with the endless-chain guides *l* and the frame C, of the forked bracket *o*, having set-screws *n*, substantially as herein shown and described, whereby the said guides are supported and held in place, as set forth.

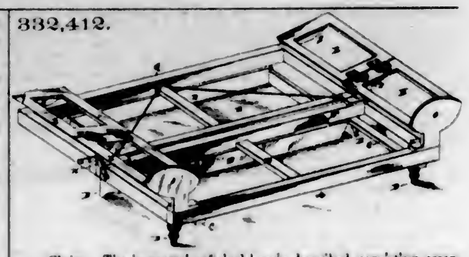
5. In a sugar-cane harvester, the combination, with the horizontal shaft A and the frame C, of the stationary knife 3, the revolving-knives 2, and the band and pulleys 3 *z* 1, substantially as herein shown and described, whereby the tops are cut from the stalks as the said stalks are coming into position to be discharged from the machine, as set forth.

6. In a sugar-cane harvester, the combination, with the shafts O O T and A and the endless belts *f*, of the guides *l*, substantially as shown and described, whereby the said belts will be guided as they pass from the vertical shafts to the horizontal shaft, as set forth.

7. In a sugar-cane harvester, the combination, with a cutter, of an elevator consisting of endless chains carrying arms and of supporting-shafts, the said elevator being inclined transversely from a vertical to a horizontal position, and having its lower chains speeded faster than its upper chains, substantially as shown and described, whereby the cut cane will be turned from a vertical to a horizontal position before being discharged from the elevator, as set forth.

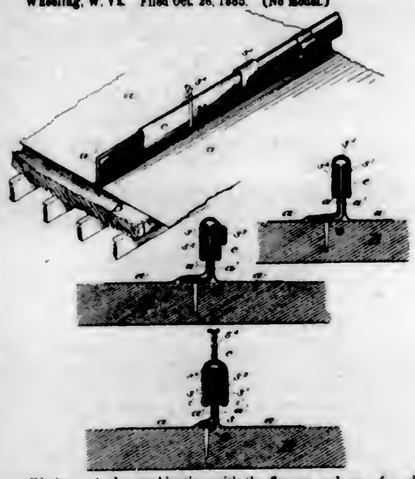
332,412. SOFA-BED. CARL A. LEDERER, Louisville, Ky. Filed July 28, 1885. (No model.)

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Claim.—The improved sofa-bed herein described, consisting, essentially, of the main frame having the stops and guide-strips on its under side, a receptacle normally resting under the said frame, a back hinged to the said frame and adjustable as to the relative angle thereto, and head and foot rests, each composed of a fixed section secured to the frame and having the outer end projecting upward, and a section hinged to the said fixed section and provided at each end with an upward projection, and the hinge H, composed of two similar strips twisted about midway of their length, so as to have their respective twisted portions engage each other relatively at right angles with relation to the inner and outer ends, all arranged to operate substantially as specified.

332,413. SHEET-METAL-ROOFING ANCHOR. WILLIAM A. LIST, Wheeling, W. Va. Filed Oct. 26, 1885. (No model.)

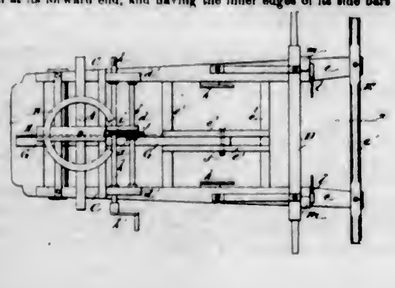


Claim.—1. In combination with the flanges and cap of a sheet-metal roof, an anchoring mechanism secured to the roof, passing upward between the flanges of the sheets, downward over the upper edge of each flange, outward under each outer edge of the cap, and with its ends overlapping each other, substantially as set forth.

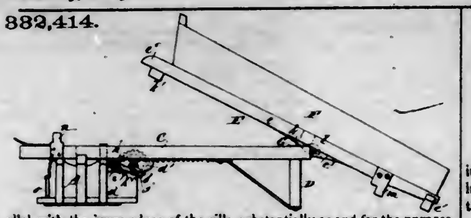
2. In combination with the flanges and cap of a sheet-metal roof, an anchoring mechanism secured to the roof, passing upward between the flanges of the sheets, downward over the upper edge of each flange, outward under each outer edge of the cap, and over the outside of the cap, and with its extreme ends united together by a lock-joint, substantially as set forth.

332,414. DUMPING-WAGON. JAMES MCFARLAND, Louisville, Ky. Filed May 19, 1885. (Model.)

Claim.—1. In a dumping-wagon, the combination, with the sills C, having parallel inner edges, of the sliding frame E, wider at its rear than at its forward end, and having the inner edges of its side bars par-



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allel with the inner edges of the sills, substantially as and for the purpose set forth.

2. In a dumping-wagon, the combination, with the sills C, having parallel inner edges, of the sliding frame E, wider at its rear than at its forward end, having the inner edges of its side bars parallel with the inner edges of the sills, and the downwardly-projecting flanges *k'* on the inner edges of the side bars of the sliding frame, substantially as herein shown and described.

3. In a dumping-wagon, the combination, with the sills C, having parallel inner edges, and provided with the pins *l*, of the frame E, wider at its rear than at its forward end, and provided with the hooked guide-plates *k*, adapted to engage the pins *l* when the frame is moved backward, substantially as herein shown and described.

4. In a dumping-wagon, the chair A, provided at its rear with bearing-blocks for the shafts of the operating-gear, in combination with said shaft and gear, and rack-plate for operating the box and its supporting-frame, substantially as described.

5. In a dumping-wagon, the shafts *b h* and intermeshing gear-wheels *a i j*, in combination with the connecting-rod G, provided with rack H and connected with the sliding frame E, the pinion *a*, meshing with the rack H, substantially as described.

6. The sliding frame E, provided with plates *m*, in combination with the sills C, provided with loops *n*, to receive the forward end *e'* of the frame E, substantially as and for the purposes set forth

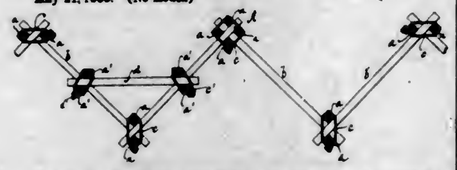
332,415. SNAP-HOOK. WILLIAM H. MCGREW, Peru, Ind., assignor of two-fifths to John Myers, same place. Filed Sept. 24, 1885. (No model.)



Claim.—1. As an article of manufacture, a snap-hook having a buckle and the flaring guide-walls *c'*, cast integral therewith, and provided with a curved socket. *c'*, a sliding tongue, E, arranged between the guide-walls and having a finger-piece, and a spring seated in the socket and bearing against the tongue to keep the same normally in engagement with the hook, as set forth.

2. As an article of manufacture, a snap-hook comprising a buckle and hook cast or formed in one piece, the buckle having side and cross bars and an attaching-tongue, a sliding tongue having an arm, *d*, and a finger-piece, *d²*, flaring side walls, *c'*, formed with the buckle and hook, and a spring seated in a recess in the hook and keeping the arms *d d'* normally pressed outwardly, as set forth.

332,416. WORM-FENCE. DAVID A. MCHENRY, Younger, Mo. Filed May 21, 1885. (No model.)



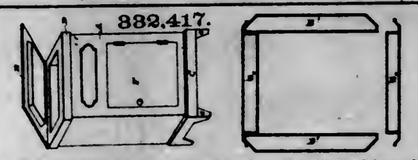
Claim.—A worm-fence consisting of the main posts *a*, arranged in pairs in a zigzag line, the rails *b*, having their ends extending between said posts, the pairs of posts *a'*, arranged in a straight line between the ends of the rails, the riders *d*, spanning the space between the sets of rails, and having their ends extending between the said intermediate posts, and the wires binding the rails and main posts together and the intermediate posts and riders together, substantially as described.

332,417. REFRIGERATOR. ANGUS MCKINNON, Toronto, Ontario, Canada, assignor of one-half to Sidney F. Stevens, Grand Rapids, Mich. Filed Mar. 2, 1885. (No model.)

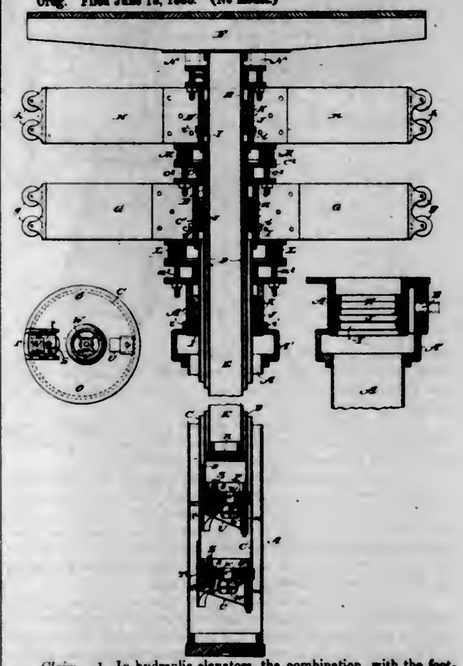
Claim.—1. As a refrigerator, a metal box or chest composed of four hollow walls hermetically closed, in combination with a tray-shaped base with hollow center, and a tray-shaped top, substantially as shown and for the purpose specified.

2. As a refrigerator, a metal box composed of four walls, consisting each of a rectangular box hermetically closed, two of such boxes having extensions which clasp the other two boxes, in combination with the tray-shaped base, and top or cover, substantially as shown and for the purpose specified.

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332,418. HYDRAULIC ELEVATOR. PARKER P. MORSE, Portland, Oreg. Filed June 18, 1885. (No model.)



Claim.—1. In hydraulic elevators, the combination, with the foot-block of a telescoping ram, provided with an opening or valveway, *s*, formed substantially as specified, of a valve, S, made in long tapering form and adapted to opening S, and arranged to be opened as the ram rises by contact of a device to which the valve is attached, with a stop fixed at or near the head of the pipe in which the ram moves, substantially as herein set forth.

2. In hydraulic elevators, the combination, with the telescoping rams, of downwardly-opening inlet-valves fitted to slides guided on the rams, stops in the stand-pipe positioned to be struck by the valve-slides to open the valves as the rams are lifted, and springs acting to close the valves, substantially as herein set forth.

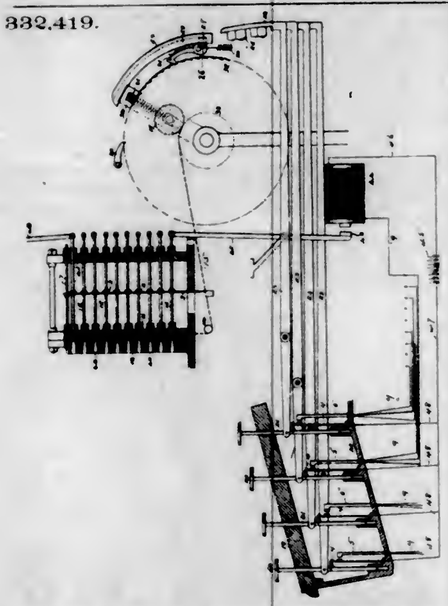
3. In hydraulic elevators, the combination, with the telescoping rams, of downwardly-opening inlet-valves fitted to slides guided on the rams, and rings I in the stand-pipe, and successive rams serving as stops to be struck by the valve-slides to open the valves, and serving also as guides to the moving rams, substantially as herein set forth.

4. A hydraulic elevator comprising a main stand-pipe connected with water-distributing inlet and outlet valves, substantially as specified, a telescoping ram fitted in the stand-pipe and provided with opening *s* and long tapering inlet-valve S, adapted to said opening *s*, and arranged to be opened as the ram rises by contact of a device to which the valve is attached, with a stop fixed at or near the head of the pipe in which the ram moves, a spring adapted to close the tapering valve S as the ram first falls, and a downwardly-opening outlet-valve fitted in the foot-block of the ram, substantially as herein set forth.

332,419. PERFORATING-MACHINE. JAMES E. HOBBIE, New York, N. Y. Filed Aug. 5, 1882. Renewed Oct. 9, 1885. (No model.)

Claim.—1. The combination, with a gang of punches, as 12, and a corresponding series of magnets, as 44, for operating the same, of a series of keys, as 20, and electrical connections whereby the movement of a single key operates a plurality of punches, a series of levers, as 23,

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corresponding in number with said keys and connected thereto, and provided with adjustable lugs, as 25, whereby like movements of the several keys produces variable feed movements, all substantially as described.

2. The combination, with the magnets 44, of the keys 20, having the pivoted spring-dogs 6, the circuit-closers 4 5, operated by said dogs, and electrical connections, substantially as described.

3. The combination, with the punches 12, magnets 44, circuit-closers 4 5, and connections, substantially as described, of the keys 20, connected to the levers 23, for operating the feeding mechanism, and being provided with the pivoted spring-dogs 6, for operating said circuit-closers, whereby the magnets 44 are kept energized a sufficient length of time to allow the punches to act, but are de-energized in time to allow the feeding mechanism to act, all substantially as described.

4. The combination, with the gang of punches 12 and the auxiliary punch or marker 7, of means for supporting a band of paper within the range of action of said punches and for advancing said band of paper with a variable step-by-step movement, means for operating said punches at each step of said band, and means whereby the operation of any one or more of said punches operates said auxiliary, all substantially as described.

332,420. AUTOMATIC CIRCUIT BREAKER AND CLOSER. M. JEROME MYERS, Syracuse, N. Y. Filed June 25, 1885. (No model.)

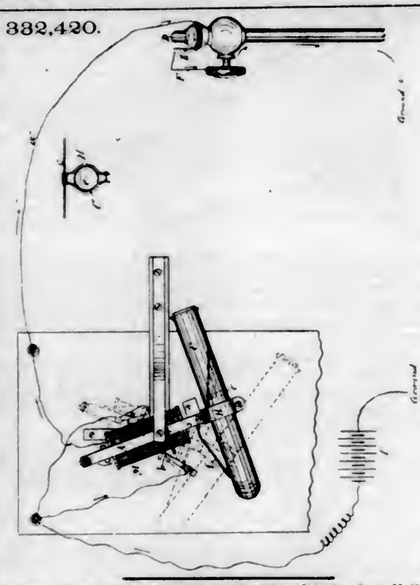
Claim.—1. In combination with the electric circuit-breaker, an electro-magnet and pivoted armature, a pivoted lever actuated by said armature and arranged to transmit motion to the circuit-breaker, and a weight arranged to be movable on said lever from end to end thereof, and thereby impart to said lever the power for actuating the circuit-breaker, substantially as set forth.

2. In combination with the circuit-breaker and electro-magnets, the pivoted tube C, fluid in said tube, a partial dam in the central portion of said tube, and a pivoted armature to counterpoise the fluid of the tube, substantially as set forth.

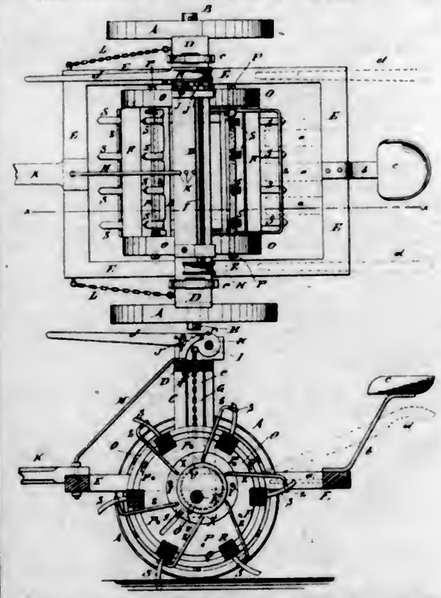
3. In combination with the contact-points of the broken circuit, the metallic yoke A, pivoted to turn in a vertical plane and encounter said contact-points, the magnet M, rigidly secured to said yoke, the pivoted armature B, the tube C, pivoted between its two ends, and fluid in said tube, and an arm carried by the armature and bearing with its free end on the lighter end of the tube to counterpoise the same when the armature is dormant, said counterpoise being removed from the tube automatically with the attraction of the armature to the magnet, substantially as and for the purposes set forth.

4. In combination with the pivoted circuit-breaker and electro-magnets connected thereto, the pivoted hanger H, the tube C, connected with said hanger and mounted therein so as to rotate about its axis, fluid in the tube, and a dam extending part way across the interior of the tube, whereby the flow of the fluid can be regulated by turning said tube on its axis, substantially as described and shown.

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332,421. CYLINDER PLOW AND PULVERIZER. SAML. M. NEELY, Smith's Turn Out, S. C. Filed May 8, 1885. (No model.)



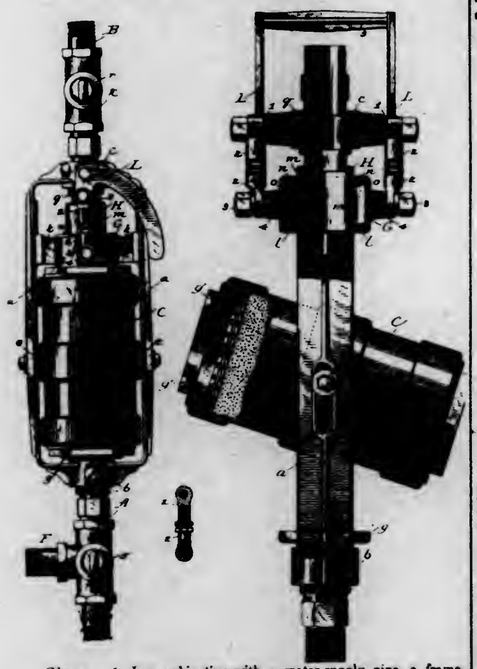
Claim.—1. In a cylinder plow and pulverizer, the combination, with the frame E, of the stationary shaft F, the loose disks O, having annular grooves Q in the outer parts of their inner sides, the bolts P, connecting the disks, and the bars R, having end tenons to enter the grooves of the disks O, and provided with teeth S and their fastening-pins T, substantially as herein shown and described, whereby the tooth-bars will be securely held and can be readily attached, adjusted, and detached, as set forth.

2. In a cylinder plow and pulverizer, the combination, with the frame E, the stationary shaft F, the grooved disks O, the tooth-bars R, and the teeth S, of the eccentrics U, secured to the said stationary shaft F, the annular disks X, and the bails Z, hinged to the said annular disks X, substantially as herein shown and described, whereby the said bails will be pushed outward to clear the teeth of rubbish as the said teeth rise from the ground, and drawn inward out of the way as the said teeth move downward, as set forth.

3. In a cylinder plow and pulverizer, the combination, with the plow-frame E and the stationary shaft F, of the wheels and axles A B, the upright frame C D, having vertical grooves in the inner sides of its uprights to receive the ends of the said stationary shaft and the draft-chains L, and adjustable hook-brace M, connecting the said frames, substantially as herein shown and described, whereby the plow-frame is provided with a carriage, as set forth.

4. In a cylinder plow and pulverizer, the combination, with the plow-frame E, the stationary shaft F, attached to the said plow-frame, and the upright carriage-frame C D, having grooves in the inner sides of its uprights and apertures in its top bar, of the bars *e*, having concaved lower ends to rest on the said stationary shaft, substantially as herein shown and described, whereby weight can be applied to the said stationary shaft to hold the plow-frame and its attachments down with any desired force, as set forth.

332,422. FILTER. WILLIAM NEBAGNER, Cleveland, Ohio. Filed Feb. 19, 1885. (No model.)



Claim.—1. In combination with a water-supply pipe, a frame connected to the pipe, a reversible filter mounted in said frame, movable endwise therein, and between the ends of the supply and discharge pipe, combined with movable connections for forming water-tight joints between the filter and the pipe at one end and fixed connections at the other, substantially as described.

2. In connection with a water-supply pipe, a frame connected to the pipe, a reversible filter mounted between the ends of said pipe on trunnions working in elongated bearings in said frame, combined with a fixed seat at one end, a movable seat at the other, and a lever for operating the parts carrying the movable seat, whereby the water-tight joints are formed, substantially as described.

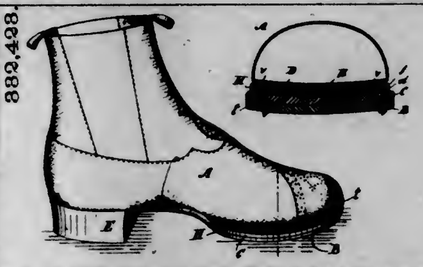
3. In combination with the frame and reversible filter mounted in trunnions, which turn and slide in said frame, a fixed seat and packing at one end, a guided ring, G, and its seat fitted to the packing of the filter, the flange *n* on said ring, and a flange, *l*, on the pipe-section H, said ring being provided with operating-levers, all substantially as described.

332,423. BOOT OR SHOE. JAMES H. O'DONNELL, Abington, Mass. Filed July 16, 1885. (No model.)

Claim.—1. As an article of manufacture, a sole, H, composed of a layer of cork, *d*, and a layer of leather, *f*, said layers being cemented together, and a binding, *z*, which surrounds the edges of said layers and overlaps the outer faces thereof, said binding being cemented to said layers, substantially as described.

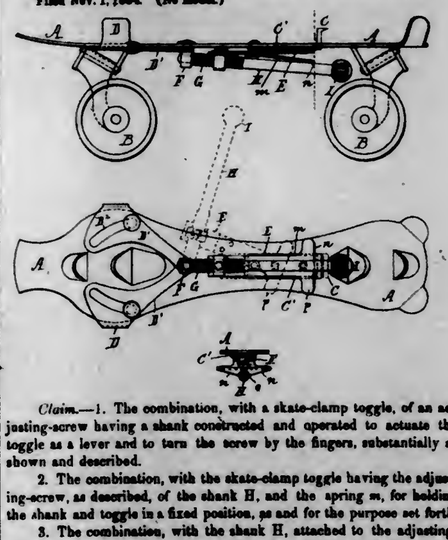
2. A boot or shoe provided with a tap-sole having its outer edges bound or covered with leather corresponding approximately with the

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leather of which the upper is composed, the binding being cemented to the tap-sole, said sole being interposed between the insole and outer sole and secured in position by stitches, which pass directly through the insole, lower edge of the upper, said tap-sole, the binding or covering of said tap-sole, and the outer sole, substantially as set forth.

332,424. SKATE-FASTENER. HENRY F. OSBORNE, Newark, N. J. Filed Nov. 1, 1884. (No model.)

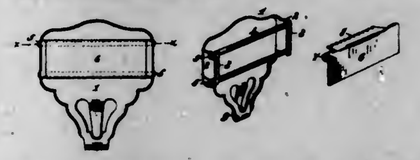


Claim.—1. The combination, with a skate-clamp toggle, of an adjusting-screw having a shank constructed and operated to actuate the toggle as a lever and to turn the screw by the fingers, substantially as shown and described.

2. The combination, with the skate-clamp toggle having the adjusting-screw, as described, of the shank H, and the spring *m*, for holding the shank and toggle in a fixed position, as and for the purpose set forth.

3. The combination, with the shank H, attached to the adjusting-screw, of the spring *m*, provided with inclined lips *n*, notch *o*, and ears *p*, the whole arranged with a skate-toggle and operated as and for the purpose set forth.

332,425. SUSPENDER-BUCKLE. WILBUR F. OSBORNE, Ansonia, Conn. Filed Oct. 22, 1885. (No model.)



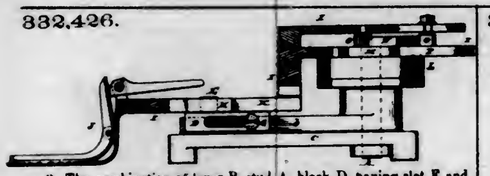
Claim.—The combination, in a suspender-buckle, of a plate having end flanges, two rods connected, respectively, with the upper and lower ends of the flanges, and a lever pivotally connected with one of the rods and adapted to rest against the other rod, substantially as described.

332,426. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JOHN H. PALMER, Philadelphia, Pa. Filed June 19, 1884. (No model.)

Brief.—This invention is an improvement on that embraced in Patent No. 302,018, granted July 15, 1884, to the same party, and is designed to vary the width between the rows of stitches, as may be desired. A sliding block is adjustably secured on the front arm of the vibrating bell-crank lever. The block carries a pin engaging in a slot in the cloth-carrying lever.

Claim.—1. The combination of lever S, stud A, block D, having slot F and pin E, screw G, sliding vibrating lever I, having slots K P, cloth-clamp J, and cam M, substantially as and for the purpose specified.

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2. The combination of lever B, stud A, block D, having slot F and pin E, screw G, sliding vibrating lever I, having slots K P and rollers or pins O, cloth-clamp J, cam N, and cam M, substantially as and for the purpose specified.

3. The combination of lever B, stud A, block D, having slot F and pin E, block H, screw G, sliding vibrating lever I, having slots K P, cloth-clamp J, and cam M, substantially as and for the purpose specified.

332,427. VENTILATING DEVICE FOR COMMUTATORS OF DYNAMO-ELECTRIC MACHINES. CHARLES PARHAM, Philadelphia, Pa. Filed July 21, 1885. (No model.)



Claim.—1. The combination, in a dynamo-electric machine, with a commutator the segments of which are perforated, of means of supplying air to the interior of the said commutator, substantially as and for the purposes set forth.

2. The combination of a hollow or perforated armature-shaft, an air-supplying device adapted to supply air to the hollow interior of said shaft, vents whereby the air supplied to can escape from the interior of said shaft, and a commutator surrounding the shaft and adapted to be cooled by the air supplied internally to it, substantially as described.

3. In a dynamo-electric machine, the combination of a hollow or perforated armature-shaft and air-supplying device adapted to supply air to the hollow interior of said shaft, holes or openings through the shaft communicating with the hollow interior thereof, a commutator surrounding the shaft, and holes or openings through the segments of the commutator, substantially as and for the purposes set forth.

4. In a dynamo-electric machine, the combination of a hollow or perforated armature-shaft, an air-supplying device adapted to supply air to the hollow interior of said shaft, holes through the shaft communicating with hollow interior thereof, a commutator surrounding the shaft in such manner as to leave an air-space between the shaft and commutator, and holes through the commutator for the passage of air, substantially as and for the purposes set forth.

5. In a dynamo-electric machine, the combination of a hollow or perforated armature-shaft, an air supplying device adapted to supply air to the hollow interior of said shaft, holes through the shaft communicating with the hollow interior thereof, a commutator surrounding the shaft in such manner as to leave an air-space between the shaft and itself, (the said commutator,) holes through the commutator for the passage of air, head-plates connected with the shaft, and insulating-studs interposed between the commutator-segments and the said head-plates in such manner as to leave an interspace between said head-plates and the ends of the segments, substantially as and for the purposes set forth.

6. As a means for securing the segments of a commutator in suitable relationship to a shaft with which the commutator revolves and in such manner as to leave an air-space at each end of the commutator, the combination of the head-plates and the insulating-studs, constructed as described, substantially as and for the purposes set forth.

7. As an improvement in insulating-studs for the maintenance of a commutator, a stud of insulating material containing a stiffening-stem of metal or other rigid material.

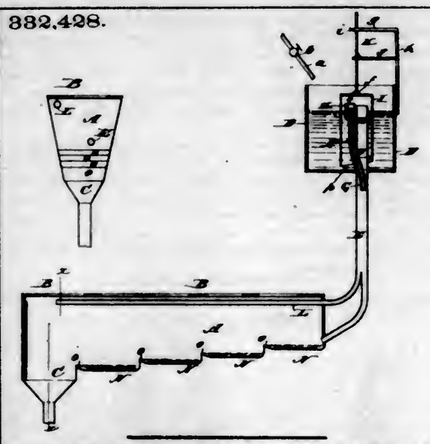
332,428. AUTOMATIC FLUSHING WATER-CLOSET. WILLIAM B PARSONS, Jr., Elmira, N. Y. Filed Aug. 19, 1885. (No model.)

Claim.—1. A trough formed with a series of basins, each basin being provided with a weir or dam, the trough being adapted to receive a current of water, substantially as described.

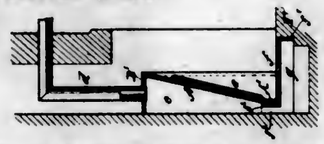
2. A trough formed with a series of basins located in different levels, and each provided with a weir or dam, said trough being adapted to be connected to a supply-pipe, substantially as described.

3. A trough formed with a series of basins located on different levels, each basin being provided with a weir or dam, in combination with a flushing attachment, substantially as described.

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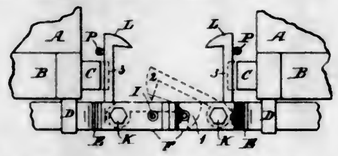


332,429. HOT-AIR FIRE-PLACE. DOYEL PEARSON, Memphis, Tenn. Filed Nov. 1, 1884. (No model.)



Claim.—In a fire-place, the combination, with the inclosing-walls E and the hearth F, of the plate *f*, having the flanges *f'*, *f²*, and *f⁴*, the plate A, having the oblique portion A', wings B, flanges *a*, and offset B', the outlet-pipe *d*, and the inlet-pipe *h*, substantially as shown and described, whereby chambers are formed beneath and at the back and sides of the fire-place and air can pass through and be warmed in said chambers, as set forth.

332,430. CAR-COUPLING. GEORGE D. PEARSON, Montreal, Quebec, Canada, assignor of one-half to John Wallace and Peter Wallace, same place. Filed Apr. 28, 1885. (No model.)



Claim.—The combination of the hunters E E, having each a recess, H, pins K and O, and hook L, the said hooks being furthermore arranged to meet, uprise, and further actuate each other, substantially as shown and described.

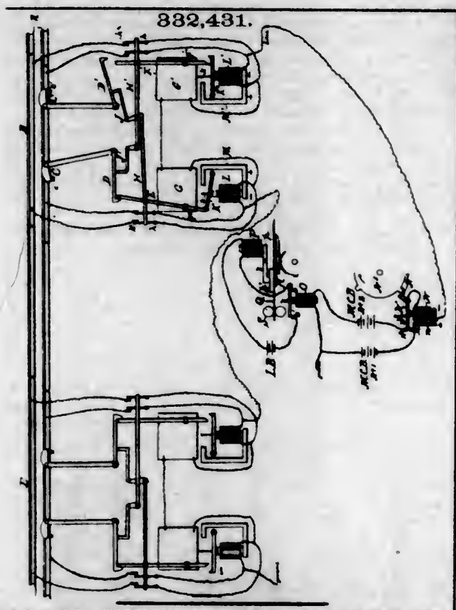
332,431. RAILWAY-SIGNAL. WILLIAM M. PRASE, Pittsburg, Pa., assignor of one-half to Lenox Simpson, same place. Filed Apr. 24, 1884. (No model.)

Claim.—1. The combination, with the alarm mechanism G G', provided with levers E E', of the armatures K K', polarized magnets L L', polarized magnet N, armature N', contact-points n' n^2, having connection with the negative and positive poles, respectively, of batteries, and a line-wire, substantially as described, whereby when the negative current is broken by the circuit-breaking wheel of the alarm mechanism first put in operation a positive current will be established over the line, and such mechanisms as are wound up while said first mechanism is reporting will be locked, for the purposes set forth.

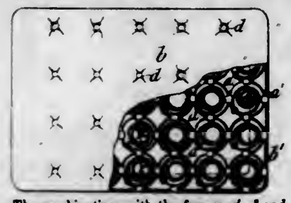
2. The combination, with the alarm mechanism G G', provided with levers E E', armatures K K', polarized magnets L L', polarized magnet N, armature N', contact-points n' n^2, batteries, and line-wire, of the intermittently-revolving toothed wheel N^2, substantially as described, whereby the normal current is re-established, for the purposes set forth.

3. The combination, with the alarm mechanism G', armature K', polarized magnet L', line-wire, polarized magnet N, armature N', contact-points n' n^2, batteries, magnet O, armature *o*, contact-point *o'*, printing-magnet P, and local battery connected with said point *o'* and magnet P, substantially as described, whereby when the normal current is broken the printing-magnet P is energized, for the purposes set forth.

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332,432. MATTRESS. GORDON D. PETERS, London, England. Filed Aug. 18, 1885. (No model.) Patented in England Feb. 4, 1885, No. 1,548.

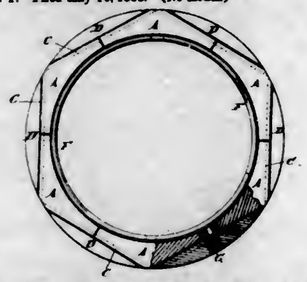


Claim.—1. The combination, with the frames a' a^2 and interposed springs *a*, of the cushion *b*, provided with hooks *c*, attached at intervals along its edges, and constructed to engage with frame a' and hold the cushion securely in place, substantially as described.

2. The combination, with the frames a' a^2 and interposed springs *a*, of the cushion *b*, having a flap, *b'*, inclosing said frames, and the hooks *c*, secured to the edges of cushion *b*, and engaging with frame a', to hold said cushion in place, substantially as described.

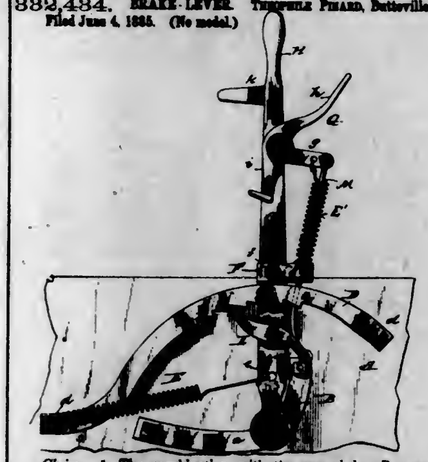
3. The combination with the frames a' a^2 and interposed springs *a*, of the cushion *b*, having a flap, *b'*, inclosing said frames, and provided with eyelets *d*, and the hooks *c*, secured to said cushion and engaging with frame a', to hold the cushion in place, substantially as described.

332,433. METALLIC PISTON-PACKING. NICHOLAS PELHAM, Port Jervis, N. Y. Filed May 16, 1885. (No model.)



Claim.—A piston-packing constructed substantially as herein shown and described, and consisting of the interior angular blocks, A, having their apices convexed in the arc of a circle, and provided with central grooves in their outer surfaces and recesses in their adjacent ends, and the exterior segments, D, covering the joints between the angular blocks, and provided with tongues on their inner surfaces and with central radial perforations registering with the end recesses of the angular blocks, whereby tallow can pass from the interior space of the piston-packing to the surface of the cylinder, to keep it lubricated, as set forth.

332,434. BRAKE-LEVER. THEOPHILE PIHARD, Battleville, Oreg. Filed June 4, 1885. (No model.)



Claim.—1. The combination, with the curved bar B, secured to the side of the wagon-body, and the slotted rack-bar D, also secured to the body and provided with the rack-teeth, of the brake-lever C, pivoted to bar B and held by spring E, the pawl L and lever G, pivoted upon said lever C, said lever G having arms *h g*, the rod M, spring E', and block F, substantially as described.

2. The combination, with bar B, having stud *a*, and slotted bar D, having teeth *l*, of lever C, carrying pawl L, block F, and lever G, having arms *g h i*, the guard *k*, rod M, springs E E', and nut *c*, substantially as set forth.

332,435. PLATED HOLLOW EARTHENWARE. DAVID S. PLUMB, Newark, N. J. Filed Aug. 11, 1885. (Specimens.)



Claim.—1. The hollow earthen vessel having a glazed interior, and having an exterior layer of electroplate in intimate contact therewith, substantially as set forth.

2. The hollow vessel having the body of clay, the inner and outer layers of glazing, and an outer layer of electroplate.

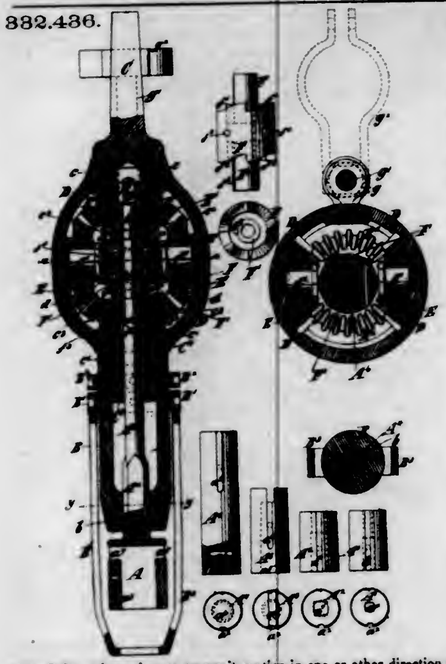
3. The earthenware vessel having an outer electroplated surface extending over the edges of the vessel into the interior thereof, the bulk of said interior surface remaining unplated, substantially as set forth.

332,436. TAPPING DEVICE. JOHN H. RATHBUN, New York, N. Y., assignor of one-half to C. H. De Lamater & Co., same place. Filed Nov. 2, 1885. (No model.)

Claim.—1. The combination, with a tool-holder and a shank or spindle projecting therefrom, of two spindle portions, C C', the former adapted to be inserted in a machine-spindle and the latter serving to transmit motion to the tool-holder, oppositely-arranged bevel-wheels, each having clutch formations, one being fast on the spindle portion C and the other fitted to the spindle portion C', a non-rotary casing or frame, and idler bevel-wheels journaled therein and engaging the two oppositely-arranged wheels, and a sliding clutch-sleeve on the shank or spindle of the tool-holder, adapted to make engagement with either of the clutch formations on the oppositely-arranged wheels, to transmit to the tool-holder rotary motion in one or other direction, substantially as herein described.

2. The combination, with a tool-holder having a shank or spindle, A^5, of the spindle portions C C', and oppositely-arranged wheels E' E^2, with their clutch formations, the non-rotary casing or frame, and wheels supported thereby and engaging the wheels E' E^2, and the sliding clutch-sleeve F, fitting the cylindric bearing portions c^2 c^3 of the spindle por-

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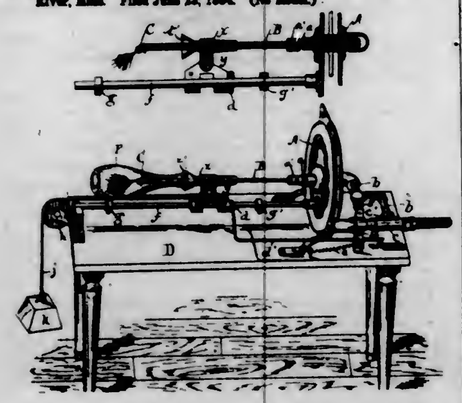


tions C C', and serving to transmit motion in one or other direction to the tool-holder, substantially as herein described.

3. The combination, with a tool-holder and its shank or spindle having a polygonal formation, A^6, of the spindle portions C C', the split polygonal chuck B on the spindle portion C', the wheels E' E^2, the former fast on the spindle portion C and the latter adapted to rotate on the spindle portion C', and both provided with clutch formations, a non-rotary casing or frame, and wheels supported thereby and engaging the wheels E' E^2, and a sliding clutch-sleeve locked to the spindle portion C' to turn therewith, and adapted to engage with the wheel E' or E^2, to turn the spindle portion C' with its chuck and tool-holder in one or other direction, substantially as herein described.

4. The combination, with a tool-holder having a shank or spindle, A^6, with a polygonal formation, A^6, of the spindle portions C C', the split polygonal chuck B on the spindle portion C', the wheels E' E^2, provided with clutch formations, a non-rotary casing or frame, and wheels supported thereby and engaging the wheels E' E^2, the sliding clutch-sleeve F, adapted to engage the clutch formation on either wheel E' or E^2 and fitting the bearing portions c^3 c^4 of the spindle portions C C', and the inner sleeve, F', on the shank or spindle A^6, made fast to the clutch-sleeve F, sliding within the spindle portions C C', and locked by a groove and feather to the spindle portion C', to drive it and its chuck B in one or other direction, substantially as herein described.

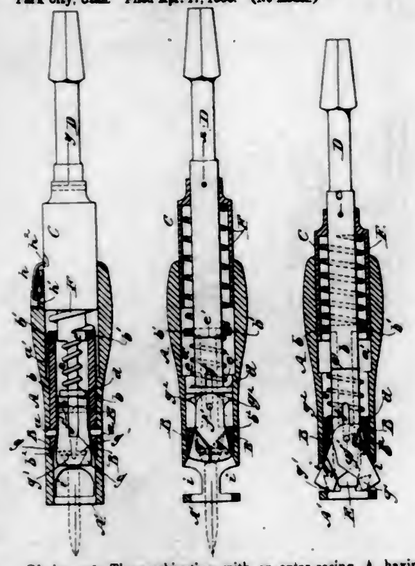
332,437. BOTTLE-WASHING MACHINE. AUGUSTUS R. RICE, Fall River, Mass. Filed June 23, 1884. (No model.)



Claim.—1. An organized bottle-washing machine consisting of the motor A, provided with a hollow shaft, *a*, spindle B, detachably secured to the shaft *a*, and carrying the brush-holder C, bottle-guide *x*, supported by slide *y*, guide-rod *f*, slide *d*, rod *d'*, lever b^3, valve *b'*, spring *e*, pipes *b c*, pulley *h*, cord *j*, weight *k*, and table D, all arranged, combined, and adapted to operate substantially as and for the purposes set forth.

2. In a bottle-washing machine, the combination of the guide-rod *f*, placed on a line parallel with the shaft or arbor of the motor, the slide *d*, adapted to be operated on the guide-rod by contact with the guide-slide *y*, the stops *g g'*, the rod *d'*, lever b^3, valve *b'*, and spring *e*, all substantially as and for the purposes set forth.

332,438. SELF-HOLDING SCREW-DRIVER. JOHN W. RICHARDSON, Park City, Utah. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, with an outer casing, A, having a spring-catch, *h*, and an interior skeleton frame, B, having side pieces, *b b*, and upper ring, *b'*, of the spring-operated spindle D, passed through ring *b'*, and provided with a slotted blade, E, the ring *d* on the blade and guided between the arms *b b*, and the jaws *g*, pivoted to the blade, the pivot passing through the slot thereof, substantially as set forth.

2. In a screw-driver, the outer casing, A, having the skeleton frame B, rounded at b^3, the spindle D, the blade E, slotted at *f*, and the jaws *g g*, pivoted at the slotted portion of the blade and having projections g^3 on their inner ends constructed to engage the rounded parts b^3 of the skeleton B^3, substantially as and for the purpose set forth.

3. The combination, with the outer casing, A, having the ring A' at its lower end, the openings *i*, adjacent thereto, the spring-catch *h*, and the skeleton having arms *b b* and upper ring, *b'*, of the inner casing, C, the spindle D, the spring F on the spindle D, resting against the ring *b'* and the upper end of the casing G, the blade E on the lower end of the spindle and provided with the slot *f*, the jaws *g*, pivoted by the pin *f'*, extending through the slot *f*, the sliding guide-ring D on the blade above and in contact with the inner ends of the jaws, and the spring *e* on the blade between the rings *d b'*, substantially as set forth.

332,439. TREATING BUCKRAM AND OTHER FIBROUS SUBSTANCES WITH STARCH. PETER C. RITCHIE, New York, N. Y. Filed Apr. 27, 1885. (No specimens.)

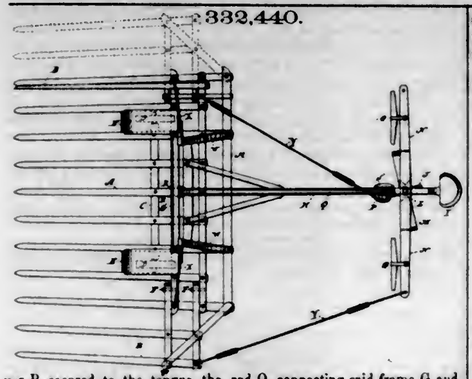
Claim.—The within-described process of treating buckram and other fibrous or textile material for stiffening purposes, which consists in coating the material with a solution of raw starch and then exposing it to the action of dry steam, thereby cooking the starch and causing it to combine with the fibers of the material, as set forth.

332,440. HORSE HAY-RAKE. GEORGE ROBINSON, Chillicothe, Mo. Filed Jan. 22, 1885. (No model.)

Claim.—1. In a horse hay-rake, the combination, with the frame A, of the hinged sections B, pivotally secured to the frame and adapted to be vertically raised, in the manner and for the purpose set forth, a tongue secured to the frame, the wheel J, and rods Y, adapted to hold the sections B in their raised or lowered positions, substantially as set forth.

2. In a horse hay-rake, the combination, with the frame A and vertically-moving sections B, pivotally secured thereto, of the vertical frame G, secured to the frame A, the vertically-movable tongue H, lever P, secured to the tongue, the rod Q, connecting said frame G and tongue H, and rods Y, all of the above parts being combined and adapted to operate substantially as set forth.

332,440.

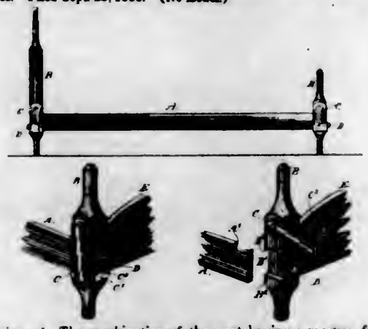


332,441. PROCESS OF MAKING CRYSTALLINE GLASS. EUGENE A. SAVARY, New York, N. Y. Filed July 23, 1885. (No specimens.)

Claim.—1. The herein-described process of producing crystalline glass, consisting in first coating the glass with a solution of Epsom salts, allowing the same to dry on the glass and then treating the coated surface with hydrofluoric acid.

2. The herein-described process of producting crystalline glass, consisting in first coating the glass with a solution of Epsom salts in beer, allowing the same to dry on the glass and then treating the coated surface with hydrofluoric acid.

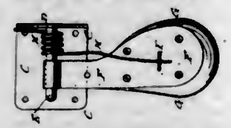
332,442. BED-RAIL FASTENER. ADAM SCHNELL, Hartsell's, Ala., assignor of two-thirds to Willis A. Barclift and James L. Echols, same place. Filed Sept. 23, 1885. (No model.)



Claim.—1. The combination of the post having a mortise formed in the side thereof, a rail lapped alongside of and having its end fitted in said mortise and interlocked therein to prevent longitudinal displacement, an angle-iron pivoted to the side of the post on one side of the mortise over which it extends, and a catch to engage the free end of the pivoted angle-iron, whereby lateral displacement of the rail is prevented, substantially as described.

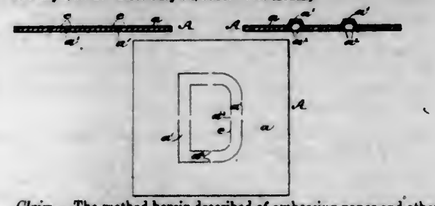
2. The combination of the post having a mortise formed in its side, the lower wall of which is level and the upper wall inclined, the side rail having a tenoned end conforming to the mortise in which it is seated, an angle-iron pivoted to the post on one side of the mortise and extending thereover, and a catch to engage the free end of the angle-iron, substantially as and for the purpose set forth.

332,443. COMBINED TRUSS AND SUPPORTER. HENRY A. SCHULZ, Brooklyn, N. Y. Filed Sept. 7, 1885. (No model.)



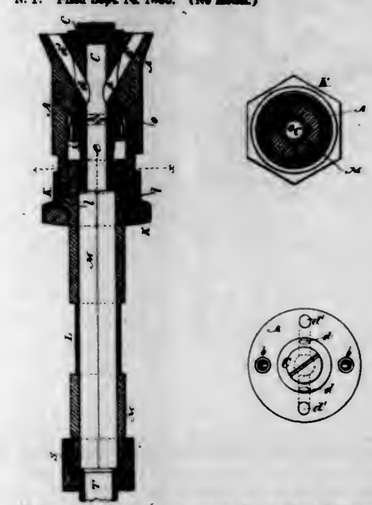
Claim.—As an improved article of manufacture, a rupture-pad and abdominal supporter consisting of the attaching-plate C, having the flange D at right angles thereto, the pivot E, secured to or formed on the said flange and extending across the attaching-plate parallel with its outer face, the plate F, hung on the pivot E, the pad G on the plate F, and spring H, bearing at its lower end on the plate F below its pivotal point, and at its opposite end bearing on the plate C, substantially as set forth.

332,444. EMBOSSING PLASTIC MATERIAL. CHARLES SCHWARTZ, Brooklyn, N. Y. Filed July 14, 1885. (No model.)



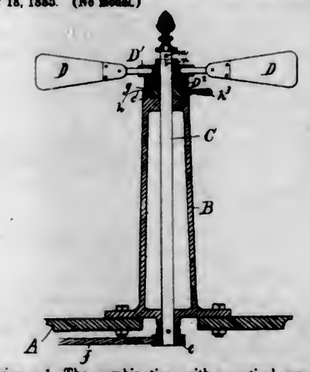
Claim.—The method herein described of embossing paper and other plastic substances, which consists in incising the upper surface of the sheet to be embossed in outline of the figure to be raised, and then subjecting the sheet to pressure in embossing-dies, and raising the material along the lines of incision, substantially as and for the purposes set forth.

332,445. TAP-BUSH FOR BARRELS. LEWIS SELGRATH, New York, N. Y. Filed Sept. 14, 1885. (No model.)



Claim.—The bush A and means for securing the same into the barrel, in combination with a tapering axial plug having a polygonal projecting end and diverging passages and inserted from the inner end of the bush, a washer and nut within the bush, a tubular key fitting the end of the plug, a flange thereon, and a screw coupling-ring around the tubular key, screwed upon the bush to retain the key upon the plug and allow the rotation of the key and plug, substantially as set forth.

332,446. COLUMNAR FAN. JAMES M. SEYMOUR, Newark, N. J. Filed July 18, 1885. (No model.)



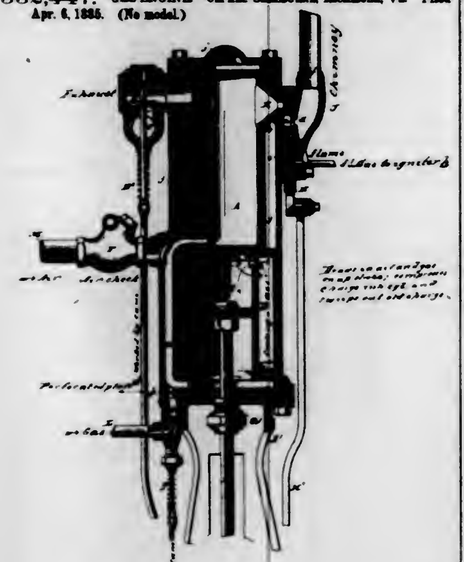
Claim.—1. The combination, with a vertical support or column carrying a rotary shaft with a fan fitted to its upper end, of a clutch

above the fan-hub upon the shaft, and means for lifting the fan-hub and engaging it with the clutch, as and for the purpose set forth.

2. The combination, with a vertical support or column carrying a shaft with a fan at its upper end, of a rotary friction-disk beneath the fan, a flange upon the fan-hub to rest upon the disk, a clutch above the fan-hub upon the shaft, and means for lifting the fan-hub from the disk and engaging it with the clutch, as and for the purpose set forth.

3. The combination, with a vertical support or column, B, carrying a shaft, C, with a fan, D, at its upper end, of a clutch above the fan-hub upon the shaft, and the collar A, having inclines A' fitted to the top of the column, and adapted to raise the collar and fan-hub when the collar is rotated, as and for the purpose set forth.

332,447. GAS-ENGINE. CYPRAS SHELBURNE, Richmond, Va. Filed Apr. 6, 1885. (No model.)



Claim.—1. In a gas-motor engine, the combination of the cylinder A, having the enlarged end, the piston C, having the enlarged head working in the enlarged end of the cylinder, unobstructed port r in the cylinder, communicating with the outer air, and passage D, provided with air and gas valves F and G.

2. In a gas-motor engine, the combination of the cylinder A, having the enlarged end, the piston C, having the enlarged head working in the enlarged end of the cylinder, port r in the cylinder, communicating with the outer air, passage D, and ports b b^2, communicating with the enlarged and reduced portions of the cylinder, air-valve F at one end of passage D, gas-valve G at opposite end thereof, perforated plate p between the gas-valve G and the port b^2, and discharge-valve E, adapted to be opened just before the piston has uncovered the port b, substantially as described.

3. The combination, in a gas-engine, of the cylinder A, piston C, air-jacket B', and unobstructed ports r r^2 for keeping up a constant current of air in and around the piston, as and for the purpose specified.

332,448. SUSPENDER-BUCKLE. ABRAHAM SHEFFIELD and CALVIN VOORHIS, New York, N. Y. Filed Oct. 6, 1885. (No model.)



Claim.—1. The buckle-body A, having returned end flanges and the metal strap-pieces bent up into circular eyes, in combination with the clamping-lever and the pivots thereof, which pivots enter into the eyes, substantially as set forth.

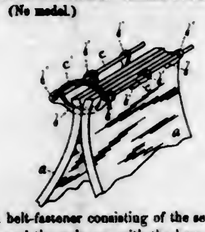
2. The buckle-body having pivot-eyes formed of the bent-up straps, and the returned end flanges, in combination with the clamping-lever and a pivot-wire for connecting the clamping-lever to the eyes in the body, substantially as set forth.

3. The combination, with the buckle-body and the pivot-wire, of a bent clamping-lever having braces at the ends of the bent portion, with holes through which the pivot-wire passes, substantially as set forth.

4. The combination, with the buckle-body and the pivot-wire, of a bent clamping-lever having loops in the bend through which the pivot-wire passes, substantially as set forth.

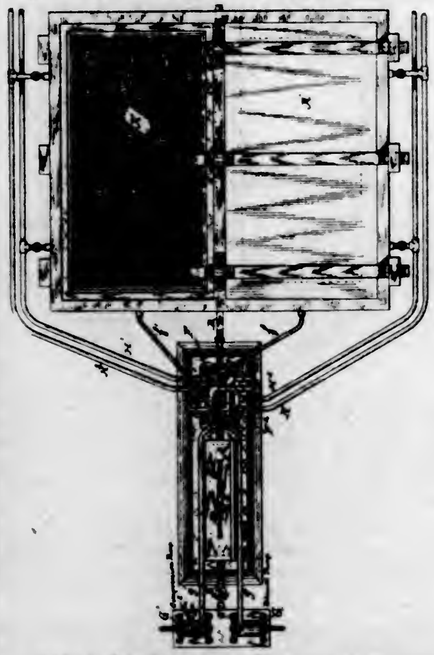
5. The combination, in a suspender-buckle, of the body A, having returned end flanges, and pivot-eyes formed of the strap-pieces bent up, and a bent clamping-lever with perforated braces at the ends of the bent portions, and loops bent in the sheet-metal for the passage of the pivot-wire, substantially as set forth.

332,449. BELT-FASTENER. ALBERT D. SIKES, Buffalo, N. Y. Filed Oct. 24, 1885. (No model.)



Claim.—A belt-fastener consisting of the series of curved links b, with end eyes, b', and the rods c c, with the bow or curved portion c', connecting the same to form a handle for inserting the rods c c within the eyes b', or withdrawing the same therefrom, substantially as shown and described.

332,450. TANNING APPARATUS. LENOX SIMPSON, Bellevue, Allegheny County, Pa. Filed Apr. 22, 1885. (No model.)



Claim.—1. The combination, with the two vats A A', separated by a partition, of the casing a', having ports a^2, and the slide-valve B, having ports b, as and for the purpose described.

2. The combination, with the vats A A', casing a', and slide-valve B, of the end-slotted lever D, having a rod-connection with said valve end, the piston E, connected with the slotted end of lever, and the cylinder F, having pipes f f' near its ends, as and for the purpose specified.

3. In a tanning apparatus in which air-pumps are employed, the combination, with two air-tight vats provided with valved connections at their bottoms, of a cylinder having one end connected with one of said vats and the other end connected with the remaining vat, a piston working in said cylinder and connected with the valves of the vats, and mechanism for regulating the movement of said piston, whereby the difference in pressure within the two vats operates said valves, substantially as and for the purposes described.

4. The combination, with the two air-tight vats and an exhaust and compression pump, of a cylinder, one end of which is connected with one of said vats and the other end with the remaining vat, a valve-chest provided with four entrance and four exit ports, said ports connected with the pumps and vats, respectively, a valve adapted to open and shut said ports, a piston working in said cylinder and adapted to operate said valve, and mechanism for regulating the movement of said piston, substantially as and for the purposes described.

5. The combination of two air-tight vats provided at their bottoms with valved connections, exhaust and compression pumps, a valve-chest having four entrance and four exit ports connected with the pumps and vats, respectively, and provided with a valve adapted to open and close said ports, a cylinder, one extremity of which is connected with one of the vats and the other extremity with the remaining vat, a piston working in said cylinder and connected with all the valves, and mechanism for regulating the piston, substantially as and for the purposes described.

6. The combination, with two air-tight vats provided at their bottoms with valved connections, exhaust and compression pumps, a valve-chest having four entrance and four exit ports connected with the pumps and vats, respectively, and provided with a valve, and a cylinder, one of whose extremities is in communication with one of the vats and the other extremity with the remaining vat, of a piston working in said cylinder and provided with lugs, and catches adapted to engage with said lugs and regulate the movement of said piston, substantially as and for the purposes set forth.

7. The combination of vats A A', provided with valve-casing a' and valve B, cylinder F, pipes f f', piston E, having lugs e e^1 e^2 e^3, springs e^2 e^3, catches L' L^2, lever D, and pumps G G', connected with the vats, substantially as described, whereby, when the difference in pressure within the two vats is sufficient to overcome the resistance of the catches L' L^2, the valve between the vats will be opened and the liquor shifted into the empty vat, for the purposes set forth.

8. The combination of vats A A', provided with valve-casing a' and valve B, cylinder F, pipes f f', piston E, having lugs e e^1 e^2 e^3, springs e^2 e^3, catches L' L' L^2 L^2, lever D, valve-casing F^2, valve F', pumps G G', and pipes g g' H H' H^2 H^2, substantially as described, whereby the liquor is shifted back and forth between the vats, pressure applied to the vat containing liquor, and the air exhausted from the vat devoid of liquor, for the purposes set forth.

332,451. TANNING APPARATUS. LENOX SIMPSON, Bellevue, Allegheny County, Pa. Filed July 18, 1885. (No model.)

Claim.—1. The combination, with a tanning-vat provided with a vertically-reciprocating hide-frame, of one or more rods, J, working through stuffing-boxes j, and means for operating said rod or rods, substantially as and for the purposes described.

2. The combination, with a tanning-vat provided with the vertically-reciprocating hide-frame G, having rod J attached thereto, of the rope or chain K, drum L, and weight M, substantially as and for the purposes described.

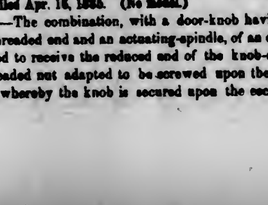
3. A tanning apparatus consisting, essentially, of an air-tight tanning-vat provided with induction and eduction pipes having cocks, a vertically-reciprocating hide-frame, a device for raising and lowering said hide-frame, and pumps for alternately exhausting and compressing the air within the vat, arranged substantially as described, and for the purposes set forth.

332,452. WAGON-TONGUE SUPPORT. JAMES SHALLEY, Factoryville, Pa. Filed Jan. 5, 1885. (No model.)

Claim.—1. An automatic wagon-tongue support consisting of a single piece of round, square, or angular steel or other suitable material, provided with two longitudinal arms resting on the bounds at any desired point, two coiled springs opposite each other, two angular arms, and a transverse arm engaging at its forward part with a stirrup provided with hooks, said stirrup passing under and outside of the tongue on each of its sides, substantially as described.

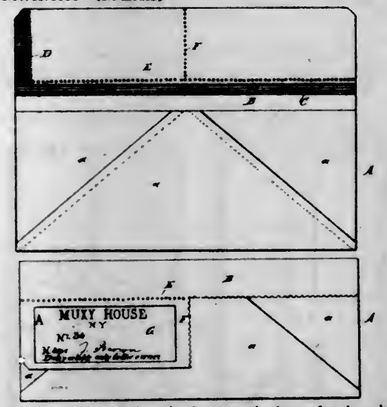
2. The combination, in a wagon-tongue support, of the coiled springs with the longitudinal, transverse, and angular arms bearing on the top and sides of the bounds, forming an automatic clamp, substantially as described.

332,453. ELECTRIC-LIGHT ATTACHMENT FOR SPECULUMS. CASTLE SMITH, Queen Victoria Street, London, England. Filed Dec. 26, 1884. (No model.)



Claim.—An electric-lamp attachment for speculums and other scientific instruments, consisting of the combination of a lamp-holder, a supporting-plate which is furnished with insulated terminals, and adjustable connection between said holder and supporting-plate, a fastening for attaching said plate to the instrument, and a hinge between said plate and fastening, substantially as herein described.

332,454. ENVELOPE. SAMUEL H. SMITH, New York, N. Y. Filed Nov. 19, 1884. (No model.)



Claim.—1. An envelope having two checks produced on its flap, substantially as herein shown and described.

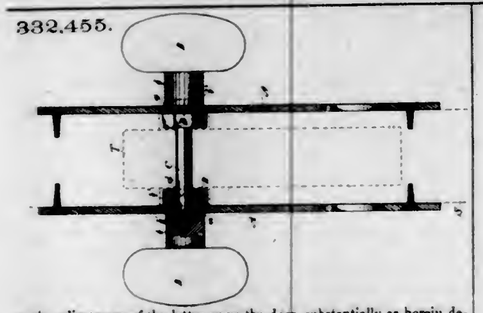
2. An envelope having two checks produced on its flap, and having a gum line produced on the back of the flap above the checks, substantially as herein shown and described.

3. An envelope having two checks produced on its flap, and a gum line on the back of the flap above the checks and a gum line at one end, substantially as herein shown and described.

332,455. KNOB ATTACHMENT. WILLIAM B. SMITH, San Francisco, Cal. Filed Apr. 16, 1885. (No model.)

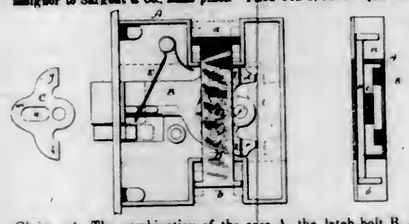
Claim.—The combination, with a door-knob having a shank with a reduced threaded end and an actuating-spindle, of an escutcheon or rose plate adapted to receive the reduced end of the knob-shank, and an internally-threaded nut adapted to be screwed upon the threaded end of said shank, whereby the knob is secured upon the escutcheon previous

332,455.



to the adjustment of the latter upon the door, substantially as herein described.

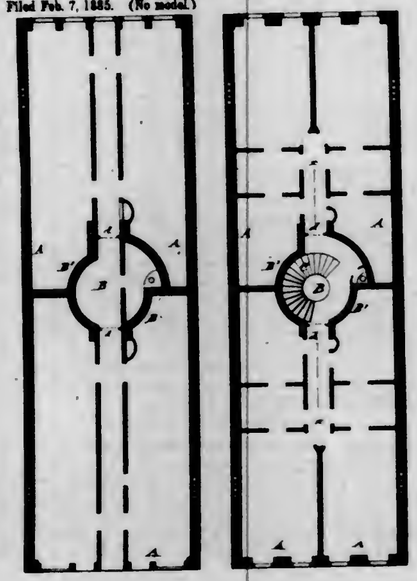
332,456. MORTISE-LATCH. WILLIAM E. SPARKS, New Haven, Conn., assignor to Sargent & Co., same place. Filed Oct. 5, 1885. (No model.)



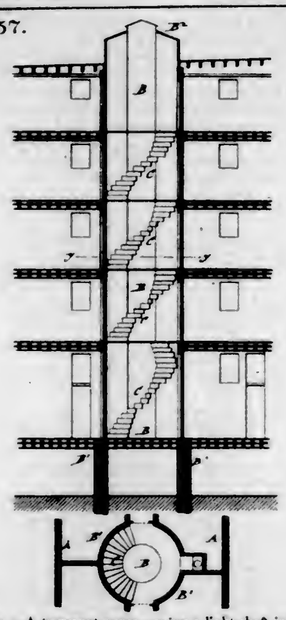
Claim.—1. The combination of the case A, the latch-bolt B, constructed with shoulders *d e* at its inner end, the slide D, adapted to move vertically through the case, its ends projecting, respectively, above and below the edges of the case, with the three-arm lever C, pivoted within the case between the said shoulders on the bolt, two of the arms of said lever adapted to engage, respectively, with the shoulders *d e*, the other arm of said lever adapted to engage with the slide, and the spring E, to throw the bolt, but yield to allow it to be drawn, substantially as described.

2. The combination of the case A, constructed with a recess, *a*, in its upper edge, and a corresponding recess, *b*, in its lower edge, the latch-bolt B, constructed with shoulders *d e* at its inner end, the slide D, adapted to move vertically through the case, one end extending into the recess *a* and the other into the recess *b*, with the three-arm lever C, pivoted within the case between the said shoulders on the bolt, two of the arms of said lever adapted to engage, respectively, with the shoulders *d e*, the other arm of said lever adapted to engage with the slide, and the spring E, to throw the bolt, but yield to allow it to be drawn, substantially as described.

332,457. TENEMENT-HOUSE. WENDELIN STURM, New York, N. Y. Filed Feb. 7, 1885. (No model.)



332,457.



Claim.—A tenement-house having a light-shaft inclosed by fire-proof walls at or near the center of the building, a winding staircase arranged in the light-shaft, landings at each floor communicating with said staircase, said light-shaft having a quadrantal offset in one or more stories, so as to provide the requisite space for the staircase and landing, substantially as set forth.

332,458. PROCESS OF MANUFACTURING FLUXES. HENRY F. TAYLOR, Neath and Briton Ferry, County of Glamorgan, and GEORGE LEYSHON, Tividale, County of Stafford, assignors to Taylor, Struvé, Eaton & Price, Neath and Britton Ferry, South Wales, England. Filed Nov. 24, 1883. (No specimens.) Patented in England Apr. 20, 1883, No. 2,012; in France June 22, 1883, No. 151,893; in Belgium July 16, 1883, No. 61,822, and in Canada Oct. 3, 1883, No. 17,826.

Claim.—The method herein specified of preventing injury to iron plates, coated with tin or other metal, from the traces of acid remaining in the flux employed, consisting in mixing with the muriate-of-zinc flux a material—such as lime, chalk, or magnesia—having a great affinity for the acid, so as to remove any traces of free acid, and immersing the plates in such flux previous to applying the coating metal, substantially as set forth.

332,459. LOCK. WARREN H. TAYLOR, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed June 10, 1884. (Model.)



Claim.—1. In a lock, an improved sliding tumbler having a horn and a groove, A, provided therein, substantially as and for the purpose set forth.

2. In a lock, the combination of a spring-tumbler having a horn and a groove, A, therein, and a plug having a narrow cut, B, between the spring-hole and the hole for the main part of the tumbler, substantially as set forth.

3. In a lock, the combination of a sliding tumbler having a spring-horn and a plug having a tumbler-slot with a projection extending into a cut in the tumbler and forming guideways to prevent the tilting of the tumbler, substantially as set forth.

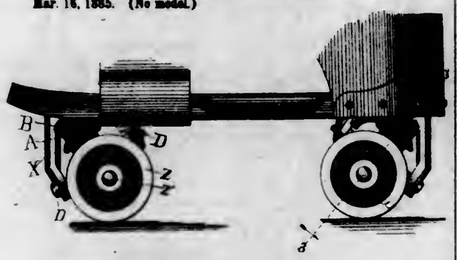
4. In a lock, the combination of the plug, the barrel having slots K, and a holding-plate with ears projecting into said slots, substantially as set forth.

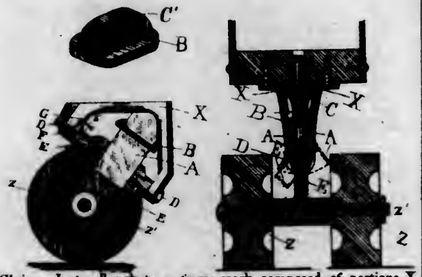
5. In a lock, the combination of a latch-bolt, L, a cross-head, M, two latch-rods, N, located between the latch-bolt and the cross-head and

directly connected to the latch-bolt, and the springs P, carried by the rods N, substantially as set forth.

6. In a lock, the combination of the escutcheon and lock-case, the detachable tube Q, loosely carried thereby, and the removable bar R, located between the escutcheon and case, substantially as and for the purpose set forth.

332,460. ROLLER-SKATE. HORATIO THOMAS, Chicago, Ill. Filed Mar. 16, 1885. (No model.)





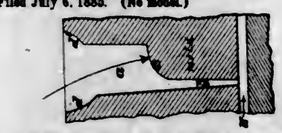
Claim.—In a roller-skate, a frame-work composed of portions X and E, united by a spindle, in combination with springs A A and adjustable sleeve B, substantially as described, and for the purpose set forth.

332,461. TOY GUN. GEORGE S. TINSLEY, Pawtucket, R. I., assignor to the R. Bliss Manufacturing Company, same place. Filed May 20, 1885. (No model.)



Claim.—A toy gun having a groove in the upper surface of the stock, a notch or opening in the barrel, a double elastic cord attached near the muzzle on each side, crossed in the notch or opening, and connected to the driver, and the trigger adapted to catch and retain the driver, the parts being constructed and combined substantially as and for the purpose set forth.

332,462. GATE FOR CASTING. CHARLES TRUBSDALE, Cincinnati, Ohio. Filed July 6, 1885. (No model.)



Claim.—A molder's gate consisting of a body and shank having flat and laterally-displayed sides tapering from top to bottom, and joined by one or more prolonged shoulders located at any suitable distance between the top and bottom of said gate, whereby a pouring-hole having an extended barrier or barriers is formed in the cope of the flask, for the purpose of causing the molten metal to enter the matrix in a thin but broad sheet, as herein explained.

332,463. FLOW-SHOE. MARCELLUS WALKER, Cambridge, Mass. Filed Sept. 8, 1885. (No model.)

Claim.—1. A shoe having its upper cut or slitted on the side in a line extending from the top downward and forward toward the toe of the shoe, said cut following substantially the longitudinal contour of the instep and terminating under the same, and having its edges connected by a folding gusset, and means for fastening the shoe upon the foot, substantially as described.

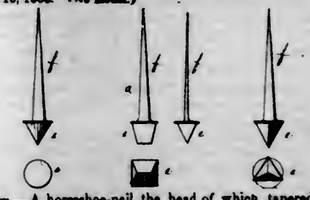
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2. A shoe having its upper cut or slitted on the side in a line beginning at the top and extending downward and toward the toe, following substantially the longitudinal contour of the instep, and terminating under the same, said slit or cut having its edges connected by a folding gusset, and closed by fastenings arranged and acting in a diagonal direction across the shoe from the instep downward and toward the heel, substantially as described.

3. A shoe having an upper composed of front and back pieces separated on the side by a slit, F, that extends from the top of the shoe downward and along the longitudinal contour of the instep toward the toe, the edges of said slit or opening being connected by a folding gusset, K, having a slit, S, at its lower end for receiving a tail on the back piece of the upper, substantially as described.

332,464. HORSESHOE-NAIL. BENJ. WATKINS, Akron, Ohio. Filed Aug. 10, 1885. (No model.)



Claim.—A horseshoe-nail the head of which, tapered and terminating in a point, has a broad flat base, to insure a firm and even bearing against the under surface of the shoe and completely covering the nail-hole, as described and shown.

332,465. SKATE-SHARPENER. EARLE F. WATSON, New York, N. Y. Filed Apr. 23, 1885. (No model.)

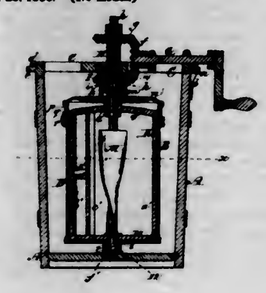


Claim.—1. The combination, with two clamps, B B, having openings for receiving a sharpening-tool and provided with thumb-screws *a' a'* for securing the tool in place, of two swinging guide-plates, E E, pivoted, respectively, to the clamps and thumb-screws *d*, for swinging the guide-plates on their pivot-connection with the clamps, substantially as and for the purposes described.

2. The combination of the adjustable clamps B B, the slots formed therein constructed to receive a file or the like, the swinging guide-plates E E, pivoted to the clamps and the thumb-screws, for swinging the guide-plates on their pivots, substantially as described.

3. The combination of the adjustable clamps B B, the slots formed therein, the lugs on the said clamps, the swinging guide-plates E E, pivoted to the clamps, the extension *f*, formed on the guide-plates, and the thumb-screws engaging threads in the lugs and bearing upon the extensions *f*, substantially as shown and described.

332,466. ICE-CREAM FREEZER. JESSE G. WEBB, Boston, Mass. Filed Aug. 25, 1885. (No model.)



Claim.—1. In an ice-cream freezer, the combination, with a rotating cream-can having at its center a vertical rotating spirally-twisted blade or screw-shaft, of the scraper K, having an inner vertical bar, *c'*, inclined in the direction of its width toward the central rotating screw-shaft, and arranged in close proximity therewith, whereby the frozen cream, as it is removed from the sides of the can by the scraper, is forced toward the center to take the place of that forced outward by the screw-shaft, substantially as described.

2. In an ice-cream freezer, the combination, with the rotary cream-can B and its scraper K, of the vertical spirally-twisted blade or screw-shaft M, having its bearings in the top and bottom bars of the said scraper, and forming a central support therefor, the yoke C, carrying the crank-shaft G, the gears *f g* I, sleeve H, and the vertical shaft A, whereby the can B and screw-shaft M are rotated and the scraper held stationary, substantially as described.

3. In an ice-cream freezer, the cream-can B, having a cover, *n*, provided at its top with a central neck or flange, *m*, having notches *l*, in combination with the gear I, having lugs or projections *k*, adapted to fit within the notches *l*, the detachable yoke C, the tub A, the gear *f*, and the crank-shaft G, all operating substantially in the manner and for the purpose set forth.

4. In an ice-cream freezer, the combination of the tub A, the detachable yoke C, secured thereto and provided with a vertical sleeve or bearing, H, the cream-can B, rotating within the tub, and provided with a cover, *n*, having a neck or flange, *m*, provided with notches *l*, the gear I, with its lugs *k*, fitting within said notches *l* and revolving loosely on the sleeve H, the stationary scraper or stirrer K, having a stud or nipple, *c'*, fitting within a socket at the end of the sleeve H, the vertical shaft A, rotating within the sleeve H, and carrying the gear *g*, and having at its lower end a socket, *g'*, the central vertical screw-shaft, M, rotating in bearings in the scraper K, and fitting at its upper end within the socket *g'* of the shaft A, and the crank-shaft G, with its gear *f*, meshing with the gear *g* I, all constructed and arranged to operate substantially in the manner and for the purpose described.

332,467. ELECTRICAL THERAPEUTICAL BELT. CHAS. N. WEST, San Francisco, Cal. Filed Aug. 7, 1882. (Model.)



Claim.—1. In an electric belt for body wear, having a series of electric elements, the outer plate or covering, B, of each element bent as shown, in combination with the wire frame C, articulating with the bend of said plate and joining suitably with the opposite conductor of the next element, said connecting-frame being insulated at M to prevent contact with the outer covering or plate of said next element, substantially as herein described.

2. In an electric belt for body wear, composed of a series of flexibly-connected electric elements, the outer covering or plate, B, of each element bent as shown and having rounded and inwardly-flanged ends, whereby the remaining portions of the element are inclosed, in combination with the means for closing said covering-plate, consisting of the pivoted bails or bands A' A', adapted to swing on a circle over the ends of the bent plate, substantially as herein described.

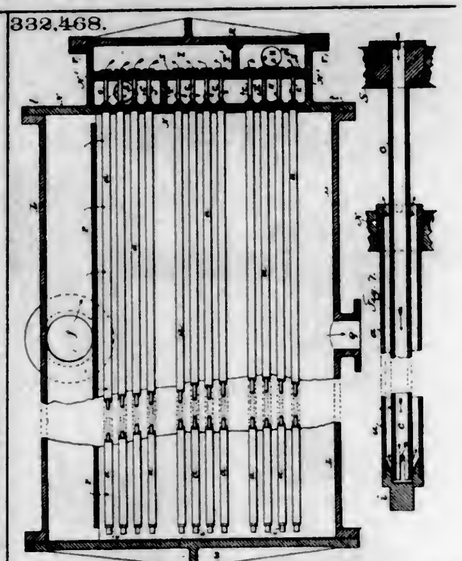
3. In an electric belt for body wear, having a series of flexibly-connected electric elements, the inner metal plate, J, of the element, and its absorbent covering I, in combination with the outer covering or plate, B, and the bent metal plate intervening between said outer covering and the absorbent material, said intervening plate being corrugated and perforated, substantially as and for the purpose herein described.

4. In an electric belt for body wear, consisting of a series of electric elements suitably formed and connected, and in combination therewith, the attachment P, consisting of a wire spirally twisted and formed into a loop, said attachment being connected with the belt by a flexible metal conductor and constituting the negative electrode of said belt, substantially as herein described.

332,468. SURFACE-CONDENSER. FREDERICK M. WHEELER, Montclair, N. J., assignor to the Lighthall Manufacturing Company, New York, N. Y. Filed Apr. 22, 1885. (No model.)

Claim.—1. The horizontal case L, having an inlet-pipe for the steam at the top and an outlet-pipe for the water of condensation at the bottom, in combination with the perforated distributer P, the tube-sheet N, the horizontal tubes *a*, screwed into such sheet N and opening through the same, the movable caps that close the other ends of such tubes *a*, the tubes *c* within the tubes *a* and open at each end, and the tube-sheet S, into which such tubes *c* are screwed, and the heads and the pipes for supplying water to circulate between the heads and tube-sheets and through the tubes *a c*, substantially as set forth.

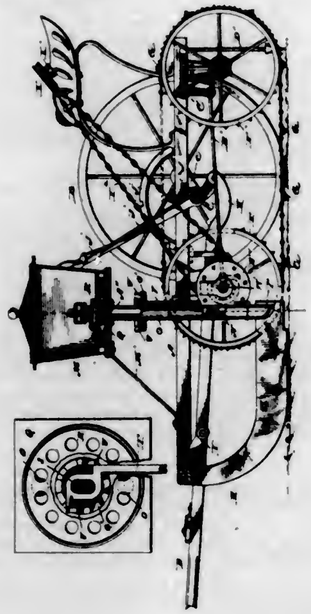
2. The combination, with the horizontal condenser-case and the tube-sheets N S, of the tubes *a*, with the ends thicker than the body, and having screw-threads thereon screwed into the sheet N, the tubes *c*, having attached to them screw-ferrules at their ends that are larger in diameter than the pipes *a* and screwed into the tube-sheet S in line with the tubes *a*, so that such tubes *a* can be removed through the openings in the sheet S after the tubes *c* have been removed, the removable caps *i* to the tubes *a*, and the supply and discharge pipes H K, substantially as specified.



3. The combination, with a horizontal condenser-case, of two or more groups of pipes, the respective tube-sheets N S, into which the respective pipes *a c* are screwed, the inlet and outlet pipes H K, and the partitions between the respective groups of pipes to direct the circulating water, substantially as specified.

332,469. CORN-PLANTER. ANDREW YOUNT, Denver, Ind. Filed Mar. 11, 1885. (No model.)

Claim.—1. The combination, with the shafts W W' and friction-pulley clutch E' E'', of the endless chain I² and the pulley X, as and for the purposes set forth.



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2. In a corn-planter of the character described, the combination, with the main frame, its supporting wheels, and runners, of the draft-pole, the front link connecting the pole directly to the main frame, the rear link connecting it to a crank-axle, the hand-lever and latch, and the notched segment, as and for the purposes described.

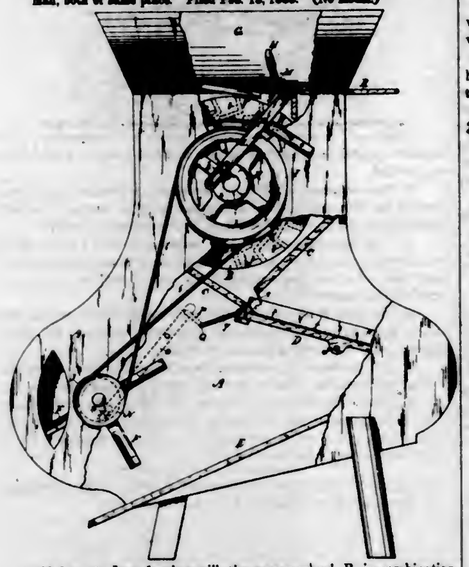
3. The combination, in a corn-planter, of a main frame, mounted as described, a grain-hopper centrally located and provided with laterally-curved conveyers leading to vertical discharge-tubes in line with the covering-wheels, the vibrating discharge-valves in the said tubes, an intermittent grain-dropping disk on the perforated hopper-bottom, and the devices described for actuating the said disk, substantially as specified.

4. The combination of a grain-hopper having a perforated intermittently-rotating dropping-disk on a shaft, S, the ratchet-disk, the slotted arm-bearing pawls, the lever V, bearing a swivel, *t*, and a cam-block, Y, applied on a shaft, W', mounted as described.

5. The combination, with the grain-spouts N, of the vibrating valves P, their connecting-rod P', vibrating lever *p*, actuated as described, and transmitting intermittent rotation to the dropping-disk by devices described.

6. The combination, in a corn-planter, of the two shafts W W', journaled in the same axial line and bearing a sprocket-wheel, with a compound friction-pulley, an accommodating bearing, Z, and a cam-block, substantially as and for the purposes described.

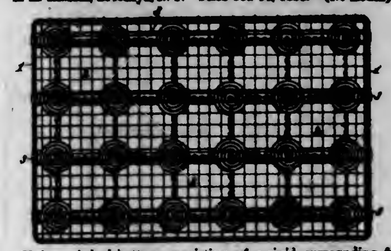
332,470. AUTOMATIC FANNING-MILL. HARRY S. ZINK, Sacramento, Cal., assignor of two-thirds to Richard Read and Henry S. Rahlman, both of same place. Filed Feb. 18, 1885. (No model.)



Claim.—1. In a fanning-mill, the power-wheel B, in combination with the hopper G, having feed-aperture *g* in communication with the wheel, the feeder-shaft H in the hopper having teeth A, and the means by which said shaft is oscillated, consisting of the crank K on the wheel-shaft, having pin *k*, the crank M on the feeder-shaft, and the pivoted lever L, slotted on the pin and engaging the crank M, substantially as herein described.

2. In a fanning-mill, the power-wheel B, rotated by the grain entering the mill, as described, in combination with the fan F, the pivoted riddle D, and the means by which the fan is rotated and the riddle vibrated, consisting of the pulley I on the wheel-shaft, the pulley J on the fan-shaft, and belt i between them, the crank N on the other end of the fan-shaft having pin *n*, the cross-shaft Q, having interior crank, *q*, engaging the riddle, and exterior crank, P, and the pivoted lever O, slotted on the pin *n* and engaging crank P, all arranged and adapted to operate substantially as and for the purpose herein described.

332,471. SPRING BED-BOTTOM. JAMES ARMLIN, Jr., and ARCHIBALD K. M. ARMLIN, Brooklyn, N. Y. Filed Oct. 14, 1885. (No model.)



Claim.—A bed-bottom consisting of a rigid surrounding frame, a woven-wire base having its edges secured to said frame, a series of metallic strips woven through the said base and having their ends attached to the surrounding frame, and a series of spiral springs having one end riveted to each metallic strips, whereby all the parts are permanently connected together, substantially as described.

332,472. SASH-FASTENER. JOHN F. ALEXANDER, Bridgeport, N. J. Filed Oct. 16, 1885. (No model.)

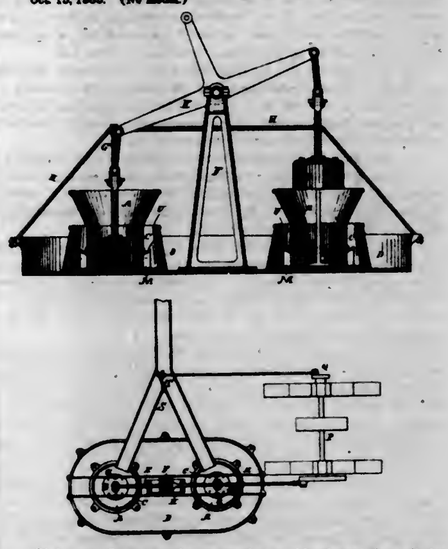


Claim.—1. The combination of a window-frame and upper sash having recesses *e* with a slotted bolt, D, pivoted to the frame, and adapted to engage with said recesses in the upper sash, substantially as set forth.

2. The combination of a slotted bolt, D, pivoted to the frame of the window, and having a head, *d'*, with the sash having a recess, *e*, provided with a cam-flange, *e'*, substantially as described.

3. The combination of a window-frame and upper and lower sashes having recesses with a reversible bolt, D, pivoted to the frame and adapted to engage with the recesses in both sashes, as set forth.

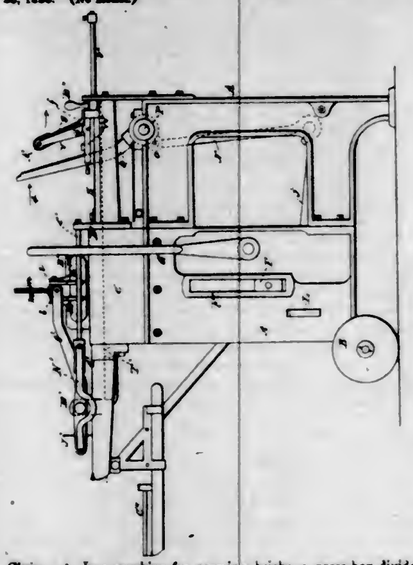
332,473. AMALGAMATOR. MYRON J. ADEE, Portland, Oreg. Filed Oct. 15, 1885. (No model.)



Claim.—1. In an amalgamator, the combination of the cylinders having funnels at their tops and ports M at their bottoms, their pistons, the reservoirs C, and the forked sluice S, with its gate, substantially as set forth.

2. In an amalgamator, the combination of the cylinders and alternately-operating pistons, a sluice adapted to feed each cylinder alternately, quicksilver-reservoirs for the cylinders, and a receptacle or settler, D, substantially as set forth.

332,474. BRICK-MACHINE. John Haller, Salem, Ohio. Filed May 25, 1885. (No model.)



Claim.—1. In a machine for pressing bricks, a press-box divided by a partition into two compartments, 1 and 2, of the shape and size of a brick, and arranged edgewise vertically, so that the bricks therein will be edgewise to the line of pressure and so pressed, and provided with a vertically-movable bottom, in combination with a pair of adjustable wedging-slides forming a top or cover to the press-box, constructed and arranged to operate in the manner substantially as described, and for the purpose set forth.

2. In combination with the vertically-movable bottom of the press-box, the lever J and bar L, passing through the head of said lever, and the edge of which is the vibratory axis or fulcrum of the lever, said lever being connected by a rod to the bifurcated arm O, projecting from the shaft P, and actuated by the handle Q for operating the lever J, forming, in connection with the said bifurcated arm and handle, a compound lever, for the purpose specified, and substantially as described.

3. In a machine for pressing bricks, the combination, with the cross-head F and stanchions supporting the bottom of the press-box, of the rock-shaft H, arm and lever G, and bolster for operating said shaft and arm, constructed and arranged to operate in the manner as described, substantially as described, and for the purpose specified.

4. In a machine for pressing bricks, the slides S S, constituting the cover of the press-box, and consisting of wedge-shape sections *a'* and *b*, imposed one upon the other, and adapted to slide in the way-grooves T T, along the inner sides of the frame of the machine, substantially as described, and for the purpose set forth.

5. In combination with the slides S S, the adjustable flange or flanges W, having pivoted therein the levers V V, the lower ends of which depend to the sections *a'* of the slides for operating the same, dogs pivoted to said levers, lifting-rods, and check-plates B'' B'', constructed and arranged to operate co-ordinately and jointly, for the purpose specified, and substantially as set forth.

6. In a machine for pressing bricks, the guide-rods C' C', arranged, respectively, on each side of the press-box, and having thereon reciprocally-movable sleeves, to the inner sides of which are pivoted, respectively, the ends of the frame H', and links N' N', having their ends respectively pivoted to the said sleeves and their opposite ends connected to the arms or levers O' O', substantially as described, and for the purpose specified.

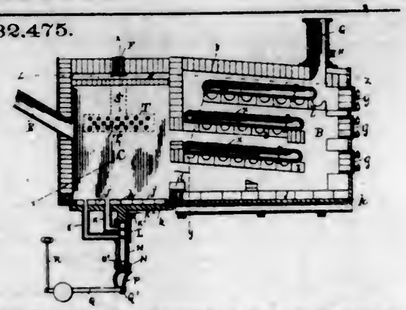
7. In combination with the arms or levers O' O', a pair of swinging clamps, consisting of a bar, P', head or block R', suspended from said bar by a loosely-fitting sleeve, arms *l l*, and bifurcated levers pivoted in said arms, and provided with plates hinged to the bifurcated ends of the levers, constructed substantially as herein described, and for the purpose set forth.

332,475. APPARATUS FOR MANUFACTURING IRON AND STEEL. Benjamin Batley, Jr., Bolmhoover, Pa. Filed Mar. 18, 1885. (No model.)

Claim.—1. The tuyeres K, in combination with the blast-pipe N', tube M, and cam P, actuated as shown.

2. The sleeve L, having flange *p*, in combination with the bar O,

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the cam P, and the means, substantially as shown and described, for operating the same.

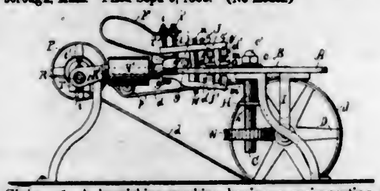
3. The bed Z, having radial recesses *l*, in combination with the furnace-bottom, having a square tapering lug, *q*.

4. The portable furnace C, having a top air-pipe and a side angular fuel-pipe, in combination with the chamber B, pipes X X, arranged in series, as shown, and tube Y.

5. The portable furnace C, having a top air-pipe and a side angular fuel-pipe, in combination with the bed Z, the cog-wheel U, pinions V V, connecting-bar I, and lever J, whereby the correlation of said furnace and bed may be varied.

6. The portable furnace C, in combination with the bed Z, the tuyeres K, sleeve L, reciprocating tube M, blast-pipe N', cam P, and the means shown and described for actuating the same, the whole co-operating in the manner and for the purpose set forth.

332,476. BURNISHING-MACHINE. Anthony H. Bliss, North Attleborough, Mass. Filed Sept. 9, 1885. (No model.)



Claim.—1. A burnishing-machine having a reciprocating pair of burnisher bearing-arms, and a feed-plate rotated between said burnishers, as specified.

2. The combination, with a longitudinally-reciprocated pair of arms bearing burnishers opposite to and approaching one another, of a feed-plate rotating between said burnishers, for the purpose described.

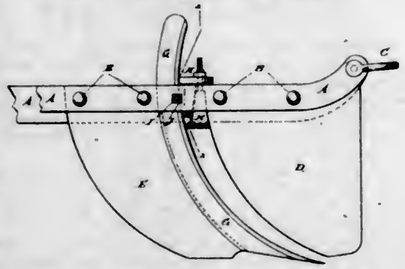
3. In a burnishing-machine, the combination, with a reciprocating rod carrying a fixed and a rocking arm, said arms bearing fixed or rotary burnishers, of a feed-plate rotating in the field of said burnishers, substantially as described.

4. In a burnishing-machine, the combination, with a reciprocating rod, of a pair of arms having thereon adjustable burnishers, and a feed-plate rotated in the field of the said burnishers.

5. In a burnisher, the combination, with a pair of arms, of burnishers having adjustable riders or platforms, for the purpose described.

6. The combination, with the arms J J', having the spacing-screws *n n'*, and supporting-rods *o' o'*, having binding-screws *q q*, and provided with the riders O O, of the feed-plate B, having the openings *b b*, substantially as and for the purpose described.

332,477. ICE-PLOW. John G. Bodenstein and Henry Bodenstein, Staatsburg, N. Y. Filed Aug. 18, 1885. (No model.)



Claim.—1. In an ice-plow, the combination, with the frame A and the tooth O, of the set-screws I and the jam-nuts J, substantially as

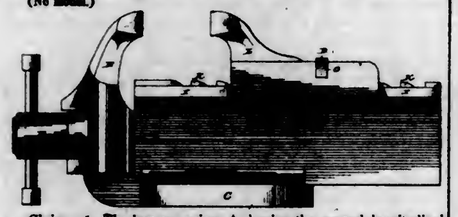
herein shown and described, whereby the points of the teeth can be readily brought into line, as set forth.

2. In an ice-plow, the combination, with the frame A and the plates D E, of the re-enforcing-plates F, substantially as herein shown and described, whereby space for the teeth is obtained without grooving the parts of the said frame, as set forth.

3. In an ice-plow, the frame A, made substantially as herein shown and described, with its forward end curved upward, whereby the said frame can pass over projections, as set forth.

4. In an ice-plow, the frame A, consisting of two bars or plates of unequal width, secured together and having their forward ends curved or bent upward, substantially as described, whereby provision is made for the escape of chips when the plow is working at its full depth and the frame permitted to pass over projections, as set forth.

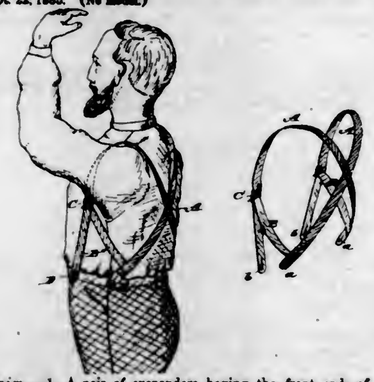
332,478. VISE. Henry D. Booth, Elmira, N. Y. Filed May 26, 1885. (No model.)



Claim.—1. The box or casing A, having the central longitudinal opening, B, foot-piece C, and the lug or stud H at one end, in combination with the screw-actuated jaw E, provided with the hollow shank D, sliding in the opening B, the screw G, working in the lug or stud H, and swiveled in the jaw E, and the movable sliding jaw L, as set forth.

2. The box or casing A, provided with the rack-teeth on its upper side, a space being left between each tooth, in combination with the screw-actuated jaw, the sliding jaw L, having the transverse opening or slot O, and the transverse gravity-pawl P, oblong in form, pivoted at one end to the sliding jaw and in its normal position fitting entirely within the slot O, the lower edge of the pawl being received in the space between the rack-teeth, as set forth.

332,479. SUSPENDERS. George H. Boyd, Marysville, Cal. Filed Sept. 22, 1885. (No model.)



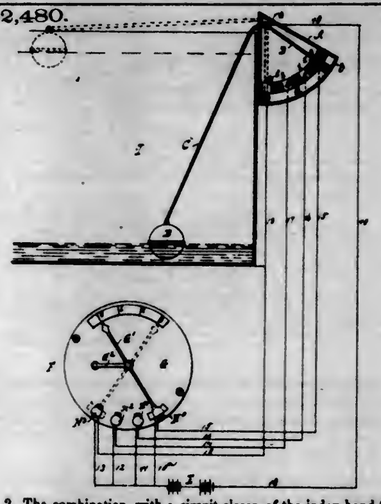
Claim.—1. A pair of suspenders having the front ends of the shoulder bands or straps passed through buckles on buckle-straps having button-holes in the front end, and having their rear ends secured to the shoulder-bands, substantially as herein shown and described.

2. In a pair of suspenders, the combination, with the crossed bands A, having their front ends united to the buckles C and their rear ends provided with button-holes, of buckle-straps B, passed through the buckles C, having button-holes at their front ends, and having their rear ends connected with the straps A a short distance above the button-holes at the rear ends of said straps, substantially as herein shown and described.

332,480. MAGNETO-ELECTRIC INDICATOR. Jeffrey C. Boyle, Brooklyn, N. Y. Filed Oct. 7, 1885. (No model.)

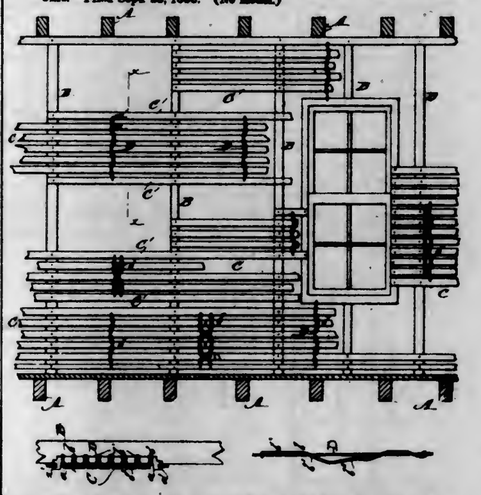
Claim.—1. The combination, with a circuit-closer and the index-hands, of the pairs of magnets H° H', each pair consisting of an electro-magnet and a permanent magnet placed together, the permanent magnet retaining the index-hand after the electro-magnet has become demagnetized, a battery, and connections between the battery, the magnets, and the circuit-closer, substantially as described.

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2. The combination, with a circuit-closer, of the index-hand G', the magnets H° H', &c., each composed of an electro-magnet, *h*, and a permanent magnet, *h'*, said magnets H° H' being arranged beneath the hand, and in a position to act upon the same, a battery, and connections between the battery, the magnets, and the circuit-closer, substantially as shown and described.

332,481. LATH ATTACHMENT. Edward J. Bracken, Columbus, Ohio. Filed Sept. 25, 1885. (No model.)



Claim.—1. The combination, with several laths, of a fastening or stiffening device attached at its ends to two of the laths and lashed to the intermediate lath, substantially as and for the purposes set forth.

2. The lath fastening or stiffening device D, offset at *a* and notched at its ends, substantially as described.

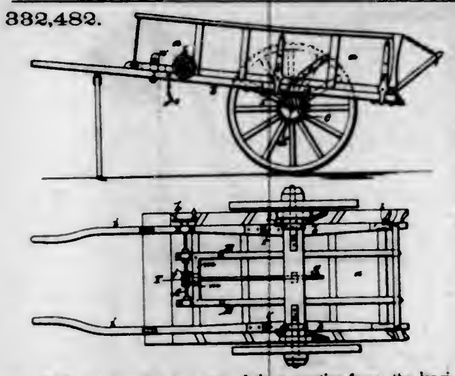
3. The wire *b*, bent to form double series of loops *b' b''*, in combination with the lath C and stiffening or fastening plate D, the wire being adapted to be bent at the face of the lath for taking up the slack, substantially as described.

332,482. BRAKE FOR VEHICLES. Thomas Brown, Darwen, County of Lancaster, England. Filed Sept. 15, 1885. (No model.) Patented in England Aug. 25, 1883, No. 4,112.

Claim.—1. The combination, in a cart, of the supporting-frame, a longitudinally-sliding body, and a brake actuated by the rearward-sliding movement of the body to apply the brakes, substantially as described.

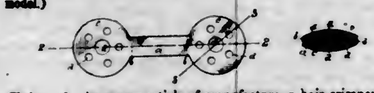
2. The combination, in a cart, of the supporting-frame, the longitudinally-sliding body, and a brake applied to the wheels by the rearward-sliding movement of the body, and removed from the wheels by the forward-sliding movement of said body, substantially as described.

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3. The combination, in a cart, of the supporting-frame, the longitudinally-sliding body, and the brake-band secured at one end to the frame and connected at its other end with the sliding body, for applying the brake-band to the wheel-hub by the rearward-sliding movement of the body, substantially as described.

332,483. HAIR-CRIMPER. Edward J. Brooks, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Oct. 24, 1884. (No model.)

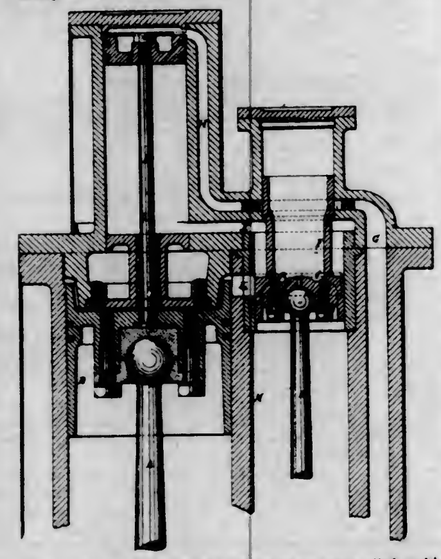


Claim.—1. As a new article of manufacture, a hair-crimper having a leaden body provided with an impermeable self-attached envelope or protective coating of rubber or the like, substantially as herein specified, for the purposes set forth.

2. In a hair-crimper, a normally-flat leaden body provided with a very thin re-enforcing strip of stronger metal extending from end to end thereof, so as to strengthen its several bends, as herein set forth.

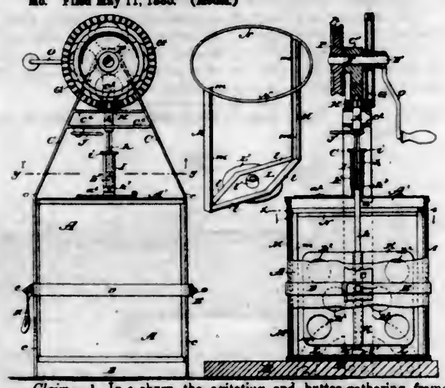
3. The combination, in a normally-flat hair-crimper having a flexible leaden body, of a waist portion adapted to have the hair for a curl or ringlet wound thereon, and having a bending-point at each end thereof, and a pair of perforated leaves or end portions adapted to be bent toward said waist portion, so as to clamp said hair by or between them, substantially as herein set forth.

332,484. COMPOUND ENGINE. Peter Brotherhood, Lambeth, County of Surrey, England. Filed Feb. 12, 1885. (No model.) Patented in England Oct. 17, 1884, No. 13,756.



Claim.—The combination of a small or high-pressure cylinder with a larger or expansion cylinder, single-acting and in line with the small cylinder, and a slide-valve and ports so arranged that while the full pressure acts constantly on the back of the smaller piston it acts on its front during the back-stroke, the larger cylinder then discharging exhaust, and during the forward stroke the fluid that had acted in front of the smaller piston expands into the larger cylinder, acting on the larger piston, substantially as herein described.

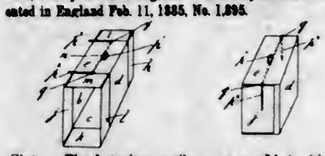
332,485. CHURN. Henry Brown and Andrew Bushnell, Lamar, Mo. Filed May 11, 1885. (Model.)



Claim.—1. In a churn, the agitating and butter-gathering frame herein described, the same consisting of the top ring, N, the ribbed side pieces, M M, depending from said ring, the plate L, connecting the lower ends of the bars, the plate L' on the under side of the plate L, and the step-bearing l', substantially as set forth.

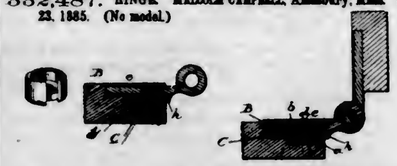
2. The churn herein shown and described, the same consisting in the vessel A, top A', vertical frame-posts c c, bent inward at their upper ends, bearing-block c', connecting said upper ends, cross-pieces c^2 c^2, the journal F, carrying the crown-gear G, the shaft h, having bearings in the cross-pieces and extending to a point near the top A', pinion H on said shaft, the flanged connecting-sleeve I i on the lower end of the shaft, the hook J, pivoted to the cross-piece c^2 to engage the flange i of the sleeve, and the dasher-shaft extending up through the top of the churn adjacent to the end of the shaft h, all combined and arranged substantially as set forth.

332,486. FOLDING BOX. Robert W. Brumby and Simpson Clarke, Hull, County of York, England. Filed May 26, 1885. (No model.) Patented in England Feb. 11, 1885, No. 1,895.



Claim.—The fastening appliance p, provided with an eye, p', and with two bent ends, p^2, as shown, in combination with a folding box, provided with flaps and slots for receiving said legs and eye, substantially as set forth.

332,487. HINGE. Malcolm Campbell, Amesbury, Mass. Filed July 23, 1885. (No model.)



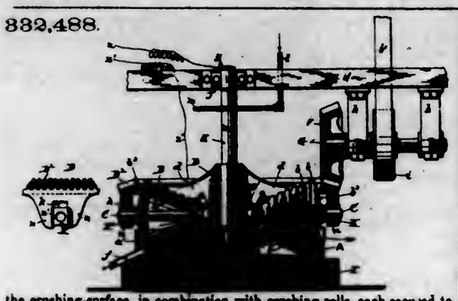
Claim.—1. The combination, in a hinge, of a hinge-plate suitably perforated for the passage of the securing-screws, independent perforations, and adjusting-studs therefor, and a bearing-plate against which said studs abut, substantially as set forth.

2. The combination, with the upper socketed section of a hinge, of a plate, C, and a plate, B, perforated as described, and having a rib, h, screws or studs passing through said perforations and bearing against the plate C, substantially as and for the purpose specified.

332,488. ORE-CRUSHING MACHINE. Edwin M. Carmany, Providence, R. I. Filed Jan. 10, 1885. (No model.)

Claim.—1. In an ore-crushing machine, a bed having a circular inclined track provided with a series of concentric corrugations, forming

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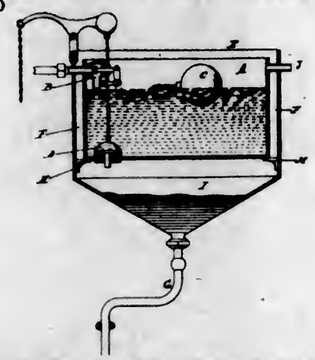


the crushing-surface, in combination with crushing-rolls, each secured to a supporting-shaft mounted in bearings, forming a part of the driving-gear, the surface of each roll being substantially a cone-frustum, and provided with a series of concentric grooves or corrugations, forming the counterpart of the circular track of said bed, substantially as shown and described.

2. The ore-crushing machine herein described, consisting of the stationary bed A, having the beveled and corrugated circular crushing-track b', and the vertical circular retaining-flange a', provided with the concave inner surface, the crushing-rolls B, each having a series of concentric corrugations, b, and the convex-shaped outer end, b^2, adapted to conform to said track and flange, shafts C, carrying the rolls, the driving-gear D, having said shafts mounted therein, the vertical shaft E, carrying the gear, and means, substantially as shown, for imparting rotary motion to the gear, as set forth.

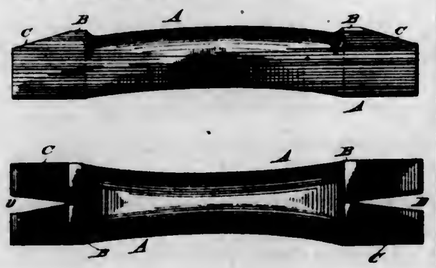
3. In an ore-crushing machine, the conical crushing-rolls B, each having a series of concentric ogee-like corrugations, b, and means, substantially as described, for mounting and driving said rolls, in combination with the stationary bed A, having an inclined circular track provided with a series of concentric corrugations, b', forming the counterpart of the roll's crushing-surface, as and for the purpose specified.

332,489. WATER-TANK. Francis J. Carney, New York, N. Y., assignor to himself and John Reid, same place. Filed Sept. 16, 1885. (No model.)



Claim.—A safety water-tank constructed, arranged, and operating substantially as herein described, consisting of an outer tank, E, having a hopper-shaped bottom, I, provided with an escape-pipe, G, a fixed inner tank, A, to receive and hold the water, provided with a self-acting inlet-valve, B, and overflow-pipe J, in combination with an exit-valve, D, on the bottom of the interior tank, A, as set forth and shown.

332,490. RAILROAD-TIE. Lewis M. Clark, Harper, Kans. Filed May 26, 1885. (No model.)



Claim.—1. A railroad-tie made of wood and having each end vertically bifurcated below and to the outer side of the adjacent rail-seat, in order to rapidly shed rain-water from said seat and to cause the tie to weather rapidly.

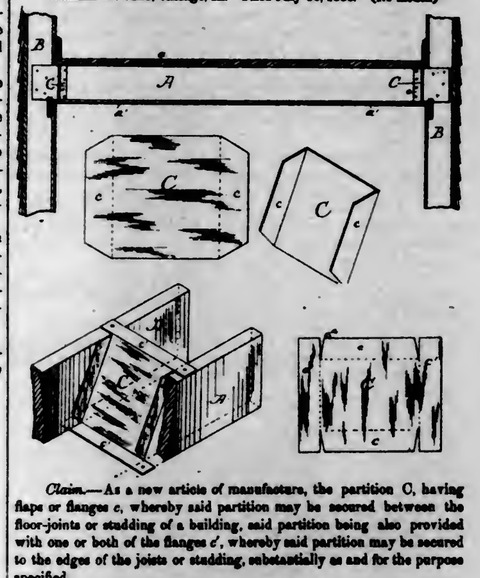
2. A railroad-tie having its upper surface arched and rounded or beveled to shed rain and its ends vertically bifurcated to weather more rapidly, substantially as specified.

3. An arched railroad-tie having one or both of its sides concaved or dished inwardly, substantially as and for the purposes described.

4. An arched railroad-tie having bifurcated or slotted ends and one or both of its sides concaved or dished inwardly, substantially as and for the purpose specified.

5. An arched railroad-tie having one or both of sides concaved, its ends bifurcated, and wider at their base than at their tops, and formed with elevations for the rails to rest upon, all substantially as described.

332,491. DEVICE FOR PREVENTING DRAFTS BENEATH FLOORS. William W. Clay, Chicago, Ill. Filed July 16, 1885. (No model.)



Claim.—As a new article of manufacture, the partition C, having flaps or flanges c, whereby said partition may be secured between the floor-joints or studding of a building, said partition being also provided with one or both of the flanges c', whereby said partition may be secured to the edges of the joists or studding, substantially as and for the purpose specified.

332,492. ELASTIC GORE FOR WEARING-APPAREL. Morris Cohn, New York, N. Y. Filed Aug. 24, 1885. (No model.)



Claim.—The herein-described elastic gore or section, consisting of a fabric having a series of parallel pockets formed therein, combined with india-rubber springs, each in the form of an endless loop introduced through the said pockets, the doubled ends projecting at the respective ends of the pockets, and stays introduced through the doubled or projecting ends of the springs, to take a bearing against the ends of the pockets, substantially as described.

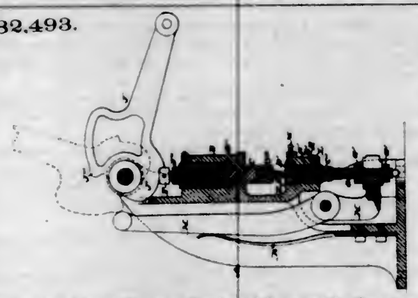
332,493. PILL-MACHINE. Eberhe A. Cohn, Philadelphia, assignor of one-half to William D. Billmeyer, York, Pa. Filed Feb. 20, 1885. (No model.)

Claim.—1. The two-part cam J' and J'', in combination with lever H and dies D D', the part J' of the cam being directly in contact with the head of the socket or holder of the die D, substantially as and for the purpose set forth.

2. A two-part cam and an elbow-lever, in combination with the dies and their sockets or holders, the socket of the upper die having an adjusting screw-bolt, against which the cam operates, substantially as described.

3. In a pill-machine, the operating-lever J, having cams J' and J'', in combination with socket C, provided with screw-bolt F, and having die D, and elbow-lever H, having socket C', carrying die D', pivot-

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ally secured thereto by the screw G, substantially as and for the purpose described.

4. The grooved socket C', carrying the die D', and pivotally hinged by the screw G to the elbow-lever H, in combination with the boss B' of the frame A and screw L, substantially as and for the purpose described.

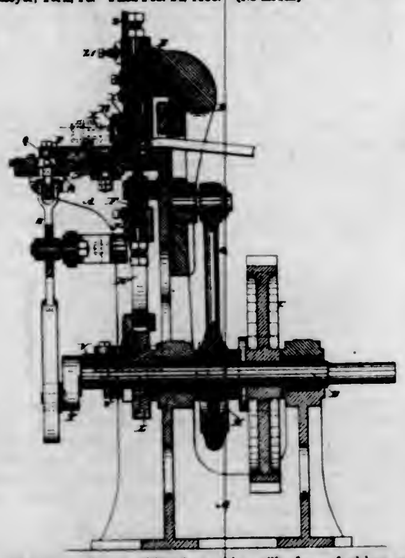
5. In a pill-machine, a die pivotally connected with a screw-bolt and detachably connected with an operating-lever, whereby said die may be removed from its boss or guide, substantially as and for the purpose set forth.

6. In a pill-machine, a die having a screw, G, pivotally connected therewith, in combination with an elbow-lever having a slotted limb and the nuts G' G', substantially as and for the purpose set forth.

7. A machine with two or more dies of different sizes, a bed having openings registering with said dies, and a feed-box having a discharge-opening which may be set to either of the openings of said bed, substantially as and for the purpose set forth.

8. The dies and bed, in combination with a feed-box having a discharge-opening and a holder in which said box is adjustably held, substantially as and for the purpose set forth.

332,494. MACHINE FOR MAKING PILLS, LOZENGES, &c. Ezekiel A. Colbi, Philadelphia, assignor of one-half to William D. Billmeyer, York, Pa. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a machine for making pills, &c., a feed-box provided with a distributer which is rotated alternately in opposite directions, substantially as and for the purpose set forth.

2. The distributer Y, having a stem which is spirally grooved in opposite directions, and a rising and falling head having a screw or pin engaging with the grooves of said stem, substantially as and for the purpose set forth.

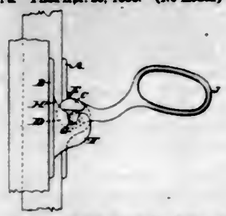
3. The rotary table M, having pockets and provided with a ratchet, in combination with the slide R, having a dog or pawl, Q, attached thereto, means to operate said slide, dies E and F, secured in heads D and J, respectively, means for raising and lowering said dies, and the frame having an opening for the passage of the die F, coincident with the charged pocket of the table, substantially as described.

4. The dies E and F and means for operating said dies, in combination with the shaft B, cam U, lever V, formed of jointed sections, vertical shaft W, and wiper X, substantially as described.

5. The wiper, in combination with the shaft W, jointed levers V, and cam U, substantially as and for the purpose set forth.

6. In a pill-machine, the lower die, in combination with the compound cam L and the yoke K, having an angular end, one limb of which rests on the outer face of the cam and the other limb carries a roller which rides in a groove on the side of said cam, substantially as described.

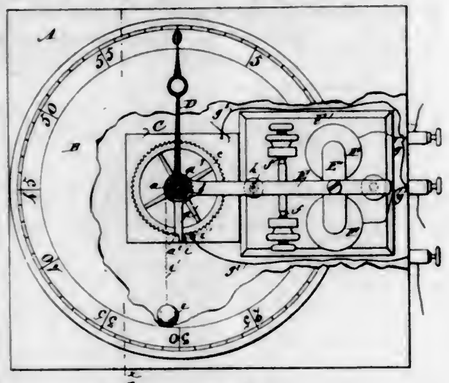
332,495. DOOR OR SHUTTER FASTENER. Patrick J. Conroy, Philadelphia, Pa. Filed Apr. 29, 1885. (No model.)

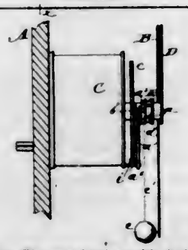


Claim.—1. A lug projecting laterally from a head having an eccentric axis, and a keeper or catch formed with an opening to receive said lug, combined and operating substantially as and for the purpose set forth.

2. A lug projecting from a head having an eccentric axis, in combination with a keeper or catch formed with an opening to receive said lug, and a face on which said lug bears when removed from the opening of said catch, substantially as described.

332,496. ELECTRIC TIME-SIGNAL FOR RAILWAYS. George Connell, Crystal Run, N. Y. Filed June 20, 1885. (No model.)





Claim.—1. The combination, with clock mechanism, stationary magnets F, and armature-lever E E', of the sliding hand D, weight *e*, and studded arm *a'*, for connecting the hand D with the wheel c of the clock mechanism, substantially as and for the purposes described.

2. The sleeve *a*, placed loosely upon the arbor *b* of the clock mechanism, the hand D, arm *a'*, weight *e*, and lever E E', attached to the arbor, in combination with the clock mechanism, the wheel c, and the magnets F F, arranged to operate the lever E, substantially as and for the purposes set forth.

3. The sleeve *a*, provided with the arm *a'*, having the stud a^2 at its outer end, and provided also with the hand D, opposite to the arm *a'*, so the latter will counterbalance the hand and also connect it with the cog-wheel c, substantially as described.

4. The sleeve *a*, hand D, pulley a^3, arm *a'*, and pin a^2, all supported loosely upon the arbor of the clock mechanism, in combination with the clock mechanism, the arbor *b* thereof, weight *e*, dial B, stop-pins *i i'*, magnets F, and the armature-lever E E', attached to the sleeve *a* and arranged to be operated by the magnets, substantially as and for the purposes set forth.

5. The clock mechanism C and casing thereof, the latter having insulated stop-pin *i'* and wire g^3, connected therewith, in combination with the arm *a'* and wire g^2, so that when arm *a'* comes in contact with the pin *i'* the circuit of the magnets will be closed and the hand set back one cog of the wheel c of said mechanism, substantially as described.

332,497. ARTIFICIAL FUEL AND PROCESS OF MAKING THE SAME. William H. Cory, New York, N. Y., assignor to the Cory Artificial Fuel Company. Filed Jan. 5, 1884. Renewed Sept. 1, 1885. (No specimens.)

Claim.—1. The within-described process of making artificial fuel, which consists in mixing together carbonaceous matter and silicate of soda or potash, subjecting the mixture to the action of an acid to set free the alkali of the potash or soda, and finally compressing the mass into cakes, substantially as described.

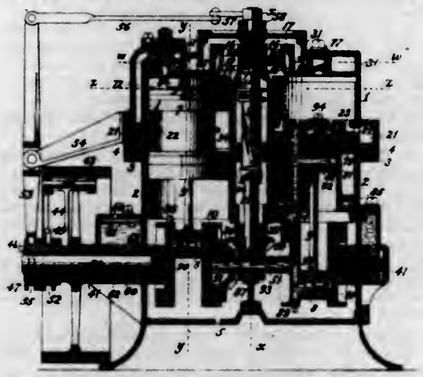
2. An artificial fuel consisting of carbonaceous matter, silicate of soda or potash, and an acid, such as muriatic acid, the silica being insoluble in water and infusible by heat, substantially as described.

332,498. CARBONACEOUS FUEL AND PROCESS OF MAKING THE SAME. William H. Cory, New York, N. Y., assignor to the Cory Artificial Fuel Company. Filed Jan. 5, 1884. Renewed Sept. 1, 1885. (No specimens.)

Claim.—1. The process herein described of making artificial fuel, which consists in mixing together carbonaceous dust and silicate of soda, adding alumina thereto to produce silicate of alumina and bind the dust together, and render it insoluble and infusible, and finally compressing the mass, substantially as described.

2. An artificial fuel consisting of carbonaceous dust, silicate of potash, and alumina, the dust being bound together by the alumina to produce an insoluble and infusible mass, substantially as described.

332,499. STEAM-ENGINE. Robert Creuzbaur, Brooklyn, N. Y., assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a steam-distribution valve governing the supply of steam to said cylinders and having no exhaust-port, and exhaust-ports formed in the pistons and adapted to communicate with exhaust-ports in the shells of the cylinders, leading into channels or passages on the exterior thereof, substantially as set forth.

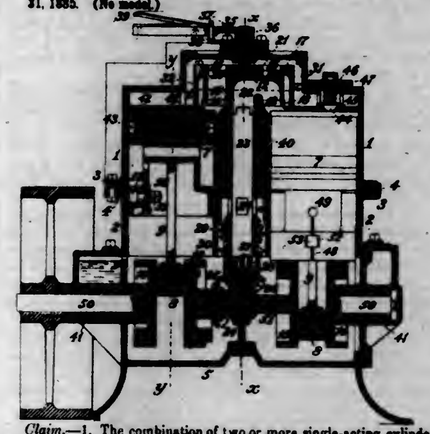
2. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft which rotates in a closed crank case or chamber, pistons fitting said cylinders and coupled to crank-pins on said shaft, a distribution-valve governing the supply of steam to said cylinders, an exhaust-passage serving to convey steam exhausted from the cylinders through the sides thereof to a condenser, and an unobstructed channel connecting the crank-case and exhaust-passage, substantially as set forth.

3. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a distribution-valve rotated by gearing from the crank-shaft and governing the supply of steam to the cylinders, and a reversing mechanism consisting of two spindle-sections, one coupled to the valve and the other geared to the crank-shaft, a sleeve having end motion and inclosing said spindle-sections at their adjacent ends, keys or lugs engaging the spindle-sections and diverging grooves in the sleeve, and a hand-lever and crank-arm for imparting end movement to the sleeve, substantially as set forth.

4. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a distribution-valve governing the supply of steam to said cylinders, and inlet-valves operated by a hand-lever and governing-ports leading from a steam-jacket into the cylinders, substantially as set forth.

5. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a distribution-valve governing the supply of steam to said cylinders, and a hand-operated inlet-valve for each cylinder, said valves governing alternately passages leading from a steam-jacket to the cylinders and from the cylinders to the exhaust-pipe, substantially as set forth.

332,500. STEAM-ENGINE. Robert Creuzbaur, Brooklyn, N. Y., assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a main or distribution valve governing the supply and exhaust of steam to and from said cylinders, a stationary pressure-relieving plate interposed between the back of the valve and its source of steam-supply, and a steam-jacket surrounding the valve-casing and outer side of the pressure-relieving plate, substantially as set forth.

2. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a rotating main or distribution valve governing the supply and exhaust of steam to and from said cylinders, an adjustable cut-off plate located on the back of the main valve, a stationary pressure-relieving plate located on the back of the cut-off plate, and a steam-jacket surrounding the valve-casing and outer side of the pressure-relieving plate, substantially as set forth.

3. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a rotating main or distribution valve governing the supply and exhaust of steam to and from said cylinders, an adjustable cut-off plate located on the back of the main valve, a stationary pressure-relieving plate located on the back of the cut-off plate, a hand-lever fixed to a stem which is secured to the cut-off plate and passes freely through the pressure-relieving plate, a sliding bolt fitting in said hand-lever and engaging teeth in a fixed rack, and a spring-lever fulcrumed on the hand-lever and coupled to the sliding bolt, substantially as set forth.

4. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a rotating distribution-valve governing the supply and exhaust of steam to and from said cylinders, and a driving-spindle coupled at one end to said valve and at the other to a bevel-gear engaging a similar gear fixed upon the crank-shaft, substantially as set forth.

5. The combination of two or more single-acting cylinders located side and side above a closed crank case or chamber at right angles to a common crank-shaft therein, pistons fitting said cylinders and coupled to crank-pins on said shaft, a main or distribution valve governing the supply and exhaust of steam to and from said cylinders and connected to a spindle which is rotated by gearing from the crank-shaft, and an exhaust-steam passage leading through said spindle and establishing communication between the valve and the crank-case, substantially as set forth.

5. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a rotating main or distribution valve coupled to a driving-spindle and governing the supply and exhaust of steam to and from said cylinders, and a bevel-gear fitted with the capacity of limited circumferential movement on the driving-spindle and engaging a similar gear fixed upon the crank-shaft, substantially as set forth.

7. The combination of two or more single-acting cylinders located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a rotating main or distribution valve coupled to a driving-spindle and governing the supply and exhaust of steam to and from said cylinders, a bevel-gear fitted with the capacity of limited circumferential movement on the driving-spindle and engaging a similar gear fixed upon the crank-shaft, a bevel-gear fixed upon the driving-spindle, and a hand-operated bevel-gear adapted to be rotated in a fixed bearing and to engage the bevel-gear which is fixed to the driving-spindle, substantially as set forth.

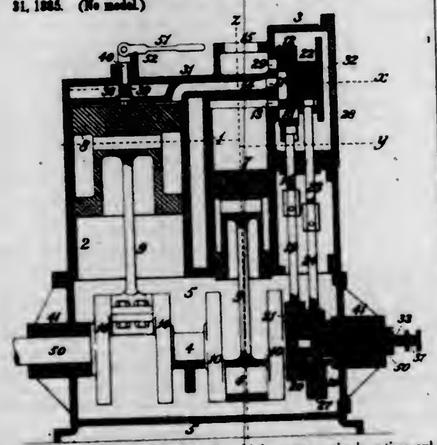
8. The combination, in a single-acting cylinder, of a higher-temperature or steam-end section, a lower-temperature section, and heat-intercepting packing interposed between flanges through which the sections are connected, substantially as set forth.

9. The combination of two or more single-acting cylinders, pistons fitting therein and coupled to crank-pins on a common crank-shaft, a distribution-valve governing the supply and exhaust of steam to and from said cylinders and rotated by a driving-spindle having an internal exhaust-passage, and heat-intercepting packing inclosing said spindle and separating the same from the shells of the cylinders, substantially as set forth.

10. The combination of two or more single-acting cylinders, pistons fitting therein and coupled to crank-pins on a common crank-shaft, a main or distribution valve located above the heads of the cylinders and governing the supply and exhaust of steam to and from said cylinders, and a steam-jacket covering the heads of the steam ends of the cylinders and forming part of the passage for steam from the boiler to the distribution-valve, substantially as set forth.

11. The combination of two or more single-acting cylinders having their pistons coupled to crank-pins on a common crank-shaft, a steam-jacket covering the heads of the cylinders, and relief-valves closing openings leading from the steam ends of the cylinders into the steam-jacket, substantially as set forth.

332,501. STEAM-ENGINE. Robert Cremebaur, Brooklyn, N. Y., assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of large diameter located side and side, and a single main or distribution valve governing ports in said cylinders, through which steam from the boiler is first admitted to the space above the piston of the high-pressure cylinder, then exhausted therefrom into the space above the piston of the low-pressure cylinder and finally exhausted from the low-pressure cylinder, substantially as set forth.

2. The combination of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter, said cylinders having their pistons connected to opposite crank-pins on a common crank-shaft, and a single main or distribution valve effecting the distribution of steam to and from both of said cylinders, substantially as set forth.

3. The combination of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter, said cylinders having their pistons connected to opposite crank-pins on a common crank-shaft, a single main or distribution valve effecting the distribution of steam to and from both of said cylinders, and a variable cut-off valve governing the admission of steam to said main valve, substantially as set forth.

4. The combination, in a compound engine, of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter located side and side at right angles to a common crank-shaft, pistons fitting said cylinders and coupled to crank-pins on said shaft, a main or distribution valve located in a chest or chamber on the side of one of the cylinders in a plane passing longitudinally through the crank-shaft, and ports governed by said valve and leading from its chest to the high-pressure cylinder, the low-pressure cylinder, and an exhaust-pipe, respectively, substantially as set forth.

5. The combination, in a compound engine, of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter located side and side, a valve-chest on the side of one of said cylinders, a main steam-jacket surrounding the major portion of the outside of and inclosing a space intervening between said cylinders, passages for the admission of boiler-steam to the jacket and of steam from the jacket to the valve-chest, and a steam-jacket covering the cylinder-heads and communicating with the main steam-jacket, substantially as set forth.

6. The combination, in a compound engine, of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter located side and side, a main or distribution valve working in a chest on the side of one of said cylinders and performing the distribution functions of both cylinders, a pressure-relieving plate by which the steam-pressure in the chest is relieved from the back of the valve, and a valve-stem of diameter greater than that due to its working strength, these members being combined for joint operation to maintain a constant pressure in one direction on the eccentric which operates the valve, substantially as set forth.

7. The combination, in a compound engine, of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter located side and side, a valve-chest on the side of one of said cylinders, a steam-jacket inclosing the major portion of said cylinders and communicating with a steam-supply pipe and with the valve-chest, and a hand-operated valve by which steam from the jacket may be admitted directly to the low-pressure cylinder, substantially as set forth.

8. The combination, in a compound engine, of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter located side and side, a main or distribution valve working in a valve-chest on the side of one of said cylinders and performing the distribution functions of both cylinders, and a variable cut-off valve governing the admission of steam from the chest to said main valve, substantially as set forth.

9. The combination, in a compound engine, of a high-pressure single-acting cylinder and a low-pressure single-acting cylinder of larger diameter located side and side, a main or distribution valve performing the distribution function of both cylinders, a cut-off valve governing the admission of steam to said main valve, an eccentric mounted adjustably upon a crank-shaft and coupled to the stem of the cut-off valve, and a spindle fitted with the capacity of end movement in a central bore in the crank-shaft, and carrying a key which passes through longitudinal slots in said shaft and fits in helical grooves in the hub of the cut-off eccentric, substantially as set forth.

332,502. STEAM-ENGINE. Robert Cremebaur, Brooklyn, N. Y., assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Aug. 31, 1885. (No model.)

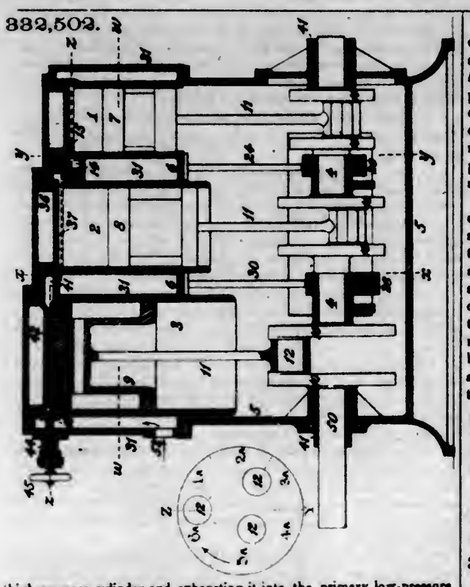
Claim.—1. The combination of a high-pressure single-acting cylinder, a primary low-pressure or expansion single-acting cylinder of larger diameter, and a secondary low-pressure or expansion single-acting cylinder of still larger diameter, said cylinders being located side and side, and having their pistons coupled to crank-pins set at about one hundred and twenty degrees apart on a common crank-shaft, substantially as set forth.

2. In a compound engine, the combination of three single-acting cylinders of unequal capacity, respectively, located side and side, and one or more valve-chests having ports located directly opposite to and substantially in line with the steam-ports of said cylinders, substantially as set forth.

3. In a compound engine, the combination of three single-acting cylinders of unequal capacity, respectively, said cylinders being located side and side, and having their pistons coupled to crank-pins set at about one hundred and twenty degrees apart on a common crank-shaft, a main or distribution valve governing the distribution functions of the first or high-pressure cylinder, and a main or distribution valve common to the two low-pressure or expansion cylinders, substantially as set forth.

4. In a compound engine, the combination of a high-pressure cylinder, a primary low-pressure cylinder of larger capacity, a secondary low-pressure cylinder of still larger capacity, said cylinders being located side and side, and having their pistons coupled to crank-pins on a common crank-shaft, a distribution-valve feeding steam from the boiler into the high-pressure cylinder and exhausting it into the primary low-pressure cylinder, a distribution-valve exhausting steam from the primary low-pressure cylinder into the secondary low-pressure cylinder and from the secondary cylinder to the atmosphere or a condenser, and eccentrics fixed upon the crank-shaft and having their straps coupled to bell-crank levers, which are in turn coupled to the stems of the distribution-valves, substantially as set forth.

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5. In a compound engine, the combination of three single-acting cylinders of unequal capacity, respectively, said cylinders being located side and side, and having their pistons coupled to crank-pins set at about one hundred and twenty degrees apart on a common crank-shaft, distribution-valves whereby steam is fed to the smallest cylinder and successively twice expanded in the two larger cylinders, and a steam-jacket substantially surrounding the cylinders and forming part of the passage-way for steam from the boiler to the valve-chest of the distributing-valve of the smallest cylinder, substantially as set forth.

6. In a compound engine, the combination of three single-acting cylinders of unequal capacity, respectively, secured side and side to a closed crank case or chamber, and a continuously-open port or passage connecting the crank-case with the exhaust-passage of the largest cylinder, substantially as set forth.

332,503. MOLD FOR CASTING. John R. Davies, Chicago, assignor of one-half to Wm. W. Flinn, Highland Park, Ill. Filed Aug. 22, 1885. (No model.)



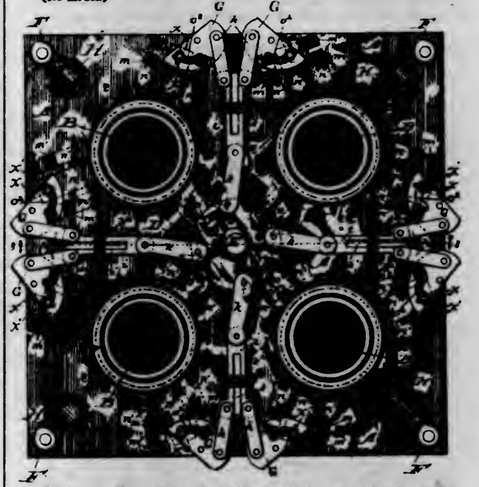
Claim.—1. The combination, with a base-plate, A, provided with an opening, of a mold for casting metals, composed of three or more laterally-adjustable sections supported on the base-plate around the opening therein, vertical shafts supported on the base-plate around the mold, one for each section, and mechanism, substantially as described, connecting the shafts and sections, whereby the sections shall be opened and closed by oscillating any one of the shafts, as set forth.

2. The combination of a base-plate, A, provided with a central opening, a mold composed of three or more laterally-adjustable sections surrounding the central opening in the base-plate, and having flanges *l* and flanges *l'*, V-shaped on one surface, shafts supported upon the base-plate, one for each section, slotted disks F, secured upon the shafts and connected with the flanges *l* of the sections, and connected together to cause the movement of one simultaneously to move the others, and rollers *k*, supported in bearings upon the base-plate having V-shaped peripheries, to receive and afford guides for the flanges *l'*, substantially as described.

3. The combination of a base-plate, A, provided with a central opening, a mold composed of three or more laterally-adjustable sections surrounding the central opening in the base-plate, and having toward their lower extremities flanges *l* and flanges *l'*, V-shaped on one surface and provided toward their upper extremities with flanges l^2, shafts E, supported upon the base-plate, one for each section, slotted disks F, secured upon the shafts toward their lower extremities and connected with the flanges *l* of the sections, and connected together to cause the movement of one simultaneously to move the others, rollers *k*, supported in bearings upon the base-plate having V-shaped peripheries, to receive and afford guides for the flanges *l'*, slotted disks F' upon the shafts E toward their upper extremities, and connected with the flanges l^2 by means of pins i^1, and a plate, H, surrounding the shafts E and mold, and supported upon the flanges l^2, provided with guide-pins *h*, pfojecting through the slots in the plate H, the whole being constructed and arranged to operate substantially as described.

4. The combination, with a mold composed of laterally-adjustable sections, of a crown, L, detachably supported over the mold and provided with projections *g*, to clamp the sections, and with holes, substantially as and for the purpose set forth.

332,504. MOLD FOR CASTING. John R. Davies, Chicago, assignor of one-half to Wm. W. Flinn, Highland Park, Ill. Filed Aug. 22, 1885. (No model.)



Claim.—1. The combination, with a mold for repeated and continuous use in casting metals, and composed of three or more sections, of mechanism, substantially as described, provided upon the mold toward its opposite extremities, to open and close the sections, as set forth.

2. The metallic base-plate A, having one or more molds, B, formed each in three or more sections, in combination with mechanism, substantially as described, upon each mold toward its opposite extremities, to open and close the sections, as set forth.

3. The combination, with a cluster or series of sectional molds upon a base-plate, of operating mechanism, substantially as described, upon the opposite extremities of the molds, for simultaneously opening and closing the molds composing the cluster or series, as set forth.

4. The combination, with a cluster of sectional molds, B, on a base-plate, A, provided with a central shaft, E, and mechanism, substantially as described, upon the base-plate A and shaft, for opening and closing the sections of the molds, of mechanism, substantially as described, upon the shaft E and molds toward their upper extremities, constructed to operate simultaneously with the mechanism of the base-plate A and shaft, to open and close the molds, as set forth.

5. A mold for casting metals, composed of three or more sections provided with non-communicating cooling-spaces *s*, having openings *s'*, in combination with mechanism, substantially as described, for opening and closing the sections, as set forth.

6. A mold for casting metals, composed of three or more sections provided with non-communicating cooling-spaces *s*, having openings *s'*, and a lining, s^2, vented by means of tubes s^3, communicating through the section with the external air, and mechanism, substantially as described, for opening and closing the sections, as set forth.

7. A mold for casting metals, composed of three or more sections provided with non-communicating cooling-spaces *s*, having openings *s'*, and lining s^2, confined by sand-cleats *q*, and vented by means of tubes s^3, communicating through the sections with the external air, and mechanism, substantially as described, for opening and closing the section.

8. A metallic base-plate, A, having one or more molds, B, formed in sections having flanges *n* and flanges *n'*, V-shaped longitudinally on their lower surfaces, rollers *m* on the lower surface of the base-plate, having V-shaped peripheries, forming guides for the flanges *n'*, an oscillatory shaft, E, supported upon the base-plate A and carrying disks D and D' toward its opposite extremities, and mechanism, substantially as described, connecting the disks D and D' with each section of a mold, whereby all the sections may be opened and closed simultaneously, as set forth.

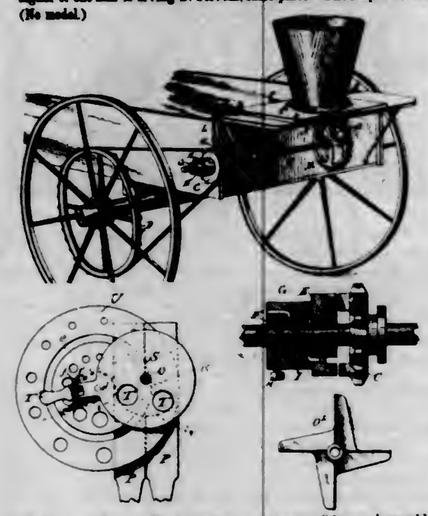
9. A cluster or series of sectional molds, B, supported upon a base-plate, A, and having independent cooling-spaces *s*, communicating with the external air, and linings s^2, vented by means of tubes s^3, communicating with the external air, a central shaft, E, upon the base-plate carrying, to move with it, a disk, D, on the lower surface of the base-plate, and a disk, D', toward its upper extremity, flanges *n* and *n'* upon opposite extremities of the sections of the molds, a plate, A', surrounding the molds toward their upper extremities, and supported above the base-plate A and on the central shaft, and mechanism, substantially as described, connecting the disks D and D' with their adjacent flanges *n*, the whole being constructed and arranged to operate substantially as set forth.

332,505. TAPE-LINE BOX. HENRY B. DERRUP, Quincy, Ill. Filed July 17, 1885. (Model.)



Claim.—As a new article of manufacture, the case or box for containing measuring tape lines or ribbons herein described, composed of the two struck-up sheet-metal sections A B, having a central spindle, C, with a crank-arm at one end and screw-thread S formed upon the other end, nut T, for securing the sections of the case together, and an exit-slot, F, having pins *c* secured at each side thereof, as shown, for the purposes specified.

332,506. SEEDING-MACHINE. LLOYD EMERSON, Joliet, Ill., assignor of one-half to Irving L. Stevens, same place. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a seeding-machine, one or more slides, each provided with an aperture or slot, in combination with plates movable one upon the other, and provided with apertures for varying the outlet for the escape of seed from the hopper through said slide or slides, substantially as described.

2. The slides, in combination with two movable and perforated plates between the slides and hopper, one of which plates has a series of perforations of varying diameter, any of which may be registered with the openings in the other plate, substantially as described.

3. In a seeding-machine, the combination of two pivoted and perforated plates, the axis of rotation of each of which is eccentric to the axis of the other plate, substantially as described.

4. In a seeding-machine, two perforated plates pivoted on axes eccentric to each other, and pivotally connected together, substantially as described.

5. In a seeding-machine, two pivoted and perforated plates, the axis of rotation of each of which is eccentric to the axis of the other plate, in combination with the slotted slides, substantially as described.

6. In a seeding-machine, one or more slotted slides, and two plates movable upon each other, and provided with apertures for varying the outlet for seed from the hopper, in combination with a fan or distributer arranged below the slides, substantially as described.

7. In a seeding-machine, one or more slides, each provided with an aperture or slot, in combination with two plates movable upon each other, and provided with apertures for varying the outlet for escape of seed from the hopper, one of said plates having a fixed pivot-bearing and means for locking said plates, whereby both may be simultaneously moved upon the said fixed axis to shift the cast of the seed, substantially as described.

8. In a seeding-machine, the drive-shaft and a sprocket thereon, in combination with a yielding and detachable connection between said shaft and sprocket, substantially as described.

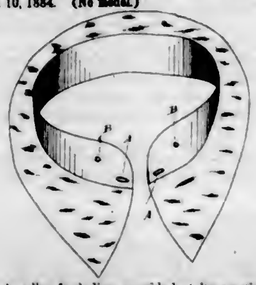
9. In a seeding-machine, the drive-shaft, the sprocket sleeved thereon, and a half-clutch sleeved on said shaft, in combination with a spring coiled about the shaft and having one end secured to said half-clutch and its other end rigidly connected with the shaft, whereby said clutch and sprocket may, partially rotate independently of the shaft, substantially as described.

10. The shaft, the sprocket sleeved on said shaft, the half-clutch on said sprocket, and means for reciprocating the same on the shaft, in combination with the sleeve and the cap rigidly secured together and to the shaft, the half-clutch loose upon the sleeve, and the spring coiled about the sleeve and rigidly secured at its extremities to the half-clutch and cap, substantially as described.

11. In a seeding-machine, the drive-shaft, a sprocket thereon, a yielding and detachable connection between said shaft and sprocket, in combination with a distributer or fan located below the hopper and actuated by said shaft, substantially as and for the purpose described.

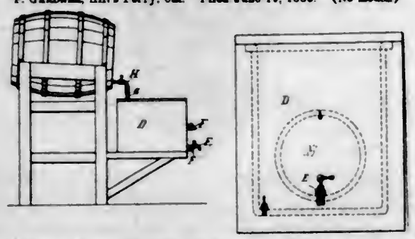
12. In a seeding-machine, the movable plate S, provided with distinct escape-apertures normally open, in combination with means for closing one of said apertures independently of the other.

332,507. LADY'S COLLAR. ESTELLE FISHER, San Francisco, Cal. Filed Dec. 10, 1884. (No model.)



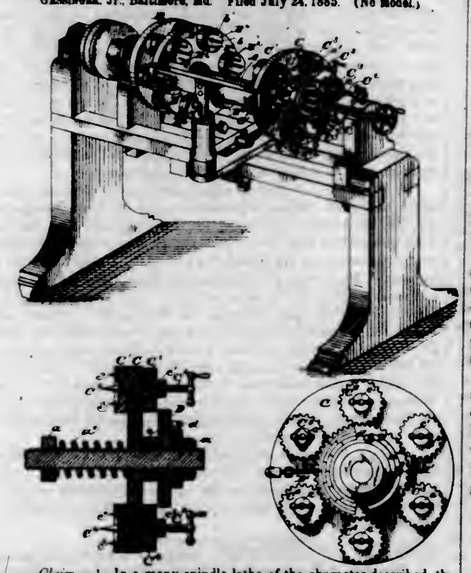
Claim.—A collar for ladies, provided at its meeting ends with the ordinary stud or button holes, A A, for attaching the collar to the neck-band, and having diagonally above the same the eyelet-holes B B, for the insertion of a breastpin, as set forth.

332,508. APPARATUS FOR COOLING AND DRAWING BEER. P F. GARDNER, Hill's Ferry, Cal. Filed June 19, 1885. (No model.)



Claim.—In a beer-cooling apparatus, the rectangular wooden tank D, containing a porcelain-lined rectangular cooling-chamber, A, which in turn contains a porcelain-lined cylinder, B, whose ends are flanged for attachment to the chamber A, the said cylinder B connecting with the beer-cask by a pipe, G, and provided with screw-cap C, vent F, and draw-off cock E, substantially as shown and described.

332,509. MANY-SPINDLE LATHE. AUGUST GAMMINGER and AUGUST GAMMINGER, Jr., Baltimore, Md. Filed July 24, 1885. (No model.)



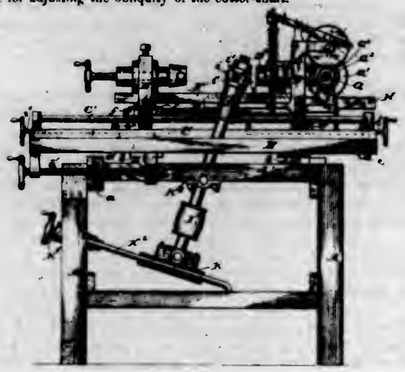
Claim.—1. In a many-spindle lathe of the character described, the combination, substantially as before set forth, of the reel, the series of head-chucks, the axle of each of which carries a fixed sheave, the corresponding series of tail-chucks, each of which carries a fixed spur-pinion, the mandrel of the reel, and the both circularly and laterally shiftable spur-wheel on the said mandrel, which combination provides for turning either circular or polygonal forms on such lathe.

2. In a many-spindle lathe of the character described, the combination, substantially as before set forth, of the reel, the fixed head carrying the head-chucks of the reel, the mandrel of the reel, the laterally-shiftable tail-disk carrying the tail-chucks, and the nuts and spring on the said mandrel for adjusting said tail-disk.

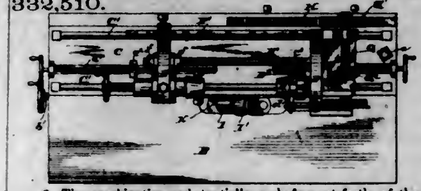
3. In a many-spindle lathe of the character described, the combination, substantially as before set forth, of the reel, the head-chucks having each a centering-point and shorter driving-spurs, the tail-chucks having each an adjustable centering-pin, the mandrel of the reel, and the shiftable tail-disk carrying said tail-chucks.

332,510. LATHE FOR TURNING SPIRALS. AUGUST GAMMINGER, Sr., and AUGUST GAMMINGER, Jr., Baltimore, Md. Filed Aug. 5, 1885. (No model.)

Claim.—1. The combination, substantially as before set forth, of a lathe for rotating the blank, the molding cutter-head on a shaft whose axis is parallel or tangential to the surface operated on, but oblique to the axis of the blank, the swiveling bearings of said cutter-shaft, and the slide for adjusting the obliquity of the cutter-shaft.



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2. The combination, substantially as before set forth, of the molding cutter-head, the traversing lathe-carriage, and the pivoted bed-plate on which the said lathe-carriage is mounted.

3. The combination, substantially as before set forth, of the pivoted bed-plate, the rack thereon, the head-stock of the lathe-carriage carrying the live-spindle, the tail-stock, and the cross driving-shaft carrying a spur-wheel meshing with the said rack and a bevel-wheel meshing with a bevel-wheel on said live-spindle.

4. The combination, substantially as before set forth, of the live-spindle, the chuck thereon having a ring of teeth, the pawl for driving the chuck from said live-spindle, the slide-rod and pawl for turning the chuck in setting or advancing the blank, the spring for retracting the said slide-rod, the cam-wheel and lever for operating the slide-rod in opposition to the spring, and the spur-wheel on the cross driving-shaft on the lathe-carriage for turning the said cam-wheel.

5. The combination, substantially as before set forth, of a lathe for rotating the blank, a molding cutter-head turning on an axis parallel or tangential to the surface operated on, but oblique to the axis of the blank, and means, substantially such as described, both for adjusting the obliquity of the cutter-shaft and for adjusting the cutter-head and the axis of the lathe with reference to each other.

332,511. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. WILLIAM H. GILBERT, Philadelphia, Pa. Filed Feb. 12, 1885. (No model.)



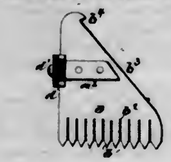
Claim.—1. In a button-hole attachment for sewing-machines, the combination, with the base-plate A, of a supplementary plate or shoe, A', fastened at or near both its ends to said base-plate, and a screw, *a'*, passing through said base-plate and bearing upon the supplementary plate, whereby, when said supplementary plate is entered to the grooves in the cloth-plate of the machine, it may be buckled or sprung therein by turning the screw *a'*, thereby securing the attachment firmly to the cloth-plate of the machine, substantially as shown and described.

2. In a button-hole attachment for sewing-machines, the combination, with a rotary head, H, through which motion is imparted to the feed-slide, said head having a dovetailed groove, of an adjustable block fitted in said groove and having a threaded opening, a heart-cam carried on said block and having a smooth hole of larger diameter than the threaded opening in said block, the diameter of said cam being greater than the width of the groove in the rotary head, and a screw with enlarged neck, said screw entering the threaded opening in the block and passing the smooth hole in the cam, its shoulder bearing upon the latter, whereby, when the screw is turned down, the block is firmly clamped in the groove, substantially as set forth.

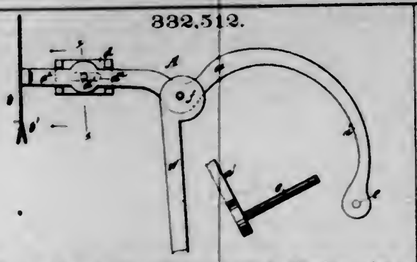
332,512. THREAD-BREAKING ATTACHMENT FOR DOUBLING AND TWISTING MACHINES. FRED HAGGAS, New York, N. Y. Filed Mar. 3, 1885. (No model.)

Brief.—The device is an improvement upon that class of thread-breaking attachments in which a yarn-holding head is adapted to break the thread between the delivery spools and rollers when the thread breaks in front. The head is triangular in shape, apex uppermost, so that when it is placed in operative position after piecing up the head will push the threads aside without catching or breaking. The apex is also notched to serve as a guide for a thread taken from another set of spools is running out. The breaking-teeth are alternately bent in opposite directions to insure catching.

Claim.—1. The rocker-arm *a*, provided at one end with the lateral stem *c*, and at the other end with the yarn-holding head or plate *b*, inclined at b^2, notched at b^4, and formed with the series of teeth b^5 and



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slots b^2, the teeth being alternately bent in opposite directions, substantially as and for the purposes set forth.

2. The yarn-holding bead *b*, made triangular in form and provided with teeth at its lower edge, in combination with the rocker-arm *a*, the lateral stem *c*, and the support W, substantially as and for the purposes set forth.

332,513. TREATING ANIMAL AND VEGETABLE FIBER FOR TEXTILES, CORDAGE, &c. Wesley W. Hamilton, Brooklyn, N. Y., assignor to Daniel D. Denton, trustee, same place. Filed June 2, 1885. (No specimens.)

Claim.—1. The process of treating animal and vegetable fibers, such as horsin specified, for textiles, cordage, and other uses, which consists in first intermingling the fibers, then packing the said fibers into a cylindrical vessel, then applying strong pressure to the fibers, and then removing the plug of fibers then formed and opening out the fibers, substantially as described.

2. The process of treating animal and vegetable fibers, such as horsin specified, for textiles, cordage, and other uses, which consists in first intermingling the fibers, then dividing them into four or five nearly equal parts and packing the said parts separately and successively into a cylindrical vessel, then applying strong pressure to the fibers and maintaining it awhile, then removing from the cylinder the plug of fibers thus formed and separating it into sections, then packing the sections separately and successively and in reverse positions into the cylindrical vessel, then applying strong pressure to the fibers and maintaining it awhile, then removing from the cylinder the plug of fibers thus formed and relaxing its compaction by applying pressure to its sides, then opening out the fibers, substantially as horsin described.

3. As a new article of manufacture, animal and vegetable fibers curled, indented, and made more pliable by strong pressure, thus rendering them better adapted to be carded, made into webs or bats and into slivers and rovings, and to be spun or twisted into yarn and twine, substantially as horsin described.

332,514. TREATING ANIMAL AND VEGETABLE FIBERS FOR TEXTILES, CORDAGE, &c. Wesley W. Hamilton, Brooklyn, N. Y., assignor to Daniel D. Denton, trustee, same place. Filed June 2, 1885. (No specimens.)

Claim.—1. The process of treating animal and vegetable fibers such as horsin specified for textiles, cordage, and other uses, which consists in first intermingling the fibers, then packing the said fibers into a cylindrical vessel, then applying strong pressure to the fibers, then removing the plug of fibers thus formed, then confining it securely with cord or wire or a wire-cloth cage, and while so confined boiling the plug of fibers in water, then removing it from the water and allowing it to drip, then removing it from its binding or cage and relaxing its compaction by applying pressure to its sides, then partially opening the fibers, and then thoroughly drying them, substantially as horsin described.

2. The process of treating animal and vegetable fibers such as horsin specified for textiles, cordage, and other uses, which consists in first intermingling the fibers, then dividing them into four or five nearly equal parts and packing the said parts separately and successively into a cylindrical vessel, then applying strong pressure to the fibers and maintaining it awhile, then removing from the cylinder the plug of fibers thus formed and separating it into sections, then packing the sections separately and successively and in reverse positions into the cylindrical vessel, then applying strong pressure to the fibers and maintaining it awhile, then removing from the cylinder the plug of fibers thus formed and confining it securely with cord or wire or a wire-cloth cage, and while so confined boiling the plug of fibers in water, then removing it from the water and allowing it to drip, then removing it from its cage or binding and relaxing its compaction by applying pressure to its sides, then partially opening the fibers, and then thoroughly drying them, substantially as horsin described.

3. As a new article of manufacture, short animal and vegetable fibers curled, indented, and made more pliable by strong pressure, substantially as horsin described, and the curls and indentations so imparted made more permanent by being boiled in water, in the manner described horsin.

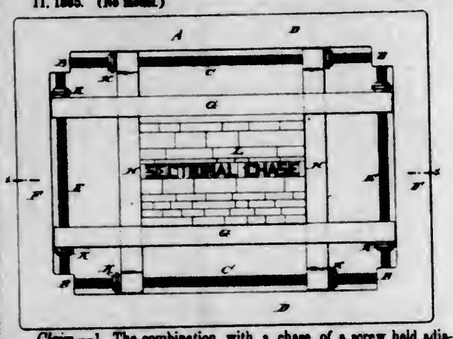
332,515. TREATMENT OF ANIMAL AND VEGETABLE FIBER FOR UPHOLSTERING. Wesley W. Hamilton, Brooklyn, N. Y., assignor to Daniel D. Denton, trustee, same place. Filed June 6, 1885. (No specimens.)

Claim.—1. The process of treating animal and vegetable fibers for upholstering uses, which consists in first intermingling the fibers, then squeezing them into bunches and placing the bunches in a strong cylindrical vessel and packing them down tightly therein, then subjecting the fibers to strong pressure and maintaining it awhile, then removing the mass of compressed fibers from the cylinder and loosely confining it in its compacted state by cord or wire-cloth cage, then boiling it in water, then putting it in cold water, then setting it aside in its bound condition, then releasing it from its confinement and putting pressure upon its sides, then partially opening out the fibers and drying them, and finally opening them out fully, substantially as hereinbefore described.

2. The process of treating animal and vegetable fibers for upholstering uses, which consists in first intermingling the fibers, then squeezing them into bunches and placing the bunches in a strong cylindrical vessel and packing them down tightly therein, then subjecting the fibers to strong pressure and maintaining it awhile, then removing the mass of compressed fibers from the cylinders and separating it into lumps or sections and putting the lumps or sections in the cylinder in reverse position therein, then again subjecting the fibers to strong pressure and maintaining it awhile, then removing the mass of compressed fibers from the cylinder and loosely confining it in its compacted state by cord or wire-cloth cage, then boiling it in water, then putting it in cold water, then setting it aside in its bound condition, then releasing it from its confinement and putting pressure upon its sides, then partially opening out the fibers and drying them, and finally opening them out fully, substantially as hereinbefore described.

3. As a new article of manufacture, animal and vegetable fibers such as hereinbefore specified made suitable for upholstering uses by being curled by strong pressure, and the curl partially relaxed, and as relaxed confirmed by being boiled in water, substantially as hereinbefore described.

332,516. PRINTER'S CHASE. Lauriston W. Hardwicke, East Saginaw, Mich., assignor of one-half to Frank Turck, same place. Filed Feb. 11, 1885. (No model.)



Claim.—1. The combination, with a chase, of a screw held adjacent to and parallel with the inner edge of each side and end bar, movable longitudinal and transverse bars having apertures in the ends through which the screws are passed, and of nuts on the screws adjacent to the outer edges of the said bars, substantially as herein shown and described.

2. The combination, with the chase A, of the screws C E, the movable longitudinal bars G, having longitudinal slots, the transverse bars H, passed through the slots J of the bars G, and of the nuts K on the screws, substantially as herein shown and described.

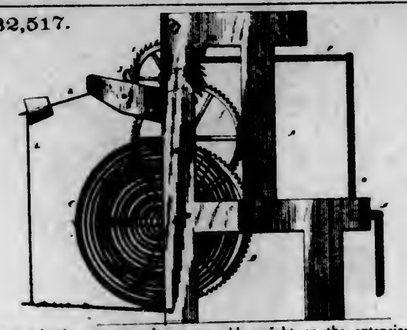
332,517. MOTOR. A. Frank Harrell, Terrell, Tex., assignor of one-half to John L. Terrell, same place. Filed Oct. 17, 1885. (No model.)

Claim.—1. The combination, with a supporting-frame and a shaft having bearing therein, of a spring, a spur-wheel, a ratchet-wheel, a pawl, and spring to engage therewith, a shaft having an escapement-wheel thereon, intermediate gearing between the spur-wheel and escapement-wheel, a pallet having an extension, a movable weight thereon, a treadle, and a cord connecting the extension and treadle, as set forth.

2. The combination, with a supporting-frame, of a train of spring-actuated gearing, a crank-shaft, a rock-shaft having an arm, connections between the crank and rock-shafts, and means, substantially as described, for regulating the speed of the device, substantially as set forth.

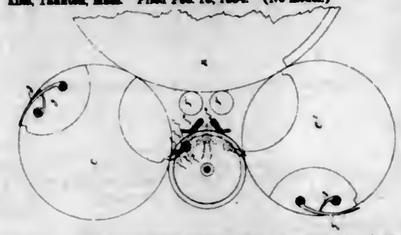
3. The combination, with a supporting-frame, a shaft mounted therein, a spring, a spur-wheel, a ratchet-wheel, a pawl secured to the spur and engaging the ratchet-wheel, and a spring, of a shaft carrying an escapement-wheel, intermediate gearing, substantially as described,

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a pallet having an extension, a movable weight on the extension, a crank-shaft, an arm connected thereto, a rock-shaft connected with said arm, and an arm on the rock-shaft, as set forth.

332,518. WEB-PERFECTING PRINTING-MACHINE. John T. Hawkins, Taunton, Mass. Filed Feb. 18, 1884. (No model.)



Claim.—1. In a perfecting printing-press in which the sheets are cut from the roll or web before printing, then taken and held by the grippers of a first impression-cylinder, as C, until partially printed on one side, the head of the sheet then being stripped from said impression-cylinder and the printing completed, in combination with said cylinder and a second impression-cylinder, a rotary sheet-reverser consisting of such parts as f^9, f, f', f^8, f^6, and f^5, whereby the tail of the sheet is taken directly from said first impression-cylinder by the grippers of said sheet-reverser and the sheet delivered by said grippers directly to the grippers of said second impression-cylinder in such reversed position, tail first, while said impression-cylinders and sheet-reverser are traveling in the same direction and at the same velocity, substantially as and for the purposes set forth.

2. In a perfecting printing-press, a rotary sheet-reverser geared to a pair of impression-cylinders so as to give equal velocities of travel to the respective grippers of said cylinders and reverser, and consisting of an oscillating gripper-carrier, as f^4, journaled in revolving wheels, as $f\,f'$, a series of twin grippers, as f^5, upon suitable shafts, as f^6, journaled in an said oscillating gripper-carrier, and means, consisting of a cam, as f^{13}, a roller, as f^{12}, an arm, as f^{14}, a rock-shaft, as f^{15}, a sector, as f^{16}, and pinions, as f^{21} f^9 f^8, by which said gripper-carrier is oscillated to present its grippers to each of the pair of impression-cylinders in proper position to seize the tail of a sheet from the first impression-cylinder and deliver said tail of the sheet, with the sheet reversed, to the second impression-cylinder, the reception and delivery of the tail of the sheet by the grippers of said sheet-reverser being made while said grippers and sheet are both moving in the same direction and with the same velocity, substantially as and for the purposes set forth.

3. In a perfecting printing-press, a rotary sheet-reverser consisting of a series of rotary wheels, as $f\,f'$, having journaled therein an oscillating gripper-carrier, as f^4, carrying a series of twin grippers, as f^5, a pinion, as f^9, on the end of said oscillating gripper-carrier, an intermediate pinion, as f^8, running loosely on a stud in one of said wheels, a central pinion, as f^{11}, running loosely on the shaft of said wheels, the three pinions engaging in a train, and means, consisting of a cam, as f^{13}, a roller, as f^{12}, an arm, as f^{14} a rock-shaft, as f^{15}, and a sector, as f^{16}, whereby said central pinion is oscillated so as to present the twin grippers in a proper position at each two points of the revolution of the first-mentioned wheels as may be required to take a sheet tail first from the grippers of a contiguous cylinder and deliver it to the grippers of another contiguous cylinder, substantially as and for the purposes set forth.

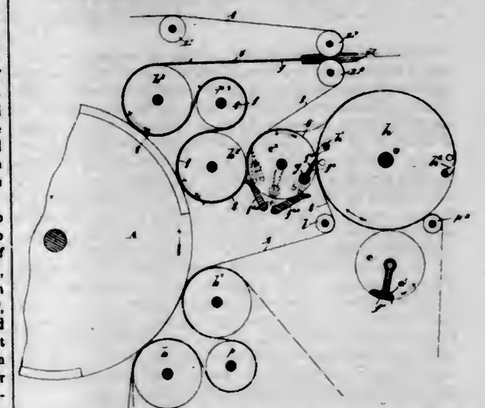
4. In a perfecting printing-press provided with a rotary sheet-reverser consisting of a series of wheels, as $f\,f'$, in which is journaled an oscillating gripper-carrier, as f^4, means for oscillating said gripper-carrier in said wheels while the said wheels revolve, consisting of a pinion, as f^9, on the end of the gripper-carrier, an intermediate loose pinion, as f^8, carried on a stud in the said wheels, a loose central pinion, as f^{11}, running upon the shaft of said wheels, a toothed arc, as f^{16}, meshing with said central pinion and operated by a rock-shaft, as f^{15}, an arm, f^{14}, and a cam, as f^{13}, secured to any suitable rotary shaft of the machine, whereby a series of twin grippers, as f^5, of said gripper-carrier will be presented in proper position to the grippers of two contiguous cylinders, to take a sheet tail first from the grippers of one and deliver it to the grippers of the other said cylinder in a reversed position, substantially as and for the purposes set forth.

5. In a perfecting printing-press provided with a rotary sheet-reverser consisting of a series of wheels, as $f\,f'$, having journaled therein an oscillating gripper-carrier, as f^4, carrying a series of twin grippers, as f^5, in combination with said twin grippers, lever-arms, as f^{18}, upon the shafts of said twin grippers, rollers, as f^{19}, on the ends of said arms, and stationary cams, as f^{20}, engaging said rollers, whereby said twin grippers are opened and closed at the proper times to directly receive and convey the tail of the sheet between two contiguous cylinders, substantially as and for the purposes set forth.

6. A rotary sheet-reverser having journaled therein an oscillating gripper-carrier, as f^4, carrying a series of twin grippers, as f^5, provided with springs, as f^{17}, and projections or stops, as *i*, on their hubs engaging said gripper-carrier, whereby either one of each pair of said series of grippers is prevented from following its respective twin gripper when the other is opened, and said grippers are closed when either twin is released by its opening mechanism, substantially as and for the purposes set forth.

7. In a perfecting printing-press in which the sheets are cut from the web before printing, the combination of a type or plate cylinder, one or more pairs of cutting-cylinders, one or more pairs of impression-cylinders, and a rotary sheet-reverser (consisting of such parts as f^9 $f\,f'$ f^8 f^6 f^5) for each pair of impression-cylinders, all arranged and constructed substantially as described, whereby said sheet-reverser is caused to take the sheet tail first directly from one of a pair of impression-cylinders and deliver it tail first and reversed directly to the grippers of the other of said pair of impression-cylinders, while the grippers of each impression-cylinder and sheet-reverser are traveling at the same velocity in the same direction, substantially as and for the purposes set forth.

332,519. WEB-PERFECTING PRINTING-MACHINE. John T. Hawkins, Taunton, Mass. Filed Feb. 18, 1884. (No model.)



Claim.—1. In a web-perfecting printing-machine, the combination, with a rotary sheet-reverser, as O^9, of a conveying-cylinder, as H, carrying grippers, as H', constructed and arranged so as to close upon the head of the web and to lift the tail of a sheet as severed from said web from contact with said cylinder during the process of reversal of said sheet, substantially as and for the purposes set forth.

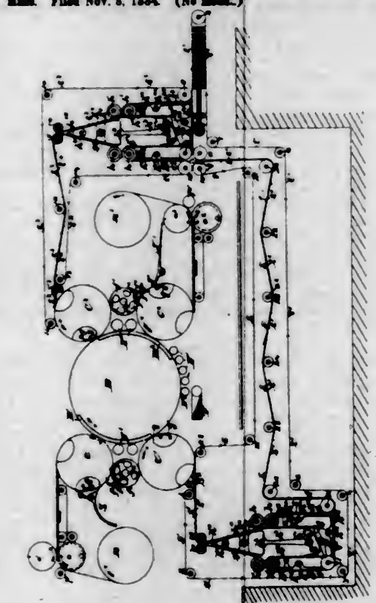
2. In a web-perfecting printing-machine, the combination, with a rotary sheet-reverser, as O^9, of a conveying-cylinder, as H, carrying grippers, as H' H^2, and recesses, as S S', for the reception of sheet-cutting knives, whereby said cylinder serves both as a conveying and cutting cylinder, substantially as and for the purposes set forth.

3. In a web-perfecting printing-machine, in combination with a form-cylinder, as A, a series of impression-cylinders, as B B' b b', and a rotary sheet-reverser, as O^9, a series of conveying-tapes, as *t*, running partly in contact with sunken portions of the type or form cylinder, and a series of tapes, as F, whereby the sheets, after being severed from the web, are conveyed through the process of being printed on their second sides, and the use of grippers in the impression-cylinders thereby avoided, substantially as set forth.

4. In a web-perfecting printing-machine, in combination with a type or form cylinder, as A, and a rotary sheet-reversing apparatus, as O^9, a pair of impression-cylinders, as B B', and leading or register rolls, as P, P', and P^2, for printing the first side while in the web, and a pair

of impression-cylinders, as B^2 B^3, and a leading or register roll, as P^2, for printing the second side after the sheets have been severed from the web and reversed, substantially as and for the purposes set forth.

332,520. PAPER-FOLDING MACHINE. John T Hawkins, Taunton, Mass. Filed Nov. 8, 1884. (No model.)



Claim.—1. In a paper-folding machine, an apparatus for making the first fold, consisting of a series of switches, as A^{16}, to deflect the sheets into alternate separate paths, a series of inclined guides, as A^{17}, to guide the sheets alternately to each of two pairs of folding-rollers, as A A', and a double oscillating folder-blade, as A^3, said rollers and blade co-operating to tuck the sheets alternately into each of the two pairs of folding-rollers, two sets of sliding or vibrating guides, as A^{20}, to protect the sheets from one roller of each pair of folding-rollers, (which runs in a contrary direction to that of the sheet,) and suitable tapes, as t^2 t^3, and guides, as A^{22} A^{23}, for conveying the sheets after receiving the first fold, all with the same side uppermost, to a common point to receive the second and succeeding folds, substantially as and for the purposes set forth.

2. In a paper-folding machine, in combination with two separate folding apparatuses, a series of tapes, as t^2 t' t^2 t^3, respectively leading, as described, from over and under pulleys numbered from 1 to 33, inclusive, and in contact with the respective guides, guide-rods, rollers, and strippers described, whereby the sheets respectively received by each of said folding apparatuses have therein imparted to them a first fold, and are thence conveyed to a common point to receive their second or succeeding folds, substantially as and for the purposes set forth.

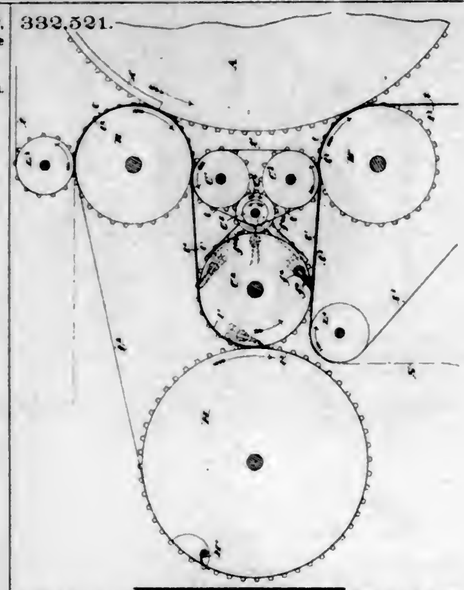
332,521. WEB-PERFECTING PRINTING-MACHINE. John T. Hawkins, Taunton, Mass. Filed May 11, 1885. (No model.)

Claim.—1. In a web-perfecting printing-machine, in combination with a type or form cylinder, as A, impression-cylinders, as B B', a rotary sheet-reverser, as C^2, and a series of intermediate gears, as C' C^2 C^4, whereby the sheets from one impression-cylinder are timed in their paths proper to meet their respective forms, while the sheet-reverser is maintained of the same diameter as that of the impression-cylinders, substantially as and for the purposes set forth.

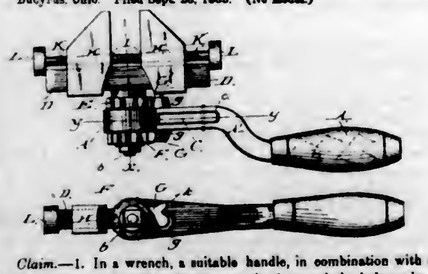
2. In a web-perfecting printing-machine, in combination with a type or form cylinder, as A, a pair of impression-cylinders, as B B', a rotary sheet-reverser, as C^2, a series of intermediate gears, as C' C^2 C^4, and a sheet-conveying cylinder, as H, whereby the sheet is reversed, its tail becoming its head, substantially as and for the purposes set forth.

3. In a web-perfecting printing-machine, in combination with a type or form cylinder, as A, a pair of impression-cylinders, as B B', a rotary sheet-reverser, as C^2, a series of intermediate gears, as C' C^2 C^4, a sheet-conveying cylinder, as H, and a series of conveying-tapes, as t t' t^2 t^3, forming paths for the sheet, whereby it is conveyed through the impressions and to the sheet-reverser without the use of grippers in said impression-cylinders, substantially as and for the purposes set forth.

332,521.



332,522. WRENCH. Thomas B. Heisey and Clarence G. Lauck, Bucyrus, Ohio. Filed Sept. 28, 1885. (No model.)



Claim.—1. In a wrench, a suitable handle, in combination with a bar, D, the oppositely-sliding jaws upon the bar, and the independent oppositely-working ratchet-wheels and pawls, substantially as herein described.

2. In a wrench, the handle, the oppositely-sliding jaws, and the ratchet-wheels, in combination with the bar D, provided with a projecting stud, upon which the wheels are mounted, the pawls engaging the ratchet-wheel, and a spring-actuated dog pivoted within a slot or recess in the handle for retaining the pawls in position, substantially as herein described.

3. A wrench comprising a handle, a bar having a projecting stud, suitable independent oppositely-arranged ratchet-wheels upon the stud, and independent pawls for engaging the wheels, sliding jaws upon the bar D, and a screw for operating the jaws, substantially as herein described.

4. In a wrench, the combination with the handle, the bar D, and the pawl-and-ratchet mechanism, of the sliding jaws upon the bar, the actuating-screw, and the heads bearing against the ends of the bar, substantially as herein described.

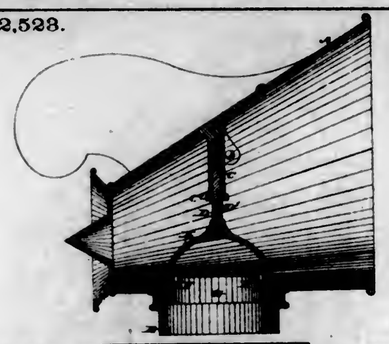
5. In a wrench, the handle, the bar D, and the sliding jaws, in combination with the oppositely-arranged ratchet-wheels, the pawls journaled on the extension A' and provided with pintles, cams, and the spring-actuated dog pivoted within a recess on the handle, substantially as herein described.

332,523. CHIMNEY COWL AND VENTILATOR. William G. Hibbs, Philadelphia, Pa. Filed Oct. 24, 1885. (No model.)

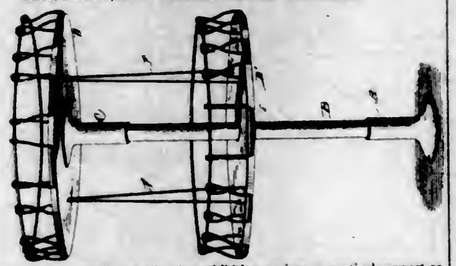
Claim.—1. In a cowl or ventilator, the annulus G, having the interior legs, F, in combination with saddle E, having lips E' at the base thereof, the step D, rising from said saddle, and a cap-sustaining sleeve, C, fitted on said step, substantially as and for the purpose set forth.

2. In a cowl or ventilator, the cap-sustaining sleeve C, having an external flange, C', at the base thereof, in combination with the step D, having opening D', the fastening H, encircling the flange C', the saddle E, and annulus G, substantially as described.

332,523.



332,524. STOCKING-EXHIBITOR. John D. Hess and George W. Hess, Fairfield, Nebr. Filed June 11, 1885. (No model.)



Claim.—1. In a device for exhibiting notions, a vertical support or shaft, in combination with a disk having a dependent socket, C, rigidly attached thereto, spring-clamps located adjacent to the periphery of said disk, and a rail supported by said spring-clamps, substantially as shown, and for the purpose set forth.

2. In a device for exhibiting notions, a vertical support, in combination with an upper disk or shelf provided with a depending socket, a shelf suspended from said upper disk and provided with a central perforation, through which the shaft passes, spring-clamps arranged adjacent to the periphery of the shelves, and provided with guard-rails E E, which pass through loops formed in the upper portions of the spring-clamps, the parts being organized substantially as shown, and for the purpose set forth.

3. The combination, with the base A, standard B, and cap *c*, of the disk D, having socket C and wire E, the disk D', having wire E and sustaining-rods F, and the spring-clasps *a a' f*, as described.

332,525. WIRE-COILING MACHINE. Christian C. Hill, Chicago, Ill., assignor to the Union Wire Mattress Company, same place. Filed Jan. 3, 1885. (No model.)

Brief.—Operating a hand-lever throws the driving mechanism out of connection with the feed-wheels, applies a brake to the spools which carry the wire and operate the cutters to sever the completed coil. The grooved mandrel, around which the wire is coiled, can be rotated slightly for adjustment. The sleeve surrounding the mandrel can be adjusted as it becomes worn by rotating it on the mandrel.

Claim.—1. In a wire-coiling loom, the grooved feeding-roller, n combination with the V-shaped disk-roller, arranged and operating substantially as and for the purpose specified.

2. The grooved roller E constructed in separate parts, substantially as and for the purpose specified.

3. The concave pulley D', provided with hand-holds and geared to the feed devices to actuate them, combined with driving-shaft L, provided with friction-pinion M and band-wheel N, and shipping mechanism to move said pinion M into or out of engagement with said disk D', whereby the feed devices may be actuated by either hand or power, as set forth.

4. The coiler T^2, provided with a lateral arm, X', combined with the stationary arm X^2, and the adjusting-screw X^3, whereby said coiler may be adjusted by partly rotating it, and then rigidly holding it in position.

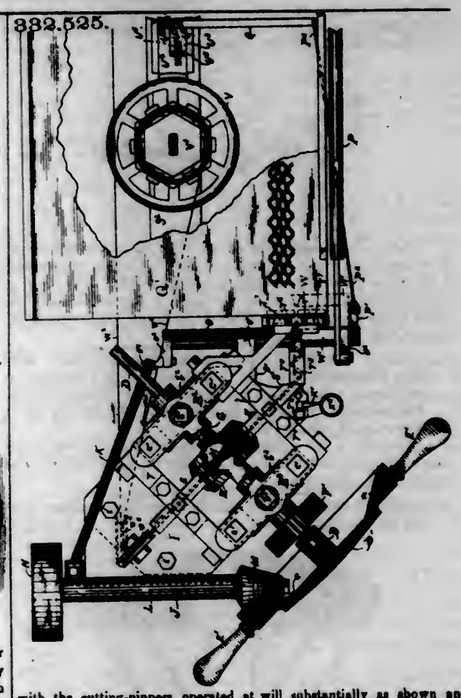
5. The coiler T^2, combined with a sleeve having exterior peripheral notches at one end, and a stationary lug, Y, adapted to engage one or another of said notches and retain said sleeve from rotation in the position desired.

6. The cutting-nippers T^3, mounted on pivoted levers T^7, provided with wings T^9, in combination with the wedge W, arm W', and the shipper-rod, substantially as and for the purpose specified.

7. The feeding devices, guide-plate S', and coiler, in combination with the cutting-nippers, operated at will, substantially as shown and described.

8. In combination, the disk D', whereby motion is communicated to the coiling mechanism, the friction-pinion M, moved into or out of engagement with said disk by connections with the rock-shaft O, the shipper P, friction-blocks U^3 and U^4, connected with and controlled by said rock-shaft, and the wire-spools V', for the purpose of arresting or liberating the spools at the same instant and by the same act which arrests or starts the coiling mechanism.

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332,526. SEWING-MACHINE GAGE. Henry Hitchcock, New Haven, Conn. Filed Mar. 30, 1885. (No model.)

Brief.—The device serves for running lines of stitches near the edge of articles to make a finish for the edge, as in the manufacture of collars and like articles, where an internal angle occurs in the line of stitching.

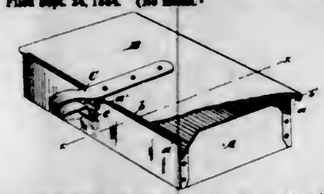


Claim.—1. The herein-described gage for sewing-machines, consisting of the plate B, constructed with a transverse slot, C, through which it is adapted to be adjustably secured with relation to the needle of the machine, said plate also constructed with a T-shaped longitudinal groove, G, the guide H, arranged transversely over said groove, secured in said groove, and so as to be movable longitudinally on said plate B, under the advancing movement of the work, substantially as described.

2. The combination of the plate B, constructed with the transverse slot C, through which it is adapted to be adjustably secured with relation to the needle of the machine, said plate also constructed with a T-shaped longitudinal groove, G, the guide H, arranged transversely over said groove, made longitudinally adjustable therein, with the movable slide *l* in said guide H, the said slide adapted to be projected from said guide above the work, substantially as described.

3. The combination of the plate A, constructed for attachment to the work-plate, the plate B, constructed with the transverse slot C, and through which it is adjustably secured to said plate A, the said plate B also constructed with a T-shaped longitudinal groove, G, the guide H, arranged transversely over the groove G, and made movable longitudinally therein under the advancing movement of the work, substantially as described.

332,527. **ASH-PAN.** John Kerper and Godfrey Martin, Cincinnati, Ohio. Filed Sept. 24, 1884. (No model.)

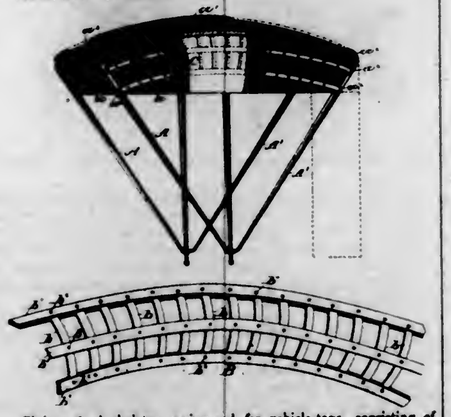


Claim.—An ash-pan having a catch on one side, a removable cover, B, secured to one side of the pan by a locking projection, and a handle, C, for the pan on the opposite side, projecting over the edge of the pan and having a hook for engaging the catch on the pan, whereby the handle serves to secure the cover and as a means for lifting and carrying the pan, substantially as described.

332,528. **DYE-STUFF MADE FROM DIAZO-NAPHTHALINE.** Meinhard Hoffmann, Heinkur, near Frankfort-on-the-Main, assignor to Leopold Cassella & Co., Frankfort-on-the-Main, Germany. Filed June 9, 1885. (No specimens.) Patented in England Jan. 5, 1884, No. 816, and in France Jan. 29, 1884, No. 150,966.

Claim.—As a new product, the herein-described dye-stuff or coloring-matter, of a reddish or scarlet color, and capable of dyeing shades of reddish blue, as set forth.

332,529. **VEHICLE-TOP.** Kirk W. Holmes, Columbus, Ohio. Filed Oct. 19, 1885. (No model.)



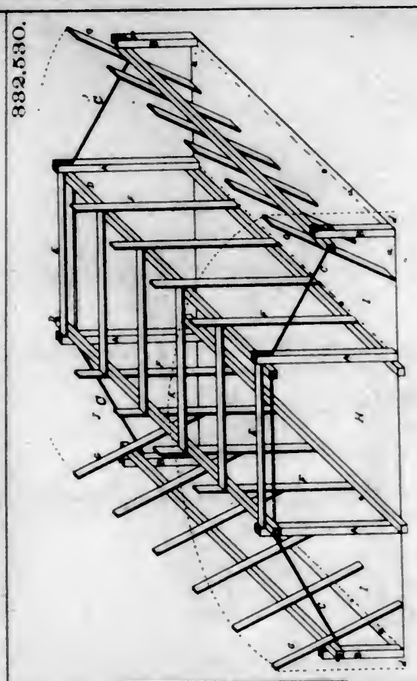
Claim.—1. A skeleton spring-pad for vehicle-tops, consisting of the springs *b b*, united by the strips of webbing, &c., *b' b'*, substantially as set forth.

2. In a vehicle-top, the skeleton spring-pad B, permanently secured at each end to the front and rear bows, between the head-lining and the outer covering, substantially as set forth.

3. In a vehicle-top, the combination, with the front and rear bows, of the skeleton spring-pad B, secured thereto, and the cloth-pad or cushion C, secured to the pad B between it and the outer covering, substantially as set forth.

4. In a vehicle-top, in constructing the skeleton pad by weaving the springs or securing the springs by weaving them in with the fabric, so as to entirely or partially inclose the spring, substantially as set forth.

332,530. **HAY AND STRAW RACK.** Wilbur G. Hoge, Lafayette, Ind. Filed Mar. 2, 1885. (No model.)

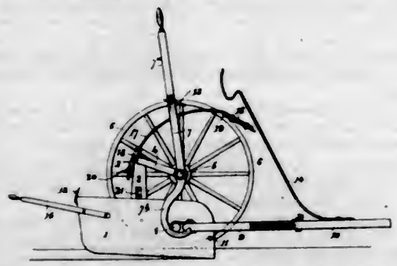


Claim.—1. A hay or straw rack and rick frame consisting of the inner posts, A A, the outer posts, B B, the braces or main stays C, beams D, uprights F, cross-bars E, and the inclined bars G, all constructed and arranged substantially as described.

2. A combined shelter and feed-rack consisting of a stock-apartment formed by the timbers A D E F, and the racks and mangers exterior thereto, formed by the posts A and uprights F, and the outer posts B, and the inclined slips G, the whole structure being braced and secured by the stays C, passing through slots in the posts A and secured in the posts B, all as shown and described.

3. A combined stock shelter and rack constructed as described, and consisting of inner posts, A, outer posts, B, lateral beams D, stays or braces C, and timbers E F G, and having feeding-spaces I between the inner and outer posts, said rack and shelter being roofed and walled by building a rick of hay or straw in the spaces I I and over the framework A D E, all as described.

332,531. **WHEELED SCRAPER.** Fred W. Hubbard, Columbus, Ohio, assignor to the Kilbourne & Jacobs Manufacturing Company, same place. Filed June 16, 1885. (No model.)



Claim.—1. The combination of a crank-axle, a scraper supported by hangers therefrom, and a hub lever or levers having curved ends engaging under suitable studs or bearings on the scraper to raise the same, substantially as set forth.

2. In a wheeled scraper having a crank-axle, an end-gate operated by *r*, sliding arm or arms connecting it with the crank-axle, substantially as set forth.

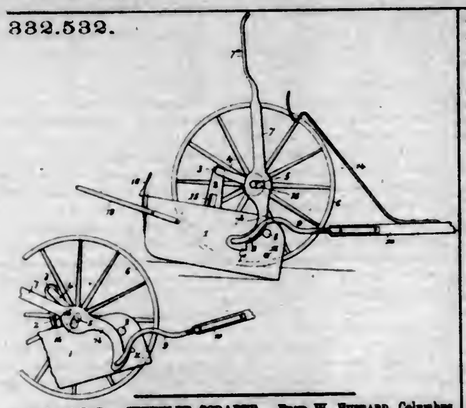
3. In a wheeled scraper, a crank-axle which drops backward in lowering the bowl to filling position, combined with an end-gate lifted from its closed position by the dropping backward of the crank-axle and bowl.

332,532. **WHEELED SCRAPER.** Fred W. Hubbard, Columbus, Ohio, assignor to the Kilbourne & Jacobs Manufacturing Company, same place. Filed June 18, 1885. (No model.)

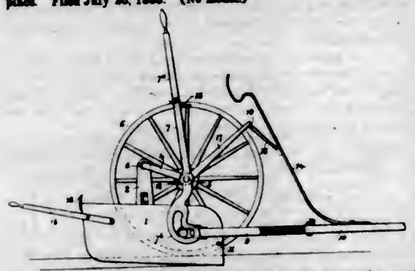
Claim.—1. In a wheeled scraper having a crank-axle, a yoke-lever to which the hounds are attached, fulcrumed on the axle-arms and having curved ends bearing under studs on the sides of the scraper to lift the front by the power of the team when thrown out of the center or line of draft, substantially as set forth.

2. In a wheeled scraper having a crank-axle, the combination of a yoke-lever fulcrumed on the arms of said axle, and having curved ends to which the hounds are connected, and studs, one receiving the forward draft on the scraper, and the other serving as a fulcrum for the hounds, to assist in lifting the scraper, as explained.

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332,533. **WHEELED SCRAPER.** Fred W. Hubbard, Columbus, Ohio, assignor to the Kilbourne & Jacobs Manufacturing Company, same place. Filed July 20, 1885. (No model.)



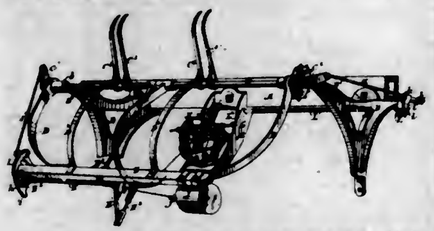
Claim.—1. An end-gate mounted upon arms hinged to the crank-axle concentrically with the carrying-wheels, substantially as herein shown and described.

2. An end-gate mounted upon arms hinged to the crank-axle and provided with lugs or projecting ends engaging with the crank-axle in its movement, substantially as and for the purposes herein set forth.

3. An end-gate mounted upon arms turning on the crank-axle, elevated by the rotation of the axle, and having lugs to support it upon the draft-bounds, substantially as set forth.

4. The combination of a crank-axle, a scraper-bowl supported by hangers therefrom, and a lever or levers having curved and slotted end or ends engaging with a stud or studs on the scraper-bowl to raise and depress the point thereof, as explained.

332,534. **GRAIN-BINDER.** Moses G. Hubbard, Jr., Norristown, Pa. Filed Oct. 10, 1883. (Model.)



Claim.—1. The combination of the revolving main shaft, a binder-arm loosely journaled thereon, and intermediate mechanism for imparting a vibrating motion from the main shaft to the binder-arm, substantially as described.

2. The combination of a revolving main shaft, a binder-arm journaled thereon, the knotting mechanism, and intermediate mechanism for vibrating the binder-arm and operating the knotting mechanism intermittently from the continuously-revolving shaft, substantially as described.

3. The combination of the continuously-revolving main shaft, the binder-arm loosely journaled thereon, the binder-arm-operating shaft, the cranks and pitman for connecting the shafts, and a crank and pitman for connecting the binder-arm-operating shaft and binder-arm, substantially as described.

4. The combination of the revolving main shaft with shafts for operating the binder-arm and knotting mechanism, said shafts driven by cranks secured to the opposite ends of the main shaft, substantially as described.

5. The combination of the revolving main shaft, the binder-arm shaft, the knotting-mechanism drive-shaft, the connecting-rods connecting the latter shafts with the main shaft, and gearing between the said rods and shafts to operate the binder-arm and knotter mechanism intermittently at an accelerated speed, substantially as described.

6. The combination of the revolving main shaft, its crank, the connecting-rod, the pivoted segment formed with toothed and delay surfaces, a segment-pinion formed with similar toothed and delay surfaces on the end of the binder-arm shaft, the crank, the link, and the binder-arm, substantially as described, to impart an intermittently-accelerated movement to the binder-arm.

7. The combination of the revolving main shaft, its crank, the connecting-rod provided with a rack and delay surface, the segment-pinion formed with toothed and delay surfaces, the knotter-mechanism-operating shaft, and mechanism for imparting intermittent accelerated motion to the knotter-mechanism-operating shaft, substantially as described.

8. The combination of the revolving main shaft, the binder-arm-operating shaft, the crank on the latter shaft, the connecting-link and the vibrating binder-arm, and the knotting mechanism, combined and arranged substantially as described, to form a cut-off or barrier between the binder-arm-operating shaft and knotting mechanism, to intercept the rising grain during the operation of the knotting mechanism, substantially as described.

9. The combination, with an oscillating gripper-hook, of two oscillating disks arranged upon a shaft parallel with the hook-shaft and independently of the gripper-hook for gripping and releasing the twine, substantially as described.

10. The combination, with an oscillating gripper-hook, of two freely-moving disks, between which the cord is carried by the hook, substantially as set forth.

11. The combination of the oscillating gripper-hook, the gripper-disks secured to a freely-revolving shaft for gripping the twine when revolved in one direction and ungripping the same when moved in the opposite direction, substantially as described.

12. The combination of the oscillating segment gear-wheel for operating the knotter mechanism, formed with a delay-surface, the segment-pinion on the gripper-shaft formed with a similar delay-surface, and the gripper connected therewith to receive an intermittent oscillating movement therefrom, substantially as described.

13. The combination of an oscillating gear-wheel, a pinion revolved alternately in opposite directions thereby, the pinion-shaft, and the segment bevel-pinions connecting said shaft and the shaft of the oscillating gripper, substantially as and for the purpose described.

14. The combination of the oscillating gripper-hook, the oscillating disks, and a rubber washer secured upon the shaft of the disks to bear against them and form an elastic cushion, substantially as and for the purpose described.

15. The combination of the binder-arm, the gripper, and the retaining-notch in front of and in line with the gripper, to hold the twine up to the gripper while the binder-arm is receding and the moving jaw of the gripper is moved forward to clamp the twine, substantially as described.

16. The combination of the needle-arm, the gripper, and the plate having a retaining-notch arranged relatively to the gripper, as described, and a slot in the plate, formed with curved walls, to permit the twine to be released from said notch, substantially as described.

17. The combination of the revolving knotter, the gripper arranged upon one side thereof, and the vertical twine-guiding rod formed with a projecting lip to hold the twine, and curved above the lip to follow the path of the revolving knotter, substantially as described.

18. The combination of the rotating knotter, a laterally-swinging knotting-mechanism frame, and means for swinging said frame laterally to bend the twine from its direct line over the knotter, substantially as described.

19. The combination of the rotating knotter, a laterally-moving knotting-mechanism frame, and a twine-guiding rod secured independently of the knotting-mechanism frame, to hold the twine while a portion of it is drawn from its direct line by the lateral movement of the knotting-mechanism frame, substantially as described.

20. The combination of the pivoted knotting-mechanism frame, a revolving knotter gear-wheel for operating the knotter, provided with a cam-plate upon its face or rim, and a friction-roller arranged to bear against the cam-plate and impart a lateral movement to the knotting-mechanism frame, substantially as described.

21. The combination of the rotating knotter, a laterally-swinging knotter-mechanism frame formed with a slot in its lower plate, and the bolt secured to a fixed frame and passing through the said slot to limit the movement of the knotter-frame, substantially as described.

22. The revolving knotter supported in a vertically-swinging knotting-mechanism frame, whereby the knotting and holding mechanism may be drawn toward the bundle while looping the twine to form the knot, substantially as and for the purpose set forth.

23. The combination of the shoe, the vertically-swinging knotting-mechanism frame pivoted thereto, and a stop-bolt secured to the shoe and arranged to check or limit the movement of the knotter-mechanism frame, substantially as described.

24. The combination of the shoe, the vertically-swinging knotter-mechanism frame, the revolving knotter, the oscillating driving-wheel, and a link pivoted at one end to the shoe and at the other end to the driving-wheel at a point eccentric to its axis, and the pitman and crank-arm for operating the driving-wheel to secure a uniform vertical movement of the knotter-mechanism frame, substantially as described.

25. The combination of the knotter-mechanism frame carrying a revolving knotter and pivoted to a vertically-swinging yoke, the pivot adapting the frame to swing laterally in the yoke, whereby the knotter may have both a vertical and transverse or lateral movement, substantially as described.

26. In a grain-binder, the combination of the laterally-swinging knotting-mechanism frame, an oscillating segment gear-wheel, with the pinion, knotter-shaft, and knotter caused to revolve alternately in opposite directions to form the knot, substantially as described.

27. The combination of the knotter-mechanism frame, the oscillating segment-gear, the revolving knotter, and an oscillating segment-pinion for operating the gripper, substantially as described.

28. The combination of the knotting-mechanism frame, the oscillating segment-gear provided with a delay-surface, the revolving knotter, and the oscillating segment-pinion provided with a delay-surface to be operated by the segment-gear in its forward and backward movement and receive therefrom an accelerated intermittent oscillating motion in forming the knot, substantially as described.

29. In a grain-binder, the combination of the knotter and mechanism to revolve the same alternately in opposite directions, and an intermittingly-operating gripper and mechanism for operating it, as described, so as to release the stub-end of the twine during the forward movement of the knotter and grip the uncut twine during its backward movement, substantially as described.

30. The combination, with a revolving knotter, its operating mechanism, an intermittingly-operating gripper, and mechanism for operating it, substantially as described, whereby the gripper will grip the twine while the knotter is moving toward the gripper to give a slack cord to be gripped, as set forth.

31. The combination of the knotter, caused to revolve alternately in opposite directions, the intermittently-oscillating gripper, and stationary knife arranged between the gripper and the knotter, against which the twine is cut in the backward movement of the knotter, substantially as described.

32. In a grain-binder, the knotter and mechanism to revolve the same alternately in opposite directions, said knotter provided with a hinged jaw having a heel-extension, in combination with a semi-rotating cam-plate encircling the shaft, arranged at its lower portion concentric with the shaft, for permitting the heel-extension to pass inside the flange of the cam to open the jaw, and to revolve with the knotter in the opposite direction without opening the jaw, as set forth.

33. The combination of the revolving knotter, provided with a hinged jaw having a projecting heel, the knotter-shaft, and a plate that completely encircles the shaft, and which has a cam-flange, and a hub that partially encircles the shaft, arranged on the opposite side of the shaft from the flange of the cam, to allow the heel of the jaw to be driven closely to the shaft by the cam-flange, substantially as and for the purpose set forth.

34. The knotter, formed with a grooved or flattened surface across one of its jaws to hold the twine transversely thereto, and preventing it from slipping out from between the jaws when the twine is cut, substantially as described.

35. In a tension device for grain-binders, the combination of the twine-box, the trough secured thereto, the bow-shaped spring, and the adjustable bolt secured midway of the spring to press the twine between the ends of the spring and trough, substantially as described.

36. The combination and arrangement of the front sill, the rear sill, the continuously-rotating main shaft, the binder-arm freely journaled to and oscillated thereon, and ejector-arms secured to and revolving with said shaft, substantially as and for the purpose described.

37. The combination of the front sill, the rear sill, the main shaft, the bundle-delivery guides or plates connected to the rear sill and main shaft, and ejector-arms arranged in pairs closely upon opposite sides of the delivery-plates, to straddle them, substantially as and for the purpose described.

332,535. PAPER BOX. GUSTAV L. JAEGER, New York, N. Y. Filed Mar. 19, 1885. (No model.)

Claim.—1. A paper box provided with a hole in one of its sides, and with a closing-sheet which is pasted over the hole, and also over the adjoining parts, and indented or provided with perforations near the line of the hole.

2. A paper box provided with a hole in one of its sides, a cover for said hole, a closing-sheet pasted over the cover and the side having the

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hole, and the tearing-off strip secured to the cover and under the closing-sheet, substantially as described.

3. A paper box provided with a hole in one of its sides, a cover for said hole, a closing-sheet pasted over the cover and the side having the hole, and the tearing-off strip secured under both the cover and the closing-sheet, substantially as described.

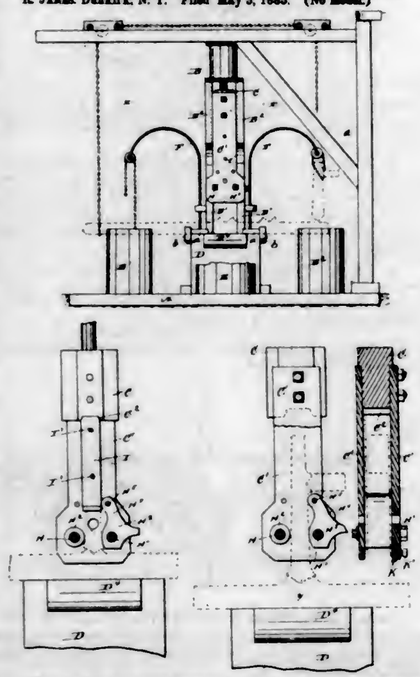
4. A paper box provided with a hole in one of its sides, a cover fitting said hole, and a closing-sheet pasted over the cover and over the side having the hole, perforations or depressions formed in said sheet outside of the line of the hole, and means, substantially as described, for opening the cover.

5. A paper box or canister provided with a filling-orifice in one of its walls, combined with means for closing said orifice, consisting of a hinged cover or lid, means for securing the lid when closed, and a string or its equivalent attached to the free edge of the said lid, whereby the fastening devices may be readily torn away or broken at the free edge of the cover in opening the latter, substantially as described.

6. A box or canister provided with a filling-orifice in one of its walls, combined with means for closing said orifice, consisting of a hinged cover or lid, a string or its equivalent attached to the free edge of said lid, and a sheet of paper secured to the box over the said lid, substantially as described.

7. A paper box or canister provided with a filling-orifice in one of its walls, combined with means for closing said orifice, consisting of a hinged cover or lid fitted within said orifice, a string or its equivalent attached to the free edge of the said lid, and a sheet of paper secured to the box over said lid, substantially as described.

332,536. HAMMER FOR WELDING LOCOMOTIVE-FRAMES. JOHN R. JAMES, Dunkirk, N. Y. Filed May 5, 1885. (No model.)



Claim.—1. In a steam-hammer for welding locomotive-frames, the hammer-head C, having a recess, C^3, and provided with the side plates, C' C', the pins H and H', the bushing H^2, the die H^3, fastened by the pin H^4, and the center bar, substantially as shown and described.

2. In a steam-hammer for welding locomotive-frames, the hammer-head C, having a recess, C^3, and provided with the side plates, C' C', the pins H and H', the bushing H^2, and the die H^3, fastened by the pin H^4, substantially as shown and described.

3. In a steam-hammer for welding locomotive-frames, the combination of the hammer-head C, having the recess C^3, and provided with the side plates, C' C', the pins H and H', the bushing H^2, the die H^3,

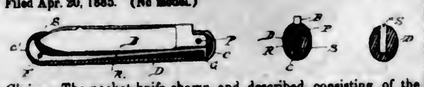
fastened by the pin H^4, and the steel cutter K, substantially as shown and described.

4. In a steam-hammer for welding locomotive-frames, a hammer-head consisting of the side plates, C' C', and the removable pins H H', and the intermediate removable pin, J^3, all passed through apertures in the lower ends of said plates, whereby the series of interchangeable dies may be used and the parts of the locomotive-frame be held and guided between said plates, substantially as set forth.

5. The combination, with the side plates, C' C', and the removable pins H H', connecting the lower ends of said plates, of the removable bushing H^2 on the pin H, and the removable die H^3 on the pin H', a space being left between the said pins, for the purpose set forth.

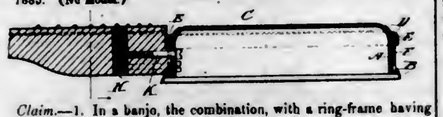
6. The combination, with the side plates, C' C', having two spaced dies mounted between their lower ends, of the cutter K, removably secured to the lower edge of one of the said plates, below the dies, substantially as set forth.

332,537. POCKET-KNIFE. CLARENCE H. KAHLER, Wilmington, Ill. Filed Apr. 20, 1885. (No model.)



Claim.—The pocket-knife shown and described, consisting of the combination of the handle D, formed from a single piece of material and having the blade and spring-channel S formed therein, bolster c, cast in one piece upon the end of said handle, blade B, and spring R, said spring being adapted to lie in the bottom of said channel and be held therein by means of the rivet F, passing through its inner end, and the blade-tang at its outer end, substantially as set forth.

332,538. BANJO. CHARLES J. KELLY, Denver, Col. Filed Apr. 11 1885. (No model.)



Claim.—1. In a banjo, the combination, with a ring-frame having an outwardly-projecting bottom flange, the under side of which is grooved, of a ring surrounding the ring-frame and serving to hold the head, and of screws passed through the flange of the ring-frame into the bottom edge of the head-holding ring, substantially as herein shown and described.

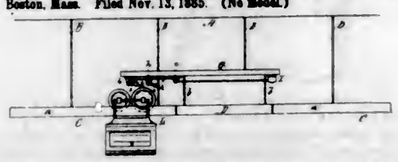
2. In a banjo, the combination, with the ring-frame A, having the flange B, of the head C, the wire ring D, the ring E, having a groove, E', and of the screws F, substantially as herein shown and described.

3. In a banjo, the combination, with the ring-frame A, of the neck J, the metal piece H in the same, and the screws K, screwed through the ring-frame into the piece J, substantially as herein shown and described.

4. A banjo finger-board made of sheet metal, parts of which are struck up to form frets, substantially as herein shown and described.

5. The combination, with a banjo-neck, of a sheet-metal finger-board on the same, the side edges of the said finger-board being bent over the sides of the neck and into longitudinal grooves in the said neck, substantially as herein shown and described.

332,539. CASH AND PARCEL CARRIER. DANIEL E. KEEPOTER, Boston, Mass. Filed Nov. 13, 1885. (No model.)



Claim.—1. As an improvement in cash or parcel transmitting apparatus for store-service, &c., a single-rail track composed of a main or direct line and one or more branches, and having a switch formed of a single-rail-track section operated automatically by a carrier which must traverse the switch to reach its station, for the purpose set forth.

2. A single-rail track having a switch composed of a single-rail-track section disconnected from the main track and operated automatically by the carrier or carriers, which must pass over said switch to reach the station to which it or they belong, for the purpose described.

3. A single-rail track having a switch composed of a single-rail-track section formed of a portion of the main or branch line, said switch being disconnected from its major portion and operated automatically by a carrier which must pass over the switch to reach its station, for the purpose specified.

4. A single-rail track, in combination with one or more switches formed of movable single-rail sections leading directly to a station, for the purpose set forth.

5. A single-rail track composed of a direct line, one or more branches or side tracks, and one or more single-rail switches, each formed of a disconnected track-section, in combination with tripping devices and their interposed switch-connecting mechanism actuated by carriers having graduated peripheral flanges or other devices connected therewith, for the purpose set forth.

6. The bell-crank levers i, the cross-head lever c, the interposed connecting-rods l, the single-rail switches D, the graduated wheel-carriers L, for operating the latter, and suitable stops, m, for limiting their lateral motion, in combination with an elevated single-rail track, substantially as and for the purpose stated.

7. A pivoted switch-frame, in combination with and for supporting a single-rail switch, operating substantially as specified.

8. In combination with a single-rail switch and its supporting-frame, the friction-rolls e and the track or way on which they move, as and for the purpose set forth.

9. The combination, with the graduated peripheral flange-wheel carriers L and graduated bell-cranks i, of the friction-rolls k, pivoted to the latter, as and for the purpose described.

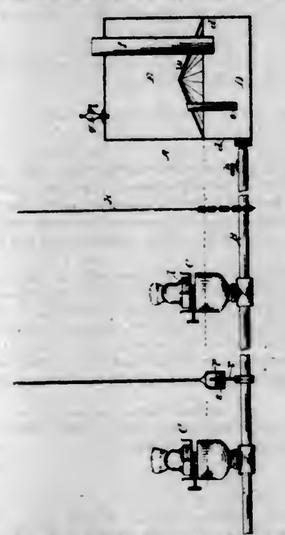
10. The retaining-springs n, in combination with the switch-frame, its friction-rolls e, and stops m, and the way formed by the plate I, constructed to operate as specified.

332,540. NUT-LOCK. JAMES B. LAW, Darlington, S. C. Filed Oct. 20, 1885. (No model.)



Claim.—As a new article of manufacture, a nut provided with an unslitted end extension of reduced thickness, provided with a thread corresponding to and communicating with the thread of the nut proper, formed of malleable metal and compressed into an elliptical cross-sectional shape, substantially as set forth.

332,541. ILLUMINATING DEVICE. CHARLES A. LEAGER, GEORGE S. PIERCE, and REHARD A. CANTERBURY, Franklin Grove, Ill.; said Pierce assignor to said Canterbury and Leager. Filed Mar. 11, 1885. (No model.)

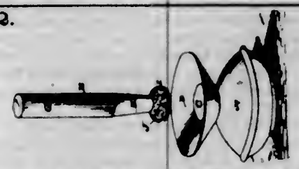


Claim.—In an automatically-discharging oil-reservoir, A, the combinations and interrelations of the following-described elements, namely: the compartment D, provided with the conical top w, the compartment E, imposed on the compartment D and provided with the stop-cock g, the tube f, extending from above the compartment E through the latter vertically to slightly below the top w of the compartment D, the tube e, seated in the top w, and extending down through such top to nearly the plane of the upper wall of the oil-outlet, the tube B, or oil-outlet, provided with the stop-cock A and inserted in the side of the compartment D, near the base of the latter, substantially as shown, whereby the altitude of the oil in the lamps is maintained within certain desired limits, as hereinbefore specified.

332,542. APPARATUS FOR MOISTENING STAMPS, ENVELOPES, &c. WILLIAM H. H. LEITNER, Little Falls, N. Y. Filed Mar. 31, 1885. (No model.)

Claim.—1. The herein-described apparatus for moistening stamps,

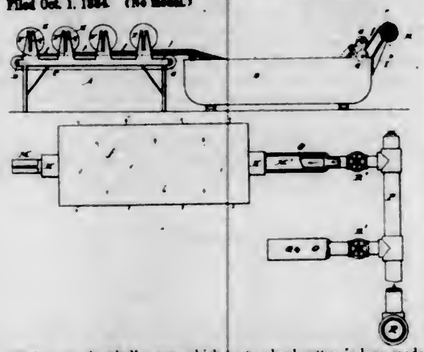
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comprising a reservoir or receptacle provided with a sponge or porous body, the neck of the reservoir being contracted and provided with an opening, and the moistening device consisting of a handle carrying a sponge, the diameter of the lower portion of the handle being considerably less than the diameter of the opening in the reservoir or receptacle, whereby said moistening device may be introduced into the same at an angle, as set forth.

2. The herein-described apparatus for moistening stamps, &c., comprising a reservoir or receptacle having a concave bottom, and provided with a sponge or porous body resting on the bottom, so as to assume a concave shape, the neck of the receptacle or reservoir being contracted and provided with an opening, and the moistening device comprising a straight handle carrying a sponge, the diameter of the handle being considerably less than the opening in the reservoir or receptacle, whereby said moistening device may be introduced at an angle, as and for the purpose set forth.

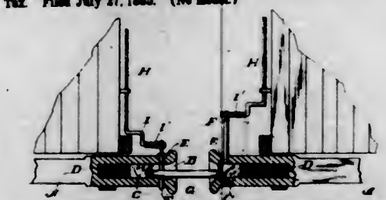
332,543. COTTON-DRIER. JOHN H. LORIMER, Philadelphia, Pa. Filed Oct. 1, 1884. (No model.)



Claim.—1. A spindle upon which to dry dyed cotton in laps, made hollow or tubular, with its surface covered with paper or cloth or their equivalent, and provided with radial apertures opening upon the surface to be covered by the cotton, and a passage to convey the drying medium to or from the interior of the spindle, substantially as and for the purpose specified.

2. A spindle upon which to dry dyed cotton in laps, made hollow or tubular and provided with radial apertures opening upon the surface to be covered by the cotton, and a passage to convey the drying medium to or from the interior of the spindle, in combination with mechanism for creating a forced draft of air or gas, and conveying or conducting pipes provided with sockets or their equivalent, to which said spindles may be detachably secured, substantially as and for the purpose specified.

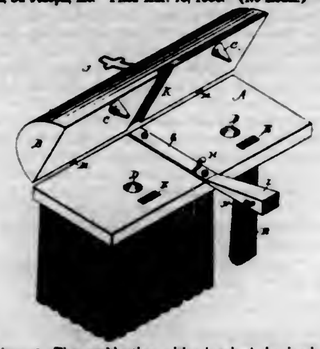
332,544. CAR-COUPLING. SAUNDERS F. MCALLISTER, San Marcos, Tex. Filed July 27, 1885. (No model.)



Claim.—1. The combination of the draw-head having therein a tap-bar and rearwardly a spiral spring, the said tap-bar C so disposed as to be projected forward by the action of the said spring sufficiently to hold the pin out of the draw-bar, with the said pin and link, and the spring I', substantially as herein set forth.

2. The combination of the draw-bar A, the opening B, the tap-bar C, the spiral spring D, the pin F, and the system of levers F', to operate the pin and spring I', the whole arranged as and for the purposes substantially as herein set forth.

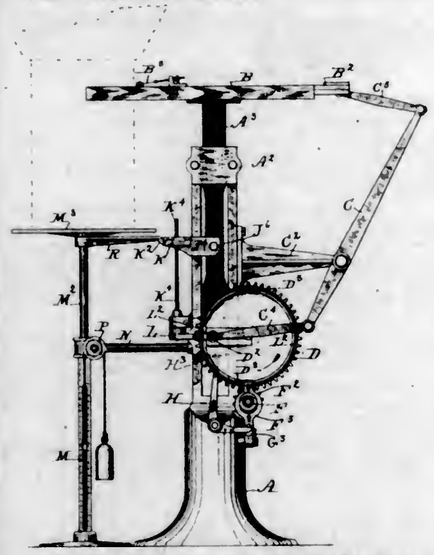
332,545. RESERVOIR WINDOW-WASHING BRUSH. THOMAS MCCABE, St. Joseph, Mo. Filed Mar. 12, 1885. (No model.)



Claim.—1. The combination, with a brush, A, having holes through the top to admit water to the bristles, of a reservoir for water, hinged to the top of said brush and having tubes C to feed the water through said holes, substantially as described.

2. The combination of the brush A, having holes D and brace G, with hook H and socket I, and the hinged reservoir B, with recess K, tubes C, and catch J, as and for the purpose described.

332,546. AUTOMATIC CUT-OFF AND TAKE-AWAY FOR DRAIN-TILE MACHINES. CALVIN J. MERRILL and WILLIAM VIEGERS, Des Moines, Iowa. Filed Nov. 8, 1884. (No model.)



Claim.—1. In a drain-tile machine, the combination of a post or vertical frame, a horizontal frame or bearing fixed to the post or vertical frame, a reciprocating frame carrying a cutter on the horizontal frame, and a lever connected with the reciprocating cutter carrier or frame at one end by means of a pitman, and with an intermittent rotary wheel at its opposite end by means of a rod and crank-pin, to operate in the manner set forth.

2. The bifurcated post A, the auxiliary post A^3, the fixed frame B, the reciprocating frame and cutter-carrier B^3, the lever C, and the wheel D, arranged and combined with a tile-machine for the purpose specified.

3. The clutch device F^3 F^4, in combination with the pinion F^2, the shaft F, and the wheel D, having cams D^2, substantially as shown and described, for the purposes specified.

4. The latch device G, in combination with the clutch F^3 and the lever H, substantially as shown and described, for the purposes stated.

5. The combination of a sliding post, A^3, having a stud, H^3, a lever, H, and a clutch-latching device, G, substantially as shown and described, for the purposes stated.

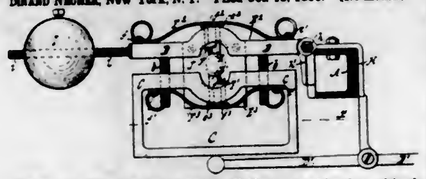
6. The combination of the bearer J^4, carrying a sliding latch in a case, the latch-operating spindle K^4, having a crank, L^2, the wheel D, having cams D^2, a vertically-reciprocating cut-off carrier, and a parallel vertically-reciprocating platform-carrier having an arm, R, to operate in the manner set forth, for the purposes stated.

7. The combination of a frame or post, A, a driving-shaft, F, a loose pinion, F^2, an adjustable clutch having a cam, F^4, a drive-wheel, D, having cams D^2, a lever, H, a vertically-adjustable post, A^3, carrying a horizontal reciprocating cut-off and a stud or roller, H^3, and a beam or lever, C, connected with the cut-off and the wheel D, for the purpose specified.

8. The latch composed of a case, K, a slide, K^2, a cam, K^3, a lever, L^2, a stud, L^4, a spring, L^3, and an arm or bearer, J^4, in combination with a cut-off carrier, a drive-wheel having a cam, L^2, and a spindle, K^4, having a crank, L, in a fixed bearing, K^5, for the purposes specified.

9. In an attachment for drain-tile machines, a frame or post, A, an auxiliary post, A^3, carrying a horizontally-reciprocating cut-off, a fixed arm, C^2, and a fixed latch-bearer, J^4, in which is a sliding latch, K^2, the wheel D, connected with the cut-off by the lever C, and pitmen C^3 C^4, in combination with a driving-shaft, F, and a parallel vertically-reciprocating platform-carrier having a fixed arm, R, and mechanism to operate the sliding latch K^2 at regular intervals, in the manner set forth, for the purposes specified.

332,547. ATTACHMENT FOR BOTTLE-WIRING MACHINES. FERDINAND NEUMER, New York, N.Y. Filed Oct. 15, 1885. (No model.)



Claim.—1. The yielding benders F F', in combination with the jaw-frames B and C and guide-posts *b b*, substantially as shown and described.

2. The yielding benders F F' and the yielding clamping-jaws E E', in combination with the jaw-frames B and C and guide-posts *b b*, substantially as shown and described.

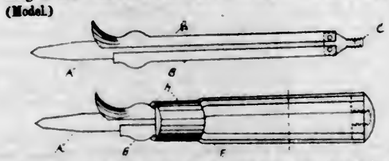
3. The combination, with the stationary jaw-frame B and the movable jaw-frame C, of the yielding benders F F', aligned in the said jaw-frames, and guide-posts *b b*, substantially as shown and described.

4. The combination of the weighted hinged jaw-frame B, the reciprocating jaw-frame C, the spring-pressed benders F F', the spring-pressed jaws E E', aligned in the said jaw-frames, and the guide-posts *b b*, substantially as shown and described.

5. The combination, with the weighted hinged jaw-frame B and the reciprocating jaw-frame C, of the spring-pressed benders F F' and guide-posts *b b*, substantially as shown and described.

6. The combination, with the weighted hinged jaw-frame B and the jaw-frame C, guided by posts mounted on the jaw-frame B, of the yielding benders F F', the yielding jaws E E', operating in advance of the punches to clamp the bottle, and means, such as described, for reciprocating the jaw-frame C, substantially as shown and described.

332,548. KNIFE-BLADE HOLDER. EZEKIEL NICHOLSON, Lynn, Mass., assignor to ALFRED A. HOWES, trustee, same place. Filed Mar. 20, 1885. (Model.)



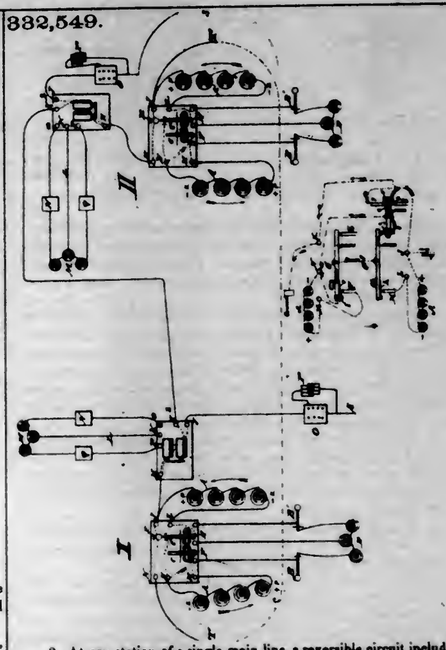
Claim.—1. The knife-blade holder, consisting of a handle having a screw-threaded socket at one end, clamps B, adapted to hold the knife-blade, the said clamps having a screw-threaded extension fitting the screw-threaded socket in the handle and a loosely-fitting ferrule on the opposite end of the handle adapted to hold the clamps, all substantially as described.

2. In combination with the handle formed as described, the clamps B, provided with the finger-rest integral with one of them, constructed substantially as described.

332,549. QUADRUPLEX TELEGRAPH. HENRY C. NICHOLSON, Kenton, Ky., assignor to the Western Union Telegraph Company, New York, N.Y. Filed Oct. 14, 1874.

Claim.—1. In a single-line telegraphic system, the combination at one station, substantially as specified, of two independent electrically-connected keys, one of which—say the first key—when operated reverses the circuit controlled by the second key, independently of the position or action of this second key.

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2. At one station of a single main line, a reversible circuit including two independent transmitting-keys, one of which keys successively reverses said reversible circuit, substantially as specified.

3. A reversible circuit having two distinct routes to the main line and including two independent transmitting-keys, one of which keys successively reverses said reversible circuit, and alternately brings either one of said routes in circuit while cutting out the other route to line substantially as specified.

4. At one station two electrically-connected transmitting keys, one of which—say the first key—simply opens and closes a battery connecting through the second key with the main line, while the second key successively reverses the direction of the main-line circuit through the circuit-connections between the two keys, and by such reversal either determines or reverses the polarity of the battery controlled by the first key, according as said first key is open or closed, substantially as specified.

5. A quadruplex telegraph, substantially as specified, provided at each station with the following instrumentalities, viz: first, a rheostat; second, suitable relays adapted to respond to incoming currents, but not affected by outgoing currents; third, two main batteries or a divided main battery; fourth, two electrically-connected transmitting-keys, one of which—say the first key—simply opens and closes the battery connecting through the second key with the main line, while the second key successively reverses the direction of the main-line circuit through the circuit-connections between the two keys, and by such reversal either determines or reverses the polarity of the battery controlled by the first key, according as said first key is open or closed.

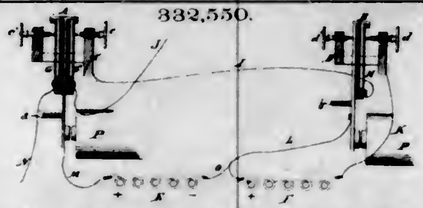
6. The combination of a double battery, A A', transmitting-keys C C', reverser E, polarized relay A, sounders or registers N Q, rheostat O, and condenser P, all connected and constructed substantially as described, and operating as and for the purpose specified.

7. The combination, substantially as specified, with a single electromagnet, of two polarized armatures, one at each end, and local circuit-connections, so arranged that one armature shall close one local circuit when the line is charged positively and the other shall close a different local circuit when the line is negatively charged.

8. The combination, substantially as specified, with a single electromagnet, of two polarized armatures, one at each end, and local circuit-connections, so arranged that one armature shall close one local circuit when the line is charged positively and the other shall close a different local circuit when the line is negatively charged, and a lever which, whenever a current of high tension and appropriate polarity is sent over the wire, will be vibrated in opposition to the stress of a spring by the adjacent polarized armature, and close the local circuit ordinarily controlled by the other polarized armature.

332,550. QUADRUPLEX TELEGRAPH. HENRY C. NICHOLSON, Kenton, Ky., assignor to the Western Union Telegraph Company, New York, N.Y. Filed May 11, 1876.

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Claim.—1. The combination at one station of two independently-operated keys connected in the same circuit, one serving to control the polarity of the line-current, and the other, whenever operated, to control the tension of the line-current, without in any instance changing its polarity, substantially as specified.

2. The combination, substantially as specified, with the main line at one station, of a relay controlled by change of polarity and a relay controlled by change of tension, arranged to simultaneously receive two signals, and at another station two independently-operated keys connected in the same circuit, one serving to control the polarity of the line-current, and the other, whenever operated, to control the tension of the line-current, without in any instance changing its polarity.

3. In telegraphic transmitting devices, the combination of keys A, G, G', and B H, secured to play, respectively, between points c c' and d d', with ground-connection N, line-connection J, local connections I K L O M, and even batteries E F, the whole to operate substantially as and for the purpose specified.

4. In telegraph transmitting devices, the key A, provided with insulated contact-springs G G', situated to play between two contact-points, c c', for the purpose substantially as specified.

5. The combination at one station, substantially as specified, of two separate batteries, or two sections of a main battery, and two independently-operated keys connected in the same circuit—one serving to control the polarity of the line-current and the other to control the tension of the line-current—by alternately opening and closing one of the batteries, without in any instance changing the polarity of said current.

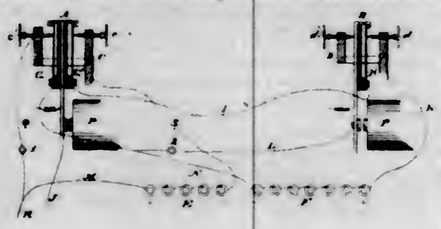
6. The combination, with a telegraphic circuit and battery, of two keys at one station, acting independently—one to reverse the polarity and the other to increase or decrease the strength of current—and two receiving-instruments at the other station, operated independently, one by the change of polarity, and the other by the change in the strength of the current.

7. In combination with a telegraphic circuit, a battery, a portion of which is permanently in the line-circuit, and two independent keys or transmitters, the first key so constructed as to reverse the polarity of whatever current is passing from the battery to line without reference to the position of the second, and the second key so arranged as to increase or decrease the strength of the current in action at pleasure, without reference to the position of the first.

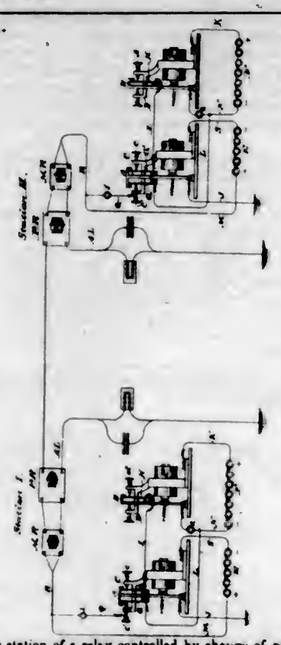
332,551. QUADRUPLEX TELEGRAPH. HENRY C. NICHOLSON, Mount Washington, Ohio, assignor to the Western Union Telegraph Company, New York, N. Y. Filed Sept. 26, 1885. (No model.)

Claim.—1. The combination, at one station of an open main-line circuit, substantially as specified, of two unequal main batteries and two electrically-connected transmitting-keys, one of which—say the first key—simply opens and closes a battery connecting through the second key with the main line, while the second key successively reverses the direction of the main-line circuit through the circuit-connections between the two keys, and by such reversal either determines or reverses the polarity of the battery controlled by the first key, according as said first key is open or closed.

2. The combination, substantially as specified, at one station of an open main-line circuit, of two unequal main batteries and two electrically-connected transmitting-keys, one of which—say the first key—simply opens and closes a battery connecting through the second key with the main line, while the second key successively reverses the direction of the main-line circuit through the circuit-connections between the two keys, and by such reversal either determines or reverses the polarity of the battery controlled by the first key, according as said first key is open or closed,

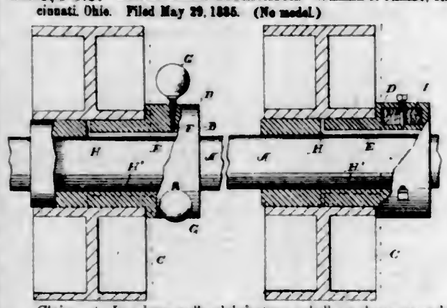


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and at another station of a relay controlled by change of polarity and a relay controlled by change of tension, arranged to simultaneously receive two messages.

332,552. LOOSE-PULLEY LUBRICATOR. WILLIAM J. ORMSBY, Cincinnati, Ohio. Filed May 29, 1885. (No model.)



Claim.—1. In a loose-pulley lubricator, a shell or sleeve securely attached to the shaft, and having centrally, on the inner side an annular reservoir or duct opening into its inner face, communicating by means of a series of ducts at one end with the oil-cups, and at the other, by means of ducts, with the periphery of the sleeve beneath the pulley, substantially as herein set forth.

2. A loose-pulley lubricator consisting of a shell or sleeve securely attached to the shaft, and provided on its inner face with annular reservoirs or ducts formed at opposite ends, with ducts to communicate with the oil-cups and the pulley and with the shaft, substantially as herein set forth.

3. The combination of the sleeve attached to the shaft, provided on its inner face with an annular reservoir or duct provided at one end with a series of oil-cups and at the opposite end with ducts communicating with the pulley, with the oil-cups G, the pulley C, and the shaft A, the whole arranged as and for the purpose substantially as herein set forth and described.

332,553. GARMENT-SLEEVE. CHARLES H. OSTRANDER, Plattsburg, N. Y. Filed Mar. 7, 1885. (No model.)



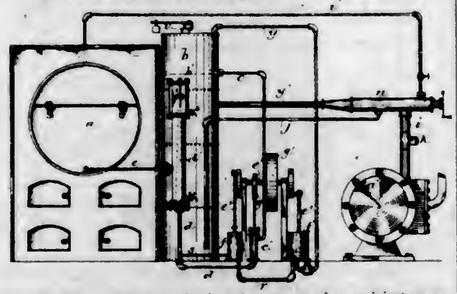
Claim.—The herein-described article of manufacture, the same consisting of a garment-sleeve having secured to the inner side thereof, at or near its lower end, an annular perforated disk or diaphragm, the same comprising two sections of fur set face to face and secured to each other and at the outer periphery of the diaphragm to the sleeve, as set forth.

332,554. FIRE-ESCAPE. ISAAC D. PASCO, Belmont, Nev. Filed June 1, 1885. (No model.)



Claim.—The combination of the U-shaped frame B, the winch consisting of the drum C, having notches in the edges of its flanged heads, and cranks G, journaled in the said frame, the line D, the guide-rollers H, and the pawl E, adapted to engage notches in both heads of the drum, and means for attaching a person to the frame B, substantially as shown and described.

332,555. HEATING FEED-WATER BY EXHAUST-STEAM. WM. E. PEARSON, Saugus, Mass. Filed Apr. 25, 1885. (No model.)



Claim.—1. The combination of a steam-engine, an injector connected with the exhaust-pipe of the engine, and a feed-water tank which is connected, as described, with the inlet and discharge passages of the injector, so that the passage of the exhaust-steam through the injector will heat and circulate the water in the tank, and means, substantially as described, for relieving pressure in the tank, and thereby preventing back-pressure on the exhaust, as set forth.

2. The combination of a steam-boiler, an engine supplied with steam thereby, a feed-water tank, an injector having a steam-inlet connected with the exhaust-pipe of the engine, its water-inlet connected with the lower portion of the feed-water tank, and its delivery-passage connected with a higher portion of said tank below its working-level, whereby the feed-water is continuously circulated and heated by the exhaust-steam, and a connection, substantially as described, between the tank and boiler, whereby the heated feed-water is supplied to the boiler, as set forth.

3. The combination of a steam-boiler, an engine supplied with steam thereby, a feed-water tank connected with the boiler, an injector provided with connections, as described, so as to receive the exhaust-steam from the engine and to draw water from the lower portion and deliver it to the upper portion of the tank, and means, substantially as described, for relieving the tank from pressure caused by the formation of vapor above the working-level of the water therein, as set forth.

4. The combination of the feed-water tank, the injector connected, as described, with the tank, so as to draw water from its lower portion and force it into its upper portion, a discharge-pipe leading from the tank above the point where water from the injector enters, said discharge-pipe being below the top of the tank, so as to maintain a vapor-chamber above the water in the tank, and a pump connected with said chamber, whereby the vapor is withdrawn from said chamber, as set forth.

5. The combination of the feed-water tank, the injector, connected, as described, with the tank, so as to maintain circulation of water therein; a discharge-pipe leading from the tank above the point where water from the injector enters, a feed-pump connected with said discharge-pipe, whereby the heated feed-water is forced to the boiler, and a vapor-pump having a connection with the vapor-chamber above the working-level of the tank and another connection with the boiler whereby the vapor forming in the tank is forced to the boiler, as set forth.

6. The combination of the boiler, the feed-water tank connected, as described, with the boiler, the injector connected, as described, with the tank, so as to heat and circulate the water therein, and means for supplying the injector either with live steam from the boiler or exhaust-steam from the engine, as set forth.

7. The combination of the boiler, the feed-water tank connected, as described, with the boiler, the injector connected, as described, with the tank, so as to heat and circulate the water therein, an engine having its exhaust connected with the injector, and a connection between the boiler and ejector, whereby live steam may be supplied to the injector, as set forth.

8. A feed-water circulating and heating injector having steam inlet or inlets, a water-inlet, and a discharge-pipe without an overflow, combined with a tank connected at its lower portion with the water-inlet and at a higher point with the discharge-pipe of the injector, and means, substantially as described, for relieving said tank from pressure, whereby the continuous operation of the injector is permitted and back-pressure avoided, as set forth.

9. The combination, with the feed-water tank, of the vapor-pump composed of the larger and smaller cylinders and their pistons and operating mechanism, and means for connecting said pump with the upper portion of the tank above its working-level and with the boiler, as set forth.

10. The combination of the boiler, the engine supplied with steam by the boiler, the feed-water tank connected with the boiler, the injector connected, as described, with the exhaust of the engine and the feed-water tank, so as to circulate and heat the water therein by the exhaust-steam, and a separator whereby the oil mingled with the water by the exhaust-steam is separated from the water before it reaches the boiler, as set forth.

332,556. METALLIC SEAL. CHARLES L. POND, Buffalo, N. Y. Filed Aug. 31, 1885. (No model.)



Claim.—1. A shackle-wire having its end provided with right and left twisted portions, substantially as set forth.

2. The combination, with a shackle-wire having its end provided with right and left twisted portions, of a soft-metal disk applied to the twisted portion of the wire, substantially as set forth.

3. A seal-disk provided with a threading-hole, *c*, and a recess, *d*, having its bottom extending across the end of the threading-hole and opening at both ends in the edge of the seal-disk, substantially as set forth.

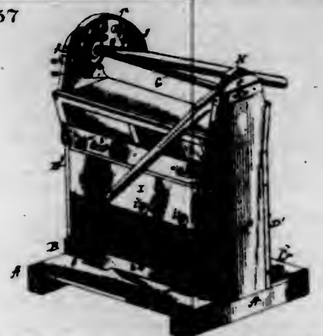
4. A seal-disk provided with a threading-hole, *c*, and a recess, *d*, having its bottom extending to the edge of the disk, and the inner and outer edges of the threading-hole arranged in the bottom of the recess *d* at different heights, substantially as set forth.

332,557. BALING-PRESS. WILLIAM W. POST, Cedar Rapids, Iowa, assignor of two-thirds to Lewis A. Bradley, same place. Filed Sept. 29, 1885. (No model.)

Claim.—1. In combination with the press-frame provided with a fixed shaft in the upper ends of its side standards, and the followers within the press, the cam-levers formed with side flanges and journaled on the fixed shaft, and the pendent pressers hung on the cams, substantially as described.

2. In combination with the press frame and hopper, and the cam-levers formed with side flanges and journaled in the top of the frame, the pendent pressers composed of a presser-block having side pieces

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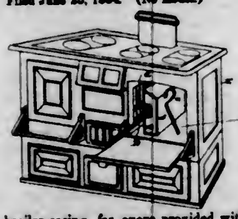


and friction-rollers, and provided with side bars to suspend the presser-block loosely on the flanges of the cams, substantially as specified.

3. In combination with the press-box formed with wire-apertures in the lower rear part, and the cam-levers mounted to turn on a fixed shaft arranged to hold the side standards of the press against displacement, the pendent pressers hung to slide on the face of the cams and the followers, the bale-follower formed with transverse wire-kerfs terminating in enlargements, and the concave bottom piece and side sill formed with kerfs registering with the kerfs in the bale-follower, substantially as described, and for the purpose stated.

4. In combination, the press-frame constructed as stated, the door hinged thereto to drop with its lower edge on a line with the base of the press and provided with turn-buttons, the cross-sill fixed to the base-pieces of the press and formed with slots to receive the turn-buttons of the door, the fixed shaft mounted in the upper part of the side standards, the cam-levers formed with the side flanges and journaled on said shaft, the pendent pressers hung to the flanges of the cams, the followers in the press, and the concave bottom formed with kerfs extended across the sill of the press, substantially as described.

332,558. BROILER FOR RANGES. JEREMIAH J. RICHARDSON, New York, N. Y. Filed June 25, 1884. (No model.)



Claim.—A broiler-casing for ovens provided with interior grates, which consists of an upright inclosing device for the broiler, having an open upright face for exposing the broiler to the grate, and flanges at the sides for preventing the broiler from falling forward, an open end for withdrawing the broiler without removing the casing from the oven, a closed top, back, and inner end, a receptacle in its lower portion for receiving the drippings, and the transverse bridges for supporting the broiler.

332,559. INDUCTION-COIL. JAMES A. ROBINSON, Nashville, Tenn. Filed Mar. 16, 1885. (No model.)



Claim.—1. An induction-coil having a tubular core internally screw-threaded at one end, combined with a screw fitting in said core, substantially as herein shown and described.

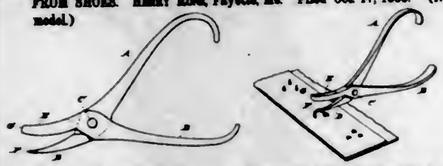
2. In an induction-coil, the combination, with a tubular core internally screw-threaded at one end, of a detachable head and a tubular screw for holding the head on the end of the core, substantially as herein shown and described.

3. In an induction-coil, the combination, with a tubular core internally screw-threaded on one end, of a head having a countersink and a tubular screw provided with a head fitting in the countersink in the head of the induction-coil and engaging the tubular core, substantially as herein shown and described.

4. In an induction-coil, the combination, with a tubular core screw-threaded at one end, of a detachable head and a screw engaging with said core and having a flat head provided with apertures for a key, substantially as herein shown and described.

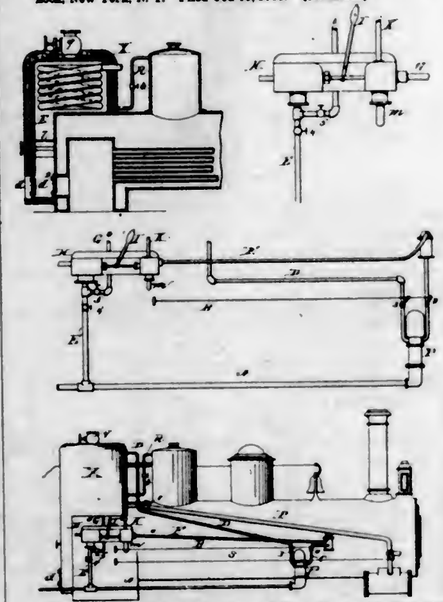
5. In an induction-coil, the combination, with the tubular core A, of the coarse-wire coil D, the fine-wire coil E, and the filling-piece F, substantially as herein shown and described.

332,560. IMPLEMENT FOR DETACHING BUTTON-FASTENERS FROM SHOES. HENRY ROSE, Fayette, Mo. Filed Oct. 17, 1885. (No model.)



Claim.—The opening-instrument for button-fasteners, staples, &c., consisting of the branches A B, pivoted together, and provided, respectively, with the narrow tapering curved point-jaw D, having a concave inner edge, and the broad, blunt, and fulcrum jaw E, having a broad convex inner face and having its guard end projecting beyond the point end of the point-jaw, substantially as specified.

332,561. HEATER AND FEEDER FOR BOILERS. OSCAR ROTHROCK, New York, N. Y. Filed Oct. 19, 1885. (No model.)



Claim.—1. In a feeder for steam-boilers, the combination of the heater, and the pump for supplying water to the heater, with the injector for feeding the hot water to the boiler, substantially as shown and described.

2. In a feeder for steam-boilers, the combination of the pump, provided with valves by which the water can be fed into the boiler or heater, with the heater and the injector, the latter so arranged as to feed hot or cold water to the boiler, substantially as shown and described.

3. In a feeder for steam-boilers, the combination of the pump P, pipes C D, and valves 2 3 with the heater X, the injector, pipes G'', F, and E', and valves 4 5, substantially as shown and described.

332,562. HARROW. JOHN S. ROWELL, Beaver Dam, Wis. Filed June 29, 1885. (No model.)

Claim.—1. The combination, with the transverse tooth-beams B, of separate beams A A, running from front to rear, and downwardly and rearwardly directed metal springs C C, connecting the beams A and B, said beams B and springs C C affording the only connection between the beams A A, substantially as described.

2. The combination, with longitudinal beams A and transverse tooth-beams B, of downwardly and rearwardly directed metal springs

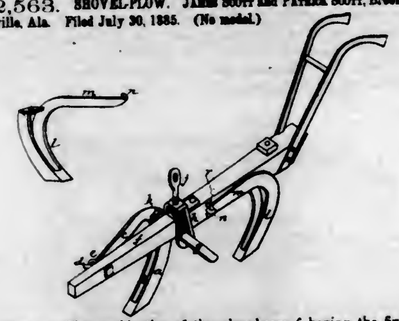
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C, fastened at their front ends to the beams A, and curved at their rear and free ends, said tooth-beams being adjustably attached upon the curved portions of the springs, whereby the inclination of the teeth may be varied, substantially as described.

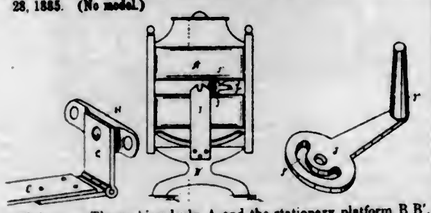
3. The combination, with the transverse tooth-beams B, of separate beams A A, running from front to rear, and springs C C, connecting the beams A and B and sustaining the teeth-heads clear of the ground when the harrow is overturned, said beams B and springs C C affording the only connection between the beams A A, substantially as described.

332,563. SHOVEL-PLOW. JAMES SCOTT and PATRICK SCOTT, Brooksville, Ala. Filed July 30, 1885. (No model.)



Claim.—The combination of the plow-beam *f*, having the fixed eyebolt *e*, with the standard-arm having the hook end *d* and the side arm, *g*, braced to the standard-arm by the block *k* at the angle of said side arm, the clip-binder A, and the clamp-screw *j*, whereby the said hook standard-arm is braced to the side arm and the latter to the beam at its bottom and at its sides, as shown and described.

332,564. CRADLE. CHARLES STREET, Cincinnati, Ohio. Filed Sept. 28, 1885. (No model.)



Claim.—1. The rocking body A and the stationary platform B B', in combination with a standard secured to said platform, and extending up in front of the cradle-body, and a latch pivoted to the said body to engage the standard and rock the cradle, substantially as shown and described.

2. The combination, substantially as specified, of the platform, the upwardly-projecting standard I, secured to one end thereof, and having inclines at the top and a notch between said inclines, with the rocking body mounted upon said platform, and having the latch J, pivoted to said body, said latch having an arm, j^3, adapted to engage with or be disengaged from the notch in the standard, for the purpose set forth.

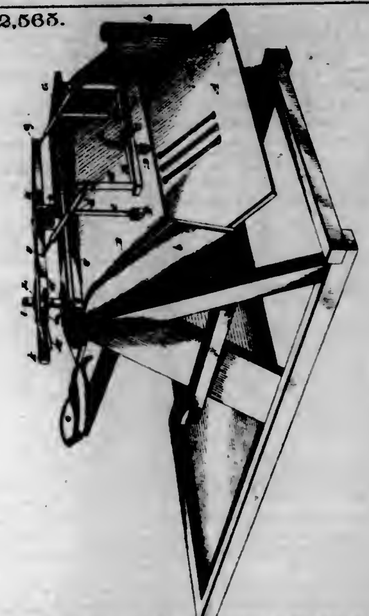
332,565. SELF-BINDING GRAIN-HARVESTER. PRATT A. SPERR, Marshall, Mich. Filed Feb. 19, 1884. (No model.)

Claim.—1. In a self-binding harvester, the combination, with a table or way over which the grain passes to the binding mechanism, of a flap secured at one edge to the harvester-frame, and covering the whole or a portion of said table or way and forming a throat, and devices located within easy reach of the driver and indirectly connected to the other or outer edge of the flap, whereby the front and rear ends of said outer edge can be adjusted relatively to the table or way, substantially as set forth.

2. In a self-binding harvester, the combination, with a table or way over which the grain moves on its passage to the binding mechanism, of a flap connected at one edge to the harvester and covering a portion of said table or way, and a single lever for elevating and lowering the front and rear ends of the other edge of said plate, substantially as set forth.

3. In a self-binding harvester, the combination, with a table or way

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over which the grain passes, of a flap secured at one edge to the harvester, and forming, with the table or way, a throat, and devices for adjusting the outer edge and both ends of said flap or plate, substantially as set forth.

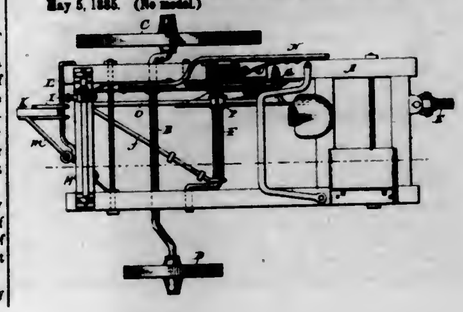
4. In a self-binding harvester, the combination, with a binding-table and a single flap located over the table and secured at its upper or inner end to the harvester-frame, of a lever indirectly connected with the front and rear ends of the outer or lower edge of said flap, substantially as set forth.

5. In a self-binding harvester, the combination, with a single flap or sheet situated above and nearly parallel with the binding-table, and forming, with the binding-table, a throat, of devices for locking the lower or outer edge of the flap in any required vertical adjustment, and devices for adjusting and locking the front and rear ends of the flap in different vertical positions, substantially as set forth.

6. The combination, in a self-binding harvester, of an adjustable throat consisting of a flap or sheet forming, in connection with the floor of a binding-table, a throat, adjusting devices consisting of a perforated bar pivoted to the flap near the middle of its outer edge and passing between the arms of a bracket secured to a supporting-bar, two operating-rods connected with the ends of the flap and with an operating-lever, and a spring-actuated pin constructed to engage a perforated sector-bar, and thereby hold the operating-lever in the required adjustment, substantially as set forth.

7. In a self-binding harvester, an expanding and contracting throat consisting of the binding-table A, in connection with the flap B, and adjusting and operating mechanism, consisting, essentially, of the perforated bar *d*, secured to the flap B, the locking-bracket *e*, the operating-rods G, connecting-rods *f*, the operating-lever K, provided with the spring-pressed lever M and pin N, and bar *l*, the whole being constructed in the manner and for the purpose substantially as set forth.

332,566. FLOW-CARRIAGE. CYRUS B. SPURR, Columbia, Dak. Filed May 5, 1885. (No model.)



Claim.—1. The axle B, having the right-angled crank on the furrow-wheel side and a lesser crank and land-wheel, in combination with the lever N, crank-arm N', and rack N², whereby the frame is made level when the large wheel is in the furrow, or as when both wheels are on the land, as set forth.

2. The combination, with the frame and crank-axle, of the plow-bail E, the elbow-lever G, having the connecting-rod *g*, crank H I, rock-shaft H', brace J, and plow-beam, substantially as shown and described.

332,567. INDIVIDUAL CALL. JOHNSTON STEWART, Edinburgh, County of Mid-Lothian, Scotland. Filed July 10, 1885. (No model.) Patented in England Feb. 21, 1884, No. 3,868.



Claim.—1. In combination with an electric circuit, a current-reversing device at a calling-station, and an electro-magnet or solenoid in said circuit, a magnet and a pendulum, all at a receiving-station, said magnet and solenoid being fixed, one to the pendulum and the other to a support stationary relatively to said pendulum, substantially as and for the purpose set forth.

2. In combination with an electric circuit and means of disturbing the current therein periodically, a pendulum and an electro-magnetic device for vibrating said pendulum, consisting of a solenoid in said electric circuit and a magnetized core, one of said members being fixed to the said pendulum, and the other rigid with the base or support, substantially as set forth.

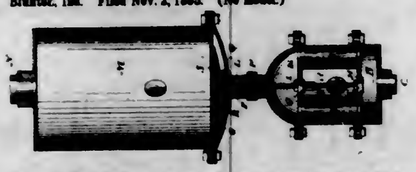
3. In combination with an electric circuit and a current-reversing device, a pendulum and an electro-magnetic device for vibrating said pendulum, consisting of a permanent magnet and an electro-magnet on each side of said pendulum, one member on each side being rigid and the other connected with the pendulum, and the whole being so arranged that the continuous reversal of the current will cause the pendulum to be drawn alternately in opposite directions, substantially as set forth.

4. In combination with an electric circuit and a current-reversing device therein at different stations on said circuit, a solenoid and magnet for each pendulum, one attached to said pendulum and the other rigid, the whole being so arranged that a continuous reversal of the current will cause an alternate attraction and repulsion between said solenoid and magnets, and a consequent vibration of the pendulum, substantially as set forth.

5. In combination with an electric circuit, a metronome, a commutator on the shaft thereof, brushes bearing on said commutator, and respectively in circuit with the battery and the line, and a series of pendulums, each having solenoid and magnetized core, adapted to operate substantially as and for the purpose set forth.

6. In combination with a line-circuit and a device for periodically disturbing the current therein, an electro-magnet in said circuit, a pendulum adapted to be vibrated by said magnet, a local circuit including transmitting and receiving instruments, and a trip or switch adapted to be released by said pendulum, and to automatically break the line-circuit through said magnet and connect said circuit with the local circuit, substantially as set forth.

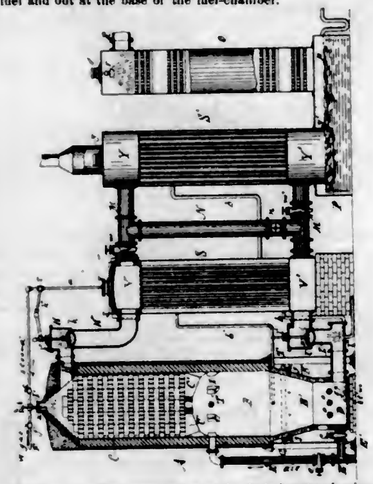
332,568. AUTOMATIC GAS-REGULATOR. ALVIN J. STEWART, Bluffton, Ind. Filed Nov. 2, 1885. (No model.)



Claim.—In a fluid-pressure regulator, the combination of a lower high-pressure chamber having an inlet-pipe and a valve-seat upon the upper side of its top, an upper high-pressure chamber having tubes communicating with the lower chamber, and a stuffing-box in the center of its top, and provided with a valve-seat in the upper side of its bottom, registering with the lower seat and with the stuffing-box, and of a smaller diameter than the lower seat, a low-pressure cylinder secured between the chambers and having outlet-apertures in its sides, an upper low-pressure cylinder having an outlet-pipe in its top, and having a downwardly-bulged bottom provided with a central aperture and with an air-aperture, and provided with curved pipes entering the apertures of the low-pressure cylinder, a diaphragm stretched at the lower end of the upper low-pressure cylinder above its bottom, and a valve-stem having valves fitting upon the seats of the high-pressure chambers, and having its upper portion passing through the stuffing-box of the upper chamber and the aperture in the bottom of the upper cylinder, and provided with a disk at its upper end bearing against the under side of the diaphragm, as and for the purpose shown and set forth.

332,569. APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed May 31, 1884. (No model.)

Brief.—Heating and illuminating gases are made in the same apparatus by combustion of fuel in the decomposing-chamber and of the resulting gaseous products in a steam-superheating chamber, then superheating steam by passage down through such superheater, decomposing it by passage down through the incandescent fuel and conducting the resulting gases off at the base of the fuel-chamber; then, when the apparatus is reduced to the proper temperature, spraying oil into the top of the superheating-chamber by means of a jet of water-gas under pressure, and converting the resulting oil-vapor into hydrocarbon gas by passage through such chamber. The gas formed may be conducted off just below the superheating-chamber, or may be passed down through the fuel and out at the base of the fuel-chamber.



Claim.—1. The combination of the fuel-chamber having a steam-inlet pipe at the base, a chamber containing refractory material located above it, an oil-injecting pipe connected with the top of such chamber, and a gas-discharge pipe leading from the fuel or generating chamber, for the purpose described.

2. The combination of the fuel-chamber, a chamber located above and provided at its top with an injector having connecting-pipes for oil and steam, and a gas-outlet pipe having a valve connecting with the base of the fuel-chamber, for the purpose described.

3. The combination of the fuel-chamber, a chamber containing refractory brick-work directly above, provided with an oil-injecting pipe at the top and a gas-outlet pipe leading from the generating-chamber, for the purpose described.

4. The combination of the fuel-chamber, a chamber containing refractory brick-work located above and provided at its top with an injector having connecting-pipes for oil and water-gas, and a gas-outlet pipe connecting with the base of the fuel-chamber.

5. The fuel and decomposing chamber and the superheating-chamber containing refractory brick-work, arranged in relation to each other, as described, in combination with the steam-inlet pipe at the top of the superheater, and the gas-outlet pipe connecting with the base of the fuel-chamber and with a boiler or water-heater, and having a steam-jet nozzle and a valve, for the purpose described.

6. The decomposing-chamber and fixing-chamber, constructed as described, in combination with a boiler or heater, a pipe provided with a controlling-valve connecting them at the top, and a pipe provided with a controlling-valve connecting them at the bottom, and a gas-outlet pipe leading from the heater.

7. The generator and boiler or heater, in combination with a connecting-pipe, a hollow valve therein having a hollow stem, and a flexible pipe connecting the latter with the steam-drum or other source of steam-supply, for the purpose described.

8. In combination with a gas-connecting pipe of a gas apparatus, a hollow perforated valve having a hollow stem, and a flexible pipe connecting each stem with a steam-chamber, for the purpose described.

9. In combination with the pipe connecting the generator and boiler or heater, a hollow valve having a hollow stem connecting with a steam-chamber, and a steam-pipe connecting with the gas-pipe and adapted to spray steam against the valve, and also exhaust gas from the generator.

10. The combination of the generator, a steam boiler or heater, and a second heater or scrubber, pipes having controlling-valves connecting the generator and boiler at top and bottom, and a pipe having a controlling-valve connecting the boiler and second heater or scrubber at top, for the purpose described.

11. The combination of the generator, a steam boiler or heater, pipes having valves connecting the two at top and bottom, a second heater connected with the wash-box at the base, and having a safety and escape valve at the top, pipe M M', having valve *m m'*, connecting the heaters at top and bottom, and pipe N, having valve *n*, connecting the two pipes, as and for the purpose described.

12. In combination with the generator, the puffing-blast pipe G and inlet-pipes *g*, connecting with the middle portion of the fuel-chamber, and the usual air-blast and steam-supply pipe connecting with the base of the generator.

332,570. ROOFING. WILLIAM H. STEWART, Brooklyn, N. Y. Filed Sept. 7, 1885. (No model.)

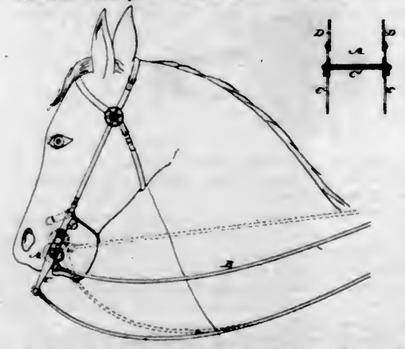


Claim.—1. Roofing-felt made in separate sheets A, having attached in the process of manufacture a flexible strip, E, arranged to extend beyond the edge of A and cover the joint between this sheet and the next, substantially as herein specified.

2. A strip of roofing-felt, A, having a strip of flexible material, E, connected along one edge, and adapted to serve as herein specified.

3. The board D, nails C, and felts A B, in combination with each other and with the muslin or analogous tough flexible strip E and cement M, arranged to serve as herein specified.

332,571. BRIDLE-BIT. A. HOMER TREGO, Philadelphia, Pa., assignor of three-fourths to Edward L. Smith, Jonas Steelman, Jr., and Albert De Cornea, all of same place. Filed Oct. 8, 1885. (No model.)



Claim.—1. A bridle-bit having side pieces with bars pivotally secured to said pieces above the mouth-piece, substantially as described.

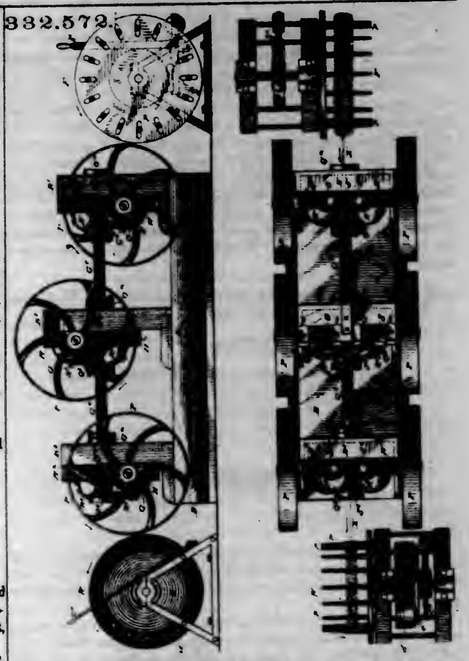
2. The side pieces, C, and mouth-piece C', in combination with the bars D, pivotally secured to said side pieces, and a curb-chain connected with said side pieces, substantially as described.

332,572. MACHINE FOR REDUCING WIRE RODS. WILLIAM TUCKER, East Brookfield, assignor to himself and F. F. Ballard, Palmer, Mass. Filed Mar. 6, 1885. (No model.)

Claim.—1. In an apparatus for reducing rods or bars, the combination, substantially as herein specified, of two or more sets of flat-faced rolls, three or more in a set, the angular pass of the second set of rolls having its angles intermediate to those of the first pass, whereby the angles or edges produced in one pass are opposed to the faces of the rolls, so as to be rolled radially inward at the next pass, and the production of fins is avoided.

2. In apparatus for reducing rods or bars, the combination, substantially as herein specified, of two or more sets of flat-faced rolls, three or more in a set, each succeeding set having the angles of its pass intermediate to those of the preceding pass, and a straight guide extending from

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one pass to the next and corresponding with the former, whereby the metal is continuously guided and its angles or edges produced at the first pass are opposed to the faces of the rolls at the next pass without twisting or deflecting the metal.

3. In apparatus for reducing rods or bars, the combination, substantially as herein specified, of two or more sets of flat-faced rolls, three or more in a set, each succeeding set having the angles of its pass intermediate to those of the preceding pass, and a continuous guide composed of successive sections, coupled end to end by screws, and each made up of a number of radial parts corresponding to the number of rolls in the set, and correspondingly reeled with reference to the section next behind it, for the purposes set forth.

4. In apparatus for reducing rods or bars, the combination of a set of three or more flat-faced rolls and a delivering guide-section on the feeding side, extending inward to the pass of the rolls, and having an angular bore with angles intermediate to those of the pass, and slotted to admit the rolls to the metal within it, substantially as shown.

5. In apparatus for reducing rods or bars, the combination of a set of three or more flat-faced rolls mounted on an upright bed, a corresponding set of struts screwed fast to said bed between the rolls and extending beyond the pass of the rolls on the discharging side, and a receiving guide-section attached to the outer ends of said struts, and having a bore corresponding with said pass and a slotted rear end which penetrates to the pass, substantially as shown.

6. In apparatus for reducing rods or bars, a guide-section composed of three or more radial parts, and having an angular bore formed by truncating the inner angles of said parts, substantially as shown.

7. In apparatus for reducing rods or bars, the combination, substantially as herein specified, of two or more sets of rolls, a receiving guide-section attached to the bed of one set and extending from its pass, a delivering guide-section attached to the bed of the next set and extending to its pass, and a connecting guide-section attached at its respective ends to said receiving and delivering guide-sections, substantially as shown.

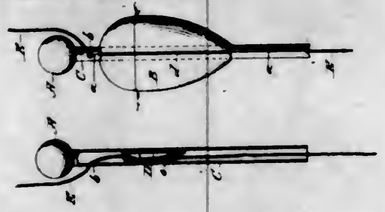
8. In apparatus for reducing rods or bars by means of three or more rolls in a set, the combination, as herein specified, of an upright bed, provided on its face with ways radial to the pass of the rolls, and lugs having screw-tapped bores parallel to said ways, housings for the roll-shafts, having ribbed backs fitted to said ways, and adjusting-screws working through said lugs and swiveled to the outer ends of said housings, for moving the rolls positively inward and outward at will, substantially as shown.

9. The within-described apparatus for reducing wire rods to hexagonal wire, comprising three sets of flat-faced rolls, three in a set, the successive sets of reduced thickness, and with the angles of each of the second and third passes intermediate to those of the one next preceding it, and a continuous guide composed of a delivering-section having a round

bore fitted to the wire rod, sections having a triangular bore corresponding with the first pass, other sections having a reversed triangular bore corresponding with the second pass, and a last receiving-section having a hexagonal bore fitted to the final product, substantially as specified.

10. The combination, substantially as herein specified, of a feeding-reel adapted to support rod-bot coils of wire rod, and provided with a friction-brake or tension device, a reducing apparatus comprising three sets of flat-faced rolls, three in a set, the successive sets of reduced thickness, and with the angles of each of the second and third passes intermediate to those of the one next preceding it, a continuous guide for the metal, and mechanism for driving the successive sets of rolls at different speeds, each roll being driven positively, and a winding-reel having an independently-driven loose pulley and a speed-controlling clutch mechanism, arranged and operating substantially as set forth, for the objects stated.

332,573. FISHING-LINE FLOAT. WILLIAM H. TOWER, Washington, D. C. Filed Feb. 7, 1885. (No model.)



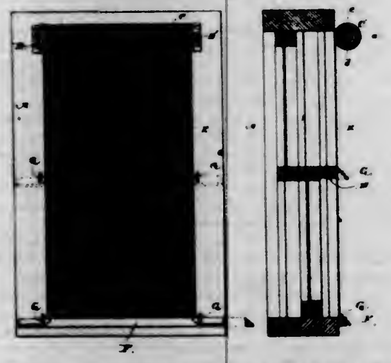
Claim.—1. A float-body, B, having a longitudinal bore, *c*, through it, and a slit, *d*, coextensive with the bore, in combination with the slitted tube C, provided with the aperture *b* for releasing the line, substantially as set forth herein.

2. A float-body, B, having a longitudinal bore through it and a connecting-slit of same length, in combination with the tube C, provided with the slit *a*, the aperture *b*, and the spring D, for clamping the line, all as specifically described herein.

3. A float-body, B, having a longitudinal bore and connecting-slit *d*, in combination with a slitted tube provided with the aperture *b*, the spring D, and the ball A, substantially as specified.

4. A float having at one end a line-attaching device consisting of a slitted tube with an aperture, and suitable means for securing the line at the other end, substantially as described herein.

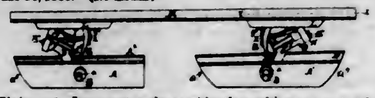
332,574. WINDOW-SCREEN. SAMUEL J. VANCE, Macomb, Ill. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with a window or door frame having the brackets provided with inclined slots, and the pins on the opposite side from the brackets and inclined in the opposite direction from the slots of said brackets, of a spring-roller journaled in the slots of the brackets, a screen on said roller, and the rod F at the opposite end of the screen, said rod being adapted to engage with the inclined pins, whereby the screen is stretched tightly across the frame, its sides being in contact with the sides of the frame, substantially as described.

2. The combination, with a window or door frame having the brackets provided with the inclined slots, and the projecting pins on the side opposite the brackets and inclined in the opposite direction to the slots with the spring-roller journaled in the slots, of the screen secured to the roller at one end and having the stick F at its opposite end, said stick having the projecting beveled ends adapted to bear under the projecting pins, for the purpose set forth, substantially as described.

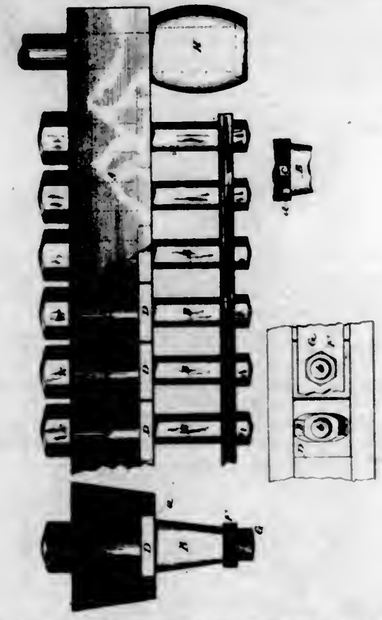
332,575. COASTER. OREN A. WHEELER, Springfield, Mo. Filed June 30, 1885. (No model.)



Claim.—1. In a coaster, the combination, with runners A A' A² A³, of revolving axles B B, wrists D D, sleeves C C, inclined axles-rods E E, supports G G H H, hinged piece I, having a set-screw, K, and a spring-block, F, pieces L L, and top M, all substantially as shown and described.

2. The combination, with axle-rods B B, having washers *a' a²*, and sleeves C C, having shoulders *c c*, and the wrists D D, of the inclined axles E E, hinged piece I, for clamping, a spring-block, F, supports G G H H, and top M, all substantially as shown and described.

332,576. GEARING FOR PRINTING-PRESSES. STURGIS WHITLOCK, Birmingham, Conn. Filed June 15, 1885. (No model.)



Claim.—1. The herein-described improvement in rack for the Napier movement of a printing-press, consisting of the base or bar transversely pierced with holes corresponding to the position of the several teeth, combined with teeth to form the rack, each tooth consisting of a body of a shape adapted to the teeth of the pinion to work thereon, and also constructed with a shank to pass through the corresponding hole in the bar, the face of the rack and base of the teeth constructed to engage each other, whereby rotation of a tooth upon its own axis is prevented and a nut applied to the shank to secure the teeth in the rack, substantially as described.

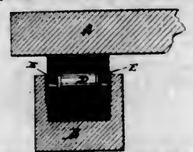
2. The herein-described improvement in rack for the Napier movement of a printing-press, consisting of the base or bar transversely pierced with holes corresponding to the position of the several teeth, combined with teeth to form the rack, each tooth consisting of a body of a shape adapted to the teeth of the pinion to work thereon, and also constructed with a shank to pass through the corresponding hole in the bar, the face of the rack and base of the teeth constructed to engage each other, whereby rotation of a tooth upon its own axis is prevented, and a nut applied to the shank to secure the tooth in the rack, the outer end of the teeth constructed with a stud, correspondingly-pierced bar arranged upon the studs of the several teeth, and nuts upon the studs outside the said bar, substantially as described.

3. The herein-described improvement in rack for the Napier movement of a printing-press, consisting of the rack base or bar constructed with a longitudinal groove, with holes transversely through the bar in said groove corresponding to the position of the respective teeth, the teeth constructed separate from each other, each composed of a body of a shape adapted to the teeth of the pinion to work thereon, and with a shank adapted to pass through the corresponding hole in the bar, and also with a collar adapted to set in said groove and locate the teeth with

relation to each other and to the bar, and provided with a nut whereby the said teeth are secured to the bar, substantially as described.

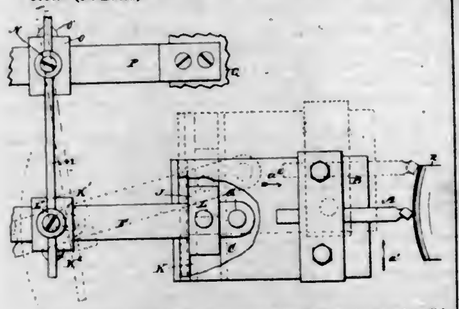
4. The herein-described improvement in rack for the Napier movement of a printing-press, consisting of the rack base or bar constructed with a longitudinal groove, with holes transversely through the bar in said groove corresponding to the position of the respective teeth, the teeth constructed separate from each other, each composed of a body of a shape adapted to the teeth of the pinion to work thereon, and with a shank adapted to pass through the corresponding hole in the bar, and also with a collar adapted to set in said groove and locate the teeth with relation to each other and to the bar, and provided with a nut whereby the said teeth are secured to the bar, the outer ends of the teeth constructed with a stud, a correspondingly-perforated bar set upon said studs, with nuts upon said studs outside said bar, whereby the outer ends of the said teeth are connected, substantially as described.

332,577. SLIDING BEARER FOR PRINTING-MACHINES. STURGIS WHITLOCK, Birmingham, Conn. Filed June 25, 1885. (No model.)



Claim.—In a printing-press, the combination of the type-bed, the trough B, arranged below it and in the line of movement required for the bed, the grooved shoe C, arranged in the bottom of the trough, the corresponding grooved shoe, F, upon the under side of the bed, the grooves of the two shoes in the line of movement of the bed and parallel with each other, a series of rolls, D, the periphery of the rolls corresponding to the grooves in the two shoes, the axis of the rolls at right angles to the path of movement of the bed, and the several rolls connected by bars E, the sides of the trough extending upward, so as to substantially incluse the rolls, and substantially as and for the purpose described.

332,578. TAPER AND PULLEY TURNING ATTACHMENT FOR LATHES. THOMAS H. WORRALL, Meredith Village, N. H. Filed Mar. 5, 1885. (No model.)



Claim.—1. In a lathe, the combination, with a carriage and a sliding tool-holder thereon, of a lever having its inner end movably connected to the carriage and its outer or free end connected to the bed of the same, and intermediate connections between the inner end of the said lever and the sliding tool-holder, substantially as herein shown and described.

2. In a lathe, the combination, with the bed and a carriage thereon, of a sliding tool-holder on the carriage, and a lever pivoted to the carriage and connected to the tool-holder and bed, substantially as herein shown and described.

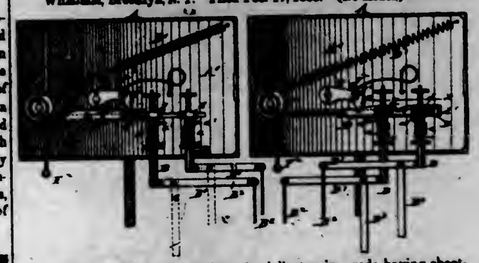
3. In a lathe, the combination, with the bed and a carriage thereon, of a tool-holder fitted in ways on the carriage, a lever pivoted to the carriage and to the tool-holder, and a bar connected to the said lever and to a fixed arm on the bed, substantially as herein shown and described.

4. In an engine-lathe, the combination, with the arm P, fixed on the bed, of the pivoted lever F, connected by a rod, M, with the arm P, the sliding tool-holder, and the link or lever S, connecting the tool-holder and the lever F, substantially as herein shown and described.

5. In an engine-lathe, the combination, with the arm P, fixed on the bed, of the pivoted lever F, connected by a rod, M, with the arm P, the sliding tool-holder, the link or lever S, having a slot, S', and the block S², placed in the slot S' and held on the lever F, substantially as herein shown and described.

6. The herein-described attachment for lathes, consisting of the sliding tool-holder, the pivoted lever F, the link S, pivoted to the lever and holder, and the bar M, swiveled to the said lever and to a fixed support, as specified.

332,579. MUSIC-LEAF TURNER. CHRISTIAN ANDERSEN and SOPHUS WILHELM, Brooklyn, N. Y. Filed Feb. 17, 1885. (No model.)



Claim.—1. The combination of axially-turning rods having sheet-holding fingers and pinions, a guided and spring-actuated slide-bar having a rack at the outer end, a spring-pawl engaging notches of said slide-bar, and a fulcrumed and spring-actuated elbow-lever that is attached to the rear part of the partition of the casing and adapted to engage pins of the slide-bar, so as to move the slide-bar forward for turning one finger after the other, substantially as set forth.

2. The combination of axially-turning and spring-actuated rods having fixed pinions, cut away at one side, arms having leaf-holding fingers, a guided and spring-actuated slide-bar having a rack at the outer end for engaging said pinions, a spring-pawl adapted to engage notches of the slide-bar and having a projecting pin, and a fulcrumed and spring-actuated elbow-lever having a cam engaging the pin of the spring-pawl, so as to release the spring-pawl and cause the return motion of the leaf-holding fingers, substantially as set forth.

3. The combination of axially-turning rods, sheet-holding fingers connected to said rods, pinions keyed to said rods and cut away at one side, a guided and spring-actuated slide-bar having notches, projecting pins, and a rack at the outer end, a spring-pawl having a projecting pin, a fulcrumed and spring-actuated elbow-lever having a fixed cam and a bent-up lower arm, whereby the spring-pawl is released and the slide-bar moved in one or the opposite direction, substantially as set forth.

332,580. METHOD OF PREVENTING SALTPETER EXUDATIONS FROM FORMING ON THE FACES OF WALLS OF BUILDINGS. JAMES C. ANDERSON, Highland Park, Ill. Filed Oct. 2, 1884. (No model.)



Claim.—1. The method herein described of preventing saltpeter exudations and deposits on the face-wall of brick buildings, the same consisting in interposing a coating or layer of an acid and water proof compound applied in a plastic or semi-plastic condition between the front and rear walls, substantially in the manner set forth.

2. A brick wall for buildings, consisting of a front wall of fine face-brick, with a rear wall of coarser brick contiguous thereto, but separated from the front wall by a continuous coating or layer of a composition of paraffine, crude petroleum, and benzine, the front and rear walls being held together by suitable binders or anchors, as set forth.

332,581. HARROW. JAMES E. BARNARD and PETER GRARY, Sterling, Ohio. Filed Oct. 3, 1885. (No model.)

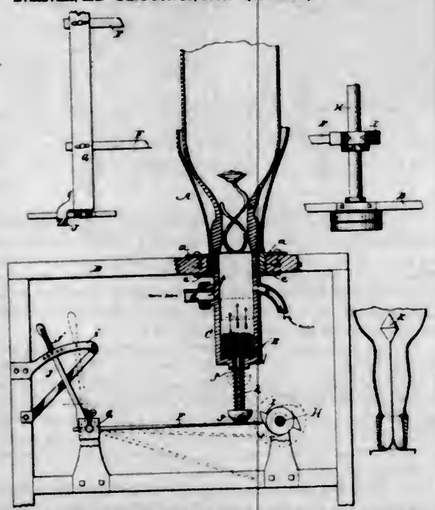


Claim.—1. In a harrow, the combination, with the toothed cylinders having journals secured to each frame-bar, of the toothed bars secured in mortises in the longitudinal frame-bars, the levelers having recesses in their upper surfaces, and the clamp-bars for securing teeth in the recesses in said levelers, said levelers and toothed bars being rigidly secured by notted rods, substantially as shown and described.

2. In a harrow, the combination, with the toothed cylinders, of the toothed bars, the levelers and clamp-bars, said levelers and clamp-bars

having corresponding recesses for securing teeth E, and the notted rods, substantially as shown and described.

332,582. BOTTLE-WASHING APPARATUS. Alfred L. Bernardin, Evansville, Ind. Filed Feb. 18, 1885. (No model.)



Claim.—1. In a bottle-washing apparatus, the combination, with a bottle-holder and a cylinder or plunger-guide placed below the latter, of a reciprocating plunger containing a quantity of shot and having a projecting stem, substantially as shown and described, to operate as specified.

2. In a bottle-washing apparatus, the combination, with a bottle-holder, of a reciprocating plunger, a quantity of shot, and a device, substantially as described, for forcing the plunger upward, substantially as specified.

3. In a bottle-washing apparatus, the combination of a spring-hammer and tripping-cam with reciprocating plunger, the guide-cylinder, and a bottle holder or support, substantially as specified.

4. In a bottle-washing apparatus, the combination of the funnel-shaped inverted bottle-holder, the cylinder pendent beneath it, the shot-forcing plunger having a stem, *f*, having head *g*, a spiral spring encircling said stem, a spring-hammer arranged horizontally, and a tripping-cam, substantially as specified.

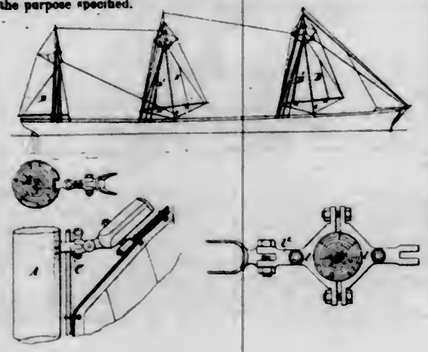
5. In a bottle-washing apparatus, the cylinder having the water-inlet with upwardly-projecting flange or lip and a water-outlet and the shot-forcing plunger working in said cylinder, all arranged as shown and described.

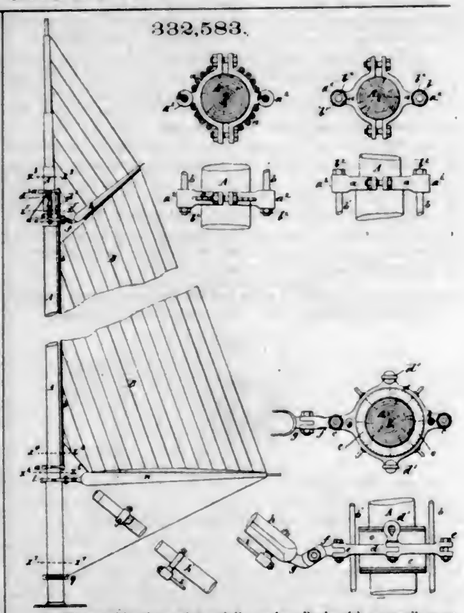
6. In a bottle-washing apparatus, the combination of the plunger, made recessed or cup-shaped, the cylinder for guiding the same, and a bottle-holder, as shown and described.

7. In a bottle-washing apparatus, the combination of the spring-hammers with the cam-shaft, a rotatable bar for holding the hammers, and a device, substantially as described, for locking it in different positions, substantially as specified.

332,583. RIGGING FOR SAILS OF VESSELS. Girolamo Bianchi Genoa, Italy. Filed Sept. 23, 1885. (No model.)

Claim.—1. The combination, substantially as described, with a vessel's mast, of two spanker-sails having their booms and yards connected with the mast, to rotate and slide thereon, substantially as and for the purpose specified.





2. The combination, substantially as described, with a vessel's mast, of two spanker-sails having their yards and booms articulated to collars or carriages connected with the mast, for the purpose specified.

3. The combination, substantially as described, with a vessel's mast, of two spanker-sails having their booms and yards connected with the mast, to slide and rotate thereon, and stay-sails for said mast, for the purpose specified.

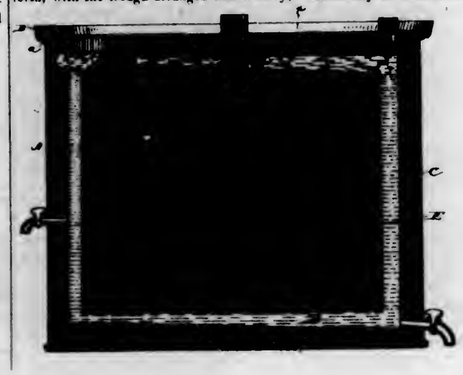
4. The combination, with a mast provided with collars *a* and *a'*, guide-rods *b* and *b'*, secured to said collars, of two spanker-sails, B and B', and their yards and booms *h h'* and *n n'*, articulated to their supports by means of links *f f* and l^2 l^2, to adapt said yards and booms to swing both horizontally and vertically, substantially as and for the purpose specified.

5. The combination, with a mast provided with collars *a* and *a'* and guide-rods *b* and *b'*, secured to said collars, of the fixed collar *l*, sliding panel or sleeve *c*, the yards *h h'*, booms *n n'*, and spanker-sails B B', said parts being constructed and arranged for operation substantially as and for the purpose specified.

6. The combination, with a mast provided with collars *a* and *a'*, guide-rods *b* and *b'*, secured to said collars, and the stay-collar *q*, of the fixed collar *l*, sliding panel or sleeve *c*, the yards *h h'*, the booms *n n'*, and spanker-sails B and B', and their operating chains, halyards, or ropes, said parts being constructed for operation substantially as described, and for the purpose set forth.

332,584. REFRIGERATING-VESSEL FOR COLD STORAGE. Albert M. Blanchard, Ellington, N. Y. Filed July 11, 1885. (No model.)

Claim.—1. The combination, in a refrigerating-vessel, of the outer casing, a center casing or vessel having an inclined bottom, and an inner corrugated vessel having its top wall inclined, for the purpose set forth, with the trough arranged transversely, substantially as described.



332,584.

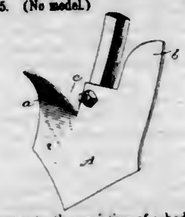


2. The combination, in a refrigerating-vessel for cool storage, which consists of three casings, each concentrically arranged within the other at a suitable distance apart, the center one having an inclined bottom and the inner one an inclined top provided with a distributing-trough and inlet and outlet conductors, substantially as set forth and shown.

3. In a refrigerating-vessel of the character described, the combination of the hollow water-door provided with the hollow hinges for circulating purposes, whereby the cooling-liquid is made to circulate through the door, in the manner and for the purpose set forth.

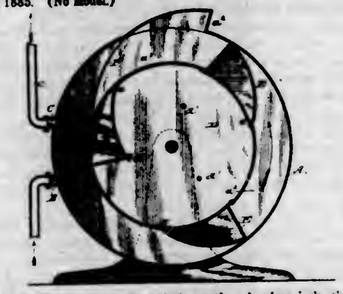
4. The combination, in a refrigerating-vessel made up of an outer casing, a central casing, and an inner casing, the central casing having an inclined bottom, the inner casing an inclined top, the bottom having a trough arranged transversely at one end to the corrugations formed on said top, the outer casings having an outer upturned flange provided with perforations for the escape of water along the sides, all operating together in the manner and for the purpose set forth.

332,585. CULTIVATOR-TOOTH. John T. Bond, Bond's Mill, Ga. Filed Sept. 10, 1885. (No model.)



Claim.—A cultivator-tooth consisting of a body portion of ordinary shape, a wing, *a*, upon one side curved substantially as described, and an extension, *b*, upon the other side, all substantially as described.

332,586. ROTARY PUMP. Jos. F. Bruux, Philadelphia, Pa. Filed May 9, 1885. (No model.)



Claim.—1. The combination of the casing having induction and eduction ports and provided with a division or abutment, the cylinder having closed ends and journaled in said casing and provided with peripheral openings, pistons made of a length equal to the peripheral openings of the cylinder, hinged at one end of said opening and having their opposite ends movable into and out of the cylinder, and stops whereby to limit the inward movement of pistons, substantially as set forth.

2. A cylinder for rotary pumps, closed at both ends and having peripheral openings, and provided with pistons hinged at one end to the end wall of said openings, and fitted to approximately close the same in either their open or closed positions, said pistons being closed on all sides, whereby the in-forcing of one piston will operate to drive another piston out by the action of the water within the cylinder, substantially as set forth.

3. In a rotary pump, the combination of the casing having an abutment, induction and eduction ports, and an enlargement in advance of the eduction-port, the cylinder having closed ends and journaled in said casing, and provided with peripheral openings and internal stops located between said openings and the axis of the cylinder, and pistons made of a length equal to the peripheral openings, hinged at one end to one end wall of said openings and having their opposite ends provided at their inner edges with forwardly-projected flanges or stops, all arranged substantially as set forth.

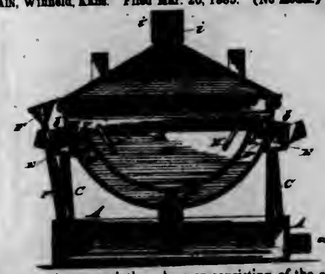
332,587. CORE-LIFTER FOR ROCK-DRILLS. George F. Case, Denver, Colo. Filed Sept. 8, 1885. (No model.)

Claim.—1. A core-lifter consisting of the combination, with a core-barrel and drill, of two oppositely-tapering rings, one of which is formed with a flange extending over the upper end of the other, said rings being located between the core-barrel and drill-bit, substantially as set forth.



2. The combination, with the bit, the core-barrel, and their screw-threaded tubular connection, of an outer and an inner ring, said rings being elastic split rings having oppositely-beveled meeting surfaces, and being located within said tubular connection between the core-barrel and bit, substantially as set forth.

332,588. MACHINE FOR CLEANSING CLOTHES. James M. Chamberlain, Winfield, Kans. Filed Mar. 20, 1885. (No model.)



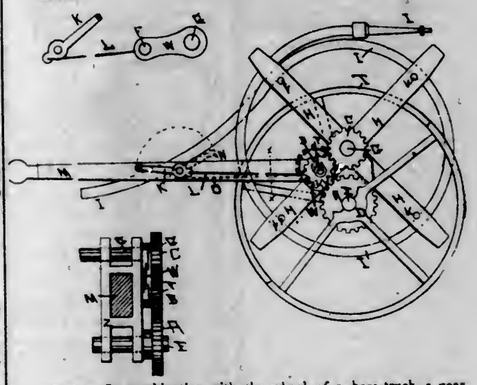
Claim.—1. A steam clothes-cleanser consisting of the combination of a water-reservoir, a clothes-vessel supported above the latter by steam-pipes and provided with steam-chambers, and valves for regulating the escape of steam from said chambers to the clothes-vessel, substantially as set forth.

2. The combination, with a box or water reservoir forming the base of the machine, of a clothes-vessel connected thereto by steam-pipes and formed with steam-chambers, an alarm-whistle, and a cover provided with an escape-pipe, substantially as set forth.

3. In a steam clothes-cleanser, the combination, with the clothes-vessel formed at its ends with upper and lower steam-openings, of partition-cleats separating said openings, and a clothes-frame supported upon said cleats, substantially as set forth.

4. In a steam clothes-cleanser, the combination, with the water-reservoir, of a clothes-vessel provided with a central discharge-tube, and a clothes-frame supported within said vessel and provided with a transverse rest, which is cut away above said discharge-opening of the vessel, substantially as set forth.

332,589. HOSE-TRUCK. Henry P. Cope, Detroit, Mich., assignor of one-half to John H. Bissell, same place. Filed July 18, 1885. (No model.)



Claim.—In combination with the wheel of a hose-truck, a gear-wheel secured to the axle of the wheel, a hose-reel having a gear-wheel secured to its shaft, and a movable gear-wheel adapted to connect said gear-wheels together, substantially as shown and described.

332,590. EXTENSION-TABLE. Siegfried E. Claussen, Portland, Oreg. Filed Sept. 11, 1885. (No model.)

Claim.—1. The combination of the end sections, the metallic frame

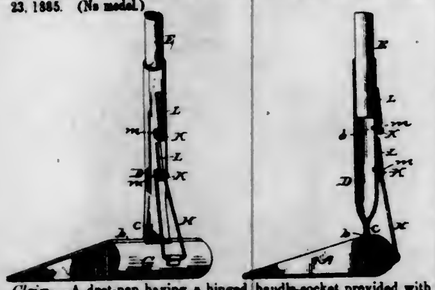
332,590.



having arms secured to the roller-section, and a cross-bar extended between the inner ends of said arms, a roller journaled to the arms of said frame, and a slat belt connected at one end with the roller and at its opposite end with the opposite end section, substantially as set forth.

2. The extension-table herein described and shown, comprising a roller-section provided with a metallic frame having arms secured to such section, and a cross-bar connecting the inner ends of said arms, the roller journaled in said arms, and the extension-slides joined together, forming a series or chain, connected at one end with the slide-section and at its other end with the cross-bar of the roller-supporting frame, substantially as set forth.

332,591. DUST-PAN. Silas Cloud, Huntington, Ind. Filed Sept. 23, 1885. (No model.)

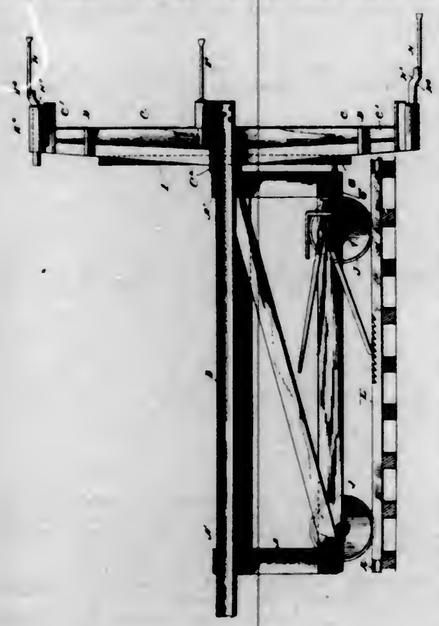


Claim.—A dust-pan having a hinged handle-socket provided with a catch, K, consisting of a spring-tongue formed with a bent end under said catch and entering a recess of said socket, substantially as specified.

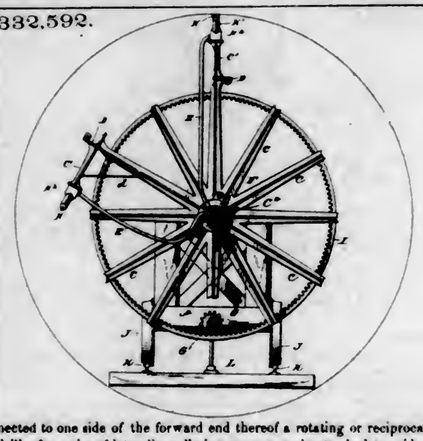
332,592. ROCK-DRILLING AND TUNNELING MACHINE. Robert Dalzell, Waddington, N. Y. Filed Sept. 7, 1885. (No model.)

Claim.—1. In a rock-drilling machine, the combination of a suitable frame carrying a rotating or oscillating tubular shaft having near its forward end a series of laterally-radiating arms having adjustably secured to their outer ends one or more reciprocating or rotary drills, with mechanism for operating the same both simultaneously and separately, substantially as set forth.

2. In a rock-drilling machine, the combination, with a suitable frame carrying a rotating or oscillating tubular shaft having adjustably connected to one side of the forward end thereof a rotating or reciprocating drill, of a series of laterally-radiating arms securely attached to said shaft at or near its forward end and carrying at their forward ends a series of rotating or reciprocating drills, and mechanism for operating the same both simultaneously and separately, substantially as and for the purpose shown and set forth.



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3. In a rock-drilling machine, the combination of a suitable frame carrying a rotating or oscillating tubular shaft carrying a series of radiating arms, said arms being composed of two sections, the outer section of which is adjustably connected to the inner section by hinge or sliding mechanism, whereby the arm may be lengthened or shortened, and carrying upon the outer end a series of rotating or reciprocating drills, with mechanism for operating the same, substantially as described.

4. In a rock-drilling machine, the combination of a suitable frame carrying a rotating or oscillating tubular shaft mounted longitudinally upon the same, and carrying at its forward end a series of laterally-radiating arms having an extension or bracket hinged to the outer end thereof, and carrying a series of reciprocating drills arranged parallel with said shaft, and mechanism for operating the same.

5. In a rock-drilling machine, the combination of a frame or truck with a rotating or oscillating tubular shaft carrying upon its outer end a hub or wheel having upon the periphery thereof a series of rotating or reciprocating drills adjustably connected thereto and arranged parallel to said shaft, with means for operating the same both simultaneously and separately, substantially as set forth.

6. In a rock-drilling machine, the combination, with the brackets formed at their outer ends with the sockets or bearings, of the drill tubes or pistons having the curved or bent forward ends forming shoulders and adapted to be secured in the said bearings in the manner shown and described.

7. In a rock-drilling machine, the combination of a suitable frame supporting a rotating or oscillating tubular shaft carrying a series of radiating arms, each arm being composed of two sections, the outer section of which is adjustably connected to the inner section by hinged or sliding mechanism, and having upon the outer end of each outer section a cylinder, a piston working therein and carrying a drill, and mechanism for operating the drills both simultaneously and separately.

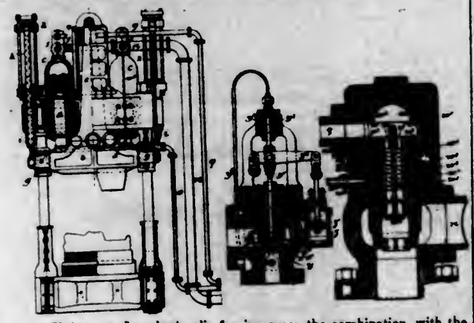
8. In a rock-drilling machine, the combination of a suitable frame supporting a rotating or oscillating shaft carrying one or more radial arms having upon their outer end a cylinder, a piston working in said cylinder and so constructed as to carry a drill in one end thereof, said piston having a bend or set-off for the purpose of enabling the drills to cut an excavation larger in diameter than a circle described by said arms and cylinders thereon combined, so that a clearance will be cut to allow the machine to advance as the work progresses.

332,593. FELLY FOR VEHICLE-WHEELS. Ebenezer Danford, Geneva, Ill. Filed Oct. 16, 1882. (No model.)



Claim.—In a felly for vehicles, the combination of a metallic outer wall, casing, or tube, and a filling of wood or equivalent material separated into divisions or layers, substantially as described, and for the purpose specified.

332,594. HYDRAULIC FORGING-MACHINE. Charles Davy, Sheffield, County of York, England. Filed May 29, 1885. (No model.) Patented in England Sept. 29, 1884, No. 12,920; in France Apr. 27, 1885, No. 168,526; in Belgium Apr. 28, 1885, No. 68,686; in Germany May 3, 1885, and in Italy June 30, 1885, XIX, 18,360, and XXXVI, 277.



Claim.—1. In a hydraulic forging-press, the combination, with the moving cross-head or tool-holder, of a rigid arm or tail-piece extending through the press-head and working in a vertical guide above or beyond the press-head, substantially as shown and described, for the purpose specified.

2. In a hydraulic forging-press, the construction of each pressing-ram in the form of a hollow trunk or cylinder closed at the inner end, and the combination therewith, and with the moving cross-head, of a thrust-rod working on a joint at each end, substantially in the manner and for the purpose specified.

3. The combination and arrangement, substantially as shown and described, of the moving cross-head or tool-holder, its central rigid arm or tail-piece and guide-cylinder therefor, the pair of pressing-ram cases and rams, constructed in the form of hollow trunks, thrust-rods working on universal joints between the rams and cross-head, and the universal joints between the ends of the cross-head and their guide-blocks, all for the purpose of permitting a slight horizontal deviation or rocking motion of the cross-head without throwing undue side strains on the rams and guides of the press.

4. In a hydraulic forging-press, the combination of the cross-head having a rigid tail-piece moving in a guide or cylinder, a pair of hollow pressing-rams acting through universal-jointed thrust-rods, guide-blocks for the cross-heads, with universal joints between the cross-head gudgeons and the guide-blocks, and a pair of lifting-rams connected by pairs of rods and universal joints to the gudgeons of the cross-head, substantially as set forth.

5. The compound automatic valve herein described, consisting of a tubular plug-valve controlling the communication of the pressing-ram cases with the low-pressure main, and surrounded by an annular chamber wherein high-pressure water acts to open the tubular valve, an inner spring-loaded valve opening in the opposite direction to the tubular plug-valve and controlling the communication of the high-pressure main with the pressing-ram cases, the parts being constructed, combined, and arranged to operate automatically, substantially in the manner and for the purpose specified.

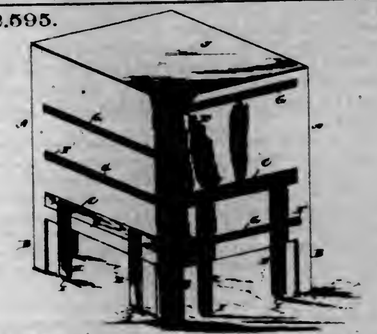
6. The combination, with the floating or pilot valve composed of a balanced tubular plug-valve and an inner or pilot valve combined to operate in the manner described, of a balancing ram and cylinder in communication with the space in front of the valve, said ram and cylinder being of such an area and so applied as to counterbalance the pressure on the face of the pilot-valve, substantially as specified.

7. The combination, with a hydraulic forging-press having pressing and lifting or return rams acting in opposite directions, and of different areas, of an air-vessel, a set of high-pressure pumps, pipe-connections, and valves so arranged and operated that the cross-head will be brought into working position in the manner described, the working-pressure applied by the differential power of high-pressure water acting on the pressing ram or rams opposed by low-pressure water on the lifting ram or rams, and the cross-head raised out of work by the differential power of high-pressure water acting on the lifting ram or rams, and opposed by low-pressure water acting on the pressing ram or rams, whereby power is economized, a quick motion of the cross-head toward and away from its work is obtained, and the same water used over and over again, substantially as specified.

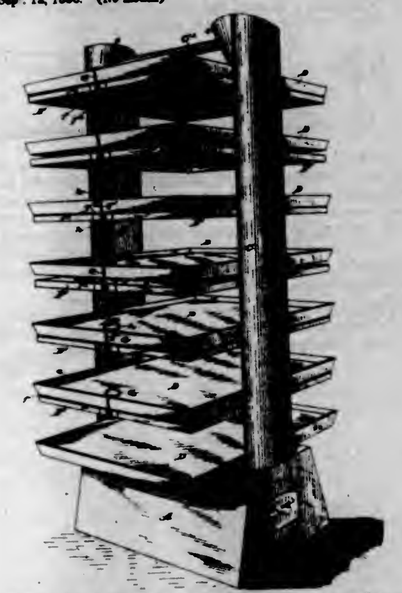
332,595. FRUIT-DRIER. Samuel Dean, North Ogden, Utah. Filed Aug. 19, 1885. (No model.)

Claim.—The combination of a rectangular casing having horizontal apertures in its sides, and having horizontal slots to the sides of the apertures and in a level with the said apertures, trays having perforated bottoms and provided with laterally-projecting trunnions at their inner ends provided with grooved rollers traveling in the slots, and downwardly-projecting supports or legs secured to the outer ends of the trays and provided with casters at their lower ends, as and for the purpose shown and set forth.

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332,596. FRUIT-DRIER. Joseph R. Dew, Knoxville, Tenn. Filed Sept. 12, 1885. (No model.)



Claim.—1. In a fruit-drier, the combination of a boiler, water stand pipes in communication therewith at each end, and having an open mouth or upper end for introducing the water therein, and a series of drying-shelves arranged between and supported by the water-pipes and having a shallow chamber communicating at its middle with the water-pipes, whereby a constant circulation of water is maintained through the boiler, the water-pipes, and the chambers of the drying-shelves and steam permitted to escape through the open mouth of the water-pipes, substantially as described.

2. In a fruit-drier, the combination of the boiler, water-pipes communicating therewith at the lower ends and having open flaring mouths at the upper ends, a transverse pipe, C', connecting the water-pipes at their upper ends, and a series of drying-shelves arranged between and supported by the water-pipes, and having a shallow water-chamber provided with brace-rods e', and having an opening at the middle of each side wall which communicates with the water-pipes, substantially as and for the purpose set forth.

3. In a fruit-drier, the combination of a furnace, a boiler arranged above the same, stand-pipes C C in communication with said boiler, a chimney or exit to the furnace arranged within the casing of the stand-pipe C', and a series of drying-shelves having a water-chamber in communication with the stand-pipes, substantially as described.

4. In a fruit-drier, the combination of a drying-shelf and a perfo-

rated tray having an annular flange and detachably and reversibly suspended from said shelf, as set forth.

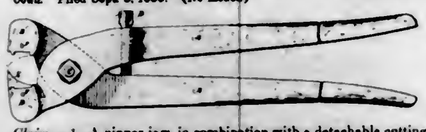
5. In a fruit-drier, the combination of the drying-shelf, a tray provided with an annular flange arranged beneath the shelf and reversible, and suspending devices loosely journaled in bearings at the ends of the tray and having arms to clamp the shelf and tray together, substantially as described.

6. A fruit-drier comprising a furnace, a boiler arranged above the same, stand-pipes connecting with a boiler, a chimney to the furnace arranged within the shell of one of the stand-pipes, a series of drying-shelves arranged between and supported by the stand-pipes, and having a water-chamber communicating centrally with said pipes, a series of trays or pans arranged beneath the drying-shelves, and a clamping bar or rod journaled at each side of the trays and having flanges to engage the shelf and tray to suspend the latter in position, all arranged and adapted to serve substantially as and for the purpose described.

7. In a fruit-drier, the combination, with a drying-shelf and the heating-chamber thereof, of a tray or pan arranged beneath the shelf and having a flange adapted to bear against the lower face of the drying-shelf, and reversible, and clamping devices to suspend the tray from the shelf, substantially as described.

8. The combination, in a fruit-drier, of a drying-shelf having a heating-chamber, a reversible tray or pan having a projecting annular flange, and a suspending device loosely journaled in bearings secured to the tray at each side thereof and having arms adapted to clamp the shelf and tray together, substantially as described.

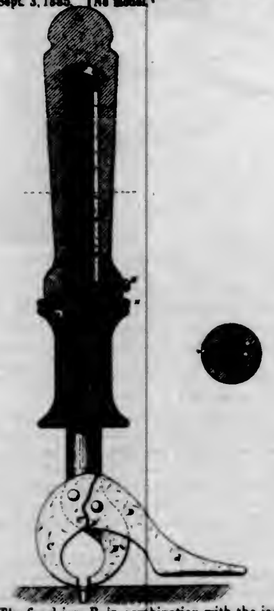
332,597. CUTTING-NIPPERS. GEORGE L. DONOVAN, Meriden, assignor to Augustus C. Burghoff and George S. Wilcox, both of Wallingford, Conn. Filed Sept. 3, 1885. (No model.)



Claim.—1. A nipper-jaw, in combination with a detachable cutting-edge and a fastening device for securing them together, said jaw and cutting-edge being constructed with interlocking recesses, lugs, and beads, which prevent motion either laterally or toward and from the pivot, and act as braces against strain in either direction, substantially as set forth.

2. A cutting-piece, E, having a groove, e', from end to end, in combination with the softer body of the jaw, having beads f' f^2, and the removable locking-pin, substantially as set forth.

332,598. NAIL-DRAWER. GEORGE L. DONOVAN, Meriden, assignor to Augustus C. Burghoff and George S. Wilcox, both of Wallingford, Conn. Filed Sept. 3, 1885. (No model.)

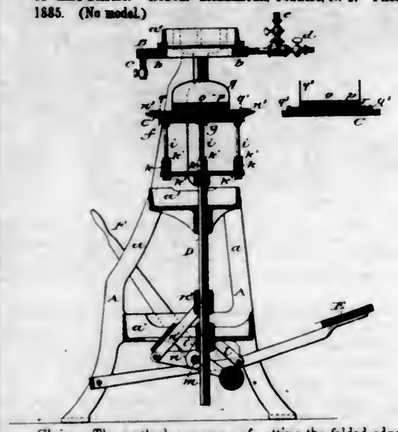


Claim.—1. The fixed jaw B, in combination with the jaw C, which is pivoted thereto, and the arm D, pivoted to fixed jaw B and arranged to engage jaw C, and open it when said arm is brought in contact with the surface into which the nail has been driven, substantially as set forth.

2. The pivoted jaw C, having projection C', and fixed jaw B, in combination with lever D, having horn D', for opening jaw C by contact with projection C', substantially as set forth.

3. In a nail-drawer, the combination of a longitudinally-grooved stem or tang, A, with a longitudinally-movable stock or handle, F, which has a pin or stud, G, extending into said groove, and a supplemental handle or grasping-piece, E, which is fast on said tang, the pivoted jaw C, having projection C', fixed jaw B, and lever D, having horn D', for opening jaw C by contact with projection C', substantially as set forth.

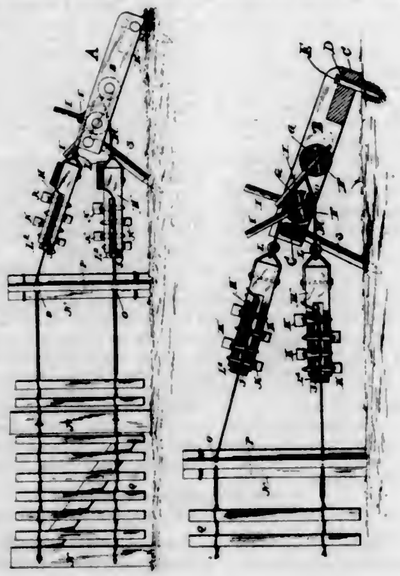
332,599. PROCESS OF SETTING THE FOLDED OR CURLED EDGES OF HAT-BRIMS. RUDOLF EICHMEYER, Yonkers, N. Y. Filed May 12, 1885. (No model.)



Claim.—The method or process of setting the folded edges of hat-brims, substantially as hereinbefore described, which consists in compressing the inwardly-folded edge of a brim while in a cold condition, then, while under pressure, heating said folded portion of said brim, and, finally, while still under pressure, cooling said folded edge.

332,600. FENCE-BUILDING MACHINE. JAMES T. FAIRBURN, Merrillton, Ark. Filed June 10, 1885. (No model.)

Brief.—The wires pass from the coils through the friction-blocks and their ends are secured to a fence-post. The frame is then securely staked to the ground and the wires tightened by turning the rollers. In order to keep the pairs of wires properly spaced, they are passed through holes in a plank detachably secured to the fence-post nearest the work. The wires are twisted by levers placed in front of the friction-blocks.

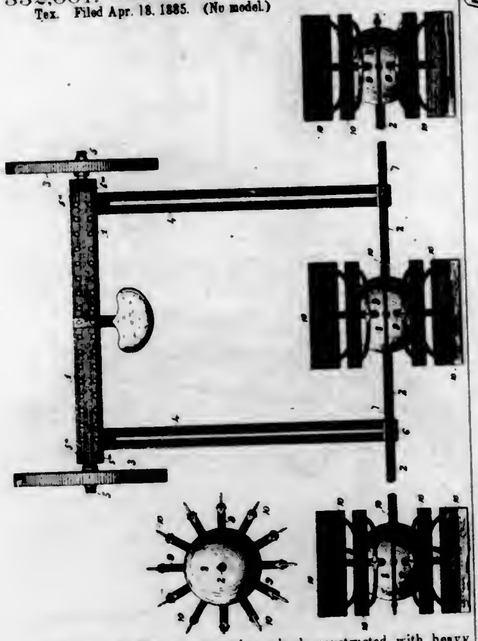


Claim.—1. In a machine for constructing fences, the combination, with the tightening-frame having the transverse tightening-rolls provided with openings to receive the operating-levers, of the ropes or chains wound upon the said rolls, and the friction-blocks swiveled to the ends of the said ropes or chains, substantially as and for the purpose herein set forth.

2. In a machine for constructing fences, the combination, with the tightening-frame, of the wire-guides or friction-blocks consisting of blocks having longitudinal slots at their front ends, transverse perforations intersecting the said slots, pins or pegs seated in the said perforations, and swivel-links at their rear ends, whereby they are connected to the ropes or chains wound upon suitable tightening-drums, substantially as and for the purpose set forth.

3. In a fence-making machine, the combination of the tightening-frame having suitable tightening rollers or drums, the ropes or chains wound upon the same, the wire-guides or friction-blocks having longitudinal slots and transverse pegs through which the fence-wires are rove, said wire-guides being swiveled to the free ends of the ropes or chains wound upon the tightening-drums, and a guide-board secured detachably to one of the posts of the fence under construction, and having properly-spaced perforations through which the wires are rove in pairs, substantially as and for the purpose herein set forth.

332,601. STALK AND CLOD CUTTER. JOHN C. FARLEY, Hearne, Tex. Filed Apr. 18, 1885. (No model.)

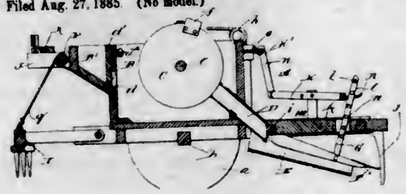


Claim.—1. The rotary cutting-wheels constructed with heavy spherical hubs 8, branching spokes 9, and cutting-knives 10, substantially as herein shown and described.

2. The cutting wheels or rollers consisting of spherical hubs 8, arms 9, and knives 10, in combination with the shaft 7, on which the said spherical hubs 8 of the wheels are secured at any desired distance asunder, as set forth.

3. The combination of the beams 4, secured adjustably at their forward ends in the axle 5, the longitudinally-slotted shaft 7, turning in boxes 6 on the rear end of said beams 4, and the cutting-wheels 8 9 10, secured adjustably on said shaft 7, as and for the purposes herein set forth.

332,602. CORN-PLANTER. ABRAM GLISSON, Rutherford, Tenn. Filed Aug. 27, 1885. (No model.)

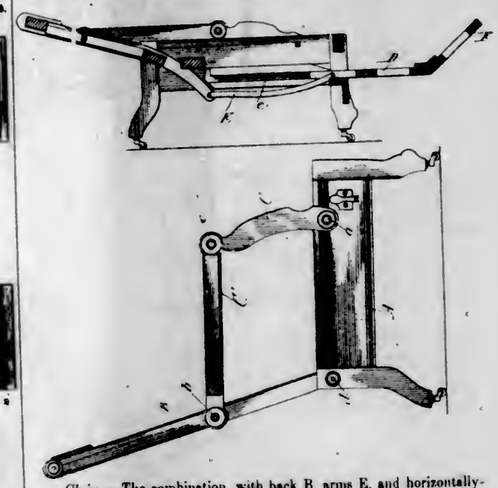


Claim.—1. A corn-planter consisting of the receptacle and chamber, the slide for regulating the passage of the contents of said receptacle, the spring-arm secured to said chamber, and the dropping wheel or disk having the seed or fertilizing carrying cell, the plow or shovel standard arms having lateral pins or studs, the bail-shaped lever carrying forwardly-projecting fingers, the handled roller or shaft connected by cords or straps to said bail-shaped lever, and the harrow, also connected by a cord or strap to said roller or shaft, substantially as shown and described.

2. In a corn-planter, the combination of the harrow pivotally secured at the rear end of the frame, the handled roller or shaft, said harrow being connected to said roller by a cord, and the bell-shaped lever for raising and lowering the plow or shovel standard arms, also connected to said roller by a cord, substantially as shown and described.

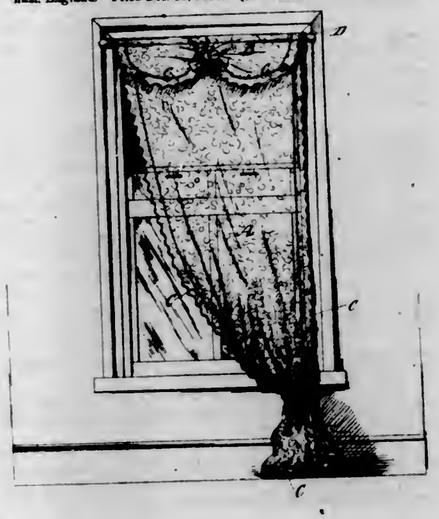
3. The combination, with the driving-wheels, one of said wheels carrying a pawl, and the ratchet-wheel secured upon the shaft of said wheels and gearing with a pinion geared to a third pinion, of the dropping wheel or disk having the seed or fertilizing carrying cell, and carrying screws or projections, and acted upon by a spring-arm, substantially as shown and described.

332,603. RECLINING-CHAIR. JOHN GLOECKLER, Chicago, Ill. Filed Apr. 13, 1885. (No model.)



Claim.—The combination, with back B, arms E, and horizontally-moving frame D, the latter provided with a notched side rail, of pin g, lever k, and springs A n, as and for the purpose set forth.

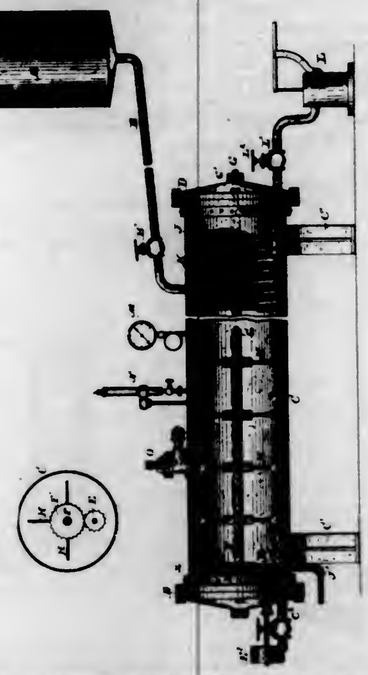
332,604. WINDOW-CURTAIN. FREDERICK H. GOODYER, Nottingham, England. Filed Dec. 13, 1884. (No model.)



Claim.—1. As a new article of manufacture, the window-curtain A, of rectangular form, having an extension on its end, the said extension being festooned from side to side, to form a lambrequin, B, of approximately the same width as the curtain, and made in one piece therewith, substantially as described.

2. As an article of manufacture, the window-curtain A, of rectangular form, having the continuous border C, extended entirely around it, and an extension on its end, with rounded corners, such extension being festooned from side to side, to form a lambrequin, B, of the same width as the curtain A, substantially as set forth.

332,605. **SOAP-MANUFACTURING MACHINE.** WILLIAM A. GRANT, Houston, Tex. Filed Aug. 7, 1885. (No model.)



Claim.—1. Apparatus for soap manufacture, consisting of a charger, a compressor, having a mixer and heating-coil within the same, and a hydraulic pump connected to said compressor, all arranged and combined substantially as described.

2. The charger A, in combination with pipe B, having cock B', compressor C, having steam-coil J within the same, extending from end to end thereof, a rotary mixer within the said compressor, and means, substantially as described, to rotate the same, and a hydraulic pump, L, connected to said compressor by pipe L', having cock L'', substantially as described.

3. The compressor C, having detachable heads D, rigid shaft G, rotary shaft E, having pinion E', means, substantially as described, to rotate the said shaft E, perforated sleeve F, having pinion F', meshing with E', and blades H, substantially as described.

4. A compressor having a mixer consisting of a perforated sleeve provided with blades loosely mounted on a fixed shaft, and carrying a pinion meshing with a pinion mounted on a rotary shaft passing through one of the heads of the compressor, substantially as described.

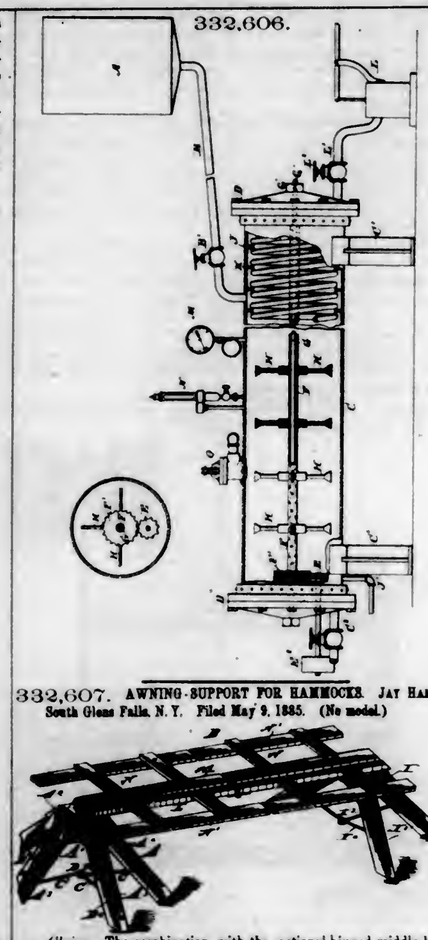
5. The charger A, having outlet-pipe, in combination with compressor C, having within the same a steam-heating coil and a rotary mixer, a hydraulic pump connected to said compressor, pressure-gage M and N, and safety-valve O, substantially as described.

332,606. **MANUFACTURE OF SOAP.** WILLIAM A. GRANT, Houston, Tex. Filed Aug. 7, 1885. (No model.)

Claim.—1. A new process of manufacturing soap, consisting in applying hydraulic pressure to the mass undergoing mixture and steam-heating, substantially as described.

2. A new process of manufacturing soap, consisting in thoroughly mixing the ingredients composing the same in a close vessel by means of rotary blades, heating the same by steam, and at the same time applying pressure by means of a hydraulic pump to the said mixture.

332,606.



332,607. **AWNING-SUPPORT FOR HAMMOCKS.** JAY HAMILTON, South Glens Falls, N. Y. Filed May 9, 1885. (No model.)

Claim.—The combination, with the sectional hinged middle bar, L, sectional top slat, M, and the pivoted cross-bars N, of the sectional side bars, N', pivoted to said cross-bars to serve with the supports, substantially as specified.

332,608. **MEAT-CHOPPING MACHINE.** ANTON HEUSCH, Chicago, Ill. Filed Mar. 31, 1885. (No model.)

Claim.—1. In a meat-chopping machine, the combination, with a meat-receptacle, two cutter-carrying frames, and supports for the same, of two series of cutters mounted in such frames, and suitable gearing for revolving such cutters and frames in opposite directions with respect to each other, as set forth.

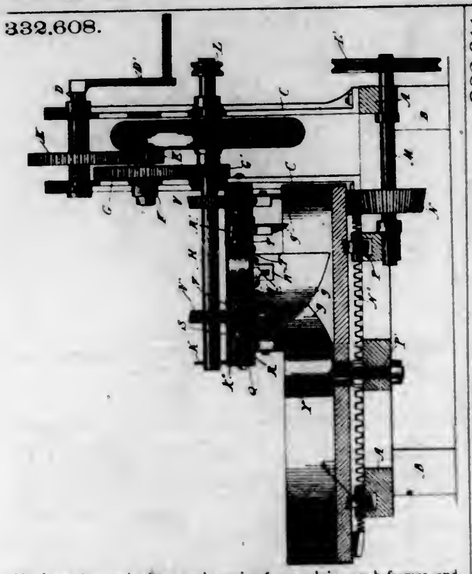
2. In a meat-chopping machine, in combination with a meat-receptacle, gearing for revolving it, two cutter-carrying frames, and supports for the same, of two series of cutters mounted in such frames, and suitable gearing for revolving such cutters and frames in opposite directions with respect to each other, as set forth.

3. In a meat-chopping machine, the combination, with a meat-receptacle, of two circular cutter-carrying frames, one situated within the circle formed by the other, supports for such frames, a series of cutters secured to each frame, and suitable gearing for revolving such frames in opposite directions with respect to each other, as set forth.

4. In a meat-chopping machine, the combination of two circular cutter-carrying frames, each provided with friction-rollers, and one situated within the circle formed by the other, supports for such frames, a series of cutters secured to each frame, and suitable gearing for revolving such frames in opposite directions with respect to each other, as set forth.

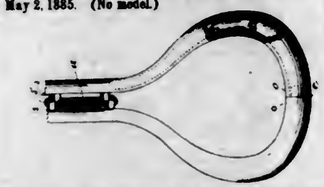
5. In a meat-chopping machine, the combination, with a meat-receptacle, of two circular cutter-carrying frames, one situated within the circle formed by the other, supports for such frames, each of said frames being provided on its lower face with two pieces, W W', cutters remov-

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ably secured to such pieces, and gearing for revolving such frames and knives in opposite directions with respect to each other, as set forth.

332,609. **HARNESS-CRUPPER.** FRANK K. HICKOK, New York, N. Y. Filed May 2, 1885. (No model.)



Claim.—A separable crupper constructed as herein illustrated and provided with the spring *a*, as described, in combination with a metal frame construced with the rule-joints *c c*, socket *n'*, and stud *n*, with a suitable covering, all as herein set forth, and for the purpose specified.

332,610. **FILTER.** BENJAMIN JAMES, Worcester, Mass., assignor to Walter B. James, same place. Filed Apr. 29, 1884. (No model.)

Brief.—Water from a ditch or sewer, A, flows, when the gate B' is open, into a reservoir containing a filter-bed and a perforated pipe, by which it is deprived of its impurities and flows out through the pipe to the river. The gate B is used for flushing the perforated pipe, and also when it is desired to clean up the filter-bed.



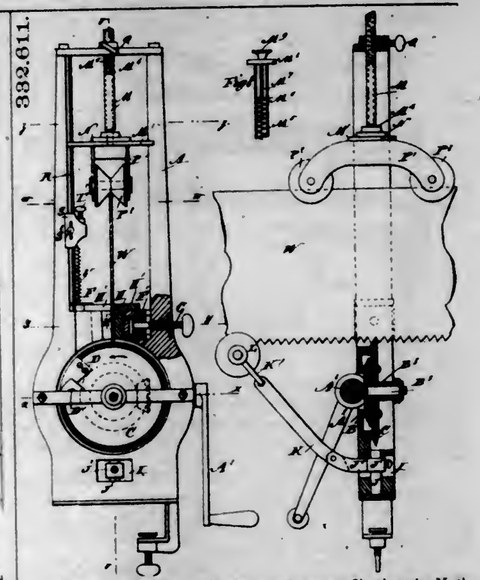
Claim.—The perforated drain-pipe, in combination with the canal, supply-pipe provided with a controlling-gate, the filtering-basin provided with suitable filtering material, and filtering-pipe having gate, substantially as specified, and for the purpose set forth.

332,611. **SAW-SHARPENING MACHINE.** DAVID W. JOHNS, New Albany, Ind. Filed Aug. 27, 1885. (No model.)

Claim.—1. A saw-sharpener having a rotary file or cutting-disk provided with a notch in its rim, in which a plate is held, the outer edge of the plate being on a spiral line, substantially as herein shown and described.

2. In a saw-sharpener, the combination, with a rotary file or cutter having a notch in its edge, of a plate held at one end on the disk and extending diagonally across the recess, and a screw for adjusting the pitch of the said plate, substantially as herein shown and described.

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3. The combination, with a frame, of a rotary file, the tube M, the rod M⁴ in the same, the rollers P², held on arms on the lower end of the rod M⁴, a spring resting on the upper end of the rod M⁴ and contained within the tube M, and a screw for adjusting the tension of the spring, substantially as herein shown and described.

4. In a saw-sharpener, the combination, with a frame, of a rotary file in the same, two guide-pieces above the rotary file, and a screw for adjusting one of the guide-pieces, substantially as herein shown and described.

5. In a saw-sharpener, the combination, with a frame, of a rotary file, guides above the rotary file, and a vertically and laterally swinging arm for supporting the saw, substantially as herein shown and described.

6. In a saw-sharpener, the combination, with a rotary file, of guides above the same, a laterally and vertically swinging arm mounted below the rotary file, and of a grooved pulley on the free end of said arm, substantially as herein shown and described.

7. In a saw-sharpener, the combination, with a frame, of a rotary file, a guide for the saw, a laterally and vertically swinging arm supporting the saw, and a frame above the file, for holding the saw down on the file, substantially as herein shown and described.

8. In a saw-sharpener, the combination, with a frame, of a rotary file, a rod in the top of the frame, rollers on said rod, which rollers are to rest on the top edge of the saw, together with a tube containing a spring acting upon said rod, and a screw working in said tube, substantially as herein shown and described.

9. In a saw-sharpener, the combination, with a frame, of a rotary file, a rod in the top of the frame, rollers on said rod, and a latch for locking the rod, together with a tube containing a spring acting upon said rod and a screw working in said tube, substantially as herein shown and described.

10. In a saw-sharpener, the combination, with a rotary file, of a rod in the top of the frame, a binding-screw for locking the rod in place, and of rollers held on plates on the lower end of the rod, together with a tube containing a spring acting upon said rod and a screw working in said tube, substantially as herein shown and described.

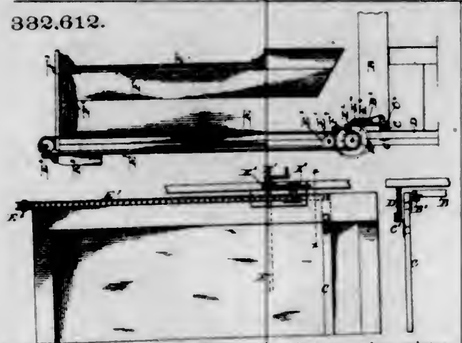
11. In a saw-sharpener, the combination, with the frame A, of the rotary file C, the rod M⁴, the movable cross-piece M', the toothed wheel N, the latch O, the plates P', and the rollers P², substantially as herein shown and described.

332,612. **FOLDING BEDSTEAD.** GEORGE H. KAMBACHER, Columbus, Ohio, assignor to R. Deimel & Brothers, Chicago, Ill. Filed May 23, 1884. (No model.)

Claim.—1. In a folding bedstead, the combination of a foot-board, side rails pivoted thereto, a head-board provided with a cross-bar pivotally secured to the side rails, a front section movable upon the head-board casing, and means for elevating the cross-bar within the casing, substantially as specified.

2. In a folding bedstead, a foot-board provided with a writing-table, and hinged brace A⁹ for supporting the same at any desired angle in an open position, in combination with a compartment extending below the

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hinge of said table and of which the said table forms a door, substantially as specified.

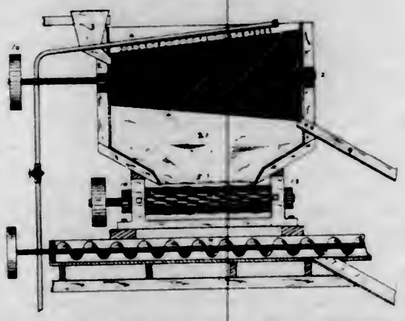
3. The combination of a foot-board provided with a drawer in the bottom portion thereof, a series of drawers at the top thereof, and a series of compartments between said upper and lower drawers, with the door of said compartments sustained by an adjustable brace and adapted to serve as a writing-table, substantially as specified.

4. In a folding bedstead, the combination of the head-board case E, having tracks secured to its sides, and the front section adapted to slide upon said tracks and within said head-board case, with side rails pivoted to a cross-bar and connected to a counterbalancing elevating strap or straps, substantially as specified.

5. The combination of the band or bands E^1, sprocket E^2, pinion E^3, crank-shaft E', with the cross-bar C, having guides C', uprights D, side rails, B, and foot-board A, substantially as shown and described.

6. The combination of the head-case E, side rails hinged to the foot-board, and the cross-bar of the head-board hinged to the side rails, with a crank, gears, and vertical bands for elevating the side rails by their forward extremity, substantially as described.

332,613. MANUFACTURE OF COKE. Isaac M. Kelley, Imperial, Pa. Filed Sept. 13, 1883. (No model.)



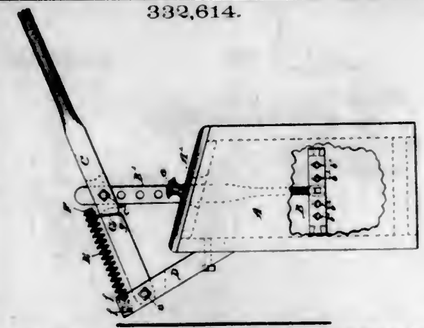
Claim.—1. The method herein described for the manufacture of coke, which consists in first forming a mass for coking by grinding together coal and a liquid hydrogenous matter, whereby the hydrogenous matter is caused to permeate the mass, and then subjecting the mass thus prepared to a coking process, substantially as and for the purposes specified.

2. In a machine for the preparation of coal for the manufacture of coke, a revolving screen, in combination with grinding or crushing devices, and perforated pipes or tubes, arranged, as specified, to deliver liquid hydrogenous matter to the coal during the grinding operation, substantially as and for the purpose specified.

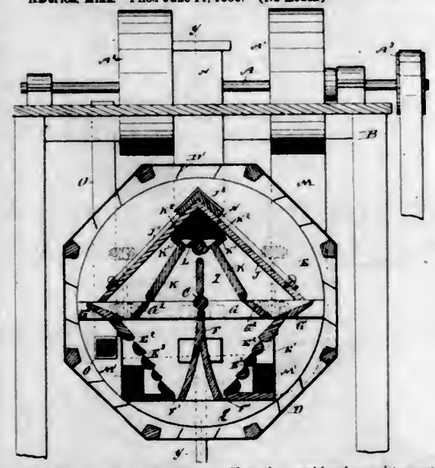
332,614. CHURN. John W. Kerbodle, Winston, N. C. Filed Aug. 29, 1884. (No model.)

Claim.—In churns, the box A, having removable slotted cover A' and fulcral support D, in combination with the lever C, pivoted at c to the support D, notched at *g*, and joined at c^2 to the dasher-rod, the spring E, having plugs at each end, and attached thereby, respectively, to the support D and lever C, rod B', having a series of holes, b^2, to vary its stroke, and dasher B, having rotary agitators B^2, journaled therein, diamond-shaped in cross-section, the whole co-operating in the manner and for the purpose set forth.

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332,615. MIDDLINGS-PURIFIER. William Klosterman, Young America, Minn. Filed June 11, 1885. (No model.)



Claim.—1. In a middlings-purifier, the combination, with a rotary drum provided with elevator-strips on its inner surface, of the box E', the vibrating section G above it, and the peaked top J above the vibrating section, the box E', the section G, and the top J being within the drum, substantially as herein shown and described.

2. In a middlings-purifier, the combination, with the rotary drum D, having elevator-strips on its inner surface, of the box E', the peaked top J, the pivoted partitions K in the same, and the rod L, provided with the cams L', for adjusting the upper ends of the partitions K a greater or less distance from each other, substantially as herein shown and described.

3. In a middlings-purifier, the combination, with a rotary drum having elevator-strips on its inner surface, of the box E', the vibrating section G, having outwardly and upwardly inclined flanges, G', the peaked top J, the pivoted partitions K, and the shaft L', carrying the cams L substantially as herein shown and described.

4. In a middlings-purifier, the combination, with a rotary drum having elevator-strips on its inner surface, of the box E', having slotted partitions E^2, the vibrating section G, the peaked top J, having adjustable partitions K, the air-conducting tube N, connected with the peaked top, the air-conducting tube M, connected with the box E', and means for providing an air-current, substantially as herein shown and described.

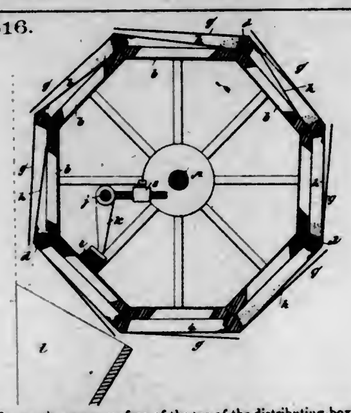
5. In a middlings-purifier, the combination, with a rotary drum having elevator-strips on its inner surface, of the box E', the vibrating section G, the peaked top J, the links L^2, connecting the vibrating section with the ends of the peaked top, and the angle-lever I for vibrating the section G, substantially as herein shown and described.

332,616. MIDDLINGS-PURIFIER. William Klosterman, Young America, Minn. Filed Apr. 10, 1884. Renewed Sept. 15, 1885. (No model.)

Claim.—1. In a middlings-purifier, the combination, with a revolving drum, of a fixed middlings-distributing box within the drum, wings supported within the middlings-distributing box, and means for rocking the said wings, substantially as herein shown and described.

2. In a middlings-purifier, the combination, with a revolving drum, of a fixed middlings-distributing box within the same, and of a series of

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ribs or riffles on the upper surface of the top of the distributing-box, substantially as herein shown and described.

3. In a middlings-purifier, the combination, with a revolving drum, of a fixed middlings-distributing box within the same, and of a series of adjustable ribs or riffles on the upper surface of the top of the distributing-box, substantially as herein shown and described.

4. In a middlings-purifier, the combination, with a revolving drum, of a fixed middlings-distributing box within the same, of a series of adjustable ribs or riffles on the upper surface of the top of the distributing-box, and of means for adjusting the inclination of said ribs, substantially as herein shown and described.

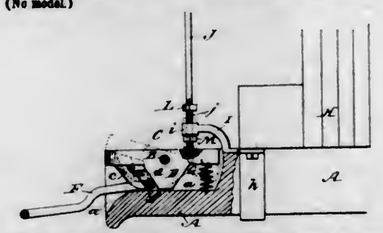
5. In a middlings-purifier, the combination, with a revolving drum, of a middlings-distributing box in the same, a series of ribs having their lower ends pivoted on the upper surface of the inclined top of the distributing-box, and a sliding bar on the top of the said box pivoted to their upper ends, substantially as herein shown and described.

6. In a middlings-purifier, the combination, with an elevator-drum, of a middlings-distributing box held in the same, an air-channel, O, a suction-fan, and one or more screens, M, the part of the box above the screen M being connected with the suction-fan, substantially as herein shown and described.

7. In a middlings-purifier, the elevator-drum D, provided with openings covered with bolting-cloth *b*, metal plates *g*, secured at one edge to the longitudinal ribs or bars of the drum, and the hinged gates *h* between the apertured sides and the plates *g*, substantially as herein shown and described.

8. In a middlings-purifier, the combination, with an elevator-drum, of a middlings-distributing box, the rocking shafts Q in the said box, the wings Q' on the same, the elbow-lever Q^2, connected by a bar, Q^3, and a bar connecting one of the elbow-levers with a revolving disk or crank-arm, substantially as herein shown and described.

332,617. CAR-COUPLING. Adrian T. Lott, Coldwater, Miss., assignor to himself and John L. Gatti, same place. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head A and pivoted and spring-pressed coupling-plate C, having a hook, c, substantially as specified, of the arm I *i* and the screw-rod J, extended to the top of the car, substantially as herein specified.

2. In a car-coupling, the combination, with the draw-head A, pivoted and spring-pressed coupling-plate C, having hook c, the arm I *i*, and screw-rod J, of the stop nuts or collars L N on rod J, substantially as herein set forth.

332,618. BROOM-HOLDER. Oscar Ludwig, Evanston, Wyo. Filed Oct. 16, 1884. (No model.)

Claim.—1. In a broom-holder, the independent side holding-arms formed of the opposite free ends of a single piece of wire attached at or near its middle point to the holder-back, having its free ends extending over and inward toward the center of the holder-back, substantially as and for the purpose described.

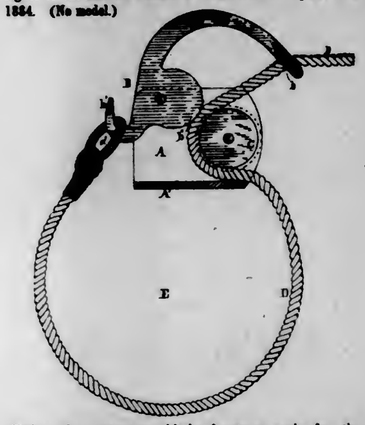
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2. In combination with the main portion or back of a broom-holder, the holders attached to said main portion on opposite sides of its face, which consist each of a single piece of wire, bent at its middle portion into a U shape, parallel with and attached to the back or main portion of the holder, and having its ends bent to extend over the holder-back, to receive and hold the broom-head, substantially as shown and described.

3. In a broom-holder, the back provided on each side with a pair of independent holding-arms formed of the ends of a single piece of wire which has its middle portion bent into a U shape, parallel with and fastened to the back, and at its lower end with a support for the broom-head at or near its attachment to the handle, consisting of the substantially-horizontal arms formed of the ends of a single piece of wire which has its middle portion bent to form a U, parallel with and fastened to the holder-back, substantially as shown and described.

332,619. FODDER-BINDER. Charles E. Holse, Wilmot, Ohio, assignor of one-half to William M. Johnston, same place. Filed Oct. 21, 1884. (No model.)



Claim.—In a temporary binder for straw, grain, &c., the cam-lever B, having a hook, *b'*, at one end and the eye *b* at the other, in combination with the pulley c and a cord having a loop or ring, substantially as and for the purpose described.

332,620. CUFF AND COLLAR BUTTON. Edward B. Nock, Brooklyn, N. Y. Filed June 22, 1885. (No model.)

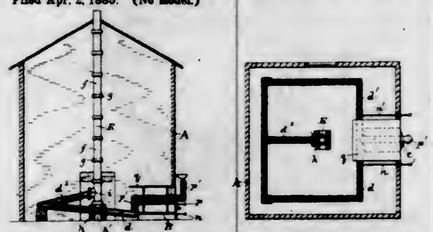


Claim.—1. An improved button having a pair of jaw-disks and a head at the respective extremities of a suitable shank or stem, and provided with a spring tending to keep the jaws closed, the movable jaw-disk having its lever edge opposite said head of the button in line with the stem, substantially as herein specified, for the purposes set forth.

2. The combination, in a button, of two disks and a tubular shank or stem rigidly united with each other, a spiral spring partly within said shank or stem, and a movable jaw-disk hinged to one of the aforesaid disks and acted on by said spring on one side of its hinge, to form a supplemental attaching device, substantially as herein specified.

3. The within-described cuff-button, having at the shoe end of its shank or stem a pair of jaw-disks united by a transverse pintle and forming jaws to take hold of the wrist-band of a shirt-sleeve, and provided with a jaw-closing spring, the back disk being the movable jaw-disk, and having its lever edge substantially in line with said stem, for attaching and detaching the button, and therewith the cuff, in the manner set forth.

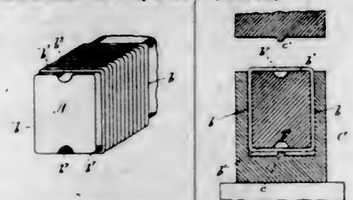
332,621. TOBACCO-CURING HOUSE. JOB OSBORN, Raleigh, N. C. Filed Apr. 2, 1885. (No model.)



Claim.—1. The combination of an upright sectional fire-clay flue, a supporting-foundation open below the flue, and a flue-stopper entered in the end of the flue at said opening in the foundation, as set forth.

2. A tobacco-curing house having in combination the walls, an upright yielding fire-clay flue inside the house, an iron furnace, two horizontal iron smoke-flues, each leading from the furnace in an opposite direction and each provided with a damper, and an escape-flue, *p'*, leading directly from the furnace through the wall and provided with a damper, as shown and described.

332,622. METHOD OF MAKING BUCKLE-BLANKS. THOMAS O. POTTER, Boston, Mass. Filed May 2, 1885. (No model.)



Claim.—The method of making buckle-blanks, consisting in winding wire continuously about an arbor or form having the inside configuration of the buckle, and then submitting the wire to a forming operation or manipulation by suitable dies, whereby the wire is brought to the shape of the arbor or form, and in then cutting the wire longitudinally upon the arbor or form to form independent or separate blanks, all substantially as and for the purposes described.

332,623. LUBRICATOR. JAMES POWELL, Cincinnati, Ohio. Filed Oct. 8, 1885. (No model.)



Claim.—1. The combination, in a grease-cup, of a fount or reservoir having a ventage, a spring-actuated piston for effecting a forced feed of the turgid lubricant, a cut-off for regulating the discharge of the same, and a hood or cover which is screwed to said fount and imparts the tension to said spring, substantially as described.

2. The combination, in a grease-cup, of a fount or reservoir having a ventage, a spring-actuated piston for effecting a forced feed of the turgid lubricant, a hood or cover which is screwed to said fount and imparts the tension to said spring, and a stem or rod projecting outwardly from said hood to indicate the exact level of the grease, as herein described.

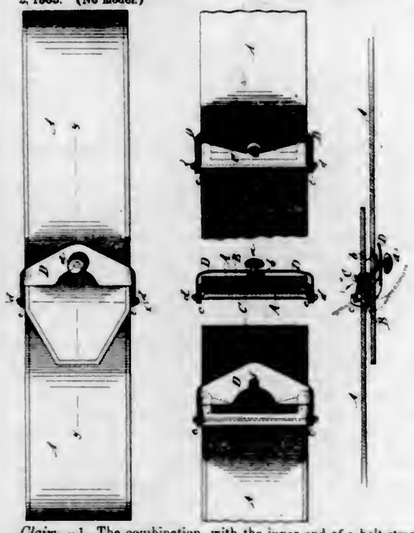
3. The combination, in a grease-cup, of a fount or reservoir having a ventage, a spring-actuated piston for effecting a forced feed of the turgid lubricant, a hood or cover which is screwed to said fount and imparts the tension to said spring, and a stop applied to the outer end of the piston-rod, for the purpose specified.

4. The combination, in a grease-cup, of a fount or reservoir having a ventage, a piston for effecting a delivery of the turgid lubricant, and a spring surrounding the rod of said piston and interposed between the latter and a hood or cover, said cover being screwed to said reservoir and serving to impart the tension to said coiled spring, substantially as herein described.

5. A grease-cup composed of the following elements: a fount or reservoir, A, hood or cover I, piston N M, spring O, regulator D, channel or port E C, and stop R, substantially as herein described.

6. The combination, in a grease-cup, of a fount or reservoir having a suitable ventage, a spring-actuated piston for effecting a forced feed of the turgid lubricant, a cut-off for regulating the discharge of the same, and an air-vent located within said cut-off, for the purpose described.

332,624. WAIST-BELT. MAX RUBIN, New York, N. Y. Filed Sept. 2, 1885. (No model.)



Claim.—1. The combination, with the inner end of a belt-strap, of a guide-plate, means for adjusting said guide-plate, a buckle-plate pivoted to said guide-plate and having a recess at its inner edge, and a fixed tongue or button attached to the outer end of the waist-belt, substantially as set forth.

2. The combination of a belt-strap, a guide-plate applied to the inner end thereof, a serrated clamping-plate pivoted to the guide-plate back of the belt-strap, and a buckle-plate also pivoted to the guide-plate and provided with a larger recess at its inner edge for the passage of the head of the button and a smaller recess for the shank thereof, substantially as set forth.

3. The combination of a belt-strap, a serrated clamping-plate provided with pivot-pins, a guide-plate having backwardly-bent ears pivoted to said pins, a buckle-plate also pivoted to said pins and provided with a recess at its inner edge, and a fixed tongue or button attached to the outer end of the belt-strap and adapted to engage the recess of the buckle, substantially as set forth.

332,625. FASTENER FOR HAND-SATCHELS. MAX RUBIN, Brooklyn, N. Y. Filed Oct. 9, 1885. (No model.)



Claim.—The combination, with a purse or satchel frame, of an inclined post having a rounded end projecting from one part of the frame and an inclined plate secured to the other part of the said frame and provided with a slot corresponding in shape with the end of the said post, substantially as herein shown and described.

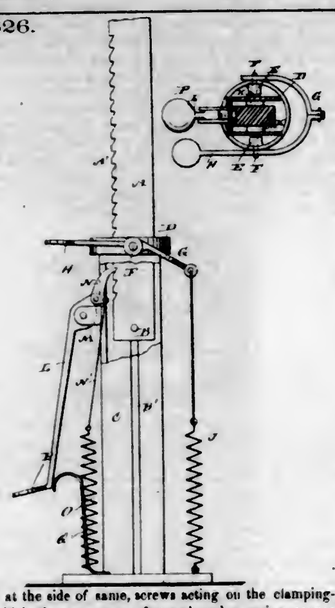
332,626. LOWERING MECHANISM FOR DENTISTS' CHAIRS. L. STUCK, Hart, Mich. Filed May 19, 1885. (No model.)

Claim.—1. The combination, with uprights, of a tapered sliding bar, clamping-plates at the sides of the sliding bar, screws acting on the clamping-plates, and a lever to which the screws are secured, substantially as herein shown and described.

2. The combination, with uprights, of a tapered sliding bar, clamping-plates at the sides of the bar, screws acting on the clamping-plates, a lever to which the screws are secured, and an arm on said lever, substantially as herein shown and described.

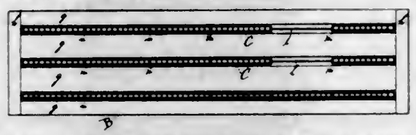
3. The combination, with an upright, of a tapered sliding bar, clamping-plates at the side of same, screws acting on the clamping-plates, a lever to which the screws are fastened, and a spring connected with the lever, substantially as herein shown and described.

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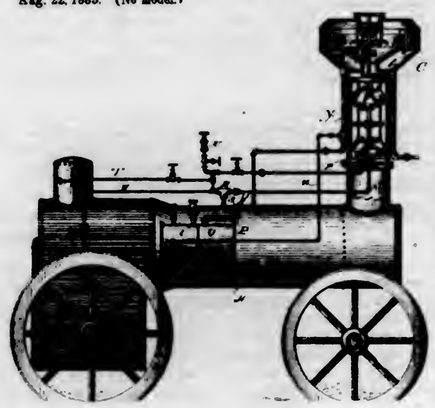
4. The combination, with the uprights C, of the ring D on the same, which ring has nuts E, the screws F in the nuts, the lever G, to which the screws are secured, the sliding bar A, the clamping-plates K at the sides of the same held on the inner ends of the screws, and of the arm H, and the screw J, substantially as herein shown and described.

332,627. BOOK-SHELF. CHARLES B. TAYLOR, Denver, Colo. Filed June 10, 1885. (No model.)



Claim.—A book-shelf constructed of longitudinal strips fastened at their ends by the end pieces, with openings between said strips extending from end piece to end piece, in which openings are set short rollers on shafts extending from end piece to end piece of the shelf, the rollers projecting above the strips, and the shafts supported on sheet-metal pieces fastened to the under side of the strips, and forming bearings for the shafts, and projecting up into the spaces between the strips, substantially as described, and for the purposes set forth.

332,628. SPARK-ARRESTER. THOS. THORNTON, Tidioute, Pa. Filed Aug. 22, 1885. (No model.)



Claim.—1. The combination, with the smoke-stack, of a rotating disintegrating-wheel provided with propeller blades or vanes curved as described, a central hollow stack adapted to rotate, and steam-nozzles for propelling said wheels by causing the steam to impinge against said vanes, as set forth.

2. The combination, with a smoke-stack, of a spark arrester and extinguisher, the latter consisting of a cylindrical cage having wheels at each end, the hubs of which form journals, and a hollow shaft adapted to rotate, said shaft having curved vanes, and steam-nozzles for throwing the steam against said vanes for rotating the shaft, for the purpose set forth.

3. A hollow shaft contracted at its end and carrying spark arresting and disintegrating wheels, and steam-jet nozzles arranged to cause the steam to impinge against the curved vanes of said wheel for rotating it, in combination with a smoke-stack, substantially as set forth.

4. In combination with a smoke-stack jointed to tilt near its base, a spark arrester and extinguisher composed of a cylindrical cage having hubs which form journals, and a hollow shaft into which an exhaust-pipe enters, the lower hub of said cage having a flaring entrance to permit its tilting without disturbing the exhaust-pipe, in the manner shown and described.

5. A smoke-stack having a spark arrester and extinguisher rotating on a hollow shaft, in combination with a perforated cup forming a supplemental extinguisher and a spark and cinder arrester, the latter having discharge-pipes, as described.

6. The combination, with a smoke-stack having arresting, extinguishing, and disintegrating devices, of a dead spark and cinder receptacle, and a supplemental rotating extinguishing device arranged in the cap or hood of said stack, and a dependent valved escape-cylinder, all operating together substantially as described.

7. As an attachment for smoke-stacks, a spark arrester, extinguisher, and disintegrator constructed and arranged to rotate within a stack, in combination with a supplemental extinguisher and a down-jet to draw the cinders downward in their passage, and an up-jet to draw them upward to their exit, substantially as shown.

8. In a smoke-stack for locomotives and portable engines, the combination of the main spark-arrester having vanes and nozzles for rotation, a fly or balance wheel, and a supplemental spark-extinguisher, and means for creating an upper draft therein, and with supply and exit pipes, all arranged for joint operation substantially as herein shown and described.

9. The combination, in a smoke-stack, of a spark-extinguisher having a hollow shaft, the bore of which is of unequal diameter, and adapted to carry disintegrating-wheels and extinguishers, the said hollow shafts having also communicating steam-nozzles, as described, and a stationary live-steam nozzle secured in the stationary portion of the stack, all arranged to operate substantially as described.

332,629. CASTER. WELLS VAN VALKENBURGH, Oneida, and DANIEL E. TEAL, Oneida Castle, N. Y. Filed Feb. 19, 1885. (No model.)



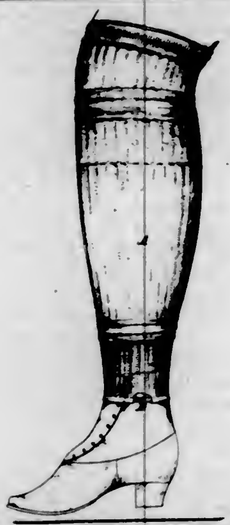
Claim.—1. A caster composed in part of a pintle that is provided at its lower end with a head, above which may be journaled the frame or yoke of the roller, and has its body above said yoke threaded, to adapt it to screw into and be adjustable longitudinally within an article of furniture, in combination with a nut for locking said pintle in position when adjusted, and an interiorly-threaded washer that is adapted to form the upper bearing for said yoke, substantially as and for the purpose shown.

2. The hereinbefore-described caster, composed of the pintle A, provided with the head *a* and having a threaded periphery, the yoke B, carrying the roller C, the washer-bearing D, and the nut F, in combination with the ferrule G on the leg or equivalent part of a piece of furniture, substantially as and for the purpose described.

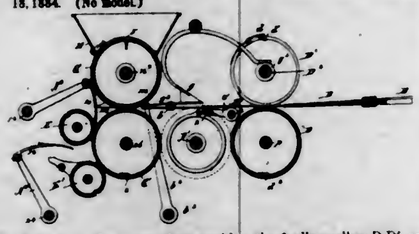
332,630. LEGGIN. J. HOWARD WAY, Philadelphia, Pa. Filed Sept. 27, 1884. (No model.)

Claim.—As an improved article of manufacture, a knit leggin formed to terminate at the ankle of the wearer, and provided at its lower end with a circular elastic band of such thickness as to engage the buttons or fastenings at the upper part of the shoe of the wearer, and thus be held against displacement, substantially as specified.

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332,631. PAPER-BAG MACHINE. Daniel Appel, Cleveland, Ohio, assignor to the Eastern Paper Bag Company, Hartford, Conn. Filed Aug. 18, 1884. (No model.)



Claim.—1. In a paper-bag machine, the feeding-rollers D D', provided with the knives d d^2, to slit the tube longitudinally and cut it transversely from the slits to the edges of the tube, and provided, respectively, with the diagonally-placed crimping-blades, and notches or equivalents to pass each other and crimp the tube from the ends of the slits outward toward the edges of the tube, substantially as described.

2. The two main feeding-rollers and the slitting-knives d, and knives d^2, connected therewith to cut the tube transversely, combined with the former, arranged in front of the said rolls, and with the tongue extended between and back of the said rolls, substantially as described.

3. The spring-tongue located within the paper tube, combined with the roller 2 and with means, substantially as described, to operate the roller and lift the tongue and to sever the upper ply of the tube, as set forth.

4. The former, the feed-rollers provided with the knives d d^2, and the tongue extended between the feed-rollers, and having a widened upturned end, combined with means, substantially as described, to lift the end of the tongue and cause it to effect the cutting of the upper ply of the tube between the short transverse edge cuts f f, substantially as set forth.

5. The roller G', provided with the knife 4, combined with the roller G, provided with the closing-bar, and means, substantially as described, to move it radially and open a space for the said knife when it is to act to sever the central part of the under ply of the tube, substantially as set forth.

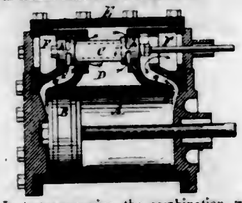
6. The nose g, provided with the recess h', combined with the tongue provided with a projection, 4, and a roller and actuating-cam therefor to operate said tongue to cut a lip for the mouth of the bag, substantially as described.

7. The rollers G' and E, combined with the tucking-blade composed of the short finger 12 and the bifurcated fingers 29, to operate substantially as described.

8. The former, the feeding-rolls provided with the knives d d^2, the tongue extended between them, means, substantially as described, to lift the said tongue to cut the upper ply of the tube and lift it above the nose, and the nose g, combined with the rollers G G', carrying the pasting device and the knife 4, to operate substantially as described.

9. The former, the feeding-rolls provided with the knives d d^2, the tongue extended between them, means, substantially as described, to lift the said tongue to cut the upper ply of the tube and lift it above the nose, and the nose g, combined with the rollers G G', carrying the pasting device and knife 4, and with the rollers E E', and two tucking-blades, all arranged to operate substantially as set forth.

332,632. PISTON-VALVE. Pardon Armington, Providence, R. I., assignor to the Armington & Sims Engine Company, same place. Filed Jan. 2, 1883. (No model.) Patented in England Aug. 16, 1882, No. 3,914; in Italy Sept. 4, 1882; in Sweden Oct. 11, 1882; in Austria Oct. 13, 1882, No. 28,161; in France Nov. 14, 1882, No. 150,660; in Germany Dec. 30, 1882, No. 22,828 and No. 23,636; in Spain Feb. 3, 1883; in Norway Apr. 24, 1883, and in Russia June 20, 1884, No. 4,747.

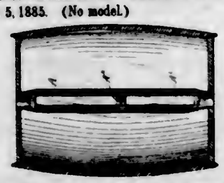


Claim.—1. In a steam-engine, the combination, with the valve C, constructed substantially as described, of two valve-cases constructed to receive the two ends of the valve, and provided with port-openings and exhaust-passages, said exhaust-passages being located in alignment with the ends of the valve, and the latter being at all times exposed to the live steam, as described and shown.

2. The combination, with a tubular valve having annular openings near each end, constructed to admit steam from the steam-chest to the cylinder at both ends of such valve simultaneously, of a valve-case constructed to receive the ends of the valve, but open in the center, and the cover E, the whole constructed to expose the valve to view and facilitate the adjustment of the same, as described.

3. The combination, with a steam-engine cylinder, of a cylindrical valve constructed to control the admission and exhaust of the steam at both ends of the cylinder when the center of the valve is exposed to the live steam only, and open to view for adjustment by the removal of the cover E of the valve-chest, as described.

332,633. BOX-VENTILATOR. William T. Atterbury, Donnellson, Ill. Filed Oct. 5, 1885. (No model.)



Claim.—The herein shown and described ventilator for crates and barrels, consisting of a tube made of a single piece and provided with a series of longitudinal slots extending nearly its whole length, and a ring located midway therein to sustain outward pressure, the ends of the tubes being open and presenting the shape of truncated cones, as and for the purposes specified.

332,634. HARNESS-TRIMMING. William Boese, Newark, N. J. Filed Feb. 10, 1885. (No model.)



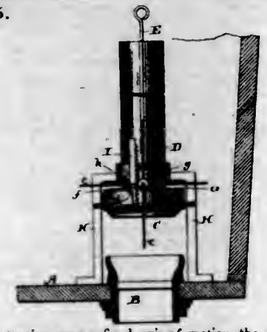
Claim.—A harness-mounting having undercut grooves or other undercut or dovetail recesses and perforations through said recesses, which are filled with rubber or other plastic material forced into such recesses and hardened, whereby portions of the mountings are covered and the filling is held in place, as set forth.

332,635. VALVE FOR WATER-CLOSET SUPPLY-TANKS. William Bunting, Jr., Boston, Mass., assignor to the Meyer-Sniffen Company, (Limited,) New York, N. Y. Filed Oct. 5, 1885. (No model.)

Claim.—1. In combination with the stem or body of any of the usual forms of lifting and dropping valves elevated by a positive connection with the valve-lifting mechanism of the water-closet, a rotatory fan-like device geared to the valve-stem, or some attachment thereof, and mounted upon a fixed axis, all substantially in the manner and for the purposes hereinbefore set forth.

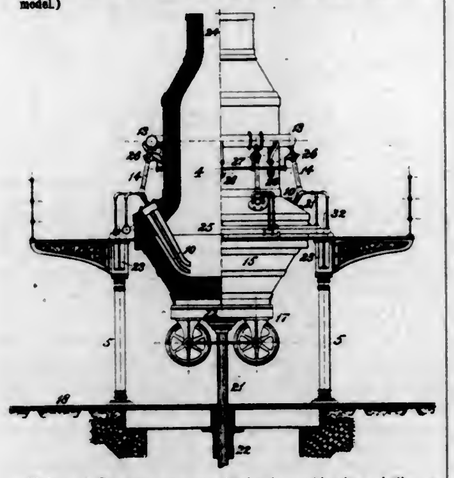
2. In a valve mechanism composed of a valve of any of the usual forms of lifting and dropping valves, and a rotatory fan-like device geared

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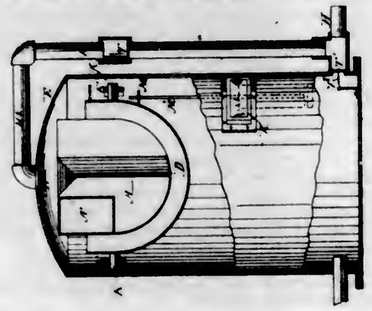
therewith and turning upon a fixed axis of motion, the arrangement of the toothed rack of the valve and the pinion of the fan-like device or paddle-wheel relatively with the valve-seat, so that the said rack and pinion will run out of engagement before the valve reaches its seat, substantially as and for the purpose specified.

332,636. CONVERTER FOR THE MANUFACTURE OF IRON AND STEEL. Edward M. Buth, Allegheny, Pa. Filed June 1, 1885. (No model.)

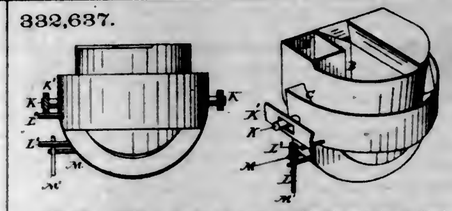


Claim.—A Bessemer converter having in combination a hollow or chambered main body or upper section provided with a gas-escape or blowing-hole in or approximately in line with its vertical axis, and a flaring or outwardly-tapered lower throat or opening, a series of fixed tuyeres entering the same through its flaring portion, said tuyeres being oblique to and having their discharge-openings directed toward the vertical axis of the converter-body, a series of columns or standards supporting the body at points adjacent to the outer edge of its lower throat, and a separable and removable bottom of suitable capacity to contain the entire charge of molten metal to be treated, substantially as set forth.

332,637. OSCILLATING WATER-METER. Joseph W. Byrne, Boston, Mass. Filed Feb. 9, 1885. (No model.)



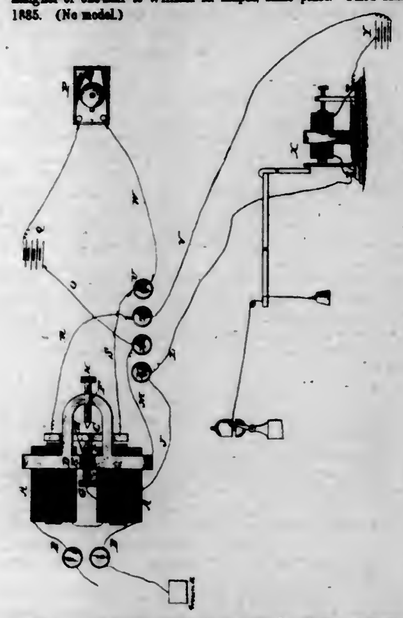
332,637.



Claim.—1. In a water-meter, the combination of the oscillating meter-vessel having compartments A, A', B, B', C, D, and with the cylinder E, and supply-pipes H H^2 H^3, all operating together substantially as described, and for the purposes set forth.

2. In the water-meter, the combination of the chamber E, the oscillating meter-vessel A, A', B, B', C, and D, with the registering device consisting of the pin M, the piston-rod M', the piston S, tube T^2, lever M^2, pawl P, and registering-wheel R, all operating together substantially as described, and for the purpose set forth.

332,638. ELECTRIC FIRE-ALARM. Sidney A. Chase, Evart, Mich., assignor of one-half to William R. Mapes, same place. Filed Mar. 14, 1885. (No model.)



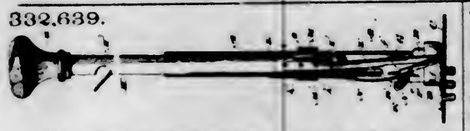
Claim.—As an improvement in electric fire-alarm apparatus, the combination, with an electro-magnet located in the main-line circuit and having the usual metallic yoke, of the two contact-screws, one of which is in direct contact with the metallic yoke, while the other passes through an insulated aperture in the said yoke, and the armature arranged to come in contact with the insulated contact-screw when attracted by the magnets of the electro-magnet, and to come in contact with the uninsulated contact-screw when the main-line circuit is broken, an alarm-releasing instrument located in a normally-closed local circuit, one of the wires leading from its electro-magnet connecting with the insulated contact-screw, while the other wire connects with the armature of the main-line electro-magnet, and the alarm-bell located in a normally-open local circuit, one of the wires of which connects with the metallic yoke of the main-line electro-magnet, while its other wire connects with the armature of the said electro-magnet, all constructed and arranged to operate in the manner and for the purpose herein shown and described.

332,639. MACHINE FOR TURFING FABRICS. Matthew F. Comfort, Jr., Springfield, Ill. Filed Mar. 11, 1885. (Model.)

Claim.—1. In a turfing-machine, in combination with the tubular needle, the tubular needle-bar provided at or near its upper end with a side opening for the passage of the yarn or other material, substantially as and for the purpose described.

2. In a turfing-machine, in combination with the tubular needle, the tubular needle-bar provided at its upper end with a knob or handle and near such end with a side opening for passage of the yarn or other material used, substantially as and for the purpose described.

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3. In combination with the tubular sheath, the lug within the sheath on its front side near its lower end, the needle-bar sliding within the sheath, and the needle pivoted on the bar and provided on its forward side with a cam-lug, substantially as and for the purpose described.

4. In combination with the tubular sheath, the lug within it on its forward side having its upper end inclined, the needle-bar sliding within the sheath, the needle pivoted in the lower end of the bar, the cam-lug on the forward side of the needle, and a spring adapted to swing the needle forward on its pivot, substantially as and for the purpose described.

5. In a tarfing-machine, in combination with the needle provided with pivot lugs or pins, the needle-bar slotted or forked at its lower end and provided with a series of holes in its forked arms, adapted to receive the pivot-lugs on the needle, substantially as and for the purpose described.

6. In a tarfing-machine, in combination with the tubular needle provided with pivot lugs or pins on opposite sides at or near its upper end, out of line with its bore, the tubular needle-bar forked at its lower end and provided with one or more pairs of opposite holes in the fork-arms, to receive the pivot lugs or pins on the needle, substantially as and for the purpose described.

7. In combination with the tubular handle or sheath, the needle-bar slotted or forked at its lower end, the needle pivoted in the fork of the bar, and a pin passing across the sheath and through the slot in the needle-bar, substantially as and for the purpose described.

8. In combination with the tubular sheath, the slotted needle-bar sliding therein and the needle pivoted on the bar, the stop-pin passing through the sheath and the slot in the needle-bar, and the spring attached at one end to the pin and at the other adapted to apply its force to swing the needle on its pivot, substantially as and for the purpose described.

9. In combination with the stop-pin and the spring N, attached thereto and extending along the tubular sheath A, the collar on the sheath cut away to admit the passage of the spring, and the sleeve on the sheath adapted to be slid over the spring, and the collar to hold the spring pressed down into the cut or notch in the collar, substantially as and for the purpose described.

10. In a tarfing-machine, an impaling-foot provided with a series of impaling-points, in combination with means for causing the impaling-points to impale the yarn in the rear of the needle, substantially as and for the purpose described.

11. In combination with the needle of a tarfing-machine, the impaling-foot, and means, substantially as shown, whereby the foot is caused to descend to impale the yarn between the needle and the loop last formed as the needle descends, and is retracted as the needle reaches the end of its downward stroke, substantially as and for the purpose described.

12. In a tarfing-machine, the combination, with the needle, of the impaling-foot, and a rotary carrier on which the foot is pivoted, substantially as and for the purpose described.

13. In combination with the sheath, the needle-bar, and the needle provided with a notch or shoulder, the rotary carrier pivotally attached to the sheath, the impaling-foot pivoted on the carrier, provided on its inner side with a shoulder, and adapted to be engaged by the notch or shoulder on the needle as the needle moves downward, substantially as and for the purpose described.

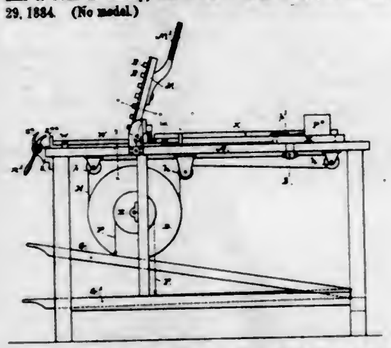
14. In a tarfing-machine, in combination with the reciprocating and swinging needle provided with a notch or shoulder, the rotary carrier, the impaling-foot pivoted thereon and provided on its face toward the needle with a shoulder adapted to be engaged by the notch or shoulder on the needle in the downward stroke of the latter, and a spring adapted to keep the foot normally pressed against the needle, substantially as and for the purpose described.

15. In combination with the tubular sheath provided with an internal lug on its forward side near its lower end, the rotary U-shaped carrier pivoted in lugs on the rear of the tube, the impaling-foot pivoted on the cross-bar of the carrier, the spring pressing inward upon the foot at its pivotal point, the reciprocating needle-bar within the sheath, and the needle pivoted to the bar and provided with a cam-lug adapted to engage the lug within the sheath-tube, substantially as and for the purpose described.

16. In a tarfing-machine, in combination with the sheath or tubular handle provided with an internal lug near its lower end, the needle-bar within the tube forked at its lower end, the needle pivoted in this fork and provided with a lug inclined on its lower end, to engage the lug on the tube, and with a notch or shoulder on the opposite side from the lug, the U-shaped rotary carrier pivoted in lugs on the tube, the impaling-foot provided with a shoulder adapted to be engaged by the notch or shoulder on the needle, and a spring pressing inward against the foot at the point at which it is pivoted on the carrier, substantially as and for the purpose described.

17. In combination with the reciprocating needle-bar forked at its lower end, the needle pivoted at or near its upper end in the fork of the bar, and provided with a cam-lug and with a notch or shoulder on its opposite side, the tubular sheath, the lug within the sheath, the lugs or ears extending outward from the opposite slotted side of the sheath, the U-shaped rotary carrier pivoted in such lugs or ears, the impaling-foot pivoted upon the cross-bar of the carrier and provided with a shoulder on its side toward the needle, the spring pressing the foot inward toward the needle, and the brace and guide-plate D, substantially as and for the purpose described.

332,640. MACHINE FOR THE MANUFACTURE OF BOTTLE-COVERS FROM TULE. Earl K. Cooley, San Francisco, Cal., assignor of one-half to John H. Gillespy and Walter C. Childs, same place. Filed July 29, 1884. (No model.)



Claim.—1. The herein-described machine for stitching stalks of tule together, consisting of the bench or table having guides for the needle-carrier B, the traveling needle-carrier having long eye-pointed needles, the axle D, sheaves E, cords F F′, and treadles G G′, and the cord H, as a means for throwing the needle-carrier forward and back, the stalk-supporting bed, the hinged presser-plate M, with needle-grooves *p*, and the thread-clamping device composed of rock-bar R, with handle R′, the clamping-fingers S^x, and the stop-plates T on the bed at one side of the lines of the needles, substantially as set forth

2. In a machine for the purposes described, the combination of a reciprocating needle-carrier carrying a gang of needles, the stalk-supporting bed, the hinged presser-plate, the rock-bar with clamp-fingers adapted to seize the ends of the thread brought forward by the needles and held there while the needles draw back, the slide-bars in line with the needle-carriers, and the fingers on the ends of the rock-shaft, substantially as set forth.

3. In a machine for the purposes described, the combination of a reciprocating needle-carrier carrying a gang of needles, the stalk-supporting bed with slots or depressions J along one side, and the removable presser-plate having the projecting blocks P, as a means for pressing down a stalk or stalks at intervals from among the row of stalks upon the bed to bring a portion of the number out of line of the needle, substantially as set forth.

4. In a machine for the purposes described, the combination, with the stationary bed having the corrugated strips L L with longitudinal needle-slots, of the presser-plate M, provided with similar corrugations, *m*, in which are needle-slots *p*, substantially as and for the purpose set forth.

332,641. CROSS-OVER SWITCH. Nevin Cort, New Florence, Pa. Filed Feb. 24, 1885. (No model.)

Claim.—1. The combination of the partially-revolving shaft C, rods *m*, connected to opposite ends thereof, the switch-rails 1 5, and connecting-rods *d*, the ends of the rails 1 being placed in advance of the ones 5, substantially as shown.

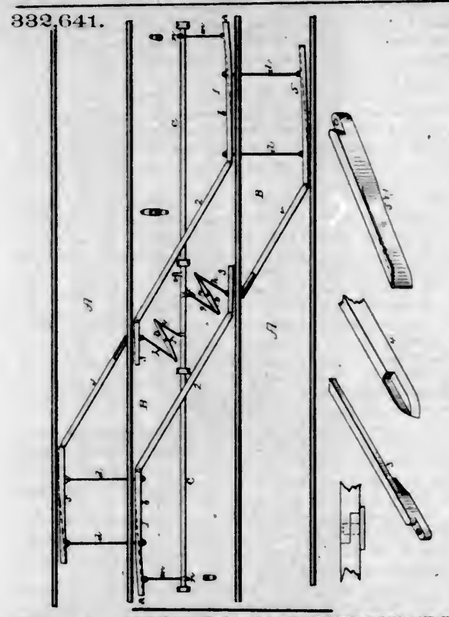
2. The combination of the main tracks A and cross-over rails 2 4, extending across them, with the shaft C, rods *m*, rails 1 5, and rods *d*, substantially as described.

3. The combination of the main tracks A, the shaft C, rods *g h*, levers D, and the switch-rails 3, substantially as set forth.

4. The combination of the partially-revolving shaft C, rods *m*, connected to opposite ends thereof, the switch-rails 1 5, connected together, and the cross-over rails 2 3 4, the rails 3 being connected to the shaft C so as to be moved at the same time as the ones 1 5, substantially as specified.

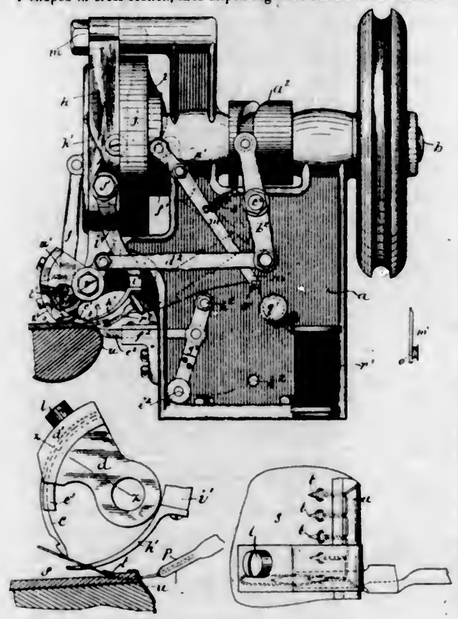
5. The combination of the main tracks A, the shaft C, switch-rails 1 5, connected together and to the shaft, the rails 2 4 3, rods *g h*, and levers D, substantially as described.

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332,642. SEWING-MACHINE FOR CONNECTING SOLES AND UPPERS OF TURNED SHOES. Peter A. Coupal, Boston, and Joseph Coupal, Quincy, Mass. Filed July 3, 1885. (No model.)

Brief.—A curved needle is provided with a knife or cutter on each side thereof, the sharp edges of said cutters being toward the point of the needle, the cutters being so arranged that through the needle's oscillation they will cut tongues in the soles. The looper, cast-off, and take-up cause the loops of thread drawn through the material by the needle to be tightly drawn over the tongues. The cast-off keeps the loop sufficiently raised to prevent it being drawn under the tongue. The awl is moved forward to make the hole for the next loop, and is withdrawn before the needle is moved laterally to feed the work. The needle, in feeding the work along, is moved laterally by means of the swinging head. The cutters may be formed on the awl, or the latter may be made V-shaped in cross-section, thus dispensing with cutters on the needle.



Claim.—1. A curved needle having knives alongside thereof, presenting their cutting-faces toward the point of the needle, combined with mechanism for oscillating said needle and knives, substantially as described.

2. A curved needle having knives alongside thereof, which present their cutting-edges in the same direction as the needle-point, mechanism to oscillate said needle and knives, a looper, a take-up, and mechanism for operating the same, all in combination, substantially as described.

3. A curved needle having attached cutting-knives with their edges in the direction of the needle-point, mechanism, substantially as described, for oscillating the same, and suitable mechanism, as described, for moving the needle laterally, and an awl and its operating mechanism, arranged as described, to perforate for the needle, all combined as set forth.

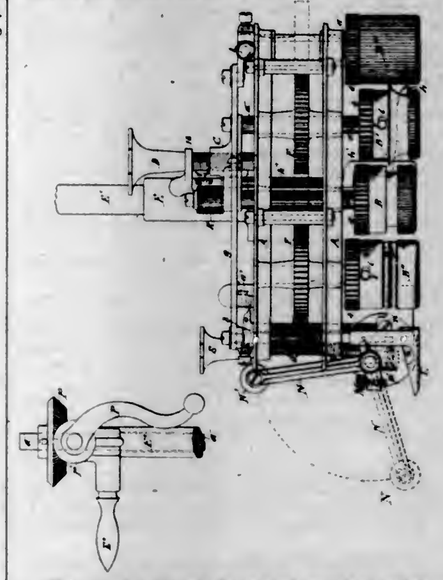
4. The combination, with the curved needle, of knives having their edges in the direction of the needle's point, mechanism, as described, for operating the same, a looper and its operating devices, the cast-off and the take-up, all relatively arranged substantially as stated.

5. The combination, with the awl, the needle having cutting-wings with edges in the direction of the needle's point, operating devices for the awl and needle, the movable gage e^3, and devices for adjusting the same, all substantially as set forth.

6. The combination, with the curved puncturing device having a cutting-blade at each side thereof, the blades presenting their cutting-edges in the same direction as the puncturing-device point, of the needle and cutter-carrier and its oscillating mechanism, and the loop-engaging mechanism, substantially as described, all co-operating substantially as and for the purposes set forth.

332,643. MACHINE FOR EDGING AND SEAMING TIN ROOFING. Julius J. Cowell, Westport, N. Y., assignor of one-half to Sylvester W. Young, same place. Filed July 22, 1885. (Model.)

Brief.—The strip of tin is laid flat and one corner slightly turned up and introduced into the machine. By turning the handle the machine is then caused to travel over the tin, forming a vertical flange the whole length of the strip. The gage is then set so as to turn up a wider flange, and the operation repeated. In this second operation the upper edge of the flange formed is bent downward. A wide flange and a narrower flange are then placed together, so that the downturned edge of the wide flange overhangs the narrower flange. The guide is then swung out of the way, the last pair of compressing-rolls brought together, and the guide-wheel on the swinging arm made to engage the overhanging edge of the wider flange. By turning the crank the machine is caused again to pass over the tin. In this operation the edge of the wider flange is compressed onto the other flange, and the edge of the wider flange, with the inclosed portion of the narrower flange, is turned down and compressed against the flanges, thus completing a double seam.



Claim.—1. A machine for flanging and seaming tin roofing, comprising a frame, flanging, folding, and compressing rollers journaled in said frame and arranged in sets, and with the rollers of each set, respectively, at opposite sides of the longitudinal central line of the machine, a train of gearing for transmitting synchronous movement to the aforesaid

rollers, and a main driving-shaft connected to one of said gears, substantially as set forth.

2. In combination with the frame A, the folding-rollers B B', having their shafts journaled in said frame and movable vertically thereon, the yoke C, connected with said shafts, and the adjusting-screw D, arranged to sustain the yoke at different elevations on the frame, substantially as and for the purpose set forth.

3. In combination with the frame A, the vertically-journaled rollers B, one of them being sustained so as to yield vertically on said frame, to conform to the increased thickness of tin at the cross-seams thereof, as set forth.

4. In combination with the frame A, the tubular standard E E', secured to said frame, the driving-shaft *a*, arranged to be movable vertically in said standard, and provided with the groove *b*, the folding-rollers B, one of them being fixed to said shaft, the gear F, confined vertically on the frame, and connected with the shaft by a spline or feather, *c*, sliding in the groove *b*, all constructed and combined to allow the roller B and its shaft to rise and fall without interfering with the gear F, substantially as set forth.

5. In combination with the frame A, the tubular standard E E', secured to said frame and provided with the aperture *d*, the driving-shaft *a*, arranged to be movable vertically in said standard, the folding-rollers B, one of them being fixed to the lower end of the shaft *a*, collars *e e*, attached to said shaft, the yoke C, embracing the shaft between the collars thereof, and the adjusting-screw D, arranged to support the yoke, substantially as described and shown.

6. In combination with the frame A, standard E E', driving-shaft *a*, rollers B, one of them being fixed to said shaft, yoke C, supporting the shaft *a*, and the adjusting-screw D, supporting the yoke, as described, the scale *g*, attached to the standard, and the indicator *f*, attached to the yoke, substantially as described and shown.

7. In combination with the folding-rollers B', the shoe *h*, arranged between said rollers, to enter into the fold of the tin and prevent the complete closing of the fold, substantially as described and shown.

8. In combination with the folding-rollers B', the shoe *h*, arranged between said rollers, to enter into the fold of the tin, and the guard A', carried at the side of the shoe, substantially as and for the purpose specified.

9. The combination, with the shaft *a*, of the roller B, formed with a concentric cavity around the shaft and provided with the horizontally-elongated eyes *i i*, the rubber bush *g*, the hub H over the bush, the gear 4 on said hub, and the pin I, extending through the shaft and hub and into the eyes *i i*, substantially as described and shown.

10. In a machine for flanging tin, the guide L, arranged in front of the machine, and composed of a horizontal plate, 5, carried on a level with the base of the machine, and provided with an upwardly-curved side flange, 6, substantially as described and shown.

11. In combination with the frame A and flanging-rollers journaled therein, the shaft 7, pivoted on the frame and provided with the lever 8, and the guide L, attached to the foot of said shaft, substantially as described and shown.

12. In combination with the frame A and the flanging and folding rollers journaled therein, the compressing-roller B'', journaled in the rear end of said frame at one side of the center thereof, the eccentric journal-box *k*, pivoted on the frame opposite the roller B'', the roller B''', journaled in said box, the collar *l*, attached to the box, the lever *l'*, connected with the collar, the shaft 7, pivoted on the opposite end of the frame, the lever 8, attached to the upper end of said shaft, the guide L, attached to the foot of the shaft 7, and the strap 9, connecting the lever 8 with the collar *l*, substantially as described and shown.

13. In combination with the frame A and flanging-rollers journaled therein, the guide L, arranged in front of the said rollers, and the wheel M, arranged edgewise over said guide, substantially as described and shown.

14. In combination with the frame A and flanging-rollers journaled therein, the shaft 7, and arm M', supported so as to yield vertically on the frame, the guide L, attached to the foot of the shaft 7, and the wheel M, pivoted on the arm M', substantially as described and shown.

15. In combination with the frame A and folding-rollers journaled therein, the arm N, projecting forward from the frame, and the roller pivoted on the free end of said arm, substantially as and for the purpose set forth.

16. In combination with the frame A and folding-rollers journaled therein, the arm N, hinged on the front end of the frame, a stop on said arm for limiting its movement to its forward projecting position, and the roller N', pivoted on the free end of said arm, substantially as described and shown.

17. In combination with the frame A and folding-rollers journaled therein, the arm N, hinged to swing vertically on the front end of said frame, a spring, *m*, for normally sustaining said arm in a vertical position, a stop on the arm for limiting its movement to its forward projecting position, and the roller N', pivoted on the free end of said arm, substantially as described and shown.

18. In combination with the frame A and folding-rollers journaled therein, the arm N, hinged to swing vertically on the front end of said frame, the roller N', pivoted on the free end of said arm, and the set-screw *n* on the rear portion of the arm, to adjust said arm in its forward projecting position.

19. In combination with the frame A and flanging and folding rollers journaled therein, the vertical screw-threaded socket O, attached to said frame, the screw-threaded shaft O', extending through said socket, the collar O'', attached to the foot of said shaft, the arm N, hinged on said collar, and the roller N', pivoted on the free end of said arm, substantially as described and shown.

20. In combination with the frame A and flanging and folding rollers journaled therein, the vertical screw-threaded socket O, attached to said frame, the screw-threaded shaft O', extending through said socket, the collar O'', attached to the foot of said shaft, and the gage *n*, attached to said collar, substantially as described and shown.

21. In combination with the frame A and flanging and folding rollers journaled therein, the vertical screw-threaded socket O, attached to said frame, the screw-threaded shaft O', extending through said socket, the collar O'', attached to the foot of said shaft, the gage *n*, projecting rearward from the collar, the arm N, hinged on the collar, and the roller N', pivoted to the free end of the arm, all combined to be adjusted simultaneously vertically toward or from the base of the machine, substantially as described and shown.

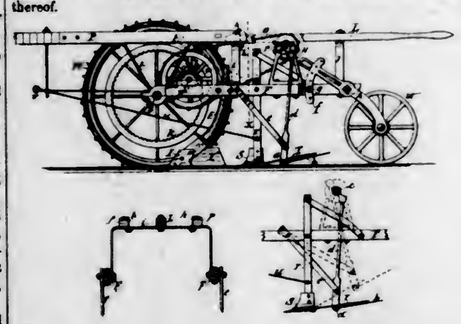
22. In combination with the frame A and flanging and folding rollers journaled therein, the vertical screw-threaded socket O, screw-threaded shaft O', extending through said socket, gage *n*, carried on the foot of said shaft, the indicator *o*, carried on said gage, and the scale *o'*, attached to the frame, substantially as described and shown.

23. In combination with the frame A and flanging-rollers journaled therein, the shaft V, locking-arm U, adjustably connected to said shaft, the arm M', clamped on the shaft, and the roller M, pivoted on the arm M', all combined to operate substantially as described and shown.

24. The rollers B'' and B''', provided with circumferential grooves *a' a'*, in combination with companion rollers having straight vertical sides, substantially as and for the purpose specified.

332,644. POTATO-DIGGER. CHARLES J. CUMMINGS, Preble, N. Y. Filed June 19, 1884. (No model.)

Brief.—Hinged separating-tines vibrated by oscillating bar on which their free ends rest, said bar having shorter rigid tines. Tongue secured to brackets rising from axle and projecting backward to arch upon digger-frame, and detachably engaged by hooks upon said arch. Lever for elevating digger projecting backward from arches on frame thereof.



Claim.—1. In combination with the scoop S, the crank-shaft *c*, arms *d*, suspended from the cranks, pivoted brace *e*, connected with said arms *d d*, cross-bar *a*, fixed to the lower end of the arms *d*, tines *b*, affixed to the cross-bar *a*, and tines T, hinged on the scoop and resting with their free end on the said cross-bar, and mechanism for transmitting motion from the traction-wheel to the crank-shaft, substantially as described and shown.

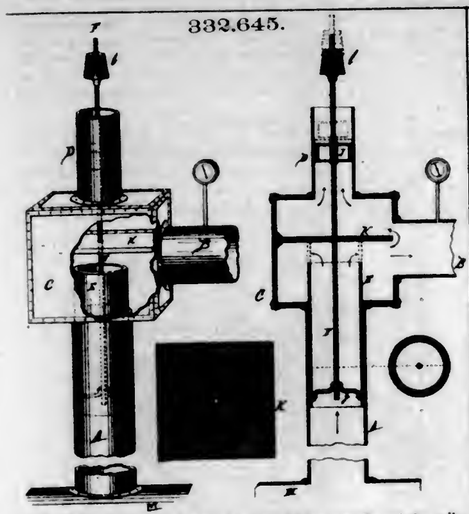
2. In combination with the frame F, supported at opposite ends by wheels W *w*, the yokes *i* and *j*, secured to the frame, the pole P, supported on the axle of the wheels W, the hooks *h h*, pivoted on the yoke *i* and adapted to engage with the pole, and the lever L, fastened to the top of the yokes *i* and *j* and extended rearward, substantially as described and shown.

332,645. FLUID-PRESSURE REGULATOR. JOHN F. DE PEW, Denver, Colo. Filed Apr. 6, 1885. (No model.)

Claim.—1. The continuous pipe A C B, composed of the joint A and the joint B, connected by the valve-chest C, as described, in combination with the stationary head K and the valve E, substantially as described, and for the purposes set forth.

2. In a fluid-pressure regulator, the telescopic valve E, working as described, in combination with the joint A, the valve-chest C, and the stationary head K, substantially as described, and for the purpose set forth.

332,645.



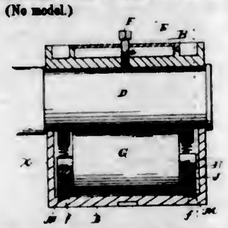
3. The valve-chest C, with the joint A, the joint B, and the cylinder D opening into it, in combination with the stationary head K, which divides it into an upper and a lower compartment.

4. In the continuous pipe A C B, the combination of the valve E with the stationary head K and the valve-stem and piston-rod F, substantially as described, and for the purposes herein set forth.

5. In the continuous pipe A C B, the combination of the valve E with the stationary head K, the valve-stem and piston-rod F, the piston J, the cylinder D, and the weight *l*, all substantially as described, and for the purposes herein set forth.

6. The combination of the joint A with the valve-chest C, the joint B, the valve E, the stationary head K, the valve-stem and piston-rod F, the piston J, the cylinder D, and the weight *l*, all substantially as described, and for the purposes herein set forth.

332,646. CAR-AXLE BOX. MICHAEL DOUGHERTY, Sedalia, Mo. Filed July 8, 1885. (No model.)



Claim.—1. The combination of the hollow perforated set-screw F and the reservoir E with the journal-box, substantially as set forth.

2. The combination of the journal-box, provided with the recesses or grooves *d d*, with the bearings M M, having the grooves *b b*, and the bearings H, provided with the tongues *c c*, and working in the grooves *b b* and supporting the wheel G, substantially as described.

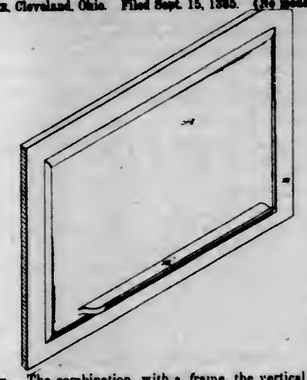
3. The combination of the oil-distributing roller journaled beneath the axle-journal, the journals of the distributing-roller adjustable within ways and provided with spiral springs, so as to produce a tension of the oil-distributing roller against the periphery of the axle-journal, with the rubber sections K K at the ends of the journal for preventing the escape of the oil, substantially as herein set forth.

4. The combination of the oil-distributing roller G, journaled within ways and provided with spiral springs J, so as to produce a tension against the periphery of the axle-journal D, the rubber sections K at the ends of the journal, the spiral springs L, two under each of the rubber sections, and the reservoir B, substantially as herein set forth.

5. The combination of the journaled boxing-sections A and B, the feeding set-screw F, the axle-journal D, the distributing-roller G, the concaved rubber sections K, and the spiral springs J and L, the whole arranged as and for the purposes substantially as herein set forth and described.

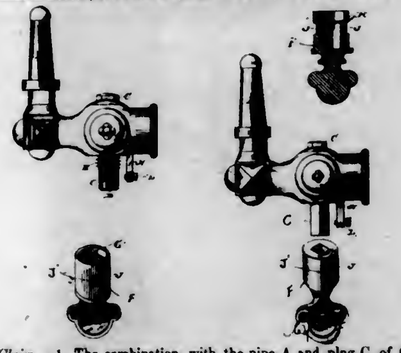
6. In an axle-lubricator, the axle-journal box provided with the bearings M M, in combination with the spring-supported journals H, and the double spring-supported rubbers K K, all of said springs mounted in a common bearing and in direct line with each other, substantially as set forth.

332,647. RACK OR HOLDER FOR MUSIC AND BOOKS. BAPTIST DREHER, Cleveland, Ohio. Filed Sept. 15, 1885. (No model.)



Claim.—The combination, with a frame, the vertical rods secured to the frame, and the links pivoted to the frame below the rods, of the blocks mounted on the rods and adapted to slide thereon, and the panel hinged at its upper edge to said blocks and pivotally secured at its opposite sides near its lower edge to the outer ends of the links, all of the above parts combined and operating substantially as set forth.

332,648. SAFETY-KEY FOR GAS-BURNERS. JOSEPH DUTTON and JAMES H. DUTTON, San Francisco, Cal. Filed July 1, 1884. (Model.)

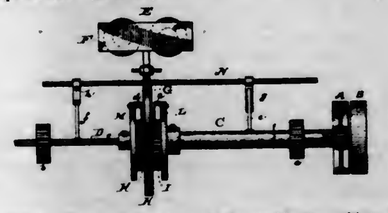


Claim.—1. The combination, with the pipe A and plug C, of the key F, having a slot, J, and vertical slots J' at the ends of slot J, the plate N, having an opening, and the pin L, working therein, for the purpose set forth.

2. The combination, with the pipe A and plug C, having the groove or channel D, of the key F, having an inwardly-extending nib, H, slots J J' in the key, the plate N, and pin working therein, for the purpose set forth.

3. The combination, with the pipe A, a plug, C, and a spiral spring fitting thereon, of the key having an interior shoulder to bear against said spring, slots J J' in the key, the plate N, and pin working therein, for the purpose set forth.

332,649. PRINTING-TELEGRAPH. RICHARD N. DYER, New York, N. Y., assignor to the Commercial Telegram Company, same place. Filed Sept. 10, 1885. (No model.)



Claim.—1. In a printing-telegraph, the combination, with two independently-revolving type-wheels, of a single pallet and scape-wheel, and connections for controlling their movements, substantially as set forth.

2. In a printing-telegraph, the combination, with two independently-revolving type-wheels, of a single pallet and scape-wheel, and con-

nections for controlling their movements, and a single vibrating magnet-armature, to which said pallet is directly connected, substantially as set forth.

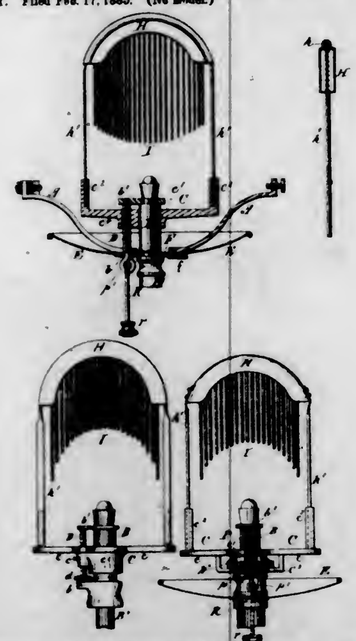
3. In a printing-telegraph, the combination, with two independently-revolving type-wheels, of a single pallet and scape-wheel, and connections for controlling their movements, a single vibrating armature, to which said pallet is connected, and means for stopping said type-wheels at the blank or unison points, substantially as set forth.

4. In a printing-telegraph, the combination, with two independent type-wheel shafts, of a scape-wheel connected with both of said shafts by pawls and ratchets, and a pallet engaging the scape-wheel, substantially as set forth.

5. In a printing-telegraph, the combination, with two independent type-wheel shafts, sleeved one upon the other, of a scape-wheel connected with both of said shafts by pawls and ratchets, and a pallet engaging the scape-wheel, substantially as set forth.

6. In a printing-telegraph, the combination, with two type-wheel shafts revolved in the same direction by power applied separately thereto, a scape-wheel connected with both of said shafts by pawls and ratchets, a pallet engaging said scape-wheel, and means for stopping said type-wheel shafts at the blank or unison points, substantially as set forth.

332,650. SUPPORT FOR HOLDING AND ADJUSTING INCANDESCING BODIES IN A GAS-FLAME. OTTO B. FARNERFELD, New York, N. Y. Filed Feb. 17, 1885. (No model.)



Claim.—1. The combination, substantially as described, with a gas-burner, an incandescing body suspended above the burner-tip, and a support for said incandescing body connected with the burner below the tip, of a screw operating on the support to move the incandescing body toward and from the burner-tip, and means, substantially as described, for manipulating the screw from a distant point, for the purpose specified.

2. The combination, substantially as described, with a gas-burner, an incandescing body suspended above the burner-tip, a support for said incandescing body, and a drip-cup, both connected with the burner below the burner-tip, of a screw operating on the support to move the incandescing body toward and from the burner-tip and drip-cup, for the purpose specified.

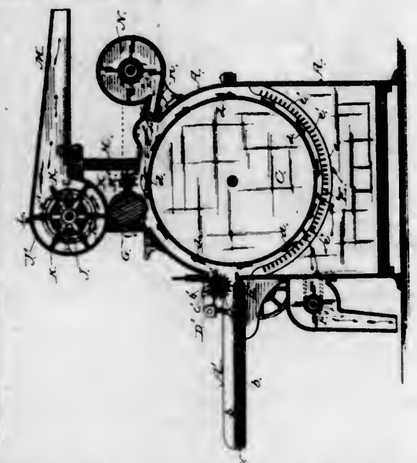
3. The combination, substantially as described, with a gas-burner, an incandescing body suspended above the burner-tip, a support for said body, and a drip-cup connected with the burner below its tip, of a screw operating on the support to move the drip-cup and incandescing body toward and from the burner-tip, for the purpose specified.

4. The combination, substantially as described, with a gas-burner, an incandescing body suspended above the burner-tip, a holder for said body, and a drip-cup connected with the burner below the said tip, and a screw acting on the support arranged above the drip-cup, of means, substantially such as described, for rotating the screw from a point below the drip-cup, for the purpose specified.

5. The combination, substantially as described, with a gas-burner, an incandescing body suspended above the burner-tip, a support for said body, and a combined drip-cup and shade-holder connected with the burner below the burner-tip, of a screw operating on the support for the incandescing body to move the latter toward and from the burner-tip, for the purpose specified.

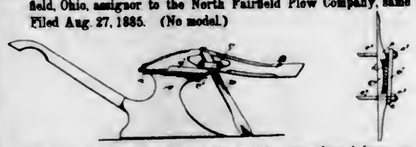
332,651. WOOL BURRING AND PICKING MACHINE. THOMAS H. FAULKNER, McMinnville, Tenn. Filed Apr. 24, 1885. (No model.)

Brief.—A fan-blower is so placed above the picker-cylinder and just in advance of the burring and doffing cylinders as to assist in the removal of the material from the teeth of the picker and to diminish the danger of breaking the fibers.



Claim.—The combination, with the frame A, the cylinder C, and the burr-cylinder G, of a concentric grating, E, provided with transverse spaced bars *e'*, a suction-fan, F, at the front of the machine and beneath the table, a fan, J, a fan-case provided with a discharge-flume, and a blower-fan, N, at the rear and immediately beneath the discharge-flume, substantially as herein described.

332,652. PLOW ATTACHMENT. WALTER S. FELTON, North Fairfield, Ohio, assignor to the North Fairfield Plow Company, same place. Filed Aug. 27, 1885. (No model.)



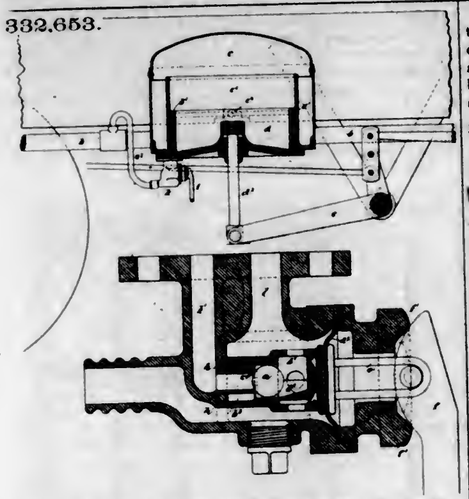
Claim.—A plow attachment for holding a colter, jointer, or similar implement, consisting, essentially, of a plate, the inner face of which is constructed to rest solidly against the plow-beam, and the outer face thereof provided with the convex bearings *a'*, located, respectively, near the upper and lower edges thereof, shoulders formed on the outer face of said plate for engaging the front and rear edges of the colter-standards, and bolt-holes formed through said plate, a cross-bar for engaging the outer face of the colter or jointer shank, and bolts for holding the cross-bar in position.

332,653. AUTOMATIC VACUUM-BRAKE APPARATUS. JAMES GRESHAM, Salford, County of Lancaster, assignor to the VACUUM BRAKE COMPANY, (Limited,) 32 Queen Victoria Street, County of Middlesex, England. Filed May 25, 1885. (No model.) Patented in England Nov. 23, 1881, No. 5,109, and Dec. 27, 1882, No. 6,171; in France Mar. 6, 1883, No. 154,136; in Belgium Mar. 7, 1883, No. 60,676; in Italy Mar. 15, 1883, No. 15,231; in Austria-Hungary July 11, 1883, No. 9,791; in Victoria Sept. 19, 1884, No. 3,848, and in New South Wales Dec. 13, 1884, No. 1,539.

Claim.—1. The improved automatic vacuum-brake apparatus, constructed and working substantially as herein described, and consisting of a brake-cylinder open at one end to and inclosed within a vacuum-chamber, the piston packed as shown, and operated by means of ball-valve apparatus in connection with the train-pipe, and communicating directly with one end of the brake-cylinder and with the vacuum-chamber, respectively.

2. The use, in automatic vacuum-brake apparatus, of a ball-valve mounted in a movable carrier having chambers of three diameters, respectively smaller, slightly larger, and considerably larger than that of the ball-valve, the chamber having the largest diameter being provided

332,653.

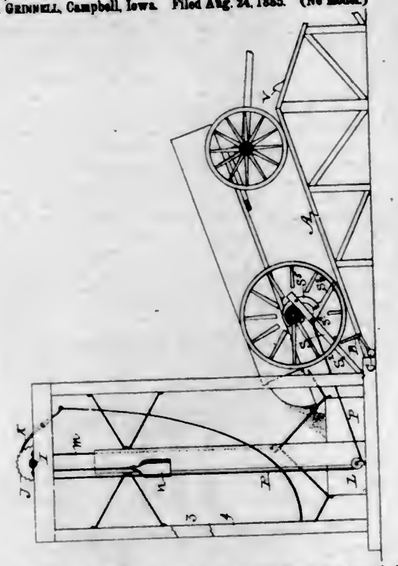


with an inclined surface for the purpose of causing the valve to roll toward its seating against which it closes with a very slight, if any, lift, substantially as described.

3. The lever *f* and connections, as described, for manually releasing the valve from its seat, the same consisting of a tubular carrier having a part beyond the valve of contracted diameter, the said carrier being attached to a flexible diaphragm or equivalent device, whereby the valve is enabled automatically to resume its working position on vacuum being recreated.

4. The improved means, substantially as described, for rapidly admitting air from the train-pipe direct to the vacuum-chamber without passing around the ball-valve, such means consisting of the valve-carrier *b*, having longitudinal internal grooves, b^3, the open neck c^4, and pipe c^3, all arranged to serve with the pieton-cylinder and train-pipe *b*, as set forth.

332,654. PORTABLE PLATFORM DUMP AND ELEVATOR. AMOS L. GRINNELL, Campbell, Iowa. Filed Aug. 24, 1885. (No model.)

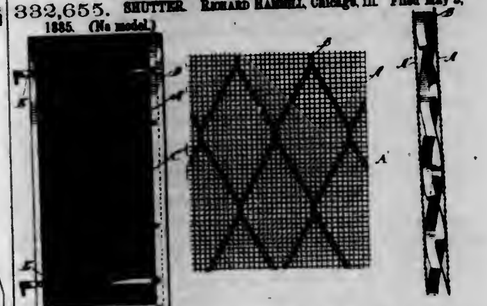


Claim.—1. An elevator-frame having a revolving horizontal shaft at its top, to which shaft are attached a drum and rope for operating jointly two drums of different diameters fixed to the same shaft, in the manner set forth, for the purposes specified.

2. The rope-fastening device S S^2 S^3 S^4 S^5, in combination with a rope and drum in an elevator, to operate in the manner set forth, for the purposes specified.

3. A wagon dump and elevator composed of the following elements, to wit: an inclined platform, an elevator-frame, a horizontal shaft, a drum and rope and rope-fastening device adapted to be connected with a wagon, two drums of unequal diameter connected with the ends of a box by means of ropes, and a ratchet and pawl, substantially as shown and described, for the purposes specified.

332,655. SHUTTER. REINARD HAMMILL, Chicago, Ill. Filed May 5, 1885. (No model.)



Claim.—1. A window-shutter composed of two wire screens, an interposed iron mesh, and frames, as set forth.

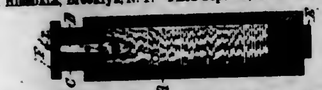
2. A window-shutter composed of two wire screens, an interposed iron mesh formed from slit and stretched metal, and suitable frames, as set forth.

3. A window-shutter composed of two wire screens, an interposed iron mesh formed from slit, stretched, and flattened metal, and suitable frames, as set forth.

4. A window-shutter composed of two wire screens, an interposed iron mesh, partly broken away, and suitable frames, as set forth.

5. A window-shutter composed of two wire screens, an interposed iron mesh, suitable frames, and hinge-straps extending across the face of the shutter, as set forth.

332,656. APPARATUS FOR PRESSING FLUID METAL. WILLIAM R. HINSDALE, Brooklyn, N. Y. Filed Sept. 10, 1884. (No model.)



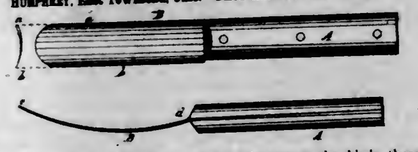
Claim.—1. The combination, with the mouth of a filled ingot-mold, of the stopper herein described, and provided with a central recess communicating with the external atmosphere and adapted to rupture the surface metal at the head of the ingot while under pressure, the said recess being connected with the external atmosphere by means of an outlet or outlets by which the gas is conducted from such recess with a portion of the fluid metal, substantially as and for the purpose set forth.

2. The combination, with a filled ingot-mold, of means applied to the top of the mold for forming a central stud upon the surface of the metal, and means applied to the bottom of the mold for forcing the metal upward and discharging the confined gases from the center of the mold with such stud, substantially as and for the purpose set forth.

3. The combination, with an ingot-mold, of the stopper herein described, and provided with a central recess having edges or corners adapted and operated to rupture the surface metal at the head of the ingot while under pressure, and having one or more outlets connecting said central recess with the external atmosphere to discharge the gas from such central recess with a portion of the fluid metal, and of means for compressing the fluid metal within the mold with said central recess in communication with the atmosphere, substantially as and for the purpose set forth.

4. The combination, with the mouth of an ingot-mold, of a movable plunger provided with a central perforation, and having radial grooves in its upper end for the escape of the gas between the plunger and the abutment against which it presses, substantially as and for the purpose set forth.

332,657. KNIFE FOR CUTTING SEED-POTATOES. DUDLEY S. HUMPHREY, East Townsend, Ohio. Filed Mar. 23, 1885. (Model.)



Claim.—1. In a knife for cutting seed-potatoes, the blade thereof in cross-section concavo-convex, and curved longitudinally from the

handle to the end of the blade, and tapering from the back to the cutting-edge, substantially as herein described, and for the purpose specified.

2. In a knife for cutting seed-potatoes, a blade concavo-convex in cross-section and provided with a handle for the purpose specified, and substantially as set forth.

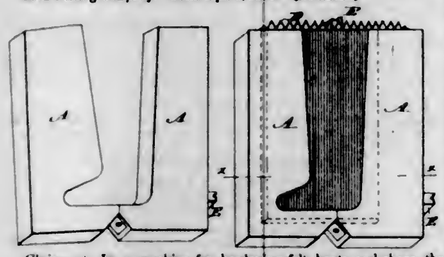
332,658. SPRING FOR VELOCIPEDE-SEATS. ROBERT E. HUMPHREYS, Irwin, Pa. Filed May 9, 1885. (No model.)



Claim.—1. A spring-support formed of a wire bent to have coils at the front and rear of the support, the coils being in horizontal planes both at the front and rear, and the top and bottom coils alternating both at the front and rear, substantially as shown and described.

2. A spring-support formed of a spring-wire bent to form a U-shaped part, E, uniting two sides or sections of the support, the wire being bent to form the front coils, *a c*, in different horizontal planes, the rear coils, *d b*, in different horizontal planes, and the straight parts A, B, C, and D uniting the coils *a b c d*, in the manner substantially as herein shown and described.

332,659. MACHINE FOR HARDENING SEAMLESS FELT BOOTS, SHOES, &c. WALTER P. HYATT, Matteawan, N. Y., assignor to the New York Felting Company. Filed Apr. 8, 1885. (No model.)



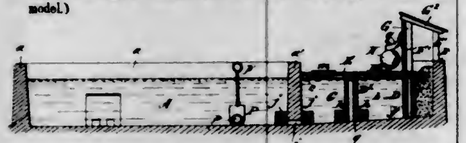
Claim.—1. In a machine for hardening felt boots and shoes, the combination, with a mold formed of two sections hinged together at the ends and swinging from each other in the planes of said sections, which sections have their inner edges recessed to form a recess or cavity having a shape approaching that of a boot, of a core having a shape similar to that of the recess or cavity, which core can be placed into said recess or cavity, substantially as herein shown and described.

2. In a machine for hardening felt boots and shoes, the combination, with a mold formed of two sections, hinged to each other, in which sections a cavity of a shape approaching that of a boot or shoe is formed, of a vibrating core in said mold, substantially as herein shown and described.

3. The combination, with the hinged mold-sections A, of the core B and the spring D, for pressing the mold-sections against the core, substantially as herein shown and described.

4. In a machine for hardening felt articles, the combination, with a mold having a recess, of a core which can be placed into the said recess, and of a hardening-board on the mold and core, substantially as herein shown and described.

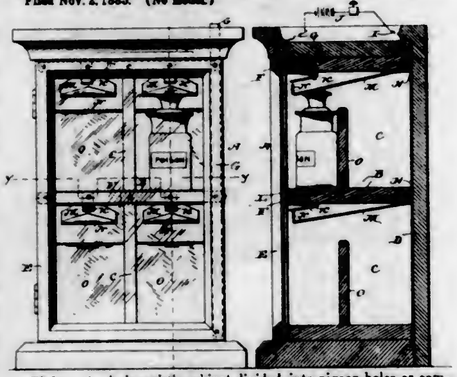
332,660. FILTER. WILLIAM L. JOHNSON, Hackettstown, N. J., assignor to George W. Johnson, Jr., same place. Filed Aug. 22, 1885. (No model.)



Claim.—1. The platform E, over which the water flows, the pit C, formed under it, the reservoir A on one side of the pit C and connected therewith, the filter-reservoir C' on the other side of the pit C and connected therewith, in combination with an automatic gate, F', arranged at one edge of the platform E and controlled by the water flowing over the same for regulating the supply of water entering the filter-pit C', substantially as and for the purpose described.

2. The platform E, over which the water flows, the pit C, formed under it, the reservoir A on one side of the pit C and connected therewith, the filter-pit C', formed on the other side of the pit C and connected therewith, in combination with the gate F', arranged at one edge of the platform E, and provided with the lever *q*, and float H, arranged to be lifted for closing the gate F' during high water, substantially as and for the purpose set forth.

332,661. DRUGGIST'S SAFE. THOMAS KNOBEL, East St. Louis, Ill. Filed Nov. 2, 1885. (No model.)



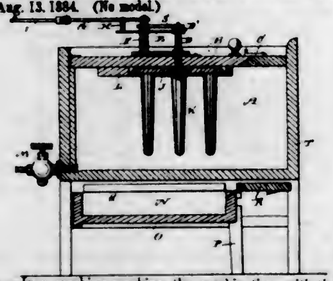
Claim.—1. A druggist's cabinet divided into pigeon-holes or compartments, and having springs projecting from the tops of the pigeon-holes and bearing against the bottles in the same, and an alarm mechanism, with its operating device, arranged in the path of the springs, as and for the purpose shown and set forth.

2. In a druggist's cabinet, the combination of a back, a cabinet swinging horizontally against the said back, being hinged at the rear edge of one of its side pieces, and having shelves and partitions dividing it into pigeon-holes, transverse partitions dividing each pigeon-hole into a forward compartment of the same depth and width, and a larger rear compartment, and springs secured in the tops of the pigeon-holes bearing against the tops of bottles in the pigeon-holes, and an alarm mechanism, with its operating device arranged in the path of the springs, as and for the purpose shown and set forth.

3. The combination of a cabinet subdivided into pigeon-holes and having metallic strips at the forward and rear edges of the horizontal shelves, and having vertical metallic strips connecting the said horizontal strips, a battery having suitable ground-connection and connected to one of the vertical strips, an alarm having suitable ground-connection and connected to the other vertical strip, V-shaped springs secured with the upwardly-bent ends of their upper arms under the strips upon the forward edges of the shelves, and spring-plates secured with their inner ends under the rear horizontal strips, and having their forward ends formed with flanges having a point for contact with the lower arms of the V-shaped springs, as and for the purpose shown and set forth.

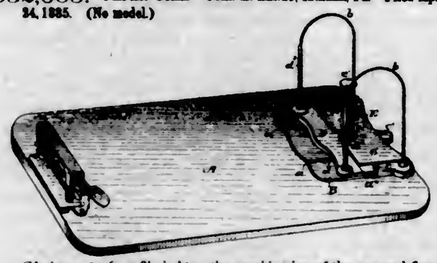
4. In a druggist's cabinet, the combination of a pigeon-hole of the same depth and width, a V-shaped spring secured under the top of the pigeon-hole and having suitable connection to an alarm, and a spring-plate having its rear end secured at the rear of the top of the pigeon-hole and having connection with a battery, and provided at its forward end with an upwardly-bent pointed flange, whereby when a bottles is removed from the pigeon-hole the spring-plate is pushed upward to bring the point in contact with the V-shaped spring, as and for the purpose shown and set forth.

332,662. WASHING-MACHINE. GEORGE G. KOECHEL, Denver, Colo. Filed Aug. 13, 1884. (No model.)



Claim.—In a washing-machine, the combination, with the hinged cover of the clothes-receptacle, of the disk or board carrying the pendent pins, the disk-shaft supported by a bracket or raised plate secured to the upper side of said cover, the second shaft also supported upon said bracket or plate and geared to the disk-shaft, and the arm held upon said second shaft and having a pendent pin connecting with the gear-wheel of said second shaft, the said arm having a pivoted handle, substantially as and for the purpose set forth.

332,663. PAPER-FILE. JOHN H. LANEY, Indiana, Pa. Filed Apr. 24, 1885. (No model.)

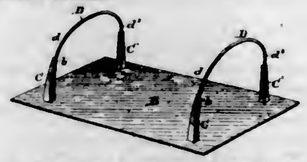


Claim.—1. In a file-holder, the combination of the grooved fixed plate B, the recessed and flanged fixed plate C, the arched guards secured to the latter, with the sliding base-plate D, having toogues *d*, and provided with tubular holders having beveled pointed ends, a spring-catch, *a'*, and means for disengaging the same.

2. In a file-holder, the combination, with the recessed base-plate C and its arched guards, of movable plate D, having tubular holders, a locking-catch for securing the plate D in the open or closed position, and a releasing-pin on said plate.

3. In a file-holder, the fixed plate B, provided with a spring-catch attached thereto, and having parallel grooves, with the recessed base-plate C, having arched guards, the sliding plate D, provided with tubular holders, a post, E, a releasing-pin, and recesses for said spring-catch.

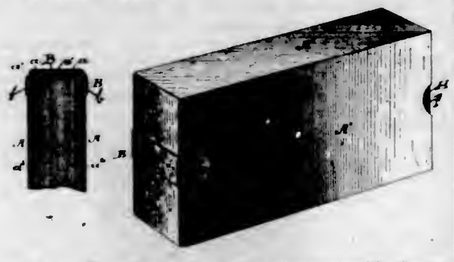
332,664. TRANSFER-FILE. JOHN H. LANEY, Indiana, Pa. Filed Apr 24, 1885. (No model.)



Claim.—1. A transfer-case consisting of a backing or tablet provided with guideways, and a plate adapted to fit and slide in said guideways and readily removable therefrom, having the two pairs of conical tubular holders, and transfer-wires secured to said plate, substantially as described.

2. In a transfer-file, the combination of the case H with the tablet provided with the paper-holders, and also having the closing-piece at one end of the tablet, substantially as described.

332,665. FILING-CASE. JOHN H. LANEY, Indiana, Pa. Filed Apr. 24, 1885. (No model.)



Claim.—The within-described new and improved article of manufacture, consisting of a knockdown case having four folding end flaps and a self-sealing or adhesive flexible closing-strip, B, across one of the end flaps, as set forth.

332,666. PUNCH. JOHN H. LANEY, Indiana, Pa. Filed Apr. 24, 1885. (No model.)

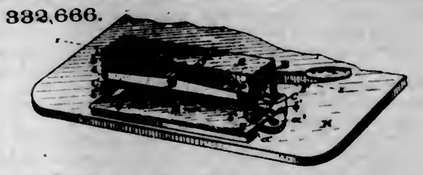
Claim.—1. In a paper-punch, the combination of a frame having a notched base, punch-guides, and gage-bearings with a perforated plate, punches and their guides, a spring-actuated cross-head to which the punches are secured, and a depressing-lever therefor, all arranged substantially as described.

2. The combination, with the notched or recessed base and the perforated plate G, secured thereon, of two or more punches actuated as described, and gage-bearings *b' b'*, substantially as described.

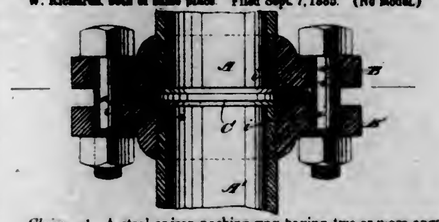
3. The combination of an open-faced frame, the perforated cutting-plate G, and the gage-bearings with a spring cross-head and its punches guided and actuated substantially as described.

4. The combination, in a punching-machine, of the perforated cutting-plate G, the punches, and beveled studs for discharging the punchings, arranged as described.

332,666.



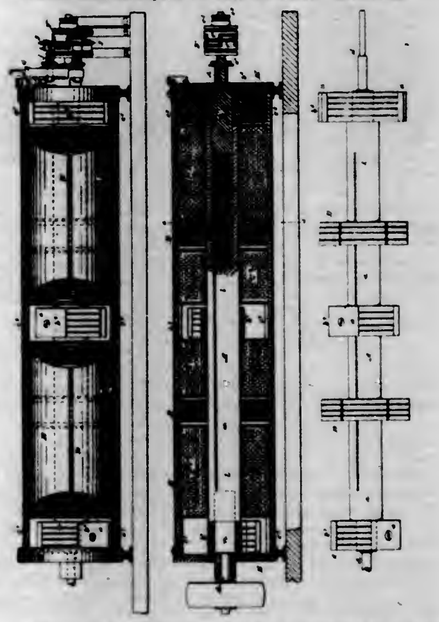
332,667. STEAM-PIPE-JOINT PACKING. JAMES B. LYONS, Norway, Mich., assignor of two-thirds to Frederick L. Hirschmann and Frederick W. Richards, both of same place. Filed Sept. 7, 1885. (No model.)



Claim.—1. A steel or iron packing-ring having two or more angular concentric sharp A-shaped ridges upon each face, substantially as set forth.

2. The combination with the pipes A A', coupling-flanges B B, and bolts *a a*, of a steel or iron packing-ring, C, formed with sharp A-shaped ridges *i i*, substantially as described.

332,668. ELECTRIC MOTOR OR DYNAMO-ELECTRIC MACHINE. WILLIAM MAIN, Brooklyn, N. Y. Filed Mar 2, 1885. (No model.)



Claim.—1. The combination, to form a dynamo-electric machine or electromotor, of a revolving armature consisting of a core having polar projections, stationary pole-pieces arranged on opposite sides of the armature to receive the magnetic reaction of said polar projections as the latter alternately approach and recede with the rotation of the armature, and a stationary exciting-coil surrounding said core and arranged with its axis coincident with the axis of rotation of said armature, where-

by the armature is caused to revolve within its exciting-coil, substantially as set forth.

2. The combination of an exciting-coil, a revolving armature consisting of a core arranged in the axis of said coil and polar projections outside thereof, stationary pole-pieces arranged on opposite sides of the armature and corresponding in position to the polar projections thereon, whereby as the armature revolves its polar projections alternately approach and recede from said pole portions, and a commutator adapted to shunt said coil into circuit while said polar projections are approaching said pole portions and cut it out of circuit while they are receding therefrom, substantially as set forth.

3. The combination of an exciting-coil, a revolving armature consisting of a core arranged in the axis of said coil and polar projections outside thereof, a stationary magnet arranged outside of said coil and within the inductive influence thereof, and having pole portions corresponding in position to the polar projections on the armature, and a commutator adapted to shunt said coil into circuit while said polar projections are approaching said pole portions and cut it out of circuit while they are receding therefrom, substantially as set forth, whereby said pole portions and polar projections mutually attract each other during the approach of the latter and cease to attract each other during the recession thereof.

4. The combination of a revolving armature, two or more exciting-coils surrounding said armature and arranged with their axes coincident with its axis of rotation, a stationary magnet arranged outside of said coils, and a commutator, substantially as set forth, adapted to cause an alternate or successive excitation of said coils.

5. The combination of a stationary magnet, B, having pole portions, a revolving armature, A, having polar projections corresponding to and alternating in arrangement with said pole portions, two or more exciting-coils, C C, surrounding said armature with their axes coincident with its axis of rotation, and a commutator, substantially as described, adapted to alternately connect each coil in the circuit and cut it out therefrom, and to direct the current alternately or successively through the respective coils, as set forth, whereby each coil receives its current in the same direction relatively to the external circuit.

6. In an electromotor, the combination of a revolving armature, two or more coils surrounding said armature with their axes coincident with its axis of rotation, and arranged to magnetize each a separate portion of said armature, and a commutator adapted to direct the current successively through said coils in the same direction, substantially as set forth, whereby each coil receives the current during not more than half the time, and during the remainder of the time it is severed from the circuit and receives no current.

7. The combination of revolving armature A, having polar projections, stationary magnet B, having corresponding pole portions, and a magnetic inductive connection between said armature and magnet, arranged remote from said polar projections and pole portions, with one or more exciting-coils, C, inclosing said armature, substantially as set forth.

8. The combination of stationary magnet B, revolving armature A, coils C C, and iron disk D, mounted on said armature and revolving therewith, with its periphery in inductive proximity to the magnet B, substantially as set forth.

9. In an electromotor, the combination of a revolving armature having polar projections, a stationary magnet having corresponding pole portions, exciting-coils inclosing said armature with their axes coincident with its axis of rotation, and the commutator F, constructed, substantially as set forth, with the roller or conductor *g*, through which the current enters the commutator, and a controlling-lever, G, carrying the conductor *g* and adapted to move the same to different positions around the commutator, and thereby to stop, start, or reverse the motor, as set forth.

10. The combination of a stationary tubular magnet, B, cut away to form pole portions *c c*, revolving armature A, arranged concentrically within it, and exciting-coil C, inclosing the core of said armature and inclosed within said tubular magnet, whereby it magnetizes simultaneously said armature and magnet, substantially as set forth.

11. The combination of a stationary tubular magnet, B, cut away to form pole portions *c c* and divided longitudinally between the pole portions, as described, with a revolving armature, A, arranged concentrically within it, and the exciting-coil C, inclosing the core of said armature and inclosed within said tubular magnet, whereby it magnetizes simultaneously said armature and magnet, substantially as set forth.

12. In an electromotor, the combination, with stationary magnet B, having pole portions and exciting-coil C, of revolving armature A, arranged in the axis of said coil and consisting of an iron core, *a*, subdivided into distinct longitudinal members, for the avoidance of Foucault currents, and pole-pieces *b b*, made up of separate laminæ, substantially as set forth.

13. In an electromotor, the combination, with stationary magnet B, having pole portions and exciting-coil C, of revolving armature A, arranged in the axis of said coil and consisting of a core, *a*, constructed of a longitudinally-slitted iron tube, *l*, and iron wires *m*, arranged longitudinally in said tube, and laminated pole-pieces *b b*, substantially as set forth.

14. The combination, with stationary magnet B, having pole portions and exciting-coil C, of revolving armature A, consisting of iron core *a*, longitudinally subdivided, and the pole-pieces *b b*, each consisting of a series of iron plates separated by intervening layers of non-magnetic material and provided with pole-caps *o o*, substantially as set forth.

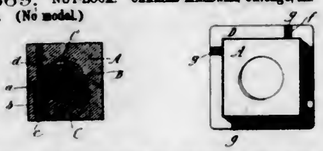
15. The combination, with armature A, exciting-coils C C, and tubular magnet B, of disk-shaped end frames, E E, and non-magnetic tubular envelope or casing I, substantially as set forth, whereby the magnetic parts are inclosed and protected from dust.

16. The combination of revolving armature A, consisting of core *a* and three pole-pieces, *b*, set at equal angular distances apart, magnet B, having pole portions *c c*, corresponding to said pole-pieces, and three exciting-coils, C C, with a commutator, F, adapted to direct the current into said coils successively, whereby each coil receives the current during its proportionate fraction of the revolution, substantially as set forth.

17. The combination of revolving armature A, stationary magnet B, and two or more coils, C C, with a commutator, F, having as many members as there are coils and adapted to direct the current into said coils successively, with roller or conductor *g*, by which the current enters the commutator, and another roller or conductor, *g'*, angularly adjustable relatively to the roller *g*, whereby the duration of the current through each coil may be prolonged and the current may be admitted to each coil for a longer or shorter interval before being cut off from the preceding coil, substantially as set forth.

18. The combination, with the coils C C, of the commutator F, having as many members as there are coils, the roller or conductor *g*, the controlling-lever G, carrying said conductor, the roller or conductor *g'*, the lever G', carrying the latter, and the screw H, for angularly adjusting said levers G G' relatively to each other, substantially as set forth

332,669. NUT-LOCK. Charles Maldwer, Chicago, Ill. Filed Oct. 2, 1885. (No model.)

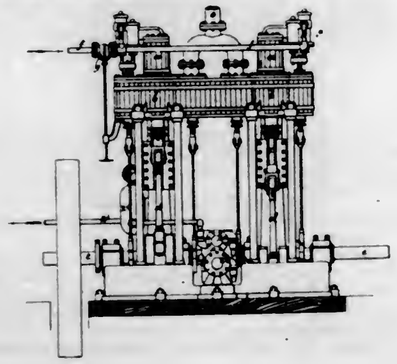


Claim.—1. The combination of the nut A, provided with interior chamber, *b*, having pin-hole *d*, leading into the same, the spiral spring *c* therein, and the click *a*, having pin *f*, seated upon the spring, especially adapted to prevent the nut from turning off the bolt, except when it is desired that it shall do so, and then by simple pressure upon the top end of the pin *f* it is forced entirely out of reach of the grooves C, so that the nut may turn back freely, substantially as described.

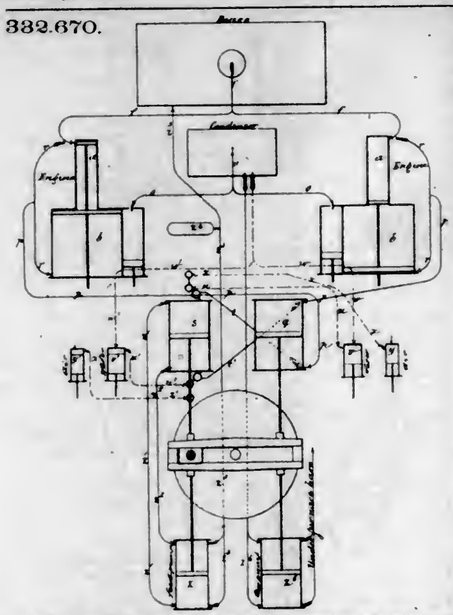
2. The combination of the key D, so constructed as to fit snugly over the angular nut A, and provided with the inclined recesses *g*, so located therein that the pin *f* will enter some one of them whenever the key is properly presented and forced upon the nut, with the said nut A, having the pin-hole *d*, chamber *b*, spring *c*, click *a*, and pin *f*, adapted to force in the pin *f* and hold the click *a* out of reach of the grooves C on the bolt, so that the nut may be turned backward without its touching the screw-thread on the bolt when required, substantially as described.

332,670. STEAM-ENGINE. Robert M. Marchant, London, England. Filed May 25, 1885. (No model.) Patented in England Apr. 26, 1883, No. 2,120; in France Dec. 18, 1883, No. 159,237; in Germany Dec. 25, 1883, No. 27,334, and in Belgium Dec. 28, 1883, No. 63,697.

Brief.—The live steam at the point of cut-off in the high-pressure cylinder is partly passed to the low-pressure cylinder and partly to a compression-pump, and at the same time the condenser-water and compressed air are pumped with the compressed steam to the boiler. The low-pressure cylinder exhausts into the condenser.



332,670.



Claim.—1. The combination, with a steam engine and boiler, of a feed-pump for feeding the boiler, a condenser communicating with the exhaust from the engine, a steam-passage communicating with the engine-cylinder and adapted to transfer steam therefrom at high pressure, two or more pumps and their communicating passages, substantially as described, adapted to compress and unite said steam and the water resulting from the condensation of the remaining steam, and to force them to the feed-pump, to be returned into the boiler, and an air-compressor with its discharge-passage communicating with said pumps and adapted to force compressed air or other gas thereto, to effect the sending forward or propulsion of said steam and water, substantially as and to the effect set forth.

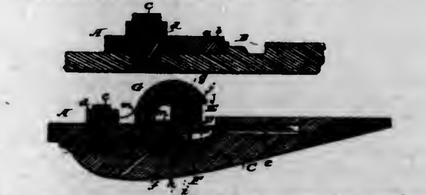
2. The combination, with a steam engine and boiler, of a feed-pump for feeding the boiler, a pressure-pump, the inlet-passage thereto communicating with the cylinder, and the outlet-passage thereof communicating with an intermediate pressure-pump, the said intermediate pump, the outlet-passage thereof communicating with said feed-pump, a condenser communicating with the exhaust from the engine, a condensation-water pump with its inlet communicating with said condenser and its discharge communicating with said intermediate pump, and an air-compressor with its discharge communicating with said intermediate pump, all substantially as set forth, whereby a portion of the steam, after having done its work at high pressure in the engine-cylinder, is transferred therefrom and compressed, and the remaining steam, after having acted by expansion, is condensed, and the condensation-water is forced forward with the aid of the compressed air or other gas being united with and separated by the said steam, and the mixed steam and water are finally forced by the feed-pump, aided by the compressed air, back into the boiler.

3. The combination of the engine-cylinder, the steam-inlet pipe, the exhaust-pipe, the condenser, the condensation-water pump *v*, the passage *w* from the condenser to said pump, the compressing-pump *q*, the passage *p*, for high-pressure steam, leading thereto from the cylinder, the delivery pipe or pipes from said pump, communicating with the compressing-pump *s*, and eventually with a feed-pump, *z*, the said compressing-pump *s*, the said feed-pump, the passage *u*, leading from the pump *v* and communicating eventually with said feed-pump, an air compressor or pump, *y*, the delivery-passage therefrom communicating eventually with said feed-pump, and the feed-pipe z^3, leading from the feed-pump to the boiler, substantially as set forth.

4. The combination of the engine-cylinders, the steam-inlet pipe, the exhaust-pipe, the condenser, the double-acting condensation-water pump or pumps, passages leading thence from said condenser, the double-acting first compressing pump or pumps, passages leading thence from the respective cylinders, the double-acting intermediate compressing pump or pumps, the double-acting air pump or pumps, the double-acting feed-pump for feeding the boiler, the double passages leading from the respective air and feed pumps and first compression-pumps and communicating with said intermediate compression pump or pumps, the double passages leading from said intermediate compression pump or pumps and communicating with said feed-pump, and the passage leading thence to the boiler, with the engine-shaft and connections therewith for operating said pumps in unison with the engine-pistons, substantially as set forth.

5. The combination of the engine-cylinders, the steam-inlet pipe, the exhaust-pipe, the condenser, the condensation-water pumps, the passage leading from the cylinder for taking off high-pressure steam, the first and intermediate compressing-pumps, the feed-pump for feeding the boiler, the air-compressor, and passages leading from said condensation-water pump, compressing-pumps, and air-compressor, communicating eventually with said feed-pump, with the air-suction pump z^2, communicating with the condenser and adapted to draw the air therefrom, substantially as set forth.

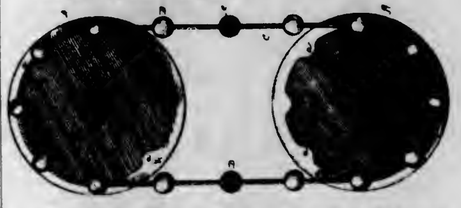
332,671. FINGER-BAR AND FINGER FOR MOWING-MACHINES. Dewitt C. Markham, Towanda, Pa., assignor to the Eureka Mower Company, Utica, N. Y. Filed July 15, 1884. (No model.)



Claim.—1. The finger-bar of a mowing-machine formed with a downwardly-beveled front side, *a*, in combination with the shoes of a mowing-machine, upon which the ends of said finger-bar rest and to which said bar is secured, said shoes being formed in front of said bar with an upwardly-extending overlapping part, *b*, which fits over the beveled side of the finger-bar, substantially as set forth.

2. A finger-bar formed with projections *n n* and a knife with its knife-head E, which is beveled on its upper front edge, *j*, in combination with a knife-keeper having flanges H H, bolt-holes *k k*, grooves *m m*, projection I, and lip J.

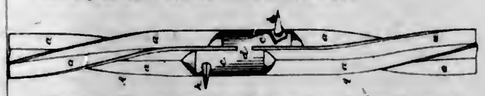
332,672. DRIVING-BELT. John Mellette and Francis M. Harris, Winamac, Ind., assignors of one-third to W. H. Bonsiog, same place. Filed Aug. 10, 1885. (No model.)



Claim.—1. A belt consisting of a wire rope with at intervals a series of metallic balls cast directly on said rope, substantially as specified.

2. A belt consisting of a wire rope with pins at intervals, and metallic balls surrounding said pins and cast on said rope, substantially as specified.

332,673. COUPLING FOR LIGHTNING-RODS. Alvin J. Munson, Indianapolis, Ind. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with the sections of a spirally-twisted lightning-rod of four webs, of a coupling-casting of four quadrants of a solid cylinder united by a transverse web, *d*, and provided with bolt-openings and coupling-bolts therefor, substantially as and for the purpose set forth.

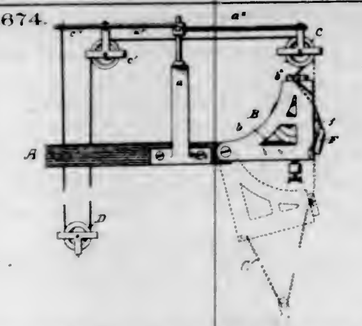
2. The combination, with the sections of a spirally-twisted lightning-rod of four webs, of a coupling-casting formed of four quadrants of a solid cylinder united by a transverse-web part, and provided with bolt-openings and coupling-bolts therefor, pointed, as described, whereby the electric discharge is gathered and dispersed, substantially as described.

3. The combination, with the rod-sections, of the coupling having matching quadrant-arms and bolts passing through them in pairs at right angles, as shown and described.

332,674. STORE-SERVICE APPARATUS. Ralph H. North, Philadelphia, Pa. Filed Nov. 12, 1885. (No model.)

Claim.—1. In a store-service apparatus, the combination of a carrier-

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dispatcher or send-off, a carrier-cord, and a weight, for the purpose specified.

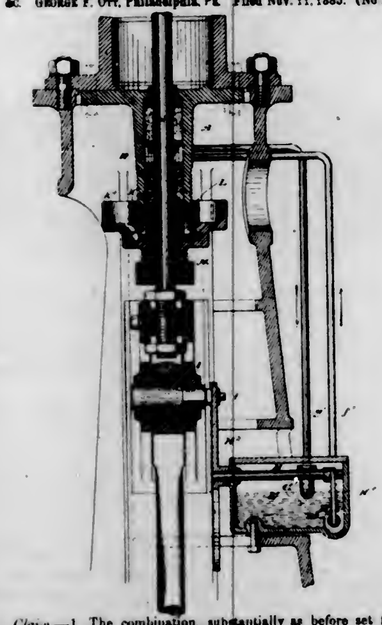
2. In a store-service apparatus, the combination of a dispatcher or send-off, a carrier-cord so suspended as to have two bights formed in it, an operating-pulley suspended in one of the bights, and a counter-weight suspended in the other bight, for the purpose specified.

3. In a store-service apparatus, the combination of a dispatcher or send-off, a carrier-cord so suspended as to have two bights formed in it, an operating-pulley suspended in one of the bights, and a counter-weight of greater weight than the operating-pulley suspended in the other bight, for the purpose specified.

4. The combination of the carrier-dispatcher or send-off, the carrier-cord, the counter-weight provided with cord roll or eye, and the carrier, substantially as described.

5. The combination of the carrier-dispatcher or send-off, the carrier-cord, the counter-weight provided with ears and with a cord roll or eye, and the carrier, substantially as described.

332,675. STUFFING-BOX FOR PISTON-RODS OF ICE-MACHINES, &c. George F. Ott, Philadelphia, Pa. Filed Nov. 11, 1885. (No model.)

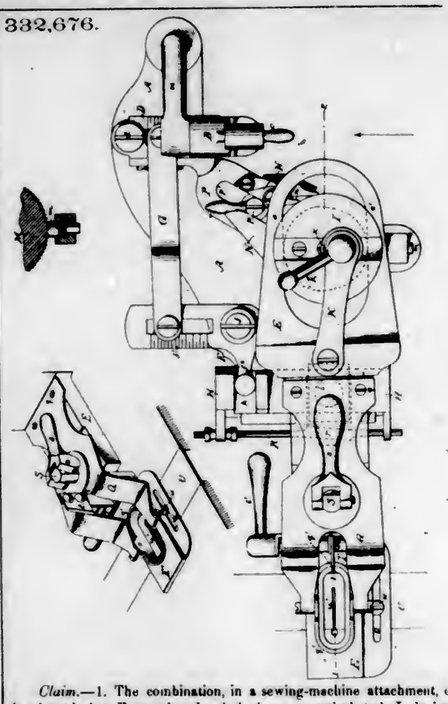


Claim.—1. The combination, substantially as before set forth, of the stuffing-box having an oil-cavity in the packing, a pump for forcing oil into said cavity, and a safety-valve connected with said oil-cavity.

2. The combination, substantially as before set forth, of the stuffing-box, the skeleton separator-ring in the packing, a pump for forcing oil into the cavity formed by said separator-ring in the packing, an oil-well, and a safety-valve within the oil-well and connected with the said cavity in the packing.

332,676. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. Erastus S. Pratt, Brooklyn, N. Y., assignor to the American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Filed Aug. 3, 1885. (No model.)

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Claim.—1. The combination, in a sewing-machine attachment, of the pivoted plate E, carrying the cloth-clamp, a vertical stud, J, devices carried thereby and acting upon the rear end of said plate for reciprocating the same in the direction of its length, a cam, I, also carried by said stud J, for vibrating the plate E on a pivot-pin, *i*, a transverse slide, H, carrying said pivot-pin *i*, the lever D, and means for vibrating the same, and the bell-crank lever F at the side of the slide E, one arm of said lever being connected to the lever D, and the other arm to the transverse slide H, all substantially as set forth.

2. The combination of the plate E and means for reciprocating the same in the direction of its length, the transverse plate H and means for reciprocating the same, and a block, *i*, adapted to a slot in said plate E and adjustable on the slide H, so as to be moved nearer to or farther from the fulcrum of said plate, all substantially as specified.

3. The combination of the plate E, a crank-wheel and connecting-rod for reciprocating the same in the direction of its length, a cam adapted to a slot in the plate, and serving to impart lateral vibration thereto, a slide, H, guided transversely to the plate E, and carrying an adjustable pivot-pin therefor, a lever, D, and means for vibrating the same, and a bell-crank lever, F, one arm of which is connected to the lever D, and the other arm to the slide H, all substantially as specified.

4. In a button-hole attachment for sewing-machines, the combination of the cloth-clamp, the movable plate carrying the same, a knife mounted on and moving with said plate, and a sliding plate, U, connected to the clamp so as to move laterally therewith, all substantially as specified.

5. In a button-hole attachment for sewing-machines, the combination of the cloth-clamp, the movable plate carrying the same, a knife mounted on and moving with said plate, and a sliding plate, U, provided with a slot for the entrance of the knife, and connected to the clamp so as to move laterally therewith, all substantially as specified.

6. The combination of the plate E, the cam L, and the slide H, a plate, *i'*, guided in said slide and carrying a pivot-block, *i*, for the plate E, and an adjustable rod, R, having a cam, *r*, adapted to a slot, *r'*, in said plate *i'*, as set forth.

332,677. CHURN-VENTILATOR. John G. Pritchard, Poultney, Vt. Filed Dec. 31, 1884. (No model.)

Claim.—1. The combination, with a vent-tube carrying a supporting-frame, of a valve, a pendulous weight, and a rod loosely connected with said valve and weight, substantially as specified.

2. The combination, with a liquid-receptacle, of a vent-tube, a valve, a pendulous weight journaled in the frame of said tube, and a rod loosely connecting the weight and valve, substantially as specified.

3. The combination of the tube M', the valve L, the pendulous weight N, and a connecting-rod, O, loosely connected with the weight below its pivots, substantially as specified.

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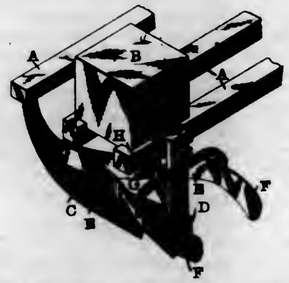
4. The combination of tube M' and supporting-frame, as P, a pendulous weight, as N, pivoted within the frame, and provided with a slotted lug, N^3, and the connecting-rod O, loosely connected with said lug and pivotally connected with the valve L, substantially as shown and described.

5. The combination of the tube M', provided with the valve-seat M, supporting-frame P, and the nut M^3, the valve L, adapted at L' to fit said seat, and provided with the guides L^2 and eye L^3, and the weight N, provided with the bar N^3, pivoted lugs N', the slotted lug N^3, and the rod O, substantially as shown and described.

332,678. METHOD OF TRANSFERRING LETTERS AND DESIGNS TO DIALS. François Schmalz, New York, N. Y., assignor, by mesne assignments, to Robbins & Appleton, same place. Filed Oct. 31, 1884. (No specimens.)

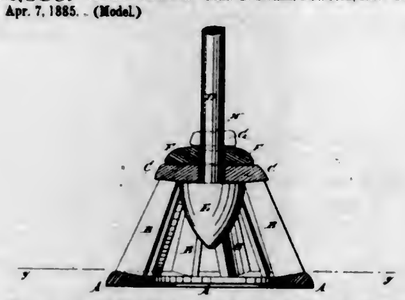
Claim.—The improvement in the art of transferring designs and letters upon watch and clock dials and other surfaces, which consists of the following steps: first, applying a glass-mounted positive having its design fired in, whereby the use of a protective varnish is dispensed with, to a sensitized plate or paper; second, exposing the positive and sensitized plates so applied to the light; third, applying a powdered mineral paint to the undecomposed portions of the sensitized plate after its exposure; fourth, removing the sensitized film from the plate; fifth, applying the sensitized coated film and its adhering mineral paint to the article to which the characters are to be affixed; and, sixth, finally firing the article, substantially as set forth.

332,679. CORN-PLANTER. Edward M. South, Hamilton, Ohio, assignor to Henry P. Deuscher, same place. Filed Aug. 10, 1885. (No model.)



Claim.—In a corn-planter, the combination of a runner-shaped furrowing-blade, C, having a widened heel at its rear end, and the fenders E, having their forward ends secured to the forward portion of the furrowing-blade and formed to present convex curves toward the furrowing-blade forward of the point where the furrowing-blade widens, and having their rear ends presenting concave curves inward, substantially as and for the purpose set forth.

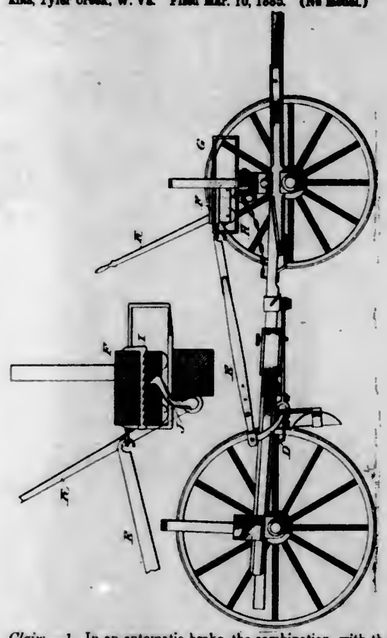
332,680. CHURN-DASHER. John B. Swaim, Newbern, Ind. Filed Apr. 7, 1885. (Model.)



Claim.—1. A churn-dasher consisting, essentially, of an annular base-plate, a top plate, inclined spaced slats connecting the said plates, each pair of slats being wider apart at their inner than their outer edges, a cone-shaped projection extending downward within the space between the upper ends of the slats, and an operating-handle, substantially as set forth.

2. As an improved article of manufacture, the churn-dasher, consisting of the top plate, C, the annular base-plate A, inclined from its outer to its inner edges, as described, the slats B, connecting said plates and converging at their upper ends, each pair of said slats being wider apart at their inner than at their outer edges, the handle D, provided with the pointed or conical knob E, resting against the lower face of the top plate, and means for securing the handle to said top plate, substantially as set forth.

332,681. WAGON-BRAKE. Franklin M. Swaim and William W. Adkins, Tyler Creek, W. Va. Filed Mar. 10, 1885. (No model.)

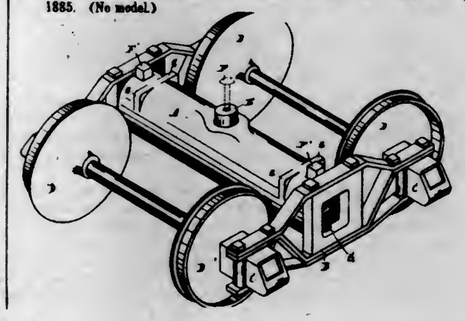


Claim.—1. In an automatic brake, the combination, with the movable sand-board, connecting-rods, and brake-rod, of the coupling-pole B, the bounds A A, having the plates or boxes *a a* and the slots *a'*, and a pin for engaging the coupling-pole and slots.

2. In an automatic brake, the combination, with the coupling-pole and rear bounds, having the slotted box *a a*, of the brake-rod C, having a box, *c'*, on the coupling-pole, a semicircular brace, c^2, connected at its ends to the brake-rod and extending forward beyond the box *a*, and provided with a box, c^3, through which the coupling-pole passes, the forward sand-board F, and connections thereto from the brake-rod, as shown and described.

3. The combination, with the brake-rod C, extensible connecting-rods E, sand-board F, having grooves in its ends, boxes or shoes G, on the upper plate of which the board F moves by means of the groove, and rollers H H, working in boxes G, as and for the purpose set forth.

332,682. CAR-TRUCK. John Turner, Detroit, Mich. Filed Oct. 15, 1885. (No model.)



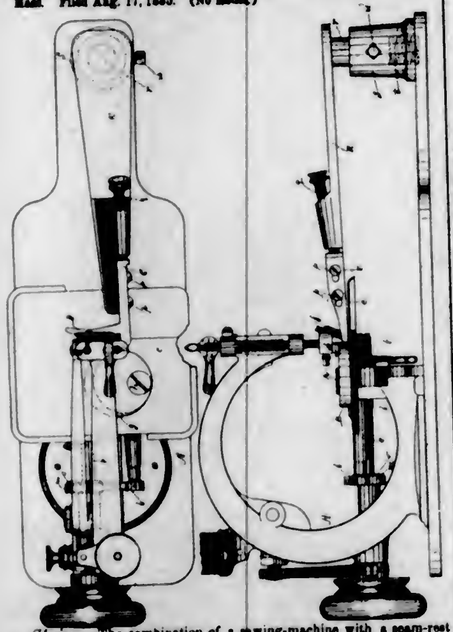
Claim.—1. In a railway-car truck, a hollow cylindrically-shaped beam, the ends of which are squared, as shown, in combination with trusses which embrace and are rigidly secured to said squared ends and carry the axle-boxes, substantially as described.

2. In a car-truck, and in combination with a hollow cylindrical beam, a spring or nest of springs located in the interior center of such beam, in combination with a pivot-block resting upon the top of such spring or springs, substantially as and for the purposes specified.

3. In a car-truck, a hollow cylindrically-shaped beam having secured to its ends the necessary trusses, which carry the car-axle boxes, and having an interior central spring-support carrying the pivot-block, in combination with bearing-studs projecting through the wall of said beam near each end and resting upon springs concealed within said beam, substantially as and for the purposes set forth.

4. In a railway-car truck, a hollow cylindrical beam constructed substantially as described, and having ears cast upon either side thereof or secured thereto for the purpose of supporting inside brakes, substantially as described.

332,683. **SEWING-MACHINE.** John W. Tuttle, Watertown, assignor, by mesne assignments, to himself, and Charles Woodman, Chelsea, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—The combination of a sewing-machine with a seam-rest and work-separator and their supporting-arm and a seam-compressor, substantially as described, arranged essentially as represented, with the table, feeder, needle, and presser of such machine, such rest and work-separator being adjustable, as explained, relatively to the table and seam-compressor, and the latter having mechanism for intermittently moving it toward and from the said seam-rest, in order to permit the work to be fed along and its seam-edges compressed, as specified.

332,684. **CRUTCH.** John W. Tuttle, Watertown, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—1. The stem stepped in the metallic foot and connected thereto by a tapering spiral spring encompassing the stem and fixed to the foot, in combination with the elastic shoe surrounding the foot and stem and the said spring, and extending across the under side or tread of such foot.

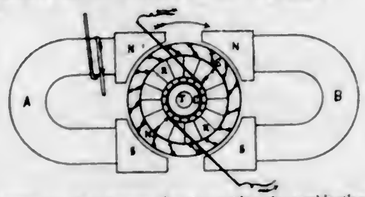
2. The combination of the covering and contractile cap D, encompassing the stem and upper part of the shoe, with the metallic foot and the stem stepped in the latter, and with the tapering spiral spring connecting the foot and stem and surrounding the latter, as set forth.

3. The combination of the metallic thimble fixed on the staff and extending across the lower end thereof, with the screw-threaded stem screwed into the lower part of the said thimble and stepped into a foot and connected therewith by a conical spring, as described, such foot and stem having upon them the covering-shoe and its contractile cap, as represented.

4. The crutch-shoe having within it the metallic insole and its spor, as described, in combination with the metallic foot and the screw-threaded stem stepped in the foot and arranged in the shoe and its contractile cap, and connected to the foot by a spiral spring, as set forth.

5. The screw-threaded stem having its screw-thread flattened on one side, as represented, and screwed into a metallic thimble provided with a set-screw to screw against the flattened part of the stem, in combination with the crutch-staff inserted in and fixed to the thimble, and with the metallic head, the connecting spiral spring, and the elastic shoe and its contractile cover, all being arranged and applied substantially as set forth.

332,685. **DYNAMO-ELECTRIC MACHINE.** Frank G. Waterhouse, Sacramento City, Cal. Filed June 17, 1884. (No model.)



Claim.—1. In a dynamo-electric machine, the combination of two separate field-magnets, each provided with two separate pole-pieces, a rotary armature and commutator, and connections substantially as described, the poles of the armature being arranged adjacent to the opposite poles of the two field-magnets, whereby the said armature-poles act inductively upon the adjacent poles of the field-magnets and strengthen the poles at the opposite end of the magnets.

2. In a dynamo-electric machine, the combination of two separate field-magnets, each provided with two separate pole-pieces, the like poles of the magnet being opposite each other, a rotary armature and commutator, and connections substantially as described, the poles of the armature being arranged adjacent to the opposite poles of the two field-magnets, as and for the purpose set forth.

3. In a dynamo-electric machine, the combination of two separate horseshoe field-magnets, the like poles of the two magnets being arranged opposite each other, a closed-circuit armature and commutator, and connections, substantially as described, whereby the armature-poles act inductively upon the adjacent poles of the field-magnet and strengthen the poles at the opposite ends.

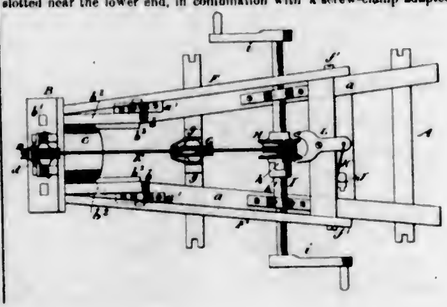
332,686. **PRINTER'S GALLEY.** Daniel B. Watts, Montrose, Mo., assignor of one-half to George W. Dunn, same place. Filed Apr. 20, 1885. (No model.)



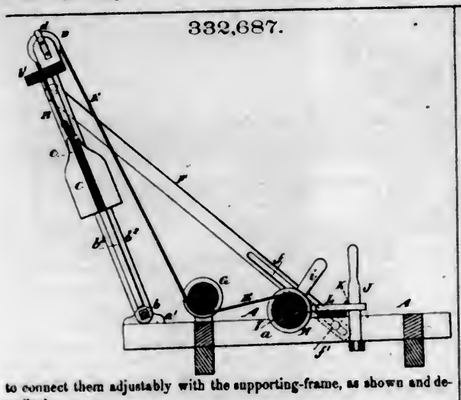
Claim.—As an improvement in printers' galleys, the combination, with the box or casing having one of its sides formed with the recesses or slots, of the adjustable slide formed with the laterally-extending bosses provided with screw-threaded apertures, and the removable adjusting-screws seated in the said recesses or slots in the side of the casing and provided each with the two collars adapted to prevent their lateral motion, as and for the purpose shown and set forth.

332,687. **POST-DRIVER.** Alfred Weeden, Bon. Wis., assignor of one-half to J. W. Bradshaw, same place. Filed May 25, 1885. (No model.)

Claim.—1. In post-drivers, the two braces for the pivoted rack, slotted near the lower end, in combination with a screw-clamp adapted



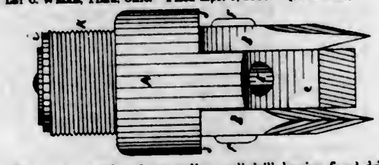
332,687.



to connect them adjustably with the supporting-frame, as shown and described.

2. In a post-driver having a windlass, pulley, hand-crank, clutch, and horizontally-movable lever, the vertically-movable hand-lever connected with the horizontally-movable lever, and placed in such local relation to the hand-crank on windlass that a man working the windlass may also work the trip mechanism, as described.

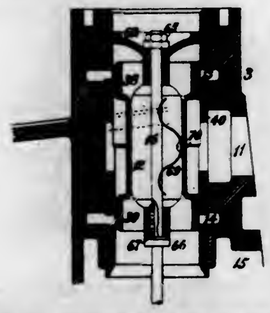
332,688. **SELF PUMPING AND EXPANDING WELL-DRILL.** Willet C. Wells, Tiffin, Ohio. Filed Apr. 9, 1885. (No model.)



Claim.—1. A winged expanding well-drill having fixed drill-head with opposite faces converging to form a central cutting-edge transverse to the face or faces to which the wing or wings are pivoted, and openings (one or more) in said converging faces extending upward and communicating with the interior of the tabular drill-stock, substantially as described.

2. An expanding well-drill having fixed and central drill-head with faces converging to form a cutting-edge, one or more openings extending upward from the converging faces of said fixed drill-head and communicating with the interior of the tabular drill-stock, and expanding wings (one or more) pivoted to the side or sides of said fixed drill-head and oscillating thereon in a plane transverse to the cutting-edge of the fixed head, substantially as described.

332,689. **STEAM-ENGINE VALVE.** H. Herman Westinghouse, New York, N. Y., assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Oct. 1, 1885. (No model.)

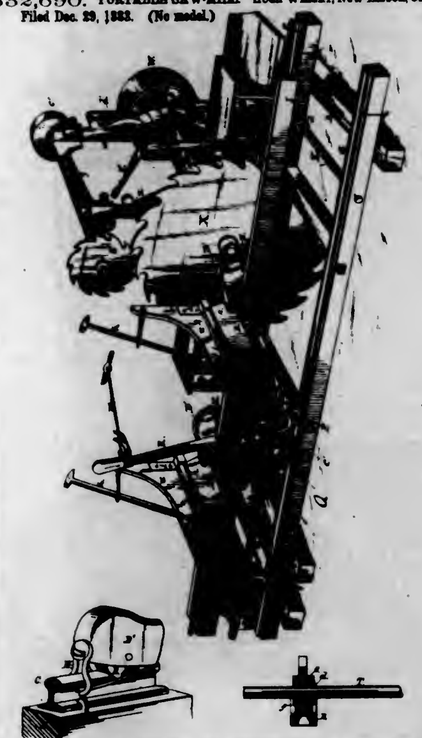


Claim.—1. The combination of a piston-valve, one or more packing-rings fitting therein, and a pressure device, substantially as described, for maintaining said rings in contact with the casing or chest of the valve at and adjacent to their cuts or points of division, substantially as set forth.

2. The combination of a piston-valve, a packing-ring fitting a recess therein and held in said recess against axial movement, a stem on which the valve is fixed with the capacity of a slight degree of lateral movement, and a spring bearing against the valve-stem and valve and exerting lateral pressure in the direction of the cut or point of division of the packing-ring, substantially as set forth.

3. The combination of a valve having two end pistons, which are inwardly tapered or inclined on one or both of their ends, packing-rings fixed as against lateral movement in said pistons, a pressure device for maintaining said rings in contact with the casing or chest of the valve at and adjacent to their cuts or points of division, and segmental cylindrical bearing-surfaces, each raised above the tapered portion of one of the pistons and extending from a packing-ring toward the end of the piston at and adjacent to the cut or point of division of said packing-ring, substantially as set forth.

332,690. **PORTABLE SAW-MILL.** Hugh Wright, New Lisbon, Ohio. Filed Dec. 29, 1883. (No model.)



Claim.—1. In a saw-mill, the combination with a trackway consisting of an outer flat rail, G, and an inner T-rail, C, of the head-blocks D and feed-rack I, connecting the same, the said head-blocks having at their outer ends the friction-wheels F, and having at their inner ends hollow cross-extensions D', bearing flanged wheels E, said cross-extensions being also provided at each of their extremities with yokes H, extending beneath the flange of the T-rail, substantially as shown and described.

2. In a saw-mill, the combination, with the head-blocks D and the superjacent knees U, said knees being provided on their under sides with gear rack-teeth *g*, of the set-shaft T, having pinions *d*, engaging with said teeth and splined upon the shaft, the bore of said pinions gradually increasing from their centers to their ends, the pinions being provided with peripheral grooves *e*, and the head-blocks with corresponding tongues, *f*, fitting therein, substantially as set forth.

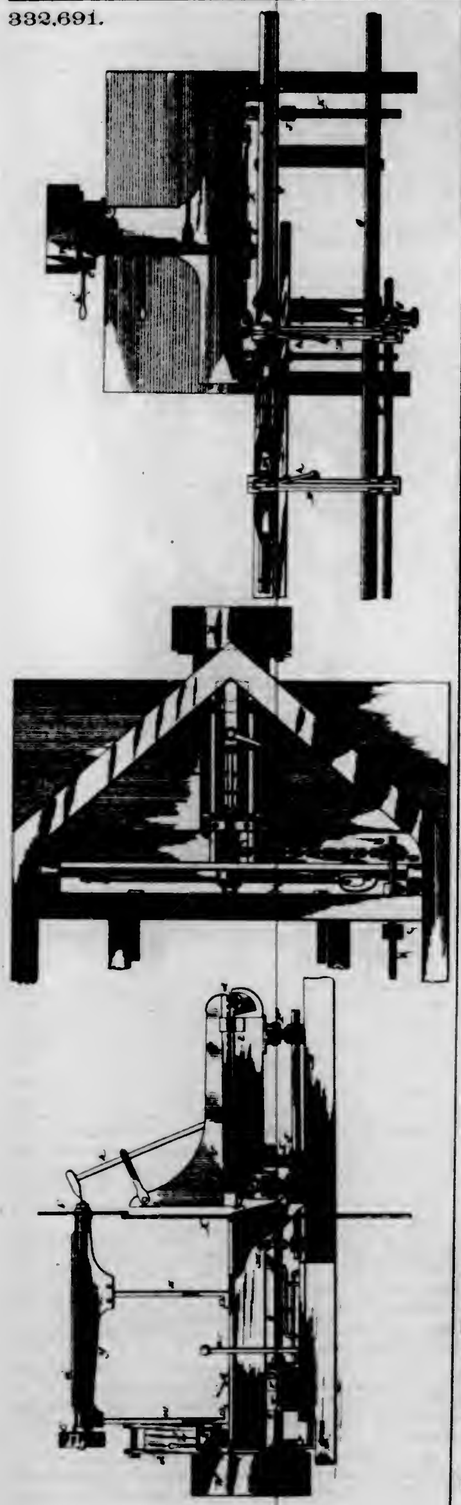
3. In a saw-mill, the combination, with the head-block D, having the upper flange, *k*, of the superjacent knee U, provided on its under side with the rack-flange *i*, the head-block being furthermore provided at its outer end with the detachable guide *l*, and the knee being provided at its inner end with the detachable guide *j*, substantially as set forth.

332,691. **CIRCULAR-SAW MILL.** Hugh Wright, New Lisbon, Ohio. Filed June 17, 1885. (No model.)

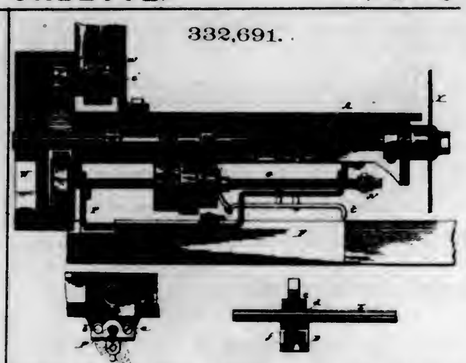
Claim.—1. In a saw-mill, the combination of a hollow T-shaped frame, A, the main saw-shaft V, a supplemental shaft, as O, and an endless chain, said shafts supported and the chain and shafts inclosed and protected by the hollow frame, in the manner and for the purpose set forth.

2. In a saw-mill, the combination of a main frame, as A, a swinging frame, as P, attached thereto, a main shaft, as V, supported by the main frame and carrying a saw and a driving-pulley, as W, and a sup-

332,691.



332,691.



plemental shaft, as O, carrying a friction-pulley, as *v*, adapted to engage with the inner surface of the driving-pulley, substantially as described.

3. In a saw-mill, the hollow T-shaped frame A, in combination with the main saw-shaft V, differential speed-pulley Y, mounted on shaft O, pulleys *n o p* on shaft V, sprocket-wheels L N on shafts K and O, endless chain M, and shipping mechanism connected to pulley Y, substantially as described.

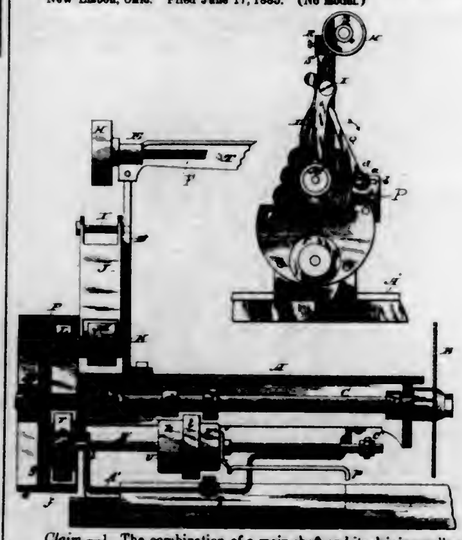
4. The combination, with a saw-mill, of the main driving-shaft having bearings in the fixed frame, the shaft O, arranged parallel with the main shaft, and having its bearings in a frame pivoted to the main frame, and carrying a differential friction-pulley constructed to mesh with the pulleys on the main shaft, and mechanism for engaging said pulleys, substantially as described.

5. The combination, with a saw-mill, of the main driving-shaft having bearings in the fixed frame, the shaft O, arranged parallel with main shaft and having its bearings in a frame provided with two distinct pivot-points, whereby the frame can be connected to engage with the driving-shaft on either side, substantially as described.

6. The combination, with a saw-mill and its main shaft, the shaft O, mounted in a swinging frame connected to the main frame and having two distinct pivot-points, of the main shaft V, provided with friction-pulleys *n o p*, differential pulley Y on shaft O, and lever *u*, attached to the swinging frame for engaging and disengaging the differential driving-pulleys, substantially as described.

7. In combination with a saw-mill and its main shaft, the swinging frame secured to the main frame, shaft O, supported by said swinging frame and bearing pulleys Y and *v*, shaft V, supported by the main frame and provided with driving-pulley W and friction-pulleys *n o p*, shipping-lever *t*, connected to pulley Y, and lever *u*, secured to the swinging frame, substantially as described

332,692. MEANS FOR TRANSMITTING MOTION. HUGH WRIGHT, New Lisbon, Ohio. Filed June 17, 1885. (No model.)



Claim.—1. The combination of a main shaft and its driving-pulley, provided with a frictional surface, as shown, a secondary shaft, a swinging hanger carrying a belt-pulley and a friction-pulley, and a lever for operating the swinging hanger to bring the friction-pulley into contact with the driving-pulley, substantially as described.

2. The combination of a main driving-pulley, provided with frictional surfaces, as shown, a swinging hanger supporting a friction and a belt pulley, and an operating-lever eccentrically connected to the hanger, and a bracket attached to the main frame, whereby the pulleys are secured in either position described, as and for the purpose set forth.

3. The combination of a bracket, a laterally-swinging hanger pivoted thereto and supporting a friction and a belt pulley, a driving-pulley provided with a frictional surface on the inner side of its rim, and a lever for operating the swinging hanger, substantially as described.

4. The combination of a main shaft, its driving-pulley, a secondary shaft adjustably supported upon brackets, and pulleys, substantially as shown, a swinging hanger supporting a friction-pulley, and an operating-lever, as and for the purpose set forth.

5. The combination of a main shaft and its driving-pulley, provided with an inner frictional surface, and two friction-pulleys bearing upon the main pulley, and adapted, through means substantially as described, to transmit motion from the main shaft to two supplemental shafts, as and for the purpose set forth.

6. The combination of a driving-pulley provided with frictional surfaces, as shown, a supplemental shaft supported in a swinging frame and carrying a friction-pulley, a lever for operating said frame, a swinging hanger and its pulleys, a lever for operating said hanger, and an additional shaft driven from the main pulley, substantially as shown and described.

7. The combination of pulley P', provided with inner frictional surface, laterally-swinging hanger J, supporting-pulleys L M, shaft F, pulley H, and lever Q, substantially as described.

8. The combination of pulley P', shafts B' and F, swinging hanger J, friction-pulleys L *r*, belt-pulleys M H, swinging frame A', and operating-levers Q and *q*, substantially as described.

332,693. BRAKE-BLOCK. ROBERT S. C. HERRMAN, Gardenville, Md. Filed May 10, 1884. Renewed May 12, 1885. (No model.)

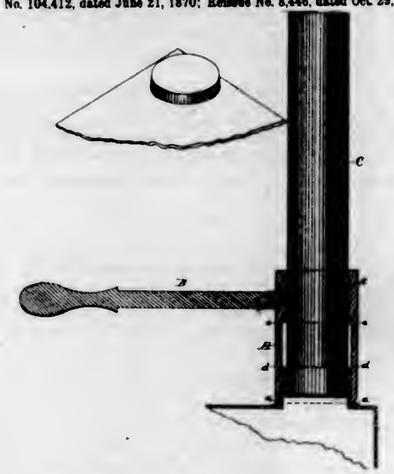


Claim.—1. A brake-block consisting of a brake-shoe having ears *b*, which protect the sides of the rubber B, provided with a facing-piece, and said rubber held in place by a set-screw and supported on a projection, c, which also receives the thrust, all constructed and arranged substantially as specified.

2. The combination of a brake-shoe, A, having ears *b* and angular projection *c*, with a rubber, B, having facing-piece C, and held in place by a set-screw, e, and attached to the brake-bar D, all constructed and arranged substantially as and for the purpose set forth.

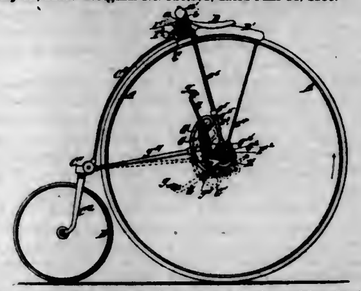
REISSUES.

10,672. SOLDERING-IRON. JAMES A. BOSTWICK, New York, N. Y., assignor to McMurray, Lang & Burnham. Filed May 17, 1884. Original No. 104,412, dated June 21, 1870; Reissue No. 8,446, dated Oct. 29, 1878.



Claim.—The hollow soldering-iron A, having a handle, B, and beveled rim *a a*, in combination with the rod C, substantially as herein described and set forth.

10,673. VELOCIPEDE. CHARLES S. LINDSLEY, Morristown, N. J. Filed July 31, 1885. Original No. 320,673, dated June 16, 1885.



Claim.—1. In a velocipede, the combination, with a driving-wheel and bearings, of a clutch mechanism consisting of a cylindric hub turning with the wheel, a surrounding clutch-drum provided with inclined surfaces on its inner circumference, and a roller-frame in which are journaled friction-rollers, which are arranged opposite the inclined surfaces of the drum and bear on the said cylindric hub, a treadle-lever, and a flexible connection attached at one end to the drum, passed around the drum, and attached at the other end to said lever, whereby the movement of the lever will produce a pull on the connection to turn the clutch-drum, substantially as herein described.

2. In a velocipede, the combination, with a driving-wheel and bearings, of a clutch mechanism consisting of the cylindric hub turning with the wheel, the roller-frame and rollers, and the clutch-drum provided with inclined surfaces on its inner circumference, as described, a treadle-lever, flexible connections attached to the clutch-drum, passing around the same in opposite directions and attached to the treadle-lever near opposite ends thereof, and a spring for returning the lever and clutch-drum after operation, substantially as herein described.

3. In a velocipede, the combination, with the axle E, of a clutch mechanism consisting of the hub fast on said axle, the roller-frame and rollers, and the clutch-drum, flat metallic bands H H', attached to and passed around the drum in opposite directions, a treadle-lever to which said bands are attached, and a spring whereby the treadle-lever and clutch-drum are returned after operation, substantially as herein described.

4. In a velocipede, the combination, with the axle E, of a clutch mechanism consisting of a hub fast on the axle, the roller-frame and rollers, and the clutch-drum, flexible connections attached to and passing around the drum in opposite directions, a treadle-lever to which said flexible connections are attached, and a coiled spring, G^2, whereby the treadle-lever and clutch-drum are returned after operation, substantially as herein described.

5. The combination, with the driving-axle E, of a clutch mechanism comprising the clutch-drum F^3 with its cylindric periphery, the treadle-lever G, the flat metal bands H H', having enlarged heads or end portions, the box H^2, attached to said drum and having at opposite sides a large opening, h^2, for the introduction of the head of a band, and a narrow slot, h^3, for the passage of the band itself, the two bands being passed in opposite directions around the drum and attached to the lever, all substantially as herein described.

6. The combination, with the drum F^3 and the treadle-lever G, of the flexible connections H H', passed in opposite directions around the drum and attached at opposite ends to the drum and lever, a tightening-screw, and saddle g^{13} g^{14}, applied to one of the connections H H', for taking up slack in both connections, substantially as herein described.

7. The combination, with the axle E and its fixed hub E', of the roller-frame comprising heads or disks *c*, having notched bearing c^3, and rollers *d*, journaled therein, the clutch-drum F^3, having inclined surfaces upon its inner circumference, a treadle-lever, G, and straps or bands passing in opposite directions around the drum and attached at opposite ends to the said drum and lever, substantially as herein described.

8. The combination, with the axle E and the hub E' fast thereon, of the roller-frame and its rollers *d*, and the stud c^4, projecting from the side thereof, the clutch-drum having the slot h^3 in one of its heads, and the bolt h^7, the slotted plate or link H^2, secured in place by the bolt h^7 and receiving through it the stud c^4, the treadle-lever G, and connections between the treadle-lever and clutch-drum for rotating the latter, substantially as herein described.

9. The combination, with the axle E and the clutch mechanism for rotating the axle and comprising the clutch-drum F^3, of the rotary or oscillating frames *f f'* and their lever-supporting rollers f^2, the treadle-lever G, arranged between the said rollers f^2 and the clutch-drum, and connections between said clutch-drum and lever for rotating the drum, substantially as herein described.

10. The combination, with the rotary frames or rings *f f'* and the screw-threaded pins f^2 connecting them, of the rollers f^3, pairs of nuts f^4 applied to said pins, and spherical rollers f^5 between said pairs of nuts and the rollers f^3, substantially as herein described.

11. The combination, with the axle E and the non-rotary boxes b^3, supported by ball-bearings on said axle, of the yoke F^3, connected by pivot-screws *e* with said boxes and supporting the fixed frame of the machine, whereby both roller-bearings may be tightened by tightening the outer bearing, substantially as herein described

12. The combination of the axle E, the sleeves or thimbles *b b'*, and hub E', rotating with said axle, the roller-frame and its rollers *d*, and the clutch-drum F^3, inclosing the hub E' and fitted to turn on the sleeves *b b'*, the non-rotary boxes b^3, supported by ball-bearings, and the yoke F^3, supported by said boxes, the rings or frames *f f'*, journaled on the boxes b^3 and provided with rollers f^3, the treadle-lever G, and the operating straps or bands H H', substantially as herein described.

13. The combination, with a driving wheel or shaft, of a pivoted treadle-lever having a swinging movement on its pivot or fulcrum, a guide along which the fulcrum of the lever is movable during its swinging movement, and connections, substantially as described, through which the treadle-lever during its movement along the guide in one direction transmits rotary motion to said wheel or shaft, substantially as herein set forth.

14. The combination, with a driving wheel or shaft, of a treadle-lever having a swinging movement on its pivot or fulcrum, an arc-shaped or carved guide along which the fulcrum of the lever is movable during the swinging movement of the lever, and connections, substantially as described, through which the treadle-lever during its movement along the guide in one direction transmits rotary motion to said wheel or shaft, substantially as herein described.

15. The combination, with the driving wheel or shaft and a treadle-lever and connections for operating the same, of the carved and slotted guide G' and a roller fitted to the lever-fulcrum and working in said slotted guide, substantially as herein described.

16. The combination, with a driving wheel or shaft, of a treadle-lever having a swinging movement on its pivot or fulcrum, a guide along which the fulcrum of the lever is movable during its swinging movements, supports on which the guide may be adjusted relatively to the axis of the wheel or shaft, locking devices for securing the guide after adjustment, and connections, substantially as described, through which the treadle-lever during its movement along the guide in one direction transmits rotary motion to said wheel or shaft, substantially as herein set forth.

17. The combination, with a driving wheel or shaft, of a treadle-lever having a swinging movement on its pivot or fulcrum, a guide along which the fulcrum of the lever is movable during its swinging movements, supports on which the guide is adjustable relatively to the axis of the wheel or shaft, connections extending upward from said guide to the top of the machine, and through which the guide may be adjusted by the rider, and connections, substantially as described, through which said lever during its movement along the guide in one direction transmits rotary motion to said wheel or shaft, substantially as herein set forth.

18. The combination, with a driving wheel or shaft, and a clutch mechanism for driving the same, of a lever connected with the clutch mechanism for producing the operation thereof, and a slotted arc-shaped guide, G', wherein the fulcrum of the said lever is movable, substantially as herein described.

19. In a velocipede, the combination, with a driving wheel or shaft, and clutch mechanism for driving the same, comprising a clutch-drum, of a treadle-lever having a swinging movement on its pivot or fulcrum, a guide along which the fulcrum of said lever is movable during the swinging movements of the lever, and a band passing from the lever around the clutch-drum, and through which the treadle-lever serves to rotate the drum during the movement of the lever along its guide in one direction, substantially as herein described.

20. In a velocipede, the combination, with a driving wheel or shaft, and clutch mechanism for driving the same, comprising a clutch-drum, of a treadle-lever and band passing therefrom around the drum for the purpose of rotating the drum, a guide whereon the fulcrum of said lever is movable, and by which it is guided, and devices for adjusting the guide into positions eccentric to or concentric with said driving wheel or shaft, substantially as herein described.

21. The combination, with the slotted guide G' and the treadle-lever G, of the fulcrum-pin g^3, a roller, g^3, fitting the slotted guide and having a roller-bearing support on said pin, the axle E and its clutch mechanism, and a connection between the lever and clutch-drum, substantially as herein described.

22. The combination, with the driving-axle E and clutch mechanism thereon, of the treadle-lever G, for operating the axle through the clutch mechanism, the curved guide G', whereon the fulcrum of said lever is movable, supports whereon the guide may be raised and lowered, and rods extending upward from the guide to the top of the machine and by which the guide may be adjusted, substantially as herein described.

23. The combination, with the guide G', of the frame comprising tubular portions c^3 c^4, the portion c^3 serving as a support on which the guide is adjustable, and a rod, *i*, extending from the guide upward through the tubular portion c^4 and serving to adjust the guide upward and downward to bring it eccentric to or concentric with the driving-wheel, substantially as herein described.

24. The combination, with the guides G' and their supports, of the shaft I, journaled in bearings *j* at the top of the machine and having sectors I' fixed upon it, the rods *i*, extending upward from said guides, the flexible connections i' i^2 between said rods and sectors, and the screw-threaded handle I^2, serving both to turn and to lock or hold the shaft I and sectors I', substantially as herein described.

10,674. PIPE-COUPLING. JUNIUS A. MCCORMICK, Pittsburg, Pa. Filed Oct. 22, 1885. Original No. 318,009, dated May 19, 1885.



Claim.—1. A pipe-coupling comprising a sleeve to fit the pipe ends, a pressure-chamber communicating with the interior of the pipe, and one or more annular packing-chambers in communication at their top with said pressure-chamber, and adapted to receive a suitable packing material, substantially as described.

2. A pipe-coupling composed of a sleeve to fit the pipe ends, an annular pressure-chamber communicating with the interior of the pipe, and one or more annular packing-chambers communicating with said pressure-chamber at their upper part only, and provided with means for filling with suitable packing material after the insertion of the pipes to be coupled, substantially as described.

3. In a pipe-coupling, the combination, with the pipes A A, of the sleeve B, having necks *c*, one or more annular sealing-chambers, *f*, and a pressure-chamber, *e*, both of said chambers having a communicating port, *h*, at their upper portion, substantially as described.

4. In a pipe-coupling, the combination, with the pipe ends, of the sleeve B, having neck *c*, a pressure-chamber, *e*, communicating with the interior of the pipes, and one or more annular sealing-chambers, *f*, having port *h*, and subetantially filled with a liquid or semi-liquid material, substantially as described.

5. In a pipe-coupling, the combination, with adjacent sections of a pipe, of a liquid seal surrounding one or both the said pipes near the end, the said liquid being contained in an annular chamber having an opening for the introduction of the same, which opening is tightly closed after the liquid has been introduced, substantially as described.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE LUTZ.

Decided November 25, 1885

1. Applicant presents for registration as a print a sheet containing a representation of thirty-six playing-cards, constituting an entire pack. His petition asks that his "title of the said print, 'Lutz Advertising Cards,'" be registered. *Held* that there is no objection to the registration of such title, but that the sheet alone, and without title, being the merchandise itself, is not entitled to be registered.
2. *Held, further*, that "a label, or print, or legend which shall contain the title 'Lutz Advertising Cards,' and be illustrated as a part thereof by a picture or cut of proper size of one or even all the cards proposed to be described and covered thereby, carefully and properly guarded, so that the public could not be misled into the belief that such registration constituted a protection to the party in the manufacture and sale of such cards, would probably not be objectionable."
3. Prior to the act of August 1, 1874, the Librarian of Congress uniformly registered trade-marks, labels, and prints. Since such act such librarian has not registered trade-marks or labels, and registers a print only when it is in fact a "pictorial illustration or some work connected with the fine arts."
4. The term "print," as applied to articles "other than pictorial illustrations or works connected with the fine arts," is used synonymously with the word "label," and which prints should be presented to the Commissioner of Patents for registration.
5. Such print or label which is really a "device, picture, word or words, figure or figurs (not a trade-mark) impressed or stamped directly upon the articles of manufacture," must be registered upon presentation to the Commissioner of Patents.

APPEAL from the Examiner.

REGISTRATION OF A LABEL—PLAYING-CARDS.

Application of Jacob Lutz filed January 24, 1885.

Messrs. Foster & Freeman for the applicant.

MONTGOMERY, *Commissioner:*

I am impressed that quite a wide departure has taken place and now exists between the proposition of applicant when he first came to the Office asking this registration and the proposition as now presented. His application, after proceeding the usual way and describing the title of his print as "Lutz Advertising Cards," simply asks that the "title of the said print" be registered. Surely there can be no objection to *this*. Indeed, I do not understand that any one has made any objection to registering this "title of the said print." The difficulty seems to have arisen, however, from the fact that such title was not actually presented for registration, and that, indeed, no title at all was presented. Instead of presenting the "title of the said print," a naked sheet containing the representation of thirty-six playing-cards, constituting an entire pack, and without label and without designation, was presented for registration. I can see no objection whatever to registering the title "Lutz Advertising Cards," or "Lutz Advertising Playing Cards," or any other similar title. Quite possible it would not be objectionable to receive and register such a title, accompanied by a picture or representation by cut of one or even *more* such cards; of anything, indeed, which might fairly tend to illustrate, explain, or indicate to the observer the quality or nature of the cards.

The point which is made by the Examiner seems to be that he regards this as an attempt to procure the registration of the cards *themselves*, the goods themselves, the merchandise itself, instead of registering the *title*, and instead of securing upon the articles themselves a mechanical or design patent, as should be done, provided they are not anticipated.

If Mr. Lutz desires to have registered his "title of the said print," I think it should be done. A label, or print, or legend which shall contain the title "Lutz Advertising Cards," and be illustrated as a part thereof by a picture or cut of proper size of one or even all the cards proposed to be described and covered thereby, carefully and properly guarded, so that the public could not be misled into the belief that such registration constituted a protection to the party in the manufacture and sale of such cards, would probably not be objectionable.

On the argument of this appeal it was alleged by counsel for applicant that while the holding of the Examiner was in direct line with the uniform previous holdings of the Office upon this subject, still that the statute governing these matters had been ignored. I have examined such statute, and I deduce the following conclusion therefrom:

The general statute upon this subject was passed, and took effect August 1, 1874. (See Patent Office Pamphlet, p. 24.) Prior to that time it had been regarded as the duty of the Librarian of Congress to register, and he had uniformly registered, trade-marks, labels, and prints. Section 1 of the act above mentioned provides that no person shall "maintain an action for the infringement of his copyright unless he shall give notice thereof [that he has secured such copyright] by inserting in the several copies of every edition published, * * * if it be a book, * * * or by inscribing upon some visible portion thereof, in case it be a map, chart, painting, drawing, *print, cut, engraving*, &c., the legend 'Entered according to act of Congress in the year ——, by ——, in the office of the Librarian of Congress, at Washington,' or, at his option, the word 'Copyright,' together with the year the copyright was entered and the name of the party by whom it was taken out."

Section 3 of the act declares that in its construction the words "engraving," "cut," and "print," respectively, employed in the first section—which really means a likeness, a picture, or something similar—shall

be applied to (shall *mean*) only "pictorial illustrations or works connected with the fine arts"—that is to say, this statute means that whenever an engraving, or a cut, or a print is presented for registration to the Librarian of Congress, and he is invited to inscribe thereon the legend above mentioned, he shall do so, provided such engraving, or cut, or print be in fact a "pictorial illustration," or some work "connected with the fine arts." If it be anything else whatever—as, for instance, a box of cigars, or any article of merchandise—then it must be taken to the Commissioner of Patents, who will upon proper application register, (*not* the article of merchandise *itself*,) but a *print* or *label*. I have no doubt that these respective words "print or label," as employed in the statute, and as applicable to the things which are intended for registration by the Commissioner of Patents, are used as synonymous terms; indeed they are so declared by the rules. (See "Rules and Forms adopted by the United States Patent Office [December 17, 1884,] for the Registration of Trade-Marks under the act of March 3, 1881")—that is to say, the Commissioner of Patents should register *prints* which are in *fact* labels. They are both defined as "any device, picture, word or words, figure or figures [not a trade-mark] impressed or stamped directly upon the articles of manufacture."

To conclude, I repeat that applicant's proposition to have the *title* of his cards registered is entirely reasonable, and should be complied with. On the other hand, to have the *sheet* which he offers for registration so registered I do not think would be right. If Mr. Lutz desires protection in the manufacture of this particular kind of card, containing a particular shaped spot, or a particular constructed spot, or a margin for them, *that* must be secured by some kind of a patent, and not by registration. If, on the other hand, he seeks to simply register a legend "Lutz Playing Cards," accompanied by any representation which shall fairly illustrate what that means, I see no objection to such registration.

Ex parte YOUNG *et al.*

Decided December 7, 1885.

1. The statute does not forbid the joinder in one patent of claims for method and apparatus.
2. If an applicant comes to the Office alleging a "unitary invention consisting of the process and the product thereof," which are shown to be novel and useful, and are "in their nature and operation connected together," such invention may be, and ordinarily should be, included in one patent.
3. Two or more inventions which are distinct and disconnected should not be included in one patent. Where, however, two or more inventions are "kindred and auxiliary," or "in their nature or operation connected together," or "connected in their design and operation," they may be included in one patent.
4. Upon receipt of an application the Examiner should determine whether or not two or more independent and separate inventions are included, and if so a division should be required.
5. If not so independent and separate, but are only distinct, but still 'kindred and auxiliary,' or connected in their design and operation, or in their nature or operation connected together, then ordinarily a division should not be required.

APPEAL from Primary Examiner.

TREATMENT OF COAL, &C., FOR OBTAINMENT OF AMMONIA, &C.

Application filed October 17, 1883.

Mr. M. Bailey for the applicants.

MONTGOMERY, *Commissioner:*

The Examiner is of the opinion that the invention claimed by these applicants cannot be included in one patent, and he therefore required them to file a divisional application. From such requirement they appeal to the Commissioner, and request him

to indicate in his decision * * * his dissent from the proposition * * * of a statutory inhibition against the joinder in one patent of claims for methods, apparatus, &c.

I regret that I have been unable to give this important question the careful attention which the subject demands. Even now I have not been able to give to *this case* the exhaustive examination which it and the doctrine it involves merit. I feel, however, no hesitancy whatever in saying, generally, that the unqualified statement "that claims for method, apparatus, &c., are prohibited by the statute from ever being joined or included in one patent," is faulty, and, in my judgment, cannot be sustained. If an applicant comes to the Office alleging a "unitary invention consisting of a process and the product thereof," which are shown to be novel and useful, and are "in their nature and operation connected together," such invention may be, and ordinarily should be, included in one patent. This question has been before the court many times. The case of *Merrill* v. *Yeomans* (4 Otto, 568) was one where suit was brought for infringement, and the question determined was the correct construction of the plaintiff's patent," as evidenced by the specification. The court say that—

no such question could have arisen if appellant had used language which clearly and distintly points out what it is that he claims in his invention.

The court next proceeds to say—

that if all which is described as new in these specifications is really so, the inventor has a right to a patent for three inventions: 1, for a modification or improvement in the distilling apparatus; 2, for a new process or mode of distilling heavy hydrocarbon oils by which they are deprived of their offensive odors; 3, for the product of this new process of distillation, namely—the deodorized heavy hydrocarbon oils fitted for use in the arts.

The conclusion reached by the court is that the patent is good and valid for two important matters, and that if the patentee is—

also entitled to a patent for the product of the distillation, and has failed, * * * the law affords him a remedy by a surrender and reissue.

This decision certainly distinctly recognizes applicant's right to a patent for the product of his process as well as for the process itself, had both been fairly claimed and described.

Again, it is said by the authorities that—

patents may be united if two or more included in one set of letters * * * are in their nature or operation connected together. (1 Whitman, 484.)

In the frequently-referred-to case of *Hogg* v. *Emerson* (11 Howard, 587) it is declared that where two or more inventions are "kindred and auxiliary" one patent may be allowed to cover both. And, again, that

a patent for more than one invention is not void if they are connected in their design and operation. (Ib., 606.)

It is true that several of the justices dissented from the conclusion which was reached by the court. There is nothing, however, to indicate the reason of their dissent except the brief dissenting opinion of Justice Catron, in which he declares that

no more than one invention, distinct and disconnected from others, can be granted in the same letters.

I do not understand this doctrine to be at all at variance with the general doctrine which has been so frequently asserted by the courts. No one will, I think, contend that it would be wise or reasonable to ask for or include more than one distinct and disconnected invention in one patent. It is true that a majority of the court in *Hogg* v. *Emerson* do not seem to assent to the doctrine that

two or more inventions, which are entirely separate and independent,

cannot be patented together, but, on the contrary, it is declared to be doubtful on principle, and the court cite with approval the case of *Wyeth* v. *Stone*, (1 Story, 288,) where it is declared that,

in order to render letters patent necessary, it is said, the inventions must be wholly independent of each other, and distinct inventions for unconnected objects—as one to spin cotton and another to make paper.

I think it abundantly settled by repeated adjudications that two or more inventions which are "kindred and auxiliary," or which are "in their nature or operation connected together," or which are "connected in their design and operation," may be included in one patent. Now, while this is true, the Patent Office is undoubtedly vested with a somewhat liberal discretion in determining when and under what circumstances applicants should be required to make divisional applications. Patent Office Rule 40, which prohibits two or more "independent inventions" being included in the same patent, is no doubt reasonable and proper and must be upheld. I cannot agree, however, that the broadest construction of which its language may be deemed capable should be given it. Ordinarily an applicant should be indulged in his demand for a patent, unless he asks that two or more inventions—which are independent, which are separate, which are not "kindred and auxiliary," which are not in their nature or operation connected together, and which are not connected in their design and operation—be included in the one grant. If it be found necessary to limit applicant beyond these requirements, I think such limitation should be exceptional and not the usual rule. Many times the best judgment of the Examiner must be exercised in determining what really constitutes two or more separate and independent inventions. The rule above cited simply intends to prohibit the obtaining of two separate, independent inventions in one and the same patent. It clearly intends that ordinarily this shall be the test. Inventions may be *distinct* and not separate and independent; even if so distinct, if they depend upon each other and mutually contribute to produce a single result, if they are "kindred and auxiliary," if they are in their nature or operation connected together, if they are connected in their design and operation, they may be claimed in one patent.

All will agree that an application should not ordinarily embrace matters which belong to absolutely distinct, independent, and unconnected official classes or sub-classes where the inventions involved are separate, independent, and not connected together in their nature, design, or operation, but that in such cases a division should undoubtedly be insisted upon. The first inquiry, therefore, should be as to whether or not the inventions, if there be more than one included in the application, can reasonably and properly be said to be independent inventions—*separate* inventions. If they are so independent and separate, they should not be joined, and a division should be called for. If they are not so independent and separate, but are only distinct, but still "kindred and auxiliary," or connected in their design and operation, or in their nature or operation connected together, then ordinarily a division should not be required. Suppose, for instance, a novel, useful, and valuable machine is invented, such a one as has never been before heard of; it involves various mechanical contrivances and various combinations of mechanical elements; applicant obtains a patent for this machine and goes away; a year thereafter he comes back asking for another patent for his *improved* machine. During such year he has conceived and perfected a dozen important improvements, each and all tending to the renovation, correction, and improvement in the working of his machine. He asks for a patent for such improvements. Except in very exceptional cases it would be, in my judgment, unjust and improper to require him to file eleven different applications.

I do not know that I shall be able to say anything more upon this subject. In my opinion it is simply impossible to lay down or formulate any rule, doctrine, or decision which shall establish an invariable and inflexible line of conduct to be followed by the examiners. I do not think any such rule desirable. It is impossible, and, I think, unwise, to attempt to prescribe or point out what shall or shall not be done by the examiner, so as to interfere in the least degree with his conscientious and intelligent consideration of every application and of every invention. It is impossible that a rule should be made which shall indicate each case in which a division should be required, as one might indicate the difference between two or more pronounced colors. This cannot be done. We shall be compelled to deal with each case as intelligently as we can when it reaches us.

In the case under consideration I think that a division should not be required, but that the invention shall be examined as a whole.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Eastern District of Michigan.

THE ROYAL BAKING POWDER COMPANY v. DAVIS *et al.*

Decided November 5, 1885.

1. Although the use of the words "Coral Baking Powder" is not in itself an infringement of the trade-mark, "The Royal Baking Powder," yet when the cans upon which they are used are similar and the labels of the same color and general appearance, a liability exists to deceive purchasers into buying one for the other, and injunction will be granted.
2. Such injunction does not extend to the use of the words "Coral Baking Powder," but to their use in connection with cans and labels of the same general appearance as those of the plaintiff.

BROWN, *J.:*

This is a bill in equity for the infringement of plaintiff's trade-mark, which consists of the words "Royal Baking Powder," used in connection with labels of a particular design and color, applied to the cans containing the article manufactured by plaintiff.

The defendants make use of cans of precisely the same size and shape, to which are affixed labels of the same colors and general design as those of the plaintiff, with the words "Coral Baking Powder" thereon. The answer avers "that the shape and size of the can described in the bill is a common mercantile article in the market, and is made by different manufacturers for holding baking-powders;" that "the colors on the labels are also in common use by baking-powder manufacturers," and denied that the colors and devices men-

tioned in the bill, in combination with each other or with any other matter or thing, constitute a trade-mark. The labels used by defendants' firm are similar to those used by the plaintiff's in their color, and to the extent that one half of the label has a red ground with white letters and the other half a yellow ground with black letters. The corner ornamentations upon the red half are the same, but the words upon this ornamentation differ. The word "Royal" on plaintiff's red ground is in good-sized letters. The word "Coral" on defendants' is in larger letters. In the center of plaintiff's red ground the ornamentation is a picture of a Royal Baking Powder can in a circle. In the center of defendants' red ground is a circle containing therein the words "Trade-Mark," with a large picture below of a piece of coral.

I do not think the use of the words "Coral Baking Powder" is in itself an infringement of plaintiff's trade-mark—"The Royal Baking Powder." The difficulty is with the similarity of the labels of the cans upon which the words are used. The general arrangement of the words being the same, the devices upon the cans being very much alike, and the labels of the same color and general appearance, I think purchasers might be very easily deceived into buying the one for the other. The injunction, then, will not extend to the use of the words "Coral Baking Powder," but to their use in connection with cans and labels of the same general appearance as those of the plaintiff.

U. S. Circuit Court---Eastern District of Missouri.

PETERSEN *et al. v.* SIMPKINS.

Decided October 24, 1885.

The case being before the court on final hearing, and the proofs showing that the defendant put up the oven and controlled and managed it, and impliedly, if not directly, acknowledged that it was his work, injunction is granted, and the case sent to the master to assess damages.

Mr. Geo. H. Knight for the complainants.

Mr. Paul Bakewell for the defendant.

TREAT, *J.*, (orally:)

I regret that this case was presented to the court in the manner that it was. It is a patent case. There is nothing before the court but, assuming the patent to be valid, whether this defendant has infringed. It is thought by counsel that the testimony does not show that fact, or that he had anything to do with this baker's oven, which seems to have been specially examined. I think the testimony shows that he had. The proof is sufficient to the mind of the court that he put up the oven and controlled and managed it, and impliedly, if not directly, acknowledged that it was his work. In that case, as the matter is but imperfectly before the court, and as it is here now for final hearing, I can do nothing more than to grant an injunction and let the case go to a master to assess damages.

U. S. Circuit Court---Eastern District of Missouri.

PETERSEN *et al. v.* SIMPKINS.

Decided October 31, 1885.

Motion for a rehearing is overruled.

Mr. Geo. H. Knight for the complainants.

Mr. Paul Bakewell and *Mr. R. A. Bakewell* for the defendant.

TREAT, *J.*, (orally:)

This is a patent case on the equity side of the court. I have gone over the motion for a rehearing with painstaking care and carefully considered the questions involved. I have examined also the decisions of the Supreme Court with regard to these matters, in order to verify my action not only for the purposes of this case, but also for my conduct hereafter, to see whether I had been in error or not with regard to what is their true construction, and I find the decisions of the Supreme Court fully sustain what I determined with regard to this matter, leaving open only one question, which is a question of fact submitted to the chancellor, in the light of the testimony. I cannot see, after going over that testimony again, how any other conclusion can be reached than that Mr. Simpkins did, in connection with this bake-oven, put it up, and that it is practically so admitted.

I shall overrule the motion.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Order No. 313.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., December 15, 1885.

In compliance with the recommendation of the Examiner in charge, the following changes are hereby directed in the classification in Division XIV:

Class 150, Packing and Storing Vessels, change the title of subclass "Barrel—Stave" to *Barrels*. In Wooden vessels, &c., form a new sub-class, *Bungs*.

Class 113, Sheet-Metal Ware, Making, form new sub-class in "Die-shaping," *Fillers and Forcers*.

Class 153, Metal Bending and Straightening, Division XIII, form new sub-classes in—

Bending—
By-press.
By-rolls.

ROBT. B. VANCE,
Acting Commissioner.

Order No. 314.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., December 15, 1885.

In compliance with the recommendation of the Examiner in charge, the following sub-classes in Class 75, Metallurgy, Division III, are abolished:

Metals—
17. Reducing, refining, and separating
18. Solution and precipitation of
25. Roasting-hearths.

The following new sub-classes are directed to be formed in said Class 75:

Drying air,
Utilizing tin-scrap,
Wet processes,
Reducing and separating—
Apparatus,
Aluminium,
Desilverizing lead,
Desulphurizing ores,
Disintegrating ores,
Copper,
Flux,
Gold and silver,
Ore Bricks,
Nickel and cobalt.
Solution and precipitation—
Chlorination,
Electrolysis,
Ferric salts,
Parting bullion.
Iron and steel direct—
Furnaces,
Retort-furnaces,
Bricks,
Flux,
Gases,
Slag,
Sponge.
Roasting and smelting hearths.

ROBT. B. VANCE,
Acting Commissioner.

Issue of December 22, 1885.

Patents	403	No. 332,694 to No. 333,096, inclusive.
Designs	2	No. 16,423 to No. 16,424, inclusive.
Trade-Marks	5	No. 12,871 to No. 12,875, inclusive.
Labels	9	No. 4,675 to No. 4,683, inclusive.
Reissue	1	No. 10,675.
Total issue	420	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	1	.....	Germany	9	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	.....	.....	Ireland	.....	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	Norway	.....	.....
Canada	3	.....	Russia	.....	.....
Central America	1	.....	Scotland	2	.....
Colombia, U. S. of	.....	.....	Spain	.....	.....
Cuba	.....	.....	Switzerland	1	.....
Denmark	.....	.....	Victoria	.....	.....
Egypt	.....	.....			
England	8	.....	Total to citizens of		
France	2	.....	foreign countries	27	.....

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	3	.....	New Hampshire	.....	.....
California	17	.....	New Jersey	17	1
Colorado	1	.....	New Mexico Territ'y	.....	.....
Connecticut	11	.....	New York	88	7
Dakota Territory	1	.....	North Carolina	3	.....
Delaware	1	.....	Ohio	24	1
District of Columbia	6	.....	Oregon	2	.....
Florida	.....	.....	Pennsylvania	42	.....
Georgia	1	.....	Rhode Island	12	.....
Idaho Territory	1	.....	South Carolina	1	.....
Illinois	31	.....	Tennessee	1	.....
Indian Territory	.....	.....	Texas	1	1
Indiana	14	.....	Utah Territory	.....	.....
Iowa	5	.....	Vermont	3	.....
Kansas	3	.....	Virginia	.....	.....
Kentucky	4	.....	Washington Territ'y	1	.....
Louisiana	2	1	West Virginia	3	.....
Maine	3	.....	Wisconsin	1	.....
Maryland	4	2	Wyoming Territory	.....	.....
Massachusetts	33	1	United States Army	.....	.....
Michigan	13	.....	United States Navy	.....	.....
Minnesota	10	.....			
Mississippi	.....	.....	Total to citizens of the United States	378	14
Missouri	11	.....			

DESIGNS.

16,423.—CANNON STOVE.—*H. Clay Bascom*, Troy, N. Y. Application filed November 16, 1885. Serial No. 183,050. Term of patent 7 years.

16,424.—CYLINDER-STOVE.—*H. Clay Bascom* and *Alexander Wemyss*, Troy, N. Y., assignors to said *H. Clay Bascom*. Application filed November 16, 1885. Serial No. 183,049. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,871.—EVAPORATED SUGAR-CORN.—*William L. Amos*, Fallston, Md. Application filed November 17, 1885.

"The word 'MONDAMIN.'"

12,872.—RUM.—*Charles Warren Howland*, Boston, Mass. Application filed November 14, 1885.

"The word 'EVERETT,' in connection with the picture of the bust or head of Edward Everett."

12,873.—RIBBONS.—*John Ryle*, Paterson, N. J. Application filed November 21, 1885.

"The word 'ARGONAUT.'"

12,874.—LAMPS.—*Charles S. Upton*, New York, N. Y. Application filed October 23, 1885.

"The words 'THE ROCHESTER,' arranged to form a curve."

12,875.—CEMENT FOR LEATHER.—*Henry G. Williams*, New York, N. Y. Application filed October 27, 1885.

"The word symbol 'STICK FAST,' in plain black block capitals arranged in a horizontal line upon a red ground."

LABELS.

4,675.—Title: "PERMANENT ARGENTIC BROMIDE PAPER."—*The Eastman Dry Plate and Film Company*, Rochester, N. Y. Application filed November 30, 1885.

4,676.—Title: "PERMANENT GELATINO-ARGENTIC BROMIDE PAPER."—*The Eastman Dry Plate and Film Company*, Rochester, N. Y. Application filed November 30, 1885.

4,677.—Title: "PERMANENT GELATINO BROMIDE PAPER."—*The Eastman Dry Plate and Film Company*, Rochester, N. Y. Application filed November 30, 1885.

4,678.—Title: "BRUNSWIG'S ORANGE MINT ELIXIR."—*G. R. Finlay & Co.*, New Orleans, La. Application filed November 27, 1885.

4,679.—Title: "OUR OWN" (FOR SHIRTS.)—*Johnson, Sutton & Co.*, Baltimore, Md. Application filed September 7, 1885.

4,680.—Title: "DR. BELL'S NEVER-FAILING, WONDERFUL MIXTURE FOR CHILLS AND FEVERS."—*W. A. Schropshire*, Rockdale, Tex. Application filed November 28,

4,681.—Title: "DR. DUNLOP'S CASCARA COMPOUND."—*United States Medicine Company*, New York, N. Y. Application filed November 20, 1885. (Trade-Mark Registered.)

4,682.—Title: "THE FAMOUS CARACCAS HERB-TONIC."—*George Edward Walton*, Cincinnati, Ohio. Application filed October 31, 1885.

4,683.—Title: "ATLEE'S LONDON SYRUP."—*Frederick T. Wilcox & Co.*, Le Roy, N. Y. Application filed November 27, 1885.

DISCLAIMER.

303,288.—*Allen Stamper Jackson*, Kokomo, Ind. IMPROVEMENT IN COMBINED CHIMNEY AND VENTILATOR. Patent dated August 12, 1884. Disclaimer filed December 17, 1885, by the patentee.

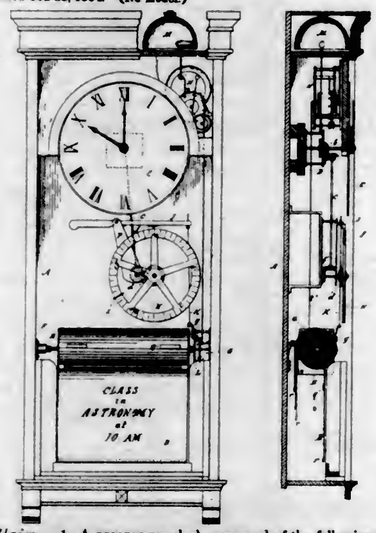
Enters his disclaimer to the words and letter "double cowl A and" in the claim, so that the claim will read as follows:

"In a combined chimney and ventilator, the concaved plates E F, cone-cover D, and pipe B, in combination with the chimney-pipe C, all for the purpose set forth."

PATENTS

GRANTED DEC. 22, 1885.

332,694. PROGRAMME-CLOCK. WILLIAM AKIN, New York, N. Y. Filed Oct. 23, 1884. (No model.)



Claim.—1. A programme-clock composed of the following parts, namely: an ordinary time-keeping mechanism, D, and dial C, a rotating graduated disk, H, driven by said mechanism, and provided with removable teeth I, a rotating drum, E, holding placards or sheets B, and a striking mechanism, N, said disk H being constructed, as described, to automatically release a suitable escapement at a certain predetermined time, and thereby simultaneously exhibit a specified sheet, B, and sound an alarm, substantially as set forth.

2. In a programme-clock, a disk, H, having radial slots *e* formed at regular intervals around its periphery, into which said slots are fitted projecting removable teeth I, in combination with an escapement and with the spring-driven mechanism G, as and for the purpose set forth.

3. The escapement herein described, consisting of the pivoted fly L, driven by the spring mechanism G, and having one end bifurcated and provided with pins *y* and *y'* at unequal distances from its pivotal center and adapted to operate in connection with a pin, *w*, on the lever *g*, as set forth.

4. The pivoted fly L, constructed as described, to operate in connection with the lever *g*, and provided with the pin *w'*, in combination with the lever *u'*, rod *t'*, striking mechanism N, and rotating drum E, as set forth.

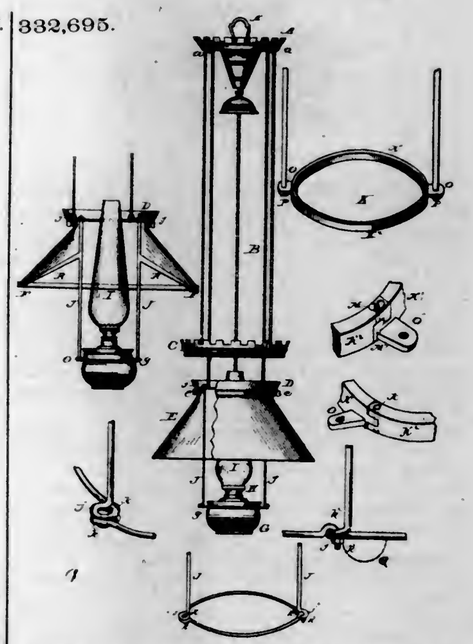
5. The disk S, driven by the spring mechanism G, and provided with a series of equidistant slots, y^3, corresponding with the series of sheets B on the drum E, in combination with the disk R, fixed on the shaft *n*, and provided with the pin y^3, as and for the purpose set forth.

6. In combination with the disks R and S, constructed as described, the adjustable bearing F, composed of the slotted sliding piece *n'*, sleeve n^2, and set-screw n^3, as shown and described.

7. In combination with the drum E, and sheets B, having strips *r* along their lower edges, the spring-roller *s s'*, constructed as described, for the purpose set forth.

332,695. SUSPENSION DEVICE FOR LAMPS. WILLIAM H. BABCOCK, Washington, D. C. Filed July 11, 1884. (No model.)

332,695.



Claim.—1. In a fixture for suspension-lamps, a lamp-harp consisting of vertical rods or bars and a horizontal ring-section fixed thereto, in combination with a hinged laterally-opening section completing the lamp-inclosing ring, substantially as set forth.

2. In a suspension-lamp fixture, a lamp-harp consisting of upright rods and a ring-section in a single piece, in combination with a ring-section hinged thereto and completing the lamp-inclosing ring, substantially as set forth.

3. In a suspension-lamp fixture, a wire lamp-harp consisting of a single piece bent to form vertical supporting-rods and a horizontal ring-section, in combination with another ring-section hinged or pivoted thereto and completing the lamp-inclosing ring, substantially as set forth.

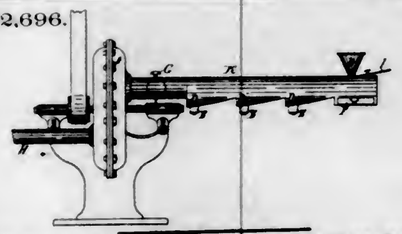
4. The rods J J and a ring-section formed in one piece therewith, in combination with the additional section, which completes the lamp-supporting ring, the latter section being hinged to the former, so as to open and close laterally, for the purpose set forth.

5. The supporting rods, the fixed ring-section, and the hinged laterally-opening ring-section provided with a screw-threaded hook which passes through an eye of the former section to close the lamp-supporting ring, in combination with a nut which screws on said hook below said eye, and a chain which connects said nut to said fixed ring-section, substantially as set forth.

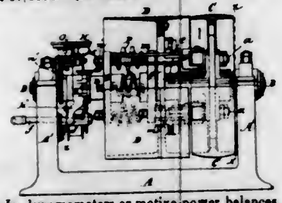
332,696. ORE-SEPARATOR. GEORGE H. BLAKE, Portland, Me. Filed May 19, 1884. (No model.)

Claim.—An ore-separator comprising the pipe K, having on its under side the inclines D, pockets E, and drawer F, and at its outer end the hopper B, provided with regulating-slide I and the slots C, and at its opposite end with damper G and suction-fan A, all constructed and arranged as described, and for the purposes set forth.

332,696.

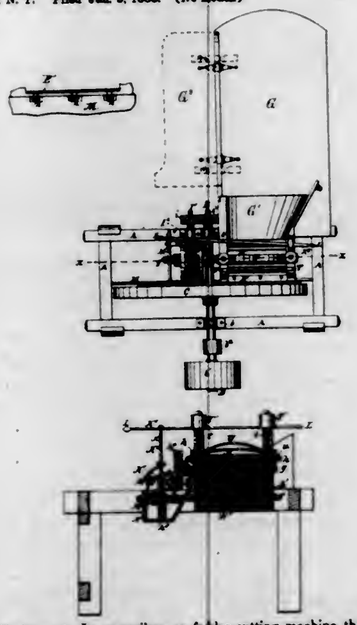


332,697. DYNAMOMETER OR MOTIVE-POWER BALANCE. ERNEST A. BOURRY, Horn, assignor to J. Bourry-Sequin, Zurich, Switzerland. Filed June 17, 1884. (No model.)



Claim.—In dynamometers or motive-power balances, the combination, with the driving and driven mechanism, of a plurality of interposed balances so distributed as to counterbalance each other reciprocally, and transfer the dynamical energy from the driving to the driven mechanism while weighing conjointly the drag, said balances consisting each of a T-shaped beam, E, formed by the arms *b*, *c*, and *d*, which oscillate at their point of intersection upon the radial trunnion of a fixed pulley or cross-head, D, upon the driven shaft B, the extremity of the arm *b* receiving the driving-pressure from a pin, *a*, on the driving pulley or shaft C, and transmitting the same through the arms *c* and *d* and suitable connecting-links to the disks F and G, reciprocating longitudinally upon the shaft B, and between which a number of springs are interposed, all substantially in the manner and for the purpose herein set forth.

332,698. ENSILAGE AND FODDER CUTTER. JAMES B. BROWN, New York, JOHN W. DOUGLASS, Brooklyn, and JOHN PENTREATH, Yonkers, N. Y. Filed Jan. 5, 1885. (No model.)

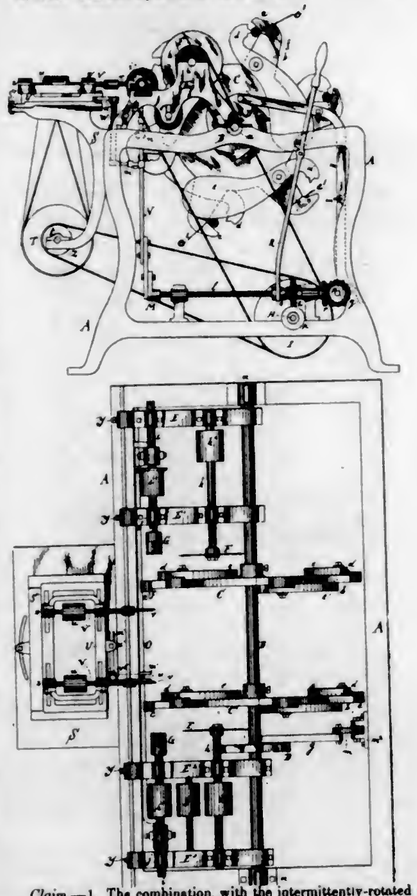


Claim.—1. In an ensilage or fodder cutting machine, the spring-arch U, attached to sliding boxes *h h* of the upper feed-roller, constructed and operating as and for the purpose described.

2. In an ensilage or fodder cutting machine, the upper roller journaled in sliding boxes *h h*, connected by spring-arch U, all constructed as and for the object specified.

3. In an ensilage or fodder cutting machine, the combination, with the shaft B, revolving knives E, and rail M, of the beveled steel cutting-bar E', detachable from the mouth of the feed-box, to which it is attached by bolts, which pass through the bottom of said box and enter notches in the rail, substantially as described, for the purpose set forth.

382,699. MACHINE FOR SAWING, TENONING, AND BORING CHAIR-LEGS, &c. LEWIS BUSH, Jr., Chicago, Ill., assignor, by mesne assignments, to the American Machinery Company, same place. Filed May 16, 1882. Renewed Apr. 7, 1884. (No model.)



Claim.—1. The combination, with the intermittently-rotated disks C C', for chucking the chair legs or spindles, substantially in the manner described, of the circular saw F and the cutter-heads G, having laterally-adjustable journal-boxes *j*, as and for the purpose set forth.

2. In a machine for the purpose substantially described, the shaft H, having drums I I', for driving the circular saws F and cutter-heads G G', and the worm K, for driving worm-wheel L, that is mounted upon shaft *l*, and having crank M, for imparting reciprocating movement to the mandrels of such cutter-heads G and G', in the manner and for the purpose described and shown.

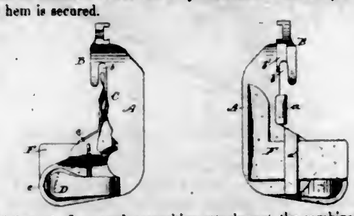
3. In a machine for the purpose substantially described, the cutter-heads G G', mounted upon the ends of mandrels *i*, having pulleys *i'* and laterally-adjustable boxes *j*, in combination with crank M, bifurcated lever N, bar O, and crutch *o*, the same being constructed and arranged to operate in the manner substantially as and for the purpose set forth.

4. The combination, with the intermittently-rotated disks C C', for chucking the chair-legs, the circular saws F, and the longitudinally moving cutter-head G, of the laterally-sliding auger-mandrels V, the whole being constructed and arranged substantially as and for the purpose described and shown.

5. The combination, with frame A, shaft H, with pulley H' and worm K, shaft *l*, with worm-wheel L and crank M, and lever N, with bar O and stud-collar *w*, of the auxiliary frame S, having shaft *t*, with drum T and laterally-sliding journal-boxes *z* for mandrels V, that carry angers *v* and have pulleys *u*, and of vertical rocker-shaft W, having arms *m'* and *n'*, the whole being constructed and arranged substantially as and for the purpose set forth.

332,700. COMBINED HEMMER AND LACE-GUIDE FOR SEWING-MACHINES. WILLIAM R. CLARK, Detroit, Mich., assignor to the Singer Manufacturing Company, of New Jersey. Filed July 7, 1885. (Model.)

Brief.—The device is designed to turn a hem on the edge of a piece of fabric as the latter passes to the stitching-point of the sewing mechanism, and also to guide simultaneously a strip of lace or other material so that its edge will be presented to the needle beneath the hem, and will thus be attached to the fabric by the line of stitches by which the turned hem is secured.



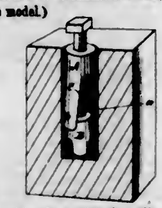
Claim.—1. In a sewing-machine attachment, the combination, with a hemmer, of a supporting-plate, to the upper side of which said hemmer is attached, said supporting-plate having on its under side, below the hemmer and forward of the rear end thereof, an inclosed strip-guiding passage, which is mainly inside or to the right of said hemmer, but having its outer edge in line with the latter, substantially as set forth.

2. In a sewing-machine attachment, the combination with a supporting-plate having a strip-guiding passage on its under side, of a hemmer supported above said plate, a friction-spring in front of said hemmer, and an inclined rib or projection beneath the outer end of said friction-spring, substantially as set forth.

3. The combination, with the hemmer, of the supporting-plate having the lip *a* and slotted rib *a'*, of the adjustable guide-piece F, said lip and guide-piece serving to form an adjustable or variable strip-guiding passage, substantially as set forth.

4. In a sewing-machine attachment, the combination, with a hemmer, of a supporting-plate therefor, having on its under side, below the hemmer and forward of the rear end thereof, an inclosed strip-guiding passage, mainly inside or to the right of said hemmer, and a presser-foot having a recess, as *b*, on the inner side of its lower or bearing surface, substantially as set forth.

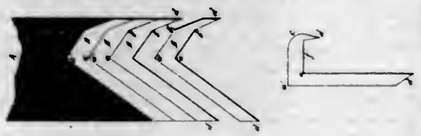
332,701. ANCHOR-BOLT. WILLIAM S. CRAIG, Springfield, Ohio. Filed Apr. 14, 1885. (No model.)



Claim.—1. The combination, with the cylindrical tapered piece, of the cylindrical sleeve having three or more longitudinal openings and a similar number of legs adapted to be expanded by said tapered piece, and means for forcing said tapered piece into said sleeve, substantially as specified.

2. The combination, with the sleeve having the longitudinal openings therein, of the tapered piece hollowed out and notched at the bottom thereof, and a bolt adapted to extend through said sleeve and screw into said tapered piece, which is correspondingly tapped, substantially as specified.

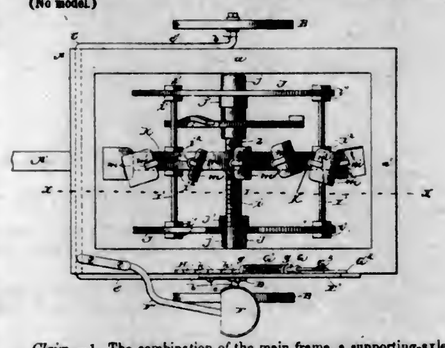
332,702. FLAT WIRE NAIL. CHARLES W. DEAN, South Wareham, assignor of one-half to Edgar Robinson, Wareham, Mass. Filed Mar. 10, 1883. Renewed May 27, 1885. (No model.)



Claim.—1. A nail-blank having a sharp-pointed stem and a flat head whose parallel inner and outer edges or faces, respectively, form right angles with the corresponding edges of the stem, and which head terminates in a beveled and hook-like point, as described.

2. A nail cut from bar metal with a stem and a head substantially at right angles to each other, formed by the cut that severs said nail from the bar, and having a short point projecting from said head parallel with the stem, substantially as described.

332,703. SPADING-MACHINE. WILLIAM E. DEPP, Brookville, Pa., assignor of one-half to S. Chambers, same place. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination of the main frame, a supporting-axle, bearing-wheels mounted on said axle and rotating independently thereof, an implement-carrying wheel connected to and rotating with the bearing-wheels, a cam-wheel arranged within the implement-carrying wheel and rigidly secured on the axle, and a series of spading implements rotatively mounted in the carrying-wheel, and adapted to be rotated by the rigid cam-wheel when the carrying-wheel is revolved, substantially as described.

2. The combination of the main frame, an axle mounted therein, a cam-wheel rigidly secured to said axle, bearing-wheels mounted on the axle and rotating independently thereof, and an implement-carrying wheel secured upon rods connected with the bearing-wheels and arranged immediately over the cam-wheel, substantially as described.

3. The combination of the main frame, the axle, a cam-wheel rigidly secured on said axle, a rotating wheel arranged over said cam-wheel, and a series of digging implements mounted in the rotating wheel, and having cross-heads at their lower ends adapted to be rotated by contact with the cam-wheel, substantially as described.

4. The combination of the main frame, an axle journaled therein, a cam-wheel or disk rigidly secured on the axle, a rotating wheel arranged over said cam-wheel, and a series of digging implements rotatably mounted in said revolving wheel and arranged around the periphery thereof substantially as described.

5. The combination of the main frame, an axle supported therein, a cam-wheel rigidly secured on the axle, a revolving wheel arranged over the cam-wheel, and a series of spading implements rotatably mounted in said revolving wheel, and having right-angled cross-heads at their lower ends adapted to be operated upon by the cam-wheel, substantially as described.

6. The combination, with the axle and a revolving wheel, of a cam-wheel and a series of spading implements mounted in the revolving wheel and carrying two cross-heads at their lower ends arranged at right angles to each other, substantially as described.

7. The combination, with the axle, a revolving wheel, and a cam-wheel, of a series of spading implements mounted in said revolving wheel and comprising a blade, a shank, and two cross-heads, one below the other, connected together and arranged at right angles to each other, substantially as described.

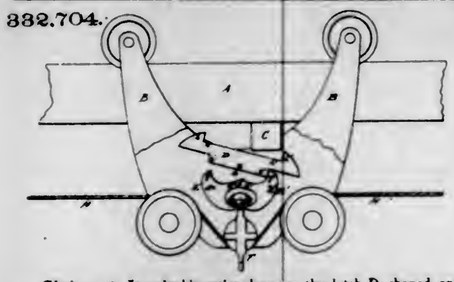
8. The combination of the axle, a cam-wheel rigidly mounted thereon, a revolving wheel arranged over said cam-wheel, and a series of spading implements mounted in said revolving wheel and having two cross-heads, one of which normally lies transversely across the face of the cam-wheel, while the other cross-head lies parallel with its face, substantially as described.

9. The combination of the axle, bearing-wheels mounted thereon, a revolving wheel mounted on cross-bolts secured in the bearing-wheels, a cam-wheel arranged within the revolving wheel, and a series of spading implements rotatably mounted in said revolving wheel and adapted to be operated on by the cam-wheel, substantially as described.

10. The combination of the frame, a screw-threaded axle mounted therein, two bearing-wheels having a screw-threaded nut and plain hubs mounted on said axle and free to rotate thereon, a cam-wheel having a screw-threaded hub rigidly secured on the axle, and an implement-bearing wheel arranged over the cam-wheel and mounted upon bars or rods secured in the bearing-wheels and adapted to rotate therewith, substantially as described.

332,704. DOUBLE-ACTION HAY-CAR. JOSEPH DRADER, London, Ontario, Canada. Filed Sept. 14, 1885. (No model.)

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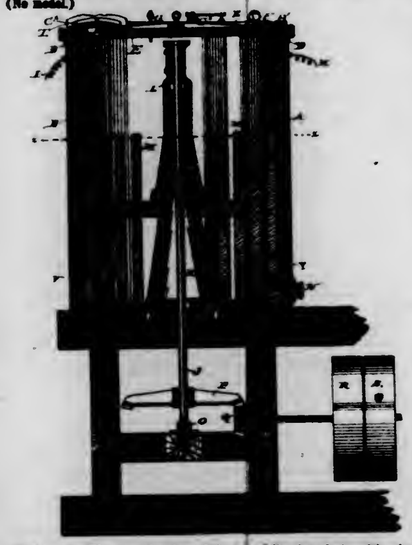


Claim.—1. In a double-action hay-car, the latch D, shaped and operating substantially as shown and described.

2. The grapnels E E', joined by pivoted arms G G', substantially as shown and described.

3. The combination of latch D and grapnels E E' with ordinary stop-cocks, C, and head of pulley-block F, substantially as shown and described.

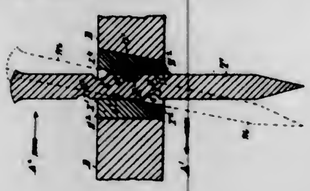
332,705. APPARATUS FOR CHLORIDIZING GOLD, SILVER, AND OTHER ORES. HENRY H. RAHN, Philadelphia, Pa. Filed Apr. 21, 1885. (No model.)



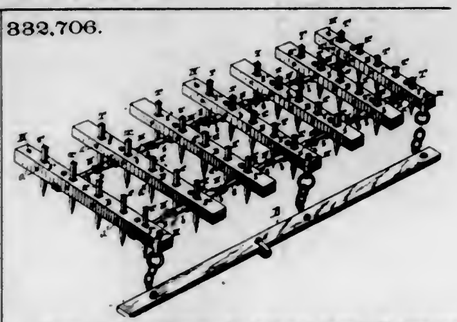
Claim.—1. The combination of the wood-lined tank A, with stirrers M, electrodes V Y, cover B', steam-supply pipe E, with injector steam-pipes E' E'' E''' E'''', safety-valve G', with indicator-whistle, steam-gage F, and escape-valve G, as and for the purpose specified.

2. The combination of the cylindrical tank A, with wood lining B, and the iron cover or top lined with wood on the inside and fitted with steam-gage F, steam-escape pipe G, safety-valve and whistle-indicator G', and charging-opening B'' and lid C', steam-pipes E' E'' E''' E'''', connected with steam-supply pipe E, the copper electrodes V and Y, to which the wires H and I are attached, the discharge-gate N, the truncated hollow cone K, the depending hollow cone L, with horizontal arms attached to the base thereof, the stirrers M, the shaft J, step O, wheels P and Q, pulleys R S, and the screws fastening the hollow cone L to the shaft J near the top thereof, substantially as and for the purpose specified.

332,706. HARROW. OSCAR H. EDDY, Greenwich, N. Y. Filed June 9, 1885. (No model.)



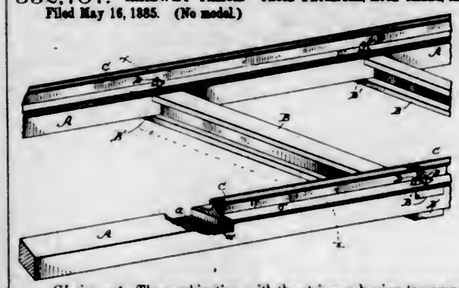
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Claim.—1. In combination, the teeth-bars formed with apertures having an inclined or tapered seat, and side apertures, *a'*, the teeth sockets or sleeves S^3, made in a single piece, having an inclined side to set in the seat of the apertures in the teeth-bars, and formed with a tooth-passage through them, having vertical side walls, an end wall with a vertical upper portion and a flaring lower portion, and an end wall having a vertical lower portion and a flaring upper portion, and an intermediate circular seat transversely arranged, the teeth formed with transverse grooves O^2, and the pivot-pin P, projected through the side aperture of the teeth-bars into the hole formed between the tooth and circular seat, substantially as described, and for the purpose stated.

2. In combination with the teeth-beams, the bars or straps *b*, formed with a depending seat, *b'*, and ends vertically curved in opposite directions, and formed with eyes E, the bars or straps S, formed with a depending seat, b^2, and hooked ends adapted to engage with the eyes in the curved ends of the straps *b*, and bolts to hold the straps to the under side of the beams, whereby the harrow can be folded up, substantially as described.

332,707. RAILWAY-TRACK. JACOB FEYDINGER, Rock Island, Ill. Filed May 16, 1885. (No model.)



Claim.—1. The combination, with the stringers having transverse notches in their upper faces, of the rail secured on such stringers, and the metallic cross-ties having their ends slotted, forming arms, the lower ones of which extend under the stringers, and the upper ones of which are seated in the notches in the stringers, with their upper faces flush with those of the stringers, and securing-bolts, substantially as set forth.

2. The railroad-track herein described, consisting of the stringers having transverse notches in their upper faces, the metallic cross-ties having their ends slotted, providing arms, the lower ones of which extend under the stringers, and the upper ones of which are seated in the transverse notches thereof, with their upper faces flush with those of the stringers, the rails seated on the stringers, and the fastening-bolts passed through the arms of the cross-ties, the stringers and the rail on opposite sides of the web of the latter, substantially as set forth.

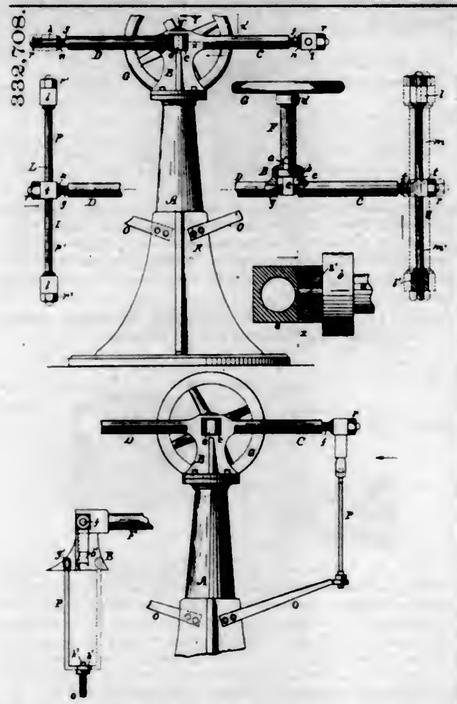
332,708. MACHINE FOR PRODUCING RECTILINEAR RECIPROCATING MOTION. JAMES M. FURLONG, Rochester, N. Y. Filed Apr. 13, 1885. (No model.)

Claim.—1. In a machine for producing a rectilinear reciprocating motion, the combination, with the pedestal, of the sleeve-block B, formed with a cavity, *c*, and provided with the straight sleeves D C F, set at right angles to each other in the same plane, substantially as shown.

2. In combination with the sleeve-block B of a machine for producing a rectilinear reciprocating motion, formed with a cavity, *c*, and provided with the horizontal sleeves D, C, and F, substantially as shown, a crank-shaft, *a*, provided with crank *b*, reciprocating arms *g* and *f*, and head *e*, formed with an inclosed cavity or recess, *h*, substantially as described.

3. In combination with the sleeve-block B of a machine for producing a rectilinear reciprocating motion, formed with a cavity, *c*, and provided with the horizontal sleeves D, C, and F, substantially as shown, a crank-shaft, *a*, provided with crank *b*, reciprocating arms *g* and *f*, and

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head *e*, formed with an inclosed cavity or recess, *h*, the respective arms *g* and *f* being formed with collars *n* and seats *k*, for receiving tool stocks or heads *t*, and clamping-nuts *r* for holding the same to place, substantially as described and shown.

4. In a machine for producing a rectilinear reciprocating motion, the sleeve-blocks B, formed with the cavity *c*, and an actuating-crank, *b*, occupying the said cavity, in combination with a reciprocating head, *e*, occupying the said cavity contiguous to and operating with said crank, the said head being formed with an inclosed cavity or recess, *h*, opening out to or turned toward the face of the crank, substantially as and for the purpose set forth.

5. The combination, in a machine for producing a rectilinear reciprocating motion, of the sleeve-block B, formed with sleeves D, C, and F, crank *b*, recessed head *e*, reciprocating arms *f* and *g*, and tool stocks or heads *t*, with means, substantially as shown, for securing said tool stocks or heads to the arms, for the purpose specified.

6. The combination, in a machine for producing a rectilinear reciprocating motion, of the sleeve-block B, formed with sleeves D, C, and F, crank *b*, recessed head *e*, reciprocating arms *f* and *g*, and stock or head *t*, secured to a reciprocating arm, as *f*, provided with arms *m* and *m'*, secured rigidly to the head *t*, and formed with rest *t'* for tool-stocks, substantially as shown and described.

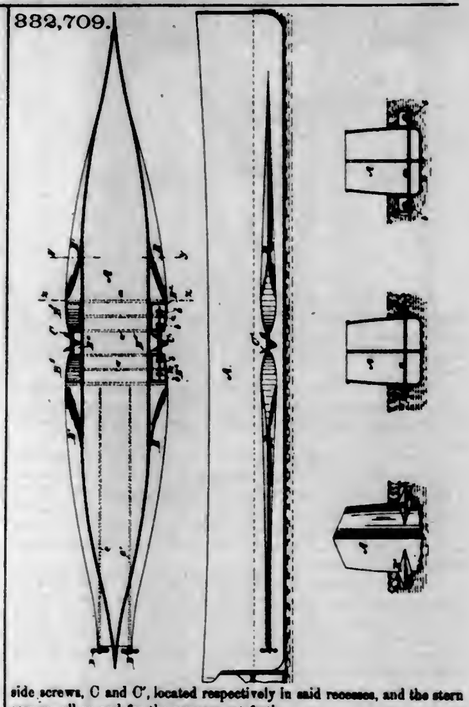
7. In a machine for producing a rectilinear reciprocating motion, in combination with a reciprocating arm, *f*, a tool-stock, K, for holding a burnishing or other tool, *d'*, said tool-stock being formed with jaws *f'*, inclosing a slot or space, *i'*, in which to receive said tool *d'*, and provided with a spring, *n'*, and retaining-pin *o'* for the tool, substantially as shown and described.

8. In a machine for producing rectilinear reciprocating motion, in combination with a burnishing-tool, *d'*, a finger-rest, P, held by a support, O, in position to receive the finger of the operator, said support being formed with a foot-piece, *h'*, turned laterally at about right angles thereto, said foot-piece being held by a pivot-bolt, *k'*, at a point in line with the tool upon a base, R, by means of which said finger-rest may be turned or adjusted to occupy a position on either side of said tool, substantially as and for the purpose set forth.

332,709. SCREW-PROPELLING APPARATUS FOR STEAM-VESSELS. EDWARD H. HALL, Brooklyn, N. Y. Filed Oct. 20, 1884. (No model.)

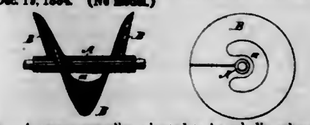
Claim.—The combination, with the hull of a vessel, of the guard-floats B and B', one on each side and extending longitudinally of the hull, and having the forward and rearward triangular portions described, and the mid-ships rectangular portions B^2 and B^2, respectively cut away to form the inclosing side-screw recesses, B^4 and B^5, together with the

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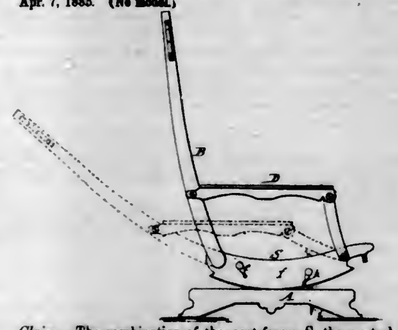
side screws, C and C', located respectively in said recesses, and the stern screws, all as and for the purpose set forth.

332,710. SCREW-PROPELLER. EDWARD H. HALL, Brooklyn, N. Y. Filed Dec. 19, 1884. (No model.)



Claim.—A screw-propeller adapted to be wholly submerged in operation, consisting of an axial shaft, A, and a blade, B, extending helically entirely once around the said shaft, and having the elliptical opening *a* in that portion of the body of the blade which is immediately adjacent to the shaft, and extending, in a curve which is concentric to that of the shaft and the blade rim, into each wing of the blade about one-third of the distance from the axial line of the shaft to the extremity of the wing, as and for the purpose specified.

332,711. CHAIR. FRANKLIN E. HARRINGTON, Syracuse, N. Y. Filed Apr. 7, 1885. (No model.)



Claim.—The combination of the seat-frame S, the central bar, *c*, the rod *r*, journaled on the said seat-frame and central bar, the back-frame B, attached to the rod *r*, the ratchet *a*, fastened on said rod at the side of the central bar, *c*, the rod *d*, extended through the side rail and central bar of the seat-frame, the crank *e*, attached to the outer end of the rod *d*, and the pawl *b*, attached to the said rod at the side of the central bar, *c*, substantially as described and shown.

332,712. CARTRIDGE-SHELL CRIMPER. HENRY T. HAZARD, Los Angeles, Cal. Filed Aug. 17, 1885. (No model.)



Claim.—1. The combination, in a cartridge-shell crimper, of a reciprocating shell carrier and clamp, a crimping-disk, and a cord or band encircling such disk and adapted to cause its rotation, the crimping-disk being situated in the line of motion of the shell-carrier, substantially as set forth.

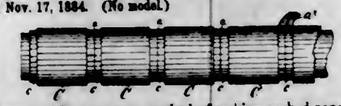
2. In a cartridge-shell crimper, and in combination with a rotary crimping-disk, substantially as shown, a horizontally-reciprocating shell-carrier having a shell clamp and platform mounted thereon, for the purpose set forth.

3. A cartridge-shell crimper consisting of the following elements, in combination with each other, substantially as shown: a frame with a horizontal runway therein, a horizontally-reciprocating carrier adapted to move therein, a platform or rest for the shell, and a clamp mounted on such carrier, fulcrum projections mounted upon the frame, as shown, and a lever attached to such carrier and engaging with the fulcrum projections upon the frame.

4. The combination, in a cartridge-shell crimper, of the crimping-disk, the reciprocating shell-carrier platform, and the shell-clamp, the arms of the clamp having edges N′ inclined from the front end of the arms backward and downward, as shown, whereby the shell is caused to become wedged between the clamp and the platform when the shell is forced against the crimping-disk.

5. In a cartridge-shell crimper substantially such as described, the combination of the horizontally-reciprocating shell-clamp and carrier and the stationary lug Z, mounted behind the shell-carrier and in the line of motion of the shell, as set forth, whereby the shell is intercepted and held stationary until the clamp is forced away from the shell and releases it.

332,713. PROCESS OF MAKING PAPER BOXES. IRA W. HOLLETT, Chicago, Ill., assignor to the Chicago Liquid Sack Company, same place. Filed Nov. 17, 1884. (No model.)

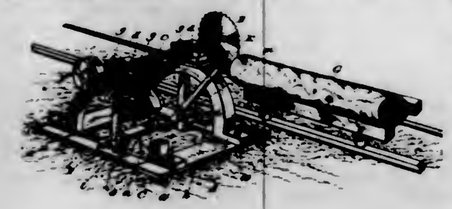


Claim.—1. The process or method of making necked paper boxes, consisting in first wrapping a rectangular blank or sheet of paper into a cylinder composed of two or more thicknesses, and then cutting or dividing the same into separate box-lengths and cutting or scoring partially through the thickness of the paper cylinder from the outside thereof, near the end of each box, and finally removing from the outside of said cylinder a narrow strip at the end of each box to the depth of such score, substantially as specified.

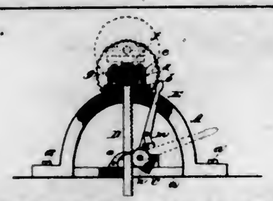
2. The art or process of making necked paper boxes, consisting in first wrapping a rectangular blank into cylindrical form of two or more thicknesses, then cutting or scoring partially through the thickness of the paper cylinder from the outside thereof near the end of the box to be formed, and finally removing from the outside of said cylinder the narrow strip between such score and the end of the box or cylinder, substantially as specified.

332,714. CIRCULAR-SAW MILL. ROBERT B. HOLT, Guthrie, Ky., assignor of one-half to Isaac N. Walton, same place. Filed June 17, 1885. (No model.)

Claim.—In a circular-saw mill, the combination, with the arched supports having openings therein, of a saw-carrying shaft extending

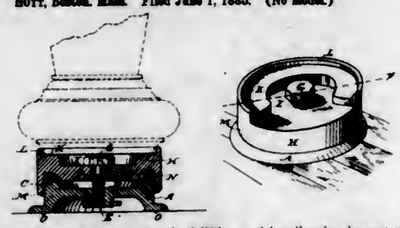


332,714.



across the same in movable bearings, toothed racks moving vertically in the openings of said supports, upon which the bearings rest, a lower shaft bearing pinions which engage the racks for adjusting the same, the operating-lever and its pivoted dog, the actuating-pinion, and the detent by which it is engaged, all substantially as shown, and for the purpose described.

332,715. LEVELING AND SUPPORTING IMPLEMENT. LEWIS S. HOTT, Boston, Mass. Filed June 1, 1885. (No model.)

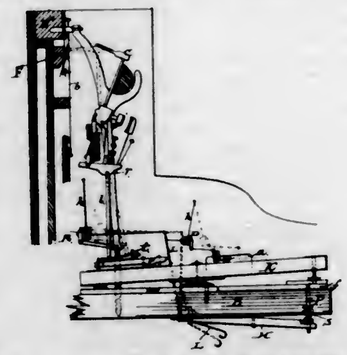


Claim.—1. In an organized lifting and leveling implement, the oscillating supporting-base H, provided centrally with a double countersunk perforation, J, operating with and receiving the elevating-screw E, the quadrantal or semicircular depressed open chamber I, permitting access to said screw E, and the sustaining-floor K, the outer semi-circumference of which forms the protecting and confining rim L, combined to operate with a perforated depressed receiving-base, A, having a corrugated floor, O, substantially as arranged and described.

2. In an organized lifting and leveling implement, the receiving-base A, having a depressed floor, B, inclosed by a continuous wall, C, the threaded boss D, receiving and sustaining the elevating-screw E, combined to operate with the supporting-base H, provided with the quadrantal chamber I, the double-concaved opening J, the sustaining-floor K, the protecting-rim L, and circumferential wall M, as described, and for the purpose set forth.

3. In an organized lifting and leveling implement, the combination of the base A, provided with the depressed face B and screw-threaded boss D, the supporting-base H, having the double-concaved perforation J, the segmental floor K, and the elevating-screw E, having the conoidal shoulder F and fixed actuating-head G, all operating substantially as described.

332,716. PIANO-ACTION. FERDINAND IMBORST, San Francisco, Cal. Filed July 12, 1884. (No model.)



Claim.—1. In a piano, a perforated and curved sheet-metal vibrator secured to the frame F, in combination with the strings *b* and a key and intermediate mechanism for operating the hammer, substantially as described.

2. In a piano or other musical instrument, the combination, with a resonating chamber, box, pipe, or cavity, of a perforated sheet-metal vibrator and the strings of the instrument, substantially as herein described.

3. In a piano, the key K and rocker *e*, in combination with a curved

segment upon said rocker, and a cross-rail, R, lever L, and its connections for causing a prolong to move back and forth upon the segment, substantially as described.

4. In a piano, the key-frame *m*, key-bottom B, pivoted lever H, a pin, *p*, and spring *s*, in combination with the movable front section, *f*, of the key-frame, substantially as described.

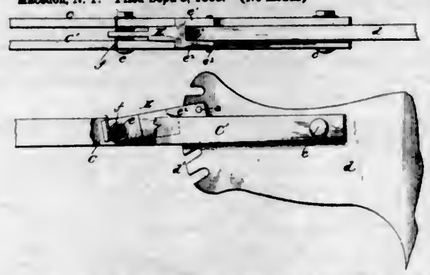
5. In a piano, a key-frame having a movable front section, *f*, in combination with a pin, *p*, attached to a pivoted lever, H, to adjust the distance between the bottom of the key and the movable front section, *f*, substantially as described, and for the purpose herein set forth.

6. In a piano, the key K and rail *a*, in combination with a weight, *w*, pivotally-secured cross-rails R and D, a lever, L, and suitable connections for causing said weight to move back and forth on the rail *a*, substantially as and for the purpose described.

7. In a piano, the combination, with a key, of a touch-regulating weight, a cross-rail connected to the weight, a lever for moving said weight, and a pipe, groove, or gutter within which the weight moves, substantially as and for the purpose set forth.

8. In a piano, the angular lever L, the pivotally-secured cross-rails, the lever H, with its pin, and suitable connections secured to the cross-rails for moving the lower ends of one or more pivoted prolongs upon a curved segment, *t*, and for moving a weight to regulate the touch, substantially as herein described.

332,717. GRAIN-DRILL TOOTH OR HOE. GEORGE W. KIRKPATRICK, Macedon, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—1. The pivoted tooth or hoe provided with the toothed rack, in combination with a movable break-pin, adapted to be disengaged from said rack without being removed or withdrawn from its arm or support, substantially as described.

2. The drill tooth or hoe provided with the toothed rack on its pivoted supporting-arm, in combination with the pivoted pawl for engaging said rack and holding the tooth at any desired adjustment, substantially as described.

3. The pivoted drill tooth or hoe, provided with the toothed rack or segment, in combination with a break-pin secured in a pivoted arm or pawl, for the purpose and substantially as described.

4. The combination of the pivoted hoe or tooth provided with the toothed rack or segment, the break-pin mounted in a pivoted arm or pawl, and a spring for holding said pawl with the break-pin in engagement with said rack, substantially as described.

5. The combination, with the draw-bar, of the pivoted hoe or tooth provided with the toothed rack or segment, the pivoted arm or pawl, and the break-pin upheld by said pawl, and operating substantially as described.

332,718. PRESS FOR SEPARATING LIQUID AND SOLID MATTER. HUGH W. LAFFERTY, Gloucester City, N. J. Filed Aug. 22, 1885. (No model.)

Claim.—1. The combination of a tapering pressure-screw, a corresponding casing having a series of slots or perforations, and a perforated separating-lining fitting the periphery of the thread of the pressure-screw, substantially as set forth.

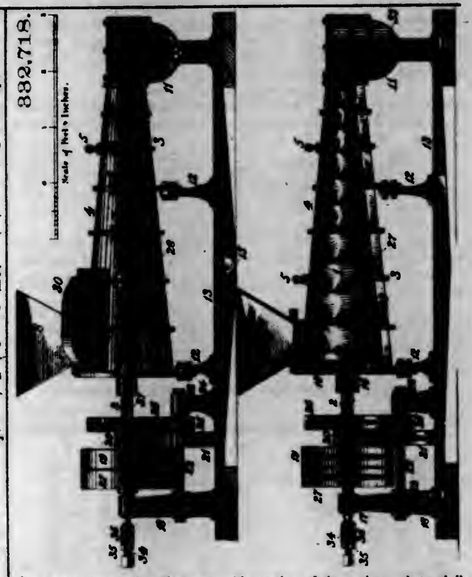
2. The combination of a tapering pressure-screw and a casing having an imperforate upper section, and a slotted or perforated lower section provided with a lining fitting the periphery of the thread of the pressure-screw and having a series of perforations of lesser area than the slots or perforations of the casing-section, substantially as set forth.

3. The combination of a tapering pressure-screw, a slotted or perforated lower casing-section fixed to a bed or support, a removable imperforate upper casing-section, and a series of detachable clips or fastenings connecting said sections, substantially as set forth.

4. The combination of a tapering pressure-screw, a perforated casing, a feed-hopper and supply-opening communicating with the supply end of the casing, and a rotating breaker mounted in bearings in a discharge-chamber communicating with the delivery end of the casing, substantially as set forth.

5. The combination of a tapering pressure-screw, a perforated casing composed of a fixed and a removable section, and one or more toothed disks engaging the thread of the pressure-screw and mounted in bearings

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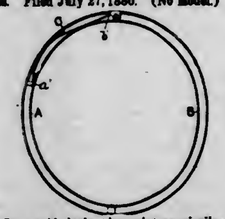
in a case connected to the removable section of the casing, substantially as set forth.

6. The combination of a tapering pressure-screw, a driving-shaft secured to the larger end thereof, a perforated casing having a supply-opening adjacent to the larger end of the pressure-screw, and a discharge-opening at its opposite end, and an adjusting-screw adapted to bear against the outer end of the driving-shaft and engaging a nut in a thrust-block connected with the casing, substantially as set forth

7. The combination of a tapering pressure-screw, a perforated casing, and a bed-plate supporting the screw and casing and forming a trough or receptacle for liquid discharged from the perforations of the casing, substantially as set forth.

8. The combination of a tapering pressure-screw having a driving-shaft secured to its larger end, a perforated casing within which said screw rotates, a driving pulley and pinion fixed together and mounted to rotate freely on the driving-shaft, a gear engaging the driving-pinion and fixed to a pinion upon a counter-shaft, and a gear fixed upon the driving-shaft and engaging the counter-shaft pinion, substantially as set forth.

332,719. SELF-CLOSING BRACELET. HUGO LIEBEL, North Attleborough, Mass. Filed July 27, 1880. (No model.)



Claim.—1. In a self-closing bracelet or similar article, the combination of hinged sections or wings with a spring mounted and concealed in one of the sections and acting upon a lever on the adjoining section, substantially as and for the purposes specified.

2. In a self-closing bracelet or similar article, the combination of hinged sections or wings with a loosely-mounted spring secured by a stop or rest contained and concealed in one of the wings and abutting against a lever on the adjoining wing, substantially as and for the purposes specified.

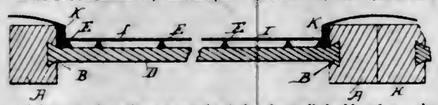
3. In a bracelet, ear-ring, or other article of jewelry, the hinged sections connected with each other by a pivot-joint within the body of the article, so as to leave no projections, and combined with a spring at the hinge, concealed and mounted within one of the sections, said parts being so connected that their movement is limited under the action of the spring, substantially as set forth.

4. In a self-closing bracelet or similar article, the combination of a section containing a spring concealed therein, with a second section hinged thereto and provided with a lever which engages the spring, enters the first section, and is concealed thereby, substantially as set forth.

5. In a self-closing bracelet, the combination of the wing A, hav-

ing a stop, *a'*, the wing B, having its hinged end provided with a projecting lip, *b'*, and a spring, C, loosely mounted in the wing A, with its inner end abutting the stop *a'* and its outer end underlying the lip *b'*, substantially as described and shown.

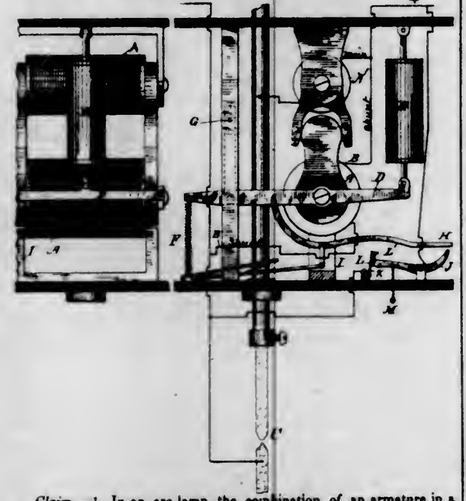
332,720. ROOF. Aaron L. Lemmley, Chicago, assignor of one-half to Willis Drummond, Jr., Oak Park, Ill. Filed Mar. 27, 1885. (No model.)



Claim.—1. A roof constructed of the dovetailed side pieces, the tenoned panels fitting therein, and the metallic covering and interlocking fastening devices, combined and arranged substantially in the manner specified.

2. A roof made in panels or sections, substantially as shown, having thereon cleats or ribs over which is placed a metal covering, leaving an air-space between the wood and metal, as and for the purpose shown.

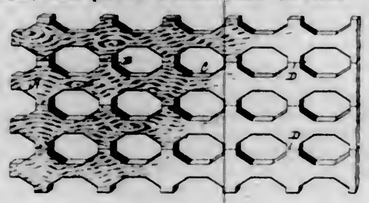
332,721. Electric-Arc-Lamp Cut-Out. George P. Loomis and Henry W. Cooley, Lynn, Mass. Filed Sept. 22, 1885. (No model.)



Claim.—1. In an arc lamp, the combination of an armature in a shunt-circuit to the arc, a lever supporting said armature, one end of the lever being connected to a dash-pot and the other to a spring, and the armature being located between the dash-pot and the fulcrum of said lever, a projecting arm from said lever, an iron post under each pole of said armature, a second lever located under said first-named lever, and a spring having a surface partly of insulating substance and partly of conducting substance, and pressing upon one end of said second lever, said second lever being a conductor of electricity and connected to one pole of the main circuit, and said spring being connected to the other pole of the main circuit, substantially as and for the purpose specified.

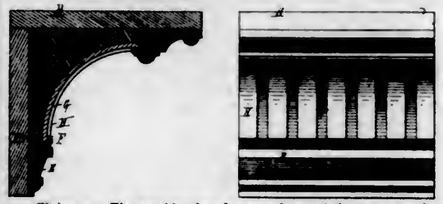
2. In an arc lamp, the combination of a swinging shunt-armature and a projecting arm thereto, a lever having one end in movable contact with said arm and supported by a pillar upon the base of said lamp, a swinging rod or handle hanging from the said lever and passing through the said base, a flat spring fixed to said base, and having a portion of its surface made of insulating material and pressing against one end of said lever, and electrical connections from the main wires, respectively, with the said lever and with the said spring, substantially as and for the purpose specified.

332,722. Art of Producing Open-Work Panels. Frederick Mankey, Williamsport, Pa. Filed Nov. 2, 1885. (No model.)



Claim.—The improvement in the art of producing open-work or reticulated panels, substantially as hereinbefore described, which consists, first, in producing a configuration of alternate elevations and depressions upon the parallel and opposite sides of a board or plank and extending transversely the grain thereof; second, joining two or more of said boards in contact, one upon the other, at the meeting faces of their elevations; and, third, dividing the mass so formed longitudinally into slabs or panels.

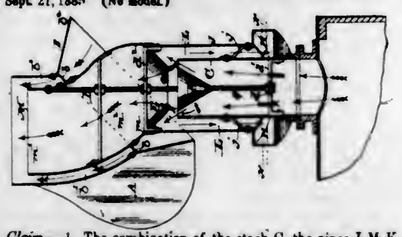
332,723. Cornice. Frederick Mankey, Williamsport, Pa. Filed Nov. 2, 1885. (No model.)



Claim.—1. The combination, in a cornice, and the same forming a new article of manufacture, of the supporting-boards A B, the wooden strips or members C E, having grooves or channels D F, and the bent slab of wood G, having on its concave side integral projections H, substantially as described.

2. The combination, in a cornice, of an upper strip or member, a lower strip or member, and supported in and between said members a curved slab plate or plank of wood having upon its outer concave surface transverse elevations integral with said slab and disposed at an angle to the grain thereof, substantially as described.

332,724. Spark-Arrester. Frank Manual, St. Louis, Mo. Filed Sept. 21, 1885. (No model.)



Claim.—1. The combination of the stack C, the pipes J M K, the passage H, the spindle D, cone F, the deflector E, and the hood B, having the vane A, substantially as described.

2. A stack, C, having the pipe M bent and pointing upward, as described, and provided with the hood B, having the vane A, and attached to the pipe M, substantially as described.

332,725. Grain-Binding Harvester. Thomas C. Marshall, Akron, Ohio, assignor to Lewis Miller, same place. Filed Apr. 7, 1884. (No model.)

Claim.—1. In a grain-binding harvester, a knotter-shield or breast-plate suspended above the binder-table and pivoted upon the knotter-actuating shaft, in combination with means operating in connection with the knotter-actuating shaft for vibrating the breast-plate, in the manner and substantially as specified.

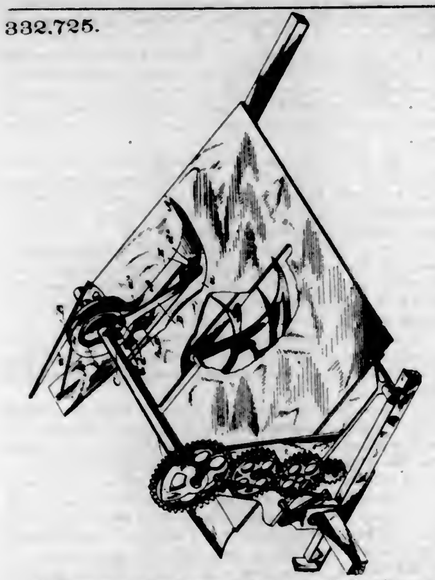
2. In a grain-binding harvester, an inclined elevating binder-table located between the platform-carrier and the driving-wheel, in combination with a pivoted automatically-vibrated breast-plate suspended above said inclined table, and the needle-arm and packers operating in connection therewith, for the purpose and substantially as described.

3. In a grain-binding harvester, a breast-plate suspended above the binder-table and pivoted upon the knotter-actuating shaft, in combination with a cam-wheel mounted upon and rotating with the knotter-actuating shaft, and a link or rod interposed between the inner end of the breast-plate and the cam-wheel, and actuated by the latter for elevating said inner end of the breast-plate, substantially as and for the purpose described.

4. In a grain-binding harvester, a breast-plate suspended above the binder-table and pivoted upon the knotter-actuating shaft, in combination with an intermittently-rotating knotter-actuating shaft, and link interposed between the outer end of the breast-plate and the cam-wheel secured upon and rotating with the knotter-actuating shaft, whereby the said breast-plate is adapted to be rocked during the process of binding or at suitable intervals, substantially as described.

5. In a grain-binding harvester, the combination, with the binder-table thereof, of the swinging pivoted knotter-shield or breast-plate constructed of metal or other suitable material, and provided with the curved ribs or plates upon its under side, for the purpose and substantially as described.

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6. In a grain-binding harvester, the knotter-shield or breast-plate suspended above the inclined binder-table and pivoted upon the knotter-actuating shaft, in combination with an elbow-lever connected at one end with the inner end of the breast-plate by means of a sliding loop-bearing, and at its other end provided with a pin or stud shaft projecting within and engaged by a cam-groove formed in a wheel secured to the knotter-actuating shaft, said lever at its elbow being pivoted to a lug formed upon the knotter-actuating shaft-sleeve, all for joint operation, substantially as described.

7. In a grain-binding harvester, the knotter-shield or breast-plate constructed of sheet metal or other suitable material, in combination with a supplementary plate secured to the rear end thereof, the loop-bearing formed upon or secured to the inner or front end of said breast-plate, the standard through which the breast-plate is pivoted upon the knotter-actuating shaft and held suspended above the binder-table, and the braces, all of said parts being constructed and arranged relatively to each other, for the purpose and substantially as described.

332,726. Imitation Coal. Jos. Mayer, Beaver Falls, Pa., assignor of one-half to Ernest Mayer, same place. Filed Oct. 5, 1885. (No specimens.

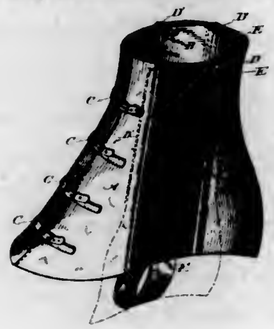
Claim.—1. As a new article of manufacture, an imitation coal consisting of irregular blocks of baked ware covered with an opaque glazing, substantially as and for the purpose set forth.

2. An imitation stone-coal consisting of blocks of porous earthenware having a hard black smooth coating, as set forth.

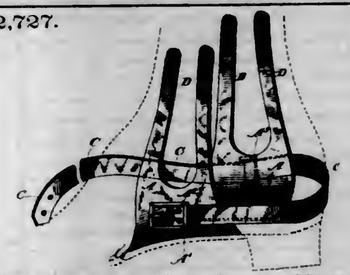
3. An imitation of stone-coal having a clay body, and an enamel consisting of a vitrified composition of feldspar, flint, lead, boracic acid, oxide of zinc, chromate of iron, oxide of cobalt, oxide of nickel, and china-clay, substantially as set forth.

332,727. Ankle-Support. George C. McEwen, Newark, N. J. Filed Mar. 12, 1885. (No model.)

Claim.—1. An ankle-support having a flexible body portion adapted to snugly fit the leg and foot above, below, and at the ankle-joint, and



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provided with vertical strengthening-ribs, substantially as and for the purpose specified.

2. An ankle-support comprising a flexible body portion adapted to snugly fit the ankle-joint, and strengthening-ribs arranged to prevent a sidewise motion of the joint, and to permit an opposite motion of said joint, substantially as specified.

3. An ankle-support consisting of a pliable ankle portion and resilient strengthening-ribs, constructed to be drawn against the instep outside of and above the sole of the shoe, substantially as specified.

4. In an ankle-support, the combination, with vertical strengthening-ribs, of devices, substantially as shown and described, for firmly binding the same upon a shoe against the instep and ankle, substantially as specified.

5. The combination of the body portion A and the fastening devices C, said body portion being provided with elastic portions B and with strengthening-ribs, as D, arranged in pockets formed by lines of stitches, substantially as specified.

332,728. Ankle-Support. George C. McEwen, Newark, N. J. Filed Mar. 12, 1885. (No model.)



Claim.—1. An ankle-support formed of a single piece of material, and consisting of an instep-band and upwardly-projecting prongs at each side thereof, substantially as specified.

2. In an ankle-support, the combination, with the frame-work comprising instep and heel bands and upwardly-projecting strengthening ribs or prongs, of a body portion or its described equivalent mounted thereon and adapted to be bound around the ankle, substantially as specified.

3. In an ankle-support, the combination of a body portion having an elastic web forming a part thereof, fastening devices, and strengthening-rim-receiving pockets, with a frame-work formed in a single piece and comprising strengthening ribs or prongs, a heel-band, and an instep-band, the whole being adapted for use outside of a boot or shoe, substantially as specified.

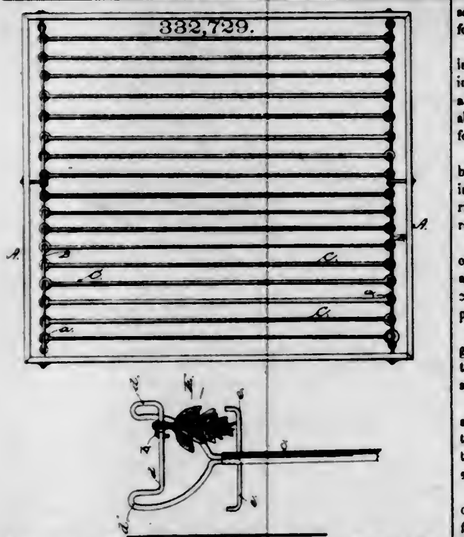
4. The combination of the instep-band E^2, the heel-band E', and the upwardly-projecting resilient strengthening-ribs E with a fastening device or body portion, as A, substantially as shown and described.

5. The combination of the body A, provided with the fastening devices C, the web B, and pockets formed by stitches D', of the frame-work comprising the prongs E and heel-band E', secured in said pockets, and the instep-band E^2, projecting below said body, substantially as shown and described.

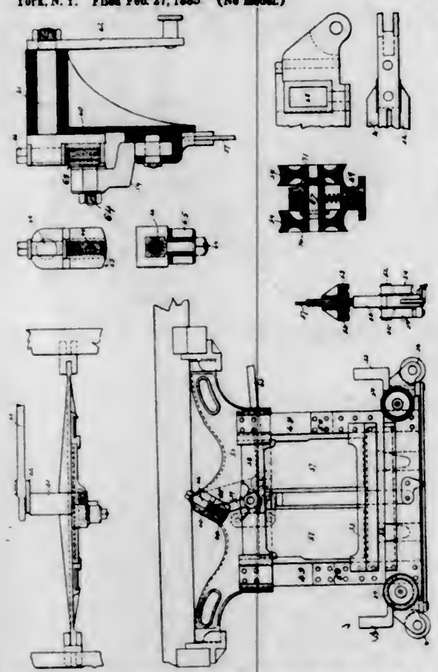
332,729. Apparatus for Curing Tobacco. Daniel G. McLellan, Rhodes, N. C. Filed Nov. 9, 1885. (No model.)

Claim.—1. The herein-described apparatus for curing tobacco, consisting of the frames A, transverse frames B, and cross-rods C, provided with looped ends *a*, for engagement with transverse frames B, substantially as and for the purpose specified.

2. In an apparatus for curing tobacco, the hanging device E, consisting of the handle *c*, provided with cross-frames *d* and *e*, substantially as and for the purpose set forth.



332,730. GRIP FOR CABLE RAILWAYS. DANIEL J. MILLER, New York, N.Y. Filed Feb. 27, 1885. (No model.)



Claim.—1. In a grip for cable-railway cars, having one of its jaws connected to a yoke by means of suspenders, each made in two pieces spliced together to facilitate replacing the upper parts when they become worn by contact with the slot-irons.

2. The combination, with the stationary and movable jaws of a grip, of a crank-shaft, 61, journaled in the frame or yoke 51 of the stationary jaw, the adjustable crank-arm 60, secured to said shaft, and the link 59, connected at its respective ends to said arm and the slide of the movable jaw, thereby forming a toggle-connection between the two jaws, substantially as and for the purpose set forth.

3. The combination, with the stationary and the movable jaw of a grip, of the crank-shaft 61, journaled in the yoke of the former, the crank-arm 60, secured to said crank-shaft, the sliding block 65, secured to said crank-arm, and the link 59, connected at its respective ends to said block and the slide of the movable jaw, as and for the purpose set forth.

4. In a grip, the stationary jaw, a horizontal crank-shaft mounted in the attaching-yoke thereof, and a crank-arm projecting from said shaft, in combination with the movable jaw, a slide to which it is secured, and a link positively connected at its respective ends to said crank-arm and slide by means of pivot-pins, substantially as and for the purpose set forth.

5. In a double grip for use in connection with twin cables, the combination of the lower jaw having a vertical transverse opening formed in each end thereof, a journal-box secured in said opening, an axle carried by said journal-box, and the cable-supporting sheaves carried at the respective ends of said axle, substantially as set forth.

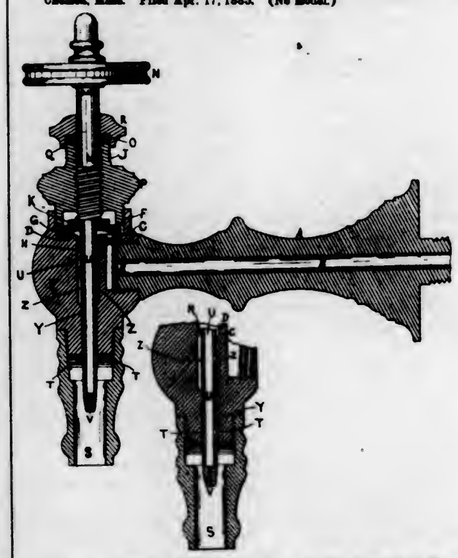
6. The combination, with the lower jaw, 52, having the transverse opening 68, of the journal-box 67, having the head 70 and nut 71, the axle carried by said journal-box, and the cable-supporting sheaves 54, carried at the respective ends of said axle, substantially as and for the purposes set forth.

7. A grip for cable-railway cars, having near each end a pair of grooved rolls for carrying the moving cable when the car is at rest, fixed to a shaft running in a journal-box supported on springs, substantially as set forth.

8. The combination, with the fixed jaw having a rigid yoke or shank and the movable jaw having a slide, of an arm connected at one extremity to the yoke of the fixed jaw, a link connected at one extremity to the slide of the movable jaw, an adjustable connection between said arm and link, and means for operating them, substantially as set forth.

9. The combination, with the yoke of the fixed jaw and the slide of the movable jaw, of the arm 60, connected at one extremity to the former, and the link 59, connected at one end to the latter, the sliding block 65, secured to the arm 60, and to which the free extremity of the link 59 is attached, and the set-screw 66, for controlling the position of the block 65, substantially as and for the purposes set forth.

332,731. DRAFT-TUBE FOR SODA-WATER. JOSEPH C. MILLER, Chelsea, Mass. Filed Apr. 17, 1885. (No model.)

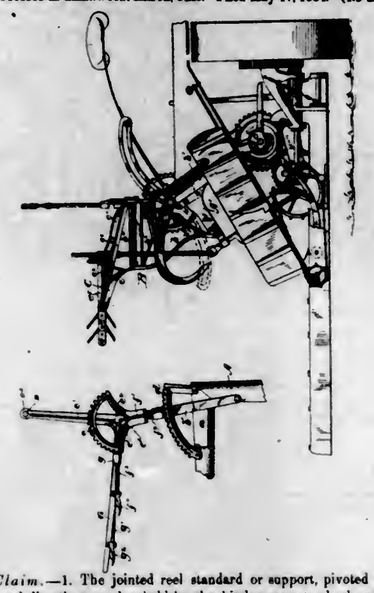


Claim.—1. The draft-tube E, having an inclosed chamber, H, and contracted passage Y, and provided with an adjustable interior tube, U, having an inlet, Z, connecting with said chamber, and a large outlet, T, and small outlet V, whereby the upward movement of the said tube U closes the large outlet T, and thereby forces all of the discharge through the small outlet V in the end of the interior tube, as described, and for the purposes set forth.

2. The combination, with the draft-tube E, having a chamber, H, and contracted passage Y, of the adjustable interior tube, U, adapted to fit and slide within said passage Y, and provided with an inlet-opening, Z, outlet-opening T, and small hole V, and a spraying-nozzle, S, as set forth.

3. The combination, with the draft-tube E, having an internal opening, H, and contracted passage Y, of the adjustable interior tube, U, provided with an inlet-passage, Z, outlet-passage, T, and small outlet V, said passage T being closed by contact with the walls of said passage Y by vertical movement of the said tube U, whereby the discharge is forced through the small outlet V, as described.

332,732. REEL-SUPPORT FOR HARVESTERS. LEWIS MILLER and AUGUSTUS E. ELLINWOOD, Akron, Ohio. Filed May 17, 1884. (No model.)



Claim.—1. The jointed reel standard or support, pivoted at its lower end directly to and upheld by the binder-gear standard, substantially as described.

2. The combination, with the binder-gear standard, of the jointed reel-supporting standard composed of frames, the uprights or side bars of which are curved or inclined over the grain-platform from their pivotal points of support, substantially as and for the purpose described.

3. The toothed rack on the binder-gear standard, in combination with the pivoted upright of the reel-standard, and the latch on said reel-standard engaging said rack, substantially as described.

4. The toothed rack on the binder-gear standard, in combination with the pivoted upright of the reel-standard, passing and adjustable between said rack and the tubular arm of the gear-standard and the latch on said reel-standard engaging said rack, substantially as described.

5. The pivoted and jointed reel-standard provided with the V-shaped or double incline track, in combination with the latch for holding said reel-standard at any desired adjustment, substantially as and for the purpose described.

6. The pivoted and jointed reel-standard, in combination with the segment-racks *d* and *e*, the latter provided with the inclined V-shaped track, the sliding latch, and means connected with the reel-adjusting lever for actuating the latch.

7. The jointed and pivoted reel-supporting standard hinged to and supported by the binder-gear standard, in combination with the segment racks, the single hand-lever for adjusting the reel both horizontally and vertically, the two retaining-latches for holding the reel at any desired adjustment, both having connection with the single hand-lever, and means for operating said latches, substantially as described.

332,733. RAILWAY-FROG. WILLIAM J. MORDEN, Chicago, Ill. Filed July 30, 1885. (No model.)

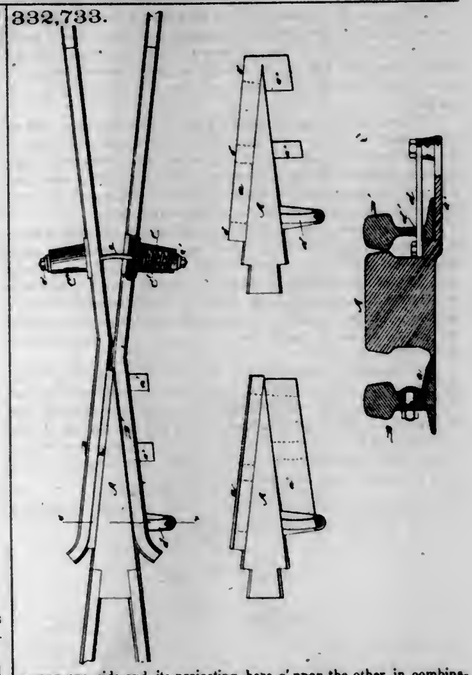
Claim.—1. A railway-frog point formed in one solid piece, having on one side a projecting separating-piece for securing to one wing-rail, and upon the other a projecting base upon which the other wing lies and moves, both formed in one piece with the point, substantially as shown and described.

2. In a railway-frog, a solid point having an integral projection on one side to which one of the wing-rails is firmly secured, and an integral bearing-plate upon the other side, in combination with a movable wing-rail resting upon this bearing and held normally against the point by a spring, substantially as and for the purpose set forth.

3. In a railway-frog, a point having upon one side a separating-piece formed solid therewith, and upon the other a supporting-base, also formed solid with the point, in combination with a stationary wing-rail secured to the separating-piece upon one side, and a movable wing upon the other side of the point, lying normally against the point and upon the projecting base-plate, and having its free end confined by a bar passing through the wing and secured to the base, and a spring bearing upon the movable rail to return it to contact with the point after being pushed aside by a passing wheel, substantially as and for the purpose set forth.

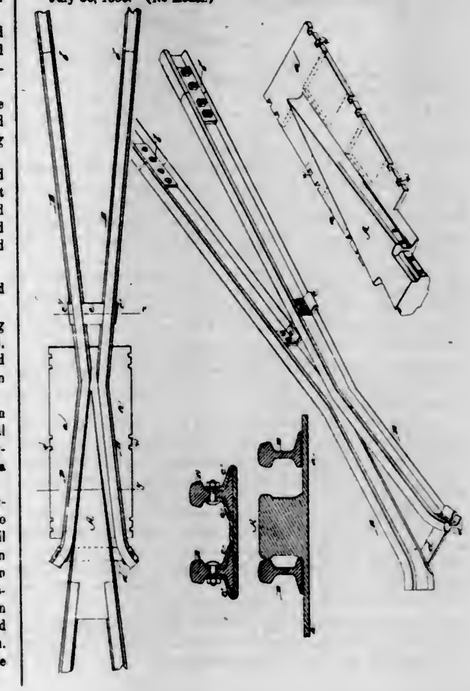
4. The point A, cast or formed in one piece with its separating-piece

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a upon one side and its projecting base *a'* upon the other, in combination with a stationary wing-rail, B, firmly secured to the piece *a*, and a movable wing, B', resting upon the plate *a'* and confined by a bar, *d*, passing through a hole, *d'*, in the wing, and a tie-rod, *c*, passed through both wings beyond the throat of the frog, and having a spring, C, upon each end inclosed in a case, C', all constructed and arranged to operate substantially as and for the purpose set forth.

332,734. RAILWAY-FROG. WILLIAM J. MORDEN, Chicago, Ill. Filed July 30, 1885. (No model.)



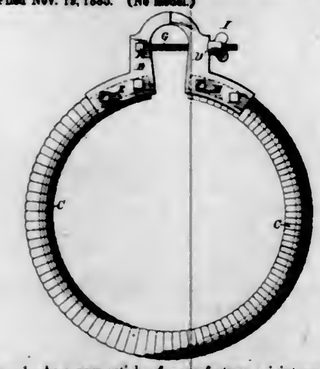
Claim.—1. In a railway-frog, the solid point A, having projecting base *a a* upon each side, formed in one continuous piece with the point, and having notches *n n*, the said base *a a* forming a support for the movable wing-rails B B and of sufficient width to allow said wings to move freely, substantially as shown and described, and for the purpose set forth.

2. In a railway-frog, a frog-point formed in one solid piece with an integral base projecting upon each side, in combination with a pair of wing-rails secured at one end to the track-rails, and having their opposite ends connected together and resting upon the point-base upon each side of the point, to and from which they are freely moved by the passing wheels, substantially as and for the purpose set forth.

3. In a railway-frog, a solid frog-point having a projecting base or support formed therewith upon each side, in combination with the wing-rails secured at their forward ends to the track-rails and lying loosely upon the base upon each side of the point, and two bars connecting them, one at or near the throat and one at their rear ends beneath or through the heel of the point, whereby the wings are readily moved to and from the point, to secure a double bearing for the wheels, substantially as shown and described.

4. The point A, formed in one piece with the projecting base *a*, upon each side, having notches at proper points for spiking to the ties, in combination with the wings B B, resting loosely upon the point-base on each side of the point and connected at the throat of the frog by bars *c c'*, shaped to fit the rails, and at the rear ends by a bar, *d*, passing under or through the point, to prevent the wings from jumping, substantially as and for the purpose set forth.

332,735. JOINT-PACKING BAND. DAVID B. MORRELL, Philadelphia, Pa. Filed Nov. 19, 1885. (No model.)



Claim.—1. As a new article of manufacture, a joint-packing band for making lead joints, consisting of a yielding interior or core protected by an exterior of coiled cord asbestus packing, the ends being provided with metal blocks D D', to form a gate through which to pour the lead and to provide substantial means for drawing the two ends of the packing-band together, substantially as described.

2. As a new article of manufacture, a joint-packing band for making lead joints, consisting of a yielding interior or core protected by an exterior of coiled cord asbestus packing, the ends being provided with metal blocks D D', to form a gate through which to pour the lead, and thumb nut and screw G I, to tighten up the band, substantially as described.

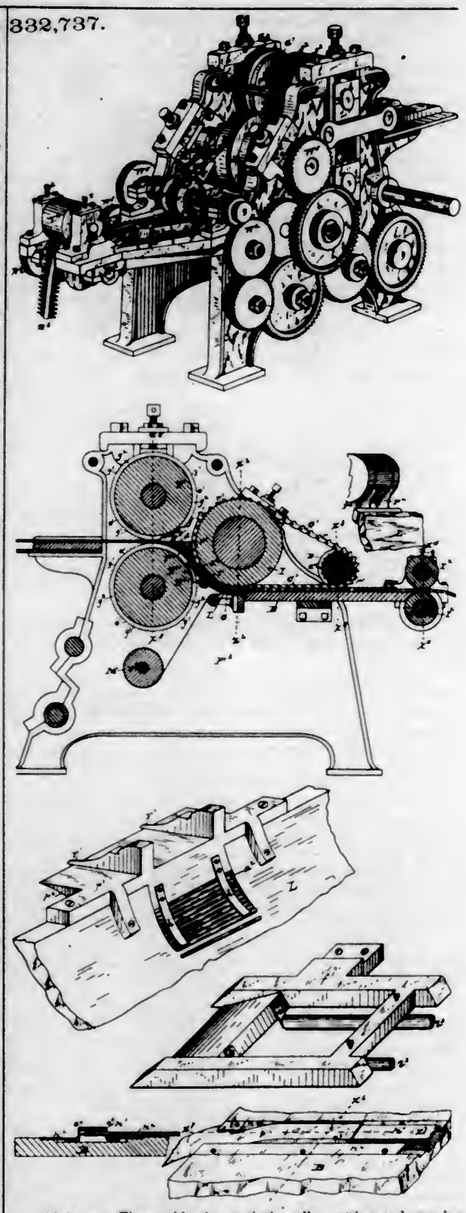
3. As a new article of manufacture, a joint-packing band for making lead joints, consisting of a rubber interior core wrapped with cord asbestus packing, for protection against heat, and metal blocks D D', with the thumb nut and screw G I, to draw the blocks together and tighten the packing-band on the joint to be filled, substantially as described.

332,736. METALLIC ALLOY OR COMPOUND IN PRODUCING THE SAME. HERMANN J. F. NIEWERTH, Hanover, Prussia, Germany. Filed Dec. 3, 1884. (No specimens.)

Claim.—1. The process of alloying heavy metals with the sulphurets of metals, which consists in first dissolving the sulphuret of the metal in molten zinc, then mixing the product with the heavy metals desired to form the alloy in their molten condition, and finally removing the zinc by cupellation, substantially as set forth.

2. The process of alloying heavy metals with the sulphurets of metals, which consists in adding to the heavy metals desired to form the alloy in their molten conditions small quantities of the sulphuret of an alkaline metal, so that the decomposition of the said sulphuret takes place gradually, and the sulphur and nascent alkali are enabled to combine with the said heavy metals, substantially as set forth.

332,737. MATCH-MAKING MACHINE. GEORGE E. NORRIS and WILLIAM E. HAGAN, Troy, assignors of one-third to James K. P. Pine, Lansingburgh, N. Y. Filed May 13, 1885. (No model.)



Claim.—1. The combination, with the splint cutting and pressing rollers R' and R², each having the circumferentially-arranged grooves g^2, and connected by gears to move together, of the fingers F', constructed to enter said grooves of the upper roller, R', to strip the splints from off the bottom of the latter, the fingers F², arranged to enter the said circumferential grooves of the lower roller, R², to strip the splints from the side of the latter, and the concavely-curved guide-plate L, made with the passage a^2, substantially in the manner as and for the purposes set forth.

2. The combination of the concavely-curved guide-plate L, made with the opening a^2, the rubber roller I, made with the grooves a^4, and arranged with reference to said guide-plate substantially as shown, the drum D, arranged on the shaft S', the endless conveying chain belts C', and the bed B, said parts being constructed and arranged to operate substantially in the manner set forth.

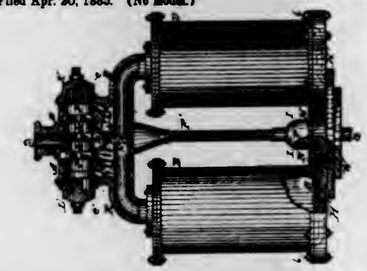
3. The combination, with the bed B, of the endless chains C' C', constructed to be actuated by the roller I and drum D, substantially as described, the web M, having a longitudinally and centrally arranged upfold, the rollers I² I², constructed to draw said web through the mechanism, and the endless-chain belt C², constructed to be actuated by the sprocket-drum d^2 and roller d^3 relative to the traverse of said chain C' and the said web, substantially in the manner as and for the purposes set forth.

4. The combination of the fold-plate *n'*, made to curve upwardly from where attached at the rear of the machine-bed, as shown, and therefrom extended frontwardly in a line horizontally parallel with but above the machine-bed, the side fold-plates, n^2 n^2, each of which is arranged over and above the bed, but below and at one side of the said plate *n'*, substantially as shown, and the endless-chain belt C², operated by means of a vertical sprocket-drum and roller with the stretch of said chain belt that is adjacent to the said fold-plates, making an acute angle with the latter and moving thereat toward the delivery end of the machine, as and for the purposes set forth.

5. The combination, with the bed B, of the conveying-chains C' C', constructed to be operated by the roller I and drum D, substantially as described, the presser-frame *f'*, having the rubber strips, v^3, the web M, having a longitudinally and centrally arranged upfold, the rollers I² I², and the endless chain C², actuated by the sprocket-drum d^2 and roller d^3, all substantially in the manner as and for the purposes set forth.

6. The combination, with the bed B, of the web M, having a centrally and longitudinally arranged upfold made therein, the rollers I², constructed to move said web, and the endless-chain belt C², arranged to be actuated by the drum d^2 and roller d^3, to move relatively to the traverse of said web, substantially in the manner as and for the purposes set forth.

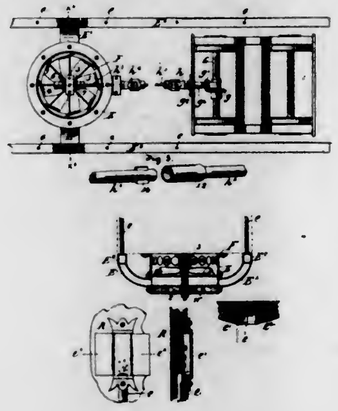
332,738. STEAM VACUUM-PUMP. GEORGE H. NYE, Chicago, Ill. Filed Apr. 20, 1885. (No model.)

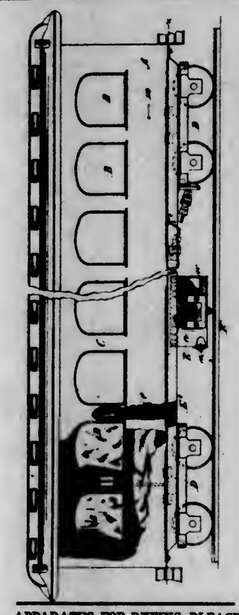


Claim.—In steam vacuum-pumps for elevating water, the valve-case A L' K, constructed with the pipe attachment R S, openings 1 4 communicating with the valve-chamber and pipes R S, the annular grooves *d d m*, steam-pipe C, and partition N, in combination with the valve having the four cut-offs J L L J, spaces *a a' a* between them, and holes *c* through the heads J J for alternately directing steam into the cylinders B D, as specified.

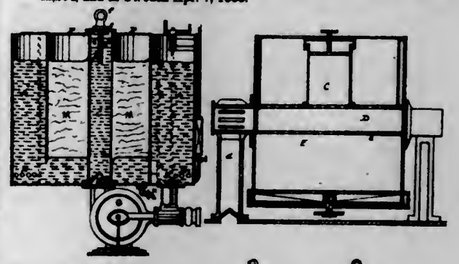
332,739. CAR-VENTILATOR. WILLIAM Y. OBER, Lynn, Mass. Filed Aug. 3, 1885. (No model.)

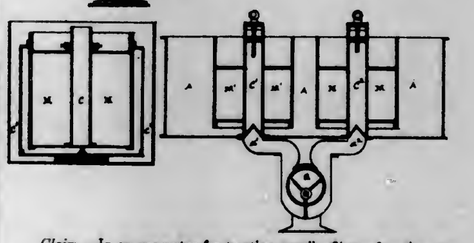
Claim.—In a car-ventilator, a water-tank, fan, branch pipes leading into the car between the windows, and means, substantially as described, to rotate the fan to force the air-supply, in combination with the registers R, in which the branch pipes terminate, having the independently-movable doors or wings *e' e²*, substantially as shown and described.





332,740. APPARATUS FOR DYEING, BLEACHING, &c. JULIUS O. OBERMAIER, Lambrecht, Bavaria, Germany. Filed Jan. 27, 1885. (No model.) Patented in Germany Dec. 5, 1882, No. 23,117; in Denmark Jan. 10, 1883; in Russia Jan. 15, 1883, No. 5,434; in Spain Jan. 24, 1883, No. 20,120; in Italy Feb. 8, 1883, No. 15,091; in Austria Mar. 6, 1883, No. 42,204, and in Sweden Apr. 7, 1883.





Claim.—In an apparatus for treating textile fibers, &c., the combination, with the vat, of the stationary perforated cylinder M, the interior stationary perforated cylinder, C, and the pump having connections with the vat and the central cylinder, substantially as described.

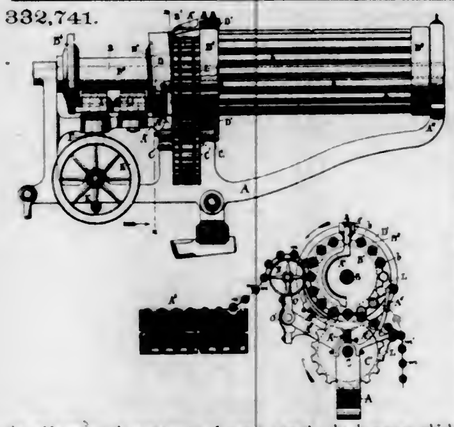
332,741. MACHINE-GUN. CHARLES H. PALMER, New York, N. Y. Filed Jan. 23, 1884. Renewed May 7, 1885. (No model.)

Claim.—1. In a repeating-gun, the two wheels B' C', recessed on their peripheries, as described, to receive and hold the cartridges, in combination with each other and with a revolving abutment-ring carrying exploding-hammers, and with a barrel, as *b*, as set forth.

2. The wheels B' C', recessed as described to receive and hold the cartridges, and having annular grooves about their peripheries, combined with the plows L, bearing in such grooves, and means for revolving said wheels, substantially as set forth.

3. In combination with the series of barrels supported on a revolving axis, B, the wheels B' C', recessed to receive and hold the cartridges, the abutting-ring D, and means, substantially as described, for moving

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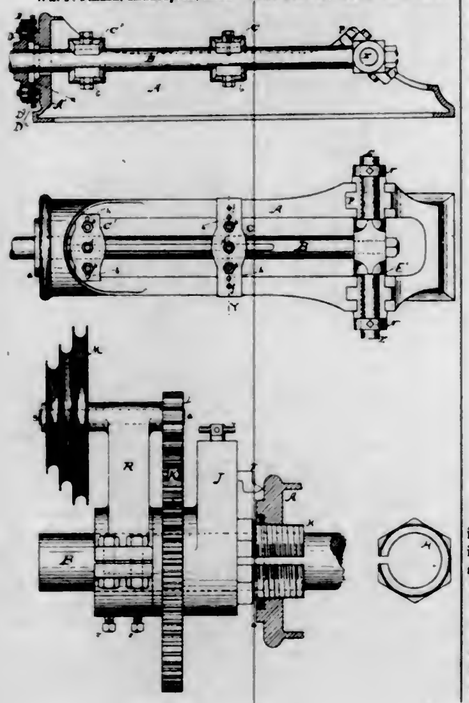
the said parts at the same rate of speed, whereby the hammers which are supported in the ring, the barrels, and the cartridge-holding recesses will register correctly, as set forth.

4. In combination with the wheels B' C', as described, and the ring D, mounted on the axis B by a universal joint, the series of hammers G, having arms G', the springs H, the fixed track A^4, and means for revolving the said ring and wheels at a uniform speed, as set forth.

5. The combination, with the wheels B' C', having semi-cylindrical recesses for holding the cartridges, and barrels *b*, counterbored at their rear ends, of the ring D, supported on the axis B, and adapted to force the cartridge-shell into close contact with the barrel as the abutting portion approaches the part where the semi-cylindrical recesses form a complete chamber, as set forth.

6. In a repeating-gun the abutment-wheels I J, adapted to serve the double function of transmitting a strong compressive force and of conveying motion, in combination with the rear wheel, B^6, and with the abutment-ring D, mounted on a universal joint, and with means for holding and firing cartridges, all arranged for joint operation substantially as herein specified.

332,742. MECHANISM FOR FINISHING ENGINE BED-FRAMES. WM. F. PARISH, Minneapolis, Minn. Filed June 22, 1885. (No model.)



Claim.—1. The combination, with the arbor, of the plates C C', means for securing said plates to the arbor, and the adjusting-screws *f*, all substantially as described, and for the purpose set forth.

2. The combination, with the arbor B E, having the two parts at right angles to each other, of means for centering said arbor in an engine bed-frame, revolving tools, as described, mounted on said arbor for truing the end of the bed, and plates C C', secured to said arbor for preparing the supporting projections to receive the cross-head guides, all substantially as described.

3. The combination, with the arbor B E, having the two parts at right angles to each other, of means, as described, for centering said arbor in an engine bed-frame, and revolving tools mounted on said arbor for truing the end of the bed-frame, all substantially as described.

4. The combination, with the arbor B E, having the two parts at right angles to each other, of means for centering said arbor in an engine bed-frame, and the plates C C', secured to the arbor for preparing the supporting projections for the cross-head guides, all substantially as described.

5. The combination, with the arbor having the longitudinal groove or grooves b^2, of the plates C, having a corresponding groove, the key *c*, bolts *b*, bolt *d*, and screws *f*, all substantially as described.

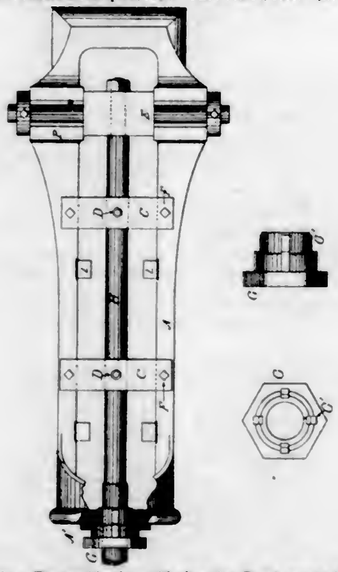
6. The combination, with the arbor B, of means for centering said arbor in an engine bed-frame, the cutter-head J, mounted on the arbor and carrying the tool T, and means for revolving said cutter-head, as and for the purpose set forth.

7. The combination, with the arbor B E, of means for centering said arbor in an engine bed-frame, and means mounted on said arbor for truing the end of the bed, said means consisting of the part R, clamped to the arbor and carrying the shaft S, pulley M, and gear L, and the cutter-head J, adapted to revolve freely on said arbor and provided with a gear, K, and cutter T, all substantially as described.

8. The combination, with the bed-frame A, having the projections *n n*, of the arbor B, centerer D, the plates C, having recesses fitting the arbor, means for securing said plates to the arbor, the bolts *b*, and screws *f*, as and for the purpose set forth.

9. The combination, with the bed-frame A, of the arbor B, the tapering threaded split sleeve H, the cutter-head J, mounted on the arbor and carrying the tool T, and means for revolving said slide-rest, as and for the purpose set forth.

332,743. MECHANISM FOR FINISHING ENGINE BED-FRAMES. WM. F. PARISH, Minneapolis, Minn. Filed Oct. 16, 1885. (No model.)

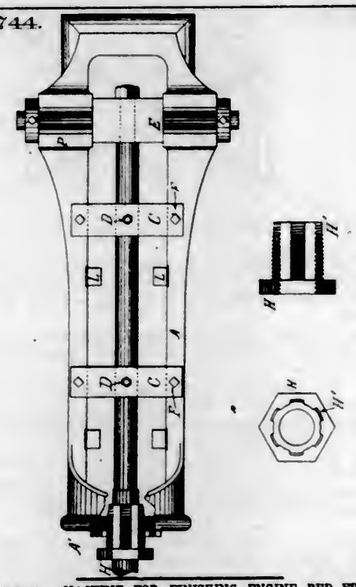


Claim.—The combination, with the arbor B and means for centering said arbor in an engine bed-frame, of the reamer G, having an opening therein to fit said arbor, and provided with the series of cutters G', all substantially as and for the purpose set forth.

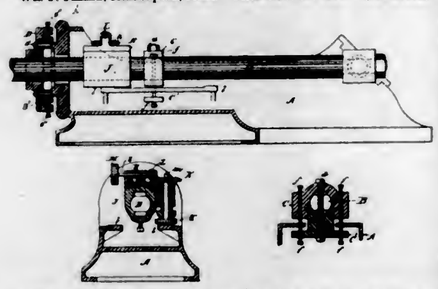
332,744. MECHANISM FOR FINISHING ENGINE BED-FRAMES. WM. F. PARISH, Minneapolis, Minn. Filed Oct. 16, 1885. (No model.)

Claim.—The combination, with the arbor B and means for centering said arbor in an engine bed-frame, of the tap H, having an opening therein to fit said arbor, and provided with the cutting-threads H', all substantially as described, and for the purpose set forth.

332,744.



332,745. MACHINE FOR FINISHING ENGINE BED-FRAMES. WM. F. PARISH, Minneapolis, Minn. Filed Nov. 10, 1885. (No model.)



Claim.—1. The combination, with an arbor and means for centering said arbor in an engine bed-frame, of a tool-frame mounted on said arbor, a truing-tool carried by said frame for truing the supports for the cross-head guides, and means for operating said tool, all substantially as described, and for the purpose set forth.

2. The combination, with an arbor and means for centering said arbor in an engine bed-frame, of a tool-frame mounted on said arbor and carrying a revolving truing-tool for truing the supports for the cross-head guides, and means for operating said tool, all substantially as described.

3. The combination, with the main arbor B and cross-arbor E and means for centering said arbor in an engine bed-frame, of the tool-frame mounted on said arbor and carrying the truing-tool for truing the supports for the cross-head guides, and means for operating said tool, all substantially as described.

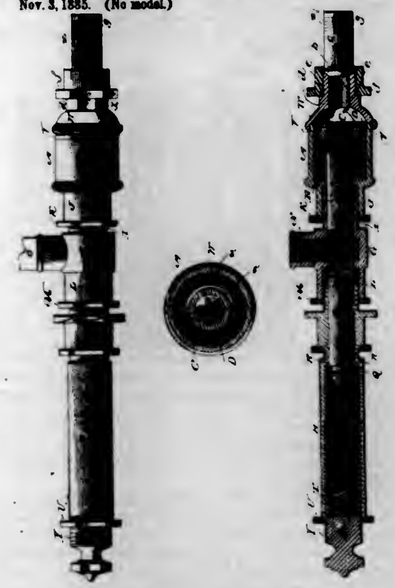
332,746. SEED-PLANTER. JAMES B. PARKER, Memphis, Ala. Filed May 9, 1885. (No model.)



Claim.—1. The combination, with the hopper having the opening in its bottom, and the shaft having the carrying-wheels mounted thereon and passing through the hopper, of a disk mounted on the shaft within the hopper, a series of slots or spaces on the peripheral face of the seed-disk at intervals apart, a series of radially-arranged laterally-projecting pins or projections on the seed-disk, and adjusting devices, such as screw-bolts, located in the slots or spaces, for regulating the quantity of seed to be dropped, substantially as set forth.

2. The hopper having an opening formed in its bottom, the walls of which opening are beveled, as at *b*, in combination with the shaft having the carrying-wheels mounted thereon, a wheel or disk mounted on the shaft within the hopper, and having its periphery provided with a series of slots or open spaces at intervals apart, a series of laterally-extending pins provided on the spokes of the wheel or disk, and screw-bolts working through the periphery of the latter, and having one end extending into the slots or spaces, so as to regulate the quantity of seed received within the latter, as set forth.

332,747. AUTOMATIC PRESSURE-REGULATOR. WALTER S. PAYNE, Fostoria, Ohio, assignor to Walter S. Payne & Co., same place. Filed Nov. 3, 1885. (No model.)



Claim.—1. In an automatic pressure-regulator, the cylinder and its outlet, in combination with the piston-head working in the cylinder, the hollow piston-rod, the inlet, and perforations or openings provided in the piston-rod, the latter having said perforations normally registering with the inlet, as set forth.

2. In an automatic pressure-regulator, the cylinder and its outlet, in combination with the piston-head, the hollow piston-rod having one end discharging into the cylinder, and provided with inlet-openings for the entrance and passage of the steam or water, as set forth.

3. In an automatic pressure-regulator, the cylinder and its outlet, in combination with the piston-head working in the cylinder, the hollow piston-rod discharging at one end into the cylinder, an adjusting-spring acting against the other end of the piston-rod, and perforations or openings provided at an intermediate portion of the same piston-rod, as set forth.

4. In an automatic pressure-regulator, the combination, with the cylinder, piston-head, and piston-rod, of a spring acting against the piston-rod, an exteriorly-threaded adjusting-cap, and a clamping-collar engaging with the threads of the cap to hold it to the desired adjustment, as set forth.

5. The cylinder having its outlet end beveled and threaded, in combination with the branch pipe Z, having one end beveled to correspond to the beveled end of the cylinder, and a nut, *f''*, carrying the branch pipe and working over the threaded outlet end of the cylinder, as set forth.

6. The piston-head having the packing D fitted to its periphery, the annular groove *a'*, and the perforations *b'* in the outer wall of the piston-head surrounding this groove, as set forth.

7. The piston-head having the steam-passages *b'*, and the packing D, secured over the said passages, for the purpose set forth.

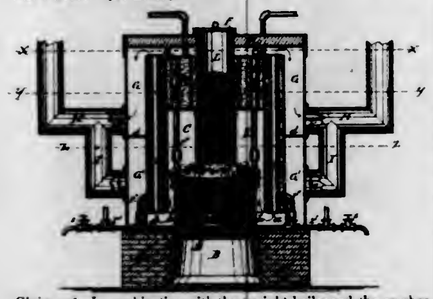
8. The cylinder A and the branches G H, in combination with the piston-head C, working in the cylinder, the hollow piston-rod discharging therein, the perforations or openings in the piston-rod, the inlet N, provided in the branch G, the spring inclosed in the branch H, and the adjusting-cap closing the open end thereof, as set forth.

9. The cylinder A and branches G H, detachably fitted together and provided with suitable stuffing-boxes, the branch G having the inlet N, in combination with the piston-head working in the cylinder, the piston, the spring located in the branch H, and the adjusting-cap Y, as set forth.

10. In an automatic pressure-regulator, the combination, with the cylinder A, of a cap, W, provided with an extension, X, having its end beveled inwardly, a branch pipe, Z, having its end correspondingly beveled to fit within the end of the extension X, an annular collar on said branch pipe, and a packing-nut connecting the said pipe to the extension, for the purpose set forth.

11. In a pressure-regulator, the cylinder, in combination with the piston-head formed with an annular groove to receive suitable packing, the hollow piston, an inlet communicating with the piston, an outlet for the steam or water in the cylinder, and an opening in the cylinder back of the piston-head, as set forth.

332,748. STEAM-BOILER. John F. Pease, Syracuse, N. Y. Filed Jan. 27, 1885. (No model.)



Claim.—1. In combination with the upright boiler and the combustion-chamber extending into said boiler from the bottom thereof, as shown, a fire-pot composed of a coil of water-pipes arranged inside of the combustion-chamber, with a fire-passage between their vertical sides, flues extending vertically through the boiler from the bottom of the water-space surrounding the combustion-chamber, and a smoke-box over the top and sides of the boiler, all constructed and combined substantially in the manner specified and shown.

2. The combination, with an upright boiler, of the combustion-chamber extending vertically into the boiler from the bottom thereof, the fire-pot extending into the combustion-chamber, a fire-passage between the vertical sides of the combustion-chamber and boiler and under the latter, vertical flues extending through the boiler at the sides of the combustion-chamber, a smoke-box surrounding the upper part of the boiler and communicating with the upper ends of the flues, a smoke-box surrounding the lower portion of the boiler and communicating with the fire-passage at the bottom thereof, an exit-flue tapping one of the smoke-boxes, a duct extended from the other smoke-box to the exit-flue, and dampers in said flue and duct, substantially as described and shown.

3. The combination, with the upright boiler, of a combustion-chamber extending vertically into the boiler from the bottom thereof and concentric therewith, flues extended vertically through the boiler at the sides of a fire-pot arranged concentric with the bottom portion of the combustion-chamber, with a fire-passage between their vertical sides, smoke-boxes completely surrounding the boiler and extended across the top thereof, and communicating, respectively, with the base of the combustion-chamber and upper end of the flues, and a fuel-magazine extending vertically through the upper smoke-box and through the center of the boiler, all combined substantially in the manner specified and shown.

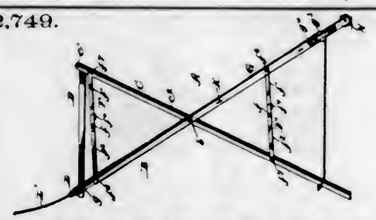
4. The combination of the upright boiler formed with the combustion-chamber extending vertically into the bottom of the boiler, a coil of water-pipe arranged concentric in the lower portion of the combustion-chamber, with a fire-passage between their vertical sides, the base of said coil communicating with the base of the boiler, and the top of the coil terminating with vertical branch pipes tapping the boiler at the top of the combustion-chamber, vertical flues extending through the boiler at the side of the combustion-chamber, smoke-boxes completely surrounding the boiler and communicating, respectively, with the upper ends of the flues and with the combustion-chamber at the bottom of the boiler, exit-pipes connected to one of the smoke-boxes, ducts extended from the other smoke-box to the exit-pipes, and dampers in said pipes and ducts, all combined to operate substantially as described and shown.

332,749. FOLDING CHAIR. Effie L. Prall and Arvilla Williams, Wellington, Kans. Filed May 7, 1885. (No model.)

Claim.—1. In a combined folding and adjustable chair, a seat-supporting lever, a bell-crank, substantially as described, in combination with supporting-legs and seat of a chair, as and for the purpose specified.

2. In a combined folding and adjustable chair, a hinged folding brace, substantially as described, in combination with a seat-supporting

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lever H and the legs and seat of the chair, as and for the purpose set forth.

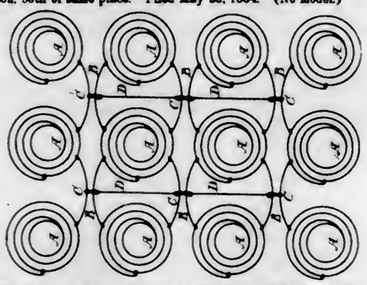
3. In a combined folding and adjustable chair, a cord arranged and operating substantially as described, in combination with the legs, seat, braces, and seat-supporting lever of the chair, as and for the purpose specified.

4. In a folding and adjustable chair, legs B, provided with rollers N, pulleys g g^3, and levers H, with the legs C, folding braces F, and seat D, substantially as described.

5. In a folding and adjustable chair, the combination of legs B, provided with lateral brace K, lever H, rollers N, pulleys g g^3, and loop L, with legs C, seat D, operating-cords G, hinged folding braces F, and straps or cords L, substantially as described.

6. In a combined folding and adjustable chair, the combination of legs B and C, pivoted together, the leg B being of greater length than its fellows and having rollers N and pulleys g g^3, with lever H, seat D, operating-cords G, and braces, substantially as described.

332,750. SPRING BED-BOTTOM. Harrison Quaid, Schenectady, N. Y., assignor of two-thirds to Henry A. Burt, Jr., and William Y. Thomson, both of same place. Filed May 28, 1884. (No model.)



Claim.—1. In combination with the coiled-wire springs A, the semi-elliptic links B and loops C, as and for the purpose specified.

2. In combination with the coiled-wire springs A, the semi-elliptic links B, and loops C, the auxiliary links D, connecting said loops, as and for the purpose specified.

3. In spring bed-bottoms, the combination of the coiled-wire springs A, semi-elliptic links B, connecting said springs, loops C, connecting said links, and the auxiliary links D, connected with the loops, all constructed and arranged substantially as shown and described, for the objects herein set forth.

332,751. PRODUCTION OF COLD. Auguste J. Rossi, New York, N. Y., assignor to George H. Robinson, same place. Filed June 27, 1885. (No specimens.)

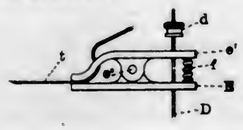
Claim.—The use of carbonic acid combined with sulphuric ether for producing cold, substantially as described.

332,752. PRODUCTION OF COLD. Auguste J. Rossi, New York, N. Y., assignor to George H. Robinson, same place. Filed June 27, 1885. (No specimens.)

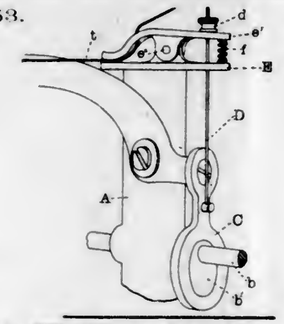
Claim.—The use of a ternary liquid consisting of carbonic acid combined with a binary volatile absorbent for the production of cold, substantially as described.

332,753. TENSION ATTACHMENT FOR SEWING-MACHINES. R. Rossiter, Lynn, Mass. Filed Mar. 18, 1885. (No model.)

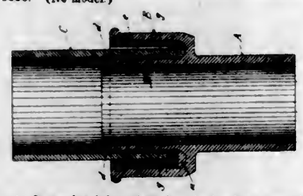
Claim.—A tension attachment having the rod D, nut d, jaws E and e', pin e^2, and spring F, and means, as strap C, for imparting an intermittent movement to rod D from the main shaft, all substantially as in the one shown and described.



332,753.



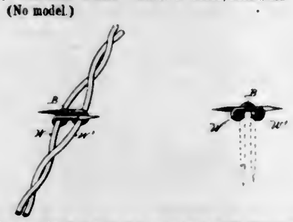
332,754. PIPE-JOINT. George R. Scott, Washington, D. C. Filed Nov. 3, 1885. (No model.)



Claim.—1. In a pipe-joint, the pipe A, having a continuation, D, and a slightly shorter hub, B, surrounding it, thus forming a recess in which are contained the ribs a, in combination with the pipe C, telescoping over the continuation D of the pipe A, substantially as and for the purpose set forth.

2. In a pipe-joint, the pipe A, having a continuation, D, and a slightly shorter hub, B, with the ribs a, in combination with the pipe C, and a rubber or packing ring, d, substantially as and for the purpose described.

332,755. BARBED WIRE. Hiram B. Scott, Joliet, Ill. Filed Sept. 14, 1885. (No model.)



Claim.—In combination with the strand-wires W W', a barb formed from a short piece of pointed wire having its body part bent U-shaped and placed transversely between said strand-wires to form a spring to yieldingly support and hold said wires apart, and having its prods bent back upon and about said strand-wires in opposite directions, one on either side of said U-shaped spring-body part, and arranged to present two oppositely-projecting prods, as and for the purposes set forth.

332,756. STOVE-POLISH. William T. See, Meadville, Pa. Filed June 13, 1885. (No specimens.)

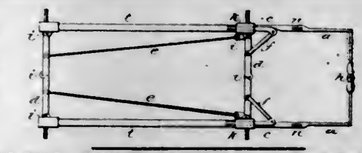
Claim.—The herein-described composition to be used as a polish for stoves or other metallic surfaces, consisting of water, dextrine, plumbago, and lamp-black, in the proportions specified.

332,757. FOLDING BABY-CARRIAGE. Charles Seel, Philadelphia, Pa. Filed May 29, 1885. (No model.)

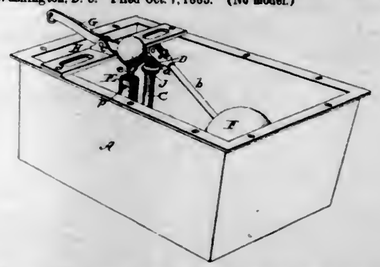
Claim.—The combination, in a baby-carriage, of a folding running-gear controlled by handles a a, acting as levers, all substantially as set forth.



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332,758. TANK FOR WATER-CLOSETS. James W. Somerville, Washington, D. C. Filed Oct. 7, 1885. (No model.)



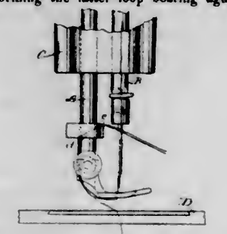
Claim.—1. In combination with the vertical supply-pipe C, the cup-shaped valve D, having its vertical walls arranged to project downward around said pipe, with an unbroken annular space between them, said parts being constructed and arranged to operate substantially as and for the purpose set forth.

2. The combined overflow-pipe and valve E, provided at its lower end with an internal annular chamber, f, formed by an enlargement of the pipe, and the inwardly-projecting flange u at the bottom of said enlargement, substantially as shown, and for the purpose herein set forth.

3. In combination with the tank A, the cross-bar H, provided with the two sets of holes h, and the adjustable bracket or lever-support c, said parts being arranged to operate substantially as described, whereby the valve-lever can be adjusted to one or the other side, as and for the purpose set forth.

332,759. THREAD HOLDER AND CUTTER FOR SEWING-MACHINES. David F. Speer, Vincennes, Ind., assignor to the Singer Manufacturing Company of New Jersey. Filed June 26, 1885. (No model.)

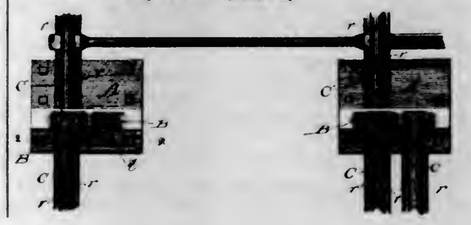
Brief.—A clasping-loop to embrace the pressure-bar has a second loop extending forward, provided with an upper cutting-edge, a part of the metallic strip forming the latter loop bearing against the clasping-loop.



Claim.—1. A thread holder and cutter all in one piece, and consisting of a clasping-loop adapted to embrace the presser-bar, a cutting-loop in front of said clasping-loop and having a cutting-edge on its forward side, and a holding-arm bearing against said clasping-loop and having an outwardly-inclined rear end, substantially as set forth.

2. A thread holder and cutter all in one piece, and consisting of a clasping-loop, a, adapted to embrace the presser-bar, and having a flattened side, a cutting-loop, b, in front of said clasping-loop and having a cutting-edge at its forward side, and a holding-arm, d, bearing against said flattened clasping-loop, substantially as set forth.

332,760. CHAIR FOR RAILROAD-TRACKS. Axel A. Strom, Austin, Ill. Filed May 26, 1885. (No model.)

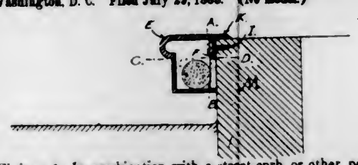


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Claim.—A switch or head chair comprising, in combination, a plate, A, and a cross-bar, B, formed in one or more parts and secured upon the plate A, and slitted transversely part way across, and having the edges on each side of a slit bent upward to afford slots *t* and sockets *s*, closed on one side, substantially as described.

332,761. CONDUIT FOR ELECTRIC WIRES. ROBERT R. TAYLOR, Washington, D. C. Filed July 29, 1885. (No model.)



Claim.—1. In combination with a street-curb or other permanent structure, a conduit having an open back, the curb forming the back thereof, and means for securing the conduit and curb together, consisting of a projection or flange resting upon the top of the curb, and screw passing through the same into the curb, as described.

2. In combination with a street-curb or other permanent structure, a conduit having an open back, the curb forming the back thereof, a conduit having a flange bearing against the front side of curb for steadying the conduit in position, and means, substantially as described, for securing the conduit to the curb, consisting of a flange or projection bearing upon the top of the curb, and screws passing through the flange into the curb.

3. In combination with a street-curb or other permanent structure, a conduit having an open back, the curb forming the back thereof, a flange bearing upon the top of the curb, and a dovetailed connection for securing the conduit to the curb, as set forth.

4. In combination with a street-curb or other permanent structure, a conduit having an open back, the curb forming the back thereof, said conduit having a flange bearing against the front part of the curb and having dovetailed slots, dovetailed pieces suitably attached to the curb and engaging said slots, and means for sustaining the conduit from displacement in a downward direction, as set forth.

5. In combination with a street-curb, a conduit having an open back, the curb forming the back thereof, said conduit having a flange bearing upon the front of the curb and provided with a dovetailed slot, and dovetailed pieces suitably secured to the front of the curb, and a projecting flange bearing upon the top of the curb, as set forth.

6. In combination with a street-curb, a conduit having an open back, the curb forming the back thereof, said conduit having a flange bearing upon the front of the curb and provided with a dovetailed slot, dovetailed pieces suitably secured to the front of the curb, a projecting flange bearing upon the top of the curb, and screws passing through the flange into the curb, as set forth.

7. As a new article of manufacture, a conduit having an open back and designed to be applied to a curb or other permanent structure, so that the structure may form the back thereof, a flange for resting upon the stop of said structure, and a second flange for bearing against the front of the same, as set forth.

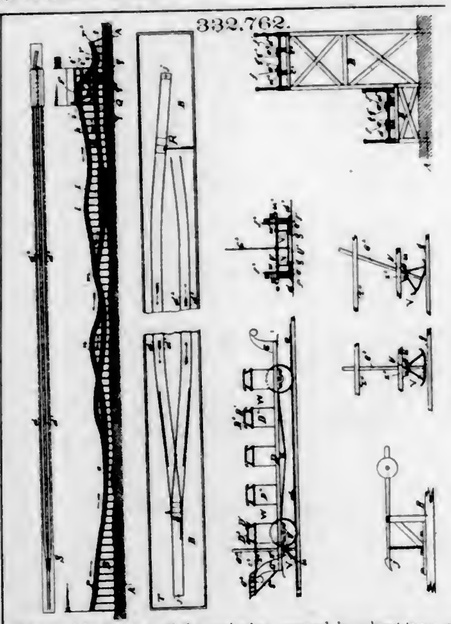
8. As a new article of manufacture, a conduit having an open back and designed to be applied to a street-curb or other permanent structure, so that the structure may form the back thereof, a flange for resting upon the top of said structure, and a second flange for bearing against the front of same, the said conduit having a dovetailed slot for engaging with a dovetailed projection upon the structure to which it is applied, as set forth.

332,762. GRAVITY SWITCH-BACK RAILWAY. LA MARCUS A. THOMPSON, Philadelphia, Pa. Filed Sept. 10, 1885. (No model.)

Claim.—1. In a gravity switch-back railway, the combination, with the trestle-work so constructed as to form a series of descending and ascending planes, of the longitudinal stringers for the reception of the rails, the guardways or stringers for preventing the cars from jumping the tracks, and the brake-sliding ways or stringers, substantially as and for the purposes described.

2. In a gravity switch-back railway, the combination, with the undulating trestle-work having thereon the longitudinal trackways and rails, of the guard-stringers and brake-slide stringers contiguous thereto, of a car having brake-shoes which engage with said brake-stringers through the operation of a lever, substantially as and for the purposes set forth.

3. In a gravity switch-back railway, the combination, with the undulating trestle-work of the trackways and rails, of the guard-stringers,

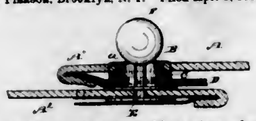


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of brake-slide stringers, of the car-brakes actuated by a hand-lever, of the automatic and sliding switches, of dogs for holding the cars, and mechanism, substantially as described, for elevating the car from the plane *r* to the starting-point, substantially as and for the purposes set forth.

4. The combination, with a gravity switch-back railway having starting and terminal points at different altitudes, of the car D, provided with brake mechanism consisting of shoes V V', cross-arms U U', and lever U^2, arranged and operating substantially as described.

332,763. GLOVE-FASTENING. AUGUSTUS TRAVER, New York, and HENRY B. PIERSON, Brooklyn, N. Y. Filed Apr. 5, 1884. (No model.)



Claim.—1. The combination, with a piece of material having a button-hole, of an open spring ring or band held along the edge of the hole by threads passed through the material and around the spring strip or wire, substantially as herein shown and described.

2. The combination, with a glove, of open spring rings or bands along the edges of the bottom holes, fabric layers or lining D, held on the under surface of the glove, and of threads passed through the glove and fabric and around the spring bands or ring, substantially as herein shown and described.

3. The combination, with a glove having one or more holes along the edges of one flap, of open spring rings or bands held along the edges of the holes by threads passed through the glove and around the spring rings or bands, and of ball-headed studs E, held on the edge of the other flap, substantially as herein shown and described.

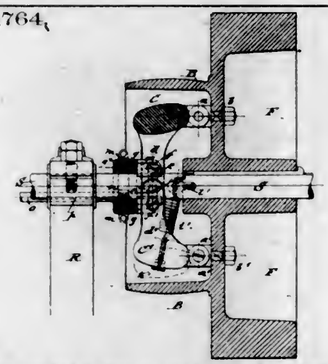
332,764. GOVERNOR FOR STEAM-ENGINES. MAX ULRICH, Easthampton, Mass. Filed Oct. 13, 1885. (No model.)

Claim.—1. The combination of a pulley, B, oscillating weights C C', pivoted to the web of said pulley and provided with slotted levers *d d'*, spiral springs *i i'*, connecting the weights C C' with the hub of the pulley, a laterally-sliding governor-sleeve, *g*, provided with lugs *g' g'* and pins *f f'*, a ring-shaped collar, *m*, guided loosely in a groove of said sleeve, and a rod, *o*, connecting said collar to the throttle-valve of the engine, substantially as set forth.

2. The combination of a pulley, B, having fixed lugs *a a'*, oscillating weights C C', pivoted to said lugs and having slotted levers *d d'*, tension-springs *i i'*, attached at their inner ends to the hub of the pulley and at their outer ends to holes through the weights, adjusting-nuts *k k'*, and a governor-sleeve having lugs *g' g'*, and guide-pins *f f'*, for guiding the slotted ends of the levers *d d'*, substantially as set forth.

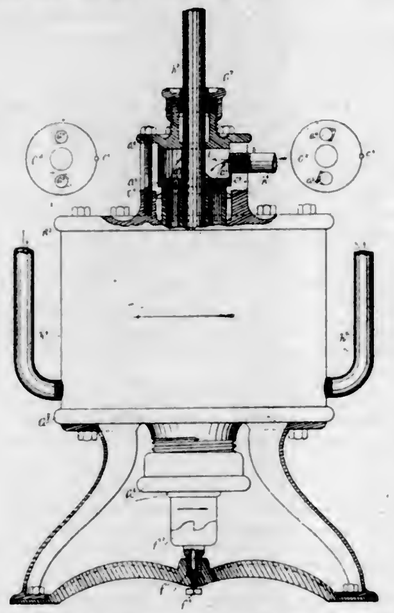
3. The combination of a pulley, B, oscillating weights C C', pivoted to said pulley and having slotted levers *d d'*, tension-springs *i i'*,

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connecting the weights with the hub of the pulley, a laterally-sliding governor-sleeve, *g*, having lugs *g' g'*, and guide-pins *f f'*, for the slotted levers *d d'*, a ring-shaped collar, *m*, guided in a groove of the governor-sleeve and provided with a screw-socket, *n*, and a connecting-rod, *o*, secured to the socket *n*, and guided in an opening, *p*, of the supporting-standard of the main shaft S, substantially as set forth.

332,765. ROTARY ENGINE. ALVIN W. VAN DORSTON, East Portland, Oreg. Filed June 24, 1884. (No model.)



Claim.—1. In a rotary engine constructed as described, the cylinder *h*, having the exhaust-ports *e e* and cushion-ports c^2 c^2, also recesses h^5 h^5, and the removable abutments *a a*, in combination with the disk *d*, provided with ports a^2 a^2, and piston-valves P P, substantially as and for for the purpose set forth.

2. In a rotary engine, substantially as described, the disk *d*, having piston-valves P P, with concentric journals J' B', of unequal diameter, and shoulders S, in combination with shoulders S', removable bearings B, and the stationary bearings J, substantially as and for the purpose set forth.

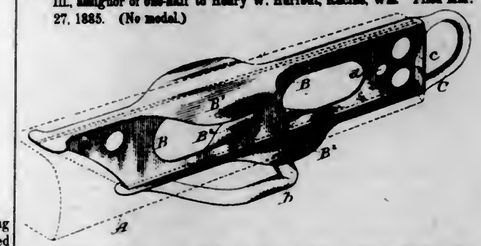
3. In a rotary engine constructed as described, the combination of the head a^2, the cap a^3, the disk *d*, provided with the shaft h^3, toe-pin, *f''*, the clutch f^3, and the base provided with the screw f^3, as and for the purpose set forth.

4. In a rotary engine constructed as described, the head a^2, provided with the fixed gland a^4, the inlet-pipe h^4, fixed cut-off valve c^3, having key c^4, and the cover a^3, provided with the cap a^7, as and for the purpose described.

5. In a rotary engine such as herein described, the disk *d*, revolving in contact with the fixed cut-off valve c^3, in combination with cylinder *h*, having abutments *a a*, provided with packing-strips *a' a'*, and heads a^2 a^2, having packing c^4 c^4, substantially as described.

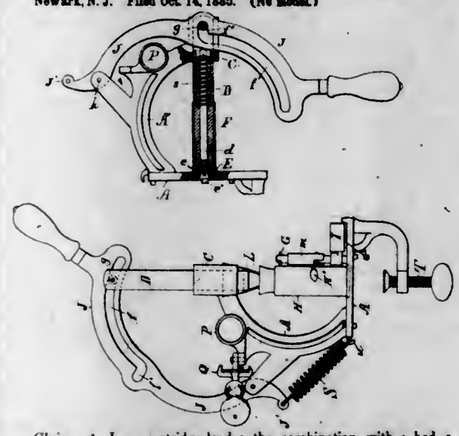
6. In a rotary engine constructed as described, the heads a^2 and a^2, provided with the metallic packing-strips c^4 c^4, in combination with the abutments *a a*, having packing-strips *a' a'* and elliptic springs *c' c'*, as and for the purpose set forth.

332,766. WAGON-TONGUE IRON. OLIVER VANORMAN, Rockford, Ill., assignor of one-half to Henry W. Hurlbut, Racine, Wis. Filed Mar. 27, 1885. (No model.)



Claim.—As a new article of manufacture, a holdback-iron for wagon-tongues, consisting of a central web adapted for insertion into a slot in the tongue, and flanges that clamp the tongue from above and below, a lug for the neck-yoke ring on its under side, and a clevis in front, substantially as described.

332,767. CARTRIDGE-LOADING MACHINE. ABRAM W. WHEATON, Newark, N. J. Filed Oct. 14, 1885. (No model.)



Claim.—1. In a cartridge-loader, the combination, with a bed, a movable setting-die, and a rammer movable to and from the bed and die, as described, of a punch movable within the rammer and normally held within the point of the latter, and a lever for pressing the rammer downward and constructed and operated to project the punch from within the rammer at the end of its stroke, substantially as and for the purpose set forth.

2. In a cartridge-loader, the combination, with a bed and a movable setting-die, of a rammer movable to and from the bed and die, a lever provided with a slot and fitted to a roller in the head of the rammer, as described, a notch in the end of the slot to admit the roller, and a punch movable within the rammer, in contact with the under side of the lever, and actuated by the lever when the notch drops over the roller, substantially as herein set forth.

3. In a cartridge-loader having a rammer vertically movable in a guide over a bed, as described, the means for operating the rammer, consisting in the combination, with the bed A and standard A', of the guide C, the rammer D, fitted thereto to move to and from the bed, and having the roller G, pivoted in its upper end, and the lever J, pivoted upon the standard, and provided with a slot, *f*, adapted to fit the roller, the lever being arranged with the slot embracing the roller and operated to move the rammer up and down in the guide, substantially as and for the purpose set forth.

4. In a cartridge-loader, the combination, with a bed and a rammer movable to and from the same, of the setting-die I, constructed with the central stud, *c*, and the yielding plate *a*, and adapted to sustain the cap before and during its setting in the cartridge, substantially as herein set forth.

5. In a cartridge-loader, the combination, with the bed A, having recess E and a rammer mounted over said recess, of a setting-die pivoted to the post G, and constructed with hub *e'* to fit said recess, the hub be-

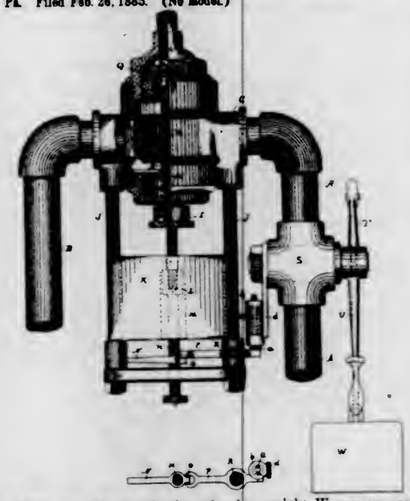
ing beveled at one edge to rise automatically in sliding from the recess, substantially as herein described.

6. In a cartridge-loader, the combination, with the bed A, having recess E, and the shell-case H, pivoted upon the post G adjacent to the recess, of one or more openings, H', in the sides of the case for grasping the shell, as and for the purpose set forth.

7. The combination, with the bed A, the standard A', guide C, rammer D, and lever J, of the recess E, formed in the bed beneath the rammer, the post G, affixed to the bed at one side of the recess, the setting-die I, pivoted to the post and adapted to drop into the recess when moved over the same, and the case H, pivoted upon the post above the setting-die, and provided at its hub *m* with a notch, *n*, fitted to a pin, *o*, upon the side of the post, to hold the case in its inoperative position, the whole arranged and operated substantially as herein set forth.

8. The means for admitting a movement of the rammer-lever below the top of the rammer-guide, consisting in the combination, with the bed A, standard A', and guide C, of the lever J, slotted as described, the rammer having roller *g*, pivoted in its upper end, as described, the lever pivoted upon the standard and arranged with its slot embracing the roller, and the guide provided with the notch C' in its top in a line with the lever, the whole arranged and operated substantially as herein set forth.

332,768. PRESSURE-REGULATOR. MOSES G. WILDER, Philadelphia Pa. Filed Feb. 26, 1885. (No model.)



Claim.—1. The combination of rod *n*, weight W, pressure-regulating valve E, piston V, and nose O, by means of which the automatic cut-off is released and the flow of gas stopped by an increase of pressure beyond a predetermined degree, substantially as described.

2. The combination of rod *n*, weight W, pressure-regulating valve E, piston V, and nose O, by means of which the automatic cut-off is released and the flow of gas stopped by a decrease of pressure below a predetermined degree, substantially as described.

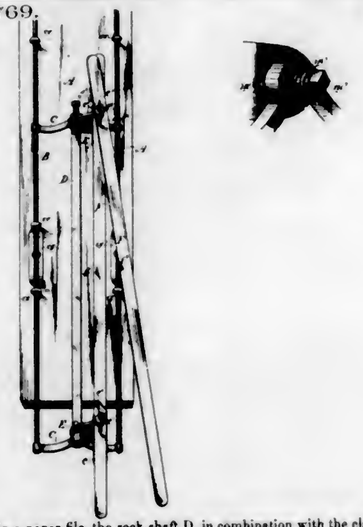
3. The combination of rod *n*, piston V, lever O, lever P, pin *a*, arm *d*, valve S, handle T, chain or cord U, and weight W, substantially as and for the purposes described.

332,769. NEWSPAPER-FILE. FRANK M. KIDDER, Arcata, Cal. Filed Apr. 27, 1885. (No model.)

Claim.—1. In a paper-file, the parallel independent clamping-bars F F', adapted to bind the papers, pamphlets, &c., between them, in combination with the clamps E, having bearing-plates *e*, carrying the bars F F', and clamping-screws e^2, binding said bars on their intervening material, substantially as herein described.

2. In a paper-file, the parallel independent clamping-bars F F', receiving the papers, pamphlets, &c., between them, in combination with the clamps E, having bearing-plates *e*, carrying the clamping-bars, and clamping-screws e^2, binding said bars, and the pin e^3 on one of the clamps, on which the bars are pivoted, whereby they may readily be turned free of the screws to separate them for the admission of the file contents, substantially as herein described.

3. In a paper-file, the lower or inner bar, F, having impaling-pin *f* and hole *f'*, and the outer or upper bar, F', having notch f^3 and hole f^2, as described, in combination with the clamps E, having bearing-plates *e*, on which the bars rest, and screws e^2, binding on said bars, and the pivot-pin e^3 on one of the clamps fitting in the holes *f f'* of the bars, substantially as herein described.



4. In a paper-file, the rock-shaft D, in combination with the clamping-bars F F', adapted to receive and bind the papers, pamphlets, &c., between them, and connections between said bars and shaft whereby they may be turned about said shaft as a center from one position to another at right angles, substantially as herein described.

5. In a paper-file, the clamping-bars F F', adapted to receive and bind the papers, pamphlets, &c., between them, in combination with the rock-shaft D and the clamps E, fixed on the shaft, and having bearing-plates *e*, supporting the bars, and screws e^2, clamping them, substantially as herein described.

6. In a paper-file, a rock-shaft, fixed braskets in which said shaft is mounted, and clamps fixed on the shaft, and consisting of bearing-plates and oppositely-placed binding-screws, in combination with independent parallel clamping-bars lying on the bearing-plates and bound by the screws of the clamps, said bars being adapted to receive and bind the papers, pamphlets, &c., between them, substantially as herein described.

7. In a paper-file, the combination of an adjustable or traveling carriage, clamps mounted thereon, and bars secured by the clamps and adapted to receive and bind the papers, pamphlets, &c., between them, substantially as herein described.

8. A paper-file comprising an adjustable carriage, brackets on said carriage, a rock-shaft mounted in the carriage, clamps carried by the rock-shaft, and bars actuated by the clamps and adapted to receive and bind the papers and pamphlets between them, substantially as herein described.

9. In a paper-file, the rods B, adapted to move longitudinally on a fixed backing or bench and forming a carriage, the brackets C on the rods, and the rock-shaft D in the brackets, and the clamps E on the rock-shaft, having bearing-plates *e* and screws e^2, in combination with the clamping-bars F F', seated on the plates and bound by the screws, substantially as herein described.

10. The backing or bench A, having guide-sockets *a* and springs *a'*, the rods B, mounted and adapted to slide in the sockets and controlled by the springs, the brackets C on the rods, the rock-shaft D in the brackets, and the clamps E on the rock-shaft, having bearing-plates *e* and screws e^2, in combination with the clamping-bars F F', seated on the plates and bound by the screws, substantially as herein described.

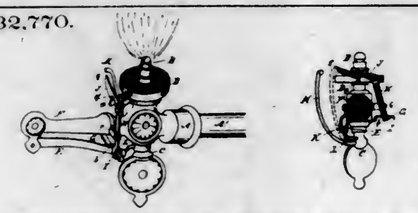
11. In a paper-file, the brackets C, rock-shaft D, and clamps E, for securing the paper-clamping bars, as described, in combination with the means for fixing the rocking adjustment of the clamps, consisting of the tooth *m* on the bracket, the socket *m'* in the clamp, and the controlling-spring m^2 on the shaft, substantially as herein described.

12. A paper-file comprising the traveling carriage B, brackets C on the carriage, rock-shaft D in the brackets, clamps E on the rock-shaft, having bearing-plates *e* and screws e^2, and the independent laterally-swinging clamping-bars F F', resting on the bearing-plates of the clamps and pivoted to one of them, as described, and having pins for impaling the papers, &c., all arranged and adapted to operate substantially as herein described.

332,770. SAFETY GAS-BURNER. LOUIS ZAGELMEYER, West Bay City, Mich. Filed Feb. 26, 1885. (No model.)

Claim.—1. In a safety gas-burner, for the purposes described, a thermal helix formed of a bar composed of two or more strips of metal

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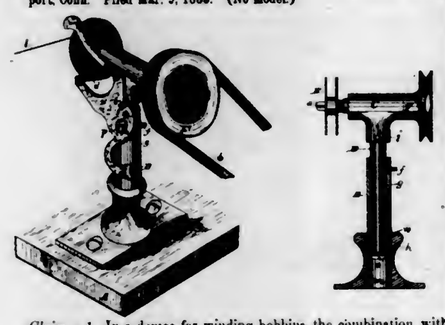


of unequal expansion, coiled into a helix and secured in proximity to the gas-burner, with its free end projecting, in combination with a trigger, a detent, and a spring actuated by the turning of the gas-cock for lighting the flame, all arranged as shown, whereby the contraction of the thermal helix will operate the trigger and release the said spring, to automatically turn off the gas, substantially as described.

2. In a safety gas-burner, for the purpose described, the combination of a thermal helix, a cock, arms upon the cock, a trigger set by the contact of said arms when the cock is operated to turn on the gas, a leaf-spring actuated by the same manipulation of the cock, and a detent for engaging the spring when wound up, all arranged as shown, whereby the contraction of the helix will operate the trigger to release the leaf-spring from its detent and close the cock automatically by its tension, substantially as described.

3. In a safety gas-burner, as described, the combination, with the burner and cock, of the thermal helix D, having the free end *a*, the notched latch J, the lever H, terminating into the stirrup I, the spring G, having notch *b*, the leaf-spring E, the arms M L, and stop K, all arranged and combined as described.

332,771. BOBBIN-WINDER. ALEXANDER V. ABERCROMBIE, Bridgeport, Conn. Filed Mar. 9, 1885. (No model.)

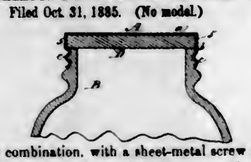


Claim.—1. In a device for winding bobbins, the combination, with a movable cutter having a brake, of a movable spindle-carrying frame holding the bobbin-spindle, and a belt-pulley on said spindle, said spindle-carrying frame actuated by a spring, and adapted by means of said spring to descend and slacken the belt, and by such action of said frame and spring cause the brake to grip and hold the belt in a state of rest, substantially as set forth.

2. In a device for winding bobbins, the combination, substantially as set forth, of the movable cutter c, having brake *e*, finger *d*, and cam-like projection *q*, with the movable spindle-carrying frame C, having pin *i* to engage the cam-like projection of the cutter, revolving spindle *a*, and belt-pulley F, said spindle adapted to hold the bobbin in a fixed position in relation to finger *d* of the cutter, that the accumulating thread on the bobbin will release the cutter, and by means of said frame and spring cause the cutter to descend and sever the delivery-thread, and by means of said brake grip and hold the belt in a state of rest.

3. The combination, substantially as described, of the movable spindle-carrying frame C, actuated by a spring, pin *i*, and standard B, with the cutter c, having cam-like projection *q*, finger *d*, and notch *j*.

332,772. SHEET-METAL SCREW CAP OR COVER. SAMUEL ADLAM, Boston, Mass. Filed Oct. 31, 1885. (No model.)



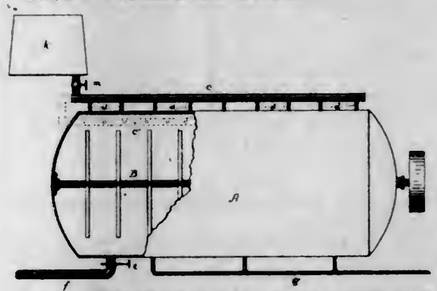
Claim.—The combination, with a sheet-metal screw cap or cover, A, provided with a depending flange, *b*, having a smooth upper portion, 5, and a lower threaded portion, *c*, of a wooden lining-disk, D, inside of the cap or cover, and held in place by the upper portion of the screw-thread *c*, which overlaps its lower edge, substantially as described.

332,773. SASH-CORD FASTENER. WILLIAM ALTICK, Dayton, Ohio. Filed June 26, 1885. (No model.)



Claim.—The combination, in a sash-cord iron, of a shell, A, with tapering bore, outer recesses, *a*, and inner slots, *b*, end an anchor or stay-piece, B, provided with a rear slot, *e*, retaining-shoulder *c*, concavities *f*, notches *g*, and retaining-points *h*, the whole constructed and adapted to be applied in connection with a sash-cord, substantially as described.

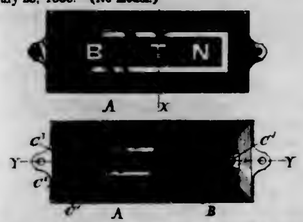
332,774. MASHING APPARATUS. CHRISTIAN ANDERSEN, New York, N. Y. Filed Mar. 20, 1885. (No model.)



Claim.—1. The combination, with the mashing apparatus provided with suitable stirrer, and the small-grain tub, of the small-grain pipe connected to said tub and having several branches, whereby to introduce the small grain simultaneously throughout the mash, substantially as and for the purpose set forth.

2. In a mashing apparatus, the combination, with the cylinder, the stirrer adapted to revolve within said cylinder, and the steam-pipe having branches entering the bottom of said cylinder, of the small-grain pipe *c*, having several branches, *d*, connected at several points to the top of said cylinder, whereby the small grain is distributed simultaneously and equally throughout the entire mash, as herein described.

332,775. DOOR-PLATE. ELIJAH C. BARTON, East Hampton, Conn. Filed July 23, 1885. (No model.)



Claim.—1. The combination, with the recessed name-plate having an opening for the display of letters, and adapted to be secured to a door or other surface, of the series of removable letter-blocks, an elastic backing for said letter-blocks, and a clamping bar or plate secured to the name-plate upon said elastic backing by means of studs or screws, substantially as described, the said letters and their securing devices all being within the recess and below the plane of the rear edge of the name-plate.

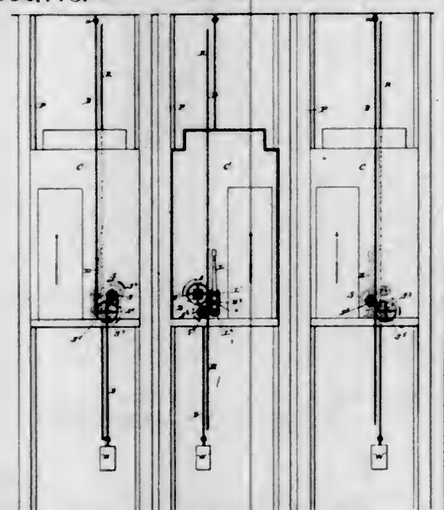
2. In combination, a door-plate, A, having the opening A' and the recess A^2, and bearing the studs C^3 with broadened ends, the removable letter-blocks B, and the clamping-plate C', with slots C^2 in the ends, all substantially as described.

332,776. OPERATING MECHANISM FOR ELEVATORS. NORMAN C. BASSETT, Chicago, Ill., assignor to the Hydraulic Elevator Company, same place. Filed Sept. 23, 1885. (No model.)

Claim.—1. The combination of an elevator-car, shifting-rope, rope-actuating device carried by the car, and appliances, substantially as described, whereby the operator can at will put said device into operative connection with the rope.

2. The combination, with the car and shifting-rope of an elevator, of a driving-wheel on the car, the periphery of which moves at a different speed from that of the car, and means, substantially as described.

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for bringing the shifting-rope into frictional contact with said wheel, substantially as described.

3. The combination, with the car, shifting-rope, and controlling device of an elevator, of a driving-wheel deriving its motion from that of the car, and appliances, substantially as described, for bringing said wheel into operative connection with the shifting-rope at the will of the operator in the car, substantially as described.

4. The combination of the car and shifting-rope of an elevator, and two driving-wheels carried by the car and running at different speeds, and means, substantially as described, for bringing the shifting-rope into frictional contact with either wheel at the pleasure of the operator, substantially as set forth.

5. The combination of the car, one or more driving-wheels, shifting-rope, and devices for clamping the rope temporarily against said wheel or wheels, whereby the latter is caused to move the rope at a speed varying from that of the car, substantially as described.

6. The combination of the car, shifting-rope, one or more pulleys carried by the car, and a stationary track in frictional contact with the said pulleys, substantially as described.

7. The combination of the car, shifting-rope, driving-wheel for operating said rope, and pulley connected to operate said wheel and arranged to bear upon a vertical track within the well, substantially as described.

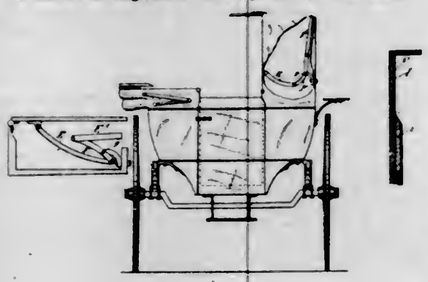
8. The combination of the car, shifting-rope, wheel, and pulley, and a flexible track hanging vertically in the well and in frictional contact with the pulley, substantially as described.

9. The combination of the car, shifting-rope, wheel, pulley, flexible track, and track-tightening device, substantially as described.

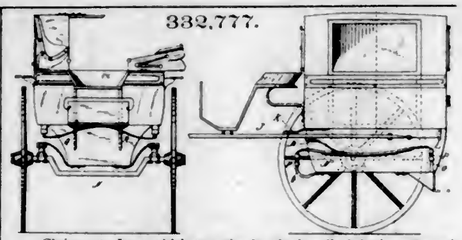
10. The combination of the car, shifting-rope, rope-driving wheel arranged adjacent to said rope, and lever carrying a wheel arranged on the opposite side of the rope, substantially as and for the purpose set forth.

11. The combination of the car, shifting-rope, driving-wheels of different diameters opposite one side of the rope, and lever carrying pulleys arranged opposite the other side of the rope, substantially as and for the purpose described.

332,777. TWO-WHEELED VEHICLE. FREDERICK BIX and EDMUND F. REUBER, Washington, D. C. Filed Sept. 21, 1885. (No model.)



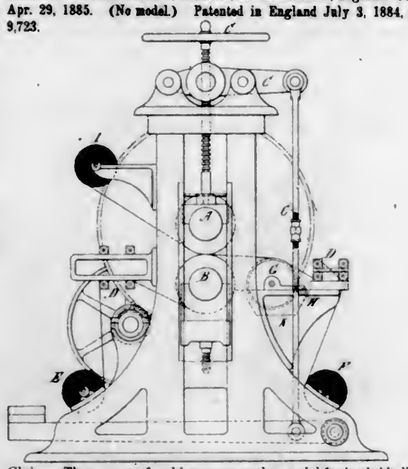
332,777.



Claim.—1. In a vehicle-top, the herein-described devices, through the medium of which said top is permitted to be raised and lowered, consisting of the curved arm E, curved vertical arm F, having its fulcrum at *g*, and arm F', said arms E and F' being pivoted to standard *b* and top rail, H, respectively, all constructed, arranged, and operating as set forth.

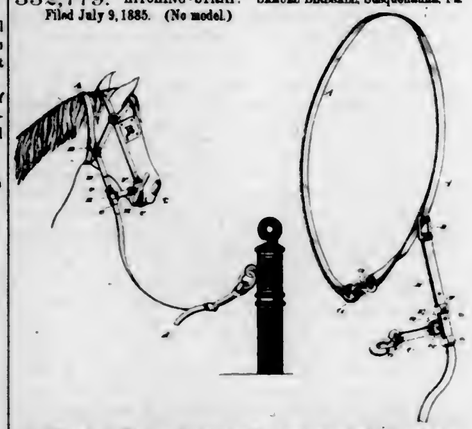
2. The combination of the body, spring N', and shaft J, pivoted to the body in rear, and the spring K, attached to the front of the body and pivoted to the shaft J, and the spring M, pivoted at its front end to the shaft J, and its rear end clipped to the axle N, as described.

332,778. MANUFACTURE OF COMPOUND FABRIC FOR BOOK-BINDING. SAMUEL EARLOW, Castleton, near Manchester, England. Filed Apr. 29, 1885. (No model.) Patented in England July 3, 1884, No. 9,723.



Claim.—The process of making compound material for book-binding and other purposes, consisting in combining sheets or webs of paper, cloth, or other material by pressing together such sheets or webs with interposed adhesive material between two rolls, one roll having a rigid and the other roll an elastic or resilient surface, substantially as described.

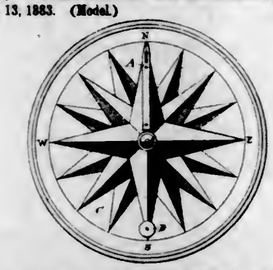
332,779. HITCHING-STRAP. SAMUEL BIRDSALL, Susquehanna, Pa. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with a neck-strap and a tie-strap secured thereto, of a plate adjustably secured to the tie-strap and provided with an eye, a ring secured within the eye and carrying a brace-strap, and a snap-hook secured to the free end of said brace-strap, substantially as set forth.

2. The combination, with a neck-strap, of a tie-strap secured to the neck-strap by means of a loop or square having two parallel sides supplied with anti-friction rollers, and a brace-strap adapted to connect the tie-strap to the bit or bridle ring at either side of the horse's mouth, substantially as set forth.

332,780. COMPASS-NEEDLE. GEORGE BLANCHARD, New York, N.Y. Filed Oct. 13, 1883. (Model.)



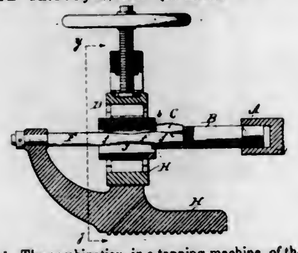
Claim.—1. A compass-card having a magnetic needle radially attached thereto wholly to one side of the pivot, as and for the purpose described.

2. The combination, in a mariner's or surveyor's compass, of a compass-card suitably pivoted, with a compass-needle radially affixed thereon and wholly to one side of the pivot, substantially as described.

3. The combination of an ordinary compass-card or other suitable supporting material, and a magnetic needle radially affixed thereto and wholly to one side of the pivot of said compass-card or supporting material, as and for the purpose set forth.

4. A magnetic needle, in combination with a compass-card, upon which the said needle is radially attached wholly at one side of the pivot, and a suitable counterpoise, as and for the purpose set forth.

332,781. TAP FOR SCREW-THREADING SOCKETS. HIRAM R. BORIE, New Castle, Del., assignor of one-half to Stephen P. M. Tasker, Philadelphia, Pa. Filed July 21, 1885. (No model.)

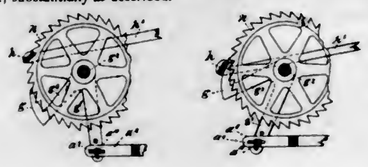


Claim.—1. The combination, in a tapping-machine, of the traveling holder provided with the shaping-spindle, and with the chuck maintained by said holder in concentricity with said shaping-spindle, the hollow tap-shank provided with the tap-cutters, the spindle for occasioning the rotation of the tap-shank, suitable means for occasioning the rotation of the spindle, and suitable means for occasioning the advance and retreat of the holder, chuck, and shaping-spindle, substantially as and for the purposes set forth.

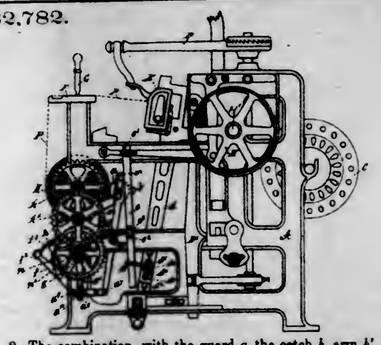
2. The combination, in a tapping-machine, of a shaping-spindle having tapering surfaces, with the tubular tap-shank B, having radial seats for the tap-cutters, the tap-cutters C, and the annular cap for retaining said tap-cutters, substantially as set forth.

332,782. TAKE-UP MECHANISM FOR LOOMS. JOHN C. BROOKS, JAMES F. BROOKS, and FREDERICK W. BALL, Paterson, N. J., and HARRY BROOKS, Fall River, Mass. Filed May 26, 1884. (No model.)

Claim.—1. The combination, with the guard *g*, and arms g^2 g', stud g^3, and frame for supporting said stud, of the link a^9, having slot a^8, bolt a^{10}, and lever *a'*, said lever having enlarged slotted end a^3, roller *a*, and roller *k*, arms *b*, bolt a^3, the hook *h*, the devices whereby the same is actuated, the ratchet *n*, and gearing between the same and the cloth-roller K, substantially as described.

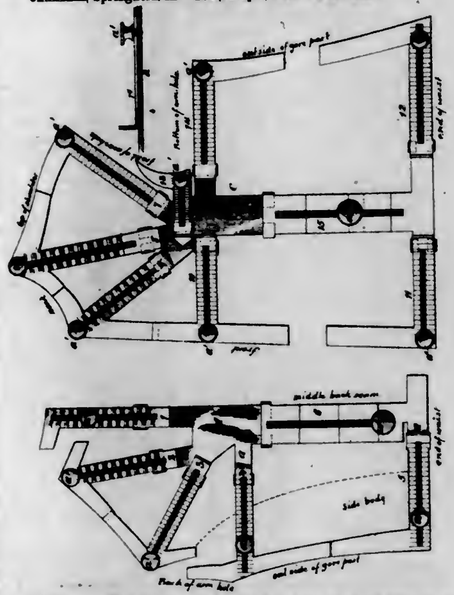


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2. The combination, with the guard *g*, the catch *h*, arm *h'*, lever *e*, having slot e^2, bracket *e'*, the devices whereby guard *g* is actuated, and the bolt e^3, of the lay-sword *d*, having slot d^2, bracket *d'*, bolt d^3, plate d^4, bolt d^5, as described, ratchet-wheel *n*, pinion *n'*, gear-wheel *k'*, pinion k^2, stud k^3, bracket *f*, pawls *f'*, pin f^2, wheel *k*, roller K, and frame A, substantially as described.

332,783. TAILOR'S MEASURE. GEORGE J. CHAMBERS and EDUARD CHAMBERS, Springfield, Ill. Filed May 9, 1885. (No model.)



Claim.—1. The measure A, having six scaled slides adapted to be used for drafting the back of a garment, in the manner set forth.

2. The scale C, having nine scaled slides adapted to be used for drafting the front of a garment, as specified.

332,784. RAILROAD-SIGNAL TORPEDO. HENRY F. CLARK, Poughkeepsie, N. Y., assignor to the Palmer Torpedo Railway Signal Company, Plainfield, N. J. Filed Aug. 6, 1885. (No model.)



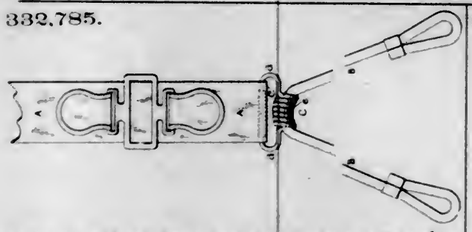
Claim.—1. The combination, with the torpedo-case and the explosive cap, of a hollow frangible support or anvil for the explosive cap, substantially as set forth.

2. The combination, with the saucer-shaped base *a* and lid *b*, of the separate anvil *c*, having a hollow conical base, and the firing-cap *e*, substantially as and for the purposes set forth.

332,785. DEVICE FOR ATTACHING SUSPENDER-ENDS. WILLIAM E. CLARKE, Providence, R. I. Filed Oct. 26, 1885. (No model.)

Claim.—1. The improved device or loop C, for attaching the ends of suspenders to the shoulder-straps thereof, composed of a continuous piece of wire wound spirally into a tubular portion, *c*, to receive the sus-

332,785.

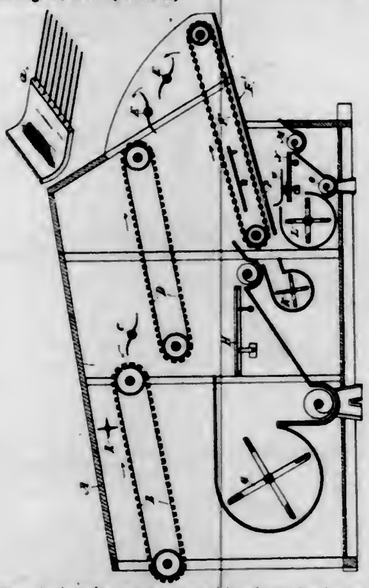


pender-end, and bent to form an eye, *c'*, for attachment to the shoulder-strap, substantially as set forth.

2. The device C, composed of a continuous piece of wire and having a spirally-wound tubular portion, *c*, longitudinally curved throughout its length, and an eye, *c'*, substantially as and for the purposes specified.

3. The device C, for attaching the ends of suspenders to the shoulder-straps thereof, composed of a continuous piece of wire having its ends secured to each other, and having a spirally-wound tubular portion, *c*, and an eye, *c'*, projecting from such portion, substantially as set forth.

332,786. GRAIN-SEPARATOR. RUFUS M. COCHRAN, Jacinto, Cal. Filed Aug. 26, 1885. (No model.)



Claim.—1. A grain-separator comprising the main cleaning shoe and fan, an inclined open slat-belt, the inclined floors F and Q, the lower one, F, having a slot for the passage of the separated grain, and the secondary cleaning-screen, fan, and conveyers, substantially as herein described.

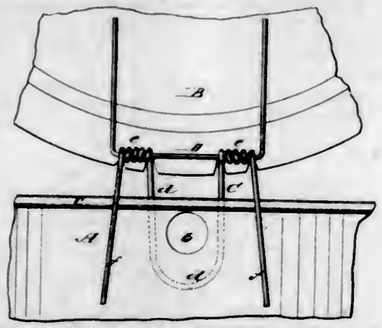
2. A grain-separator comprising the main carrying-belt and straw-carrier, beaters and pickers, and cleaning-shoe, an open inclined traveling belt moving over partial floors or bottoms, the lower floor being slotted to allow the grain to fall through a partially-covered rack beneath said slot upon which the grain and unthrashed heads are received, a cleaning-shoe situated beneath said rack, and fans and conveyers for grain and unthrashed heads, substantially as herein described.

332,787. DOUBLE-CLINCHING CARRIAGE-KNOB. MAITLAND A. CORLISS, Flint, Mich. Filed Jan. 12, 1885. (No model.)



A carriage-curtain knob having a spreading-shank of half-round wire bent upon itself with its flat sides adjacent and its ends pointed, and the head or button cast on the bent end of said shank, substantially as and for the purpose described.

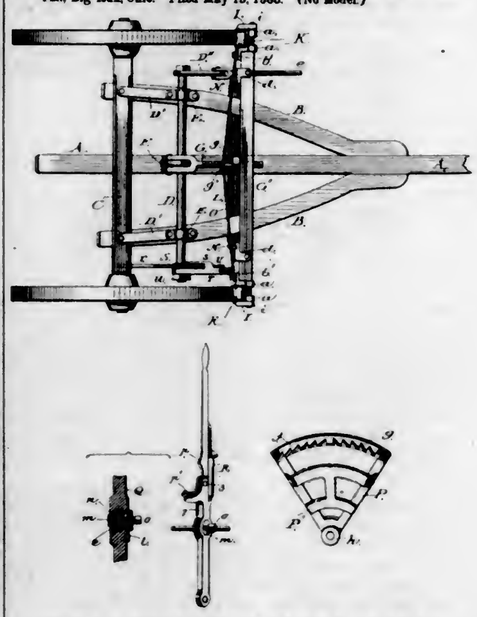
332,788. FASTENER FOR SAP-BUCKET COVERS. BURT F. COUCH, Garrettsville, Ohio. Filed Feb. 24, 1885. (Model.)



Claim.—1. The within-described detachable hinge for sap and other buckets or vessels, the same consisting of a stationary clasp, C, having a central bowed portion, *d*, and coiled outer side extensions, *e e*, terminating in arms or legs *f f*, and the loop or bail D, with its cross-bar passed freely through the coiled extensions *e*, and forming the hinge-pin, substantially as and for the purpose set forth.

2. The combination, with the bucket A and its cover B, of the loop-piece D, secured to the cover and bent upward at its outer end, and the bucket-clasp C, having inner and downward clamping portions, *d f*, and outer upper opposite lateral extensions, *e*, arranged to project above the edge of the bucket, and serving to receive the loop-piece D as a hinge-pin freely through them, substantially as specified.

332,789. WAGON-BRAKE. HENRY M. CRIPPEN and JOHN M. CRIPPEN, Big Run, Ohio. Filed May 13, 1885. (No model.)



Claim.—1. In a vehicle-brake, a roller-bar, D, and slotted lever D'', in combination with a connecting-rod, *e*, a lever provided with a spherical nut, and a set-screw for adjusting the rod, substantially as described.

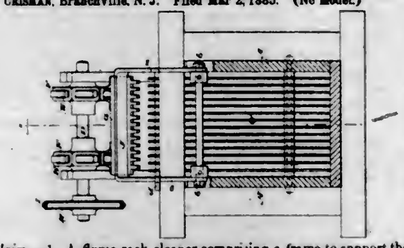
2. The roller-bar D and connecting-rod E, in combination with the segmental plate provided with teeth running in opposite directions, and a lever having means for engaging the teeth, substantially as herein described.

3. The segmental plate P, in combination with a lever, Q, a rotary nut, *m*, within the lever, and a means—such as a sliding plate—for converting the lever from a flexible to a rigid one, substantially as and for the purpose set forth.

4. The segmental plate P, provided with teeth, in combination with a jointed lever, Q, a rotary threaded nut, *m*, a sliding plate, R, and a spring-plate, P', for holding the lever into engagement with the segmental plate, substantially as described.

5. The equalizing-bar N, in combination with a rubber bar, G', suitable slotted castings, *d*, a draw-bar, G, adjusting-nuts provided with lips on both sides, and a double truss-rod, substantially as and for the purpose set forth.

332,790. FLUME-RACK CLEANER. VIRGIL H. CRISMAN and GEORGE T. CRISMAN, Branchville, N. J. Filed Mar 2, 1885. (No model.)



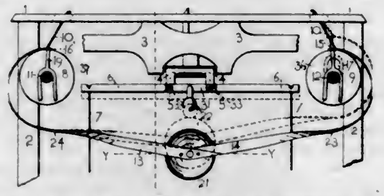
Claim.—1. A flume-rack cleaner comprising a frame to support the moving parts, the sprocket-wheels and their shafts, mounted in said frame, the two endless chains arranged at the sides of the flume, so as to leave a free passage between them for the floating debris, the bar-like rake extending across from chain to chain and secured at its ends to the chains, and a stripper arranged to strip the débris from the rake, all constructed and arranged to operate substantially as set forth.

2. A flume-rack cleaner comprising the frame K, with legs *e e* to rest on the rack, the sprocket-wheels and their shafts, the two endless chains arranged near the sides of the flume, the rake mounted on said endless chains, and the stripper, constructed and arranged to operate substantially as described, whereby the said cleaner may be set on the rack in proper relation therewith, and be readily removed from the flume, for the reasons set forth.

3. The combination, with the inclined rack of a flume, of the hinged stripper arranged to operate as shown, and a rack-cleaner comprising the sprocket-wheels and their driving-gear, the endless chains on said sprocket-wheels, and the rake secured to said chains, the chains being mounted in the frame, substantially as set forth, with their under working sides substantially parallel with the rack, and the hinged stripper arranged with respect to the chains substantially as set forth.

4. The combination, with the rack C of a flume and the hinged stripper I, of the removable rack-cleaner comprising the frame K, with legs *e e* to set on the rack, the shafts and their sprocket-wheels, mounted in said frame, the two endless chains F F, arranged near the sides of the flume, and the rake G, mounted on the chains, substantially as set forth.

332,791. INK-RIBBON ANNUNCIATOR FOR TYPE-WRITING MACHINES. THOMAS I. DANIEL, Jackson, Mich. Filed Oct. 23, 1885. (No model.)

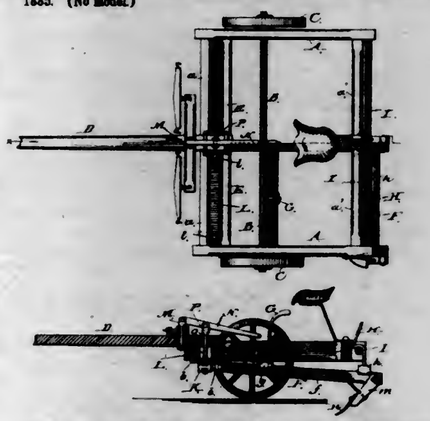


Claim.—1. In a type-writing machine, the combination of a bell-hammer attached to the letter-space-ratchet rocking frame, and a frame supporting a bell and extending transversely across the center of the type-writing machine, and holding the bell just below the field of vibration of the hammer-head, and adapted to be raised at one end by an increased thickness or bunch on the inking-ribbon, to bring the bell in position to be struck by the hammer-head, substantially as shown and described.

2. A device for attaching a bell-hammer to the letter-space-ratchet rocking frame of a type-writer, consisting of the metal strip 31, attached across the end of the hammer-shaft, and provided with the slots 32 32, adapted to fit over the shanks of the screws which attach the cross-bar to the arms of the rocking bar of the letter-space-ratchet rocking frame, substantially as shown and described.

3. A bell-supporting frame consisting of the ribbons or rods of metal, 13 and 14, bent around and over the inking-ribbon spools of a type-writer, and twisted so as to bring the ends that are to be fastened together in a vertical plane, and adapted to be fastened together in a dowel-joint held together by a screw-threaded shank, 25, and shoulder 26 on the bell-stem 29, the cross-pieces 15 and 16 having the slots 35 35, and being fastened rigidly to the bent ends of the metal ribbons 13 and 14, and the forked rods 17 18 and 19 20, each pair being bent in the arc of a circle having a radius equal to the distance apart of the shafts of the inking-ribbon spools, substantially as shown and described.

332,792. LAND-MARKER. PETER M. DOX, North Manchester, Ind., assignor of one-half to Eli H. Butterbaugh, same place. Filed Aug. 5, 1885. (No model.)



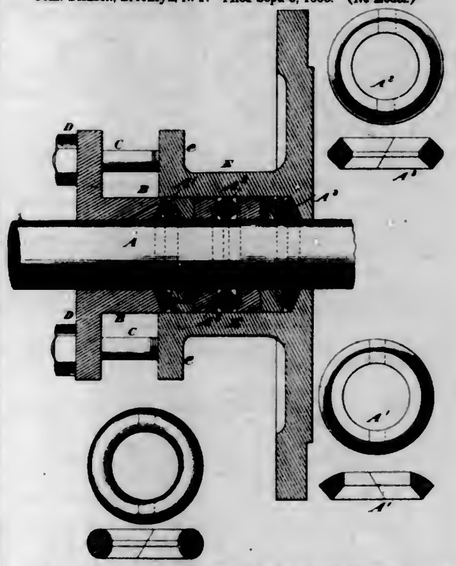
Claim.—1. In a land-marker, a main frame supported upon wheels, in combination with a supplemental frame beneath and hinged to the main frame and adapted to have a lateral movement therein, said supplemental frame being of a width about equal to one-half the width of the main frame and hinged to laterally-moving bars in the front of said frame, substantially as and for the purpose set forth.

2. The main frame provided with the spaced bars *a* and E, the metallic plates *b*, and the transverse rod I, in combination with a supplemental frame carrying the markers or shovels, and provided with the handle H and catch G, and the bars K and L, bolted together and moving in the slot between the beams *a* and E, substantially as described.

3. The main frame provided with the spaced bars, the laterally-moving bars K and L, and the supplemental frame hinged thereto, in combination with a locking-bolt adapted to bear against the ends of the sliding bars, substantially as described.

4. The main frame and the laterally-moving supplemental frame, in combination with a stud, M, a lever, N, and a swinging bolt adapted to lock the supplemental frame, substantially as described.

332,793. PACKING FOR PISTON-RODS. GEORGE H. DICKSON and JOHN DICKSON, Brooklyn, N. Y. Filed Sept. 8, 1885. (No model.)



Claim.—The packing B', combined with the wedge-rings A' A² A³ and a clamping-gland, substantially as and for the purpose specified.

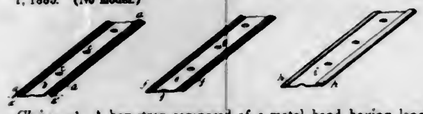
332,794. TRANSOM-LIFTER. GILBERT J. DICKSON, Albany, N. Y. Filed June 8, 1882. Renewed July 24, 1885. (Model.)



Claim.—1. The combination, with the operating-rod E, provided with a slotted arm, I, rigidly secured to said rod and adapted to engage with the operating-arm *m* of the transom-adjuster, of the eccentric-cam lever F, having the operating-rod E at its pivotal center, and adapted to operate substantially as specified.

2. In a transom-adjustor, the combination, with a stationary segmental plate, *n*, having teeth or indentations formed on its convex edge and a movable segmental plate, *d*, concentrically pivoted to the stationary plate *n*, and provided with a radial arm, *m'*, the said arm having a longitudinal slot for receiving a sliding plate, O, provided with a detent, S, and spring *f*, as herein described, of the operating-arm *m*, pivoted to the sliding plate O, and fulcrumed on the end of the radial arm *m'* in such manner that when moved in either direction the said operating-arm *m* will centrifugally retract the detent S from the teeth of the stationary plate *n*, as herein specified.

332,795. BOX-STRAP. HIRAM FRANK, New York, N. Y. Filed Aug 1, 1885. (No model.)



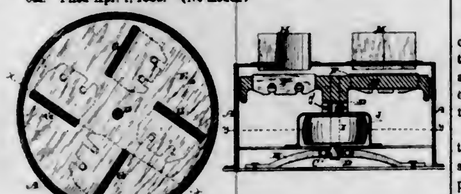
Claim.—1. A box-strap composed of a metal band having longitudinal stiffening-ridges along its edges, substantially as and for the purpose set forth.

2. A box-strap composed of a metal band provided with longitudinal stiffening-ridges and having its extreme edges bent or formed to project beyond its under side, substantially as and for the purpose set forth.

3. A metal-band box-strap composed of a thin central web and longitudinal ridges raised above the top of the web along its edges, substantially as and for the purpose set forth.

4. A metal-band box-strap composed of a thin central web and longitudinal ridges raised above the top of the web along its edges, and having indentations formed at intervals in the central web, substantially as and for the purpose set forth.

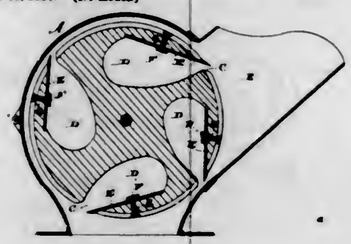
332,796. BARK-CUTTING MACHINE. JOHN C. HAGERTY, Santa Cruz, Cal. Filed Apr. 1, 1885. (No model.)



Claim.—1. A bark cutting and reducing machine comprising a knife-carrying disk having a hub and rotating in a horizontal plane, and having slots and cutters arranged tangentially to a circle of less diameter than the disk, a box or bearing, C, a driving-shaft, an exterior case provided with feed-openings, rectangular hoppers having parallel inclined walls, a driving-pulley, a bearing for the lower end of the shaft, and a casing, J, for the pulley, substantially as described.

2. The inclosing-case, the disk carrying knives and rotating in a horizontal plane, the vertical shaft, and driving-pulley I, in combination with a casing or covering, J, substantially as herein described.

332,797. BARK-CUTTER. JOHN C. HAGERTY, Santa Cruz, Cal. Filed Apr. 20, 1885. (No model.)

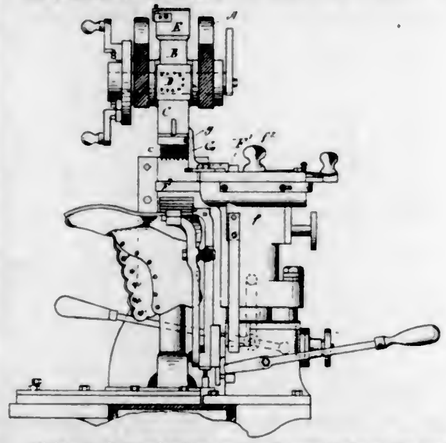


Claim.—1. In a bark-cutting machine, the combination, with an inclosing-case, of a rotating drum or cylinder having slots in its periphery, said slots opening into chambers which are enlarged at their rear and inner portions and have flaring or funnel-shaped openings toward the side of the drum and suitable knives or cutters, substantially as herein described.

2. In a bark-cutting machine, the combination of an inclosing-casing and a rotating drum or cylinder having chambers formed within its periphery, said chambers having enlarged curved interiors and flaring or funnel-shaped openings toward the side of the drum, and knives or cutters projecting through slots made in the face of the drum and communicating with the chambers, the cut bark being discharged into the space between the side of the drum and the casing, substantially as herein described.

3. In a bark-cutting machine, the drum or cylinder having chambers with enlarged curved interiors and flat front sides, in combination with straight flat knives, clamping-bars extending across the same, and bolts and holding-nuts, substantially as herein described.

332,798. HEEL-NAILING MACHINE. HENRY A. HENDERSON, Lynn, Mass., assignor to the National Heeling Machine Company, Portland, Me. Filed Oct. 26, 1885. (No model.)



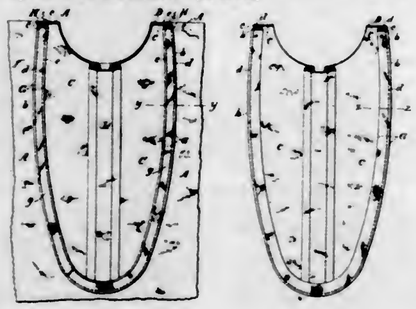
Claim.—1. In a heel-nailing machine, the combination of the gang or group of awls adapted to be moved into and out of operative position, a sliding templet, a sliding nail-holder, and a stop on the nail-holder and awl-carrier, substantially as set forth, for preventing the movement of the nail-holder while the awls are in operative position, all substantially as described.

2. In a heel-nailing machine, the combination of a spanker adapted to be moved into and out of operative position, a sliding nail-holder, a sliding templet, and a stop on the revolving shaft and nail-holder for preventing the movement of the nail-holder and templet while the spanker is in operative position, all substantially as described.

3. In a heel-nailing machine, the combination of the nail-holder having the angle-piece G and the arm C, having the stop *g*, all substantially as described.

4. In a heel-nailing machine, the combination of the nail-holder having the angle-piece G with the revolving shaft *b*, having the arm H, substantially as described.

332,799. METHOD OF SECURING A BOSOM TO A SHIRT-BODY. MAX HERMANN, Troy, N. Y., assignor to Tim. Wallerstein & Co., same place. Filed Mar. 31, 1885. (No model.)



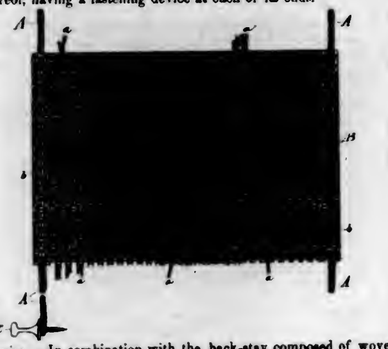
332,799.



Claim.—The method of securing a bosom to a shirt-body by folding forward the edge part of the rear layer of the bosom, placing on and along the front side of the border part of the bosom a strip folded rearward along its edges, and stitching the outer edge part of the folded strip to the bosom-layers, and the inner edge part of said strip to the bosom-layers and shirt-body, substantially as set forth.

332,800. BACK-STAY FOR CARRIAGE-TOPS. HENRY HIGGINS, Newport, Ky. Filed Mar. 30, 1884. (No model.)

Brief.—A flexible wire cord is woven in the textile fabric near each edge thereof, having a fastening device at each of its ends.



Claim.—In combination with the back-stay composed of woven fabric having a flexible wire cord woven in the material at or near each edge thereof, fastening devices C, attached to said flexible wire cord, substantially as described.

332,801. DIE-STOCK. JOSEPH H. HINES, Calistoga, Cal. Filed Aug. 7, 1885. (No model.)

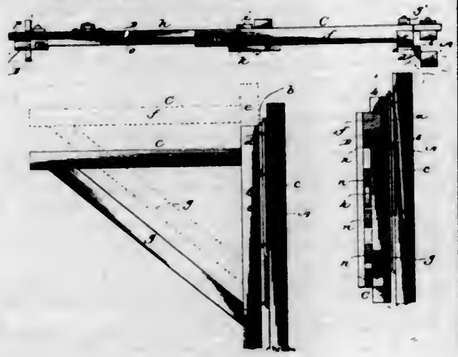


Claim.—1. The combination, with the case and the ratchet-head secured therein, of screw-cutting dies, whose outer faces correspond to the configuration of their inner faces, and a screw-cap for retaining the dies in place, substantially as herein described.

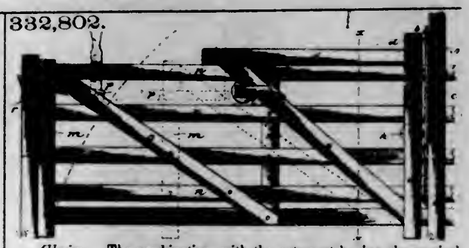
2. In a screw-cutting device, the combination, with a cylindrical case and a ratchet-head secured therein, of the dies C, within an interior chamber in the head, and whose outer and inner faces have a like configuration, the perforated screw-cap, whereby the dies are held in place, and the spring-pawls extending into the central compartment of the case from opposite sides, substantially as herein described.

3. A screw-cutting device consisting of a cylindrical ratchet-head having a central compartment within which dies are secured, in combination with an exterior case having a central chamber within which the ratchet-head may rotate, spring-pawls extending into said chamber, to hold the ratchet-head, a hinged side to the exterior case, through which the ratchet-head may be introduced or removed, and a locking ring or clasp, substantially as herein described.

332,802. GATE. MARTIN P. HIVELEY, Van Wert, Ohio. Filed July 7, 1885. (No model.)

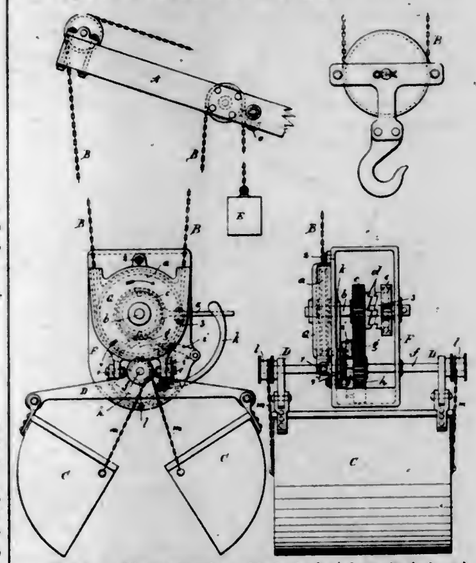


332,802.



Claim.—The combination, with the gate-post having the vertical rod and the spring-bar having the lug at its free end, of the swinging frame pivotally secured on the vertical rod and free to slide vertically thereon, and the sliding gate suspended by the swinging frame, substantially as described.

332,803. HOISTING MACHINERY. CHARLES W. HUNT, West New Brighton, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—1. The combination, with the bucket, the main shaft, and the drums and chains for operating the bucket, and a frame connected with the main shaft, of a chain-wheel, a shaft for the same, and the connecting-gearing, said chain-wheel being outside the frame, whereby the chain can be lifted off the chain-wheel without disconnecting any portion of the chain, substantially as set forth.

2. The combination, with the bucket, the main shaft, and the drums and chains for operating the bucket, and a frame connected with the main shaft, of a chain-wheel, a shaft for the same, and the connecting-gearing, said chain-wheel being outside the frame, and a guide or guides whereby the chain is retained in its place, but can be lifted off the chain-wheel without disconnecting any portion of the chain, substantially as set forth.

3. The combination, in a hoisting apparatus, with the frame F, the shaft *b*, and chain-wheel *a* and chain, of a cover, G, hinged to the frame F and held in place in substantially the manner described, said cover being adapted to be swung out from the frame F, to give access to the chain B, to remove it from the chain-wheel *a*, for the purposes and substantially as set forth.

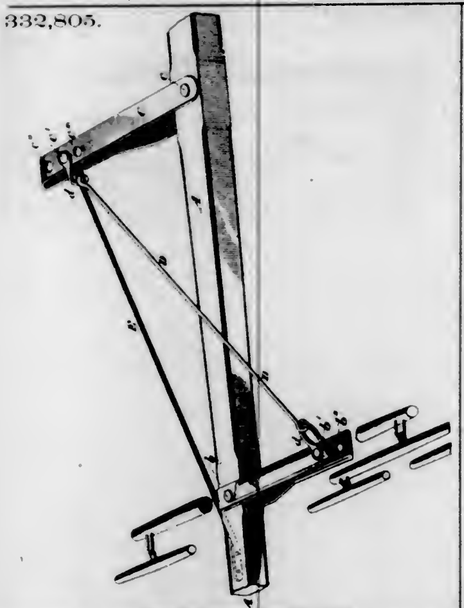
332,804. REMEDY FOR BLACKLEG. CHARLES L. HUSSEY, Sacramento, Cal. Filed Oct. 15, 1885. (No specimens.)

Claim.—A composition of matter to be used as a remedy for blackleg in cattle, consisting of a cider-vinegar, molasses, salt, asafetida, spirits of turpentine, alcohol, tincture of iron, and sulphuric acid, united in the proportions substantially as specified.

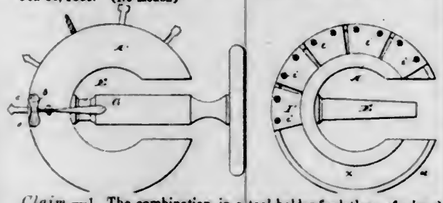
332,805. DRAFT-EQUALIZER. JOHN H. INGERSOLL, Edgewood, Iowa. Filed Aug. 29, 1885. (No model.)

Claim.—The brace-rod E, combined with the pivoted bars B C, arranged on opposite sides of the tongue A and connected by a diagonal rod, D, substantially as shown and described.

332,805.



332,806. TOOL-HOLDER FOR LATHES. CHARLES H. KELLEY, Revere, assignor of one-half to Francis C. Parkins, Somerville, Mass. Filed Oct. 19, 1885. (No model.)



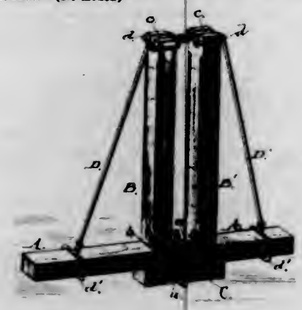
Claim.—1. The combination, in a tool-holder for lathes, of a head and a series of sliding tool-carriers supported by the head and independently adjustable in the same path, to bring each in axial line with the work, substantially as set forth.

2. A head adapted for attachment to a lathe, in combination with a series of sliding tool-carriers independently movable in the same path in and supported by the head, and a locking device, whereby each carrier may be locked in position in line with the lathe-spindle, substantially as set forth.

3. An attachment for lathes, consisting of a head supporting a series of sliding tool-carriers, said head being provided with a shank adapted to be connected to and supported by the tail-stock of the lathe, substantially as described.

4. A tool-holder for lathes, consisting of a curved head supporting a series of tool-carriers sliding independently in the same path, and provided with a locking device and with a projecting shank, substantially as set forth.

332,807. FENCE-POST. SAMUEL L. KNEPPER, Findlay, Ohio. Filed Sept. 12, 1885. (No model.)



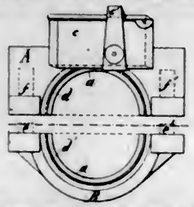
Claim.—In a fence-post, the combination, with the base-timber and a weight or anchor attached thereto, of the posts having notches at their lower ends, and kerfs formed in their extreme upper ends, and the independent braces having loops which fit over and engage the upper portion of one of the posts, the said braces extending in opposite directions through the kerfs and secured to the base-timber, substantially as herein described.

332,808. CRUTCH. LEWIS LADOMUS, Chester, Pa. Filed July 25, 1885. (No model.)



Claim.—In combination with the body of a crutch, the spur-rod *f*, constructed with a neck, *r*, the cross-piece *i*, the plate *p*, provided with a slot in two parts, *p' p²*, part *p'* being countersunk, and the spring *k*, substantially as set forth.

332,809. AXLE-BOX. LORENZ LEBER, Buda-Pesth, Austria-Hungary. Filed June 12, 1885. Patented in Belgium May 20, 1885, No. 68,936, and in England May 20, 1885, No. 6,191. (No model.)

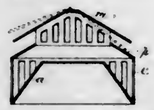


Claim.—1. The combination of the parts A B, having journal-bearings *a*, recesses or dust-guards *d d'*, and lubricating-chamber *c*, substantially as set forth.

2. The combination of the box parts A and B, having journal-bearings *a* and dust-guards *d d'*, with a rotating axle, *k k'*, having journals *h h'* and shoulders *p p'*, substantially as specified.

3. The combination of the parts A B, having journal-bearings *a*, an annular groove, *b*, and dust-guards *d d'*, with a rotating axle, *k k'*, having journals *h h'*, collars *i i'*, and shoulders *p p'*, substantially as specified.

332,810. CHIMNEY-CAP. JOHN MACDONALD, Norwood, Mass. Filed Apr. 15, 1885. (No model.)



Claim.—A chimney-cap composed of open-work sides, and a fixed cover with opening in its center, in combination with deflectors and a swinging cover.

332,811. HOUSE-RAISING APPARATUS. THOMAS F. MAHER, San Francisco, Cal. Filed Oct. 27, 1885. (No model.)

Claim.—1. In house-raising apparatus, the combination of a screw on which the weight rests, separable or divided nuts adapted to be fitted over the screw at any portion, and frames adapted to be fitted around the screw and to form bearings for the nuts, substantially as described.

2. In house-raising apparatus, the combination of a screw on which the weight rests, separable or divided nuts adapted to be fitted over the screw at any portion, frames adapted to be fitted around the screw, and removable cross-pieces supported by the frames and forming bearings for the nuts, substantially as described.

3. In house-raising apparatus, the combination of a screw on which the weight rests, separable or divided nuts having flanges and adapted to be fitted over the screw at any portion, frames adapted to be fitted around the screw, and removable cross-pieces supported by the frames and forming bearings for the flanges of the nuts, substantially as described.

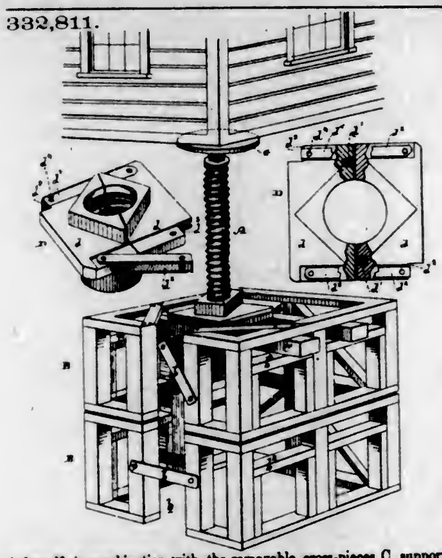
4. In house-raising apparatus, the screw-elevating nut D, having a flange, *d*, and consisting of two independent parts, and the pivoted bails or clamps d^2 for holding the parts together, substantially as described.

5. In house-raising apparatus, the screw-elevating flanged nut D, consisting of two independent parts united by dowel-pins *d'*, and the pivoted bails or clamps d^2 for holding the parts together, substantially as described.

6. In house-raising apparatus, the frame B, having an opening, *b*, in one side or end by which it can be fitted around the lifting-screw while the latter is in place, substantially as described.

7. In house-raising apparatus, the frame B, having an opening, *b*, in one side or end by which it can be fitted around the lifting-screw, and

332,811.



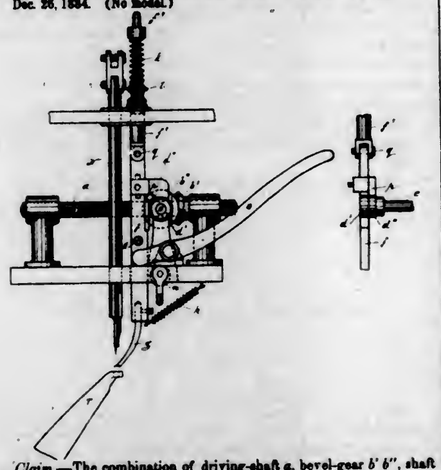
ledges b^2, in combination with the removable cross-pieces C, supported on the ledges, substantially as described.

8. In house-raising apparatus, the screw supporting the weight, and separable or divided nuts to be fitted on said screw, in combination with frames B, having an opening, *b*, on one side or end by which they can be fitted around the screw, and ledges b^2 in their sides, and the removable cross-pieces C, supported on the ledges and supporting the flanged nuts, substantially as described.

9. In house-raising apparatus, the screw supporting the weight, and frames constructed to fit around the screw while in place, in combination with the flanged nuts D, consisting of two independent parts united by dowel-pins and held together by pivoted clamps d^2, said nuts being fitted on the screw while in place and bearing on the frames, substantially as described.

10. In house-raising apparatus, the combination of the screw A, supporting the weight, the frames B, having openings *b*, and removable cross-pieces C, having bearings *c*, and the two-part separable flanged nuts D, fitting on the screw and bearing on the cross-pieces, substantially as described.

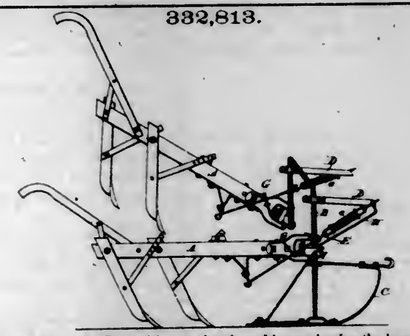
332,812. FEED-MOTION FOR SEWING-MACHINES FOR BOOTS AND SHOES. CHRISTIAN MAHNFELD, Reudnitz, Leipsic, Germany. Filed Dec. 26, 1884. (No model.)



Claim.—The combination of driving-shaft *a*, bevel-gear *b' b''*, shaft *c*, double cam *d' d''*, feeding-rod *f*, with arm *p*, guide-rod *f'*, spring *k*, spring *h*, and eccentric *n*, arranged to operate in the manner and for the purpose substantially as described.

332,813. CULTIVATOR. THOMAS W. MCDILL, Ottumwa, Iowa. Filed Dec. 27, 1884. (No model.)

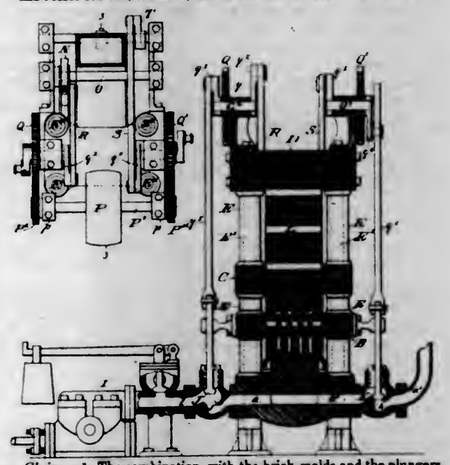
332,813.



Claim.—1. In a cultivator, the pivoted beams having the hangers, the runners having the forward projections, and the springs attached at one end to the hangers and at the other to the said projections, the points of attachment of the said spring being in line with the point at which the beams are pivoted when the parts are in their normal positions.

2. In a cultivator, the pivoted beam having the hanger for the attachment of the spring, the projection from the frame to which the bars are pivoted, the spring attached to the said hanger and projection, and the loop G, inclosing the spring and limiting its upward movements.

332,814. HYDRAULIC BRICK-MACHINE. SAMUEL E. MCGREGORY and JULIUS J. KOCH, St. Louis, Mo. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination, with the brick-molds and the plungers, of a mechanical power for operating one of said plungers rapidly to press the clay and a hydraulic power for subsequently operating the other plunger to give a final and heavy pressure, substantially as set forth.

2. The combination, with the brick-molds and the plungers, of a mechanical power for operating one of said plungers rapidly to press the clay and a hydraulic power for subsequently operating the other plunger to give a final and heavy pressure, the mechanical power having a pause upon the dead-center at the time said hydraulic power gives the final heavy pressure, substantially as set forth

3. The combination, in a brick or tile press, of the lower hydraulic plunger, F, the molds *b*, the upper plunger, H, and the toggle L, substantially as described.

4. In a brick or tile press, the combination of the shaft Q^2, the crank *q'*, the slotted rod R, the eccentric M, the shaft O, the strap N, the toggle L, and the plunger H, substantially as and for the purpose described.

5. The combination of the shafts O P Q^2 Q^2, the pinions P^2 P^{2a}, the gears Q Q', the cranks *q' q²*, the slotted rods R S, the eccentric M, the strap N, the toggle L, the plunger H, the lever T, and the charger T', substantially as described.

6. The combination of the shafts Q^2 Q^2, the cranks q^3 q^4, the rods q^5 q^6, and the valves J K, substantially as described.

7. A brick or tile press in which the bricks or tiles are pressed by means of two plungers or platens moving toward each other and pressing the clay upon opposite sides thereof, respectively, one of said plungers or platens being actuated rapidly by a toggle or other mechanical power and the other of said plungers or platens being attached to or made part of an hydraulic press, substantially as and for the purpose described.

332,815. MANUFACTURING PICTURE-FRAME MOLDINGS. HUGH MCHUGH, New Bedford, Mass., assignor, by mesne assignments, to himself and Thomas L. Manchester, same place. Filed Oct. 1, 1885. (No specimens.)

Claim.—1. In manufacturing a picture-frame molding by running a plastic composition of which it is made between an embossing-roller and a bed-roller, oiling the embossing-surface, and passing between the composition and the bed-roller and against them while the two rollers are in operation on the composition a strip of paper, cloth, or other suitable flexible material, such as will adhere to the composition and not to the bed-roller and pass with such composition between the two rollers, all being substantially as set forth.

2. In manufacturing a picture-frame molding by running a plastic composition of which it is made between an embossing and a bed roller, oiling the embossing-surface, passing between the composition and bed-roller and against them while the two rollers are in operation on the composition a strip of paper, cloth, or other suitable flexible material, such as will adhere to the composition and not to the bed-roller, and subsequently detaching or separating the said strip from the embossed composition, all being essentially as specified.

332,816. FIRE-KINDLER. PETER MCMENAMIN, Jersey City, N. J. Filed Oct. 26, 1885. (No model.)

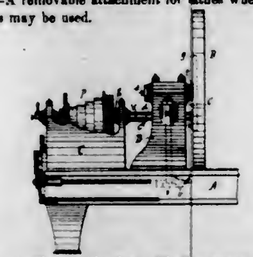


Claim.—1. The combination, in a fire-kindler, of the inflammable coated wrapper *a*, having twisted ends, with an outer paper wrapper, C, having flaring ends *c c*, substantially as shown and described.

2. A fire-kindler composed of a body of cotton or waste, *b*, saturated with an inflammable oil or liquid and wrapped in an inflammable coated wrapper, *a*, having twisted ends, and having an outer wrapper, C, with flaring ends *c c*, substantially as shown and described.

332,817. LATHE ATTACHMENT. WALTER MIDDLEDITCH, Detroit, Mich. Filed May 25, 1885. (No model.)

Brief.—A removable attachment for lathes whereby varying sizes of face-plates may be used.



Claim.—1. The combination, with the support mounted upon the frame of a lathe, and the means for securing said support to said lathe, of a face-plate, its shaft journaled in said support at an elevation to the drive-shaft, and its gear adapted to engage with the pinion of the drive-shaft, said pinion and the drive-shaft journaled in said support and adapted to be coupled in axial line with the spindle of a lathe, for the purposes set forth.

2. In combination with the body of a lathe, a support mounted thereon, carrying a face-plate upon a shaft journaled in said support at an elevation to the spindle, and means, substantially as set forth, for driving said face-plate.

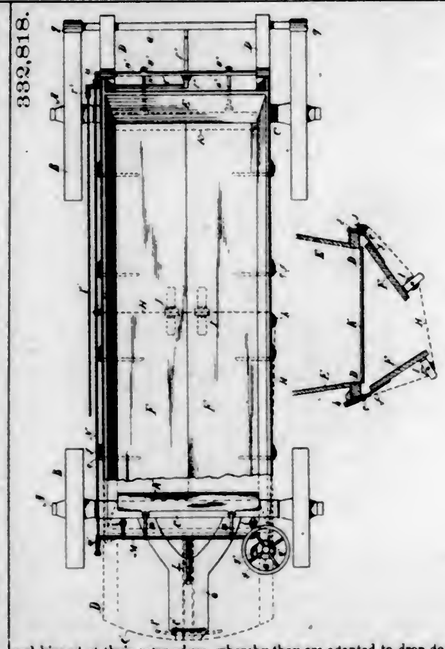
332,818. DUMPING-WAGON. FRANK C. HILLIKER, San Francisco, Cal. Filed Sept. 19, 1885. (No model.)

Claim.—1. In a dumping-wagon, the bed E, mounted on suitable running-gear, and the bottom boards, F, of said bed, meeting on a central longitudinal line and hinged at their outer edges, whereby they are adapted to drop down to a vertical plane, in combination with the chain H, secured at its forward end to a winding mechanism, and passing under the bottom boards of the bed and secured to one side of the bed, whereby said boards may be raised to position, substantially as herein described.

2. In a dumping-wagon, the bed E, mounted on suitable running-gear, and the centrally-meeting bottom boards, F, hinged at their outer edges, and having the pulleys I on their under surfaces, in combination with the chain H, secured to the bed on one side and passing under the pulleys I and upwardly and forwardly around a guide-pulley, A, the spindle G, having crank-wheel *g* and ratchet *g'*, and the pawl *g²*, all arranged and adapted to operate substantially as herein described.

3. In a dumping-wagon, the bed E, mounted on suitable running-gear, and the bottom boards, F, meeting on a central longitudinal line

332,818.

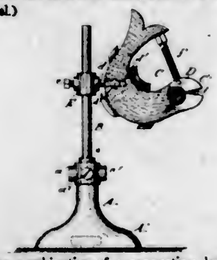


and hinged at their outer edges, whereby they are adapted to drop down to a vertical plane, in combination with the horizontally-sliding lock-strips K, mounted under the bed, and adapted to be forced in under the ends of the bottom boards to hold them and to be withdrawn therefrom to relieve them, substantially as herein described.

4. In a dumping-wagon, the bed E, mounted on suitable running-gear, and the bottom boards, F, meeting on a central longitudinal line and hinged at their outer edges, for the purpose described, in combination with lock-strips K, mounted in suitable guides under the bed, and the mechanism by which said strips are operated, for the purpose described, consisting of the pivoted and guided lever L, the shaft M, and connecting-links *m*, the crank *m'* on said shaft, the connecting-rod N, the crank *n* at the rear, the shaft *n'*, having cranks *n²*, and the links *n³*, all arranged and adapted to operate substantially as herein described.

5. In a dumping-wagon, the bed E, mounted on suitable running-gear, and the bottom boards, F, meeting on a central longitudinal line and hinged at their outer edges, as described, in combination with the chain H, passing under said boards and secured to one side of the bed and to a winding-spindle, G, in front, whereby said boards are raised to position, and the horizontally-sliding lock-strips K, adapted to move under the ends of the boards to hold them and to be withdrawn therefrom to relieve them, substantially as herein described.

332,819. JOURNAL-BEARING FOR SHAFTS. PETER MURRAY, Jr., Newark, N. J., assignor to himself, Alfred N. Lewis, same place, and Richard S. T. Cissel and Robert B. Cissel, Elizabeth, N. J. Filed Sept. 2, 1885. (No model.)

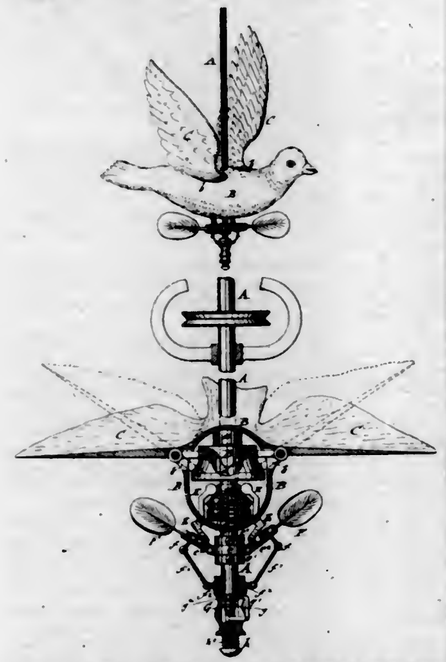


Claim.—1. The combination of a supporting bracket-arm having an enlarged base, a socket in line with the axis of the arm, and a socket at right angles thereto, a rod adjustable in said sockets, an adjustable sleeve or thimble located on said rod, and an oil-cup supported on said sleeve and having a journal-bearing for the shaft, substantially as set forth.

2. The combination of a supporting bracket-arm, A, having an enlarged base, A', and sockets *a a'*, an adjustable rod, B, secured by a set-screw, *a²*, to one of said sockets, a sliding sleeve, E, having a set-screw,

e, and a fixed shank, *d*, and a lubricating-cup, C, connected to a socket, *d'*, and set-screw *d²* to the shank, and having a journal-bearing, D', for the shaft, substantially as set forth.

332,820. AUTOMATIC FAN. PETER MURRAY, Jr., Newark, N. J., assignor to himself and Alfred N. Lewis, same place, and Richard S. T. Cissel and Robert B. Cissel, Elizabeth, N. J. Filed Sept. 17, 1885. (No model.)

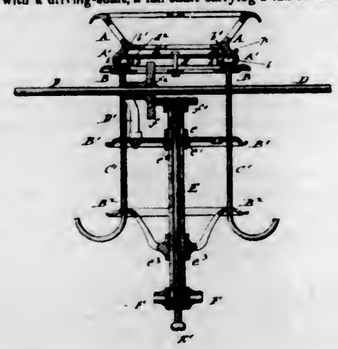


Claim.—1. The combination of a rotary fan-shaft, a hollow body placed loosely on the same, wings fulcrumed in side openings of said body, a wave-wheel on the shaft engaging the inner ends of the wings, and a clutch device whereby the body is thrown in or out of gear with the shaft, substantially as set forth.

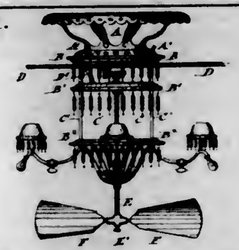
2. The combination, with a rotary fan-shaft, a hollow body placed loosely on the same, wings fulcrumed to side openings of the body, a wave-wheel on the shaft engaging the inner ends of the wings, a clutch mechanism for throwing the shaft in or out of gear with the body, auxiliary fans set into sockets of the clutch-levers, a slide-sleeve, and levers for setting said auxiliary fans and the clutch device while the fan-shaft is in motion, substantially as set forth.

332,821. COMBINED CHANDELIER AND ROTATING FAN. PETER MURRAY, Jr., Newark, N. J., assignor to himself and Alfred N. Lewis, same place, and Richard S. T. Cissel and Robert B. Cissel, Elizabeth, N. J. Filed Sept. 18, 1885. (No model.)

Claim.—1. The combination of a hanger-frame composed of a stationary top section attached to the ceiling, and a lower axially-adjustable section with a driving-shaft, a fan-shaft carrying a fan at the lower end,



332,821.



and friction-disks by which rotary motion is transmitted from the driving-shaft to the fan-shaft, substantially as set forth.

2. The combination of a hanger-frame having center bearings for the fan-shaft, a driving-shaft supported on a standard of said hanger-frame, a vertical fan-shaft having a fan at the lower end, and friction-disks by which rotary motion is imparted by the transmitting-shaft to the fan-shaft, substantially as set forth.

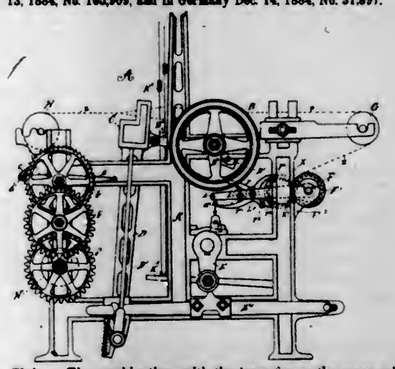
3. The combination of a hanger-frame, consisting of a stationary top section, gas-tubes, and ring-shaped sections, a driving-shaft, a vertical fan-shaft, and friction-disks on said driving-shaft and fan-shaft, substantially as set forth.

4. The combination of a stationary hanger-section attached to the ceiling, said hanger-section having an annular groove or channel, an axially-adjustable hanger-section formed of ring-shaped sections, and gas-tubes communicating with said channel, the lower section being connected by a center bolt and disk to the top section, and provided with center-bearings for the vertical fan-shaft, substantially as set forth.

5. The combination of a hanger-frame, a driving-shaft supported by said hanger-frame, a tubular fan-shaft supported by center bearings of said hanger-frame, transmitting friction-disks on the driving-shaft and fan-shaft, a handle-rod passing through the fan-shaft, and a clutch mechanism whereby the friction-disk on the fan-shaft can be set higher or lower, so as to vary the speed of the fan, substantially as set forth.

6. The combination of a hanger-frame, a driving-shaft supported by said frame, a friction-disk applied to the driving-shaft and having a central depression, a tubular fan-shaft supported by said hanger-frame, a fan keyed to the lower end of the fan-shaft, a friction-disk arranged loosely on the upper end of the fan-shaft, a center rod, and means for connecting the center rod with the friction-disk of the fan-shaft, so that it can be raised or lowered or placed in line with the central depression of the friction-disk of the driving-shaft, substantially as set forth.

332,822. LET-OFF MECHANISM FOR LOOMS. JOHN NIGHTINGALE and JOSEPH NIGHTINGALE, Paterson, N. J. Filed Sept. 23, 1884. (No model.) Patented in England Dec. 13, 1884, No. 16,390; in France Dec. 13, 1884, No. 165,909, and in Germany Dec. 14, 1884, No. 31,897.

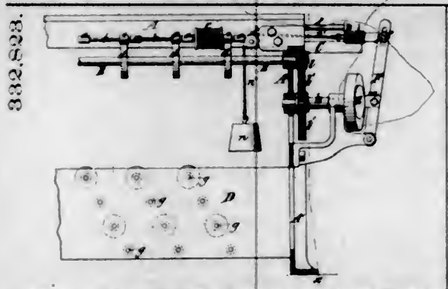


Claim.—The combination, with the loom frame, the warp-roller F, and the gear-wheel secured to said roller, of the lever L, the gear-wheel F^2, the wheel K, having notches K', the stud L^4, the lever P, having the tooth P^4 for engagement with the notches K', the lever P', the brake-plate I^2, the weight *a*, the cord *a'*, the stud L^3, the spring L', the crank-shaft, and the pin B^2, substantially as described.

332,823. MACHINE FOR DOUBLING AND SPINNING SILK. WM. NUGENT, Paterson, N. J., assignor to Stephen Van Winkle, trustee, same place. Filed Sept. 16, 1884. (No model.)

Brief.—The guide-bars are connected to the traverse-bar, and are reciprocated longitudinally therewith. A lever of the third order is employed for this purpose, which lever is operated by a face-cam in one direction and by a weight in the other.

332,823.



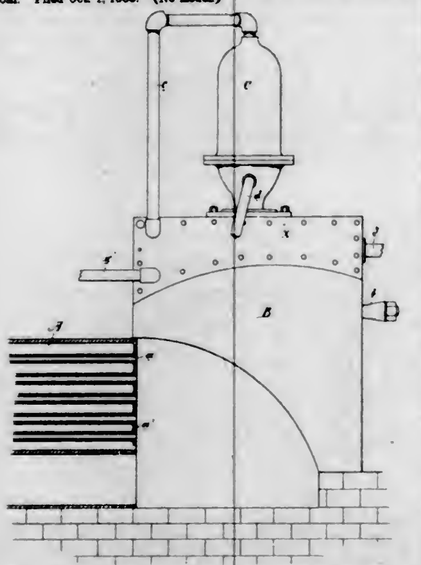
Claim.—1. The combination, with mechanism, substantially as described, for driving winding-bobbins, of a traverse-bar and a rod or rods over which threads or filaments pass to the traverse-bar, and mechanism, substantially as described, for imparting a traverse motion to said bar and to said rod or rods, as and for the purpose herein set forth.

2. The combination, with mechanism, substantially as described, for driving winding-bobbins, of a traverse-bar and a rod or rods over which threads or filaments pass to the traverse-bar, roller-supports for said rod or rods, and mechanism, substantially as described, for imparting a traverse motion to said bar and to said rod or rods, as and for the purpose set forth.

3. The combination, with mechanism, substantially as described, for driving winding-bobbins, of a traverse-bar, and a rod or rods over which threads or filaments pass to the traverse-bar, a cross-bar connecting said traverse-bar and rod or rods at their ends, and mechanism, substantially as described, connected with said cross-bar for moving it and its attached bar and rod or rods, as and for the purpose herein set forth.

4. The combination, with mechanism, substantially as herein described, for driving winding-bobbins, of the traverse-bar C and rods *f*, the cross-bar *j*, connecting said traverse-bar and rods, the cam E and means for rotating it, and the lever F, connected with said cross-bar and acted upon by said cam, substantially as herein set forth.

332,824. FEED-WATER HEATER. LARS A. OLSEN, San Francisco, Cal. Filed Oct. 1, 1885. (No model.)



Claim.—1. In a feed-water heater and purifier, the box B at the back of the boiler, in combination with the globe C, communicating with the pump and with the box at one end, and the globe E, communicating with the boiler and with the box B at the other end, substantially as herein described.

2. In a feed-water heater and purifier, the box B at the back of the boiler, having a communication at one end with the boiler, in combination with the box X, having inlet and exhaust ports for the exhaust-steam, and the flues or pipes *x* within the box X, communicating with the pump and with the box B, substantially as herein described.

3. In a feed-water heater and purifier, the box B at the back of the boiler, having a communication at one end with the boiler, in combination with the globe C, communicating with the other end of the box and with the pump, and the cup or dish D in the globe, adapted to receive the water, having an exit-pipe with a valve, substantially as herein described.

4. In a feed-water heater and purifier, the box B at the back of the boiler, communicating at one end with the boiler, in combination with the globe C, the inlet water-pipe *c*, having perforations in its lower end, the conical sleeve or thimble W on the end of pipe *c*, and the cup or dish D, having pipe *d* and valve *d'*, substantially as herein described.

5. In a feed-water heater and purifier, the globe C, communicating with the feed-water-heating chamber, and having a cup or dish, D, within it provided with a valved outlet, in combination with the feed-pipe *c*, projecting into the globe above the cup or dish and having a perforated lower end, and the conical sleeve or thimble W on the pipe *c*, substantially as herein described.

6. In a feed-water heater and purifier, the globe C, communicating with the feed-water-heating chamber, the cup or dish D within the globe and provided with a valved outlet, and the screen or sieve V over the top of the cup, in combination with the feed-pipe *c*, projecting into the globe and through the top of the screen and having a perforated lower end, and the conical sleeve or thimble W on the pipe *c*, substantially as herein described.

7. In a feed-water heater and purifier, the globe E, communicating with the boiler, in combination with the perforated valved casing F within the globe and communicating with the feed-water-heating chamber, substantially as described.

8. In a feed-water heater and purifier, the globe E, communicating with the boiler, and having a valved outlet-pipe at or near its base, in combination with the perforated valved casing F within the globe and communicating with the feed-water-heating chamber, substantially as described.

9. In a feed-water heater and purifier, the globe E, communicating with the boiler and having a valved outlet-pipe at or near its base, in combination with the perforated valved casing F within the globe and communicating with the feed-water-heating chamber, and the cylindrical screen R around said casing, substantially as herein described.

10. In a feed-water heater and purifier, the box B at the back of the boiler, in combination with the globe C, communicating with one end of the box and with the pump, the cup or dish D within said globe adapted to receive the feed-water and having a valved outlet, the globe E at the other end of the box, communicating with the boiler and having a valved outlet, and the perforated valved casing F within globe E and communicating with the box, substantially as herein described.

11. In a feed-water heater and purifier, the box B at the back of the boiler and communicating at one end with said boiler, the box X on top of said box heated by exhaust-steam, and the flues or pipes *x* in said box X, communicating with the pump, in combination with the globe C on the box X and communicating with the box B, the pipe *c*, connecting the flues or pipes *x* with said globe, said pipe having a perforated end within the globe, the thimble or sleeve W on the pipe, the cup or dish D, having a valved outlet, and the top screen, V, for said cup or dish, substantially as herein described.

12. In a feed-water heater and purifier, the box B at the back of the boiler, and the box X, heated by exhaust-steam and having flues or pipes *x*, connected with the pump and communicating with the box B at one end, in combination with the globe E, having a valved outlet and communicating with the boiler, and the perforated valved casing F within the globe and communicating with the box B, substantially as described.

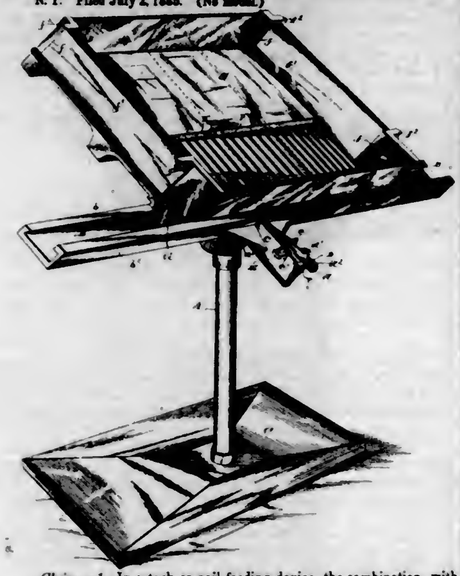
13. A feed-water heater and purifier comprising the box B at the back of the boiler, the box X on top of box B, and having ports adapting it to be heated by exhaust-steam, the flues or pipes *x* in box X, the pipe *x'*, connecting said flues with the pump, the globe C, communicating with the box B, the pipe *c*, connecting the flues or pipes *x* with said globe, said pipe projecting into the globe and having a perforated end, the thimble or sleeve on the end of pipe *c*, the cup or dish D, having a valved outlet and a screened top, the globe E, connected with the boiler and having a valved outlet, the perforated valved casing F in said globe communicating with box B, and the screen R around said casing, all arranged and adapted to operate substantially as herein described.

332,825. SPLASHER-HOLDER. ARTHUR W. PARMELEE, Worcester, Mass., assignor to the Wire Goods Company, same place. Filed Sept. 23, 1885. (No model.)



Claim.—A splasher-holder, the same consisting of the screw-eyes *e e* and bases *i i*, in combination with the rod *c*, having screw-threads upon each end thereof, and screw-tips *g g*, adapted to be screwed onto the ends of said rod *c*, up tight against the screw-eyes aforesaid, after the latter have been fastened in position, whereby said rod *c* is held in a rigid horizontal position, substantially as shown and described.

332,826. NAIL-FEEDING APPARATUS. STUART PERRY, Newport, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. In a tack or nail feeding device, the combination, with a magazine for holding nails, of a spout connected therewith and having an open upper face or edge, for the purpose of permitting the nails or tacks to be grasped by the head, two movable stops or dogs attached to said spout and adapted to separate from a series of nails or tacks the foremost one and retain it in a position to be removed by grasping by the head between the thumb and forefinger, and a bar or finger-piece for operating the dogs, substantially as set forth.

2. The combination, with a nail or tack feeding spout, of a spring-actuated dog having a face covered with rubber, leather, or equivalent flexible material, and adapted to engage the shank of one or more nails and check the line of nails from advancing after the foremost one has been separated for use, substantially as set forth.

3. The combination, with a magazine for holding nails, of a nail or tack feeding spout having an open upper face and a cross-bar or stop at the outer end thereof, a pair of dogs secured to the spout and adapted to mutually actuate each other, and a spring adapted to hold one of the dogs normally in engagement with the foremost nail but one, and force the said dog into the spout when the foremost nail is removed by its head, substantially as set forth.

4. The combination, substantially as described, with a group of magazines inseparably connected, and having adjustable channels for holding different-size nails or tacks, of a feeding-spout open at its upper edge, and provided with a cross-bar or stop at its lower edge, and dogs adapted to separate from a series of nails the foremost one and retain it in a position to be removed from the spout, substantially as set forth.

5. The combination, with a nail-receptacle and a series of nail-magazines located therein, of a plate fitting snugly within the receptacle and forming a cover for holding the nails or tacks in the several magazines against displacement, substantially as set forth.

6. The combination, with a group of nail-magazines inseparably connected, of a transparent cover adapted to hold the nails or tacks against displacement, substantially as set forth.

7. The combination, with a receptacle for holding nails in bulk, and a group of magazines located therein, of a plate constructed to fit said receptacle and form a cover for the entire group of magazines, and legs, substantially as described, adjustably secured to said plate or cover, substantially as set forth.

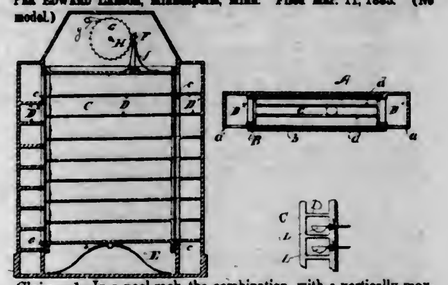
8. The combination, with a receptacle adapted to hold tacks or nails in bulk, and a single feeding-spout having dogs for regulating the discharge of the nails or tacks, of a series of magazines located within said receptacle and adapted, by means substantially as described, to be brought into alignment with the spout for discharging the nails therein, substantially as set forth.

9. The combination, with a receptacle and a feeding-spout provided with spring-actuated dogs adapted to separate from a series of nails the foremost one and retain it in a position to be removed from the spout, of a group of nail-magazines located within the receptacle and adapted to be brought into alignment with the spout, and a removable partition, substantially as described, for dividing the receptacle into two compartments for nails or tacks of different sizes.

10. The combination, with a guide-bar having a groove or way therein and a feeding-spout secured thereto, of a nail-receptacle secured to said guide-bar and adapted to slide thereon, all arranged substantially as set forth.

11. The combination, with a guide-bar having a feeding-spout and a groove or guideway for the nail-receptacle, of the nail-receptacle secured to and adapted to slide on said bar, and a series of nail-magazines located within said receptacle and adapted to be brought into alignment with the feeding-spout, substantially as set forth.

332,827. SELF-TALLYING POOL-RACK. NIELS C. PETERSON and PER EDWARD LARSON, Minneapolis, Minn. Filed Mar. 11, 1885. (No model.)



Claim.—1. In a pool-rack, the combination, with a vertically-movable spring-supported rack-section, of a counting mechanism and means carried by said movable rack-section for operating the counting mechanism, whereby said section is moved against the tension of the spring supporting it, and the counting mechanism is operated by the weight of the balls placed in the rack.

2. The combination, in a pool-rack, of a vertically-movable rack-section, and springs supporting said section, with a counting mechanism, and a spring-dog on said movable section, adapted to engage with and to operate said counting mechanism, substantially as described, and for the purpose set forth.

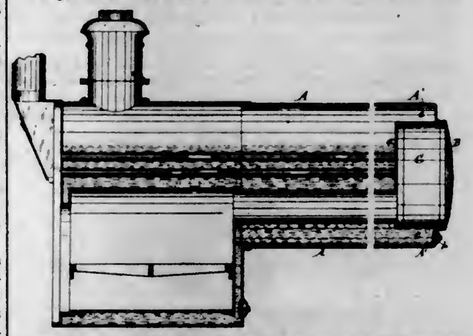
3. The combination, with the rack A, having shelves D' and openings *a*, of the vertically-movable rack-section C, having shelves D, supporting springs for said section, a counting device, and means secured to the movable section for operating said device, substantially as described.

4. The combination, with the rack A, having shelves D' and openings *a*, of the vertically-movable rack-section C, having shelves D, supporting-spring E, spring-gates L L, a counting device, and means secured to the movable section for operating the counting device, substantially as described.

5. The combination, with the rack A, having shelves D' D^2 and openings a^2 a^2, of the vertically-movable rack-section C, having shelves D, supporting-spring E, gates L L, friction-rolls *c*, a counting device, and means on the movable section for operating the counting device, substantially as described.

6. The combination, in a pool-rack, with the vertically-movable rack-section D and spring E, of the ratchet G, pawl *g*, shaft H, needle I, dial K, and spring-dog F, substantially as described.

332,828. STEAM-BOILER. GEORGE A. PORTER, Syracuse, N. Y. Filed Sept. 21, 1885. (No model.)



Claim.—In combination with the smoke-box shell C, the boiler-shell extension A, formed with the steam and water space *e* between it and the shell C, and having its end bent inward and terminated with an outward flange embracing the end of the smoke-box shell, and riveted directly thereto, substantially as described and shown.

332,829. MANUFACTURE OF BETA-NAPHTHYLAMINE SULPHO-ACID. HUGO PERUL, Frankfort-on-the-Main, Germany, assignor to Farbfabrik, vormals Brünner, same place. Filed May 5, 1884. (Specimens.) Patented in Germany July 5, 1883, No. 22,547; in Belgium July 17, 1883, No. 56,501; in England Aug. 4, 1883, No. 3,734; in France Aug. 5, 1883, No. 150,503, and in Luxemburg Mar. 19, 1883, No. 263.

Claim.—1. The method of obtaining beta-naphthylamine sulpho-acid, consisting in treating the beta-naphthol monosulpho-acid described by Schäfer with ammonia at a temperature of about from 180° to 200° Celsius, substantially as herein described.

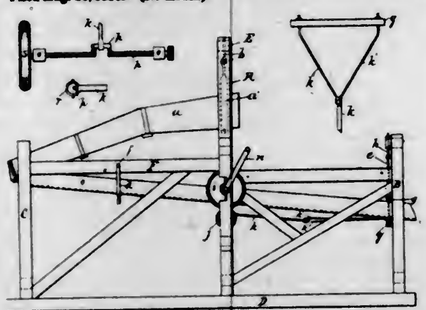
2. The new beta-naphthylamine sulpho-acid having the properties herein set forth—that is to say, being difficultly soluble in water and forming almost insoluble salts of highly crystallizing properties.

332,830. RED COLORING-MATTER FROM BETANAPHTHYLAMINE SULPHO-ACID. HUGO PERUL, Frankfort-on-the-Main, Germany, assignor to Farbfabrik, vormals Brünner, same place. Filed May 5, 1884. (Specimens.) Patented in Germany July 5, 1883, No. 22,547; in Belgium July 17, 1883, No. 56,501; in England Aug. 4, 1883, No. 3,734; in France Aug. 5, 1883, No. 150,503, and in Luxemburg Mar. 19, 1883, No. 263.

Claim.—1. The method of producing a red coloring-matter by combining betanaphthol disulpho-acid with the diazo combinations of beta-naphthylamine sulpho-acid which has been produced by treating beta-naphthol sulpho-acid with ammonia, substantially as herein described.

2. The new red coloring-matter herein described, having the properties of dissolving in concentrated sulphuric acid with a cherry-red color, and which when treated with tin and muriatic acid forms betanaphthylamine sulpho-acid and the disulpho-acids of amido-betanaphthol, substantially as herein set forth.

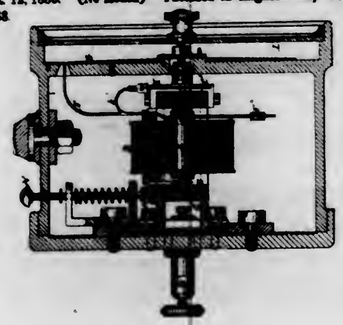
332,831. CONCENTRATOR. JOHN N. RAHDE, Castle Rock, Colo. Filed Aug. 20, 1885. (No model.)



Claim.—1. In a concentrator, the combination of a suitable frame, the concentrating-box *c*, provided with the riffled plate *l*, said concentrating-box being supported as described, and mechanism for operating box *c*, consisting of gear-wheels *i* and *j*, shaft *p*, provided with crank *p'*, rod *k*, provided with branches *k'*, and bar *q*, substantially as shown and described, and for the purpose set forth.

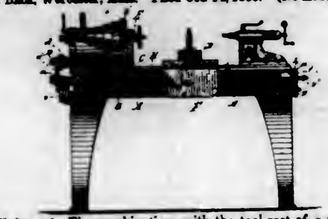
2. A concentrator comprising a suitable frame, the hopper *a*, supported as described, concentrating-box *c*, supported as described, and provided with riffled plate *l*, and mechanism for operating hopper *a* and box *c*, consisting of gear-wheels *i* and *j*, shaft *p*, provided with eccentric *p'* and fly-wheel *s*, rod *k*, provided with branches *k'*, and bar *q*, substantially as shown and described, and for the purpose set forth.

332,832. ELECTRIC METER. JOHN S. RAWORTH, Manchester, County of Lancaster, assignor to Siemens Brothers & Company, (Limited,) 12 Queen Anne's Gate, Westminster, County of Middlesex, England. Filed Sept. 12, 1885. (No model.) Patented in England May 13, 1884, No. 7,668.



Claim.—The combination of the spindle A, having two small arms, *a a*, projecting from it in opposite directions, conducting-coils B, consisting of numerous convolutions of fine insulated wire arranged around the spindle, the rectangular casing E, having a number of convolutions of insulated wire, $C' C^2 C^3 C^4$, wound around it, the index-wire F, counterbalanced by an adjustable weight, F', and projecting through the dial G, the central spindle, H, passing through the dial, and the volute spring K, connected by the arm *k* to the index-wire, as and for the purpose described.

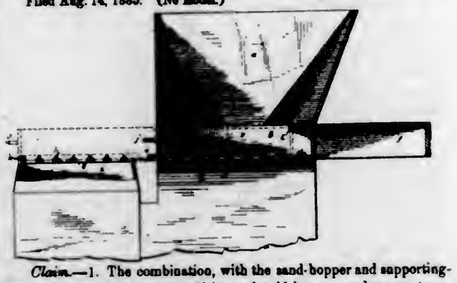
332,833. METAL-TURNING LATHE. FREDERICK E. REED and JOHN R. BAGE, Worcester, Mass. Filed Oct. 14, 1885. (No model.)



Claim.—1. The combination, with the tool-rest of a metal-turning lathe, of a leading-screw connected with the rotating spindle and held in fixed bearings on the lathe-bed, and a feed-rod held in fixed bearings on the lathe-bed and driven from the leading-screw, as described, and for the purpose set forth.

2. The combination, with the leading-screw and feed-rod, held in fixed bearings on the bed of a metal-turning lathe, of pinions attached to said screw and rod, and an intermediate gear capable of sliding on a stud attached to the bed, as described, and for the purpose set forth.

332,834. SAND-MOLDING MACHINE. ARTHUR REE, New Albany, Ind., assignor to the Pearlson Manufacturing Company, Louisville, Ky. Filed Aug. 14, 1885. (No model.)



Claim.—1. The combination, with the sand-hopper and supporting-frame, of a sand-drawer arranged beneath said hopper, and means to reciprocate it thereunder, a fixed slatted bottom in said drawer, and a movable slatted bottom superposed upon said fixed bottom, and means to reciprocate it to cover and uncover the fixed bottom, substantially as described.

2. In a sand-molding machine, a flask-receiver, and a sand-hopper and supporting-frame, combined with a sand-drawer having a slatted bottom, which, when closed, receives a charge of sand from the hopper, means to project such charged drawer over the flask, and means to then open said slatted bottom, to thereby discharge the sand into the flask throughout its full length and width evenly and uniformly, substantially as described.

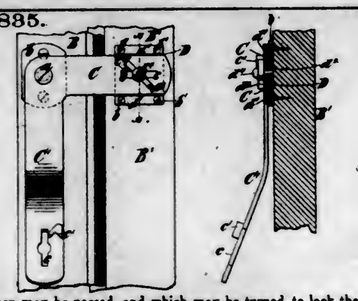
3. In a molding-machine, a binder provided at one end with an eye, an internally-screw-threaded sleeve arranged in said eye, and an attached operating-handle, and a hook at the other end of said binder, combined with screw-threaded posts rising from the molding-machine and engaged by the binder to permit the binder to be swung upon the same, substantially as described.

4. In a sand-molding machine, a binder provided with an eye, and an internally-screw-threaded sleeve inserted in said eye, combined with a screw-threaded post, upon which said sleeve is secured, and means for raising and lowering the sleeve, whereby the binder is swiveled to the molding-machine, and its vertical adjustment obtained co-ordinately with the height of the flasks, substantially as described.

332,835. COMBINED SHUTTER-FASTENER AND SHUTTER-BOWER. FRED. C. ROBINSON, New York, N. Y. Filed Nov. 2, 1885. (No model.)

Claim.—1. The combination, with a hasp for attachment to a blind-stile and provided at the end with a slot, of a plate for attachment to the opposite stile, provided with raised flanges or ribs receiving the hasp between them, and a button pivoted on said plate, over which the slot

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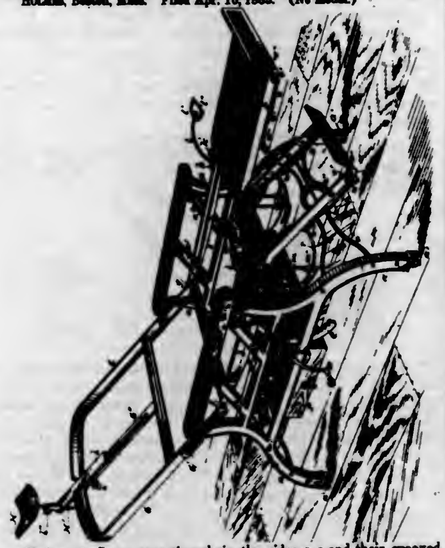
is the hasp may be passed, and which may be turned to lock the hasp to the plate, substantially as herein described.

2. The combination, with a hasp provided with a slot, *c*, of the plate D, having raised flanges or ribs *d'*, receiving the hasp between them, and a hub, d^2, which is received in the slot of the hasp, and a button, d^3, pivoted to the plate D, and adapted to engage the hasp, substantially as herein described.

3. The combination, with a hasp provided with a slot, *c*, and a shoulder or projection, *c'*, from its face, of the plate D, provided with ribs or flanges receiving the hasp between them, and a button adapted to pass through the slot in the hasp, and when turned to engage the shoulder or projection *c'*, substantially as herein described.

4. The combination, with a hasp-plate comprising a straight and a bowing hasp extending at an angle to each other and each provided with a slot, *c*, of a plate, D, provided with raised ribs or flanges for receiving the hasp between them, and a button pivoted to the plate, over which the slot in either hasp may be passed, and which may be turned to secure the hasp to the plate, substantially as herein described.

332,836. OPERATING-CHAIR. JAMES B. ROBINSON and GEORGE W. HOLMES, Boston, Mass. Filed Apr. 10, 1885. (No model.)



Claim.—1. In an operating-chair, the sides *a a* and their grooved guides a^2 a^2, in combination with the seat *b* and its anti-friction rollers *b' b'*, the curved racks *c c*, hinged to the seat, and shaft *d'*, with its pinions *d d* and crank D, for the purpose of vertically adjusting the position of the seat, as herein set forth.

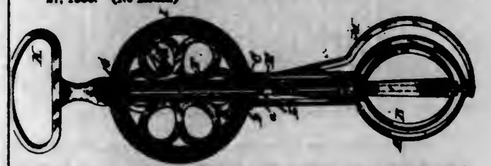
2. In an operating-chair, the stationary sides *a a*, having guides a^2 a^2, and the vertically-adjustable seat *b*, having the curved racks *c c* hinged to it, in combination with shaft *d'*, pinions *d d*, crank D, and anti-friction guide-rollers *c' c'*, as and for the purpose set forth.

3. In an operating-chair, the stationary sides *a a* and the vertically-adjustable seat *b*, guided in the sides *a a*, in combination with the back-rest G, hinged to the seat *b*, and having slotted recesses G' G', adapted to receive and to be guided on the pin, and rolls *h h'* on the sides *a a*, as and for the purpose set forth.

4. In an operating-chair, the vertically-adjustable seat *b*, its curved racks *c c*, pinions *d d*, shaft *d'*, and crank D, combined with the ratchet-wheel *s*, pawl *s'*, and releasing-lever *f f'*, as and for the purpose set forth

5. In an operating-chair, the vertically-adjustable seat *b*, having the slotted braces *m m'* secured to its forward end, in combination with the hinged leg-rests L L, having hinged to them the curved ratchets *r r''* and releasing-levers *u u''*, as and for the purpose set forth.

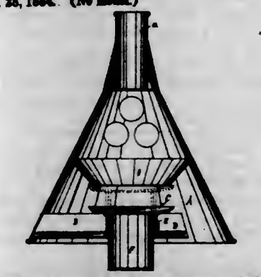
332,837. EGG-BEATER. DANIEL B. ROCK, Fairfield, Pa. Filed June 27, 1885. (No model.)



Claim.—1. In an egg-beater, the combination, with a single toothed driving-wheel and a central stationary guide and supporting-rod, of two oppositely-revolving beaters provided with pinions of equal size and arranged one above the other and engaging with the driving-wheel at points diametrically opposite each other, substantially as and for the purpose set forth.

2. In an egg-beater, a single toothed driving-wheel, and a handle formed with a shank, in which the shaft of the wheel has its bearing, said shank terminating in a curved support, in combination with a central stationary guide and supporting-rod, connected at its lower end to the curved support, and two oppositely-revolving beaters provided with pinions of equal diameters arranged one above the other and engaging with the driving-wheel at points diametrically opposite each other, substantially as and for the purpose specified.

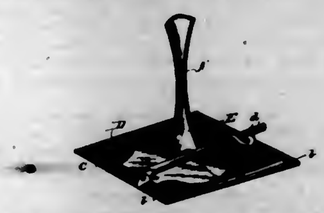
332,838. CLOTHES-POUNDER. FRANCIS T. ROUTH, Connersville, Ind. Filed Nov. 28, 1884. (No model.)



Claim.—1. As a new article of manufacture, a clothes-pounder consisting of a hollow open-bottomed vessel, A, provided with a water-chamber having in its side walls open ports and a horizontal upwardly-closing valve, to close against its seat and form with it the bottom of said chamber, and a valve-stem projecting downward to the bottom of the body when the valve is closed, substantially as shown and described.

2. In a clothes-pounder, the combination, substantially as specified, of the hollow open-bottomed vessel A, the chamber formed by the valve-seat B and valve C, when it is closed, and the side walls of the vessel, the open ports for said water-chamber, and the valve-opening in the bottom of said chamber, with the webs D, valve-guide E, valve C, and its stem F, said stem constructed to guide the valve to and from its seat, and to force the said valve against its seat upon the downward stroke of the pounder.

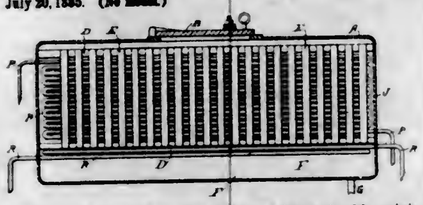
332,839. SEAT AND DESK FASTENING. FRED L. SAYER, Lyndon, Ill. Filed Aug. 22, 1885. (No model.)



Claim.—1. The combination of an attachment, B, fixed to the floor and provided with spaces *b*, the foot A, provided with projections *a*, for insertion into such spaces, the lever F, and means for holding such lever adjustably upon a portion of such foot, substantially as shown, and for the purpose specified.

2. The combination of the attachment B, the foot A, lever F, and hook G, substantially as shown, and for the purpose described.

332,840. **TREATING LEATHER-STOCK WITH NAPHTHA TO EXTRACT OILS THEREFROM.** JAMES J. SAWIN, Worcester, Mass. Filed July 20, 1885. (No model.)



Claim.—1. In a tank for treating leather or other stock with naphtha, the combination, with the heating-chamber for drying the stock, having coils of steam-pipes extending around two or more sides of said chamber, of the cooling-chamber having a coil or coils of cold-water pipes, substantially as and for the purpose stated.

2. In a tank, A, the combination, with the heating-chamber J, having coils of steam-pipes P extending around one or more sides of said chamber, for the purpose stated, of the cooling-chamber F, having coils of cold-water pipes extending therein, for the purpose stated, substantially as set forth.

3. In a tank, A, the heating-chamber J, having a lattice-work extending around the sides thereof, and steam-pipes extending between said lattice-work and the sides of the tank, in combination with a cooling-chamber, F, having coils of cold-water pipes R extending therein, and an opened lattice-work or floor above said pipes, separating the said cooling-chamber F from the heating-chamber J, substantially as described, and for the purpose stated.

4. A tank, A, constructed with the heating-chamber J, having steam-pipes P, for the purpose stated, and a cooling-chamber, F, having cold-water pipes R, for the purpose stated, substantially as set forth.

5. A tank, A, having one or more openings in the top thereof, provided with covers, an outlet-pipe, G, an inlet-pipe, C, coils of steam-pipes P in the upper part of the tank, and coils of cold-water pipes R in the lower part of the tank, the ends of said coils projecting through the sides or ends of the tank, substantially as set forth.

332,841. **MANUFACTURE OF FLOOR-CLOTH, &c.** GUSTAV SCHWARSWALD, New York, N. Y., assignor of two-fifths to Henry Newman, same place. Filed Mar. 5, 1885. (Specimens.)

Claim.—1. A covering made of plastic materials in figures of various colors by depositing the individual figures of the pattern simultaneously and contiguously through independent feeding-tubes, substantially as described.

2. In the art of making cloths or coverings in patterns of various colors, the process of depositing the plastic material for each member of the pattern by means of an independent feeding-pipe, substantially as set forth.

3. In the art of making cloths or coverings of plastic materials in patterns containing various colors, the process of forming the figures of the pattern by forcing the mass of material forming each figure through an independent mold of the configuration desired, substantially as set forth.

4. The process of making cloths or coverings of plastic materials in patterns of various colors by depositing masses of the materials constituting the members of the pattern independently of each other and simultaneously upon a suitable surface, substantially as set forth.

5. In the art of making cloths or coverings of plastic materials in various colors, in which each color of the pattern consists of a mass of material entirely of each color, the process of making the layer of material homogeneous in structure by depositing such masses simultaneously and contiguously upon a suitable surface, substantially as set forth.

6. The process of making cloths or coverings of plastic materials in patterns of various colors, consisting of making each color of the pattern of material of such color throughout its entire mass, depositing the same according to the pattern contiguously and simultaneously to the required thickness on a suitable surface, and thereafter finishing the same, substantially as set forth.

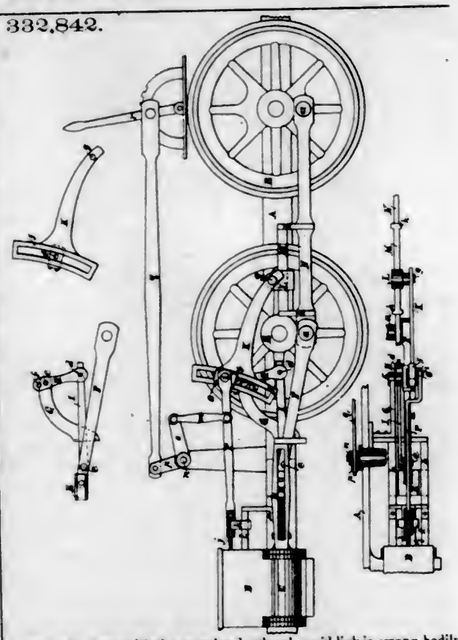
7. The process herein described of making floor, wall, and other coverings, which consists in depositing simultaneously a number of contiguous sections of plastic material in different colors upon a suitable foundation and then drying and finishing the same, substantially as set forth.

332,842. **VALVE-GEAR.** HENRY F. SHAW, Boston, Mass. Filed Oct. 10, 1885. (No model.)

Claim.—1. In a locomotive, and in combination with a parallel rod, a pivoted link, J, provided with an arm, K, pivoted to a block adapted to slide on said parallel rod, whereby the rocking motion of said link is derived from the movement of the parallel rod, substantially as specified.

2. In a locomotive, a link pivoted to a lever which is pivoted to a part of or stand on the frame of the locomotive, and also to a rod which

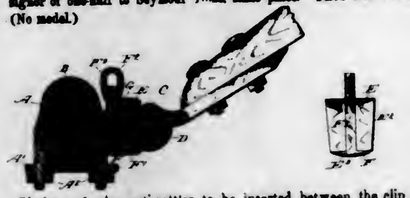
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connects the lever with the cross-head, whereby said link is swung bodily by means of the cross-head, substantially as set forth.

3. The combination of a link, J, and a cross-head, together with suitable intervening lever and connecting-rod, with a parallel rod, together with suitable intervening arm and sliding block, whereby said link may have a swinging motion derived from the cross-head, and a rocking motion derived from the parallel rod, substantially as and for the purposes set forth.

332,843. **THILL-COUPLING.** JOHN M. SIMPSON, Maltaville, N. Y., assignor of one-half to Seymour Twss, same place. Filed Nov. 5, 1885. (No model.)



Claim.—1. An anti-rattler to be inserted between the clip and shank-iron of a shaft, consisting of a rubber cushion, as E, concaved, as at E', and provided with a tapering groove, as E^2, and having a tapered stud or rod, as F, bent to form a seat or head, as F', for said cushion, and provided with a bearing-plate, as G, arranged to slide upon the back of the bolt, and a thumb-screw, F^2, substantially as shown and described.

2. The combination of the cushion E, tapered, as at E^2, and concaved, as at E', provided with the tapering groove E^2, and having the stud or rod F, bent to form a seat or head, F', the plate G, bent, as at G', and the thumb-nut F^2, with the shank-iron D and clip A, substantially as shown and described.

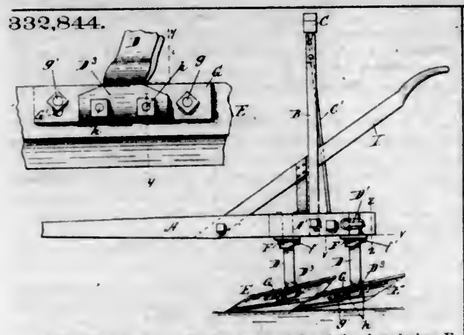
3. The combination, with the tapered bolt F, having the seat or head F' and nut F^2, of the plate G, mounted and arranged to slide upon said bolt, with a rubber cushion, E, tapered, as at E^2, and having the thicker upper portion above its concave E', substantially as shown and described.

332,844. **SCRAPER ATTACHMENT FOR WHEEL-PLOWS.** EDWIN SLOSSON, Verona, Ill. Filed Feb. 9, 1885. (No model.)

Claim.—1. The combination, with the two sets of beams A and A', of the standard B and spacing-block B', arranged between each pair of beams, and a cross-beam, C, to which the upper ends of the standards are hinged, substantially as and for the purposes specified.

2. The combination, with the standard B, of the plate F, secured to the beam and projecting laterally therefrom, the said plate being provided with a slot, *f*, at its projecting portion to receive the standard D, and the lower edge of the said slot being surrounded by a flange, F', perforated to receive a suitable break-pin, *f'*, substantially as and for the purposes specified.

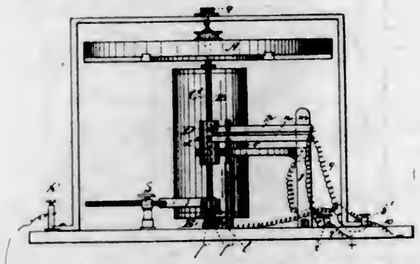
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3. The combination, with the standard D, of the slotted plate F, secured underneath the beam and having perforated flange F' to receive a suitable break-pin, *f'*, and a clamping-plate arranged on the side of the beam above the said plate F and connected to the beam by means of a single bolt, D^2, substantially as and for the purposes specified.

4. The combination, with the scraper E, of plate G, adjustably secured thereon and connected to the standard-foot D^2 by means of suitable bolts, *h*, and the plate H, interposed between the plate G and the standard-foot, presenting its flat side to the plate and its curved side to the correspondingly-curved standard-foot, and provided with slots H', through which the connecting-bolts *h* pass, substantially as and for the purposes specified.

332,845. **POLE-CHANGER.** ELIPHALET W. SMITH, Newark, N. J. Filed June 21, 1884. (No model.)



Claim.—The combination, with an electric motor consisting of vertically-arranged electro-magnets B, a shaft, C, placed between said magnets and carrying a wheel, A, which is situated above said magnets and rotates in a horizontal plane, said shaft having also a drum, D, secured thereto but insulated therefrom, provided with pins thereon, and a collar, E, having conducting and non-conducting points, which are also secured to said shaft, and elastic strip *s*, engaging with said collar, and the motor-battery and its circuit, of a pole-changing device consisting of contact-points *o' o''* in the line-circuit, elastic strips *p n* in the circuit of the pole-changing battery and adapted to engage with the said contact-points and the projections on the drum D, an elastic band bearing against said drum D and in the ground-circuit, and a battery and its circuit, all said parts being arranged and operating for the purposes set forth.

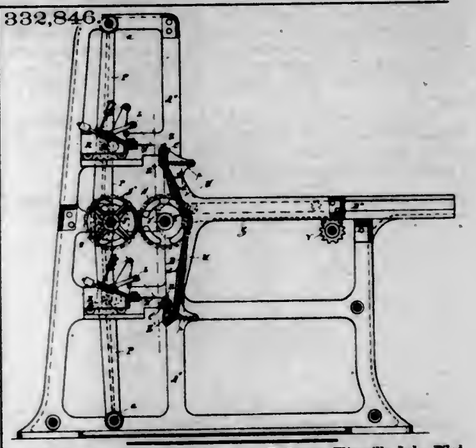
332,846. **EMBROIDERING-MACHINE.** HERRMANN STÖCKEL, Auerbach, Germany. Filed Nov 24, 1884. (No model.)

Brief.—A loop-hook is arranged with each needle, and is operated by cam mechanism in connection with the intermittently-reciprocating needles to form chain-stitch embroidery on the fabric operated upon. The needle-carriage is provided with a rack-and-pinion device which may be operated by a hand-crank, whereby the whole loop-hook mechanism can be moved away from the material for the purpose of replacing the same with other material.

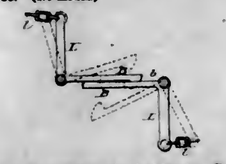
Claim.—1. The combination of a swinging frame, H, with cam-shaped opening A, turning freely on a shaft, D, supporting-arm A, link B, loop-hook E, turning on a center, C, on the plate H, and crank-pin M in a rotary shaft, *n*, arranged to operate in combination with the needle N, and the suitable thread with its tension and take-up mechanism of an embroidering-machine, in the manner and for the purpose substantially as described.

2. The combination of the shaft J, crank-pin O, vibrating levers P, with slot P'', pin R', working in said slot P'', with the carriage R, supporting the needles N, and their appendent parts, arranged to operate in combination with the loop-hooks E in the manner and for the purpose substantially as set forth.

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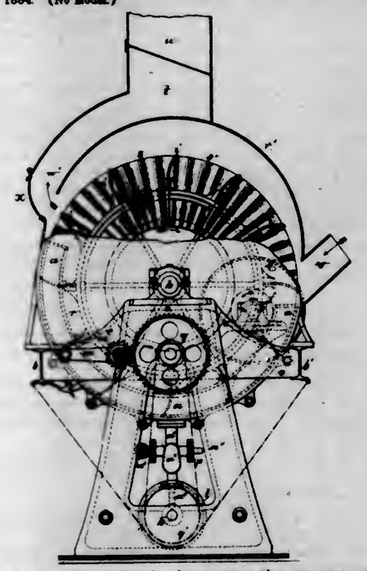


332,847. **CAR-COUPLING.** JOHN F. SWOPE, Elizaville, Ind. Filed Aug. 24, 1885. (No model.)



Claim.—In a car-coupling, the locking-bar B, having the rounded head or catch *b*, and the forks C D, to receive the catch *b*, in combination with the spring S, lever L, bent-lever T, to uncouple from the top of the car, and the bent lever and crank P, and chain *l*, to uncouple from the side of the car, substantially as described, and for the purposes specified.

332,848. **EVAPORATING AND CONDENSING APPARATUS.** EDUARD THIEMEN, Lindenau, near Leipsic, Saxony, Germany. Filed Aug. 25, 1884. (No model.)



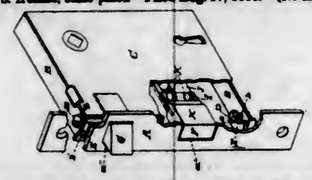
Claim.—1. The combination, in an evaporating apparatus, with the revolving shaft and the circular blades or disks upon the same for exposing the liquid material to be evaporated, of a vessel to contain said liquid, having portions of the sheet metal thereof extending inwardly to form flues or channels for the external heat and to increase the area upon which the heat acts to evaporate the material, substantially as specified.

2. The combination, in an evaporating apparatus, with the revolv-

ing shaft and the circular blades or disks upon the same for exposing the liquid material to be evaporated, of a vessel to contain said liquid, having portions of the sheet metal thereof extending inwardly to form flues or channels for the external heat, and corrugated to increase the area upon which the heat acts to evaporate the material, substantially as specified.

3. In an evaporating apparatus, the combination, with vessels or containers for the reception of the liquid to be evaporated, of circular revolving blades or disks, said blades or disks being corrugated to expose a greater surface to evaporation, substantially as specified.

332,849. MORTISE-LOCK. George Voll, Cincinnati, Ohio, assignor to Thomas S. Ireland, same place. Filed Aug. 17, 1885. (No model.)



Claim.—In a mortise-lock, the combination, with the face-plate provided with the rearwardly-extending lugs E, having orifices e therein, of the top and bottom plates, B, having curved or bent slots *b* formed therein, and screws D, engaging said curved slots, whereby the said face-plate is made capable of being set either square or to a right or left bevel, substantially as set forth.

332,850. STAMPING-MACHINE. Mary C. Walling, Washington, D. C. Filed Aug. 28, 1885. (Model.)



Claim.—1. The combination of a frame having one side open, an impression-roller mounted in the lower part thereof, and a pattern-roller having inking apparatus above it mounted in the upper part thereof, the open end of said upper part of the frame being provided with lateral overhanging arms extending on either side of the pattern-roller and adapted to guide the fabric, substantially as described.

2. The inking and impression rollers, and a pattern-roller mounted between them, having its body made up of detachable sections secured by heads and confining-screws, in combination with the frame supporting the rollers, and having openings A³, whereby access may be had to said screws and heads, for the adjustment or removal of said sections without disturbing their shaft or the other rollers, substantially as described.

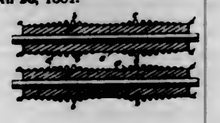
3. In a stamping-machine, the combination, with the supporting-shaft *i*, of the detachable and interchangeable segmental sections D, the heads *k*, and confining-screws *m*, the whole arranged substantially as and for the purposes specified.

4. The combination, with the rollers mounted in a frame open at one end, of the spring-support and the presser-foot secured at the open end of the frame, whereby the goods are held in position while passing through the machine, substantially as specified.

5. The combination, with the inking-roller, of the ink-receptacle and washer and the metallic plate and binding-screw for controlling the flow of ink, substantially as specified.

332,851. MACHINERY FOR FELTING HAT-BODIES, &c. John T. Warren, Yonkers, N. Y. Filed Apr. 6, 1885. (No model.)

Brief.—Improvement on the invention of Reissue Patent No. 9,683, dated April 26, 1881.





Claim.—1. A felting-machine in which the whole or a portion of its working-surfaces have, in a direction transverse to their working movement, a profile which gives the cavity between the said surfaces a greater width at the ends of the working parts of said profile than at a distance from said ends, substantially as and for the purpose herein described.

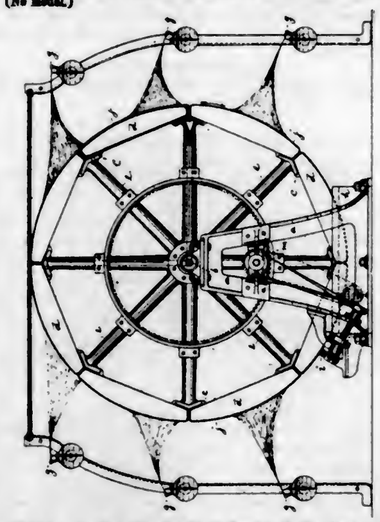
2. A felting-machine in which the whole or a portion of its working-surfaces have, in a direction transverse to their working movement, a profile of concave and convex, taper or sloping form, whereby the cavity or space between said surface is made larger at the middle of the length of such profile, thence contracted to a certain distance from the ends, and thence wider toward the ends thereof, substantially as herein described.

3. A felting-machine roller having its end portions tapered, substantially as herein shown and described.

4. A felting-machine having its working-surfaces of ribbed or lagged construction, and having the lags lower at the middle of their length, thence increasing in height to a certain distance from their ends, and thence again having their height diminished toward the ends, substantially as herein described.

5. A felting-machine roller having a less circumference at the middle of its length, thence increasing in circumference for a certain distance therefrom, and thence diminishing in circumference toward the ends, substantially as herein described.

332,852. MACHINE FOR MAKING ARTIFICIAL LITHOGRAPHIC STONES. Julius Wehl, Reudnitz, Germany. Filed May 26, 1885. (No model.)



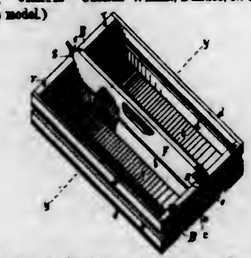
Claim.—1. The combination of drum *c*, having hollow boxes *d*, with nozzles *g*, substantially as specified.

2. The combination of drum *c*, having hollow axle *b f* and boxes *d*, with arms *e e'*, and with nozzles *g*, substantially as specified.

3. The combination of drum *c*, having boxes *d*, with trough *h*, scrapers *i*, and nozzles *g*, substantially as specified.

4. The combination of drum *c*, having boxes *d* and hollow axle *b f*, with arms *e e'*, trough *h*, scrapers *i*, and nozzles *g*, substantially as specified.

332,853. CRATE. George Wilkin, Dundee, N. Y. Filed July 22, 1885. (No model.)



Claim.—1. A crate having a raised portion, F, on one side and a recess or groove, *e*, to receive the corresponding portion, F, of another crate, substantially as described.

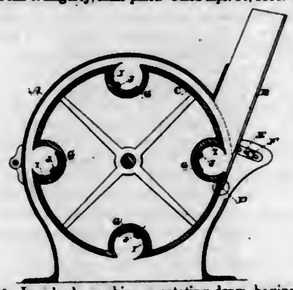
2. A crate having a raised portion on one side and an opening or recess in its opposite side, in combination with spring-actuated hooks, with apertures below the springs of the hooks, for the reception of the hooks of another crate, substantially as shown and described.

3. A crate having a raised portion, F, and dowels *r r*, or their equivalent, in combination with a crate having a recess or opening, *e*, to receive such raised portion, whereby lateral movement is prevented when so arranged together, in the manner substantially as described.

4. In combination with a crate having the raised portion F and recess *e* underneath it, the cover H, having the opening *s'* through it, substantially as described.

5. In a crate, the lid H, having protecting-pieces *f f* and an opening, *s'*, through it, in combination with spring-actuated hooks, with apertures below the springs of the hooks, for the reception of the hooks of another crate, substantially as set forth and described.

332,854. BARK-MILL. William A. Woods, Santa Cruz, Cal., assignor to John C. Hagerty, same place. Filed Apr. 20, 1885. (No model.)

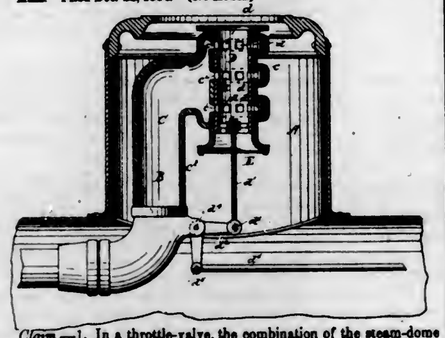


Claim.—1. In a bark-machine, a rotating drum having chambers formed parallel with its face and with closed ends and cutters fitted to project beyond the edges of the chambers, in combination with an inclosing casing, and an apron by which the bark will be held in contact with the periphery of the drum as it rotates, substantially as herein described.

2. In a bark-mill, a cylindrical rotating drum having longitudinal cylindrical chambers with closed ends, and cutters in said openings, in combination with an exterior casing having a feed apron or chute at one side, and means for adjusting and changing the angle of the said chute, substantially as herein described.

3. In a bark-mill, a rotating cylindrical drum having cylindrical chambers with closed ends formed within the drum parallel with its face, and openings through the face into the chambers, in combination with cutters or knives curved to fit the interior of the chambers, with their cutting-edges projecting through the openings, an inclosing-case, and an adjustable feed chute or apron, substantially as herein described.

332,855. THROTTLE-VALVE. Charles H. Worthen, Lawrence, Mass. Filed Dec. 22, 1884. (No model.)

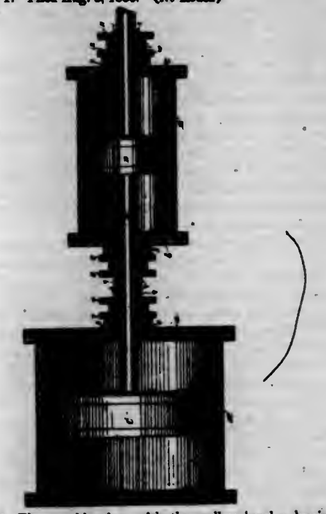


Claim.—1. In a throttle-valve, the combination of the steam-dome A of a steam-boiler, the dry-pipe B, the cylindrical casing *c* within the dome A and having an opening at both ends, and the ports or passages *c'*, connecting its opening with the dry-pipe, with the cylindrical valve D, also open at both ends and having the ports or passages *d*, and movable in said casing *c* in relation to the ports or passages *c'*, all substantially as described.

2. The combination, in a throttle-valve, of the cylindrical casing *c*, having an opening at each end, and one or more ports or passages, *c'*, connecting with the dry-pipe *c²*, with the cylindrical valve D, having openings at both ends, and one or more ports, *d*, adapted to be brought in register with the ports *c'* by the movement of the valve in the casing, the spindle *d'*, lever *d³*, and rod *d⁴*, for moving the valve-cylinder, all substantially as described.

3. The combination of the cylindrical tubular valve-casing *c* with the wire gauze or netting E extended across the opening *c'* of said casing, all substantially as and for the purposes described.

332,856. PISTON-ROD PACKING. Charles C. Worthington, Irvington, N. Y. Filed Aug. 3, 1885. (No model.)



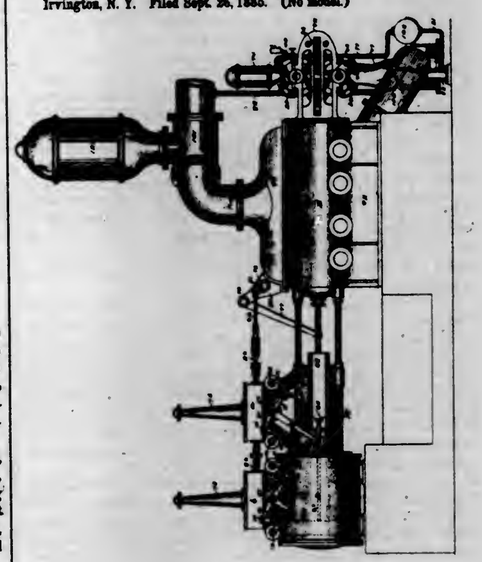
Claim.—1. The combination, with the wall or head *c*, having the stuffing-box 10, and the rod E, passing through said box, of the rigid sleeve 9, surrounding said rod, and the packing 12, surrounding said sleeve, substantially as described.

2. The combination, with the wall or head *c*, having the stuffing-box 10, and the rod E, passing through said box, of the rigid sleeve 9, surrounding said rod and having the flange 3, and the packing 12, surrounding said sleeve, substantially as described.

3. The combination, with the wall or head *c*, having the stuffing-box 10, and the rod E, passing through said box, of the rigid sleeve 9, surrounding said rod, and the yielding packing 12, surrounding said sleeve and permitting it to have a slight lateral movement to accommodate itself to distortions of the rod, substantially as described.

4. The combination, with the walls or heads *a b*, having the stuffing-boxes 7 8, and the rod E, passing through said boxes, of the sleeve 9, surrounding said rod, and the packings 5 6, surrounding said sleeve, substantially as described.

332,857. DIRECT-ACTING ENGINE. Charles C. Worthington, Irvington, N. Y. Filed Sept. 26, 1885. (No model.)



Claim.—1. The combination, with a main cylinder or cylinders and piston or pistons, of a compensating cylinder or cylinders provided with a piston or pistons and rod or rods, and supplied with a suitable motor-fluid and arranged to act in opposition to the main piston or pistons during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor valve or cock arranged to control the admission of the motor-fluid to the compensating cylinder or cylinders, substantially as described.

2. The combination, with the main cylinders and pistons forming the two sides of a duplex engine, and provided with connections by which the valve or valves of each side is or are operated by the other side, of a compensating cylinder or cylinders for each side of the engine, each provided with a piston and rod, and supplied with a suitable motor-fluid and arranged to act in opposition to the main piston or pistons to which they are connected during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor valve or cock arranged to control the admission of the motor-fluid to the compensating-cylinders, substantially as described.

3. The combination, with a main cylinder or cylinders and piston or pistons, of a compensating cylinder or cylinders provided with a piston or pistons and rod or rods, and supplied with a suitable motor-fluid and arranged to act in opposition to the main piston or pistons during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor valve or cock controlled by the resistance of the load upon the engine and arranged to admit the motor-fluid to or shut it off from the compensating cylinder or cylinders, according to the resistance offered by the load, substantially as described.

4. The combination, with the main cylinders and pistons forming the two sides of a duplex engine and provided with connections by which the valve or valves of each side is or are operated by the other side, of a compensating cylinder or cylinders for each side of the engine, each provided with a piston and rod and supplied with a suitable motor-fluid and arranged to act in opposition to the main piston or pistons to which they are connected during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor valve or cock controlled by the resistance of the load upon the engine and arranged to admit the motor-fluid to or shut it off from the compensating-cylinders, according to the resistance offered by the load, substantially as described.

5. In a pumping-engine, the combination, with a main cylinder or cylinders and piston or pistons, of a compensating cylinder or cylinders provided with a piston or pistons and rod or rods and supplied with a suitable motor-fluid, and arranged to act in opposition to the main piston or pistons during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor valve or cock controlled by the pressure in the force-main and arranged to admit the motor-fluid to or shut it off from the compensating cylinder or cylinders, according to the pressure in the main, substantially as described.

6. The combination, with the main cylinders and pistons forming the two sides of a duplex pumping-engine and provided with connections by which the valve or valves of each side is or are operated by the other side, of a compensating cylinder or cylinders for each side of the engine, each provided with a piston and rod and supplied with a suitable motor-fluid, and arranged to act in opposition to the main piston or pistons to which they are connected during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor valve or cock controlled by the pressure in the force-main and arranged to admit the motor-fluid to or shut it off from the compensating-cylinders, according to the pressure in the main, substantially as described.

7. The combination, with a main cylinder or cylinders and piston or pistons, of a compensating cylinder or cylinders provided with a piston or pistons and rod or rods and supplied with a suitable motor-fluid, and arranged to act in opposition to the main piston or pistons during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor-valve arranged to control the admission of the motor-fluid to the compensating cylinder or cylinders and to permit it to flow freely out of said cylinder or cylinders, substantially as described.

8. The combination, with a main cylinder or cylinders and piston or pistons, of a compensating cylinder or cylinders provided with a piston or pistons and rod or rods and supplied with a suitable motor-fluid, and arranged to act in opposition to the main piston or pistons during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor-valve controlled by the resistance of the load upon the engine, and arranged to admit the motor-fluid to or shut it off from the compensating cylinder or cylinders, according to the resistance offered by the load, and to permit it to flow freely out of said cylinder or cylinders, substantially as described.

9. In a pumping-engine, the combination, with a main cylinder or cylinders and piston or pistons, of a compensating cylinder or cylinders provided with a piston or pistons and rod or rods and supplied with a suitable motor-fluid, and arranged to act in opposition to the main piston or pistons during the first part of the stroke, and in conjunction therewith during the last part of the stroke, and a governor-valve controlled by the pressure in the force-main and arranged to admit the motor-fluid to or shut it off from the compensating cylinder or cylinders, according to the pressure in the main, and to permit it to flow freely out of said cylinder or cylinders, substantially as described.

10. The combination, with a main cylinder or cylinders and piston or pistons and one or more compensating cylinders and pistons, of a governor valve or cock, as 42, for controlling the admission of the motor-fluid to the compensating cylinder or cylinders, the cylinder 17, communicating with the force-main, and the piston 16, connected to the governor valve or cock, substantially as described.

11. The combination, with a main cylinder or cylinders and piston or pistons and one or more compensating cylinders and pistons, of a governor valve or cock, as 42, for controlling the admission of the motor-fluid to the compensating cylinder or cylinders, the cylinder 17, communicating with the force-main, the piston 16, connected to the governor valve or cock, and the by-pass 87, substantially as described.

12. The combination, with the main cylinder or cylinders and piston or pistons, of one or more compensating cylinders and pistons, said compensating cylinder or cylinders being provided with a volume of liquid which fills it or them behind the piston or pistons and is acted upon by a gas under pressure, substantially as described.

13. The combination, with the main cylinder or cylinders and piston or pistons, of one or more compensating cylinders and pistons, said compensating cylinder or cylinders being provided with a volume of liquid which fills it or them behind the piston or pistons and is acted upon by a gas under pressure, and a governor valve or cock which controls the pressure of the liquid upon the piston or pistons of the compensating cylinder or cylinders, substantially as described.

14. The combination, with the main cylinder or cylinders and piston or pistons, and one or more compensating cylinders and pistons, of a tank, as 103, communicating with the compensating cylinder or cylinders and containing a volume of gas under pressure, and a volume of liquid interposed between said gas and the piston or pistons of the compensating cylinder or cylinders, substantially as described.

15. The combination, with the main cylinder or cylinders and piston or pistons, and one or more compensating cylinders and pistons, of a tank, as 103, communicating with the compensating cylinder or cylinders and containing a volume of gas under pressure, a volume of liquid interposed between said gas and the piston or pistons of the compensating cylinder or cylinders, and a governor valve or cock which controls the pressure of the liquid upon the piston or pistons of the compensating cylinder or cylinders, substantially as described.

16. The combination, with the main cylinder or cylinders and piston or pistons, and one or more compensating cylinders and pistons, of a tank, as 103, communicating with the compensating cylinder or cylinders and containing a volume of gas under pressure, a volume of liquid interposed between said gas and the piston or pistons of the compensating cylinder or cylinders, and a compressor, as 83, for maintaining the proper pressure in the tank, substantially as described.

17. The combination, with the main cylinder or cylinders and piston or pistons, and one or more compensating cylinders and pistons, of a chamber, as 74, which communicates with the compensating cylinder or cylinders behind the piston or pistons and contains a volume of liquid under pressure of a gas, substantially as described.

18. The combination, with the main cylinder or cylinders and piston or pistons, and one or more compensating cylinders and pistons, of a chamber, as 74, which communicates with the compensating cylinder or cylinders behind the piston or pistons and contains a volume of liquid under pressure, and a governor valve or cock, as 42, for controlling the flow of the liquid from the chamber, substantially as described.

19. The combination, with the main cylinder or cylinders and piston or pistons, and one or more compensating cylinders and pistons, of a chamber, as 74, which communicates with the compensating cylinder or cylinders behind the piston or pistons and contains a volume of liquid under pressure, and a governor-valve, as 42, arranged to control the flow of the liquid from the chamber to the cylinder or cylinders and to permit it to flow freely back into the chamber, substantially as described.

20. In a direct-acting pumping-engine, the combination, with the piston-rod extending through and beyond the water-cylinder, of connections between the end of the rod at the outer end of the water-cylinder and the steam valve or valves for operating the latter, substantially as described.

21. In a direct-acting duplex pumping-engine, the combination, with the piston-rods 25 26, extending through and beyond the water-cylinders, of connections, as the links 78, rock-shafts 76, &c., between the end of the rod at the outer end of the water-cylinder of each side of the engine and the valve or valves of the opposite side of the engine for operating the latter, substantially as described.

22. The combination, with the steam cylinder and piston and its piston-rod extending through and beyond the water-cylinder, of connections between the end of the rod at the outer end of the water-cylinder and the steam valve or valves for operating the same, the cut-off valves at the opposite ends of the steam-cylinders, and the rod 67, secured to the piston and passing through the end of the cylinder and having connections for operating the cut-off valves, substantially as described.

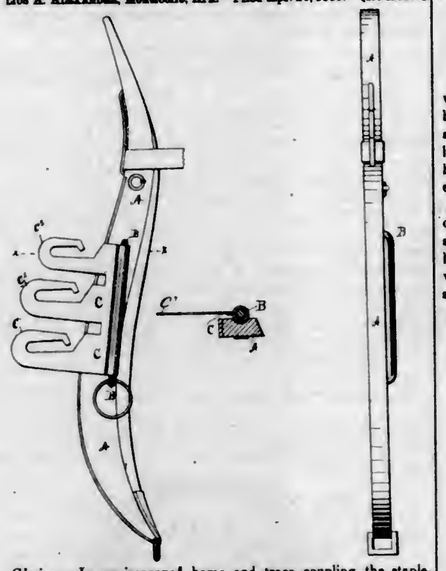
23. The combination, with the main cylinder or cylinders and piston or pistons, and one or more compensating cylinders and pistons, of a chamber, as 74, which communicates with the compensating cylinder or cylinders behind the piston or pistons and contains a volume of liquid, a tank, as 103, which communicates with said chamber and contains a gas under pressure, and a cock or valve, as 52, arranged to shut off communication between said tank and chamber, substantially as described.

332,858. TOBACCO-PIPE. James Aikman, Glasgow, County of Lanark, Scotland. Filed Oct. 2, 1884. (No model.) Patented in England Jan. 29, 1884, No. 2,317, and in France Apr. 16, 1884, No. 161,566.



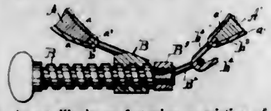
Claim.—The combination, in a tobacco-pipe or cigar-holder, of the following elements, to wit: the mount C C', formed in two parts, the one part, C, having formed or fitted in it a perforated partition, D, and the other part, C', which is adapted to fit into the part C, being made in the form of a tubular cavity for the reception of saliva, with an orifice, c, and being attached to the pipe-stem B, wherein a nipple, a^2, is fitted to project into the cavity C', substantially as set forth.

332,859. ADJUSTABLE TRACE-CONNECTION FOR HAMES. Julius A. Alexander, Monticello, Ark. Filed Apr. 20, 1885. (No model.)



Claim.—In an improved hame and trace coupling, the staple-formed bar B, adapted to be riveted to the hame, in combination with the plate C, hinged to such bar, and provided with a series of connecting-hooks arranged at different heights, all substantially as shown and set forth.

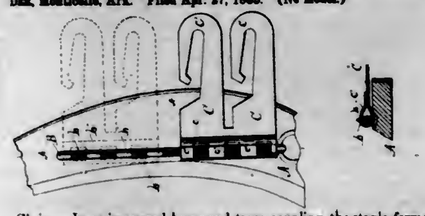
332,860. HAME-FASTENER. Julius A. Alexander, Monticello, Ark. Filed Apr. 20, 1885. (No model.)



Claim.—1. A metallic hame-fastening consisting of a tightening-screw, B, threaded in a swinging socket-piece, B', which is attached by a swinging loop or link with the lower end of one of the hames, a swivel-piece, B^2, attached to the coupling end of the screw B, a swinging hook or link, B^3, attached to said swivel-piece and arranged to engage with a hook attached to the lower end of the other hame, as described.

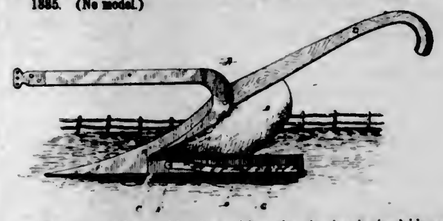
2. A hame-fastening consisting of the screw B, socket B', coupling-piece B^2, swivel B^3, and the hame-loops b^2 b^3, combined and operated as described.

332,861. ADJUSTABLE TRACE-FASTENING. Julius A. Alexander, Monticello, Ark. Filed Apr. 27, 1885. (No model.)



Claim.—In an improved hame and trace coupling, the staple-formed bar B, provided with lugs, as *b*, said bar being adapted to be riveted to the hame, in combination with the plate C, constructed with alternate looped portions, as *c'*, and recesses or slots, as *c*, said plate being hinged to said bar, and provided with a series of connecting-hooks at different heights, all substantially as shown and set forth.

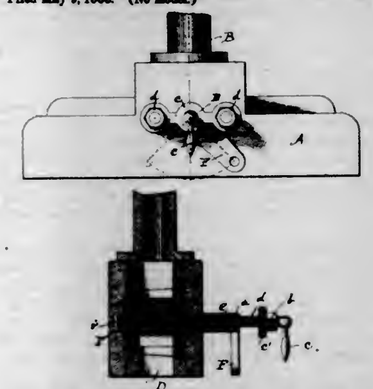
332,862. PLOW. Ingvar Anderson, Parham, Minn. Filed Sept. 7, 1885. (No model.)



Claim.—1. The combination, with a plow having its landside provided with a plurality of bolt-apertures, of a shoe consisting of a horizontal bar of steel having its forward portion curved upwardly and provided with a transverse slot, its rear straight portion provided with a vertical slotted lug, and an inward rectangular flange on its lower edge, the said flange being provided with an under bevel at its forward edge and adapted to engage the under side of the landside, substantially as specified.

2. As an improved article of manufacture, a plow-shoe consisting of a steel bar having a forward upwardly-curved portion and a rear straight portion provided with slots for attaching bolts, and an inward horizontal flange on the lower edge of its straight portion having its forward edge cut outwardly and rearwardly and beveled on its under side, substantially as specified.

332,863. STEAM-ENGINE VALVE. Henry C. Amson, Derby, Ind. Filed May 9, 1885. (No model.)

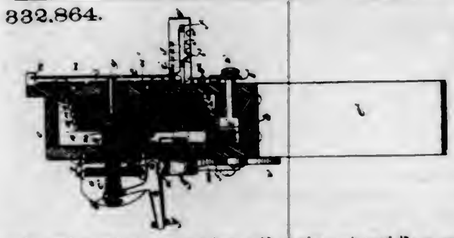


Claim.—The combination, with the steam-chest having recess i and taper circular valve-seat, and provided with stud-bolts having a yoke and set-screw, of the circular taper valve having double ports, valve-stem, and arm, and a central test forming a guide-journal on its smaller end, as and for the purpose set forth.

332,864. LUMBER-MEASURE. Ernest N. Barber, Kent, Ohio. Filed Apr. 10, 1885. (Model.)

Claim.—1. The combination, in a lumber-measuring machine, of the main wheel *a*, projecting through the lower face of the casing and having its periphery provided with engaging points, with the series of changeable-speed gear-wheels mounted on the shaft of the main wheel, a second series of changeable-speed gears meshing with the first-named

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series, and a register operated from said gearing, substantially as set forth.

2. The combination, in a lumber-measuring machine, of the main wheel *a*, the two series of changeable-speed wheels for actuating the registering mechanism, and registering mechanism connected therewith, the shaft of said registering mechanism having a disconnecting device to allow the main wheel and driving-gears to return to the zero-point independently of the said registering mechanism, substantially as described.

3. The combination, in a lumber-measuring machine, of the main wheel *a*, the two series of changeable-speed wheels, and registering mechanism, said registering mechanism being coupled with said changeable-speed wheels by a connecting and disconnecting clutch, and the driving-wheel *a*, having a retracting-spring, *j'*, to return it to the starting-point independently of the registering mechanism, substantially as described.

4. The combination, in a lumber-measuring machine, of a main driving-wheel, *a*, two series of changeable-speed wheels, and a registering mechanism, said registering mechanism being geared with said wheels by a clutch device having means for automatically connecting it when the machine is applied to the lumber, substantially as described.

5. The combination, in a lumber-measuring machine, of the piece *v* and levers *w* and *z* with the clutch device that connects the registering mechanism with the driving-gear, the said piece *v* being actuated by contact with the lumber when the machine is applied thereto, substantially as described.

6. The combination, with a lumber-registering machine and the automatic mechanism for connecting and disconnecting its drive-wheel with and from the registering mechanism of a piece, as at *v*, connected to the said connecting mechanism and projecting below the lower face of the casing adjacent to the said drive-wheel, substantially as set forth, whereby, when drawn across a board the said piece *v* will automatically cause the disengagement of the clutch and registering mechanism the instant the said piece passes over the rear edge of the measured board.

7. The combination, in the lumber-registering machine, with the clutch mechanism and the main drive-wheel *a*, constructed to be connected with the registering mechanism by said clutch, of the longitudinally-adjustable piece *v*, mounted on the pivoted lever *w* of the said clutch mechanism and extending below the lower surface of the machine, adjacent to the drive-wheel *a*, whereby the said piece may be adjusted toward the pivot of the lever *w* in the measurement of flooring, &c., substantially as set forth.

8. In a lumber measuring-machine, the combination of the main drive-wheel *a*, projecting through the lower face of the casing, with the starter *d'*, connected to and rotating with the drive-wheel, the said starter being arranged with its vertical edge at the front part of that portion of the wheel projecting through the casing, whereby when the measurer is being drawn across the board the starter *d'* will strike the edge of the board and positively start the drive-wheel at that point, substantially as set forth.

9. The starting-slide *d'*, arranged in a groove in the face of the main wheel *a*, and having a stud or projection, *d'*, engaged with the spiral groove *f'* of the case to retire said slide, substantially as described.

10. The combination, with main shaft, of the spring *j'*, for returning the same to its normal position, the main or drive wheel *a*, two series of interchangeable differential wheels, and a registering mechanism geared with said wheels by a disconnecting-clutch, substantially as described.

11. The combination, with the main wheel *a* and two series of changeable-speed wheels, of the connecting device for the registering mechanism, consisting of the hollow shaft *k*, and point-disk *l*, socket-shaft *m*, and leather-faced disk *o*, and the shaft *q*, said shaft being coupled to the socket-shaft by a pin and slots, one of the sets of wheels being secured to the hollow shaft, and the shifting-levers being connected to the shaft *m*, substantially as described.

12. The combination of lever *z*, spring *d'*, leather-faced disk *o*, point-faced disk *l*, and the shafts *k m*, substantially as described.

13. The combination, in a lumber-measuring machine, of the main driving-wheel *a*, two series of differential wheels, a disconnecting clutch device for the registering mechanism, retracting-spring *j'*, and the brake *k' l*, substantially as described.

14. The combination, with the registering mechanism of a lumber-measuring-machine, of a supplemental register adjustably secured to the machine adjacent to the main register and constructed to be thrown into and out of engagement therewith, substantially as set forth, whereby lumber of different grades may be measured in the manner herein set forth.

15. The auxiliary series of registering-dials arranged on a pivoted bar, *p'*, and provided with a shifting bar, *z'*, in combination with the main registering apparatus to connect and disconnect therewith, substantially as described.

16. The combination of guard *d'* with the handle *d* of the lumber-measuring machine, the horizontal part of the said guard being secured below the handle in the plane of the lower face of the casing, substantially as described.

332,865. DEVICE FOR PICKING COTTON. GERARD BEEKMAN, New York, N. Y. Filed Mar. 19, 1885. (No model.)



Claim.—1. In a machine for harvesting cotton, picking devices consisting of one or more cords or wires and means for rotating them upon their longitudinal axes, substantially as described.

2. In a cotton-picking machine, the combination of picking devices consisting of a cord attached at one end to a shaft, B, tension-spring G, and wheel F, and at the other end in a suitable bearing in the frame E, substantially as described.

332,866. FARE-REGISTERING MACHINE. JOHN B. BRETON, New York, assignor to the Railway Register Manufacturing Company, Buffalo, N. Y. Filed Nov. 11, 1884. (No model.)

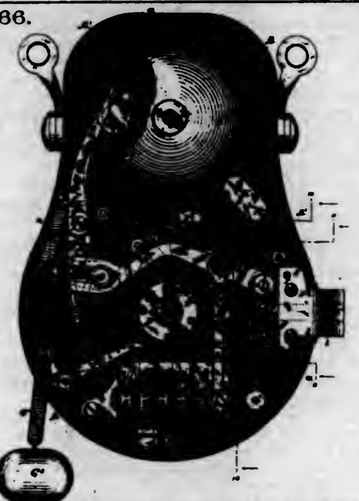
Claim.—1. The combination, with a trip-register, its actuator, and a resetting mechanism for said register, of a notched or recessed direction-indicator, a gear-connection between said indicator and said resetting mechanism, and a locking mechanism adapted to lock the main actuator when the resetting operation is commenced, and release said actuator when the resetting operation is completed, substantially as described.

2. The combination, with a trip-register, its actuator, and a resetting mechanism for said register, of a direction-indicator, a gear-shaft connecting said resetting mechanism and said indicator, and a pivoted lever moved in one direction by said gear-shaft to lock the actuator of the machine and free the direction-indicator and trip-register, and in the other direction by a spring when said indicator and trip-register have shifted and reset, respectively, to lock said indicator and register-resetting mechanism and release said actuator, substantially as described.

3. The combination of a trip-register, an actuator thereof, and resetting mechanism therefor, with a direction-indicator, locking mechanism which, when the trip-register is free to be reset, locks the actuator thereof, and a single knob or handle and connecting devices, whereby said locking mechanism is controlled and the indicator and trip-register shifted and reset, respectively, by a single operating mechanism, substantially as described.



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4. The combination, with a trip-register, a resetting mechanism for said register, and a direction-indicator, of a gear-shaft connecting said resetting mechanism and indicator, and acting to simultaneously reset said register and shift said indicator, substantially as described.

5. The combination, with a trip-register, a resetting mechanism for said register, and a zero-register or trip-registering wheel, of a gear-shaft connecting said resetting mechanism and trip-registering wheel, substantially as described.

6. The combination, with a direction-indicator and a trip-registering wheel, of a gear-shaft connecting said indicator and said wheel, whereby the number of times the indicator is shifted is shown, substantially as described.

7. The combination, with a trip-register, a resetting mechanism for said register, a direction-indicator, and a trip-registering wheel, of a gear-shaft connecting said resetting mechanism, indicator, and trip-registering wheel, substantially as described.

8. The combination of a trip-register, the actuator of said register, a resetting mechanism for said register, a direction-indicator, a gear-shaft connecting said resetting mechanism and said indicator, so as to cause them to be movable together, a pivoted lever fitted at one end to engage locking recesses or notches in said indicator, and at the other side of its pivot with a locking connection to engage said actuator, and a cam or connection of said gear-shaft to disengage said lever from said indicator, to permit it to be shifted and the trip-register to be reset, and at the same time lock the actuator from the counting operation, substantially as described.

9. The combination and organization, in a registering-machine, of an inclosing-casing, a centrally-located trip-register, a general register mounted in the lower end of said casing, below said trip-register, a lever pivoted near one side of the casing and extending transversely across it above said trip-register, a push-arm connected to said lever at one side of the trip-register and extending downward to act upon the actuating ratchet-wheel of the general register to operate it step by step in the counting process, an endwise-movable handle or slide jointed to said lever at the side of the trip-register opposite to said push-arm and projecting at its lower end through a guide-slot in the lower end of said casing, to afford ready means for grasping the slide to operate it by a downward pull, and an operating pawl or connection, also connected with said slide to actuate the trip-register, substantially as described, whereby an effective operating connection is secured for both the trip and general registers, with a compact organization of the parts.

10. The combination, with a driving or operating ratchet-wheel of a registering mechanism, and with the inclosing-casing thereof, of a lever-arm having an angular or short bent end pivoted at the angle thereof within said casing, a push arm or pawl carried by the long end or portion of said lever-arm and acting upon said ratchet-wheel to operate it, a spring acting on the short angle end of said lever-arm to normally maintain said lever-arm in position to engage its operating arm or pawl with the teeth of the ratchet-wheel, and a handle to operate said lever-arm through its long arm extending outside the casing to be grasped by the operator, substantially as described.

11. The combination of a register-casing, a lever-arm having a short angular or bent end pivoted at the angle thereof within said casing at or near one side thereof, and said lever-arm extending transversely across the machine, a push arm or pawl pivoted to the long arm or portion of said lever-arm near said pivoted angle end thereof, a registering mechanism having an actuating ratchet-wheel to be acted upon and operated by said push arm or pawl, a spring acting on the short arm of the angle or bent end of said lever-arm to return said lever-arm to its normal position after an actuation thereof, and a reciprocating endwise-movable handle or slide to operate said lever-arm through its long arm, and extending downward through the bottom edge of the casing to be operated by a downward pull, substantially as described.

12. The combination, with the actuating ratchet-wheels of a trip and a general register, of a rocking lever-connection with the back plate of the register extending across the machine, operating pawls for the trip and general registers carried by said lever-connection, an endwise-movable operating slide or handle jointed to said lever-connection at one side of the machine and movable up and down to vibrate said connection to operate the registers, a pivoted bell-hammer, also vibrated and tripped by said lever-connection, and a spring to return said lever-connection, operating-pawls, and handle to their normal position after the downward pull on the handle is released, substantially as described, whereby the registers are operated and the alarm sounded by means of a simple and effective operating connection, with a compact organization of the parts.

13. The combination, with a register-operating ratchet-wheel and a pivoted lever carrying a pawl to engage with and operate said ratchet-wheel, of a pivoted punch-operating lever connected with and operated by said pawl-carrying lever, and a straight reciprocating slide connected with said pawl-carrying lever by a link-connection to operate said lever, substantially as described.

14. The combination, with an actuating ratchet-wheel of a register and its actuator, of a pivoted lever and a spring acting thereon to keep one end of said lever in contact with said ratchet-wheel, said lever being fitted at the other end to be acted upon at the close of the counting movement by a projection on said actuator, substantially as described, whereby said lever is firmly held against said ratchet-wheel at the close of the counting operation to stop said wheel and prevent it from moving farther than it should go.

15. The combination, with a fast register disk or dial and its carrying or supporting device, of a detachable friction-ring, between which and a frame-plate the edge of the disk rotates, whereby friction is exerted on the edge of said disk to retard its motion, substantially as described.

16. The combination, with a register disk or dial and its carrying or supporting device, of a friction device fitted to act on said disk or dial, and a stop device acting on said carrying or supporting device of said disk, substantially as described, whereby the movement of the disk and its supporting device in the counting operation is limited by said stop device, and in addition friction is independently exerted upon the disk, whereby the connection between said disk and said carrying or supporting device is rendered durable.

17. The combination, with the trip-disks having projections thereon, of a zero gathering-plate having a pivoted arm to act on the projections of said disk, said arm forming a rigid connection with the trip-disks in the resetting operation, while yielding to permit the passage of the disks in the counting operation, substantially as described.

18. In combination with a trip-register operated step by step in the process of consecutive counting and capable of being reset to zero or the starting-point, a zero-register wheel having gear-teeth around its edge, and numerals or figures thereon, and a pinion-wheel mounted on an independent axis, and meshing with said teeth to move the zero-register wheel when the trip-register is reset, substantially as described.

19. The combination, with a trip-register having units and tens dials to show the count or tally thereof, of a resetting mechanism acting on pins or projections on the face of said dials to reset them, and a zero-register wheel having gear-teeth in its edge, which registers the number of resetting operations of said trip-register, said zero-register wheel being operated by means of a pinion-wheel operated when the resetting mechanism is operated, substantially as described.

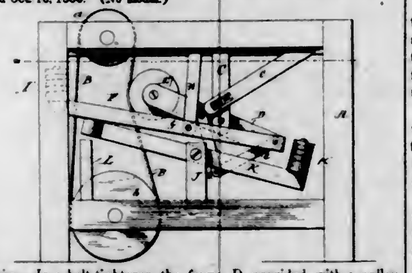
20. In combination with a trip-register, a zero-register or trip-registering wheel having gear-teeth in its edge, a pinion to operate said zero-register wheel, a resetting mechanism to reset said trip-register, and an operating-connection between said resetting mechanism and said pinion, substantially as described, so that when the trip-register is reset the pinion-wheel is operated to change the indication of the zero-register or trip-indicator.

21. The combination, in a fare-register, of a trip-registering mechanism, a pivoted lever carrying a pawl to actuate said trip-register in the counting process, an endwise-movable slide or prime mover jointed to said lever and extending outward through the casing to operate said pawl-carrying lever, a pivoted or rocking catch or lever to lock the prime mover from operation when said catch is in one position, a resetting mechanism to reset the trip-register, and a connection between said locking catch or lever and said resetting mechanism, whereby when the resetting mechanism is operated to bring the trip-register to zero the actuator is locked from an actuating movement, while when the trip-register is reset to zero the locking catch or lever is moved out of locking contact with the actuator, as set forth.

22. In the organization of a fare-registering machine, the combina-

tion, with an inclosing-casing, of a substantially central post or axis, around which the trip-register supporting or carrying devices work, an alarm device mounted upon a post above said trip-register in the upper end of the casing, a permanent or general register mounted in the lower end of said casing below said trip-register devices, a lever-connection extending crosswise of the machine carrying operating pawls or connections to act upon the ratchet-wheels of the trip and general registers and to operate the alarm mechanism, to move said registers simultaneously in the counting process and sound the alarm, and a reciprocating or endwise-movable actuating slide or prime mover jointed to said lever-connection, and extending outside the casing to be operated by hand, substantially as described, whereby a highly-effective organization of the parts of a fare-register, particularly of the actuating-connections thereof, is attained, substantially as described.

332,867. BELT-TIGHTENER. PHILIAS H. BINET, East Brighton, Vt. Filed Oct. 10, 1885. (No model.)

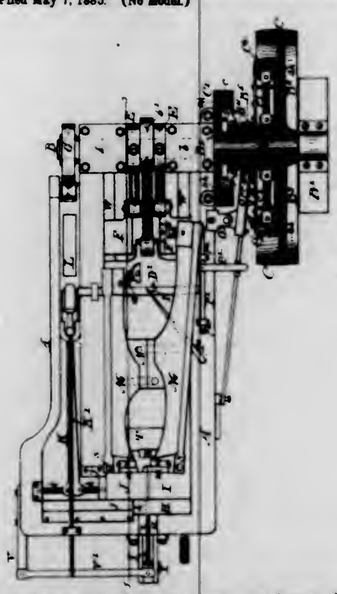


Claim.—In a belt-tightener, the frame D, provided with a pulley adapted to be moved so as to engage with the belt, a weighted frame pivotally attached thereto, in combination with the bar K, carrying at one end a weight, the opposite end being adapted to engage with a spring-catch, substantially as shown, and for the purpose set forth.

332,868. COMPOSITION OF MATTER FOR WATERPROOFING PAPER. CHARLES S. BIRD, East Walpole, Mass. Filed July 20, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used for waterproofing paper, consisting of resin, paraffine, and silicate of soda in about the proportions specified.

332,869. BOLT-BLANK MACHINE. JOHN R. BLAKESLEE, Cleveland, Ohio. Filed May 7, 1885. (No model.)



Claim.—1. In a machine for making square and hexagon headed bolt-blanks by a continuous operation, a mechanism constructed and arranged to cut off the blanks, a mechanism constructed and arranged for gripping said blanks, a mechanism constructed and arranged for hammering and swaging the heads on said blanks, a mechanism constructed and arranged for automatically shifting the clutching device for stopping the machine and unlocking the grippers, and a mechanism constructed and arranged for discharging the headed blank, all combined and operating substantially in the manner and for the purpose specified.

2. The combination of the steel backing H, having the hole h, through which the heated bar is fed, the stationary die I, and the movable gripping-die J, connected by links *k k* with the pitman K, connected to and operated by the sliding frame L, which is actuated by the cam G on shaft B, by which the blank is severed from the bar and gripped or held for the upsetting and hammering operations.

3. The levers M M, arranged in pairs, and fulcrumed in the cross-piece N, and provided with the adjustable hammers *m m* on one end, the opposite ends connected by links *d d f f* to the sliding blocks D' and F, which are connected by pitman D and eccentrics E E with crank-shaft B, the movements of said sliding blocks D' and F operating the levers M for hammering the sides of the bolt-head, all said parts combined substantially as described.

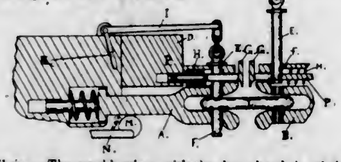
4. The sliding block T, having the heading-die R, and riding on the ways W in the sides of frame A, said block T being connected to and operated by the rods *r r*, sliding through the cross-piece N, and attached to the sliding block D', which derives its motion by pitman D from driving-shaft B, all combined and arranged to operate as and for the purpose specified.

5. The combination, with the hammer-levers M, of the breaker device consisting of the piece of cast-iron *n'*, arranged in the chamber in the end of the lever, and the block n^2, bearing against said cast-iron *n'* and connected to the link *f* and bail n^2, substantially in the manner shown, and for the purpose specified.

6. The clutch mechanism, consisting of the flanged disk C', permanently attached to the frame A, and wheel C, provided with flange C^2, the disks B^2 B^3, fixed on shaft B, and provided with the ways WS, for carrying the brake-shoes *sh*, which are connected by links *c c* and *c' c'* to the sliding sleeve B^4, and the ring B^5, attached to the shifting-lever O, hinged to bracket O' on side of frame A, said lever O having sliding bar provided with pins *p p p* and rollers *r'*, said pins and rollers being struck and moved by the leaf Q and projection *q* on the disk B^3, whereby the said lever O is moved and the clutch shifted for stopping the machine at one or more revolutions of the driving-shaft B, substantially as described.

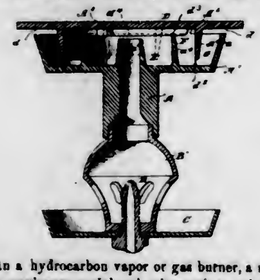
7. The combination, in a machine for making bolts, of the bracket Y, having slide *y*, carrying push-pin *x*, and the lever V', pivoted to arm V on frame A, and having catch-lever V^2, which is actuated by rod K', connected to sliding frame L, which, when it moves, draws on the rod K, that moves the lever V', thereby pushing the pin *x* inward at the same time the dies are opened, and thus discharging the bolt therefrom, substantially as described.

332,870. CAR-COUPLING. IRA H. BRADSHAW, Sacramento, Cal. Filed Apr. 29, 1884. (No model.)



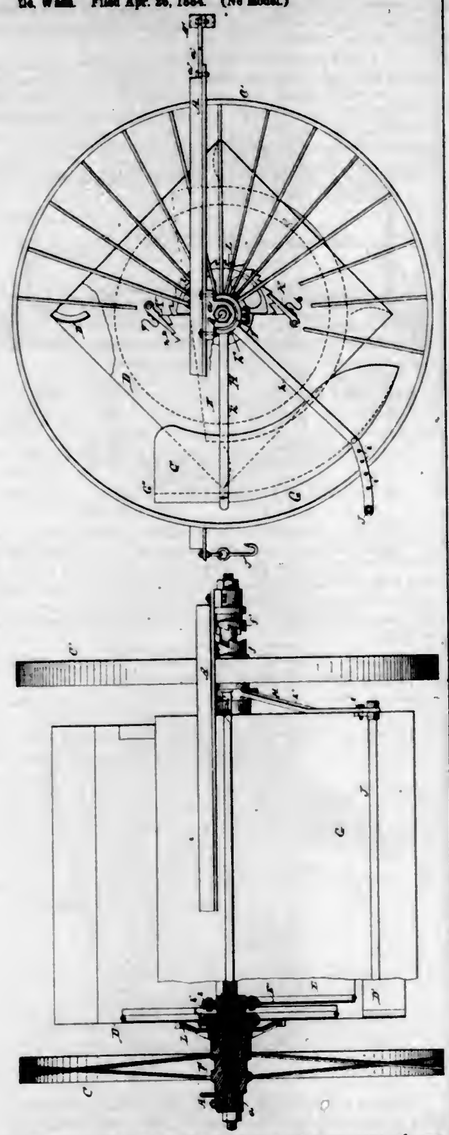
Claim.—The combination, with the draw-head A, of the frame G, having the guide-rod P, the spring H thereon, the catch J, the coupling-pin E, having the notch at its lower end, the lever I, connected with the coupling-pin, and the hand-lever K, to which the lever I is connected, as set forth.

332,871. HYDROCARBON VAPOR OR GAS BURNER. ADELBERT M. BRAINARD, Chicago, Ill. Filed Sept. 3, 1884. (No model.)



Claim.—In a hydrocarbon vapor or gas burner, a mixing-chamber having a single continuous peripheral exit-opening, and divided into two or more compartments by apertured partition-walls interposed between the inlet and exit openings of the said mixing-chamber, the areas of the apertures in the partition-walls and the exit-opening being increased gradually from the inlet to the exit opening, substantially as and for the purpose set forth.

332,872. DIRT SCRAPER AND CARRIER. HENRY M. BROWN, Seattle, Wash. Filed Apr. 26, 1884. (No model.)

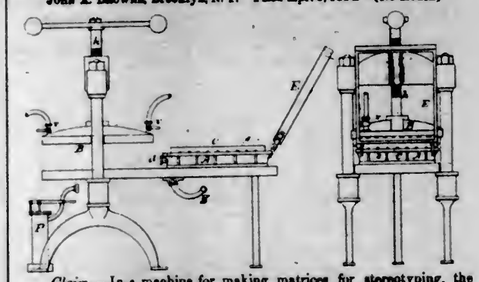


Claim.—1. The combination, in an excavating apparatus, of a supporting-frame, a shaft journaled therein, carrying-wheels mounted loosely thereon, a dirt-carrying receptacle rigidly secured on said shaft, a clutch-disk, *f*, rigidly secured to said shaft, a second clutch-disk adapted to slide longitudinally thereon, but revolving therewith, and a lever for effecting the engagement and disengagement of said disks, a turning-plate secured loosely on each side of the receptacle and provided transversely with carrier-blades, devices for driving said carriers from the shaft, and a scraper, substantially as set forth.

2. The combination, in an excavating apparatus, of a receptacle mounted rigidly on the main axle of the machine, clutch-disk *f*, rigidly secured to said shaft, a second clutch-disk adapted to slide longitudinally thereon by revolving therewith, and a lever for effecting the engagement and disengagement of said disks, plates located loosely on said shaft and connected by carriers, and devices for throwing said plates into and out of gear with the carrying-wheels, substantially as set forth.

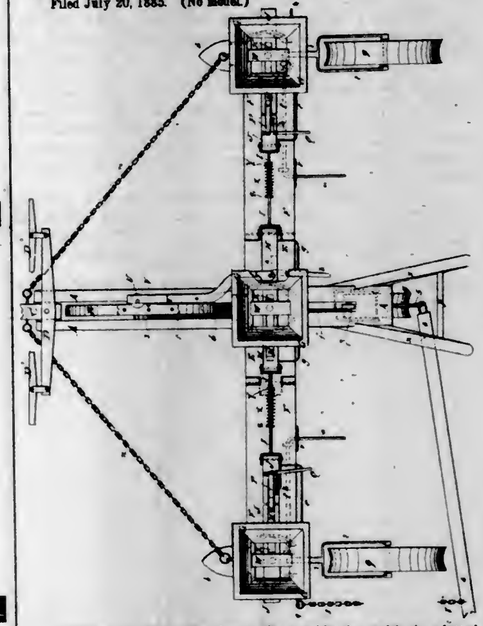
3. The combination, in an excavating apparatus constructed and operating substantially as described, of a scraper, rods *h'*, properly supported and pivotally connected to the axle, and rods *h*, properly supported and each provided with a series of perforations, and pivots supporting the scraper and engaging the said perforations, as described, substantially as set forth.

332,873. APPARATUS FOR MAKING STEREOTYPE MATRICES. JOHN X. BROWNE, Brooklyn, N. Y. Filed Apr. 9, 1884. (No model.)



Claim.—In a machine for making matrices for stereotyping, the combination of the following elements: a heated platen, B, bed A, provided with a hinged frame, E, chase C, provided with the grooves *s s*, and air-pump P, constructed and operating substantially as and for the purposes specified.

332,874. CORN-PLANTER. EDWARD BURKHOLDER, Glendale, Ky. Filed July 20, 1885. (No model.)



Claim.—1. In a corn-planter, the combination, with the slotted beam A, the jointed cross-bar E F, and the seed-boxes G, of the drive-wheel B, having side spokes, V, the check-lever T, having friction-wheel U, and the seed-dropping slides H J, connected by pivoted rods I, provided with springs X and collars Y, substantially as herein shown and described, whereby the seed-dropping slides will be operated by the advance of the machine whatever be the position of the parts of the jointed cross-bar, as set forth.

2. In a corn-planter, the combination, with the seed-dropping slides J, made in two parts tongued and slotted to each other, of the connecting-bars P, the levers Q, the catch-plates R, and the lever-holding springs S, substantially as herein shown and described, whereby the parts of the said slides can be readily adjusted to cause the seed-receiving holes to register with the discharge-holes through the bars E, as set forth.

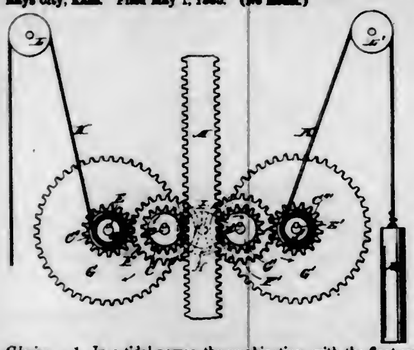
3. In a corn-planter, the combination, with the seed-dropping slide H I J and the plow-standards *a*, of the pivoted chutes *c*, having reversely-inclined plates *j k* and stationary plate *l*, the bent rods *e g*, and the springs and collar *i h*, substantially as herein shown and described, whereby the said chutes will be vibrated to control the dropping of the seed by the movements of the seed-dropping slide, as set forth.

4. In a corn-planter, the combination, with the end parts, F, of the cross-bar, and the draw-bails *r*, of the side packing-wheels, *q*, said bails

having axial-cranked rearwardly-projecting arm *u*, and the catch-bars and springs *v w*, substantially as herein shown and described, whereby the plows can be adjusted and raised from the ground, as set forth.

5. In a corn-planter, the combination, with the slotted beam A and the drive-wheel B, of the lever *z*, the bar-pawl 1, and the ratchet-wheel 2 upon the drive-wheel, substantially as herein shown and described.

332,875. TIDAL POWER. FELIX R. BOSSARD and MARTIN GATES, Hays City, Kans. Filed May 1, 1885. (No model.)



Claim.—1. In a tidal power, the combination, with the float-supported rack-bar A, of two series of gearing-clutches, winding-drums, and weights, constructed to be operated in alternation, as herein described.

2. The combination, with the rack-bar A, of the clutch spur-wheels C and C', the shafts B B', spur-wheels F F', clutch spur-wheels C² C³, shafts E E', spur-wheels G G', pinion H, and shaft I, as herein specified.

3. In a tidal power, the combination, with the winding-drum, rack-bar A, and intermediate mechanism, of clutch-wheels, each consisting of a sleeve, *c*, collars *a a'*, rim D, rollers *b b'*, and the spring-pressed clutch-arms *d*, pivoted in the sleeve *c*, as herein described.

4. In a tidal power, the combination of a rack-bar, as A, carried by a float, with a clutch arranged to engage with said rack-bar, and mounted on a shaft carrying a pinion, as F', a shaft, as E', carrying a pinion, as C''', and a drum, as J', all arranged substantially as described.

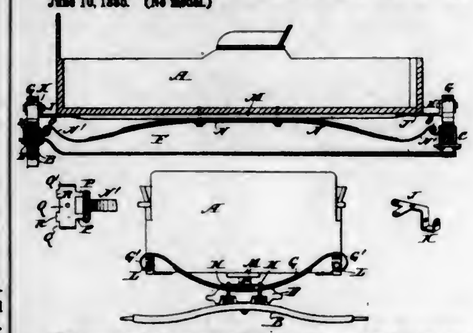
332,876. RAILROAD SNOW-EXCAVATOR. J. N. BUTLER, Kingsley, Iowa. Filed Apr. 30, 1885. (No model.)



Claim.—1. A snow-excavator for railroads, consisting of an upwardly and rearwardly inclined frame having a pitch to opposite sides from a longitudinal central point, and a forward cutting-edge tapering rearwardly from its center, and provided with lateral and an intermediate vertical cutter, the whole supported on a track and adapted to serve in front of a car, substantially as specified.

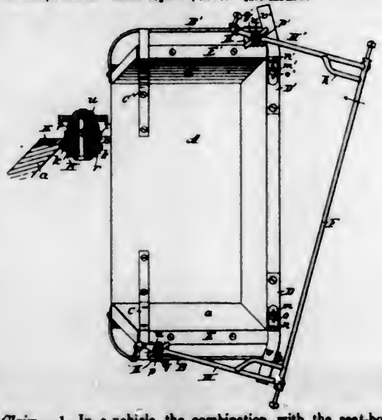
2. A snow-excavator for railroads, consisting of an inclined frame having a forward cutting-edge tapering rearwardly from a central point, a vertically-inclined cutter rising from the said point, and similar cutters arranged at the rear ends of the said tapering edge, the whole mounted upon wheels and adapted to serve in front of a car having an oppositely-inclined top, substantially as specified.

332,877. VEHICLE-SPRING. CORNELIUS H. CAIN, St. Louis, Mo. Filed June 10, 1885. (No model.)



Claim.—A spring mechanism for vehicles, comprising the two central longitudinal brace-springs, N N, secured to the under side of the vehicle-body at their inner ends and pivotally connected to the axles at their outer ends, and the upward and outward curved end springs secured rigidly at their central portions to the axles and pivotally connected at their outer ends to the four corners of the vehicle-body, substantially as set forth.

332,878. BUGGY-TOP. EDWARD CARROLL and PATRICK RYAN, Guelph, Ontario, Canada. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a vehicle, the combination, with the seat-box provided with side arms, of a top-supporting frame pivoted to each side of the seat-box, between the sides of the box and the said arms, substantially as described.

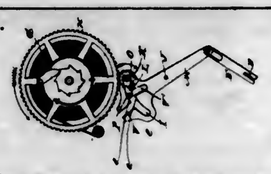
2. In a vehicle, the combination, with the seat-box A, provided with the side arms, B, and the wearing-plates E, of the top-supporting frame consisting of the bar F, the arms H, and connecting-rods *r*, the sliding blocks K, the pivot-bolts *q*, and nuts *u*, substantially as described.

3. In a vehicle, the combination, with the seat-box A, provided with the side arms, B, the wear-plates E, and the projecting supports *v*, of the top-supporting frame consisting of the bar F, provided with the arms *s*, the arms H, having braces *h*, and the connecting-rods *r*, the sliding blocks K, the pivot-bolts *q*, and the stop *n*, substantially as herein shown and described.

332,879. ROTARY ESCAPE-MOVEMENT. WILLIAM D. CHAPMAN, Theresa, N. Y. Filed Oct. 3, 1885. (No model.)

Claim.—1. In a revolving escape-movement consisting of a lever, M, having a slot, I, concentric with the pivot J, and two corresponding slots, V V', at right angles thereto in opposite directions, so as to form corresponding shoulders, *a a*, in the slot I, in combination with the crank L, substantially as herein described.

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2. In combination with the revolving escape mechanism herein described, consisting of a crank, L, slotted lever M, vibrating on a pivot, J, centrally, the intermediate lever, F, and flexible strap D, adapted to be used in a horizontal reciprocating movement in clocks and watches, substantially as herein set forth.

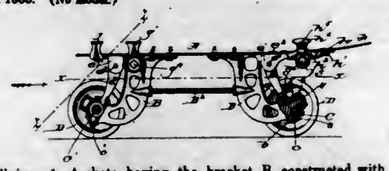
332,880. PEN-HOLDER. JULIUS M. CLAPP, Boston, Mass. Filed Sept. 28, 1885. (No model.)



Claim.—1. The bored or hollow holder A, and the block *e* therein, combined with a centrally-slotted plug of suitable diameter to fit the holder, the slot in the plug retaining the pen substantially in line with the axis of the holder, substantially as described.

2. The holder A and its block *e*, combined with the conical plug having a head, *b*, of larger diameter than the shank, and screw-threaded portion *d*, the said head and shank together being slotted centrally to retain a pen substantially in a line with the axis of the holder, substantially as described.

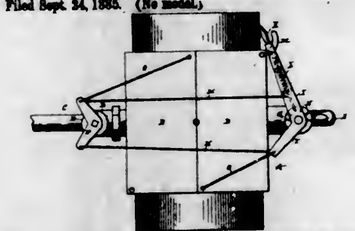
332,881. SKATE. THEODORE D. DAVIS, Williamsport, Pa. Filed Oct. 5, 1885. (No model.)



Claim.—1. A skate having the bracket B, constructed with the circular bearing portion *b* and the stud 4, combined with the socket-piece C, having the lip *c*, fitted to the bearing *b* and upon the stud thereof, and held upon the same by nuts 5 6, the wheel-axles projecting from said socket-piece, and means, as set forth, to permit said socket-piece to rock upon its bearing, substantially as described.

2. The sole-plate, its attached projections 10 and A, the carriages A^3, fitted to slide therein, and provided with sole-engaging dogs A^6, pivoted on posts A^3 of said carriages, and with threaded sockets, combined with a right-and-left-threaded screw, *m*, and with a holder, A', for the said screw, substantially as described.

332,882. MEASURING-FAUCET. SCOTT B. DERBY, Utica, Nebr. Filed Sept. 24, 1885. (No model.)



Claim.—1. A measuring-faucet having a measuring-receptacle and inlet and outlet valves, a lever on the stem of the inlet-valve, a lever with a handle and lock-bolt on the outlet-valve, and connecting-rods extending from one lever to the other, substantially as set forth.

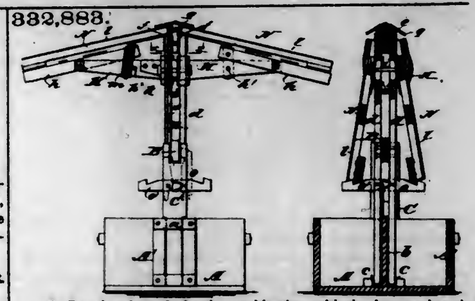
2. A faucet having a measuring-receptacle, inlet and outlet valves with extended stems, pivoted lids to said receptacle, connected levers on the stems, also having connection to the lids, a spring-bolt on the lever on the outlet-valve, an interior gage, and a separate handle on the outlet valve or faucet, substantially as set forth.

332,883. HOP-BOX SHADE. ALFRED ENGLE, West Amboy, N. Y. Filed Oct. 20, 1885. (No model.)

Claim.—1. In a hop-box shade, the combination, with the base or box A, of the lug-pole B, supported by standards C C, and carrying a central standard, D, adapted to support the ridge-pole, substantially as described.

2. In a hop-box shade, the combination, with the base or box A, of the lug-pole B, standards C C, central standard, D, ridge-pole *e*, shade-frames N N, and a folding bar, H, substantially as described.

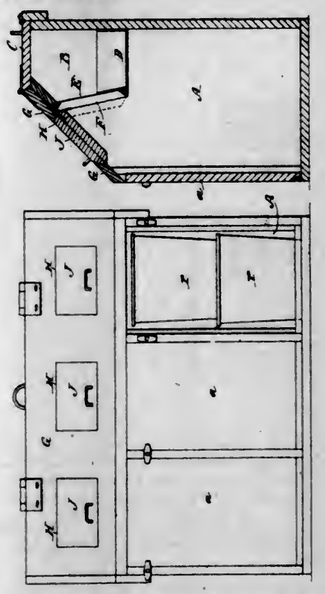
332,883.



3. In a hop-box shade, the combination, with the base or box A, of the following-named elements: lug-pole B, standards C C, standard D, ridge-pole *e*, cover *q*, shade-frames N N, and a compound folding bar formed of the sections H A A, substantially as set forth.

4. In a hop-box shade, the combination, with the shade-frames and their supporting-frame, of catches formed from folding arms *o o'*, pivotally connected to the supporting-frame and formed the one with a recess and the other with a projection on their approaching ends, substantially as set forth.

332,884. REFRIGERATOR. JOHN FALKNER, Orange, N. J. Filed July 10, 1885. (No model.)



Claim.—1. The provision-chamber A and ice-box B, separated from each other by the partition E, formed with openings F, in combination with the lids J, arranged to close both the provision-chamber and the ice-box, the latter, when swung back, to open the provision-chamber, substantially as described.

2. The refrigerator having the inclined top board, G, provided with openings H and lids J, in combination with the partition E, separating the provision-chamber from the ice-box, and formed with openings F in line with the openings H, substantially as and for the purposes set forth.

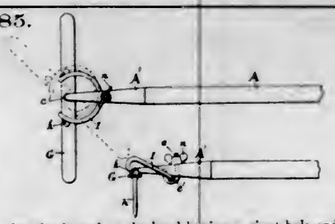
3. The refrigerator herein shown and described, formed with the lower doors, *a*, and upper inclined doors, J, to the provision-chamber, the ice-box B, separated from the provision-chamber by partition E, formed with opening F, in combination with the said inwardly-opening doors J, adapted to close the openings F when the provision-chamber is opened, substantially as described.

332,885. GARDEN-RAKE. JAMES B. FITZPATRICK, St. Albans, and ALVA LEWIS, Wheeling, W. Va. Filed May 15, 1885. (No model.)

Claim.—1. A rake having in combination a handle provided with a set-screw hook and a pivot-hook, and a rake-head having a pivot-hole and a segment-ring which is clamped by the set-screw hook, as set forth.

2. A rake having in combination a handle provided with a set-screw

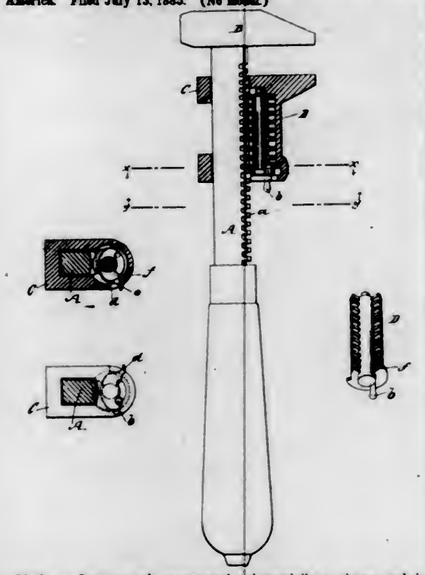
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hook and a pivot-hook, and a rake-head having a pivot-hole and a segment-ring provided with notches *l*, as set forth.

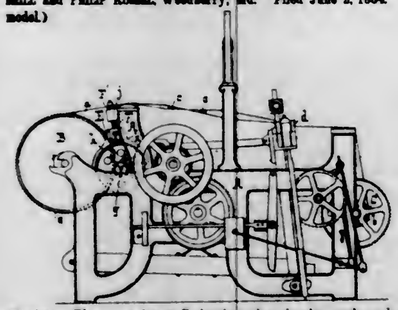
3. A rake having in combination a handle provided with a hole, *d*, a socket, *f*, and a pivot-hook, a set-screw hook having its screw part in the hole and its hook end in the socket, and a rake-head having a pivot-hole and a segment-ring which is clamped by the set-screw hook, as set forth.

332,886. WRENCH. MORGAN GALE, Corozal, San Salvador, Central America. Filed July 13, 1885. (No model.)



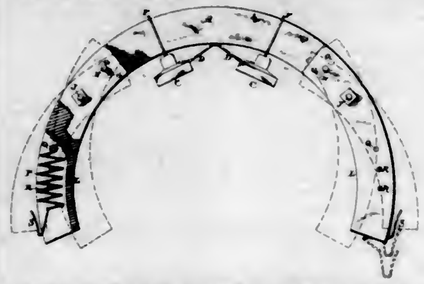
Claim.—In a wrench constructed substantially as shown and described, and having a toothed shank and a mutilated screw-spindle, as D, held in a socket of the movable jaw, the combination, with said spindle provided with a notch, as *f*, of the spring *d* and catch *e*, as set forth.

332,887. LET-OFF MECHANISM FOR LOOMS. WILLIAM B. GAMBRILL and PHILIP ROESSE, Woodberry, Md. Filed June 2, 1884. (No model.)



Claim.—The yarn-beam B, having the circular rack *e*, shaft *g*, pinion *s* on the shaft *g*, in gear with the said circular rack, and friction-pulley D on the shaft *g*, combined with the loom-frame having the threaded lug *j*, projecting from and forming a part thereof, screw F, which passes through the said threaded lug, curved block E, resting on the friction-pulley and provided with the recess *k*, curved plate *l*, situated in the recess *k*, and spring G, substantially as and for the purpose specified.

332,888. BACK-BAND. JAS. W. GARDNER, Whitaker's, N. C. Filed Oct. 10, 1885. (No model.)



Claim.—1. The combination of the central part, A, with the pivoted end pieces provided with springs, substantially as shown.

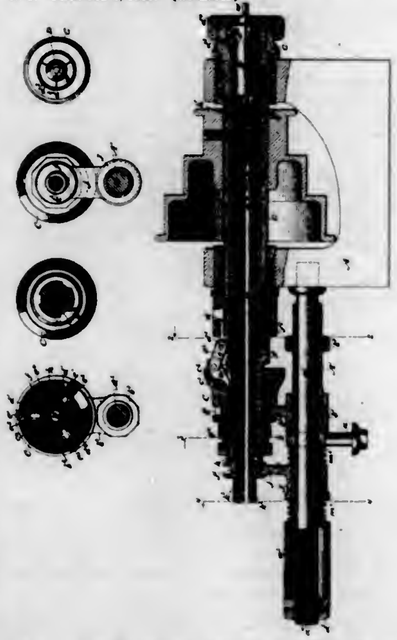
2. The combination of the rigid central piece, A, with the rigid end pieces, which are pivoted thereon, and which can be adjusted in relation to each other, substantially as described.

3. The combination of the saddle, the central piece, A, and the end pieces provided with springs, substantially as set forth.

4. The combination of the central piece, A, the end pieces, L, provided with grooves, and the springs which are adjustable vertically in the grooves, substantially as specified.

5. The combination of the central piece, A, provided with a series of holes near its ends, the end pieces, L, which are pivoted to the central piece, A, and which can be adjusted thereon, and the springs which are placed in the grooves in the end pieces, substantially as shown and described.

332,889. WIRE-FEEDING MACHINE. JAMES H. GERRY, Brooklyn, N. Y. Filed Oct. 2, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a revolving chuck, a longitudinally-movable chuck in the same axial line therewith, means for withdrawing the second chuck from the first chuck, means for permitting said second chuck to open before it is withdrawn and for closing it when so withdrawn, means for then permitting the opening of the first chuck and for advancing the second chuck to its normal position, and means for subsequently closing the first chuck.

2. The combination, substantially as hereinbefore set forth, of a wire-holding chuck, means for causing it to grasp and to release a wire at will, a longitudinally-movable chuck for engaging the same wire normally tending to open by reason of its inherent elasticity, and means for causing the latter chuck to move from and toward the former and to be

open when moving from and to be closed when moving toward the first-named chuck.

3. The combination, substantially as hereinbefore set forth, of a wire-holding chuck, a longitudinally-moving feeding-chuck tending to open by reason of its inherent elasticity, a sleeve for closing the same, and means for causing a to-and-fro movement of the feeding-chuck in the axial line of the holding-chuck.

4. The combination, substantially as hereinbefore set forth, of a wire-holding chuck, a feeding-chuck normally tending to open by reason of its inherent elasticity, means for moving the latter toward and from the holding-chuck, and means for causing the holding-chuck to be closed when the feeding-chuck is adjacent thereto.

5. The combination, substantially as hereinbefore set forth, of a holding-chuck, a feeding-chuck normally tending to open by reason of its inherent elasticity, means for moving the latter in the axial line of the former, and means for opening the holding-chuck when the feeding-chuck has reached one limit of its movement and for closing it when the feeding-chuck is at or near the other limit of its movement.

6. The combination, substantially as hereinbefore set forth, of a chuck, a sleeve surrounding the same, a stationary support, one or more toggle-joints, each consisting of two pivoted arms connecting the sleeve with the support, a flat bearing surface upon one of the arms of each toggle-joint, and a device for extending said joint or joints and resting upon said surface.

7. The combination, substantially as hereinbefore set forth, of a chuck, a sleeve surrounding the same, a support, one or more toggle-joints, each consisting of two pivoted arms, one arm of each of which is connected with the sleeve and the other connected with the support through a flexible extension, and means for extending said joint or joints against the tension of said flexible extension.

8. The combination, substantially as hereinbefore set forth, of a holding-chuck, a sleeve for closing said chuck, means for operating said sleeve, a feeding-chuck, a sleeve for operating the same, means for moving the last-named sleeve longitudinally upon the said chuck, and means for moving said feeding-chuck and its sleeve together, substantially as described.

9. The combination, substantially as hereinbefore set forth, in a wire-feeding machine, with a holding-chuck, a sleeve for operating the same, and one or more toggle-joints, each consisting of two arms pivoted to each other, of a feeding-chuck, a sleeve surrounding the same, a spindle for said chuck extending beyond the end of said sleeve, a yielding spring tending to force said sleeve upon the chuck to close it, and means for forcing said sleeve toward the projecting end of said spindle, thereby compressing said spring and permitting said chuck to open.

10. The combination, substantially as hereinbefore set forth, of a rotating and a longitudinally-movable chuck located in the same axial line, a spindle attached to the longitudinally-movable chuck, a collar for moving said spindle, a sleeve extending through said collar, equilibrium-springs tending to hold said collar in a given position upon said sleeve, means for moving said sleeve longitudinally, a stop for limiting the movement of said collar without interrupting the movement of said sleeve, a device for operating the rotating chuck, and means moving with said sleeve for operating said device after said collar has been arrested, substantially as described.

11. The combination, substantially as hereinbefore set forth, of the chucks D and H, the forks b^3 and *j* for operating the same, the rod *a'*, the sleeve A' upon which said forks are supported, and the adjustable stops a^3 and b^3.

332,890. TRANSFER OR REPRODUCING PAPER. DAVID GREITZNER, London, England. Filed Apr. 18, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a sheet of transfer-paper consisting of a sheet of bamboo-fiber paper on one surface of which a layer of wax or paraffine is fixed, substantially as herein shown and described.

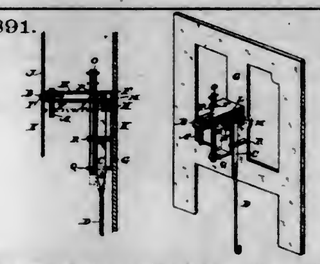
2. As an improved article of manufacture, a cross-ruled sheet of bamboo-fiber paper on one surface of which a layer of wax or paraffine is fixed, substantially as herein shown and described.

332,891. REGULATOR FOR CLOCKS. GEORGE L. GOODRICH, Bristol, Conn., assignor to the E. Ingraham Company; same place. Filed June 30, 1884. (No model.)

Claim.—1. In a regulator for pendulum-clocks, a dial provided with an opening in its face, a screw, a milled disk operated through the opening in the dial for turning the screw, and devices operated by the screw for changing the vibratory length of the pendulum, substantially as set forth.

2. In a regulator for pendulum-clocks, a screw, a milled disk for turning it, a dial provided with an elongated slot through which the edge of the disk projects, and a device connecting the pendulum and screw, substantially as set forth.

332,891.

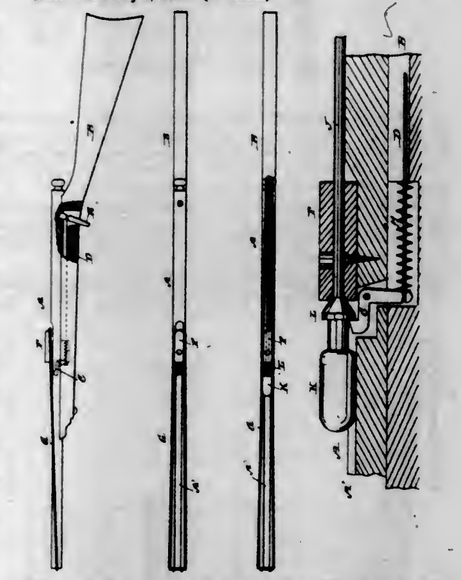


3. In a regulator for pendulum-clocks, a screw, a milled disk for turning it, a bracket having the screw mounted in and depending from it, and a device connecting the pendulum and screw, substantially as set forth.

4. In a regulator for pendulum-clocks, a dial provided with an opening in its face, a screw, a milled disk operated through the opening in the dial for turning the screw, and devices operated by the screw for raising and lowering the pendulum, substantially as set forth.

5. In a regulator for pendulum-clocks, a screw, a milled disk for turning it, a bracket in which the screw is mounted, a plate tapped to receive the screw and connecting with the pendulum, and a pillar secured to the said plate and having its ends journaled in the bracket, substantially as set forth.

332,892. TOY SPRING-GUN. FRANCIS W. GOODYEAR, Springfield, Mass. Filed May 1, 1885. (No model.)



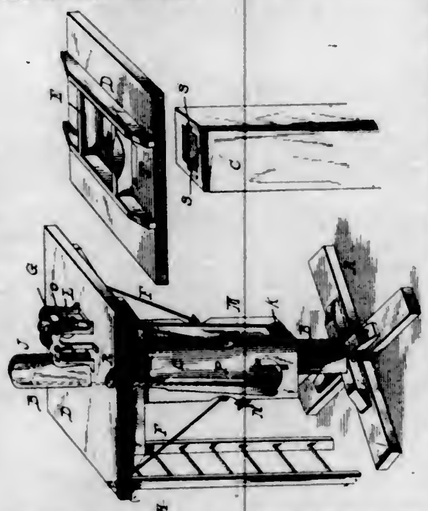
Claim.—1. In a toy gun, the combination, with a barrel, of the apertured block F, secured on the top of the barrel, the aperture in said block being parallel with the length of the barrel, the elastic band G, fastened to the gun at or near the muzzle end and passed around the rear end of the block, the trigger C, pivoted in the barrel in front of the above-mentioned block F, the wire D, having its front end connected with the trigger, and the trigger-lever E, to which the rear end of the wire D is connected, substantially as herein shown and described.

2. The toy gun having a grooved barrel, a block, F, apertured parallel with the groove in the barrel, the trigger C in front of the apertured block, the trigger-lever E, connected with the trigger, and the elastic G, secured to the muzzle end of the barrel and passed around the rear end of the apertured block, in combination with the arrow J, having a collar adjacent to the rear of its head, whereby when in place in the gun the collar and trigger will engage when the rear end of the arrow is passed through the apertured block to engage the elastic, substantially as set forth.

3. The toy gun having the apertured block F, secured to the barrel in advance of its breech, the spring-operated trigger C, having its front end beveled, as described, the trigger-lever connected therewith, and the elastic G, secured to the muzzle end of the gun and passed around the rear end of the apertured block, in combination with an arrow having a

collar adjacent to the rear of its head, said collar being beveled at its rear edge, whereby when the arrow is passed through the apertured block the beveled collar will depress the beveled trigger and be engaged and held thereby, substantially as set forth.

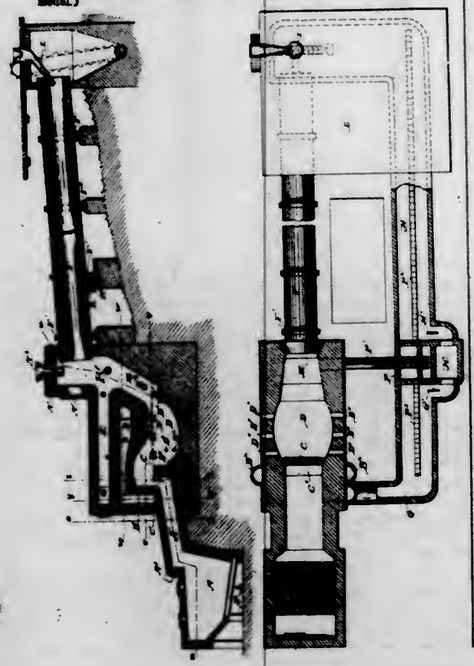
332,893. SCAFFOLD. ANDREW C. HALTERMAN, New Haven, W. Va. Filed June 1, 1885. (No model.)



Claim.—1. The combination, in an adjustable scaffold, of a standard, a casing sliding thereon and carrying a platform, a windlass located on said platform, a rope connected thereto passing around pulleys and connected to the standard, and a pulley, L, adapted to move on a shaft arranged parallel with the windlass, substantially as set forth.

2. The combination, in an adjustable scaffold, of a standard, a casing sliding thereon, carrying a platform, and provided with grooves *s s*, and a windlass and rope for raising said platform, said grooves being provided for the retention of said rope, substantially as set forth.

332,894. FURNACE FOR ROASTING AND SMELTING ORES. B. FRANKLIN HAMBLETON, Keokuk, Iowa. Filed Oct. 12, 1885. (No model.)



Claim.—1. A furnace having the air-heating flue B interposed between and combined with the heating-chamber C and the return-flue E, substantially as and for the purpose set forth.

2. The by-passage flue E, combined with the smelting-hearth D and the rotary roasting-cylinder F, and adapted to regulate the heat in the cylinder.

3. The combination of air-heating flues B with the heating-flue E in the roof of the furnace, and with the checker-work outlet B', gas-producer A, and the smelting-furnace bed D.

4. In a smelting-furnace provided with a roasting-passage, the combination of two passages, E F, and their extensions to chimney for the gases of combustion, each provided with valve for regulating draft, adapted to regulate the heat of roasting.

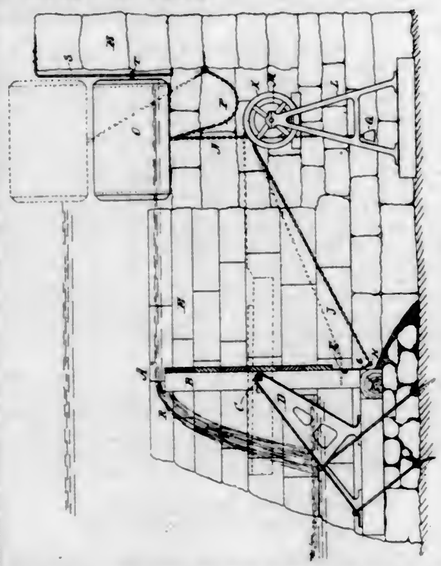
5. The combination, with a smelting-bed, D, of a roasting-passage and a flue dust-chamber provided with apparatus for feeding dust therefrom to the smelting-bed separate from the roaster.

6. The combination of a rotary furnace-cylinder having a ring or projection around it with a wheel acting against the side thereof and borne by a sliding carriage having a screw or means of adjustment adapted to adjust the position of the cylinder lengthwise.

7. An ore-reducing apparatus provided with a gas-producer, air-heater, combustion-space, smelting-bed, rotary roasting-cylinder, a by-passage for gases from a point in front of the roaster-passage to regulate the heat therein, regulating by-passage for gases, flue dust-chambers, draft-chimney, and dust conveyer and feeder, as set forth.

8. In a metallurgic furnace, the combination of a rotary-cylinder roaster, F, with a step or supporting-bed, M', in a communicating uptake-passage, M, at an angle from the hearth thereof, and with a smelting-bed, D, all provided with an inclosed flue-passage through them, and adapted for preparing ores continuously and smelting them in intermittent portions.

332,895. AUTOMATIC DAM. HORACE HARDING, Tuscaloosa, Ala. Filed Sept. 5, 1885. (No model.)



Claim.—1. The combination, with abutments and fixed bearings, substantially such as described, of a dam pivoted above the center of its area in said bearings, and gates in the lower portion of the dam covering an area thereof greater than the difference between the areas above and below its pivots, substantially as shown and described.

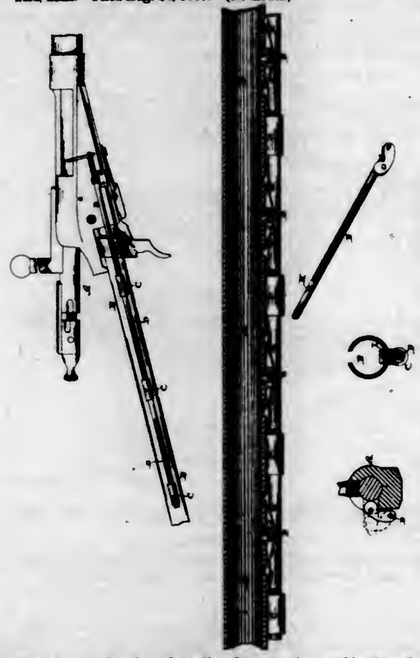
2. The combination of a dam pivoted above the center of its area and gates in the dam below the said pivots, substantially as shown and described.

3. The combination of a dam horizontally pivoted above the center of its area, gates pivoted in the dam below the pivots of the dam, a float adapted to rest on the water, and connections between the float and the said gates, substantially as shown and described, whereby a rise of the river raises the float, thereby first opening the said gates, and then by the same continued motion opening the dam, as set forth.

4. The combination of the anchored standards D, the dam A, pivoted above the center of its area therein, the gates F, pivoted in the dam, the wheels K and M, mounted on the same shaft, the float O, the chain N, connecting the float with the wheel M, and the chain J, connecting the wheel K with the said gates, substantially as shown and described.

5. The combination of the float O and means connecting it with water-gates, and the chain P, secured at one end to the float and anchored at the other end, substantially as shown and described, whereby the amount of rise of the float and its strain upon the said connections is limited, as set forth.

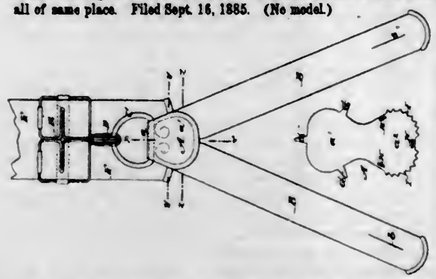
332,896. MAGAZINE FOR FIRE-ARMS. RICHARD T. HARE, Springfield, Mass. Filed Aug. 24, 1885. (No model.)



Claim.—1. In a breech-loading fire-arm, the combination of the magazine-tube having perforations through its side, with the plugs which pass through the perforations and catch over the flanges upon the cartridge, the springs which are applied to the plugs and between the side of the magazine-tube and the operating-rod, and the partially-revolving operating-rod, provided with the cut-away or cam surfaces in its side, and an arm or lever which is operated by the firing-bolt for the purpose of partially revolving the rod, substantially as shown and described.

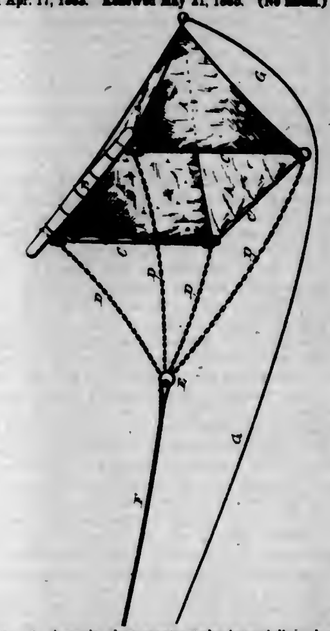
2. In a breech-loading fire-arm, the combination of the magazine-tube, an operating-rod which is applied to and extends parallel with this tube, suitable keepers for holding the rod in position, the spring-actuated plugs, which are moved in one direction by the cam-surface on the rod and in the other direction by springs which are applied to them, the arm or lever O, which is secured to the upper end of the operating-rod and the firing-bolt, substantially as set forth.

332,897. SUSPENDER-STRAP CLASP. CHARLES R. HARRIS, Jersey Shore, Pa., assignor to himself, Winfield S. Harris, and Anson Underwood, all of same place. Filed Sept. 16, 1885. (No model.)



Claim.—A suspender-strap clasp consisting of the metal plate A, bent upon itself, as at *a*, forming the front and rear portions, *a' a²*, the portion *a'* being provided with prongs G, and the rear portion with slots H to receive the prongs, and inwardly-projecting marginal teeth I, as set forth.

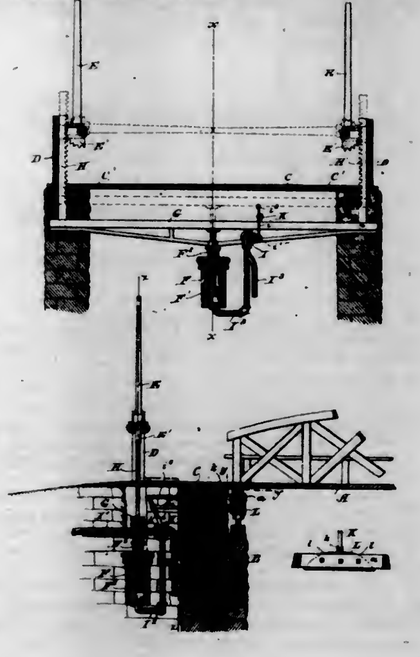
332,898. MARINE DRAG. WILLIAM H. HART, New York, N. Y. Filed Apr. 17, 1883. Renewed May 21, 1885. (No model.)



Claim.—1. A marine drag constructed substantially as herein shown and described, and consisting of a pyramidal body A, the spar B, the jointed metal bars C, the ropes or chains D, the hawser F, and the tripline G, as set forth.

2. A marine drag having the pyramidal canvas body A, the buoyant spar B, lashed to one side of the mouth, and the weight-rods C, made fast to the other three sides of said mouth, the rods being jointed together and to the spar, as shown and described.

332,899. SAFETY-GATE FOR DRAW-BRIDGES. GEORGE E. HAWES, Highland Park, Ill., assignor of one-half to Edgar A. Hill, same place. Filed Sept. 24, 1883. (No model.)



Claim.—1. The combination, with a gate and a street water-main affording a constant supply of water under pressure, of a water-motor actuated by a supply derived from said water-main, and constructed and applied to move the gate in one direction, and a weight or spring applied to move the gate in the opposite direction, substantially as described.

2. The combination, with a swing or draw bridge, a gate, and a street water-main affording a constant supply of water under pressure, of a water-motor actuated by a supply derived from the street-main, said motor being controlled by the movements of the bridge, and constructed and applied to operate the gate substantially in the manner and for the purpose described.

3. The combination, with a bridge, a gate, and a pipe communicating with a source or means of water-supply giving continuous pressure in said pipe, of a cylinder provided with a suitable piston and piston-rod, a valve or valves for controlling the inlet and outlet of said cylinder, means operated by the movement of the bridge for controlling said valve, and connections between the piston-rod and gate whereby the movement of said rod is transmitted to the gate, substantially as described.

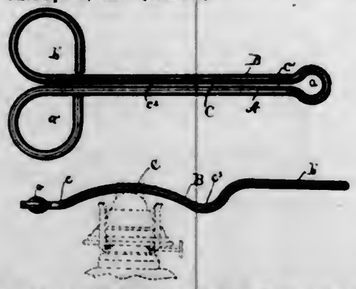
4. The combination, with a swing or draw bridge, a gate, and a pipe communicating with a source or means of water-supply giving continuous pressure in said pipe, of a water-motor actuated by a supply derived from said pipe and constructed and applied to operate the gate, a valve constructed to control the flow of water to the said motor, and means upon the bridge constructed to automatically operate the said valve when the bridge is moved, substantially as described.

5. The combination, with a swing or draw bridge, a gate, and a pipe communicating with a source or means of water-supply giving continuous pressure in said pipe, of a water-motor actuated by a supply derived from the said pipe, and constructed and applied to operate a gate, a valve constructed to control the flow of water to said motor, a spring constructed to retain said valve at one limit of its movement, and means upon the bridge constructed to hold the valve at the opposite limit of its movement in opposition to the action of the spring, substantially as described.

6. The combination, with two oppositely-swinging gates and a pipe communicating with a source or means of water-supply giving continuous pressure in said pipe, of a cylinder provided with a suitable piston and piston-rod, a valve for controlling the inlet and outlet of said cylinder, pulleys rigidly connected with the gates, and suitable ropes connected with said piston-rod and passing over said pulleys, substantially as and for the purpose set forth.

7. The combination, with two oppositely-swinging gates and a pipe communicating with a source or means of water-supply giving continuous pressure in said pipe, of a cylinder provided with a suitable piston and piston-rod, a valve or valves for controlling the inlet and outlet of said cylinder, pulleys rigidly connected with the gates, ropes connected with the said pulleys and constructed to move the gates in one direction, and a weight applied to move the gates in the opposite direction, substantially as described.

332,900. LAMP-WICK TRIMMER. HARRY H. HAWLEY, Malone, N. Y. Filed Apr. 20, 1885. (No model.)



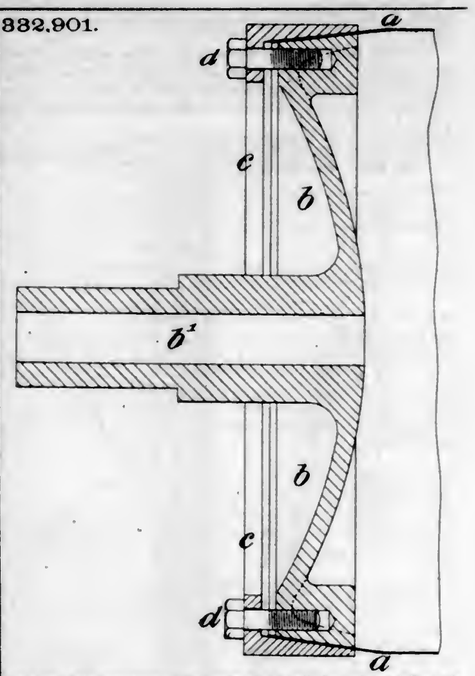
Claim.—A lamp-wick trimmer formed of a single piece of merchantable wire bent around at its forward end so as to hinge together the two side bars, A B, of which the trimmer is formed, and bent upward at C, so as to form on said bars a convex trimming-surface, as described.

332,901. CONSTRUCTION OF DRYING-CYLINDERS. JOHN HAWTHORN and JOHN P. LUDELL, Newtown, County of Chester, England. Filed Dec. 18, 1884. (No model.) Patented in England Nov. 12, 1884, No. 14,881.

Claim.—1. The combination of the sheet-metal body of a drying-cylinder with the end *b*, having a conical periphery, and the internally-coned ring adapted to be applied to the outside of the coned end, and screws to force the ring over the end of the cylinder, substantially as described.

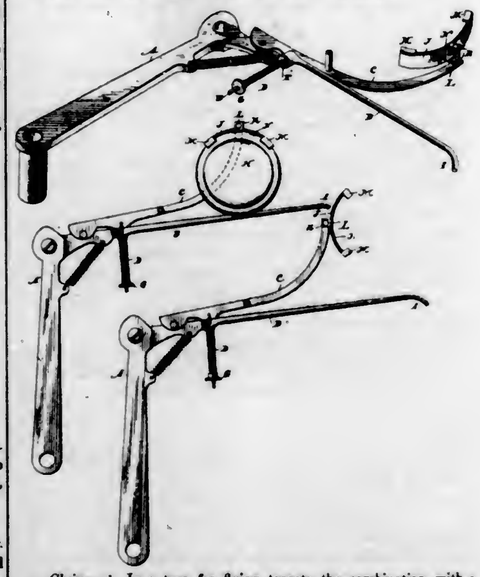
2. The combination of the sheet-metal body of a drying-cylinder with the end having a hollow journal and a coned periphery, and an internally-coned ring adapted to be forced onto the periphery of the said

332,901.



end over the sheet metal of the body of the cylinder, substantially as described.

332,902. TARGET-TRAP. ALBERT H. HERRARD and CHARLES C. HERRARD, Knoxville, Tenn. Filed Nov. 10, 1885. (No model.)



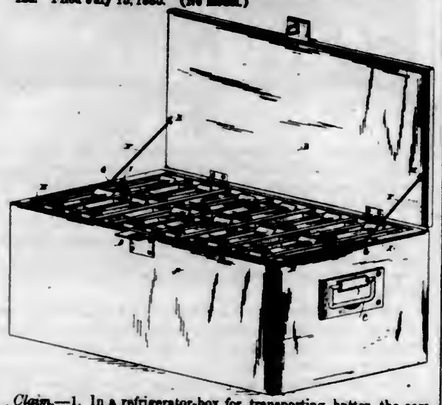
Claim.—1. In a trap for flying targets, the combination, with a throwing-arm, of an outer spring-cushioned arm pivoted to the outer end of the throwing-arm, and a spring-actuated clamping-arm pivoted to the outer side of the outer arm, and having at its outer end a curved bar pivoted at its middle to the end of the clamping-arm, as and for the purpose shown and set forth.

2. In a trap for flying targets, the combination of a throwing-arm, an outer spring-cushioned arm pivoted to the outer end of the throwing-arm, and having its outer portion rounded, a clamping-arm pivoted to the outer side of the inner end of the outer arm, and having a spring

drawing it toward the said arm, and a curved bar pivoted at the middle of its convex side to the outer end of the clamping-arm, as and for the purpose shown and set forth.

3. In a trap for flying targets, the combination of a throwing-arm, an outer spring-cushioned arm pivoted to the outer end of the throwing-arm, and having its outer portion rounded, a clamping-arm pivoted to the outer side of the inner end of the outer arm, and having a spring drawing it toward the said arm, and an upwardly-projecting pin at its outer outwardly-curved end, and a segmental bar having two outwardly-projecting perforated lips at its upper and lower edges pivoted upon the pin of the clamping-arm, and formed with inwardly-projecting lips at the ends of its upper and lower edges, and provided with a soft lining upon its inner concave side, as and for the purpose shown and set forth.

332,903. BUTTER-CABINET. SAMUEL G. HEMPILL, Boston Station, Ind. Filed July 15, 1885. (No model.)



Claim.—1. In a refrigerator-box for transporting butter, the combination of the box having a perforated bottom, an ice-pan resting upon the bottom of the box, and butter-trays having pairs of longitudinal and transverse partitions forming narrow and deep butter-cells and narrower and deep air-cells, as and for the purpose shown and set forth.

2. A butter-tray for the transportation of butter in a refrigerator-box, consisting of a perforated bottom, perforated side and end pieces, and pairs of perforated longitudinal and transverse partitions forming narrow and deep butter-cells and narrower and deep air-cells, as and for the purpose shown and set forth.

3. In a refrigerator-box for transporting butter, the combination of the box having a perforated bottom, an ice-pan having transverse cleats resting upon the bottom of the box, and butter-trays having perforated bottoms and side and end pieces, and provided with pairs of longitudinal and transverse perforated partitions forming narrow and deep butter and air cells, the ends of the said partitions projecting outside of the side and end pieces of the trays, as and for the purpose shown and set forth.

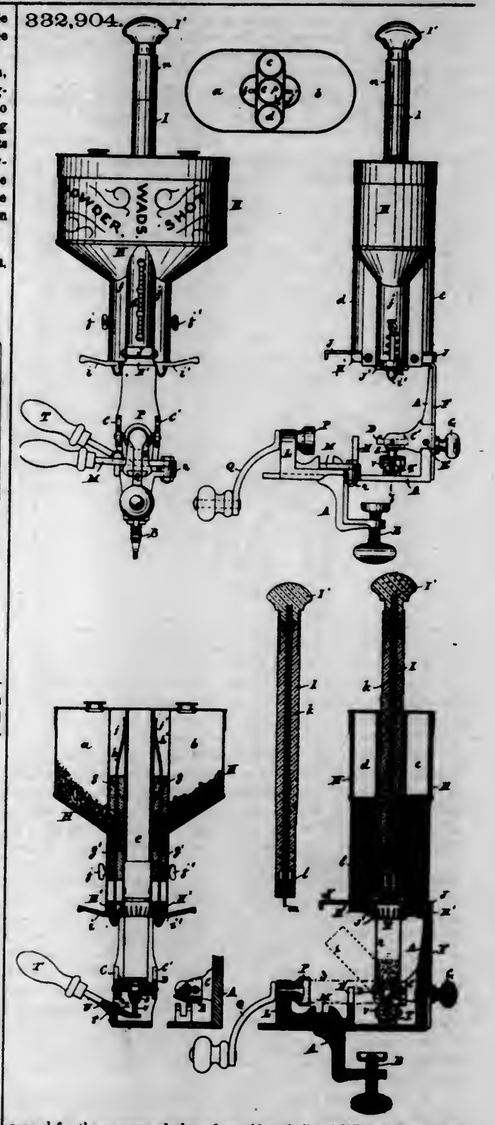
332,904. CARTRIDGE-LOADING MACHINE. WALTER HILL, South Easton, Mass. Filed Apr. 4, 1885. (No model.)

Claim.—1. A cartridge-loading machine consisting of a box or receptacle divided into several compartments all connected with a central compartment in which is a plunger, two of said compartments being for powder and shot, respectively, and two for holding wads, placed one on each side of the central compartment, and provided with a perforated slide, which takes a wad alternately from each wad-compartment, the chambers for powder and shot being provided with valves to allow the powder and shot to pass into the central compartment, the said valves being so adjusted as to admit of a greater or less quantity of powder and shot to pass into the central compartment to be fed to the cartridge-shells, substantially as set forth.

2. The combination of the receptacles *a b*, holding, respectively, powder and shot, chambers *f f'*, arranged between the receptacles *a b* and the central delivery-tube, valves *g g* and *g' g'*, arranged one set above and one set below the delivery-passage leading from the powder-and-shot receptacles to the chambers *f f'* and attached to rods *h h'*, which are free to slide up and down, the lower ends of the rods *h h'* passing through the bottom of the chambers *f f'* and secured to arms *i i'*, by which the said rods are moved, the upper valves, *g g*, being permanently attached to the rods *h h'*, and the lower valves, *g' g'*, being adjustable on said rods, whereby the space between the two sets of valves can be adjusted to hold any required charge of powder or shot, all substantially as shown and described.

3. The cartridge-holder D, in combination with and pivoted to arms C C', secured to the upright portion of the frame A, the arm C' being attached to the frame by means of a screw, so that it can be readily re-

332,904.



moved for the accommodation of cartridge-shells of different sizes, as set forth.

4. The plate H', forming the base of the receptacle H, and provided with an opening at its center, in combination with the removable rings J' and K, the latter being secured within the ring J', and also slitted at its lower portion and bent slightly inward, as and for the purpose set forth.

5. The combination, with the base-plate A and the receptacle H, of the adjustable and adjusting spring F, secured to the base-plate by a screw, G, so that the receptacle H can be readily adjusted to cartridge-shells of different lengths, as set forth.

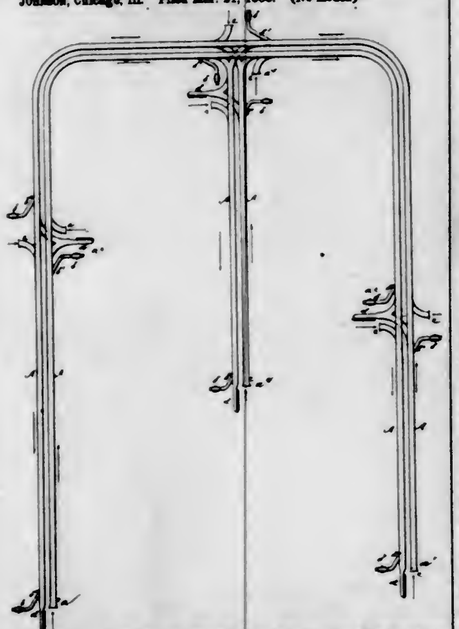
6. In combination with the shell-holder D, the spring R, secured to the arm C, and caused to press against the rim of the cartridge-shell base, so as to retain the shell in position and prevent it from turning during the operation of crimping, as set forth.

7. The frame L, made to slide upon the frame A, in combination with a crimper, P, journaled in the same and operated by a crank, Q, a hand-lever, M, fulcrumed in the frame A, by which the frame L is moved to and fro, and the rest N, as shown and described.

8. The cap-holder S, in combination with and pivoted to the under side of the cartridge-holder D, so as to enable it to swing and carry a cap to the center of the shell-holder, the lever T, fulcrumed to the frame

A and held in an elevated position by means of a spring, U, the inner end of the lever T bearing upon the lower end of a plunger, V, moving in the carrier S, whereby upon depressing the lever T a cap is forced into the cartridge-shell, as described.

332,905. PNEUMATIC DISPATCH-TUBE SYSTEM. CHARLES M. JOHNSON, Chicago, Ill. Filed Mar. 21, 1885. (No model.)



Claim.—1. A pneumatic tube divided into a series of independent sections, each provided with an air-supply and an exhausting apparatus, in combination with a gate hinged within the tube between the sections and closing firmly in one direction, but opening freely in the other, to cut off the passage of air from one section to the other, but admit the easy passage of the carrier, substantially as and for the purpose set forth.

2. A pneumatic tube divided into a series of independent sections, each of which is provided with an air-supply and an exhausting apparatus, in combination with a hinged gate between the sections, to cut off the backward flow of air from one to the other, and an inclined arm hinged within the tube and connected to the gate, to open the latter for the passage of the carrier, substantially as and for the purpose set forth.

3. In a terminal cushion for pneumatic dispatch-tubes, a cushioning-tube provided with a pipe for supplying compressed air or steam, and a valve in said pipe to open or close the same, in combination with a hinged lever-arm projecting within the tube and connected to the valve to open it, and a second hinged lever connected to the valve to close it, whereby the carrier is caused to automatically open and close the valve, substantially as and for the purpose set forth.

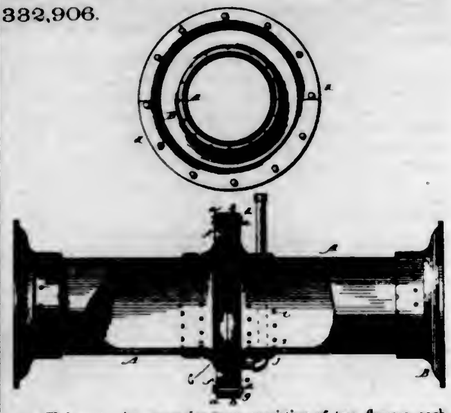
4. In a terminal cushion for pneumatic dispatch systems, a cushioning-tube, a pipe connected therewith to supply the cushioning material and provided with a valve, a stop-cock, and a pair of levers projecting within the tube and acting by contact with the carrier to alternately open or close the valve, in combination with an exit-pipe connected upon the side of the cushion, and a gate or switch hinged at its junction therewith and provided with a weight, whereby the switch yields readily to the incoming carrier, but cuts off its retreat to the main tube and directs it to the exit, substantially as and for the purpose set forth.

5. In a pneumatic dispatch system, the combination, with the tube and its carrier, of an electric signal-circuit connected therewith and broken at intervals, and a movable contact-point at said point projecting within the tube, whereby the carrier in passing is caused to close the circuit to signal its progress, substantially as and for the purpose set forth.

6. A carrier for pneumatic dispatch-tubes, consisting of a hollow sphere having its cap secured thereon by a screw-rod, the head of which is recessed in the cap and the point screwed into a cross-bar within the main body of the carrier, substantially as and for the purpose set forth.

7. The combination, with a pneumatic dispatch-tube, of a cushioning-chamber and means for admitting compressed air or equivalent cushioning-fluid therein, substantially as and for the purpose set forth.

332,906. EXPANSION-FLANGE CONNECTION. GUSTAVUS A. KARWEISE, New York, N. Y. Filed Mar 3, 1885. (No model.)



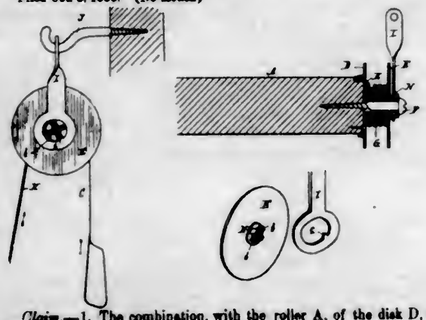
Claim.—1. An expansion-joint consisting of two flanges, each of which is corrugated, and provided with a flange extending outwardly from said corrugation, said flange having an outward projection for fastening and an inner groove for packing, substantially as described.

2. The combination in an expansion-joint composed of two or more sections, each having a corrugated flange, and clamping devices having lap-joints, as shown, each of said corrugated flanges having a short section of pipe integral therewith and secured to the pipe-section, as shown and described.

3. The combination in an expansion-joint composed of two sections, as shown, of the lap-joint-clamping device, the packing *c*, and soft-metal packing *d*, with the pipe A and blow-off pipe, arranged in the manner and for the purpose set forth.

4. In an expansion-flange connection of the character described, the combination of the sections of pipe, the flexible flange-connections, and the blow-off pipe, (in the lower portion of the groove or trough formed by the flange-connection,) which facilitates the removal of accumulated sediment, substantially as set forth, and for the purpose explained.

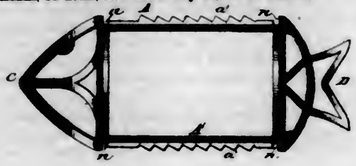
332,907. CURTAIN-FIXTURE. WALLACE C. KELLY, Hastings, Mich. Filed Oct. 8, 1885. (No model.)



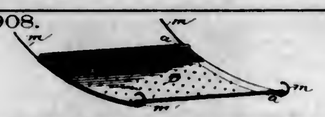
Claim.—1. The combination, with the roller A, of the disk D, secured thereto, the disk E, its axis F, passing through both of said disks into the roller and supported by the hanger I, and the cylindrical spring G, interposed between said disks upon said axis, and serving the double function of a tension-regulating spring and a drum upon which the cord is wound, substantially as described.

2. In a curtain-roller, the combination of the hanger I, having elongated opening and detent *c*, of the roller A, disk D, secured thereto, disk E, having formed integral therewith the hub H, provided with stops *b*, the cylindrical spring G, interposed between said disks, and the axis F, supported by said hanger, and passing through said disks and spring into the roller, all substantially as described.

332,908. VEGETABLE-GRATER. FREDERICK C. KESSLER and HENRY KESSLER, St. Louis, Mo. Filed May 22, 1884. (Model.)



332,908.



Claim.—The vegetable-grater herein described, consisting of the frame A, having notches *n* on its sides, near the ends, in combination with the grater-plate B, having its side edges lapped and its upper and lower edges rolled to receive the wires *m*, which wires are bent aronnd the frame in the notches to hold the plate to the frame, substantially as set forth.

332,909. NAIL-EXTRACTOR. ISAAC H. KIRBY, Riverside, Cal., assignor of two-thirds to Russell Porter Waite, same place, and Alfred W Eames, Los Angeles, Cal. Filed Sept. 23, 1885. (No model.)



Claim.—1. A nail-extractor having a bearing-surface and a notch in one of its sides, said notch having inclined faces, the surfaces of which intercept the bearing-surface of the extractor and form edges *b' b''*, for grasping the nail, substantially as described.

2. A nail-extractor having a bearing-surface and a notch in one of its sides, said notch having inclined faces, the surfaces of which intercept the bearing-surface of the extractor and form edges *b' b''*, one of said edges being at substantially right angles to a line drawn lengthwise through the extractor, and the other being inclined thereto, substantially as described.

3. A nail-extractor having a notch in one of its sides, said notch having inclined faces, which intercept each other at the inner limit of the notch, substantially as described.

4. A nail-extractor having a bearing-surface and a series of notches of various dimensions in its sides, each of said notches having inclined faces, which intercept the bearing-surface of the extractor and form edges *b' b''*, for grasping the nail, substantially as described.

5. A device for pulling nails having a nail-extracting notch at one side thereof, a hole for the insertion of a handle, a collar surrounding said hole, and a brace or fin extending from said collar to or near the end of the device, substantially as described.

332,910. PIPE-LINE CLEANER. JOHN S. KLEIN, Oil City, Pa. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a pipe-line cleaner, the combination, substantially as set forth, of a central stem, one or more whirls of yielding supports, one or more whirls of yielding scraper-blades, and a whirl of yielding horizontally-pivoted plates forming a propelling-disk.

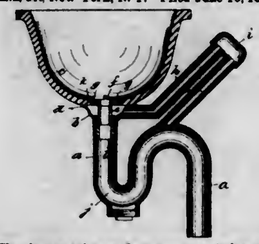
2. In a pipe-line cleaner, the combination, substantially as set forth, of a central stem, one or more whirls of yielding supports having spurred wheels pivoted at their bearing ends, one or more whirls of curved and yielding scraper-blades, and a whirl of yielding horizontally-pivoted plates forming a propeller-disk.

3. In a pipe-line cleaner, the combination, substantially as set forth, of a central stem, one or more whirls of yielding supports, and a whirl of yielding horizontally-pivoted plates forming a propeller-disk.

4. In a pipe-line cleaner, the combination, substantially as set forth, of a central stem, one or more whirls of yielding scraper-blades, and a whirl of yielding horizontally-pivoted plates forming a propeller-disk.

5. In a pipe-line cleaner, a propeller-disk consisting of the combination, substantially as set forth, of the head D, the whirl of yielding arms *d*², and the plates D', horizontally pivoted on said arms, and arranged as shown, to form a disk.

332,911. OVERFLOW-TRAP FOR WASH-BASINS, BATH-TUBS, &c. STEPHEN LANE, Jr., New York, N. Y. Filed June 10, 1885. (No model.)



Claim.—The improved overflow-trap consisting of the combined basin having a series of holes through it surrounding the waste-pipe connection, the cup *b*, attached to the upper end of the waste-pipe *a*, and adapted to be attached to the bottom of the basin and to receive the water through the holes aforesaid, the overflow-pipe A, attached to the cup and to the waste-pipe, and the headed and screw-threaded extension-joint *e* of the waste-pipe, passing through and connecting the cup and the basin, and forming a separate waste-passage through the cup, substantially as described.

332,912. WAGON-BODY. JAMES R. LAW and CHARLES MOONEY, Darlington, S. C. Filed July 13, 1885. (No model.)



Claim.—1. In combination with a wagon-body, and as a combined fastening and brace for the side-boards thereof, double-armed clamps fitted over and having their crowns bearing upon the upper edges of the side-board, and their arms passed down on opposite sides of the side-board and secured to the bottom, all arranged and operating substantially as described, whereby the said side-board, having its upper edge bearing within the crowns of the clamps, will resist inward and outward pressure by a tensile strain on respectively the outer and inner arms thereof, substantially as set forth.

2. The combination, in a wagon-body, of the bottom, the side-board, the keeper, and a double-armed clamp having one arm fitted within the keeper, whereby the latter is secured in position, substantially as set forth.

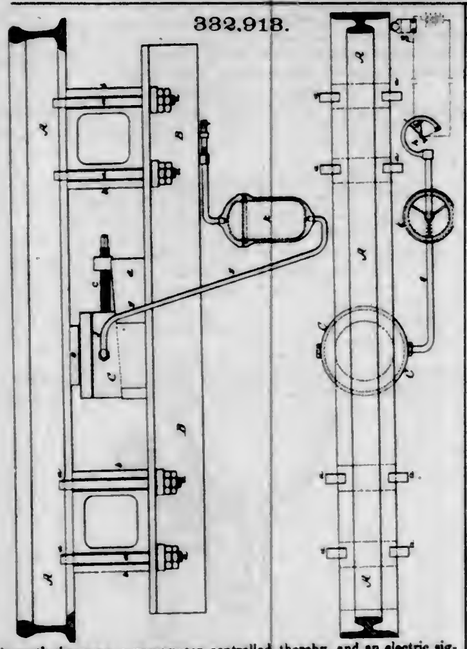
332,913. APPARATUS FOR AUTOMATICALLY INDICATING OR SIGNALING THE PASSAGE OF TRAINS UPON RAILWAYS. HENRI LEBASTEUR and STANISLAS H. ROUART, Paris, France. Filed May 15, 1885. (No model.) Patented in France Dec. 10, 1884, No. 165,846; in Belgium Mar. 11, 1885, No. 68,152; in England Mar. 12, 1885, No. 3,258, and in Austria-Hungary July 1, 1885, No. 10,494.

Claim.—1. The combination of the rail of a railway-track and a closed chamber beneath the rail and containing a liquid, with a manometric indicating device at a distance, and a connecting-pipe for transmitting the deflections of the rail to the indicator, substantially as described.

2. The combination of the rail of a railway-track and a closed chamber beneath the rail containing a liquid, with a manometric indicating device, connecting-pipe, and compensator, substantially as set forth.

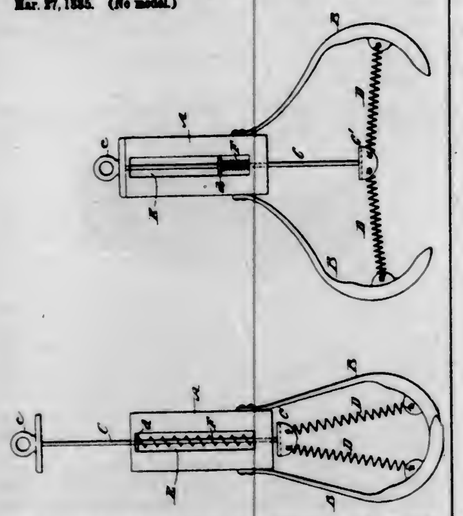
3. The combination of the rail of a railway-track, a closed chamber

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beneath the same, a manometer controlled thereby, and an electric signal, substantially as described.

332,914. HITCHING DEVICE. Lewis Lewis, Ironton, Ohio. Filed Mar. 27, 1885. (No model.)



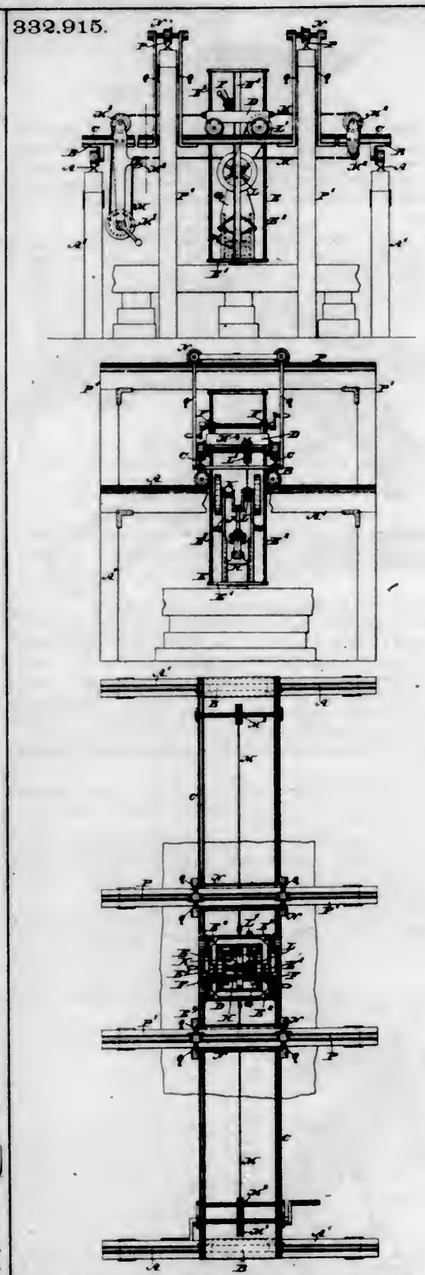
Claim.—1. In a hitching device, the combination, with the stock, the rod sliding in bearings therein, and an expansible spring on said rod, of the spring-jaws secured at one end to the stock, and springs connecting the sliding rod with said jaws, all arranged and adapted to operate substantially as set forth.

2. As an improved article of manufacture, a hitching device consisting of the stock A, the spring-arms B, having a tendency to spring outward, the sliding rod C, having an eye, *c*, collar *d*, and end piece, C', the springs D, connected to the lower end of the rod C and to the jaws B, as shown, and the expansible spring F on the rod C, between the collar *d* and the stock, substantially as set forth.

332,915. STONE-DRESSING MACHINE. Frank Manning, Ardmore, Pa. Filed Sept. 3, 1885. (No model.)

Claim.—1. The frame A', having the track A thereon, in combination with trucks B B, working on said track, the track C C, having

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the ends thereof secured to said trucks B B, the carriage D, operating on said track C C, a hammer supported in a rising and falling frame connected to said carriage, and means, substantially as described, for imparting a reciprocating motion to said carriage and for operating said hammer, substantially as and for the purpose set forth.

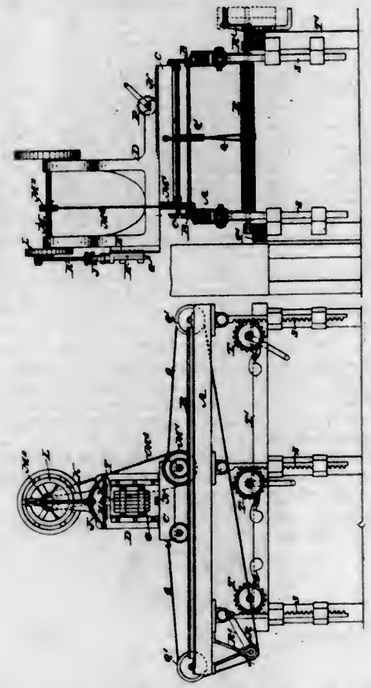
2. In a machine for dressing stone, the frame A', having track A thereon, in combination with trucks B B, with tracks C C, connected to said trucks B B, the carriage D, with adjustable frame having rising and falling hammer, and the frame P' P', having tracks P P, frame Q, connected to said trucks N and B, and adapted to assist in supporting the said trucks B, substantially as described.

3. The carriage D, having the depending frame E, and means for raising and lowering the same, in combination with the frame G, secured

to and within the said frame E and furnishing bearings for the crank-shaft K, the hammer H, having connection J, pivotally secured to said crank-shaft, and means, substantially as described, for imparting a rising and falling motion to said hammer, substantially as described.

4. The carriage D, and means, substantially as described, whereby the same may be moved in both a longitudinal and transverse direction, in combination with frames E and G, attached to said carriage, hammer H, having connection J, pivotally secured to the crank-shaft K, the latter having bearings in the frame G, sprocket-wheel L, mounted on the crank-shaft K, and sprocket-wheel L', mounted on one of the axles of the said carriage D, and a chain connecting said sprocket-wheels L and L', substantially as and for the purpose set forth.

332,916. MACHINE FOR DRESSING STONE. Frank Manning, Ardmore, Pa. Filed Sept. 3, 1885. (No model.)



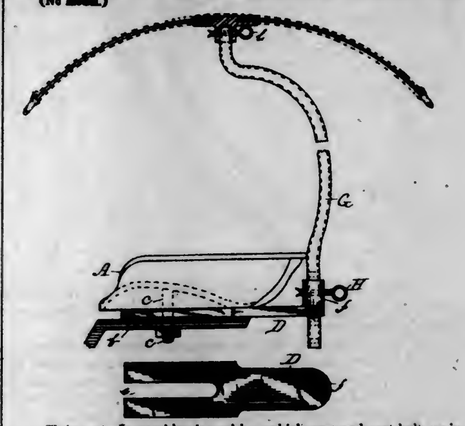
Claim.—1. In a stone-dressing machine, the head F, having bits G, in combination with straps H, spring J, and rod K, the latter attached to the wrist-pin of the crank-wheel L, the axle M, having sprocket-wheel M^2 mounted thereon, the carriage C, having sprocket-wheel M' mounted on an axle thereof, and chain M^3, connecting said sprocket-wheels, said parts being arranged and operated substantially as and for the purpose set forth.

2. In a stone-dressing machine, the frame A, with the track B thereon, in combination with the carriage C, working on said track and provided with a rack-bar, N, the frame D, carrying the sliding head F, with bits G, and means for operating said head, the pinion P, having bearings in said frame D and meshing with said rack-bar N, the said rack-bar being placed transversely to the said track B, and means, substantially as described, for rotating said pinion P, substantially as and for the purpose set forth.

3. In a stone-dressing machine, the frame A, having the track B, with the carriage C thereon, in combination with the frame D, having a sliding head, F, with bits G, and means, substantially as described, for operating the same, the rack-bars S, depending from said frame A, the frame T', having guideways for said bars S, pinions T, having bearings in said frames T' and meshing with said rack-bar S, and means, substantially as described, for operating said pinion T, substantially as and for the purpose set forth.

4. The carriage C, having the sprocket-wheel M' mounted on one of its axles, in combination with the frame D, with uprights E, furnishing bearings for the shaft M, the latter having sprocket-wheel M^2 mounted thereon, crank-wheel L on said shaft, head F, carrying bits G, and attached to said wheel L by rod K, spring J, and straps H, either of the said wheels M' and M^2 being secured to its shaft by a feather, substantially as and for the purpose set forth.

332,917. UMBRELLA-SUPPORT. Dewitt C. Markham, Utica, N. Y., assignor to the Eureka Mower Company, same place. Filed Mar. 7, 1885. (No model.)

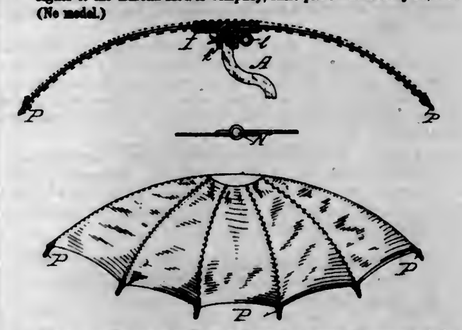


Claim.—1. In combination with a vehicle-seat and seat-bolt, an independent separate slotted supporting-plate placed beneath the seat and between the seat and a suitable support, and held securely in place by the seat-bolt, substantially as described.

2. In combination with a vehicle-seat, the supporting-plate D, provided with a hub, *f*, the umbrella-staff supplied with holes, and the spring-key H, whereby the staff may be adjusted as to height, substantially as described.

3. In combination with a vehicle-seat, the slotted supporting-plate D, having the open hub *f*, the umbrella-staff G, bent as shown, the spring-key for adjusting the height of staff, and a removable top, substantially as described.

332,918. UMBRELLA-TOP. Dewitt C. Markham, Utica, N. Y., assignor to the Eureka Mower Company, same place. Filed July 30, 1885. (No model.)



Claim.—1. In an umbrella or canopy, the removable top consisting of the canvas, the notch I, provided with holes and open hub *k*, the removable ribs, the seams in which said ribs are inserted, and the thimbles for securing the ribs in the seams, in combination with the staff A, provided with holes and spring-keys, substantially as described.

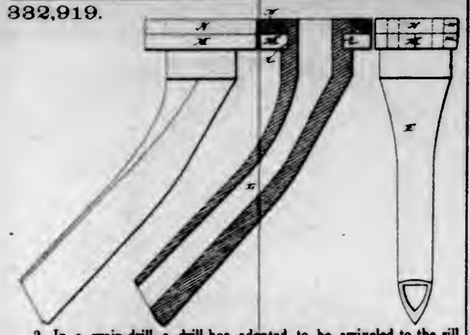
2. The top having the seams formed with apertures N, provided with the ribs *m*, and the thimbles P, in combination with the notch I, having the holes *j*, whereby the ribs may be inserted in the seams and in the holes in the notch, and secured in place by the thimbles P without sewing or other fastening, substantially as described.

332,919. GRAIN-DRILL. Jacob O. Mahen, Urbana, Ill. Filed Sept. 3, 1885. (No model.)

Claim.—1. In a grain-drill, the combination, with a hopper and a sill, of a drill-hoe swiveled, substantially as described, to the sill, below the hopper, and provided with a dropping-throat extending throughout the entire length of the hoe, substantially as set forth.



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2. In a grain-drill, a drill-hoe adapted to be swiveled to the sill below the hopper, and having a dropping-throat formed therein, substantially as set forth.

3. The combination, with the sill located below the hopper, of a series of drill-hoes swiveled, substantially as described, to the sill, and having dropping-throats formed therein, said drill-hoes being bent obliquely to the sill and thereby caused to trail in substantially straight lines as the sill is moved forwardly, substantially as set forth.

4. In a grain-drill, a drill-hoe swiveled to a sill, substantially as described, and provided with a sharp cutting-edge, and having a dropping-throat formed therein, substantially as set forth.

5. In a grain-drill, the combination, with the dropper-sill, of a drill-hoe having a rotary movement on said sill and bent to form an oblique angle therewith, said drill-hoe having a sharp cutting-edge and a dropping-throat located within, substantially as set forth.

6. In a grain-drill, the combination, with a series of drill-hoes swiveled to the sill of the dropper, and adapted to serve as dropping-throats, of a sulky to the frame of which the dropper-sill is hinged, and from which the drill-hoes are elevated or depressed, substantially as set forth.

7. In a grain-drill, the combination, with the sulky, of the dropper-sill hinged thereto, a series of drill-hoes swiveled to the dropper-sill, and an elbow-lever pivotally secured to the axle of the sulky and to the sill, whereby the series of drill-hoes are elevated and depressed, substantially as set forth.

8. In a grain-drill, the combination, with the dropper-sill, and a drill-hoe having an annular groove near its upper end, of a sectional collar adapted to embrace the drill-hoe in the groove, a collar adapted to embrace the drill-hoe above the groove, and a series of draw-bolts adapted to lock the collars in position and the drill-hoe to the sill, substantially as set forth.

332,920. GLASS TUBE FOR WATER-GAGES. Auguste Guilbert-Martin, St. Denis, France. Filed Nov. 25, 1884. (No model.) Patented in France Oct. 1, 1883, No. 157,799; in Belgium Oct. 16, 1883, No. 62,396; in England Oct. 17, 1883, No. 4,960; in Germany Oct. 22, 1883, No. 26,920, and in Italy Sept. 30, 1884, No. 374.



Claim.—1. As an improved article of manufacture, a glass gage or thermometer-tube having a colored strip arranged on and narrower than a bright strip, substantially as herein shown and described.

2. A glass gage or thermometer-tube provided with a longitudinal colored strip or stripe on a white or bright strip, the colored strip being arranged nearer the inner surface of the tube than the white or bright strip, substantially as herein shown and described.

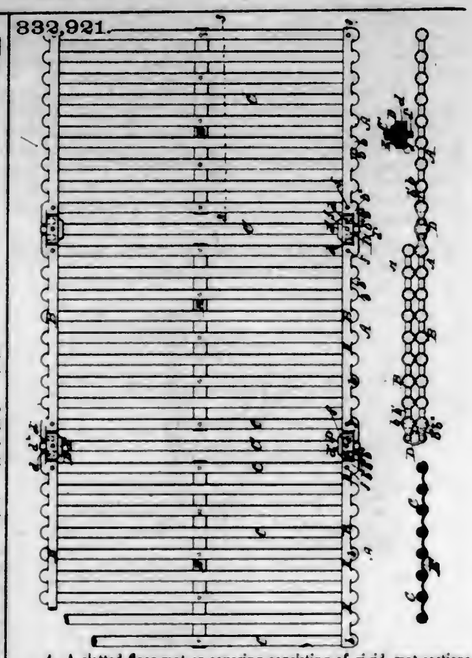
332,921. MAT OR FLOOR-COVERING. Rafael Martinez, New York, N. Y., assignor to Edward Basille, Cranford, N. J., and John F. Courtney, Philadelphia, Pa. Filed Oct. 16, 1885. (No model.)

Claim.—1. The joint-casting for floor-mats herein described, consisting of a single piece of cast metal having a socket or seat near each side of one end thereof, opening outwardly to receive the inwardly-projecting hooks or pivots of the joint, and an extension of the casting at said end beyond said sockets, and a socket at the opposite end of said casting opening inwardly to receive the end of a rod or slat upon which the casting is to be fitted, substantially as described.

2. A slatted floor mat or covering consisting of rigid sections united together by socketed joints at opposite sides of the mat, said joints being held in position by a slat or rod forming one of the slats or rods of the mat, substantially as described.

3. A slatted floor mat or covering consisting of rigid sections united together end to end by means of hooks on the ends of the respective mat-sections fitting openings or seats in interposed socketed links or joints carrying an interposed slat or rod, substantially as described.

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4. A slatted floor mat or covering consisting of rigid mat-sections united together by yielding joints, to permit the mat to be folded, and the slats of each of said sections being rigidly connected together at or about the center thereof by a binding-strip on the under surface of the mat, substantially as described.

5. A slatted floor-mat the slats of which or the slats of sections of which are connected together by a sinuous or corrugated binding-strip at the under surface of the mat, substantially as described.

332,922. NECK-WEAR FASTENER. George H. Marvin, Buffalo, N. Y. Filed Feb. 24, 1885. (No model.)



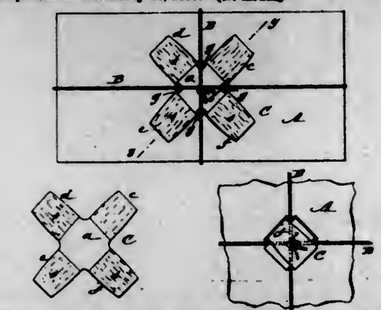
Claim.—The within-described neck-wear fastener, consisting of the central inverted-V-shaped device, A, having arms B B and legs C C, and arms D D and E E, all substantially as described and shown, and for the purposes specified and set forth.

332,923. NECK-WEAR FASTENER. George H. Marvin, Buffalo, N. Y. Filed Feb. 14, 1885. Renewed Dec. 2, 1885. (No model.)



Claim.—The within-described neck-wear fastener consisting of the central depression, A, and arms B B, flattened, spring-legs C C, curved or inflected set-offs D D, engaging-hooks E E, and braces with pointed ends F F, substantially as set forth, and for the purposes specified.

332,924. FASTENING FOR TIED PACKAGES. Rafael McCarty, Newport, R. I. Filed May 20, 1885. (No model.)

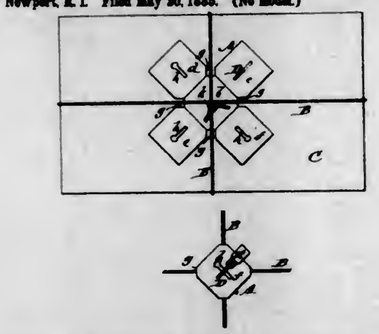


Claim.—1. As a new article of manufacture, a folding seal-fastening for the knotted or tied ends of cords or strings on packages, the same being composed of a center or body piece, and flaps on the side edges of said piece adapted to close and fasten by adhesive material, one over or upon the other and over the knot of the string, substantially as specified.

2. In a folding seal-fastening for the knotted or tied ends of cords or strings on packages, the flexible seal C, composed of a quadrilateral body or center piece, *a*, and having flaps *c*, *d*, *e*, and *f*, constructed to close adhesively one over or upon the other with the knot of the string in between them and the body, essentially as described.

3. In a folding seal-fastening for the knotted or tied ends of strings on packages, the combination of the re-enforcements *g* with the body or center piece, *a*, of the fastening, having flaps *c d e f*, substantially as and for the purposes herein described.

332,925. FASTENING FOR TIED PACKAGES. Rafael McCarty, Newport, R. I. Filed May 20, 1885. (No model.)



Claim.—1. A fastening for tied packages, in which is combined a folding seal having a series of flaps, the one of which is provided with a rotatable staple and the others with slots for the staple to pass through and turn in, said slots being arranged so as to occupy crossing positions in relation with each other consecutively when the flaps are turned down or closed, substantially as specified.

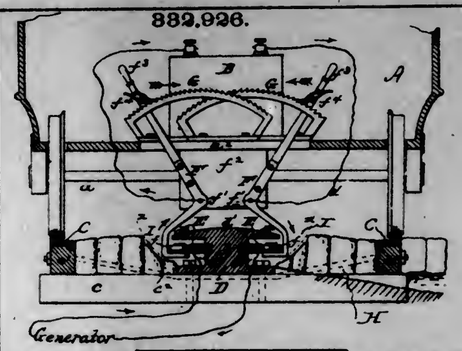
2. The seal-fastening A, having folding flaps *c d e f*, the three, *d e f*, of which have slots A in them, arranged as described, in combination with the rotatable staple D, attached to the remaining flap, *c*, essentially as herein set forth.

3. The combination of a lock with the staple D, and the folding-seal fastening A, having a center or body part, *b*, and flaps *c d e f*, with slots A arranged in relation to each other in certain of the flaps of the seal-fastening, substantially as shown and described.

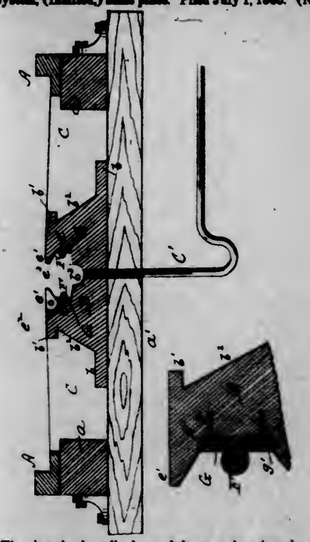
332,926. ELECTRICAL RAILWAY. James F. McLaughlin, Philadelphia, Pa., assignor, by mesne assignments, to the National Electric Railway System, (Limited,) same place. Filed Jan. 12, 1885. (No model.)

Claim.—The combination of a rail carrying insulated conductors on its opposite sides with an electric railway-car having two levers, F F, pivoted to the car and carrying at their lower ends contacts for the said conductors and at their upper ends spring-pawls, and carved racks G G on the car, with which the pawls engage, substantially as set forth.

332,926.

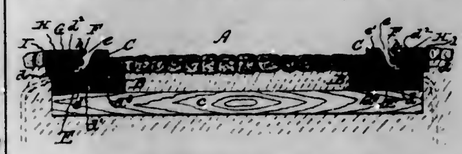


332,927. ELECTRICAL RAILWAY. James F. McLaughlin, Philadelphia, Pa., assignor, by mesne assignments, to the National Electric Railway System, (Limited,) same place. Filed July 1, 1885. (No model.)



Claim.—The herein-described conduit, carrying interior insulated conductors, and having thickened side walls with inclined exterior surfaces, substantially as and for the purpose set forth.

332,928. ELECTRIC RAILWAY. James F. McLaughlin, Philadelphia, Pa., assignor, by mesne assignments, to the National Electric Railway System, (Limited,) same place. Filed July 1, 1885. (No model.)



Claim.—1. The combination of the stringers and rails with L-shaped bars D, carrying the conductors, and forming, with the said stringers and rails, conduits therefor, and cross-ties carrying both stringers and bars, substantially as described.

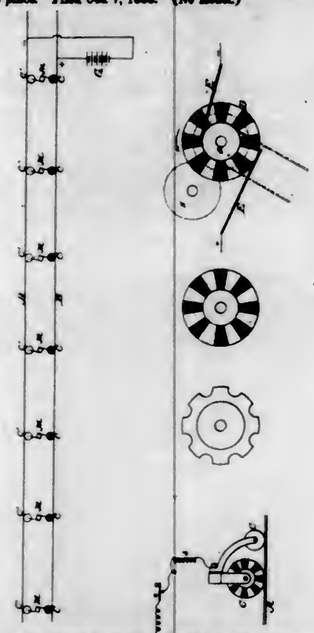
2. The combination of the track-rails and stringers with bars D, carrying the conductors and bolted to said stringers, and supporting cross-ties for the stringers and bars, substantially as set forth.

3. The combination of the rails C, stringers, and cross-ties with L-shaped bars D, insulating-strips G, secured to the bars, and electrical conductors F, carried by the strips, substantially as described.

4. The combination of the rails, stringers, and cross-ties with the L-shaped bars D, carrying the electrical conductors, and covers H, together forming the conduit, substantially as described.

5. The combination of the rails, stringers, and cross-ties with the L-shaped bars D, conductors F, and cement bars *c'*, in the conduit on the side adjacent to the stringers, substantially as set forth.

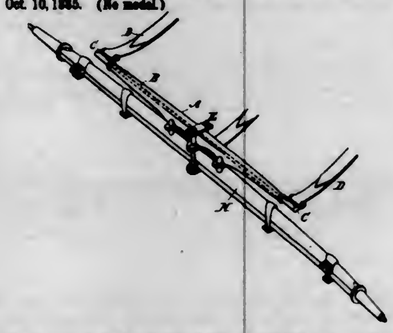
332,929. ELECTRICAL RAILWAY. James F. McLaughlin, Philadelphia, Pa., assignor to the National Electric Railway System, (Limited,) same place. Filed Oct. 7, 1885. (No model.)



Claim.—1. The herein-described method of operating a series of electrical-railway cars with motors in multiple arc, said method consisting in intermitting the current in the derived circuits between the line-conductors, some of the motors being thrown out of circuit while others are in circuit.

2. The herein-described method of operating a series of electrical-railway cars with the motors in multiple arc, said mode consisting in intermitting the current in the derived circuits between the line-conductors, some of the motors being thrown out of circuit while others are in circuit, and operating the circuit-breakers synchronously, substantially as set forth.

332,930. VEHICLE RUNNING-GEAR. Alexander McPherson and Franklin P. Randall, Ypsilanti, Mich. Filed Nov. 17, 1883. Renewed Oct. 10, 1885. (No model.)



Claim.—1. A hollow bolster having bearings for an equalizing-bar, substantially as described.

2. In combination with a hollow bolster, an equalizing-bar placed within the bolster, substantially as shown and described.

332,931. FRICTION CLUTCH AND COUPLING. William T. McRae, Philadelphia, Pa. Filed Sept. 7, 1885. (No model.)

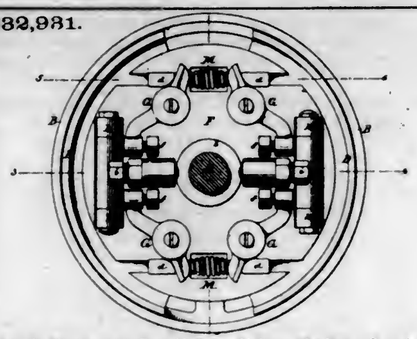
Claim.—1. The combination of a shaft or shafts, a wheel or pulley, and a clutching device comprising a disk or frame, F, secured to the shaft, opposite friction-shoes guided on said frame, levers G, hung to the frame and acting on the shoes, and levers H, also hung to the frame and acting upon the levers G, substantially as specified.

2. The combination of the shaft or shafts and the wheel or pulley with the clutching device comprising a disk or frame, F, secured to the shaft, the friction-shoes D, guided on said frame, the levers G, acting on said shoes, and having set-screws *f*, the levers H, acting on said set-screws, and having set-screws *i*, and a cone-sleeve, J, acting on the latter, as set forth.

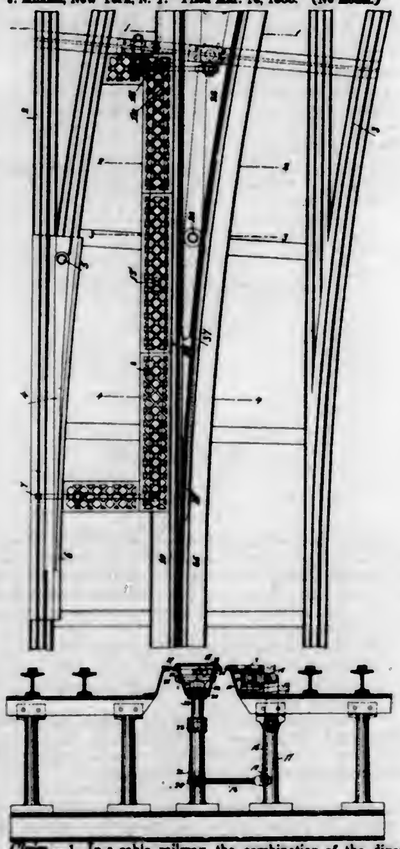
3. The combination of the frame or disk F and its opposite guided friction-shoes, levers for actuating the latter, and springs M, connecting the opposite shoes and serving to retract the same, as specified.

4. The combination of the disk or frame F, the friction-shoes D, guided thereon and having adjustable screw-stems *n*, and the springs M, connecting the stems of the opposite shoes, as specified.

332,931.



332,932. SWITCHING DEVICE FOR CABLE RAILWAYS. Daniel J. Miller, New York, N. Y. Filed Mar. 16, 1885. (No model.)



Claim.—1. In a cable railway, the combination of the diverging conduits and a tongue extending from the intersection of the two slots to and beyond a pivot on which said tongue is swiveled, with the mechanism for operating the tongue.

2. In a cable railway, the combination of the horizontally-movable tongue, the vertically-swinging lever connected to one end thereof, and the operating mechanism.

3. In a cable railway, the combination, with a pivoted slot-tongue, of a vertically-swinging lever engaging at one end therewith, a connecting-bar located transversely of the tunnel and beneath the travel of the grip, and the operating mechanism, said connecting-bar being connected at its respective ends with said vertically-swinging lever and the operating mechanism, substantially as set forth.

4. In a cable railway, the combination of the main and branch conduits, said conduits provided with slot-rails, substantially as shown and described, the contiguous slot-rails of the two conduits terminating in and being firmly secured to a single stationary plate, with a movable tongue or extension for opening the slot of the main conduits and closing that of the branch conduit, and vice versa, as set forth.

5. In a cable railway, the combination of the outer slot-rails and a single cover-piece supported centrally by a single pillar between the said diverging outer slot-rails.

6. In a cable railway, the combination of the main and branch conduits, with their corresponding openings or slots, of the triangular cover-piece supported from a single central pillar, with the tongue situated beneath and pivoted to the cover-piece, as shown and described.

7. In a cable railway, the combination of the main and branch conduits, the swinging tongue of the slot-rails, supported by and beneath the triangular cover-piece, the system of levers connecting said tongue with the source of operation, and the operating-lever, all arranged substantially as and for the purposes set forth.

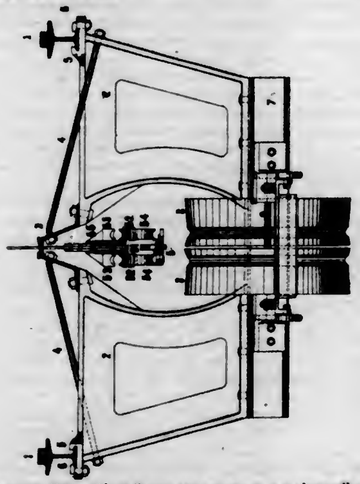
8. In a cable railway, the combination of the slot-tongue pivoted and supported as described, the vertical levers pivoted on the supporting-pillars, the connecting-bar extending between the levers and beneath the travel of the grip, within the conduit, and a system of levers extending to the source of operation, and the operating-lever, substantially as shown and described.

9. In a cable railway, the main and branch conduits, the main and branch slots and slot-rails, and the cover-piece arranged and supported centrally and from a single pillar between the branching conduits, with the tongue pivoted to and beneath the cover-piece, the vertical lever for operating the tongue and pivoted to aforesaid central pillar, a bar extending beneath the travel of the grip within one of the conduits, and a series of levers extending to the operating-lever, with said operating-lever, as set forth.

10. In a cable railway, the combination of the slot-tongue pivoted as described, the vertical lever pivoted to the central pillar for throwing the tongue from one position to another, the bar extending beneath the travel of the grip within the conduit, the vertical and horizontal levers arranged and distributed as shown and extending to the operating-lever, with said operating-lever, as set forth.

332,933. CABLE RAILWAY. Daniel J. Miller, New York, N. Y. Filed July 23, 1884. Renewed July 27, 1885. (No model.)

Brief.—Paired carrying-palleys with grooves near their inner edges have bearings in frames resting on knee-irons bolted to the transverse I-beams of the tube-framing. A block of wood is inserted between the I-beams and the knee-irons.



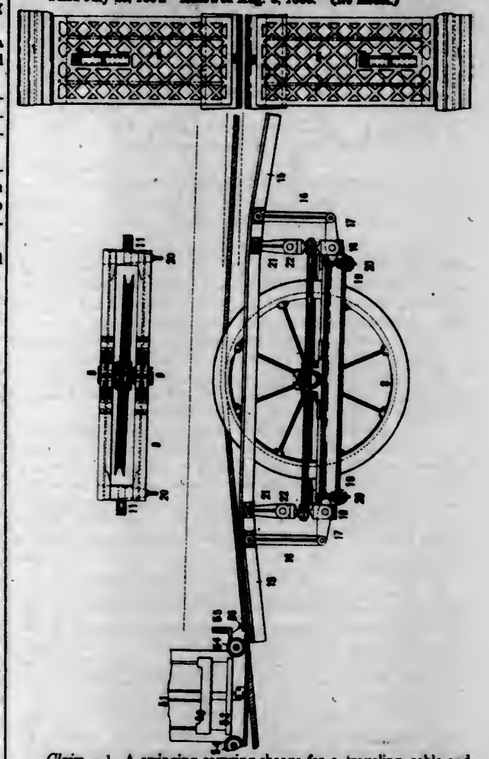
Claim.—1. In a cable railway, one or more carrying-palleys the shaft or shafts of which have their bearings in a frame resting on lugs or knee-irons fixed to the transverse I-beams of the tunnel-yoke, substantially as herein shown and described.

2. The combination, with supporting-frames for the rope-carrying palleys, of lugs or knee-irons bolted to the I-beams and the interposed blocks of wood or other comparatively soft material.

3. The combination of the paired carrying-rolls mounted in a common supporting-frame and grooved near their adjacent ends to receive the cables, substantially as herein shown and explained.

4. A yoke for cable-railway tunnels, constructed with paired castings connected at the bottom by transverse I-beams and supporting at top the slot-irons and the track-rails, in combination with tie-rods extending from the respective slot-irons to the risers of the yoke, substantially as herein shown and described.

332,934. CABLE RAILWAY. Daniel J. Miller, New York, N. Y. Filed July 23, 1884. Renewed Aug. 5, 1885. (No model.)



Claim.—1. A swinging carrying-sheave for a traveling cable and an oscillating or tilting frame in which it is journaled, in combination with a vertically-movable bar connected to said oscillating frame and a projection from the car for depressing said bar, as explained.

2. The combination of the tilting frame, a sheave mounted therein for carrying a traveling cable, and the levers operating, substantially as set forth, to tilt the frame and deflect the carrying-sheave by vertical pressure from the grip or other attachment to the car.

3. A cable-carrying sheave mounted in a tilting frame operated by a lever for holding the said sheave in either position to permit or prevent the engagement of the cable by the grip.

4. The combination of the carrying-sheave, the tilting frame in which it is mounted, the levers, connecting-links, and stop-block to fix the adjusting-lever, and consequently the tilting frame and sheave, in either position in which they are placed.

5. A carrying-sheave for a traveling cable, mounted in a tilting frame operated by connections to fix in its retracted position or permit it to fall into operative position at will and capable of automatic deflection while in operative position, substantially as and for the purposes set forth.

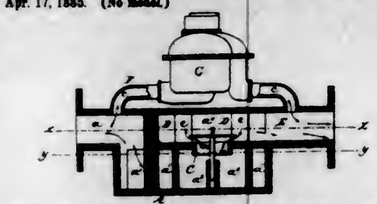
6. The combination of the carrying-sheave, the tilting frame in which it is mounted, the levers and connections for controlling the position of the sheave relatively to the grip and slot, and the slot-and-pin connection between the operating-levers, permitting free movement to the tilting frame when the sheave is tipped to bring the cable within reach of the grip.

7. The combination, with a pair of sheaves for supporting twin cables and independently-oscillating frames in which they are respectively journaled, as described, of a tilting device common to both, whereby either may be brought into active position at the will of the operator, and a projection from the car for engaging with said tilting device, substantially as set forth.

8. The combination of one or more carrying-sheaves for traveling cables, the tilting frame or frames in which they are mounted, the tilting levers and links, the vertically-moving frame, and the grip provided with rollers for tilting the frame and carrying-sheaves by vertical pressure, as herein set forth.

9. In combination with a sheave for supporting a traveling cable, an oscillating or tilting frame in which said sheave is journaled, having trunnions whose axis passes through or near the center of gravity of the oscillating parts, as and for the purpose set forth.

332,935. **PROPORTIONAL WATER-METER.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination of a water-measuring device, G, with a chamber-section of the water-main having one or more circular passages, a', in the same plane, a tangential inlet, and a valved port, n, arranged between the influent and the affluent passages of said chamber-section, substantially as described, for the purpose specified.

2. The combination of a water-measuring device, G, with a chamber-section of the water-main having one or more communicating circular passages, a', in the same plane, supplemented by a chamber, a^4, having radial abutments e, and communicating with said circular passages, substantially as described, for the purpose specified.

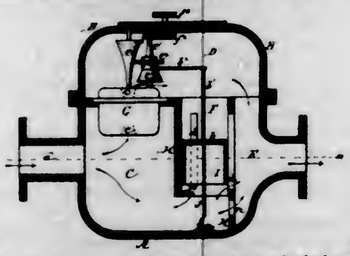
3. The combination, in a water-meter, of a shell having a receiving and discharging chamber formed with current diverting and retarding passages, with a valved communicating opening and a metered passage communicating with the discharge-chamber outside of the current-retarding passages, substantially as described, for the purpose specified.

4. The combination, in a water-meter, of a shell having the obstructed passages a' a^2 a^3 a^4, with the communicating port n and a metered passage, c, which receives a division of the volume to be measured, substantially as described, for the purpose specified.

5. In a water-meter, the combination, with the working and registering device receiving a division of the volume to be measured, of a main chamber adapted to resist the flow of water, a weighted valve for the communicating port of said passages arranged and operating to balance the friction due to the moving parts of the measure-indicating devices, and means, substantially such as described, for equalizing the resistance to the flow of the divided volume.

6. The water-meter-chamber section A, consisting of two chambers, one supplementing the other and communicating centrally, one chamber having circular passages in the same plane and the other chamber having separated abutments, the receiving-chamber having a tangential inlet and the discharging-chamber a radial outlet, in combination with a measuring device operated by the division of the inflow volume, substantially as herein set forth.

332,936. **METHOD OF OPERATING PROPORTIONAL WATER-METERS.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—1. The improved method herein described of measuring water flowing through a pipe and indicating the quantity of such flow, which consists in dividing the flowing volume into two streams, causing one stream to pass through a metered passage and utilizing the difference of pressure in the two streams passing through their separate chambers to vary the speed of an indicating mechanism, whereby the indicator is caused to indicate the quantity of water passing in the two streams.

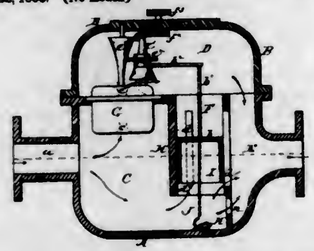
2. The method, substantially hereinbefore described, of measuring water flowing in separate streams from a single supply-pipe, which consists in utilizing the difference in the pressure in the two streams in their separate courses to vary the speed of an indicating mechanism conjointly with the indicating device, whereby the proportionate quantity passing in both streams is determined.

3. The method, substantially hereinbefore described, of measuring water flowing in separate streams from a single supply-pipe through separate chambers, which consists in controlling the outflow of one stream, so that its pressure will operate a discharge-controlling valve to govern the area of the discharging-ports from said chamber, and causing the other stream to pass from a metered passage on the opposite side of said pressure-controlled valve, substantially as described, for the purpose specified.

4. The method, substantially hereinbefore set forth, of measuring water flowing in separate streams from a supply-pipe through separate chambers, which consists in utilizing the difference of pressure in both streams in their separate chambers, to alter the speed of the indicating mechanism, to indicate the quantity passing in the separate streams as the sum total of the entire passing-volume.

5. The method, substantially hereinbefore set forth, of measuring water flowing through separate chambers, which consists in altering the speed of the indicating mechanism by means of the difference of the pressure of the two streams caused to act upon a movable dividing medium of said chambers having direct connection with said mechanism.

332,937. **PROPORTIONAL WATER-METER.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—1. The combination, in a water-measuring device, of an inclosing-case having chambers dividing the influent volume into separate streams, with an indicating device operated by the direct flow of one of said currents, a variable-speed-indicating mechanism, and a valve connected with and regulating the speed of said mechanism, substantially as described, for the purpose specified.

2. The combination, in a water-measuring device having separate chambers receiving the inflow in separate streams and discharging it in a single volume, of the meter G, containing the indicator-operating parts, with a piston-valve, I, dividing said chambers, and controlling the outflow from one of said chambers, and variable-speed-controlling mechanism operated by said valve, all inclosed within a case, substantially as described, for the purpose specified.

3. The combination, in a water-measuring device, of the meter G, containing the indicator-operating parts, with a piston-valve, I, suitable connections for uniting the latter with the indicating mechanism for varying the speed of the same, and a sectional weight suspended from said piston-valve acting to increase the weight of the piston-valve according to the length of the weight carried by it, substantially as described, for the purpose specified.

4. The combination of the shell A, having an interior cylinder open at both ends, having wall outlet-ports communicating with the separate chambers C D E, with the piston-valve I, controlling said cylinder-ports, a variable-speed-indicating mechanism connected with said valve, and a meter, G, containing the indicator-operating parts, whereby a measurement and indication of the flow is effected, as stated.

5. The combination, in a water-meter, the indicating parts of which are operated by a division of the volume to be measured, of the meter G, with the piston-valve I b, the variable-speed-indicating mechanism consisting of the cones e e', the friction-wheel e^3, and means whereby the latter is connected with the piston-valve, substantially as described, for the purpose specified.

6. An organized meter device for effecting a proportional measurement of a volume divided into separate streams, consisting of indicating mechanism operated by one of said streams, a valve operated by the difference of pressure of both streams, and a variable-speed-controlling mechanism operated by said valve, substantially as described, for the purpose specified.

7. The combination, in a water-meter in which the flowing volume is divided into separate streams, of a case divided into separate chambers, indicating mechanism operated by one of said streams, and a valve exposed to the action of both the outflowing streams, with mechanism connecting said valve with the indicating mechanism for varying the speed of the latter, and the dividing partition of said case having suitable effluent ports, substantially as described, for the purpose specified.

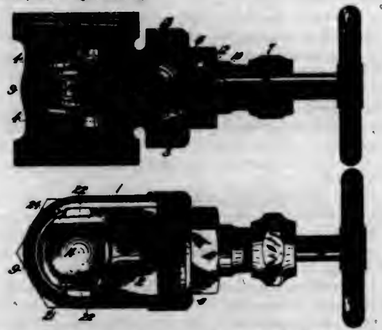
8. The meter-case having the interior cylindrical dividing-wall F, provided with effluent ports d n, in combination with a piston, I, fitted to move in said dividing-wall, having a rigid rod, b', extending from one end of said piston into the chamber D, and a sectional flexible weight suspended from the other side of said piston into the chamber C, meter-operating mechanism, and mechanism connecting it with the latter and with the piston-rod, substantially as described, for the purpose specified.

332,938. **SPUN CHENILLE AND THE ART OF MANUFACTURING THE SAME.** WILLIAM E. OBERLIN and ALBERT C. OBERLIN, Philadelphia, Pa., assignor of one-half to Hartley A. Cables, same place. Filed Nov. 8, 1883. (No specimens.)

Claim.—1. The improvement in the art of manufacturing spun chenille herein described, the same consisting in first printing upon the weft or body threads or yarns the desired colors at the proper points and then connecting the said weft or body threads to the binding threads or chain as in the usual process of manufacture, substantially as set forth.

2. As a new article of manufacture, spun chenille having weft or body threads or yarns with different colors printed thereon, substantially as set forth.

332,939. **SLIDING GATE-VALVE.** JAS. OLD, Allegheny, Pa. Filed Mar. 13, 1885. (No model.)



Claim.—1. In a gate-valve, a case having inclined valve-seats, in combination with a reciprocating yoke having wedge-shaped sides, a bearing having convex ball-shaped sides loosely mounted in said yoke, the two disks arranged outside of the yoke on opposite sides thereof, and provided with concave seats for the reception of the ball-bearing, substantially as set forth.

2. In a gate-valve, the combination of a yoke, a disk on each side of the yoke, a ball-and-socket bearing back of each disk, and a jointed connection uniting or tying each disk to the yoke independently of the valve-seat bearing, substantially as set forth.

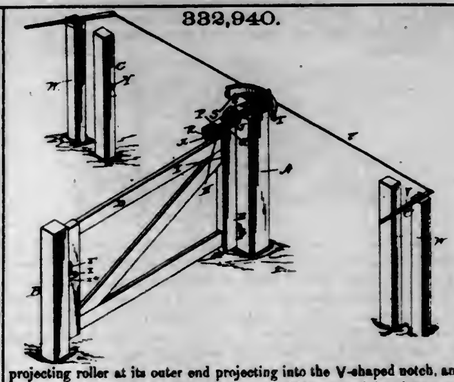
3. In a gate-valve, a reciprocating yoke, in combination with valve-disks 16, provided with journal projections 17, adapted to fit within the yoke, a ball-bearing arranged between the disks and within the yoke, and the key 24, engaging the disks and yoke and serving to hold them in loose connection, substantially as set forth.

4. In a gate-valve, a reciprocating yoke having guide-stems 19 and 20, arranged on opposite sides thereof, in combination with a bearing having convex sides, and two valve-disks arranged one on each side of the yoke and provided with convex seats for the reception of the ball-bearing, substantially as set forth.

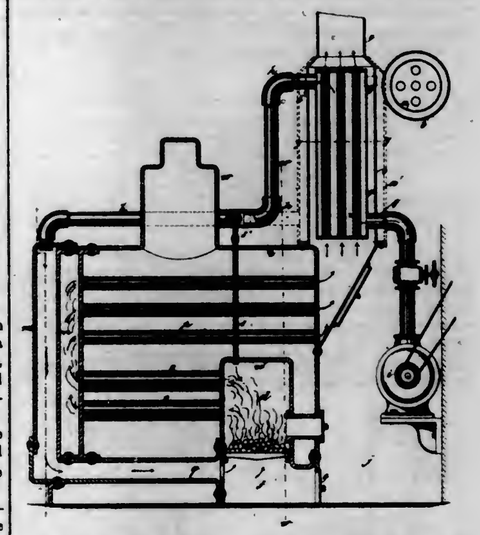
332,940. **DEVICE FOR OPERATING GATES.** CHARLES H. PATTON, Springfield, Ohio. Filed Sept. 2, 1885. (No model.)

Claim.—1. In a device for opening swinging gates, the combination of a plate secured upon the top of the hinge-post and having an upwardly and a downwardly projecting pintle concentric with each other, a plate secured to the upper edge of the gate at its hinge end and having a V-shaped notch in one end and a large perforation in the other end fitting upon the downwardly-projecting pintle, and an arm pivoted upon the upwardly-projecting pintle and having a downward projection at one end engaging the V-shaped notch, and having ropes attached to its other end, as and for the purpose shown and set forth.

2. In a device for operating swinging gates, the combination, with the gate, hinge-post, and latch-posts, of a plate secured upon the top of the hinge-post and having an upwardly and a downwardly projecting pintle concentric with each other, a plate having a bulge bearing against the outer side of the top of the hinge-end rail of the gate and a lip bearing against the other side and formed with a V-shaped notch in its outer end and with a heart-shaped aperture in its inner end, an arm fulcrumed upon the upwardly-projecting pintle and having a downwardly-projecting roller at its outer end projecting into the V-shaped notch, and having a segment at its other end formed with two peripheral grooves, and two ropes secured, one at each end of the grooves, as and for the purpose shown and set forth.



332,941. **AIR-SUPPLY APPARATUS FOR STEAM-BOILERS.** JOHN S. PRESCOTT, Brooklyn, N. Y. Filed July 24, 1885. (No model.)



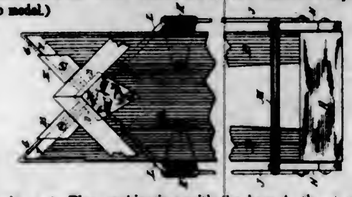
Claim.—1. The combination, with a steam-boiler, of the air-heater a, located in the waste-heat passage above the boiler, and having an inlet-pipe and a delivery-pipe, also the air-cap m over the hood n of the return-flue, said air-cap having an inlet-passage connected with the heater and a delivery-passage connected with the furnace, for conducting the air for combustion through the heater and the air-cap, substantially as described.

2. The combination, with a steam-boiler, of the air-heater adapted to be heated by the waste-heat passage above the boiler and having inlet and connecting passages, also the air-jacket l, connected with the said heater and extending along the top of the boiler, and also the air-cap m, located over the hood n of the return-flue and connected with the jacket l, and also having a delivery-passage connected with the furnace for conducting air for combustion through the heater-jackets and cap.

3. The combination, with a steam-boiler, of the air-heater a, located in the waste-heat passage above the boiler, the inlet-pipe thereto, delivery-pipe arranged for conducting air for combustion into the furnace below the grate, and a series of branch tubes, s, connected with the furnace through the crown-sheet, substantially as described.

4. The combination, with a steam-boiler, of the air-heater adapted to be heated by the waste-heat passage above the boiler and having an inlet-pipe and a delivery-pipe, also the air-jacket l, extending along the top of the boiler, also the air-cap m, over the hood n of the return-flue and having a delivery-passage connected with the furnace below the fire-bed, and also the tube s, connected with the jacket l through the top of the boiler and with the furnace through the crown-sheet, substantially as described.

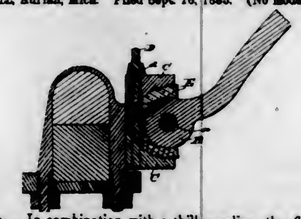
332,942. MOLDING-CLAMP. Charles A. Phelps and William W. Stebbs, Humboldt, Iowa. Filed Nov. 6, 1884. Renewed Sept. 5, 1885. (No model.)



Claim.—1. The combination, with the base A, the standard B, provided with guideways at its top at a right angle with each other, and the independent jaws E, fitted to slide therein, of the rectangular anvil C, fixed to the said standard in the path of the jaws with its faces at right angles to the line of travel of the jaws, the treadle H, pivoted to the base, the bell-crank levers K, and the rods J and L, connecting the levers K with the treadle H and the jaws E, respectively, substantially as shown and described.

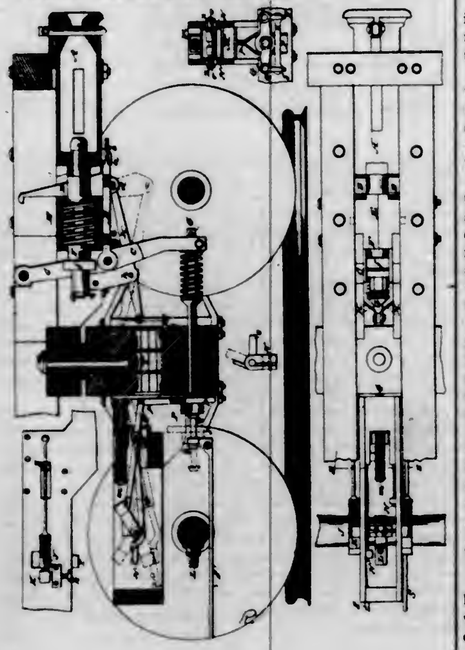
2. The combination of the vertical post B, notched at its upper end to a right angle, the strap G, formed with a right-angular bend at its center, and with two bends at forty-five degrees therewith near its ends, the said ends being parallel and secured to the vertical edges of the said post, the right angle of the strap being above and parallel to the right-angular notch in the post, and the jaws E, fitted to slide between the strap G and the top of the post, substantially as shown and described.

332,943. ANTI-RATTLER FOR THILL-COUPLINGS. Timothy P Randall, Adrian, Mich. Filed Sept. 16, 1885. (No model.)



Claim.—In combination with a thill-coupling, the flexible elastic packing E, the wedge-shaped compression-blocks C C, provided with concave faces *c c*, having corrugations *c' c'*, and the connecting-bolt D and nut *d*, all constructed and arranged substantially as shown and described.

332,944. AUTOMATIC CAR-BRAKE. Richard Randolph, Rockville, Md. Filed Feb. 10, 1885. (No model.)



Claim.—1. The combination of the bracket formed on the under side of the draw-head, the bar B, the lever C, abutting against the bracket, and the rod *b*, playing through a perforation in the face of the bracket, for the purpose of actuating the lever C from the lowest point of the draw-head, to avoid interference with the draw-bar and buffer, and to allow of the forward movement of the draw-head independent of that of the lever C.

2. The combination of the horizontal bar G, the springs interposed between the lever C which operates the bar, and a collar formed upon it, the cross-head P, the plate *p*, suspended from the levers N and playing vertically between the bar and the cross-head, the rods Q, connecting the cross-head with the levers R, and the springs between these levers and the heads of the rods at this end, for the purpose of operating the levers by the lever C with a determined and graduated pressure, as described, and at the same time to move the levers N forward, so as to disengage them from the pendulum upon each complete action of the brakes.

3. The combination of the sloping projections on the sides of the draw-head A, the wedges D, having a corresponding slope and thickness and playing vertically between these projections and the buffer or dead-block behind the draw-head, and the levers H, supporting these wedges at their bases, having their fulcrums attached to the body of the car above the car-springs and their ends opposite to the wedges attached to the truck-sill below the car-springs, for the purpose of graduating the backward movement of the draw-head to the weight of the car with its load.

4. The combination of the projection L, the pendulum I, the levers N, the catches O, the plate *p*, suspended from the levers, and the frame attached to the truck-sill supporting the apparatus, the whole being adjusted and fulcrumed, as described, for the purpose of determining the automatic action of the brakes by the velocity of the car.

5. The rods K, deflecting vertically and having the sleeves J, to which the pendulum is attached, sliding upon them against spiral springs coiled around the rod, to allow accidental movements of the pendulum, both vertical and horizontal, to be made without injury, and to restore it to its normal position.

6. The combination of the sliding box M, carrying the bent fulcrum-piece *o*, the spring upon the rod *m*, the offsets upon the pendulum, and the catches on the levers, all so arranged that the pendulum will be disengaged from the levers by their forward movement with the cross-head, and the levers be restored to their normal position afterward.

7. The adjusting-screw *k* and the beveled shoulders and taps on the fulcrum-piece *o*, for adjusting the pendulum and levers vertically.

8. The combination of the pair of levers R on one side of the truck-sill, the pair of levers *r*, hinged at their inner ends to the opposite side of the same sill, and the movable fulcrums between the opposite levers, R and *r*, for the purpose of applying an equal pressure to all the wheels of the same truck by a force applied at the center of the system.

9. The wedge 7, in combination with the fulcrum-bar U, divided into two parts, and having the wedge inserted between them near the middle of the truck-sill, for the purpose of increasing the distance between the fulcrums automatically, as described.

10. The combination of the extension-rods 8, the springs between their heads and the levers through which they pass, the clamps 11, and the screw 9, connecting them, for the purpose of allowing the wearing-surface of the shoe to approach the wheel to within a certain constant distance when the brakes are not applied, the slack thus created to be taken up by the wedge 7 at fulcrum, as described.

11. The combination of the wedges or blocks 1, inserted between the levers R and the truck-sill, the rock-shaft under the sill having arms supporting the two blocks, and an arm at the middle of the shaft in the opposite direction bearing the counterpoise 2, and the plate suspended from the automatic apparatus whose weight is imposed upon this arm, as described, for the purpose of preventing the levers R from acting when the plate is down, and of leaving them free to act when the plate is up.

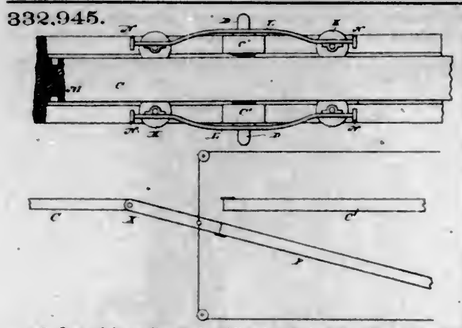
12. The combination of the wedges or blocks inserted between the levers R and the truck-sill, the rock-shaft under the sill with arms bearing the blocks on one side and a counterpoise on the other, and the stop *p*, actuating the rock-shaft, as described, for the purpose of determining the automatic action of the levers by the vertical position of the stop, as described.

13. The combination of the extensions of the rods 8 under the sill, connected by the plate 3, the bent end of the arm of the rock-shaft bearing the counterpoise 2, and the spring 5, attached to the extensions of rods 8, maintaining their ends in contact with the piece 6, for the purpose of freeing the levers R from the blocks before the hand-power is applied, and to restore the parts to their normal position afterward.

332,945. SKATING APPLIANCE. Robert H. Rue, Fremont, Ohio. Filed Mar. 17, 1885. (No model.)

Claim.—1. In a rink appliance for aiding in skating, &c., in combination with an overhead endless way, a light trundle having riding-wheels, side bars, guide-rollers, and bumpers, and a bow and pendent cord, substantially as and for the purpose set forth.

332,945.

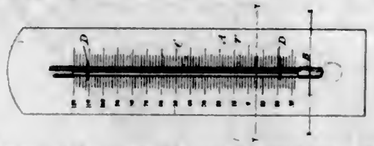


2. In a rink appliance for aiding in skating, &c., in combination with an overhead endless way having a pivoted switch-section, movable horizontally, and a side track, a light anti-friction slide or trundle bearing on said way, a pendent bow and cord or the like, suitably connected with the slide or trundle, and pull-cords or the like connected with the switch, so that from beneath, by the pull-cords of the switch and trundle, they can be controlled at will, substantially as set forth.

332,946. COUGH REMEDY. James F. Richardson, Toledo, Ohio. Filed July 3, 1885. (No specimens.)

Claim.—A compound for medical purposes, consisting of raw tar, Cayenne pepper, vinegar, red-clover tea, honey, butter, and sugar, substantially as herein specified, and for the purpose set forth.

332,947. THERMOMETER. John L. Sardy and Charles N. Coles, New York, N. Y. Filed June 2, 1885. (No model.)



Claim.—1. A thermometer-case formed of a single piece of metal, and having the top, bottom, and side flanges turned back from the face or scale-plate, in combination with the tube fastened in the rear of the said plate, as shown and described, and for the purpose set forth.

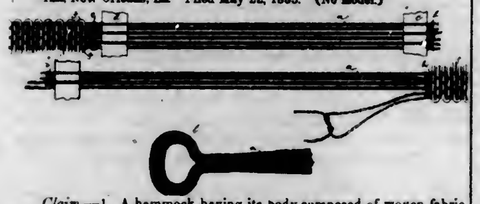
2. In combination with the thermometer-casing, formed of a single piece of metal provided with a longitudinal opening, as described, the tube fastened to the rear of the scale-plate and projecting through the opening, as set forth.

3. The thermometer-casing, formed substantially as described, and having a slit or longitudinal opening in the face thereof, in combination with the tube attached to the casing, contiguous to and directly behind the slit, whereby the tube and its bulb are thoroughly protected and the readings easily made.

4. The thermometer-casing A, having the flanges A' and *a*, the offsets or receptacles B, and the slit or opening C, with the thermometer-tube T and attaching-rings D, as set forth and shown.

5. In combination with the casing A, having the longitudinal opening C, the thermometer-tube T, projecting through the opening, and the attaching-rings D, the shield or guard E, for the purposes described.

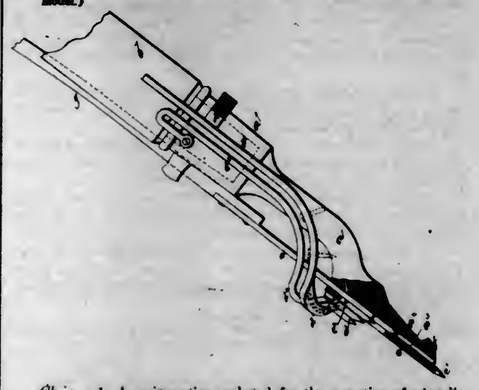
332,948. HAMMOCK. William Schilling and Julius Ehrenfrochter, New Orleans, La. Filed May 22, 1885. (No model.)



Claim.—1. A hammock having its body composed of woven fabric provided with selvage edges, and having its outer weft-cords secured by doubly knotting the unwoven portions of the warps over same, the unwoven portions of the warps serving as suspensory-cords, substantially as set forth.

2. A hammock having its body composed of woven fabric with selvage edges, and with outer weft-cords secured by doubly knotting each adjacent pair of warps over same, the unwoven portion of each pair of warps formed into loops, and the said loops united together, substantially in the manner shown, and for the purpose set forth.

332,949. CARPET STRETCHER AND TACKER. Ephrem Schmidt and John R. Kuehlman, Stillwater, Minn. Filed July 25, 1885. (No model.)

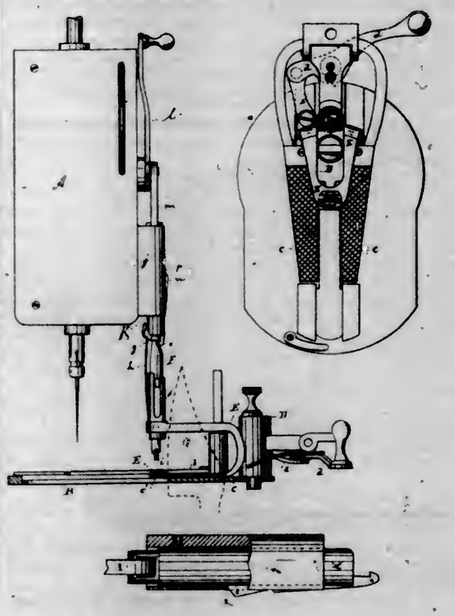


Claim.—1. A main casting socketed for the reception of a handle and having a groove formed in its forward or upper side covered by a steel plate provided with teeth for engagement with the carpet, in combination with a tack-holding bar secured to the side of the casting and bent around in front of the grooved head, a tack-guard of the same form in close relation thereto, and a plunger working in the groove and connected to an operating-lever hinged upon the handle, substantially as and for the purpose set forth.

2. The casting *a*, formed with the groove a^3 in its forward side, the toothed plate *c*, with an opening over said groove, and the handle *b*, in combination with the flat holding-bar *d'* and its guard d^3, curved as herein shown, the plunger *e*, rod *g*, and lever *g'*, all constructed and arranged to operate substantially as and for the purpose set forth.

332,950. CUTTING ATTACHMENT, FOR BUTTON-HOLE SEWING-MACHINES. Friedrich E. Schmidt, Brooklyn, N. Y. Filed Mar. 31, 1885. (No model.)

Brief.—The object of the device is to punch the eye and cut the slit in cloth or fabric which, when stitched around the edges, makes the button-hole. The punch is provided with a head, upon which a plunger bears when the latter is operated to force down the punch. Beneath the head of the punch a hook carried by the plunger engages for drawing it up, where it is held by a recessed spring. The lower end of the punch is provided with V-shaped cutting-edges, and is hollowed out to receive a pin with coiled spring superposed, to force the pin in pushing out the small piece of severed cloth.



Claim.—1. The combination of a cloth-clamp with a slide adapted to reciprocate within the cloth-clamp and carrying a punch, and with a plunger adapted to force down the punch, substantially as specified.

2. The combination of cloth-clamp D, having perforated slide E, with punch F, having head *g*, and with head A, having a plunger for forcing down the punch and a hook for raising it, substantially as specified.

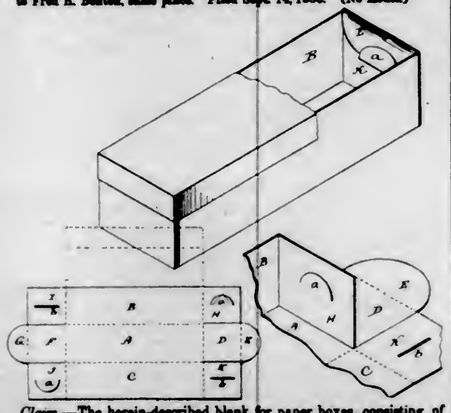
3. The combination of a cloth-clamp, D, with perforated slide E, having punch F, and with plunger K, the punch having a double-V-shaped cutting-edge, substantially as specified.

4. The combination of cloth-clamp D, having perforated slide E, with punch F, having recessed top, and with head A, casing *j*, plunger K, hook *o*, and spring *q*, substantially as specified.

5. The combination of cloth-clamp D with perforated slide E, cutting-blade G, pivoted shank *r*, button *s*, and stop *t*, and with an abutment for stop *t*, substantially as specified.

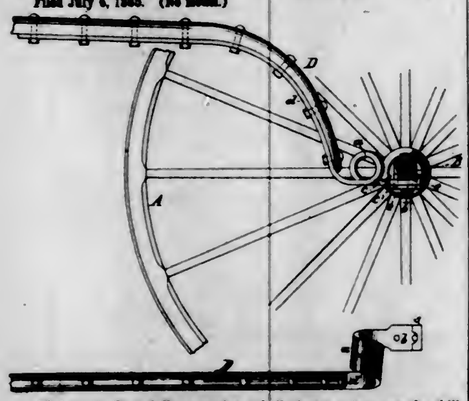
6. The combination of clamp D and perforated slide E with punch F, for forming the eye of a button-hole, and operated by plunger K, and with blade G, for cutting the slit of a button-hole, and operated by shank *r*, substantially as specified.

332,951. PAPER BOX. JAMES A. SCOTT, New Haven, Conn., assignor to Fred H. Benton, same place. Filed Sept. 14, 1885. (No model.)



Claim.—The herein-described blank for paper boxes, consisting of the central portion, A, side portion, B, upon one edge, and the other side portion, C, upon the opposite edge, the bottom portion constructed with an extension, D, at one end, and F at the opposite end, corresponding to the ends of the box, the said extensions D F further extended to form a flap, sides constructed with an extension at each end corresponding substantially to the end of the box, one of said extensions having a slit therein to form a tongue, *a*, the extension at the opposite end of the same side having a longitudinal slit, *b*, therein corresponding to said tongue, the said blank slit between the extension from the sides and bottom, and the blank scored for the bends, substantially as described.

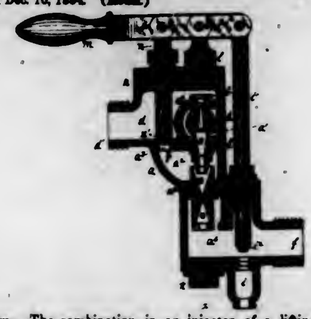
332,952. THILL-COUPLING. WILLIAM A. SCOTT, Jr., Pittsburg, Pa. Filed July 6, 1885. (No model.)



Claim.—1. In a thill-connection, a helical coil, *a*, between the thill and the axle, said spring being parall with the axle and in the same plane therewith, substantially as set forth.

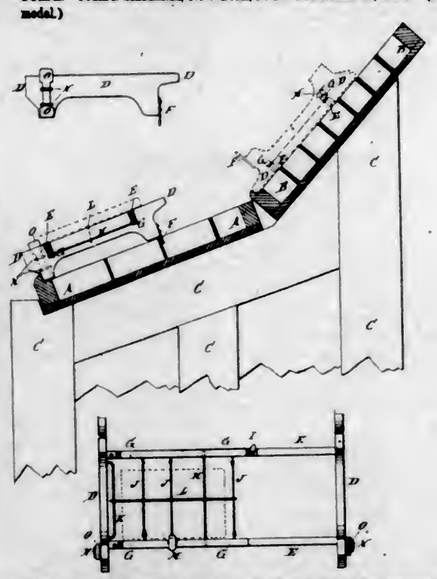
2. A thill-strap, *d*, having a helical spring-coil, *a*, and a rear extension, *b*, by which to make connection with the vehicle, said strap and rear extension being tangential to the coils, substantially as set forth.

332,953. INJECTOR. WILLIAM J. SHERIFF, Allegheny City, Pa. Filed Dec. 10, 1884. (Model.)



Claim.—The combination, in an injector, of a lifting or ejecting head or nozzle, a cold-water-induction pipe, and a hot-water-induction pipe, both of said pipes communicating with the said lifting-head, substantially as and for the purposes described.

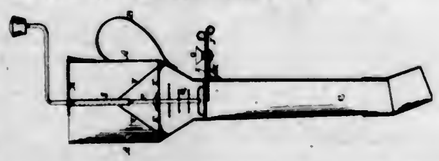
332,954. COMBINED GALLEY-REST, COPY-HOLDER, AND COPY-GUIDE. JOSEPH SILBERNIK, New York, N. Y. Filed Mar. 19, 1885. (No model.)



Claim.—1. The combination, with the frame D E, of the metallic plates F, the staples N, and the stop-bars O, sliding in the said staples, substantially as herein shown and described, whereby the said frame can be used either side up, as set forth.

2. The combination, with the frame D E, having metallic plates F and staples and sliding bars N O, of the hinged bars G, the rod H, and cords J, and the long staple K and sliding hook-rod L, substantially as herein shown and described, whereby the galley-rest can be used as a copy holder and guide, as set forth.

332,955. CORN-PLANTER AND GUANO-DISTRIBUTER. ROBERT E. SIBELL, Newnan, Ga. Filed July 13, 1885. (No model.)



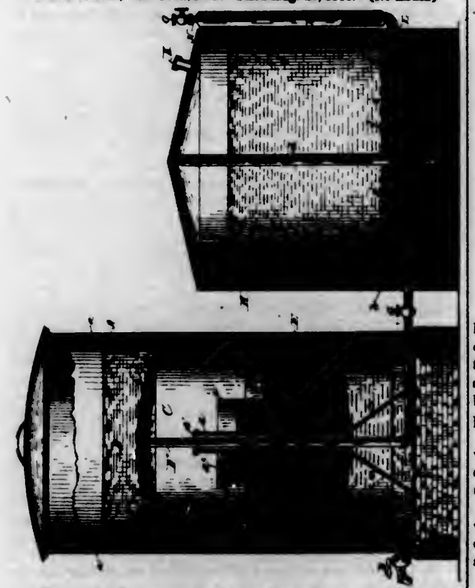
Claim.—The combination of the body A, the support R, which is applied to its outer edge, the shaft P, provided with the stirring devices Q, the tube S, braces V, and support T, whereby the whole stirring apparatus is made removable from the body, substantially as described.

332,956. FOLDING BED. GEORGE L. SLATER and WILLIAM A. EATON, Buchanan, Mich. Filed July 11, 1885. (No model.)



Claim.—In a folding bed, the combination, with the bed-bottom hinged to the base of the vertical back, of the circular rack secured to the said base within the same, the transverse spring-actuated shafts journaled in the side rails of the hinged bottom, and the pinion secured to one end of the said shaft to engage the rack, substantially as specified.

332,957. PROCESS OF MANUFACTURING ILLUMINATING-GAS. BYRON SLOPER, New York, N. Y. Filed Aug. 27, 1885. (No model.)



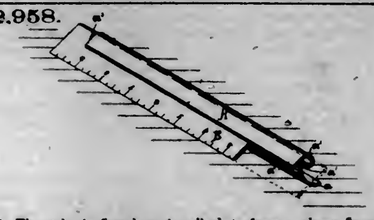
Claim.—1. The process herein described of automatically generating gas, which consists in simultaneously subjecting a body of metallic scrap or turnings and a body of marble-dust or carbonate of lime to the action of dilute acid in a closed chamber.

2. The process herein described of automatically generating illuminating-gas, which consists in, first, producing water-gas by simultaneously subjecting metallic scrap or turnings and carbonate of lime to the action of dilute acid, and, second, carbonating the resulting gas with hydrocarbon vapor.

332,958. SCALE AND RULE HOLDER. CHARLES A. SMITH, Pawtucket, R. I. Filed Sept. 9, 1885. (No model.)

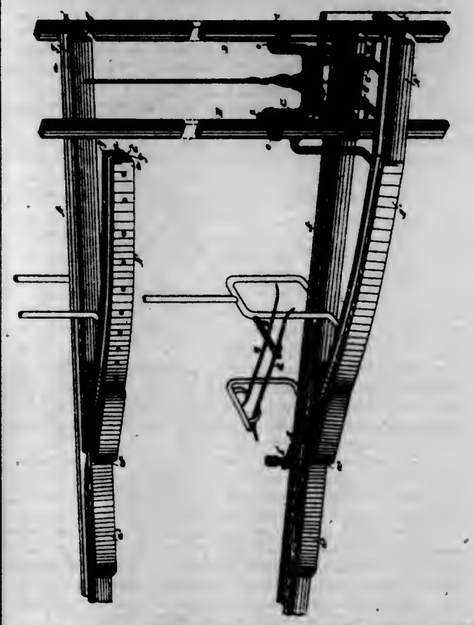
Claim.—1. A strip longitudinally flexed forwardly convexly, rearwardly concavely, forming, respectively, a clamp-flange adapted to clamp and rest on the rule, and a support-flange adapted to adjust the face-angle of said rule, as specified.

332,958.



2. The strip A, flexed, as described, to form a clamp-flange, a^2, a loop, a^3, a bend, a', and a support-flange, *a*, for the purpose described.

332,959. CARRIER APPARATUS. HERVEY SMITH, Erie, Pa. Filed Oct. 12, 1885. (No model.)



Claim.—1. In a carrier apparatus, the combination, with a track having its supports attached to only one of its vertical sides, leaving its other three sides unobstructed, and having its upper face grooved centrally, of a car-trolley which embraces the three unobstructed sides of said track, has its upper wheels centrally flanged, and operates against both the upper and lower faces of the track, substantially as and for the purposes set forth.

2. In a carrier apparatus, substantially as shown, the combination, with a car having two sets of centrally-flanged wheels, one for running on the top and the other on the bottom of the track, of a track having upper and lower centrally-grooved faces.

3. In a carrier apparatus, substantially as shown, the combination, with a car having two sets of centrally-flanged wheels, one for running on the top and the other on the bottom of the track, of a track having a narrow groove in upper face and a wide groove in its lower face.

4. A carrier-apparatus track consisting of three parallel parts clamped together, the central part being of such a width and so placed as to give the track-faces the proper form to receive the flanges of the car-wheels.

5. A carrier-apparatus track consisting of three parallel parts clamped together, of which one is of metal.

6. In a carrier apparatus, substantially as shown, the combination, with a main track, of curved sections of track for switches or bends in the main track, which are made of a bent bar of iron with side pieces of other material clamped thereto.

7. In the track of a carrier apparatus, substantially as shown, the combination, with a taut wire, of bars having thereon the tread-faces for the car-wheels, which are clamped upon the said taut wire.

8. In the track of a carrier apparatus, substantially as shown, the combination, with a taut wire, of two parallel wooden bars clamped upon said taut wire, said bars being properly shaped to form the tread-faces for the car-wheels.

9. In a carrier apparatus, substantially as shown, the combination, with a track having a central groove and branch grooves at the switch-points, of a car with wheels having a central flange, *d'*, and side threads, *d d*, each of which, together with the flange *d'*, is wider than the widest point in the track-groove at the switch-point.

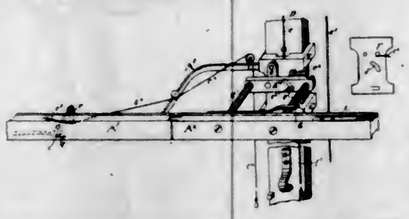
10. In a carrier-apparatus car, substantially as shown, the combination, with the frame of the trolley, of a pivoted standard having thereon one of the wheels of the trolley, whereby said wheel can be turned at an angle to the other wheel of the trolley.

11. In a carrier apparatus, substantially as shown, the combination, with a car having the pivoted standard E', bearing one of the wheels of the car, and the bar *e'* at the upper end of said standard, of the guards G G at the switch-points, substantially as shown, and for the purposes mentioned.

12. In a carrier apparatus, substantially as shown, the combination, with a switch-track having adjusted thereon the guards G G, of a car having on its frame the guide-bar *e'*, substantially as shown, and for the purposes set forth.

13. In a carrier apparatus, substantially as shown, the combination, with the elevator-track, of an elevator-carriage frame which embraces said track, and is provided at the embracing-points with friction-rollers *c c c*, arranged substantially as and for the purposes set forth.

332,960. CARRIER APPARATUS. HERVEY SMITH, Erie, Pa. Filed Nov. 18, 1885. (No model.)



Claim.—In a carrier apparatus, the combination, with a bar-track which is supported by fixtures attached to one of its vertical sides so as to permit a trolley which embraces three sides of the track to travel thereon, of ribs raised along the edges thereof outside of the wheel-tread, substantially as and for the purposes set forth.

2. In a carrier apparatus, the combination, with a bar-track which is supported by fixtures attached to one of its vertical sides so as to permit a trolley which embraces three sides of the track to travel thereon, of ribs raised along the edges thereof on both its upper and lower face.

3. In a carrier apparatus, the combination, with a bar-track which is supported by fixtures attached to one of its vertical sides so as to permit a trolley which embraces three sides of the track to travel thereon, of ribs raised along the edges thereof outside of the wheel-tread, and frog-ribs on the track-face placed midway between said ribs at the switches, and a car-trolley having centrally-grooved wheels.

4. In a carrier apparatus, the combination, with a bar-track which is supported by fixtures attached to one of its vertical sides so as to permit a trolley which embraces three sides of the track to travel thereon, of ribs raised along the edges thereof outside of the wheel-tread, and frog-ribs a^2 and movable switch-tongue a^3.

5. In a carrier apparatus, the combination with the incoming and outgoing tracks at the central station, of a terminal track forming a junction with both said main tracks, in a manner substantially as shown, whereby a car may be received from the incoming track onto said terminal track and switched from it onto said outgoing track.

6. In a carrier apparatus, the combination, with a track which is adapted, as shown, to receive a trolley which embraces three sides of the track, of the spring C on the face of said track, and means, substantially as shown, for operating the said spring to stop and release cars moving on the said track.

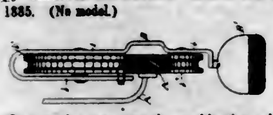
7. In a carrier apparatus, the combination, with the switch-track A' and the track-section A^1 on the elevator, of the tenon and notch for holding said parts in the same vertical plane, and the latch F' F^2, for holding said parts in the same horizontal plane, substantially as set forth.

8. In a carrier apparatus, the combination, with the car-elevator and the receiving-switch, of a catch on the track of the elevator and on the switch-track, the latches F and F', operating on said catches, and means, substantially as shown, for disengaging said latches simultaneously, for the purposes mentioned.

9. In a carrier apparatus, the combination, with the track-section on the elevator, of the spring-catch G, for locking a car thereon, and means, substantially as set forth, for disengaging said catch by the upward movement of the elevator, for the purposes mentioned.

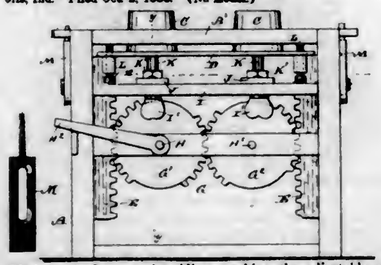
10. In a carrier apparatus, the combination, substantially as set forth, of the elevator-slide E, the links *a*, pivoted on said slide, the elevator-frame pivoted on said link, and the arm H on the elevator-track D, for moving said frame and link on their pivots, substantially as set forth.

332,961. CARRIER APPARATUS. HERVEY SMITH, Erie, Pa. Filed Nov. 18, 1885. (No model.)



Claim.—In a carrier apparatus, the combination, with a track which is supported from one of its vertical sides, leaving its three other sides unobstructed, and is provided with wide upper and lower faces, one of which is adapted, as set forth, to receive a flanged wheel, of a car-trolley which embraces the three unobstructed sides of said track, bears with its wheels on the edges of the track-face and operates against both the upper and lower faces of the track, substantially as and for the purposes set forth.

332,962. SAND-MOLDING MACHINE. PATRICK C. SMITH, Indianapolis, Ind. Filed Oct. 2, 1885. (No model.)

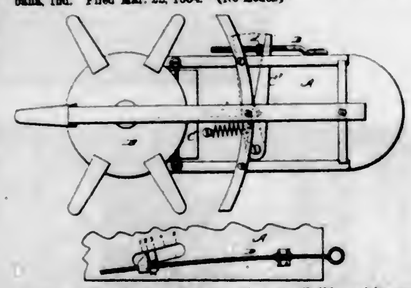


Claim.—1. In a sand-molding machine, the adjustable studs or pins K, and the slotted cross-bar J, adjustable on the side bars, I, in combination with the follower-plate D, substantially as shown and described.

2. In a sand-molding machine, the stationary slotted side bars, I, the thumb-screws I', the cross-bars J, having the slots J', the studs or pins K, and the nuts K', all combined and arranged substantially as described, for supporting the sand-cores, as specified.

3. In a sand-molding machine, the face-plate B, having the apertures B', the follower-plate D, the racks E, the adjustable pins or studs K, and the adjustable slotted cross-bars J, in combination with the quadrant-gearing G and the set-screws L, substantially as shown and described.

332,963. BROADCAST SEED-PLANTER. SAMUEL S. SPENCER, Urbana, Ind. Filed Mar. 22, 1884. (No model.)

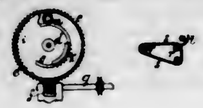


Claim.—1. In a hand seed-planter, the cut-off slide and its operating-lever, in combination with a rod secured to the side of the frame, and provided with an adjustable beveled stop and means for securing it at any point on the rod, substantially as and for the purpose set forth.

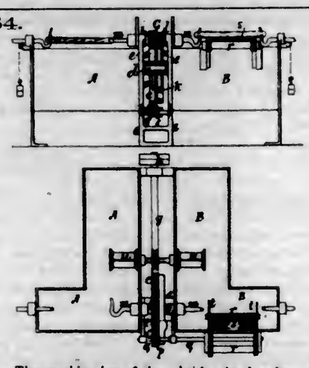
2. In a hand seed-planter, a spring-actuated cut-off slide and its operating-lever, in combination with a beveled stop adjustably secured upon a spring-rod and adapted to engage and hold the lever, substantially as shown and described.

3. In a hand seed-planter, the slide C and spring-actuated lever C', in combination with the beveled stop *d*, adjustably secured by a set-screw, *d'*, upon a spring-rod, D, all constructed and arranged to operate substantially as and for the purpose set forth.

332,964. APPARATUS FOR DYEING, SIZING, AND WRINGING YARN. SAMUEL SPENCER, Radcliffe Bridge, County of Lancaster, England. Filed Aug. 24, 1885. (No model.) Patented in England Aug. 5, 1882, No. 3,746.

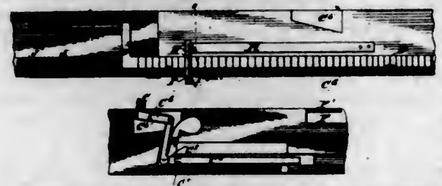


332,964.



Claim.—The combination of the wheel *c*, having internal and external spur-segments and holding-segments *n a*, with hooks, of which one has a pinion, *l*, the traveling apron, and fingers for removing the hanks, substantially as and for the purpose set forth.

332,965. SELF-INDICATING MEASURE FOR DRY-GOODS, &c. CHRISTIAN CONRAD SPRINGE and CHARLES JULIUS RAIFFEISEN, Sedalia, Mo. Filed June 20, 1885. (No model.)



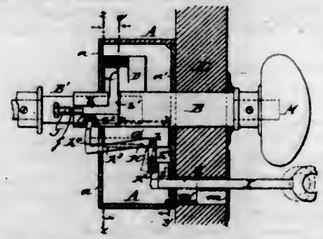
Claim.—1. A registering-measure comprising a frame, a scale, a bell-crank lever having a knob projecting through the frame, a sliding spring-pawl hinged to the bell-crank lever, a sliding spring rack-bar having an arm provided with an index-finger pointing to the scale, and a spring-bar retaining the rack-bar as it is adjusted by the pawl, substantially as set forth.

2. A registering-measure comprising a frame, a scale, a bell-crank lever having a knob projecting through the frame, a pawl formed with a curved end and hinged to the bell-crank lever, spring bearing on the pawl, spring bearing on the bell-crank lever, sliding spring rack-bar having index-arm, and a spring-bar retaining the rack-bar as it is adjusted by the pawl, substantially as set forth.

3. A registering-measure comprising a frame, a scale, a bell-crank lever having a knob projecting through the frame at its outer end, a sliding pawl at its inner end, a sliding spring rack-bar having index-arm, and a spring having a dog (for retaining the rack-bar as the latter is adjusted) formed with a trigger for releasing the dog, substantially as set forth.

4. A registering-measure comprising a frame, a scale, a spring bell-crank lever having a knob projecting through the frame, a spring sliding pawl hinged to the bell-crank lever, a sliding spring rack-bar having an arm provided with an index-finger pointing to the scale, and a spring-bar having a dog provided with a trigger extending through the frame, substantially as set forth.

332,966. LOCK. JOHN C. TAYLOR, Niles, Mich. Filed Jan. 19, 1885. (Model.)



Claim.—1. A lock comprising a case, a spindle made in two parts, B B', said part B' having an arm, C, engaging part B and bolt D, and a bent lever, H, hung to part B, and adapted to be swung by the key-bit into a notch, b^3, of part B' to connect the two parts of the spindle, substantially as herein set forth.

2. A lock comprising a case, a spindle made in two parts, B B', said part B' having an arm, C, engaging part B and bolt D, and a bent lever, H, hung to a lug, G, on part B, which lug fits between the opposite lock-plates *a a'*, and said lever being adapted to enter a notch, b^3, in part B' of the spindle, substantially as herein set forth.

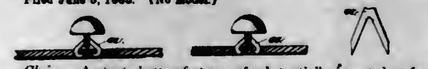
3. A lock comprising a case, a spindle made in two parts, B B', said part B' having an arm, C, engaging part B and bolt D, and a beat lever, H, hung to part B, and adapted to be swung by the key-bit into a notch, b^3, of part B', and a catch-plate, K, fitted to slide between the lever and spindle, substantially as herein set forth.

5. A lock comprising a case, a spindle made in two parts, B B', said part B' having an arm, C, engaging part B and bolt D, a bent lever, H, hung to part B, and adapted to enter a notch, b^3, of part B', and the slide-catches J K, all connected for operation substantially as herein set forth.

6. In a lock, the combination, with the case A and the two-part spindle B B', the part B' having notch b^3, arm C, bolt D, and the lever H, hung to part B, substantially as specified, of a circuitous key-bit passage, *m m'*, made in the door or in a projection from the inner lock-plate, substantially as herein set forth.

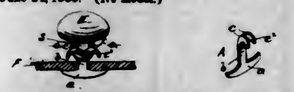
7. In a lock, the combination, with the case A and the two-part spindle B B', the part B' having a notch, b^3, arm C, bolt D, and the lever H, hung to part B and set out of line with the key-hole, substantially as specified, of a circuitous key-bit passage, *m m'*, made in the door or in a projection from the inner lock-plate, substantially as herein set forth.

332,967. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed June 8, 1885. (No model.)



Claim.—A staple button-fastener of substantially inverted-V form, having two legs or prongs at less than a right angle to each other, and having a section of its crown or head removed, said fastener being cut from a blank without bending—that is to say, having the metal comprising the fastener in the same condition as it existed in the blank from which it is formed—substantially as set forth.

332,968. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed June 24, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the button-fastener herein described, consisting of the single stem or post with the duplex or forked attaching-loop on its end and the retaining-base, substantially as shown and set forth.

2. The metallic button-fastener A, herein described, consisting of the base *a*, stem *b*, and double or forked attaching-hook c c^2, the whole being integrally formed from a single blank, substantially as shown and set forth.

3. The metallic blank B, herein described, having the elongated head *a*, stem *b*, extending from said head, and oppositely-formed hooks *c c*, the latter forming the termination of said stem and having the points thereof substantially in line with or over the end portions of the head *a*, as shown.

332,969. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed Aug. 8, 1885. (No model.)



Claim.—1. The button-fastener hereinbefore described, consisting of the single stem or post *b*, having the retaining-base or table *a*, formed on one end substantially at right angles with and at the center of the horizontal plane of said base, and the forked attaching-loop *c* on the other end, as and for the purpose set forth.

2. The button-fastener A, hereinbefore described, consisting of the base *a*, having the swaged edge, the stem *b*, upturned from said base, and the forked or duplex attaching-loop *c*, the whole integrally formed from a sheet-metal blank, substantially as shown and set forth.

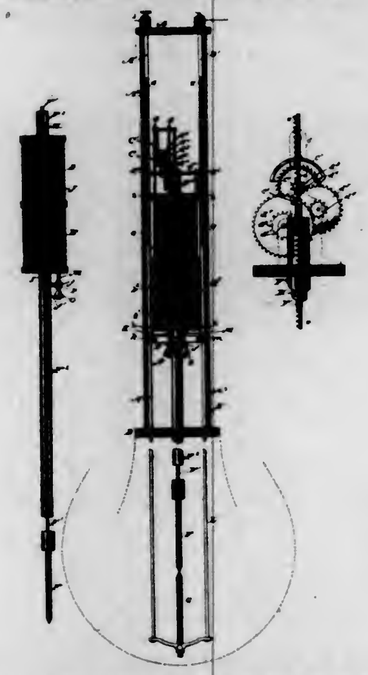
332,970. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed Sept. 30, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the button-fastener hereinbefore described, consisting of a piece of wire bent to form a base or table, from which extends at right angles therewith the double post or stem having upper or free ends terminating in overhanging hooks *d*, substantially as shown and set forth.

2. The button-fastener A, hereinbefore described, made from wire bent to form the base or table *a*, and the double stem or post *c*, having the overhanging forked or duplex attaching-hooks *d* on its end, substantially as shown, and for the purpose set forth.

332,971. **ELECTRIC-ARC LAMP.** WILLIAM H. THOMAS, Grand Rapids, Mich., assignor of one-half to the Grand Rapids Electric Light and Power Company, same place. Filed Feb. 12, 1885. (No model.)



Claim.—1. The combination of the electrodes of an arc lamp, a vertically rising and falling carbon-carrying rod, feeding mechanism for supporting and feeding said carbon-carrying rod, cut-out contacts arranged in suitable relation to the carbon-carrying rod, and another cut-out contact carried by the carbon-carrying rod in proximity to the first-mentioned contacts, said contacts being normally arranged in close proximity during the entire consumption of the carbons, whereby the lamp may be cut out of circuit by the descent of the rod should a slight fall of said rod occur independently of the action of the feeding devices during the working of the lamp.

2. The combination of the electrodes, the rising and falling carbon-carrier, feed-regulating devices or helices which are caused to descend bodily in the adjustment of the lamp, and short-circuiting contacts arranged in proximity to each other which are completed to short-circuit the lamp upon an abnormal descent of the carbon-carrier to effect the readjustment of the electrodes, and are separated when the carbon-carrier is caused to rise to re-establish the arc.

3. The combination of the two descending helices arranged in a fixed relation to each other, the tube on which they are mounted, the rising and falling carbon-carrier arranged concentrically within said tube, and the core or cores carried thereby on which the helices act.

4. The combination of the electrodes, a vertically rising and falling carbon-carrier, feed-regulating devices or helices which are caused to descend bodily in the adjustment of the lamp, short-circuiting or cut-out contacts carried by said descending feed-regulating devices, and a contact on the carbon-carrier for automatically completing the cut-out circuit between the contacts on the descending feed-regulating devices upon the abnormal descent of the carbon-carrier.

5. The combination of the reversely-acting helices, the carbon-carrying rod or support, the escapement mechanism, and the automatic cut-out and cut-in devices, for the purpose set forth.

6. The combination of the rising and falling carbon-carrying rod, the prime helix, the high resistance helix, means substantially such as described for permitting the descent of the helices at intervals, and short-circuiting or cut-out devices which are thrown into action upon the abnormal descent of the carbon-carrying rod, for the purpose set forth.

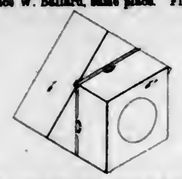
7. The combination of the prime helix and the high-resistance helix which move together, the escapement or clutch devices, the armatures or cores of said helices, the carbon-carrying rod which is raised and lowered by the action of said helices on their cores, and short-circuiting or cut-out devices which are automatically thrown into operation upon an abnormal descent of the carbon-carrying rod, for the purpose set forth.

8. The combination of the carbon-carrying rod, the prime helix which causes the elevation of said rod to establish the arc, the secondary or high-resistance helix which causes the descent of the rod to maintain the normal arc length, mechanism substantially such as described which permits the descent of the prime helix when the carbons are shortened or consumed, and cut-out devices which short-circuit the carbons when the carbon-carrying rod and prime helix descend to accomplish the adjustment of the apparatus, for the purpose set forth.

9. The combination of the electrodes, the rising and falling carbon-carrying rod, the prime helix and high-resistance helix which descend to readjust the arc between the electrodes, cut-out devices for short-circuiting the electrodes when the helices and carbon-carrying rod make an abnormal descent and bring the electrodes in contact, and means for opening the short-circuit, arresting the descent of the helices when the carbons come in contact, and re-establishing the arc.

10. The combination of the parallel frame-bars, the traveling toothed wheels d^3, the helices which rise and fall with said toothed wheels, the escapement, and the rising and falling carbon-carrying bar.

332,972. **NUT-LOCK.** JESSE B. THOMPSON, Chicago, Ill., assignor of one-fifth to Clarence W. Ballard, same place. Filed Sept. 24, 1885. (No model.)



Claim.—1. In a nut-lock, the combination, with a bolt having a right and a left hand thread, of two nuts, one of which is formed with a recessed face and the other having a projection punched into the recess, substantially as and for the purpose set forth.

2. In a nut-lock, the combination, with a bolt formed with two oppositely-pitched threads, of two nuts, one of which is formed with a recessed face, and the other is made of softer material and has a portion punched into said recess after being placed in position, substantially as and for the purpose set forth.

332,973. **DEVICE FOR FEEDING SALT OR COMPRESSED FEED TO CATTLE.** MARK S. THOMPSON, New York, N. Y., assignor to Henry A. Lee, same place. Filed Sept. 18, 1885. (No model.)



Claim.—The herein-described hopper having an oblique opening at its lower end and provided with a ledge below said opening, substantially as described.

332,974. **MACHINE FOR TESTING LUBRICANTS.** ROBT. H. THURSTON, Hoboken, N. J. Filed May 13, 1885. (No model.)

Brief.—Improvement on Patent No. 230,158, dated July 20, 1880, to Thurston.



Claim.—1. In a machine for testing lubricants, the combination, with the brass or bearing B of the testing-journal of the shaft, of a thin removable shell, *b*, applied to the interior of said bearing, substantially as and for the purpose herein set forth.

2. In a machine for testing lubricants, the combination, with the rotating shaft A of the machine, of the independent journal *c*, the outer thin removable shell, *d*, and the brasses B, essentially as described.

3. In a machine for testing lubricants, the combination, with the rotating shaft A, of a thin removable shell, *d*, applied to the journal of said shaft, the thin removable shell *b*, and the bearing or brasses B B, substantially as and for the purposes specified.

332,975. **FEEDING FUEL TO BOILERS.** SAMUEL W. VALENTINE, Boston, Mass. Filed Apr. 27, 1885. (No model.)



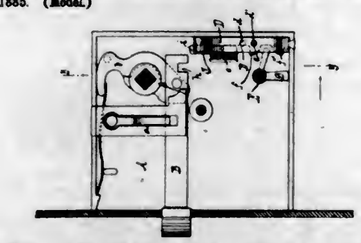
Claim.—1. In combination, an apparatus suitable to pulverize or otherwise reduce fuel to a comminuted condition, a furnace suitable for combustion of comminuted fuel directly connected with each other, and a storage-bin connected to said pulverizing apparatus and said furnace and provided with means suitable to enter its contents into said furnace, all substantially as and for operation and purposes described.

2. In apparatuses adapted for pulverizing or otherwise reducing fuel to a comminuted condition and entering the so-comminuted fuel into the combustion-chamber therefor of the apparatus, a storage-bin for comminuted fuel connected by a fuelway with the combustion-chamber or furnace of the apparatus, and provided with a feed and fan-blower mechanism adapted to enter its fuel into said combustion-chamber through said fuelway, in combination with a valve of said fuelway adapted to open and to close the same, substantially as described, for the purpose specified.

3. In apparatuses adapted for pulverizing or otherwise reducing fuel to a comminuted condition and entering the so-comminuted fuel into the combustion-chamber therefor of the apparatus, a storage-bin for comminuted fuel connected by a fuelway, F, with the pulverizing mechanism and by a fuelway, U V, with the combustion-chamber or furnace of the apparatus, and provided with a feed and fan-blower mechanism adapted to enter its fuel into said combustion-chamber through said fuelway U V, in combination with a fuelway, C, connecting said pulverizing mechanism and said furnace or combustion-chamber, and with valves Z, A^3, and B^3 in said fuelway, substantially as described, for the purpose specified.

4. In apparatuses adapted for pulverizing or otherwise reducing fuel to a comminuted condition and entering the so-comminuted fuel into the combustion-chamber therefor of the apparatus, a storage-bin, D, for comminuted fuel connected by fuelways F U V with a fuelway, C, connecting pulverizing mechanism with furnace or combustion-chamber, and provided with a feed and fan-blower mechanism adapted to enter the fuel of the bin into said combustion-chamber or furnace, in combination with valves Z, A^3, and B^3 in said fuelways, substantially as described, for the purposes specified.

332,976. **LOCK.** CHARLES F. VEIT, London, England. Filed Mar. 12, 1885. (Model.)



Claim.—1. The combination, with a lock-case, of a knob-latch, B, a bolt, C, constructed to engage with the knob-latch, a spring-plate, D, acting on the bolt, two holes, *d d'*, formed in the spring-plate, a projection, *e*, formed on the bolt and constructed to engage with said holes, and a key for moving said bolt, substantially as and for the purpose specified.

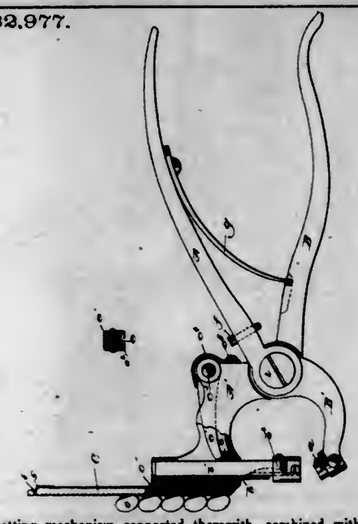
2. The combination, with a lock-case, of a knob-latch, B, a recess, A, formed in said knob-latch, a bolt, C, constructed to engage the recess in the knob-latch, a spring-plate, D, acting on the bolt, two holes, *d d'*, formed in the spring-plate, a projection, *e*, formed on the bolt and constructed to engage with said holes, and a key for moving said bolt, substantially as and for the purpose specified.

332,977. **BUTTON-SETTING INSTRUMENT.** JOHN H. VINTON, Boston, Mass., assignor to the Peninsular Novelty Company, Grand Rapids, Mich. Filed Sept. 7, 1885. (No model.)

Claim.—1. In a button-setting instrument, a pair of pivoted jaws and button-setting mechanism connected therewith, combined with an independent magazine or receptacle connected with one of the said jaws, said magazine or receptacle having its end adjacent to the opposing jaw closed, substantially as described.

2. In a button-setting instrument, a pair of pivoted jaws and button-setting mechanism connected therewith, combined with an independent magazine or receptacle connected with one of the said jaws, the said magazine or receptacle having a spring provided with an interned free end, substantially as described.

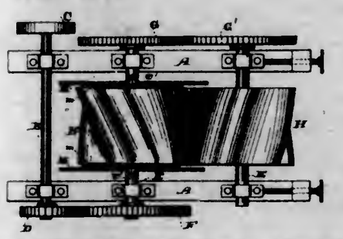
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3. In a button-setting instrument, a pair of pivoted jaws, A' B', an anvil carried by one of the said jaws, and a staple-carrier, its block, and a driver carried by the other jaw, combined with a lug, *c*, projecting from the staple-carrier, the pivoted detent *c'*, to engage the said lug, and the spring to normally retain the said detent compressed, substantially as described.

4. In a button-setting instrument, the staple-carrying block having the pin *e*, normally protruding to catch the eye of a button as it is dropped into said staple-carrying block, and the spring *e'*, substantially as described.

332,978. **CRUSHING-ROLL.** ENOS A. WALL, Bullion, Idaho. Filed Nov. 12, 1885. (No model.)



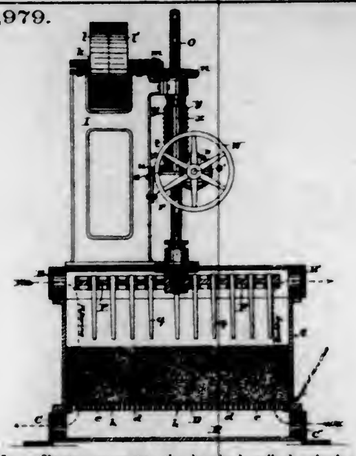
Claim.—1. The combination of the two oppositely-rotating crushing-rolls H, having corrugated or fluted intermeshing surfaces, the ribs and grooves of which are arranged on the rolls oppositely and in a spiral or inclined course or direction, said ribs or corrugations being in depth about one-tenth of the diameter of the rolls, and about one-sixth of the thickness of their own bases, and in thickness at their bases about one-sixth of the circumference of the rolls, taken on a line or curve passing through the ribs at points about one-third of their length from their ends, substantially as herein described.

2. In combination with the oppositely-rotating crushing-rolls H, having the spirally-arranged corrugated or fluted and intermeshing surfaces, the rotating shields or guard-plates M at the ends of one of the rolls, and overlapping slightly the ends of the other, said shields or guard-plates consisting of halves fitted on the roll-shaft and having angled flanges at their meeting edges secured by bolts, substantially as herein described.

332,979. **FILTER.** JOHN E. WARREN, Westbrook, Me. Filed Feb. 20, 1885. (No model.)

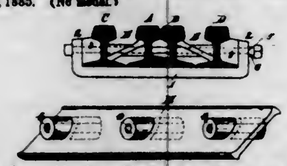
Claim.—1. In a filtering apparatus, the combination, with the tank or cistern A, provided with the inlet-ports B B' and outlet-ports C C', of a false bottom or screen for supporting in place a bed of filtering agents, said false bottom or screen composed of parallel slats *d d*, separated by spaces *e e*, and covered with a carpet of wire-gauze or perforated sheet metal, *h*, and the toothed agitator vertically adjustable, substantially as herein described.

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2. In a filtering apparatus, the herein-described agitating device, consisting of the cross-bar P and teeth q, which whip the water and plow into the bed of filtering agents G, for the purpose of freeing the same of adhering sediment, in combination with the plunger O, gears n and m, and the means for giving rotation to said plunger O and its attached agitator, substantially as herein set forth.

332,980. RAILWAY-FROG. FREDERIC C. WEIR, Cincinnati, Ohio. Filed Oct. 8, 1885. (No model.)



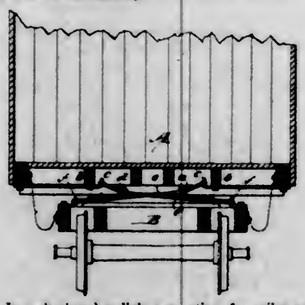
Claim.—1. In combination with the wing-rail of a frog, an inclined support, E, serving as a spacing and supporting plate between the wing and point rails, and bearing directly against the said wing and point rails, substantially as herein specified.

2. In combination with the wing-rails of a frog, the inclined bracing-supports E, placed between the two point and wing rails, substantially as herein specified.

3. In a railway frog or crossing, the inclined supports E, serving as spacing and arch or truss supporting plates for the point-rails, substantially as specified.

4. In combination with the wing and point rails of a frog; the clamp 1, filling-blocks 3, and inclined bracing-plates E, clamping and supporting the wing and point rails, substantially as herein specified.

332,981. CAR-TRUCK. ARTHUR H. WELLINGTON, New York, N. Y. Filed May 9, 1885. (No model.)

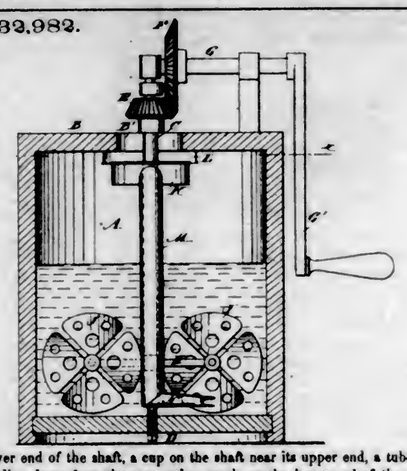


Claim.—In a check-rod or link connection for railway-trucks, the combination of the oblique flexed link-and-rod connection *d e* with the hooks or fastenings *c f*, applied, respectively, to the body and truck, substantially as shown and described, and for the purpose or purposes herein set forth.

332,982. CHURN. LOREN J. WEED, Paterson, N. J. Filed Sept. 18, 1885. (No model.)

Claim.—1. In a churn, the combination, with the cream-vessel, of the vertical shaft C, mounted on the same, the screw-wheels J on arms on the

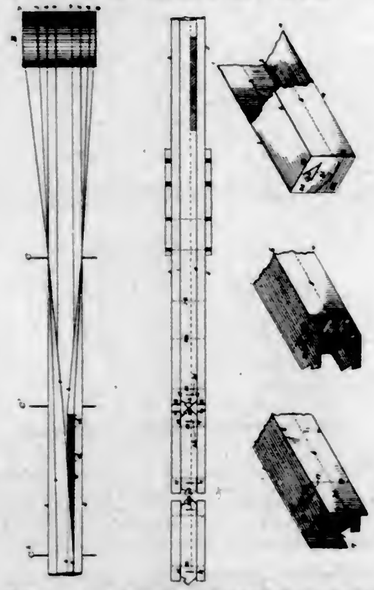
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lower end of the shaft, a cup on the shaft near its upper end, a tube extending down from the cup, and a nozzle on the lower end of the tube, substantially as herein shown and described.

2. In a churn, the combination, with the cream-vessel, of the shaft C, mounted vertically in the same, the screw-wheels J on arms on the lower end of the shaft, the cup K on the shaft near the upper end, the tube M, extending from the cup downward at the side of the shaft, and of the flaring flattened nozzle N on the lower end of the said tube, substantially as herein shown and described.

332,983. METHOD OF MAKING PAPER BOXES. MCCLINTOCK YOUNG, Frederick, Md. Filed Dec. 26, 1883. (No model.)



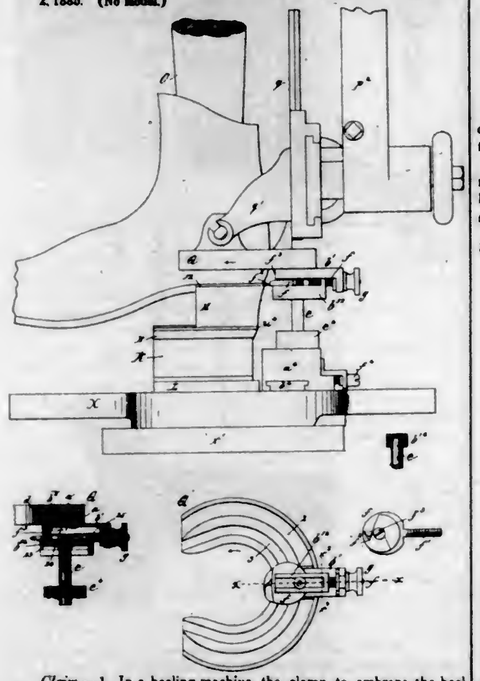
Claim.—1. As an improvement in the art of manufacturing boxes of paper, &c., the hereinbefore-described method of forming folded box-tubes, consisting in advancing a flattened tube, severing the box-tubes, and at the same time forming their end flaps, substantially as hereinbefore set forth.

2. As an improvement in the art of manufacturing boxes of paper, &c., the hereinbefore-described method of forming folded box-tubes, consisting in advancing a flattened tube, transversely creasing the tube on lines upon which fold the end flaps of the boxes to be made, severing the box-tubes, and at the same time forming their end flaps, substantially as hereinbefore set forth.

3. As an improvement in the art of manufacturing boxes of paper, &c., the hereinbefore-described method of forming folded box-tubes, consisting in supplying a strip creased longitudinally upon parallel lines to predetermine the location of the corners of the boxes to be made, forming the tube by folding upon lines predetermined by two of said creases, advancing the flattened tubes, severing the box-tubes, and forming their end flaps, substantially as hereinbefore set forth.

4. As an improvement in the art of manufacturing boxes of paper, &c., the hereinbefore-described method of forming folded box-tubes, consisting in supplying a strip creased longitudinally upon six parallel lines, four of which creases predetermine the location of the box-corners, forming a pasted flattened tube folded upon lines predetermined by two of such creases, transversely creasing the tube, and severing the flattened tube into box-tubes within end flaps folding upon the lines of the transverse creases, substantially as hereinbefore set forth.

332,984. HEEL-TRIMMING MACHINE. EDWARD B. ALLEN, Portland, Me., assignor to James W. Brooks, trustee, Boston, Mass. Filed Feb. 2, 1885. (No model.)



Claim.—1. In a heeling-machine, the clamp to embrace the heel of the upper, combined with a holder made movable thereon, and provided with a rand-cutter, substantially as described.

2. The grooved clamp, the holder having the block and roller to enter the grooves of the clamp, and the nut *g*, combined with and to adjust the rand-cutter toward and from the center or axis of the heel, substantially as described.

3. The clamp, the holder, the rand-cutter, the connecting-block, and the carriage to carry a heel-trimming knife about the heel to trim the same, combined with a pin or rod to connect the carriage and connecting-block; to operate substantially as described.

4. In a heeling-machine, the clamp Q, grooved at its under side and adapted to embrace the heel of the upper, combined with a rand-cutter and with a holder made movable on the said clamp, the holder being provided with a block and stud to enter the grooves of the clamp, substantially as described.

332,985. GRAIN-BINDER. JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, same place. Filed Oct. 28, 1884. (No model.)

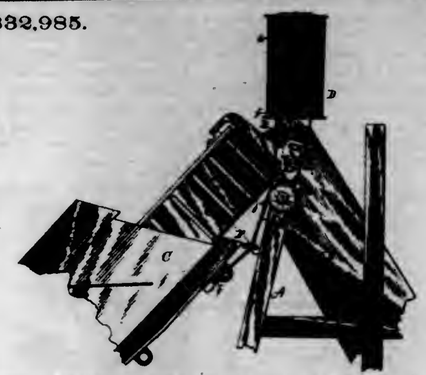
Claim.—1. The combination, substantially as herein described, with the cord-receptacle and tension device, of a rotating feed-pulley located between the cord-receptacle and said tension device, around which pulley the cord passes, and is uniformly fed forward to the tension device, regardless of the varying force with which the cord is held back at the ball.

2. The combination, substantially as herein described, with the cord-receptacle, binder-arm, and knotter, of a rotating feed-pulley located between the cord-receptacle and binder-arm, around which pulley the cord passes, and is uniformly fed forward toward the binding-arm, regardless of the varying force with which the cord is held back at the ball.

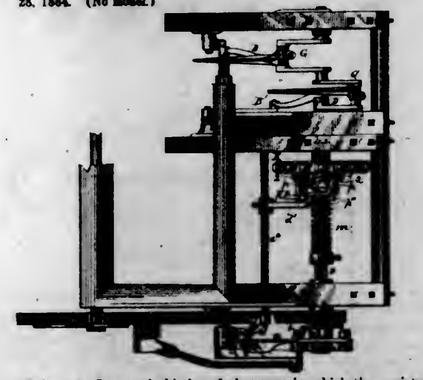
3. The combination, substantially as described, with the cord-receptacle, tension device, binder-arm, and knotter, of a feed-pulley adapted to operate on the cord, substantially as described.

4. The combination, substantially as herein described, with a cord-receptacle and cord, of a feed-pulley around which said cord passes, and by which the cord is fed forward, substantially as and for the purpose specified.

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332,986. GRAIN-BINDER. JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, same place. Filed Oct. 28, 1884. (No model.)



Claim.—1. In a grain-binder of that type in which the resistance of the grain in the gavel-receptacle to the packer or packers causes said packer or packers to operate a trip mechanism for throwing the binding, tying, and sheaf-discharging mechanism into operation, in combination with a loose sprocket-wheel, E, the constantly-revolving shaft D, and the packers, a sliding yoke, P, on shaft D provided with wedge-shaped ends arranged to stand between projections from the wheel E and arms fixed to the shaft D and provided with lugs *p''*, an arm projecting from the shaft c^3, and a spring adapted to force said yoke away from the arm on the shaft c^3, substantially as and for the purpose specified.

2. In a grain-binder of the type herein described, in combination, the shaft D, carrying the packers, a wheel, E, having lugs 1, arms R, fixed to the shaft D, and a sliding yoke, P, provided with wedge-shaped ends adapted to coact with the lugs 1 and arms R, and lugs *p''*, adapted to coact with the arm *d'* on the shaft c^3, and a spring, *m*, substantially as and for the purpose specified.

3. In a grain-binder of the type herein specified, in combination with the sprocket-wheel, E, loosely mounted on the shaft D, and the arms R, fixed to the shaft D, a sliding yoke, P, having tapering or wedge-shaped arms adapted to coact with the wheel E and fixed arms R, substantially as and for the purpose specified.

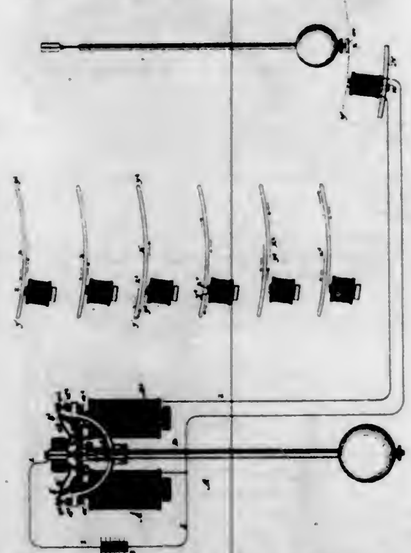
4. In a grain-binder of the type herein specified, in combination, the shaft D, carrying the packers, wheel E, having projections 1, and sliding yoke P, adapted to coact with a projection from the shaft c^3, substantially as and for the purpose specified.

5. In a grain-binder of the type herein specified, the combination of the shaft D, packers G, and a sprocket-wheel, E, loosely mounted on the shaft D, and adapted to act on one side of the wedge-shaped arms *p* of the yoke P, and press their other sides against projections from the shaft D, whereby the yoke will be forced away from the wheel to cause it to engage with a projection from the shaft c^3, substantially as and for the purpose specified.

6. In a grain-binder of the type herein specified, the combination,

with the packing arm or arms and the trip-lever, of an intermediate mechanism for causing the said arm or arms to actuate the said lever, composed, essentially, of a drive-wheel mounted loosely on the drive-shaft of said packing arm or arms, a sliding yoke mounted to slide on said shaft and held in close relation with the said wheel by a spring and provided with wedge-shaped or tapering arms adapted to coact with said wheel, and arms projecting from said drive-shaft and provided also with projections adapted when the yoke is shifted to communicate motion to the trip-lever, substantially as and for the purpose specified.

332,987. **ELECTRIC SYNCHRONIZING DEVICE FOR CLOCK-PENDULUMS.** HENRY L. BAILEY, Brooklyn, assignor to the Telegraphic Time Company, New York, N. Y. Filed Aug. 10, 1885. (No model.)



Claim.—1. The hereinbefore-described method of controlling the vibrations of pendulums, which consists in periodically applying thereto correcting-impulses directly proportionate in their effects to the tendency of the pendulums to vary from a fixed standard between the repetitions of the impulses.

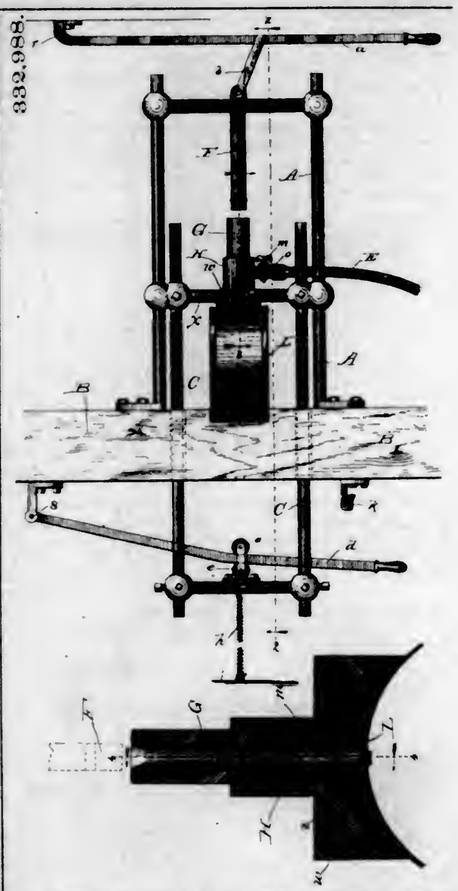
2. The hereinbefore-described method of controlling the vibrations of pendulums, which consists in exerting thereupon magnetically accelerating or retarding impulses, as required, proportionate to the error to be corrected between each repetition of such impulses.

3. The hereinbefore-described method of synchronizing clock-pendulums, which consists in alternately accelerating and retarding the same and causing the accelerating or the retarding influence to exceed in value, accordingly as it is desired to hasten or slow the pendulum.

4. The hereinbefore-described method of synchronizing clock-pendulums, which consists in subjecting the same to magnetic influence during its movements in two directions, and in causing the duration of its movements counter to said force to exceed the duration of its movement toward the force, or vice versa, as may be required to correct the error of the pendulum.

5. The hereinbefore-described method of maintaining pendulums in action for time-keeping, which consists in subjecting the pendulum to the influence of electro-magnetic action during its movement toward and away from one of its limits and through the center of magnetic force.

332,988. **APPARATUS FOR PRESERVING MEATS, &c.** WILLIAM RALDER, Chicago, assignor of one-half to George H. Webster, Cook County, Ill. Filed June 23, 1884. (No model.)



Claim.—1. In apparatus for preserving, &c., the combination, with an exhaust-chamber, of an inner tube extending to, or near to, the bottom of said chamber, and having a reciprocating piston therein, and a branch feed-tube extending laterally from the piston-tube and open at its outer end, substantially as shown and described.

2. The combination, in an air-exhausting apparatus, of the frame A, the chamber G, having an opening in one side to receive wax, the frame C, the plunger F, the lever *a*, the lever *d*, and the spring *h*, said parts being connected with any suitable support, and being operated substantially as and for the purpose set forth.

3. The combination, with frame A, of lever *a*, connecting-rod *b*, and plunger F, substantially as set forth and for the purpose specified.

4. The combination, in an apparatus for exhausting air from cans or other vessels, of the frame C, the lever *d*, the spring *h*, and the friction-rollers *e e*, all arranged and operated substantially as described, and for the purpose set forth.

5. In an apparatus for exhausting the air from the cans or other vessels containing articles to be preserved, the combination, with a sliding frame within which is contained an exhaust-chamber having an inner sealing-plunger and cylinder, the extended base of said exhaust-chamber being provided with a rubber seating shaped to fit over and surround an opening in the can, of a spring or its equivalent attached to the frame and serving normally to force the said seating down upon the surface of the can during the sealing operation, substantially as and for the purposes set forth.

332,989. **CABINET EXERCISING APPARATUS.** GEORGE H. BENEDICT, Chicago, Ill. Filed Sept. 21, 1885. (No model.)

Claim.—1. In a cabinet-gymnasium, the cabinet, in combination with a frame hinged thereto, folding therein, and supporting the exercising apparatus, substantially as described.

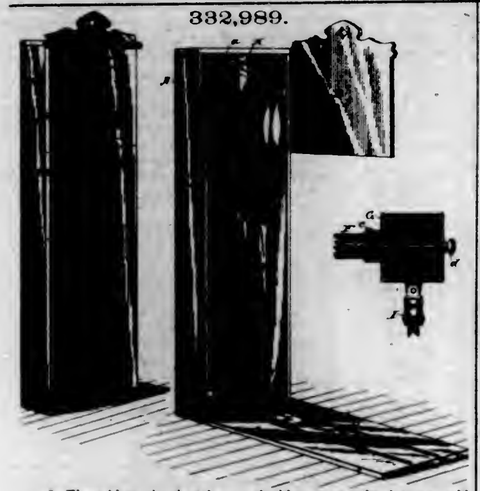
2. The cabinet, in combination with the bars at the top and bottom of the cabinet, and a connection between said bar and cabinet, and the chest-bars constituting a connection between each pair of said bars, substantially as described.

3. The cabinet, the hinged bars, and the bars E, in combination with the pulley-weights and the slides thereof, embracing said bars, said bars E constituting ways or guides for said slides, substantially as described.

4. The cabinet, the bars hinged thereto, the chest-bars, and the bars E, connecting said hinged bars, in combination with the pulley-weights and connections between said weights and the chest-bars and bars E, substantially as described.

5. The cabinet, the supporting-frame hinged thereto, and the chest-bars of said frame, in combination with the parallel bars, a hinged connection between said bars and cabinet, and a detachable connection between the chest and parallel bars, substantially as described.

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6. The cabinet, the chest-bars, and a hinge-connection between said cabinet and bars, in combination with the horizontal bar and an adjustable and sliding connection between said bar and the chest-bars; substantially as described.

7. The cabinet, the chest-bars, the horizontal bar, and an adjustable sliding connection between said bar and chest-bars, in combination with pulley-weights and a connection between the cords thereof and said chest-bars and horizontal bar, substantially as described.

8. The chest-bars, the horizontal bar, the pulleys upon said bars, and a pivot-connection between the horizontal bar and the bearing of the pulley thereof, whereby said pulleys may have a swinging movement, in combination with the pulley-weights, the cords of which engage said pulleys, substantially as and for the purpose described.

9. The cabinet, the chest-bars, and a hinge-connection between said bars and cabinet, in combination with the horizontal bar, an adjustable sliding connection between said horizontal and chest bars, and removable pin *d*, passing through said connection and chest-bars, said connection being open upon one side, whereby it may be removed from the chest-bars, substantially as described.

10. The chest-bars, the adjustable slides, and the horizontal bar socketed in said slides, and the removable locking-pin *c*, and eyes upon the horizontal bar, in combination with pulley-weights, which may be connected with said eyes, whereby the horizontal bar may be used as a wrist-roller, substantially as described.

11. In a cabinet-gymnasium, the combination, with the pulley-weights, of a two-part slide detachably connected together, a removable weight supported upon one of said parts and by its gravity serving to lock said parts together, and a bar, E, serving as a way for said slide, substantially as described.

12. The guide bar or way E, in combination with a two-part slide, a dumb-bell supported by one of said parts and by its gravity locking together the parts of the slide, and a cord-connection engaging the other part and the dumb-bell, substantially as shown and described.

13. In a pulley-weight device for exercising purposes, a two-part slide, one part, K', of which is provided on opposing sides with parallel lugs, the other part, K^2, being of C-shaped form and its side arms adapted to be embraced by said lugs projecting beyond the part K' and curved to form bearings for a removable weight, locking said parts together and constituting the weight of the pulley device, substantially as described.

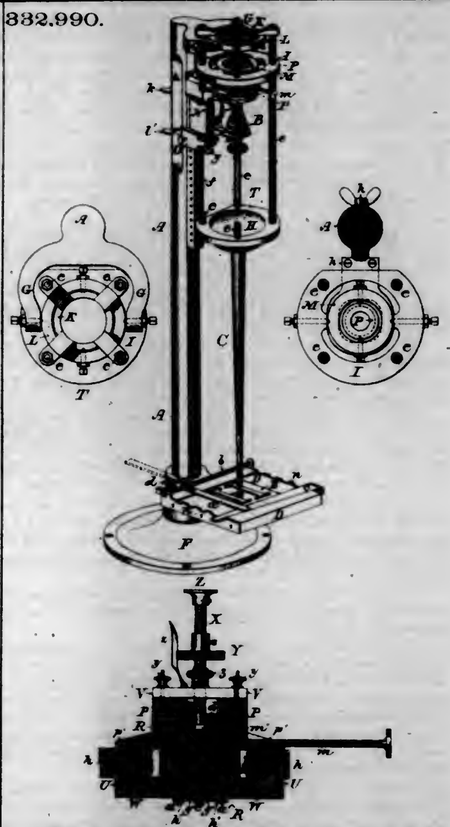
14. The cabinet and the door C, hinged to the base thereof so as to open outwardly upon the floor and constitute an extended base for said cabinet, in combination with bars hinged to the cabinet so that they may be swung outwardly and embrace said door and constitute a locking-connection between the cabinet and the extended base or door, substantially as described.

15. The cabinet, the door thereof hinged so that when opened it will constitute an extended base for the cabinet, in combination with a track upon said door and a movable seat upon said track, substantially as described.

16. The cabinet and the hinged and extended base thereof, in combination with the hinged sills O, a sliding seat mounted upon said sills, and a locking-connection between the seat and sills, whereby the said sills may fold upon the extension and be maintained in an upright operative position by the seat, substantially as described.

332,990. **PUNCH-CUTTING MACHINE.** LEWIS B. BENTON, Milwaukee, Wis., assignor to Benton, Waldo & Co., same place. Filed Feb. 29, 1884. (No model.)

332,990.



Claim.—1. In a punch-cutting machine, the combination of a fixed standard or frame, a swinging frame suspended therefrom by a universal-joint connection, a holder for the punch-blank, having a support connected with said swinging frame by a universal-joint connection, a cutting-tool, and mechanism for rotating the same, a leaf attached to the fixed standard for holding the pattern, an index-rod attached to the swinging frame for tracing the pattern, and a pattern, substantially as and for the purposes set forth.

2. In a punch-cutting machine, the combination of a fixed frame or standard, A, an oscillating or swinging frame, T, attached thereto by a universal-joint connection, a work-holder, R, a rotating cutter, a support, D, for the pattern, and an index-rod, C, for tracing said pattern, substantially as and for the purposes set forth.

3. In a punch-cutting machine, the combination of a standard or frame, A, an oscillating frame, T, composed of the upright rods *e e*, ring K, and disk H, and suspended at the top from standard A by a universal-joint connection, an index-rod, C, attached to and depending from said frame, a leaf, D, adjustably attached to standard A, and provided with gage *a*, laterally adjustable on rod *b*, together with a lathe-head, B, attached to the standard A, and provided with a cutting-tool, a holder, R, for the reception of the punch-blank, and a support, P, for said holder R, connected with swinging frame T by a universal-joint connection, substantially as and for the purposes set forth.

4. In a punch-cutting machine, the combination, with a fixed frame or standard, A, of a lathe-head, B, provided with a tool, *o*, and adjustably attached to said standard, of a pattern, E, and a support, D, for said pattern, together with a support for the punch-blank, connected by a universal joint with said standard A, and provided with a rod for tracing the pattern and giving a corresponding movement to the work, substantially as and for the purposes set forth.

5. In a punch-cutting machine, the combination of the standard A, from which is suspended by a universal-joint connection the oscillating frame T, the work-holder support P, embracing and bearing upon the bracket h, which is secured to and projects from the block N, a universal-joint connection between said support P and frame T, together with a rotating cutter or tool, a support, D, for the pattern, and an index for tracing said pattern and moving the work correspondingly, substantially as and for the purposes set forth.

6. The combination, in a punch-cutting machine, of standard A, provided with a vertical way, *f*, a block, N, adjustably attached upon said way to the standard, and adjustable block O, also attached upon said way to the standard A, and provided with the micrometer adjusting-screw *g*, which engages with a threaded socket in block N, and with the pin *r'*, which engages with a graduated series of holes cut in the way *f*, the oscillating frame T, suspended by a universal-joint connection from standard A, a work-support, P, resting upon a bracket, *h*, attached to and projecting from the block N, and connected with said oscillating frame by a universal joint, together with a rotating cutter and an index-rod for tracing the pattern, substantially as and for the purposes set forth.

7. In a punch-cutting machine, the work-holder R, composed of shell *a'*, lining *g'*, back *b'*, and cap *d'*, and provided with the stem X, substantially as and for the purposes set forth.

8. In a punch-cutting machine, the work-holder R, provided with a socket for the reception of the blank, and with the stem X, substantially as and for the purposes set forth.

9. In a punch-cutting machine, the combination of the work-support P with the detachable holder R, provided with the threaded stem X, pivoted therein, cross-head V, and graduated disk Y, together with spring-catch *z*, substantially as and for the purposes set forth.

10. The combination, in a punch-cutting machine, of the standard A, work-support P, the bracket *h*, attached to the block N, the oscillating frame T, and the universal-joint connection, as described, between said swinging frame and said work-support P, substantially as and for the purposes set forth.

11. In a punch-cutting machine, the combination of the standard A, block N, adjustably attached thereto and provided with bracket *h*, the work-support P, secured in and bearing upon said bracket *h*, and the rotary cutter, both attached to block N, substantially as and for the purposes set forth.

12. In a punch-cutting machine, the combination of the holder R, constituting a facing-jig, and a clamping device, substantially as and for the purposes set forth.

13. The combination, in a punch-cutting machine, of a graduated series of followers, S, *w*, 4, and 5, by which the distance of the cut from the face of the character is determined, and the work-holder R, with means, as described, for adjusting its height, whereby the depth of the cut is regulated, substantially as and for the purposes set forth.

14. The combination, in a punch-cutting machine, of the work-holder R, cross-head V, and graduated disk Y, together with the cutting-tool, substantially as and for the purposes set forth.

15. The combination, in a punch-cutting machine, of a follower, S, for tracing the pattern, a work-holder, R, an adjustable cross-head, V, for regulating the height of said holder, and a cutting-tool, substantially as and for the purposes set forth.

16. In a punch-cutting machine, the combination of an index-rod, C, a series of tracing-followers, S, *w*, 4, and 5, the blank-holder R, and the rotary cutting-tool, substantially as and for the purposes set forth.

17. In a punch-cutting machine, the blank-holder R, composed of a hardened shell, *a'*, that constitutes a facing-jig, and an interior clamping device, substantially as and for the purposes set forth.

18. In a punch-cutting machine, the combination of an index-rod, C, and a tracing-follower, S, constructed so that a follower of one size may be substituted for one of another size, substantially as and for the purposes set forth.

19. In a punch-cutting machine, a graduated series of followers, S, *w*, 4, and 5, for tracing the pattern, whereby the punch is cut and finished by a succession of cuts, substantially as and for the purposes set forth.

20. In a punch-cutting machine, the combination of a rotary cutter, and the means for holding and giving the proper lateral movement to the punch-blank and for maintaining the same throughout its movement in a plane at right angles to the axis of the cutter, substantially as and for the purposes set forth.

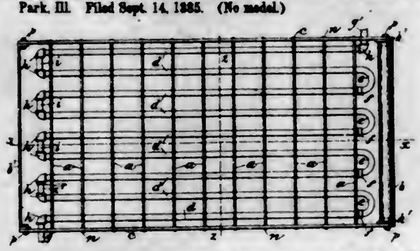
21. In a punch-cutting machine, the combination of an index-rod, C, adjustable in length, so as to reproduce patterns according to different scales, as desired, and a rotary cutter, o, substantially as and for the purposes set forth.

22. In a punch-cutting machine, the combination of a tapering tool, the work-holder, the pattern, and an index by which said pattern is traced and the cut of the tool directed, said tool and holder being adjustable so as to permit a series of cuts varying in depth and proximity to the outline of the finished character or design to be made, substantially as and for the purposes set forth.

23. In a punch-cutting machine, the combination of a tapering tool, a work-holder, a pattern, and an index by which said pattern is traced and the cut of the tool directed, said tool or work-holder being adjustable in the line of the axis of said tool, or nearly so, and in a plane at right angles, or nearly so, to the axis of said tool, so as to produce, by the movement of the index about said pattern, a series of cuts varying in depth and proximity to the outline of the finished character or design, substantially as and for the purposes set forth.

24. In a punch-cutting machine, the combination of a tapering rotary tool and a work-holder, said tool or work-holder being adjustable in the line of the axis of said tool or in a line parallel thereto, or nearly so, a pattern, and an index arranged to trace said pattern and at the same time to move said tool or work-holder in a plane at right angles, or nearly so, to the axis of said tool in paths corresponding to the travel of said index, and varying in proximity to the outline of the finished character or design, substantially as and for the purposes set forth.

332,991. LUMBER-DRYING PLATEN. NATHANIEL S. BOUTON, Hyde Park, Ill. Filed Sept. 14, 1885. (No model.)



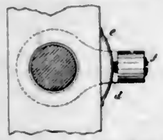
Claim.—1. In a lumber-drier, the gridiron-frame, consisting of the two side bars, *c*, provided with the series of mortises *s*, and the series of three or more perforated supporting-bars, *a*, provided with the tenons *n*, with the latter rigidly riveted to the said side bars, in combination with the pipe *d*, tortuously arranged through the said perforations in the said supporting-bars, all substantially as and for the purpose set forth.

2. The combination of the gridiron-frame, consisting of the two side bars, *c*, provided with perforations *s*, the series of three or more supporting-bars, *a*, provided with perforations *m* and tenons *n*, the latter rigidly riveted to the said side bars, with the end bar attached to the ends of the said side bars with bolts, and removable therefrom, and with the pipe *d*, all substantially as and for the purpose set forth.

3. In a platen for lumber-driers, the supporting-bars *a*, consisting of thin flat bars of iron having a series of perforations for the admission and support of the pipe, and provided with square-cornered tenons *n*, in combination with the side bars of the frame, and with the pipe *d*, substantially as and for the purpose set forth.

332,992. SPINDLE AND BEARING. WILLIAM T. CARROLL, Worcester, assignor to Sawyer Spindle Company, Boston, Mass. Filed Jan. 5, 1885. (No model.)

Brief.—To compensate for inequalities in band pull, a spring is interposed between the rail and an arm attached to the movable bearing in which the spindle receives its lateral support.



Claim.—1. The rail A and the spindle and its lateral bearing placed loosely in a hole in the said rail, combined with an arm or projection connected with the said lateral bearing and with a spring co-operating with the said rail and the arm or projection, to operate as and for the purpose set forth.

2. The rail A, the lateral bearing placed therein loosely, the spindle in the said bearing, an arm or projection connected with the said bearing, and an adjusting-screw, combined with a spring co-operating with the said rail, and the arm or projection, to operate as and for the purpose set forth.

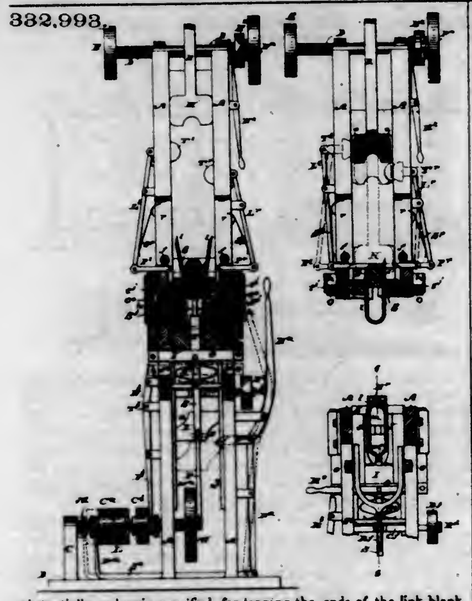
332,993. LINK-MAKING MACHINE. JAMES I. CHEESMAN, Altoona, Pa. Filed May 27, 1885. (No model.)

Claim.—1. The combination of the loose driving-pulley L, clutch-slide C^6, shaft M, crank-wheel W, pitman P, and vertical mandrel-slide S, the latter carrying a bending-mandrel on its face, with the horizontal feed-rollers *f f*, and the open jaws J J, below said rollers, substantially as herein specified, for bending a straight link-blank to U shape, in the manner set forth.

2. The combination of the vertical mandrel-slide S, carrying a bending-mandrel on its face, the vertical thrust-bar T, the sliding frame O, having cam-recesses in its uprights, and the jaws J J, pivoted at their lower ends and having tappet projections engaging with said cam-recesses, substantially as herein specified, for clamping the bent link-blank laterally, in the manner set forth.

3. The combination of the drop-hammer H, tappet-slides T^5 T^4, levers L^7 L^8, and pushers P^5 P^4, with their appurtenances, and the upper part of the vertical mandrel-slide S, supported by its ways beneath said hammer, and having an anvil-section of the bending-mandrel upon its face, substantially as herein specified, for lapping the ends of the link-blank, one over or upon the other, and welding them together, in the manner set forth.

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4. The combination of the hand-lever H^6, sliding frame O, thrust-bar T, and cushioning-spring S^4, with the lateral jaws J J, and vertical mandrel-slide S, substantially as herein specified, for loosening and partially re-elevating the welded link, in the manner set forth.

5. The combination of the parallel crank-shafts C^7 C^8, rock-frames R^7 R^8, and finishing-hammers H^7 H^8, with a driving-shaft, clutch, band and pulleys, and connecting-gear for driving said crank-shafts simultaneously at will, substantially as herein specified, for finishing the links, in the manner set forth.

6. The combination of the loose driving-pulley L, clutch-slide C^6, shaft M, crank-wheel W, pitman P, and vertical mandrel-slide S, the latter having on its face a vertically-collapsing mandrel, the upper section of which carries the finished link upward and supports it loosely until it is taken from the machine, substantially as herein specified.

7. The combination, in an upright machine for bending and welding links, of a horizontal pair of feed-rollers, a vertical mandrel-slide carrying a combined bending-mandrel and an anvil on its face, and a pair of clamping-jaws for bending a straight link-blank to U shape, and holding it tightly in this shape, with a pair of end-lapping pushers and a welding-hammer, substantially as herein specified, for making a lap-weld link, in the manner set forth.

8. In an upright machine for bending and welding links, the combination, with a vertical mandrel-slide, of the cross-head X, tappet-slide T^5, fork F^5, and clutch-slide C^5, substantially as specified, for automatically unclutching the shaft which drives said mandrel-slide from its driving-pulley at the end of each bending-stroke, in the manner set forth.

9. In an upright machine for bending and welding links, the combination, with a vertical mandrel-slide, of the cross-head X, tappet-slide T^5, fork F^5, and clutch-slide C^5, substantially as specified, for automatically unclutching the shaft which drives said mandrel-slide from its driving-pulley at the end of each return-stroke, in the manner set forth.

10. In a machine for bending and welding links, a combined mandrel and anvil carried by a two-part slide, and itself divided transversely, substantially as herein specified, the bending-section of the mandrel being adapted to slide away from the anvil-section in each bending-stroke, and to reapproach the same in each return-stroke, for releasing a link formed and welded on the mandrel, in the manner set forth.

332,994. MEANS FOR LUBRICATING FLANGES AND TREADS OF CAR-WHEELS. FRANK S. CLARKSON, Baltimore County, Md., assignor of one-half to Frank B. Sloan, same place. Filed June 21, 1883. Renewed June 29, 1885. (No model.)

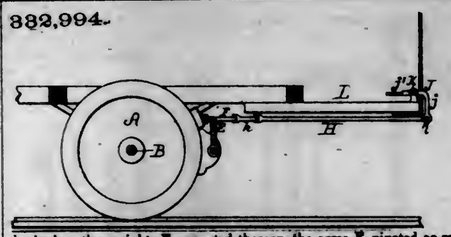
Claim.—1. The combination, with the body, wheels and axles, brakes and brake-rods of a car, of lubricants carried on levers, as described, and means for bringing said lubricants into contact with the wheels, substantially as set forth.

2. The combination, substantially as described, of the wheels, the brake-bar, the uprights E, mounted thereon, the arms F, pivoted on said uprights and carrying lubricating material at their outer ends, the links *k*, bar H, elbow-lever L, and spring M, for the purpose set forth.

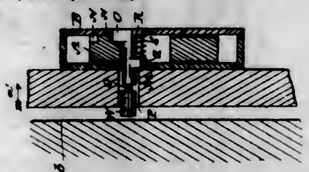
3. The combination, with the wheels of a railway-car and the body thereof, of means, substantially as described, whereby the flange or tread of said wheels may be lubricated by the driver, substantially as and for the purpose set forth.

4. The combination, with the wheels of a railroad-car, of a lubricant and means, substantially as described, extending to within easy reach of the driver or other person on the car, whereby the flange or tread of said wheels may be lubricated by the driver while seated or standing in his position on the platform, as set forth.

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332,995. DOOR-LATCH. WILLIAM G. CLINE, Gallatin, Mo. Filed Sept. 30, 1885. (No model.)



Claim.—1. The combination, with a latch-casing, of a knob-bolt having notches in its head, a sliding latch having a lug on the inner end and having the front end projecting from the face of the door, which latch has its projecting end made adjustable in length, substantially as herein shown and described.

2. The combination, with a latch-casing, of a knob-bolt, a latch for locking the same in its retracted position, and a screw projecting from said latch through an opening in the door and from the face of said door, substantially as herein shown and described.

3. The combination, with a latch-casing, of the knob-bolt A, having the notches N in its head, the sliding latch M, having the lugs O' and Q, the pin R, the spring S, surrounding the pin R, the screw O, screwed in the latch, and of the head W on the screws, substantially as herein shown and described.

4. The combination, with a latch-casing, of the knob-bolt A, having the notches N and covers *a*, and of the latch M, having a lug, substantially as herein shown and described.

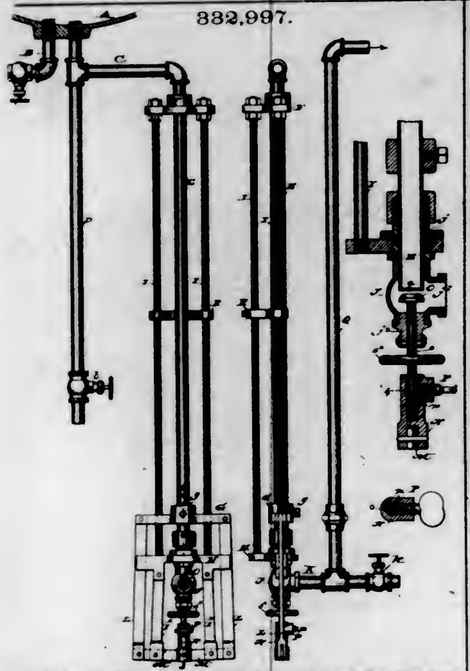
332,996. SHAFT FOR GRINDSTONES. WILLARD W. COON, Palmyra, assignor of one-third to T. F. Leavitt, Sioux Falls, Dak. Filed Mar. 14, 1885. (No model.)



Claim.—The improved shaft for grindstones herein shown and described, having at one end a projection for the attachment of a removable crank and handle for turning the stone by hand-power, and at the other end a fixed crank adapted to be connected to a pitman and treadle for turning the stone by foot-power, the said fixed crank having a stud or projection parallel to the shaft for the attachment of the removable handle, and having suitable means for locking said handle upon the same, substantially as and for the purpose set forth.

332,997. STEAM-TRAP. JOHN CORNELL, St. Louis, Mo. Filed Mar. 5, 1885. (No model.)

332,997.



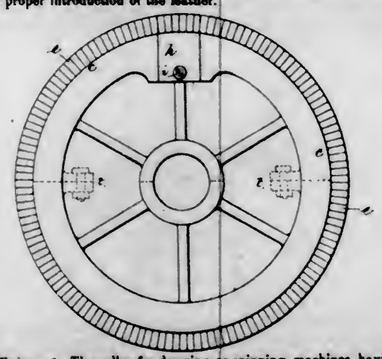
Claim.—1. In combination with the vessel A and the steam-trap, the settling-chamber D, said settling-chamber being between said vessel and said steam-trap, substantially as described.

2. The combination of the tube E, the cross-plates F G H, the ties I I I, the arms L L, the rods I' I', the levers M M, and the holder N, substantially as described.

3. In a steam-trap, the combination of the tube E, the valve-chamber J, the tube K, and the tube Q, said tube working freely in said valve-chamber, as and for the purpose described.

332,998. ROLL FOR DRAWING AND SPINNING MACHINES. CHARLES COUPLAND, Seymour, Conn. Filed Nov. 12, 1883. (No model.)

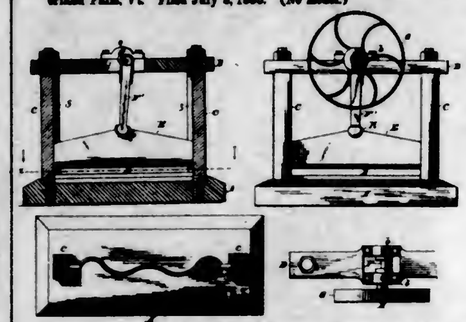
Brief.—The roll is constructed of iron, with one or more dovetail channels in its periphery for the reception of pieces of leather, which are cut into proper form, compressed into sectoral shape, and are then set therein edgewise. The roll may be made in two parts and bolted together, or it may have fitted in its periphery one or more base-blocks for the proper introduction of the leather.



Claim.—1. The roller for drawing or spinning machines having a metallic body with undercut peripheral grooves, and pieces of leather consolidated by pressure into sectoral form and set together in said grooves flatwise and parallel to the axis, the same forming a leather surface to the roller, substantially as specified.

2. The combination, in a drawing or spinning roll having a leather surface, of a body with an undercut peripheral groove, sectoral segments of leather packed into such groove flatwise and parallel to the axis of the roller, and one or more movable base-blocks introduced into the roll and containing leather segments, substantially as set forth.

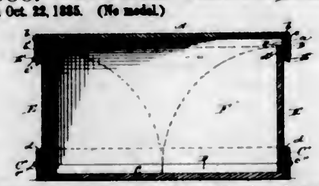
332,999. STONE-DRESSING MACHINE. HENRY DONNELLY, Sutherland Falls, Vt. Filed July 3, 1885. (No model.)



Claim.—1. In a machine for cutting stone, the combination, with a bed-plate having grooved posts C, which are connected to each other by a rigid cap-piece having journals for the eccentric-shaft of a knife having all parts of its upper edge in the same horizontal plane and rigidly attached above the bed-plate, of a sliding knife with its lower edge parallel to that of the fixed knife and connected at its center by a ball-and-socket joint to an arm which is operated by an eccentric, the parts being organized substantially as shown and specified.

2. The combination, with the bed A, carrying the fixed knife D, the standards C, having the grooves *s*, and the cap-piece B, having the bearings *b*, of the shaft H, having the eccentric or crank F and carrying the wheel G, the arm F', having the ball K, and the knife E, having the socket and placed parallel to the fixed knife D, as described.

333,000. FOLDING CRATE. WILLIAM C. DOUBLEDAY, Lima, Ohio. Filed Oct. 22, 1885. (No model.)



Claim.—1. In a folding crate, the combination of a top having depending side and end pieces, a bottom section with upwardly-projecting side and end pieces and having pivoted end boards, the parts being adapted to be secured to each other by hooks, and side boards, F, substantially as shown, and for the purpose set forth.

2. In a folding crate, a top section provided with end boards, *b*, which depend from the same, said end boards having tongues formed thereon, and provided with a hook or fastening device, in combination with a bottom section having upwardly-projecting end pieces with grooves on their inner sides and staples for the hooks or fastening devices of the top section to be engaged with, so as to secure the parts upon each other, substantially as shown, and for the purpose set forth.

3. In a folding crate, the top section, A, provided with end pieces, with depending tongues *b'*, said end pieces carrying fastening devices, a bottom section having the ends E pivoted thereto, said end pieces having attached thereto adjacent to their upper edges transverse strips E', with grooves *d'*, and devices for engaging with a fastening-hook attached to the top section, substantially as shown, and for the purpose set forth.

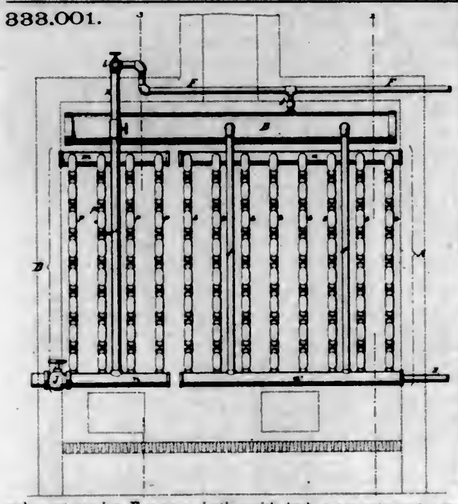
4. In a folding crate, the top section, A, provided with depending side and end pieces, a bottom section, C, with upwardly-projecting side and end pieces, the boards E, pivotally attached to the bottom section, so as to fold within the same, and side pieces, F, and the fastening devices B, for holding the top section upon the end boards, E, and to the bottom section, the parts being combined and organized substantially as shown, and for the purpose set forth.

333,001. STEAM-GENERATOR. MILTON FOREMAN, Philadelphia, Pa. Filed Apr. 11, 1885. (No model.)

Claim.—1. The combination of a steam-generator, a steam-distributing pipe, *i*, and a superheater communicating with said pipe and with the steam-space of the generator, said superheater being arranged as described in respect to the generator, whereby its furnace can be independently fired, as set forth.

2. The combination of a steam-generator, a steam-distributing pipe, *i*, a superheater communicating with said pipe and with the generator, and a return-pipe, F, communicating with both superheater and generator, as specified.

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4. The combination of a steam-distributing pipe, a steam-generator and a superheater, both communicating with said distributing-pipe, and a communication between the superheater and the steam-space of the generator, said superheater being arranged in respect to the generator as described, whereby its furnace can be independently fired, as set forth.

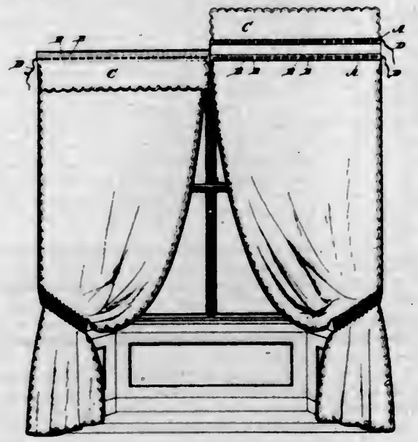
5. The combination of a distributing-pipe, *i*, a steam-generator and a superheater, both communicating with said pipe, a communication between the superheater and the steam-space of the generator, and valved pipes, whereby both generator and superheater may be charged with water, said superheater being arranged in respect to the generator as described, whereby its furnace can be independently fired, as set forth.

6. The combination of a steam-generator, a steam-distributing pipe, *i*, a superheater communicating with said pipe and with the steam-space of the generator, but located as described in respect to the generator, whereby its furnace can be independently fired, and a valved communication between the superheater and the water-space of the generator, as set forth.

7. The combination, in the generator and superheater, of the upper and lower manifolds, the connecting-coils, the steam-drum, and the circulating-pipes, as set forth.

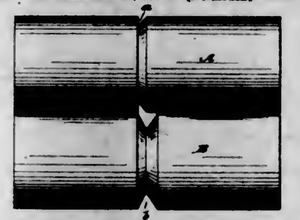
8. The combination of the distributing-pipe *i*, the superheating-coils *p*, the drum B, the upper and lower manifolds, *m* and *n*, the valved pipes *t* and *w*, a communication between the drum B and the upper manifold, a communication between the pipe *i* and the lower manifold, and a valved communication between the said pipe *i* and the drum B, as set forth.

333,002. LACE CURTAIN. JOHN F. FORTH, Nottingham, England. Filed July 6, 1885. (No model.) Patented in England June 15, 1885, No. 7,266.



Claim.—A lace curtain having a valance, C, and a cloth band, A, provided with holes B, for the insertion of a rod or cord, substantially as described.

333,003. ROLL FOR FORMING TOE-CALK BARS. JOHN W. FOULIS, Brooklyn, N. Y. Filed Oct. 10, 1885. (No model.)



Claim.—The combination, with the roll A, having a circumferential groove provided with one inclined side and one side at a right angle to the axis of said roll, of the roll B, having a circumferential V-shaped groove, substantially as described.

333,004. DEVICE FOR ATTACHING PRESSER-FEET AND OTHER ATTACHMENTS TO SEWING-MACHINES. HARRY C. GOODRICH, Chicago, Ill. Filed Dec. 24, 1883. (Model.)

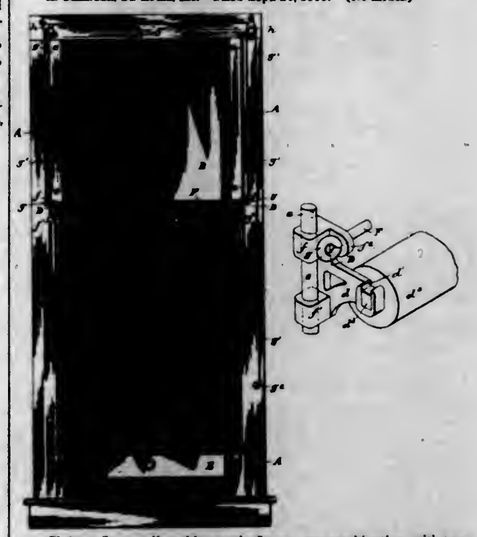


Claim.—1. A head or shank, A, having a horizontal slot, *a*, behind the needle-hole, in combination with a presser-foot or other attachment having a flat attaching-shank secured in said slot *a* by the head of a set-screw, substantially as described.

2. The attachment-holder provided with a socket for attaching the same to the presser-bar of a sewing-machine, and having a transverse groove therein behind the needle-hole, in combination with the series of attachments having each a flat attaching-plate of a size and shape to fit in said groove, and a holding-screw tapped into said holder and arranged to bind or bear against the edge of said plate to prevent removal of the attachment, substantially as described.

3. The attachment-holder in the form of a presser-foot, having a horizontal transverse groove therein behind the needle-hole, in combination with the series of attachments having each a flat horizontal attaching-plate of a size and shape to fit in said groove, and the holding-screw tapped into said holder from the rear and arranged to bear against the rear edge of the attaching-plate inserted in the groove, substantially as described.

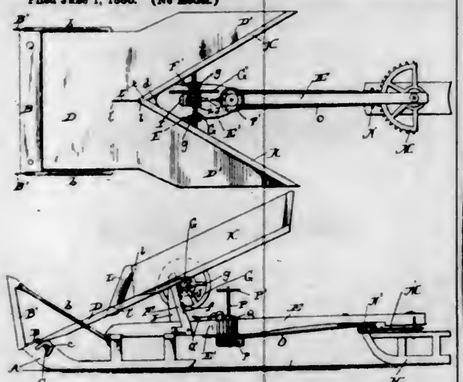
333,005. ADJUSTABLE WINDOW-SHADE ATTACHMENT. JOHN H. GRANGER, St. Louis, Mo. Filed Sept. 26, 1885. (No model.)



Claim.—In an adjustable curtain-fixture, the combination, with two roller-baskets having perforated lugs for the passage of a transverse union-rod, of a union-rod passing through said lugs and having at each

and an enlargement to afford a suspension-eye for the fixture, substantially as and for the purposes specified.

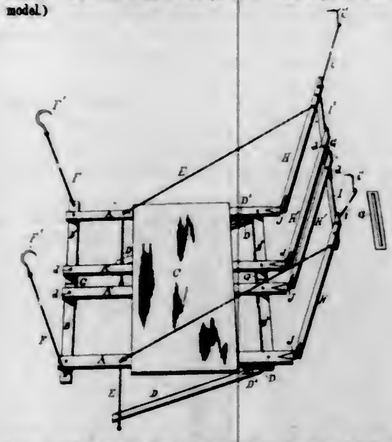
333,006. SNOW-CLEARER. WILLIAM A. GREENLEE, Ottawa, Ill. Filed June 1, 1885. (No model.)



Claim.—1. The combination, with the table D, having recess *l*, and the deflectors K K, arranged as shown and having recess *l'*, of the removable inclined cutter L, all arranged and serving as and for the purposes set forth.

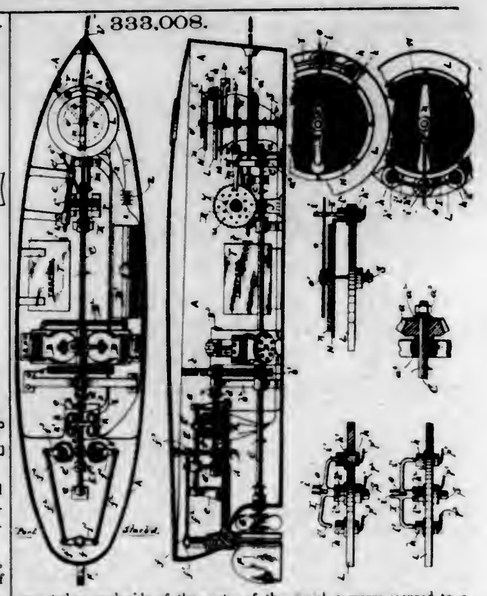
2. In a snow-clearer substantially as described, the combination, with the table D and means F F' G J, &c., for adjusting it at will, of the reach-frame E, having platform E', the bob H, segment M, pinion, rope, or chain O, standard P, and dog Q', all arranged and operating as and for the purposes set forth.

333,007. FOLDING AND ADJUSTABLE WINDOW-BRACKET SHELF. ELNA M. GREER, Stockton, Cal. Filed Sept. 10, 1885. (No model.)



Claim.—The combination, substantially as described, of the front cross bar-sections, B B', the rear cross-bar sections, B^2 B^2, the cross-bar sections I I' of the back, the slotted plates G, bolts *d*, longitudinal bars A A' and H H', the hinges J, the bracing-bars D, blocks D^2, the cords G, with stop-knots, the cords F, having hooks F', the cords *i*, having flat-end hooks *i'*, and the platform C.

333,008. ELECTRO-MAGNETIC STEERING AND REVERSING MECHANISM FOR TORPEDO-BOATS. HORACE P. GREWOLD, Providence, R. I. Filed Oct. 21, 1885. (No model.)



Claim.—1. In a boat of the character hereinbefore described, the combination, with the rudder, of a shaft having a screw-worm secured thereto, mechanism for revolving the same, a journaled rod having an arm adapted to support the free end of said shaft, two worm-wheels suitably mounted, having the worm arranged to freely revolve between and independently of said wheels, and levers or other substantially equivalent means which connect each wheel with the rudder, the whole arranged whereby the journaled rod is adapted to vibrate and cause the revolving worm to engage either wheel, the angular movement of the latter being transmitted to the rudder, substantially as shown, and for the purpose set forth.

2. The combination, with a rudder connected with a worm-wheel mounted on each side of the center of the vessel, a worm secured to a jointed shaft intermediate of said wheels, and mechanism for revolving the shaft, of a loosely-mounted rod provided with an arm having the free end of the worm-shaft journaled therein and a pair of electro-magnets having the armature thereof secured to said rod, the whole combined and arranged whereby the worm is disengaged from both wheels when the magnets are demagnetized, and engaging either wheel, according as the armature is attracted and vibrated toward either magnet by means of an electric current passing through it, substantially as shown and hereinbefore set forth.

3. In a boat of the class described, the combination, with the rudder, connections, worm-wheels, and electro-magnets having the armature thereof secured to a rod which carries the revolving shaft and worm, substantially as shown, of a compass needle and card, mounted as usual, a finger adjustably secured to the needle, a pivoted two-arm lever adapted to receive the free end of said finger, two mercury or contact cups secured below the lever, adapted to each to receive an arm thereof, and suitable conducting-wires connecting said cups, lever, and electro-magnets with a battery or other suitable source of electricity to produce a circuit, the whole arranged on board the vessel, whereby any material variation of the boat from a straight course is immediately counteracted by the magnetic needle, which latter causes the corresponding arm of the pivoted lever to engage its corresponding mercury-cup, thereby closing the electric circuit and instantly deflecting said armature, thus swinging the worm into gear with one of the wheels and moving the rudder, substantially as shown and set forth.

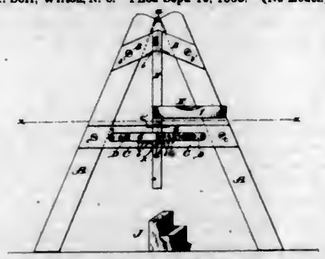
4. In a boat of the class herein described, having a suitable electric battery and propelling mechanism, the combination, with the electrically-connected steering device, compass needle, card, and adjustably-secured finger, of a suitably-mounted spindle adapted to be intermittently revolved one hundred and eighty degrees, mechanism, substantially as shown and described, for effecting the same, a set of three electrically-connected stationary metallic plugs secured forward of the spindle, and a similar set of plugs secured aft of the spindle, an insulated disk secured to and revolving with said spindle, the disk having a forked two-arm lever pivoted thereto, and the two mercury-cups, said lever and cups being electrically connected with either set of stationary plugs, the whole combined and arranged, whereby the boat is automatically reversed in its course, said device being self-contained and independent of control from the shore.

5. The combination, with the suitably-mounted firing-pin or torpedo-exploding rod having an opening formed therein, of the pivoted suspended lever having a pin secured thereto and a revolving dial provided with a pin adapted to engage said lever, whereby the latter is released and its pin made to enter the said opening, thus locking the rod in position and preventing it from exploding the torpedo, substantially as shown and set forth.

6. In a compass, the combination, with the insulated disk secured to a spindle adapted to be automatically revolved, provided with two electrically-connected mercury-cups and an electrically-connected pivot, on which a forked two-arm lever is adapted to vibrate, of a magnetic needle and its compass-card, mounted as common, having a delicate finger adjustably secured to the top of the needle, the free end of the finger extending beyond the needle and engaging the forked or slotted portion of the two-arm lever pivoted to said insulated disk, substantially as shown, and for the purpose set forth.

7. The improved automatic electro-magnetic steering and reversing apparatus hereinbefore described, the same consisting of the electro-magnets K K, having the armature K' thereof secured to a freely-mounted rod, from which depends an arm, *e'*, in which a revolving jointed shaft, D, carrying the worm H, is journaled, toothed wheels H', mounted each on a shaft, f^4, from which extends an arm, f^5, that connects with the tiller *f'* of the rudder, a suitably-mounted spindle, S, adapted to be revolved by means of the gear *a*, frictionally mounted on a revolving shaft, c, and a gear, *a'*, secured to said spindle, an escapement-lever, *m*, operated by means of one or more pins, u' u^2 u^3, carried by a revolving dial, which releases the wheel W, secured to the spindle S, an insulated stationary disk, M, having the two sets of electrically-connected plugs g g^3 secured thereto, the insulated disk L, provided with the two mercury-cups h, and pivot h^3, secured to said spindle, a slotted two-arm lever, I, mounted in the pivot h^3, a compass-card, N, magnetic needle *n*, and finger *o*, adjustably secured to the needle and surmounting the spindle, a battery, Z, or other generator of electricity, and the electric conducting-wires connecting the several plugs g g^3, cups h h, pivot h^3, electro-magnets K K, and battery Z, to form the circuit, the whole combined, arranged, and adapted for use substantially as shown and set forth.

333,009. LEVELING-INSTRUMENT. JOHN D. HAYHCOCK and WILLIAM T. SUIT, Wilton, N. C. Filed Sept. 19, 1885. (No model.)



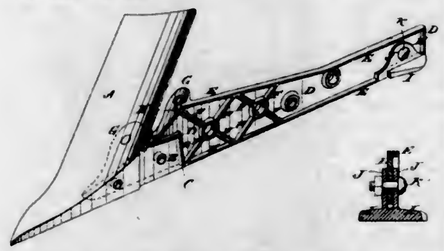
Claim.—1. The combination, with the hinged uprights, supporting-bars pivoted to the uprights and hinged together at their inner meeting ends, and a pivoted spirit-tube-carrying arm, substantially as described.

2. The combination, with the pivoted uprights, transverse horizontal bars pivoted thereto, brackets secured to said bars, a pivoted oscillating bar, and a spirit-tube secured thereon, substantially as described.

3. The combination, with the hinged uprights, horizontal bars pivoted thereto and hinged together at their meeting edges, brackets having inwardly-extending arms, a pivoted bar, and a spirit-tube mounted thereon above the plane of the bars, substantially as described.

4. The combination of the hinged uprights, blocks D, pivoted to said uprights and hinged together, bars C, arranged below the blocks B and pivoted to the uprights at their outer ends and hinged together at their meeting edges, one of said bars having a series of apertures, brackets D, having arms *d*, and secured to the bars C, and one provided with a scale, a vertical bar pivoted to the blocks D, and a spirit-tube secured to said bar, substantially as described.

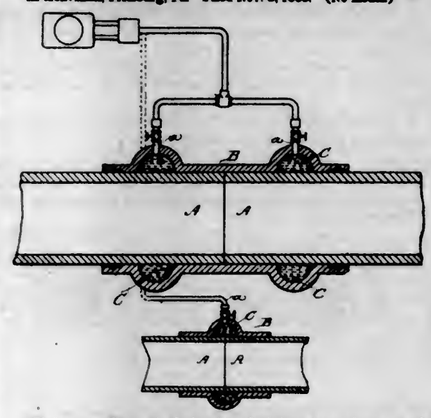
333,010. PLOW. WILLIAM H. HODGSON, Winona, Minn. Filed July 29, 1885. (No model.)



Claim.—1. In a plow, the heel I, formed on its upper surface with vertical parallel apertured lugs J, the projecting side parts of the heel being narrower at their alternate ends, substantially as shown and described.

2. The landside D, having its front end inclined and recessed at C, and formed with the rib E, extending along the edges of the landside and around the edges of the said recess, the ribs F, radiating from the bolt-holes to the marginal rib E, the lugs G, the lips H, projecting from the forward edge of the upper lug, and the heel I, having parallel lugs J, embracing rear end of the landside, the rib E being cut away at this point, substantially as set forth.

333,011. METHOD OF SEALING THE JOINTS OF GAS-MAINS. W. A. HOEVELER, Pittsburg, Pa. Filed Nov. 2, 1885. (No model.)

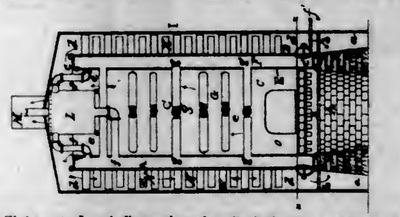


Claim.—1. The method of sealing the joints of gas pipes or conduits, which consists in forcing between the pipe and surrounding casing, under a pressure greater than the normal pressure of the gas, paraffine or other material capable of hardening at a normal temperature.

2. The method of sealing the joints of gas pipes or conduits, which consists in admitting between the pipes and surrounding casing paraffine, and then hermetically sealing the opening through which such material is introduced.

3. The method of sealing the joints of gas pipes or conduits, which consists in forcing between the pipe and a surrounding casing, under a pressure greater than the normal pressure of the gas, paraffine or other substance in a liquid form, and then hermetically sealing the opening through which said liquid has been introduced.

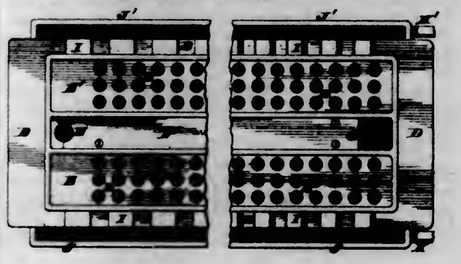
333,012. VERTICAL TUBE-BOILER. PHILIP HOLTZMANN and RUDOLPH MAYER, New York, N. Y. Filed Apr. 17, 1885. (No model.)



Claim.—1. In a boiler such as described, the two concentric shells E D, with the space F between them, the shell E having short radial tubes G extending within, and the shell D having the short radial tubes H extending without, said tubes G and H opening into the space F and closed at their other ends, as set forth, in combination with the inclosing-casing I, as described.

2. In a boiler such as described, the two concentric shells E D, having the space F between them, the shells having the tubes G and H leading into the space F and closed at their other ends, in combination with the casing I, the vertical plates N N between the shell D and casing, and the flue-plates B, having the openings *n' b b*, as set forth.

333,013. CANDLE-MOLDING MACHINE. LOUIS HOMAN, Cincinnati, Ohio. Filed Sept. 12, 1885. (No model.)



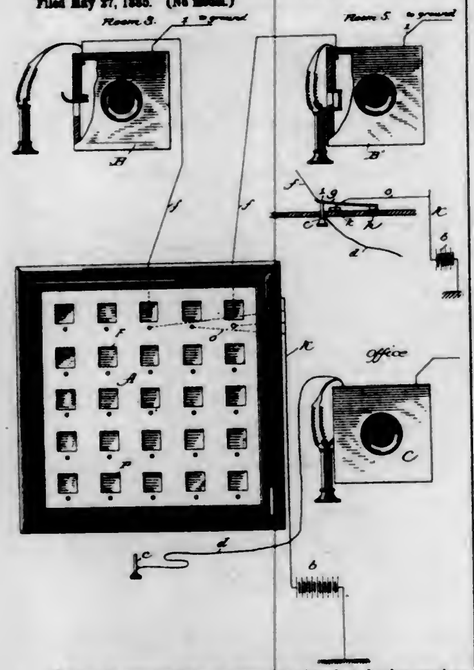
Claim.—1. A candle-mold box provided with a water-inlet, a series of discharge-ports or vents at or near the top of said box, and one or more troughs for catching the water that escapes from said ports and conducting it away from the machine, substantially as herein described.

2. The combination of candle-mold box A B C, cap D E E', inlet H, discharge-ports I, and troughs J J', said troughs being provided with suitable waste-ways, for the purpose described.

3. As a new article of manufacture, the candle-mold box A, having troughs J J' cast on the opposite sides of the same, as herein described.

4. The candle-mold-box cap D, having on its under side a series of discharge-ports, I, for the purpose described.

333,014. **TELEPHONE ANNUNCIATOR AND CIRCUIT.** JAS. HOULIHAN, Toledo, Ohio, assignor of one-half to William A. Benton, Boston, Mass., and seven-sixteenths to J. S. Barker and E. E. Dwight, Toledo, Ohio. Filed May 27, 1885. (No model.)



Claim.—In combination, an annunciator-board, A, having numbers for each room, a telephone in each room, connected to its appropriate number on the board by a wire, *f*, and spring *g*, arranged in line with the hole in the board, the wire K, and battery *b*, with connections *o*, and bars *k* to each spring *g*, the office-telephone in an ordinary circuit, and the wire *d* and pin *c*, all arranged to operate substantially as set forth.

333,015. **RAILWAY SLEEPER AND CHAIR.** JAMES HOWARD and EDWARD T. BOURFIELD, Bedford, England. Filed May 13, 1885. (No model.) Patented in England Mar. 19, 1885, No. 3,528.

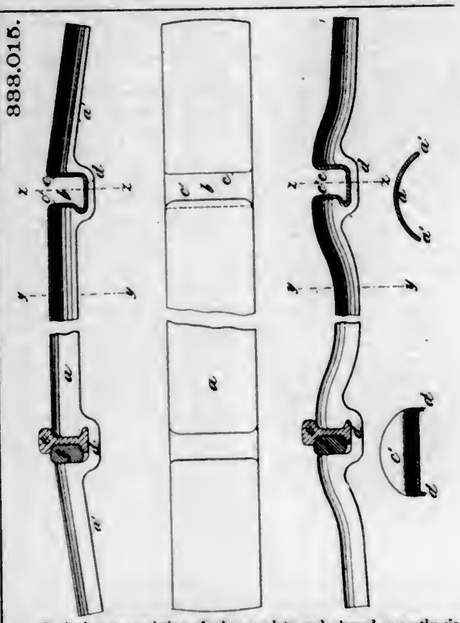
Claim.—1. A combined sleeper and chairs made from one plate, strip, or sheet of metal which is arch-shaped in transverse section, and in which the receptacles or chairs for the rails are formed by depressing, sinking, or flanging down the metal below the top or arched surface of the sleeper, substantially as described.

2. The continuation of the lower edges of the arch-shaped plate, strip, or sheet *a* below the rail-seats for the purpose of forming flanges *d*, for increasing the strength and rigidity of the sleeper, as above set forth.

3. A sleeper formed of a plate, strip, or sheet, *a*, of metal which is arch-shaped or partly circular in transverse section throughout its entire length, except where the gaps or depressions *b* are formed to serve as seats or receptacles for the rails, substantially as set forth.

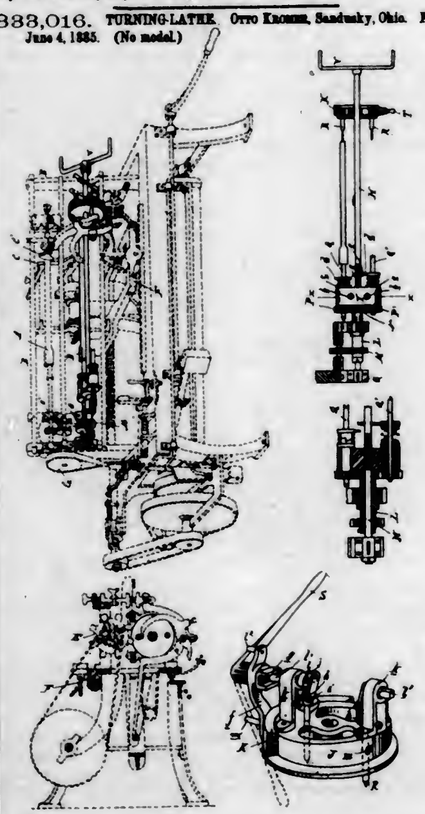
4. The plate, strip, or sheet *a* of metal, which is arch-shaped in transverse section, and which is made with the depressions *b* and flanges *d*, to form rail seats or receptacles of the same width as the arch-shaped portion, and with sides whose upper edges throughout their entire extent coincide and form a junction with the arch-shaped portions of the sleeper, substantially as set forth.

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5. A sleeper consisting of a bar or plate arch-shaped or partly circular in transverse section, which has receptacles for the rails formed across it in the manner specified, and which will properly hold and support the rails without any stays, ties, bolts, rivets, or other adjuncts, except the ordinary keys or wedges, substantially as set forth.

333,016. **TURNING-LATHE.** OTTO KROMER, Sandusky, Ohio. Filed June 4, 1885. (No model.)



333,016.



Claim.—1. In a lathe, a reversible frame provided with two sets of spindles and pivotally secured to the swinging frame carrying the pattern, substantially as described.

2. In a lathe for cutting irregular forms, a reversible frame pivotally secured to the swinging frame, in which the pattern is fixed, and having two sets of spindles secured to it upon opposite sides of the axis on which it rotates, substantially as described.

3. In a lathe for cutting irregular forms, a reversible frame pivotally secured to the swinging frame, in which the pattern is fixed, and having two sets of spindles secured to it upon opposite sides of the axis on which it rotates, combined with the dog U, substantially as and for the purposes specified.

4. In a lathe, the combination, with the reversible spindle-frame and its shaft H, provided with stops, of the head-stock I, forming one end of said reversible frame, and provided with spindles Q Q', and clutches c, provided with pins *d*, substantially as and for the purposes specified.

5. In a lathe, the combination, with the shaft H, frame B, and ring-bearing K, secured to said frame, of the tail-block J, journaled in said ring-bearing, substantially as and for the purposes specified.

6. In a lathe, the combination, with the shaft H, the swinging frame B, pivoted thereon, and the ring-bearing K, adjustably clamped to said frame, of the tail-blocks J, journaled in said ring-bearing, and provided with the spring-bolt T, substantially as and for the purpose specified.

7. In a lathe, the combination, with the shaft H and the tail-block J, secured thereon, and provided with holes *m n*, of the ring-bearing K, surrounding said tail-block, and provided with the spring-bolt T, adapted to engage said holes, substantially as and for the purposes specified.

8. In a lathe, the combination, with the reversible spindle-frame and the shaft H, on which it rotates, of the clutches c on the head-stock and the spindles Q Q', secured to the loose members of the clutches, substantially as described.

9. In a lathe, the combination, with the reversible spindle-frame, of the clutches c on the head-stock, the loose members of said clutches being provided with pins *d*, adapted to engage stops *e* on the shaft H, on which said reversible frame rotates, substantially as described.

10. In combination with the reversible spindle-frame having two set of spindles, the pinions P P', and clutches c on the head-stocks, the spindles Q Q', secured to the loose members of the clutches, the pins *d* upon the loose members of the clutches, and the stops *e*, all arranged substantially as described.

11. In combination with the reversible spindle-frame provided with two sets of spindles, the spring-dog U, and the stops *p* on the head-block I, forming a part of said reversible frame, substantially as and for the purpose described.

12. In combination with the reversible spindle-frame having two sets of spindles, the tail-block J, forming one end of said reversible frame, the lever S, pivoted to the brackets *f* and having slotted wrist *g*, and the crank shaft *l* for operating the dead-spindle, and having a squared end, *l'*, substantially as described.

13. In combination with the reversible spindle-frame provided with two sets of spindles, the tail-block J, forming one end of said frame, the bracket *f*, the lever S, pivoted to said bracket and having slotted wrist the crank-shaft *l*, having squared end *l'*, the crank *g*, working in said slotted wrist, the link *i*, collar *h*, and dead-spindles R, all arranged substantially as described.

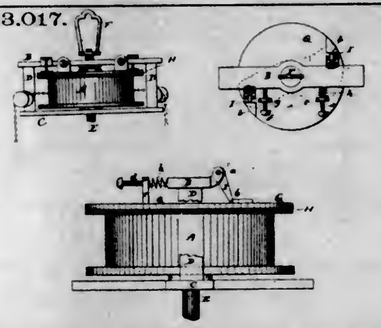
14. In combination with the reversible spindle-frame provided with two sets of spindles, the tail-block J, forming one end of said reversible frame and adjustably secured to the central shaft, H, of the reversible frame and engaging with a spline into a key-way on said shaft, and the ring-bearing K, provided with a clamping device for securing it adjustably in position, substantially as described.

15. In combination with the reversible spindle-frame provided with two sets of spindles, the tail-block J, forming one pivot of the reversible frame, the ring-bearing K, surrounding said tail-block, and provided with the spring-bolt T, the lever S, pivoted to the bracket *f* and having slotted wrist *g*, the crank-shaft *l*, provided with squared ends *l'*, working in said wrist, the crank-arms *j*, the links *i*, the collars *h*, and the dead-spindles R R, all arranged substantially as described.

333,017. **SUSPENSION DEVICE.** LYMAN T. LAWTON, Meriden, Conn., assignor to the Meriden Malleable Iron Company, same place. Filed Aug. 31, 1885. (No model.)

Claim.—1. The combination of the supporting-frame, axle, and spring-drum, with an oscillating bar or disk loose upon the axle between the frame and end of the drum, and one or more dogs hung to the frame

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adjacent to said disk, the said dogs greater in length than the distance between their hinging-point and the surface of the said disk, whereby the said dogs are inclined from the pivot forward toward the disk, the disk constructed with a shoulder or shoulders corresponding to the said dog or dogs, and forward of the free end of said dogs, substantially as described, and whereby under oscillation of the disk in one direction the said dogs will be forced to bear upon said disk and force said disk onto the drum, or in the opposite direction will relieve said disk from the pressure of said dogs, substantially as described.

2. The combination of the frame, axle, and spring-drum, with an oscillating bar or disk loose upon the axle between the frame and end of the drum, one or more dogs hung to the frame adjacent to said disk, the said dogs greater in length than the distance between their hinging-point and the surface of the said disk, whereby the said dogs are inclined from the pivot forward toward the disk, the disk constructed with a shoulder or shoulders corresponding to the said dog or dogs, and forward of the free end of said dogs, and a screw on said disk whereby the extent of oscillation of the said disk may be adjusted, substantially as described.

3. The combination of the frame, axle, and spring-drum with an oscillating bar or disk loose upon the axle between the frame and end of the drum, one or more dogs hung to the frame adjacent to said disk, the said dogs greater in length than the distance between their hinging-point and the surface of the said disk, whereby the said dogs are inclined from the pivot forward toward the disk, the disk constructed with a shoulder or shoulders corresponding to the said dog or dogs and forward of the free end of said dogs, and a spring between the frame and dogs adapted to turn said disk toward the nose of the dog, substantially as described.

4. The combination of the frame, axle, and spring-drum, the disk between said frame and drum loose upon the axle and adapted to oscillate thereon, dogs I I, hung to the frame at diametrically-opposite points, the said dogs greater in length than the distance between their hinging-point and the surface of the said disk, whereby the said dogs are inclined from the pivot forward toward the disk, the said disk constructed with shoulders *b* forward of the free end of the said dogs, and a stop arranged to arrest and limit the extent of movement of the shoulders from the dogs, substantially as described.

5. The combination of the frame, axle, and spring-drum, the disk oscillating between said frame and drum loose upon the axle and adapted to oscillate thereon, dogs I I, hung to the frame at diametrically-opposite points, the said dogs greater in length than the distance between their hinging-point and the surface of the said disk, whereby the said dogs are inclined from the pivot forward toward the disk, the said disk constructed with shoulders *b* forward of the free end of the said dogs, and a spring, *h*, between said frame and disk, adapted to turn the disk and hold the said shoulders against the nose of the dogs, substantially as described.

6. The combination of the frame, axle, and spring-drum, the disk between said frame and drum loose upon the axle and adapted to oscillate thereon, dogs I I, hung to the frame at diametrically-opposite points, the said dogs greater in length than the distance between their hinging-point and the surface of the said disk, whereby the said dogs are inclined from the pivot forward toward the disk, the said disk constructed with shoulders *b* forward of the free end of the said dogs, and an adjustable stop arranged to arrest the movement of the disk toward the dogs, substantially as described.

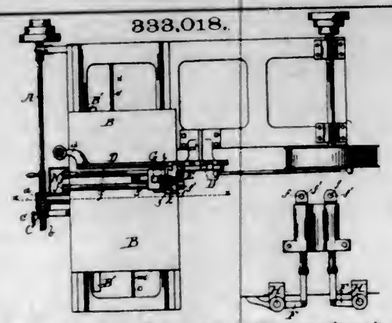
333,018. **STEREOTYPE-PLATE ROUGHING-MACHINE.** GEORGE E. LLOYD, Chicago, Ill. Filed May 12, 1885. (No model.)

Claim.—1. The combination, in a roughing-machine, with the shaft A, journaled in oscillatory bearings near one end, block C, in which the other end is journaled, head C', and cam *c*, as shown, of the spiral gear *b*, shaft *b'*, pinion b^2, and bed B, having rack B', as set forth.

2. The combination, with bed B, of the rollers *f f*, rods *f' f''*, arms F, suitably connected to said rods *f''*, rock-shafts H, having laterally-extending arms, connecting-rods K, and treadles.

3. The combination, with bed B, of the rollers *f*, rods *f'*, arms F, suitably connected to said rods *f''*, rock-shafts H, having lateral arms

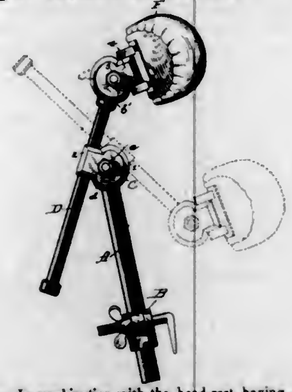
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extending from both shafts, H, toward each other, connecting-rods and treadles, vertical arms *m* and *n*, rods *m'* and *n'*, and springs *o* and *o'*, arranged substantially as and for the purpose set forth.

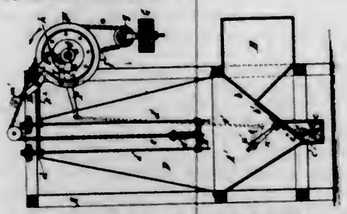
4. In a roughing-machine, the combination, with the carrier having an arm, 1, provided with tenon 2, of the head 3, having lugs, between which is pivoted the stock *g*, holding the chisel G, and having a lug, 4, having an index, *e*, made in its upper surface, and screw E, passing vertically through said lug 4, and having a graduated boss adjacent and made with reference to said index *e* on the lug 4.

333,019. HEAD-REST FOR DENTAL CHAIRS. Alva R. Merrix, Blomberg, Pa. Filed Mar. 9, 1885. (No model.)



Claim.—In combination with the head-rest having a shank, *f*, a clamp, C', having the two parts adapted to clamp the flattened head of the standard and the shank *f*, and the bolt and the nut, all substantially as described.

333,020. DUST-COLLECTOR. Charles H. Morgan, Buffalo, N. Y. Filed May 21, 1885. (No model.)



Claim.—1. In a dust-collector, the combination, with the air-spout, of a dust-receptacle connected therewith by an aperture, a valve applied to said aperture and opened and closed automatically, and a filter-bag having its lower end rigidly secured and communicating with said dust-receptacle, and having a free upper end which is dropped to detach the dust from the bag and deliver it into the dust-receptacle, substantially as set forth.

2. In a dust-collector, the combination, with the air-spout, a dust-receptacle connected therewith, and a valve which is automatically opened and closed to open and break the communication between the dust-receptacle and the air-spout, of a filter-bag having its lower end rigidly secured and communicating with said dust-receptacle, and a free upper end which is dropped to detach the dust from the bag, a stop whereby the fall of the upper end of the bag is arrested, and a lifter whereby the upper end of the bag is returned to its elevated position, substantially as set forth.

3. In a dust-collector, the combination, with the air-spout and dust-receptacle, of a filter-bag having its lower end rigidly secured and communicating with said dust-receptacle, and a free upper end capable of being dropped, and an automatic locking device whereby the upper end of the bag is alternately supported and released, substantially as set forth.

4. In a dust-collector, the combination, with the air-spout and dust-receptacle, of a filter-bag having its lower end rigidly secured and a free upper end capable of being dropped, a stop whereby the fall of the upper end of the bag is arrested, a lifter whereby the upper end of the bag is returned to its elevated position, and an automatic locking device whereby the upper end of the bag is supported, substantially as set forth.

5. The combination, with the filter-bag D, air-spout B, dust-receptacle A', and conveyer c C, of the valves *b'* *c'*, which are moved simultaneously, and whereby the communication of the dust-receptacle with the air-spout is opened when its communication with the conveyer is closed, and vice versa, substantially as set forth.

6. The combination, with the dust-receptacle A' and the filter-bag D, provided at its free upper end with a plate, *d*, of the suspended stop E and the lifting mechanism connected therewith, substantially as set forth.

7. The combination, with the stationary frame A, dust-receptacle A', and the filter-bag D, provided at its free upper end with a plate, *d*, of the guide-rods *d'* and the suspended stop-plate E, substantially as set forth.

8. The combination, with the dust-receptacle A' and the filter-bag D, rigidly secured at its lower end, and having its free upper end attached to a movable plate, *d*, which is capable of being dropped, of the stop E, provided with an elastic cushion, *e'*, against which the plate *d* strikes when the upper end of the bag has dropped the proper distance, substantially as set forth.

9. The combination, with the dust-receptacle A' and the filter-bag D, of the stop E, attached to a chain, *e*, the rotating shaft *f*, the chain-wheel F, which is alternately connected with and disconnected from said shaft, and the weight G, applied to said chain, substantially as set forth.

10. The combination, with the dust-receptacle A' and filter-bag D, of the stop E, attached to a chain, *e*, the rotating shaft *f*, provided with a carrier, H, having a pawl, *h*, the chain-wheel F, having a ratchet-wheel, *h'*, a stop, *i'*, whereby the pawl is thrown out of engagement, and the weight G, applied to the chain, substantially as set forth.

11. The combination, with the main frame A, the dust-receptacle A', and filter-bag D, of the stop E, attached to a chain, *e*, the rotating shaft *f*, provided with a carrier, H, having a pawl, *h*, the chain-wheel F, having a ratchet-wheel, *h'*, a stationary frame, I, having a stop, *i'*, made adjustable on said frame, and the weight G, applied to the chain, substantially as set forth.

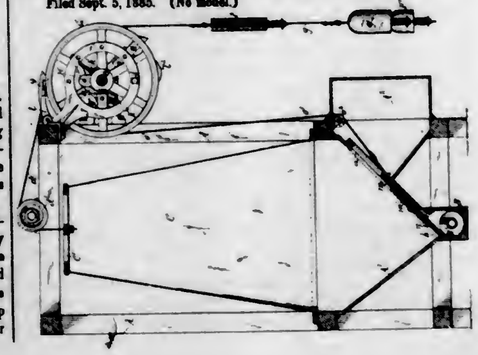
12. The combination, with the main frame A and the filter-bag D, provided at its upper end with a plate, *d*, carrying a notched bolt, *j*, of an automatic locking-bolt, *k*, which is moved to secure and release the upper end of the bag, substantially as set forth.

13. The combination, with the main frame A and the filter-bag D, of the stop E, attached to the chain *e*, a chain-wheel, F, whereby the stop E and the upper end of the bag are raised, and a jarring-lever, M, bearing upon the chain *e*, substantially as set forth.

14. The combination, with the main frame A, dust-receptacle A', air-spout B, conveyer c C, and filter-bag D, of the slides *b' c'*, actuating-lever P, connected with said slides, rotating shaft *f*, and a cam, *p*, whereby the lever P is moved, substantially as set forth.

15. In a dust-collector, the combination, with the air-spout and dust-receptacle provided with a discharge-opening, of a filter-bag having one end rigidly secured and the other end movable, and a valve whereby the dust-discharge opening is automatically opened and closed, substantially as set forth.

333,021. DUST-COLLECTOR. Charles H. Morgan, Buffalo, N. Y. Filed Sept. 5, 1885. (No model.)



Claim.—1. The combination, with the dust-receptacle, of an air-spout leading to the same, a valve whereby the connection between the dust-receptacle and air-spout is automatically opened and closed, a filter-bag having its lower end rigidly secured and its upper end movable, and an automatic lifting mechanism constructed substantially as described and attached directly to the movable end of the filter-bag, whereby said end is automatically raised and lowered, substantially as set forth.

2. The combination, with the air-spout and dust-receptacle, of a filter-bag having its lower end rigidly secured and its upper end made movable, a driving-shaft, *e*, provided with a pulley, E, having a notch, *l'*, a band, *d*, connecting said pulley with the movable end of the bag, and a detent, *l*, whereby the bag is held in an elevated position, substantially as set forth.

3. The combination, with the air-spout and dust-receptacle, of a filter-bag having its lower end rigidly secured and its upper end made movable, a driving-shaft, *e*, provided with a loose pulley, E, a band, *d*, attached directly to the movable end of the bag and connecting the same with the pulley, and a counterbalancing-weight, F, connected with the pulley E, substantially as set forth.

4. The combination, with the filter-bag having its lower end rigidly secured and its upper end made movable, of a driving-shaft, *e*, provided with a loose pulley, E, a band, *d*, connecting said pulley with the movable end of the bag, and a pulley, G, provided with a weight, *g'*, and which causes the pulley E to be rotated and the bag to be raised by the descent of the weight, substantially as set forth.

5. The combination, with the filter-bag having its lower end rigidly secured and its upper end made movable, of a driving-shaft, *e*, provided with a loose pulley, E, a band, *d*, connecting said pulley with the movable end of the bag, a pulley, G, provided with a weight, *g'*, whereby the pulley E is rotated and the bag is raised, a carrier, H, secured to the shaft *e* and engaging with the pulley G for raising the weight *g'*, and suitable connecting devices whereby the pulley E is driven from the pulley G, substantially as set forth.

6. The combination, with the filter-bag and driving-shaft *e*, of the loose pulley E, having a notch, *l'*, and connected with the bag by a band, *d*, a detent, *l*, whereby the bag is supported, a pulley, G, provided with a weight, *g'*, and having a cam, *l²*, whereby the detent is disengaged for releasing the bag, substantially as set forth.

7. The combination, with the filter-bag and the driving-shaft *e*, of the loose pulley E, connected with the bag by a band, *d*, a loose pulley, G, provided with a weight, *g'*, and with a pawl, *k*, engaging with the pulley E, a carrier, H, secured to the shaft *e*, and provided with a pawl, *h*, engaging with the pulley G, and a stop, *j*, whereby the pawl *h* is disengaged from the pulley G, substantially as set forth.

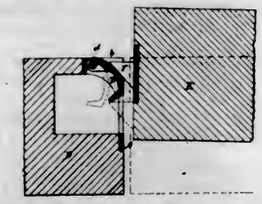
8. The combination, with the filter-bag, dust-receptacle, air-spout, and conveyer, of the air-spout valve *m* and conveyer-valve *n*, attached together by a sliding connection, substantially as set forth.

9. The combination, with the filter-bag and air-spout valve, of the driving-shaft *e*, a loose pulley, O, provided with a weight, P, a carrier, R, secured to the shaft *e*, and provided with a pawl, *r*, engaging with the pulley O, and a stop, *s*, whereby the pawl *r* is disengaged from the pulley, substantially as set forth.

10. The combination, with the filter-bag and air-spout valve, of the driving-shaft *e*, a loose pulley, O, provided with a weight, P, a detent, *q*, and an arm, Q, secured to the shaft, whereby the detent is released, substantially as set forth.

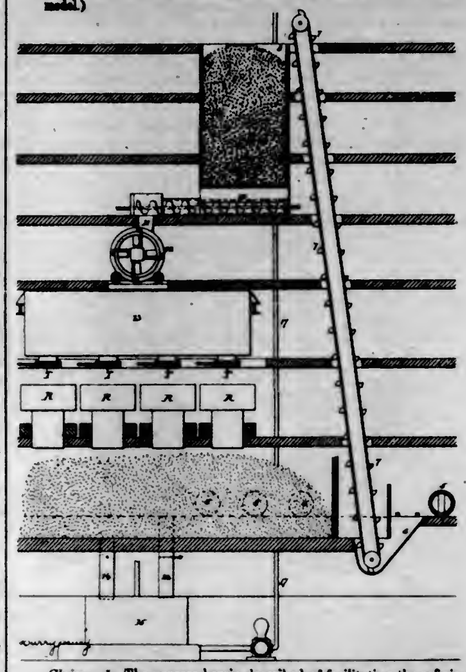
11. The combination, with the filter-bag, air-spout, and dust-receptacle provided with a discharge-opening, of an air-inlet valve and a dust-discharge valve capable of independent movement with reference to each other, whereby the dust-discharge valve is closed before the air-inlet valve is opened, substantially as set forth.

333,022. KEEPER FOR KNOB-LATCHES. Henry Norton, Branford, Conn., assignor to the Branford Lock Works, same place. Filed Oct. 5, 1885. (No model.)



Claim.—The herein-described keeper for latches, consisting of the plate A, constructed with the latch-opening *a* extending through its side, and with ears *b b* extending outward above and below said opening, combined with the strike B, hung between the ears *b b* upon pivots outside the latch-opening, and adapted to swing therein, provided with a stop to support and a spring to yieldingly hold the strike in its normal position, substantially as described.

333,023. MACHINING RAW SUGAR. George H. Newhall and John Henry Tucker, Philadelphia, Pa. Filed July 27, 1885. (No model.)

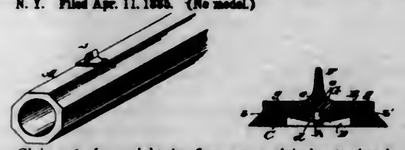


Claim.—1. The process herein described of facilitating the refining of raw sugar, said process consisting in mixing with the raw sugar under treatment heated liquor or sirup, substantially as set forth.

2. The process herein described of facilitating the refining of raw sugar, said process consisting in preparing a hot dense sirup or liquor from a part of the sugar and mixing this in proper proportion with the raw sugar to be treated, as set forth.

3. The process herein described of facilitating the refining of raw sugar, said process consisting in preparing a hot dense sirup or liquor from a part of the sugar and mixing this with the raw sugar to be treated, and then heating the magma formed in a heater on its way to the centrifugal machines.

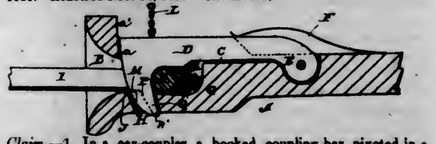
333,024. SIGHT FOR FIRE-ARMS. Walter G. Owen, New York, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—1. In a sight for fire-arms, a sight-bar having its ends similarly shaped and contrastingly colored, mounted on a plate which is revolubly on a base-plate and provided with stops to limit its movement thereon, substantially as described.

2. The base C, attached to the gun-barrel, having recess D, aperture *c*, and cavities *b b'*, in combination with the rotating plate E, having slot *e*, to receive the sight F, central pivot, G, and rounded projections *g*, the spring *d*, for holding the plates together, the pin *h*, fitting in pin-hole *i* in pivot G, and the sight F, substantially as herein shown and described.

333,025. CAR-COUPLING. Frank J. Papineau, Jr., New Orleans, La., assignor of one-half to Emile C. Canning, same place. Filed Apr. 13, 1885. Renewed Nov. 16, 1885. (No model.)

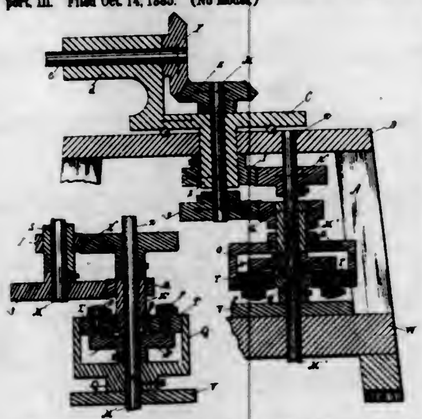


Claim.—1. In a car-coupler, a hooked coupling-bar pivoted in a recess formed in the top of the draw-bar and constructed with a hook

having a curved front end, in combination with a curved abutment at the back of the head of the draw-bar terminating in an aperture, H, a backwardly-inclined floor, and a fulcrum-bearing, J, for a coupling-link, substantially as and for the purposes described.

2. The combination of a draw-bar having a curve, *a'*, at the back of its head, a backwardly-inclined floor, an aperture through the latter provided with a nib, M, and a fulcrum-point, J, with a coupling-hook having a groove in its front curved end to receive said nib, substantially as described.

333,026. GEARING FOR WINDMILLS. GEORGE H. PATTISON, Freeport, Ill. Filed Oct. 14, 1885. (No model.)



Claim.—1. In a windmill of the class described, the combination of the gear K, located at one side of the vertical axis of the mill, the planet-gear T, whose support is rigidly connected with and rotated by said gear K, and a gear engaging directly with the gear K and having its axis coincident with the vertical axis of the mill.

2. In a windmill of the class described, the combination of a rotating turn-table and a gear-wheel rigidly fastened thereto, a wind-wheel shaft journaled in the turn-table, a power-transmitting gear at one side of the vertical axis of the mill, and a train of gearing connecting said wind-wheel shaft, turn-table gear, and said power-transmitting gear, one element of said train of gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of rotation of said power-transmitting gear, whereby the rotation of the wind-wheel shaft in its bearing rotates said loosely-mounted gear about its own axis only.

3. The combination of the turn-table C, the gear I, rigidly mounted on said turn-table, the gear K, engaging with the gear I, and the planet-gear T, whose support is rigidly connected with and rotated by said gear K, substantially as shown and described, and for the purpose set forth.

4. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, two independently-journaled vertical shafts located at one side of the vertical axis of the mill, one of said shafts being adapted to transmit the power of the mill to other machinery, and a train of gearing connecting said vertical shafts with the wind-wheel shaft and said turn-table, whereby the rotation of the wind-wheel shaft in its bearing rotates said vertical shaft in opposite directions, one element of said train of gearing being a loosely-mounted gear free to rotate on its own axis and about an axis at one side of the vertical axis of the mill.

5. In a windmill of the class described, a planet-gear whose rotating support is located at one side of the vertical axis of the turn-table, said support being connected with said turn-table by means adapted to insure their simultaneous rotation.

6. In a windmill of the class described, the combination of a geared turn-table and a wind-wheel shaft journaled therein, a power-transmitting gear, a loosely-mounted gear free to rotate on its own axis and about an axis parallel to the vertical axis of the mill, gearing connecting the rotating support of said loosely-mounted gear with the turn-table gear, gearing engaging said loosely-mounted gear on one side and connecting it with the wind-wheel shaft, and gearing engaging it on the opposite side and connecting it with the power-transmitting gear.

7. In a windmill of the class described, the combination of a planet-gear whose rotating support is connected directly by gearing with the turn-table of the mill.

8. The combination of the turn-table C and its gear I, the wind-wheel shaft c and gear F, vertical shaft M and gears E 3, gear G, engaging with the gear 3, and gear O, mounted on the same shaft with the gear G and engaging with and rotating the planet-gear T on its gudgeon P, connected with shaft Z and gear K, substantially as described.

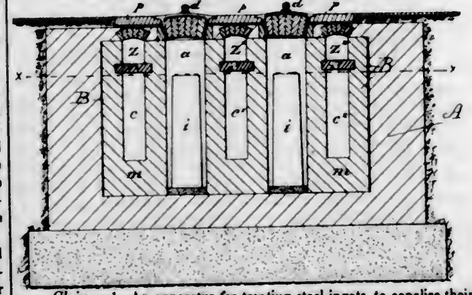
9. In a windmill of the class described, the combination of a wind-wheel shaft journaled in a rotating turn-table, gears F and E, shaft M, and gear 3 at its lower end, and a train of gearing connecting the gear 3 with a power-transmitting gear and with a central gear whose axis of rotation is coincident with the vertical axis of the mill, one element of said train of gearing being a planet-gear having a geared rotating support and capable of bodily rotation about an axis at one side of the vertical axis of the mill, whereby the reaction of the work to be performed tends to rotate said central gear and the gear 3 in opposite directions.

10. The combination of a geared turn-table, a wind-wheel shaft journaled therein, a power-transmitting gear, a planet-gear capable of bodily rotation about a vertical axis at one side of the vertical axis of the mill and having a gear rigidly attached to its rotating support, said wind-wheel shaft, turn-table, power-transmitting gear, and said planet-gear with its geared support being connected by gearing whereby the rotation of the turn-table has no tendency to rotate either the wind-wheel shaft or the power-transmitting gear.

11. The combination of the geared turn-table engaging directly with the gear K, and a planet-gear, T, whose support is rigidly connected with and rotated by said gear K, gearing engaging the gear T on one side and connecting it with power-transmitting mechanism, and gearing engaging said gear T on the opposite side and connecting it with the wind-wheel shaft.

12. In a windmill of the class described, a train of gearing connecting the wind-wheel shaft, turn-table, and a power-transmitting gear at one side of the vertical axis of the mill, one feature of said train of gearing being a planet-gear engaging with the power-transmitting gear and having a geared rotating support, substantially as described.

333,027. SOAKING-PIT FOR STEEL INGOTS. JAMES RILEY, Glasgow, Scotland, assignor to John Gjers, Middlesbrough-on-Tees, England. Filed May 1, 1885. (No model.) Patented in Germany May 9, 1882, No. 21,716; in England Aug. 6, 1884, No. 10,971; in Belgium Feb. 21, 1885, No. 67,968; in France Feb. 21, 1885, No. 167,216; in Sweden Feb. 28, 1885, No. 85; in Luxemburg Mar. 1, 1885, No. 505, and in Austria Mar. 13, 1885, No. 47,144.



Claim.—1. An apparatus for treating steel ingots, to equalize their temperature before rolling, comprising a soaking pit or pits, in combination with a gas passage or passages formed in the walls of the soaking-pits and outside thereof, whereby heat from burning fuel is imparted to the walls of said pit or pits, and not directly to the pits themselves, substantially as described.

2. In apparatus for treating steel ingots, to equalize their temperature before rolling, comprising a soaking pit or pits and means for imparting heat to the walls thereof from burning fuel, a small chamber into which the heating gases and air are admitted and ignited, in combination with a series of flues or passages formed in the walls of the soaking-pits and a flue leading to a chimney, substantially as described, for the purposes specified.

333,028. GLOBE FOR INCANDESCENT ELECTRIC LAMPS. WM. STANLEY, Jr., Pittsburg, Pa. Filed Aug. 31, 1885. (No model.)



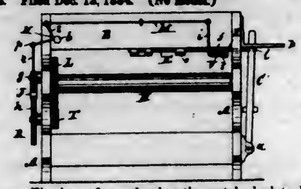
Claim.—1. An incandescent lamp having its globe or chamber formed of two parts united by fusion, substantially as described, the one part being of blown glass and the other of pressed glass.

2. An incandescent-electric-lamp globe constructed of a blown-glass section and a pressed-glass section, in combination with the leading-in conductors passing through the pressed-glass section.

3. The combination, substantially as hereinbefore set forth, with the globe of an incandescent electric lamp, of a neck of pressed glass having conductors passing through its walls, and a transverse thickened portion through which said conductors extend.

4. The combination, substantially as hereinbefore set forth, with the bulb or globe of an incandescent electric lamp, of a neck formed of pressed glass and having a ridge of greater thickness formed across its end, and conductors leading through said thickened portion.

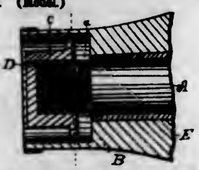
333,029. DEVICE FOR ARRESTING THE TAKE-UP MECHANISM OF LOOMS ON BREAKAGE OF THE WEFT. ALBERT F. STAPLES, Franklin, Mass. Filed Dec. 13, 1884. (No model.)



Claim.—1. The loom-frame having the notched plate D, the lever E, bell-cranks N K, rods M *r*, link *d*, collar *f*, pawl J, ratchet-wheel R, and lever C, combined and arranged to operate substantially as described.

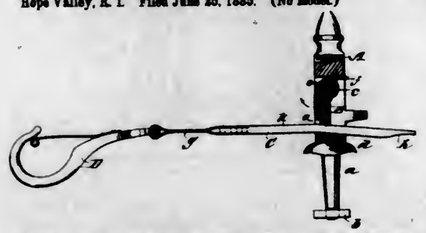
2. The loom-frame having the notched plate D, the lever E, spring *y*, bell-cranks N K, rods M *r*, link *d*, collar *f*, pawl J, ratchet-wheel R, and lever C, combined and arranged to operate substantially as described.

333,030. ADJUSTABLE AXLE-NUT. JAMES H. STEEL, Canton, Ohio. Filed June 6, 1885. (Model.)



Claim.—The axle-nut consisting of the nut C, closed at one end and screw-threaded interiorly, and provided with a groove, c, the thimble B, open at both ends, provided with a groove, *b*, and screw-threaded interiorly and exteriorly, and fitting in and inclosed by said nut, the locking-pin D, fitting in said grooves *b* and c, and the contracted opening in the closed end of nut C, leading to groove c, the construction being such that when the nut is screwed upon the threaded end of an axle the outer end of pin D will abut against the shoulder thereof, and be retained in place thereby, substantially as described.

333,031. CHECK-REIN HOLDER. WILLIAM D. TABER, Rockville, R. I., assignor to himself, Clark A. Taber, same place, and John A. Covey, Hope Valley, R. I. Filed June 25, 1885. (No model.)



Claim.—1. The combination, with a strap, as C, of a frame, as A, carrying a tongue, as B, formed with a cam-face, e, a spring, as *f*, and a pin, as o, substantially as described.

2. The combination, with a frame, as A, formed with a beveled surface, as *d*, of a cam-faced tongue, B, that is borne upon by a spring, *f*, substantially as described.

3. The combination, with a holder, substantially as described, of a strap carrying a hook, as D, connected to the main body *k* by a strip, as *g*, substantially as described.

4. The combination, with a holder, substantially as described, of a strap consisting of the portions *g*, *k*, and A, and carrying a hook, as D, substantially as described.

5. As a new article of manufacture, a check-rein holder consisting of a frame, as A, in which there is loosely pivoted a cam-faced tongue, as B, that is controlled by a spring, as *f*, substantially as described, and for the purpose specified.

333,032. STEAM-TRAP. HENRY A. TOBEY, Lima, Ohio. Filed May 26, 1885. (No model.)

Claim.—1. In a steam-trap, an upper water-chamber, a lower float-chamber, an inlet to said water-chamber, and an outlet from said float-chamber, in combination with a discharge-pipe connecting said water and float chambers, which discharges water from said water-chamber to said float-chamber only when said water-chamber is full, or nearly so, a siphon-discharge tube connecting said two chambers, a valve closing the discharge-outlet leading from said float-chamber, and a float in said float-chamber which controls said discharge-valve, substantially as set forth.

2. In a steam-trap, an upper water-chamber, a lower float-chamber, a siphon-tube connecting said chambers, an inlet to said water-chamber, an outlet from said float-chamber, a valve which closes said outlet, and a float in said float-chamber which controls said valve, in combination with a pipe connecting said float and water chambers, which pipe commences to discharge water from said water-chamber to said float-chamber only when said water-chamber is full; or nearly so, said pipe having a discharge-orifice of a smaller area than that of the discharge-outlet leading from said float-chamber, substantially as set forth.

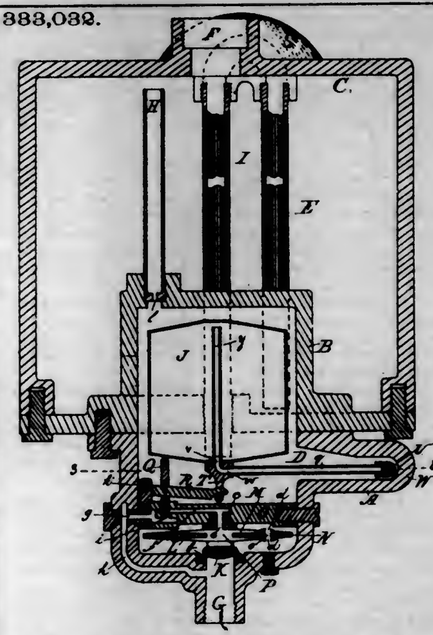
3. In a steam-trap, a float-chamber and a discharge-outlet leading therefrom, in combination with an auxiliary pressure-chamber, an elastic or flexible disk or diaphragm forming one side of said chamber, a valve adapted to said discharge-outlet, connected to said elastic-disk, an orifice connecting said auxiliary pressure-chamber with said float-chamber, a passage leading from said auxiliary chamber to beneath said outlet-controlling valve, an auxiliary valve adapted to said passage, and a float in said float-chamber which controls said auxiliary valve, substantially as set forth.

4. In a steam-trap, a float-chamber, a discharge-outlet leading therefrom, an auxiliary pressure-chamber, an elastic diaphragm forming one side of said auxiliary chamber, a valve controlling said outlet connected to said diaphragm, and an orifice connecting said auxiliary and float chambers, in combination with a passage leading from said auxiliary chamber to the outlet beneath its controlling-valve, a valve-orifice located in said passage, having an area greater than the area of the orifice connecting the auxiliary and float chambers, an auxiliary valve controlling said valve-orifice, and a float in said float-chamber which controls said auxiliary valve, substantially as set forth.

5. In a steam-trap, a float-chamber, a discharge-outlet leading therefrom, and a cross-bar located in said chamber, in combination with two elastic concavo-convex disks secured together at their edges, whereby an auxiliary pressure-chamber is formed between them, the upper of said disks being secured to said cross-bar, a valve controlling said discharge-outlet, secured to the lower of said disks, an orifice in one or both of said disks establishing communication between said float-chamber and said auxiliary chamber, a passage which leads from said auxiliary chamber to the discharge-outlet beneath its controlling-valve, an auxiliary valve which controls said passage, and a float in said float-chamber which actuates said auxiliary valve, substantially as set forth.

6. A valve-controlling mechanism which consists of a double-concave plate having an aperture or apertures therethrough, in combination with two concavo-convex elastic disks secured at the edges to said plate,

333,032.



with their concave faces toward the plate, to one of which disks the valve is secured, substantially as set forth.

7. A valve-controlling mechanism which consists of a double-concave plate having a central apertare, and with radial grooves on its surface, which extend from said aperture, in combination with two concavo-convex elastic disks secured at the edges to said plate, with their concave faces toward the plate, to one of which disks the valve is secured, substantially as set forth.

8. In a steam-trap, a valve-controlling mechanism for the discharge-outlet valve located within said trap, which mechanism consists of a central plate and two elastic disks secured to opposite sides of said plate, each disk being formed with an orifice, and the plate being formed with an aperture in the same line with said orifices, in combination with a removable plug in said trap-casing in line with the orifices and aperture in said valve-controlling mechanism, substantially as set forth, whereby access may be had to said orifices to cleanse the same.

9. In a steam-trap, a valve and a lever pivoted at one end to a fixed support and pivoted to said valve, in combination with a float and a downwardly-extending open link attached to said float, which link embraces the free end of said valve-controlling lever, but is not attached thereto, substantially as set forth.

10. In a steam-trap, a float and a casting having tubular bearings extending outward through said trap-casing, in combination with two pipes connecting said float to said casting, one of said pipes opening at the bottom of said float and the other near the top thereof, substantially as set forth, whereby water may be discharged from said float through one of said pipes, and air may be admitted through the other.

11. In a steam-trap, a water-chambet, a float-chamber, an inlet to said water-chamber, an outlet from said float-chamber, a valve controlling said outlet, a pipe opening at its upper end near the top of said water-chamber and opening at its lower end into said float-chamber, and a siphon-tube connecting said water and float chamber, in combination with a float in said float-chamber which controls said discharge-valve, and a casting having bearings which extend through the trap-casing, to which casting said float is connected, substantially as set forth.

333,033. ROLLER-HINGE FOR GATES. Ira B. Tucker, Hanford, Cal. Filed Aug. 10, 1885. (No model.)



Claim.—1. A roller-hinge consisting of two similar combined side and end portions, each portion formed with a pivot-pin and a lug, A, cast integral, and an apertare to receive the lug of the opposite portion, a suitable roller, and an axle-bolt, substantially as shown and described.

2. A roller-hinge consisting of two similar combined side and end portions, each portion formed with a pivot-pin, *d*, a lug, *h*, and a shoulder, *e*, all cast integral, and an apertare to receive the lug of the opposite portion, a suitable rolle and an axle-bolt, substantially as described.

333,034. MANUFACTURE OF COLOR-PRODUCING ACIDS. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Oct. 3, 1884. (Specimens.)

Claim.—As a new article of manufacture, a color-producing acid consisting of the herein-described new naphtholdisulphonic acid, being a derivative of the herein-described naphthylaminesulphonic acid, whose sodium salt is not easily soluble in water, substantially as set forth.

333,035. COLORING-MATTER DERIVED FROM ALPHANAPHTHOLDISULPHONIC ACID. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Oct. 3, 1884. (Specimens.)

Claim.—As a new coloring-matter, a dye-stuff consisting of the diazoxylol compound of our herein-described new alphanaphtholdisulphonic acid, and having the qualities herein set forth.

333,036. NITRONAPHTHOLSULPHONIC ACID. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Jan. 13, 1885. (Specimens.)

Claim.—As a new product, a yellow dye-stuff consisting of the herein-described new naphtholmononitromonosulphonic acid, substantially as set forth.

333,037. MANUFACTURE OF DYE-STUFF FROM NAPHTHOL. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Jan. 12, 1885. (No specimens.)

Claim.—As a new product, the dye-staff or coloring-matter which results from the reaction of diazoazobenzol with the solution of the sodium salt of our herein-described naphtholdisulphonic acid, substantially as set forth.

333,038. MANUFACTURE OF DYE-STUFF FROM NAPHTHOL. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Jan. 13, 1885. (No specimens.)

Claim.—As a new product, the dye-staff or coloring-matter which results from the reaction of diazotoluol with the solution of the sodium salt of our herein-described naphtholdisulphonic acid, substantially as described.

333,039. COLORING-MATTER DERIVED FROM DIAZOBENZOL AND ALPHANAPHTHOLDISULPHONIC ACID. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Jan. 13, 1885. (Specimens.)

Claim.—As a new product the dye-staff or coloring-matter which results from the reaction of diazobenzol with the solution of the sodium salt of our herein-described naphtholdisulphonic acid, substantially as set forth.

333,040. ALPHANAPHTHOLSULPHONIC ACID. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Jan. 13, 1885. (Specimens.)

Claim.—As a new article of manufacture, a color-producing acid consisting of a new naphtholmonosulphonic acid, as herein described, being a derivative of the herein-described naphthylaminesulphonic acid, and having the qualities herein set forth.

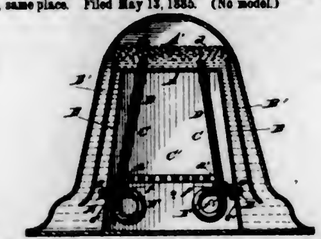
333,041. COLORING-MATTER DERIVED FROM DIAZOBENZOL AND ALPHANAPHTHOL. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Jan. 13, 1885. (Specimens.)

Claim.—As a new product, the dye-staff or coloring-matter which results from the reaction of diazobenzol with the solution of the sodium salt of our herein-described new naphtholmonosulphonic acid, substantially as set forth.

333,042. COLORING-MATTER DERIVED FROM ALPHANAPTHOL AND DIAZOTOLUOL. Heinrich Vollbrecht and Carl Mensching, Buffalo, N. Y., assignors to the Schoellkopf Aniline and Chemical Company, same place. Filed Jan. 13, 1885. (Specimens.)

Claim.—As a new prodoct, the dye-staff or coloring-matter herein described, which results from the reaction of diazotoluolsulphonic acid with the solution of the sodium salt of our herein-described new naphtholmonosulphonic acid, substantially as described.

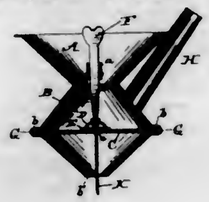
333,043. WATER-TUBE FOR BOILERS. William F. Wethore and Levi H. Bratt, South Bend, Ind., assignors of one-third to J. B. Birdsell, same place. Filed May 13, 1885. (No model.)



Claim.—1. In a boiler, the combination of two water-space walls inclined to each other at or nearly at an angle of ninety degrees, with a water-tube having an end secured in and opening through each wall and bent on itself to form a single compensating coil on the side of the larger angle formed by the crossing of the two parts of the tube that run in different directions, substantially as specified.

2. In a boiler, the combination of the crown-sheet A and water-space wall B with the water-tube C, composed of the section D, parallel to the wall B, the section E, parallel to the crown-sheet, and the compensating coupling-coil F, connecting the adjacent ends of said sections and situated on the side of the larger angle formed by the extended axes of the sections, substantially as specified.

333,044. MECHANICAL TELEPHONE. Moses B. Williamson, Xenia, Ill. Filed July 23, 1884. (No model.)

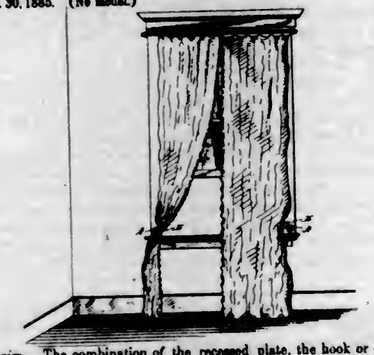


Claim.—1. The combination, in a mechanical telephone, of the sounding-tube B, having flanges *b*, with the diaphragm C and the band G, in the manner hereinbefore described, whereby distinct transmission of sounds is promoted.

2. The combination, in a mechanical telephone, of the sounding-tube B, having flanges *b*, with the diaphragm C, the button D, the cushion E, and the band G, all in the manner hereinbefore set forth, for the purpose of improving telephonic articulation by the suppression of ringing and jarring noises, as herein set forth.

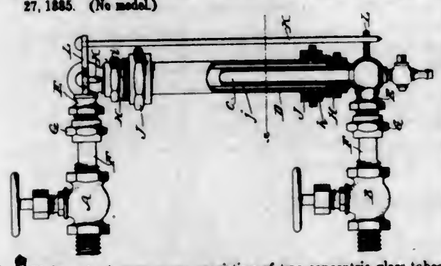
3. The combination, in a mechanical telephone, of the thimble L, having a short cable, *l*, with the tension-key M, the pawl N, and the pulley O, in the manner hereinbefore described, for the purpose of insulating and tightening the transmitting-wire of such a telephone, as herein set forth.

333,045. CURTAIN-HOLDER. Nelse Wilson, Hutto, Tex. Filed Oct. 30, 1885. (No model.)



Claim.—The combination of the recessed plate, the hook or clasp working in the said plate and projecting with its shank into the recess, the pin or key inserted transversely through the shank and adapted to fit into a notch in the recess, and the coiled spring disposed around the shank and bearing with one end against one end of the recess, and with the other end against the aforesaid pin or key, substantially as and for the purpose shown and set forth.

333,046. WATER-GAGE. William Young, Easton, Pa. Filed Mar. 27, 1885. (No model.)



Claim.—1. A water-gage consisting of two concentric glass tubes, C D, having a space, *j*, between them, the inner one, C, communicating only with the steam-passages, substantially as herein shown and described.

2. In a water-gage, the boxes H, for securing the inner tube to the elbows E, formed with cups *h*, in combination with the outer tube, D, and nuts J, arranged substantially as and for the purposes set forth.

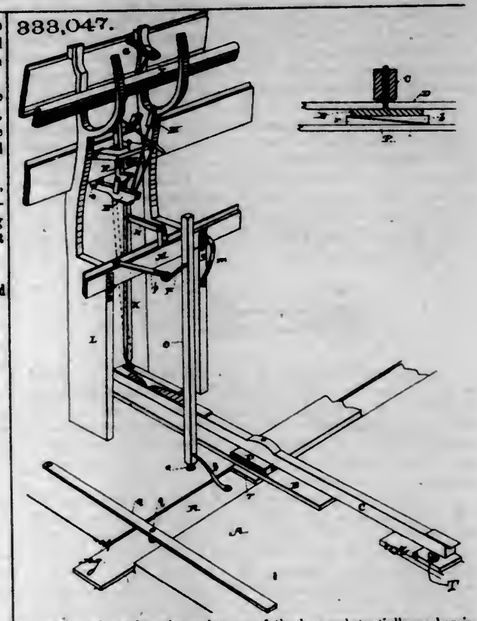
333,047. PIANO-ACTION. Jacob Zech, San Francisco, Cal., assignor to August F. Zech, same place. Filed Mar. 20, 1884. (No model.)

Claim.—1. In a piano-forte, a connection between the oscillating key and the actuating-lever of the action, whereby said lever is operated, said connection being adjustable back and forth on said lever, whereby the touch or resistance of the key is regulated, substantially as described.

2. In a piano-forte in which the action is operated by a pivoted jack-lever, a bar connected with the key and having its other end impinging against and adjustable back and forth under said jack-lever, substantially as and for the purpose herein described.

3. In a piano-forte in which the action is operated by a pivoted jack-lever, a bar connected with the key and having its other end impinging against the jack-lever, whereby power is transmitted to said lever, and a lever, Q, slide R, and a post, O, with their connections, for moving the end of said bar back and forth on said jack-lever, to vary its work and regulate the resistance of the key, substantially as herein described.

333,047.



4. In a piano-forte in which the action is operated by a pivot jack-lever, a bar connected with the key and having its other end impinging against the jack-lever, whereby power is transmitted thereto, a lever, Q, slide R, and post O, or their equivalent, for moving the end of said bar on said jack-lever, and for varying the limits of motion of the key, substantially as and for the purpose herein described.

5. In a piano-forte in which the action is operated by the pivoted jack-lever E, the bar K, connected with the key and impinging against the jack-lever, the hinged strip M, connecting-link N, and mechanism for turning said strip on its hinges to adjust the bar K under the jack-lever, substantially as and for the purpose herein described.

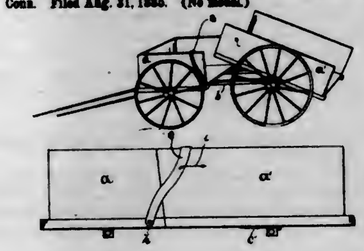
6. In a piano-forte in which the action is operated by the pivoted jack-lever E, the bar K, connected with the key and impinging against the jack-lever, the key C, the hinged strip M, and link N, connecting it with the bar K, the sliding strip R, having wedge *r*, and movable key-frame B, having wedge *b*, and a connection between said hinged strip M and sliding strip R, whereby they may be operated simultaneously, substantially as and for the purpose herein described.

7. In a piano-forte in which the action is operated by the pivoted jack-lever E, the bar K and key C, the hinged strip M and link N, in combination with the post O, having arm P and link *p*, and means for torning said post, substantially as herein described.

8. In a piano-forte, the means for vertically adjusting the keys, consisting of the movable key-frame B under the balance-rail, and having wedge *b*, and the sliding strip R, having wedge *r*, substantially as herein described.

9. In a piano-forte in which the action is operated by the pivoted jack-lever E, the bar K, key C, hinged strip M, link N, the sliding strip R, having wedge *r*, and movable key-frame B, having wedge *b*, in combination with the post O, having arm P and link *p*, the rod S, connecting said post with the sliding strip, and the lever Q, connected with said strip, all arranged and operating substantially as and for the purpose herein described.

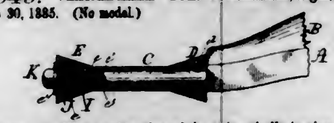
333,048. DUMPING-WAGON. Jules N. Archambault, Willimantic, Conn. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a wagon of the class herein referred to, a body formed of one fixed and one tilting section, clamps, substantially as herein described, for locking together the two sections, and arranged to be operated simultaneously from either side of said body, and a suitable running-gear, all being combined substantially as described, and for the purpose specified.

2. In combination with a wagon-body formed of a fixed and tilting section, as described, means, substantially as described, for locking said sections together, and a board so hinged to the floor of the tilting section that it may be raised to form a division-board between the two body-sections, or may be lowered to a horizontal position to cover the opening between said sections, substantially as herein described.

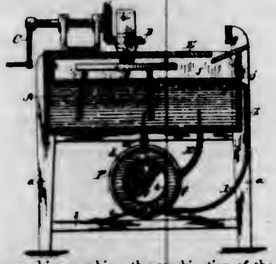
333,049. VEHICLE-AXLE. ISAAC W. ARCHIBALD, Elgin, Ill. Filed June 30, 1885. (No model.)



Claim.—1. The combination of the axle-spindle having a threaded end, an inner removable conical bearing, a conical bearing having a threaded socket adjustably fitted on the outer threaded end of the spindle, and provided with a perforated cap, a threaded bolt fitted to the spindle and passing through the cap of the outer bearing, and securing-nuts fitted on the bolt and bearing against the cap of the outer bearing, substantially as described.

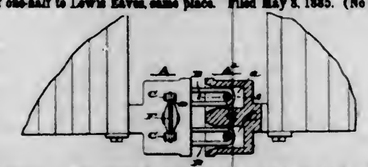
2. The combination of the axle-spindle having a threaded outer end and a threaded socket, a removable conical bearing, D, having a tightening-screw fitted on the inner end of the spindle, an adjustable conical bearing, E, provided with a socket fitted on the threaded end of the spindle and having a perforated cap, a threaded bolt, I, fitted in the socket of the spindle and passing through the cap of the outer bearing in a jam-nut, J, arranged on the bolt within the socket of the bearing E, and fitted against the inner face of the cap thereof, and a securing-nut, *k*, bearing against the outer face of the bearing-cap E, substantially as described.

333,050. WASHING-MACHINE. WILLIAM ARNOLD, Pawtucket, assignor to Raymond N. Colvin, Providence, R. I. Filed Apr. 4, 1885. (No model.)



Claim.—In a washing-machine, the combination of the box A, revolving dasher B, boiler F, steam and water pipe G, boiler-supply pipe H, and safety-pipe I, all arranged and operating substantially as described.

333,051. CAR-COUPLING. LAFAYETTE BATES, St. Louis, Mo., assignor of one-half to Lewis Eaves, same place. Filed May 3, 1885. (No model.)

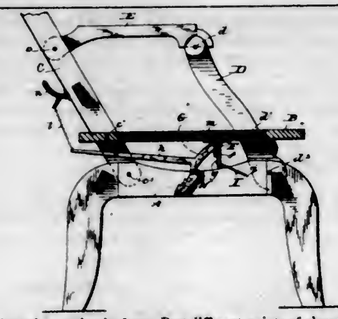


Claim.—1. The combination of the draw-heads A A', having the chambers *a a'*, the links B B, and the pins C C, said chambers being arranged vertically one above the other, substantially as described.

2. The combination of the draw-head A, having the chambers *a a'*, the pins C C, the yoke D, the rod E, having the shoulder *e*, the handle F, and the spring G, said chambers being arranged vertically one above the other, substantially as described.

333,052. RECLINING-CHAIR. FREDERICK W. BROOKS, Cleveland, Ohio. Filed Mar 13, 1885. (No model.)

Claim.—1. The combination, with stationary frame A, movable frame B, and posts D—frame B connected to said posts at a point above the connection of frame A to said posts, said frames rearwardly connected to rails C at separate and independent points—of pawl-and-ratchet mechanism adapted to maintain frame B at different points of elevation above frame A and also to adjust rails C in different positions relative to said frames, substantially as set forth.

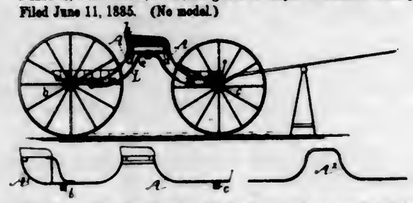


2. The combination, with rails C, pivoted to frames A and B, and frame B provided with pawl-rod F, having retracting-spring I, of ratchets H, secured to the side bars, respectively, of frame A, and means of unlocking said pawl-rod, whereby said rails C and frame B are allowed to have simultaneous movement, substantially as set forth.

3. In a reclining-chair, the combination, with pawl-rod F, journaled in parts which move with the back, and ratchet mechanism secured to base-frame, of bar *h*, extending rearwardly from pawl G, lever *n*, pivoted to chair-back and intermediate connection, *l*, substantially as set forth.

4. In a reclining-chair, the pawl-rod F, journaled on the under face of seat-frame B, and depressed in its mid-portions *f*, to accommodate any downward spring of seating affixed to said frame, substantially as set forth.

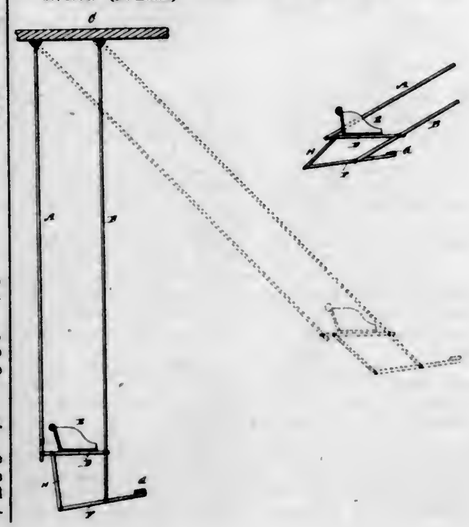
333,053. BUCKBOARD-WAGON. DAVID BROWN and JOSEPH D. BRADLEY, New Haven, Conn., assignors to Royal O. Dorman, same place. Filed June 11, 1885. (No model.)



Claim.—1. The combination of the front and rear series of slats A with the auxiliary spring L, having its ends attached to the respective series of slats, substantially in the manner and for the purpose specified.

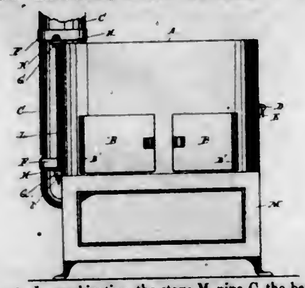
2. In a double-seated buckboard-wagon having an arched frame, the rear series of slats, A', bent upward at each end to form an elastic support for the respective seats, substantially in the manner set forth.

333,054. SWING. WILLIAM S. BROWN, Pine Hill, Ky. Filed Oct. 25, 1884. (No model.)



Claim.—In a swing, the combination, with the swinging rods A B, of the seat-bars D, uniting them, the levers F, pivoted to the lower ends of the rods B a short distance below the point of connection with said rods B of the seat-bars D, the foot-board G, uniting the levers F at their front ends, and the links H, pivoted to the rear ends of the levers F and to the bars D near the rear ends of the same, substantially as herein shown and described.

333,055. STOVE-HOOD. HANNAH M. BRUSH, Manistee, Mich. Filed Oct. 4, 1883. Renewed May 13, 1885. (No model.)

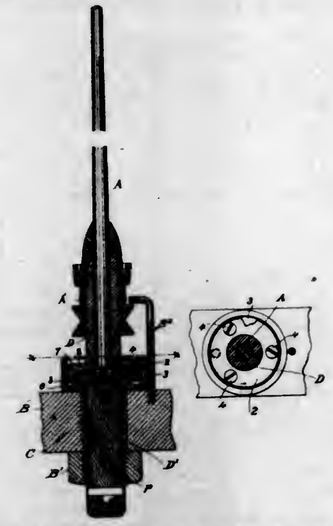


Claim.—1. In combination, the stove M, pipe C, the bands F, having lugs H, the lugs G, and the hood A A', as described, the said bands F being located and arranged, respectively, near the upper and lower rear inner corners of the said sections A A', for the purpose set forth.

2. The combination, with the stove and its pipe, of the divided hood A A, having the lugs G at top and bottom of each of its sections, the bands F, surrounding the pipe and carrying the lugs H, the rod L, passing through said lugs, and the fastening devices D and E, for holding the sections of the hood together, substantially as described.

333,056. SPINDLE-BOLSTER. WILLIAM T. CARROLL, Worcester, Mass. Filed Jan. 5, 1885. (No model.)

Brief.—The bolster is made in two parts—a foot part, entering the oil-well loosely and provided with a flange and a pin to restrain it from rotation, and an upper sleeve-like portion, surrounding the spindle and provided with a flange to rest upon the foot part, said flange being beveled from its center and secured to the foot by screws passing through it and entering the flange of the foot.



Claim.—1. The oil-well closed at its lower end, the bolster provided with a foot and placed in the said oil-well loosely, and a pin or projection to restrain the rotation of the bolster in the oil-well, combined with a sleeve-whirl spindle, the pintle of the spindle entering a hole in the upper part of the bolster, the latter being surrounded and inclosed by only the sleeve-whirl, substantially as described.

2. The oil-well and means to support it, combined with the bolster D, provided with a flange, a foot part, D', also provided with flange and entered into the oil-well, and with means, substantially as described, to adjustably connect the upper part of the bolster with the foot part thereof, substantially as described.

3. The oil-well and the bolster composed of the upper portion, D, and the detachable foot portion D', and adjustable screws to connect them, combined with means, substantially as described, to restrain the rotation of the bolster in the oil-well, as set forth.

4. The oil-well, the bolster-foot extended therein loosely, and provided with a flange on the top of which the spindle rests, and the upper portion, D, of the bolster having a flange at its lower end, which is adapted to rest on the flange of the foot, and means, substantially as described, to connect the said two flanges together, combined with the spindle and with an elastic packing applied between the exterior of the foot and the interior of the oil-well, substantially as described.

5. The spindle, the oil-well, the foot portion D' of the bolster, and a pin or projection to restrain the bolster from rotation in the oil-well, combined with the sleeve-like portion D, to receive and form a lateral bearing for the spindle, and with screws to adjust the said portion D upon the foot portion, for the purposes set forth.

333,057. WATCH-CASE. CALEB K. COLBY, Brooklyn, N. Y. Filed Apr. 4, 1885. (Model.)



Claim.—1. The combination, with the pendant of a watch-case, of the push-pin mounted in said pendant, the push-bar arranged to project from the push-pin laterally through a slot in the wall of the pendant, and the spring provided with a catch arranged in front of the projecting end of said push-bar, whereby pressure on the push-pin acts through the push-bar to press back the spring and catch, as set forth.

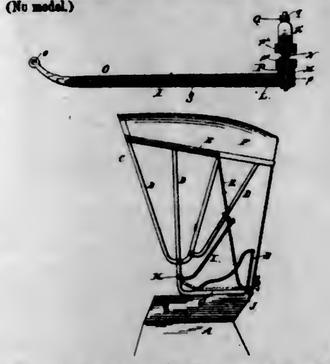
2. The combination, with the pendant of a watch-case, of the push-pin mounted in said pendant, the push-bar, arranged to project laterally from the push-pin through a slot in the wall of said pendant, and the spring *g*, provided with a catch, *h*, and also a catch, *j*, substantially as and for the purposes set forth.

3. The combination, with the cap C of a watch-case, provided with a spring, *g*, a catch, *h*, on said spring *g*, and a recess to receive the neck of the pendant, of the ring A, the pendant B, fixed to said ring and constructed to fit in the recess in the cap C, the push-pin *c*, mounted in said pendant, and the push-bar mounted in the pendant, substantially as described, and its head arranged to engage the spring *g*, substantially as described, and for the purposes set forth.

4. The combination, with the pendant of a watch-case, of the push-pin provided with a shoulder, the push-bar provided with a recess, *l*, to engage the push-pin, and a head, *n*, arranged to project through a slot in the wall of the pendant, and a spring, *g*, mounted on the watch-case and provided with a catch, *h*, said spring being arranged with reference to the head of the push-bar, substantially as set forth.

5. The combination, with the cup C and its hinged face-cap D, of the ring A and the pendant fixed thereto, the spring *g*, mounted on cup C, and provided with the two catches *h* and *j*, the shouldered push-pin mounted in the pendant, and the push-bar E, mounted in the pendant, and provided with the head *n* to engage the spring *g*, all constructed and arranged to operate substantially as set forth.

333,058. BUGGY-TOP-BOW PROTECTOR. J. R. CREVISTON, Unionville, assignor to Thomas W. Frazier, Pollock, Mo. Filed Oct. 26, 1885. (No model.)

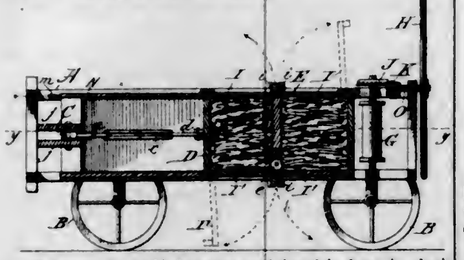


Claim.—1. A protector for the purposes described, consisting of the following elements in combination: a rigid extension-arm terminating in a vertically-apertured head, a coincidently-apertured clip, a bolt passed through the apertures of the clip and head, and a spring interposed between the clip and head, substantially as and for the purposes set forth.

2. The cast-metal head slotted at one end and provided with an apertured extension at the other, in combination with the extension-arm seated in the slotted end and strengthened by side pieces, and the clip yieldingly secured to the apertured end of the head, substantially as and for the purposes set forth.

3. The combination, with the head vertically apertured, and having a recess formed in its crown, of a clip having its lower end recessed, its upper end bifurcated, the branched ends terminating in threaded shanks, a yoke mounted thereon and secured by nuts, a bolt uniting the clip and head, and a coiled spring surrounding the bolt, and interposed between the parts and seated in the recesses, substantially as described.

333,059. PORTABLE HAY-PRESS. BURWELL J. CURRY, Huntsville, Ala. Filed Aug. 26, 1885. (No model.)



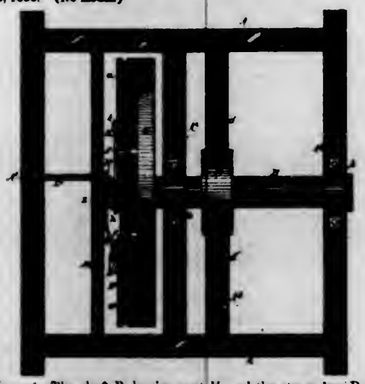
Claim.—1. A portable hay-press consisting of the frame A, wheels B, press-box M, having slide N, upper doors, I I, and lower doors, I' I', and the platen D, actuated by a system of leverage which consists of lever-arms C C, levers *b b*, intermediate levers, *a a*, cross-levers *c c*, and levers *d d*, substantially as shown and described.

2. In a portable hay-press, the follower E, having rollers *e e*, substantially as described.

3. In a portable hay-press, the press-box M, open at one end, having slide N, with handle *m*, upper doors, I I, lower doors, I' I', secured by clamps, and said box being provided with a platen, D, and a removable follower, E, provided with apertures and pins *f*, whereby the same may be held temporarily in a vertical position, substantially as shown and described.

4. In a portable hay-press, the combination, with a press-box constructed substantially as described, of a removable follower, E, provided with rollers *e e*, and pins *f f* for its temporary adjustment in a vertical position, substantially as shown and described.

333,060. STEAM-ENGINE. JOHN CURTIS, North Dorset, Vt. Filed Oct. 5, 1885. (No model.)



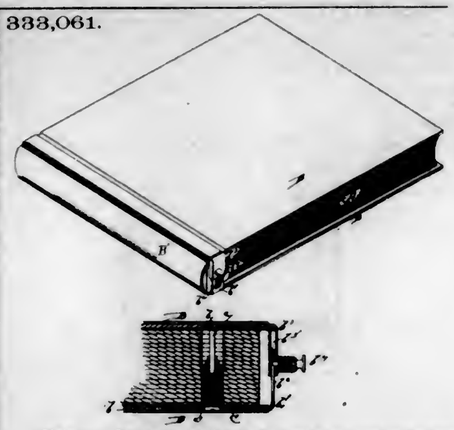
Claim.—1. The shaft B, having port *b'*, and the steam-box D, having partitions d^3 d^3, in combination with the disk C and cylinder E, having pistons F F', arranged to operate as specified, for the purpose set forth.

2. The rods K K', connected to and arranged to operate on the fixed arm L, in combination with the cross-heads G G', as and for the purpose set forth.

333,061. PRESS-COPYING BOOK. CHARLES E. DOYLE, Peru, Ind. Filed May 9, 1884. (No model.)



333,061.



Claim.—1. In a press-copying book, a series of removable alphabetical sections, in combination with the covers provided with studs, upon which the sections of the book are secured, and interlocking arms for securing the covers in place, substantially as and for the purpose set forth.

2. The covers B B, provided with metal strips *b*, in combination with the studs C, and the interlocking ends of the metal bars, one of which is formed with a slot or opening, b^3, and the other with a socket, b^3, and spring-latch b^4, substantially as and for the purpose set forth.

3. In a press-copying book, a series of removable alphabetical copying-sections, in combination with a temporary binder provided with holding-studs having a spring-actuated extension, whereby the pressure upon the covers is prevented from injuring the studs, substantially as shown and described.

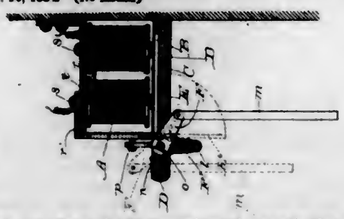
4. The covers B B, having metal strips *b* at their rear ends, the interlocking arms *b' b'*, and the studs C C, formed hollow and provided with the spring-actuated extensions *c c*, in combination with the alphabetically-arranged copying-sections *a*, having holes *a'*, substantially as and for the purpose set forth.

333,062. PARASOL. WILLIAM A. DROWN, Weldon, Pa. Filed Aug. 1, 1885. (No model.)



Claim.—The combination of the stick, ribs, stretchers, and runner of a parasol, with retainers *a d*, whereby the runner may be held in either of two elevated positions, as specified.

333,063. ANNUNCIATOR. DELAVAN S. FOOTE, Chicago, Ill., assignor to the American Electric Manufacturing Company, same place. Filed Nov. 10, 1884. (No model.)

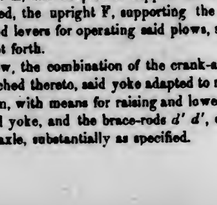


Claim.—1. In an electric annunciator, the combination, with the electro-magnet, of the armature pivoted toward one end below the electro-magnet and extending across its core or cores, and provided with a suitable catch, the drop or curtain hinged below the electro-magnet toward one end of the armature, to engage with the said catch when raised to a horizontal or nearly horizontal position, and means for raising the said drop or curtain to its said horizontal position when it shall have been released therefrom, substantially as described.

2. In an electric annunciator, the combination of the following elements, viz: an electro-magnet, A, supported to hang within a suitable frame, *r r'*, to be supported within the annunciator-case, an adjustable armature, B, pivoted toward one end within the said frame and extending across the under side of the core or cores of the said electro-magnet, a catch, C, provided upon the said armature, a drop or curtain, E, hinged to the said frame, to hang vertically below the said armature, an oscillating rod, *o*, supported within suitable bearings to extend transversely across the plane of the said electro-magnet, an oblique arm, F, operated by a rod, *m*, to turn the said rod *o*, and an arm, F', upon the rod *o*, provided with a pin, *l*, to engage with the drop or curtain E in raising the said drop or curtain to its horizontal or nearly horizontal position, the whole being constructed and arranged to operate substantially as described.

3. In an electric annunciator, the combination, with the rod *o*, supported to oscillate in suitable bearings, of the adjustable arms F and F', provided with apertures *i*, to permit their adjustment on the said rod *o*, a projection, *k*, upon one end of each arm, a vertical slot, *h*, extending through the said projection below the said aperture, a set-screw, *n*, passing transversely through the said projection, a projection, *l*, upon the arm F', and means for turning the arm F to oscillate the rod *o*, substantially as described.

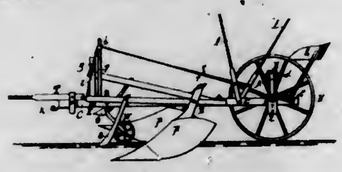
333,064. SUPPLEMENTARY WAISTBAND FOR PANTS. LEON FREDENRICH, New York, N. Y. Filed Dec. 11, 1883. (No model.)



Claim.—1. A supplementary waistband for pantaloons, provided with suitable fastening devices composed of a strip of textile material having inserted bodily therein, within apertures *b*, a piece or pieces of elastic material deeper in width at the center and tapering therefrom to either end, said band A having its lower edge, *a'*, stitched its full length to an underlying waistband-lining, C, as and for the purpose intended, substantially as described.

2. In a supplementary waistband for boys' pants, an inelastic strip, A, having cut out from its body one or more apertures, *b*, said apertures being supplied with elastic pieces B, having the greater depth at their centers and tapering therefrom to their side ends, said strip A, constructed as described, being attached along its lower edge, *a'*, to the waist-lining C, all in combination with the rear portion of a pair of boy's pants, as and for the purpose intended, substantially as described.

333,065. WHEEL-PLOW. CARMI M. FRENCH, Waterford, Mich., assignor of one-half to Morison Beardsly, same place. Filed June 1, 1885. (No model.)

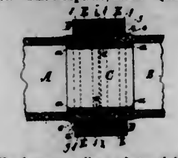


Claim.—1. In a wheel-plow, the combination of a central beam, the front end supported by a wheel, and the rear end pivoted within the double yoke, said yoke pivotally attached to the crank-axle having transporting-wheels, said central beam supporting adjustably the plow-beams carrying right and left hand plows, as specified, and means for raising and lowering said plows, substantially as set forth.

2. In a wheel-plow, the combination of the central beam supported upon wheels, as set forth, the plow-beams attached to said central beam by means of the L-shaped couplings D D, with the guides *g g*, mounted upon the transverse bar E, and adapted to support the free ends of said plow-beams, as specified, the upright F, supporting the bar *n*, its pulleys, and the chains and levers for operating said plows, substantially as and for the purposes set forth.

3. In a wheel-plow, the combination of the crank-axle, the double yoke H, pivotally attached thereto, said yoke adapted to receive the rear end of the central beam, with means for raising and lowering said beam within the forks of said yoke, and the brace-rods *d' d'*, connecting said beam with said crank-axle, substantially as specified.

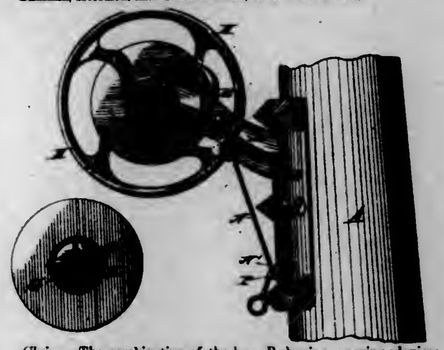
333,066. HOSE-COUPLING. JOHN R. GREEN, Worcester, Mass., assignor to Enoch H. Towne, Napoleon P. Hunt, and George M. Woodward, all of same place. Filed Sept. 28, 1885. (No model.)



Claim.—1. The hose-coupling substantially as described, composed of the flanged tube C, the flanged or elliptically chambered or rabbeted annulus D, and the two curved and crescent-shaped jaws E, such jaws being arranged within the said annulus, and provided with means of sustaining them thereon, and all being to operate essentially as set forth.

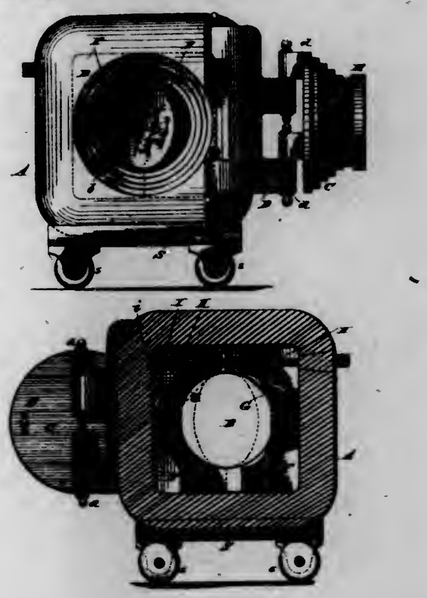
2. The combination of the tube C, flanged at each end, as represented, with the two flanged and elliptically chambered or rabbeted annuli D, and their pairs of crescent-shaped jaws E, arranged within and applied to them, substantially as set forth.

333,067. LINE-STRETCHER. CASPER GROBINSKI and GEORGE B. BERRIER, Morrison, Ill. Filed Mar. 28, 1885. (No model.)



Claim.—The combination of the base B, having securing devices, and provided with the curved bearing-arms near its upper end and the pin P near its lower end, the shaft G, having a hand-wheel and a fixed ratchet at one end, the spool having the central rectangular aperture for the said shaft, the pawl journaled on the curved arm D, and the wire secured to the heel end of the pawl and arranged to engage the pin P, substantially as shown and described.

333,068. SAFE. J. ROSS GROVE, York, Pa. Filed Apr. 21, 1885. (No model.)



333,068.



Claim.—1. The combination, with a safe-door, of securing plates or bolts arranged within the safe, and mechanism for sliding said plates or bolts toward each other to embrace the inwardly-projecting portion of the door after it is closed, substantially as set forth.

2. The combination, with a safe-door, formed with a groove or grooves or recesses on two or more sides of its inwardly-projecting portion, of sliding plates or bolts arranged within the safe to enter said grooves or recesses, and mechanism for operating said plates or bolts, substantially as set forth.

3. The combination, with a safe-door, of locking devices arranged within the safe, and mechanism for simultaneously moving said locking devices toward each other to engage and lock the door after it is closed, and away from each other to release the door, substantially as set forth.

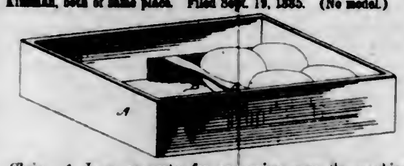
4. The combination, with a safe-door, of transversely-sliding plates arranged within the safe and independent of the door, to grasp the inwardly-projecting portion of the door on two opposite sides, or on all sides, and mechanism for operating said plates, substantially as set forth.

5. The combination, with a safe-door formed without the usual locking-bolts, of locking mechanism arranged within the safe and consisting of two transversely-movable sections which embrace the inwardly-projecting portion of the door, entirely around the latter when the door is closed, to lock the safe, said sections being adapted to be simultaneously slid apart to unlock the door, substantially as set forth.

6. The combination, with a safe, of a sliding locking device or devices transversely arranged within the safe to engage the door and to break the joint made by the door and the front wall of the safe either partly or entirely around the said joint, and mechanism for operating said locking devices, substantially as set forth.

7. The combination, with a safe, of a circular door projecting inwardly beyond the front wall of the safe when closed, and formed with an edge groove to receive a locking device arranged within the safe, and mechanism for operating said locking device, substantially as set forth.

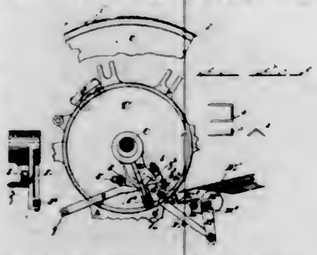
333,069. APPARATUS FOR PRESERVING EGGS. GEORGE B. HAKINS, Norwood, N. Y., assignor of one-half to Henry G. Port and Henry M. Kinsman, both of same place. Filed Sept. 19, 1885. (No model.)



Claim.—1. In an apparatus for preserving eggs, the combination of a rectangular tray with an open-bottomed rectangular frame inserted into and adapted to slide upon the bottom of said tray, said sliding frame having partitions running crosswise to the length of the tray, and fitting with its sides against the sides of the tray, substantially as and for the purpose shown and set forth.

2. In an apparatus for preserving eggs, the combination of a rectangular tray with an open-bottomed rectangular frame inserted into and adapted to slide upon the bottom of said tray, said sliding frame having horizontal parallel partitions with notched or recessed edges running crosswise to the length of the tray, and fitting with its sides against the sides of the tray, substantially as and for the purpose shown and set forth.

333,070. CYLINDER PRINTING-MACHINE. JOHN T. HAWKINS, Taunton, Mass. Filed Mar. 15, 1884. (No model.)



Claim.—1. In a hand-operated cylinder printing-machine driven by means of a crank, as R^8, thecombination, substantially as described, with a cylinder, as C, and a reciprocating type-bed, as D, geared thereto, of driving-pinions of different diameters, to be actuated by said crank, whereby the power required to operate the machine may be varied to conform, measurably, to the strength of the operator, the weight of the form, or the speed at which the machine may be run, substantially as set forth.

2. In an oscillating-cylinder printing-machine, the combination of parts, substantially as described, for the purpose of automatically lowering and raising the impression-cylinder to and from the type-surface, consisting of an eccentric rock-shaft, as C', carrying said cylinder, a lever, as L, secured to said rock-shaft, and a stud, as b', fixed in the said cylinder, said stud impinging upon the said lever to rotate said rock-shaft during a portion of the cylinder's rotation in either direction, substantially as set forth.

3. In an oscillating-cylinder printing-machine, the combination of parts, substantially as described, for lowering and raising the cylinder to and from the type-surface, and automatically holding it in either position through the necessary periods of the cylinder's rotation, consisting of a cylinder, as C, rotating freely upon an oscillating rock-shaft, as C', a lever, as L, secured to said rock-shaft, and carrying a roller, as b^3, on its extremity, and two spring-catches, as b^3, located, as described, to engage said roller, substantially as set forth.

4. In an oscillating-cylinder printing-machine, the combination of parts, substantially as described, for opening and closing the cylinder-grippers for the reception of the sheet, consisting of an oscillating rock-shaft, as C', a lever, as L, secured to said rock-shaft, and carrying a stud and roller, as g^2, a bent lever, as g, pivoted at one end to a fixed part of the machine, and having a hook formed on its free end, a lever on the end of the gripper-shaft, as G^3, carrying a roller, as G^3, a helical or other spring arranged to operate or close the grippers, as g^3, and a stud, as g^4, secured to the frame or other fixed part of the machine, substantially as set forth.

5. In an oscillating-cylinder printing-machine, the combination of the following-named parts: a cylinder, as C, and an eccentric rock-shaft upon which it freely rotates, a stationary cam, as g^3, a gripper-shaft, as G', and a lever-arm, as G^4, secured thereto and provided with a roller, as G^5, whereby said cylinder's center of oscillation is so changed in position as to keep said roller out of contact with said cam during the cylinder's printing revolution, but in contact with said cam during the cylinder's non-printing revolution, so that said cam only opens the cylinder-grippers upon said gripper-shaft when the sheets are to be delivered, substantially as and for the purposes set forth.

6. In an oscillating-cylinder printing-machine, the combination of parts for raising and lowering the feed-board, consisting of a cylinder, as C, running freely upon an oscillating rock-shaft, as C', a lever, as L, secured to one end of said rock-shaft, a stud, as b', attached to said cylinder, engaging said lever, a lever, as L', secured to the other end of said rock-shaft, and a connecting-rod, as L^2, pivoted to said lever at one end, and at the other end to a lever, as L^3, secured to a rock-shaft, as E^3, carrying-cams, as E^4, upon which a feed-board, as E', rests, substantially as set forth.

7. In an oscillating-cylinder printing-machine, means for rotating the ink-fountain roller, substantially as described, consisting of a cylinder, as C, running freely upon an oscillating rock-shaft, as C', a lever, as L, secured to one end of said rock-shaft, a stud, as b', attached to said cylinder, engaging said lever, a lever, as L', secured to the other end of said rock-shaft, and a strap, as L^4, articulated to the free end of said lever, leading to and inwrapping a pulley on the axis of the fountain-roller f^1, substantially as set forth.

8. In a cylinder printing-machine, in combination with an impression-cylinder, sheet-supports, as $s s^2$, portions of which are entered between said cylinder's tympan-sheet and packing, and portions of which protrude above the tympan-sheet, said supports being held in place by the tightening of said tympan-sheet upon them, whereby the tail edge of the sheet is elevated from contact with said cylinder, in aid of the delivery of the sheet by said edge, substantially as and for the purposes set forth.

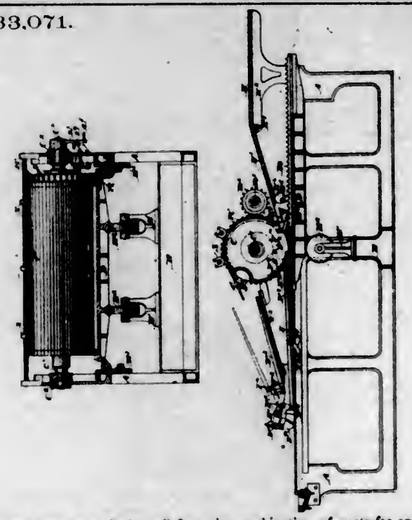
333,071. SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES. JOHN T. HAWKINS, Taunton, Mass. Filed June 22, 1885. (No model.)

Claim.—1. In an oscillating-cylinder printing-machine in which the sheet is delivered from the cylinder tail first, a sheet-delivery apparatus consisting of a series of sheet-supports, as s, a series of pressure-rollers, as S, a series of stripper-fingers, as s'', an inclined receiving-board, as P, and sheet-stops, as I^4, substantially as and for the purposes set forth.

2. In a printing-press, in combination with its sheet-delivery apparatus, a sheet flattening and controlling apparatus consisting of a series of fingers, as F^2, projecting from a bar, as F^3, pivoted by a stop-joint to two levers, as F', said levers being in turn pivoted to the machine and operated substantially as described, whereby said fingers are caused to lie upon the pile of sheets on the receiving-board whether there may be a small or a large pile of sheets upon the board, substantially as and for the purposes set forth.

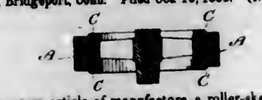
3. In an oscillating-cylinder printing-press in which the sheets are

333,071.



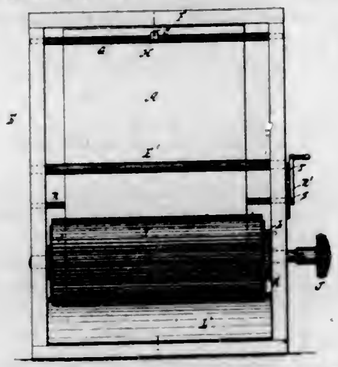
delivered from the cylinder tail first, the combination of parts for automatically flattening out the sheets upon the receiving-board, consisting of a series of fingers, as F^2, secured to a bar, as F^3, pivoted by a stop-joint to two levers, as F', secured to a rock-shaft, as F, a stud upon the free end of one of said levers engaging a weighted hook, as F^6, a stop-roller, as I^2, secured to the type-bed and engaging the lower part of said weighted hook, pivoted to the horizontal arm of a bell-crank lever, as F^5, oscillating upon a stud, as F^{14}, a connecting-rod, as F^7, pivoted at one end to the vertical arm of said bell-crank lever and at the other end to the vertical arm of another bell-crank lever, as F^9, upon a stud, as F^{13}, secured to the frame or other fixed part of the machine, and a roller, as F^9, upon the horizontal arm of said bell-crank, engaging a suitably-formed cam, as F^{12}, secured to said oscillating cylinder, whereby the sheets are automatically flattened out at the proper times upon a receiving-board, as I^4, substantially as set forth.

333,072. ROLLER-SKATE WHEEL. HENRY A. HOUSE and HENRY A. HOUSE, Jr., Bridgeport, Conn. Filed Oct. 16, 1885. (No model.)



Claim.—As a new article of manufacture, a roller-skate wheel having the tire united to the felly by projections cast from the latter within recesses in the former, substantially as set forth.

333,073. CABINET FOR SANITARY TOILET-PAPER. JAMES T. HOYT, New York, N. Y., assignor to Emily C. Hoyt, same place. Filed Apr. 16, 1885. (No model.)



Claim.—1. The combination, substantially as shown and described, of a cabinet or case, the friction-roller I, and the pressure-plates O and Q, and spring N, or their equivalents, for pressing the lower ends of sheets of paper against the roller.

2. In a cabinet or case, the combination, with the swinging plate O, suspended from near the top of said case and extending down to near the bottom thereof, of the swinging plate Q, the lower end of which bears against the lower end of plate O, and the spring N, having one end connected with the plate Q, so as to force the package of sheets placed in front of plate O up against the separating device, substantially as described.

3. A cabinet, E, for toilet-paper, provided with a door, F, for inserting the paper, a mouth, M, and incline L, for discharging the sheets, in combination with a roller, I, for separating the sheets one by one from the package of sheets of paper, and a pressing device for forcing the sheets against the roller, substantially as shown and described.

4. The combination, with a cabinet or case, of a bar or rod, C, for suspending a package of sheets of paper, the cap U, the two bars G G, and the sockets H H thereof receiving the ends of the suspension-bar C, substantially as and for the purpose described.

5. The combination of a cabinet or case for containing a suspended package of sheets of paper, a friction-roller for detaching the sheets from the package, and a pressure-plate for pressing the package toward the roller, substantially as described.

333,074. PACKAGE OF SANITARY OR TOILET PAPER. JAMES T. HOYT, New York, N. Y., assignor to Emily C. Hoyt, same place. Filed June 4, 1885. (No model.)



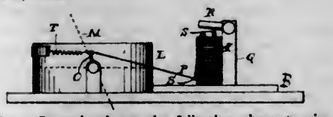
Claim.—1. A suspension device for packages of toilet-paper and the like, consisting of an arm adapted to extend through the package and a hook or suspension-plate on one end of the arm, substantially as shown and described, whereby the sheets are kept in a compact state while allowed to be stripped one by one from the package without disturbing the remaining sheets.

2. The combination, with a package of toilet-paper, of a suspension device consisting of a plate, A, provided with one or more hooks or tongues and an arm or arms projecting therefrom, adapted to extend through the paper and embrace the same, substantially as shown and described.

3. The combination, with a package of sanitary or toilet paper, of a suspension device consisting of the plate A, provided with one or more hooks, a hanger extending over the package, and an arm or wire or equivalent means adapted to extend through the package, which is secured at one end to the plate and at its other end to the hanger, substantially as shown and described.

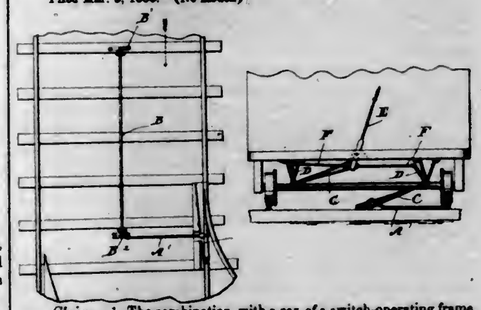
333,075. INCUBATOR-THERMOSTAT. FRANK HUMPHREVILLE, Lancaster, Pa. Filed Nov. 26, 1884. (No model.)

Brief.—An improvement on Humphreville's patent, No. 296,413, dated April 8, 1884.



Claim.—In an incubator, the following elements, viz: frame A, chamber C, spring-bar D, composed of two different metals, screw G, a battery and electro-magnet, the lever R and its depending arm, damper M, crank-arm O, rod P, the spring T, and the wires I and J, the whole constructed, combined, and operating as described.

333,076. TRAMWAY-SWITCH. HIRAM A. HUNTER, Topeka, Kans. Filed Mar. 5, 1885. (No model.)

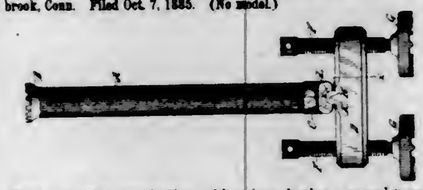


Claim.—1. The combination, with a car, of a switch-operating frame, having an operating-edge inclined to the line of motion of the car, and

pivotal connections for attaching said frame to the car substantially parallel with its line of motion, whereby said inclined edge is free to be carried to or from the car, substantially as and for the purposes specified.

2. In combination with the car, the switch-operating frames, each pivoted at one edge to the car on opposite sides of its longitudinal center, and having their other edges inclined in opposite directions and at an angle to the line of motion of the car, cranks secured one to each of said frames concentric with the pivots thereof, a lever located between the frames, and links connecting the said lever with each of the cranks, substantially as set forth.

333,077. SUPPORT FOR ROCK-DRILLS. SIMON INGERSOLL, Glenbrook, Conn. Filed Oct. 7, 1885. (No model.)



Claim.—1. The combination, with a base having a curved transverse rib provided with a curved enlargement, of a column having a foot-piece provided with a longitudinal groove corresponding with said rib, and with a deeper transverse groove corresponding with said enlargement, whereby the column is permitted to move in one plane only and the joint is at all times thoroughly protected.

2. The combination, with the base having threaded holes at each end for set-screws, and provided with a rib, H, and enlargement K, of a column to which a foot-piece is firmly attached, said foot-piece having a groove, L, corresponding with rib H, and a depression, M, corresponding with enlargement K, as described, and for the purpose set forth.

333,078. COMBINED WASHER AND LINCHPIN. JOHN LOVETT, Indianapolis, Ind., assignor of one-third to John Pickering, Cincinnati, Ohio. Filed May 13, 1885. (No model.)



Claim.—1. A combined washer and linchpin, consisting of a washer having secured to its face a pivoted linchpin, and a spring-stop arranged to positively lock the pin in place, substantially as described.

2. A combined washer and linchpin, consisting of a washer having an opening, and an approximately-L-shaped pin pivotally secured at one end to the face of the washer to centrally cross said opening, and a spring-stop rigidly secured at one end to the washer, and adapted to engage said pin, substantially as and for the purpose set forth.

3. A combined washer and linchpin, consisting of an annular washer having a central opening, an approximately-L-shaped pin pivotally secured at one end to said washer and centrally crossing said opening at the other end, and a spring-stop rigidly secured at one end to the washer, and having its other end upset to rest against the face of the washer in rear of the pin, substantially as and for the purpose set forth.

333,079. ELECTRIC METER. SAMUEL D. MOTT, New York, N. Y., assignor, by mesne assignments, to the Schuyler Electric Light Company, of New York. Filed Aug. 24, 1883. Renewed Nov. 27, 1885. (No model.)

Claim.—1. In an electric meter, a driven registering-train, in combination with a regulating-pendulum whose length is automatically varied in accordance with the strength of current, as and for the purpose described.

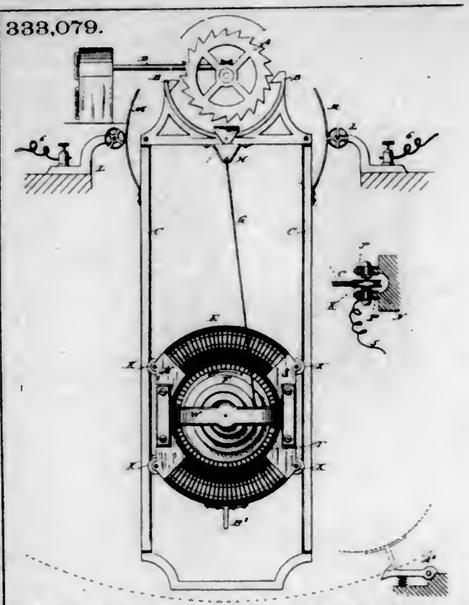
2. The combination, substantially as described, of a driven train of wheels, a regulating-pendulum, and means for raising the pendulum-bob, energized by the current to be measured, so that with an increased current the pendulum is shortened and the train allowed to move at greater speed, while, vice versa, with a decrease of current the pendulum is lengthened and the speed of movement of the train decreased.

3. The combination, in an electric-current meter, with a driven train of wheels, of an adjustable regulating-pendulum, and means for effecting an automatic adjustment of said pendulum in accordance with the strength of the current.

4. In an electric meter, the combination, with an escapement-wheel, of a pendulum having an adjustable bob, and an electro-magnetic lifting device for adjusting said bob, energized by the current to be increased.

5. The combination, with the escapement-wheel, of a pendulum supporting an electric motor that is energized by the electric current and

333,079.



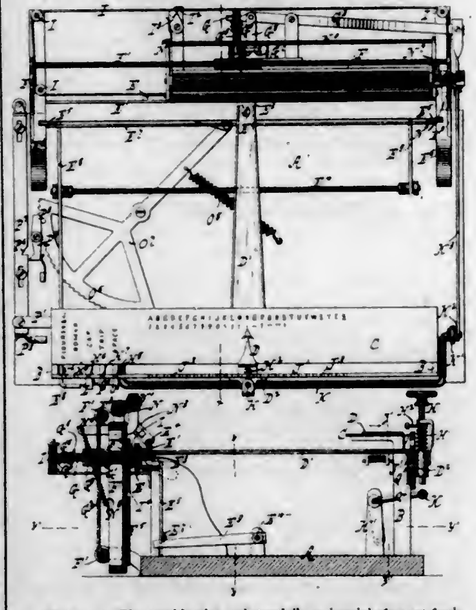
lifts itself to different heights, according to the strength of the current flowing.

6. The combination, with the adjustable pendulum-bob, of an electric motor, and a spiral drum over which is wound the supporting or actuating cord for said bob.

7. The combination, substantially as described, of the pendulum-frame and the electric motor supported in said frame by a cord wound upon a spiral drum revolved by the motor, as and for the purpose described.

8. The combination, with the automatically-adjustable pendulum-bob, adjustable by the action of the current, of the catch for engaging with said bob when at its lowermost position.

333,080. TYPE-WRITER. BARTLEY T. MULLIGAN, Brooklyn, N. Y. Filed Jan. 24, 1883. Renewed Aug. 18, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with the paper-carriage, of the feed-roller, the presser-roller, a propelling-

screw upon the shaft of the feed-roll, and a device engaging with one of the blades of said screw, said devices operating to impart a forward motion to the feed-roller in each return movement of the carriage, for the purpose of automatically advancing the paper.

2. The combination, substantially as hereinbefore set forth, with the paper-carriage, of the feed-roller, the pressure-roller, the propelling-screw fixed to the shaft of the feed-roller, and the yielding fork arranged on the machine-frame to receive it in the proper blade of the screw in the return movement of the carriage.

3. The combination, substantially as hereinbefore set forth, with the paper-carriage, its return-spring, and the carriage-propelling devices, of a trip mechanism consisting of a pawl connected by a link with a tripping-lever, a spring-impelled slide which actuates said lever, and a latch automatically engaged with and disengaged from said slide, whereby the carriage is automatically released in its advance movement and allowed to follow the action of said spring.

4. The combination, substantially as hereinbefore set forth, of the stationary scale, the horizontal slide D^2, carrying the index, the guide-plate J', supporting the horizontal slide, the type-form, and the rearwardly-projecting arm D' of the slide connecting the type-form with the index.

5. The combination, substantially as hereinbefore set forth, of the stationary scale, the movable index, the vertically-adjustable type-form connected to the index, the paper-carriage, the inking-ribbon, and the clamping-jaws I^3 I^3, attached to the paper-carriage for imparting an intermittent movement to the inking-ribbon, and means for adjusting the type-form to bring any line of type into alignment, as set forth.

6. The combination, substantially as hereinbefore set forth, of the stationary scale, the index, the key, the horizontal slide D^2, carrying the index and key, the swinging yoke K, having its traverse arranged in the vertical plane of the key, the hammer, the hammer-lever G^3, and the connections between the yoke and the hammer-lever.

7. The combination, substantially as hereinbefore set forth, of the hammer, the stop G^4, the hammer-lever projecting at one end into a longitudinal slot of the hammer, the spring G^5, intermediate of said stop and the hammer-lever, the tubular guide G', for the hammer, the spring-bolt G^7 on said guide, adapted to engage the hammer, and the bolt-retracting wedge G^8, attached to the hammer-lever.

8. The combination, substantially as hereinbefore set forth, of the stationary scale, the index, the key having the bit H^2, the horizontal slide D^2, carrying the index and key, and the guide-plate J' of the horizontal slide having the notches J^3 to receive the bit of the key.

9. The combination, substantially as hereinbefore described, of the type-form, the guide-bar E' of the type-form, the vertically-movable frame supporting said guide-bar, the frame-adjusting levers' E^9 E^9, one having its outer end bent in the vertical plane of the key, the stop-lever L, having the toe L', the releasing-lever L^2, engaging the stop-lever, and the key adapted to actuate the bent adjusting-lever and the releasing-lever.

10. The combination, substantially as hereinbefore set forth, of the type-form, the guide-bar E' of the type-form, the vertically-movable frame supporting said guide-bar, the frame-adjusting levers E^9 E^9, one having its outer end bent in the vertical plane of the key, the stop-lever L, having the toe L', the releasing-lever L^2, engaging the stop-lever, the key having the bit H^2, the horizontal slide D^2, carrying the key, and the guide-plate J' of the horizontal slide having the notches H^4 H^5 H^6, to receive the bit of the key in the action of the key on the bent adjusting-lever and the releasing-lever.

11. The combination, substantially as hereinbefore set forth, of the swinging yoke K, the space-lever O, having the spur O', catching under yoke, the reciprocating pawl-arm O^8, engaging the space-lever O^7, having at one end the toothed segment O^6, to engage the pawl O^4 of the pawl-arm, and the return-spring O^9 and stop-pawl O^5 of the propelling-lever.

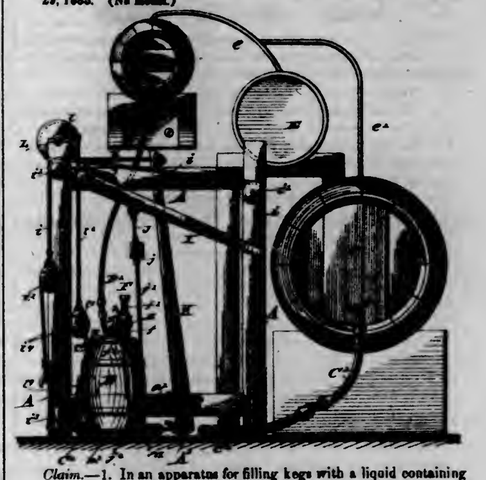
12. The combination, substantially as hereinbefore set forth, of the swinging yoke K, the space-lever O, having the spur O', catching under the yoke, the reciprocating pawl-arm O^8, engaging the space-lever, the carriage-propelling lever O^7, having the toothed segment O^6, to engage the pawl O^4 of the pawl-arm, the return-spring O^9 and stop-pawl O^5 of the propelling-lever, the key having the bit H^2, the horizontal slide, and the guide-plate J' of the horizontal slide, having the notch H^6, to receive the bit of the key in the action of the key on the space-lever.

13. The combination, substantially as hereinbefore set forth, of the paper-carriage, the carriage-propelling lever having the toothed segment O^6 and trip-pin P^9, the spring-impelled slide P^2, having the notch P^3, the connecting-lever P^8 between the propelling-lever and paper-carriage, having the wedge P^4, for retracting the slide, the spring-latch P^6, adapted to engage said notch of the slide, for locking the latter in its rear position, and further adapted to be withdrawn from the notch by the action of said trip-pin of the locking-lever, the return-spring O^9 and stop-pawl O^5 of the propelling-lever, and the pawl-retracting lever P', connected to the slide and to the stop-pawl.

14. The combination, substantially as hereinbefore set forth, of the paper-carriage, the carriage-propelling lever having the toothed segment O^6 and trip-pin P^9, the spring-impelled slide P^2, having the notch P^3, the connecting-lever P^8 between the propelling-lever and the paper-carriage, having the wedge P^4 for retracting the slide, the spring-latch P^6, adapted to engage said notch of the slide for locking the latter in its rear position, and further adapted to be withdrawn from the notch by the action of said trip-pin of the locking-lever, the return-spring O^9 and stop-pawl O^5 of the propelling-lever, the pawl-retracting lever P', connected to the slide and to the stop-pawl, the trip-lever P^{10}, for actuating the retracting-lever, the key H, having the bit H^2, the horizontal slide D^2, carrying the key, and the guide-plate J' of the horizontal slide, having the notch H^7 to receive the bit of the key in the action of the key on the trip-lever.

15. The combination, substantially as hereinbefore set forth, of the horizontal slide D^2, the guide-plate J' of said slide, having two sets of notches, J^3 and H^4, &c., and the cam-slot Q', and the independent slide D^3, supporting the index-arm, and having the stud Q^2 and the latch Q hung to said horizontal slide, and having the spur Q^4, whereby it engages said cam-slot.

333,081. APPARATUS FOR FILLING VESSELS WITH FERMENTED LIQUORS. CHRISTOPH MÜSSEL, South Bend, Ind. Filed Aug. 29, 1885. (No model.)



Claim.—1. In an apparatus for filling kegs with a liquid containing carbonic acid or other gas in solution, the combination of the cask holding the liquid, situated above the keg to be filled and joined thereto by a suitable tube and corking device secured over an opening near the lower end of the said keg, the relief-vessel situated above the keg to be filled and connected thereto by a suitable tube and corking device secured over an opening in the upper head of said keg, and the condensed-air reservoir connected both to the cask and relief-vessel by proper tubing, all substantially as specified.

2. In an apparatus for filling kegs with a liquid holding carbonic acid or other gas in solution, the combination of the cask C, the relief-vessel D, the condensed-air receiver E, the corking devices F F', secured, respectively, over openings in the top and bottom of the keg to be filled, the tube C', connecting the device F' to the cask, the tube D', connecting the device F to the relief-vessel, the tube *e*, connecting the relief-vessel and condensed-air receiver, and the tube *e'*, connecting said tube to the top of the cask, all substantially as specified.

3. The combination, with the cask, relief-vessel, condensed-air receiver, corking devices F F', and tubes C', D', *e*, and *e'*, of the lever I, drawn upward by means of the cords i^1 i^1, pulleys i^2 i^2, and weights i^3, the rope j', passing over the pulleys j^2 j^2, and connected by means of the pulley *j* and cord J to the lever I, the lever K, having its upper arm drawn forward by means of the cords k^1 k^1, shaft L, pulleys l^1 l^1, and weight l^3, the cord *m'*, pulley M, connected to the lower arm of the lever K by the cord *m*, and the yokes H H, which connect the cords *m'* and j' with the corking devices F' and F, respectively, all constructed and arranged substantially as and for the purpose specified.

333,082. INDIVIDUAL HOLDER OR REST FOR TABLE-SERVICE ARTICLES. KATE E. NEEDLS and EMMA V. WHITNEY, Leominster, Mass. Filed Mar. 30, 1885. (Model.)



Claim.—1. As an improvement in table-service ware, a combined knife, fork, and spoon holder or rest for individual use, consisting of the stand A, provided at its top with V-shaped notches or recesses *d d d*, within which rest the inner ends of the handles of said articles, the outer ends of the handles resting on the table or cloth thereon, substantially as shown and described.

2. A table-service device for individual use, consisting of a hollow stand, A, having upright walls *a a b c*, the two side walls, *a a*, and rear wall, *b*, being flat and provided with notches *d*, for supporting a knife, fork, and spoon, and the front wall, *c*, being curved outwardly and inclosing a tooth-pick receptacle, *n*, as set forth.

3. The cushion or guard *h*, in combination with the knife, fork, and spoon holder or notched stand A, as and for the purpose specified.

333,083. BRACELET. CHARLES S. PEIN, Providence, R. I. Filed Feb. 10, 1885. (No model.)



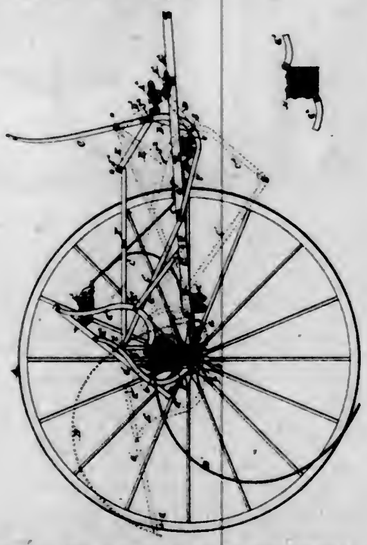
Claim.—1. An improved spring-band bracelet, composed of a series of units strung upon spring-wires and held upon said wires by inwardly-bent extensions bent over said wires, as described.

2. The units *a*, having the extensions *d*, as set forth.

3. The combination, with the wires *b b*, of the dish-shaped units *a*, having the extensions *a'* bent over the said wires, as described.

4. The combination, with the wires *b b* and the units *a*, having the bent extension *a'*, of the center unit, *c*, having the extensions bent as at *c' c'*, as set forth.

333,084. HORSE HAY-RAKE. WALTER P. PRALL, Woodbridge, N. J. Filed Mar. 27, 1885. (Model.)



Claim.—1. The combination of the rake-head, standard b^2, rods F and C', toggle-links E E' D D^2 D^3 C^3 C^4, and the whiffletree, for the purpose of holding the rake down to its work.

2. The combination of the rake-head, standard b^2, rods F C', toggle-links E E' D D^2 D^3 C^3 C^4, and lever C, and the whiffletree, for the purpose of raising or lowering the rake.

3. The combination of the rake-head, standard b^2, rods F and C', lever C, toggle-links C^3 C^4 E E' D D^2 D^3, and the bend or stop *e*, for the purpose of limiting the dropping of the rake-teeth.

4. The combination of the rake-head, standard b^2, links E E' D D^2 D^3 C^3 C^4, rods C' F, and lever C, for the purpose of operating the rake.

5. In a rake, the combination of the toggle-joints C^3 C^4 E E' and D D^2 D^3, connecting-rods C' and F, fulcrum-box *c*, whiffletree A^4, and the rake, as and for the purpose set forth.

6. In a rake, the combination of the toggle-joint C^3 C^4 E E' and D D^2 D^3, connecting-rods C' F, fulcrum-box *c*, whiffletree A^4, the rake-head, a cleaner provided with a cross-bar having its line of operation parallel to the curve of the rake-teeth, and connections, substantially as described, between the rake-head and cleaner.

7. In a rake, the combination of the toggle-joints C^3 C^4 E E' and D D^2 D^3, connecting-rods C' F, fulcrum-box *c*, whiffletree A^4, the rake-head, a cleaner provided with a cross-bar hung under the rake-teeth, and having its line of operation parallel to the curve of the teeth, and connections, substantially as described, between the rake-head and the cleaner.

8. In a rake, the combination of the rake-head B, having the slots *b'*, rake-teeth B', passed through said slots and curved down and under said head, and provided with tenons b^2, extending up into the under side of the head, the axle A, having a bearing against the under side of the teeth, and the staples *b*, passed around the axle, through the head, and secured by nuts for the purpose of securing the teeth in the head.

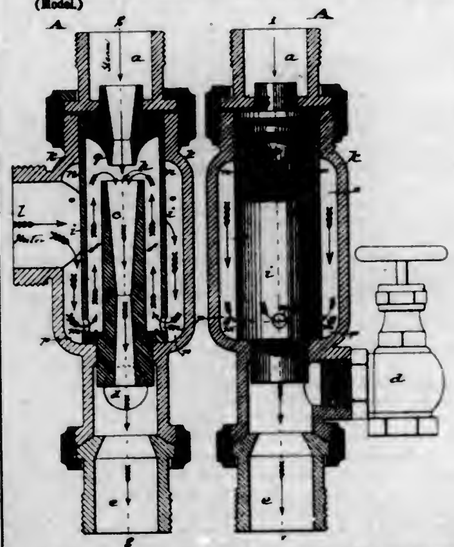
9. In a rake, the rake-head B, cleaner G, carrying-bar G', moving support G^2, lever G^3, moving fulcrum-bar G^4, and thill A^2, all combined for the purpose of cleaning the teeth of the rake, substantially as described.

333,085. PLANT-BED HEATER. ALLEN S. ROUSH and ANDREW C. HALTERMAN, New Haven, W. Va. Filed June 1, 1885. (No model.)



Claim.—The combination, in a plant-bed heater, of a receptacle having a tight bottom, doors hinged over apertures in one end, the upper edges of the sides being recessed and having bars fitted in said recesses, leaving slight spaces between each other to form a top for the support of the plant-bed, and a pipe extending into said receptacle, provided with a series of perforations increasing in number in the direction of the steam-travel, substantially as set forth.

333,086. INJECTOR. MORGAN D. STRICKLAND, St. Louis, Mo., assignor of one-half to Charles D. Carroll, same place. Filed Aug. 17, 1885. (Model.)



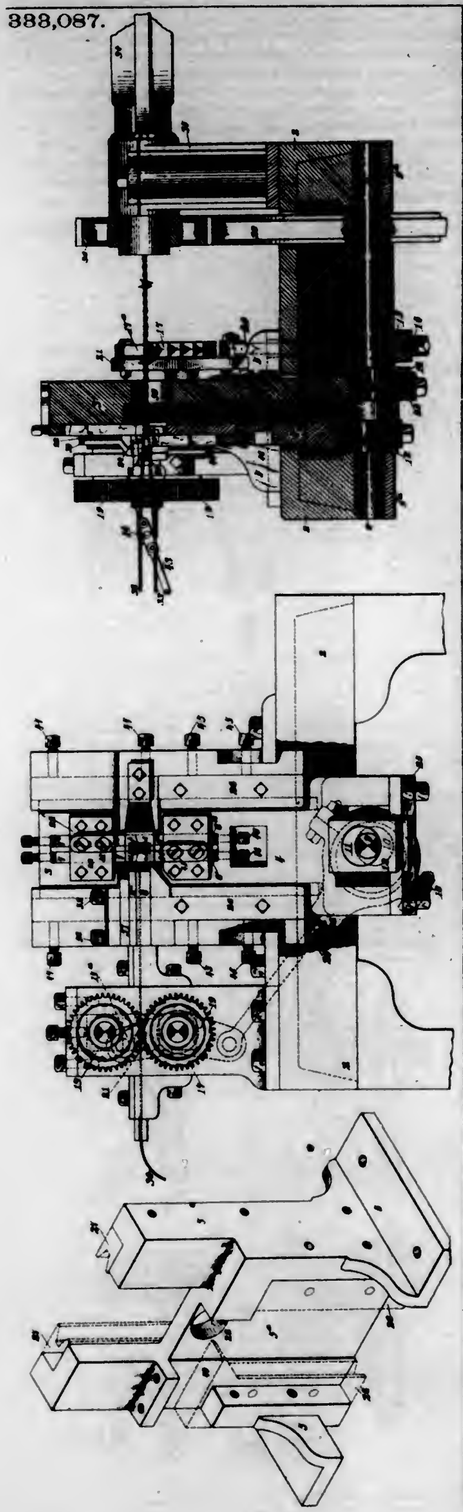
Claim.—1. An injector having a casing within the injector-shell and surrounding the combining-tube, allowing the feed-water to flow against the exterior of the casing, but cutting off the direct flow of the feed-water to the combining-tube inlet, and directing it first to around the lower end of the combining-tube and thence along the combining-tube to its inlet, substantially as described.

2. The combination of the shell *k*, the steam-jet tube *b*, the combining-tube *c*, the flange *j*, and the tube *i*, substantially as described.

3. The combination of the shell *k*, the steam-jet tube *b*, the combining-tube *c*, the casing *i*, perforated at *m*, and the water-supply pipe *l*, leading into the annular space *o*, which in turn extends below the pipe *l* at *p*, substantially as described.

333,087. WIRE-BARBING MACHINE. JOHN STUBER, Pittsburg, Pa., assignor to the Pittsburgh Steel Fencing Company, same place. Filed Oct. 7, 1885. (No model.)

333,087.



Claim.—1. The combination, in a wire-barbing machine, of mechanism for feeding a barb-strip between strand-wires, mechanism for feeding the latter, moving knives for shearing a barb-blank from the strip after it has been so introduced between the wires, and spreading pins or arms connected with and moving with the knives, said spreading pins or arms engaging the strand-wires and separating them when the knives are retracted, to permit insertion of the barb-strip, substantially as and for the purposes described.

2. The combination, in a wire-barbing machine, of mechanism for feeding the barb-strip between strand-wires, mechanism for feeding the latter, moving knives for shearing a barb-blank from the strip after it has been introduced between the wires, and spreading arms or pins connected with and actuated by the heads of the knives, so as to separate the wires during the latter part of the retracting movement of the knives, to permit the insertion of the barb-strip, substantially as and for the purposes described.

3. The combination of a guide-die having a beveled end and a groove or way through its body for passage of a barb-strip, so that it may project from the die, knives 6 and 7, having cutting-edges which move in contact with the beveled end of the die, whereby the barb is cut with a fish-tail or V on the end thereof and the end of the strip is provided with a point the counterpart of the fish-tail or V, knives 6^a 7^a, moving toward each other and against the strip, all of said knives 6, 7, 6^a, and 7^a being made separate from each other and the members of each pair separated laterally, to allow passage of the strand-wires, and mechanism for actuating the knives, substantially as and for the purposes described.

4. The combination, in a wire-barbing machine, of a die having its end laterally beveled to a vertical edge, and having a channel or way through which a barb-strip is fed so as to project from the edge of the guide-die, and moving knives having blades which move in contact with the beveled sides of the end of the die, whereby the barb is cut with a fish-tail or V at the end thereof, and the end of the strip is provided with a point the counterpart of the fish-tail or V, substantially as and for the purposes described.

5. The combination, in a wire-barbing machine, of mechanism for feeding a barb-strip between the strand-wires, mechanism for feeding the latter, moving knives for shearing a barb-blank from the strip after it has been introduced between the wires, and for bending parts of the blank around the wires, moving presser-feet 23 and 24, arranged to engage the strand-wires during the cutting and bending operation, and to clamp them upon the interposed barb-blank, and mechanism for actuating said knives and presser-feet, substantially as and for the purposes described.

6. The combination of a guide-die having a channel or passage through its body for passage of a barb-strip, and having its end laterally and symmetrically beveled to a vertical edge, and moving knives whose blades are inclined to cut in contact with the beveled sides of the end of the die, substantially as and for the purposes described.

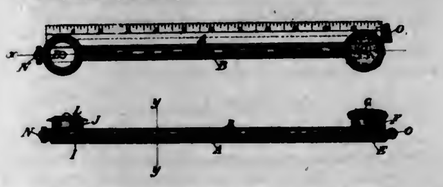
7. The combination, in a wire-barbing machine, of a die which acts in shearing the barbs, and a stripper arranged to move after the cutting of the barb to engage it, and to free it from the die, and mechanism for actuating the stripper, substantially as and for the purposes described.

8. The combination, in a wire-barbing machine, of a spring-actuated stripper, a die, and a moving knife for shearing the barb, the stripper being arranged in the path of the head of the knife, so as to be retracted by the cutting motion thereof, and to be projected at the retraction of the knife, to disengage the barb from the die, substantially as and for the purposes described.

9. In a wire-barbing machine, the wedge 57, arranged so as to be capable of projection between the strand-wires for spreading the same, and mechanism for projecting and retracting the wedge, substantially as and for the purposes described.

10. In a wire-barbing machine, the pivoted lever 43, bearing upon the strand-wires, and movable to separate them, substantially as and for the purposes described.

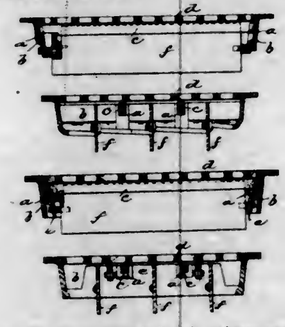
333,088. INSTRUMENT OF STATIONARY. JOHN W. TURNER, Pittsburg, Pa., assignor of one-third to Samuel Kelley, same place. Filed Oct. 26, 1885. (No model.)



Claim.—1. The combination of a tube for containing water and a sponge affixed to a sheath or cap on the tube, the sheath and tube being perforated to permit access of water from the latter to the sponge, substantially as and for the purposes described.

2. The combination of a tube for containing water, a sheath or cap surrounding the tube, a pan, F, mounted on the sheath, and a sponge arranged within the pan, the pan, sheath, and tube being perforated to permit access of water from the tube to the sponge, substantially as and for the purposes described.

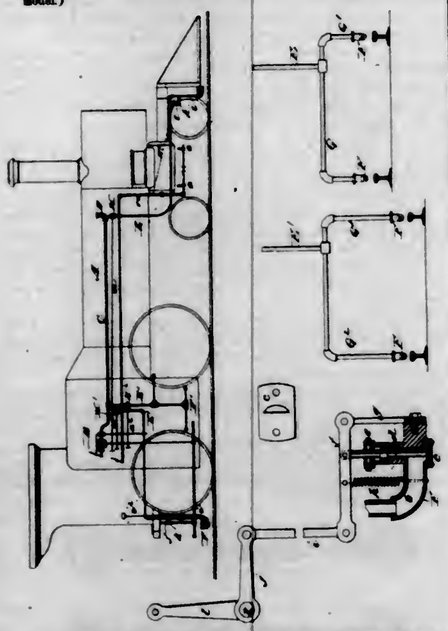
333,089. **HOT-AIR REGISTER.** ARTHUR C. TUTTLE, New York, N. Y., assignor to the Tuttle & Bailey Manufacturing Company, same place. Filed May 14, 1885. (No model.)



Claim.—1. The improvement in hot-air registers consisting of the combination of the re-enforcing bars c with frame-plates or attached plates having end-bearing seats or rests a, molded or cast therein, and being adapted to enable the re-enforcing bars c to be inserted from the top of the frame when the top plate, *d*, is removed, substantially as described.

2. The improvement in hot-air registers consisting of the combination of the frame having end-bearing seats or rests *a*, the insertible re-enforcing bars c, and the face-plate of the register, said plate securing said bars, substantially as described.

333,090. **TRACK AND WHEEL CLEANING AND LUBRICATING DEVICE.** FRANCIS G. TUTTLE, Portland, Oreg. Filed June 4, 1885. (No model.)



Claim.—1. The combination, with the injector-discharge pipe of a locomotive, of track and wheel cleaning nozzles and pipes establishing communication between the boiler-feed pipe and the said nozzles, substantially as herein described.

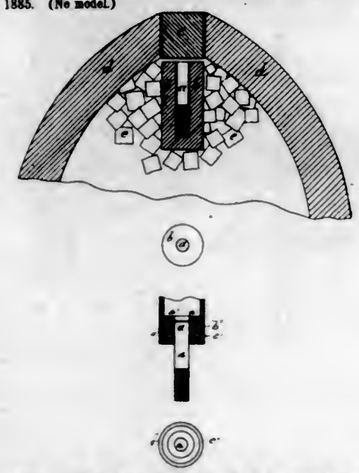
2. The combination, with the injector-pipe of a locomotive, of nozzles adapted to discharge water or steam upon the track or locomotive wheels or both, and valves for controlling the discharge of water from the pipes, as herein specified.

3. The combination, with the injector B and pipe C, leading therefrom to the boiler, of one or more pipes provided with suitable regulating-valves and one or more pairs of nozzles, F, adapted to discharge hot water or steam on the track or wheels, as herein specified.

4. A track and wheel cleaning nozzle having a discharge-opening of the form of a segment of a circle with the straight side thereof beveled to form a thin flat discharge-opening, and the combination therewith of a cylindrical valve having a beveled end, as herein specified.

5. The combination, with the nozzle F, having the valve *d*, of the lever *f*, spring *h*, and means for operating the lever *f*, substantially as herein specified.

333,091. **SHELL.** MAX VON FÖRSTER, Berlin, Germany. Filed July 7, 1885. (No model.)

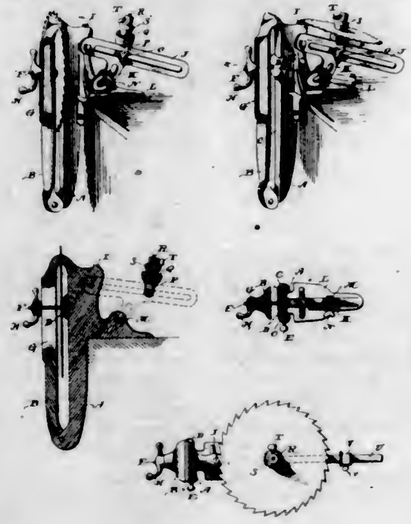


Claim.—1. A hollow projectile having its explosive contents embedded in paraffine or equivalent material to form the whole of said contents into a solid mass.

2. A hollow projectile having a granular explosive and a priming-cartridge both embedded in paraffine or equivalent material to form the whole contents of said projectile into a solid mass.

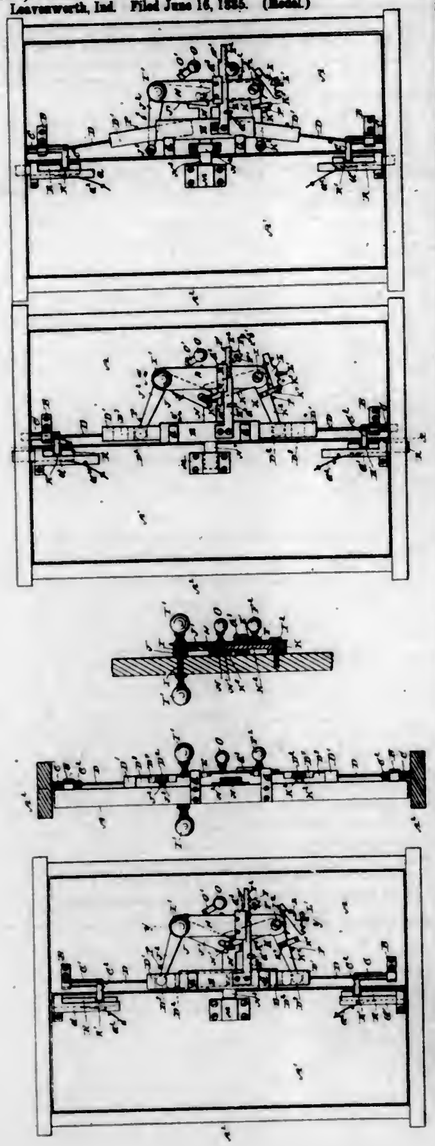
3. A hollow projectile containing a porous explosive having its granular contents embedded in paraffine or equivalent material, the grains having a protective coating to prevent the entrance of the paraffine or equivalent into the same, substantially as described.

333,092. **DEVICE FOR SETTING, FILING, AND JOINTING CIRCULAR SAWS.** ALOIS WINKLER, Oneonta, N. Y. Filed July 31, 1885. (No model.)



Claim.—A compound tool for setting and filing saws, comprising a stationary-jaw piece, A, the front side of which is provided with laterally-extending guide-flanges and the rear portion with a rearwardly-extending projection, and suitable means for securing the same to a table or bench, the upper end of said jaw-piece being provided with a projection or anvil, a clamping-jaw piece pivotally secured to the lower part of said stationary-jaw piece and slotted near its upper end, a sliding block engaging with the guide-flanges on the stationary-jaw piece and provided with a bolt projecting through the slot in the clamping-jaw piece, and a tightening-nut fitted thereon, a slotted bracket pivotally secured to the upper rear portion of the stationary-jaw piece, and provided with a downwardly-extending slotted arm and suitable means for adjustably securing said arm to said rearward projection, a cup-shaped rest adjustably secured to said slotted bracket, and provided with an upwardly-projecting spindle, an inverted-cone-shaped clamping-piece adjustably secured on said spindle, a movable arm pivoted on said spindle, and a suitable file-holder adjustably secured thereon, all arranged substantially as described, and for the purposes set forth.

333,093. **FASTENING FOR DOUBLE DOORS.** GEORGE W. WEIGHT, Leavenworth, Ind. Filed June 16, 1885. (Model.)



Claim.—1. In a door-fastener, the bolts C and C', the pivoted rods D, and the bars D', having recesses D^2 and D^3, in combination with the levers J and K, substantially as shown and described.

2. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', having recesses D^2 and D^3, and the guiding-plate E, in combination with the levers J and K and the rollers J^3 and K^3, substantially as shown and described.

3. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', the guiding-plate E, and the arm E', provided with teeth E^2, in combination with pinion F, the shaft F', and the knob F^2, substantially as shown and described.

4. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', having recesses D^2 and D^3, the levers J and K, the guiding-plate E, the arm E', and the teeth E^2, in combination with the pinion F, the shaft F', and the knob F^2, substantially as shown and described.

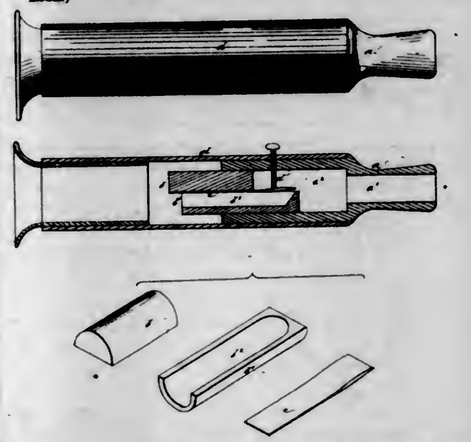
5. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', having recesses D^2 and D^3, the guiding-plate E, the levers J and K, the shaft I, the knobs I', the arm K^4, and the pin K^5, in combination with the locking device L, substantially as shown and described.

6. In a door-fastener, the levers J and K, having the arms J' and K', forked at their ends, and the pin K^5, in combination with the bolt N, having a recess, N', substantially as shown and described.

7. In a door-fastener, the bolts C and C', the arm C^2, the pivoted rods D, the bars D', having recesses D^2 and D^3, the guiding-plate E, and the levers J and K, in combination with the bolts R, having the recesses R', substantially as shown and described.

8. In a door-fastener, the bolts C and C', the arms C^2, the pivoted rods D, the bars D', having the recesses D^2 and D^3, the rollers J^3 and K^3, the levers J and K, the shaft I, the knobs I', the guiding-plate E, the arm E', the teeth E^2, the pinion F, the shaft F', and the knob F^2, all arranged and operating substantially as described, in combination with the bolts R, having the recess R', the bolt-case Q, and the spring Q^2, substantially as set forth and described.

333,094. **GOOSE-CALL.** DAVID S. FULLER, Chicago, Ill., assignor of one-half to Watts De Golyer, same place. Filed June 15, 1885. (No model.)



Claim.—1. A mouth-piece formed with a chambered rear end, in combination with a reed formed of two differently-toned leaves secured in said chamber, substantially as and for the purpose set forth.

2. In a goose-call, a mouth-piece having its rear end chambered out, in combination with two blocks in its rear end, one of which is hollowed from the rear nearly to its forward end, and a two-leaved reed clamped at one end between said blocks and at the other end lying free over the hollow, substantially as and for the purpose set forth.

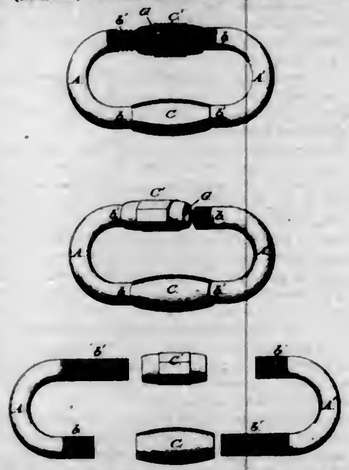
3. In a goose-call, the reed *c*, formed of two leaves, one of which is thinner or differently-toned from the other, substantially as and for the purpose set forth.

4. In a goose-call, a reed formed of two differently-toned leaves, the forward ends of which are slightly bent upward, substantially as and for the purpose set forth.

5. In a goose-call, a reed formed of two differently-toned leaves having their free ends slightly convexed in rear of their points to give free access of air between them, substantially as and for the purpose set forth.

6. In a goose-call, a main body provided with a reed formed of two differently-toned leaves, one of which is convexed in rear of its point, in combination with an adjusting-screw having its point bearing upon said convex leaf, substantially as and for the purpose set forth.

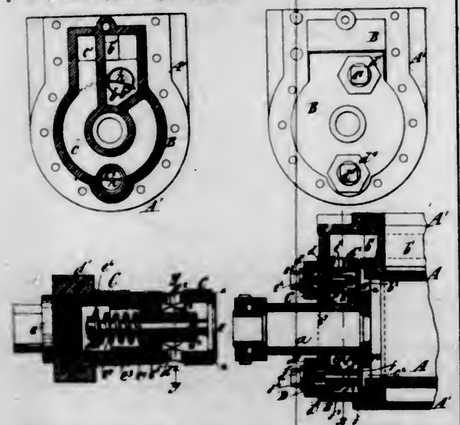
333,095. CHAIN-LINK. DONALD MUNRO, Pictou, Nova Scotia, Canada, assignor of one-half to Andrew Hislop, same place. Filed July 10, 1885. (No model.) Patented in Canada May 30, 1885, No. 21,779.



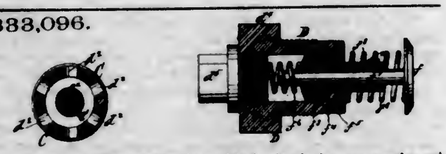
Claim.—1. The combination, with two separate corresponding divisions of a divided link, each formed with arms of unequal length, both threaded at their extremities uniformly in the same directions and with the same pitch, the longer arm to a length equal to that of the sleeve to be fitted thereon, of two coupling sleeves or sockets internally threaded uniformly and in the same direction from end to end to screw each upon the longer arm of one division and then back upon the shorter arm of the opposite division when brought into juxtaposition therewith, all substantially in the manner and for the purpose herein set forth.

2. The combination, with an interiorly-threaded sleeve or nut screwing upon the opposite arms of an open link to couple them together, of a spring seated in the threaded portion of one arm to bear against the encircling-sleeve, substantially in the manner and for the purpose herein set forth.

333,096. VALVE FOR AIR AND GAS COMPRESSORS. WILLIAM H. WORTHEN, Brooklyn, N. Y., assignor to Guild & Garrison, same place. Filed Mar. 31, 1884. (No model.)



333,096.

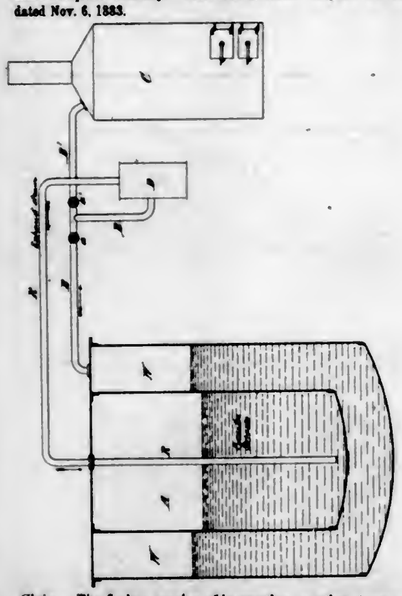


Claim.—1. The combination, with the head of a compression-cylinder having an air-chest formed therein, of a valve-box inserted into the head and extending from the outer side of said head inward, and having two portions of different internal diameter joined by an annular conical seat, a valve and its stem, a sleeve and guide receiving the valve-stem through it and having portions of different external diameter, and a conical shoulder whereby it is made to fit the valve-box, a spring whereby said sleeve and guide is held in place and centered by its conical shoulder bearing against said conical seat, and a plug or bonnet closing the outer end of the valve-box, substantially as herein described.

2. The combination, with the inlet-valve box C, having the conical annular seat c^4, and the portions of different internal diameter joined by said seat, of the sleeve and guide consisting of the portion c^3 and the cup-shaped portion c^2, of larger diameter, joined by the conical shoulder c^1, the valve c, and stem c', having at the outer end a head, c^6, and a spring, c^7, surrounding the stem and bearing at one end on the stem-head and at the other end in the cup-shaped portion c^2 of said sleeve and guide, substantially as herein described.

REISSUES.

10,675. UTILIZATION OF EXHAUST-STEAM. MORITZ HONIGMANN, Aix-la-Chapelle, Germany. Filed Oct. 6, 1884. Original No. 287,237, dated Nov. 6, 1883.



Claim.—The fireless running of locomotives or other steam-engines by first generating an initial pressure in the steam-generator of the locomotive or engine by means of any source of heat which is external of and independent from the said locomotive or engine, while the subsequent pressure in said generator is produced exclusively by means of the absorption of the exhaust-steam of said locomotive by a caustic-soda or potash lye which is in direct contact with the said generator.

PHOTO LITH. NORRIS PETERS

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

MILLER *et al. v.* FOREE *et al.*

Decided December 14, 1885.

1. Patent to Miller and Worley for alleged improvements in finishing tobacco-plugs, granted December 5, 1876, and reissued January 29, 1878, declared void.

2. PRIOR INVENTION.
Prior invention made out where a sample of the prior device is produced and identified by several witnesses whose characters for truth and veracity complainants have failed to substantially affect.

3. PROCESS.
Application of old process to same material at a different stage *held* not patentable.

APPEAL from the Circuit Court of the United States for the District of Kentucky.

Mr. Arthur Stern, Mr. James A. Beattie, Mr. George Harding, and *Mr. F. T. Chambers* for the appellants.

Mr. B. F. Thurston for the appellees.

Mr. Justice BRADLEY delivered the opinion of the Court.

This is a suit brought by the appellants against the appellees, complaining of the infringement of a certain patent granted to Anton Miller and Christian Worley, two of the complainants, for an alleged improvement in finishing tobacco-plugs and in marking the same. A patent was applied for September 23, 1876, and was granted on the 5th day of December, 1876. It was subsequently surrendered and reissued on the 29th of January, 1878. The improvement, as declared in the specification, consists in pressing in the side of the plug, during the process of manufacture, letters or marks, so as to be ineffaceable. The description contained in the reissued patent, which does not differ materially from that contained in the original, after referring to the illustrative drawings, which are not necessary to the understanding of the invention, proceeds as follows:

In carrying out our process, the plugs are packed with alternating plates in the finisher, so that they take their permanent set with the impression in them, whereby said impression is preserved ineffaceable.

We have used the process of finishing tobacco as described in Patent No. 181,512, issued to Worley and McCabe, on the application of Christian Worley, and dated August 22, 1876, but this system of marking may be used in conjunction with the ordinary finishing process by having the devices in relief on pressure-plates used in the last pressing.

Our preferred manner of forming the letters on the plates A′ is by stamping them therein, and then making the letters solid by filling in the concave side of the letters with melted metal, such as solder, so that said letters will withstand the extreme pressure to which they are subjected in the finishing-box.

In constructing said compress-plate, however, any projecting surfaces in relief, either formed upon the plate or loose from the same, would secure the same result and may be employed.

From this description it appears that the process consists simply in attaching or placing raised characters on the metallic plates which are interlaid between the layers of tobacco to give it a smooth surface in its final compression, which characters leave their imprint in the side of the plugs.

The claim of the original patent was for—

The mode of simultaneously stamping and finishing tobacco, consisting of tightly compressing the plugs between plates having in relief letters in alternating series, substantially in the manner described.

The claim of the reissued patent is for—

1. The described process of marking plug-tobacco, which consists in impressing letters or other marks directly into the side of the plug during the process of manufacture, and by the pressure employed in making the plug, substantially as described.
2. A tobacco plug marked with an impression, substantially as described.

The second claim of the reissue was afterwards abandoned and formally disclaimed in the Patent Office. The first claim is, in its terms, broader than the claim of the original patent. It is a general claim for the described process of impressing letters or marks directly into the side of the plug during the process of manufacture. This embraces the application of the process at any stage of the manufacture, either in the molding process or the finishing process; but if it should be confined by construction to the latter, as in the claim of the original patent, it would still apply to every kind of finishing process, whether separate from the molding process or not. The question, then, will be whether this claimed invention was anticipated by prior invention or use in the art. Impressions of letters, figures, and other marks have for a long period been made by compression upon plastic substances, such as cakes of soap and chocolate, bars of lead, balls of butter, sealing-wax, the leather covers of books, &c. It was not strange, therefore, that the same process for producing a like result should have been applied to tobacco when molded and compressed into solid plugs of definite form. An English patent was granted to Thomas and George Cope in April, (specification filed October,) 1868, for improvements in machinery for molding, pressing, and stamping Cavendish and other tobacco into any desired form by suitable dies. These dies have any desired form and design, and, when filled with tobacco, a powerful pressure is applied by means of a metallic die-piece, which gives to the tobacco a durable form and solidity, with the impression of the shape and design of the dies. In describing the machine and its operation the patentees say:

This machine is useful for various purposes in manufacturing tobacco. It can be advantageously employed in stamping or forming devices of various kinds on tobacco.

Another patent was granted to Gibson and others in April, (specification filed October,) 1874, for a mode of

heating, pressing, and curing roll and coil tobacco, in the course of which the tobacco (in the case of coil) is alternated with metallic plates, between which and the coils are placed thin wooden disks of a size to match the plates, and between these and the coils of tobacco a thin metal plate bearing the manufacturer's name, abode, trade-mark, &c. It is then heated, and afterward submitted to great pressure. And the inventors add:

> When the tobacco has cooled down sufficiently, it is removed, and the sheath-pipe being withdrawn by gentle pressure, the metallic disks, scale-board disks, and name-tablets are separated from the tobacco, and the tobacco is found to be impressed with the name or marks from the tablets, the rest of its surface having the impression of the wooden disk, smooth or showing the grain of the timber. The tobacco, then thoroughly cured and pressed, is fit for sale.

Charles Siedler obtained a patent of the United States, dated January 12, 1875, reissued October 24, 1876, on application filed April 26, 1875, for impressing into the body of the plugs of tobacco metallic labels with raised letters, &c., either covered or not covered by the outside wrapper, whereby he obtained distinct and durable impressions. He says:

> Before giving the plug of tobacco its final pressure the metal B b [the label] is placed in proper position upon it by an attendant, and by subsequent powerful pressure the label is sunk into the body of the tobacco, so that its face is about flush with the outer surface thereof, and its points sink quite deeply into the most dense mass. It adheres firmly. * * * The plugs thus impressed with the hard labels, presenting the letters in relief, are then wrapped in a large leaf of properly-dampened tobacco and again powerfully compressed. The label appears beneath the wrapper of the finished plug, and is not liable to be removed by any ordinary or extraordinary cause.

In 1867 or 1868 Fisher and Harris, of St. Louis, fitted into a mold for plug-tobacco a metallic plate, having on its face the word "Blackberry" in raised letters in the form of types, which produced on the surface of the plug, as it was pressed in the mold, the word "Blackberry." Many plugs were made in this mold, and received the said impression, from the time of its construction until 1876, and were sold in the market. Boyce and Brothers bought out Fisher and Harris in 1869, and continued to use the same mold. It is true that this mold was only one in a block or frame of fifteen molds, and eleven other frames were used in connection with this frame, without any such types in them, in making up boxes of tobacco; but in view of the fact that the mold having the types continued to be used for many years, and that the word "Blackberry" was invariably printed on the tobacco, the process, though somewhat imperfectly applied, cannot be regarded as an abandoned experiment. The impression being made in the mold while the tobacco was moist might not remain as clearly defined as if it were made in the finishing process, (when a further finishing process was used,) but it continued to appear quite distinctly and remained as a permanent mark on the tobacco, as is seen in the specimen which has been preserved and made an exhibit in the cause. There is also evidence in the case of a zinc plate with raised characters, forming the name of the maker, one E. F. Smith, being used by him in the summer of 1875, both in the molding and in the finishing process, for the purpose of imprinting the name upon plug-tobacco which he was then manufacturing in a small way in Evening Shade, a village in Arkansas. The plate was used in substantially the same way as that described in the patent of the complainants, and if the evidence is to be believed the fact of prior anticipation is clearly established. The circuit judge who decided this case in the court below, after a careful examination of the testimony on the subject, came to the conclusion that it was to be believed, and based his decision principally upon it. We have come to the same conclusion. It is true that a vigorous effort was made to break down the testimony of the principal witnesses, Smith and his foreman Lee, and it was pretty clearly shown that much could be affirmed derogatory to their general characters; but the complainants failed to show anything substantially affecting their characters for truth and veracity, or that they were not to be believed under oath. Besides, the manner in which their testimony was given, and in which they bore the test of a somewhat rigorous cross-examination, tends to give confidence in the truth of their statements; and they are not without a good deal of corroboration. One of the alleged identical plates was produced, and the jeweler who made it, being called as a witness, recognized it, and said that he thought he made two of them; and he corroborated the date, and testified that Smith showed him some tobacco which he said had been marked with the plate, and which appeared to have been so marked.

Metcalf, one of the complainants' witnesses, also states on cross-examination that he had seen one or two plugs with Smith's name impressed on it, which he (Smith) represented to be his work, and that this was in 1875 or 1876. Huddleston, the sheriff of the county, testified that he had purchased plug-tobacco from Smith about that time, with Smith's name impressed upon it. The fact that the process was not used to a great extent, and not brought into more public notice, is explained by the further facts that Smith's manufacture was not of large extent, and that his establishment was closed by the internal-revenue officers in the spring of 1876, in consequence of sales charged to have been made by him without the proper stamp. We think that the alleged process of Smith is substantiated by the evidence, and that the decision of the case might be rested on his anticipation of the complainants' invention. But it is not necessary to rely on this branch of the case alone. Leaving the evidence in relation to Smith's process out of the case, the state of the art at the time of Miller and Worley's application for a patent, as already pointed out, was such as to leave no ground for its issue. What more did they do, at most, than to apply a process of stamping tobacco, which was already well known, to the same tobacco at a later stage in the process of manufacture? Did this entitle them to a patent? According to the ruling of this Court in *Pennsylvania R. R. Co.* v. *Locomotive Truck Co.* (110 U. S., 490) this question must be answered in the negative. That case is precisely in point. The contrivance for allowing the cars, in rounding a curve, to have a lateral motion so as to counteract the tendency to depart from the track, had been applied to passenger-cars but not to locomotives. Smith, the patentee in that case, obtained a patent for applying that same device to locomotives. We decided the patent to be void, and held, in general terms, that—

> the application of an old process or machine to a similar or analogous subject, with no change in the manner of applying it, and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated.

We adhere to that ruling, and the principle involved in it is fatal to the patent now under consideration.

The decree of the circuit court is affirmed.

U. S. Circuit Court—Southern District of New York.

HAWLOWETZ *v.* KASS.

Decided November 21, 1885.

1. MARKING ARTICLES PATENTED—PENAL STATUTE—CASE STATED.
   In an action brought, under the provisions of section 4901 United States Revised Statutes, to recover penalties for marking unpatented articles as patented with intent to deceive the public, wherein on trial the judge instructed the jury "that the defendant's patent did not embrace the article stamped," and refused to instruct "that the plaintiff was required to prove his case with the same particularity and exactness as on trial of an indictment."

2. CONSTRUCTION OF THE PATENT FOR THE COURT.
   Held, as to the instruction in reference to the defendant's patent, "it is clearly the duty of the trial judge to construe the patent and determine its scope and effect," there being not the slightest room for doubt upon the evidence that the patent did not cover articles such as was alleged had been stamped as patented by the defendant, and no question of the fact upon this point which could have been properly submitted to the jury.

3. EVIDENCE—CHARACTER OF PROOF.
   Held, as to instructions denied, "the instructions asked for in reference to the exactness and particularity of the proof required upon the trial of such an action called for the statement of a mere abstract proposition, and if it had been given by the judge would not have enlightened the jury without a further explanation respecting the practical application of the case in hand, assuming, however, as has been assumed by counsel on argument, that the request and refusal was in effect a refusal to charge the jury that the defendant's evidence must prove his case beyond a reasonable doubt, and should be held that the instruction was properly refused."

4. CASE OF CHAFFEE *v.* UNITED STATES (18 WALL., 516) COMMENTED ON AND EXPLAINED.
   Commenting upon the case of *Chaffee* v. *United States* (18 Wall., 516) the Court says such case "is sometimes cited by the text-writers as an authority, that in an action brought by the Government to recover a penalty the burden rests upon the Government to make out its case beyond a reasonable doubt." (Wharton E. V. sec., 371.) The syllabus in the report of that case is to this effect; but an examination of the opinion shows that no such point was considered by the Court. The only point decided was that the instructions in the court below were erroneous, because they were in substance "that the Government need only prove that the defendants were presumably guilty, and the duty thereupon devolved upon them be to establish their innocence, and if they did not they were guilty beyond a reasonable doubt."

5. EVIDENCE—RULE OF EVIDENCE IN QUI TAM ACTION.
   Commenting upon the effect of the evidence in suits for penalties, the Court says: "It is consonant with good sense to hold that in suits for penalties, as in all other civil actions, the effect of the evidence should be considered with reference to the character of the act with which the defendant is charged; that the gravity of the charge and the legal presumption of innocence be considered together, and that in analogy to the rule now more generally sanctioned in civil actions where an act of grave misconduct is imputed to a party, it should be deemed enough that the jury are reasonably satisfied upon the evidence as to all material facts."

Mr. Louis C. Raegener for the appellant.

Mr. Antonio Knauth and *Messrs. Briesen & Steele* for the appellee.

WALLACE, *J.*:

Upon the trial of this action in the district court a verdict was rendered for the plaintiff, and the defendant has brought this writ of error to review the judgment entered upon the verdict. The action was brought, under the provisions of section 4901, United States Revised Statutes, to recover penalties for marking unpatented articles as patented with intent to deceive the public. By the statute one-half the recovered is given to any person who may sue for the same and one-half goes to the United States. Upon the trial the judge instructed the jury, in substance, that they were to be reasonably satisfied upon the evidence as to the material facts upon which the plaintiff's right to recover depended—that is, whether the article was stamped as patented by the defendant, or by his employés under his directions, whether the article was unpatented, and whether it was stamped as patented by the defendant with intent to deceive the public. They were also instructed that the plaintiff could not recover, although the article stamped was not patented, if the defendant honestly believed that it was patented under a certain patent owned by him. They were further instructed that the defendant's patent did not embrace the article stamped. The defendant requested the judge to instruct the jury that the plaintiff was required to prove his case with the same particularity and exactness as on the trial of an indictment. The court declined to give this instruction. The defendant excepted to the court's refusal to instruct the jury as requested, and also to the instruction that the article in controversy was not covered by the defendant's patent. He now assigns this refusal to instruct and the instructions given as error.

As to the instruction in reference to the defendant's patent, it was clearly the duty of the trial judge to construe the patent and determine its scope and effect. There was not the slightest room for doubt upon the evidence that the patent did not cover articles such as it was alleged had been stamped as patented by the defendant. There was no question of fact upon this point which could have been properly submitted to the jury.

The instruction asked for in reference to the exactness and particularity of proof required upon the trial of such an action called for the statement of a mere abstract proposition, and if it had been given by the judge would not have enlightened the jury without a further explanation respecting its practical application to the case in hand. Assuming, however, as has been assumed by counsel on the argument, that the request and refusal was in effect a refusal to charge the jury that the plaintiff's evidence must prove his case beyond a reasonable doubt, it should be held that the instruction was properly refused. The question whether in a civil action brought to recover a penalty the case must be proved against the defendant, as in criminal cases, beyond a reasonable doubt has seldom been decided, and is one upon which the authorities disagree. In the case of *White* v. *Comstock* (6 Vermont, 405) it was held that such strict proof was not required, and that it was sufficient if the jury were reasonably satisfied upon the evidence. In *Hitchcock* v. *Munger* (15 N. H., 97) the contrary was held. In each of these cases the action was brought to recover penalties for taking usurious interest under a statute authorizing a recovery in treble the amount exacted. Both of the decisions were by courts of last resort.

The question does not seem to have been determined or considered by the federal courts, except at *nisi prius*. In *Nicoll* v. *Newell* (1 Fisher, 647,) Judge Sprague, in charging the jury, instructed them, in a case like the present, that the plaintiff must prove his case beyond a reasonable doubt. On the other hand, in suits for forfeiture tried in this circuit, the jury have been instructed, as they were in the present case, that it is

incumbent upon the plaintiff to establish his cause of action by the evidence to their reasonable satisfaction. In *Lilienthal's Tobacco* v. *The United States*, a case tried in this court and taken by writ of error to the Supreme Court—a forfeiture case in which the defendant was charged with acts in fraud of the revenue—the instruction was that the Government must show to the satisfaction of the jury that such intent to commit a fraud upon the law existed. (See 97 U. S., 257.) In the Supreme Court in that case the suggestion was considered whether the court below erred in not instructing the jury that they could not find that the property was forfeited unless the matters charged were proved beyond a reasonable doubt. Mr. Justice Clifford, who delivered the opinion, stated that the question was not properly raised by the exception or assignment of errors, but intimated quite plainly that there was no merit in the point. (Page 271.)

The case of *Chaffee* v. *United States* (18 Wall., 516) is sometimes cited by the text-writers as an authority that in an action brought by the Government to recover a penalty the burden rests upon the Government to make out its case beyond a reasonable doubt. (Wharton Ev., Sec. 371.) The syllabus in the report of that case is to this effect; but an examination of the opinion shows that no such point was considered by the Court. The only point decided was that the instructions in the court below were erroneous, because they were in substance—

> that the Government need only prove that the defendants were presumptively guilty, and the duty thereupon devolved upon them to establish their innocence, and if they did not they were guilty beyond a reasonable doubt.

Commenting upon the instructions given, Mr. Justice Field said:

> The instruction sets at naught established principles and justifies the criticism of counsel that it substantially withdrew from the defendants their constitutional right of trial by jury and converted what at law was intended for their protection—the right to refuse to testify—into the machinery for their sure destruction.

Upon principle it is not apparent why the rules of criminal evidence should be imported into the trial of actions of debt for penalties any more than in any other civil actions in which an issue of criminal conduct—such as arson, forgery, perjury, adultery, &c.—may be involved. The decisions in this class of cases are collated in Abbott's Trial Evidence, 495, (note,) and the author states the the rule followed by the greatest number of American authorities is that proof beyond a reasonable doubt, such as is required in criminal cases, is not necessary. In the federal courts it has been held that the rule in civil, and not the one in criminal, cases as to the quantum of proof applies. (*Scott* v. *Home Insurance Company*, 1 Dolf., 105; *Huchberger* v. *Merchants Insurance Company*, 4 Biss., 265.)

In many actions for penalties the issue does not involve an act of any appreciable degree of moral turpitude on the part of the defendant. Many statutes create penalties for acts of mere neglect in which the knowledge or intention of the offender is not an ingredient. The public welfare may require a rigorous enforcement of some statutes of this kind; but the transgressor is not a criminal, and it seems absurd, when he is charged in a civil suit with their infraction, to regard him as such and try him by the rules of criminal evidence. If one rule of criminal evidence is to apply, all should apply. If a jury are only to find a verdict upon a case proved beyond a rational doubt, then the defendant should be permitted to throw his character into the scale of conflicting probabilities and prove general good character to rebut circumstantial evidence of guilt. Yet it is well settled that evidence of general good character is not admissible in civil actions where the party offering it is charged with fraud or tort or criminal conduct; but it is only admissible in a direct prosecution for a crime. (*United States* v. *Wood*, 13 Blatch., 252.) (It is more consonant with good sense to hold that in suits for penalties, as in all other civil actions, the effect of the evidence should be considered with reference to the character of the act with which the defendant is charged; that the gravity of the charge and the legal presumption of innocence be considered together, and that in analogy to the rule now more generaly sanctioned in civil actions where an act of grave misconduct is imputed to a party it should be deemed enough that the jury are reasonably satisfied upon the evidence as to all material facts.) Such was in substance the instruction in the court below.

The judgment of the district court is affirmed.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic	.....	.....	Germany	5	2
Austria-Hungary	.....	.....	Holland	.....	.....
Barbadoes	.....	.....	Italy	.....	.....
Belgium	1	.....	Norway	.....	.....
Bermuda	.....	.....	Peru	.....	.....
British Columbia	.....	.....	Russia	.....	.....
Canada	6	.....	Scotland	2	.....
Chili	.....	.....	Sweden	1	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	1	.....	West Indies	.....	.....
Denmark	.....	1			
Ecuador	.....	.....	Total to citizens of foreign countries	27	3
England	9	.....			
France	1	.....			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	.....	.....	Nebraska	1	.....
Arizona Territory	1	.....	Nevada	.....	.....
Arkansas	1	.....	New Hampshire	1	.....
California	11	2	New Jersey	37	3
Colorado	4	.....	New Mexico Territ'y	.....	.....
Connecticut	13	1	New York	60	16
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Delaware	.....	.....	Ohio	40	3
District of Columbia	4	.....	Oregon	3	.....
Florida	1	.....	Pennsylvania	46	9
Georgia	2	.....	Rhode Island	6	.....
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	42	2	Tennessee	3	.....
Indiana	10	.....	Texas	2	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	12	.....	Vermont	.....	.....
Kansas	2	.....	Virginia	1	.....
Kentucky	3	.....	Washington Territ'y	.....	.....
Louisiana	1	.....	West Virginia	2	.....
Maine	5	.....	Wisconsin	7	.....
Maryland	4	1	Wyoming Territory	.....	.....
Massachusetts	40	3	United States Army	.....	.....
Michigan	13	.....	United States Navy	.....	.....
Minnesota	3	1			
Mississippi	.....	.....	Total to citizens of the United States	396	42
Missouri	10	1			
Montana Territory	.....	.....			

DESIGNS.

16,425.—TYPE.—*Charles H. Besler, Jr.*, Philadelphia, Pa., assignor to *The MacKellar, Smiths & Jordan Company*, same place. Application filed October 2, 1885. Serial No. 178,855. Term of patent 14 years.

16,426 and 16,427.—OPEN-WORK PANEL.—*Frederick Manley*, Williamsport, Pa. Applications filed November 13, 1885. Serial Nos. 182,762 and 182,763. Term of patents 7 years.

16,428.—OPEN-WORK PANEL.—*Frederick Manley*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,766. Term of patent 7 years.

16,429.—MOLDING.—*Frederick Manley*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,758. Term of patent 7 years.

16,430.—ORNAMENTATION OF FLANGES FOR HUBS.—*Jared Maris*, Columbus, Ohio. Application filed October 30, 1885. Serial No. 181,422. Term of patent 14 years.

16,431.—ORNAMENTATION OF FLANGES FOR HUBS.—*Jared Maris*, Columbus, Ohio. Application filed October 30, 1885. Serial No. 181,431. Term of patent 14 years.

16,432.—ORNAMENTATION OF FLANGES FOR HUBS.—*Jared Maris*, Columbus, Ohio. Application filed October 21, 1885. Serial No. 180,554. Term of patent 14 years.

16,433 to 16,435, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed November 21, 1885. Serial Nos. 183,564 to 183,566, inclusive. Term of patents 3½ years.

16,436 to 16,447, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed November 14, 1885. Serial Nos. 182,890 to 182,901, inclusive. Term of patents 3½ years.

16,448.—JEWELRY-CHARM.—*Gregory L. Ruff*, Pittsburg, Pa. Application filed October 26, 1885. Serial No. 181,014. Term of patent 14 years.

16,449.—TYPE.—*Edwin C. Ruthven*, Philadelphia, Pa., assignor to *David Wolfe Bruce*, New York, N. Y. Application filed December 13, 1884. Serial No. 150,313. Term of patent 14 years.

16,450.—COOKING-STOVE.—*William H. Wilkinson*, St. Louis, Mo. Application filed June 27, 1885. Serial No. 170,014. Term of patent 14 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,876.—PETROLEUM-OIL FOR ILLUMINATING PURPOSES.—*Chesebrough Manufacturing Company, (Consolidated,)* Brooklyn, N. Y. Application filed November 24, 1885.
"The word 'LUXOR.'"

12,877.—COSMETIC.—*Linnie C. Else*, Reading, Pa. Application filed November 28, 1885.
"The words 'PEARL OF BEAUTY,' in combination with a panel having concave sides and ends with a central semicircular annex above and below the sides, with a crown displayed in the face of the upper semicircle."

12,878.—MEDICATED TOILET PREPARATION.—*R. P. Lickes*, Steubenville, Ohio. Application filed November 25, 1885.
"The word 'CURA.'"

12,879.—CIGARS.—*Juan F. Portuondo*, Philadelphia, Pa. Application filed November 14, 1885.
"A pictorial representation of a plantation with field-hands, under the superintendence of a white overseer or planter, cultivating tobacco-plants, and the words 'JUAN F. PORTUONDO,' all inclosed in a circular border."

12,880.—LOTION FOR EXTERMINATING INSECTS AND CURING THEIR STINGS AND FOR RELIEVING PAIN.—*Sallade & Co.*, New York, N. Y. Application filed September 22, 1885.
"The words 'MAGIC MOSQUITO.'"

12,881.—ROASTED COFFEE.—*Toledo Spice Company*, Toledo, Ohio. Application filed September 29, 1885.
"The word 'GERMAN,' in connection with a black shield bearing the monogram consisting of the letters 'T. S. C. O.'"

12,882.—KID AND KID-FINISHED LEATHER.—*Richard Young*, Flatbush, N. Y. Application filed November 27, 1885.
"The figure of a goat and the words 'CEARA KID.'"

12,883.—SALVE OR OINTMENT.—*Mary Barrett*, Elgin, Ill. Application filed October 10, 1885.
"The words 'DR. PERDUE'S.'"

12,884.—BUTTER.—*Ellis Brothers*, Boston, Mass. Application filed June 26, 1885.
"The representation of a star."

12,885.—LIQUID PREPARATIONS FOR THE CURE OF VENEREAL AND URINARY DISEASES.—*Francis Kirsch*, St. Louis, Mo. Application filed November 20, 1885.
"The representation of a female figure and the word 'DIANA.'"

12,886.—ALUMINIUM PENS.—*William D. Marvel*, New York, N. Y. Application filed November 24, 1885.
"The arbitrary word 'NE-PEN-THE.'"

12,887.—STARCH.—*John M. Porter*, Boston, Mass. Application filed November 2, 1885.
"The figure of a star and two electric flashes or darts radiating in opposite directions therefrom."

12,888.—GUNPOWDER, EXPLOSIVE COMPOUNDS, CARTRIDGES, AND THE LIKE.—*Vereinigte Rheinisch-Westphälische Pulver-Fabriken*, Cologne, Germany. Application filed October 31, 1885.
"Two hexagon figures, with a third hexagon lying between and above the others, resting on their upper slopes, and each of said hexagons having in the center thereof a small shaded circle."

12,889.—NATIVE WINES AND BRANDIES.—*C. Anduran & Co.*, San Francisco, Cal. Application filed October 9, 1885.
"The letters and words 'UNCLE SAM.'"

12,890.—SHIRTS, SHIRT-WAISTS, AND DRAWERS.—*Wm. J. Bloomer*, New York, N. Y. Application filed November 21, 1885.
"The words 'THE KING OF SHIRTS.'"

12,891.—NON-CONDUCTING COMPOUND FOR COVERING HEATED SURFACES.—*William Berkefeld*, Hanover, Germany. Application filed July 1, 1885.
"Two crossed spears having pennants, and a star."

12,892.—COMPOUND FOR THE CURE OF DISEASES OF THE HEAD AND THROAT.—*William J. Bennet*, Cleveland, Ohio. Application filed November 19, 1885.
"The word-symbol 'ZERONA,' associated with two stalks of sugar-cane crossing each other."

12,893.—CORSETS.—*James Bowers*, Newark, N. J. Application filed November 9, 1885.
"The arbitrarily-selected word-symbols 'ELECTRO MAGNETIC,' displayed on a band which extends across the representation of a globe."

12,894.—SEWING AND EMBROIDERY SILK.—*The Brainerd & Armstrong Company*, New London, Conn. Application filed December 8, 1885.
"The arbitrarily-selected word 'ASIATIC.'"

12,895.—ELIXIR OR BITTERS.—*Harald Valdemar Mansfeld-Büllner*, sole proprietor of the firm of *Mansfeld-Büllner & Lassen*, Copenhagen, Denmark, and Washington, D. C. Application filed November 23, 1885.
"The arbitrary word 'BRAMA' or 'BRAHMA,' with or without the 'H.'"

12,896.—SPICE-MILLS.—*Jabez Burns & Sons*, New York, N. Y. Application filed December 3, 1885.
"The word 'CHALLENGE.'"

12,897.—WOVEN COTTON STRIPES AND PLAIDS.—*Samuel A. Crozer & Son*, Upland, Pa. Application filed December 8, 1885.
"The word 'ALABAMA.'"

12,898.—REFINED HARD SUGAR.—*De Castro & Donner S. R. Company*, New York, N. Y. Application filed December 2, 1885.
"The word 'DOMINO.'"

12,899.—CIGARS.—*David S. Erb*, Boyertown, Pa. Application filed December 2, 1885.
"The words 'THE CARVERS,' in combination with a representation of a crossed carving knife and fork."

12,900.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed November 6, 1885.
"The word-symbol 'CASTLE.'"

12,901.—LINIMENT, COUGH-SIRUP, LIVER-PELLETS, AND CORN-CURE. *Charles W. Horn*, Slatington, Pa. Application filed November 24, 1885.
"The arbitrary word 'TELEPHONE.'"

12,902.—BITTERS.—*A. M. Muth*, Red Bluff, Cal. Application filed November 13, 1885.
"The representation of a section of honey-comb with the queen-cell and the queen-bee within it."

12,903.—DOOR CHECKS AND SPRINGS.—*Norton Door Check and Spring Company*, New York, N. Y. Application filed November 11, 1885.
"The word 'NORTON.'"

12,904.—SOAP AND PERFUMES.—*Solon Palmer*, Jersey City, N. J. Application filed December 7, 1885.
"The words 'CHAUTAUQUA BOUQUET.'"

12,905.—ILLUMINATING, BURNING, AND LUBRICATING OIL.—*Henry W. Peabody & Co.*, Boston, Mass. Application filed December 4, 1885.
"The word 'CRESCENT.'"

12,906.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*Charles L. Pratt*, Minneapolis, Minn. Application filed November 9, 1885.
"An arbitrary symbol representing a Maltese cross having in its center a small cross and crown, the three representations being superimposed upon and surrounded by rays of light radiating therefrom."

12,907.—STOVE-POLISH.—*Gilbert M. Richardson*, New York, N. Y. Application filed November 19, 1885.
"The arbitrary words 'SILVER ORE LACQUER.'"

12,908.—BITTERS.—*C. F. Stadiger*, Philadelphia, Pa. Application filed December 7, 1885.
"A monogram made up of the initial letters 'C F S,' placed upon a medallion surmounted by an owl with wings outstretched and holding in his beak a pair of scales."

12,909.—VELVETEENS.—*Edward Walther*, New York, N. Y. Application filed December 5, 1885.
"The word 'MOLEVETEEN.'"

LABELS.

4,684.—Title: "DR. PERDUE'S SALVE."—*Mary Barrett*, Elgin, Ill. Application filed May 25, 1885. (Trade-Mark Registered.)

4,685.—Title: "IMPERISHABLE PASTE."—*Charles B. Campbell*, Newark, N. J. Application filed November 30, 1885.

4,686.—Title: "THESE GOODS ARE MANUFACTURED WITH GREAT CARE FROM WELL SELECTED COTTON AND ALL THE COLORS ARE FAST." (FOR COTTON-GOODS.)—*Samuel A. Crozer & Son*, Upland, Pa. Application filed December 5, 1885.

4,687.—Title: "PERMANENT BROMIDE PAPER."—*The Eastman Dry Plate and Film Company*, Rochester, N. Y. Application filed November 30, 1885.

4,688.—Title: "HEINZ'S" (FOR PICKLES, PRESERVES AND CONDIMENTS.)—*Henry J. Heinz*, Pittsburg, Pa. Application filed December 3, 1885.

4,689.—Title: "FROM F. & J. HEINZ PURVEYORS TO THE TRADE." *Henry J. Heinz*, Pittsburg, Pa. Application filed December 3, 1885.

4,690.—Title: "GENERAL DRAWING INK."—*Charles M. Higgins*, Brooklyn, N. Y. Application filed December 3, 1885.

4,691.—Title: "DR. C. C. JOSLIN'S LIVER PILLS."—*Chauncey C. Joslin*, Johnstown, N. Y. Application filed December 3, 1885.

4,692.—Title: "RIDGEWOOD RE-DISTILLING COS. D. D. RYE GIN." *Ridgewood Re-Distilling Company*, New York, N. Y. Application filed December 2, 1885.

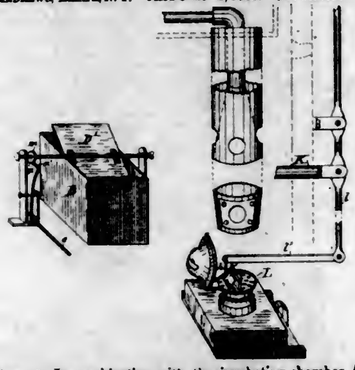
4,693.—Title: "CUSTOM MADE," (FOR CORSETS.)—*Thomson, Langdon & Co.*, New York, N. Y. Application filed December 8, 1885.

4,694.—Title: "FLEECE LINED" (FOR CORSETS.)—*Thomson, Langdon & Co.*, New York, N. Y. Application filed December 8, 1885.

PATENTS

GRANTED DEC. 29, 1885.

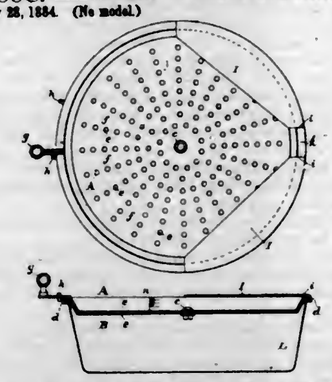
333,097. **AUTOMATIC HEAT-REGULATOR FOR INCUBATORS.** E. W. ANDREWS, Elmira, N. Y. Filed June 26, 1885. (No model.)



Claim.—1. In combination with the incubating-chamber A, thermostatic bar K, and pivoted lever *l*, the ventilator-valve D', pivoted and balanced, the pinion *m*, attached to the valve-shaft, the pivoted arm *n*, provided with the segmental rack *n'*, and the rod *o*, connecting the arm *n* with the lever *l*, substantially in the manner described and shown.

2. In combination with the incubating-chamber A, heating-chambers B B', thermostatic bar K, and lamp L, the cranked rod *h*, flame-checker *h'*, attached to said rod, the lever *l*, the arm *l'*, connecting said lever with the rod *h*, the ventilator-valve D', pivoted and balanced, the pinion *m*, attached to the valve-shaft, the pivoted arm *n*, provided with segmental rack *n'*, and the rod *o*, connecting the arm *n* with the lever *l*, all constructed and combined to automatically and simultaneously regulate the supply of heat to and escape of heat from the incubating-chamber, substantially as described and shown.

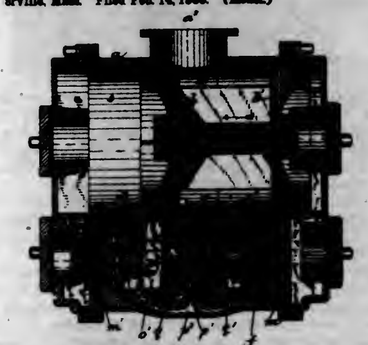
333,098. **MILK-SKIMMER.** MARY C. ATKINSON, Baltimore, Md. Filed May 28, 1884. (No model.)



Claim.—1. A milk-skimmer consisting of two circular plates, each having an upturned rim, the lower one of which is provided with a horizontal flange, and both plates having the flat surface within the rim perforated, and one plate fitting closely within the other, and the two pivoted together at the center to admit of partly turning, and means to limit the extent of the turning movement, as set forth.

2. A milk-skimmer having a perforated plate with a rim, and provided with a spout composed of two guard-plates attached to the rim in such position as to leave a space or opening between the adjacent ends of the plates, as set forth.

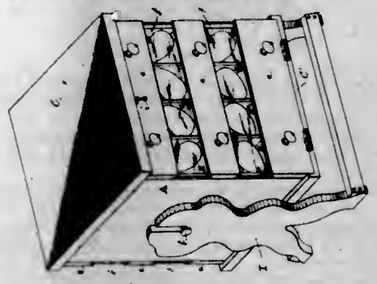
333,099. **PISTON-METER FOR FLUIDS.** HENRY H. BARTLETT, Somerville, Mass. Filed Feb. 14, 1885. (Model.)



Claim.—1. The combination of the piston-reversing valve having the large central opening and the inlet and outlet ports arranged in pairs at opposite sides of said opening, the casing having the induction and piston chambers, the fixed projection and its ports located in the central opening of the valve, and ports arranged substantially as described, whereby water may be conducted to either piston-chamber from the inlet and from the other piston-chamber to the outlet, the D-valve arranged on the fixed projection, and the pistons arranged to reciprocate said valve, as set forth.

2. The combination of the casing having the induction-chamber and piston-chambers, the ports *d d'*, communicating with the outer ends of the piston-chambers, the eduction-ports *q q'* in the lower portion of the casing, the fixed projection having the ports *l l'*, communicating with the ends of the casing, and the port *p*, communicating with the outlet, the D-valve resting on said projection, the connected pistons arranged to reciprocate said valve, and the piston-reversing valve having a central opening for the projection *p²*, and the ports *g h g' h'* at opposite sides of said central opening, as set forth.

333,100. **ROTARY EGG-PRESERVER.** GEORGE W. RAUMGARTNER, New Orleans, La. Filed Oct. 23, 1885. (No model.)



Claim.—1. In a rotating device for preserving eggs, a casing having covers connected with the diagonally-opposite angles thereof, said

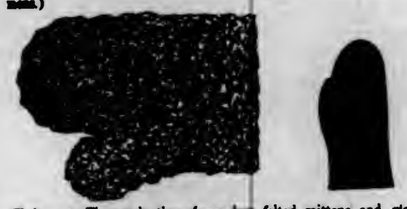
casing provided internally with egg-frames and intermediate boards, as described, and externally with end pins or trunnions, substantially as and for the purpose set forth.

2. In combination with a suitable frame having journal-bearings therein, the casing provided with end pins or trunnions adapted to operate in the aforesaid bearings, as described, the said casing provided with a pair of covers hinged at diagonally-opposite angles thereof, and furnished inside with a series of egg-frames and intermediate boards, the covers and casing being made air-tight, substantially as described.

3. A casing provided externally with end pins or trunnions, whereby it is adapted to be supported in a suitable frame, and internally with a series of egg-frames and intermediate boards, as described, the front and rear of the casing being provided with glass plates, substantially as and for the purpose specified.

333,101. MANUFACTURE OF FELTED MITTENS AND GLOVES.

Dempsey Beatty, Mishawaka, Ind. Filed June 12, 1882. (No specimens.)



Claim.—1. The production of seamless felted mittens and gloves by the use of bats of felted wool of the form of the hand, but of greater size, one bat being placed over the other, the placing between these bats of a pattern or former smaller than one or both of said bats and of the shape of the hand, but of larger size, and the felting and hardening of the bats while in this position, the withdrawing of the pattern or former, and the fulling in the ordinary manner, and by such fulling the mitten or glove being brought to the proper size, substantially as set forth.

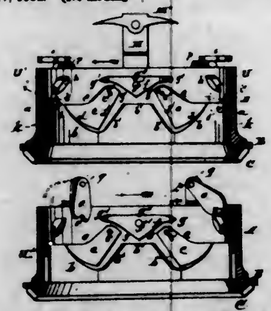
2. As a new manufacture, seamless felted mittens and gloves made substantially as described.

3. The process of making seamless felted mittens and gloves which consists in uniting, by felting together their edges, two bats of felted wool over a former larger than the hand, hardening and felting the bats upon the former, withdrawing the former, and then fulling the felt in the ordinary manner until by such fulling the mitten or glove is reduced to its proper size, substantially as set forth.

4. As a new article of manufacture, felted mittens and gloves made of two bats of felted wool, one bat, constituting the front or palm, being felted into the other bat, which latter bat constitutes the body of the mitten or glove, substantially as described.

333,102. KNITTING-MACHINE.

Edwin R. Bramson, Chicago, Ill. Filed Jan. 17, 1882. (No model.)



Claim.—1. The combination, with the needle-cylinder, needles, cam-cylinder, and needle-operating cams, of levers or lifters located below said cams, and levers or droppers located above said cams, said levers or lifters and levers or droppers being constructed to raise and lower the needles successively to render them acting and non-acting, substantially as described.

2. The combination, with the needle-cylinder, needles, cam-cylinder, and needle-operating cams, of the levers or lifters *i*, having notched ends and located on each side of the needle-operating cams, and the guides *k*, having notched ends and located above said levers or lifters, substantially as described.

3. The combination, with the needle-cylinder, needles, cam-cylinder, and needle-operating cams, of the levers or lifters located one on each side of the needle-operating cams, a stop or retainer for the levers or lifters to rest against, and means for adjusting the stop or retainer, substantially as described.

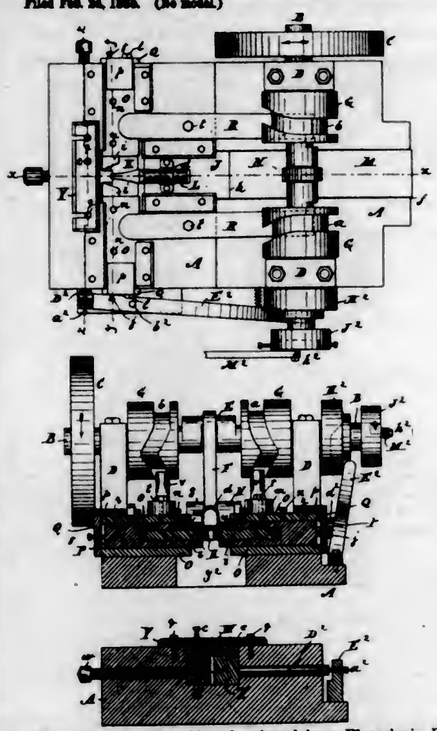
4. The combination, with the needle-cylinder, needles, cam-cylinder, and needle-operating cams, of a lever or depressor located above and at one side of the needle-operating cams, for automatically depressing or lowering the needles successively, substantially as described.

5. The combination, with the needle-cylinder, needles, cam-cylinder, and needle-operating cams, of the levers or droppers located one on each side of the needle-operating cams, for automatically engaging the heel of the elevated needles in succession and depressing them, substantially as described.

6. The combination, with the needle-cylinder, needles, cam-cylinder, and needle-operating cams, of the levers or droppers *o* and a retaining spring or catch therefor, substantially as described.

333,108. NAIL-MACHINE.

Lemuel Bradford, 3d, Plymouth, Mass. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a nail-machine, the pivoted lever E^2, push-pin D^2, blocks S T, cutters *i*, stocks P, blocks O, and header K, in combination with means for securing and adjusting the stocks P in the blocks O, securing and adjusting the blocks S T in their socket, and means for actuating said lever, cutters, and header, substantially as described.

2. In a nail-machine, the plate Y, provided with the clamping-screw *c*, the plate W, provided with the stud *s*, the blocks S T, screws *q*, and bed A, combined and arranged to operate substantially as set forth.

3. In a nail-machine, the stocks P, carrying the cutters *i*, in combination with the sliding blocks O and means for reciprocating said cutters, substantially as set forth.

4. In a nail-machine, the blocks O, carrying the stocks P, and provided with the plates Q, substantially as described.

5. In a nail-machine, the plates Q, provided with the adjusting-screws *j*, in combination with the blocks O and means for detachably connecting said plates to said blocks, substantially as and for the purpose set forth.

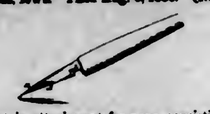
6. In a nail-machine, the blocks O, provided with the screws *n l*, stocks P, provided with the cutters *i* and screws *m*, plates Q, provided with the screws *j*, and the levers R, provided with the studs *v*, in combination with the cams G H^3, shaft B, lever E^2, push-pin D^2, blocks S T, header K, stock J, levers N M, pitman F, and body A, substantially as described.

7. In a nail-machine, the push-pin D^2, in combination with the pivoted lever E^2, blocks S T, cutters *i*, stocks P, blocks O, header K, cam H^3, shaft B, and operative mechanism, substantially as described.

8. In a nail-machine, the plate W, provided with the stud *s*, the block T, provided with an elongated slot for receiving said stud, means for securing said plate, and means for forcing said block against the block S to grasp the wire, substantially as described.

333,104. FOUNTAIN ATTACHMENT FOR PENS.

Edward A. Brandreth, Cedar Rapids, Iowa. Filed Aug. 6, 1885. (No model.)



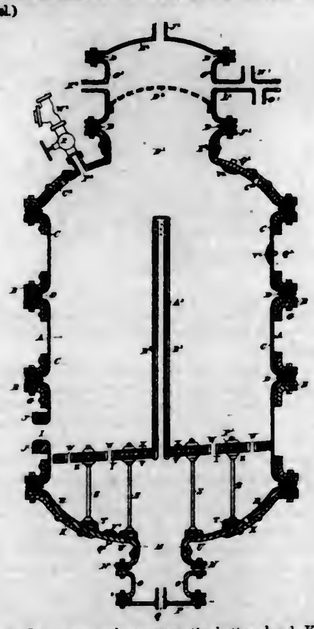
Claim.—1. A fountain attachment for pens, consisting of the plate A, having lugs *b b*, adapted to embrace the sides of the pen-shank, and a slotted lug, *a*, adapted to retain the nibs of the pen, substantially as and for the purpose set forth.

2. In a fountain attachment for pens, the plate A, having slotted lug *a* and lateral lugs *b b*, substantially as described, in combination with the tongue *c*, adapted to aid in retaining the ink and modify the flexibility of the pen, substantially as set forth.

3. As a new article of manufacture, the described fountain attachment for pens, consisting of the plate A, having terminal slotted lug *a*, lateral lugs *b b*, and tongue *c*, having the slit *c'*, substantially as and for the purpose set forth.

333,105. PAPER-PULP DIGESTER.

Charles Brenaker, Louisville, Ky., and Michael Zerr, Sr., New Albany, Ind. Filed Mar. 30, 1885. (No model.)



Claim.—1. In a paper-pulp digester, the bottom head, K, and top head, C', consisting of two parts each, convex in form, with the edges securely riveted to an additional thickness of the same material extending in from the flanges, to which it is riveted, sufficient to overlap the butted seam, and thereby answer as a means of connecting the heads and giving strength and rigidity to the projecting flanges, substantially as herein described, and for the purpose set forth.

2. In a paper-pulp digester, the flanges B B, made of rolled plate metal in two parts, one placed over the other, substantially as described, and for the purpose set forth.

3. In a pulp-digester, the combination of the chamber G', in the form shown, with its cap H' and branch J' on the top, and branches K' and L' on the sides, and branch N', to which a safety-valve may be attached, substantially as described, and for the purpose set forth.

4. In a paper-pulp digester, the branch pipe P', vacuum-valve W, and steam-valve P^2, connected with the top of the digester, substantially as described, and for the purpose set forth.

5. In a pulp-digester having a perforated false bottom, V, the surface lead lining X X and small lead pipes Y Y, by means of which the holes are lined, substantially as described, and for the purpose set forth.

6. In a pulp-digester, the small composition pins P^2 P^2, screwed into the false bottom V, against which the composition washers Z and T rest, substantially as described, and for the purpose set forth.

7. In a pulp-digester, the supporting stand-bolts S S, upon which the false bottom V rests, with the composition washers Z and T on the ends and under the collars, substantially as described, and for the purpose set forth.

8. In a paper-pulp digester, the metal pipe A' in the center of the false bottom V, and lead lining B', substantially as described, and for the purpose set forth.

9. In a pulp-digester, the composition anchor-plates or washer-formed nuts V^1, and bolts Q', for holding the lead lining C C to the inner surface of the digester, substantially as described, and for the purpose set forth.

10. In a paper-pulp digester, the manner of arranging the long and short bolts in bolting the rings together, commencing with the bottom flanges, by inserting a long bolt, H, in about every fifth hole, which bolt is long enough to pass through the bottom flange and up through the flanges of the first and second rings, thereby constituting the first one of a series of similar long bolts, H, inserted side by side to the right and left in each set of flanges, extending up in like manner through the upper head, with screw-nuts on each end above and below each set of flanges, with the spaces between the long bolts H at the bottom filled with three short bolts G, but the other flanges above have only two short bolts G between each until the top head-flanges are reached, which will require three, thereby securing the digester from end to end, substantially as described, and for the purpose set forth.

11. In a pulp-digester, the combination of the flanged-chamber O, cap-plate P, and pipe-connection Q, substantially as described, and for the purpose set forth.

12. In a pulp-digester, the lead gasket or ring D, having small convex raised rings F around the bolt-holes and two raised rings, F' F', on the faces inside of the bolts, on a line with the ring, substantially as described, and for the purpose set forth.

333,106. MACHINE FOR ROLLING NUT-BLANKS.

Frederick H. Brown, Buffalo, N. Y. Filed Dec. 20, 1884. (No model.)

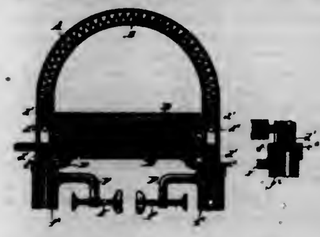


Claim.—1. A pair of rolls for rolling iron to form nuts, upon one of which are arranged at intervals annular recesses with central raised bosses therein, the other roll having a corresponding number of bosses for forcing the metal into the annular recesses as the bar is passed between the rolls, all arranged and operating substantially as shown and described.

2. The combination, with the roll having the side bearing-surfaces, *e e*, the depressed central portion, *e'*, and the series of bosses e^2, of the roll having the side bearing-surfaces, *f f*, the raised central portion, *f'*, and the series of annular recesses f^2, and central raised bosses, f^3, the rolls being arranged and operating substantially as and for the purpose stated.

333,107. CLOTHES-WRINGER.

Worthington Bulkley, Cleveland, Ohio. Filed Dec. 13, 1883. (No model.)

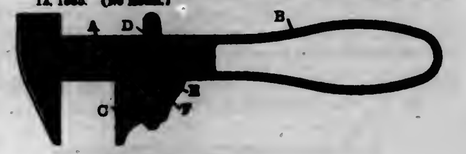


Claim.—1. In a wringer, the combination, with frame, rollers, and bearings, of an arching spiral spring, B, substantially as shown, and as herein set forth.

2. In a wringer, the combination, with frame, springs, rollers, and sliding bearings, of horizontally-swinging and vertically-adjusting clamps F F, substantially as shown, and for the purpose set forth.

333,108. WRENCH.

Robert S. Carr, Hamilton, Ohio. Filed Oct. 12, 1885. (No model.)



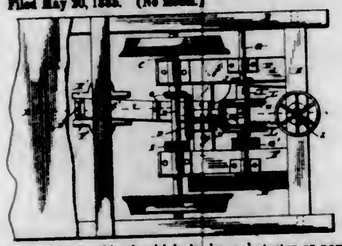
Claim.—1. In a wrench, the combination of a parallel wrench-bar provided with a handle and a fixed jaw, a movable jaw fitted to slide along the wrench-bar, and a bridle encircling the bar and movable jaw; and having its lower end articulated to the movable jaw in the manner described, whereby when the movable jaw is moved from the fixed jaw the bridle will be tipped and will clasp the parts, as described.

2. In a wrench, the combination of a wrench-bar provided with a handle and a fixed jaw, a movable jaw engaging against the lower edge of the wrench-bar, and having ears engaging the sides of the wrench-bar, and a rectangular bridle engaging around the wrench-bar, and the movable jaw, as described, and provided with intermediate portions adapted to engage the rearward ears of the movable jaw when the same is moved along the wrench-bar toward the fixed jaw of the wrench, substantially as described.

3. In a wrench, the combination of a wrench-bar provided with a fixed jaw and a handle, a rectangular bridle surrounding the wrench-bar, and a movable jaw held to the wrench-bar by the bridle, and having a necked portion, as described, for permitting the turning of the bridle when the same is being applied to the movable jaw, substantially as and for the purposes described.

4. In a wrench, the combination of a parallel wrench-bar provided with a fixed jaw, a handle, and a centrally-disposed serrated rib upon its back, a movable jaw upon the wrench-bar, and a bridle articulated to the movable jaw, as described, and adapted to clamp the movable jaw to the wrench-bar, substantially as and for the purposes described.

333,109. **CAR BRAKE AND STARTER.** WILLIAM M. CASE, Carlock, Texas. Filed May 20, 1885. (No model.)



Claim.—1. In a combined vehicle brake and starter or power-storage machine, the combination, with a vehicle-body, of a swing or oscillating frame, a shaft mounted in the said frame and having one or more springs adapted to be wound thereon, a sleeve arranged to slide laterally upon the said shaft and having a pair of bevel-gears facing each other, a stationary shaft having a pinion adapted to engage either one of the said bevel-gears, and a miter-gear meshing with a pinion upon a transverse shaft, a pinion upon the latter shaft adapted to engage a pinion upon one of the car or vehicle axles, and means, substantially as described, for manipulating the said oscillating frame, substantially as and for the purpose set forth.

2. In a combined vehicle brake and starter or power-storage machine, the combination, with the vehicle-body, of a swinging or oscillating frame having a transverse shaft equipped with one or more springs adapted to be wound thereon, a train of gears adapted to connect the said shaft with one of the vehicle-axles, a ratchet-wheel upon the said shaft, a stud or dog mounted upon a spring and adapted to engage the said ratchet-wheel, and a longitudinally sliding and vibrating frame connected with and adapted to operate the oscillating frame and having a laterally-extending pin adapted to engage and operate the spring carrying the stop stud or dog, substantially as herein described, for the purpose set forth.

333,110. **ELECTRICAL CONDUCTOR.** EDWARD CLARK, Newburg, N.Y. Filed Apr. 25, 1885. (No model.)



Claim.—1. An electrical conductor consisting of a wire provided with an insulating-coating composed of emery and a binding material, substantially as set forth.

2. An electrical conductor consisting of a wire provided with an insulating-coating composed of emery and a binding material, the said coating being vulcanized on the wire, substantially as set forth.

3. An electrical conductor consisting of a wire provided with an insulating-coating consisting of emery, rubber, tar or asphalt, and sulpher, substantially in the proportions set forth, vulcanized on the wire.

333,111. **CONDUCTOR.** EDWARD CLARK, Jersey City, N.J. Filed Aug. 15, 1884. Renewed May 19, 1885. (No model.)



Claim.—1. An insulator for electric conductors, consisting, essentially, of corundum and a binding agent, substantially as described.

2. An electric conductor covered or coated with an insulator consisting of corundum and a binding agent, substantially as described.

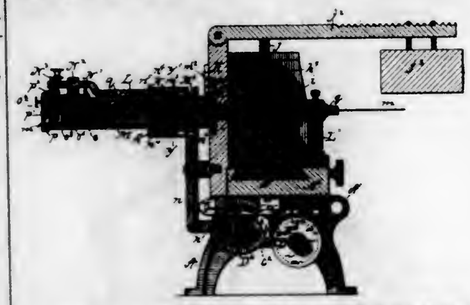
3. An electric conductor having an insulating covering composed of corundum and tar or asphaltum, substantially as described.

4. An electric conductor having an insulating coating consisting of strips of fabric coated or impregnated with corundum and a binding agent, such as tar or asphaltum.

5. An electric conductor having an insulating coating consisting of strips of fibrous material coated or impregnated with a composition consisting of corundum, tar or asphaltum, rubber cement, and naphtha, substantially as described.

333,112. **MACHINE FOR BENDING AND FORMING WIRE.** WILLIAM B. CURTISS, Danbury, Conn., assignor to William B. Curtiss & Co., same place. Filed Oct. 1, 1885. (No model.)

Brief.—Improvement on Patent No. 283,327, dated August 14, 1883. The wire is forced by the conical feed-rolls through gripping-rolls, then through guiding-rolls and under a bending-roll. The guiding and bending rolls are mounted in an oscillating sleeve, and the bending-roll is reciprocated across the end of the oscillating sleeve. The rate of feed is varied by adjusting the conical rolls.



Claim.—1. In combination with the frame of a wire-bending machine, a feed-roll frame bearing feed-rolls that are adjustable across the path of the wire and the within-described driving mechanism, all substantially as described.

2. In combination with the frame of a wire-bending machine, and substantially the within-described driving mechanism, a feed-roll frame bearing tapered rolls with a series of corresponding grooves of various lengths, and the feed-screw whereby the roll-frame is adjusted in the direction of the meeting line of the rolls, all substantially as described.

3. In combination, the frame of a wire-bending machine, a longitudinally-adjustable roll-frame, the feed-rolls having corresponding peripheral grooves of various lengths, the roll-bearings vertically adjustable in the standards of the roll-frame, the roll-shaft connected to the sliding driving-spindle by a universal joint, the feed-screw, and the driving mechanism of shafts and intermeshed gear-wheels, substantially as described.

4. In combination, the frame of a wire-bending machine, the feed-roll frame bearing feed-rolls adjustable across the path of the wire, the roll-bearings borne in the standards, the springs whereby the rolls are held apart, the roll-shafts with intermeshing gears, the shaft of one roll connected to the sliding driving-spindle by a universal joint, and the driving mechanism, all substantially as described.

5. The combination of the frame of the wire-bending machine, the feed-screw, the adjustable roll-frame bearing the tapered rolls with corresponding peripheral grooves, and with their meeting faces in a line passing through the axis of the wire as it is fed through the machine, the spring-separated roll-bearings, and the yoke, lever, and weight, whereby the grasp of the rolls upon the wire is adjusted, all substantially as described.

6. In combination, the frame of the wire-bending machine used, the feed-screw, the adjustable roll-frame, the rolls mounted in the frame and having a series of corresponding grooves of various lengths, and the scale fast to the machine-frame and bearing marks, whereby the rolls may be placed with a groove of a given length in the plane of the axis of the wire in the quill, all substantially as described.

7. In combination with the cam-shaft D, the cam-block D^2, having a removable sectional shell bearing the cam-groove D^3, the oscillating sleeve bearing the bending device, and the intermediate mechanism connecting the said cam-block and sleeve, all substantially as described.

8. In combination with a rotary shaft bearing a cam, a lever with the distance constant from the fulcrum or pivot to the end engaging the cam, and having an extensible arm clamped to the lever and engaging at its outer end the sliding rack of the oscillating mechanism of the wire-bending machine, and the sleeve bearing the wire-bending device, all substantially as described.

9. In combination, in a wire-bending machine, the cam-shaft D, the cam D^2, with cam-groove D^3, the extensible lever n^3, with the arm m^6 of fixed length, the extensible arm m^3, the clamp-screw m^2, the sliding rack m^{12}, engaged and moved by the upper arm of the lever, and the sleeve bearing the bending device, all substantially as described.

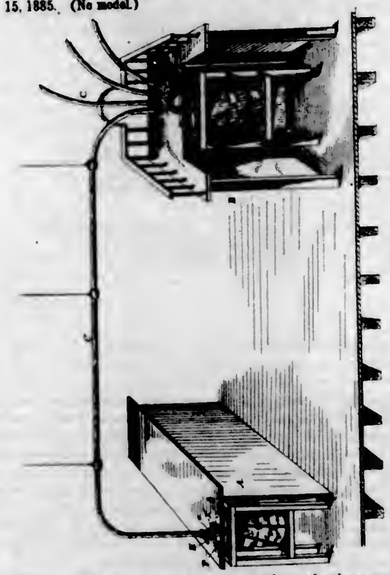
10. In combination with the sliding rack of the wire-bending machine, the cog-wheel supported on the horn fast to the frame, and having a peripheral groove in its hub, and the sleeve carrying bending mechanism and arranged outside the horn and hub, and bearing clamp-screws that take into the groove in the hub, whereby the sleeve is detachably secured to the hub of the gear-wheel of the oscillating mechanism, all substantially as described.

11. In combination with the oscillating gear-wheel having the hub held against endwise play on the horn of the wire-bending machine, the sleeve outside the horn carrying bending mechanism and detachably secured to the horn by clamp-screws taking into a groove in the hub, all substantially as described.

12. In combination, in a wire bending and forming machine, the horn L, the sleeve M, carrying bending mechanism, and with lugs extending into the spring-sockets in the collar N, the collar N, and the springs n^4, seated between the lugs and the end wall of the socket in the collar, all substantially as described.

13. In combination, in a wire bending and forming machine of the within-described class, the horn bearing the quill-extension with flaring outlet, and the oscillating sleeve bearing the bending-roll, all substantially as described.

333,113. **PNEUMATIC CASH-CARRIER.** WILBUR G. DAVIS, Cambridge, assignor of one-half to Wm. M. Hinman, Boston, Mass. Filed May 15, 1885. (No model.)



Claim.—1. In cash-carriers for store-service and other purposes, a tube leading from the salesman's counter or other station to the cashier's desk, adapted to be engaged with a bellows at either end, as described, whereby the cash box or carrier is made to travel in either direction toward or from the cashier's desk, as set forth.

2. The counter A, having a bellows, D, located thereunder, provided with a nipple, F, leading through the top of the counter, and the double tubes H and I, adapted to be brought under the tube C, as set forth.

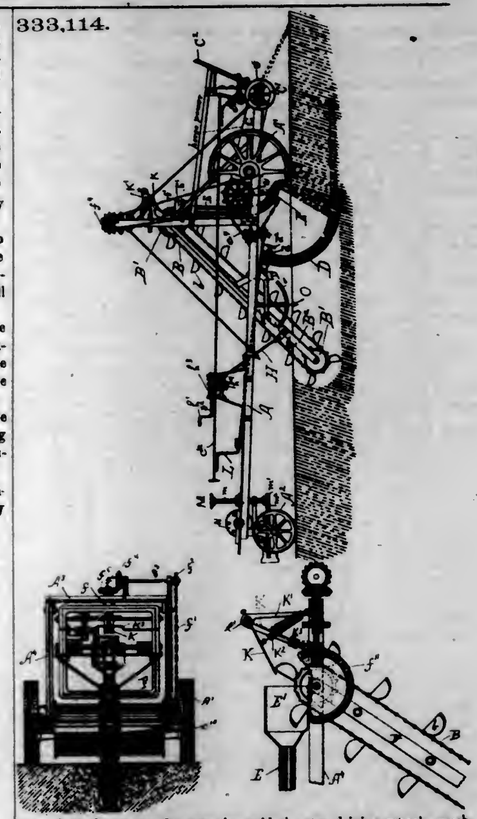
3. The bellows D, having the nipple F and pipe H hinged thereto, in combination with the pipe C, as set forth.

4. In devices for transmitting carriers from the cashier's desk to stations or counters in the store, the bellows D, located under the cashier's desk, provided with a flexible hose and nozzle, K, adapted to receive the cash box or carrier and be inserted into the main tubes or pipes C, as set forth.

333,114. **DITCHING AND TILE-LAYING MACHINE.** JAMES T. DOUGLASS, Chicago, Ill. Filed Feb. 16, 1885. (No model.)

Claim.—1. The improved ditching and tiling machine, consisting in the combination of an excavating elevator or ditch-cutter, with a curved tile-laying spout suspended therefrom, a discharge-spout adapted and arranged to deliver the dirt or excavated material upon the lower or rear end of said tile-laying spout and upon the tile issuing therefrom, a tread or other power for operating said elevator, driving-wheels, mechanism operated by said power to propel the machine forward as the ditch is cut, and steering-wheels and mechanism for operating the same, substantially as specified.

333,114.



2. The combination, with an excavating elevator or ditcher, of a tile-laying spout suspended therefrom, substantially as specified.

3. The combination, with an excavating elevator or ditcher, of a quadrant-shaped tile-laying spout, the lower end of said spout occupying a horizontal position, while its upper end remains vertical, whereby the tile are delivered into the ditch in a horizontal position by their own gravity, and said spout being suspended from said elevator, substantially as specified.

4. The combination, with an excavating elevator or ditcher, of a quadrant-shaped tile-laying spout, the lower or rear end of which extends back of the point of discharge, so that as the dirt is discharged from said elevator it will fall upon the rear end of said spout and upon the tile issuing therefrom, and thus serve to pull the tile from the spout, and to prevent their being drawn forward by the advancing spout, substantially as specified.

5. The combination, with an excavating elevator or ditcher, of a quadrant-shaped tile-laying spout suspended pivotally therefrom, substantially as specified.

6. The combination, with an excavating elevator or ditcher, of a curved telescopic pivoted tile-laying spout, substantially as specified.

7. The combination, with an excavating elevator or ditcher, of a curved spout and a pivoted ring from which said spout is suspended, substantially as specified.

8. The combination of excavating elevator-frame B^2, bracket D', ring *d*, and curved tile-laying spout D, substantially as specified.

9. The combination of a curved sliding tile-laying spout, C, with a pivoted ring in which it is mounted, substantially as specified.

10. The combination of an endless belt or chain bucket-elevator with a vibrating pivoted or hinged bucket-clearer blade or scoop and a stop to limit its upward vibration, substantially as specified.

11. The combination of an endless belt or chain bucket-elevator with a pivoted or hinged bucket-clearer blade or scoop and a spring for restoring the same to position, substantially as specified.

12. The combination of an endless belt or chain bucket-elevator with a pivoted or hinged bucket-clearer blade or scoop, and a spring for

restoring the same to position, and a stop or rest to limit its backward movement, substantially as specified.

13. The combination of endless elevator-chain B, having buckets *b*, sprocket-wheel B', stationary bracket K', bucket-clearing blade K, pivoted thereto, stop or rest *k*, and spring *k'*, substantially as specified.

14. The combination, with a swiveling frame, of an endless-chain elevator having its end mounted therein, and a vibrating pivoted bucket-clearer, K, mounted on an arm or bracket extending from said swiveling frame, and a stop to limit the upward vibration of said bucket-clearer, substantially as specified.

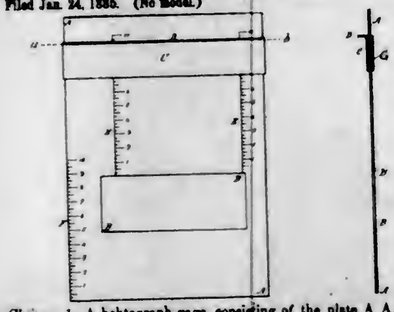
15. The combination of an excavating-elevator mounted on a carriage with a curved tile-laying spout, a windlass for raising and lowering the digging end of said elevator, a discharge-pipe, a pivoted bucket-clearer blade, K, and a plumb-line, O, and graduated arc, substantially as specified.

16. The bucket-discharge consisting of the vibrating pivoted blade K and a stop to limit its upward vibration, substantially as specified.

17. The bucket-discharge consisting of the pivoted blade K, in combination with spring K^2 and stop K^3, substantially as specified.

18. The combination, with the driving-shaft *c'*, of the gears c^3, shaft c^4, worm c^5, gear c^6, shaft c^7, sprocket-wheel c^8, chain c^{10}, and drive-wheels A', carrying said chain, substantially as specified.

333,115. HEKTOGRAPH-GAGE. FRANK M. DUNBAR, Titusville, Pa. Filed Jan. 24, 1885. (No model.)



Claim.—1. A hektograph-gage consisting of the plate A A, with the opening B B, and slide C, with the raised rim D, all operating substantially as shown and described.

2. A hektograph-gage consisting of the plate A A, with the opening B B, and slide C, with the raised rim D, and with the scales E E and F, all operating substantially as shown and described.

333,116. SPRING-BED. JOHN F. DUER, Green Island, N. Y. Filed Mar. 2, 1885. (No model.)



Claim.—1. In bed-bottoms, the combination of outer frame-sections carrying lugs G, and intermediate ones carrying links L, slotted at *a a*, said lugs and links being held together by screws and nuts, substantially as shown and described.

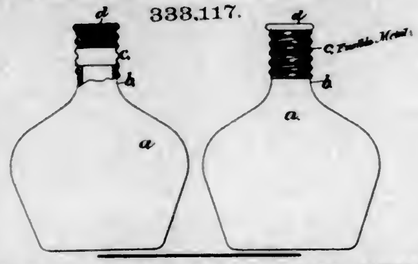
2. In a spring-bed provided with spring-supporting slats, the combination of elongated slots or openings therein, with coiled-wire springs and securing-bolts adapted to pass through said openings for the purpose of adjustably securing the springs to the slats, substantially as described.

3. The springs S, having end loops, and the frame-sections A A, having slots C, in combination with bolts passing through said loops and slots, the same being held by detachable nuts, as and for the purpose set forth.

333,117. GRENADE. JAMES L. ELY, Jersey City, N. J., assignor, by direct and mesne assignments, of three-fourths to William C. Spalman and George E. Stevens, both of New York, N. Y. Filed May 9, 1885. (No model.)

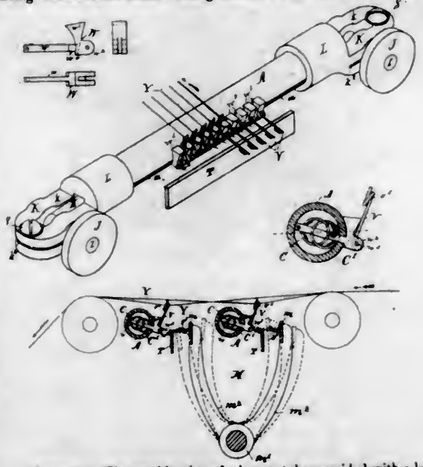
Claim.—In an automatic discharging grenade, the combination of a portion of the neck or body of the grenade composed of fusible metal, the whole forming the receptacle, substantially as herein set forth.

333,117.



333,118. EXPANSION DROP-WIRE FOR WARPING-MACHINES. THOMAS C. ENTWISTLE, Melrose, Mass. Filed Sept. 20, 1884. (No model.)

Brief.—Within a tube slotted on the side towards the warp-beam is placed a pair of springs wound together, and between the coils of the springs the shanks of the drop-wire brackets are inserted, the bracket being guided and held in the spring by guide and stop rods. Each bracket is provided with a head shaped to fit the outside of the tube, and has ears between which the drop-wires are pivoted. The drop-wire brackets may be expanded by means of a strap on each end of the spring and passing around small drums turning in brackets at each end of the tube.



Claim.—1. The combination of a box or tube provided with a longitudinal slit, springs placed within said box, drop-wire brackets having shanks placed in said slit between the coils of said springs, drop-wires having yarn-eyes and pivoted to said brackets, the straps connected, substantially as described, to said springs, the heads secured to said box or tube and provided with drum-supporting brackets, the drums turning in said brackets last named, said last-named brackets being slit in the plane of the axes of said drums, and means, substantially as described, of closing the sides of said slit upon said drums, said drums being connected to said straps, as and for the purpose specified.

2. The combination of a box or tube provided with a longitudinal slit, springs placed within said box, drop-wire brackets having shanks placed in said slit between the coils of said springs, drop-wires having yarn-eyes and pivoted to said brackets, the straps connected, substantially as described, to said springs, the heads secured to said box or tube, and provided with drum-supporting brackets, the drums connected to said straps and turning in said brackets last named, said last-named brackets being slit in the plane of the axes of said drums, and a clamp-screw turning freely in the part of the bracket on one side of the slit, and screwing into the part of the bracket on the other side of said slit, as and for the purpose specified.

333,119. PIPE FOR FLOORINGS, CEILINGS, AND OTHER BUILDING PURPOSES. FERDINAND EPHRAIM, San Francisco, Cal. Filed May 13, 1885. (No model.)

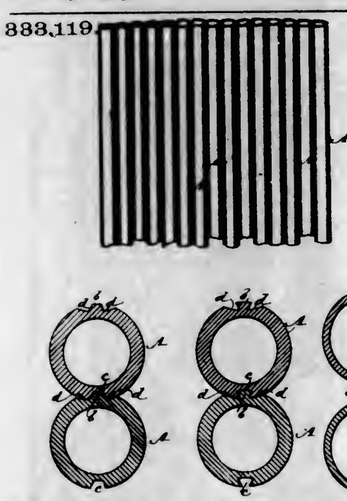
Claim.—1. The pipes provided with longitudinal tongues and grooves in or on their exterior surfaces, and adapted to engage with one another when the pipes are in parallel relation with one another side by side, substantially as specified.

2. A pipe for building purposes having a longitudinal tongue in or on one side and a longitudinal groove or socket in or on the opposite sides of its exterior surface, essentially as herein set forth.

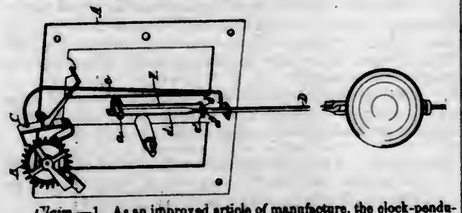
3. The combination of a series of iron or other metal pipes arranged side by side in parallel relation with each other, and provided with matching or interlocking tongues and grooves in or on and along their exterior surfaces, substantially as specified.

4. A pipe for building purposes having a longitudinal tongue of dovetail shape in transverse section on its one side and a longitudinal groove of corresponding shape on the opposite side of its exterior surface, essentially as described.

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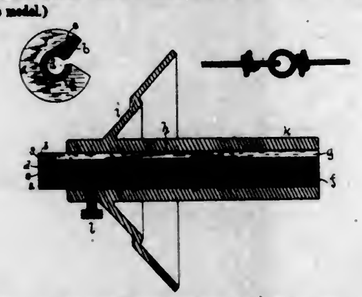
333,120. CLOCK-PENDULUM PROTECTOR. LARS ERICSON, Chicago, Ill. Filed Aug. 21, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the clock-pendulum guard E, having its lower end bent at right angles, or approximately so, to the shank, and slotted, as described, and the upper end perforated, as at *e*, substantially as described, and for the purposes set forth.

2. The combination, with a clock-pendulum provided with a shoulder, *d'*, or its equivalent, and the stud by which the pendulum is suspended, of the guard E, loosely connected with said pendulum by means of the slot e^2 and loosely suspended from said stud, substantially in the manner and for the purposes specified.

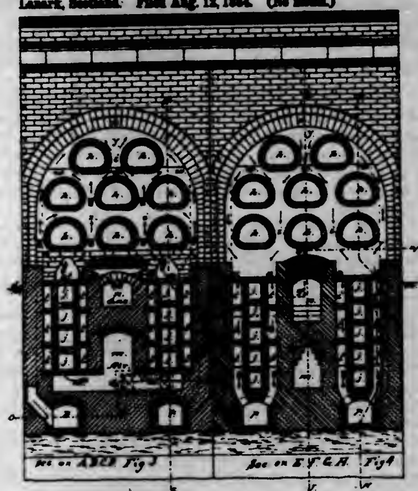
333,121. TWISTER-HEAD FOR MACHINES FOR FORMING INTERLOCKING EYES. ROBERT FARIES, Decatur, Ill. Filed Nov. 10, 1885. (No model.)



Claim.—1. The twister-head herein set forth, having recess *e* of the comparative size specified, drive-shoulder *c*, obstructive surface *b*, and suitable means of preventing longitudinal retrograde motion in the head, for the purpose specified.

2. The twister-head herein set forth, having recess *e* of the comparative size specified, drive-shoulder *c*, obstructive surface *b*, bevel *d*, and suitable means of preventing longitudinal retrograde motion in the head, for the purpose specified.

333,122. RETORT-FURNACE. WILLIAM FOWLER, Glasgow, County of Lanark, Scotland. Filed Aug. 13, 1884. (No model.)

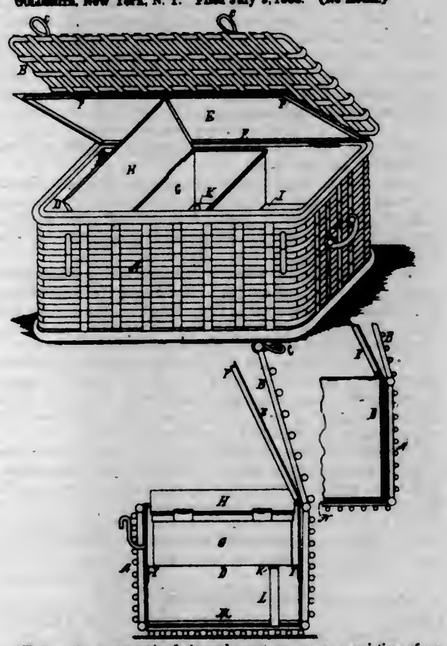


Claim.—1. A retort-furnace having gas and air ports arranged on each side of the gas flue or chamber, in combination with division-walls leading upward from the ports among the retorts and supporting them, as and for the purposes described.

2. A gas-retort furnace having the large openings *o* for the gas, the gas-flue *n*, the large air-openings *r* on each side thereof, and air-flues *j*, as and for the purpose described.

3. A gas-retort furnace having openings *o* and flue *n* for the gas, the large openings *r*, and the flues *j*, the channels formed by the retort-supporting wall *w* and the retort-supporting wall *w'*, which is carried down to the top of the regenerative furnace, as and for the purpose described.

333,123. PORTABLE MEAT AND FRUIT PRESERVER. JAMES GOLDSMITH, New York, N. Y. Filed July 9, 1885. (No model.)



Claim.—1. A portable fruit and meat preserver consisting of an outer strengthening and protecting case, A, provided with a cover, an inner metallic case, D, provided with a cover separate and distinct from the cover of the outer case, and an ice-box, G, located within the inner case, D, substantially as and for the purposes set forth.

2. A portable fruit and meat preserver consisting of an outer strengthening and protecting case, A, provided with a cover and handles, an inner metallic case, D, provided with a cover, an independent movable ice-box, G, placed within the case D, and supported on brackets I at the upper part of the case D, substantially as and for the purposes set forth.

3. The combination, in a portable fruit and meat preserver, of a basket-work outer case, A, provided with a cover and with handles, an independent interior metallic case, D, removable from the case A, and an ice-box, G, provided with a cover and placed within the case D, the cover for the ice-box being attached thereto and separate and distinct from the covers of the outer and inner case, substantially as and for the purposes set forth.

4. A fruit and meat preserver consisting of an exterior strengthening and protecting case, A, provided with a cover, an interior case, D, provided with a cover, an ice-box, G, placed within the case D, and provided with escape-pipe K and water-leader L, substantially as and for the purposes set forth.

5. A portable meat and fruit preserver consisting of an external strengthening and protecting case, A, provided with handles, and having a cover provided with fastening devices, an internal metallic case, D, removable from the outer case, A, and provided with a cover, an independent removable ice-box, G, provided with a cover and having a water-escape pipe, K, and slat-work placed in the bottom of the case D, substantially as and for the purposes set forth.

6. The combination, in a meat and fruit preserver, of an internal metallic case, D, an independent movable ice-box, G, and brackets I, for supporting the ice-box in any desired position in the case D, substantially as and for the purposes set forth.

7. The combination, in a portable fruit and meat preserver, of an internal metallic case, D, provided with a perforated bottom and slat-work in the bottom thereof, whereby the contents of the case will be held up from the bottom thereof, and an external perforated protecting and strengthening case, A, provided with a cover, and handles whereby the same may be easily carried or moved, substantially as and for the purposes set forth.

8. The combination, in a portable meat and fruit preserver, of a basket-work external case, A, provided with handles, and a cover which surrounds and protects an internal metallic case, D, also provided with a cover, for the reception of the meat and fruits, and an independent removable ice-box provided with a cover, and placed within the interior case, D, substantially as and for the purposes set forth.

9. A portable fruit and meat preserver consisting of an external basket-work case, A, provided with a cover and handles, surrounding an internal metallic case, D, provided with a cover, an independent removable ice-box provided with a cover and placed within the case D, and a slat-work frame, M, placed within the bottom of the case D, whereby its contents will be held up from the bottom of the case D, substantially as and for the purposes set forth.

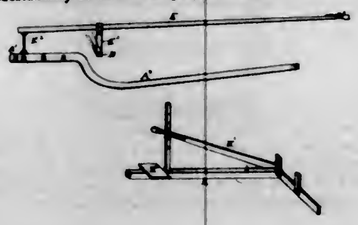
333,124. HARVESTER. Christopher Grattan, Stockton, Cal. Filed May 20, 1884. (No model.)

Claim.—1. A frame adapted for a combined harvesting-machine, said frame composed of the cross-beams B, C, B', and B^3, longitudinal beams 8, $8'$, 8^2, 8^3, and 8^4, pushing-tongue A with platform H^3, and platform D, parallel with beam 8^4, and attached to outer ends of beams C and B', all substantially as set forth.

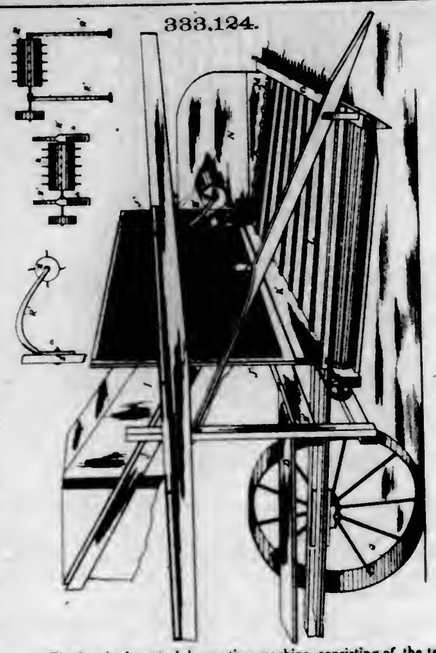
2. The combination, with the diagonal brace A', attached to the tongue A and cross-brace A^2, and connected with the beams 8^2 and 8^3 by the angular iron braces A^3 and A^4, of the lever E, connected to the brace A' by means of the swinging link E^2, and having its fulcrum in vertical post E', seated upon beam B, substantially as set forth.

3. The combination, with the cylinder P, feeding-draper M, fender-board N at the side of draper M, of the rotary feed-roller R, attached to posts 8^2 8^3 by means of angular arms R' R', provided with slots and attached to posts 8^3 by bolts *a*, whereby its position over the cylinder P and feeder M may be regulated, substantially as shown.

4. The combination of vertical posts 8^2 8^3, attached to the beams 8 and $8'$, with the angular arms R', having the slots *r* and attached to posts 8^3 by bolts *a*, and carrying the rotary feeder R, provided with teeth, substantially as and for the purposes shown.



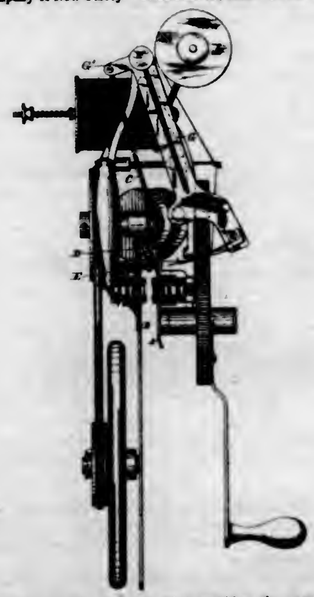
333,124.



5. The herein-described harvesting-machine, consisting of the tailings-trough J, screen J', platform side bars, K and O, the draper L, the feeding-draper M, having the fender-board N at its side, and the cylinder P, all arranged, substantially as shown, to deliver the tailings from trough J upon draper L.

6. The combination, with beams C, attached to beams 8^2 8^3 8^4, and beam B', attached to beams $8'$ 8^2 8^3 8^4, of the platform D, having the front end of the lever E over it, substantially as shown

333,125. MOQUETTE-GUIDE FOR CARPET-SEWING MACHINES. Ghoser Grebel, New York, N. Y., assignor to the Singer Manufacturing Company of New Jersey. Filed June 23, 1885. (No model.)



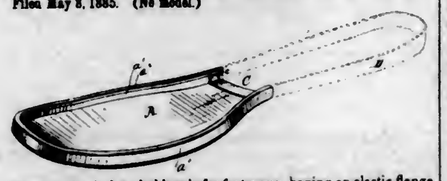
Claim.—1. In a carpet-sewing machine, the combination, with a turning-in guide, of a reciprocating piler or pile-deflector tapering rearwardly and downwardly, said pile-deflector being arranged in front of said guide and movable independently thereof in a plane at right angles to the feed, substantially as set forth.

2. In a carpet-sewing machine, the combination, with a turning-in guide, of a reciprocating pile-deflector tapering rearwardly and downwardly, and arranged in front of said guide, said pile-deflector being adjustable independently of said guide, and also movable independently thereof in a plane at right angles to the feed, substantially as set forth.

3. A turning-in guide for carpet-sewing machines, having at its top a forwardly-projecting perforated lug, combined with a rod passing through said lug, means for reciprocating said rod, and a rearwardly and downwardly tapering pile-deflector arranged in front of said guide and adjustably attached to said rod, substantially as set forth.

4. The combination, with the plates A and B, of the turning-in guide D, having a transverse needle-recess, d^4, and the flanges d^5, forward and rearward of said needle-recess, substantially as set forth.

333,126. DETACHABLE SOLE. Matthew Hawk, New York, N. Y. Filed May 8, 1885. (No model.)



Claim.—1. A detachable sole for foot-wear, having an elastic flange extending from the shank portion continuously along each side and around the toe portion, the said flange being of a depth corresponding to that of the sole which it is to engage, and adapted to overhang the edge of the sole, whereby the sole will be held detachably to the boot or shoe by the inherent spring of the flange, as set forth.

2. A detachable sole, as A, having a flange, a', with bead a^2, of elastic material, which normally inclines inwardly and is continuous upon the sides and around the front, and which may be sprung over the edges of the sole of a boot or shoe, whereby the said sole will be held to the sole only of the boot or shoe by the inherent spring-clamping force of the flange without covering any portion of the upper, as set forth.

3. A detachable sole, as A, having an elastic sole-engaging continuous flange, a', with bead a^2, made in a single piece, and having at its rear portion a spring-clamp, C, with shank-engaging hooks *c*, combined and operating as and for the purposes specified.

4. A detachable sole, as A, having an elastic sole-engaging flange, a', combined with a strap, D, arranged to pass around the rear of the boot or shoe and to maintain a tension upon the flange a' to increase its clamping spring, as specified.

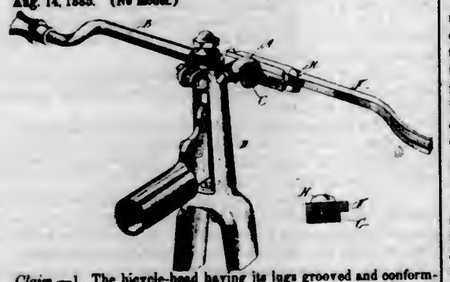
5. The detachable sole described, consisting of the roughened body A *a*, having elastic flange a', with bead a^2, the spring-clamp C, having shank-engaging hooks *c*, and the strap D, for maintaining a tension on the flange, as specified.

333,127. ART OF DECORATING WOOD AND OTHER OPAQUE BODIES. Wm. Ryland, New Haven, Conn. Filed May 4, 1885. (Specimens.)

Brief.—Improvement on the invention in Patent No. 313,671, dated March 10, 1885, to same inventor.

Claim.—A process of ornamenting the surface of wood or other opaque bodies, consisting of the combination of, first, preparing upon that part of the article to be decorated a bright metallic surface, either by polishing the said surface or depositing thin foil; second, of sketching or imprinting an outline of the required design, together with the necessary shade-lines, upon the said metallic surface; third, that of covering the outlined design and all intervening metal background with lacquers of appropriate colors, substantially as and for the purpose set forth.

333,128. BICYCLE. Thomas B. Jeffery, Ravenswood, Ill. Filed Aug. 14, 1885. (No model.)



Claim.—1. The bicycle-head having its lugs grooved and conforming to the handle-bar, in combination with the loops embracing both, and provided with an impinging or contacting screw, substantially as described, for the purpose set forth.

2. The combination of the loop or eye, handle-bar, projecting open lugs, and a clamp independent of either, but securing all, substantially as and for the purpose described.

3. The loop A, secured to the lug C, having a lateral extension, G, secured to the brake-lever, substantially as set forth and described.

333,129. METHOD OF PRODUCING PRINTING-SURFACES. Maurice Joyce, Washington, D. C. Filed Oct. 30, 1883. (No model.)

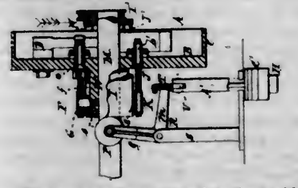


Claim.—1. The method hereinbefore described of producing printing-surfaces by marking with a refractory fluid substance on a metallic surface and then casting a printing-plate thereon.

2. The method hereinbefore described of producing printing-surfaces by marking with a refractory fluid on a metallic surface, then adding to the lines or marks a further thickness of the refractory substance, and then casting a printing-plate thereon.

3. The method hereinbefore described of producing printing-surfaces, which consists in drawing or marking the design with a refractory fluid on a metallic surface, then coating parts of the plate not covered with the design with an adhesive material, then sifting sand or similar material upon this gummed surface, then drying the matrix and taking a casting therefrom, whereby the plate so cast has a stippled appearance in such parts as are not covered by the design, as set forth.

333,130. GOVERNOR FOR STEAM-ENGINES. Jacob Kaiser, Cleveland, Ohio. Filed July 7, 1885. (No model.)



Claim.—1. In a governor for steam-engines, the combination, with flying weights suitably connected with an eccentric, with the arrangement of parts substantially as indicated, whereby the eccentric is advanced with the outward movement of the flying weights, of a sliding sleeve, chains connecting the sleeve with the flying weights, wheels, bell-crank lever, and weights for opposing the end movement of the sleeve and controlling the outward movement of the flying weights, the parts being arranged substantially as set forth.

2. In a governor, the combination, with flying weights operating substantially as described, of a sleeve mounted on the hub of the governor-casing and arranged to revolve with the hub and slide endwise thereon, chains connected with the sleeve and with the flying weights, said chains leading around suitable guiding-wheels, with the arrangement of parts, substantially as indicated, whereby the sleeve is moved endwise and from the eccentric by the outward movement of the flying weights.

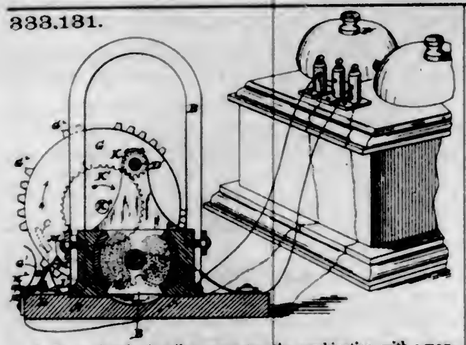
3. In a governor, the combination, with flying weights connected by chains with a sliding sleeve, the parts being arranged substantially as indicated, of friction-wheels for engaging the end of the sleeve, said friction-wheels being mounted on a bell-crank lever, the latter being connected with a lever extending at right angles to the line of the engine-shaft, and suitable devices for attaching weights, the parts being arranged and operated substantially as set forth.

4. In a governor, the combination, with flying weights suitably connected with a sliding sleeve, friction-rollers mounted on a bifurcated bell-crank lever, said friction-wheels engaging the end of the sleeve for controlling the end movement of the latter and the outward movement of the flying weights, of a compound-lever attachment for operating the friction-wheels, the free end of said lever attachment having a depending arm, and weights permanently secured thereto, removable weights connected with said lever attachment, the parts being arranged and operated substantially as set forth.

333,131. FIRE-ALARM SIGNAL. William J. Keenan, Boston, and Eugene H. Wilson, Worcester, Mass. Filed May 17, 1884. (No model.)

Claim.—1. In an electric signaling apparatus, the combination, with a magneto-electric generator, a circuit-wheel arranged to transmit electrical impulses in a definite order, and a mechanically-impelled motor operating both the generator and circuit-wheel, of a shaft carrying both locking and starting levers for said motor, adapted to operate both levers simultaneously, substantially as described.

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2. In an electric signaling apparatus, the combination, with a magneto-electric generator, a circuit-wheel, and a motor, of a shaft having an arm rigidly attached thereto, arranged to normally engage with and stop the motor, another arm also secured to the shaft, carrying a pawl arranged to engage with and to give an initial impulse to the motor, and a lever connected to said shaft, the arrangement being such that when the lever is operated the motor-train is released and an initial impulse given to the motor, substantially as described.

3. The combination, with a generator, a motor connected to and operating said generator by a train of gears, a circuit-breaking wheel also driven by the motor through the generator, a spring-actuated shaft carrying at one end an arm arranged to engage with the circuit-breaker wheel to stop the generator and motor, and a pawl at the other end of the shaft arranged to engage with the gear operating directly with the generator-shaft, whereby a slight movement of the shaft will simultaneously unlock the gear and give an initial motion to the generator sufficient to overcome its resistance, substantially as described.

4. The combination, with a motor consisting of a drum, a cord fixed at one end and passing over a series of fixed and movable pulleys and connected to the drum, and a weight connected to the movable pulleys, a generator, and a train of gears connecting the drum to the armature-shaft of the generator, a circuit-breaking wheel, and gears connecting the shaft of the generator and wheel, and a shaft carrying both a stopping device and a starting device for the motor, adapted to be operated simultaneously, substantially as described.

5. The combination of a magneto-electric generator, a circuit-controlling wheel, a signal device, and a motor actuating said generator and wheel and two circuits through the controlling-wheel, substantially as described, whereby the circuit of the generator is closed, except when broken by the action of the wheel, as set forth.

6. The combination, in an electric signaling apparatus, of a wheel, G, having a pin, M', the wheel C, the shaft L, carrying arm M, arranged to lie in the path of the pin, and pawl N, arranged to engage the teeth of wheel C, whereby the mechanism may be released and a slight movement given thereto at one and the same time, substantially as described.

7. In an electric signaling apparatus, the combination, with a magneto-electric generator and a signaling-instrument, of an independent circuit-controlling wheel having contacts to send signals of a predetermined character by alternate breaks and makes, and contacts to short-circuit the machine when not transmitting the signals, substantially as described.

8. In an electric signaling apparatus, the combination of a magneto-electric generator, a toothed circuit-wheel, a motor actuating said generator and wheel, a series of metallic segments on said wheel coinciding with the spaces between the series of teeth, a contact-spring, and connections, as described, whereby the generator is short-circuited when the line-circuit is broken, as set forth.

333,132. ELECTRIC DEVICE FOR SETTING CLOCKS. James F. Kettell, Worcester, Mass.; Sarah J. Kettell, administratrix of said James F. Kettell, deceased, assignor of one-fourth to Charles W. Sherburne, Boston, Mass. Filed Jan. 17, 1884. (No model.)

Claim.—1. Broadly, in a clock-synchronizing system, a hand having attached to it or to its shaft or arbor a gravity device, whereby the hand is set, substantially as described.

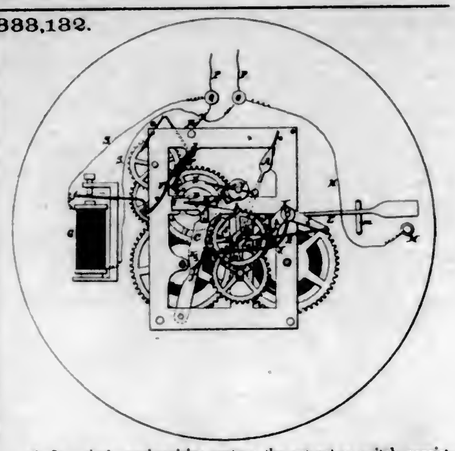
2. A clock-hand having the gravity-setting device, substantially as described, whereby the hand is set from any position upon the dial-face.

3. A hand provided with a frictional-clutch mechanism, in combination with a gravity-setting mechanism, as set forth.

4. A second-hand of a clock having a friction-clutch connection, in combination with a clutch-operating lever actuated by a spring or weight impelled train of gears, substantially as described.

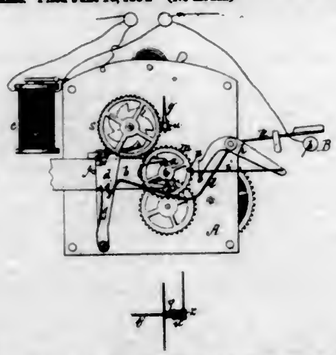
5. In a clock-synchronizing system in which the train of each clock carries its own setting mechanism, a short-circuit cut-out for controlling the setting mechanism, provided with means, substantially as described, for re-establishing the shunt-circuit instantly upon the setting of the hands of the clock.

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6. In a clock-synchronizing system, the cut-out or switch, consisting of lever I, arm *k*, pin K, arm J, combined with the electrodes L M, substantially as set forth.

333,133. ELECTRIC DEVICE FOR SETTING CLOCKS. James F. Kettell, Worcester, Mass.; Sarah J. Kettell, administratrix of said James F. Kettell, deceased, assignor of one-fourth to Charles W. Sherburne, Boston, Mass. Filed June 16, 1884. (No model.)



Claim.—1. In a clock-synchronizing system in which the train of each clock carries its own setting mechanism, a short-circuit cut-out for controlling the setting mechanism, provided with means, substantially as described, for re-establishing the shunt-circuit without perceptible interval upon the setting of the hands of the clock.

2. In a clock-synchronizing system, a hand having a frictional clutch-pinion, and a second gear connected therewith provided with actuating devices, substantially as described, whereby the latter gear is rotated to that degree which will set the clutch-pinion and its hand to the required point upon the dial.

333,134. HOD-ELEVATOR. Frank W. Keys, New York, N. Y., assignor of one-half to Daniel Dall, same place. Filed June 6, 1885. (No model.)

Claim.—1. In a hod-elevator, the combination of the frame A, pivoted bearings *e e*, shaft F, and chain C, with the frame B, pivoted bearings I I, and shaft H, substantially as herein shown and described.

2. The combination of the frame A, having cross-bars *i i*, with the screws G G, blocks *g g*, pivoted bearings *e e*, and shaft F, substantially as and for the purpose specified.

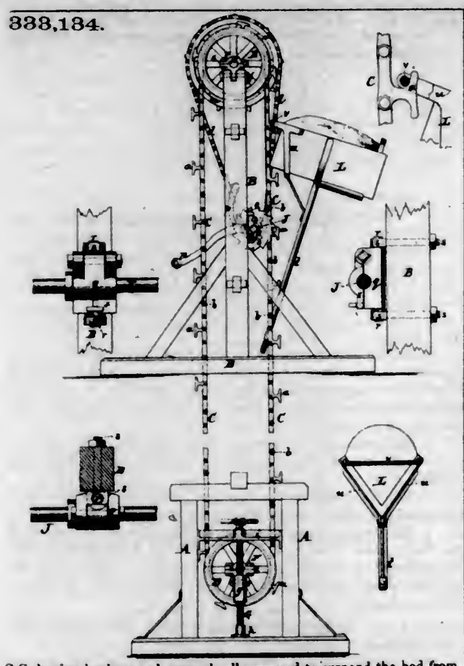
3. The frame B, combined with the screws *s s*, which have laterally-slotted heads, and with the pivoted bearings *q*, having trunnions *r r*, substantially as described.

4. The combination of the frame A with the pivoted bearings *e e*, hung therein, shaft F, chain C, shaft H, wheels E and *m*, pivoted bearings I I, frame B, chain *l*, shaft J, chain-wheel thereon, and pivoted bearings *q*, substantially as described.

5. The combination of the hod L, having shank *t* cross-bar *v*, said cross-bar being in front of and at a distance from said hod, with the chains C C, having hooks *a* and rungs *b*, all arranged to suspend the hod from the hooks *a* by the cross-bar *v*, substantially as described.

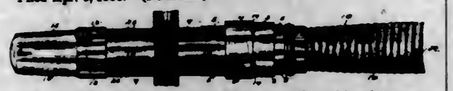
6. The combination of the hod L, having shank *t*, straps *u*, and cross-bar *v*, which cross-bar is at a distance from said hod, with the chains

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C C, having hooks *a* and rungs *b*, all arranged to suspend the hod from the hooks *a* by the cross-bar *v*, substantially as described.

333,135. REEL SEAT AND BAND. John M. King, New York, N. Y. Filed Apr. 6, 1885. (No model.)



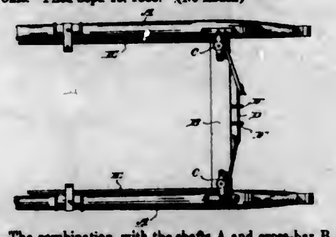
Claim.—1. The combination, with the movable reel-band 14, screw-threaded upon its interior, of the rod provided with a threaded portion to engage with the threads of the band, substantially as described.

2. The combination, with the rod provided with the raised screw-threaded portions 5, of the movable band 14, screw-threaded upon its interior, substantially as described.

3. The combination, with the rod provided with the raised threaded portions 5, arranged to form lateral supports for the fastening-plate 12, of the movable band 14, screw-threaded upon its interior, substantially as described.

4. The combination, with the rod having a screw-threaded portion, of the movable band 14, having the enlarged portion 4 and the contracted portion 3, screw-threaded upon its interior, substantially as described.

333,136. TRACE GUIDE AND FASTENER. Ernst C. L. Kunnecke, Dayton, Ohio. Filed Sept. 15, 1885. (No model.)

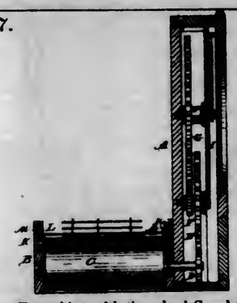


Claim.—The combination, with the shafts A and cross-bar B, of the T-shaped frames C and their sheaves C', the traces E, held in position by said frames and extending to a hooked laterally-shifting whiffletree, D, the said whiffletree and the eyebolts F supporting the latter and attached to the cross-bar, as set forth.

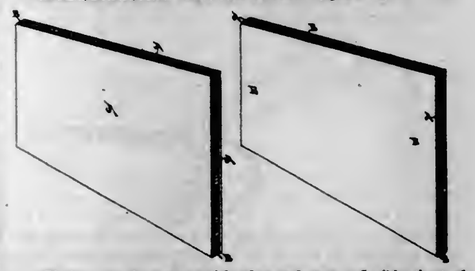
333,137. REGISTER FOR MEASURING WIRE FENCING. Samuel D. Lindsay, Jacksonville, Ill. Filed June 15, 1885. (No model.)

Claim.—The register composed of the vertical case A, having the horizontal frame B, and the dial, the spurred wheel G on a shaft journaled in the vertical case and having the indicating-hand, the shaft having the pinion F, meshing with the wheel G and the wheel E, the roller C, journaled in the horizontal frame and having the pinion D, meshing with wheel E, and the roller L, journaled in slotted openings in frame B and bearing on roller C, and the springs M, bearing on blocks on the spindles of roller L, substantially as described.

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333,138. COMBINATION OF ASBESTUS BOARD, ASBESTUS FELT, OR ASBESTUS PAPER WITH OTHER FLEXIBLE MATERIAL. Francis Lehr, Detroit, Mich. Filed June 30, 1884. (Specimens.)



Claim.—1. As a new article of manufacture, a flexible sheet of roofing material composed of a sheet or sheets of asbestus board or asbestus paper and a sheet or sheets of tarred felt, tarred board, or of similar flexible materials cemented together, all substantially as described.

2. The combination of flexible sheets of fire-proof and water-proof roofing materials, of the elements and in the manner and form substantially as described.

333,139. FAUCET. Thomas Lobb, Boston, Mass. Filed May 25, 1885. (No model.)



Claim.—1. A faucet-casing, A, having inlet and outlet passages B C, in combination with a cage or shell, E, fixed in said casing, and having an open end, M, longitudinal groove or slot Q, and side port, L, a valve, F, to said shell, having stem G moving through a fixed guide, H, of said casing A and entering said shell and its groove or slot Q, shoulder R on said valve-stem, and cam-block J, having cam-edge K, with shoulders *f f'*, located in said shell and arranged in relation to said shouldered valve-stem and adapted to be turned from the outside of the faucet-casing, substantially as described, for the purpose specified.

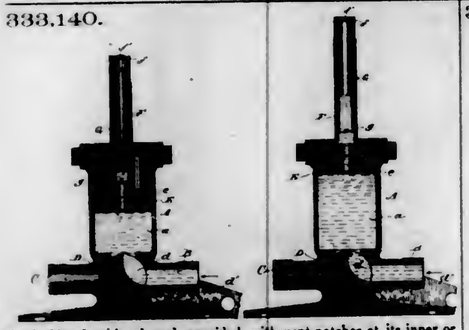
2. A faucet-casing having inlet and outlet passages B C, in combination with a cage or shell, E, fixed in said casing, and having an open end, M, longitudinal groove or slot Q, and side port, L, a valve, F, to said shell, having stem G moving through a fixed guide, H, of said casing A and entering said shell and its groove or slot Q, shoulder R on said valve-stem, and cam-block J, having cam-edge K, with shoulders *f f'*, located in said shell and arranged in relation to said shouldered valve-stem, and adapted to be turned from the outside of the faucet-casing and to receive a key, W, therefor, substantially as described, for the purpose specified.

333,140. PISTON-ROD. William J. Loseley, Mount Vernon, N. Y. Filed May 29, 1885. (No model.)

Claim.—1. The combination, with a piston having a vent-aperture and a hollow rod therefor having a valve-seat, of a valve fitting loosely in said rod and of proper length to have an endwise movement between said valve-seat and piston, substantially as set forth.

2. The combination, with a piston having a vent-aperture and a hollow piston-rod having a valve-seat, of a valve adapted to move end-

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wise inside of said rod and provided with vent-notches at its inner or lower end, substantially as set forth.

3. The combination, with a piston having a vent-aperture, and a hollow piston-rod having a valve-seat, of a hollow valve or thimble adapted to move endwise in said rod and provided with vent-notches at its inner or lower end, substantially as set forth.

333,141. PLOW-FENDER. CHARLES A. MALOTT, Paris's Mills, Ohio. Filed Aug. 15, 1884. (No model.)



Claim.—1. A fender of helical shape, for lifting and turning aside leaves, plants, &c., in front of the plow, the spaces between the bars being open to allow the soil to pass through, substantially as and for the purposes specified.

2. The fender consisting of piece A, horizontal rib D, twisted or helical ribs or bars B C, and nose, the spaces between the ribs admitting the loose earth to be thrown up around the base of the plant, substantially as and for the purposes specified.

3. The fender consisting of piece A, helical pieces B C, and piece D, converging and uniting at the forward end in a nose, the piece D having a bottom inclined upward from nose to rear, and extensions *e*, at rear of piece A, curved downward and inward, and arm F, substantially as and for the purposes specified.

4. The fender composed of ribs and piece A, the upper ribs being helically shaped, and the general shape of the fender being outwardly convex at or near its center, substantially as and for the purposes specified.

333,142. SHROUD FOR HUMAN BODIES. JAMES D. MARSTON, Englewood, and GEORGE CLAPP, Oak Park, Ill. Filed July 16, 1885. (No model.)

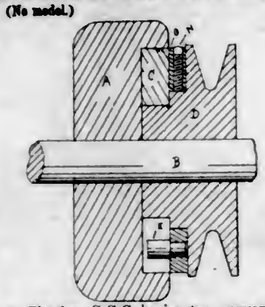


Claim.—1. An air-tight shroud or bag to receive a human body, said shroud having an opening adapted to be hermetically closed, and having an inspection glass or panel hermetically fitted into the shroud, and through which the face of the body may be seen, substantially as described.

2. An air-tight shroud or bag to receive a human body, said shroud being provided with an opening adapted to be hermetically closed, and with an inspection glass or panel, and having a suitable support placed within the body of the bag and beneath that part of the bag above the face of the corpse, to hold the glass out of contact with the face, substantially as described.

3. An air-tight shroud or bag to receive a human body, said bag being provided with an opening adapted to be hermetically closed, and with a supporting-frame placed within the body of the bag and beneath that part of the bag above the face of the corpse, and adapted to hold the shroud out of contact with the face of the corpse inclosed therein, and to be removed from the bag, to permit the same to be packed into small compass, substantially as described.

333,143. FRICTION-CLUTCH. WILLIAM R. MCDONALD, Portland, Me., assignor to the McDonald Machine Company, same place. Filed Aug. 5, 1885. (No model.)



Claim.—1. The dogs C C C, having two convex surfaces, one accurately fitting the periphery or ledge of the recess in the fixed wheel A, and the other resting upon a flat surface, which shall be a portion of a chord of an arc of the circle formed by periphery of the recess, substantially as set forth.

2. The carrier of the pulley, or lever, or pinion D, having a hexagonal shape or other shapes having rectilinear sides, substantially as shown.

3. The ring O, having the set-screw N and the stop-pins E E E substantially as shown, and for the purpose specified.

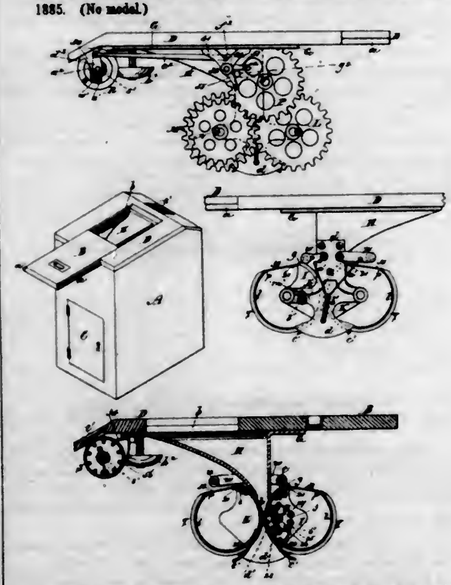
4. The combination, in a friction ratchet-and-pawl mechanism, of the fixed recessed wheel A, the shaft B, the dogs C C C, the loose pulley D, having a portion of it shaped like a hexagon, and carrying the adjustable ring O and its set-screw N, with stop-pins E E E, all substantially as set forth.

333,144. BARREL TRUCK AND SUPPORT. MINOR MILLER, Knoxville, Iowa. Filed Sept. 7, 1885. (No model.)



Claim.—The barrel-truck composed of runners A, having fixed cleats *g*, cross-pieces B, an axle, D, wheels D′, and detachable handle *h*, having a cross-piece, J, carrying an adjustable screw, *l*, an adjustable hook, *m*, and hook-operating mechanism, substantially as shown and described, to operate in the manner set forth.

333,145. REGISTERING AND CANCELING BALLOT-BOX. WILLIAM H. MUNROE and TIMOTHY C. SULLIVAN, Boston, Mass. Filed Sept. 23, 1885. (No model.)



Claim.—1. The combination, with the rocker-shaft i′ and the printing-disks mounted thereon and operated thereby, of the V-shaped or bifurcated lever *k*′, secured to the end of the shaft i′, and the contact pin or projection *l*′, for producing a movement of the lever when the roll I is rocked, whereby the shaft i′ is oscillated to operate the printing-disks without drawing out the cover B to its full extent, substantially as described.

2. The combination, with the shaft i′, provided with the V-shaped or bifurcated lever *k*′, and having the printing-disks mounted thereon, of the contact-pin *l*′, made removable from its socket or holder, as described, and provided with means for locking or holding it in position, substantially as set forth.

3. The combination, with the printing-disks 1 2 3 4, shaft i′, on which they are mounted, and means, substantially as described, for connecting and actuating said disks, of the radial pins 29 on the inside of the flange *n*′ of the disk 4, the arm *q*′ on the shaft i′, and the spring-pawl *r*′, carried by said arm *q*′, said pawl *r*′ being adapted to engage one of the pins 29 after the disk 4 has been turned one step forward, whereby a second forward movement is given to the disk 4 on the next movement of the shaft i′, substantially as and for the purpose described.

4. The combination, with the printing-disks 1 2 3, mounted upon the shaft i′, and means, substantially as described, for connecting and actuating the same, of the disk 4, having letters or characters extending around its periphery, and means for moving said disk forward one step at each complete revolution of the disk 3, and then again moving the said disk 4 another step forward at the next movement of the shaft i′, and leaving it in that position until the next complete revolution of the disk 3, substantially as and for the purpose set forth.

5. The combination, with the segmental rolls I K, of the springs *l*, each extending around from one edge of the segment-roll to the other edge, and each connected at the movable end to the said segment by a slot and screw and having the flattened portion 38, substantially as and for the purpose described.

6. The combination, with the segmental rolls I K and the slotted springs *l*, secured thereto at their movable ends by the screws 58, of the projections *s*, fitting within the slots *r*, whereby the springs *l* are prevented from moving laterally, substantially as described.

7. The combination, with the segmental rolls I K, of the springs *l*, extending around from one edge of the segment to the other and provided with projections or ribs *q*, forming printing-surfaces for canceling both sides of the ballot with a stripe, substantially as set forth.

8. In a ballot-box, the combination, with the cover B, of the rack Q, located at one edge of the same and forming a portion of one of the tongues *a* of the cover, said rack being adapted to engage with a gear through which motion is communicated to the printing-rolls I K, substantially as and for the purpose described.

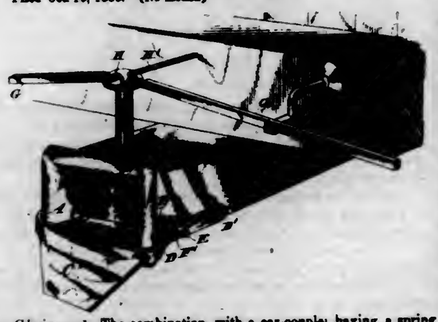
9. The combination, with the shaft *s*′ of the registering mechanism and the registering-disk mounted thereon, of the crank d^3, the connecting-rod e^3, V-shaped bell-crank lever f^3, and the pin g^3 on the oscillating gear P, all operating substantially as and for the purpose set forth.

333,146. MANUFACTURE OF BLOTTING-PAPER. CHARLES S. MUNCH, Boston, Mass. Filed May 18, 1885. (Specimens.)

Claim.—1. A sheet or card of blotting-paper having one side or surface absorbent of writing-ink and the opposite side or surface covered with a water-proof or resisting facing, lining, or composition, all being substantially as set forth.

2. A sheet or card of blotting-paper having one side or surface readily absorbent of writing-ink and the opposite side or surface covered with a calendered water-proof or resisting lining or composition, all being substantially as set forth.

333,147. CAR-COUPLING. R. FRANK O'HAVER, Murphysborough, Ill. Filed Oct. 16, 1885. (No model.)

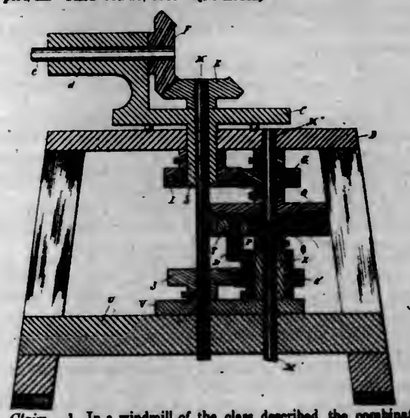


Claim.—1. The combination, with a car-coupler having a spring locking-gate, of the yieldingly-supported and forwardly-inclined guiding plate or apron C, having the arms D, pivoted to said draw-head, substantially as specified.

2. The combination, with the draw-head A, having the spring-gate B, bent, as at B′, and terminating in an operating-handle, B², of the guiding-apron C, having arms D, pivoted, as at D′, and spring E, substantially as specified.

3. The combination, with the draw-head A, of the apron C, having the arms D, pivoted to said draw-head, the spring E, and the stop-pin F, arranged to enter holes F′ in the sides of the draw-head, whereby the upward motion of the guiding-apron C is limited, substantially as specified.

333,148. GEARING FOR WINDMILLS. GEORGE H. PATTISON, Freeport, Ill. Filed Oct. 20, 1885. (No model.)



Claim.—1. In a windmill of the class described, the combination of a wind-wheel shaft journaled in a rotating turn-table, a planet-gear free to rotate about its own axis, and also about a vertical axis at one side of the vertical axis of the turn-table, and gearing connecting the geared support of said planet-gear with the wind-wheel shaft.

2. In a windmill of the class described, the combination of a wind-wheel shaft journaled in a rotating turn-table, and a vertical shaft connected directly by gearing at its upper end with the wind-wheel shaft, and at its lower end with the gear-rotating support of a planet-gear capable of rotation on its own axis, and of bodily rotation about the axis of rotation of its support.

3. In a windmill of the class described, the combination of the gears G O T K Q, a gear connected with the turn-table of the mill and engaging with the gear G, and a gear connected with the wind-wheel shaft and engaging with the gear K, substantially as described.

4. In a windmill of the class described, the combination of the central gears, 1 and 3, shaft M′ at one side of the vertical axis of the mill, and gearing, substantially as described, connecting the shaft M′ with the gears 1 and 3.

5. The combination of the turn-table C, the gear 1, rigidly mounted on said turn-table, and the gears G O, engaging, respectively, with the gear 1 and with the planet-gear T, substantially as described.

6. The combination of the turn-table C, wind-wheel shaft *c* and gear F, vertical shaft M and gears E 3, the gear K, engaging with the gear 3, and the planet-gear T, supported, as described, by the gear K, and rotating bodily therewith.

7. In a windmill of the class described, the combination of a wind-wheel shaft journaled in a geared turn-table, a power-transmitting gear at one side of the vertical axis of the mill, and a train of gearing connecting said wind-wheel shaft, turn-table gear, and said power-transmitting gear, one element of said train of gearing being a loosely-mounted gear free to rotate on its own axis and to revolve about the axis of rotation of said power-transmitting gear, whereby the rotation of the wind-wheel shaft in its bearing rotates said loosely-mounted gear, both on its own axis and about the axis of its rotating support.

8. In a windmill of the class described, the combination of a wind-wheel shaft journaled in the turn-table, and a planet-gear whose rotating support is located at one side of the vertical axis of the mill, said support being connected with the wind-wheel shaft by gearing adapted to insure their simultaneous rotation.

9. In a windmill of the class described, the combination of a rotating geared turn-table, a wind-wheel shaft journaled therein, two independently-journaled vertical shafts located at one side of the vertical axis of the mill, one of said shafts being adapted to transmit the power of the mill to other machinery, and a train of gearing connecting said vertical shafts with the wind-wheel shaft and with said turn-table, whereby the rotation of the wind-wheel shaft in its bearing rotates said vertical shafts in the same direction at different rates of speed, one element of said train of gearing being the planet-gear T.

10. In a windmill of the class described, the combination of a geared

turn-table and a wind-wheel shaft journaled therein, a power-transmitting gear, a loosely-mounted gear free to rotate on its own axis and about an axis parallel to the vertical axis of the mill, gearing connecting the rotating support of said loosely-mounted gear with the wind-wheel shaft, gearing engaging said loosely-mounted gear on one side and connecting it with the turn-table, and gearing engaging it on the opposite side and connecting it with the power-transmitting gear.

11. In a windmill of the class described, the combination of the planet-gear whose rotating support is connected directly by gearing with a vertical shaft which is operated directly by the wind-wheel shaft.

12. The combination of the wind-wheel shaft and gear F, vertical shaft M and gears E 3, gear K, engaging with the gear 3, and gear T, supported by the gear K and engaging with the gear O, which is connected with the turn-table of the mill by means adapted to insure their simultaneous rotation.

13. In a windmill of the class described, the combination of two central gears, 1 and 3, with the gears G O T K and power-transmitting gear Q.

14. The combination of the rotating geared turn-table of the mill, the wind-wheel shaft *c*, the gear Q, adapted to transmit the power of the mill to other mechanism, and the gears F E 3 G O T K, connecting the turn-table, the wind-wheel shaft, and the gear Q, whereby the reaction of the gear Q does not tend to rotate the turn-table.

15. In a windmill of the class described, the combination of the gears G O T K and the gear Q, rigidly mounted on the vertical power-transmitting shaft M', combined substantially as described.

16. The combination of the wind-wheel shaft *c* and gear F, engaging with the gear E on the vertical shaft M, gear 3 on the shaft M, engaging with the gear K, which supports the planet-gear T, gearing engaging said planet-gear T on one side and connecting with the turn-table of the mill, and gearing engaging it on the opposite side and connecting it with the power-transmitting mechanism.

17. In a windmill of the class described, the combination of the gears O T Q, located at one side of the vertical axis of the mill, and gearing, substantially as described, connecting them with the wind-wheel shaft and turn-table, whereby the rotation of the wind-wheel shaft in its bearing rotates the gears O Q in the same direction at different rates of speed.

18. The combination of the turn-table C and a wind-wheel shaft, *c*, the gear 1, fastened rigidly to said turn-table, and the train of gearing F, E, 3, G, O, T, K, and Q, substantially as shown and described, and for the purpose set forth.

19. In a windmill of the class described, the combination of two central gears and the train of gears G, O, T, K, and Q, combined with the central gears, substantially as described.

20. The combination of the wind-wheel shaft *c*, gear F, turn-table C and gear 1, gears E 3 G O T K Q, and power-transmitting shaft M', with the gear Q, rigidly attached thereto all combined and operated substantially as set forth.

21. In a windmill of the class described, the combination of the geared turn-table, a wind-wheel shaft journaled therein, two independently-journaled vertical shafts at one side of the vertical axis of the mill, and a chain of gearing connecting said vertical shafts with the wind-wheel shaft and turn-table, one element of said train of gearing being a loosely-mounted planet-gear, whereby the rotation of the wind-wheel shaft in its bearing rotates said shafts in the same direction at different rates of speed, substantially as described.

22. In a windmill of the class described, the combination of the wind-wheel shaft journaled in a rotating turn-table, gearing connecting it with a vertical shaft, and a planet-gear free to rotate on its own axis and about the axis of rotation of its revolving support, said support being connected with said vertical shaft by means adapted to insure their simultaneous rotation.

333,149. DYNAMITE. Russell S. Pressman and John C. Schrader, Dover, N. J., assignors to the Atlantic Dynamite Company, the Repauno Chemical Company, and the Hercules Powder Company. Filed Jan. 23, 1885. (No specimens.)

Claim.—An explosive compound, substantially as hereinbefore described, containing finely-comminuted solid matter charged with nitro-glycerine and grains of nitrate of ammonia, which are inclosed within a soft or viscous envelope or coating for which nitro-glycerine has no affinity, as set forth.

333,150. DYNAMITE. Russell S. Pressman and John C. Schrader, Dover, N. J., assignors to the Atlantic Dynamite Company, the Repauno Chemical Company, and the Hercules Powder Company. Filed Jan. 23, 1885. (No specimens.)

Claim.—An explosive compound, substantially as hereinbefore described, composed of composite absorbent grains charged with nitro-glycerine, and jacketed grains of an explosive salt, whereby the grains which are charged with nitro-glycerine will not be robbed of their contents by the grains of explosive salt, and also whereby said charged grains will be kept from contact with each other, for preventing adhesion when frozen, as set forth

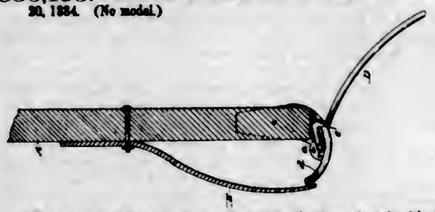
333,151. GELATINATED EXPLOSIVE. Russell S. Pressman and John C. Schrader, Dover, N. J., assignors to the Atlantic Dynamite Company, the Repauno Chemical Company, and the Hercules Powder Company. Filed Jan. 23, 1885. (No specimens.)

Claim.—An explosive compound composed of gelatinated nitro-glycerine and grains of protected nitrate of ammonia, substantially as described.

333,152. EXPLOSIVE COMPOUND. Russell S. Pressman, Dover, N. J., assignor to the Atlantic Dynamite Company, the Repauno Chemical Company, and the Hercules Powder Company. Filed Mar. 3, 1885. (No specimens.)

Claim.—The explosive compound, substantially as hereinbefore described, composed of grains or particles of nitrate of ammonia coated or protected against deliquescence, and grains or particles of chlorate of potash rendered incapable of caking or solidifying in mass by means of a dry powdered material—such as carbonate of magnesia—as and for the purposes specified.

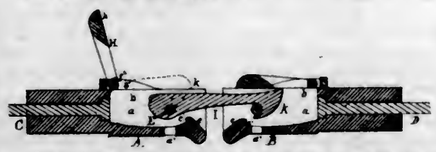
333,153. HAY-TEDDER. James F. Platt, Sterling, Ill. Filed Oct. 20, 1884. (No model.)



Claim.—1. The fork D, provided with the loop *d*, and with the loops *s s*, integral with such fork, substantially as shown, and for the purpose described.

2. The fork D, provided with the loop *d* and the loops *s s*, in combination with the arm A, plates C, and spring E, substantially as shown, and for the purpose specified.

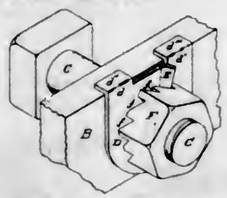
333,154. CAR-COUPLING. David Powell, Flemington, W. Va. Filed Nov. 3, 1885. (No model.)



Claim.—1. The combination of the draw-head A, having the bolt E and weight H, and the draw-head B, having a similar bolt and weight, with the coupling-bolt I, as set forth.

2. The draw-head A, having the transverse aligned holes *s s'*, the rabbeted recess *f* at the outer end of one hole, and such outer end be countersunk, in combination with the headed bolt E and the slide G, the latter corresponding with the recess *f*, as set forth.

333,155. NUT-LOCK. Edwin R. Prooter, Washington Court-House, Ohio. Filed Feb. 26, 1885. (No model.)



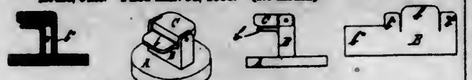
Claim.—1. The nut-lock consisting of the combination, with a screw-bolt and fish-plate, of the washer D, having the two prongs *d d'*, which terminate in lips *d'' d'''*, and having the outcurved spring-tooth E, and of the nut F, having the ratchet-notches *f* in its side, substantially as and for the purposes set forth.

2. The combination, with ratcheted screw-nut F *f*, of the washer D, having the prongs *d d'*, terminating in the lips *d'' d'''*, and the outcurved spring-tooth E, substantially as and for the purpose set forth.

3. The combination, with the bolt and nut, of a washer, D, having the two prongs *d d'*, terminating in the rectangularly-bent lips or hooks *d'' d'''*, and having a tooth for engaging with the nut, substantially as set forth.

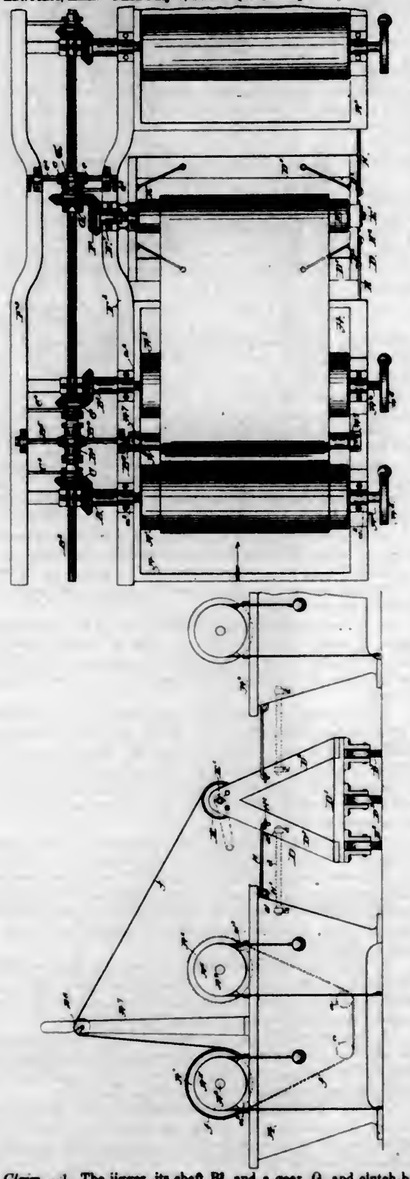
4. In a nut-lock, the washer D, having the prongs *d d'*, terminating in lips *d'' d'''*, and having projecting from prong *d* the outcurved spring tooth or pawl E, as and for the purposes set forth.

333,156. BUTTON OR STUD. Edwin R. Prooter, Washington Court-House, Ohio. Filed Mar. 21, 1885. (No model.)



Claim.—The button herein described, consisting of the rectangular shank B, formed from a single sheet-metal blank, as shown, and provided with integral foot *b*, the flat spring *c*, and the hinged shoe C, as set forth.

333,157. ATTACHMENT FOR DYE-VATS. William H. Rankin, Lawrence, Mass. Filed July 6, 1885. (No model.)



Claim.—1. The jigger, its shaft B^3, and a gear, G, and clutch-hub G' thereon, and a shipper to move the said clutch-hub, combined with a horse and an adjustable locking device to connect it with the jigger, and a roller, E, and gear F, driven by the gear G, the hub of the gear F being connected with the end of the shaft of the roller of the horse, substantially as described.

2. The rollers A' A^2 of the jigger and the detachable horse provided with a roller, E, combined with the rotating shaft B^3 and with gearing, substantially as described, for positively rotating the roller E in unison with one of the rollers of the jigger, whereby the cloth may be moved at will from either of the said rollers to the other, substantially as and for the purpose set forth.

333,158. STREET-CAR. Charles J. Reynolds, Boston, Mass., assignor, by direct and mesne assignments, to the Reynolds Manufacturing Company, Portland, Me. Filed Aug. 21, 1884. Renewed May 26, 1885. (No model.)



Claim.—1. A street-car provided with apertured or slitted curtains *a* at its sides and fastening devices for said curtains, as set forth.

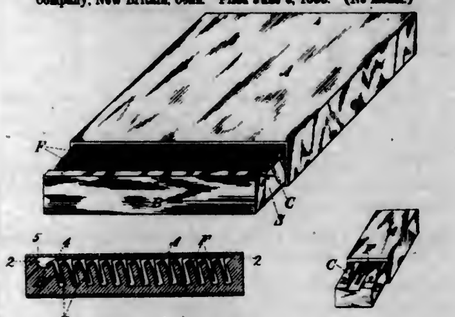
2. A street-car provided with rollers *r r* at the sides, curtains *a a*, having slits *s* on said rollers, and fastening devices for said curtains, as set forth.

3. A street-car provided with rollers *r r*, having operating-spring, tains *a a* on said rollers having slits *s*, and fastening devices for said curtains, as set forth.

4. An open-sided street-car having a series of independent inside curtains, *b*, and continuous curtains *a*, having slits *s s*, the curtains *b* covering said slits, as set forth.

5. An open street-car having a gutter, *g*, on its roof, conductors *h*, extending downwardly from said gutters, and outside curtains, *a*, provided with slits *s* at its side, as set forth.

333,159. PACKING-BOX FOR BUTTON-FASTENERS. Francis H. Richards, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed June 8, 1885. (No model.)



Claim.—1. The improved button-fastener packing-box herein described, it comprising a slide or block provided with a fastener-receiving groove and a cover fitting over said block, substantially as set forth.

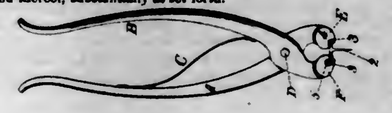
2. The improved button-fastener packing-box herein described, it comprising a slide or block provided with a series of channels and a cover adapted to move in a direction crosswise to said channels, substantially as set forth.

3. The improved button-fastener packing-box herein described, it comprising a slide or block provided with a series of channels made inclined, substantially as described, and a sliding cover adapted to hold button-fasteners into said channels, substantially as set forth.

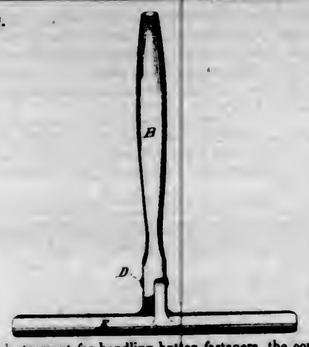
4. A button-fastener packing-box of the class described, having the inclined channels C and the groove 5, made alongside of the end channel, substantially as and for the purpose set forth.

333,160. INSTRUMENT FOR HANDLING BUTTON-FASTENERS. Francis H. Richards, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed July 2, 1885. (No model.)

Claim.—1. The improved instrument herein described for handling button-fasteners, it consisting of a pair of handles, each provided with the longitudinally-grooved jaw having the continuous thin lip 3 from end to end thereof, substantially as set forth.

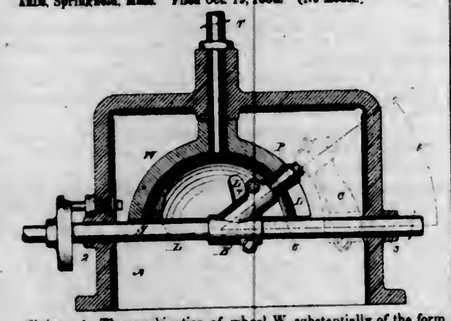


333,160.



2. In an instrument for handling button-fasteners, the combination of two parallel jaws, each having a groove, 4, and a lip, 3, one of said grooves having inserted therein a strip of elastic material, substantially as set forth, and for the purpose specified.

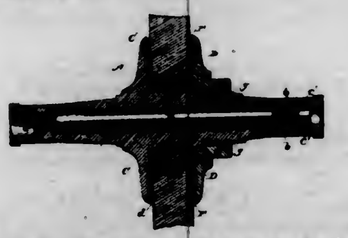
333,161. DEVICE FOR CONVERTING MOTION. Francis H. Richards, Springfield, Mass. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination of wheel W, substantially of the form of a spherical segment, having a series of slots, and shaft S, having a roll set inclined thereto and working in said slots, all arranged substantially as described, and for the purpose specified.

2. The combination of wheel W, having slots L, shaft S, bracket B, stem 6, adjustable in said bracket, and the tapered roll P, substantially as described, and for the purpose specified.

333,162. VEHICLE-WHEEL. Jerome L. Ritter, Loysville, Pa. Filed Apr. 15, 1885. (No model.)

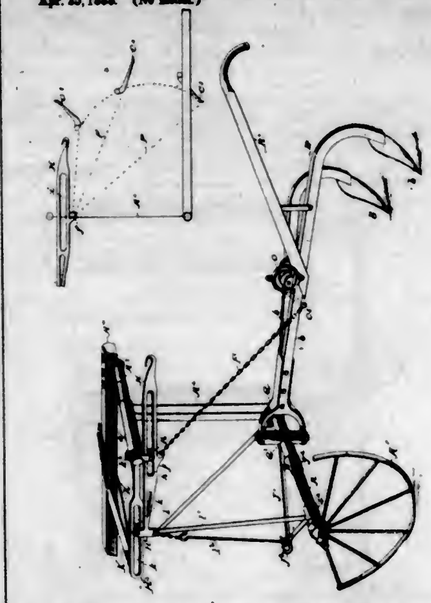


Claim.—1. In a vehicle-wheel, the hub having the clamping-sections, and an elastic collar fitted on the hub between the sections, in combination with the spokes having seats or recesses at their inner ends, and lugs or projections provided on the clamping-sections and extending inwardly over the elastic collar, so as to be received by the recesses of the spokes, as set forth.

2. The hub A, having the rigid flange C, and exteriorly threaded at *g*, and the spokes, in combination with the clamping movable collar D, having a countersunk central opening, *f*, which is sufficiently large to allow the collar to slip over the threads *g*, and a nut, G, engaging with the latter and having its inner end enlarged, so as to be received in the countersunk portion of the opening *f*, as set forth.

3. In a wheel, the hub having the rigid flange C, in combination with the clamping-collar D, the binding-nut, the spokes, the elastic washers F, interposed between the sides of the spokes and the parts C D, and circumferential depressions provided in the flange C and collar D midway their upper and lower ends, in rear of washers F, for the purpose set forth.

333,163. CULTIVATOR. Hans H. Sater, Dubuque, Iowa. Filed Apr. 25, 1885. (No model.)



Claim.—1. In a wheel-cultivator, the combination, with the arched axle and tongue, of a pair of pivoted plow-beams, a pair of fixed bars, H^3, and a pair of movable bars, H, arranged parallel with the tongue, two sets of draft-rods, J J', and two sets of connecting-braces, I I' I^3, pivoted at the upper ends to the movable bars H, substantially as and for the purposes set forth.

2. In a wheel-cultivator, the combination, with the arched axle and tongue, of a pair of bars having loose bearings on the former and connected by a slotted brace or braces made in two sections and secured by a bolt or bolts passing through them and the tongue, substantially as and for the purposes set forth.

3. In a wheel-cultivator, the combination, with the arched axle and tongue, of a pair of parallel fixed bars, a pair of movable bars, and a pair of connecting slotted braces made in two sections with a bolt at the center, passing through the tongue, substantially as and for the purposes set forth.

4. In a wheel-cultivator, and in combination with the plow-beams, a spiral band-spring inclosed within a drum or barrel, a single slotted spindle passing through the same, a recessed collar on one end of the spindle, with means for securing it, and a sheave-lever forming a part of the drum or barrel, all combined and arranged upon the plow-beams, with a chain connecting the lever to the arch, substantially as and for the purposes set forth.

5. In a wheel-cultivator, the combination of the barrel or casing C, having the hook *c* on its interior and the sheave-lever C^3 on its exterior, the inclosed spring C', the hollow spindle C^3, made square and round, with a slot, *c'*, on one end and a collar, c^4, on the other end, means for securing said collar to prevent the unwinding of the spring, and the bolt E, for mounting the whole, substantially as described, and for the purposes set forth.

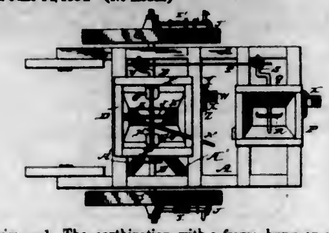
6. In a wheel-cultivator, the combination, with the plow-beams, of the yoke G and the coupling G', composed of a sleeve with a pair of branch arms inclosed each by a shell made in two parts with a rack on one side, substantially as and for the purposes set forth.

7. In a wheel-cultivator, the combination, with the plow-beams, of the yoke G, made open at each end, the coupling G', with vertical branch arms provided with a rack on one side, and a key for adjusting the yoke upon said arms, in the manner substantially as described.

8. In a wheel-cultivator, the combination, with the plow-beams and the axle, of the coupling G', having cone-shaped ends to fit over bearings on the arch stem or standard and on a collar upon the axle, substantially as described.

9. In a wheel-cultivator, the combination of a pair of axles, a pair of vertical standards secured to the same, a connecting cross-bar, a sleeve on the upper end of each standard, with a depending pair of ears carrying a roller, a slotted bar moving between said ears and upon the roller, and a fixed bar with a slot in which travels a roller on the outer end of the movable bar, substantially as described.

333,164. COMBINED FERTILIZER-DISTRIBUTER AND STALK-BREAKER. John Y. Savage and Andrew Savage, Scotland Neck, N. C. Filed June 14, 1884. (No model.)

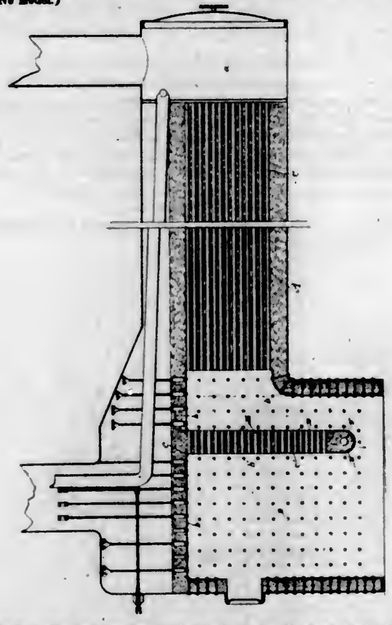


Claim.—1. The combination, with a frame hung on a revolving axle having a hopper over said axle, of a spurred feed-wheel secured to said axle, and a spurred agitating-wheel secured in said hopper over said feed-wheel, having the point of each alternate spur or arm bent forward, so as to engage with the spurs of the feed-wheel, and the points of the remaining arms or spurs bent alternately to the right and left, substantially as and for the purpose set forth.

2. The combination, in a fertilizer-distributer, of a frame having a suitable hopper and feed mechanism, of two suspended cross-braces secured to the under side of said frame, a shaft passing vertically through bearings in said cross-braces, a horizontal disk secured to the bottom of said shaft, a collar secured adjustably to the top of said shaft, a collar secured near its central portion between the two cross-braces, and suitable mechanism for revolving said shaft and disk, substantially as and for the purpose set forth.

3. The combination, with a frame hung on a revolving axle, of two cross-braces secured to the under side of said frame, a shaft passing through bearings in said cross-braces, a frame secured to the bottom of said shaft, having extended arms, a collar adjustably secured to the top of said shaft, a movable collar secured near its central portion between said cross-braces, and suitable mechanism for revolving said shaft and arms, substantially as and for the purpose set forth.

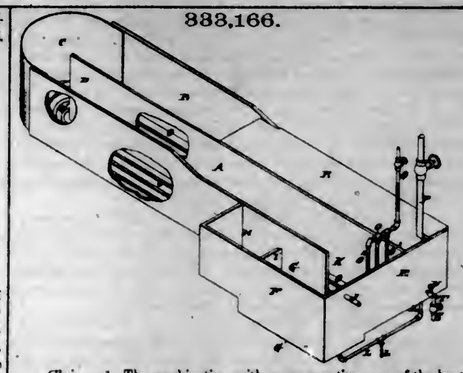
333,165. STEAM-BOILER. George N. Scheer, Evansville, assignor of one-half to Michael Crisle, Oakland City, Ind. Filed Nov. 18, 1884. (No model.)



Claim.—The combination, with a boiler and a fire-box, of the bottom depending section, open at the sides and top, and communicating with the boiler through openings formed in the crown-sheets and sides of the fire-box, the said depending section terminating a distance above the bottom of the fire-box, and provided with numerous fire-tubes extending transversely through the same, substantially as set forth.

333,166. CLARIFYING AND EVAPORATING PAN. Christoph M. Schwarz, Edwardsville, Ill. Filed May 9, 1885. (No model.)

333,166.



Claim.—1. The combination, with an evaporating-pan, of the heating-pipes entering said pan at the discharge end, a cover placed over said discharge end, and a scum-overflow at the receiving end, substantially as set forth.

2. The combination, with the receptacle having its receiving and discharge ends side by side, as described, of the heating-pipes entering said receptacle at one end, and a covering for said end for directing the steam rising from the sirup rearward or away from the operator's stand, as set forth.

3. The combination, with an evaporating-pan, of a scum box or trough having its floor in a plane above that of the pan, and a pipe leading from the floor of said scum-box into the pan, as and for the purposes set forth.

4. In an evaporating-pan, the combination, with a receptacle through which the sirup flows, of the heating-pipes extending through said receptacle, and the heating medium passed through said pipes in a direction opposite to the flow of the sirup, as set forth.

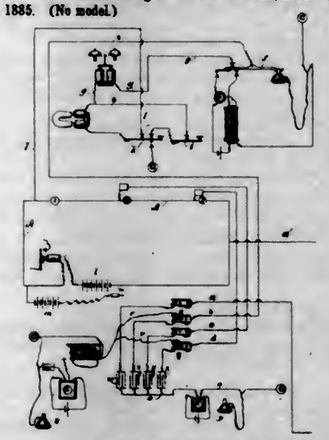
5. The combination, with the evaporating-receptacle A B C, of the receiving-trough G, separate therefrom and communicating therewith through the passage K, and the scum-box H, separated from the trough G by an overflow-partition, I, substantially as set forth.

6. The combination, with the compartments G and H, of the connecting-pipe V, leading from one to the other, substantially as and for the purpose set forth.

7. The combination, in an evaporating-pan, of the portions A and B, communicating at one end and containing heating-pipes and discharge-pipe, as S, at the end of the pan in which are the ends of the heating-pipes into which the steam first enters, substantially as set forth.

8. The combination, with an evaporating-pan, of a branched pipe communicating, respectively, with the receiving and discharge ends of the apparatus, and a cock in each branch of said pipe, as and for the purpose set forth.

333,167. SIGNALING-CIRCUIT FOR TELEPHONE-EXCHANGES. Charles E. Scribner, Chicago, Ill. Filed June 11, 1883. Renewed Oct. 22, 1885. (No model.)



Claim.—1. A group of individual telephone-lines, in combination with a listening operator's telephone, a common return-wire normally open at the central office, and a calling-battery in the circuit of the return-wire and a switch at each subscriber's office, substantially as and for the purpose specified.

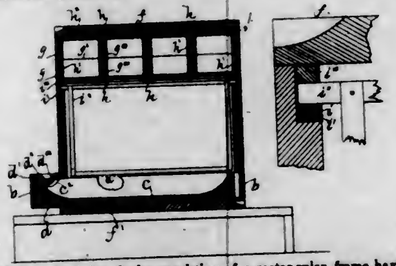
2. The combination, with a signal-circuit, including one or more signal-boxes, of the battery *t*, the relay or receiving-instrument, and branch circuits from said signal-circuit to ground, each branch containing a condenser and a telephone included in the common ground-wire, substantially as and for the purpose specified.

3. The combination, with the signal-circuit, including the signal-boxes, of a branch circuit from said signal-circuit to ground at the central station, condensers, one in each branch circuit, the common ground-wire to which the branch circuits are connected, the telephone in said common ground-wire, and switching apparatus for connecting and disconnecting the different branch circuits from the signal-circuit.

4. The signal-circuit A, including signal-boxes 1 2 3 and battery *t*, and the signal-receiving instrument, in combination with the telephone-circuits radiating from said signal-circuit to ground, each branch circuit containing a condenser and telephonic apparatus, whereby telephonic communication may be had from one point to another over said signal-circuit without impairing the integrity of the signal-circuit.

5. A signal-circuit including signal-boxes, in combination with branch circuits from said signal-circuit through telephones and condensers to ground and switches to disconnect any branch circuit from the signal-circuit.

333,168. **BEE-HIVE.** JOHN M. SHUCK, Des Moines, Iowa. Filed Feb. 19, 1885. (No model.)



Claim.—1. A bee-feeder consisting of a rectangular frame having a narrow bottom at one end, and a corresponding narrow cover at the same end, provided with one or more openings to admit liquid food, and a food-receptacle of smaller dimensions and less depth than the said frame, fixed within the frame to extend over the said narrow bottom and under the said narrow cover, in combination with the top or bottom of a hive, in the manner set forth, for the purposes stated.

2. The bee-feeding device composed of the wall *a b*, having a fixed bottom section, *d*, and a fixed cover-section, *d'*, provided with openings *d''* and screens *d'''*, and wooden pieces *c*, having parallel troughs *c'*, and openings through the partitions between the troughs, to allow liquid food introduced through the openings *d''* to flow into the combined series of troughs.

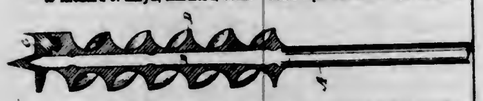
3. An invertible surplus-box for bee-hives, composed of two mating sections that are open at their tops and bottoms and have coinciding transverse partitions, and projecting strips fixed on the top edges of the upper section and on the bottom edges of the lower section, and fastening devices attached to the outside faces of the two sections, to operate in the manner set forth, for the purposes stated.

4. The honey surplus-box composed of the sections *g*, having fastening devices *g''* on their outsides, and fixed partitions *g'''* on their insides, and strips *h*, fixed on the edges of the partitions, substantially as and for the purposes specified.

333,169. **MIXED PAINT.** JOSEPH STACKHOUSE, Stockton, Cal. Filed Aug. 10, 1885. (No specimens.)

Claim.—The herein-described mixed paint, consisting of dry fresh air-slaked lime, coal-tar, Prince's metallic, coal-oil, brown japan, baking-soda, water and benzine, and shellac, in about the relative quantities described and set forth.

333,170. **AUGER.** GEORGE F. STEARNS, Chester, assignor of one-half to Richard J. Allyn, Hartford, Conn. Filed Apr. 30, 1885. (No model.)

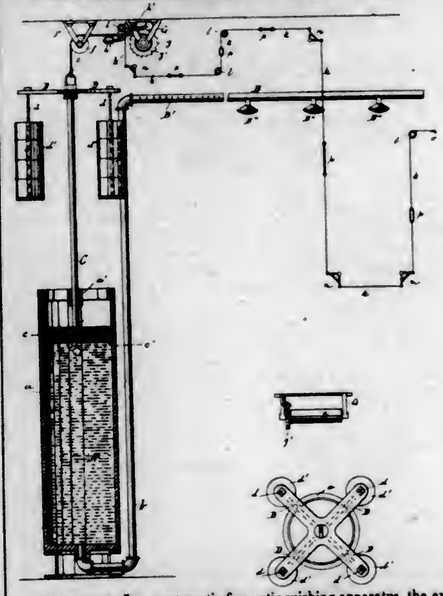


Claim.—1. The combination of an auger-shank extended forward as a core, an auger blade or bit at the forward end of the core, and an auger-worm cast upon the said core and upon the rear face of the blade or bit, substantially as shown and described.

2. An auger having a shank and core in one piece, a bit at the forward end of the core, and a worm of cast metal welded or fused upon the core and to the bit, substantially as shown and described.

3. The combination of a boring-bit, a cast worm against its rear side, and a wrought shank extending through the worm to the bit, substantially as shown and described.

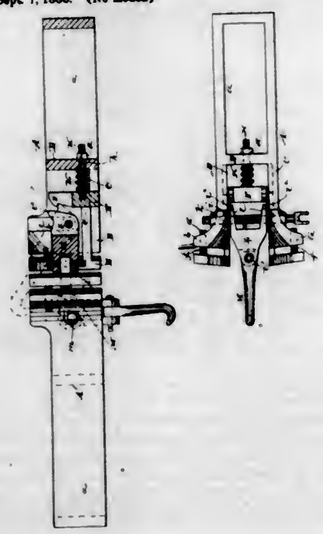
333,171. **AUTOMATIC FIRE-EXTINGUISHING APPARATUS.** D. C. STILLSON, Somerville, Mass. Filed June 11, 1885. (No model.)



Claim.—1. In an automatic fire-extinguishing apparatus, the cylinder *a*, with its piston *c* and piston-rod C, on which the weights *d' d'* are suspended, as described, in combination with the pipe *b* B and its perforated sprinklers, the drum *g*, cord *e*, ratchet *g'*, weighted pawl *h*, and connecting-wire *k*, made wholly or in part of fusible metal, as and for the purpose set forth.

2. In an automatic fire-extinguisher apparatus, the following instrumentalities: a liquid-containing receptacle having pipe *b* B, provided with perforated sprinklers, a suspended weighted plunger with weights outside the said receptacle, and a windlass having ratchet and pawl, the latter being normally held locked by means of a stretched wire made wholly or in part of fusible metal and released by the fusing of the latter, so as to cause the plunger to descend and force the liquid from the receptacle through sprinklers connected with said receptacle, as set forth.

333,172. **CAR-COUPLING.** DANIEL J. SUMMERS, Waynesborough, Pa. Filed Sept. 7, 1885. (No model.)



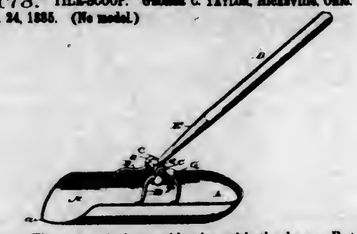
Claim.—1. In a car-coupler, the combination, with a two-branch draw-head and a cross-pin loosely secured in the branches, of a vertically and laterally swinging coupling-hook, a spring-actuated buffer, and a sliding hook connected with the buffer and located in the same plane with and behind the coupling-hook, substantially as set forth.

2. In a car-coupling, the combination, with a two-branch draw-head and a cross-pin loosely secured in the branches, of a coupling-hook consisting of a vertically-swinging section secured on the cross-pin between the branches of the draw-head, and a laterally-swinging section pivotally secured in the free end of the aforesaid section, substantially as set forth.

3. In a car-coupling, the combination, with the two-branch draw-head and the vertically-swinging coupling-hook secured between the branches, of the spring-actuated double-headed buffer adapted to slide in channels formed in the branches of the draw-head, and provided with a hook adapted to engage the shank of the coupling-hook and hold the same in a position for coupling, substantially as set forth.

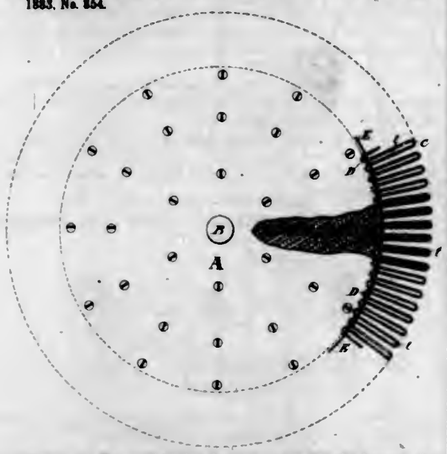
4. In a car-coupling, the combination, with the two branch draw-head and the vertically-swinging coupling-hook, of the spring-actuated buffer adapted to lock and release the coupling-hook, and provided with guide-studs adapted to work in sockets in the draw-head and steady the sliding movement of the buffer, substantially as set forth.

333,173. **TILE-SCOOP.** GUSTAVE C. TAYLOR, Hicksville, Ohio. Filed Mar. 24, 1885. (No model.)



Claim.—The scoop A, in combination with the braces B, two on each side, having their upper ends curved inward toward each other, disks or lugs C, formed integrally with the upper ends of the braces, holes or openings provided through the disks or lugs, ribs or spurs *d*, extending inwardly from the latter, the handle D, fitted with a ferrule, E, a circular perforated head or disk, F, at the outer end of the ferrule, a headed bolt, F', passing through the holes or perforations of the disks C F, and a thumb-nut, G, engaging with the threaded end of the bolt, arranged and operating as set forth.

333,174. **DYNAMO-ELECTRIC MACHINE.** WILLIAM THOMSON, Glasgow, County of Lanark, Scotland. Filed Dec. 21, 1882. (No model.) Patented in England Dec. 26, 1881, No. 5,668; in France June 26, 1882, No. 149,772; in Belgium July 7, 1882, No. 58,404; in Italy Nov. 14, 1882, No. 14,756; in Portugal Nov. 21, 1882, No. 723, and in Spain Apr. 20, 1883, No. 854.



Claim.—1. The combination, in a rotary armature for dynamo-electric machines, of wooden disk A, radial teeth *t*, and zigzag conductor C, substantially as described.

2. The combination of disk A, teeth *t*, conductor C, pins D, and binding-wire E, substantially as described.

3. The combination of a series of soft-iron cores, M, and inclosing insulated conductor W, wound in a zigzag, as described, whereby the adjacent cores are oppositely and the alternate cores similarly polarized.

4. The combination of ring K, cores M, and zigzag conductor W, substantially as described.

333,175. **HARNESS.** ALBION W. TOURGEE and LEMON DE F. JOHNSON, Mayville, N. Y. Filed Mar. 30, 1885. (No model.)



Claim.—1. The herein-described harness, consisting of the collar A and harness-saddle B, formed of metallic plates or layers provided with suitable devices for the attachment of other portions of the harness thereto, the imperforate back-strap D, having a metallic connection and adjustment with the breeching, collar, and harness-saddle, and provided with the bifurcated metallic crupper E, the imperforate breeching J, formed as described, and provided with the hip-straps I, holdback-straps K, and compound buckles *s*, *s'*, and *g*, the side straps, *m*, stirrup-straps *l*, and the stay-straps F, connecting the collar and harness-saddle, all substantially as and for the purpose specified.

2. A harness composed of a hame-collar, A, and harness-saddle B, formed of one or more metallic plates and provided with suitable attaching devices, a back-strap, D, breeching J, hip-straps I, holdback-straps K, and other connecting-straps imperforate throughout their entire extent and capable of attachment and adjustment by self-acting clasps and compound buckles, substantially as and for the purpose specified.

3. The combination of the stay-straps F with the hame-collar A and harness-saddle B, substantially as and for the purpose specified.

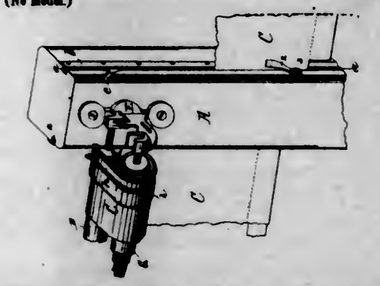
4. The traces C, imperforate throughout their entire length, composed of metallic core or lining, and provided with metallic connecting devices for attaching the same to other portions of the harness and to the whiffletree, substantially as specified.

5. The loop P, secured to the two parts or sections of the collar A by the overlapping shields *w*, substantially as and for the purpose described.

6. The spring-latch N, provided with the tongue *v* and disk *v'*, and the socket M, having openings *t* and *u*, in combination with the two parts or sections of the collar A, substantially as and for the purpose specified.

7. The belly-band or girth G, provided with an inner lining, *z*, formed of one or more metallic plates, the edges of which are bent or lapped over said band to secure the parts together, substantially as and for the purpose described.

333,176. **OPEN-CAR CURTAIN.** OTIS TUFTS, Boston, Mass.; Eleanor V. Tufts, administratrix of said Otis Tufts, deceased. Filed Jan. 26, 1885. (No model.)



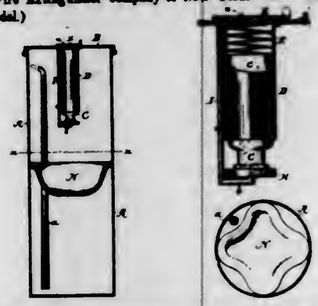
Claim.—1. The combination, with a pair of side posts provided in their opposite faces with partially-closed grooves or ways and the secondary or entrance grooves leading therefrom, as specified, of a curtain-roll provided with a curtain having side ribs, as set forth, and a leader-roll having its periphery substantially in the line of the entrance-

grooves, said leader-roll being arranged intermediate of the entrance-grooves and the curtain-roll, to properly direct the side ribs of the curtain at all times into the said entrance-grooves, substantially as described.

2. The combination, with a pair of side posts provided in their opposite faces with partially-closed grooves or ways and the secondary or entrance grooves leading therefrom, as specified, of a curtain-roll provided with a curtain having side ribs, as set forth, and a leader-roll intermediate of the curtain-roll and the entrance-grooves, substantially as described.

3. In a car, the combination, with a pair of side posts provided in their opposite faces with a longitudinal partially-closed groove or way, as specified, of a curtain attached to a suitable roll secured to the car, and provided at each side with a rib or strip adapted to be retained in the grooves or ways of the posts, and to be moved freely up and down therein as the curtain is raised or lowered, and with a broad winding-strip, *h*, substantially of the thickness of the rib or strip, to operate all as and for the purpose set forth.

333,177. **CHEMICAL FIRE-EXTINGUISHER.** THOMAS G. TURNER, New York, N. Y., assignor, by direct and mesne assignments, to the New York Fire Extinguisher Company of New York. Filed Jan. 14, 1885. (No model.)



Claim.—1. The combination, with the inverted liquid-acid receptacle, of the stopper closing the mouth of the same, a normally-compressed spring pressing against the acid-receptacle, an arm loosely connected with said stopper, and an operating rod or shaft connected with said arm, substantially as described.

2. The combination, with the inverted liquid-acid receptacle, of the flat stopper closing the mouth of the same, a normally-compressed spring, an arm loosely connected with said stopper, and an operating rod or shaft connected with said arm, substantially as described.

3. The combination, with the inverted acid-receptacle and the guide in which it moves, of the stopper, the normally-compressed spring acting directly on the acid-receptacle, an arm extending under the stopper, and a rod or shaft passing through the generating-vessel and connected with said arm, substantially as described.

4. The combination, with the inverted acid-receptacle and the guide in which it moves, of the flat stopper, the normally-compressed spring pressing against the bottom of the acid-receptacle, an arm extending under the stopper, and a rod or shaft passing through the generating-vessel and connected with said arm, substantially as described.

5. The combination, with an acid-receptacle, of a support or guide therefor, a spring arranged to act on said receptacle, a stopper provided with a rounded or conical depression in its under side, and an operating rod or shaft extending through the cap, arranged to be rotated, and provided on its inner end with an arm which engages with the depression in said stopper, substantially as described.

6. In a chemical fire-extinguisher, the combination, with the acid-receptacle, of a guide or support therefor, a stopper, a spring arranged to act on said receptacle and operating to tilt the stopper when the operating-handle is rotated to abut against its stop, a rod extending through the cap and provided on its inner end with an arm connected with the stopper, and a stop located on the cap and placed at such distance from the normal position of the operating-handle that when the latter is turned to abut against the same the stopper will be held between the acid-receptacle and the arm of the rod, so as to prevent the said receptacle from falling into the generating-vessel, substantially as described.

7. In a fire-extinguisher, the combination, with the generating-vessel and its discharge-tube, of an alkali-receptacle placed below the acid-receptacle and having an imperforate bottom and open top, for preventing the passage of the alkaline substance through the discharge-tube, substantially as described.

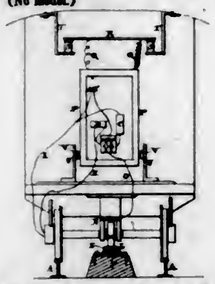
8. In a chemical fire-extinguisher, the combination, with the generating-vessel, of an alkali-receptacle having an imperforate bottom and open top, and placed in or secured to the bottom of said vessel, and a discharge-tube, the inner end of which projects below the upper edge of said alkali-receptacle, for preventing the passage of the alkaline substance through the discharge-tube, substantially as described.

9. In a chemical fire-extinguisher, the combination, with an acid-receptacle and a guide or support therefor, of a stopper held to close the same, an operating rod or shaft extending through the case and pivoted thereiu so as to rotate, an arm connected with said rod and extending under said stopper, and a spring arranged to force the acid-receptacle forward when the handle is operated, so as to remove the stopper from the mouth of said receptacle, substantially as described.

10. The combination, with an acid-receptacle, of a support therefor, a spring arranged to act directly on said receptacle to move it forward, a movable stopper held to close the same, a rod or shaft extending through the case and pivoted therein so as to rotate, and an arm connecting said rod with the stopper, whereby when the handle is operated the relative positions to each other of the said receptacle and the supporting means for the stopper are altered, so that the spring may act to tilt the stopper, substantially as described.

11. The combination, with an acid-receptacle, of a support or guide therefor, a spring arranged to act directly on said receptacle, a flat stopper held against the mouth of the same, and a rod extending through and pivoted in the cap so as to be capable of rotation, and provided on its lower end with a rigid arm directly connected with the stopper, so that when said rod is operated the stopper is caused to slide laterally on the mouth of the acid-receptacle, substantially as described.

333,178. **RAILWAY-TELEGRAPH.** WILLIAM VOGEL, Chicago, Ill., assignor to Adolph Zeller, same place. Filed Feb. 27, 1884. Renewed Aug. 3, 1885. (No model.)



Claim.—1. The combination, with a railroad-car, of a spring-supported receiving-chamber, such chamber being formed with double walls and provided with interposed packing, as and for the purpose set forth.

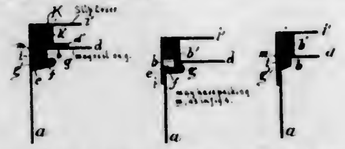
2. The combination, with a railroad-car, of a receiving-chamber which is placed therein and suspended upon springs, and the brackets for keeping the lower end of the chamber from moving about, substantially as described.

3. The combination of the railroad-car, a suspended receiving-chamber placed therein, and suitable electrically-operated mechanisms in the chamber, with the connecting-wires, a conducting-connection which is applied to the under side of the car, a support which extends along the main track, and upon which the conducting-connection travels, and a conducting-wire placed upon insulating material and connected to the support, substantially as specified.

4. The combination, with a railroad-car, of a receiving-chamber, P, springs Q, cross-beam R, springs S, and hangers T, the parts arranged as and for the purpose set forth.

5. The combination, with a railroad-car, of a receiving-chamber, P, formed with double walls and provided with interposed packings, springs Q, cross-beam R, springs S, and hangers T, the parts arranged as and for the purpose set forth.

333,179. **SHEET-METAL CAN.** FRANCIS A. WALSH, Chicago, Ill. Filed June 18, 1883. (No model.)



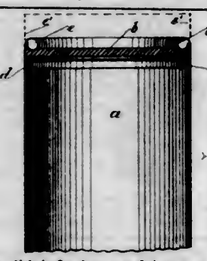
Claim.—1. A sheet-metal can having shoulders *g g'*, collar *b*, cover *d*, having wall *b'*, and ring K, united by a double seam.

2. A sheet-metal can having shoulders *g g'*, collar *b*, cover *d*, having wall *b'*, united by a double seam, in combination with a slip-cover, *i'*, and packing *m*.

333,180. **SHEET-METAL CAN.** FRANCIS A. WALSH, Chicago, Ill. Filed July 31, 1883. (No model.)

Claim.—1. In a sheet-metal can, the combination of a flat disk constituting the head of the can, with a can-body provided with an internal shoulder near its end, and having its extreme end bent over in the form

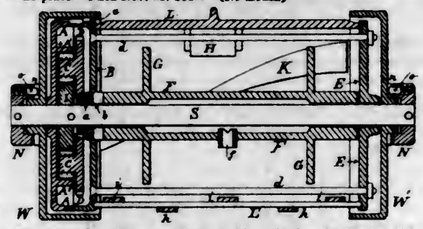
333,180.



of a scroll, so that the disk is firmly secured between the said shoulder and the said scroll, substantially as and for the purpose set forth.

2. In a sheet-metal can, the combination of the end *b* with the can-body *a*, provided with the internal shoulder, d^2, and with the scroll *e* at its extreme end, substantially as described and shown, and for the purpose set forth.

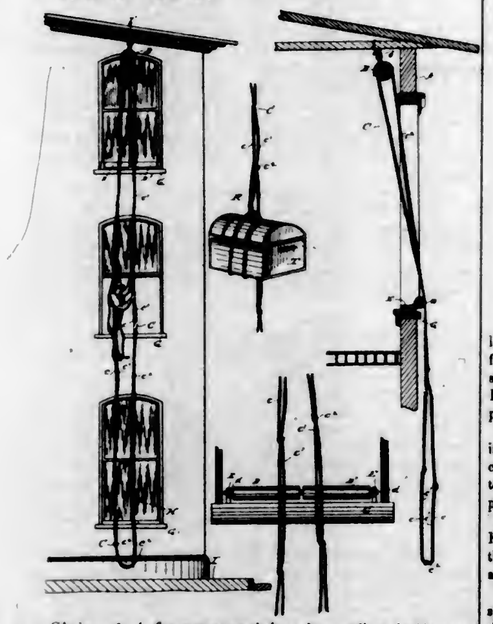
333,181. **LAWN-MOWING MACHINE.** FRANK M. WATERS, Springfield, Ohio, assignor to David P. McKinney and Thomas E. McKinney, same place. Filed Nov. 28, 1884. (No model.)



Claim.—1. In a lawn-mowing machine, the handle H, the sliding concave L, the cutter-bar L', the grooved casing B, the grooved disk E, and the bolts *d d*, arranged as and for the purpose described.

2. In combination with the revolving knives of a lawn-mowing machine, the cutter-bar L', having the lugs *i* and *h*, and the knife M, arranged as and for the purpose described.

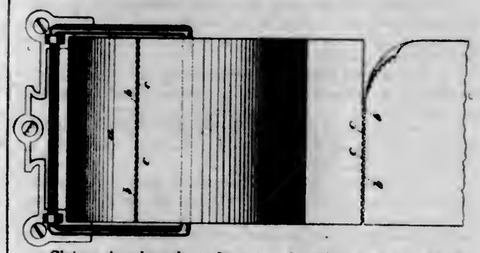
333,182. **FIRE-ESCAPE.** JEROME W. WETHORE, Erie, Pa. Filed May 23, 1885. (No model.)



Claim.—1. A fire-escape consisting of an endless double rope knotted together at short distances to form a series of links or loops, either of which may serve as a body-holder for the person escaping or assisting others to escape, together with a suitable pulley supporting the same, substantially as and for the purpose set forth.

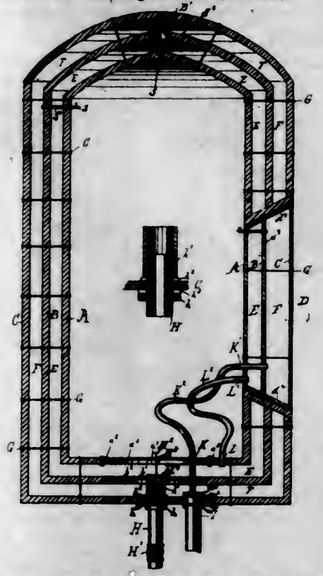
2. A fire-escape consisting of an endless double rope knotted together at short distances to form a series of links or loops for foot, hand, and body holds, a pulley supporting the same, and a suitable belt or band adapted to be passed through the loops or links to suspend a person or thing when lowered from a building, substantially as and for the purpose set forth.

333,183. **WRAPPING AND TOILET PAPER.** SETH WHEELER, Albany, N. Y. Filed Aug. 11, 1885. (No model.)



Claim.—A web or sheet of paper perforated transversely, the line of perforations containing diagonal bars and spaces for easily effecting the separation of the sheets or portions of the same, substantially as described.

333,184. **FIRE AND BURGLAR PROOF SAFE.** WILLIAM P. WHITE, Cincinnati, Ohio. Filed Aug. 16, 1884. (No model.)



Claim.—1. In a safe, the three plates A, B, and C, plate B inclosing plate A and forming water-space E, plate C inclosing plate B and forming water-space F, inlet-pipe H, communicating with the lower space, E, and the exit-pipe I, communicating with space F, and opening B', located in the upper portion of plate B, substantially as and for the purposes specified.

2. In a safe, the combination of the three plates A, B, and C, forming the spaces E F, inlet-pipe H, communicating with space E, movable cover a^3, located in the bottom of plate A, cover b^3, located in the bottom of plate B, opening B', and exit-pipe I, substantially as and for the purposes specified.

3. In a safe, the combination of plates A, B, and C, forming spaces E F, and the pipe H, communicating with the space E and passing through the bottom of plate C, and the collar A, packing h^3, packing h^3, and pipe H^4, substantially as and for the purposes specified.

4. In a safe, the combination of plates A, B, and C, forming spaces E F, and pipe H, communicating with space E and passing through the plate C, and collar A, packing h^3, packing h^3, and pipe H^4, cover a^3, located in the bottom of plate A, and cover b^3, located in the bottom of plate B, the end of pipe H^4 passing through cover b^3, and being located directly beneath the cover a^3, substantially as and for the purposes specified.

5. In a safe, the combination of plates A, B, and C, forming chambers E and F, and pipe H, communicating with space E, exit-pipe I, communicating with space F, and provided with collar *m*, packing *m'*, and collar *m²*, and packing *m³*, substantially as and for the purposes specified.

6. In a safe, the combination of plates A, B, and C, forming spaces E and F, for the circulation of water from one to the other, the door D, having partition B and spaces E F, and inlet and outlet pipes having flexible connections, substantially as and for the purposes specified.

7. In a safe between whose plates water circulates, the inlet-pipe H, provided with cock or valve H' and having turnkey H² passing up through said pipe and into the interior of said safe, substantially as and for the purposes specified.

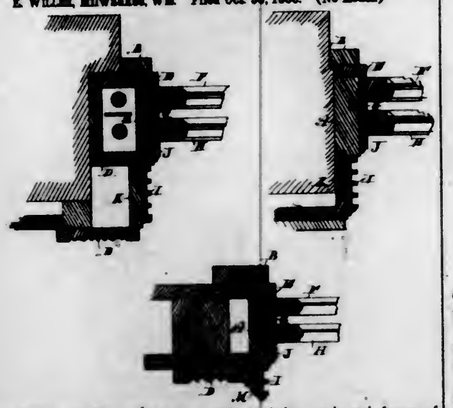
8. In a safe, the plates A, B, and C, forming the spaces E and F, the inlet-pipe H, and vent-conduit S', substantially as and for the purposes specified.

9. In a safe, the plates A B C, forming spaces E and F, inlet-pipe H, vent-conduit S', cock S, opening B', and exit-pipe I, substantially as and for the purposes specified.

10. In a safe, the combination of plates A, B, and C, forming spaces E and F, and the inlet-pipe H and exit-pipe I, and door having spaces E F, and inlet and outlet pipes, said plates A B C having screw-threaded openings provided at their outer face with a countersunk cavity, and the stay-bolt exteriorly threaded and headed in each of said countersunk cavities, substantially as and for the purposes specified.

11. In a safe, the combination of the three plates A, B, and C, forming spaces E and F, inlet-pipe, and opening B', substantially as and for the purposes specified.

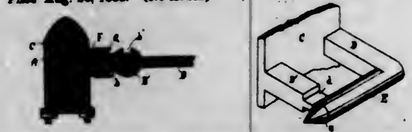
333,185. BLIND-RETAINING WAY-STRIP FOR WINDOWS. H. E. WILLIS, Milwaukee, Wis. Filed Oct. 30, 1885. (No model.)



Claim.—1. The combination, with a window sash and frame, of blind way-strips set back from the front or outer surface of the jambs of the window, substantially as and for the purpose specified.

2. The combination, with the window-frame, of the way-strips I, set back from the line of the front or outer surface of the jamb and out of the line of or contact with the inner surface of the sash-retaining bead J, whereby the corner of the jamb or lining is brought within the space between said front edges of the beads and the outer surface of the blind way-strips, substantially as and for the purpose specified.

333,186. THILL-COUPLING. DAVID T. WILLIAMS, Cincinnati, Ohio. Filed Aug. 26, 1885. (No model.)



Claim.—The combination, substantially as specified, of clip C, journal E, and cone *e*, connected thereto by bars D D' *d*, the perforated strap-iron B, and boss B', said boss having cone-shaped projections *b* at its rear and slot *b'* entirely across its top, said slot being of a width to pass the diminished end *d* of the bar D' when the shafts are elevated, and the cone *e* to guide the thills to their place.

333,187. SCARF-ANCHOR. LEE H. WILSON, Chicago, Ill. Filed Sept. 14, 1885. (No model.)

Claim.—As an improved article of manufacture, a scarf-anchor consisting of the combination of the spiral spring C with the hooks *c c'*, the points of which are bent in opposite directions radially to its axis, whereby the one may be hooked to the scarf upon one of its sides, and the other to the garment upon its reverse side, substantially as described.

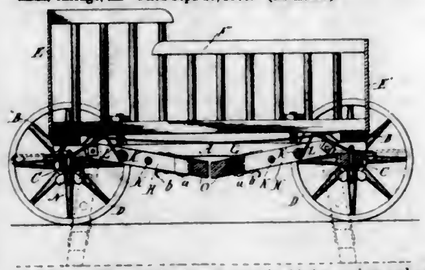


333,188. GRAIN-DRIER. STANLEY E. WORRELL, Hannibal, Mo. Filed June 18, 1885. (No model.)



Claim.—In a drying-machine, a metal furnace covered by the inclined shields *d* and connected with the soot-box *c*, containing the openings *g*, arranged and operated substantially as described.

333,189. COMBINED BABY CARRIAGE AND CRADLE. AUGUST ABEL, Chicago, Ill. Filed Sept. 29, 1885. (No model.)



Claim.—1. The combination, in a combined baby carriage and crib, of a frame mounted on wheels, and legs pivoted to the frame, but independent of the wheels, as set forth.

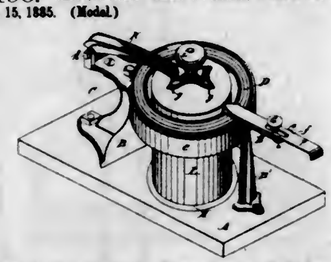
2. The combination, in a combined baby carriage and crib, of a frame mounted upon wheels, legs pivoted to the frame, and rockers hinged to the legs, the rockers and legs independent of the wheels, as set forth.

3. The combination, with a baby-carriage and legs pivoted to the frame thereof, of a bent wire secured to such legs, a hook-shaped pin, and a thumb-nut, as set forth.

4. The combination, with a baby-carriage, of legs H, cross-bars K, bent wire L, hook-shaped pin M, and thumb-nut N, as set forth.

5. The combination, with a baby-carriage, and legs H, provided with sliding bolts *b*, of hinged rockers O, provided with eyes *a*, as set forth.

333,190. CAN-OPENER. CHAS. W. ACKER, Watertown, N. Y. Filed Apr. 15, 1885. (Model.)



Claim.—1. In a can-opener, the combination of the frame with the rotatory knife-carrier in the form of a ring, and the knife or cutter supported horizontally on said carrier and adjustable in line with its cutting-edge, substantially as described.

2. The combination, in a can-opener, with the movable carrier and its support, of the horizontally-disposed knife consisting of a long flat bar having the cutting edge or edges formed on the side or sides thereof and being adjustable in line with its length, substantially as described.

3. The combination of the frame with the carrier-support in the form of a ring, the rotatory carrier resting thereon, and also in the form of a ring, and the knife or blade supported by said carrier, substantially as described.

4. The combination of the stationary ring with the rotatory ring turning thereon, and the knife or blade carried by said rotatory ring and arranged radially with respect thereto, substantially as described.

5. The combination of the stationary ring with the rotatory ring and the knife carried thereby, the knife being horizontally disposed and adjustable toward and away from the center of said rings, substantially as described.

6. The combination, in a can-opening device, of the base with the stationary ring, the rotatory ring, the knife carried thereby, and the clamping-arm, substantially as described.

7. The combination of the frame, the rotatory knife-carrier in the form of a ring supported at the top of said frame, and the clamp in the from of a pivoted arm having one or more points or spikes in its free end and adapted to hold the can within said ring during the operation of the knife, substantially as described.

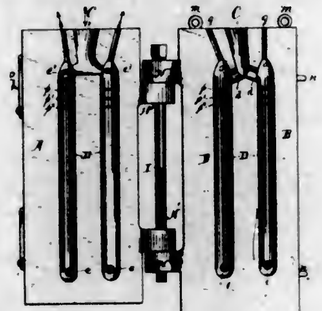
8. The combination of the frame, the rotatory carrier supported thereon, and the knife comprising a long bar having the cutting-edges formed on one end, the other end constituting a handle by which said carrier can be rotated, substantially as described.

9. The combination, with the frame and the movable knife or cutter, of the reversible adjusting-block, substantially as and for the purpose set forth.

10. The combination of the stationary and rotatory rings and the knife carried by the latter, the height of said rings being adjustable, substantially as described.

11. A can-opener comprising the following elements in combination: a frame, a stationary ring forming the top of said frame, a rotatory ring seated upon the stationary ring, said rings being sufficiently large in diameter to admit the cans within the same, the horizontally-disposed adjustable knife carried by the rotatory ring, the clamping-arm, and adjusting means whereby said knife is enabled to act on cans of different sizes, substantially as described.

333,191. CHILL-MOLD FOR SASH-WEIGHTS. REMUS ANDERSON, Urbana, Ohio. Filed Aug. 18, 1884. (No model.)



Claim.—In a chilled mold for sash-weights, the combination of the hollow sides A B, having the upper grooves, *r s*, the sliding cover, the impressions D, projections *p*, pins *e*, single central sprue and inlets therefrom to the impressions, lugs H H, and fastening devices for holding the sides when closed, as set forth.

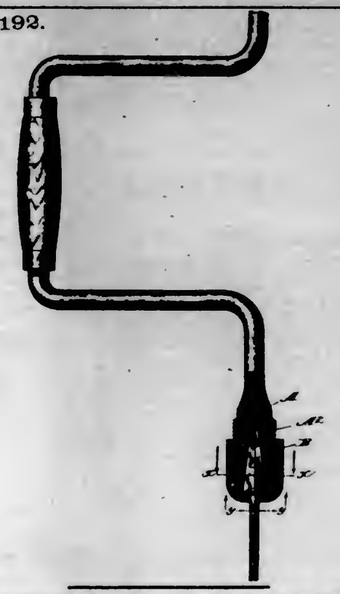
333,192. TOOL-HANDLE. JOHN RALS, Syracuse, N. Y., assignor to Thomas Hooker, same place. Filed Sept. 12, 1885. (No model.)

Claim.—1. The combination, with the exteriorly-screw-threaded body having the central cavity of the character described, of a completely-cylindrical cap, B, having a polygonal opening, B', in its end, and interiorly screw-threaded to fit the body A, substantially as specified.

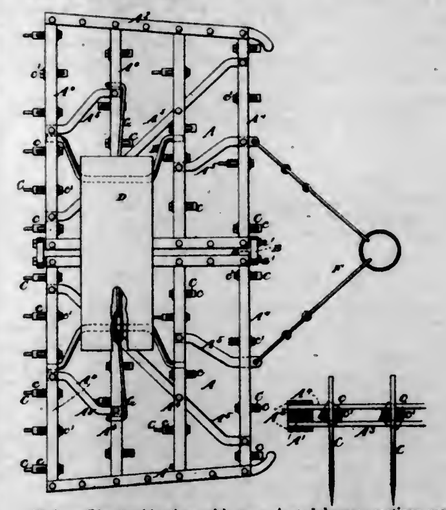
2. The combination of the exteriorly-screw-threaded body A, having the polygonal central cavity, A', of the completely-cylindrical cap B, mounted directly upon the body A, and having the central polygonal opening, B', at least equal in dimension to that of the cavity at the end of the body, substantially as specified.



333,192.



333,193. HARROW. WILLIAM W. BEARD, Sterling, Ohio. Filed June 4, 1885. (No model.)

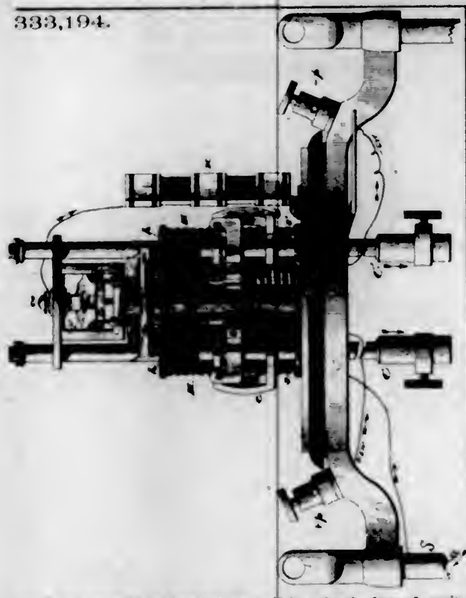


Claim.—The combination, with two pivoted harrow-sections connected by two-eyed links B at their front and rear adjacent corners, and by notted bolts projecting outwardly from said corners, of a seat supported partly on both sections, the pivoted sliding bails E, and the chains G, substantially as described.

333,194. ELECTRIC-ARC-LAMP REGULATOR. JACOB CAIN, Fort Wayne, Ind., assignor to the Fort Wayne Electric Light Company, same place. Filed Aug. 14, 1885. (No model.)

Claim.—1. The combination, in an electric-arc lamp, of a pivoted lever, two electro-magnets, each formed of two movable core-pieces yoked together, opposing each other by means of said lever, two pairs of helices, one pair of low resistance set in the main circuit and one pair of high resistance set in the shunt-circuit, and acting on said electro-magnets, respectively, two clutches carried by said lever, each combined with and operating to feed its separate carbon rod, two clutch-tripping set-screws so adjusted relatively that one shall trip its superimposed clutch in advance of the other, and a resistance in a cut-out circuit closed automatically by the tipping of said lever under the influence of the opposing magnetic forces exerted by said helices when the circuit through the carbons is broken or the arc abnormally long and flaring, and also

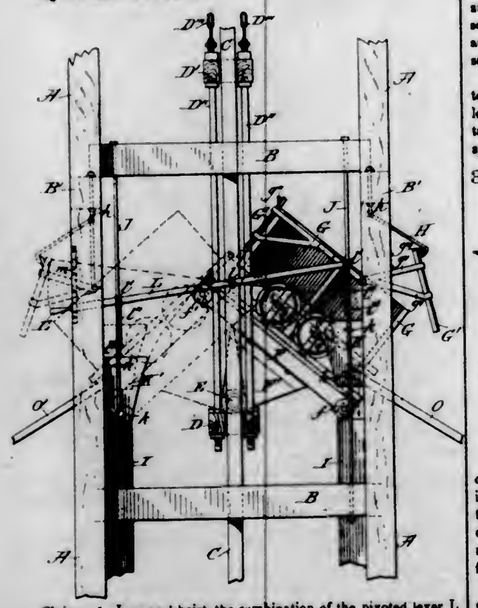
333,194.



closed automatically by like tipping of said lever by the force of gravity when there is no current passing through the lamp.

2. In an electric-arc lamp, the helices H H and h h, the magnets M and m, the lever L, the frame F, the carbon rods C and C', the clutches c and c', the set-screws s and s', the cut-out contacts co and zp, and the resistance R, each and all constructed, combined, and operating substantially as described and set forth.

333,195. COAL-HOIST. William S. Cherry, Streator, Ill. Filed Aug. 15, 1885. (No model.)



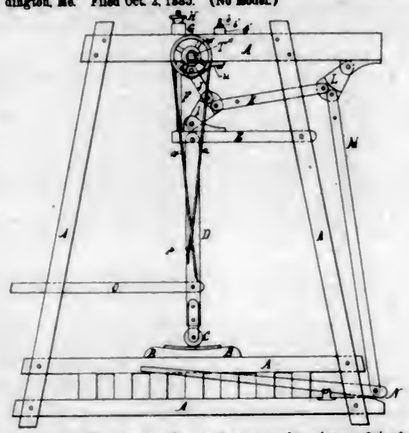
Claim.—1. In a coal-hoist, the combination of the pivoted lever L, the movable curved guides K K, and guides I with the platform F, having wheels *f* and car G, constructed and operating substantially as described.

2. In a coal-hoist, the combination of the pivoted lever L with the curved guides K and K', constructed and operating substantially as and for the purposes described.

3. In a coal-hoist, the combination of the rock or tumble shaft E, the platform F, having wheels *f*, with coal-car G supported thereon, the guides I I, curved guides K K', operating-lever L, with the pendent hook H, and leg *g''* and end-board G', substantially as described.

4. In a coal-hoist operating in a coal-shaft, the combination of the hoisting-cage, the rock-shaft supporting a tilting platform, and a coal-car thereon, with lever L and the devices connected therewith to cause the car to dump its coal upon either chute O or O', substantially as shown and described.

333,196. LEATHER-ROLLING MACHINE. Ebbe E. Church, Beddington, Me. Filed Oct. 3, 1885. (No model.)

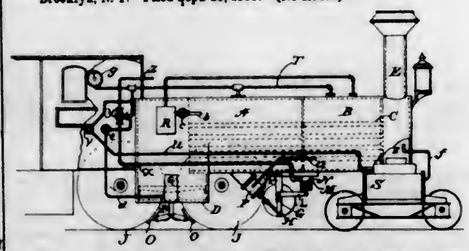


Claim.—1. The combination of the recessed top beam of the frame A, shaft T, journaled in boxes at the ends of said recess and provided with the eccentric *t*, and hanger *u*, secured to the under side of said top beam, so placed as to be borne upon by said eccentric, and so attached to said top beam as to yield to downward pressure as the eccentric is revolved, and to follow upward as such pressure is removed, substantially as described.

2. The combination of the shaft T, provided with the eccentric *t*, and hanger *u*, so placed as to be borne upon by said eccentric, and so secured as to yield to downward pressure as the eccentric is revolved, and to follow upward as such pressure is removed, substantially as described.

3. The combination of the lever E, rod F, rubber block G, two toggle-joints, I J and K L, connecting-bar M, foot-lever N, vibrating lever D, which carries the operating-roller C, shaft T, having the eccentric *t*, pulley *w*, and cord *a a'*, hanger *u*, bolt *b*, and elastic cushion or spring G', substantially as described.

333,197. STEAM AND AIR BRAKE SYSTEM. William H. Clarke, Brooklyn, N. Y. Filed Sept. 29, 1885. (No model.)



Claim.—1. In a locomotive, the combination of a boiler, an air-chamber located in said boiler, a compressing air-pump, a pipe connecting said air-chamber with said pump, a pair of wheels pressing against the peripheries of two opposite driving-wheels, a shaft provided with a crank and connecting the wheels of said pair, and a connecting-rod connecting said crank to the piston-rod of said pump, substantially as and for the purpose specified hereinbefore.

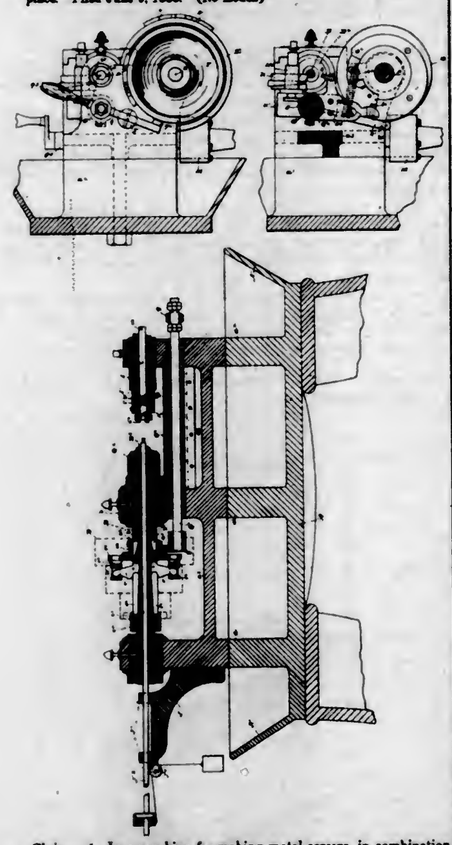
2. In a locomotive, the combination of a boiler, an air-chamber located in said boiler, a compressing air-pump, brake-blocks geared to a piston, a cylinder containing said piston, a pipe connecting said cylinder with said air-chamber, a pair of wheels pressing upon the peripheries of a pair of driving-wheels of the locomotive, a shaft provided with a crank, and connecting-wheels which press against the said driving-wheels, and a piston-rod connecting the said crank with the piston-rod of said pump, substantially as and for the purpose set forth and described in the annexed specification and drawings.

3. In a locomotive, the combination of a boiler, pipes passing through its entire length from the furnace to the draft-chamber, a partition dividing the said boiler into two parts, one of which is the boiler proper, and the other an air-compartment, a steam air-pump, and a pipe connecting said pump with said air-chamber, substantially as and for the purpose set forth.

4. In a locomotive, the combination of a boiler divided into an air-chamber and a water-chamber, a steam air-pump, pipes connecting said pump with said water and air chambers, respectively, brake-blocks pressing against the peripheries of the driving-wheels of the locomotive and geared to a piston, a cylinder containing said piston, and a pipe connecting said cylinder with said air-chamber, substantially as and for the purpose set forth.

5. In a locomotive, the combination of a chamber containing compressed air, a cylinder, a pipe connecting said cylinder and said chamber, a piston in said cylinder, gearing connected with the driving-wheels, and a lever connecting said gearing with said piston, and said gearing also being connected with an air-compressing pump, which in turn is provided with a pipe which connects with the said chamber, substantially as and for the purpose described.

333,198. METAL-SCREW MACHINE. James B. Clyne, Cleveland, Ohio, assignor of one-half to the White Sewing Machine Company, same place. Filed June 9, 1885. (No model.)



Claim.—1. In a machine for making metal screws, in combination with a rock-shaft arranged with its axis parallel with the axis of the chuck-spindle, suitable mechanism for intermittently oscillating the rock-shaft, and a stop connected with the latter and arranged to limit the advance of the blank to gage the length of the screw, the parts being so arranged and timed that the stop is respectively advanced and withdrawn simultaneously with the opening and closing of the chuck, substantially as set forth.

2. In a machine for making metal screws, a rock-shaft and attached rock-arm and a combination-tool mounted on the latter for severing the screw and shaping the body for the succeeding screw, in combination with cam mechanism for intermittently oscillating the rock-shaft, and so arranged that the combination-tool is slowly fed to its work and instantaneously withdrawn when its work is completed, substantially as set forth.

3. In a machine for making metal screws, a combination-tool consisting of two cutting-edges in different planes—one for severing the screw, having a face for dressing the top of the head thereof, and the other flat and adapted to size down the blank to form the body of a succeeding screw—in combination with suitable mechanism for moving the tool to and from the blank, substantially as set forth.

4. In a machine for making metal screws, in combination with a rock-shaft and rock-arms connected therewith, the latter extending in opposite directions, a combination-tool for severing the finished screw and sizing down the blank to form the body of a screw, and a stop for gaging the length of the screw, the said tool and stop being mounted, respectively, on the arms of the rock-shaft on opposite sides of the blank, substantially as set forth.

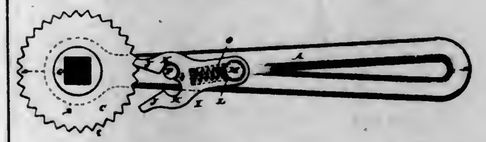
5. In a machine for making metal screws, the combination, with a rock-shaft and arms and a combination-tool and stop, mounted, respectively, on said arms, as indicated, of cam mechanism for actuating the rock-shaft, by means of which the combination-tool is slowly fed to its work and instantaneously withdrawn and the stop is advanced and withdrawn, respectively, simultaneously with the opening and closing of the chuck, substantially as set forth.

6. In a machine for making metal screws, in combination with a spindle and a chuck-head having inclined inner surface, jaws within said head bearing on said inclined surface, a rotating cross-head surrounding the spindle and having suitable means for shifting it longitudinally thereof, and levers arranged between said cross-head and the movable jaws, whereby on the shifting of said cross-head the said levers will be actuated by said cross-head to force forward or allow to retract said jaws, substantially as set forth.

7. In combination with spindle, movable jaws, cross-head, and interposed levers having movable fulcrums, the nut, screw-threaded on the spindle, for adjusting said fulcrums, levers, and jaws longitudinally of the spindle, according to the diameter of wire to be grasped, substantially as set forth.

8. In a machine for making metal screws, the combination, with a spindle and chuck, of levers for operating said chuck, a cross-head or slide mounted on the chuck-spindle and adapted to operate said levers, a rod mounted parallel with said spindle and having an arm engaging with said cross-head, a lever pivoted to said rod and to the base-frame of the machine, and a cam adapted to engage said lever and shift the rod and its connections, substantially as and for the purpose set forth.

333,199. RATCHET-WRENCH. Isaac P. Cornog, Philadelphia, Pa. Filed Nov. 11, 1885. (No model.)



Claim.—1. The combination of the handle of a ratchet-wrench having a pawl-stop, P, with the ratchet-wheel journaled upon an end of said handle and provided with the nut or drill receiving hole, and the pivoted pawl I, having the two legs J J, notches or holes K K, separated by the tongue *k*, and a spring to press said pawl toward the ratchet-wheel, substantially as and for the purpose specified.

2. The combination of the handle A, having hub B and studs M and P, with ratchet-wheel C, having shaft D, furnished with annular groove E, and, further, with the nut or drill receiving hole G, screw F, working in said annular groove, pawl I, having two legs, J J, notches or holes K K, and slot L and spring O, substantially as and for the purpose specified.

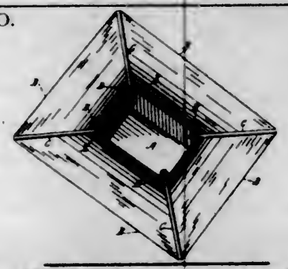
3. The combination of the handle A, having hub B and studs M and P, with ratchet-wheel C, having shaft D, furnished with annular groove E, and, further, with the nut or drill receiving hole, center and feed screw H, screw F, working in said annular groove, pawl I, having two legs, J J, notches or holes K K, and slot L and spring O, substantially as and for the purpose specified.

4. The handle A, having hub B, in combination with ratchet-wheel C, having shaft D, furnished with annular groove E, journaled in said hub, screw F, secured in said hub and fitting into said groove, center and feed screw H, carried by said shaft, and a pawl to connect the ratchet-wheel with the handle, substantially as and for the purpose specified.

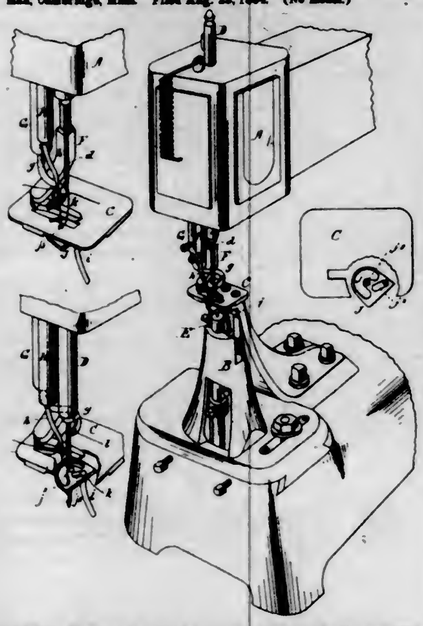
333,200. BATH. John H. Crocker, Brussels, Ontario, assignor to P. J. Edmunds, London, Ontario, Canada. Filed Mar. 24, 1883. (No model.)

Claim.—The combination of the water-guards B B B B, attached to the guard-supports C C C C, screws D D D D, each provided with an enlarged head, and wire loops E E E E, with the bath-pan A, provided with flange A', substantially as shown and described, and for the purpose set forth.

333,200.



333,201. SEWING-MACHINE. Alfred A. Cushing, Hingham, assignor of one-half to Edward Arnold, Marblehead, and Francis S. Whitman, Cambridge, Mass. Filed Aug. 23, 1884. (No model.)

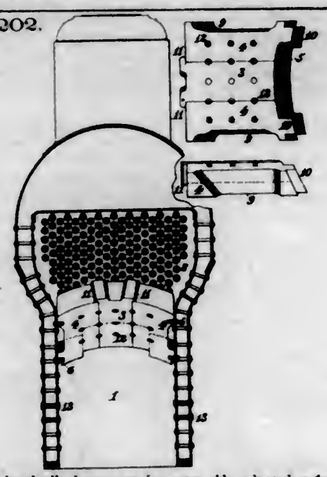


Claim.—The combination, in a sewing-machine for the purpose of making a stitch with two threads, one of which traverses the material to be stitched from surface to surface, and lies in the material double, and the other of which is thrust in loops through the bights of the thread which traverses the material, of a needle which is reciprocated through the material and carries a loop of thread from one side of the material to the other, an apparatus which supplies thread to the eye of the needle situated to one side of the material a thread-carrier, *g*, situated on the other side of the material and reciprocated through the loop of the first thread, a loop-holder, *h*, also situated on the same side of the material as the thread-carrier *g*, and reciprocated with an intermediate rest through the loop of the second thread, arranged to be actuated as follows: when the needle is carrying thread through the material, the thread-carrier is still or only beginning its movement toward the loop of primary thread, but the loop-holder is in position through the loop of secondary or securing thread until the previous stitch is tightened; when the needle has made its full throw through the material and begins to descend, the thread-carrier is moved to traverse the loop of primary thread, and the loop-holder is raised; and when the thread-carrier has made its full throw the loop-holder *h* is depressed through the loop of thread presented by the thread-carrier and remains stationary while the thread-carrier is withdrawn, the needle reciprocated to its thread-taking position, and the needle again traverses the material, carrying a loop of thread through it, substantially as described, all operating together, and with the work-plate of the sewing-machine and the presser-foot thereof and feed movement thereof, to produce the stitch referred to.

333,202. ARCH FOR LOCOMOTIVE FIRE-BOXES. George W. Cushing, St. Paul, Minn. Filed Oct. 12, 1885. (No model.)

Claim.—1 In a brick arch for locomotive fire-boxes, the combination of a center section and two side sections, each of the side sections

333,202.



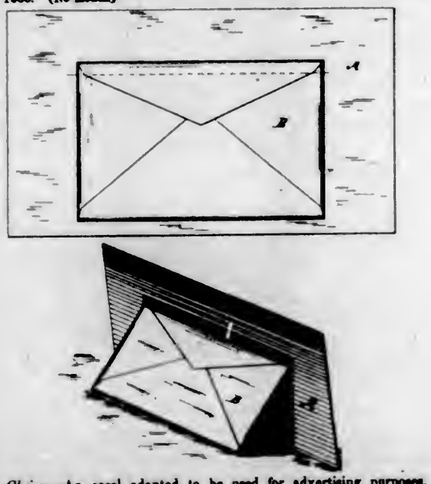
having a longitudinal recess on its outer side adapted to form a lateral passage between the arch and a side sheet of the fire-box, in which the same is to be fitted, substantially as set forth.

2. In a brick arch for locomotive fire-boxes, the combination of a center section, two side sections, a tongue or projection located on the fire-sheet end of each of the side sections, and flanges on the opposite end of the center section abutting against the adjacent ends of the side sections, substantially as set forth.

3. In a brick arch for locomotive fire-boxes, the combination of a center section and two side sections, each of said side sections being provided with a longitudinal recess on its outer side, and a tongue or projection on its end which is adapted to fit against the tube-sheet, substantially as set forth.

4. A brick arch for locomotive fire-boxes, composed of sections united by tongue-and-groove joints, and having lateral recesses, end projections, and a series of openings or perforations extending from the upper to the lower sides of the sections, substantially as set forth.

333,203. EASEL. Dundas Dee, New York, N. Y. Filed July, 13, 1885. (No model.)

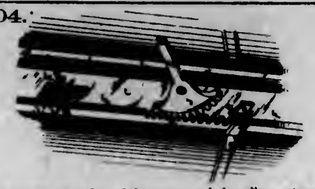


Claim.—An easel adapted to be used for advertising purposes, and consisting of a card forming one member of the easel, to the rear face of which is secured by one edge an envelope, which constitutes the other or supporting member of the easel, all as and for the purpose specified.

333,204. APPARATUS FOR STEAMING PILES. John Dolsher, San Francisco, Cal. Filed Sept. 24, 1885. (No model.)

Claim.—1. A device for destroying animal life or insects in wooden structures, consisting of an inclosure formed of two semi-cylinders hinged together at one edge and surrounding the pile or structure, and pipes for introducing a current of steam or other destructive material into the inclosure and between the sides of the same and the pile or structure to be treated, substantially as herein described.

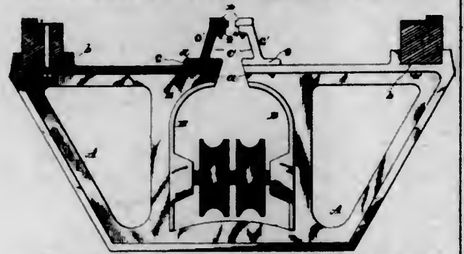
333,204.



2. An inclosure for piles or wooden structures which are permanently fixed beneath the water, consisting of a chamber formed of semi-cylinders hinged together at one edge with keys or wedges for closing and locking the opposite edges together, in combination with a sectional pipe surrounding the lower portion of the chamber and connected by a longitudinal pipe at one side with a steam-generator, substantially as herein described.

3. The means for locking the semi-cylinders together, consisting of staples fixed to one of the flanges and projecting through slots in the other, in combination with a sliding bar having wedge-shaped keys attached to it, so as to be introduced to or removed from the staples, and gearing by which the bar may be reciprocated, substantially as herein described.

333,205. SLOT-IRON FOR CABLE RAILWAYS. Edward D. Dougherty, Philadelphia, Pa. Filed Sept. 11, 1885. (No model.)



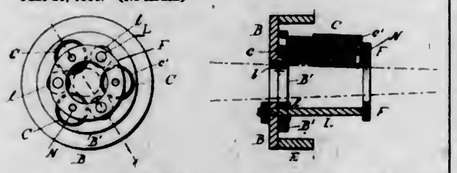
Claim.—1. The combination, with an adjustable slot-iron, of a corrugated wearing-plate removably secured to said adjustable slot-iron, substantially as set forth.

2. The combination, with a laterally-adjustable slot-iron, of wearing-plates removably secured to said slot-irons.

3. The combination, with a bracket and slot-irons adjustably secured thereon, of wearing-plates removably secured to said irons, substantially as set forth.

4. The combination, with a bracket, of the slot-irons, consisting, essentially, of the base, the web extending upwardly from or approximately from the center of the base, the inwardly-projecting flange, and a removable wearing-plate, substantially as set forth.

333,206. TUBE-EXPANDER. Chas. Dudley, Linwood, N. J. Filed June 29, 1885. (No model.)



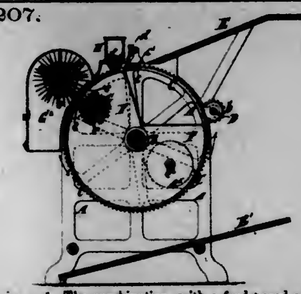
Claim.—1. In combination, tapering mandrel D, rolls C, constructed substantially as described, having integrally-formed gudgeons *c* at one end and the opposite end countersunk, cap-plate B, formed in two parts and provided with radial slots *b*, pins N, plate F, and the connecting-bolts L, as set forth.

2. In combination, rolls C, constructed as described, having gudgeons *c* at one end and the opposite end countersunk, cap-plate B, formed of two plates and having radial slots *b*, connecting-bolts L, with flaring shoulders, and circular rim-plate F, having the retaining-pins N, as described, and for the purpose set forth.

3. In combination, the cap-plate B, constructed as described, circular rim-plate F, having retaining-pins N, connecting-bolts L, having flaring shoulders *l*, and the rolls C, having countersink *c'*, for the purposes specified.

333,207. BRONZING AND DUSTING MACHINE. Rudolph F. Ehrbeck and Frederick Vogdesler, New York, N. Y. Filed Sept. 17, 1885. (No model.)

333,207.



Claim.—1. The combination, with a feed-board and a rotary carrier provided with grippers for grasping sheets, of rotary brushes arranged within and without the circular path traversed by the grippers, and boxes containing the brushes and receiving the powder and dust removed by them, substantially as herein described.

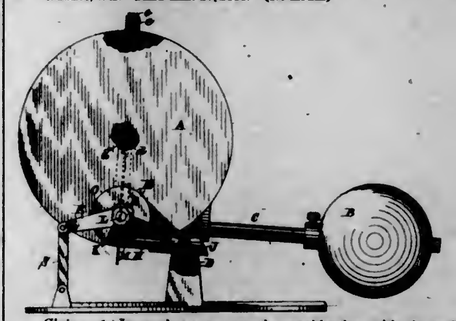
2. The combination, with a feed-board and a rotary carrier provided with grippers for grasping sheets, of a box or casing of circular form arranged within the gripper-carrier, a rotary brush journaled in said box or casing and working through an opening therein, to brush the inner surface of the sheet, and a rotary brush arranged outside the path of the grippers, to brush the outer surface of the sheet, substantially as herein described.

3. The combination, with a feed-board and a rotary gripper-carrier provided with grippers, of a spring for closing the grippers, and a cam, a lever, and gearing for opening them, brushes arranged within and without the circular path of the grippers, for brushing opposite sides of the sheet, and boxes containing the brushes and receiving the powder and dust removed by them, substantially as herein described.

4. The combination, with the feed-board and a rotary gripper-carrier provided with grippers, of a box or casing, F, arranged within the path of the grippers, a brush journaled in said box or casing, for brushing the inner surface of the sheet, a brush arranged outside the path of the grippers, for brushing the outer surface of the sheet, a main shaft and gearing for driving the rotary gripper-carrier, a counter-shaft journaled in the said box or casing F, and gearing through which it is rotated from the carrier, and belts and pulleys for driving the two brushes from the main and counter shaft, substantially as herein described.

5. The combination, with the two end frames, A, and the non-rotary bar B, connecting them, of the gripper-carrying wheels C C, journaled on said bar, the box or casing F, supported on said bar between said wheels C C, and the brushes G G', arranged within and without the path of the grippers, for brushing opposite sides of the sheet, substantially as herein described.

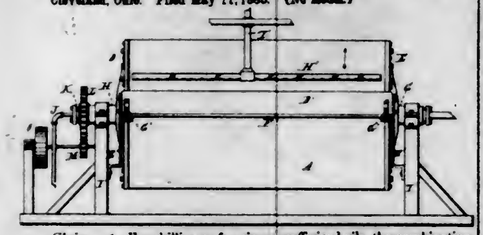
333,208. HYDRAULIC AIR-COMPRESSOR. James B. Erwin, Milwaukee, Wis. Filed Mar. 27, 1885. (No model.)



Claim.—1. In an air-compressor, the combination, with the oscillating receiver and the supporting base or bracket, of the two-way faucet E and link S, said faucet being attached to the side of said receiver by a coupling sleeve or duct, through which the same water both enters and escapes from said receiver, said receiver being counterbalanced by a weight and supported above said base or bracket upon a pivot, substantially as and for the purpose specified.

2. The combination, with the oscillating counterbalanced receiver A, provided with inlet and outlet air ducts and valves, of the chamber K, connecting sleeve or duct F, valve-shaft L, arms M M, valve-rods N N, reversely arranged, inlet and outlet valves *a* and *b*, ducts G and H, cap O, stuffing-nut P, and handle R, said handle being connected by a link with the supporting brace or bracket of said receiver, whereby said valve-shaft is turned and said valves opened and closed as said receiver oscillates, substantially as and for the purpose specified.

333,209. APPARATUS FOR CHILLING PARAFFINE AND OTHER OILS. Thomas D. Fairfield, Joshua L. Clark, and Robert Hughes, Cleveland, Ohio. Filed May 11, 1885. (No model.)

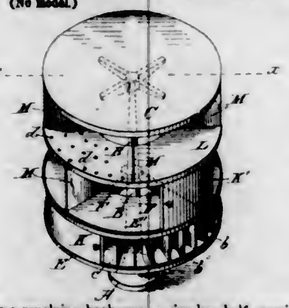


Claim.—1. For chilling or freezing paraffinized oils, the combination of the concentric revolving cylinders A and B, having between them a tight annular chamber adapted to contain a refrigerant, trunnions G and H on which the cylinders are supported and revolve in a suitable frame, pipe P, secured in the trunnion G by a stuffing-box, and having therein gas-tubes, the inner ends of which terminating in the interior of the cylinder B and their opposite ends terminating in the head S, in open relation, respectively, with the conduits therein, valve-chambers T, and valves and eduction-pipe J, substantially as described, and for the purpose specified.

2. The combination, with the valve-chambers, of the head S, conduits and tubes *d*, and cylinders, the pipes B^3, and receiver, for the purpose specified, and substantially as set forth.

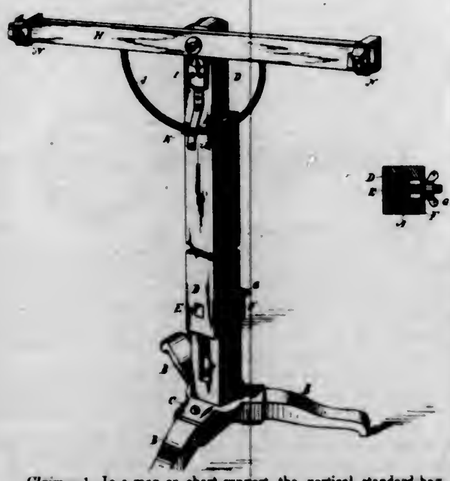
3. The combination of the revolving concentric cylinders, trough D', perforated supply, and scraper, as and for the purpose specified.

333,210. BOOK-CASE. Thomas J. Fisher, Carthage, Tenn. Filed May 9, 1884. (No model.)



Claim.—In a revolving book-case, a circular shelf provided with buttons *d d*, adapted to separate the books, substantially as described.

333,211. STANDARD FOR MAPS AND CHARTS. John S. Fox, Oakland, Cal., assignor of one-half to J. P. Garlick, same place. Filed June 22, 1885. (No model.)

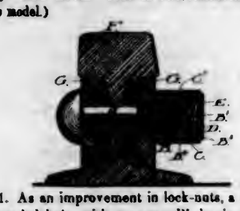


Claim.—1. In a map or chart support, the vertical standard having the dovetailed or enlarged slot formed vertically upon one side, and a correspondingly-formed sliding bar fitted in said slot, in combination with a plate having its edges turned down over the standard, and a clamping-screw passing through the movable portion, a slot in the stationary portion, and the plate, together with the supporting-nut, substantially as herein described.

2. In a map or chart support, a vertically-adjustable standard and clamp, as shown, a horizontally-pivoted arm upon the upper end of the standard, with a semicircle fixed to it radially with the pivot, and a guide upon the standard, in combination with an elastic plate, and a notch or catch in the semicircle, into which the plate falls when the arm is in horizontal position, substantially as herein described.

3. In a map or chart support, the vertically-adjustable standard, with a pivoted transverse arm, a guide, and catch, as shown, in combination with hangers fitted to slide upon said arm, and spring-plates, by which the hangers are held at any point by compression, substantially as herein described.

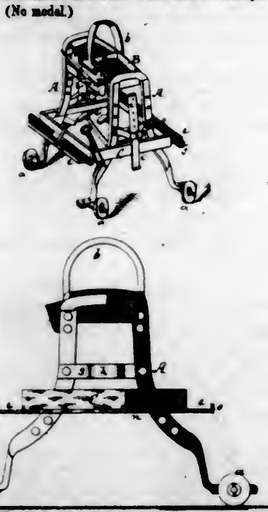
333,212. NUT-LOCK. John M. Fry, Rothsville, Pa. Filed May 1, 1885. (No model.)



Claim.—1. As an improvement in lock-nuts, a nut provided, in addition to its threaded hole, with a recess, B', having teeth impressed in the base of the same, a recess, B^3, of a somewhat larger diameter in the face of the nut, and a raised annular ledge, B^3, in combination with an annular ratchet-faced ring, C, a spiral spring, E, and cap D, the latter locked upon the nut by the compression of the ledge B^3, substantially as and for the purpose set forth.

2. As an improvement in nut-locks, an annular ring, C, ratchet-faced at C', having a tongue, C^3, in combination with a recessed nut correspondingly ratcheted in the base of the recess, a spring, E, cap D, and grooved bolt A, substantially as shown, described, and for the purpose specified.

333,213. HORSESHOER'S BOX. John Goss, Brooklyn, N. Y. Filed Oct. 9, 1885. (No model.)



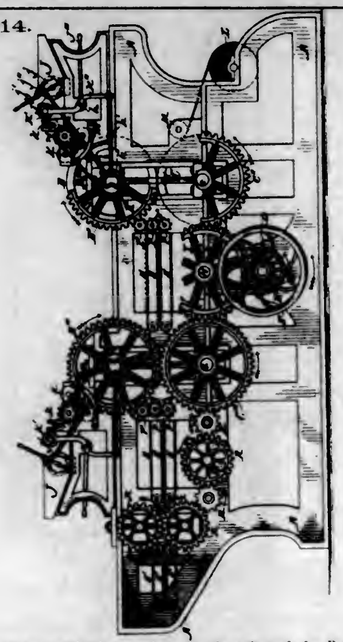
Claim.—1. The horseshoer's box consisting of the frame A, bottom plate, *n*, forming the box C, and troughs *e*, of the nail-box B above the box C, pocket D at the side of the box B, and of the loop A at the side of the frame A, all arranged substantially as herein shown and described.

2. The box C, having bottom plate, *n*, which is extended beyond the box to constitute the bottom of the trough *e*, as specified.

333,214. CHROMATIC PRINTING MACHINE. Frederick L. Goss and Samuel G. Goss, Englewood, Ill. Filed Jan. 5, 1883. (No model.)

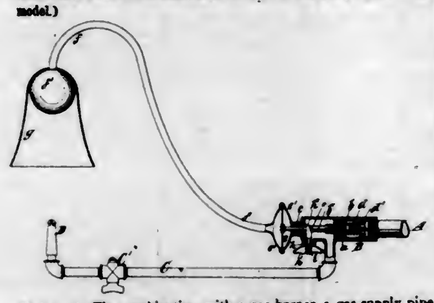
Claim.—The combination, in a printing-press, of form-cylinders and impression-cylinders having equal diameters, and supported to revolve in suitable bearings in the frame of the press, one vertically above the other in pairs horizontally in line with each other, sets of carrying-bands supported between each two vertical pairs of cylinders independently of

333,214.



the said cylinders, and having members of each set formed of endless metal bands burred on their outer surfaces, gearing, substantially as described, operating to actuate the cylinders synchronously, and intermediate connecting-gear, substantially as described, between the cylinders and bands and cylinders and inking mechanism, the whole being constructed and arranged to operate in the manner set forth.

333,215. SAFETY ATTACHMENT FOR GAS-BURNERS. Paul H. Grimm and Ward I. Fancher, Glen Cove, N. Y. Filed Sept. 5, 1884. (No model.)



Claim.—1. The combination, with a gas-burner, a gas-supply pipe, and a valve in such pipe, of an air heater or reservoir located near the burner, a motor connected with the valve in the supply-pipe, and a pipe connecting said heater and motor, substantially as herein described, whereby the confined air, when heated, will be caused to operate the motor to control the closing of said valve.

2. The combination, with a gas-burner, a gas-supply pipe, and a valve in said pipe, of an air heater or reservoir arranged a short distance above the burner, a motor connected with the valve in the supply-pipe, and a pipe connecting said heater and motor, substantially as herein described, whereby the confined air, when heated, will be caused to operate the motor to control the closing of said valve.

3. The combination, with a gas-burner, a gas-supply pipe, a valve in said pipe, and a spring for closing the valve, of an air heater or reservoir located near the burner, a motor connected with the valve in the supply-pipe, and a pipe connecting the heater and motor, substantially as herein described, whereby the confined air, when heated, will be caused to operate the motor to control the closing of the valve.

4. The combination, with a gas-burner, and a valve for controlling the supply of gas thereto, of an air heater or reservoir exposed to heat from the burner, a motor to be acted upon by the confined and heated air to hold said valve open, and a cam or device capable of operation by hand, and serving to open said valve when the gas is to be lighted, substantially as herein described.

333,216. ARTIFICIAL TOOTH. Charles P. Grout, New York, N. Y. Filed May 4, 1885. (No model.)



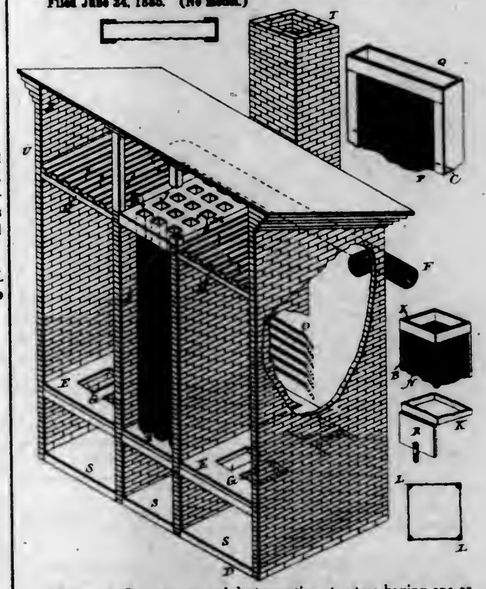
Claim.—1. A metallic tooth-crown having a divided or split-band portion, and a key or clamp applied thereto for holding the edges of the band together, substantially as and for the purpose herein described.

2. A metallic tooth-crown having upon it a dovetailed rib or projection, *c*, and split or divided through such projection, and the dovetailed clamp or key slipped upon said projection for holding the edges of the band together, substantially as and for the purpose herein described.

3. A tube for making the band portions of tooth-crowns, having upon it a dovetailed rib or projection, *c*, and the sliding key or clamp *d*, fitting such projection, substantially as and for the purpose herein described.

4. The combination, with a metallic tooth-crown having in its closed top a screw-threaded hole or socket, of a pin having a screw-threaded head, whereby it is fitted in the top of the crown and extended downward within the crown to enter a hole or socket in the tooth root or stamp, substantially as and for the purpose herein described.

333,217. DUST-ARRESTER. William Hasenberg, Toledo, Ohio. Filed June 24, 1885. (No model.)



Claim.—1. In a storage and dust-arresting structure having one or more air and material conveyers, F, discharging into the vault or vaults E E, the dust-arresting compartment I, adjoining or interposed between said vaults, when the said compartment I is provided with downwardly-discharging dust-arresting tubes A, which open at or near their upper extremity for the reception of dust and the air conveying the same in their passage from the vault or vaults E E, substantially as shown and described.

2. In a storage and dust-arresting structure having one or more air and material conveyers, F, discharging into the vault or vaults E E, and having the dust-arresting compartment I adjoining or interposed between said vaults, the perforated top covering, J, of the dust-arresting compartment I, when the said perforations open to and connect with the downwardly-discharging dust-arresting tubes A, substantially as shown and described.

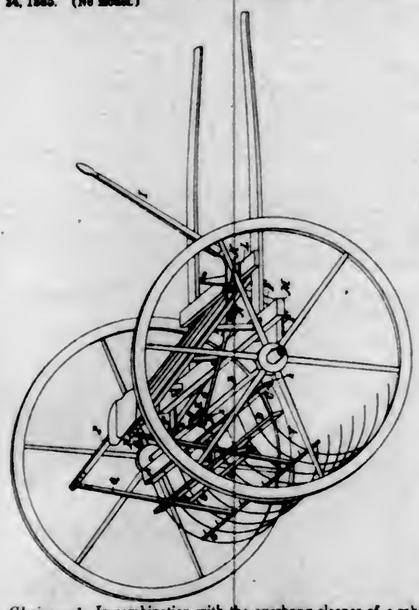
3. In a storage and dust-arresting structure, the combination of the conveyer or conveyers F F, the vault or vaults E E, dust-arresting compartment I, adjoining or interposed between said vaults, with its tubes A, when said tubes A have opening and closing outlets at their lower extremities for regulating the discharge of dust, and on their vertical sides open-meshed fabric for the discharge of air, substantially as shown and described.

4. In a storage and dust-arresting structure having the conveyer or conveyers F F and vault or vaults E E, the downwardly-discharging

dust-arresters A, located in compartment 1, in combination with stack T, substantially as shown and described.

5. In a storage and dust-arresting structure having the conveyer or conveyers F F and the vault or vaults E E, through which the dust-conveying current is passed, the slatted floor H, located in the upper part of the vault or vaults E E, arresting the coarser refuse matter, substantially as shown and described.

333,218. HORSE-RAKE. William H. Hall, Tiffin, Ohio. Filed Mar. 24, 1885. (No model.)



Claim.—1. In combination with the overhang cleaner of a rake, a rod or supplemental support hung upon the cleaner-rods in front of the cleaner-bar and above the teeth, whereby, through the impact of the teeth against said rod, the cleaner-bar is lifted from the teeth when the rake is dumped.

2. In combination with a rake, an overhang cleaner having pivoted thereto in advance of the tooth-bar of said cleaner a roller whereby the cleaner-rod is lifted from the teeth when the rake is dumped.

3. In combination with a rake, a cleaner-bar supported in swinging rods, to which is pivotally attached above the teeth and at a point in advance of said cleaner-bar a roller adapted to move over the curve of the teeth when raised or lowered.

4. In combination with the cleaner-bar of a rake, the supporting-rods, the ears pivotally attached thereto, and the roller journaled in said ears.

5. In combination with the rods supporting the cleaner-bar of a rake, the slotted ears pivoted thereto and supporting the roller, and the roller serving to raise the cleaner-bar when the rake is dumped, substantially as described.

6. In combination with the rake-head and the center draw-iron, the ratchet-casing having a forward projection pivotally supporting the center draw-iron.

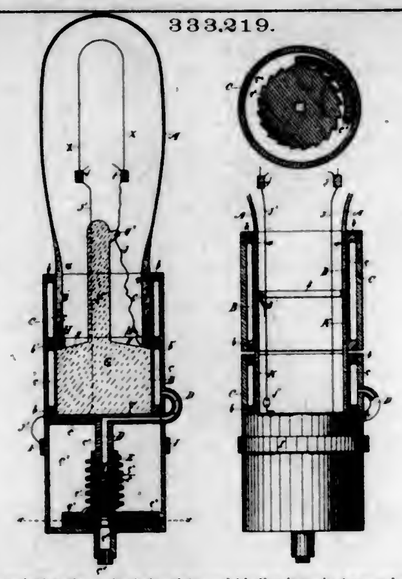
7. In combination with the rake-head and the center draw-iron, the ratchet-casing directly attached to the rake-head having projecting in the rear thereof an arm attached to the tooth guide-board and a forward extension affording a pivotal support to the center draw-iron.

8. The combination, with the rake-head and ratchet-wheel, of the ratchet-casing mounted on the front of said rake-head and having pivoted therein at a point in front of said rake-head a ratchet-latch overhanging the ratchet-wheel, so as to engage the same in front of its axis, the said latch being held normally out of engagement by means of a spring, and provided with an extension above its pivot constituting one arm of a lever, of which the latch is the opposite arm and the pivot the fulcrum, to which upward extension is connected a rod or chain which serves to rock said latch on its fulcrum and thereby throw it into engagement.

333,219. INCANDESCENT ELECTRIC LAMP. August Harding, Oakland, Cal. Filed Mar. 20, 1885. (No model.)

Claim.—1. In an incandescent electric lamp having a glass globe containing the carbon conductor, and a metallic base, the means for joining the globe to the base, consisting of an air-tight compression-chamber encircling the neck of the globe and binding it to the base, substantially as herein described.

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2. In an incandescent electric lamp having a glass globe and a metallic base, the means for joining the globe and base, consisting of an annular chamber encircling the neck of the globe, and having its inner wall of soft metal adapted under pressure to be forced against the glass, substantially as herein described.

3. In an incandescent electric lamp, the annular chamber *c*, encircling the neck of the glass globe, and having its inner wall of soft metal, and a connection between said chamber and a chamber containing liquid or gas under pressure, whereby a pressure is brought upon the soft-metal wall to force it around the glass, substantially as herein described.

4. In an incandescent electric lamp, an air-tight joint between the globe and the base of the lamp, made by compressing a tube of soft metal around the neck of the globe, the impinging-surface being provided with cement, and keeping the tube under pressure while ready for use, substantially as herein described.

5. In an incandescent electric lamp, the soft-metal tube B, having flanges, and the exterior hard-metal tube, C, encircling the tube B, whereby an annular chamber, *c*, is formed, substantially as and for the purpose herein described.

6. In an incandescent electric lamp, the soft-metal tube B, having flanges, and the exterior hard-metal tube, C, encircling tube B, forming an annular chamber, *c*, in combination with the glass globe A, having neck *a*, fitted within the soft-metal tube, the impinging-surfaces being provided with cement, and a means for admitting pressure to the chamber *c*, whereby the soft-metal tube is forced tightly around the neck *a*, substantially as herein described.

7. In an incandescent electric lamp, the soft-metal tube B, having flanges *b*, the hard-metal tube C, encircling tube B and forming a chamber, *c*, in combination with the glass globe A, having a neck fitting within the soft-metal tube, the impinging-surfaces being covered with cement, the chamber c^3 below, and the canal C, connecting the two chambers, substantially as herein described.

8. In an incandescent electric lamp, a soft-metal tube and an encircling hard-metal tube, forming between them an annular chamber, a chamber formed in the base of the hard-metal tube, containing liquid or gas under pressure, a canal connecting said chamber with the annular chamber, and a valve for closing the mouth of the canal, in combination with the glass globe, the neck of which is fitted within the soft-metal tube, substantially as and for the purpose herein described.

9. In an incandescent electric lamp, an annular chamber encircling the neck of the glass globe and having its inner wall of soft metal, in combination with a chamber containing a liquid or fluid under pressure and connected with the annular chamber, a spring-valve controlling the connection and held to its seat by a metallic pawl adapted under the influence of a magnet to relieve the valve and establish the connection between the two chambers, whereby the soft-metal wall is pressed around the glass neck, substantially as herein described.

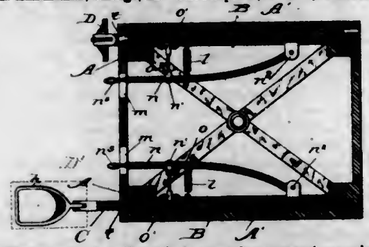
10. In an incandescent electric lamp, the soft-metal tube B and the hard-metal tube C, forming an annular chamber, *c*, the chamber c^3 in the base of the hard-metal tube, the canal D, connecting chambers c^3 *c*, the valve *e*, controlling the canal, the screw-stem e' of the valve, the ratchet e^2 on the stem, the operating-spring F, and the retaining-pawl e^3, all arranged and adapted to operate substantially as and for the purpose herein described.

11. In an incandescent electric lamp, the globe A, having neck *a*, and the underlying glass plug G, in combination with the soft-metal tube B, encircling the neck and glass plug, the hard-metal tube C, encircling the tube B and forming an annular chamber, *c*, the compression-chamber c^3, connecting-canal D, and controlling-valve *e*, all arranged and adapted to operate substantially as herein described.

12. In an incandescent electric lamp, the globe A, having neck *a*, and the glass plug G, in combination with the encircling soft-metal tube B, the exterior hard-metal tube, C, forming chamber *c*, the chamber c^3 in the base of the tube C, the canal D, connecting the two chambers, the screw-valve *e*, controlling the canal, the ratchet e^2, spring F, and pawl e^3, by which the valve is operated and held, the entrance-passage c^4 to the chamber c^3, and the plug c^5, all arranged and adapted to operate substantially as herein described.

13. In an incandescent electric lamp, the combination of the globe A, having neck *a*, the glass plug G, having spur *g'*, the metallic ring H between the neck of the globe and the glass plug, the encircling concentric tubes B C, the former of soft metal, and having a chamber, *c*, between them, the chamber c^3 below, having an entrance, c^4, the canal D, connecting the chambers, the valve *e*, controlling the canal, the ratchet e^2, pawl e^3, and spring F, exterior insulated metallic ring, I, and the inleading wires J J', connecting the carbon conductor with the metallic rings H I, all substantially as and for the purpose herein described.

333,220. FOOT-REST FOR SURGICAL CHAIRS AND TABLES. H. F. Hildebrand, Chicago, Ill. Filed Sept. 14, 1885. (No model.)



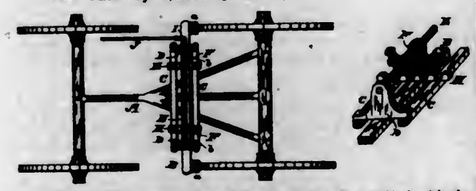
Claim.—1. An adjustable foot-rest for surgeons' operating chairs and tables, comprising a sleeve containing an extensible rod having a longitudinal recessed slot, and carrying a stirrup at one extremity, and means, substantially as described, for locking the rod in any extended position, substantially as and for the purpose set forth.

2. The combination of a surgeon's operating chair or table, a sleeve containing an extensible rod having a longitudinal recessed slot, and carrying a stirrup hinged at one extremity and provided with a stop, an auxiliary detachable foot-rest to fit upon the stirrup, and means, substantially as described, for locking the rod in any extended position, substantially as and for the purpose set forth.

3. The combination, with a surgeon's operating chair or table, of an adjustable foot-rest comprising a sleeve, B, secured to the chair and containing an extensible rod, C, slotted longitudinally and provided with recesses in the slot, and having a stirrup, D, hinged at one extremity, and means, substantially as described, for locking the rod in any extended position, substantially as and for the purpose set forth.

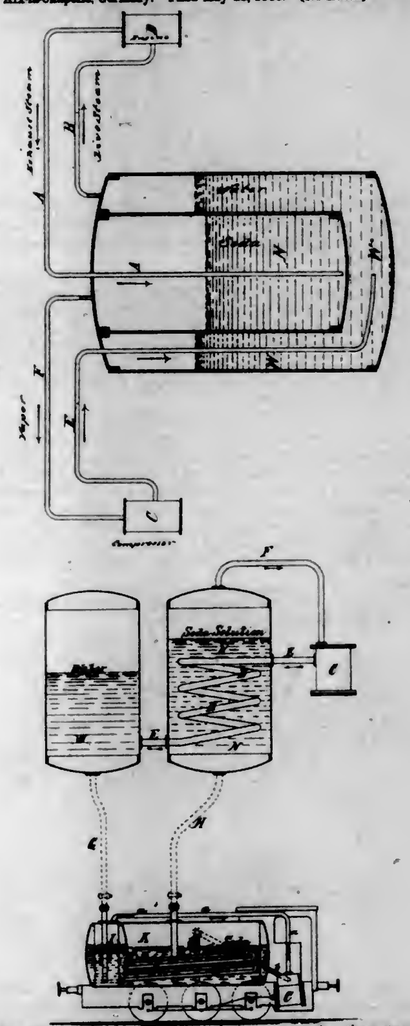
4. The combination, with a surgeon's operating chair or table, of an adjustable foot-rest comprising, in combination, a sleeve, B, constricted toward one extremity and secured to the chair, an extensible rod, C, within the sleeve having a stop, *k'*, and slotted longitudinally and provided with recesses in the slot, and having a stirrup, D, hinged at one extremity and provided with an extension, *r*, forming a stop, and means, substantially as described, for locking the rod in any extended position, substantially as and for the purpose set forth.

333,221. WAGON-BRAKE. Oliver O. Honeywell, New Baltimore, Ohio. Filed July 24, 1885. (No model.)



Claim.—The combination of the brake-bar B, provided with the toothed bars H, of the rock bar or shaft E, provided with the toothed segments F, and the operating-lever I, provided with the connecting-rod J, all arranged substantially as shown and described, and for the purpose specified.

333,222. STORING POWER. Moritz Honsmann, Grevenberg, near Aix-la-Chapelle, Germany. Filed May 28, 1885. (No model.)



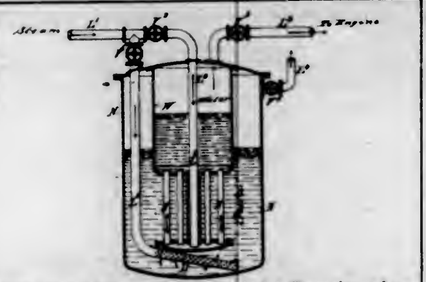
Claim.—1. The combination, with the steam-engine, the water vessel or boiler from which steam is supplied thereto, and the vessel for containing the solution into which the exhaust-steam from the engine is absorbed, of a compressor connected with the latter vessel for exhausting the water vapors from the said solution, and connected with the first-named vessel or boiler for delivering thereinto the water of said vapors, substantially as and for the purpose herein described.

2. The combination of the water vessel or boiler, the solution-vessel for containing the solution having a higher boiling-point than water, the compressor connected with said vessels for exhausting the water vapors from the solution-vessel and transferring the water thereof to the boiler, and the coil contained within the solution-vessel, and through which the water or water vapors circulate between the compressor and the boiler for communicating their warmth to the solution, substantially as and for the purpose herein described.

333,223. PRODUCTION OF STEAM AT A HIGH PRESSURE FROM STEAM AT A LOWER PRESSURE. Moritz Honsmann, Aix-la-Chapelle, Germany. Filed July 17, 1885. (No model.)

Claim.—1. The improvement in the art of generating steam, consisting in generating from water steam at a pressure above that of the atmosphere, causing such steam to pass directly to and be absorbed by

333,223.

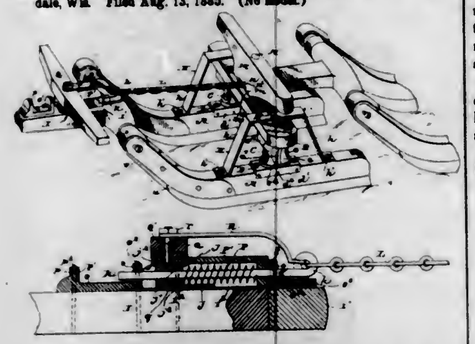


an alkaline lye or other solution having a high boiling-point, and employing the heat produced by such absorption to generate from other water steam at a pressure higher than that absorbed, substantially as herein described.

2. The within-described improvement in the art of generating steam at high-pressure by means of heat obtained by the absorption of steam of a lower pressure into solution of high boiling-point in a vessel separate from the vessel in which such generation is effected, said improvement consisting in effecting the reconcentration of said solution by introducing into the steam-generating vessel steam of a pressure and temperature corresponding with that of the steam originally absorbed, substantially as herein described.

3. The within-described improvements in the art of generating steam at a high pressure by means of heat obtained by the absorption of steam of a lower pressure into an alkaline solution in a vessel separate from the vessel in which such generation is effected, and afterward reconcentrating the solution by introducing steam into the generating-vessel, said improvement consisting in the employment of two similar sets of heat absorbing and generating vessels in such alternative manner that while steam is being generated in one set the concentration of the solution is being performed in the other one, substantially as herein described.

333,224. BOB-SLEIGH. John Horby and Canfield Marsh, Rosendale, Wis. Filed Aug. 13, 1885. (No model.)



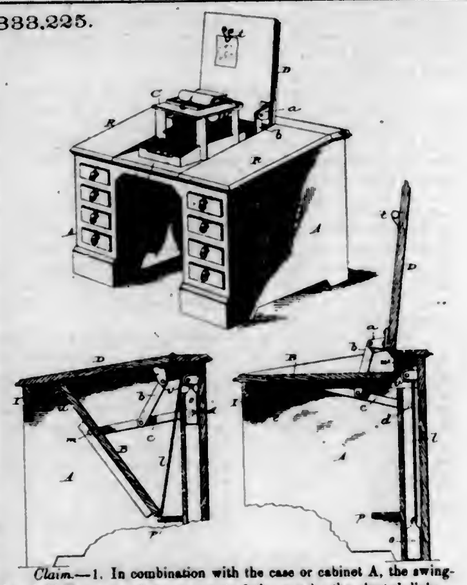
Claim.—1. In combination with a draft-pole, a casing mounted thereon, a spring-actuated sliding bolt arranged within said casing, a pivot-bolt connected to the sliding bolt and projecting through the case, a whiffletree pivoted on said pivot-bolt, a pivoted bolster, and connections between the whiffletree and sliding bolt and the bolster, substantially as described.

2. The combination, with a draft-pole, a sliding casing mounted thereon, a sliding bolt passing through the case, a spring arranged around the bolt within the case, a stop-lug against which the spring bears, guide-plates for the bolt arranged at the ends of the case and serving as limiting-stops thereto, a vertical bolt pivotally connected to the sliding bolt between the end wall of the spring-case and the stop-lug therein, a whiffletree mounted on said bolt, a pivoted bolster, and a chain connecting the sliding bolt and bolster, substantially as described.

3. The combination of the runners, a cross-beam, knees or standards having sockets or slots and secured to the cross-beam, a bolt, F, passing through the beam and the seats in the knee, around the lower end of which it is bent, a plate, G, arranged on each end of the beam and having a flange and apertures for the ends of the bolt F, nuts *f*, fitted on the ends of the bolt within the flange of the plate, and a rave having notched side edges arranged to bear against legs *g'* of the plate G and serve as limiting-stops thereto, substantially as described.

333,225. CABINET OR CASE FOR TYPE-WRITERS. William Horrocks, Ilion, N. Y. Filed June 3, 1885. (Model.)

333,225.

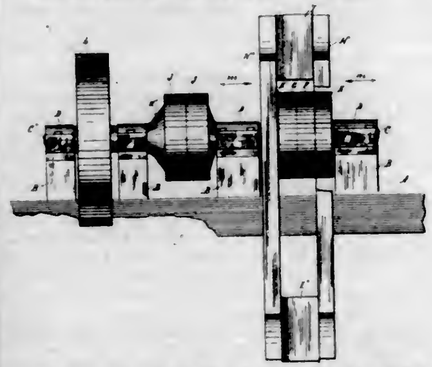


Claim.—1. In combination with the case or cabinet A, the swinging shelf B, connected to rear part of the case by the pivoted links *c*, and having its front edge connected to the case by the pivoted links *g*, or an equivalent device, whereby the front portion of the shelf is caused to move backward when its rear edge is depressed, and is brought forward over the rail I when raised to the proper position for operating the machine, substantially as and for the purpose set forth.

2. In combination with the case A, the shelf B, connected to the rear part of the case by pivoted links *c*, and its front edge supported by the pivoted links *g*, or equivalent devices, and the hinged lid D, connected to the shelf B by means of the links *b* and *c*, substantially as shown and described.

3. The combination, with case A, of the shelf B, arranged to swing downward and backward with the counter balance or weight *o* and the hinged lid D, said lid and weight both being connected to said shelf, and all being arranged to operate substantially as shown and described.

333,226. MECHANISM FOR CONVERTING MOTION. Orlando B. Howe, Fair Haven, Ill. Filed Oct. 16, 1885. (No model.)



Claim.—1. In a device for converting motion, the combination of a driving and a driven shaft and springs connecting said shafts, substantially as set forth, and adapted to equalize the motion transmitted from said driving to said driven shaft.

2. Two shafts lying in the same straight line and connected by springs adapted to communicate to the second the rotary motion of the first, whereby sudden application of rotary force to the first shaft flexes said springs and the elasticity of the springs gradually transmits the motion so stored to the second shaft.

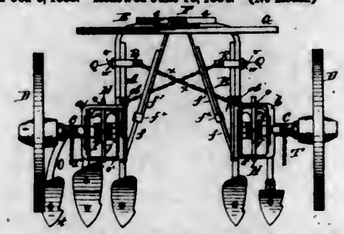
3. Springs for transmitting rotary motion from one shaft to a second shaft, said springs being attached upon diametrically-opposite sides of each of the respective shafts, whereby tension in the springs has no tendency to produce friction of said shafts in their bearings.

4. In a device for converting motion, the combination, with a driving and a driven shaft, of two or more connecting-springs, whose corresponding ends are attached to the driving-shaft or elements lying in different parts of its surface, and thin opposite ends similarly attached to the driven shaft.

5. In a device for converting motion, the combination of a driving and a driven shaft and one or more pairs of connecting-springs, the springs of each pair being attached to each shaft at diametrically-opposite points in the surface thereof.

6. In mechanism for converting motion, the combination of two pinions on the same shaft, each rotated forward and back by a reciprocating rack, means whereby the first engages and rotates their common shaft when its rack moves forward, and the second engages and rotates the same shaft during the reverse motion of its rack, and springs connecting said shaft to a second shaft to be rotated, whereby the reciprocating rock movement produces a substantially uniform rotation of said second shaft.

333,227. CULTIVATOR. William H. Hunter, Farnhamville, Iowa. Filed Oct. 6, 1883. Renewed June 16, 1884. (No model.)



Claim.—1. In a sulky plow or cultivator, the frames having rigidly attached thereto stub-axles C on one side and vertical standards on the other, in combination with an arched bar provided near its ends with loops, said bar supporting the tongue, and extensible and adjustable braces, the parts being organized substantially as shown, for the purpose set forth.

2. In a sulky plow or cultivator, the combination of an adjustable arched bar and carrying-frames with axles formed thereon, and provided with vertical standards and draft-bars for the plows or cultivators, the parts being organized so as to be vertically adjusted with respect to each other and braced by means of extensible and flexible stays, substantially as shown, and for the purpose set forth.

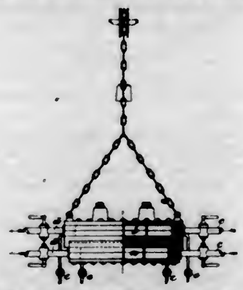
3. The combination, in a cultivator, of clips clamped to the draft-frame and carrying arms provided with crossed chains for bracing the beam-sections, substantially as set forth.

333,228. SASH-FASTENER. John Huth, Canton, Ohio. Filed June 18, 1885. (No model.)



Claim.—In a sash-fastener, the combination of the clamp B, consisting of the projections *a*, and arranged so that the rods or bars C and C' will pass each other, the rods or bars C and C', attached to the sashes D, and the set-screws *b*, all arranged substantially as shown and described, and for the purpose specified.

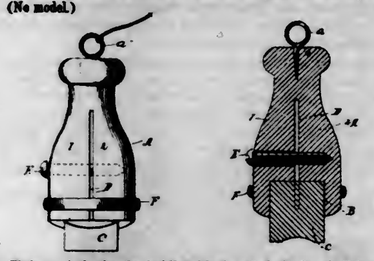
333,229. BAKING APPARATUS. Emil Jaenne, Planen, near Dresden, Saxony, Germany. Filed Apr. 21, 1884. (No model.) Patented in Germany June 27, 1883, No. 26,945; in Belgium July 9, 1883, No. 61,972; in France July 9, 1883, No. 156,465; in England July 9, 1883, No. 3,337; in Luxemburg July 10, 1883, No. 293, and in Austria-Hungary Sept. 1, 1884.



Claim.—1. In combination with the hollow portions *a b* and means for clamping them together, the inlet-connections for steam, the outlets for water of condensation, and the vents, all controlled by separate valves or cocks, as set forth.

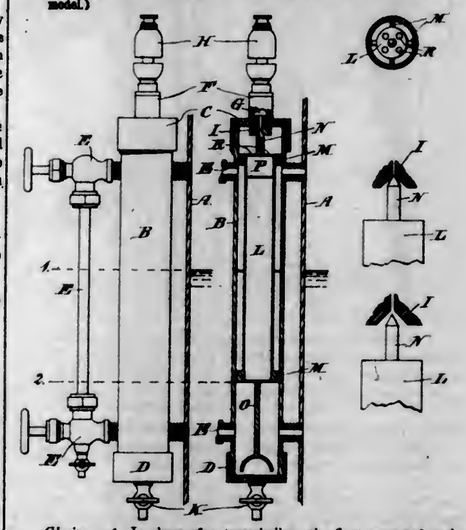
2. In combination with the hollow portions *a b*, the clamping-levers *c*, pivoted to one of said portions, the disk K, having slots, and crank *i*, for operating both clamps simultaneously, as set forth.

333,230. BILLIARD-CHALK HOLDER. Kasmar S. Jones, Flint, Mich., assignor to Ransom N. Jones, same place. Filed Apr. 14, 1885. (No model.)



Claim.—A device for holding blocks of chalk for chalking billiard-cues, consisting of the block or body A, having the recess B in its lower end, and the slot D, extending through the walls of the recess and beyond it, through the body of the block to a sufficient distance to make the limbs of the block sufficiently expansible, a pinching-screw let loosely through one of the limbs and engaging with the other at a point between the base of the recess and the closed end of the slot, and the elastic cushion F, surrounding said block or body near the bottom thereof.

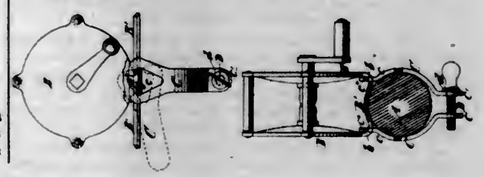
333,231. LOW-WATER ALARM FOR STEAM-BOILERS. Alexander Kerr, Montreal, Quebec, Canada, assignor of two-thirds to Richard Costigan and William Keys, both of same place. Filed Oct. 8, 1885. (No model.)



Claim.—1. In alarms for steam-boilers, the float arranged as described, and provided with an upper chamber open to the pressure that is in the space in which the float is situated, the said float being also provided with a valve, in combination with a valve-seat, a sounding device, and a passage from said valve-seat to said sounding device, the whole substantially as described.

2. The combination of the cylinder B, having valve-seat I and sounding device H connected therewith, as shown and described, in connection with a steam-boiler with float L, having chamber P open to the pressure within the cylinder B, the whole substantially as described.

333,232. CLAMP FOR FISHING-REELS. John Kopp, Brooklyn, N. Y., assignor to Thomas B. Mills, same place. Filed Mar. 19, 1885. (No model.)



Claim.—1. A clamp for a fishing-reel, consisting of two sections curved to fit a rod, and constructed at their one end for attachment separately to a reel, and a clamp-screw connecting the opposite ends of the clamp-sections, substantially as herein described.

2. The combination, with a fishing-reel, of two clamp-sections curved to fit a rod, and adjustably connected at their one end with the reel, and a clamping-screw connecting the opposite ends of the clamp-sections, substantially as herein described.

3. The clamp for a fishing-reel, consisting of the two sections C C, constructed with loops *c* and gaps or openings *c'*, and the clamp-screw D, for drawing said clamp-sections together, substantially as herein described.

4. The combination, with the fishing-reel having heads, and a base portion, B B', united by necks *b*, of the clamp-sections C C, constructed with loops *c* and gaps or openings *c'*, and the clamping-screw D, for drawing the said sections together, substantially as herein described.

333,233. FARE-BOX. FRANK O. LANDGRAFF and MILTON E. WILLIS, San Francisco, Cal. Filed Sept. 4, 1885. (No model.)



Claim.—In a fare-box, the hinged or journaled plate forming an extension below the inclined stationary plate D, and having a toothed or notched segment upon its rear edge, in combination with a weighted pawl or lever engaging said segment, substantially as herein described.

333,234. MEANS FOR THE PROPULSION OF VEHICLES OR CARS. FRANK O. LANDGRAFF, MARX P. SCHENKEL, and MILTON E. WILLIS, San Francisco, Cal. Filed Sept. 14, 1885. (No model.)

Claim.—1. The means for propelling cars, consisting of the endless traveling belt or platform upon which the horse or other animal may walk, a drum or pulley over which the belt or platform passes, and to which its motion is transmitted, and intermediate gearing or belts, whereby the power may be transmitted to the traction-wheels of the car, substantially as herein described.

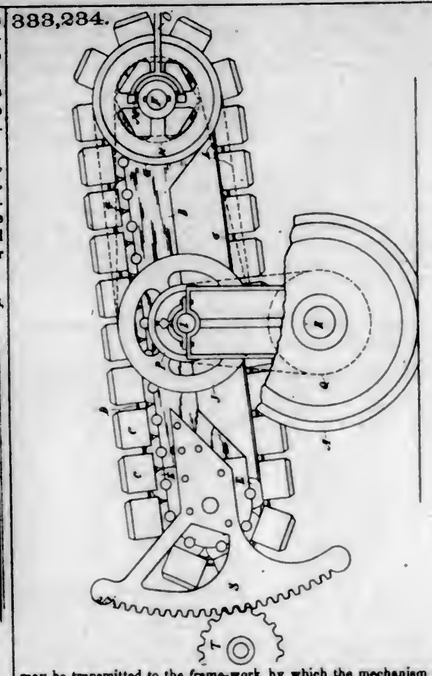
2. In combination with the traveling belt or platform through which animal-power may be applied, pulleys G and H upon the shaft of the drum to which the power is transmitted, and the clutches and levers, whereby either of the pulleys may be caused to rotate and the other be thrown out of action, substantially as herein described.

3. In combination with the traveling belt or platform through which animal-power may be applied, the drum over which said traveling belt or platform passes, pulleys of different sizes upon the shaft of said drum, and clutches by which one or the other of said pulleys may be thrown into gear, and belts or chains extending from said pulleys to the intermediate ones, from which the power is transmitted to the axle of the traction-wheels, substantially as herein described.

4. The endless traveling belt or platform composed of transverse slats, strips, or blocks with flexible connecting-links, said strips, slats, or blocks being slotted or grooved upon their lower faces, in combination with the series of rollers journaled upon the frame-work and having their rims fitted to travel in the channels or slots, so as to support the traveling belt or platform, substantially as herein described.

5. An endless traveling belt or platform passing over rollers, drums, or pulleys, by which the power applied to the traveling belt or platform

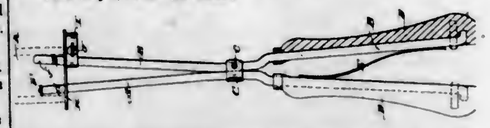
333,234.



may be transmitted to the frame-work by which the mechanism is supported, and a shaft or axis by which the central portion of the frame is journaled, in combination with a rack attached to one end of the frame-work, whereby the angle of the traveling belt may be changed, substantially as herein described.

6. The endless traveling belt or platform composed of transverse strips or blocks with flexible connecting-links, said strips or blocks having transverse grooves or channels in their lower faces, in combination with a series of rollers journaled upon the frame-work, so that their peripheries fit in the grooves in the blocks, and flexible belts passing over the rollers, so as to support the strips or blocks from one to the other, substantially as herein described.

333,235. GLASS-TUBE CUTTER. SAML. G. LAWSON, Portland, Oreg. Filed July 1, 1885. (No model.)



Claim.—1. A glass-cutter consisting of two rods pivoted together and provided with handles, a cutter on the end of one rod and a gage-plate adjustably secured to the other rod, substantially as herein shown and described.

2. A glass-cutter consisting of two rods pivoted together and provided with handles, a spring between the said handles, a cutter on the end of one rod, and a gage-plate secured to one rod and slotted to receive the other, substantially as herein shown and described.

3. In a glass-cutter, the gage-plate H, provided with the slots A A', the elastic loop-clamp I, secured around the slot A, and the set-screw J, substantially as described.

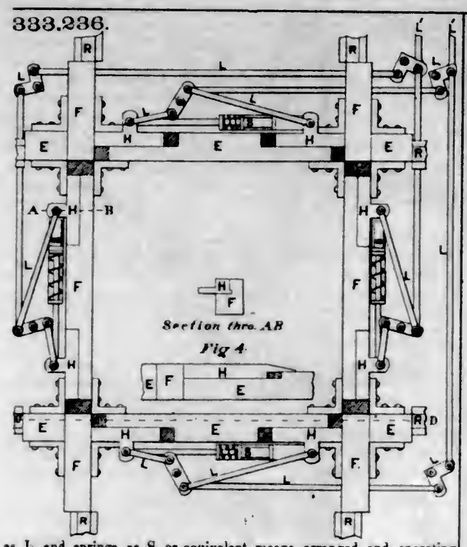
4. In a glass-cutter, the combination, with the rods A B, of the gage-plate H, provided with the slots A A', for the passage of the said rods, the loop-clamp I, secured to the under side of the said plate around the slot A, and the set-screw J, substantially as herein shown and described.

333,236. RAILWAY-CROSSING. GUSTAV LEHRBACH, Newark, N. J. Filed Oct. 5, 1885. (No model.)

Claim.—1. The combination, with a railway-crossing, of movable filling-bars sliding in the plane of the crossing, as H, substantially as described, and means arranged to operate in connection therewith, for the purposes set forth.

2. The combination, with movable filling-bars, as H, as described, of crossing-bars, as E and F, levers, bell-cranks, and connecting-rods,

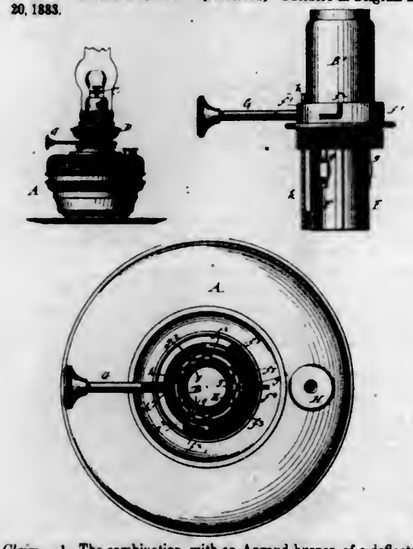
333,236.



as L, and springs, as S, or equivalent means, arranged and operating therewith, for the purposes set forth.

3. The combination, with crossing-bars, as E, formed in sections, of crossing-bars, as F, integral throughout their length, and to which bars E are secured, substantially as described, and arranged for the purposes set forth.

333,237. LAMP. JOSEPH LEMPEREUR and LAMBERT BERNARD, Liege, Belgium. Filed Oct. 9, 1885. (No model.) Patented in Belgium Dec. 20, 1883.



Claim.—1. The combination, with an Argand burner, of a deflector comprising a lower disk having perforations and a smaller disk-shaped button above the lower disk, substantially as described.

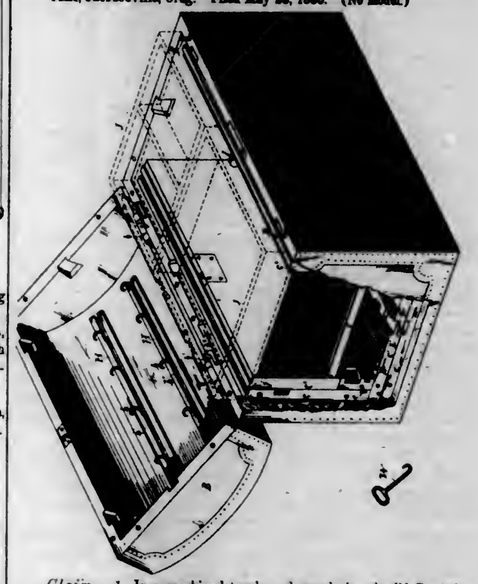
2. The combination, with an Argand burner, of a deflector comprising a lower disk having perforations, an upper smaller disk or button, and an intermediate outwardly-flaring shank, substantially as described.

3. The combination of an outer wick-tube provided with a collar having L-shaped slots, a basket provided with a base-collar fitting over the wick-tube collar, and having a slot and an interior groove, a semicircular locking-bail sliding in said groove, and provided with a button the shank of which is guided in the slot of said basket-collar, and with bent end lugs for locking the basket to the slotted collar of the wick-tube, substantially as described.

4. The combination, with an Argand burner, of the outer wick-tube having a collar provided with radial recesses at the inside, a wick-carrying tube having springs with inwardly-bent and toothed upper ends passing through slots of the wick-carrying tube, a vertical rack attached to the lower end of the wick-carrying tube, and a pinion-shaft for operating the wick-carrying tube, substantially as described.

5. The combination, with an Argand burner, of a lamp-bowl having a cylindrical passage and fixed wick-tube, an outer wick-tube having a collar with radial recesses at its inner side, a wick-carrying tube having slots near its upper end, wick-holding springs attached at their lower ends to the wick-carrying tube, and having bent and serrated upper ends, a rack attached to the lower end of the wick-carrying tube, and a shaft having a pinion meshing with said rack, substantially as described.

333,238. COMBINED WARDROBE AND TRUNK. CHRISTIAN LEIPERT, Jacksonville, Oreg. Filed May 25, 1885. (No model.)



Claim.—1. In a combined trunk and wardrobe, the lid B of the trunk, in combination with the hinges *b*, having removable pintles *b'*, with bent ends, and the removable staples *b²*, holding said pintles and adapting the hinges to be readily detached, whereby the lid may form the cover or top of the wardrobe, substantially as herein described.

2. In a combined trunk and wardrobe, the removable pieces *c*, *c'*, and *c²*, adapted to lie within the body of the trunk when not in use, and to be mounted on the top to form the body of the wardrobe, in combination with the removable dovetail strips E, adapted to fit dovetail grooves in the adjacent edges of said pieces at the corners, the double-beveled links F and G, having cross-bars, and the cross-bars I, for holding the wardrobe-pieces to their places within the trunk-body, substantially as herein described.

3. In a combined trunk and wardrobe, the means for connecting the pieces of the body of the wardrobe to the trunk, and the cover to the pieces of the wardrobe, consisting of double-beveled links F G, fitting in corresponding sockets in the trunk, the cover, and the pieces of the wardrobe, and provided with sockets *f* and cross-pins *f'*, whereby the links are readily removed, substantially as herein described.

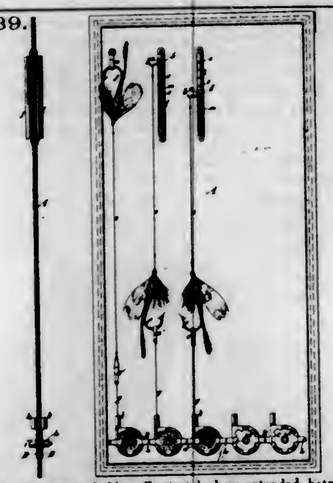
4. In a combined trunk and wardrobe, the spaced-guides H, in combination with the longitudinally-sliding hooks A on the under surface of the cover B, which forms the lid of the trunk and top of the wardrobe, substantially as herein described.

5. In a combined trunk and wardrobe in which the pieces of the wardrobe lie within the trunk when not in use, the swinging brackets K on the inner surface of the trunk, and the tray-pieces J, supported on said brackets when the device is used as a wardrobe, and resting on the pieces of the wardrobe when it is used as a trunk, substantially as herein described.

333,239. FLY-BOOK. CHANCELLOR G. LEVISON, Brooklyn, N. Y., assignor to Thomas B. Mills, same place. Filed Feb. 24, 1885. (No model.)

Claim.—1. The combination, with the leaf of a fly-book, having at one end hooks or holders for engaging with the fly-hooks or snells, of pulleys at the other end, retainer-cords winding on said pulleys, and having hooks at their ends for engaging with snells or fly-hooks, and volute springs applied to the said pulleys to turn them in a direction to wind

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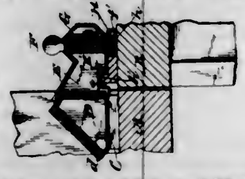


up the said cords, and to hold snells stretched or extended between the hooks or holders and the retainer-cords, substantially as herein described.

2. The combination, with the leaf of a fly-book, having at one end hooks or holders for engaging with fly-hooks or snells, of two plates, B, placed opposite each other on each side of the leaf at the other end thereof, and secured to each other and to the leaf by riveting through the whole, pulleys journaled to said plates, retainer-cords winding on said pulleys, and having hooks at their ends for engaging with snells or fly-hooks, and volute springs applied to said pulleys to turn them in a direction to wind up said cords and to hold the snells stretched or extended between the hooks or holders and the retainer-cords, substantially as herein described.

3. The combination with the leaf of a fly-book, of a tube, *l*, provided with a series of holes, *a a*, a hook, *b*, adjustable in said tube, a spiral spring applied to the said hook within the said tube, and a stop-pin adjustable in the said holes, all substantially as herein described.

333,240. SASH OR DOOR FASTENER. Christopher Longbottom, Bradford, County of York, England. Filed June 4, 1885. (No model.)



Claim.—1. The herein-described lock or sash-fastener, consisting of the latch E, pivoted to a support at an angle of or about forty-five degrees with the ender or working face of the latch, and a sliding locking pin or bolt connected to said latch, in combination with a locking-plate provided with a slot for receiving the pin or bolt, substantially as and for the purpose specified.

2. The herein-described lock or sash-fastener, consisting of the latch E, provided with a recess or notch, *e*, and pivoted or hinged to a support, C D, at an angle of or about forty-five degrees with the under or working face of the latch, and a spring-actuated bolt, F, connected to said latch, in combination with the locking-plate H, provided with a slot, *h*, and the wedge-shaped projection *h'*, substantially as and for the purpose specified.

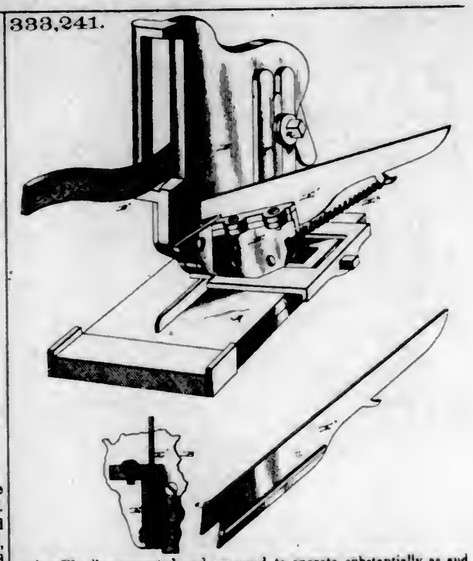
333,241. MACHINE FOR WIRING BLINDS. Ambrose Maher and Michael Gerahey, Chicago, Ill. Filed May 9, 1885. (No model.)

Claim.—1. In a blind-stapling machine, the combination of a main supporting plate or frame grooved for the reception of the plunger, the operating-lever and driving-plunger with a spring-actuated staple-slide supported in guides upon the rear of the machine with its end projecting into the staple-groove, substantially as and for the purpose set forth.

2. In a blind-stapling machine, a face-plate made in two parts, one formed with horizontal and the other with inclined adjusting-slots, the face-plate covering the lower end of the plunger-groove and plunger, substantially as shown and described.

3. In a blind-stapling machine, the base A, vertically-adjustable plate B, formed with the groove *c*, the lever B', having a slot, *b'*, the plunger C, with its stud *c'*, and the two-part face-plate *d d'*, in combination with the guide E, slide K', having a rounded or beveled end, *e*, and the

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spring E^2, all constructed and arranged to operate substantially as and for the purpose set forth.

333,242. GATE FOR RAILWAY-CROSSINGS. Mortimer B. Mills, Chicago, Ill. Filed June 3, 1885. (No model.)



Claim.—1. In a swinging gate, the combination, with the gate-bar D, of a crank, *d'*, a ratchet-wheel, H, a rod, d^3, connecting the ratchet-wheel eccentrically with the crank *d'*, a cylinder, A', having a piston, *a'*, and rod *b'*, provided with loose pawls to engage with the ratchet-wheel, and means, substantially as described, for raising the piston to turn the ratchet-wheel through the medium of the pawls and actuate the gate-bar, as set forth.

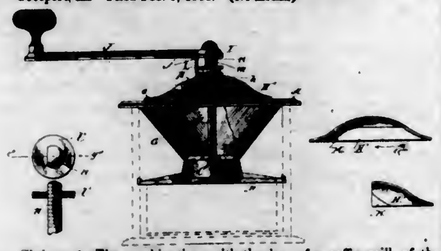
2. In a swinging gate, the combination, with the post F and swinging bar D, supported thereon, of a crank, *d'*, secured upon the bearing of the gate-bar to move with it, a ratchet-wheel, H, supported to rotate upon the post and connected with the crank *d'* by means of a rod, d^3, attached to a crank or pin, d^3, provided eccentrically upon the ratchet-wheel, a reservoir, B', to contain a liquid, a cylinder, A', communicating with the reservoir B', and having a piston, *a'*, and rod *b'*, provided with loose pawls to engage when the piston is raised with the ratchet-wheel,

and to slide over the same in falling, and a pump communicating with the reservoir B', and operating to force air or other gaseous fluid against the liquid contained therein, to raise the said piston, as set forth.

3. The combination, with the swinging bar of a gate, of a reservoir, B', to contain a liquid, a cylinder, A', communicating with the reservoir B' and provided with a piston, means, substantially as described, connecting the said piston with the gate-bar to actuate the same, a reservoir, B, to contain a liquid, and communicating by an air-conduit with the reservoir B', and a pump communicating with the reservoir B, and operating to compress the liquid contained therein through the medium of the air in the conduit against the liquid contained in the reservoir B' and raise the piston *a'*, as and for the purpose set forth.

4. In a swinging gate, the combination, with the post F and swinging bar D, supported thereon, of a crank, *d'*, secured upon the bearing of the gate-bar to move with it, a ratchet-wheel; H, supported to rotate upon the post and connected with the crank *d'* by means of a rod, d^3, attached to a crank or pin, d^3, provided eccentrically upon the ratchet-wheel, a reservoir, B', to contain a liquid, a cylinder, A', communicating with the reservoir B', and having a piston, *a'*, and rod *b'*, provided with loose pawls to engage, when the piston is raised, with the ratchet-wheel, and slide over the same in falling, a reservoir, B, to contain a liquid, and communicating by an air-conduit with the reservoir B', and a pump communicating with the reservoir B, and operating to compress the liquid contained therein through the medium of the air in the conduit against the liquid contained in the reservoir B' and raise the piston *a'*, as and for the purpose set forth.

333,243. COFFEE-MILL. Edgar H. Morgan and Charles Morgan, Freeport, Ill. Filed Feb. 9, 1885. (No model.)



Claim.—1. The combination, with the box of a coffee-mill, of the main casting thereof provided with arms having cylindrical ends, which enter sockets in the inner faces of two or more of the sides of the box, the casting being held in place by the sides of the box when connected, substantially as shown and described, and for the purpose set forth.

2. The combination of the sides B of the box and the stationary grinding-shell C, provided with arms D D D, having cylindrical ends D' and shoulders D'', the ends D being seated in sockets in the sides B, and the shoulders D being in contact with the inner faces of said sides, substantially as shown and described, for the purpose set forth.

3. In a coffee-mill, the combination of the box thereof, a grinding-shell held in place within the box and at a suitable distance below the top thereof, and a sheet-metal hopper resting on the grinding-shell and held in place by the top of the box, but not attached to the grinding-shell or to the top of the box, substantially as shown and described, and for the purpose set forth.

4. The combination of the stationary shell C, provided with the centrally-bored bridge, E, the bolt *n*, journaled in said bridge, the cone C', suspended within said shell, and supported and rotated by the head of the bolt *n*, and provided with the boss L, the crank J, attached to the upper end of said bolt, and means for raising and lowering the bolt and cone, substantially as shown and described, and for the purpose set forth.

5. The combination of the bolt *n*, the nut *l*, the washer *i*, the finger *j*, and the spring *m*, substantially as shown and described, and for the purpose set forth.

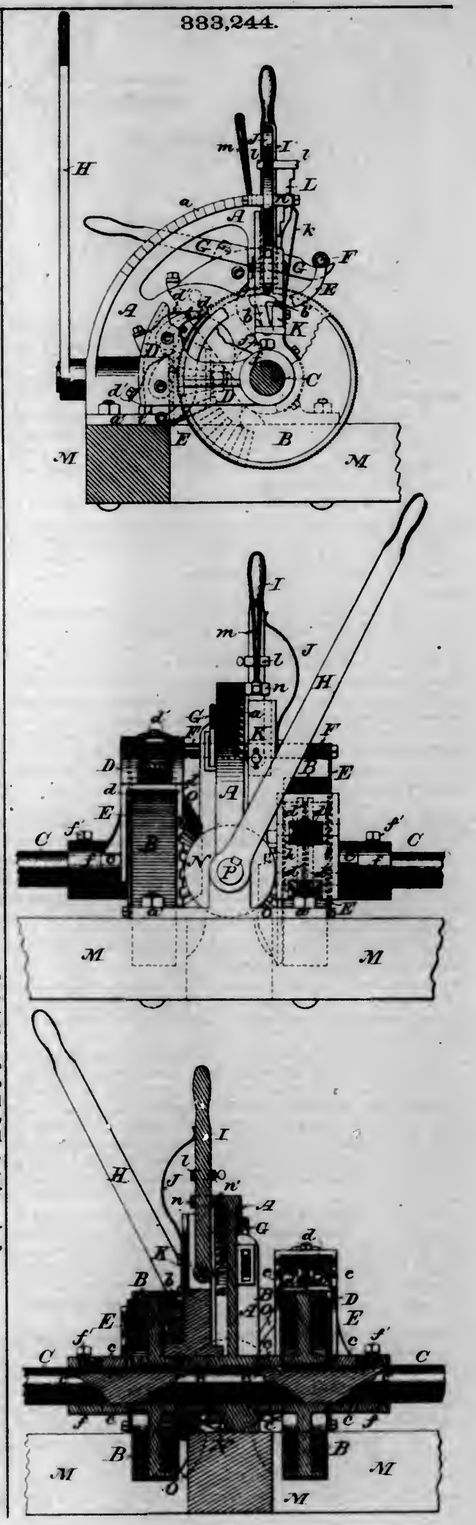
6. The combination of the top A, the annular plate H'', the stationary cover H, and the hinged cover H', provided with the web K, substantially as shown and described, and for the purpose set forth.

333,244. SET-WORKS FOR SAW-MILLS. Thomas J. Neagy, Milwaukee, Wis. Filed Oct. 4, 1884. (No model.)

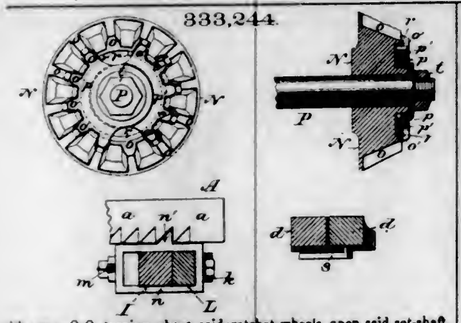
Claim.—1. In a saw-mill set-works, the combination of the set-shaft C, ratchet-wheels B B, keyed thereon, pawl-bearing bevel-gears O O, loosely mounted upon said set-shaft, pawls *d d*, arranged to engage with said ratchet-wheels and alternately turn the same, bevel-pinion N, mounted upon transverse shaft P, between gears O O, so as to mesh therewith, actuating-lever H, attached to shaft P, scale-rack *a*, lever I K, provided with a stop-block for limiting the throw of gears O O, and with a detent, *s'*, by which it may be set at any desired point on said scale-rack *a*, substantially as and for the purposes set forth.

2. In a saw-mill set-works, the combination of the set-shaft C, ratchet-wheels B B, keyed thereon, pawl-bearing casing D D, provided

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with gears O O, turning about said ratchet-wheels upon said set-shaft, bevel-gear N, meshing with gears O O and mounted upon shaft P, actuating-lever H, keyed upon shaft P, together with an adjustable stop for limiting the movement of said gears O O, substantially as and for the purposes set forth.

3. The combination, in a saw-mill set-works, of the set-shaft C, the ratchet-wheels B B, keyed thereon, pawl-bearing gears D O, bevel-gear N, meshing therewith, lever I, provided with spring-catch *n'*, graduated scale-rack *a*, and the stop-block *b*, connected with lever I, substantially as and for the purposes set forth.

4. In a saw-mill set-works, the combination of the set-shaft C, ratchet-wheels B B, keyed thereon, pawl-bearing casings and gears D O, pawls *d d*, gear N, meshing with gears O, pivoted arm K, provided with an elastic stop, *b*, lever I, pivoted in arm K and provided with detent *n'*, and scale-rack *a*, substantially as and for the purposes set forth.

5. The combination, in a saw-mill set-works, of the set-shaft C, ratchet-wheels B B, made fast thereon, pawl-bearing gears O O, loosely mounted upon said set-shaft, pawls *d d*, gear N, meshing with gears O O, scale-rack *a*, and lever I K, provided with a stop to limit the movement of said gears O O, and with a detent, *n'*, and a ladder, L, having a series of steps, whereby said detent *n'* is adjusted forward or backward, substantially as and for the purposes set forth.

6. In a saw-mill set-works, the combination, with set-shaft C, ratchet-wheels B, and pawls *d d*, of the curved plates E E, rods F, connecting their inner ends, and levers G, substantially as and for the purposes set forth.

7. In a saw-mill set-works, the combination of the set-shaft C, ratchet-wheels B, pawl-bearing gears O, pinion N, meshing therewith, lever I K, arranged to turn about said set-shaft as a center and provided with a friction clutch or stop, *b*, and a stop-block or lug, *k*, applied to or connected with the adjacent gear O, and arranged to strike against said clutch *b* and cause the same to engage with and arrest the movement of the adjacent ratchet-wheel B at any desired point, substantially as and for the purposes set forth.

8. In a saw-mill set-works, the combination of the set-shaft C, a ratchet-wheel, B, frame A, provided with rack *a*, arm K, lever I, pivoted therein, spring J, attached to arm K and bearing at its upper end against lever I, ladder L, connected with the lever I by band *l*, collar *s*, provided with detent *n'*, and spring *k*, substantially as and for the purposes set forth.

9. In a saw-mill set-works, the combination of the set-shaft C, ratchet-wheels B, keyed thereon, pawls *d d*, arranged to engage with said ratchet-wheels and pivoted in or to supports which are mounted and turned upon said set-shaft about said ratchet-wheels, segmental rack *a*, and lever I K, arranged to swing from said set-shaft as a center about said rack *a*, and provided with a detent, *n'*, adjustable in the direction of the movement of said lever, so as to divide the throw thereof between the notches in said scale *a* into smaller intervals, substantially as and for the purposes set forth.

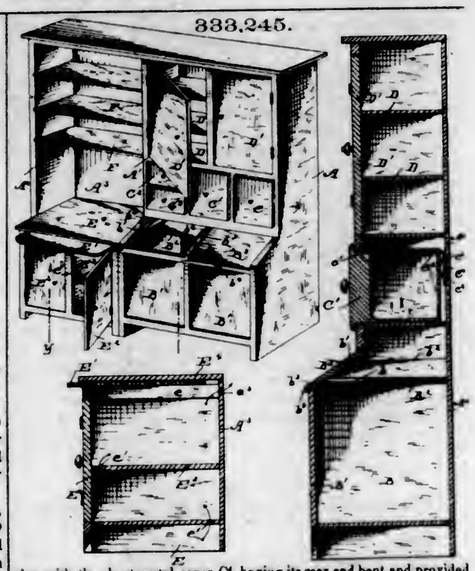
10. The combination, in a saw-mill set-works, of the set-shaft C, bevel-gears O O, mounted thereon, bevel-pinion N, meshing therewith and having cogs *o o*, plates *p p'*, having corresponding cogs *o' o'*, and spring *r*, arranged to force said plates *p p'* in opposite directions so as to take up the wear or lost motion between said pinion N and gears O O, with which it meshes, substantially as and for the purposes set forth.

333,245. KITCHEN-CABINET. Woodford D. Newlin, Annapolis, Ill. Filed Mar. 27, 1885. (No model.)

Claim.—In a kitchen-cabinet, a drawer, C', provided with grooves *c* in the upper portion of the sides and front of the drawer, in combina-

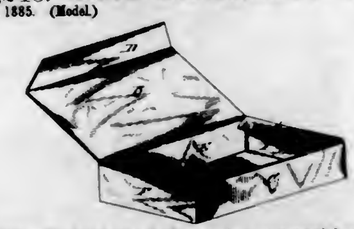


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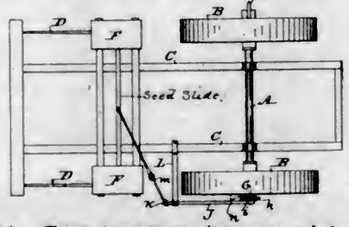
tion with the sheet-metal cover C', having its rear end bent and provided with perforations *c'* to receive fastenings to secure it to the back wall, A', of the cabinet, substantially as and for the purpose described.

333,246. PAPER BOX. Bennet Osborn, Newark, N. J. Filed Nov 18, 1885. (Model.)



Claim.—The herein-described paper box, constructed from a blank consisting of a rectangular strip creased or scored transversely, as shown, to form the bottom, sides, and cover of the box, and also the tongue or flange to the cover, said blank having lateral creased or scored extensions to form the ends and flaps thereto, substantially as and for the purpose set forth.

333,247. ATTACHMENT FOR CORN-PLANTERS. James L. Paden, Lacky Valley, assignor of one-half to James Kent, Correctionville, Iowa. Filed Aug. 10, 1885. (No model.)

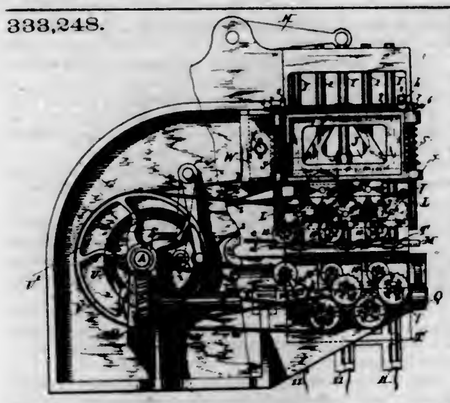


Claim.—The attachment for corn-planters, composed of a collar, G, having arms *i*, a rock-shaft, J, having a fork at its rear end and a crank, *k*, at its front end, a shaft-bearer, L, a connecting-rod, *m*, and a cam, *n*, substantially as shown and described, for the purpose specified.

333,248. MACHINE FOR STAYING LAYERS OF FLEXIBLE MATERIAL. George R. Pearl, Lynn, Mass., assignor to the Gutta Percha and Rubber Manufacturing Company, New York, N. Y. Filed May 18, 1885. (No model.)

Claim.—1. In a machine for staying the layers of flexible material, the combination of work holding and feeding devices, loop-forming mechanism, substantially as described, to retain the thread a loop and hold the thread away from the under

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surface of the work, and a movable cutter and mechanism to operate it, whereby the thread held away from the work by said finger is severed, as set forth.

2. In a machine for staying layers of flexible material, the combination of work holding and feeding devices, loop-forming mechanism, substantially as described, a take-off hook and mechanism to reciprocate it, whereby the loops drawn through the work are removed from the needle and held, and a movable cutter and mechanism to operate it, whereby the loop surrounding the take-off hook is severed, as set forth.

3. In a machine for staying layers of flexible material, the combination of work holding and feeding devices, loop-forming mechanism, substantially as described, movable cutters above and below the work, a retaining-finger below the work, and a take-off hook above the work, and mechanism, substantially as described, for operating said cutters, finger, and hook, as set forth.

4. The combination of the needle, the looper and lower retaining hook or finger connected to move in unison, and the cutter and its operating mechanism, whereby the thread is set below the work, as set forth.

5. The combination of the needle, the looper, the take-off hook and its operating mechanism, and the upper cutter, whereby the loop is severed while on the take-off hook, as set forth.

6. The combination, with a thread-loop-holding hook, substantially as described, of a rotary or disk cutter, a pivoted lever or swing supporting said cutter, and mechanism, substantially as described, for oscillating the cutter and for continuously rotating it, as set forth.

7. The combination, with the presser-foot having the reciprocating take-off hooks, of the needles, their operating mechanism, and means, substantially as described, for adjusting the limit of the upward movement of the needles, as set forth.

8. In an organized machine for staying layers of flexible material, the combination of a series of reciprocating needles and operating mechanism therefor, a work-support, a series of loopers and retaining-hooks below the work-support, a presser-foot, a series of take-off hooks supported by the presser-foot, mechanism, substantially as described, for reciprocating said loopers, retaining-hooks, and take-off hooks, a series of pivoted swings or levers below the work-support, rotary cutters mounted on said levers, gearing, substantially as described, whereby said cutters are rotated in unison, a corresponding series of swinging levers, cutters, and gears, supported by a yoke which is movable with the presser-foot, and mechanism, substantially as described, for oscillating both series of levers and cutters, as set forth.

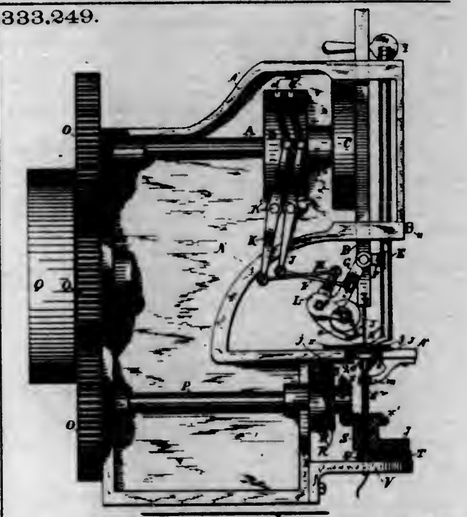
333,249. MACHINE FOR STAYING LAYERS OF FLEXIBLE MATERIAL. George R. Pearl, Lynn, Mass., assignor to the Gutta Percha and Rubber Manufacturing Company, New York, N. Y. Filed May 18, 1885. (No model.)

Claim.—1. The combination of the needle and a looping device therefor, the take-off lever having the take-off hook and cutting-edge, and pivoted to the presser-bar, the cutter-lever pivoted to the take-off-hook lever, and mechanism, substantially as described, for oscillating said levers, as set forth.

2. The combination of the needle and its operating mechanism, the shears or cutters under the work-support, the mechanism for operating said cutters, the looper-arm, and mechanism, substantially as described, for rotating said looper while the needle is depressed to present the thread to the cutters and needle, as set forth.

3. In a machine for staying layers of flexible material, the combination, with the needle and mechanism to operate it, of the rotary tube or arbor d^3, having the pinion and looper-arm, the continuously-rotated crank journaled in said tube, the segment-gear pivoted to said crank and meshing with said pinion, and the cam-groove in a fixed plate receiving a roll on said segment, as set forth.

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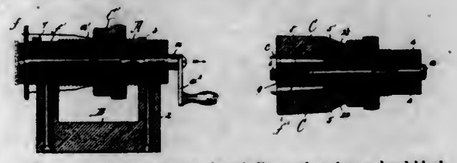
333,250. COMBINED CAN AND EJECTOR. Orrin P. Pell, Brooklyn, N. Y. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a can or jar, *a*, with movable cover *c*, connected together by a threaded screw, the stem *d* of the ejector *f* securely attached to the said cover or cap *c*, substantially as and for the purpose specified.

2. In a can or jar with a screw-threaded movable cover, the cover *c* being provided with handle *e*, and secured to the stem *d*, in combination with tube *f*, the cover *c* forming no part of the ejector *f*, but all arranged as shown, substantially as and for the purpose specified.

333,251. MAINSPRING-WINDER. Henry H. Pulver, Waltham, Mass., assignor of one-half to John Stark, Jr., same place. Filed Aug. 24, 1885. (No model.)



Claim.—1. In an apparatus for winding mainsprings, a head-block and rotating spindle passing therethrough, combined with two or more adjustable jaws mounted in said head-block, whereby the diameter of a mainspring to be wound may be gaged, substantially as described.

2. In an apparatus for winding mainsprings, a head-block and rotating spindle passing therethrough, combined with two or more adjustable jaws having spurs between which the spring is wound, and over which a barrel may be placed to adjust the said jaws to the diameter of the barrel, that the spring may fit any particular barrel after it has been wound, substantially as described.

3. In an apparatus for winding mainsprings, the head-block and spindle *a*, passing therethrough, having a rotating and a longitudinal reciprocating movement, and the adjustable jaws mounted in said head-block, combined with a discharge-plunger capable of being forced forward by the said spindle *a* when it is desired to discharge a spring from the apparatus, substantially as described.

4. In an apparatus for winding mainsprings, a head-block and rotating spindle, *a*, passing therethrough, upon which the spring may be wound, combined with two or more adjustable jaws mounted in said head-block, and movable radially with relation to its axis, and having spurs between which the spring is wound, and over which a barrel may be placed to adjust the said jaws to the diameter of the barrel, that the spring to be wound may fit its barrel and the adjusting-nut C', substantially as described.

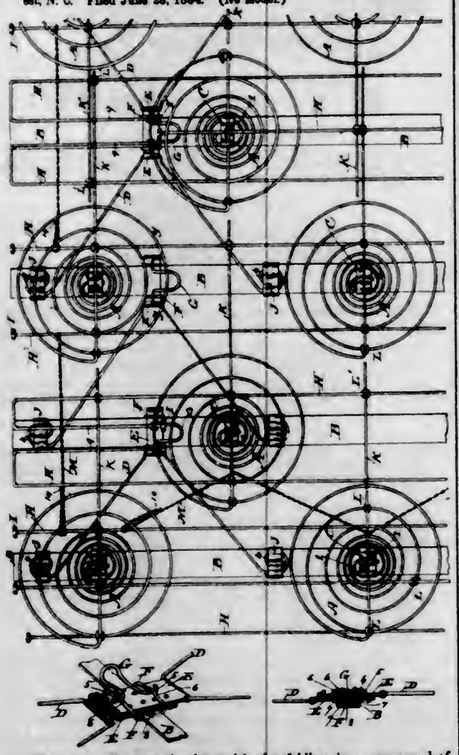
5. In an apparatus for winding mainsprings, a head-block and spindle passing therethrough, upon which a mainspring may be wound, said spindle having a rotary and a longitudinal reciprocating movement,

combined with the adjustable jaws mounted in said head-block, and provided with spurs *c*, over which a barrel may be placed to gage the diameter it is desired that the spring to be wound shall have, and between which the spring may be wound and retained when the spindle is withdrawn, the discharge-plunger engaged as it is withdrawn, freeing the mainspring from the spurs *c*, over which latter the barrel is placed to receive it, substantially as described.

6. In an apparatus for winding mainsprings, the head-block and spindle passing therethrough, having a rotary and a longitudinal reciprocating movement, and having a pin, 8, and spring 9, and the adjustable jaws mounted in said head-block, combined with a discharge-plunger capable of being forced forward by the spindle *a* when it is desired to discharge the spring from the apparatus, substantially as described.

7. In an apparatus for winding mainsprings, the head-block and adjustable jaws mounted therein, combined with a spindle having a longitudinal reciprocating movement, whereby the spindle may be withdrawn to permit the entrance of the arbor of a barrel, substantially as described.

333,252. SPRING BED-BOTTOM. ADDISON F. PURIFOY, Wake Forest, N. C. Filed June 23, 1884. (No model.)



Claim.—1. The combination, with the folding base, composed of the base-piece and hinge-connectors, and the springs carried by said base, of the top braces composed of stiff wire, rods, or the like extending across the axes of folding, said braces being coupled and arranged, substantially as described, so that the bed-bottom may be rolled or folded together without disconnecting them, substantially as described.

2. The combination, with the folding base and the springs carried thereby, of the longitudinal top braces and the cross top braces extending across the axes of folding and coupled to said longitudinal braces by means of slip-coupling, substantially described.

3. The combination, with the springs arranged after the manner of a quincunx, of the longitudinal and the cross top braces, said cross-braces being fastened at one end to the springs and at the other to the longitudinal braces between the springs in the adjacent row, substantially as described.

4. In combination with the springs arranged after the manner of a quincunx, the longitudinal top braces fastened to the springs and bent upon themselves at the end to give an enlarged support to the bedding between the springs of the end row, substantially as described.

5. In a spring bed-bottom, the top braces formed integral with the springs, and consisting each of the wire composing the spring bent diametrically across and under the top coil or coils of the spring, and projecting beyond the same for attachment to other parts of the bed-bottom, substantially as described.

6. In a spring bed-bottom having top braces combined with the springs and in combination with the crossed wires, the couplings L or L′ at the crossings, said couplings being formed each of a staple of heavy wire bent as explained, one wire lying in the original eye 12 of the staple and another in the bends 13 in the legs of the staple, substantially as described.

7. In a spring bed-bottom, and in combination with the springs thereof, top braces of wire provided at the ends with beads held thereon by spreading the end of the wire, substantially as described.

8. In combination with the springs and their supports or base-pieces, the fasteners for attaching the springs to said base-pieces, said fasteners comprising metal strips encircling each the foot-coil of a spring and the base-piece and bent down between the wires of said coil, substantially as described.

9. The combination, with the base-pieces and the connectors, of the fasteners composed of strips encircling the ends of the connectors and the base-pieces and bent down into the openings in the ends of said connectors, substantially as described.

10. The combination of the base-pieces and the fasteners for attaching the connectors or springs to the base-piece, said fasteners being composed of metal strips encircling the base-piece, and a coil on the connector or spring, and bent down into the opening in said coil, and said base-pieces having projections to prevent the fasteners slipping, substantially as described.

11. The combination, with the base-piece and connectors, of the adjustable fasteners comprising the ties and their latches having cam-lugs fitting under loops of said ties, substantially as described.

12. The combination, with the base-pieces and the connectors provided, respectively, with projections and depressions adapted to engage one with the other, of the ties and the latches having cam-lugs fitting under loops in said ties, substantially as described.

13. In combination with the base-pieces and the springs carried thereby, the jointed connectors attached to said base independently of said springs, and comprising each a member of wire and a tongue hinged to said wire, which itself forms the pintle to the hinge, substantially as described.

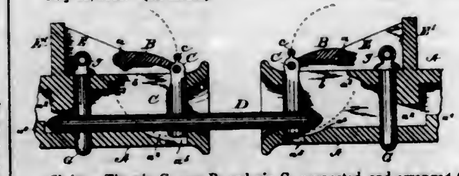
14. The combination, with the springs, the folding base, and the top slip braces, of the chains for keeping the top of the springs in their proper relative positions and preventing the top brace from slipping out, substantially as described.

15. In a spring bed-bottom, springs of different degrees of elasticity arranged in rows, the transverse rows at the head and middle of the bed-bottom being of stiffer wire than those at the foot and intermediate parts of the same, substantially as described.

16. The combination of the springs arranged after the manner of a quincunx, the folding base, the longitudinal and the cross top braces, and the slip-couplings, substantially as described.

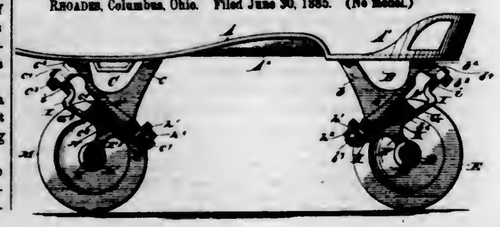
17. The combination of the base-pieces, the hinge-connectors, the permanent and the adjustable fasteners for attaching the ends of said connectors to the base-pieces, the extension top springs, the fasteners for securing them to the base-pieces, the longitudinal and the cross top braces, and the slip-couplings, substantially as described.

333,253. CAR-COUPLING. JOHN C. REED, Topeka, Kans. Filed July 23, 1885. (No model.)



Claim.—The pin C, arm B, and pin G, connected and arranged to operate as described, in combination with the draw-bar A, provided with bracket E E E′, interior perpendicular extensions, a^2 a^3, notch a^3, and recess a^4 a^5, as and for the purpose set forth.

333,254. ROLLER-SKATE. WILLIAM H. REOADES and HAL V. REOADES, Columbus, Ohio. Filed June 30, 1885. (No model.)

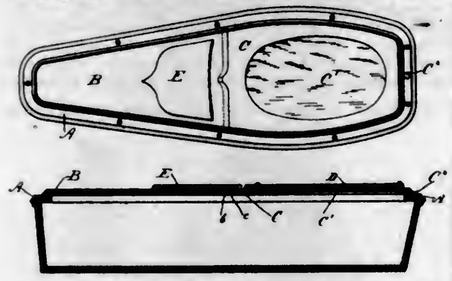


Claim.—1. In a roller-skate, the combination of the foot-plate, the frame secured to the under surface thereof, and having a threaded stem at one end and an upwardly-running slot at the other end, the plate provided with a depending collar surrounding the axle and having at one end a stem which passes through the slot of the frame, and at the other end an opening through which the threaded stem of the frame passes, the securing-nut and washer on the threaded stem, and a block of rubber having its upper and lower surfaces converging downward and inward and lying between the plate and the frame, with its inner end against the upturned inner end of the plate, and its outer end against a flange depending from the frame, substantially as specified.

2. In a roller-skate, the combination, with the foot-plate A and frame B, provided with the threaded stem b^3, flange b^3, and slot b^4, of the axle D, supporting the wheels E, plate G, provided with the depending collar D′, flanged ends H and I, and sleeves *i*, retaining-nut h^3 on the stem b^3, and rubber block K, having its ends resting against the inner flange, H, of the plate and the flange b^3 of the frame, substantially as specified.

3. The combination, in a roller-skate, with the foot-plate A and frames B and C, secured to said plate near its rear and front ends, respectively, of the axles L and D, plates G G′, depending collars L and D′, retaining-nuts h^3, and rubber blocks N and H, having their upper and lower surfaces converging inwardly, so that they both will receive tension toward the center of the foot-plate with the weight of the person, substantially as specified.

333,255. COFFIN. JOHN T. REMARDS, Chicago, Ill., assignor to the Chicago Coffin Company, same place. Filed Sept. 29, 1884. (No model.)



Claim.—1. In a coffin, the combination, with the lid-rim consisting of a simple wooden strip or strips adapted to be secured to the edge of the coffin, of a fixed panel broader than the opening of said lid-rim and connected thereto, and a movable panel broader than the opening of the lid-rim and adapted to rest thereon, said fixed and removable panels being connected together, as described, and said removable panel being provided with a catch for engagement with the lid-rim, substantially as described.

2. In a coffin, the combination of the main lid-rim extending around the entire body of the coffin, the raised top panel fixed to said lid-rim and having a beveled front edge of irregular shape, and the removable panel formed broader than the opening of the lid-rim and having its rear edge beveled and of irregular shape to engage with the edge of raised panel and prevent lateral displacement, and a suitable catch to fasten the removable panel to the lid-rim, substantially as described.

333,256. MACHINE FOR MAKING SPINNING-RINGS. CHARLES F. ROPER, Hopedale, Mass., assignor to George Draper & Sons, same place. Filed Oct. 26, 1885. (No model.)

Claim.—1. In a machine for the manufacture of rings, the rotating chuck, the cross-slide, and the raceway or chute thereon open at the lower end of the slide next the chuck, combined with the ejector to push a blank from the raceway into the chuck, substantially as described.

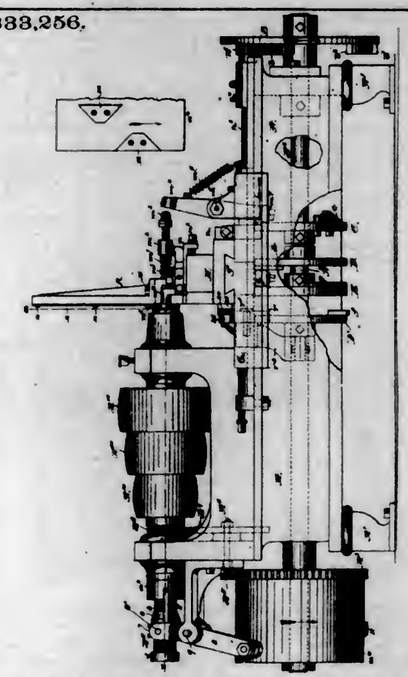
2. The carriage, the cross-slide mounted thereon, the raceway open at one side, the ejector, and the chuck, combined with means, substantially as described, to move the carriage toward and from the chuck to move the cross-slide on the carriage, to operate the ejector to push a blank from the raceway directly into the chuck, and with means, substantially as described, to operate the chuck.

3. The cross-slide, the tool-carrying slides *n o*, the plates n^2 o^2, mounted thereon, and their tools n^3 o^3, combined with a screw, *p*, to adjust the said plates and tools, substantially as described.

4. The carriage, the cross-slide, the raceway mounted thereon, and the ejector carried by the cross-slide and located in the raceway, combined with the lever m^4 and means, substantially as described, to operate it to push the ejector into and remove a blank from the raceway, as set forth.

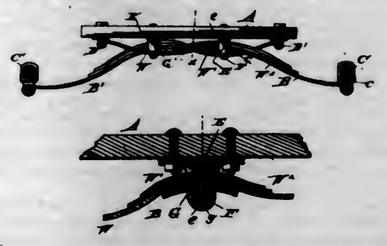
5. The raceway open at one side for the passage of the blank, combined with the ejector and its attached loose plate m^2, to operate substantially as described.

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6. The rotating spindle, the rod *a* therein and its attached spring-collet, combined with the ring-discharging device a^4 and spring a^5, substantially as described.

333,257. VEHICLE-SPRING. J. GEORGE ROTH, South Bend, Ind. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination, with the spring-bar and side bars of a vehicle, of the oppositely-extending springs B B′, each pivoted at its inner end upon the spring-bar near one end of the latter, pivoted at its outer end upon one of the side bars, and supported by a laterally-oscillating joint upon the spring-bar at a point between its ends and on the opposite side of the center of said bar from its end attachment thereto, substantially as specified.

2. The combination, with the spring-bar A and side bars, C C′, of the springs B B′, brackets E E′, and rock-plates G G′, substantially as specified.

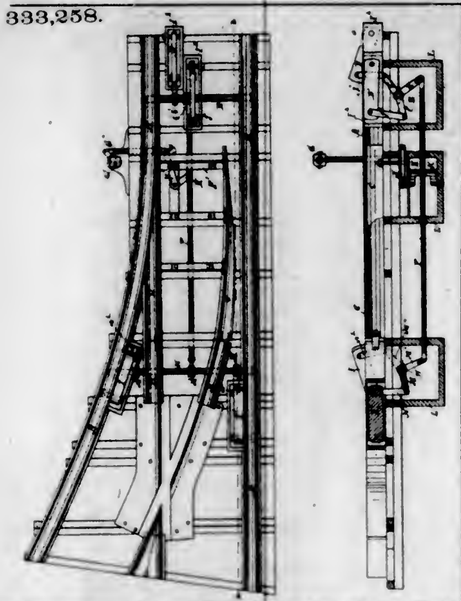
3. The combination, with the spring-bar A, brackets D D′, and side bars C C′, of the springs B B′, brackets E E′, and rock-plates G G′ substantially as specified.

333,258. RAILROAD-SWITCH. BENTON C. ROWELL, Boston, Mass. Filed Nov. 26, 1884. (No model.)

Claim.—1. As an improvement in the means for operating railroad-switches automatically, the combination of four operating-levers, D D′ and I I′, and the switch-rails of a railroad-track by positively connecting them together through bell-crank levers with a single connecting-rod, F, the levers D D′ and I I′ having respectively interposed between them and the bell-cranks the connecting links or rods *j j′* and N N′, all combined substantially as shown and described, whereby the switch may be operated in the manner described, through the single rod F, by the depression of either of said operating-levers by the passage of a locomotive.

2. The combination of the levers D D′ the bar F, and their inter-

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mediate connections, the crank K, bar F', connecting-rods *g*, bar G', and signal G, as and for the purpose set forth.

3. The combination, with the levers D D', of the wheel R on the shaft T of a locomotive, the crank-lever Q, the lever P P', rod O', and lever O, located in the cab of a locomotive, whereby the switch C C can be operated by the engineer, substantially as set forth.

333,259. PROCESS OF ORNAMENTING SURFACES. FRANKLIN RUDOLPH, Chicago, Ill. Filed June 22, 1885. (Specimens.)

Claim.—1. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistence, and rubbing dry coloring-matter upon the parts of the surface upon which the gummy substance deposits, substantially as described.

2. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, and containing coloring-matter in solution, evaporating the liquid until the gummy substance becomes reduced to a desired consistence and the coloring-matter deposited in spots, and rubbing additional dry coloring-matter upon the gummy substance, substantially as described.

3. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistence, rubbing dry coloring-matter upon the surface and removing therefrom superfluous coloring-matter, substantially as described.

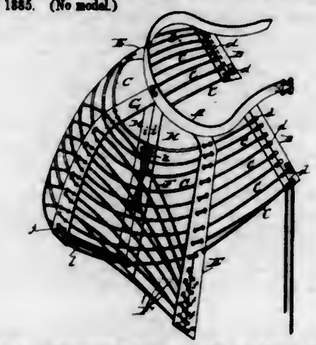
4. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, and containing coloring-matter in solution, evaporating the liquid until the gummy substance becomes reduced to a desired consistence and the coloring-matter deposited in spots, rubbing additional dry coloring-matter upon the surface, and removing therefrom superfluous dry coloring-matter, substantially as described.

5. The herein-described process of ornamenting a metallic surface, which consists in applying to it a coloring-matter to form a background, applying upon the background a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistence, rubbing additional dry coloring-matter upon the surface, and removing therefrom superfluous dry coloring-matter, substantially as described.

6. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistence, rubbing dry coloring-matter upon the gummy substance, and varnishing the surface so treated, substantially as described.

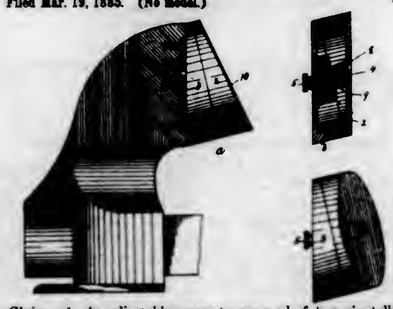
7. The herein-described process of ornamenting a metallic surface, which consists in applying to it a coloring-matter to form a background, applying upon the background a liquid, such as turpentine, in which a gummy substance is dissolved and containing coloring-matter in solution, evaporating the liquid until the gummy substance becomes reduced to a desired consistence and the said coloring-matter deposited in spots, rubbing additional dry coloring-matter upon the surface, removing therefrom superfluous dry coloring-matter, and varnishing the surface thus treated, substantially as described.

333,260. BUSTLE. JOHN SCHULTZ, Minneapolis, Minn. Filed June 11, 1885. (No model.)



Claim.—The combination, with the waistband, hip-band, main frame-arches, and the bracing-arches, of the bracing-tape extending from the waistband and attached to the main frame and bracing arches, and the flies having their outer edges attached to the hip-band, and the lower portions of their inner edges adjustably connected with the lower end of the bracing-tape by means of lacing *l*, substantially as described.

333,261. ADJUSTABLE VISE-JAW. EDGAR SHAW, Lynn, Mass. Filed Mar. 19, 1885. (No model.)



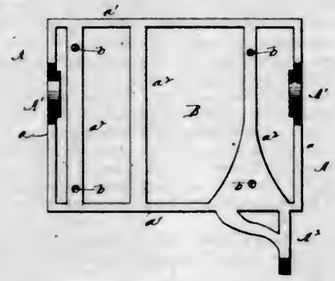
Claim.—1. An adjustable support composed of two pivotally-connected and independently-rotatable wedge-shaped sections in contact with each other, as set forth.

2. An adjustable support composed of an inner wedge-shaped section having means, substantially as described, for attachment to a vise-jaw or other support, and an outer wedge-shaped section pivoted to and bearing upon the inner, as set forth.

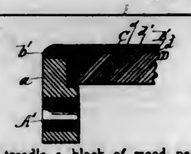
3. The combination of the wedge-shaped sections pivotally connected and in contact with each other, and a spring whereby one section is pressed against the other, as set forth.

4. The combination, with the jaws of a vise or clamp, of the two independently-rotatable wedge-shaped sections 2 3, as set forth.

333,262. SEWING-MACHINE TREADLE. SARAH A. SHEPHERD, Washington, D. C. Filed Mar. 25, 1884. Renewed June 4, 1885. (No model.)



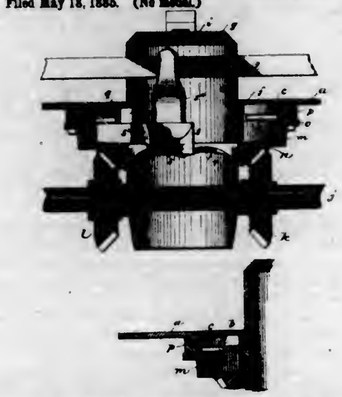
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Claim.—1. In a treadle, a block of wood, papier-maché, or like material provided with rabbeted edges and a recess, in combination with a supporting frame and brackets, constructed substantially as described, and secured to the under surface of said block, as set forth.

2. In a sewing-machine treadle, the combination of the frame A, substantially such as herein described and shown, block B, having rabbeted edges, and a depression or recess, covering of carpet, cloth, or other material, C, and an electro-galvanic pad, D, adapted to fit within said recess and be hid from view by covering C, said covering adapted to lap under and be secured in position by the rabbeted edges of said block, substantially as herein shown and described, and for the purpose set forth.

333,263. FERTILIZER-DISTRIBUTER. LLOYD C. STALMAKER, York, Pa. Filed May 18, 1885. (No model.)



Claim.—1. In a fertilizer-distributer, a feeding device comprising an annulus having internally-projecting teeth to act upon the mass from its outside, substantially as described.

2. In a fertilizer-distributer, a feeding device comprising an annulus having internally-projecting teeth to act upon the mass from its outside, and a rotary cup to which it is attached, substantially as described.

3. In a fertilizer-distributer, a feeding device comprising an annulus having internally-projecting teeth to act upon the mass from its outside, a cup to which it is attached, and a central throat encircled by said cup and annulus, and having a lateral inlet from the cup, substantially as described.

4. In a fertilizer-distributer, a throat provided with a lateral inlet, a feeder-cup, and toothed annulus encircling it, a driving-shaft passed through and supporting such throat and geared with the cup to rotate it about the throat, and means to control the quantity of material discharged from said cup into said throat, substantially as described.

5. A feeder having feeding devices, and a shaft and pinions to operate them, said shaft and pinions also serving to support the said feeding devices, substantially as described.

6. The stationary throat, and rotary feeding devices encircling the same and utilizing said throat as a journal, and a driving-shaft supporting said throat, and provided with a fast and a loose pinion, the former serving to rotate the feeding devices, and both serving to support them, substantially as described.

7. The plate *a*, forming the bottom of the hopper or box, and having the opening *b*, lip *c*, and scraper *d*, combined with the feeding mechanism arranged beneath said plate and in close contact therewith, substantially as described.

8. In a fertilizer-feeder having a discharge-throat, a surrounding cup to contain the material to be fed, and a feeding device, the scraper *s*, arranged within the discharge-throat, and having the finger s^3, and adapted to be moved back and forth, as required, to vary the quantity fed, substantially as described.

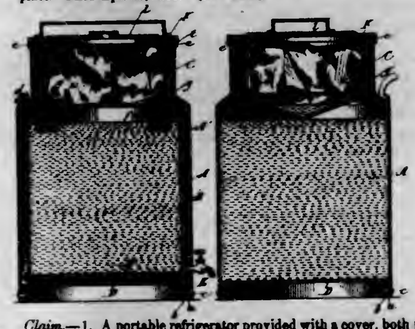
9. In a fertilizer-feeder, the discharge-throat provided with a cover and lateral braces secured to the hopper-walls to stay the upper end of the throat, substantially as described.

10. In a fertilizer-distributer, the discharge-throat provided with a cover, and an observation-door set in said cover to permit inspection of the progress of the feeding operation, substantially as described.

11. The discharge-throat having a lateral opening, and a movable scraper adapted to be projected more or less out through said opening, combined with a surrounding feed-cup into which said scraper enters, and means to feed the material to be distributed into said cup, substantially as described.

12. In a fertilizer-distributer, a central throat supported by the drive-shaft and stayed above, and having an external collar, a cup encircling said throat and having a bearing upon it and up against the lower edge of its collar, and rotated from and supported by the drive-shaft, a dentated feeding-annulus borne by the said cup, a regulator or scraper to control the quantity discharged from the cup into the throat, and a bottom plate superposed upon the cup and having a bearing upon the upper edge of the collar, substantially as described.

333,264. PORTABLE REFRIGERATOR. WILLIAM C. THAYER, Chicago, Ill., assignor to the Thayer Portable Refrigerator Company, same place. Filed Apr. 21, 1885. (No model.)



Claim.—1. A portable refrigerator provided with a cover, both parts formed with double walls and interposed non-heat-conducting material, as set forth.

2. The combination, with a portable refrigerator, of a box-shaped cover provided with a doubly-inclined bottom, the apex of which is at its lowest point, as set forth.

3. The combination, with a portable refrigator, of a box-shaped cover the bottom of which is provided with a depression, as set forth.

4. The combination, with a portable refrigerator and a box-shaped cover therefor, of a perforated plate mounted in said cover between its top and bottom, as set forth.

5. The combination, with a portable refrigerator and a box-shaped cover therefor, of a covering for the ice, and suitable hooks to hold such covering in place, as set forth.

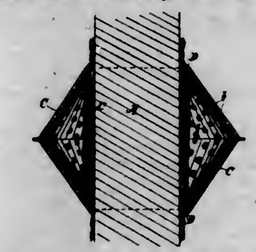
6. In a portable refrigerator, an outer corrugated wall, in combination with a plain inner wall, as set forth.

7. In a portable refrigerator, the combination, with the plain neck thereof, of a box-shaped cover corrugated as described.

8. The combination, with a refrigerator, of siphons situated therein, the operating-tubes of the siphons passed through the walls of the refrigerator and operated from the outside, as set forth.

9. In a portable refrigerator, the combination, with a bent and perforated arm secured to the neck thereof, of a cover, a bent and perforated arm secured to the cover and arranged to partly encircle the arm secured to the neck, and a suitable sealing-wire passed through the perforations of the two arms, as set forth.

333,265. CODDLING-MOTH TRAP AND TREE-PROTECTOR. GEO. W. THISSELL, Winters, Cal. Filed Sept. 4, 1885. (No model.)



Claim.—1. An insect-trap for protecting trees, shrubs, &c., consisting of an annular casing or ring, B, encircling the trunk of the tree or shrub above and independent of the ground and forming a chamber around it, the top and bottom being closed, and said casing having perforations over its entire surface, substantially as herein described.

2. An insect-trap for protecting trees, shrubs, &c., consisting of an annular casing or ring, B, encircling the trunk of the tree or shrub and forming a chamber around it closed at top and bottom, said casing being

perforated so as to leave burrs *b* on the inner surface of the holes, substantially as herein described.

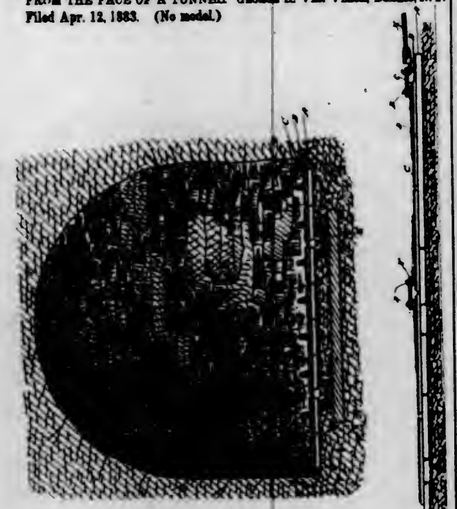
3. An insect-trap for protecting trees, shrubs, &c., consisting of the annular casing or ring B, perforated over its entire surface and encircling the trunk of the tree or shrub, forming a chamber with a closed top and bottom, and the folds of fabric D around the tree within the casing, substantially as herein described.

4. An insect-trap for protecting trees, shrubs, &c., consisting of the annular casing or ring B, perforated over its entire surface and encircling the trunk of the tree or shrub and forming a chamber around it, and the wax seal D at the top and bottom of the casing, substantially as herein described.

5. An insect-trap for protecting trees, shrubs, &c., consisting of the annular casing or ring B, made of a double conical shape in cross-section, and perforated over its surface, as described, said casing encircling the trunk of the tree or shrub, forming a tight chamber around it, substantially as herein described.

6. An insect-trap for protecting trees, shrubs, &c., consisting of the annular casing or ring B, perforated over its entire surface and encircling the tree or shrub, as described, the folds of fabric C around the tree within the casing, and the wax seal D at the top and bottom of the casing, substantially as herein described.

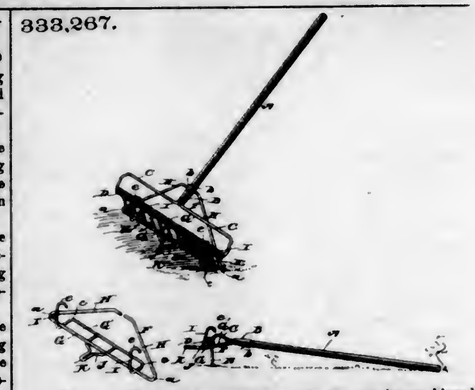
333,266. DEVICE FOR REMOVING THE DEBRIS OF A BLAST FROM THE FACE OF A TUNNEL. George H. Van Vleek, Buffalo, N. Y. Filed Apr. 12, 1883. (No model.)



Claim.—1. A device or apparatus for removing the debris of a blast from in front of the face of an excavation, consisting of the combination of the following elements or instrumentalities, substantially as set forth: a track or way on the bottom of the excavation formed of smooth-faced plank, a platform formed of plank laid on said way in front of the face of the excavation in position to receive the débris of the blast, a proper lubricant or anti-friction material placed between the faces of the planks forming said platform and those forming said way, and finally means, substantially as shown, for attaching a draft-cable to said upper platform.

2. In a device or apparatus for removing the débris of blasts from the face of an excavation, the combination, substantially as shown, of the following elements: a way formed on the bottom of the excavation of smooth-faced plank lying longitudinally with the cut or tunnel and made slippery by proper means, a movable platform on said way formed of smooth-faced iron-backed plank laid parallel over the plank forming the way, each of said last-named plank being provided with a hook or other means of attachment thereto for draft purposes, and finally means, substantially as shown, for connecting said upper plank singly or in lots with the draft-cable, whereby all or any number of said upper plank can be connected with the cable and drawn on the said way, for the purposes mentioned.

333,267. RAKE. George H. Van Wheele, Horseheads, N. Y., assignor of one-half to Richard W. Barney, same place. Filed May 7, 1885. (No model.)



Claim.—1. The rake, in combination with the attachment hinged or pivoted to the rake so as to swing in a vertical line around and between the rake-teeth, and provided with a projecting arm arranged and adapted to come in contact with the ground and raise the attachment so as to allow the rake-teeth to act freely, for the purpose set forth.

2. The combination, with the rake, of the herein-described attachment, comprising parallel bars connected by short transverse bars to work between the rake-teeth, arms extending from the parallel bars and hinged or pivoted to the rake, hooks projecting upward from the parallel bars and arranged to limit the downward movement of the attachment, and an arm projecting forward from the bars, for the purpose set forth.

3. The combination, with the rake, of the herein-described attachment, comprising parallel bars provided with means for acting upon the accumulations of matter between the teeth, arms hinging or pivoting the bars to the rake, and an arm or projection provided on the bars, for the purpose set forth.

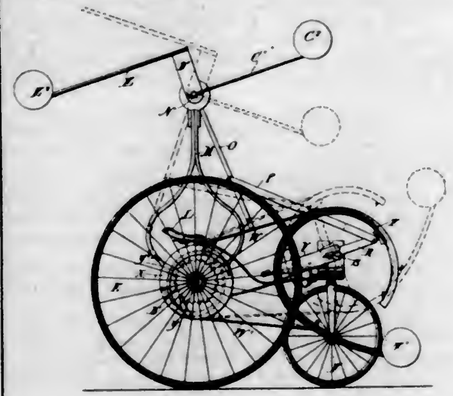
4. The herein-described attachment, comprising the main portion which acts upon the rake-teeth, hooks provided on the main portion, and a projection or arm, for the purpose set forth.

5. The combination, with the rake, of the herein-described attachment, comprising the main portion formed of parallel bars connected by short transverse bars which act between the rake-teeth, said main portion being hinged to the rake, curved hooks projecting upward and catching around the rake-head, and an arm or projection which acts upon the ground, as set forth.

6. The rake, in combination with the attachment hinged or pivoted thereto and working in a vertical line around and between the rake-teeth, said attachment being heavier at its front end, so as to drop down automatically by its own weight when the rake is raised from the ground, and hooks *e*, provided on the attachment to catch over the rake-head so as to limit the downward movement, as set forth.

7. The rake, in combination with the attachment having its main portion working between and around the rake-teeth, and spring-arms provided on the attachment, said arms being adapted to be sprung apart so as to be inserted into holes provided at the front end of the rake, as and for the purpose set forth.

333,268. VELOCIPEDE. Caspar Weber, Chicago, Ill. Filed Sept. 29, 1885. (No model.)



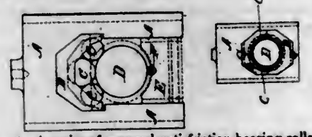
Claim.—1. The combination, with the main wheels of a tricycle, suitable curved and weighted pieces, and intermediate connections, of suitable means for elevating the weighted ends of such pieces, as set forth.

2. The combination, with the main wheels E, curved and weighted pieces T, and intermediate connections, of crank-arms R and rods P O, as set forth.

3. The combination, with wheels E, carrying ratchets, and grooved pulleys X, carrying spring-depressed pawls Y, of cords W W', curved and weighted pieces T, and suitable mechanism for elevating the weight ends of such pieces, as set forth.

4. The combination, with the wheels E, curved and weighted pieces T, and suitable intermediate connections, of crank-arms R, rods P O, shaft N, and weighted rods C' E', as set forth.

333,269. BEARING FOR LOCOMOTIVE-ENGINES. John Wells, Sheffield, County of York, England. Filed Mar. 3, 1885. (No model.) Patented in England Mar. 5, 1884, Nos. 4,401 and 7,128.

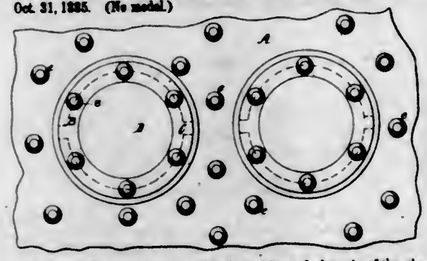


Claim.—1. A series of grooved anti-friction bearing-rollers, in combination with a steel spring-ring which fits into their grooves, substantially as set forth.

2. In combination with a journal and a series of anti-friction rollers or balls, C, in contact therewith, a lubricating-roll, F, also in contact with said journal, and an oil-receptacle, E, from which said roller supplies said journal, substantially as set forth.

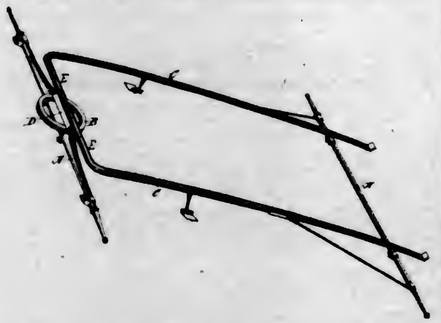
3. In combination with a journal, a series of anti-friction bearing-rollers, each having two annular grooves near its ends, respectively, and bands which fit into said grooves for holding said rollers together, substantially as set forth.

333,270. ILLUMINATING-SKYLIGHT. Theodore J. Wilmer, Cincinnati, Ohio, assignor of one-half to William R. Ward, same place. Filed Oct. 31, 1885. (No model.)



Claim.—The combination, with the perforated plate A, of the glass-containing rings C, provided with lugs *b*, projecting through the plate and riveted upon its under side, substantially as described.

333,271. SIDE-BAR VEHICLE. Arthur A. Abbott, Chicago, Ill. Filed July 27, 1885. (No model.)



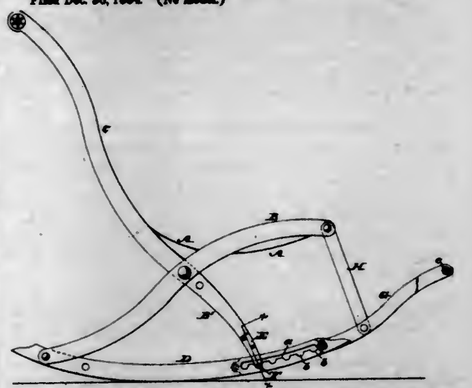
Claim.—As a new article of manufacture, a side-bar-buggy gear in two parts, the two side bars being of metal, forming the head-block in said two parts, meeting at or near the center of the front axle, in combination with the front and rear axles and fifth-wheel of the vehicle, substantially as shown and described.

333,272. COMBINED SCARF RING, BAND, AND COLLAR-STUD. Henry W. Arnelin, Bayswater, County of Middlesex, England. Filed Nov. 5, 1885. (No model.)



Claim.—The combination of a scarf ring, clasp, or band having a stem projecting from the upper end of its rear side at an upwardly-inclined angle, said stem having lateral lugs, as shown and described, and a collar-stud having a flattened pillar and a hollow flattened head provided with an oblong aperture adapted to receive the stem and lugs and to engage therewith, substantially as shown and described, for the purpose specified.

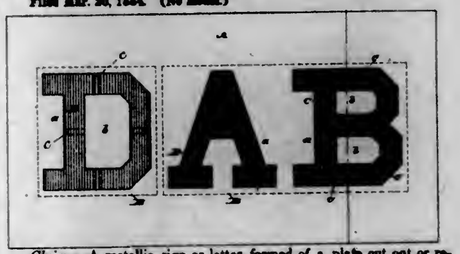
333,273. FOLDING CHAIR. Philip P. Achenbach, Camden, N. J. Filed Dec. 30, 1884. (No model.)



Claim.—1. The legs, back, and seat, in combination with rockers having slots with recesses in the lower walls thereof, and pins and straps attached to the legs, the straps freely embracing the rockers, and the pins connected with the straps and passing through the slots of the rockers, substantially as and for the purpose set forth.

2. The legs, back, and seat, in combination with rockers having slots with recesses in their lower walls, straps E, attached to the legs B', embracing the rockers, pins F, connected with the straps passing through the slots of the rockers, arms G, pivoted to the rockers provided with rounds *c*, and arms H, pivoted to the legs B, said parts being arranged and operating substantially as described.

333,274. METALLIC SIGN. David A. Baker, Philadelphia, Pa. Filed Mar. 20, 1884. (No model.)



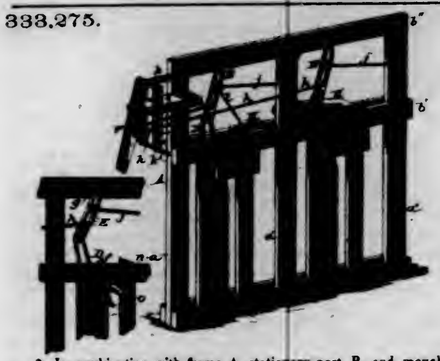
Claim.—A metallic sign or letter formed of a plate cut out or recessed, a connected perforate piece covering the back of the recess of the plate, strips having the plane of their upper faces below the plane of the face of the main plate and connecting detached portions of letters to the main plate, and a filling occupying said recess and covering the said strips, substantially as described.

333,275. CATTLE-STANCHION. David J. Barnes, Fort Atkinson, Wis. Filed Aug. 13, 1885. (No model.)

Claim.—1. In combination with a series of cattle-stanchions, independent operating-levers connected with the respective movable posts or members thereof, and a controlling-lever to act upon and simultaneously operate all of said levers.

2. In combination with the movable member or post of a cattle-stanchion, operating-levers and a catch or fastening for said movable member connected with and operated by one of said levers, substantially as set forth.

333,275.



3. In combination with frame A, stationary post B, and movable post C, the lever D, pivoted to the frame A, and serving to positively rock the post C upon its pivot in both directions.

4. In combination with frame A, posts B C, and lever D, the levers E F, connected as shown, and serving to operate the post C and its locking device.

5. In combination with frame A and posts B, bar or post C, provided with plate *d* and lug *e*, elbow-lever D, pivoted to the frame, and extending at its lower end between the post C and the lug *e*, and means for rocking said lever D.

6. In combination with frame A and posts B C, lever D, mounted in said frame, lever E, connected to the latter and provided with movable fulcrum *j*, hand-lever F, rods *g h*, connecting the levers E F, and trip or catch H, connected with and operated by one of said levers, substantially as described and shown.

333,276. WOVEN FABRIC. Georges Bertrand, Philadelphia, Pa., assignor to George W. Ennis & Co., same place. Filed Feb. 12, 1885. (No model.)

Brief.—Chenille or yarn and bullion twisted may be used as the figuring-waft. One set of the weft-threads is combined with one set of warp-threads to form figures on the face or back of the fabric, and another set of weft-threads of a finer size is combined with the same set of warp-threads to form the ground, that may be woven plain, twilled, or figured.

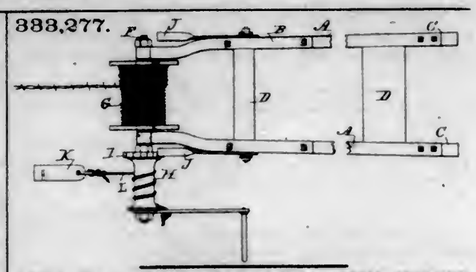


Claim.—The combination, with the stuffer-warps A and binder-warps B, of the thick wefts C and fine wefts D, the thick wefts C being interwoven with the binder-warps B to form raised figures on the face and back of the fabric, the binder-warps B being interwoven with the thin wefts D to form the ground, and the stuffing-warp, lying under the thick wefts C, and between the latter and the thin wefts D, all substantially as described.

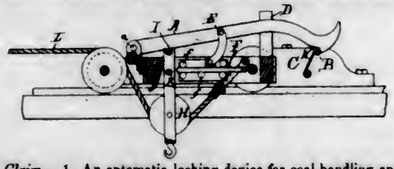
333,277. FENCE-WIRE CARRIER AND STRETCHER. John E. Blackburn, Walnut, Iowa, assignor of one-half to O. H. Bruce, same place. Filed Apr. 20, 1885. (No model.)

Claim.—The fence-wire carrier and stretcher composed of an oblong frame having shaft-bearers B at one end and hooks C at the opposite end, a detachable shaft, F, a reversible drum, H, having a duplex ratchet-wheel, I, fixed pawls J, and a wire-holding device, K, and rope or chain L, substantially as shown and described, to operate in the manner set forth.

333,277.



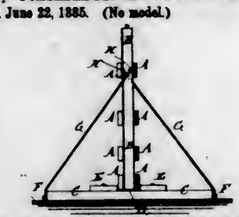
333,278. LOCKING DEVICE FOR COAL-HANDLING APPARATUS. Walter S. Bogle, Chicago, Ill. Filed Oct. 23, 1885. (No model.)



Claim.—1. An automatic locking device for coal-handling apparatus, comprising a lever pivoted at one end upon the carriage, and having its free end adapted to engage a latch, a suitable latch for locking the carriage to the track, a locking-bolt supported on the carriage, and adapted to slide in suitable ways parallel to the track, and a connecting-link pivotally connected to said lever and said bolt, whereby the movement of the lever operates said bolt automatically to lock and unlock a bucket, substantially as described.

2. In automatic locking devices for coal-handling apparatus, the combination of lever A, latch B, curved link E, and locking-bolt F, having slotted arm *e*, substantially as described.

333,279. PORTABLE FENCE. Henry W. Butterfield, Griggsville, Ill. Filed June 22, 1885. (No model.)



Claim.—An improved fence, consisting of the sills C, having the recess D, the panels A B, having their adjacent ends overlapping with the inner edges of the cross-bars B, resting against each other, and the brace-wires G, having their lower ends secured to the sills and their upper ends attached to the top boards of the panels, the said braces being inclined laterally and crossing the ends of the adjacent panels, substantially as shown and described.

333,280. CULTIVATOR. Lucian C. Chamberlin, Lathrop, Mo. Filed May 7, 1885. (No model.)



Claim.—1. A cultivator constructed substantially as herein shown and described, and consisting of the side bars, A, the forward cross-bars, B, having their forward edges inclined upward, the middle and rear cross-bars, C D, the stationary runners E, attached to the cross-bars, the side runners, F, hinged to the middle cross-bar, the springs G, holding the hinged runners in place, the beams L, hinged to the middle cross-bar, the sliding beams N, connected with the hinged runners, the cutters Q, attached to the beams, and the bar M, connecting the beams, as set forth.

2. In a cultivator, the combination, with the middle cross-bar, C, and the spring-held hinged runners F, of the hinged beams L, the sliding beams N, having rollers P, the cutters Q, and the connected cross-bar M, substantially as herein shown and described, whereby the said beams and cutters will adjust themselves to the width of the ridges, as set forth.

3. In a cultivator, the combination, with the frames A B C D E and the spring-held hinged runners F, connected with the sliding beams, of the rods H, levers I, and standards J, substantially as herein shown and described, whereby the said hinged runners and sliding beams can be readily adjusted, as set forth.

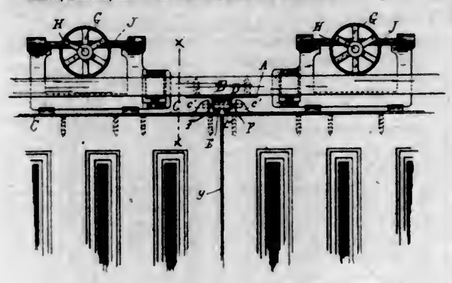
4. In a cultivator, the combination, with the sliding beams N, the hinged beams L, and the connecting-bar M, of the rods S and staples F, substantially as herein shown and described, whereby the said sliding beams are made to move squarely, as set forth.

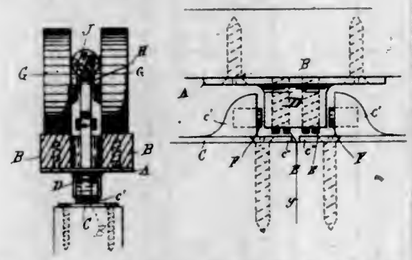
5. In a cultivator, the combination, with the rear cross-bar, D, of the frame, the connecting cross-bar M, the hinged beams L, the sliding beams N, and the cutters Q, of the lever U, substantially as herein shown and described, whereby the said cutters can be readily raised from the ground, as set forth.

6. The combination, with the framing, of the inner runner-bars diverging from front to rear, the outer runner-bars converging normally toward their rear ends, and springs for supporting said outer runners, substantially as set forth.

7. The combination of the framing, the inner runners having their forward ends slightly separated and diverging from front to rear, and the outer runners converging toward their rear ends, and a roller supported and bearing in rear of and in line with the space between the forward ends of the inner runners, all arranged and adapted to operate substantially as set forth.

333,281. ADJUSTABLE STOP FOR SLIDING DOORS. John B. Chase, Aurora, Ill. Filed Nov. 3, 1885. (No model.)





Claim.—1. An adjustable overhead center stop for sliding doors, consisting of a center plate adapted to be fixed on the under side of the track or rail and having a downward projection provided with adjustable screws, combined with a plate adapted to be secured to the top of the door and having an upward projection provided with a buffer adapted to come in contact with said downward projection, as and for the purposes set forth.

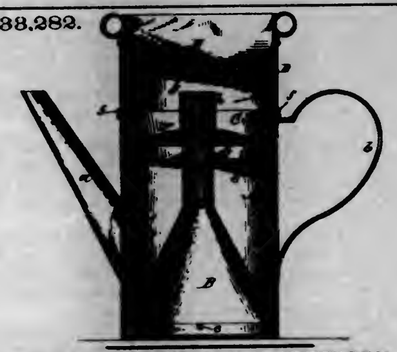
2. The described stop for sliding doors, consisting of the fixed plate B D, having the adjustable screws E E, and centrally affixed to the track, as set forth, combined with the plates C *c'*, one on each door, and each provided with a buffer, F, the combination being and operating substantially as set forth.

333,282. COFFEE-POT. Philip A. Covington, Fort Worth, Tex., assignor of one-half to Albert H. Iverson, same place. Filed June 30, 1885. (No model.)

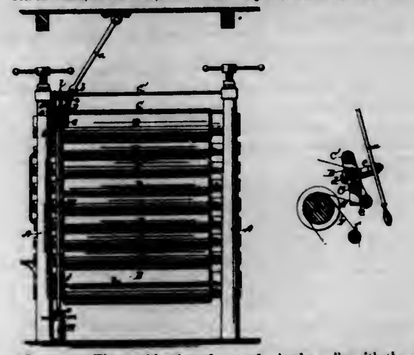
Claim.—1. A coffee-pot provided with a cone-shaped chamber perforated at its base and at its apex provided with an upright tube, a cup having a perforated bottom and surrounding said tube, and a flaring cap connecting the tube and bottom, as shown, and a convex-concavo perforated retaining-plate having a sleeve to fit over the end of the tube, substantially as and for the purpose set forth.

2. A coffee-pot having a cone-shaped chamber perforated as shown, and provided with an upright tube, a perforated cup surrounding the same, a flaring cap connected to the tube and bottom of cup, a perforated retaining-plate, and a condensing-vessel formed with a convex bottom, said vessel resting upon the extension of the perforated cup, substantially as and for the purpose specified.

333,282.



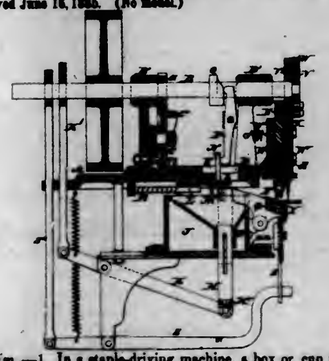
333,283. ENTERING-GUIDE FOR CALENDERING-ROLLS. Madison H. Crane, Pawtucket, R. I. Filed July 24, 1885. (No model.)



Claim.—1. The combination of a set of calender-rolls with the endless belts running from opposite sides together between the rolls, and adapted for movement to and from the larger diameter of the rolls, substantially as and for the purpose specified.

2. The combination of a set of calender-rolls with the endless belts, the sliding carriage adapted for guiding the endless belts along the surface of the rolls, and the weights adapted to compensate for the larger and smaller diameter of the rolls, substantially as described.

333,284. MACHINE FOR INSERTING AND CLINCHING STAPLES IN SHOES. Hudson E. Cunningham, Philadelphia, Pa. Filed Nov. 17, 1882. Renewed Oct. 6, 1883. Again renewed June 18, 1884. Again renewed June 16, 1885. (No model.)



Claim.—1. In a staple-driving machine, a box or cup for staples and a single staple-feeding bar working up through the same, in combination with the slide L, moving longitudinally across the top of said cup, a stripper, M, carried by said slide, and a chute to which said stripper delivers the staples after removing them from said staple-feeding bar, substantially as and for the purpose set forth.

2. A feed-chute, in combination with a pair of elastic fingers arranged to receive staples therefrom, and a staple-lifting bar which forces them one by one from said chute into said fingers, substantially as set forth.

3. A pair of elastic fingers, in combination with a staple-lifter which forces each staple up between said fingers, and a staple-driver operating down through said fingers, substantially as set forth.

4. A driving-shaft and cam actuated thereby, in combination with a sliding carriage advanced by said cam, a pair of staple-holding fingers, and a staple-driver mounted on said carriage, and devices for feeding the staples singly to said fingers, to be driven substantially as described.

5. The chute, in combination with the staple-holder T and the staple-lifter formed with a swell or cam, V, substantially as and for the purpose set forth.

6. A carriage, D, sliding horizontally and adapted to present the staple-driver in the position previously occupied by the awl, in combination with the staple-driver and awl carried by said sliding carriage and driving-shaft, and intermediate mechanism whereby the foregoing devices are operated.

7. Two or more boxes for holding staples, each provided with a feed-bar which works through the box, in combination with the chutes G, supplied from said boxes by the feed-bars, the single lifter S, which receives the staples from all of said chutes, and a single staple holding and driving device, substantially as and for the purpose set forth.

8. Sliding supply boxes or cups, each with a feed-bar, in combination with an elevating-lever provided with a saddle, H', adapted to lift either one of two of said feed-bars when brought into proper position therefor, substantially as and for the purpose set forth.

9. The carriage D, with slot *b'*, frame A, with slot *b*, in combination with the stripper-slide L, the pin N, arm P, and cam Q, substantially as and for the purpose set forth.

10. The feed-chute staple-lifter, awl, and holding and driving device, in combination with the bed or anvil Y; substantially as and for the purpose set forth.

333,285. MECHANICAL TELEPHONE. Arthur W. S. Davis, Lowell, Mass., assignor to Frederick Taylor, same place. Filed Oct. 13, 1884. (No model.)



Claim.—1. A diaphragm for an acoustic telephone, consisting of a sheet of flexible porous material having its pores filled with rosin, as and for the purpose specified.

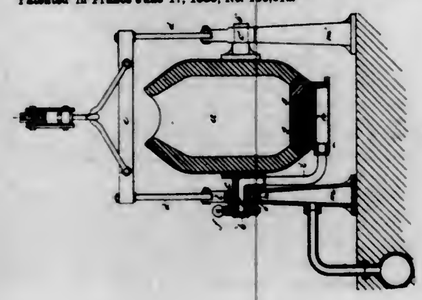
2. An acoustic telephone having a body or base-block formed of strips or pieces of wood arranged with their grain parallel to the transmitting-wire and united to each other laterally, as and for the purpose specified.

3. The combination of a diaphragm and a series of leather washers placed in front of said diaphragm, the spaces between said washers being filled with rosin, and the transmitting-wire passed through said diaphragm and washers, and looped or knotted in front of the same, as and for the purpose specified.

4. In an acoustic or mechanical telephone, the combination of the base-block having a sound-chamber in its front end, a strip or piece of sheet-lead or similar inconorous metal covering the front end of said base-block, around said chamber, and having a reduced thickness for a slight distance outward from the inner edge of said strip, and the diaphragm secured, as herein described, over the thin part of said strip, as and for the purpose specified.

5. The combination, in an acoustic or mechanical telephone, of a diaphragm concaved on its front face and a mouth-piece placed in front of said diaphragm, said mouth-piece having a circular orifice flaring outwardly from the middle thereof equally in both directions, said diaphragm forming the same angle with the plane of its attaching edges as the inner bevel of said mouth-piece forms with said plane, as and for the purpose specified.

333,286. APPARATUS FOR MAKING STEEL. Alfred Davy, Sheffield, County of York, England. Filed June 20, 1885. (No model.) Patented in France June 17, 1885, No. 169,612.

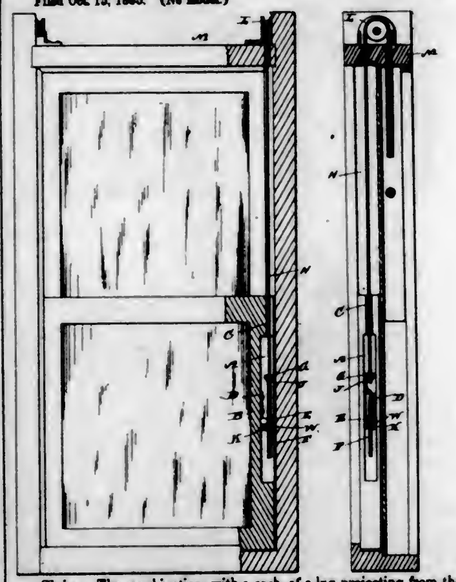


Claim.—1. The combination, with a converter mounted to oscillate on gudgeons and provided with air-lets therein, and in their bearings (or one of them) communicating with the tuyere or tuyeres, of a pair of hollow standards for the gudgeon-bearings to rest on, said standards being adapted to support the converter during the blow and to establish communication between the air-main and the hollow gudgeon bearing or bearings, and of means for suspending the converter and lifting it on and off the standards, substantially as herein described, for the purpose specified.

2. The combination, with a converter provided with air-inlets in one or both gudgeons, and in the bearings thereof in connection with the tuyeres, of standards fixed upon a carriage and adapted to support and to make connection with the bearings (one or both) of the converter during the blow, of a flexible or jointed and detachable pipe-connection between the air-main and the said standard or standards, and of means for suspending the converter and lifting it on and off the standards, substantially as specified.

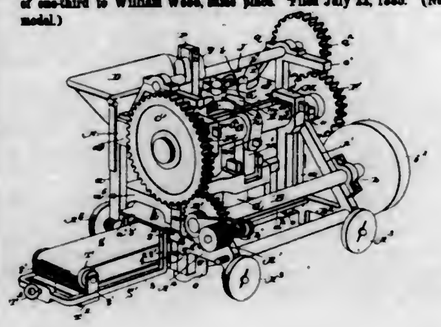
3. The combination of a converter having a hollow gudgeon and a bearing in which the gudgeon rocks, adapted to be connected with a traveler or crane, and having an inlet on its under side, with a hollow separate and independent support or seat for the said bearing, the bearing and its seat being adapted to make an air-tight joint by the former merely resting on the latter, the orifice in the seat coinciding with that in the bearing for the conveyance of air through the hollow gudgeon, whereby the converter may be lifted on and off the support, substantially as specified.

333,287. WINDOW-HANGING. Caleb Dellenbush, Portland, Oreg. Filed Oct. 15, 1885. (No model.)



Claim.—The combination, with a sash, of a lug projecting from the same, which lug has projections on its under side, a screw-rod passed through an aperture in said lug, a nut screwed on said rod, which nut has grooves in its top, and a sash-cord connected with said screw-rod, substantially as herein shown and described.

333,288. BRICK-MACHINE. Victor Dorbit, Bristol, Tenn., assignor of one-third to William Webb, same place. Filed July 22, 1885. (No model.)



Claim.—1. In a brick-machine, the combination of a frame, a power-shaft journaled therein, a shaft, J, carrying a mold-wheel at its lower end, and having a step-wheel provided with a single tooth, a shaft, G', having a drive-wheel, I, and a gear-wheel, K, and a shaft, *l*, geared to the power-shaft, and having a gear-wheel, K', substantially as described.

2. In a brick-machine, the combination of a frame, a rotating mold-wheel mounted therein, an eccentric shaft geared to a power-shaft, also mounted in the frame, an upper pressure-plunger mounted on the eccentric shaft, a pressure-bar carrying a platen arranged to reciprocate in the lower end of the molds, guides secured to the frame for the pressure-bar, and connections M, mounted on the eccentric shaft and secured to the pressure-bar, whereby when the eccentric shaft is rotated the plunger pressure-bar will reciprocate in the upper and lower half of the molds, substantially as described.

3. In a brick-machine, the combination of a frame, a mold-wheel, a power-shaft, a crank-shaft, Q', geared thereto, an expelling-plunger mounted on the crank-shaft to operate in the molds, guides *p'*, pivoted on the plunger, and a guide for the plunger secured on the table a^4 of the frame, substantially as described.

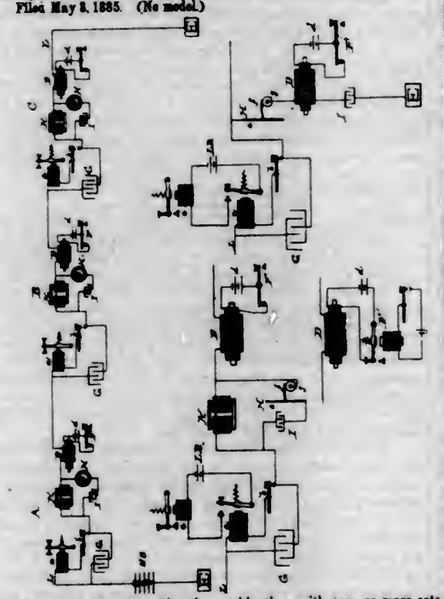
4. In a brick-machine, the combination of a frame, a rotating mold-wheel, an expelling-plunger, an intermittently-traveling belt, supporting-rolls over which the belt moves and is supported, a clutch for rotating one of the rollers, a pivoted arm, V', connected to the clutch, and an arm secured on a shaft, E', and connected to the arm V', substantially as described.

5. In a brick-machine, the combination of a frame, a traveling belt, rollers for supporting the belt, a clutch for driving one of said rollers, a shaft, E', an arm or arms secured to the hub, and an arm rigidly secured on the shaft E', and having a series of apertures at its free end, to which is connected the arm of the clutch, whereby the stroke of the clutch-arm can be varied, substantially as described.

6. In a brick-machine, and in combination with a reciprocating plunger, a traveling belt, supporting-rollers therefor, one of said rollers having a clutch-face, and a spring-pressed hub having a clutch-face normally in contact with the roller and adapted to rotate the same to feed the belt forward, substantially as described.

7. In a brick-machine, and in combination with the reciprocating plunger thereof, a traveling belt arranged below the plunger, a frame arranged to one side of the machine and carrying a roller mounted on a movable plate, a roller suspended from the bottom of the machine in hangers and carrying a spring-pressed clutch, an arm secured upon a vibrating shaft, a lever pivoted to a cross-bar, and pivoted links connecting said arm, lever, and clutch, substantially as and for the purpose described.

333,289. TELEGRAPHY. Thomas A. Edison, Menlo Park, N. J. Filed May 8, 1885. (No model.)



Claim.—1. In telegraphs, the combination, with two or more sets of Morse telegraph-instruments, consisting each of an ordinary relay and a signaling-key, a source of electrical energy for operating the same, and shunt-circuits to keep the line constantly closed at the signaling-keys, of two or more other sets of telegraph-instruments, each composed of a Morse signal-transmitter having a separate source of electrical energy and throwing momentary and sharply-defined impulses upon the line, and a diaphragm-sounder responding to such momentary impulses, whereby two sets of Morse signals can be transmitted and received simultaneously without interference, substantially as set forth.

2. In telegraphs, the combination, with two or more sets of Morse telegraph-instruments, consisting each of an ordinary relay and a signaling-key, a source of electrical energy for operating the same, and shunt-circuits to keep the line constantly closed at the signaling-keys, of two or more other sets of telegraph-instruments, each composed of a Morse signal-transmitter having a separate source of electrical energy and throwing momentary and sharply-defined impulses upon the line, and a diaphragm-sounder responding to such momentary impulses and located in a shunt from the line, whereby two sets of Morse signals can be transmitted and received simultaneously without interference, substantially as set forth.

3. In telegraphs, the combination, with a telegraph-line, Morse telegraph-instruments, consisting of relays and signaling-keys, and a source of electrical energy for operating the same, of an induction-coil having its secondary circuit in connection with line, a separate source of electrical energy, and a Morse signal-transmitting device in the primary circuit of such coil, and a diaphragm-sounder responding to the induction impulses, substantially as set forth.

4. In a system of Morse telegraphy, the combination, with a telegraph-line and Morse instruments, of a diaphragm-sounder and a signal-transmitter transmitting momentary and sharply-defined waves producing alternately-varying signals at the diaphragm-sounder, substantially as set forth.

5. In a system of Morse telegraphy, the combination, for the transmission and reception of Morse signals, of a telegraph-line, an induction-coil having secondary connected with the line, a Morse signal-transmitter in primary producing alternately-varying signals in secondary, and a diaphragm-sounder receiving the induced impulses, substantially as set forth.

6. The combination, with a telegraph-line, Morse telegraph-instruments, and a source of electrical energy for operating the same, of an induction-coil having secondary connected with the line, a Morse signal-transmitter in primary producing alternately-varying signals in secondary, and a diaphragm-sounder receiving the induced impulses, substantially as set forth.

7. The combination, with a telegraph-line, of a diaphragm-sounder responding to induced impulses, a transmitting induction-coil having secondary connected with line, a battery in primary circuit, and a key controlling said primary circuit, said key being arranged to open the primary circuit on the downstroke, substantially as set forth.

8. In telegraphs, the combination, with two or more sets of Morse telegraph-instruments, consisting each of an ordinary relay and a signaling-key, a source of electrical energy for operating the same, and shunt-circuits to keep the line constantly closed at the signaling-keys, of two or more other sets of telegraph-instruments, each composed of a Morse signal-transmitter having a separate source of electrical energy, and throwing momentary and sharply-defined impulses upon the line, and a diaphragm-sounder responding to such momentary impulses, and located in a condenser-circuit connected with such line, whereby two sets of Morse signals can be transmitted and received simultaneously without interference, substantially as set forth.

9. The combination, with a telegraph-line and Morse telegraph-instruments, of condensers located in shunts around the Morse keys, and diaphragm-sounders connected in condenser-circuits with said line, the key-condenser, being of greater capacity than the sounder-condensers, and the relative capacity of the condensers being such that the disturbance of the diaphragm-sounders by the regular Morse signals is prevented, substantially as set forth.

10. The combination, with a telegraph-line, of a diaphragm-sounder receiving Morse signals produced by momentary and sharply-defined waves, resistance in line around which said diaphragm-sounder is shunted, and a condenser in said shunt-circuit, substantially as set forth.

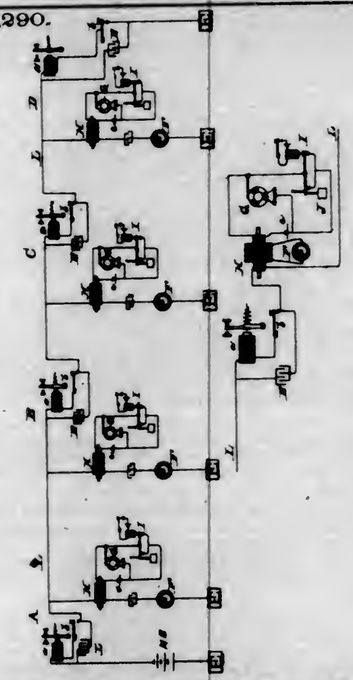
11. The combination, with a telegraph-line, of a diaphragm-sounder receiving Morse signals produced by momentary and sharply-defined waves, an electro-magnet resistance in line around which said diaphragm-sounder is shunted, and a condenser in said shunt-circuit, substantially as set forth.

12. The combination, with a telegraph-line, of a number of sets of instruments directly in the line-circuit, each set consisting of an ordinary relay and signaling-key, and a condenser shunting both the relay and key, and several sets of other and independent instruments connected with or in said line, consisting of a transmitting device for sending momentary and sharply-defined waves, a diaphragm-sounder shunted around a resistance or magnet in the line, and a condenser in said shunt-circuit, substantially as set forth.

333,290. DUPLEX TELEGRAPHY. Thomas A. Edison, Menlo Park, N. J. Filed May 8, 1885. (No model.)

Claim.—1. In a system of Morse telegraphy, the combination, with ordinary Morse telegraph-instruments shunted to keep the line con-

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stantly closed to momentary and sharply-defined waves, of diaphragm-sounders and transmitters transmitting Morse signals electrically by throwing upon the line for each signal a large number of momentary and sharply-defined waves, which do not work the Morse relays, but are responded to by the diaphragm-sounders, substantially as set forth.

2. In a system of Morse telegraphy, the combination, with a diaphragm-sounder, of a transmitter consisting of a circuit-breaker and a controlling-key, the former being constructed to make and break circuit rapidly a large number of times for each movement of the controlling-key, substantially as set forth.

3. In a system of Morse telegraphy, the combination, with a diaphragm-sounder, of a transmitter consisting of a circuit-breaker and a controlling-key, the former being constructed to make and break circuit rapidly a large number of times for each movement of the controlling-key, and means for retarding the movement of the transmitter in one direction, so as to vary alternate signals, substantially as set forth.

4. In a system of Morse telegraphy, the combination, with a diaphragm-sounder, of a transmitter composed of a revolving circuit-controller, and a sheet around the same controlled by a key, substantially as set forth.

5. In a system of Morse telegraphy, the combination, with a diaphragm-sounder, of an induction-coil with secondary in line, and a transmitter in the primary of such coil, consisting of a circuit-breaker and a controlling-key, the former being constructed to make and break such primary circuit rapidly a large number of times for each movement of the controlling-key, substantially as set forth.

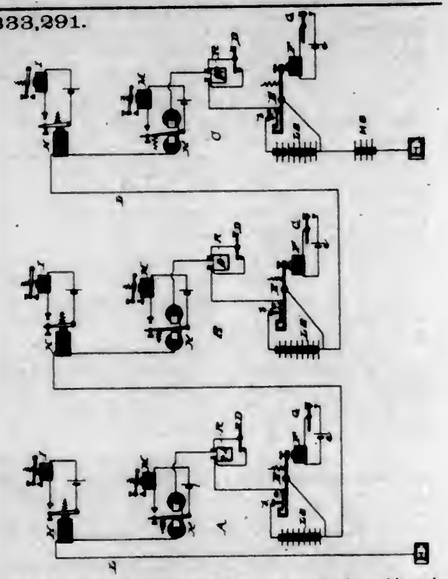
6. In a system of Morse telegraphy, the combination, with ordinary Morse telegraph-instruments adapted to keep the line constantly closed to momentary and sharply-defined waves, of a transmitter of such waves, and a diaphragm-sounder responding to such waves and connected inductively with the line, substantially as set forth.

333,291. WAY-STATION QUADRUPLEX TELEGRAPH. Thomas A. Edison, Menlo Park, N. J. Filed May 16, 1885. (No model.)

Claim.—1. In a system of Morse telegraphy, the combination, with a telegraph-line, of terminal and way stations, each of such stations having a Morse signal-transmitter changing the strength of the line-current, and a Morse signal-transmitter reversing the line-current without changing its strength, and receiving-instruments at each station responding separately to such transmitters, substantially as set forth.

2. In a system of Morse telegraphy, the combination, with a telegraph-line, of terminal and way stations, each of such stations having as receiving-instruments a polarized relay and a non-polarized relay, and two Morse signal-transmitting instruments at each terminal and way station, acting one to change the strength of the line-current and the other to reverse such line-current, substantially as set forth.

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3. In a system of Morse telegraphy, the combination, with a telegraph-line, of terminal and way stations, a main-line battery constantly in circuit, a local battery at each terminal and way station, having double the power of the main battery, said local battery being normally out of circuit, and a key for each of such local batteries throwing the local battery into circuit reverse to the main battery, whereby the line-current can be reversed at a terminal or way station without changing its strength, substantially as set forth.

4. In a system of Morse telegraphy, the combination, with a telegraph-line, of a main-line battery constantly in circuit, terminal and way stations, each provided with a local battery of double the power of the main battery, normally out of circuit, a key at each station throwing the local battery into and out of circuit reverse to the main battery, thus reversing the line-current without changing its strength, a key at each station varying the strength of the line-current without regard to its polarity, and polarized and non-polarized relays, substantially as set forth.

5. In a system of Morse telegraphy, the combination, with a telegraph-line, of a main-line battery constantly in circuit, two or more stations, each provided with a local battery of double the power of the main battery, normally out of circuit, a key at each station throwing the local battery into and out of circuit reverse to the main battery, thus reversing the line-current without changing its strength, a key at each station varying the strength of the line-current without regard to its polarity by throwing resistance into and out of the line, and polarized and non-polarized relays, substantially as set forth.

333,292. VOLTAIC BATTERY. Desmond G. Fitz-Gerald, Brixton, County of Surrey, and Thomas J. Jones, Princes Street, Hanover Square, County of Middlesex, assignors to the Primary Battery Company, (Limited,) Hanover Square, London, W., England. Filed Dec. 26, 1884. (No specimens.) Patented in England Dec. 11, 1884, No. 16,376; in France Dec. 16, 1884, No. 165,965; in Belgium Dec. 17, 1884, No. 67,257; in Germany Feb. 1, 1885, and in Italy June 30, 1885, XIX, 18,504, XXXVI, 404.

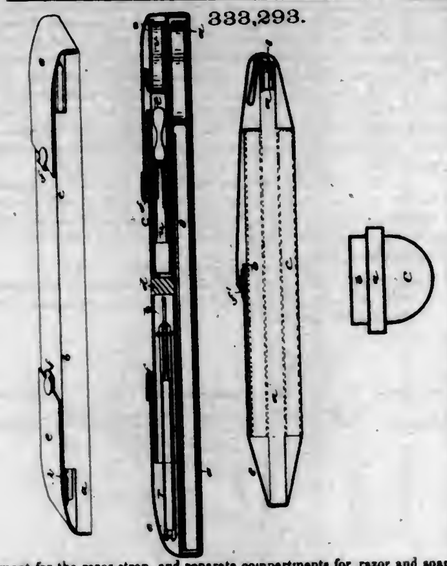
Claim.—1. In a negative element for voltaic batteries, the combination, with the conductive support and the depolarizing agent, of a water-proof layer containing peroxide of lead interposed between said conductive support and the depolarizing agent, and being in contact on the one hand with the said support and on the other hand with the depolarizing agent, substantially as specified.

2. The herein-described method of producing a negative element of a voltaic battery, consisting in the electrolytic production upon the surface of a plate of lead or other suitable conductor of a coat or layer of peroxide of lead, then rendering the same impervious to the electrolyte by the application of paraffine wax, (or other equivalent waterproofing material,) then partially removing the waterproof coating, so that the pores or interstices of the coating or layer of peroxide of lead will be left filled and its surface exposed, and finally applying the depolarizing agent in contact with the said coating or layer, substantially as specified.

333,293. SHAVING-CASE. James H. Flagg, New York, N. Y. Filed Sept. 10, 1884. (No model.)

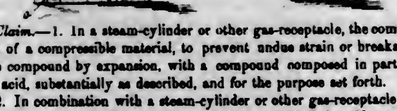
Claim.—1. A shaving-case constructed to form a main compartment for the razor-strop, and separate compartments for razor and soap and brush-box, arranged upon either or both sides of the main compartment, and provided with flaps for closing the several compartments, substantially as shown and described.

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2. A shaving-case constructed to form the main compartment *a*, in combination with compartments *b c*, divided by partition *d*, the case being provided with the flaps *e*, for closing the open ends of the compartments, substantially as described.

333,294. STEAM OR OTHER HOT-GAS CYLINDER. Francis E. Gallouet, Lynn, Mass. Filed Apr. 6, 1885. (No model.)



Claim.—1. In a steam-cylinder or other gas-receptacle, the combination of a compressible material, to prevent undue strain or breakage of the compound by expansion, with a compound composed in part of silicic acid, substantially as described, and for the purpose set forth.

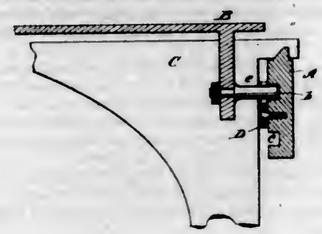
2. In combination with a steam-cylinder or other gas-receptacle, *c*, having a glass or other lining, *a*, composed in part of silicic acid, set-off rings-*d d*, by which a space is formed between the metal of the cylinder and the said lining, substantially as described.

333,295. AUTOMATIC SWITCH FOR DOVETAILING-MACHINES. Christian Gariff, Logan, Utah. Filed Aug. 29, 1885. (No model.)

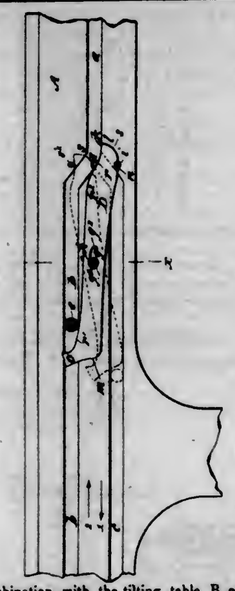
Claim.—1. In a dovetailing-machine, the combination, with the tilting table provided with a pin, of the side rail formed with grooves and provided with a switch formed with an elongated slot, and connected to the rail by a set-screw, substantially as described, and for the purpose specified.

2. The combination, with the tilting table carrying the pin *e*, of the side rail, A, formed with grooves *a*, *b*, and *c*, and provided with a switch, D, which is connected to the rail by a screw, *h*, that passes through a slot, *g*, substantially as described.

3. The combination, with the tilting table B, carrying a pin, *e*, and the side rail, A, formed with grooves *a*, *b*, and *c*, of a switch, D, formed with a slot, *g*, heel *m*, and point *k*, and connected to the rail by a screw or bolt which passes through the slot *g*, substantially as described.



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4. The combination, with the tilting table B, carrying pin *e*, and the side rail, A, formed with grooves *a*, *b*, and *c*, and having projecting pins *i i'*, of a switch, D, formed with a slot, *g*, and connected to the rail by a screw which is passed through said slot.

333,296. WEATHER-STRIP. William Harrison, Kingston, Ontario, Canada. Filed May 16, 1885. (No model.)



Claim.—1. The combination, with a pivoted weather-strip, of an upwardly-projecting bar on the same, a spring for pressing the bar and the strip downward, and of a catch for holding the bar and weather-strip raised, substantially as herein shown and described.

2. The combination, with a pivoted weather-strip, of a bar projecting upward from the same, a spring for pressing the strip and bar downward and holding the bar and strip, and a catch on the door-frame and a lug on the bar for raising said bar and strip when the door is opened, substantially as herein shown and described.

3. The combination, with the pivoted strip A, of the bar D, having a prong, J, the spring G, for pressing the strip A and bar D downward, the catch K on the door-frame, and the latch M, for locking the bolt when raised, substantially as herein shown described.

4. The combination, with the pivoted strip A, of the bar D, the spring G, the pivoted latch M, having an arm, O, the spring Q, and the beveled lug R on the door-frame, substantially as herein shown and described.

5. The combination, with the pivoted strip A, of the bar D, having the prong J, the pivoted latch M, having the arm O, the beveled catch K, and the beveled lug R on the door-frame, and the spring G, substantially as herein shown and described.

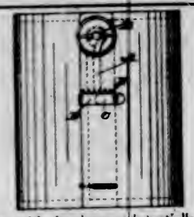
6. The combination, with the plate F, having the aperture W, of the bar D, having the prong J, the beveled catch K, the hinged strip A, connected with the bar D, and of the pin V, substantially as herein shown and described.

7. The combination, with the pivoted strip A, of the bar D, the knob S, the plate F, and the knob T, substantially as herein shown and described.

333,297. CUFF-RETAINER. Joseph M. Hawley, Philadelphia, Pa. Filed Apr. 24, 1885. (No model.)

Claim.—1. A cuff-retainer consisting of the bar A, having a hook, B, and clips C and D, the said clip D having a serrated edge, whereby

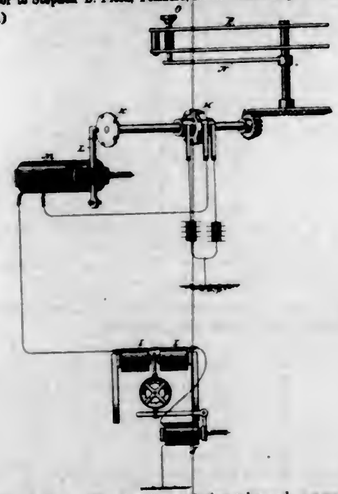
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it is adapted to engage with the sleeve, substantially as and for the purpose set forth.

2. A bar having a hook on one end and clips, substantially as described, at the other end, said clips extending in opposite directions, and one of them having a serrated portion, substantially as and for the purpose set forth.

333,298. PRINTING-TELEGRAPH. CLARENCE L. HEALY, Brooklyn, assignor to Stephen D. Field, Yonkers, N. Y. Filed Sept. 4, 1885. (No model.)



Claim.—1. In combination, in a printing-telegraph, a press-circuit, a circuit-closing key, a mechanical lock arranged to hold the circuit closed independently of the operator, and an electro-magnet connected with the circuit and operating to open said lock and interrupt the press-current when the printing has been effected.

2. In combination, in a printing-telegraph, a press-circuit, a circuit-closing key, a mechanical lock connected with said key and arranged to close and hold the circuit closed independently of the operator, and an electro-magnet connected with the circuit and arranged to disconnect said lock when the printing has been effected.

3. In combination with a press-circuit of a printing-telegraph, a transmitter for sending out type-currents, a mechanical lock operated by the keys of a key-board and arranged to arrest the transmitter and hold it independently of said keys while the press-currents are being sent out, and an electro-magnet connected with the press-circuits and arranged to open said lock and release the transmitter.

333,299. RAKE. CHARLES J. HOGUE, Hallowell, Me. Filed May 5, 1885. (No model.)



Claim.—1. In a rake, the combination of a head, A, composed of longitudinal wires *a a'* and end wires, a^2, and wire teeth D, attached to both longitudinal wires of the rake-head, substantially as set forth.

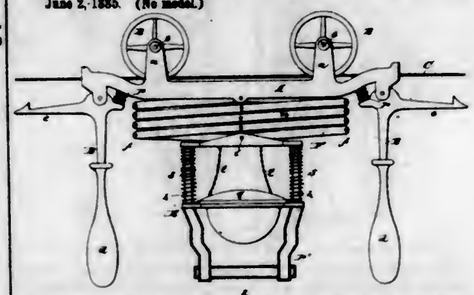
2. In a rake, the combination, with a head, A, composed of longitudinal wires *a a'* and end wires, a^2, of the wire teeth D, each provided with branches *f*, attached to the wires *a a'* of the head, substantially as set forth.

3. In a rake, the combination, with a head, A, composed of longitudinal wires *a a'* and end wires, a^2, of the wire teeth D, each provided with branches *f*, having coils *d* embracing the front wire, *a'*, and secured with their rear ends to the rear wire, *a*, substantially as set forth.

4. In a rake, the combination, with the metallic handle portion C, provided with a tang, *c*, and transverse openings, of a head, A, composed of longitudinal wires *a a'* and end wires, a^2, both longitudinal wires being secured in the openings of the handle portion, substantially as set forth.

5. The combination, with the rake-head A, composed of longitudinal wires *a a'* and end wires, a^2, of the wire teeth D, each provided with two branches *f f*, attached to the wires of the head, and stay-coils *g*, applied to the rake-head between the branches *f* of each tooth, substantially as set forth.

333,300. CAR FOR STORE-SERVICE. WARREN S. HILL, Boston, Mass., assignor to the Lamson Cash Railway Company, same place. Filed June 2, 1885. (No model.)



Claim.—1. The combination, in a car for store-service apparatus, of a body or frame provided with wheels adapted to the way, a receptacle adapted to hold the money or other articles to be transported, and one or more series of jointed bars connecting the holder extensibly to the frame, and springs connected to draw the said bars together and elevate the holder automatically when the same is released, substantially as set forth.

2. The combination, in a cash-carrier car, of a body provided with rollers or wheels adapted to the way, a receptacle provided with a lid or cover, and jointed bar extensibly connecting the body and receptacle, and springs arranged to elevate the receptacle, substantially as described.

3. The combination, with the body and receptacle of a store-service car, of extensible connections connecting the two and lifting the receptacle automatically, and a cap or cover for the receptacle connected to rise automatically as the receptacle is drawn down and to close automatically when the receptacle is released, substantially as described.

4. The combination, with the lid of a receptacle connected extensibly with the frame of a car, of a cord connected to the lid and to a support above the lid, and of such a length as to limit the downward movement of the lid, substantially as and for the purpose set forth.

5. The combination of the receptacle connected extensibly with the body of a car, of a lid, guides, springs arranged to depress the lid, and a cord connecting the lid to an upper support and limiting the downward movement of the lid, substantially as described.

6. The combination of the open frame A, provided with wheels adapted to the way, two series of jointed bars connected to the sides of said frame, springs connected to elevate the said bars, and a receptacle suspended from said bars, substantially as described.

333,301. MACHINE FOR MAKING BALLS. WILLIAM HULLMAN, Premier Works, Coventry, County of Warwick, England, assignor of five-eighths to William Henry Herbert and George Beverly Cooper, same place. Filed Sept. 9, 1885. (No model.)

Claim.—1. In a machine for making balls, the combination, with a rotary mandrel in which the blank-bar is secured and an intermittent feed, of a reciprocating cutter moved toward the axis of said blank during the intervals between the feeding actions, as set forth.

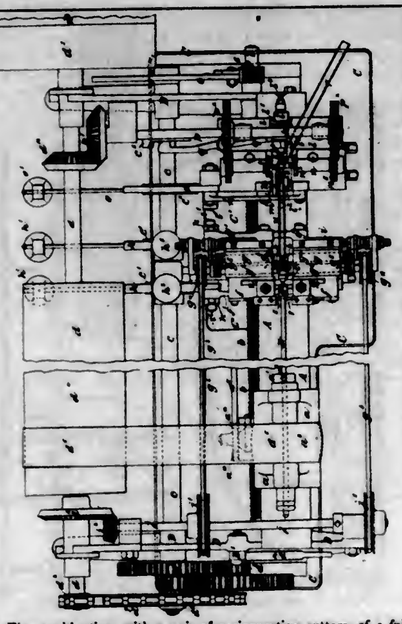
2. In a machine for making balls, the combination, with a rotary mandrel and an intermittent feed, of a series of cutters for acting simultaneously and each in succession upon a given part of the blank, as set forth.

3. In a machine for making balls, the combination, with a rotary mandrel and a blank-bar carried thereby, of a cylindrical cutter reciprocating transversely to the axis of the blank-bar, as set forth.

4. In a machine for making balls, the combination, with a rotary mandrel, of a cylindrical cutter rotating upon its axis and reciprocating transversely to the axis of the blank, as set forth.

5. In a machine for making balls, the combination, with a rotary mandrel, of a pair of rotating cylindrical cutters reciprocated in the plane of their axes and bearing at diametrically-opposite points upon the blank, as set forth.

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6. The combination, with a pair of reciprocating cutters, of a fulcrumed lever and a pair of links connecting the respective cutters with said lever upon opposite sides of its fulcrum, as set forth.

7. The combination, with a pair of cutters and the slides to which they are respectively secured, of a lever fulcrumed to the frame of the machine, links connecting the respective slides with said lever upon opposite sides of its fulcrum, and a cam for controlling the position of said lever, as set forth.

8. In a machine for making balls, the combination, with a rotary mandrel carrying the blank-bar and an intermittent feed for moving said blank-bar forward, of a series of cutters operating successively in the formation of the ball reciprocated alternately with the feed, as explained.

9. The combination, with two rotary cutters and a block in which they are mounted side by side, of intermeshing pinions secured to their spindles and means for rotating one of said spindles, as set forth.

10. The combination, with a cylindrical cutter, of a spring push-piece located within said cutter, substantially as set forth.

11. In a machine for making balls, a pair of planes bearing upon opposite sides of the ball and moved in a circular direction, in combination with the finishing-cutter, substantially as set forth.

12. The combination, with the finishing-cutter, of a pair of planes bearing against opposite sides of the ball and moved in a circular direction, substantially as described.

13. The combination, with the finishing-cutter, of a pair of planes bearing against the ball at diametrically-opposite points, and moved in the same circular direction, one in advance of the other, as and for the purpose set forth.

14. The combination, with the finishing-cutter, of a pair of planes bearing against said ball at diametrically-opposite points, and a pair of wrist-pins to which said planers are secured, said wrist-pins being placed one in advance of the other and moved in the same direction, as set forth.

15. In a machine for making balls, the combination, with the forming-cutters and a trough or chute, of the finishing-cutters and a rest for supporting the ball between said cutters while they are closing together, substantially as set forth.

16. In a machine for making balls, the combination of a pair of finishing-cutters and a spring for forcing them together, as set forth.

17. The combination, with a pair of finishing cutters and a spring for forcing them together, of a stop for limiting their approach, substantially as set forth.

18. The combination, with a pair of cutters and a spring for forcing them together, of a cam for opening them, as set forth.

19. In a machine for making balls, the combination of a rotary mandrel carrying the blank-bar, an intermittent feed, a series of cutters acting simultaneously and each in succession upon a given portion of the blank, and a pair of finishing-cutters, substantially as set forth.

20. The combination, with the head-stock, of a lever fulcrumed thereto, a two-part nut connected with said lever upon opposite sides of its fulcrum, and the feed-screw with which said nut meshes, substantially as set forth.

21. The combination, with the rotary mandrel, of the non-rotating cutters for channeling the blank-bar and the rotating cylindrical cutters for shaping the ball, substantially as set forth.

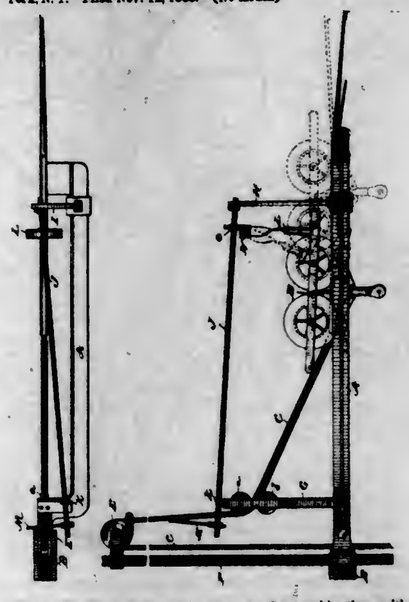
22. The combination, with the rotary mandrel carrying the blank-bar, of the series of cutters for acting simultaneously and each in succession upon a given portion of said bar and a support or guide located between each two cutters, as set forth.

23. The combination, with the finishing-cutter, of a pair of non-rotating planes bearing against opposite sides of the ball and moved in a circular direction, substantially as set forth.

24. The combination, with the finishing-cutter, of a pair of planes held in contact with the opposite sides of the ball with a yielding pressure and moved so as to rotate said ball, as set forth.

25. In a machine for finishing balls, the combination, with means for imparting rotation thereto, of a pair of finishing-cutters pressed into contact with the ball at opposite points, as set forth.

333,302. STORE-SERVICE APPARATUS. JOSEPH R. H. HERTOG, Baltimore, Md., assignor to the Continental Store Service Company, New York, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—1. In a store-service system, the combination, with the movable end of the track upon or into and from which the carriage is propelled by gravity, of a swinging gate secured to a rock-shaft and adapted to be operated for the confinement or release of the carriage, substantially as hereinbefore set forth.

2. The gate L, connected to the casting O by a ruler-joint connection, as described, whereby it may swing to permit the car to enter the trap and maintain it against release, substantially as described.

3. The combination of the casting A, posts G H, rock-shaft J, gate L, arm M, rope C, and operating-stop E, substantially and for the purpose set forth.

333,303. LETTER FOR SIGNS. ELISHA H. HOWARD, Providence, R. I. Filed May 20, 1884. (No model.)

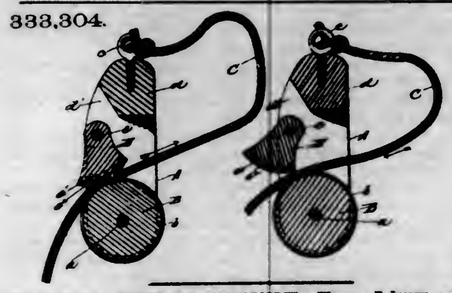


Claim.—The letter provided with the projections *a*, in combination with the wires *a'* and the plugs A', substantially as described.

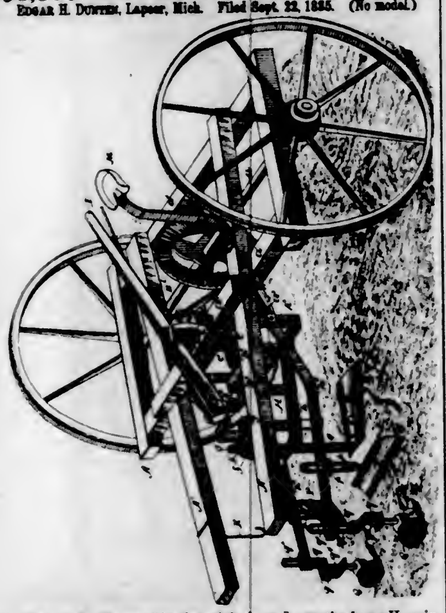
333,304. CORN-SHOCK COMPRESSOR. JASON B. HUGHES, Greensburg, Ind. Filed July 3, 1884. (No model.)

Claim.—A corn-shock compressor consisting of a bifurcated body, a grooved wheel mounted in the lower end of the bifurcation, the curved cam eccentric with the pin on which it is mounted, grooved, and provided with concave-faced metal teeth inserted transversely of the groove, and a cord or rope secured at one end to a ring or hook in the top of the body, substantially as described.

333,304.



333,305. COTTON HOE AND CHOPPER. William E. Ibbley and Edgar H. Dunten, Lapeer, Mich. Filed Sept. 22, 1885. (No model.)



Claim.—1. The combination of the lever I with the frame H, swiveled at its rear in the carriage-frame, and in which is mounted the horizontal shaft F, operated as described, and which is provided with the horizontally-operating chopper O and the vertically-adjustable hoes P, substantially as set forth.

2. The combination of the frame H, swiveled at its rear end to the frame, having hoes and choppers, and operated by lever I, with the casters Q, automatically and vertically adjustable, substantially as described.

3. In a cotton-chopper, in combination with the main frame, a swiveled sub-frame having an automatic vertical movement and movable horizontally, and provided at its forward end with casters vertically and automatically adjustable, substantially as described.

4. In a cotton-chopper, substantially as described, a frame carrying the hoes and chopper provided with casters at its forward end, positively and automatically adjustable in manner set forth, whereby the forward end is capable of an automatic rising and falling movement.

5. In combination with the carriage A and the swiveled frame H, the gear-wheel B, and the arm C, having pinion *c* and bifurcated end *c'*, with the sleeve E, the shaft F, having disk *f*, provided with eccentric pin *f'*, the chopper O, and the pivoted vibrating arm *o*, substantially as and for the purposes set forth.

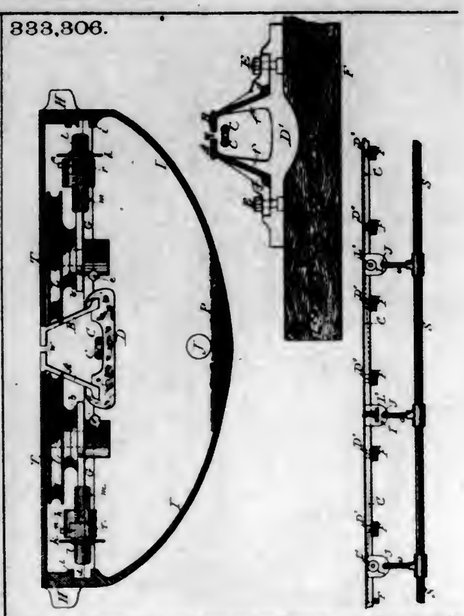
6. In combination with the frame H, the vertically-adjustable hoes, one on each side, the vertically-adjustable casters, and the chopper at the rear of the hoes, having a free right-and-left movement across the space between the hoes, substantially as shown and described.

7. In combination with the frame H, as described, swiveled at the rear at its upper and lower side in the frame of the carriage, the swiveled lever I, having spring-catch *i*, and the rack L, substantially as and for the purposes set forth.

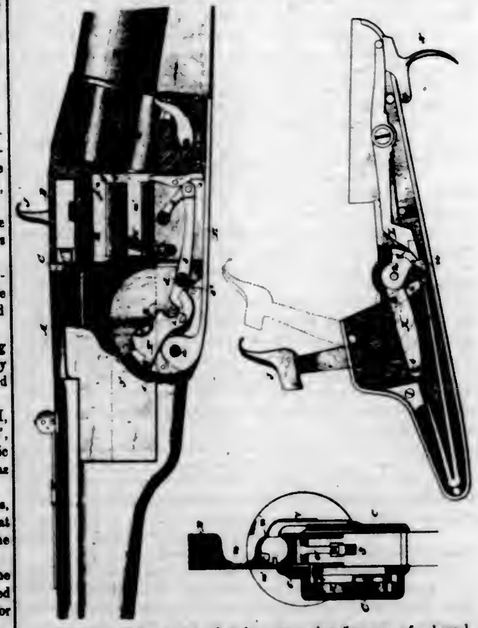
333,306. MEANS FOR CLEANING CABLE-WAYS. Tom L. Johnson, Cleveland, Ohio. Filed Oct. 1, 1885. (No model.)

Claim.—In a cable-traction railway, in combination with a cable-way provided with a smooth interior-faced bottom and dirt-receptacles at intervals below said bottom, a traveling wire cable of solid exterior strands and carried in said cable-way upon removable pulleys, whereby, when the support of one or more of said pulleys is removed, said cable by its sagging removes or sweeps the accumulations of dirt from the cable-way into said receptacles, substantially as and for the purposes set forth.

333,306.



333,307. MAGAZINE FIRE-ARM. Patrick Kerrin, New York, N. Y., executor of Thomas Cullen, deceased. Filed Apr. 2, 1885. (No model.)



Claim.—1. The combination, in a magazine fire-arm, of a barrel, a vertically-reciprocating breech-block arranged to permit the cartridges from the magazine to pass into the lower chamber thereof when the breech is closed, a hammer and its cocking-lever operatively connected to the breech-block and bearing a sear-locking device, whereby movement of the breech-block to bring the upper chamber in line with bore of barrel will bring the hammer to and secure it at half-cock, and extreme upper movement of breech-block full-cocks the hammer, substantially as described.

2. The combination, in a magazine-arm, of the sliding breech-block having two receptacles, a hammer, trigger, cocking-lever mounted on the pivotal pin of the hammer, and having an arm projecting into a slot in the sliding breech, whereby the movement of the breech-block operates the hammer, substantially as set forth.

3. The combination of the sliding breech-block provided with two receptacles, an arm extending into a slot in the breech-block, secured to the shaft carrying the hammer and the trigger, and sear-lever arranged to engage with notches 6 and 9 upon the arm, substantially as described.

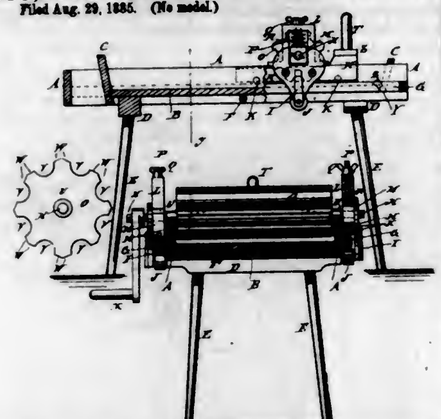
4. The combination, with the hammer, sliding breech-block having two receptacles, a trigger, its sear, and a connecting-lever between the breech-block and hammer, of an arm secured thereto and provided with half and full cock notches, and a lip adapted to lock the sear at half-cock, substantially as described.

333,308. METHOD OF TRANSFERRING PATTERNS FOR EMBROIDERY, &c. Heinrich E. Kramer, Leipsic, Germany. Filed Nov. 25, 1884. (No model.)



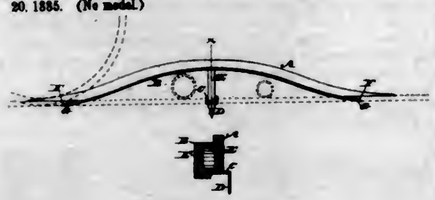
Claim.—A transfer-pattern for embroidery, consisting of a sheet or strip of paper provided with a fine layer of starch, directly on which the transferable design is printed in one or more colors, the printed matter being provided with a coating of dammar or other gum or varnish, substantially as herein shown and described.

333,309. BUTTER-WORKER. Edward Krumbe, Youngsville, N. Y. Filed Aug. 29, 1885. (No model.)



Claim.—A butter-worker consisting of the tray A B C D, supported upon legs E, and provided with the side cleats G, the bars H, provided with the slotted standards L, the rollers K, and the hangers I, having the rollers J, the roller O V W, the bearings M, in which the roller is journaled, the screws P, attached to said bearings and passing through the standards L, the nuts Q on the screws, and the springs R upon the said screws in the slot of the standards, substantially as herein shown and described.

333,310. HOSE-BRIDGE. John Kurs, Philadelphia, Pa. Filed Oct. 20, 1885. (No model.)



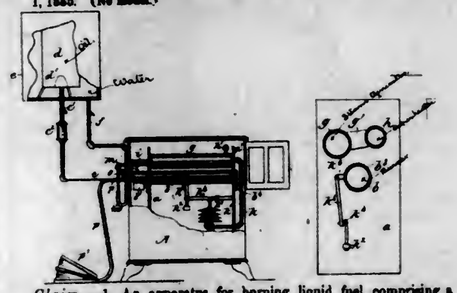
Claim.—1. A hose-bridge formed of arched bars A and arched flanges B, the latter having lateral recesses F at each end, forming lips G, the said bars resting on the said flanges, and having supporting-columns E, with spaces on opposite sides between it and the flanges, substantially as described.

2. A hose-bridge having a bar and flange and guard and a supporting-column connected with said parts, substantially as and for the purpose set forth.

3. A guard adapted to embrace the track, formed with a spur, substantially as and for the purpose set forth.

4. A bar and flange and a guard, in combination with columns riveted to said guard, bar, and flange, the flange having lips at its end, and said guard having a spur, substantially as and for the purpose set forth.

333,311. APPARATUS FOR BURNING LIQUID FUEL. Frederick Lane, Boston, Mass., assignor to Oscar Gaskell, same place. Filed June 1, 1885. (No model.)



Claim.—1. An apparatus for burning liquid fuel, comprising a steam-generator and movable burner, the position of which with relation to the steam-generator is dependent on the pressure in the said generator, substantially as described.

2. The combination, with a burner for liquid fuel, of a boiler or steam-generator which supplies a jet of steam to said burner, and is movable by the weight of the contained liquid, and a feed-pipe, the flow of fluid through which to the boiler is governed by the movement of the latter, substantially as described.

3. The combination of a movable burner and steam-generator or boiler receiving heat therefrom with a pressure-chamber communicating with the said boiler, and connecting mechanism which varies the position of the burner in accordance with variations in pressure in the said chamber and boiler, substantially as and for the purpose set forth.

4. In an apparatus for burning liquid fuel, a movable burner and a movable boiler, the position of the burner depending on the pressure in the boiler, and the feed or supply of water to the boiler depending on its position, substantially as described.

5. A burner for liquid fuel having an outlet for flame or heated gases, combined with a steam generator or boiler heated thereby, and mechanism, controlled by the pressure in the boiler, by which the position of the burner-outlet with relation to the boiler is varied, substantially as and for the purpose described.

333,312. LETTER-COPYING MACHINE. John F. Lash, Toronto, Ontario, Canada, assignor to Zebulon Ayten Lash, same place. Filed Aug. 25, 1884. (No model.)



Claim.—1. In a letter-copying machine in which the manuscript is copied on paper carried between two revolving rollers, a roller, B, arranged to damp the paper passing round the roller D, in combination with said roller D and the roller C, arranged to wring the paper on the roller D after it has passed the roller B.

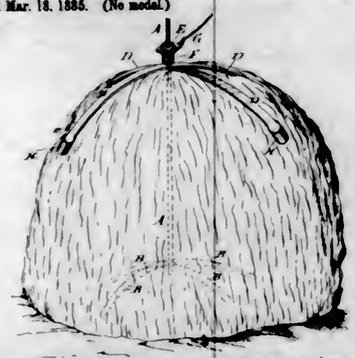
2. In a letter-copying machine in which the manuscript is copied on paper carried between two revolving rollers, the rollers D, E, and F,

around which the paper from the roll A is carried, in combination with the drum V, the damping-roller B, and wringing-roller C, arranged to wring the paper, and operating substantially as and for the purpose specified.

3. The combination of main roller D, copying-roller E, damping-roller B, wringing-roller C, arranged to wring the paper, and the drum V, bearing a continuous coil of paper passing through the said rollers, substantially as and for the purpose specified.

4. In a letter-copying machine, the combination of a main roller, D, a copying-roller, E, a wringing-roller arranged to press upon the paper, and a wetting apparatus, substantially as described.

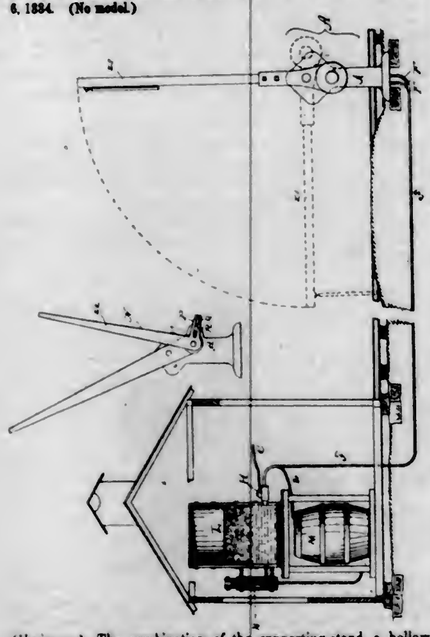
333,313. **STACK-BINDER.** ADOLPHUS J. LAUNDRAY, Clyde, Kans. Filed Mar. 18, 1885. (No model.)



Claim.—1. A stack-binder constructed substantially as herein shown and described, and consisting of the rod A, having foot B, and provided with arms D, and a nut, E, whereby a stack can be compressed by forcing the said arms down upon its top, as set forth.

2. In a stack-binder, the curved binding-arms D, having a socket, H, formed on the outer surface of each end, substantially as shown and described, whereby provision is made for hanging poles down along the sides of a stack, as set forth.

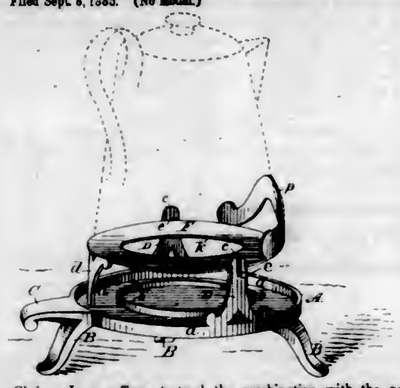
333,314. **HYDRAULIC RAILWAY-GATE.** JOHN A. LIDBACK, Portland, Me., assignor of one-half to John J. Gerrish, same place. Filed Dec. 6, 1884. (No model.)



Claim.—1. The combination of the supporting-stand, a hollow sector within said stand, a shaft to which the gate-arm is attached, mounted in bearings of said stand and carrying a piston or abutment working in the chamber of the sector, a pipe communicating with the chamber on each side of the oscillating piston, a pressure-tank, a valve seat and couplings connecting the pipes with said tank, a receptacle for the return liquid, a pipe connecting the coupling to the receptacle, said pipes all opening to the valve-seat, and a valve adapted to direct the liquid from the pressure-tank and piston-chamber, substantially as described.

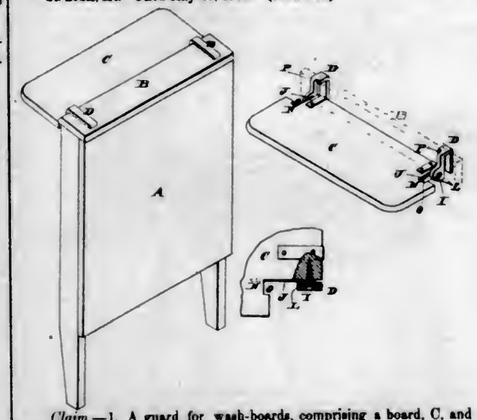
2. The combination, with the main pivoted bar of a railway-gate, of a supplemental counterbalancing-bar pivoted to the lower end of the said main bar, and having a slotted arm projecting at right angles from the pivot of said supplemental bar, and a fixed pin on the stand engaging with the slot, all substantially as described.

333,315. **COFFEE-POT STAND.** JOSEPH LUDERS, Winfield, W. Va. Filed Sept. 8, 1885. (No model.)



Claim.—In a coffee-pot stand, the combination, with the pan A, formed with the rim *a*, ridge *b*, and legs B B, and provided with the standards D D, slotted at *c c*, of a disk, F, formed with the leg *d*, journals *e e*, opening, and flange *p*, substantially as described.

333,316. **GUARD FOR WASH-BOARDS.** FREDERICK MARSCHNER, St. Louis, Mo. Filed May 23, 1885. (No model.)



Claim.—1. A guard for wash-boards, comprising a board, C, and brackets D, having hooks for engaging the top rail of a wash-board, the board C and brackets D being hinged together, substantially as set forth.

2. The combination of a guard, C, having side-rail openings O, and brackets D, having hooks forming top-rail openings, the guard being hinged to the brackets, substantially as set forth.

3. The combination of a guard, C, and brackets D, formed with shoulders P, forming stops to limit the movement of the guard, and provided with hooks for engaging the top rail of the wash-board, the guard being hinged to the brackets, substantially as set forth.

4. In combination with the wash-board, the guard, brackets hinged to the guard, and having hooks to engage the top rail of the board, and projections or shoulders P, and springs J, all arranged and operating substantially as and for the purpose set forth.

333,317. **LOOM-SHUTTLE.** ALBERT E. P. MARTIN, Manchester, N. H. Filed Mar. 15, 1884. (No model.)



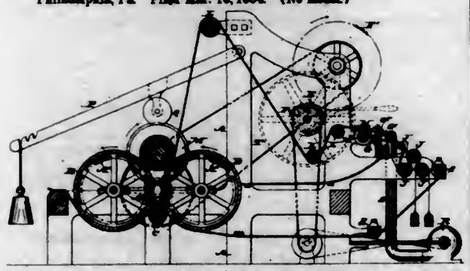
Claim.—1. The combination, with a shuttle-body having a slot extending from its eye to its upper edge, of a bushing slotted to coincide with the slot in the body of the shuttle and cut away to form an extension, and a guide-arm supported by said extension, substantially as and for the purposes described.

2. The combination of a shuttle-body provided with a throat and an eye, the latter having a slot extended therefrom to the surface of the shuttle, with a guide-arm located within the throat, and having an eye formed therein in alignment with the eye of the shuttle, the upper end of said arm extending close to the upper edge of the slot, substantially as shown and described.

3. The combination, with a shuttle-body, the eye of which is slotted substantially as shown, of a pivoted latch normally closing the slot in the shuttle, a spring acting thereon to hold it in said position, and a guide-arm having an eye formed therein substantially in line with the eye of the shuttle, its upper end extending close to the upper edge of the slot and bearing on the inner side of the latch, as and for the purposes set forth.

333,318. WITHDRAWN.

333,319. **CHENILLE-CUTTING MACHINE.** WILLIAM MCILWAIN, Philadelphia, Pa. Filed Mar. 10, 1884. (No model.)

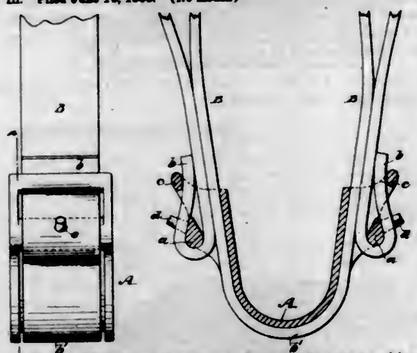


Claim.—1. An adjustable comb having slots and provided with clamping devices, and a rotary cutter whose blades alternate with the teeth of the comb, in combination with a pressure-bar for said comb, and a series of tension-regulating rollers, substantially as and for the purpose set forth.

2. A comb, a rotary cutter, and tension-regulating devices, in combination with a fan or blower and an air-conveying pipe, the latter directing air adjacent to the comb and cutter, substantially as described.

3. An adjustable comb having slots and provided with clamping devices, a pressure-bar, and a rotary cutter, in combination with rollers supporting the chenille-fabric-receiving rollers, means, substantially as described, for operating said supporting-rollers, and a friction-roller supported by a weighted arm pivoted to the frame, the said friction-roller bearing on the receiving-roller, all of said parts being arranged, combined, and operating substantially as and for the purpose set forth.

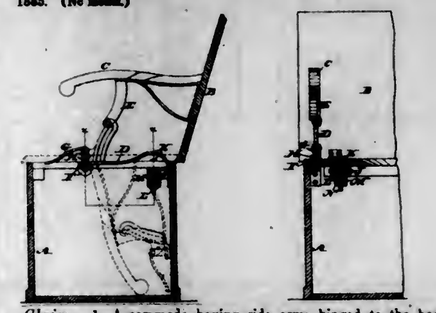
333,320. **BREAST-STRAP IRON.** HARRY MERRYMON, Carbondale, Ill. Filed June 16, 1885. (No model.)



Claim.—1. The breast-strap iron A, formed with bars *a* and keepers *c* above bars *a*, the bars *a* standing away from the iron A and being formed with the projections or nipples *d*, whereby the breast-strap may be folded back upon itself between the iron and said bar, and after the insertion therein of the projection or nipple be passed upward and held between the keeper and itself and be thus secured, substantially as and for the purposes set forth.

2. The breast-strap iron A, formed with bars *a*, standing away from the iron keepers *c* above said bars, and nipples *d*, in combination with the breast-strap B, passed around the irons A and back upon itself between the iron and bars, and having its ends wrapped around bars *a* and passed up under keepers *c*, and held by nipples *d*, passing through holes in the strap, substantially as and for the purposes set forth.

333,321. **COMMODE.** FRITZ MINK, Philadelphia, Pa. Filed Apr. 11, 1885. (No model.)

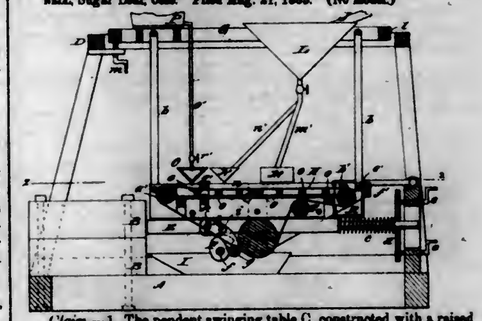


Claim.—1. A commode having side arms hinged to the body thereof and provided with gravitating catches, arm-rests secured to the lid thereof and connected to said hinged side arms, and lugs on the sides of the body, substantially as described.

2. A commode having side arms, D, provided with catches G, arm-rests C, having arms E, side arms, D, and lugs F on the body of the box, the said arms E being connected to said arms D, substantially as described.

3. The body A, in combination with lid B, having arm-rests C with arms E, hinged arms D, having gravitating catches G, and lugs F, said arms E and D being connected, substantially as and for the purpose set forth.

333,322. **ORE SEPARATOR AND CONCENTRATOR.** IRA P. MORRELL, Sugar Loaf, Colo. Filed Aug. 21, 1885. (No model.)



Claim.—1. The pendent swinging table C, constructed with a raised central longitudinal portion, *n*, on its face, in combination with the intermittently-moving belts H H on either side of said raised portion, essentially as described.

2. The combination, with the upper frame, D, of the pendent swinging table C, the suspension-rods *b b*, and the frame G, hinged or pivoted at or near one end to said upper frame, and adjustable up or down at its opposite end, substantially as described, for the purpose of changing the grade of the table, as herein set forth.

3. The combination of the cam F, the swinging table C, provided with the bumper-bar E, the adjustable frame G, from which said table is suspended, the adjustable hangers *h*, the rollers *g*, and the spring *c*, substantially as specified.

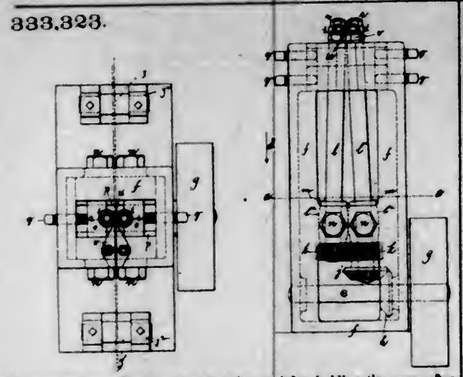
4. The hopper L, having partitions *s' s'*, and fitted with an upper screen, K, in combination with the pipes *m' n'*, perforated ore and water receptacles M N, the close clear-water receptacle O, having perforations in its bottom for supplying water under pressure, the swinging table C, and the belts H H, substantially as shown and described.

5. In combination with the table C, the belts H H, and the perforated ore and water receptacles M N, arranged, respectively, longitudinally of and transversely over the belts, essentially as and for the purpose herein set forth.

333,323. **WIRE-CORRUGATING MACHINE.** CHARLES H. MORGAN, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed May 28, 1885. (No model.)

Claim.—1. In a machine for making lateral indentations or corrugations in wire, the combination of a pair of grooved and milled rolls, a pair of hinged roll-supporting shafts, their fulcrums, the frame of the machine, means for rotating the aforesaid hinged shafts and grooved and milled rolls, and means for forcing the outer ends of the shafts and

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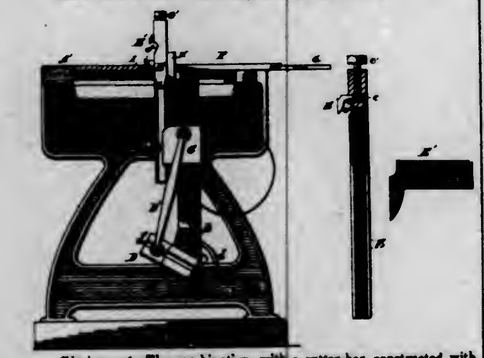


their respective rolls toward each other and for holding the same after adjustment, substantially as shown and described.

2. The combination of a machine for corrugating wire, consisting of a pair of grooved and milled rolls mounted on the outer ends of shafts whose axes are arranged at an angle to each other, and means for adjusting and operating said shafts and for supporting and holding the several parts of said machine, with a pair of plain rolls for flattening the wire preparatory to its entering the corrugating-machine aforesaid, all arranged to operate upon the wire continuously, substantially as shown and described.

3. The combination of a machine for corrugating wire, consisting of a pair of grooved and milled rolls mounted on the outer ends of shafts whose axes are arranged at an angle to each other, means for adjusting and operating said shafts and for supporting and holding the several parts of said machine, with a pair of plain rolls for flattening the wire preparatory to its entering the corrugating-machine aforesaid, and a pair of plain rolls for removing the burrs formed on said wire by the corrugating operation, all arranged to operate upon the wire continuously, substantially as shown and described.

333,324. KEY-SEAT AND GEAR CUTTING MACHINE. Matthew Morton, Romeo, Mich. Filed Aug. 2, 1884. (No model.)



Claim.—1. The combination, with a cutter-bar constructed with an orifice, *c*, and cut away, as at *c'*, of the cutter E and set-screw *c'*, the construction being such that various sizes of cutters may be located in said bar and held in place by said screw, substantially as described.

2. A cutter-bar provided with a removable cutter, said bar cut away adjacent to the cutter, substantially as described.

3. The combination of a supporting-frame, a top or table, a horizontally-sliding bar on the table, and the cutter-bar carrying a cutter, with an extended bearing interposed between the inner end of the sliding bar and the cutter-bar, and against which bearing the sliding bar abuts to press the cutter forward to its work, substantially as described.

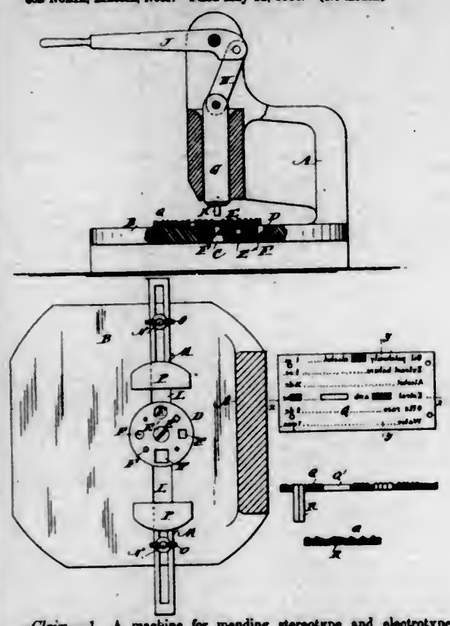
4. The combination, with the oscillating guide provided with a sliding head and a slide, *b*, of a cutter and an extended bearing, H, located in rear of said cutter and having an orifice, *h*, within which the slide *b* works to reciprocate the bearing by the action of the oscillating guide, substantially as described.

5. In a gear or keyway cutter, the combination, with the oscillating guide provided with a sliding head, of a cutter engaged with said head, an extended bearing in the rear of the cutter, a sliding bar, F, and lever G, arranged to operate substantially as and in the manner described.

6. In a gear or keyway cutter, the combination, with the oscillating guide provided with a sliding head, of a cutter and extended bearing located in the rear of the cutter, and mechanism operating upon said bearing to crowd the cutter to its work, substantially as described.

7. In a keyway or gear cutter, a screw and thumb-nut and sliding bar J, engaged at one end with said thumb-nut to limit the movement of the cutter in a forward direction, substantially as described.

333,325. MACHINE FOR MENDING STEREOTYPE-PLATES. Jacob North, Lincoln, Nebr. Filed May 12, 1885. (No model.)

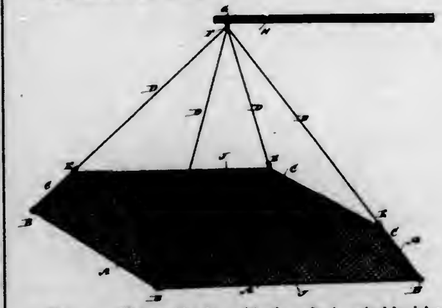


Claim.—1. A machine for mending stereotype and electrotype plates, consisting in the base B, standard A, having the plunger G, the revoluble die E on the base below the plunger, and having a series of type-shaped apertures, F, and the clamps on opposite sides of the die E, substantially as set forth.

2. In a machine for mending stereotype and electrotype plates, the combination, with the base having a circular recess, and the circular die E therein flush with the surface of the base, and provided with a series of type-shaped apertures, of male dies corresponding in shape to the said apertures, substantially as set forth.

3. In a machine for mending stereotype and electrotype plates, the combination, with base B, having the grooves L and central recess, D, between the same, of the die E in the said central recess, and the slotted bars M, adapted to slide in the slots L, and provided with clamping-jaws P and set-screws N O, as set forth.

333,326. DIP-NET. William A. Oldenham, Bowling Green, Ky. Filed Mar. 25, 1885. (No model.)



Claim.—1. The combination, with the rods A, united by joints at the ends, of netting secured to the rods, and suspension-rods having link-joints, substantially as herein shown and described.

2. The combination, with the rods A, of the netting *j*, the rod C, netting secured to the same, and the rods D, connected with the rods C by link-joints, substantially as herein shown and described.

3. The combination, with the rods A, of netting secured to the same, the rods C, netting secured to the same, the rods D, connected with the rods C by link-joints, the rings F on the upper ends of the rods D, and of the loop G, substantially as herein shown and described.

333,327. BUCKLE. James C. Parkhurst and Alonzo Swift, Sedalia, Mo. Filed June 1, 1885. (No model.)



Claim.—1. A buckle consisting of the side bars, *a a*, provided at each end with an oblique box-loop, *d* and *e*, and connected by a central cross-bar, *b*, carrying the tongue, substantially as and for the purpose described.

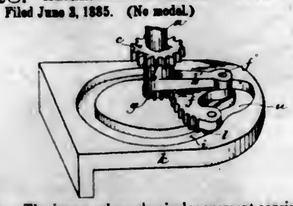
2. A buckle consisting of the side bars, *a a*, connected by a central cross-bar, *b*, carrying the tongue *c*, and provided at each end with oblique box-loops *d e*, of unequal size, whereby one of said loops will move freely on a strap and the other bind thereon, substantially as described.

3. A buckle having oblique box-loops *d e* at opposite ends, one of said loops being provided with a slot, *f*, to facilitate the insertion and withdrawal of the strap, substantially as described.

4. A buckle consisting of the side bars, *a a*, connected by a central cross-bar, *b*, carrying the tongue *c*, and provided with box-loops *d e* at each end, one of which loops is provided internally with a stud, *g*, to hold the buckle in place upon a strap, substantially as described.

5. In a buckle, the combination of the side bars or plates, *a a*, the cross-bar *b*, having a swinging tongue, *c*, and the oblique box-loops *d e* at opposite ends of said buckle, one of said loops being provided with a slot, *f*, and stud *g*, substantially as described.

333,328. MECHANICAL MOVEMENT. George R. Peare, Lynn, Mass. Filed June 3, 1885. (No model.)



Claim.—The improved mechanical movement consisting of a crank journaled to rotate independently upon a rotary arbor, a gear-segment pivoted to said crank and meshing with a pinion on said arbor, and a camway or groove in a fixed plate receiving a stud or roll on said segment, and formed to oscillate the segment as it revolves with the crank, as set forth.

333,329. BEDSTEAD-FRAME. Robert R. Peare, Hartford, Conn., assignor to the Hartford Woven Wire Mattress Company, same place. Filed Oct. 3, 1885. (No model.)



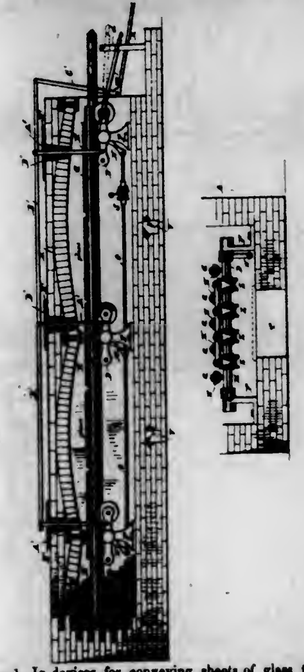
Claim.—1. The combination of the two end rails, each of which is provided with headed projections *a*, arranged in a circle on each of its ends, the four standards, each of which is provided with curved slots *b*, arranged in a circle to engage with the projections *a*, and is also provided with the slots *d*, to engage with the headed projections *c*, the two side rails, each of which is provided with the headed projections *c* and the elastic fabric 9, operating to bind all the parts of the combination firmly together.

2. The combination of the two end rails, each of which is provided with the headed projections *a*, arranged in a circle on each of its ends, the four standards, each of which is provided with the curved slots *b*, for engagement with the projections *a*, and is also provided with the slots *d*, to engage with the headed projections *c*, the two side rails, each of which is provided with the headed projections *c*, the cross-bar 7, adjustably attached to one of the end rails by two or more bolts, 8, and the elastic fabric 9, operating to bind all the parts of the combination together, substantially as described.

333,330. COMPOSITION OF MATTER FOR COATING BOXES MADE FROM PAPER, STRAW, OR PASTE BOARD. De Watt Pepper, New Milford, Conn. Filed July 22, 1885. (No specimens.)

Claim.—A composition of matter for interiorly coating paper, paste, or straw board boxes, the essential ingredients of which are paraffine and bicarbonate of soda, combined as specified.

333,331. DEVICE FOR CONVEYING SHEETS OF GLASS FROM THE FLATTENING-WHEEL THROUGH THE ANNEALING ARCH OR TUNNEL. Peter Pfeifer, Durhamville, N. Y. Filed May 11, 1885. (No model.)



Claim.—1. In devices for conveying sheets of glass through the annealing-arch, the bars G and K, made of metal tubes or gas-pipe, as set forth.

2. In devices for conveying sheets of glass from the flattening-wheel through the annealing-arch, the frames D, for supporting the parallel bars, composed of the cast-iron heads D', with journals and sockets, as described, and the side bars, I and M, made of tube-sections, as set forth.

3. In devices for moving sheets of glass through the annealing-arch, the bars or tubes K, provided with slots *c* at their rear ends, for the reception of wooden or soft-metal strips, as described, whereby the danger of scratching or chipping and breaking the edges of the glass is obviated, as set forth.

4. In devices for moving sheets of glass through the annealing-arch, the bars or tubes K, provided at their rear ends with the wooden filling-pieces, as described, said bars or tubes being connected together by the bars *b*, as set forth.

5. A glass flattening and annealing furnace of the character described, the parallel bars of which extend along by the side of the flattening-wheel and forward of the center or axis of said wheel, whereby the glass is more readily placed on the parallel bars, as set forth.

6. A leer or arch for annealing glass, provided with gravitating or self-acting doors, as set forth, whereby the pressure of the expanded air caused by excessive heat will open said valves and reduce the temperature of the arch, as set forth.

7. A leer or arch for annealing glass, of the character described, the chamber or trench T, below the parallel bars, adapted to be closed or partially closed, as set forth, in combination with the gravitating or self-acting doors located therein.

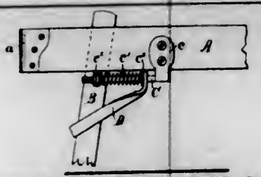
8. In a device for conveying sheet-glass through the annealing-arch, the rocking frames D, having the lever-arms A', which project upward through slots in the top of the arch, said arms or levers being connected together by the bar B', and operated by the bell-crank lever C', as set forth.

9. The operating arms or levers A', extending through slots in the top of the arch, said arms or levers being provided with a metal plate, D', adapted to move with the levers and cover the slot, as set forth.

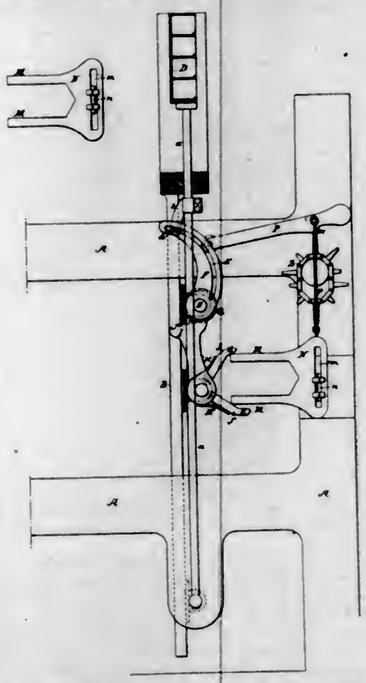
333,332. PICKER-STAFF CHECK FOR LOOMS. John C. Potter, Providence, R. I. Filed Oct. 21, 1884. (No model.)

Claim.—The combination, with the lay-beam having the brackets *c*, the rods C, carrying the springs *c'* and the nuts c^2 and washers c^3, and the staff B, of the band D, secured at its ends movably upon the rods and embracing the staff and acting frictionally upon said rods and staff, as set forth.

333,332.



333,333. **DEVICE FOR CONVERTING MOTION.** Joseph C. Potts, Berwyn, Pa., assignor of one-half to Joseph H. Coates, same place. Filed Nov. 21, 1885. (No model.)



Claim.—1. The combination of a vibrating or reciprocating frame, a lever hung thereto, and an adjustable plate for acting upon said lever as the frame vibrates or reciprocates, the contact-surfaces of the lever-arms being inclined in respect to each other, all substantially as specified.

2. The combination of a vibrating or reciprocating frame, a rod guided thereon but free to move in a direction different from that of the movement of the frame, a lever hung to the frame, means whereby the movement of the lever is transmitted to the rod, and an adjustable plate for acting upon the lever as the frame vibrates or reciprocates, the contact-surfaces of the lever-arms being inclined in respect to each other, all substantially as specified.

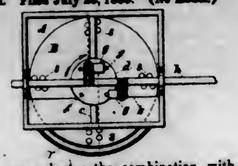
3. The combination of a vibrating or reciprocating frame, a rod guided thereon but free to move in a direction different from that of the movement of the frame, a lever hung to the frame, means whereby the movement of the lever is transmitted to the rod, an adjustable plate for acting upon the lever as the frame vibrates or reciprocates, and a pin chain or pattern device for adjusting said plate, the surfaces of the lever-arms with which the plate comes in contact being inclined in respect to each other, all substantially as specified.

4. The combination of a vibrating or reciprocating frame, a lever hung thereto and having spring-arms J J' with contact-surfaces inclined in respect to each other, and an adjustable plate for acting upon said inclined arms as the frame vibrates or reciprocates, all substantially as specified.

5. The combination of a vibrating or reciprocating frame, a lever hung thereto and having arms J J' with contact-surfaces inclined in respect to each other, a spring-retainer for holding the lever in position in the intervals between its movements, and an adjustable plate for acting upon said inclined arms J J' as the frame vibrates or reciprocates, all substantially as specified.

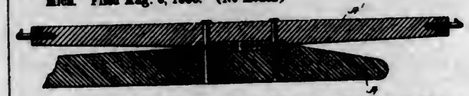
6. The combination of the adjustable plate N, having a ratcheted slot, with the ratcheted guide-lug, as set forth.

333,334. **DROPPER FOR CORN-PLANTERS.** Robert D. Powell, Jerseyville, Ill. Filed July 25, 1885. (No model.)



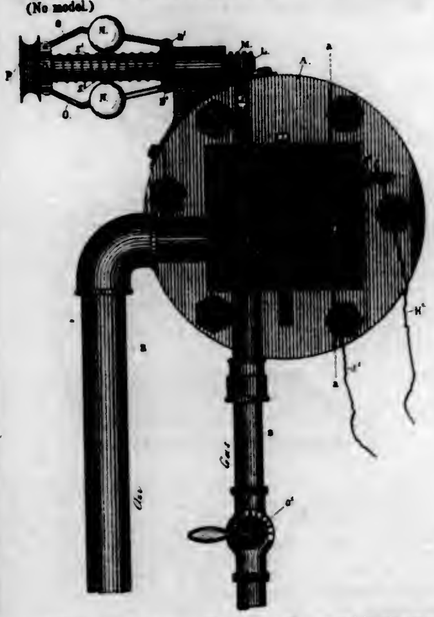
Claim.—In a corn-planter, the combination, with the vertical revolving spindle *a*, of the plate *d*, secured to the upper extremity of said spindle and provided with studs *f*, adapted to engage with pawls *g*, pivoted directly to the reciprocating bar *h*, all constructed and adapted for united operation, as and for the purpose set forth.

333,335. **WHIFFLETREE-COUPLING.** David A. Reed, Shelby, Mich. Filed Aug. 6, 1885. (No model.)



Claim.—In combination with a whiffletree and that part of the vehicle to which it is attached, the plates B B', secured to the whiffletree and that part on which the whiffletree bears, and having plane wearing-surfaces, the said plates being provided with holes and countersinks, as described, and the pin *b*, having its ends riveted and extended only to the outer face of the plates, substantially as and for the purposes described.

333,336. **GAS-ENGINE.** Daniel S. Regan, San Francisco, Cal., assignor to himself and John H. Eichler, same place. Filed Oct. 6, 1885. (No model.)



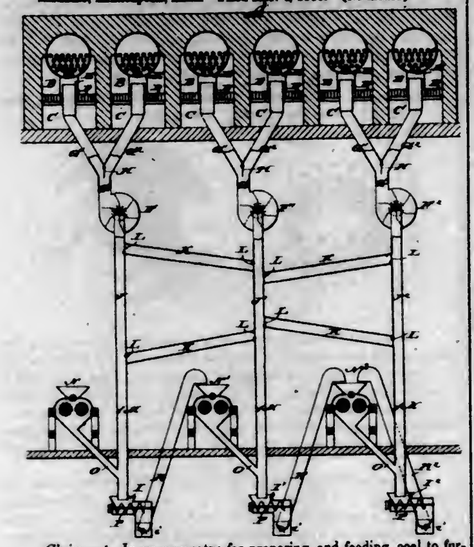
Claim.—1. The gas-valve F, with stem J, actuated by the gas and air valve G, with stem N', by means of the lifting-collar M^2 and the tripping-lever K, for the purpose of opening the gas-supply and admitting gas, constructed and operated substantially as and for the purposes set forth.

2. The gas-valve F, with stem J and segmental gear L, to operate in connection with any suitable governor, in combination with the gas and air valve G, stem N', and lifting collar M^2, for the purpose of regulating the supply and cut-off, constructed and operated substantially as and for the purposes set forth.

3. The combination and arrangement of the gas-chest, composed of the supply and mixing chamber I and igniting-chamber H, in combination with the air-pipe E, the gas-valve F, with stem J and lever K, the gas and air valve G, with stem N' and lifting-collar M^2, and the lever V, with electrical connecting-point Y and insulated electric point W, constructed and operated substantially as and for the purposes set forth.

4. The gas-valve F, with stem J, in combination with the stem A', valve G, the collar M^2, and indicating-valve O, substantially as set forth.

333,337. **FEEDING COAL TO FURNACES.** Rudolph W. O. Remmerlan, Minneapolis, Minn. Filed Apr. 4, 1885. (No model.)

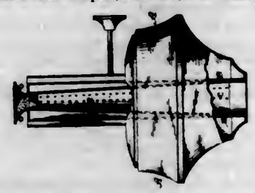


Claim.—1. In an apparatus for preparing and feeding coal to furnaces, the crusher N^2, in combination with the duct J^2, with its lower end entering the receptacle I^2, open for the admission of air, the screw P, the elevator R^2, the blower F^2, disposed at the upper end of the duct J^2, and the bifurcated duct G, connected to the blower F^2 and having branch ducts $G' G^2$, for distributing the pulverized coal to the furnace, substantially as herein shown and described.

2. In an apparatus for preparing and feeding coal to furnaces, the combination, with a series of crushers, N N' N^2, of the ducts J J' J^2, the receptacles I I' I^2, which receive the lower ends of the said ducts and open for the admission of air, the feeding-screws P, disposed in said receptacles, the elevators R R' R^2, connecting with the said receptacles and the said crushers, the blowers F F' F^2, arranged at the upper ends of said ducts J J' J^2, and the bifurcated ducts G, connected to the said blowers and having branch ducts $G' G^2$, for distributing the pulverized coal to the furnace, substantially as herein shown and described.

3. In an apparatus for preparing and feeding coal to furnaces, the combination, with a series of crushers, N N' N^2, of the ducts J J' J^2, connected together by cross-ducts K, and having valves L and M, for cutting off and regulating the supply of pulverized coal to the different furnaces, the receptacles I I' I^2, screws P, elevators R R' R^2, blowers F F' F^2, and bifurcated ducts G, having branch ducts $G' G^2$, substantially as herein shown and described.

333,338. **CENTRAL-DRAFT LAMP.** Frank Rehm, Brooklyn, assignor of one-half to Chas. S. Upton, Rochester, N. Y. Filed Oct. 13, 1885. (No model.)

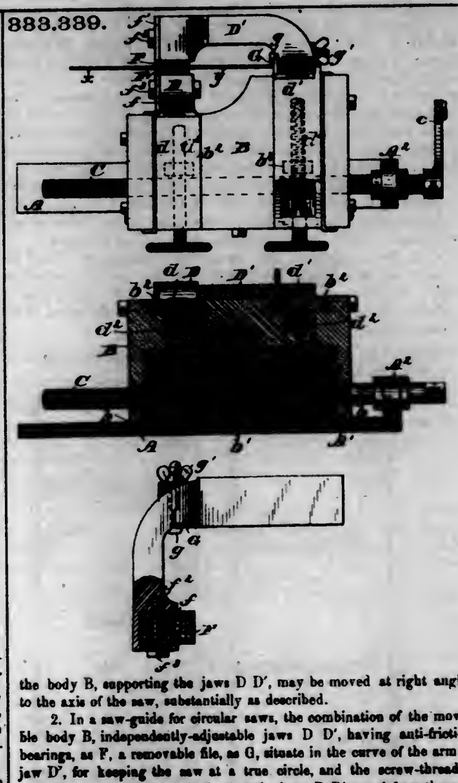


Claim.—In a central-draft lamp, the combination of the lamp-bowl, the central draft-tube, the conical perforated supporting-tube, the larger end of which snugly fits the interior of the draft-tube, and the hollow perforated spreader, which is placed upon the upper end of the supporting-tube and communicating therewith, substantially as set forth.

333,339. **SAW-GUIDE.** Henry W. Roberts, Duncan City, Mich. Filed Sept. 26, 1885. (No model.)

Claim.—1. In a saw-guide for circular saws, the combination of a movable body, as B, independently-adjustable jaws, as D D', adapted to bear at will on either side of the saw and carrying anti-friction bearings, as F, and a screw-threaded shaft, as C, having suitable bearings whereby

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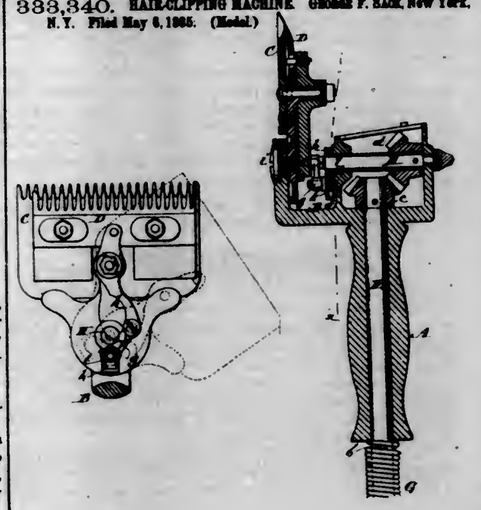


the body B, supporting the jaws D D', may be moved at right angles to the axis of the saw, substantially as described.

2. In a saw-guide for circular saws, the combination of the movable body B, independently-adjustable jaws D D', having anti-friction bearings, as F, a removable file, as G, situate in the curve of the arm of jaw D', for keeping the saw at a true circle, and the screw-threaded shaft C, having crank c, for adjusting the jaws D D' to and from the axis of the saw at will, to accommodate saws of different sizes, substantially as described.

3. In a saw-guide for circular saws, the combination of a base, as A, having a dovetail guide, as A', a movable body, B, having a groove to receive guide A', independently-adjustable jaws D D', having sockets *f*, to receive anti-friction bearings F, and means, as *f'*, *f²*, and *f³*, for removably securing the same, a file, as G, situate in the curve of the arm of the jaw D', for the purpose stated, and a screw-threaded shaft, C, having a crank, c, for moving the body B at right angles to the axis of the saw, so as to adjust the jaws D D' to saws of different sizes, substantially as described.

333,340. **HAIR-CLIPPING MACHINE.** George F. Bass, New York, N. Y. Filed May 6, 1885. (Model.)

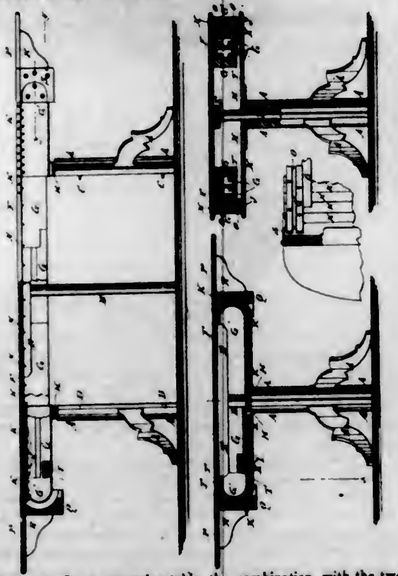


Claim.—1. The combination, with the handle of the implement, the box or frame on the forward end of the handle, and the gearing therein, by which the reciprocating cutter bar or plate is actuated, of the cutting bars or plates C D, the spindle H, through which motion is communicated to the reciprocating plate D, and the pivot *i*, arranged in the same axial line as the spindle H, and connecting the plate C with the box or frame, whereby the cutting-plates C D may be swiveled or adjusted to occupy different angular positions relatively to the said box or frame and the handle of the implement, substantially as specified.

2. The combination of the operating-shaft E, the handle A, the box or frame B, the gears *c d*, the spindle H, the crank *f*, the connecting-rod *g*, the lever *h*, the reciprocating cutting-plate D, the stationary cutting-plate C, and the pivot *i*, essentially as shown and described.

3. The combination, with the toothed cutting-plates C D, of the lever *h*, the crank *f*, having a slot, *k*, in it, the nut *l*, and the connecting-rod *g*, by which reciprocating motion is given to the cutting-plate D, whereby lost motion may be taken up to secure the proper action of the cutters, substantially as specified.

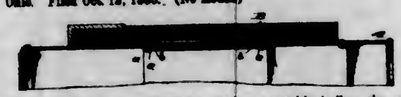
333,341. EXTENSION-TABLE. Gustave Schmitt, New York, N. Y. Filed Nov. 6, 1885. (No model.)



Claim.—1. In an extension-table, the combination, with the two-part pedestal A, the center leg B, the stationary middle part, F, of the table-top, the slides G, and the pieces G', having T-shaped grooves in their upper, lower, and end edges, of the bars K, having tongued and grooved adjacent edges provided with headed pins J, and connected by canvas, T, attached to their inner sides, substantially as herein shown and described.

2. In an extension-table, the combination, with the pieces G', having T-shaped grooves in their upper and lower edges and rounded outer ends, and the bars K, having tongued and grooved adjacent edges provided with headed pins J and connected by canvas, T, of the cross-bars Q, carrying the stationary end parts of the table-top and concaved on their inner sides, and the plates S, connecting the said cross-bars and slides, substantially as herein shown and described.

333,342. ENGINE BED-PLATE. Reinhard Schindler, Newark, Ohio. Filed Oct. 13, 1885. (No model.)

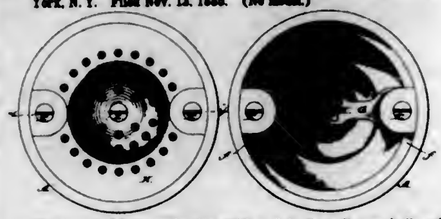


Claim.—1. The combination, with a portable boiler, the outer sheets of which at the parts where the engine-bed is seated have square edges, of an engine bed-plate, the latter having shoulders to abut against the said edges of the boiler-plates, the parts being arranged substantially as indicated, whereby the end-thrust of the bed-plate is sustained wholly or in part by the edges of the boiler-sheets, so as to relieve the securing-bolts from excessive strain.

2. The combination, with a portable boiler, of a combined engine bed-plate and heater, the body of the latter having a concaved seat made to fit the boiler, the parts being arranged substantially as indicated, whereby the boiler and heater are kept at approximately the same temperature, thus avoiding an unequal expansion and contraction of the parts, and securing a degree of heat in the feed-water approximating the temperature of the water in the boiler, substantially as set forth.

3. The combination, with a portable boiler, the outer sheets of which have square edges and preferably countersunk rivet-heads at the parts where the engine-bed is seated, of a combined heater and engine bed-plate, said heater and bed-plate being concaved and made to fit the boiler, and having shoulders made to abut against the edges of the boiler-sheets, the parts being arranged substantially as set forth.

333,343. STRAINER FOR SINKS. Christian H. Schrack, New York, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—1. The combination, with a sink, the collar encircling the flange of the waste-opening therein, and the sink-bolts by which the collar is upheld and made fast thereto, of a bridge-bar, whose ends, resting upon the shoulder encircling the waste-opening, are confined by the sink-bolts, and a strainer, which, resting upon said shoulder, is notched to receive the ends of the bridge-bar, and is secured thereto by an independent screw, substantially in the manner and for the purpose herein set forth.

2. The combination, with the bridge-bar G, secured across the waste-opening B in the sink A, and with a strainer, L, fitted over said opening, of a tapering nut, *k*, fitted centrally in the bridge-bar, with its base downward, and a screw passing through an aperture in the strainer to engage the small end of the nut, substantially in the manner and for the purpose herein set forth.

333,344. EXPLOSIVE COMPOUND. John C. Schrader, McCainsville, N. J., assignor of one-half to Russell S. Penniman, Jenkintown, Pa. Filed May 29, 1884. (No specimens.)

Claim.—The porous-grained dope, substantially as hereinbefore set forth, embodying in each grain thereof a cellular mass of sulphur, within which combustible or non-combustible matters—such as vegetable or woody fiber or coal, or asbestus, or furnace-slag, or nitrates—are held as components of said grains.

333,345. PROCESS OF MAKING EXPLOSIVE COMPOUNDS. John C. Schrader, McCainsville, N. J., assignor of one-half to Russell S. Penniman, Jenkintown, Pa. Filed May 31, 1884. (No specimens.)

Claim.—The process of manufacturing nitro-glycerine powder, substantially as hereinbefore described, which consists in mixing with suitable combustible ingredients a quantity of powdered sulphur capable when melted of adhesively controlling the mass, heating said mass and melting the sulphur, cooling said mass and forming it into porous grains, each containing a cellular mass of sulphur, and then charging said grains with the liquid explosive in quantity not greater than their capacity for receiving and retaining the same by capillary attraction, and thereby producing a dry-grained free-running nitro-glycerine powder.

333,346. DYNAMITE. John C. Schrader, McCainsville, N. J., assignor of one-half to Russell S. Penniman, Jenkintown, Pa. Filed June 2, 1884. (No specimens.)

Claim.—The dry-grained explosive compound, substantially as hereinbefore described, containing nitro-glycerine housed and retained within hard cellular grains, composed in whole or in part of a cellular mass of sulphur and fibrous vegetable matter, substantially as described, and capable of resisting the softening influences of the liquid explosive.

333,347. DYNAMITE. John C. Schrader, McCainsville, N. J., assignor of one-half to Russell S. Penniman, Jenkintown, Pa. Filed June 3, 1884. (No specimens.)

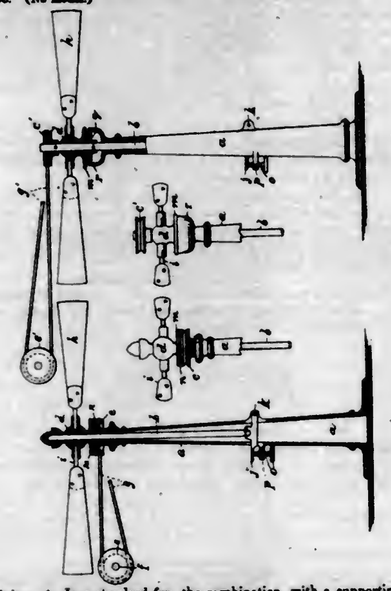
Claim.—The explosive compound, substantially as hereinbefore described, containing nitro-glycerine housed and retained within hard cellular grains composed in part of particles of solid carbonaceous matter held by a porous structure of sulphur.

333,348. DYNAMITE AND PROCESS OF MAKING THE SAME. John C. Schrader, McCainsville, N. J., assignor of one-half to Russell S. Penniman, Jenkintown, Pa. Filed June 4, 1884. (No specimens.)

Claim.—1. The process of manufacturing dry-grained free-running high explosive compounds, substantially as hereinbefore described, the same consisting, first, in charging absorbent granular matter with nitro-glycerine; and, secondly, in mixing said charged granules with dry combustible grains or granules in quantity sufficient to so far reduce the percentage of nitro-glycerine in the mass as to produce a low-grade powder, as set forth.

2. The low-grade dry-grained free-running powder, composed of absorbent grains charged with nitro-glycerine and dry combustible uncharged grains, substantially as described.

333,349. FAN. James M. Seymour, Newark, N. J. Filed Aug. 22, 1885. (No model.)

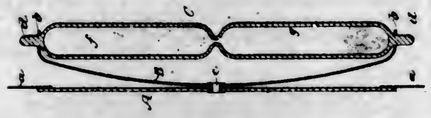


Claim.—1. In a standard fan, the combination, with a supporting-column and a vertical shaft sustained by the column and projecting above the top of the same, of a fan-hub and a rotating pulley applied to the shaft above the top of the column, and clutching mechanism for connecting the fan and pulley to rotate together, substantially as herein set forth.

2. In a standard fan, the combination, with a supporting-column and a vertical shaft sustained by the column and projecting above the top of the same, of a fan-hub and a rotating pulley applied to the shaft above the top of the column, clutching mechanism actuated by an end movement of the shaft for connecting the fan and pulley, and means for shifting the shaft endwise to operate the clutch, substantially as shown and described.

3. In a standard fan, the combination, with the column *a*, of the shaft *b*, mounted thereon and projected from its upper end, the rotating pulley *c*, applied to the shaft and resting upon the top of the column, the fan-hub *d*, sustained by the shaft above the pulley, and a screw arranged and operated to raise and lower the shaft for clutching the fan and pulley together, substantially as herein set forth.

333,350. EGG-TIMER. William H. Silvis, New York, assignor of one-half to Jno. H. Ernst, Brooklyn, N. Y. Filed May 29, 1885. (No model.)



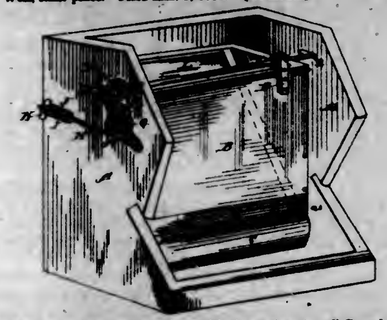
Claim.—1. The combination, with a graduated support and sand-glass, of a spring attached to the support and holding the glass, substantially as described.

2. The combination, with a support and sand-glass, of a curved spring pivoted to said support and having its ends engaging the sand-glass to hold the same, substantially as described.

3. The combination, with a support and a sand-glass having lugs or points projecting from its ends, of a spring pivoted to said support, and having eyes in its ends to receive the said lugs or points, substantially as herein shown and described.

4. As an improved article of manufacture, an egg-timer consisting of the graduated support A, having loops *a*, the spring B, pivoted to said support and having the eyes *b*, and the sand-glass C, having lugs or points *d*, as set forth.

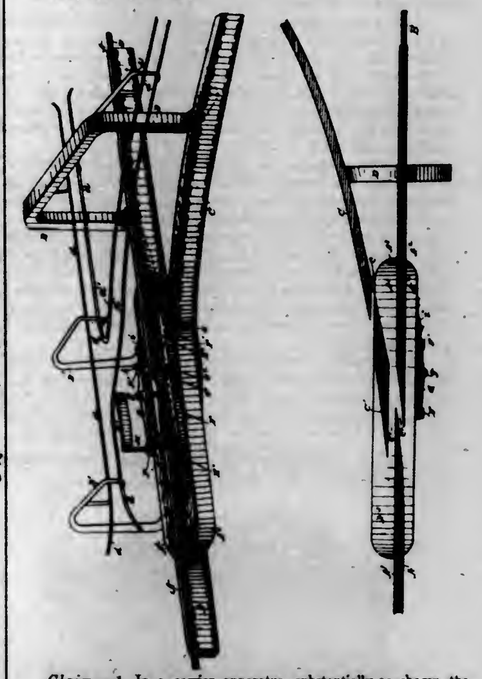
333,351. FEEDER FOR FLOURING-MILLS. Edward M. Smith and Charles H. Rice, Tecumseh, Mich., assignors of one-third to Orin B. De Wolf, same place. Filed Mar. 3, 1885. (No model.)



Claim.—1. The combination, with the casing A, roll C, and spring H, of the hopper B, supported on the rod D and having an inclined back, a vertical front, and metal plate *a'*, adjusting means, as I J K, and the lever G, having set-screw *g*, the lever serving to connect the hopper-pivots with the spring and its adjusting means, and the said set-screw *g* serving to adjust the relations of the lever with the hopper, all arranged and operating jointly as set forth.

2. The combination, with the plates F, having curved slots *f²*, screws *f³*, and pivots *f*, the rod D, brackets E, and suspended hopper having feed-plate *a'*, of the arm G, having set-screw *g*, the spring H, threaded rod I, nut K, bracket J, and feed-roll C, as and for the purposes set forth.

333,352. CONVEYER APPARATUS. Hervey Smith, Erie, Pa. Filed Oct. 5, 1885. (No model.)



Claim.—1. In a carrier apparatus, substantially as shown, the combination, with a car having a trolley which embraces three sides of the track and operates on the upper and lower faces thereof, of a track having a central rib and ledges or extensions on each side of said rib to receive the tread of the flanges of the trolley-wheels, for the purposes mentioned.

2. In a carrier apparatus, substantially as shown, the combination, with a car having two sets of double-flanged wheels arranged to operate on both the upper and lower faces of the track, of a track having a central rib and ledges or extensions on each side of said rib to receive the tread of the flanges of the trolley-wheels, for the purposes mentioned.

3. In a carrier apparatus, substantially as shown, the combination, with a branch or switch track and a main track, of ledges or projections on either side of the main track opposite the end of the switch-track, on which ledges are adjusted the means for diverting the car from one of said tracks to the other.

4. In a carrier apparatus, substantially as shown, the combination, with a branch or switch track and a main track, which consists of a taut wire, of ledges or projections which are clamped upon the main track opposite the end of the switch-track, and are made crowning, so as to extend above the main track, and are provided upon their upper surfaces with a proper formation to serve as a track for the car above the embraced wire, and also with means for diverting the car from one of said tracksto the other.

5. In a carrier apparatus, substantially as shown, the combination, with a branch or switch track and a main track, which consists of a taut wire, of ledges or projections which are clamped upon the main track opposite the end of the switch-track and support the devices by which the car is diverted from one of said tracks to the other.

6. In a carrier apparatus, substantially as described, the combination, with a branch or switch track and a main track, which consists of a taut wire, of ledges or projections which are clamped upon the main track opposite the end of the switch-track, and are provided on their upper surface with a proper formation to serve as a track for the car above the embraced wire track, and also with means for diverting the car from one track to the other.

7. In a carrier apparatus, substantially as shown, the combination of a switch-track and a main track, a ledge or projection on the main track opposite the end of the switch-track, a space, *c*, between the end of the switch-track and the said ledge, and a pivoted tongue on the said ledge, which swings over and opens the said space *c*.

8. In a carrier apparatus, substantially as shown, the combination of a switch-track and a main track, a ledge or projection, and the main track opposite the end of the switch-track, a space, *c*, between the end of the switch-track and the said ledge, and a pivoted tongue on the said ledge, which swings over and spans the said space *c*.

9. In a carrier apparatus, substantially as shown, the combination of a switch-track and a main track, a ledge or projection on the main track opposite the end of the switch-track, a space, *c*, between the end of the switch-track and the said ledge, a pivoted switch-tongue on the said ledge, which swings over and spans the space *c*, and two other pivoted switch-tongues on said ledge, which lie parallel and are moved simultaneously and operate to keep the car on the main track or diverted therefrom, substantially as set forth.

10. In a carrier apparatus, substantially as shown, the combination, with the main and the switch track, of the two parallel pivoted switch-tongues E E', the sliding bar F, connecting said tongues, and means, substantially as shown, for moving said bar from the passing car.

11. In a carrier apparatus, substantially as shown, the combination, with the main and the switch track, of the two parallel switch-tongues E E', the sliding bar F, connecting said tongues, the tongue E^2, the bar F', for moving said tongue E^2, and the lever G, connecting said bars F and F', and pivoted between them, so as to move them in opposite directions, and means, substantially as shown, for moving said lever G from the passing car.

12. In a carrier apparatus, substantially as shown, the combination, with the main and the switch tracks, of parallel switch-tongues E E', arranged with relation to said tracks, as shown, the sliding bar F, for moving said tongues simultaneously, the post H, connected with said sliding bar, and the fender A on the car for operating upon said post.

333,353. GAS-DISTRIBUTING PIPE. WILLIAM F. SMITH, Pittsburg, Pa. Filed Nov. 7, 1885. (No model.)



Claim.—1. The combination, with a collar immediately surrounding the contiguous ends of pipes, of bolts or rivets passing through said collar and into the pipes, a surrounding sleeve exterior to said collar and receiving calking material, and an intermediate central shoulder, substantially as specified.

2. The combination, with a collar immediately surrounding the contiguous ends of pipes, and having a central annular exterior shoulder, of bolts or rivets passing through said collar and into the pipes, and a surrounding sleeve for receiving calking material, substantially as specified.

3. The combination, with a collar surrounding the contiguous ends of pipes, bolts or rivets countersunk into said collar and entering the pipes, a sleeve surrounding the collar and raised therefrom by a central shoulder, and calking material filling the intervening space and covering the said bolts or rivets, substantially as specified.

4. The combination, with a collar surrounding the contiguous ends of pipes, and having near each end an annular groove, and at each end an undercut bevel, of bolts or rivets passing through said collar and into the pipes, a surrounding sleeve with grooves near each end, a shoulder raising said sleeve from said collar, and calking material filling the intervening space, entering the grooves and bevels, and covering the bolt or rivet heads, substantially as specified.

5. The combination, in a pipe-joint, of a collar immediately surrounding the contiguous ends of the pipes, an exterior sleeve, an intermediate filling of calking material, and locking bolts or bars extending from the sleeve to the collar, substantially as specified.

6. The combination of a collar immediately surrounding the contiguous ends of pipes, and having annular grooves near the ends, an exterior sleeve, an intermediate filling of calking material, and locking bolts or bars extending from the sleeve to the collar and seated in the said grooves, substantially as specified.

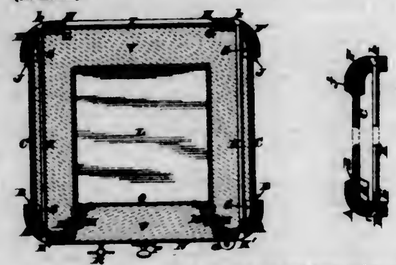
333,354. VAPOR-BURNING LAMP. ABRAHAM M. SOUTHARD, Denver, Colo., assignor to the Southard Portable Gas Company, same place. Filed Apr. 3, 1885. (No model.)



Claim.—1. The perforated ring Q *q*, in combination with the perforated cap P *p*, flanges P' Q', and bent or cranked operating-shaft R R', combined and arranged to serve relatively to each other and to the tube M and lamp-body A, substantially as herein specified.

2. The plate T, with legs T^4 T^5, and arms T' T', in combination with the tube M, cap P P' *p*, ring Q Q' *q*, and adjusting-shaft R R', and with the lamp-body A, arranged for joint operation, substantially as herein specified.

333,355. FIRE-PROOF SAFE. THOMAS S. SPIVEY, Cincinnati, Ohio, assignor of one-half to Guy Webber, same place. Filed Sept. 16, 1885. (No model.)



Claim.—1. A fire-proof safe consisting of cast front and rear frames or angle-pieces, an inner receptacle secured to said front frame, an outer sheet-metal casing between said frames, and a system of tie-rods that unites said frames, and casing, substantially as herein described.

2. A fire-proof safe consisting of cast front and rear frame or angle-pieces, an inner receptacle secured to said front frame, a system of tie-rods that unites said frames and clamps an outer sheet-metal casing between them, and a detachable back-plate, the removal of which latter permits the introduction of the non-conducting filling, as herein described.

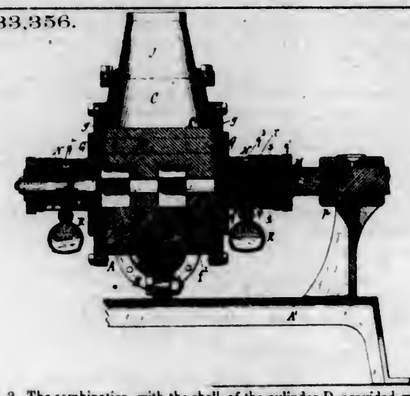
3. An improved fire-proof safe, consisting of the cast frames or angle-pieces A B E F G J, detachable sheet-metal back-plate I, outer sheet-metal casing, C, inner sheet-metal casing, L, non-conducting filling V, and a system of tie-rods, K, for the purpose specified.

4. The cast front frame, A, of a safe, having a rabbet, B, lugs S, stepped door-jamb E, and bolt-holes *e*, for the purpose specified.

333,356. ROTARY PUMP. BENJAMIN F. TABER, Buffalo, N. Y. Filed Mar. 17, 1885. (No model.)

Claim.—1. The combination, with the cylinder D, provided with sliding pistons E, of the shell B, having a concave abutment, *f*, and a concentric working-section, f', connecting portions f^3 f^3, of deeper concavity than the working-section f', suction and discharge openings *b c*, and end heads, G, provided with segmental recesses *g g* opposite the connecting portions f^3 f^3, whereby open spaces are formed opposite the ends of the pistons where the latter descend in the cylinder, substantially as set forth.

333,356.

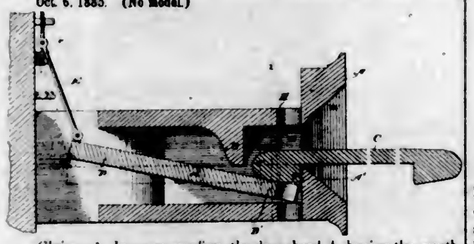


2. The combination, with the shell, of the cylinder D, provided with ways *h*, and the pistons E, sliding in said ways and composed of an outer plate, *i*, and arms i', having overlapping inner ends, i^2, substantially as set forth.

3. In a pump, the combination, with a journal, of an oil-reservoir adapted to receive the liquid which leaks along the journal, thereby displacing the oil and lubricating the journal, substantially as set forth.

4. In a pump, the combination, with the cylinder D, provided with a journal, and the shell provided with the socket *q*, of the oil-reservoir R, secured to the under side of the socket *q*, and the gland *q'*, provided with openings q^2 and a packing-ring, *r*, substantially as set forth.

333,357. CAR-COUPLING. FRANK J. TAGGART, Adrian, Mich. Filed Oct. 6, 1885. (No model.)

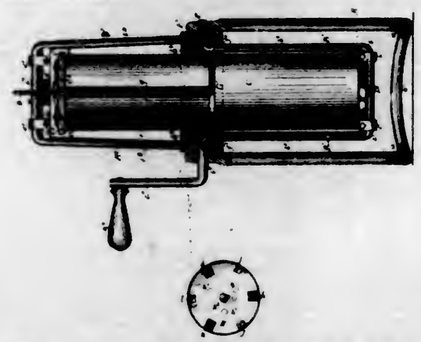


Claim.—1. In a car-coupling, the draw-head A, having the mouth *a*, shoulder A', partition B, and lever D, in combination with the draw-bar C, having the shoulders *c*, all arranged and operating substantially as shown and described.

2. In a car-coupling, the draw-head A, having the mouth *a*, shoulder A', partition B, and lever D, with the retaining-strap G, in combination with the draw-bar C, having the shoulders *c*, all arranged and operating substantially as shown and described.

3. In a car-coupling, the draw-head A, having the mouth *a*, beveled edges *a'*, shoulder A', partition B, and the lever D, arm E, and crank *e*, in combination with the draw-bar C, having the shoulders *c*, all arranged and operating substantially as shown and described.

333,358. CHURN. ELBERT C. TAYLOR, Stockton, Mo. Filed May 15, 1885. (No model.)



Claim.—1. The combination, substantially as set forth, of the supporting-frame, the churn-body, its top, and the frame journaled in the supporting-frame that carries the churn-body and is made in two parts, hinged together, whereby the upper part of the frame may be swung away so that the top of the churn-body may be removed.

2. The combination, substantially as set forth, of the supporting-frame, the churn-body, the hangers that support the churn-body and are bent to form journals on which the churn-body revolves, and the frame that holds the churn-body in position between the hangers.

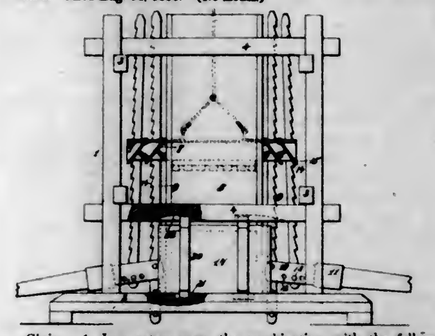
3. The combination, substantially as set forth, of the supporting-frame, the hangers journaled in the supporting-frame, the churn-body supported at one end by the hangers, and the screw-carrying frame hinged to the hangers that holds the churn-body in position.

4. The combination, substantially as set forth, of the churn-body, the supporting-frame, the hangers journaled in the supporting-frame, the screw-carrying frame hinged to the hangers, the cross-piece carrying the nut, and the screw.

5. The combination, substantially as set forth, of the cylinder, the brackets formed with two lugs secured thereto, the perforated dasher having notches in its edges that normally rest between the lugs, and the handle for the dasher, substantially as described.

6. A churn-frame formed of a single bar of metal bent at *a a* to form a horizontal support and brace, *a'*, extended up on both sides and looped at a^3, to form bearings for the journals of the churn-body, and then extended down and bent at a^4 to form feet a^5, substantially as set forth.

333,359. COTTON OR HAY PRESS. LUCIUS L. TAYLOR, Seaboard, N. C. Filed Aug. 11, 1885. (No model.)

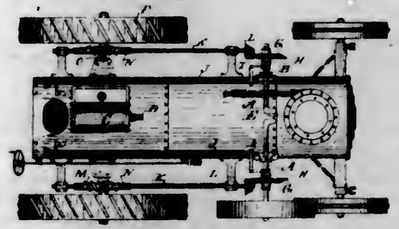


Claim.—1. In a cotton-press, the combination, with the follower having loops pivotally mounted thereon, of ratchet-bars rigidly connected to the bed-plate, levers fulcrumed upon the lower ends of said bars, and ratchet-bars connected with said levers and having their connecting-bolts horizontally adjustable upon said levers, substantially as described.

2. In a cotton-press, the combination, with a follower having vertical movement in the press-box, of levers having each a series of bolt-holes, ratchets attached to said levers by bolts adjustable in said holes, and loops upon the follower engaging with said ratchet-bars, substantially as described.

3. In a cotton-press, the combination, with a follower moving vertically in the press-box, of ratchet-bars rigidly connected with the bed-plate, similar ratchets adjustably mounted upon the levers fulcrumed upon the rigid bars, and loops pivoted upon the follower and engaging with said ratchet-bars, the serrated edges of the latter being turned outward, substantially as described.

333,360. TRACTION-ENGINE. JAMES W. TERMAN, Des Moines, Iowa, assignor of three-fourths to H. S. Butler, same place. Filed June 1, 1885. (No model.)



Claim.—In a traction-engine, a combined propelling, brake, and steering mechanism composed of the following elements, to wit: a shaft, A, driven from the cylinder C, having upon it loose bevel gear-wheels G G and clutches H H, and shafts K K, driven from the shaft A, having worms M M engaging worm-wheels N N, fixed to the driving-axle, all arranged to operate substantially as shown and described, for the purpose specified.

333,361. MEDICAL COMPOUND. CHARLES J. ULRICI, Havana, Cuba. Filed Jan. 29, 1885. (No specimens.)

Claim.—1. The combination, with colloid vegetable pitch, of glycerine and alcohol, substantially as herein set forth.

2. The herein-described composition, which consists of colloid pitch or pitch deprived of the lighter distillates—such as wood-spirit, the acetones, aldehydes, creosote, &c.—combined with glycerine and alcohol, in substantially the proportions herein stated.

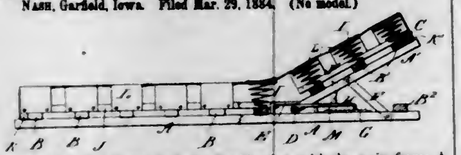
333,362. NUT-LOCK. JOSEPH B. UNDERHILL, Philadelphia, Pa. Filed Aug. 24, 1885. (No model.)



Claim.—1. A skeleton nut composed of a central core, an external shell, and a series of radial ribs or partitions extending from the core to the shell, and dividing the open space between the core and shell into a series of chambers, each adapted to receive a locking-weight, substantially as set forth.

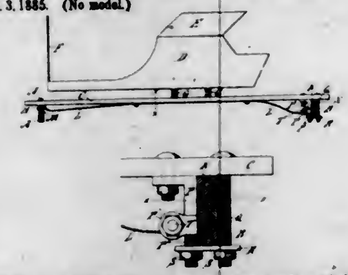
2. The combination of a screw-bolt, a chambered or recessed nut engaging the thread thereof, and a locking-weight fitting in one of the chambers of the nut, substantially as set forth.

333,363. SPRING-BED. LUTHER J. VAN DELINDER and AMASA W NASH, Garfield, Iowa. Filed Mar. 29, 1884. (No model.)



Claim.—In a spring-bed, the combination, with the main frame A B, provided with guides E, the head-rest frame A' B', having its longitudinal bars in line with and their lower ends resting on the longitudinal bars of the main frame, the rod D, connecting the lower ends of all the said bars of the head-rest frame, and having its ends extending into the guides E, and with the braces F, of the centrally-arranged rack G and pawl H, said pawl H being pivoted on the rod D, and of the trip-cord M, substantially as shown and described.

333,364. ROAD-WAGON. JAMES VAUGHAN, Danbury, Conn. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination, with the front and rear bolsters and axles and string-pieces connecting them, of springs bolted to the string-pieces and bent downward at the ends and secured rigidly to the front and rear axles or bolsters.

2. The front and rear axles and bolsters and string-pieces connecting them, in combination with springs secured to the string-pieces both sides of the center, then bent downward at each end and rigidly secured to one of the axles or bolsters.

3. The string-pieces, axles, and bolsters, in combination with springs secured to the string-pieces both sides of the center, both ends of the springs being bent downward, the forward end having a hook adapted to engage the front bolster, and the rear end having an eye through which a bolt passes to secure it to the rear axle.

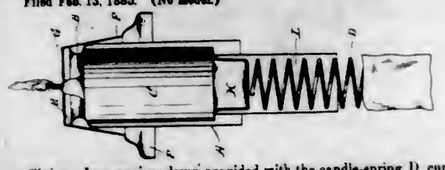
4. The body and supports G, in combination with the string-pieces to which the supports are bolted, the axles, and springs secured to the string-pieces both sides of the center, then bent downward and rigidly secured to the axles, the arrangement being such that the springs support the string-pieces and transmit a portion of the pressure to the axles.

5. The combination, with a spring, string-piece, and the rear axle, of a combined jack and clip consisting of an angle-piece having lugs to which the spring is bolted, and a threaded portion at its lower end, bolt Q, and cross-piece R.

6. The angle-piece having lugs P', and a screw-threaded end, bolt Q, and cross-piece R, in combination with the spring secured to the lugs, and the string-piece, axle, and bolster.

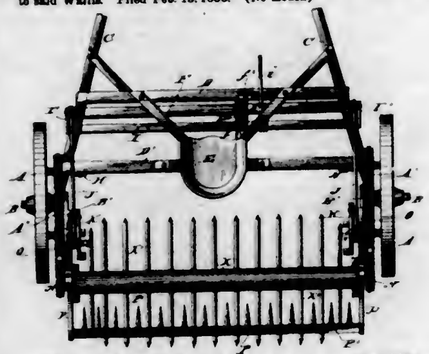
7. The string-pieces, axles, and springs L, rigidly secured at their ends, in combination with supporting-pieces C', clipped to the string-pieces and springs, and bent down at their rear ends and secured to lugs P' upon the axle.

333,365. CARRIAGE-LAMP. CHARLES F. WALDRON, Boston, Mass. Filed Feb. 13, 1885. (No model.)



Claim.—In a carriage-lamp provided with the candle-spring D, cup K, and sleeve L, the combination of the cap F, having at its upper edge the inward-turned barrier G, with the candle-tube A, formed at its upper end with the inward bead or ring B, and held firmly in contact with the inner surface of the cap F, substantially as and for the purpose set forth.

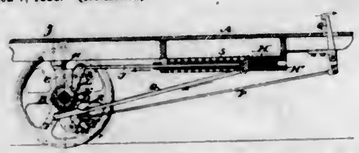
333,366. COMBINED HORSE HAY RAKE AND TEDDER. JOHN N. WALLIS and DANIEL W. SMITH, of Auburn, N. Y.; said Smith assignor to said Wallis. Filed Feb. 13, 1885. (No model.)



Claim.—1. The combination, with the crank-axles, the thills, and transporting-wheels having bearings thereon, and the rotating head-bar X, provided with the teeth X', and having bearings in the rear ends of the crank-axle arms, of the shaft F, provided with the lever F', and arms G, having near their ends pins *g*, which slide in grooves *b* in the crank-axle arms and raise the tedder when the arm is moved outward, substantially as specified.

2. The combination of the crank-axle, the rake having its central bar or head pivoted upon the ends of the arms of the crank-axles, and the mechanism, substantially as described, whereby the rake may be raised to work as a tedder, with the bar P, secured by the rods *p* to the arms of the crank-axles, and the teeth P' upon the bar P, arranged to clear the rake-teeth as the latter rotate, substantially as specified.

333,367. CAR STARTER AND BRAKE. EMIL WERNER, New York, N. Y., assignor of one-half to August W. Gorner, Philadelphia, Pa. Filed Oct. 7, 1885. (No model.)



Claim.—1. In a car-starter, an axle passing through the forks of a bifurcated hanger loosely attached to the bottom of a car, in combination with a pinion rigidly connected to said axle and within the forks of said hanger, a bar having a rack at one end thereof, and a lifter provided with a roller and pivotally connected to the lower portion of the said hanger, substantially as and for the purpose set forth.

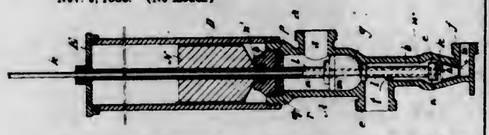
2. In a car-starter, a car-axle, in combination with a ratchet rigidly connected therewith, an arm hung loosely on said axle, a pivoted bar connected with said arm, a sliding head to which said arm is pivoted, and a spring pressing against said head, substantially as and for the purpose set forth.

3. An axle, in combination with a pinion, and a ratchet connected to said axle, a bifurcated hanger, a bar with a rack, said pinion and rack being between the forks of the hanger and adapted to operate said rack, a sliding head provided with a spring secured to one end of said rack-bar, and a second bar connected to said head and pivotally attached to an arm loosely mounted on the said axle, the said arm carrying a pawl adapted to operate the said ratchet, substantially as described.

4. In a car-starter, a pinion on the car-axle, in combination with a rack the bar whereof is formed with a brake-shoe, substantially as and for the purpose set forth.

5. An axle, in combination with the bar G, formed with a shoe, R, the lifting-arm M, the bar P, and the operating treadle or lever Q, substantially as and for the purpose set forth.

333,368. STOP AND WASTE COCK. DOUGLAS WESTERVELT, Chicago, Ill., assignor to himself and JAMES S. BASSETT, same place. Filed Nov. 9, 1885. (No model.)



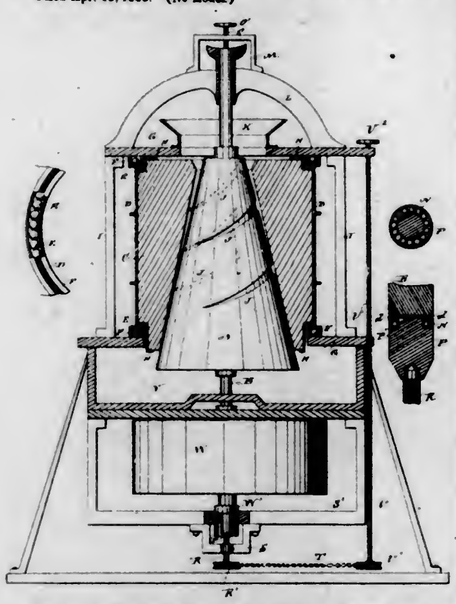
Claim.—1. The combination, with the casting A, formed with supply, service, and waste ports, the waste-port being below the service-port, of a valve-stem carrying two valves arranged substantially as described, and a second valve-stem carrying a single valve, substantially as described.

2. The combination, with a casting, A, formed with supply, service, and waste ports, the waste-port being below the service-port, and chambers *a*, *b*, and *c*, of different diameters, of valve-stems *k* and *l* and valves *m*, *n*, and *h*, all arranged substantially as described, and for the purpose specified.

3. The combination, with a casting, A, formed with supply, service, and waste ports, and with chambers *a*, *b*, and *c*, of valves *m* and *n*, operated by a hollow cylindrical valve-stem, *l*, and a valve, *h*, operated by a valve-stem arranged within the hollow stem *l*, substantially as set forth.

4. The combination, with a casting, A, closed by a plug, *o*, and formed with chambers *a*, *b*, and *c*, and ports *s*, *t*, and *u*, of a valve-stem, *l*, valves *m* and *n*, and a weight, N, a valve, *h*, and a stem, *k*, all substantially as described.

333,369. PULP-GRINDER. WILLIAM WILKINSON, Youngstown, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a pulp-grinder, the combination, with the outer stone having curved grooves in its base, and the inner conical stone, also having curved grooves, of annular pockets containing balls against which the edges of the casing of the outer stone rest, substantially as and for the purpose set forth.

2. In a pulp-grinder, the combination, with the inner and outer revolving stones, of annular pockets containing balls against which the edges of the casing of the outer stone rest, substantially as herein shown and described.

3. In a pulp-grinder, the combination, with the inner and outer revolving stones, A and C, of the casing D, surrounding the outer stone, the plates G, the slotted annular pockets F, and the balls E in the same, substantially as herein shown and described.

4. In a pulp-grinder, the combination, with the inner and outer stones, A C, of the plates G and the bars I, substantially as herein shown and described.

5. In a pulp-grinder, the combination, with the inner and outer stones, A C, of the plates G, the bridge-trees L, the arms M, and the screw O, substantially as herein shown and described.

6. The combination, with the stones A and C, of the spindle B, and the ball-box P, on which the spindle rests, substantially as herein shown and described.

7. The combination, with the stones A and C, of the casing D, surrounding the stone C, and of the angle-bars H, substantially as herein shown and described.

8. In a pulp-grinder, the combination, with the stones A C, of the shaft or spindle B, the screw R, held in a yoke, S, the rod U, and a chain and sprocket-wheels for revolving the screw R from the rod U, substantially as herein shown and described.

9. In a pulp-grinder, the combination, with the stones A C, of the spindle B, the screw R, held in the yoke S, the sprocket-wheel R' on the lower end of the screw R, the chain T, the sprocket-wheel U', and of the rod U, having a screw-threaded part, passed through a screw-threaded aperture in the frame of the machine, substantially as herein shown and described.

333,370. MANUFACTURE OF PORTLAND CEMENT. JAMES M. WILCOX, Philadelphia, Pa. Filed Nov. 5, 1885. (No specimens.)

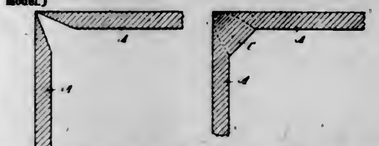
Brief.—Improvement on the invention described in Patents Nos. 293,329, dated January 22, 1884, and 309,117 and 309,118, dated Dec. 9, 1884.

Claim.—1. The admixture, with powdered cement-making material, of a binding medium, substantially such as specified, which will be made soft and fluid by heat and will harden and solidify when cooled, substantially as and for the purposes hereinbefore set forth.

2. The combination, with powdered cement-making material, of pitch or equivalent substance, which, while becoming soft and fluid under moderate heat and becoming hard when cooled, will volatilize under the temperature of the kiln in which the material is subsequently burned or calcined, substantially as and for the purposes hereinbefore set forth.

3. The improvement in the art of making hydraulic cements consisting in mixing with the powdered cement-making material a binding medium, substantially such as specified, which will soften and become fluid when heated and will harden when cooled, then molding by compression the mixture while still heated into balls or lumps, and subsequently calcining said balls or lumps and again reducing the same to powder, substantially as and for the purposes hereinbefore set forth.

333,371. PROCESS OF FUSING METALLIC PLATE JOINTS. CHAS. H. WILSON and JAMES STEUART, Detroit, Mich. Filed Oct. 29, 1885. (No model.)



Claim.—The herein-described method of fusing metallic joints together, which consists in beveling off to an edge the interior faces of two plates, then bringing together the points formed by such beveling, leaving a space between the inclined faces of the plates, and then filling in said space with molten metal, substantially as and for the purpose specified.

333,372. MOP-CLOTH. ERI F. WILSON, Rochester, N. Y. Filed May 4, 1885. (No model.)



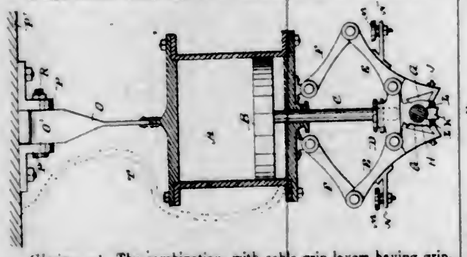
Claim.—1. A mop-cloth consisting of a base or backing of closely-woven and durable textile fabric, having its ends connected so as to form an endless band, in combination with a covering of absorbent material secured thereon, said covering being shorter than the base, so as to leave part of the base uncovered, substantially as and for the purpose set forth.

2. A mop-cloth comprising a base or backing-strip having its ends connected, so as to form an endless band, in combination with a covering of suitable absorbent material, said covering being shorter than the base, and a re-enforcing strip secured to the base and to the ends of the covering at each side of the seam in the base, substantially as and for the purpose set forth.

333,373. **PROCESS OF MANUFACTURING CASTINGS FROM WROUGHT-IRON AND STEEL BY ADDING ALUMINIUM.** CARL G. WITTENSTRÖM, Stockholm, Sweden, assignor to Thorsten Nordenfelt, 53 Parliament Street, Westminster, England. Filed July 8, 1885. (Specimens.) Patented in England July 8, 1885, No. 8,269; in France July 8 1885, No. 170,027; in Belgium July 8, 1885, No. 69,529, and in Italy Sept. 30, 1885, No. 18,647.

Claim.—The hereinbefore-described process of manufacturing castings from wrought-iron or steel, consisting in the admixture with the molten iron or steel of aluminium in about the proportions specified, and then casting, substantially as and for the purpose set forth.

333,374. **CABLE-GRIP.** LEWIS B. WHITE, New York, N. Y., assignor to Leon Abbett, Jersey City, N. J. Filed Oct. 1, 1885. (No model.)



Claim.—1. The combination, with cable-grip levers having gripping-jaws, of a vertically-movable rod, on the end of which the levers are pivoted, and of bars connecting the levers with a fixed object, substantially as herein shown and described.

2. A cable-grip provided with jaws for gripping the cable and a pneumatic cylinder for operating both jaws, substantially as herein shown and described.

3. The combination, with a cable-grip provided with two jaws adapted to grip and hold the cable, of a single pneumatic cylinder for operating said grip, substantially as herein shown and described.

4. The combination, with a cylinder, of cable-grip levers connected with the same, a piston in the cylinder, a piston-rod connected with the piston, and a block connected with the lower end of the piston-rod, on which block the grip-levers are pivoted, substantially as herein shown and described.

5. The combination, with a cylinder, piston, and piston-rod, of cable-grip levers connected with the cylinder and the piston-rod, a bolt passed through the lower ends of the levers, and of a roller on the said bolt, substantially as herein shown and described.

6. The combination, with a cylinder, piston, and piston-rod, of gripping-levers connected with the cylinder and the lower end of the piston-rod, and of guide-rollers on the gripping-levers, substantially as herein shown and described.

7. The combination, with a car, of a cylinder hung on the under side of the same, a piston in the cylinder, a piston-rod on the piston, and cable-gripping levers connected with the cylinder and the piston-rod, substantially as herein shown and described.

8. The combination, with a cylinder, piston, and piston-rod, of cable-grip levers connected with the cylinder and the piston-rod, the bar or plate O′, secured on the top of the cylinder, and of a bolt for pivoting the bar or plate to the under side of a car, substantially as herein shown and described.

9. The combination, with the cylinder A, piston B, and the piston-rod C of cable-gripping levers connected with the cylinder and with the piston-rod, the bolts J, passed through the lower ends of the gripping-levers, the rollers K on the bolts, and of the spiral springs L on the bolts, substantially as herein shown and described

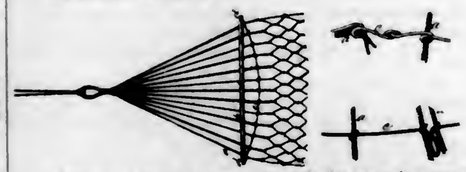
333,375. **HINGE.** JAS. W. WHITMORE, Richmond, Va., assignor of one-fourth to James W. Whitmore, Jr., same place. Filed Aug. 18, 1885. (Model.)

Claim.—In hinges for doors and gates, the half-sections or leaves of the hinge, having sockets the one of which is fitted to turn and slide up and down the other, in combination with a screw in the interior of the one socket, a nut fitting said screw, and a coupling capable of manipulation from the exterior applied to the other socket, and adapted to engage and disengage with and from the nut, whereby the hinge may either be a self-closing one or be converted into a hinge which is not capable of self-closing, substantially as described.

333,376. **SHAFT-COUPLING.** JAMES YOCOM, Jr., Philadelphia, Pa. Filed June 30, 1885. (No model.)

Claim.—In combination with the external sleeve, *a*, of a shaft-coupling, the conical sleeves *b b′*, and a screw-bolt, *d*, provided with fastening-nuts and a projection, *g*, substantially as and for the purpose set forth.

333,377. **HAMMOCK.** ALBERT L. ADAMS, Cedar Rapids, Iowa. Filed Apr. 27, 1885. (No model.)

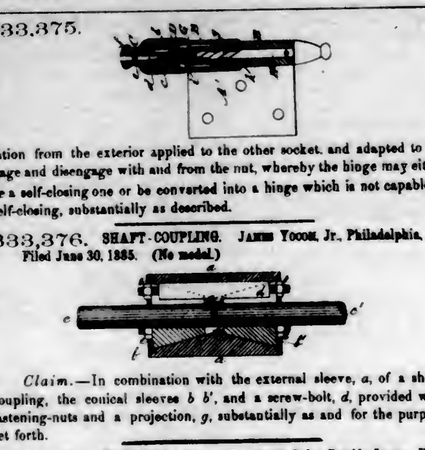


Claim.—1. A cord, chain, or analogous flexible means for connecting the cords of a hammock at fixed distances apart, in combination with a hammock and a stick or rod for distending the same, substantially as set forth.

2. The combination of hammock-cords *a*, the suspension cord or chain *c*, rings or loops *d d*, and rod *b*, all constructed and arranged substantially as and for the purpose set forth.

3. As a new article of manufacture, a hammock having a cord or chain attached to it transversely at or near the ends of the netting in substantially the manner specified, whereby uniformity in spread of the hammock is secured when the sides are distended by a plain rod placed contiguous thereto, substantially as set forth.

333,378. **STOCK-CAR.** GENEVA ARMSTRONG, Elmira, N. Y. Filed Oct. 16, 1885. (No model.)



Claim.—1. In a stock-car, the swinging troughs suspended outside the car by suitable levers connected together and operated at each end of said car, in combination with the funnel and branch pipes for supplying said troughs with water, as set forth.

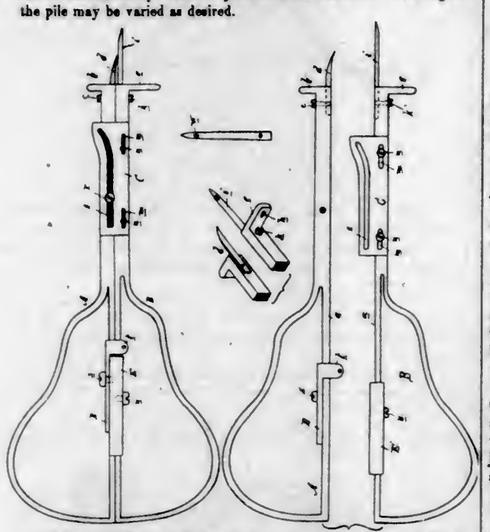
2. In a stock-car, the movable troughs and their operating-levers, in combination with the grooved guide-brackets extending outwardly from each side of the car-door for the purpose of guiding one end of the troughs, as specified.

3. In a stock-car, the movable troughs and their operating-levers, in combination with the brackets E and guide-plates *d*, arranged to guide both ends of the troughs, in the manner set forth.

4. In a stock-car provided with outwardly-swinging side doors and side openings, *a*, the combination of the suspended and movable troughs, the levers for operating them, and the guide-brackets and guide-plates adapted to cause the troughs to pass through the space *a* to the interior of the car when lowered and be drawn therefrom when raised, substantially as set forth.

333,379. **FABRIC-TURFING IMPLEMENT.** G. HENRY BAKER, Moreuci, Mich. Filed June 25, 1885. (No model.)

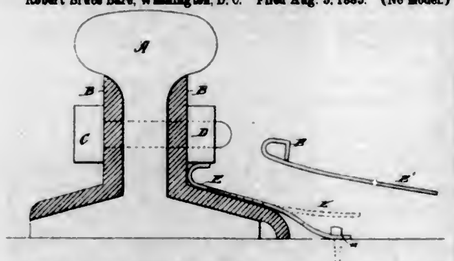
Brief.—The device is designed to form a "pile" on one side of a canvas foundation by means of yarn or other material. The length of the pile may be varied as desired.



Claim.—1. The combination, with the part A, provided with the adjustable plate D, and the part B, provided with the adjustable plate E, of the plate C, adjustably secured to the part B and provided with the curved slot *o*, engaging the projection *r* on the part A, as set forth.

2. A device for the purpose described, consisting of the two parts A B, having a limited and adjustable reciprocating movement upon each other, one part carrying a pusher or loop-former and the other a needle, both of which are removably secured, the plate C, having slots and secured to the parts A B by means of set-screws, and the two-part adjustable stop D and E, the parts being constructed, combined, and operating substantially as and for the purposes specified.

333,380. **NUT-LOCK.** JOHN BARE, Mount Union, Pa., assignor to Robert Bruce Bare, Washington, D. C. Filed Aug. 5, 1885. (No model.)



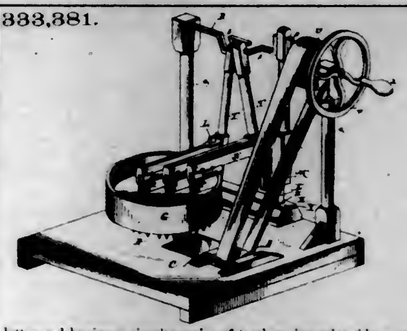
Claim.—1. The combination, with the nut, fish-plate, bolt, and railroad-rail, of a T-shaped bar having a bent spring-stem, the head or cross-piece of said bar being disposed beneath the nuts and between them and the fish-plate, and its stem portion being bent down under tension and spiked to the cross-tie, substantially as described.

2. The T-shaped spring-metal locking-bar having its stem portion bent substantially as shown and described.

3. The T-shaped spring-metal locking-bar having its head or cross-piece folded on itself and its stem portion bent substantially as shown and described.

333,381. **MEAT-CHOPPER.** ALBERT B. BAUM, Grantville, Pa. Filed May 2, 1885. (No model.)

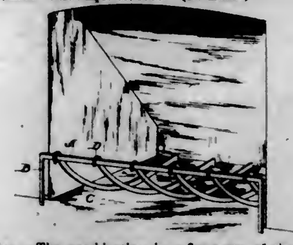
Claim.—1. In a meat-chopping machine, the combination of a base having a supporting-block, a meat-block arranged to revolve upon the latter and having a circular series of teeth on its under side, a transverse shaft journaled in said base and having a toothed wheel engaging the teeth upon the meat-block, and a band-wheel or drum, uprights at the rear corners of the base supporting a transverse crank-shaft, a belt connecting a drum upon the latter with the drum upon the transverse shaft journaled in the base, vertical rods mounted upon a ledge at the rear edge of the base, the knife-carrying sockets arranged to reciprocate vertically upon the said rods, and pitmen connecting the said sockets with the cranks upon the crank-shaft, substantially as and for the purpose herein set forth.



2. In a meat-chopping machine, the combination of a suitable base, a revolving meat-block, a ledge at the rear end of the base, rods extending upwardly from the same, a cushion-strip arranged upon said ledge, sockets arranged to reciprocate vertically upon the said rods and having forwardly-extending arms at their upper ends, provided with knife-holding jaws, and suitable operating mechanism, substantially as and for the purpose herein set forth.

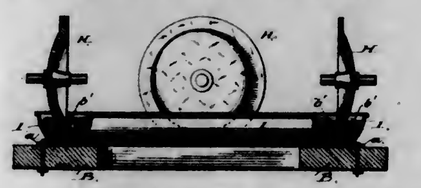
3. In a meat-chopping machine constructed substantially as described, the combination, with vertical guide-rods, of the knife-holding sockets arranged to reciprocate vertically upon said rods, said sockets being provided at their upper ends with forwardly-extending arms terminating in jaws, in which the chopping-knives are detachably secured, substantially as and for the purpose herein set forth.

333,382. **FIRE-PLACE GRATE.** WILLIAM R. BELDING, Mountain View, Ark. Filed Apr. 23, 1885. (No model.)



Claim.—The combination, in a fire-grate, of the transverse bar which extends across the front of the grate, and which is provided with a vertical support at each end, with the rearwardly-projecting bars, which have their front ends provided with hooks, so as to catch over and upon the transverse bars, and their rear ends resting upon the hearth, substantially as described.

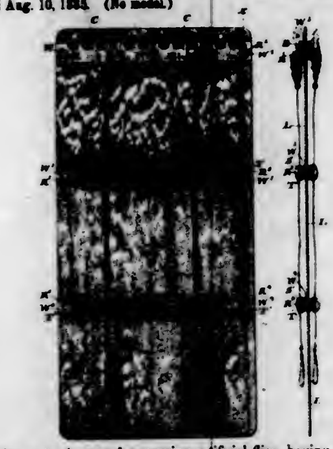
333,383. **MACHINE FOR CRUSHING ORES, PHOSPHATES, &c.** WILLIAM C. BISS, Atlanta, Ga. Filed Oct. 2, 1885. (No model.)



Claim.—1. In a crusher, an annular trough having curved sides and a level bed or bottom, vertical ribs formed upon the curved sides, and flanges *a*, by which the trough is adapted to be secured to a suitable base, substantially as herein described.

2. A crusher comprising a revolving frame, crushing-disks having edges of varying widths, an annular trough provided with ribs and flanges, a spindle passing through the frame, and around which the said frame revolves, and the plates C and E, substantially as herein described.

333,384. FLY-BOOK FOR ANGLERS. MELLEN BRAY, Newton, Mass. Filed Aug. 10, 1885. (No model.)



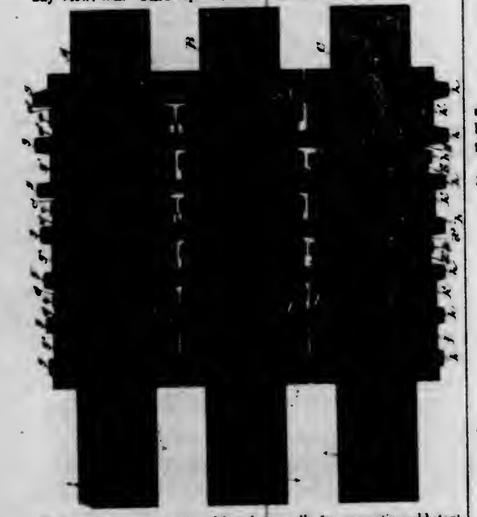
Claim.—1. A page for carrying artificial flies, having a catch or catches extending across the page, to hold the books, and provided with a coiled spring parallel to the line of said catch or catches, to receive and hold the gut between its coils, substantially as described.

2. A page for carrying artificial flies, provided with a raised catch or catches extending across the page, to hold the hooks, and further provided with a coiled spring parallel to the line of said catch or catches, to receive and hold the gut between its coils, substantially as described.

3. A page for carrying artificial flies, having a catch or catches extending across the page, to hold the hooks, and provided with a coiled spring parallel to the line of said catch or catches, to receive and hold the gut between its coils, said spring being free to move laterally on a support passing through it, substantially as described.

4. A page for carrying artificial flies, provided with a raised catch or catches extending across the page, to hold the hooks, and further provided with a coiled spring parallel to the line of said catch or catches, to hold the gut between its coils, said spring being free to move laterally on a support passing through it, substantially as described.

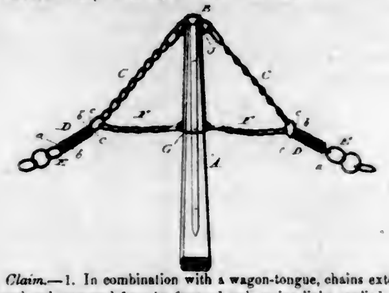
333,385. ROLL FOR REDUCING OLD RAILS. JOHN H. BROWN, Bay View, Wis. Filed Sept. 14, 1885. (No model.)



Claim.—1. A series of breaking-down rolls for converting old steel rails into steel flats, consisting of three rolls, one above the other, provided with circumferential collars and intermediate grooves and level portions, the operative portions for the reception of the rails being everywhere of the same width, substantially as set forth.

2. A series of breaking-down rolls for converting old steel rails into steel flats, consisting of three rolls, the upper and lower rolls adapted to revolve in the same direction and the intermediate roll to revolve in the opposite direction, the upper and lower rolls having circumferential guiding-collars of different and diminishing diameters, and the intermediate roll having corresponding circumferential guiding-grooves of different and diminishing depths, together with operative circumferential collars and grooves between the guiding-collars and grooves, the operative portions of the rolls for the reception of the rails being everywhere of the same width, substantially as set forth.

333,386. TONGUE-CHAIN FOR WAGONS. WILLIAM P. BROWN, Zanesville, Ohio. Filed Sept. 17, 1885. (No model.)

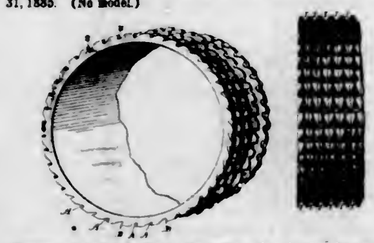


Claim.—1. In combination with a wagon-tongue, chains extending outward and rearward from its forward end, spring-links applied at the outer ends of said chains, and transverse connections extending from the inner ends of the links to the pole, substantially as described, whereby side play of the pole is prevented.

2. In combination with the tongue, the neck-chains attached to its forward end and extending rearward, spring-links applied to the outer ends of said chains, and the adjustable guide-chains F, substantially as described.

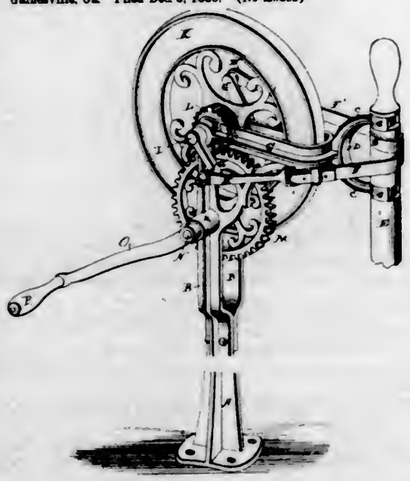
3. In a pole attachment, the combination of the pole, the eye or clevis-plate thereon, the tongue-chain C, and the link J, applied as and for the purpose described.

333,387. COTTON-GIN. OWEN T. BUGG, Newark, N. J. Filed Aug. 31, 1885. (No model.)



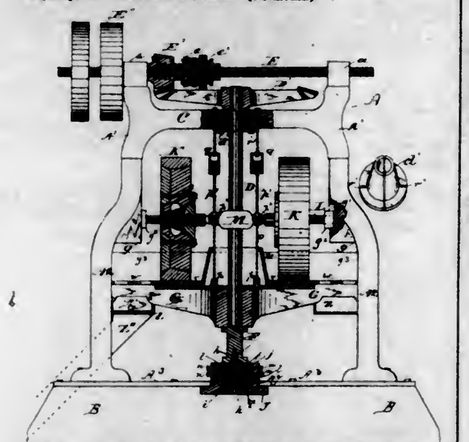
Claim.—A hollow cylinder for cotton-gins, having its teeth formed as an integral part of its surface, and provided with sharp points and beveled sides and ends, and having grooves running spirally and longitudinally, substantially as shown.

333,388. CHURN-MOTOR. DAVID C. CAMP and HENRY P. CAMP, Gainesville, Ga. Filed Dec. 8, 1885. (No model.)



Claim.—The combination, with the standard A, having gear M, shaft N, and crank O, and the shaft I, having balance-wheel K, pinion L, and cranks G G', of the shaft E, straps F F', and pitmen H H', as set forth.

333,389. GRINDING OR CRUSHING MILL. THOMAS H. CARLIN, Allegheny, Pa. Filed Dec. 27, 1884. (No model.)



Claim.—1. In a grinding or crushing mill, the combination, with a vertically-adjustable pan and a shaft by which the same is supported and revolved, of means, substantially as shown and described, whereby said pan may be lifted and the shaft relieved of its weight, as set forth.

2. In a grinding or crushing mill, the combination, with a vertically-adjustable pan and a shaft through which the same is supported and revolved, of a detachable toe or pedestal secured to said shaft, substantially as shown and described.

3. In a grinding or crushing mill, the combination, with the grinding-rolls and a vertical rotary shaft, of a pan provided with a false bottom formed of separate plates, said plates being retained in position on the bottom of the pan by means of countersunk bolts in the edges of the plates, the bolts being held in position between the plates, substantially as set forth.

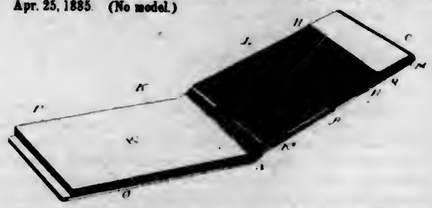
4. In a grinding or crushing mill, the combination, with the main frame, the grinding or crushing rolls, the pan, and a vertically-adjustable shaft upon which the pan is supported, of the rods or chains attached to the shafts of said rolls and to the cross-beam of the main frame, and means, substantially as described, whereby the pan and rolls may be vertically adjusted, as and for the purpose set forth.

5. In a grinding or crushing mill, the combination, with a rotary pan and a pair of grinding-rolls, of a shaft having its lower end recessed, a detachable toe inserted in said recess, a base-block, and plates supporting said toe and shaft, with guiding plates and screws in said block to hold said toe in the center of the plate, substantially as described.

6. In a grinding or crushing mill comprising a rotary pan and a pair of grinding-rolls, the combination, with said pan and rolls, of a vertical shaft having a recess in its lower end, a removable toe inserted in said recess, and a supporting-base having a central orifice, through which said toe may be removed without displacing the shaft, substantially as described.

7. In a grinding or crushing mill comprising a pan, grinding-rolls, and means for operating the same, the combination, with a pan having radial arms or spokes provided with lugs on their outer ends, of flanged segmental pieces fitting on said lugs and bolted thereto, and sifter-plates resting on said segmental pieces and supported thereby, substantially as shown and described.

333,390. SALES-BOOK. JOHN R. CARTER, Niagara Falls, N. Y. Filed Apr. 25, 1885. (No model.)



Claim.—1. The combination, with the cover of a book, of clamping-tablet and a spring attached to the sides of the cover below the tablet and to the tablet at the sides thereof, as set forth.

2. The combination, with the cover of a sales or memorandum book, of an end clamping-tablet, an inclosed metallic plate in said tablet, and a spring attached to the sides of the cover and bearing on the metallic plate in the tablet, as set forth.

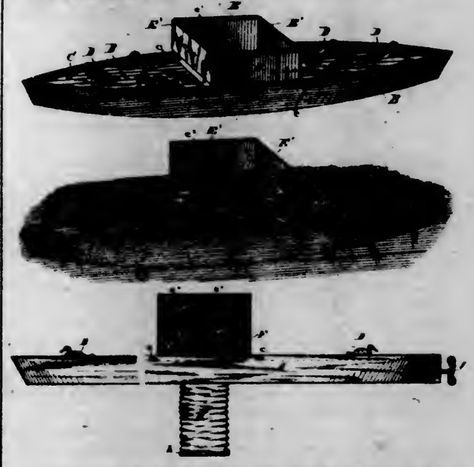
3. In combination with a sales-book cover, a clamping-tablet having a rib across the under surface, and a spring connected with the cover and bearing the tablet toward the cover, substantially as described.

4. The combination, with cover A, of the clamp-tablet C, held toward the cover by side springs connected with the cover, and the pad of the sheets having a line of perforations near the edge of the tablet.

5. The sales-book described, having stiff cover jointed centrally, the spring-tablet, and the pad of leaves perforated on a line near the edge of the tablet, perforated centrally, and perforated near the end away from the tablet, as set forth.

6. The book-cover A, of stiff material centrally jointed, the tablet C, the side springs, H, attached to the cover and bearing on the inner end of the tablet, the pad of sheets K, perforated on the lines N O Q, and the transfer-leaf held under the tablet and shorter than the leaves in the pad, as set forth.

333,391. BOAT. WILLIAM L. CASADAY, South Bend, Ind. Filed June 2, 1885. (No model.)



Claim.—1. A boat such as described, provided with a cockpit having its walls projecting above the water-line, water-tight decks below the water-line, and a gunwale projecting above said decks and water-line and having holes and plugs below the water-line, whereby when the plugs are removed the decks will be submerged, substantially as and for the purpose set forth.

2. A boat such as described, provided with a cockpit having its walls projecting above the water-line, decoys secured to the decks, and a gunwale projecting above said decks and water-line and having holes and plugs below the water-line, whereby when the plugs are removed the decks will be submerged and the decoys surrounded by water, substantially as and for the purpose set forth.

3. A boat having the walls of the cockpit extended to form a blind and provided with mirrors on the outer sides of said walls, substantially as shown and described.

4. A boat having the walls of the cockpit extended to form a blind and provided with mirrors on the outer sides of said walls, and peep-holes in the same, substantially as shown and described.

5. A boat having a cockpit provided with folding walls extended to form a blind and provided with mirrors secured to the outer sides of said walls, substantially as shown and described.

6. In a boat, water-tight decks below the water-line, decoys secured to said decks, and a gunwale projecting above the water-line and provided with holes and plugs below the water-line, in combination with a cockpit having its walls extended to form a blind and provided with mirrors on the outer sides of said walls, substantially as and for the purpose shown and described.

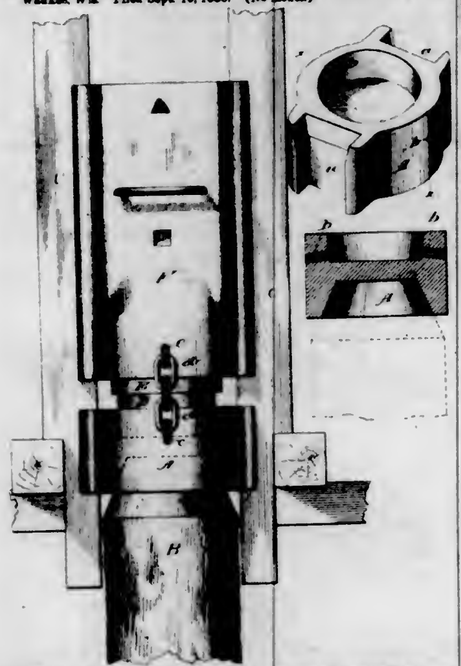
7. A boat having an opening in its bottom and provided with a flexible and adjustable water-tight sack or well secured in said opening, the bottom of said well conforming to the shape of the opening in the bottom of the boat and forming a portion of said bottom when drawn up, substantially as shown and described.

8. A boat having a removable section in its bottom, connected to the bottom of the boat by an adjustable water-tight sack or bellows, substantially as and for the purpose shown and described.

9. A boat having the walls of its cockpit extended to form a blind and provided with mirrors on the outer sides of said walls, in combina-

tion with an adjustable water-tight sack or well secured in an opening in the bottom of the boat, substantially as shown and described.

333,392. HOOD OR CAP FOR PILES. WILLIAM T. CASSIDAY, Milwaukee, Wis. Filed Sept. 10, 1885. (No model.)



Claim. -1. A hood or cap for piles, consisting of a metallic casting having a recessed lower portion and end grooves beveled at their tops, substantially as and for the purpose set forth.

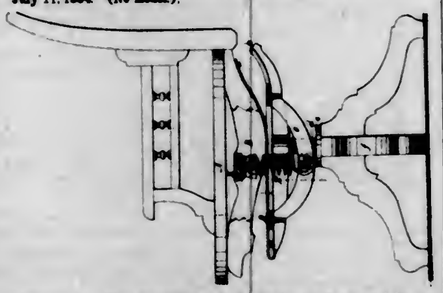
2. A hood or cap for piles, consisting of a metallic casting having recessed upper and lower portions and end grooves beveled at their tops, substantially as and for the purpose specified.

3. A hood or cap for piles, consisting of a metallic casting having beveled recesses in its upper and lower portions and beveled grooves at its ends, substantially as set forth.

4. A hood or cap for piles, consisting of a metallic casting having beveled recesses in its upper and lower portions, beveled grooves at its ends, and perforations in its sides at an angle to its horizontal plane, substantially as set forth.

5. A hood or cap for piles, consisting of a metallic casting having recesses in its upper and lower portions, grooves at its ends, and perforations in its sides, in combination with a short timber or cushion designed to fit the upper recessed portion of said hood or cap, and means, substantially as described, for connecting the latter with the monkey or rammer of a pile-driver, substantially as set forth.

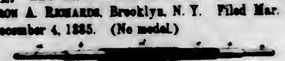
333,393. CHAIR. FRANKLIN CRICHTOWER, Poughkeepsie, N. Y. Filed July 11, 1884. (No model.)



Claim.—1. The combination of the chair-seat frame and its connected rockers with a spider having surfaces to receive the rockers, tie-strips connecting the rockers and spider, spiral springs interposed between the seat-frame and spider, and front and rear stops, substantially as described.

2. The combination of the chair-seat frame and its attached rockers with a base or pedestal, a spider having surfaces to receive the rockers, tie-strips connecting the rockers and spider, spiral springs interposed between the seat-frame and spider, front and rear stops for the seat-frame, and a swivel-screw interposed between the spider and base or pedestal, substantially as described.

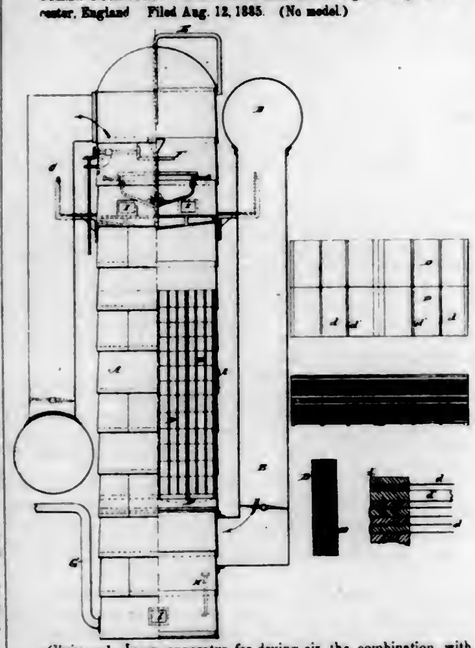
333,394. ELECTRICAL CONDUCTOR. EDWARD CLARK, Newburg, and THERON A. RENARDS, Brooklyn, N. Y. Filed Mar. 30, 1885. Renewed December 4, 1885. (No model.)



Claim.—1. An electric conductor coated with alumina as an insulating material, substantially as described.

2. The combination, with a wire, of an insulating-coating consisting, essentially, of alumina and a binding agent, substantially as described.

333,395. APPARATUS FOR DRYING AIR FOR FURNACES AND OTHER PURPOSES. CHARLES COCHRANE, Stourbridge, County of Worcester, England. Filed Aug. 12, 1885. (No model.)



Claim.—1. In an apparatus for drying air, the combination, with a casing having an air-inlet at one end and an air-eduction pipe at the other, of a series of frames covered with canvas or textile material, or wound with rope and placed in said casing between its ends, whereby an extended surface is afforded over which the air is caused to pass, a pipe for supplying the casing with a solution of calcium chloride, and a device for distributing said solution, substantially as described.

2. In an apparatus for drying air, the combination of a closed casing or chamber, A, the inlet B', for the air to be dried, the outlet C, for the dried air, the inlet E, for calcium-chloride solution, the discharge-pipe G, for said solution, and a series of frames carrying sheets of canvas or wound with rope, arranged vertically in said casing for exposing the flowing calcium-chloride solution to contact with the air passed through said casing, substantially as described.

333,396. HORSESHOE-NAIL. JOHN A. COLEMAN, Providence, R. I. Filed Oct. 25, 1883. (No model.)

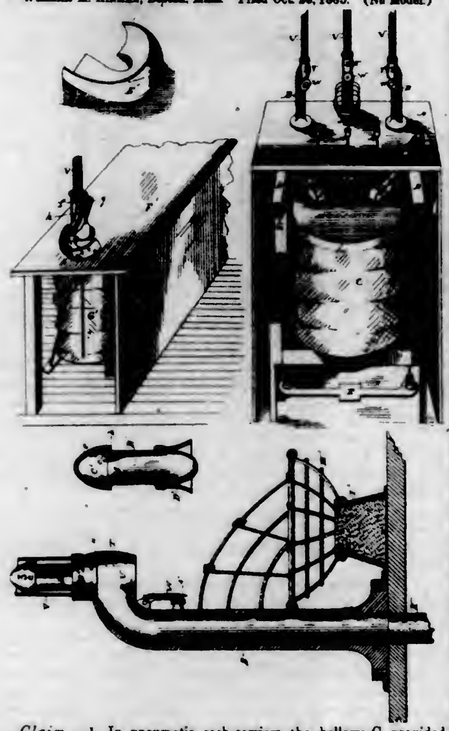


Claim.—1. A horseshoe-nail having the front face of its shank beveled at the point and beveled or inclined toward its edges or sides, as described, and such portion surmounted by a shank portion of a length as described, which is rectangular in cross-section, and has its face and sides respectively parallel, whereby the nail can readily enter the hoof and be easily driven, and be retained in the hoof by the friction of its long rectangular shank portion with the hoof, substantially as set forth.

2. A horseshoe-nail having the beveled face of its head and the point bevel on the face of its shank located upon opposite faces of the nail, and the remaining face of the head located in the same plane as that face of the shank which is beveled at the point, whereby the nail can be seated in the channel in the shoe without bending the nail under the head, substantially as set forth.

3. A horseshoe-nail having the front face of its shank portion beveled at the point and beveled or inclined in opposite directions toward the sides of the nail, and such shank portion surmounted by a shank portion of a length as described, which is rectangular in cross-section, and has its faces and sides respectively parallel, a flat rear face, and a head, the front face of which is in the same plane as the front face of the shank, and the rear face of which is beveled with relation to the rear face of the shank, substantially as described and shown.

333,397. PNEUMATIC CASH-CARRIER. WILBUR G. DAVIS and WILLIAM M. HINMAN, Boston, Mass. Filed Oct. 26, 1885. (No model.)



Claim.—1. In pneumatic cash-carriers, the bellows C, provided with a series of nozzles communicating with the transmitting-standards B, said nozzles being provided with valves L, in combination with the rods M, whereby any one of the series of nozzles may be brought into working communication with its corresponding tube, as set forth.

2. In pneumatic cash-carriers, the standards B, curved, as described, and terminating in an open head, T, the upper portion of said head being connected to the line of pipe leading to a station, the lower portion of said head being adapted to be closed by a suitable valve, whereby the carrier is readily inserted and transmitted to its destination, as set forth.

3. In pneumatic cash-carriers, the head T, provided with the groove or recess *a*, in combination with the carrier B', having the skirt D', whereby said carrier is held in position in the tube until the valve W is closed and the air-current is applied, as set forth.

4. A cash-carrier for pneumatic tubes, consisting of a metallic cylinder having both ends oval, as described, whereby said carrier adapts itself to the curves of the tube, as set forth.

5. A cash-carrier for pneumatic tubes, consisting of a metallic cylinder with oval ends, hinged in two sections, as described, and provided at its rear end with felt skirt or apron D', as set forth.

6. A cash-carrier for pneumatic tubes, consisting of a metallic cylinder with oval ends, hinged in two sections, in combination with the spring *d* and lug *c*, as set forth.

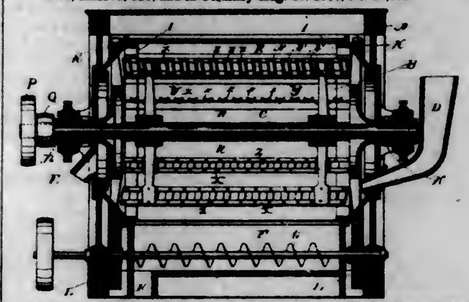
7. A receiver for cash-carriers, consisting of a sack or other suitable receptacle filled with lead shot placed under the receiving-opening of the standard B, as set forth.

8. The plate P, having the cylinder O attached thereto, said cylinder being provided with a spring, S, in combination with the rod M, provided with the projection R, whereby the rod is held in position, as set forth.

9. The rod M, provided with the projection R, and working against the spring S in the cylinder or chamber O, in combination with the nozzle I and valve L, as set forth.

10. In a cash-carrier, the combination of the bent tube A with the curved chute or trough E', as set forth.

333,398. CENTRIFUGAL REEL. CARL O. DOST, Ravensburg, Germany. Filed Sept. 15, 1885. (No model.) Patented in Italy June 23, 1885, XXXVI, 336, and in Germany Aug. 26, 1885, No. 33,179.



Claim.—1. The combination, with a bolting-reel, of a beater consisting of a shaft, radiating arms secured thereto, transversely-apertured beater-blades secured to the outer ends of said arms and having their intermediate portions provided with bent edges, as and for the purpose set forth.

2. The combination, with a bolting reel, of a beater consisting of a shaft, radiating arms secured thereto, beater-blades secured to the outer ends of said arms, said blades being transversely apertured, and the intermediate portions having bent edges, and the apertures of one blade registering with the solid portions of the adjoining blade, as and for the purpose set forth.

3. The combination, with a bolting-reel, of a shaft, radiating arms secured thereto, and beater-blades secured to the outer ends of said arms, each of which blades consists of a series of cross-pieces secured at their ends to a pair of longitudinal strips with spaces between them, said cross-pieces having flanged edges, as and for the purpose set forth.

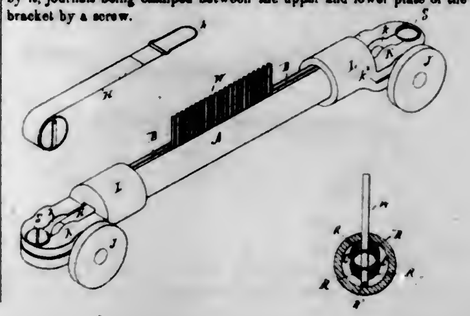
4. The combination, with a bolting-reel consisting of longitudinal bars secured in a zigzag line to the reel-heads, and the bolting-cloth secured thereto, of a revolving beater consisting of transversely-apertured beater-blades secured to the outer ends of radiating arms which are secured upon a shaft, as and for the purpose set forth.

5. In a bolting-reel, the combination of a reel having cogged rims upon its periphery, with a shaft receiving motion from the drive-shaft, and having pinions provided at intervals with cogs longer than the others and meshing with the cogged rims, as and for the purpose shown and set forth.

6. In a bolting-reel, the combination of a reel having circular flanges at its ends and cogged rims, guide-rollers journaled around the periphery of the flanges and having the flanges traveling upon them, and a shaft receiving motion from the beater-shaft and having at intervals cogs longer than the others and meshing with the cogged rims, as and for the purpose shown and set forth.

333,399. COMB FOR WARPING AND BEAMING MACHINES. T. C. ENTWISTLE, Holyoke, Mass. Filed Sept. 15, 1884. (No model.)

Brief.—A tube is slotted from end to end on the upper side, through which the upper ends of the dents project, and within the tube is placed a pair of springs, the dents being arranged vertically between the coils in the usual manner. The comb is expanded by winding upon a drum at each end of the tube a metallic strap, whose inner end is attached to the end dents, the tops of the two end dents being cut off. The drum is held in brackets at the end of the tube and prevented from turning by it, journals being clamped between the upper and lower plate of the bracket by a screw.



Claim.—1. The combination of a box or tube, slotted, as described, the springs placed within said box, the dents placed vertically between the coils of said springs, the straps connected, substantially as described, to said springs, the heads secured to said box or tube and provided with brackets, the drums turning in said brackets, said brackets being slit in the planes of the axes of said drums, and means, substantially as described, of closing the sides of said slit upon said drums, as and for the purpose specified.

2. The combination of a box or tube, slotted, as described, the springs placed within said box, the dents placed vertically between the coils of said springs, the straps connected, substantially as described, to said springs, the heads secured to said box or tube and provided with brackets, the drums turning in said brackets, said brackets being slit in the planes of the axes of said drums, and a clamp-screw turning freely in the part of the bracket on one side of the slit and screwing into the part of the bracket on the other side of said slit, as and for the purpose specified.

333,400. **BUTTON-FASTENER.** CHARLES ERLANGER, Baltimore, Md. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a button-fastening device, the button A, having three cable-holes, *a a' a''*, in alignment, in combination with a two-pronged staple, B, the prongs of which are adapted to be turned over laterally upon one surface of the button-dish, and returned in opposite directions on the other surface of said dish, whereby said prongs form lateral embracing-loops, substantially as described.

2. The combination, with a piece of fabric, of a button provided with three aligning cable-holes, and a staple having prongs bent over upon one surface of said button and returned over the other surface thereof, whereby the dish of the button is embraced by loops in opposite directions, substantially as described.

333,401. **FRAME FOR STOVE-DOORS.** CHARLES FARRELL, Peekskill, assignor to Ely & Ramsay, New York, N. Y. Filed Apr. 17, 1885. (No model.)

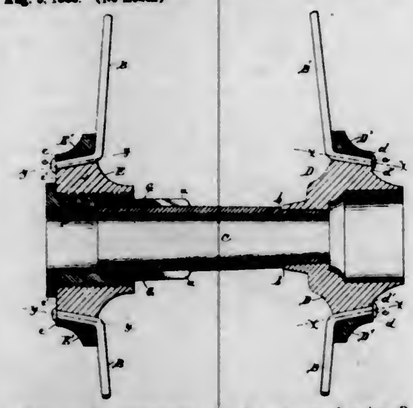


Claim.—1. The combination, with the inner frame, G, having openings and a mortise through it, of a door-frame with openings for the mica, and an oblong perforated guide-lug for the mortise in the inner frame, a turn-button, and a rivet passing through the door-frame and perforated guide-lug, and securing the turn-button, substantially as specified.

2. The combination, with the door-frame having openings for the mica, and an oblong guide-lug, *b*, and small studs *c*, of the inner frame, G, having a mortise for the guide-lug and holes corresponding in position to the small studs *c*, but larger, the turn-button *f*, and rivet *e* for the same, substantially as set forth.

3. The combination, with the door-frame having openings for the mica, and an oblong perforated guide-lug, of an inner frame having openings for the mica and a mortise for the guide-lug, and undulating surfaces adjacent to the mortise, a rivet passing through the perforated guide-lug, and a turn-button to secure the inner frame, substantially as set forth.

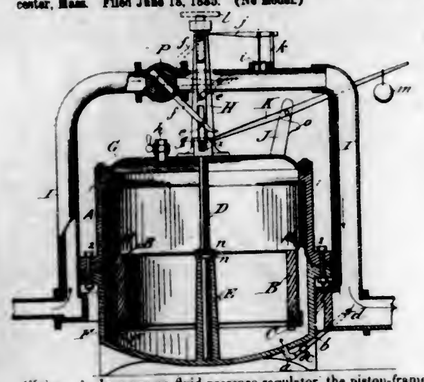
333,402. **VEHICLE-WHEEL.** JAMES PIERWICK, Mason, Ohio. Filed Aug. 5, 1885. (No model.)



Claim.—1. The combination, with the two sets of spokes B B', having bent and headed ends, of the castings D E and collars D' E', the said castings and collars being fitted with tapered joints inclined outwardly to the center, and provided with seats for the spokes, and a box for thrusting the two castings apart to tighten the spokes, substantially as shown and described.

2. The hub consisting of the two castings E D, of which E is interiorly threaded, the box C, having a bearing against the casting D at one end and a bearing, *a*, at the other, and the annular and exteriorly-threaded nut F, pressing against the bearing *a* in one direction and the casting E in the other direction, all combined substantially as and for the purpose described.

333,403. **FLUID-PRESSURE REGULATOR.** BENJAMIN FITTS, Worcester, Mass. Filed June 18, 1885. (No model.)



Claim.—1. In a gas or fluid pressure regulator, the piston-frame B, having piston-rod D, provided with plates *x x*, to which is pivoted a slotted connecting-rod, *e*, provided with bar *t* and spring *s*, in combination with the valve P, whose lever *f* is adapted to engage the rod *e* by means of a pin, *r*, substantially as shown, and for the purpose set forth.

2. A gas or fluid pressure regulator consisting, essentially, of a cylinder, A F, perforated cover G, piston B C, diaphragm M, piston-rod D, inlet-channel *a*, and tubular box E, all arranged and operating in the manner substantially as shown and described.

3. In a gas or fluid pressure regulator, the combination, with a cylinder having a conical or tapering interior, of the piston B C and the diaphragm M, arranged and operating substantially in the manner shown and described.

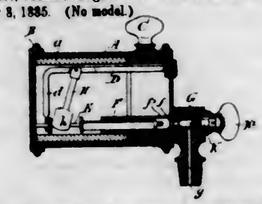
4. In a gas or fluid pressure regulator, the combination of cylinder A F, piston B C, diaphragm M, piston-rod D, connecting-lever *f*, valve P, and pipe I, substantially as shown and described.

5. In a gas or fluid pressure regulator, the safety-valve *i*, consisting, essentially, of a plug-carrying rod pivoted to a lever, *j*, fulcrumed upon an upright, *k*, and adapted to be operated by the pressure of the gas within the pipe, and also by the lever *f* coming in contact with and raising as it ascends the lever *j*, substantially as shown, and for the purpose specified.

6. In a gas or fluid pressure regulator, a cylinder, A F, provided with upright post J, upon which is fulcrumed a hooked ball-carrying lever, K, within which cylinder moves a piston, B, having piston-rod D, provided with a pin, *g*, for the engagement of the hook upon the lever K, and also with a plate, *l*, at its upper extremity, substantially as shown, and for the purpose set forth and specified.

7. In a gas or fluid pressure regulator, the combination of the piston-rod D, having pin *g*, and the lever K, weighted at one end, hooked at the other, and fulcrumed upon an upright, J, which is provided with a lug, *o*, said hooked lever engaging normally with the pin *g*, but adapted when rod D attains a certain height to rest upon the lug *o* and thus become temporarily disengaged, substantially as shown and described.

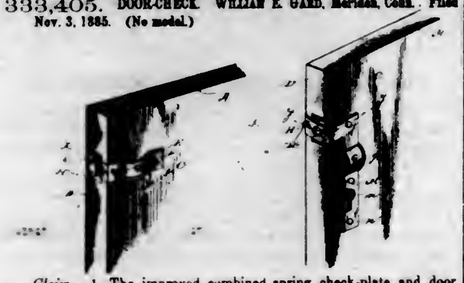
333,404. **AUTOMATIC LUBRICATOR.** JOSEPH E. FLETCHER, Montreal, Quebec, Canada, assignor of one-half to Robert Mitchell, same place. Filed July 8, 1885. (No model.)



Claim.—1. An automatic lubricator consisting of a cup having arranged therein a horizontal tube receiving oil from the cup and communicating with outlet, a plunger working in said tube to discharge the lubricant, a weighted swinging lever operating said plunger, and a rod attached to the cup-body and carrying said swinging lever, substantially as specified.

2. The combination, in an oil-cup, of the tube F, having perforations *f''*, and communicating with the outlet, plunger E, working in said tube, and having collars or stops *e e'*, swinging lever H, operating said plunger, and rod D, supporting said lever and plunger, the whole being contained within the cup, and operating substantially as and for the purpose specified.

333,405. **DOOR-CHECK.** WILLIAM E. GARD, Meriden, Conn. Filed Nov. 3, 1885. (No model.)



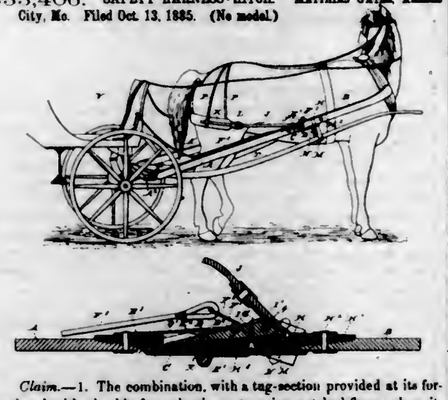
Claim.—1. The improved combined spring check-plate and door pull or handle herein described, consisting of a single piece of spring sheet metal, stamped or shaped to form the pull and latch, substantially as set forth.

2. The improved combined spring check-plate, door-pull, and escutcheon herein described, stamped or shaped up of a single sheet of spring metal, having a latch device, a pull, a key-hole, and suitable means of attachment, as set forth.

3. In combination, a combined spring check-plate and door-pull attachable to a door, and a keeper of a form to properly engage the spring check-plate attached to the door-jamb, substantially as and for the purpose set forth.

4. The improved combined spring check-plate and door-pull herein described, having flat portions to lie upon and be secured to the front of the door, an outward-curved portion to form the handle, and a portion, H, formed to lie near the edge of the door, said portion having a catch device and being provided with a slot to receive a guide-pin, as set forth.

333,406. **SAFETY HARNESS-HITCH.** MATTHIAS GATES, Kansas City, Mo. Filed Oct. 13, 1885. (No model.)



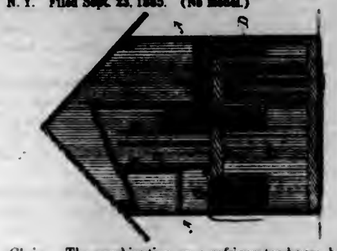
Claim.—1. The combination, with a tug-section provided at its forward end with a buckle-frame having a tapering notched flange along its under side, with a downwardly-projecting loop and an upwardly-projecting guide-spur near the forward end of said tapering flange, a holdback-strap attached to said downwardly-projecting loop, the spring-pressed hinged loop, and operating-cord, of a tug-section provided at its rear end with the bevel-faced transversely-notched block H, provided with the short arm I', substantially as specified.

2. The combination, with the part A, of the tug provided with the buckle-frame having the tapering flange along its lower side provided with the downwardly-projecting loop near its forward end, and the hold-back-strap connected to said downwardly-projecting loop, substantially as specified.

3. The combination, with the tapering buckle-frame having the tapering notched flange along its lower side, of the hinged loop with the finger-piece at its upper end and the spring bearing against said loop, as set forth.

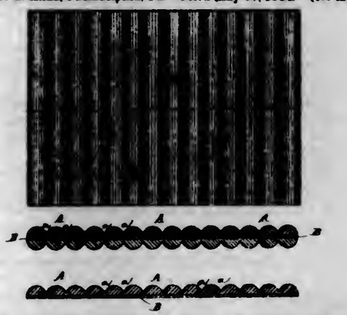
4. A safety harness-hitch consisting of a sectional tug, a spring-pressed fastening device, and a detaching-cord, one section of the tug having bevel-faced transversely-notched block, and the adjacent end of the opposite section having the fastening device consisting of a spring-pressed hinge-loop, and the releasing-cord connected with the said hinged loop, substantially as specified.

333,407. **REFRIGERATOR-HOUSE.** DU BOIS F. GERALDS, Clintondale, N. Y. Filed Sept. 23, 1885. (No model.)



Claim.—The combination, in a refrigerator-house having an upper ice and a lower refrigerator chamber, of the downward cold-air ducts C C and the intersecting warm-air ducts D, provided with the common valve E, as and for the purpose set forth.

333,408. **FLEXIBLE CURTAIN AND MATERIAL THEREFOR.** HENRY S. HALE, Philadelphia, Pa. Filed May 17, 1884. (No model.)



Claim.—1. The herein-described slat A, grooved upon one face to form beads *a a*, and adapted to be attached to a flexible back to form a curtain, substantially as set forth.

2. The herein-described slat, formed of separate strips of wood united together by their edges and afterward grooved upon one face along the lines of uniting of the different strips, and adapted to be attached to a flexible back to form a curtain, substantially as set forth.

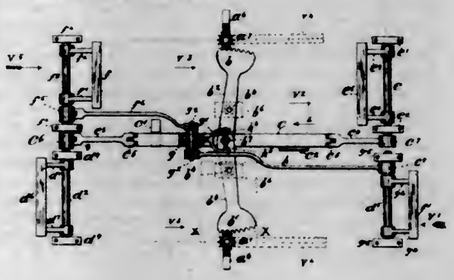
3. The herein-described fabric, consisting of a flexible back, and slats grooved upon one face to form beads *a a*, and secured to the flexible back with the grooved face exposed, substantially as set forth.

4. The herein-described fabric, consisting of a flexible back, and slats formed of separate strips of wood united by their edges and grooved upon one face, and secured to the flexible back with the grooved face exposed, substantially as set forth.

5. The herein-described fabric, consisting of two series of slats, each slat grooved upon one face, and a sheet of flexible material interposed between the two series of slats, to which they are attached with their grooved faces exposed, substantially as set forth.

6. The combination of the roller H, provided with a dovetailed groove, and the curtain consisting of the flexible fabric and the wooden slats attached to one face thereof, the two lower slats being beveled upon their opposite edges, as at A', whereby when folded together they form a dovetailed bead, adapted to fit the groove in the roller H, substantially as set forth.

333,409. **SELF-ACTING GATE.** AUGUST HALSTENBACH, Buffalo, N. Y. Filed Jan. 26, 1885. (No model.)



Claim.—1. An automatically opening and closing gate consisting of the gates a' a^2, pivoted at the top to supporting-posts, and having their lower portions below the platform pivoted to supports and provided with pinions, and two sector-gears or pivoted arms gearing with the pinions, in combination with a longitudinally-movable bar connected by supporting-brackets to the under side of the platform, and by connecting-rods and downwardly-projecting arms to steps adapted to be operated by a vehicle approaching and leaving, whereby both gates are opened and closed simultaneously, substantially as described.

2. The combination, in a gate, of mechanism substantially as above specified, for opening and closing the gates, the locking and unlocking mechanism consisting of the forked bar g', connected by pivoted sector-gear to the longitudinally-movable bar c, and the vertically-movable bolts k^2, a spring, i, and a releasing-bar connected to the bar c, as and for the purposes described.

333,410. DEVICE FOR UPSETTING THE ENDS OF METAL PIPES.

MARCUS E. HAWKINS, Lansingburg, N. Y. Filed May 14, 1885. (No model.)



Claim.—1. The combination of a pair of pliers, the block C, engaged thereby and adapted to receive the end of the pipe or tube, and a follower, D, substantially as set forth.

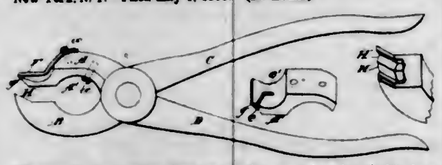
2. In combination with the pliers having a pipe-holding portion and a seat or off set adjacent thereto, the block C, provided with a recess *d*, and a follower with the conical-shaped head, substantially as shown, and for the purpose set forth.

3. In a device for upsetting the ends of soft-metal pipes, the pliers provided with a pipe-clamping portion, beneath which opening is an offset which is provided with a curved edge and an external enlarged portion *b'*, in combination with a block having an opening adapted for the reception of the head of said pliers, and a follower having a screw-threaded stem, substantially as shown, and for the purpose set forth.

4. In a device for upsetting the ends of soft-metal pipes, a pair of pliers provided with means for holding the end of said pipe, and a recessed portion against which the end of the pipe when upset is forced, in combination with a block having a semicircular opening and a recess for the reception of the head of the pliers, said block having a conical follower which is attached to a screw-threaded stem which passes through the block, and means for turning the stem, substantially as shown, and for the purpose set forth.

333,411. BUTTON-SETTING INSTRUMENT.

WILLIAM M. HAHN, New York, N. Y. Filed May 1, 1885. (No model.)



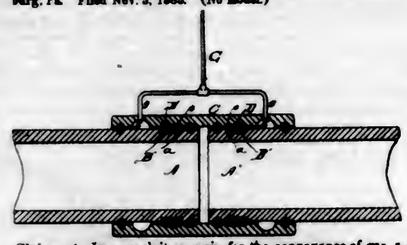
Claim.—1. In a setting-instrument, the upper jaw detachable from its handle and provided with concaved upper part, as at A', and flat operative face with beveled front portion, *g*, and the spring F, the said jaw and said spring being each provided with corresponding elongated slots *e e'*, and the lower face of the jaw being provided with concavities, as at e^3, parallel with the part *e'* of its slot, in combination with a lower jaw having in its inner upper face a die consisting of angular corrugations H H, arranged one on each side of the longitudinal center of said lower jaw, substantially as set forth.

2. A button-setting instrument consisting of the jaws A B, operated by handles C D, the jaw A being made detachable and provided with an elongated slot, the longer portion of which slot extends in a direction across the face of the jaw, while the shorter portion extends in a direction parallel with the length of said jaw, the spring F, slotted to correspond with the jaw A, and the jaw B, beveled upon its upper inner face and provided with a die consisting of the angular corrugations H H, substantially as set forth.

3. A button-setting instrument consisting of an upper jaw, A, beveled upward at its outer end, *g*, and provided with an elongated slot, the longer portion *e* of which slot extends diagonally in a direction across the face of said jaw, and the shorter portion *e'* in the direction of the length of said jaw, a correspondingly-slotted spring, F, and a lower jaw having in its inner upper face a die consisting of angular corrugations H H, arranged one on each side of the longitudinal center of said lower jaw, substantially as specified.

333,412. COUPLING FOR GAS-PIPES.

WILLIAM A. HOEVELER, Pittsburg, Pa. Filed Nov. 3, 1885. (No model.)



Claim.—1. In a conduit or main for the conveyance of gas, a cast-iron tube or conduit section having a band or bands of steel or wrought or malleable iron rigidly secured thereto and threaded upon its exterior surface, substantially as described.

2. In a conduit or pipe for the conveyance of gas, a tube or conduit section having a threaded band or ring shrunk thereon.

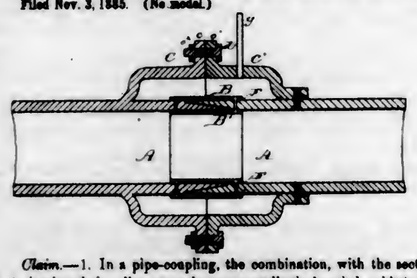
3. In a conduit or pipe for the conveyance of gas, a cast-iron pipe or section having its outer surface grooved, and having a threaded band or ring shrunk into or fastened within said groove, substantially as described.

4. A coupling-sleeve for gas pipes or conduits, consisting of a cylinder of cast-iron having a threaded band or ring applied to and secured within said sleeve, substantially as described.

5. In a conduit or pipe for the conveyance of gas, the combination, with adjacent sections of pipe, each section having screw-threaded rings secured thereto, of a screw-threaded sleeve adapted to fit over said rings, leaving a gas-receptive space between the rings, substantially as described.

333,413. PIPE-COUPLING.

WILLIAM A. HOEVELER, Pittsburg, Pa. Filed Nov. 3, 1885. (No model.)



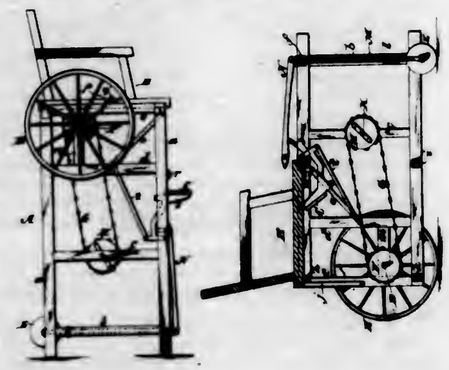
Claim.—1. In a pipe-coupling, the combination, with the sections A A, having their adjacent ends correspondingly beveled, rabbeted, or tongued and grooved, of the bands or rings B B', embracing the joint and secured to the sections by bolts or rivets, substantially as described.

2. In gas-conduits, the combination, with the sections A A and the rings or bands B B', embracing the joint and secured to the sections, of the bowls C C', having flanged mouths and secured together by means of bolts and nuts passing through the flanges, substantially as described.

3. In a pipe-coupling for gas mains or conduits, the combination, with the sections A A, having beveled or rabbeted ends, of the hard-metal interior and exterior rings, B B', riveted or otherwise secured to the sections, and the interposed packing-rings F-F, substantially as described.

333,414. CONVERTIBLE CHAIR AND VELOCIPEDE.

WILLIAM HOLDEN, Baldwinsville, Mass. Filed Sept. 3, 1885. (No model.)



Claim.—1. In a convertible chair capable of adjustment as to height, the combination, with a chair-frame, a shifting seat-frame, and a movable foot-rest, of pivoted angle-irons for connecting said foot-rest to the front of the chair-frame, links for connecting the forward and rear ends of the seat-frame to the inner sides of the chair-frame, and bars or rods for connecting the forward links of the seat-frame to the angle-irons that support the foot-rest, whereby the seat-frame and foot-rest may be shifted or adjusted together, substantially as described.

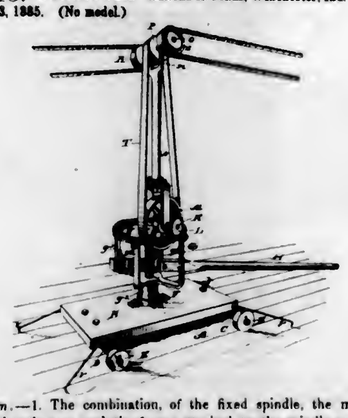
2. In a convertible chair, the combination, with a chair-frame having cross-bars *d e* and a shifting seat-frame provided at its forward end with lugs *n*, of the links *j*, pivoted to the inner sides of the cross-bars *e* and to the sides of the seat-frame at its rear end, and the links *o*, pivoted to the lugs *u* and to the inner sides of the cross-bars *d*, substantially as described.

3. In a convertible chair, the combination, with a chair-frame and a shifting seat-frame, said parts being capable of a relative adjustment to vary the height of the chair, of the links *j*, pivoted to the inner sides of the chair-frame and to the rear end of the seat-frame, and the diagonal links *o*, having a pivotal connection with the inner sides of the chair-frame and with the forward end of the seat-frame, the said links *j* being vertical and at right angles to the seat-frame when the chair is lowered, and occupying a horizontal position between the chair-frame and seat-frame when the chair is elevated, substantially as described.

4. In a convertible child's chair and velocipede, the combination, with a leg-frame having traction-wheels journaled near one end, a guide-wheel near the other end, and an intermediate crank-shaft connected with the driving or traction wheels, of a shifting seat adapted to rest upon the end of the leg-frame, when set upright or upon the side thereof, when turned down to rest upon the wheels, substantially as described.

333,415. HORSE-POWER.

LEMUEL R. JONES, Winchester, Ind. Filed Nov. 13, 1885. (No model.)



Claim.—1. The combination, of the fixed spindle, the master-wheel rotating thereon, and the frame attached to the spindle and carrying a shaft having a pinion meshing with the master-wheel and a driving-pulley, substantially as described.

2. The combination of the fixed spindle, the master-wheel rotating thereon, the frame attached to the spindle and carrying a shaft having a pinion meshing with the master-wheel and a driving-pulley, and the vertical standard attached to the frame and carrying a shaft having pulleys, one of which is connected to and actuated by the driving-pulley, substantially as described.

3. The horse-power mounted on a portable truck, the latter being provided with the attached hooks having the downturned pointed ends, for the purpose set forth, substantially as described.

4. In a horse-power, the combination of the fixed spindle and the master-wheel having the open rim, the depending inwardly-bent arms, and the hub to which the inner ends of the arms are attached, substantially as described.

333,416. SAFETY-STOP FOR FIRE-ARMS.

JOHN C. KELTON, San Francisco, Cal. Filed Oct. 1, 1885. (No model.)

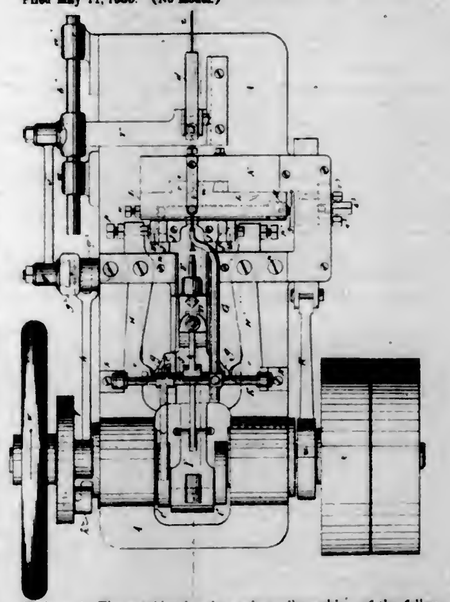
Claim.—1. A safety device for fire-arms, comprising a pin adapted to engage a hole in the side of the hammer and automatically lock said hammer when at full-bent, a spring-plate bearing the same, and a vertically-sliding plate upon the side of the stock, having an inclined plane or cam for retracting said plate to withdraw the pin, whereby a simultaneous pressure upon the plate and trigger is necessary to release the hammer, substantially as herein described.

2. A safety device for fire-arms, comprising a hammer having a hole in its side, a pin adapted to automatically lock the hammer when at full-bent, a spring-plate carrying the same, a vertically-sliding bar upon the side of the stock for actuating the plate, and having an inclined plane or cam and milled head or thumb-piece, the said pin being withdrawn and the hammer released by simultaneous pressure upon the trigger and sliding plate, substantially as herein described.



333,417. MACHINE FOR MAKING NAILS.

NELSON KING and HARRY B. LESTER, Waterbury, Conn., assignors to Blake & Johnson, same place. Filed May 11, 1885. (No model.)



Claim.—1. The combination, in a wire-nail machine, of the following elements: a reciprocating block, D, vertical brackets *c*, fixed thereto, vertically-sliding blocks *d*, a lever, *h*, shaft *f*, connecting-rod Y, triangular cam-plates *g*, fixed at right angles to the lower end of the blocks *d*, rollers *o* and *o'*, pivoted cutting-levers H and H', and cutting-chisels F' and F^2, as and for the purpose described.

2. In a wire-nail machine, the frame A, provided with the stationary block K, the block L, fitted in a recess in the block K and adjustable vertically by screw d^3, the dies M M', arranged in a recess in the face of block L, and movable transversely therein by the reciprocating bar P, rod R, cam *u*, cam-block *y*, and roller N, all combined and arranged to operate substantially as described.

3. In a wire-nail machine, clamping-dies to hold the nail-wire and nail while the nail is being headed, a heading-punch, and means, substantially as described, to move it up against the nail to head it and withdraw it from the nail after heading, and means, substantially as described, to advance the nail-rod and free it from the clamping-dies in which it has been headed, and project it into a clear space, so that it may be removed from the machine, in combination with the knocker G on the shaft E, operating-lever *l*, and its actuating-cam *m*, to forcibly eject the nail from the machine, substantially as set forth.

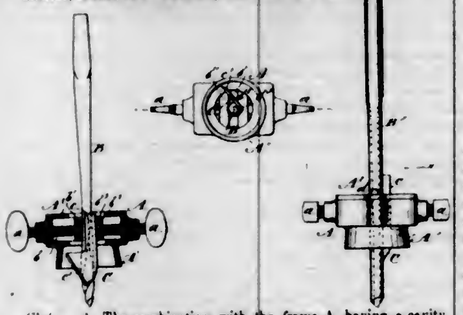
4. In a wire-nail machine, the combination of dies M and M', pressure-pin *l'*, and spring *m'*, bearing on the same, and suitable supporting and operating mechanism, as and for the purpose described.

5. In a wire-nail machine, the combination of cutting-chisels F' and F^2, means, as set forth, to support and operate them, set-screws e^3, and set-screws *p* and *p'*, constructed and arranged for the purpose of adjusting said cutting-chisels.

6. In a wire-nail machine, in combination, a cam-plate, *y*, and

means, as set forth, to reciprocate it, set-screws a^3 b^3 c^3, roller N, and die M, as and for the purpose described.

333,418. COUNTERBORING ATTACHMENT FOR BITS. EDWIN F. LINDSEY, Bristol, R. I. Filed May 11, 1885. (No model.)



Claim.—1. The combination, with the frame A, having a cavity, *b*, in the center thereof, of loose sliding jaws arranged in said cavity, and set-screws passing through the periphery of the frame and engaging the said jaws, substantially as herein shown and described.

2. The combination, with the frame A, having the cavity *b* passing through the center thereof, of the loose sliding jaws b' b^2, arranged in the said cavity, the jaw b^2 being provided with the notch b^3 on its inner surface, and the set-screws *a*, passing through the periphery of said frame and engaging the said jaws, substantially as herein shown and described.

3. The frame A, having the annular flange A' on its lower surface, and provided with the sliding jaws b' b^2, working in a central cavity of the frame, and the set-screws *a*, for operating the said jaws through the periphery thereof, as set forth.

333,419. REVERSING-VALVE. PHILO MALTBY, Cleveland, Ohio, assignor of two-thirds to L. G. Hine, Washington, D. C., and Frank D. Malt by, New York, N. Y. Filed June 9, 1885. (No model.)



Claim.—1. In a steam-engine having valve-chests arranged one upon each side of the cylinder, a single throttle feed-valve, and means for operating it to start, stop, or reverse the action, and valves working in said chests actuated by a single eccentric, whereby when live steam is fed through one chest the exhaust is being carried on through the other, as set forth.

2. A steam-engine having a valve-chest upon opposite sides of its main cylinder, and steam-ports arranged to lead the live steam to the ends of one of such chests, or to the center of the other, according to the position of a single throttle feed-valve, and valves, as S S', operating in said chests to feed live steam through one chest while the exhaust is being carried on through the other, as set forth.

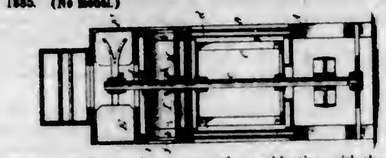
3. In an engine, substantially as described, a throttle feed-valve, as E, having a continuous live-steam passage, as e' e^2, and an exhaust-passage, *e*, passing centrally through the valve within the limits of the steam-passage e' e^2, as set forth.

4. In an engine, substantially as described, the combination, with the valve-chest D, having steam-port c^2 c^4, of the valve E, having passages e' e^2, and exhaust-passages *e*, slightly larger than the seat between the said ports c^2 c^4, whereby when the live steam is cut off the cylinder exhausts from both sides, as set forth.

5. In a steam-engine, substantially as described, the cylinder-body C' and caps C^3 C^4 C^5, arranged to form valve-chests C^3 C^4 D, and having port c^2, connecting the valve-chest with the central portion of valve-chest C^3, the vertical chamber *c*, the port c^4, connecting the said chamber with the chest D, ports *f f'*, leading therefrom to the ends of the chest C^4, and ports c^4, connecting both valve-chests C^3 C^4 with the cylinder, all adapted to serve with a single throttle feed-valve and with valves S and S', as set forth.

6. The combination, with the cylinder-body C' and caps C^3 C^4 C^5, arranged to form valve-chests C^3, C^4, and D, of the packing S^2, formed of thin sheets of soft metal clamped between the caps and body at their bearings, as set forth.

333,420. GRAIN-SCOURER. JAMES MCGILL, Lockport, N. Y., assignor to the Richmond Manufacturing Company, same place. Filed Sept. 1, 1885. (No model.)

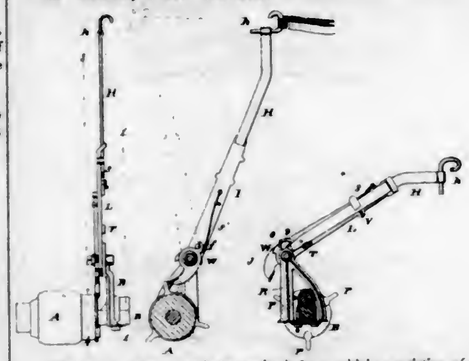


Claim.—1. In a grain-separator, the combination, with the fan and air-passage through which the dust-laden air passes to the fan, of the spindle on which the fan is mounted, a bearing supporting said spindle, and a hood or cover which covers the bearing in said air-passage and opens outside of the same, whereby said bearing is protected from the dust-laden air-current and rendered accessible from the outside without removing the hood, substantially as set forth.

2. The combination, with the scouring mechanism, the fan, and the spindle whereby said parts are driven, of an air-passage, G, leading from the scouring mechanism to the fan, a hood, I, open at its ends and extending through said air-passage, and a bearing, *h*, supporting said spindle underneath the hood I, substantially as set forth.

3. The combination, with the scouring-case having a top plate, *g*, a fan having an eye, *f*, a connecting air-passage, G, and a spindle, *e*, of the bearing *h*, the hood I, covering the bearing and extending through the passage G, and grooved cross-pieces M, receiving the lower edges of the hood, substantially as set forth.

333,421. AUTOMATIC HORSE-CHECK. MARTIN MEDART, Belleville, Ill. Filed July 3, 1885. (No model.)



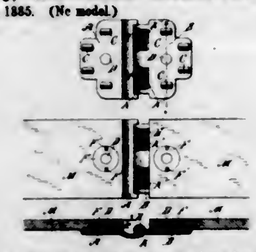
Claim.—1. An automatic horse-check for a vehicle, consisting of a rack, R, jaw J, lever L, handle H, and projections P P P, substantially as above described.

2. In an automatic horse-check, the handle H, with its recess T and spring S, in combination with the lever L, operating to extend the lever L when it is set for use, and to shorten it when it is not set for use.

3. In an automatic horse-check, the jaw J, attached to the lower end of the lever L, and being provided with the spring S' and pin *f*, in combination with said lever L, operating to allow the projections P P P to pass when the vehicle is backed and when the lever is set.

4. In an automatic horse-check, the shoulder O on the rack R, in combination with the handle H and the lever L, all operating to hold the lever L in position, so when the lever is not set the jaw J will set free of the projections P P P and allow the wheel to revolve without contact.

333,422. BELT-COUPLING. GEORGE MINCH, Stamford, Conn. Filed June 12, 1885. (No model.)

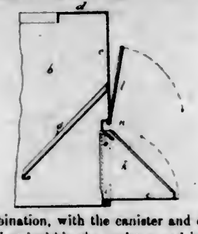


Claim.—1. In a belt-hook, a plate or plates having screw-threaded studs adapted to engage the ends of the belt, and nuts on the other side of the belt provided with tapering lips which engage the studs, whereby the leather of the belt is compressed outward without tearing it.

2. In a belt-hook, a plate, A, having a screw-threaded stud adapted to engage the belt, and hooks H at its forward end, in combination with a plate, B, having a similar stud and openings at its forward end to receive said hooks, and nuts F, which engage said studs and are provided with notches, whereby they are engaged to force them down into the belt.

3. Plate A, having stud D, prongs C, and hooks H at its forward end, in combination with plate B, having a similar stud and prongs, thickened edge K, and openings K', and nuts F, which engage the studs.

333,423. SHEET-METAL CANISTER. JAMES H. PREATER, Brooklyn, N. Y. Filed May 11, 1885. (No model.)



Claim.—The combination, with the canister and deflector *g*, of the swinging front *e*, hinged at *i* within the canister, and having end pieces, *k*, and the flap *l*, connected to the canister-front and passing down between the end pieces, *k*, substantially as specified.

333,424. BED-LOUNGE. WILLIAM REDDELL, Denver, Colo. Filed Aug. 21, 1885. (No model.)



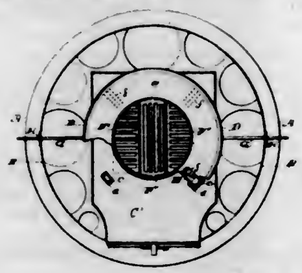
Claim.—1. A sofa-bed the back of which forms a section of the bed, and is pivoted inside of the rear edge of the seat by a curved pivotal connecting device, whereby the back is carried upward, over, and upon the seat when folded, so as to prevent excessive width of seat, substantially as specified.

2. A sofa-bed consisting of a continuous upholstering covering, the seat and back portions or sections, and a continuous series of springs extending throughout said sections, and a curved pivotal connecting device for said sections, the back being hinged to the back edge of the seat, and the back covering to the upper edge of the back, and the foot-board to the lower edge of the back covering, substantially as specified.

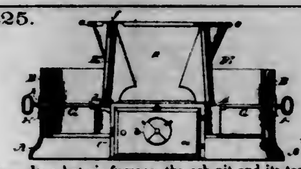
3. The combination, with the foot-section and the back, of the hinges H, provided with the strengthening-ribs H', the latter extending from the pintle of the hinge across the joints of the sections, substantially as specified.

4. The combination, with the upholstered seat A, arms B, and back E, of the drawer C and the upholstering C', secured to the front of the drawer, conforming to the general design of the entirely-upholstered article, substantially as specified.

333,425. HOT-AIR FURNACE. HENSON ROBINSON, Springfield, Ill. Filed May 12, 1884. (No model.)

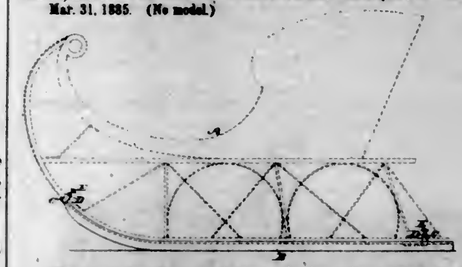


333,425.



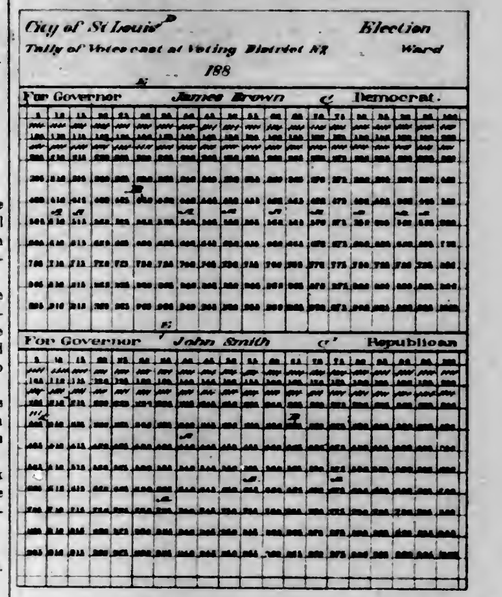
Claim.—In a hot-air furnace, the ash-pit and its top plate, C', provided with openings *c* and caps *d*, the fire-pot D, and its flange *e*, provided with the groups of perforations *f*, and the intermediate connecting-flues, E, all constructed and arranged substantially as described and shown.

333,426. SLEIGH-SHOE. ISAAC B. SMILEY, Philadelphia, Pa. Filed Mar. 31, 1885. (No model.)



Claim.—A shoe for a sleigh-runner, having a longitudinal groove or recess, and provided with a yoke, C, cross-head D, and screw E, substantially as and for the purpose set forth.

333,427. VERIFYING TALLY-SHEET. EDWARD SPENCER, St. Louis, Mo. Filed Oct. 13, 1884. (No model.)



City of St Louis Election

Tally of Votes cast at Voting District NR Ward

188

For Governor James Brown of Democrat.

For Governor John Smith of Republican

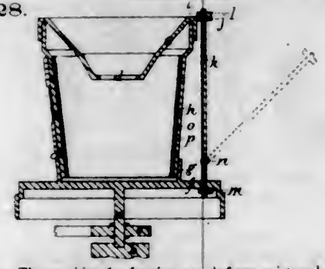
Claim.—1. A tally-sheet having a series of spaces adapted for receiving a series of tallies, the spaces bearing figures B, which are respectively multiples of the number of tally-marks which each space is to receive, substantially as described.

2. A tally-sheet having the series of spaces A and a space for receiving the legend D, said spaces bearing the figures B, which are respectively multiples of the number of tally-marks which each space is to receive, substantially as described.

3. A tally-sheet having the series of spaces A, the space E, and a space for receiving the legend D, said spaces A bearing the figures B, which are respectively multiples of the number of tally-marks which each space is to receive, substantially as described.

333,428. PULP-MACHINE. GRENVILLE M. STEVENS, Deering, Me. Filed Mar. 17, 1885. (No model.)

333,428.



Claim.—The machine for forming vessels from moistened pulp, consisting of the rotary base *f*, the perforated vessel *h*, composed of three parts, and having netting *o* and cheese-cloth *p*, the cover *e*, with its flanges *i* and *j*, and the jointed rods *k*, the whole to rotate as herein set forth.

333,429. FURNACE FOR BOILERS. LEVI STEVENS, Washington, D. C. Filed June 12, 1885. (No model.)



Claim.—The combination, with the fire-chamber of a furnace whose discharge-flues are carried through the upper part of its rear wall, and with an inverted bridge or deflecting wall depending from the top of the chamber in front of said flues, of a hot-air chamber formed within said rear wall, divided into two compartments, of which one communicates with the outer air and also by means of separate valve-openings with the second compartment and with the space beneath the grate-bars, and the other communicates by means of openings in the rear wall with the fire-chamber at or below the level of the hanging wall, all substantially in the manner and for the purpose herein set forth.

333,430. FURNACE FOR STEAM-BOILERS. LEVI STEVENS, Washington, D. C. Filed Aug. 10, 1885. (No model.)



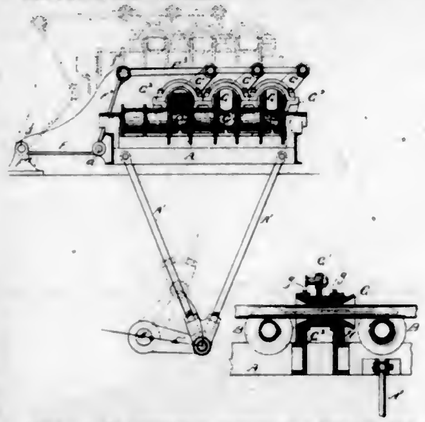
Claim.—1. The combination, with a furnace or fire-chamber inclosed at top and sides by a perforated arch, of a hollow bridge-wall at the rear of the furnace inclosing a hot-air chamber communicating with the ash-pit below and the fire-chamber above, and a perforated rear wall built upon the back end of the bridge to close the opening above it, substantially in the manner and for the purpose herein set forth.

2. The combination, with an inclosed furnace or fire-chamber constructed with a hollow rear bridge-wall inclosing a hot-air chamber made to communicate with the fire-chamber through small apertures in the upper portion of the wall, of a discharge flue or passage for the products of combustion, formed between the top of the bridge-wall and the arch of the fire-chamber and terminating in a series of openings pierced through the arch and the rear wall over the bridge-wall, substantially in the manner and for the purpose herein set forth.

3. The cellular or perforated arch F, bars D, and ash-pit E, in combination with a hollow bridge-wall, G, and perforated rear wall, C, substantially in the manner and for the purpose herein set forth.

4. The combination, with a boiler, and with a fire-chamber under the boiler, constructed with an arched top pierced with a series of openings at the rear end thereof, and with a rear wall pierced with a series of openings in the upper portion thereof, of a second combustion-chamber under the boiler and back of the fire-chamber, communicating by a series of small air-ports with a hot-air chamber, and whose rear wall is constructed with its upper portion solid and its lower portion pierced with a series of discharge-openings, all substantially in the manner and for the purpose herein set forth.

333,431. ROLLING-MILL. FRANCIS H. TREAT, Joliet, Ill., assignor of two-thirds to Horace S. Smith and Charles Pettigrew, both of same place. Filed Sept. 19, 1883. (No model.)



Claim.—1. The combination, substantially as before set forth, with the rolls of a rolling-mill, of a billet-turner composed of a trumpet-mouthed sleeve, the eye of which is angular in cross-section, and a stand or bearing on which said sleeve is journaled.

2. The combination, substantially as before set forth, of the radius-link, the feed-table pivoted thereto, means, substantially such as described, for supporting and lifting and depressing said feed-table, the billet-turner which is mounted on the feed-table, and the journaled sleeve of which is provided with an arm, and a rod connecting the said arm with the radius-link.

333,432. PLATER'S BAR. EDWARD D. TUTTLE, Waterbury, Conn., assignor to Frank J. Tuttle, same place. Filed Oct. 23, 1885. (No model.)



Claim.—As a new article of manufacture, the drawn plater's bar herein described.

333,433. DECORATED MIRROR. EIRAN S. UTLEY and HENRY S. BOWEN, Chicago, Ill. Filed Feb. 25, 1885. (Specimens.)

Claim.—As a new article of manufacture, a mirror or other silvered surface ornamented with a bordering or other design in imitation of polished stone or marble, substantially as described.

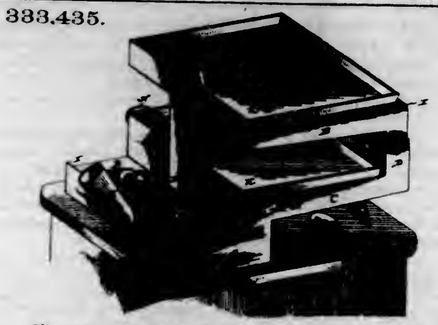
333,434. FACE-PLATE FOR LOCKS. GEORGE VOLL, Cincinnati, Ohio, assignor, by mesne assignments, to the Ireland Manufacturing Company, same place. Filed May 16, 1885. (Model.)



Claim.—The combination, with a reversible keeper having openings corresponding to those of the face-plate and a rabbet complementary to that of said plate, of the mortise door-lock having the lock-bolt, the reversible latch, and the reversible rabbeted face-plate, as set forth.

333,435. FRUIT-DRIER. JOHN J. WOLFE, West Millville, Pa. Filed June 26, 1885. (No model.)

333,435.

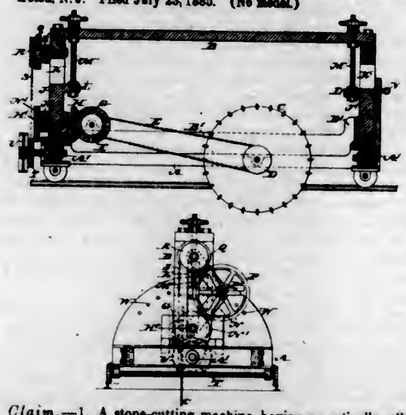


Claim.—1. An evaporator consisting of the boiler, the steam-chamber extending laterally therefrom at a distance above the boiler, detachable steam-chambers (one or more) secured vertically above the steam-chamber, the steam-escape valve G, the inlet-spout H, for the feed-water for the boiler, and the adjustable plate R, for supporting the rear end of the steam-chamber, substantially as described.

2. An evaporator consisting of the boiler and the steam-chambers (one or more) extending therefrom, the boiler being provided on its upper side with the openings and lids, for the purpose set forth, substantially as described.

3. The evaporator consisting of the boiler A, the steam-chamber C, extending laterally therefrom at a distance above the boiler, the detachable steam-chamber E, secured vertically above the chamber C and communicating therewith, and the adjustable plate O, secured to the boiler, supporting the free ends of the chamber E, and the adjustable plate R, for supporting the rear end of the chamber C, substantially as described.

333,436. STONE-CUTTING MACHINE. WILLIAM A. WRIGHT, Centreton, N. J. Filed July 23, 1885. (No model.)

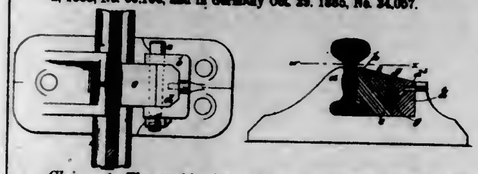


Claim.—1. A stone-cutting machine having a vertically-adjustable frame, with a rotary cutter mounted thereon, two gear-wheels, one of which is journaled in a block movable with said frame, an elbow-lever connected to the shafts of the said gear-wheels and carrying a pinion meshing at the same time with said gear-wheels, and means, substantially as described, for rotating said gear-wheels and cutter, substantially as and for the purpose set forth.

2. The frame B', vertically adjustable and having the cutter C and gear-wheel G, mounted on shafts provided with fixed bearings on said frame, in combination with means, substantially as described, for communicating motion from said gear-wheel to said cutter, the shaft H', having gear-wheel H and mounted on the box J, the shaft R', mounted on the frame B, the elbow-lever N, connected with said shafts H' and R' and carrying pinion P, meshing with pinions N' and Q, and means, substantially as described, for rotating said pinion Q, substantially as and for the purpose set forth.

3. The truck A, in combination with vertically-adjustable frame B', carrying a shaft having a cutter, C, and pulley D, mounted thereon, band or chain E, pulley F, and gear-wheel G, mounted on the shaft R', the shaft H', with bearings on the box J, carrying the gear-wheel H and gear-wheel N', the elbow-lever N, with axis P' and pinion P, the shaft B', with the upper end of the elbow-lever N mounted thereon, and carrying the pinion Q and pulley R, the said pinion P meshing with both pinions N' and Q, and means, substantially as described, for imparting rotary motion to said pulley R, substantially as and for the purpose set forth.

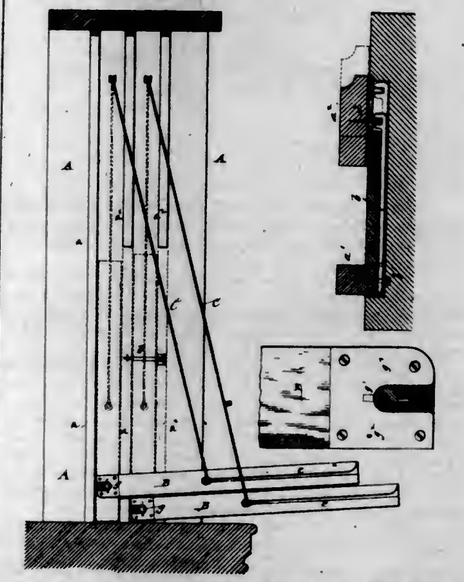
333,437. CHAIR USED FOR FIXING LINES OF RAILWAYS. JOHN R. B. ARMYTAGE, Victoria Foundry, Stanningley, County of York, England. Filed June 11, 1885. (No model.) Patented in England Mar. 9, 1885, No. 3,068; in France May 30, 1885, No. 169,201; in Belgium June 2, 1885, No. 69,106, and in Germany Oct. 29, 1885, No. 34,057.



Claim.—1. The combination, with a railway-chair having a jaw, *a*, and rectangular box *b*, formed with openings in two of its sides, of the separable blocks *c* and *d* to fit in said box between it and a rail, and having semicircular grooves on their meeting faces to receive a pin passed through the openings in the sides of the box, substantially as described.

2. The combination, with a railway-chair having a jaw, *a*, and rectangular box *b*, formed with a hole in one of its sides, of the separable blocks *c* and *d*, fastened together and fitted in said box between it and a rail, one of said blocks being formed with a hole, d^3, corresponding to the hole in the box to receive a pin passed through the latter, substantially as and for the purposes described.

333,438. WINDOW-SASH. LOUIS L. ARNOLD, Buffalo, N. Y. Filed Jan. 9, 1885. (No model.)



Claim.—1. The combination of a window-casing having detachable parting-strips and front stop-beads and fixed pivots at the lower corners, sashes having recessed plates at their lower corners and longitudinal recesses in the upper parts of their side rails, fixed hooks located in the lower enlarged parts of said recesses, and detachable sash-cords having loop-shaped ends, substantially as set forth.

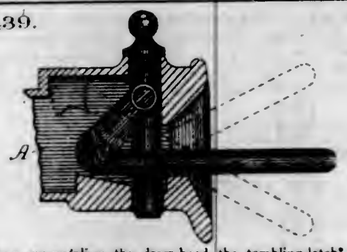
2. The combination of a window-casing having detachable parting-strips and front stop-beads and fixed pivots with diametrical lugs with sashes having recessed corner-plates and interior stops and sash-cords attached detachably to the grooves of the sashes, substantially as set forth.

3. The combination of a window-casing having a horizontal recess, of a detachable parting-strip having a staple, a detachable front bead having a locking-lug, and a slide-bolt having a recessed front end engaged by the lug of the front bead and adapted to be moved backward or forward by the latter, so as to engage or to release the staple of the parting-strip, substantially as set forth.

333,439. CAR-COUPLING. JOHN C. BLOCHER, Lima, Ohio. Filed June 1, 1885. (No model.)

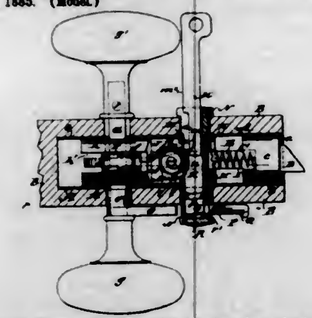
Claim.—1. In a car-coupling, the combined draw-head and the tambling-latch provided with arms extending through and swinging in said draw-head, the two parts cast together and constituting a single article of manufacture, substantially as described.

333,439.



2. In a car-coupling, the draw-head, the tumbling-latch provided with arms extending through said draw-head, and on which the latch swings, the handles to operate said latch from outside the draw-head, and the hooked end to engage with the link, in combination with an open link and coupling-pin, substantially as described.

333,440. LOCK AND LATCH COMBINED. George E. Bower, Auburn, N. Y., assignor to himself and Christopher Breen, same place. Filed Apr. 21, 1885. (Model.)



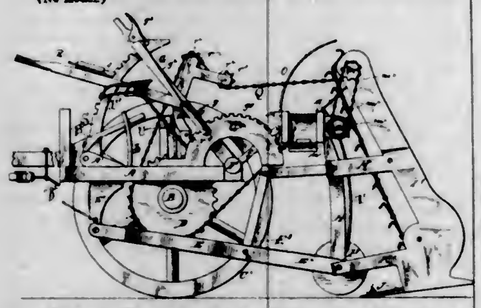
Claim.—1. The combination, with a lock-casing, of a bolt operated by a knob-spindle, a key-barrel carrying devices for locking the knob-spindle, and a notched wheel engaging the key-barrel and adapted to be revolved by a suitable key, as set forth.

2. A lock and latch comprising the case, the bolt, the knob-spindle fitted with a tumbler acting to draw the bolt, the key-barrel, a plate fitted on the knob-spindle and having a curved edge, and a plate on the key-barrel having a correspondingly-curved edge adapted to interlock with the spindle-plate, substantially as herein set forth.

3. A lock and latch comprising a case, A, bolt C, knob-spindle G, tumbler F, key-barrel N, slotted at *n*, the key-wheel K, toothed at *k* and cut away peripherally, as at *m'*, a key, M, toothed at *m* to correspond with teeth *k* of wheel K, and adapted to the key-barrel, a spring returning the key-wheel to normal position as the key is withdrawn, a plate, O, having a curved edge, T, and fitted on and to turn with the knob-spindle, a plate, P, having curved edge S, and fitting loosely on key-barrel N, and also having a lug, *q*, and a collar, R, fixed to barrel N, and having a lug, *r*, substantially as herein set forth.

4. The combination, with the block H, the key-barrel N, and key-wheel K, of the stops *l l'*, substantially as herein set forth.

333,441. DITCHING-MACHINE. Peter Brolin, West Unity, Ohio, assignor of one-half to Milton C. Shelter, same place. Filed Apr. 17, 1884. (No model.)



Claim.—1. The combination, in a ditching-machine, of a supporting-carriage mounted on a main axle, excavating devices driven from said main axle by means of a drive-chain, sprocket-wheels *r r'*, journaled as described, and means for moving said sprocket-wheels relative to the drive-chain, as and for the purpose specified.

2. The combination, in a ditching-machine, of a supporting-carriage mounted on a main axle, excavating devices driven from said main axle by means of a drive-chain, sprocket-wheels *r r'*, journaled as described, hand appliances for moving said sprocket-wheels relative to the drive-chain, and means for vertically moving the excavating devices, substantially as specified.

3. The combination, in a ditching-machine, of a supporting-carriage mounted on a main axle, a pivoted beam supporting a vertical endless conveyer, and a horizontal conveyer provided with an endless belt, both of said conveyers being driven from said main axle by means of a drive-chain, sprocket-wheels *r r'*, journaled as described, hand appliances for moving said sprocket-wheels relative to said drive-chain, and means for vertically moving said conveyers, substantially as set forth.

4. The combination, in a ditching-machine, of a supporting-carriage mounted upon a supporting axle or shaft, a beam pivoted to said carriage and supporting a vertical conveyer, and a horizontal conveyer arranged transversely to said vertical conveyer, a drive-chain for operating said conveyers from the main axle or shaft, and a pivoted lever provided with sprocket-wheels engaging with said drive-chain to take up the slack therein, substantially as and for the purpose specified.

5. The combination, in a ditching-machine, arranged and operating substantially as described, of a vertical conveyer and a horizontal conveyer pivotally supported, the operator's seat located approximately in a line with the plane of the horizontal conveyer, and a curved fender, O, interposed between the horizontal conveyer and the operator's seat, as specified.

6. The combination, in a ditching-machine arranged and operating substantially as set forth, of a carrying-wheel turning loosely on the end of a main axle or shaft and provided with cam-shoulders *c'*, adapted to engage corresponding faces on the sleeve C^2, rotating with said main axle or shaft and sliding longitudinally thereon, a spring, C^3, formed and secured, as described, for maintaining said cam-shoulders and faces in engagement with each other, actuating devices, a chain driven therefrom to operate the excavating mechanism, sprocket-wheels *r r'*, and hand appliances for moving said wheels relative to the chain, as specified.

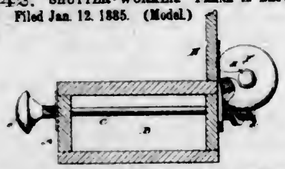
7. The combination, in a ditching-machine, of a supporting-carriage mounted on a main axle, excavating devices driven from said main axle by means of a drive-chain, Q, and provided at their lower portion with a shoe, J, terminating at its front in a bladed portion, *j*, means for automatically effecting a cessation of the operation of the said excavating devices upon a rearward rotation of said axle, sprocket-wheels *r r'*, journaled as described, and hand appliances for moving said sprocket-wheels relative to said chain, substantially as set forth.

8. The combination, in a ditching-machine arranged and operating substantially as described, of an endless conveyer, L, supported on shafts J' J^2, journaled in side sections, I I', having the horizontal extensions K K', connected with the vertical standard H, and means for vertically adjusting said conveyer, substantially as and for the purpose set forth.

9. The combination, in a ditching-machine arranged and operating substantially as described, of the vertical conveyer L, supported and actuated as herein set forth, vertical standard H, and spring-plate T, arranged in proximity thereto, for the purpose specified.

10. The combination, in a ditching-machine arranged and operating substantially as described, of a beam, W, enlarged at its center for the pivotal attachment of the sections W' W^2, the beam W and sections W' W^2 being slotted for the passage of a transverse bar, W^3, clamp-bolts w^3, for securing said beam and sections upon said bar, and standards depending from the rear ends of said sections and having attached thereto curved side wings or guards, *x x'*, pivotally connected together at their rear ends, substantially as set forth.

333,442. SHUTTER-WORKER. Frank E. Brown, Webster City, Iowa. Filed Jan. 12, 1885. (Model.)

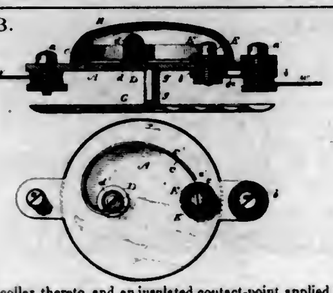


Claim.—The combination, with the frame A B and the worm-shaft C, arranged in the weight-box, out of the path of the weights, of the bracket D, having pintle *d* and slot *d'*, and the shutter-plate F, cast in one piece with a base which is secured to the shutter, and having its teeth *f'* arranged upon its under face, whereby the worm-shaft may be arranged closer to the pivot and out of the path of the sash-weights, as specified.

333,443. THERMOSTATIC CIRCUIT-CLOSER. George F. Bulen, Jersey City, N. J., assignor to the Automatic Fire Alarm and Extinguisher Company, (Limited,) New York, N. Y. Filed June 14, 1882. (Model.)

Claim.—1. In a thermostat, the combination, substantially as hereinbefore set forth, of a thermostatic strip, a metallic plate for supporting the same, a collar having an aperture in which said strip is brazed or soldered, a screw extending through said collar into said base and uniting

333,443.



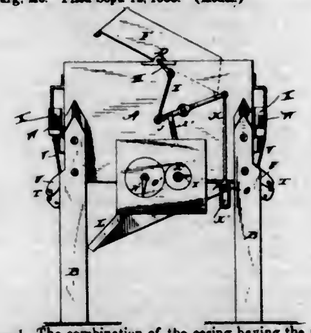
said strip and collar thereto, and an insulated contact-point applied to the remaining end of said strip.

2. The combination, substantially as hereinbefore set forth, of a thermostatic strip, a metallic base for supporting the same, an insulated screw carried upon said base, an adjustable contact-screw extending through a longitudinal opening in said insulated screw into proximity to the end of said strip, and a convex spun-metal cover fitting over said strip and contact-point.

3. The combination, substantially as hereinbefore set forth, of a thermostatic strip, a metallic base-plate, an insulated screw supported upon the same having a horizontal opening through the same, a contact pin or screw extending through said opening, means for connecting one end of the strip to said base, and a cover, H, for said strip.

4. The combination, substantially as hereinbefore set forth, of a thermostatic strip, the metallic base A, having lateral lugs, the screws *a* and *a'*, respectively supported upon said lugs, one of which screws is insulated from said base, and a cover, H, for said strip, having recesses formed in its edges for receiving said lugs.

333,444. AUTOMATIC GRAIN-WEIGHER. Charles E. Burchard, Martinsburg, Mo. Filed Sept. 12, 1885. (Model.)



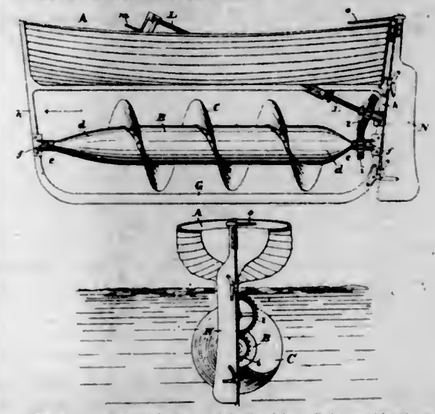
Claim.—1. The combination of the casing having the transverse partition at its middle and the transverse bearings at the upper and lower edges of the said partition, the rock-shaft journaled in the upper transverse bearings and provided with the oscillating chute having outwardly-diverging end pieces and apertures in its bottom at the ends of the same, and provided with a crank at its end, the downwardly-projecting connecting-rod, the lever pivoted upon the front of the casing and having the said rod pivoted to its short arm, the downwardly-projecting rod having the longitudinal slot at its lower end and pivoted to the lever at its long arm, and the bottoms having a rock-shaft at their united inner ends, secured together at an obtuse angle, and provided with a laterally-projecting bolt at the side of one of the united bottoms, sliding in the longitudinal slot in the lower end of the rod, as and for the purpose shown and set forth.

2. The combination of the bottoms secured together at their inner meeting edges and journaled to rock at the said edges, the bolts projecting from the middles of their outer edges, the latch-casings pivoted between lips projecting from the casing and having the spring-actuated latches, the scale-beams having sliding poises, and the connecting-rods pivoted to the upper ends of the latch-casings and to the short arms of the scale-beams, as and for the purpose shown and set forth.

3. The combination of the rocking bottoms secured together at an obtuse angle, the bolts projecting from their free edges, the latch-casings having latches engaging the bolts, the scale-beams having sliding poises and having screw-threaded extensions upon their short arms provided with poises fitting upon the same, and the connecting-rods pivoted to the latch-casings and to the short arms of the scale-beams.

4. The combination of the lever tilting at each time the chute is shifted, the vertically-sliding bar pivoted to the short arm of the said lever and formed with a bifurcated lower end having an upwardly and inwardly hooked arm and a downwardly and inwardly bent arm, a ratchet-wheel journaled between the said arms and engaged alternately at alternating sides by the said arms, and having an index upon its shaft and a laterally-projecting tooth, and a ratchet-wheel having an index upon its shaft and meshing with the laterally-projecting tooth, as and for the purpose shown and set forth.

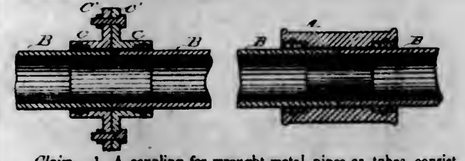
333,445. BUOYANT SCREW-PROPELLER. George S. Burr, Evergreen, Colo., assignor of one-half to James Billingsley, Baltimore, Md. Filed Oct. 15, 1885. (No model.)



Claim.—1. A boat having a false-keel bar, G, in combination with a buoyant cylinder having a spiral flange and mounted between the said false-keel bar and boat, as set forth.

2. A boat having in combination a body, a false-keel bar depending below the body, a buoyant cylinder provided with a spiral flange and mounted between the body and false-keel bar, and driving mechanism, substantially as described, connecting the boat-body with the buoyant cylinder, as set forth.

333,446. COUPLING FOR GAS-PIPES. Joseph Bush, Pittsburg, Pa. Filed Nov. 2, 1885. (No model.)

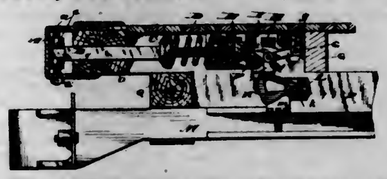


Claim.—1. A coupling for wrought-metal pipes or tubes, consisting of a coupling sleeve or bowl having a cylindrical opening of even diameter at that portion where it comes into contact with the pipe, and a pipe or tube having its end expanded into said opening, substantially as described.

2. In a pipe-coupling, the combination, with a sleeve, collar, or bowl having a central opening for the reception of the pipe end, of a band of copper or other metal inserted in said opening, and a pipe having its end expanded within said band.

3. In a pipe-coupling, the combination, with the sleeve, collar, or bowl, of the pipe ends inserted therein, and a band of copper covering the joint of the pipes and secured in position by expanding the ends of the pipes and the said band after they have been inserted in said sleeve or bowl, substantially as described.

333,447. CAR-BUMPER. Newell P. Cowell, Cleveland, Ohio. Filed May 26, 1885. (No model.)

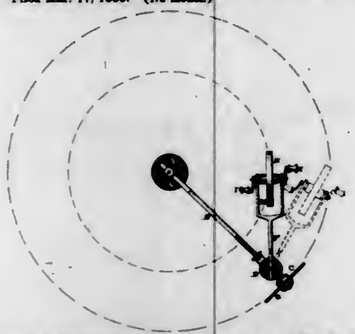


Claim.—1. The combination, with a spring car-bumper, a follower-plate forming the rear seat for the bumper-spring, a knuckle-joint arranged to actuate the follower-plate to control the tension of the bumper-spring and the movement of the bumper, of a draw-bar, incline, and suitable connecting mechanism, whereby the knuckle-joint is automatically operated by the movement of the draw-bar, substantially as set forth.

2. In a spring car-bumper, a knuckle-joint arranged to regulate the tension of the bumper-spring, and a pivoted cam or block arranged between the knuckle-joint and draw-bar, the latter having a suitable projection for automatically actuating the tension mechanism of the movement of the draw-bar, substantially as set forth.

3. The combination, with a spring-actuated bumper-stem, of a bumper-plate hinged to said stem and embracing or overlapping the platform-sill, substantially as set forth.

333,448. CENTRICYCLE OR BICYCLE. THOMAS CRIPPIN, Detroit, Mich. Filed Mar. 17, 1885. (No model.)

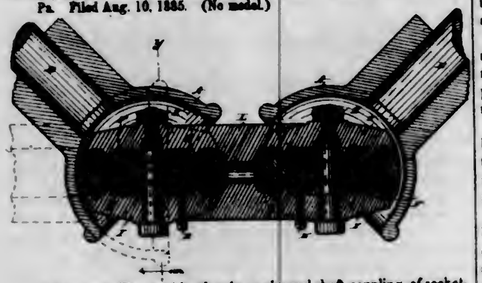


Claim.—1. The combination of the pivot, the rod B, wheel C, secured to the outer end of and supporting the rod, the bearing-plate, the rod F, and the wheel H, provided with the cranks I, substantially as shown.

2. The combination of the pivot, the rod B, made in telescopic sections, wheel C, the perforated pivotal or bearing plate, the rod F, and wheel H, provided with cranks I, substantially as described.

3. The combination of the rod B, supported by a pivot at one end and a wheel at the other, with the perforated bearing-plate, which is carried by the rod, and the rod F, wheel H, and cranks I, the rod F being adjustable upon the plate at its inner end, so as to cause the wheel H to describe a larger or a smaller circle, as may be desired.

333,449. UNIVERSAL SHAFT-COUPLING. HILEN C. CROWELL, Erie, Pa. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination, in a universal shaft-coupling, of socket-pieces, substantially as shown, adapted to be secured to shaft-sections, with a connecting central section provided with rotary disks, substantially as shown, and trunnion-pins connecting said rotary disks with the socket portions of the coupling, substantially as set forth.

2. The combination, in a universal shaft-coupling, of socket-pieces, adapted to be secured to shaft-sections, with a connecting central section provided with rotary disks in the ends thereof, and having oil-reservoirs on either side of said disks, and trunnion in said disks for connecting the same with the sockets, substantially as and for the purpose set forth.

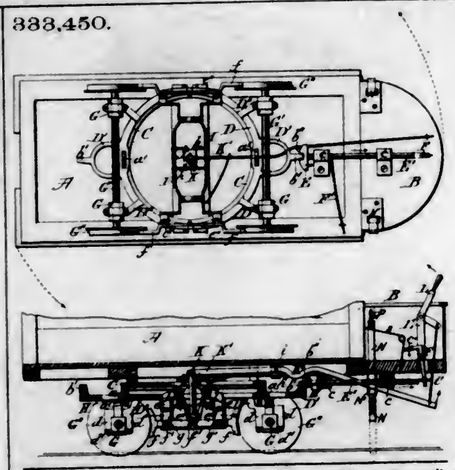
3. In a universal shaft-coupling, the combination of the central section, L, thereof, having oil-chambers F F and oil-plugs H H in each end thereof, substantially as shown, with rotary disks D, having oil-chambers G and openings *g* therein, and journal-bolts E, substantially as and for the purpose set forth.

4. The combination, in a universal shaft-coupling, of the socket-pieces A A, provided with trunnion-pin openings C C, with the central section, L, provided with rotary disks D D, having oil-chambers F G on either side thereof, the journal-bolts E, and trunnion J J, all constructed and operating together substantially as and for the purpose set forth.

333,450. STREET-CAR. MARTIN A. COTTER, Galveston, Tex. Filed Nov. 10, 1885. (No model.)

Claim.—1. In a revolving street-car, the combination of the body provided with an annular flanged circle-plate, secured to its bottom and inclosing the brake-operating devices, with the annular supporting or

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truck frame provided with wheels placed tangentially to the radius of said annular frame carrying the flanged circle-plate, and farther connected therewith by clamps secured to the truck-frame and embracing the flanged circle-plate, as set forth.

2. In a revolving street-car, the annular truck-frame provided with four radially-placed projections, each of which carries the two depending jaws of a pedestal formed to receive an axle-box, said jaws being integral with said frame, as and for the purpose stated.

3. In a revolving car, the annular truck-frame provided with forward and rear extensions terminating in upwardly-projecting catch-pins, in combination with the horizontally-sliding catch-block, its attached rod, and the bell-crank lever and stop-plate pivoted to the platform-floor, and arranged to operate in the manner and for the purpose specified.

4. The annular truck-frame provided with radially-extending projections having parallel arms, which extend downward and form the jaws of the pedestals, in combination with axle-boxes having free vertical play between said jaws, and springs secured to the truck, with their ends resting upon the axle-boxes between the jaws, substantially as and for the purpose specified.

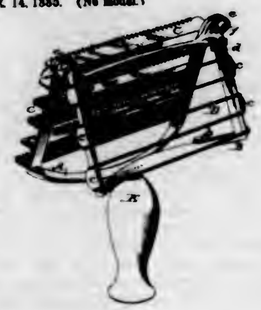
5. An annular truck-frame provided with pairs of vertical arms connected at the bottom by a slotted or dovetailed bar, said parts being made integral with the frame, in combination with the brakes having projecting tongues sliding in said slots or dovetails, the parts being arranged and operating as set forth.

6. In a revolving street-car, the annular truck-frame provided with brake holding and guiding devices, as described, in combination with the brake-operating mechanism consisting of pairs of slotted levers connected by bars, a vertically-moving block, links connecting said bars and block, and means for operating said block, as specified.

7. In a revolving street-car brake, the truck-frame provided with brake supports and guides, the brake-bars I I, the block J, and links connecting said block and bars, in combination with the centrally-placed standard K, the lever K', bell-crank hand-lever L, and rod connecting said hand-lever with the lever K, all arranged as shown and described, to operate the brakes from the driver's platform.

8. In an annular truck-frame, the brake supports and guides, in combination with the brake-bar, and springs *m*, arranged to automatically force the brakes out of contact with the wheels, as set forth.

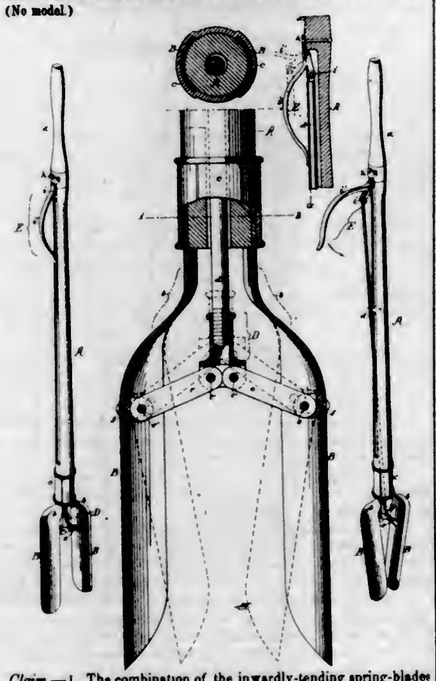
333,451. CURRY-COMB. ALEXANDER C. DECKER, Keokuk, Iowa, assignor of one-half to James Ayres and Peter Ayres, both of same place. Filed Sept. 14, 1885. (No model.)



Claim.—1. The herein-described curry-comb, consisting of frames A B, having tangs *a* and ears *c*, connected by rivets, and handle E, applied to said tangs *a*, the frame A being furnished with toothed metal stripe C, and the frame B having wire D passing from end to end, substantially as shown and explained.

2. The curry-comb consisting of frames A B, provided, respectively, with toothed metal plates or stripe and with stretched wire, said frames each having the inner or rear bar arched and furnished with a tang, and handle E, applied to the tangs, substantially as set forth and shown.

333,452. POST-HOLE-DIGGING IMPLEMENT. THOMAS S. DIMSTON, Philadelphia, Pa., assignor to Hamilton Dimston, Horace C. Dimston, William Dimston, and Jacob S. Dimston, all of same place. Filed Oct. 10, 1885. (No model.)



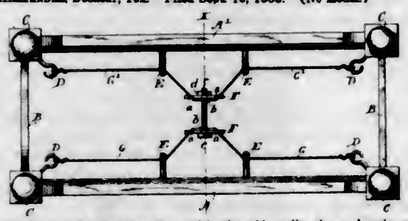
Claim.—1. The combination of the inwardly-tending spring-blades of a post-hole-digging implement with devices for forcing the blades apart, substantially as described.

2. The combination of the spring-blades and supporting-stem with knee-joint links placed between the two blades and an operating-rod connected to knee-joint links, substantially as set forth.

3. The combination of the spring-blades, the supporting-stem, and links *e e*, pivoted to the blades, with a head, D, and an operating-rod adjustably connected to the said head, substantially as described.

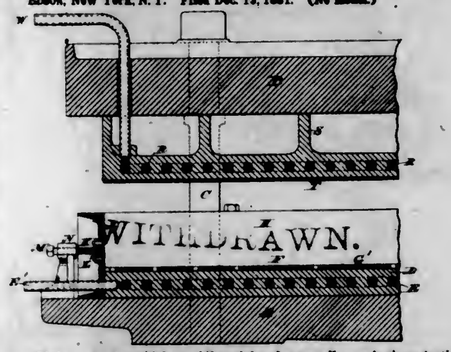
4. The combination of the inwardly-tending spring-blades with a knee-joint for separating the blades, a rod, *d*, connected to the knee-joint, and a handled lever, E, connected to the rod, substantially as described.

333,453. BEDSTEAD-BRACE. JOHN W. DURHAM and WINSTON B. ALEXANDER, Decatur, Tex. Filed Sept. 16, 1885. (No model.)



Claim.—The combination, with the side rails, the end rails, and posts, of the hooks secured to the inner faces of said posts, the eyes E on the inner sides of the side rails and located a slight distance apart, the wires G G', secured to the hooks D and passing through the eyes E, the plates F F', having openings, through which the wires pass, and the screw bolt and nut connecting said plates, substantially as set forth.

333,454. APPARATUS FOR WORKING ZYLONITE, &c. JARVIS B. EDSON, New York, N. Y. Filed Dec. 19, 1881. (No model.)

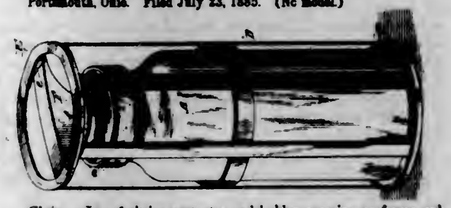


Claim.—1. A mold for molding slabs of pyroxyline and other plastic compounds, combining in its structure a false bottom having a series of orifices for the passage of screws by which to connect it with the slab, and channeled bars detachably connected and provided with attached ribs K to receive the pressure of screws M, substantially as described.

2. The combination of the platen A, the brackets N, and the screws M with the mold, consisting of the detachably-connected bars G and H, having attached ribs K, and the false bottom F, having a series of orifices for the passage of screws to enter the molded material, substantially as described.

3. The combination of the mold comprising detachable plates G and H and the false bottom F, having holes for the passage of screws, with the die having a thin sheet of metal, T, forming its face to adhere to the molded slab, substantially as described.

333,455. JAR PROTECTOR AND SEALER. MARTIN V. B. EVANS, Portsmouth, Ohio. Filed July 23, 1885. (No model.)



Claim.—In a fruit-jar protector and holder, a casing or frame, substantially as described, provided with a top having inclined depending portions and a block, F, which engages with the same to retain the cover in position, substantially as set forth.

333,456. ELEVATING AND CARRYING APPARATUS. JESSE S. FORD, Owensborough, Ky. Filed Oct. 17, 1885. (No model.)

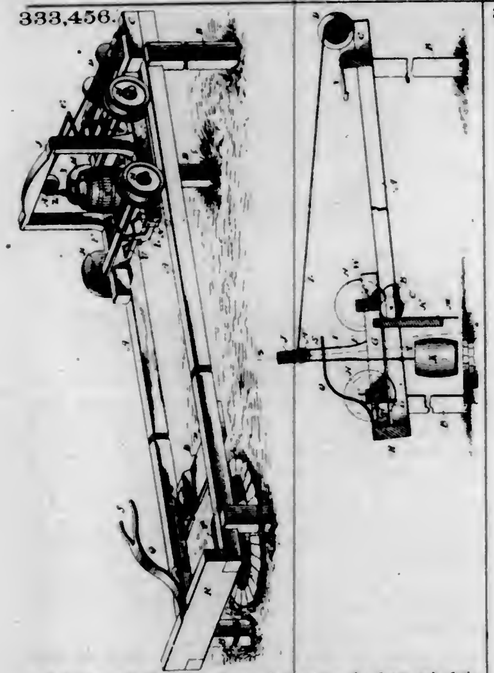
Claim.—1. In an elevating and carrying device, the combination of an inclined track mounted upon suitable frames or supports, a carriage adapted to travel upon the said track and having a hinged bottom or platform, a latch arranged to hold the said platform in a raised position, mechanism for releasing the said latch at the lower end of the track, a bucket normally resting upon the said platform, and a rope attached to the bail of the bucket and passing from thence over a pulley suspended under a cross-tree of the carriage and to a windlass at the upper end of the track, substantially as and for the purpose herein set forth.

2. In an elevating and carrying device, the combination of an inclined track, the carriage adapted to travel upon the same and having a hinged bottom or platform, and a latch adapted to sustain the latter, means for releasing said latch at the lower end of the track, and a cross-piece arranged near the lower end of the track and having a wheel or pulley adapted to bear against the under side of the said platform, thereby raising the latter when the carriage is drawn up the track, substantially as and for the purpose herein set forth.

3. The combination of the carriage-frame, the bottom or platform hinged at the rear end of the same and having a forwardly-extending pin at its front end, a latch mounted pivotally upon the front end of the carriage-frame and having a laterally-extending arm, and an inclined pin or arm affixed at the lower end of the track and adapted to strike the said latch-arm, so as to operate the latch and release the platform, substantially as and for the purpose herein set forth.

4. The combination of the carriage having a hinged platform adapted to support the bucket and provided with a staple at its front end, the inclined track, a hinged or elastic curved bifurcated bracket arranged at the lower end of the track, a catch attached to the under side of the

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said bracket and adapted to engage the staple at the front end of the carriage-frame, and a hoisting-rope attached to the bail of the bucket passing over a pulley suspended under the top cross-tree of the carriage and thence to a drum or windlass at the upper end of the track, whereby when the bucket is hoisted it shall strike the bifurcated bracket and release the carriage from the catch upon the under side of the said bracket, all arranged and operating substantially as and for the purpose herein shown and specified.

333,457. PROCESS OF DECORATING OR ORNAMENTING GLASS. Benjamin E. Foster, Stockwell, County of Surrey, England. Filed July 31, 1885. (No specimens.)

Claim.—1. The method of producing a crystalline or crystallized surface coating on glass, metal, or other material, consisting of applying to said surface a solution of crystallizable salts, and then a reacting and fixing agent, substantially as set forth.

2. The method of producing a crystalline or crystallized surface coating on glass, metal, or other material, consisting of applying to said surface a solution of crystallizable salts, and then a reacting and fixing agent and then a finishing coat of varnish to resist and protect the crystalline surface from atmospheric influences substantially as set forth.

333,458. FILE-CUTTING MACHINE. Jobiah F. French, Philadelphia, Pa. Filed July 15, 1882. (No model.)

Claim.—1. The combination of the head F and its reciprocating slide and chisel with pressure-rollers J, arranged in front and rear of the chisel, and adjustable together from and toward said chisel, as set forth.

2. The combination of the head F, its reciprocating chisel-slide, and the chisel rigidly secured thereto, with a grooved pressure-roller, J, adjustable to and fro across the face of the chisel, as specified.

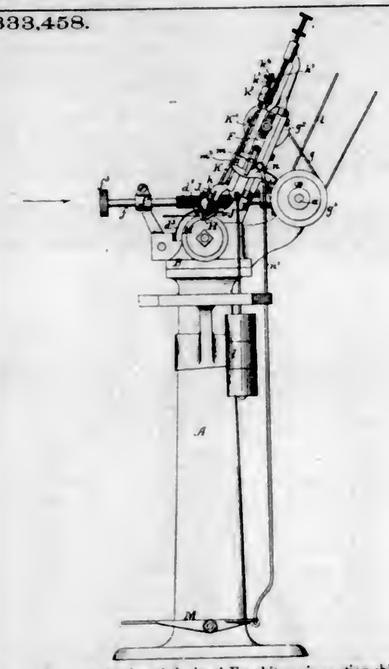
3. The combination of the head F and its reciprocating chisel-slide with a pair of grooved pressure-rollers, J, and a yoke, N, connecting the same for simultaneous operation, as set forth.

4. The combination of the head F and its reciprocating chisel-slide with one or more pressure-rollers, J, the spindle or spindles of the same, a yoke, N, and a nut, *j*, for actuating the same, as set forth.

5. The combination of the frame and the head F, adjustable vertically therein and carrying a chisel-slide and its reciprocating mechanism, with the supporting-drum H and a presser-foot, forming the sole support of the frame upon the file, but adjustable vertically in respect to said frame, whereby the impact of the chisel is regulated without variation in the reciprocating mechanism, as set forth.

6. The combination of the head F and its reciprocating chisel-slide with a supporting-drum, H, a pressure roller or rollers, a bar, K, carrying the same, a bar, K', to which the bar K is secured, and a set-screw connected to the bar K' and serving to adjust the same in respect to the head F, as set forth.

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7. The combination of the head F and its reciprocating chisel-slide, the pressure roller or rollers J, the bar K, carrying the same, and a set-screw, *p*, whereby said bar K is adjusted, as set forth.

8. The supporting-drum H, comprising the tapered core *s*, soft, metal ring *s'*, and end plate, s^2, adapted to press upon the ring and force it onto the core, as set forth.

9. The combination of a head, F, and a reciprocating chisel-slide with the support H and a pressure-roller, J, having two or more grooves side by side therein, where one file can be introduced into the machine before the preceding file has been discharged therefrom, as set forth.

10. The combination of the driving and feed shafts of the machine with the intervening worm and differential speeding-gear, said worm and the disk *d'* of the gearing being constructed as described, so as to be adjusted simultaneously, whereby the portion of the worm subjected to wear is changed with each change of feed, as set forth.

11. The combination of the driving and feed shafts, the sleeve *d*, with its worm d^2 and friction-disk *d'*, and the shouldered and threaded shaft *f*, as set forth.

12. The combination of the driving and feed shafts with a sleeve, *d*, made in sections clutched together when in operation, one section carrying the worm d^2 and the other the friction-disk *d'*, as set forth.

13. The combination of the driving-shaft *a* with the drum *e*, comprising the fast section *w* and loose section *w'*, the latter sliding from and toward the fixed section, and serving to apply the belt thereto, as set forth.

14. The combination of the drum *e*, comprising the fast and loose sections *w w'*, with the operating-lever *x* and the notched retaining-bar x^2, as set forth.

15. The combination of the driving and feed shafts with the worm d^2, an adjustable sleeve carrying the same, and a friction-disk, *d'*, adjustable on said sleeve, as set forth.

16. The combination of the supporting-drum, the head F and its reciprocating chisel-slide, an arm, B', carrying said head and guided on the frame B, and a retaining-bolt adapted to a slot in said arm, as specified.

333,459. METHOD OF DECORATING WALLS AND CEILINGS. M. Gibson, Philadelphia, Pa. Filed May 18, 1883. (Specimens.)

Claim.—1. The method of ornamenting walls, ceilings, or other surfaces which consists in the application to said surfaces of an ornamental pattern or design composed of an irregularly-surfaced mass of plastic material, substantially as set forth.

2. The method of ornamenting walls, ceilings or other surfaces which consists in the application through a stencil to said surfaces of an ornamental pattern or design composed of an irregularly-surfaced mass of plastic material, substantially as set forth.

3. The method of ornamenting walls, ceilings, or other surfaces which consists, first, in the application to said surfaces of an ornamental

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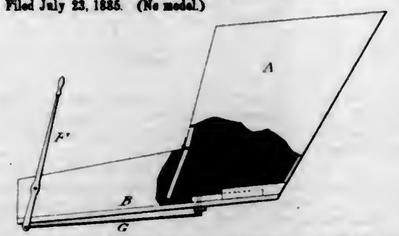
pattern or design composed of an irregularly-surfaced mass of plastic material, and, second, in coloring the plastic mass, substantially as set forth.

4. The method of ornamenting walls, ceilings, or other surfaces which consists, first, in the application through a stencil to said surfaces of an ornamental pattern or design composed of an irregularly-surfaced mass of plastic material and, second, in coloring the plastic mass, substantially as set forth.

5. A wall, ceiling, or other surface the face of which is coated or covered with an irregularly-surfaced mass of plastic material applied so as to form thereupon an ornamental pattern or design.

6. A wall, ceiling, or other surface the face of which is coated or covered with an irregularly-surfaced mass of plastic material, which is applied so as to form thereupon an ornamental pattern or design, and which is colored at will.

333,460. POTATO-PLANTER. Albert L. Gill, Allentown, N. J. Filed July 23, 1885. (No model.)



Claim.—1. In a potato-planter, the hopper A, provided with the sheaths D D, and feeders E E, substantially as shown and described.

2. In a potato-planter, the hopper A, provided with the doors C, in combination with the feeders E E, substantially as shown and described.

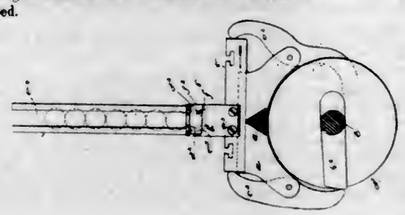
3. In a potato-planter, the hopper A, provided with doors C, in combination with the feeders E E, such feeders provided with the sheaths D D, substantially as shown and described.

4. In a potato-planter, the feeders E E, provided with the sheaths D D, and operated by the rocking bar H, substantially as shown and described.

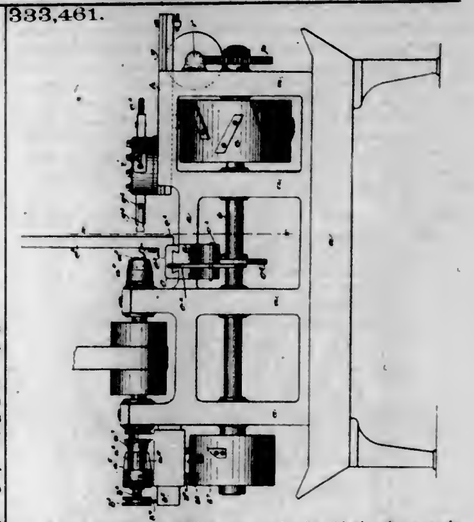
5. In a potato-planter, the hopper A, in combination with the feeders E E, such feeders provided with sheaths D D, and operated by the rocking bar H, substantially as shown and described.

333,461. MACHINE FOR DRILLING METAL BLANKS. William L. Orout and Edward L. Bowers, Orange, Mass. Filed Sept. 7, 1885. (No model.)

Claim.—1. In a machine for drilling gear and other blanks, a magazine slotted or cut out at its lower side for the withdrawal therefrom of a blank, the reciprocating cross-slide to carry the said magazine, means to move it, and a pair of jaws to grasp and hold the said blank while the magazine is moved out of line with relation to the center of rotation of the spindle and chuck, combined with a chuck and spindle to grasp the rotating blank, and with a tool to bore the blank, substantially as described.

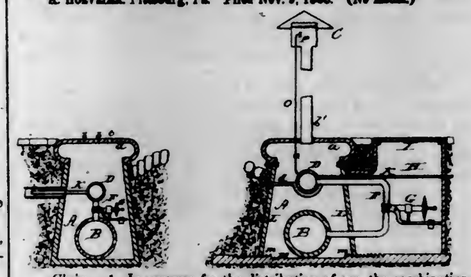


333,461.



2. In a machine for drilling gear and other blanks, the magazine slotted or cut out at its lower side for the withdrawal therefrom of a blank, and the reciprocating cross-slide to carry the said magazine, and means to move it, combined with a pair of jaws to grasp and hold the said blank while the magazine is moved out of line with relation to the center of rotation of the spindle, substantially as described.

333,462. SYSTEM FOR THE DISTRIBUTION OF GAS. William A. Hostetler, Pittsburg, Pa. Filed Nov. 9, 1885. (No model.)



Claim.—1. In systems for the distribution of gas, the combination, with a hollow curb, of high and low pressure conduits contained therein, and having means of intercommunication, substantially as described.

2. In systems for the distribution of gas, the combination, with a hollow curb, of high and low pressure conduits, connecting-pipes, and interposed pressure-regulators, substantially as described.

3. In systems for the distribution of gas, the combination, with a hollow curb having a removable cover and means for ventilation and for the escape of gas, of high and low pressure conduits arranged in said curb and connected by pipes having interposed pressure-regulators, substantially as described.

4. In systems for the distribution of gas, the combination, with a hollow curb containing high and low pressure conduits or pipes, of a supplementary chamber or chambers containing pressure-regulators and a pipe or pipes leading therefrom to the high and low pressure conduits, substantially as described.

5. In systems for the conveyance or distribution of gas, a hollow curb, in combination with a gas conduit or conduits contained therein, said curb being constructed with the adjustable walls or sides, the ribbed or rack-like base-plate, and the removable cap or cover, substantially as described.

6. The combination, with a hollow curb, of high and low pressure conduits and electric conductors, substantially as described.

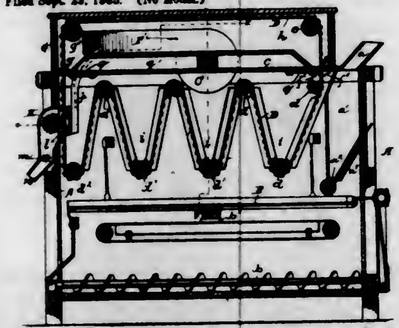
7. In systems for the distribution of fluids in cities and towns, a hollow curb having a removable cap and means for ventilating its interior and allowing the escape of vapors, and conduits located within said curb for the conveyance of fluids, substantially as described.

8. The combination, with a hollow curb containing conduits for the conveyance of gas and provided with escape-openings or ventilators for the egress of leakage-gas, of burners located in close proximity to said openings or ventilators for the ignition and consumption of the escape-gas, substantially as described.

9. A curb for the reception of gas-conduits and having high and low pressure pipes contained therein, in combination with escape-pipes rising or extending from the curb and communicating with the interior thereof, and a pipe leading from one or both the mains or conduits and provided with a burner located in proximity to the escape-outlets of said pipes, so as to ignite the gas issuing from the latter, substantially as described.

10. In systems for the distribution of gas, the combination, with a curb and a gas-conduit extending therethrough, of escape-pipes rising from said curb and a pipe leading from the conduit and provided with a burner located in close proximity with the outlet of the escape-pipe, so as to ignite the gas escaping from said outlet.

333,463. **DUST-COLLECTOR.** NOAH W. HOLT, Jackson, Mich., assignor to the George T. Smith Middlings Purifier Company, same place. Filed Sept. 29, 1885. (No model.)



Claim.—1. In a dust-collector, the combination of the series of rollers *d d' d'*, arranged on parallel lines, the driving-roller *e*, and the roller *g'*, arranged above the rollers *d d*, the filter-cloth supported upon the rollers and having its lower portion arranged in zigzag planes, and the casing provided with openings between the rollers *d d e g'* for the exit of the air, substantially as set forth.

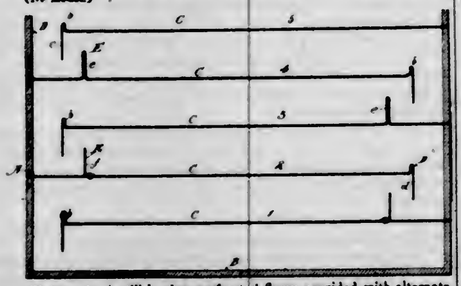
2. In a dust-collector, the combination, with the rollers *d d' e g'* and the filter-cloth D, of the casing, the fan, and the air-trunk *q'*, substantially as set forth.

3. The combination, with the shaker and the casing surrounding the shaker and forming an air-chamber above it, the rollers *d d' e g'*, and the filter-cloth supported on the rollers *d d'* in zigzag planes, of the top plate, *c*, provided at each end with openings for the passage of the filter-cloth, a fan within the casing, and a spout leading from the fan through the casing of the machine, substantially as set forth.

4. The combination, with the shaker and the casing surrounding the shaker and forming an air-chamber above it, the rollers *d d' e g'*, and the filter-cloth supported on the rollers *d d'* in zigzag planes, of the top plate, *c*, provided at each end with openings for the passage of the filter-cloth, a fan, an air-trunk, *q'*, connecting the fan with the space inclosed between the filter-cloth and the casing, and valves to regulate the passage of air through the air-spout to the fan, substantially as set forth.

5. The combination, with a passage or chamber through which the air charged with dust moves and a traveling filter-cloth, of a fan, C, provided with a blast-pipe, *p'*, air-chamber *o*, and an air-spout, *p*, for connecting said air-chamber with the blast-pipe of the fan, substantially as set forth.

333,464. **STILL.** DANIEL HORAN, Chicago, Ill. Filed Apr. 23, 1885. (No model.)



Claim.—1. A still having perforated floors provided with alternate end openings extending the width of said floor, in combination with a water-seal in each of said openings, substantially as described.

2. A still having a perforated floor of sheet metal bent across its end to form one wall of an escape or downtake passage, and a flange extending above the plane of the floor for determining the depth of mash thereon, substantially as described.

3. A still provided with perforated floors of sheet metal bent upon itself at one end to form a weir, and at its other end bent upon itself to form one side wall of a passage for the mash, and the flange for determining the depth of mash upon the floor, substantially as described.

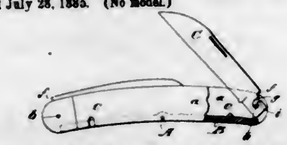
333,465. **MULTIPLE PHOTOGRAPHIC SHEET.** ORRIN L. HULBERT, St. Louis, Mo., assignor to Hulbert Brothers, same place. Filed June 29, 1885. (No model.)



Claim.—1. As a new article of manufacture, an unmounted sheet of fac-simile photographs burnished on its face and gummed on its back, to afford means for the attachment of the pictures as they are detached from the sheet, as specified.

2. As a new article of manufacture, an unmounted sheet of fac-simile photographs burnished on its face and gummed on its back, and perforated between the pictures, as specified.

333,466. **POCKET-KNIFE.** ROBERT GREEN HUNTER, Palatka, Fla. Filed July 28, 1885. (No model.)



Claim.—A blade for knives having a shoulder formed at the juncture of the back of the blade with the heel, and an open slot leading from the back edge of the heel inward and rearward to the usual pivotal point, substantially as set forth.

2. The blade C, having the shoulder *f*, the curved slot *g*, extending from the back edge of the heel inward and rearward to the usual pivotal point, and the projection *i*, terminating in a shoulder in front of the base of the slot, substantially as set forth.

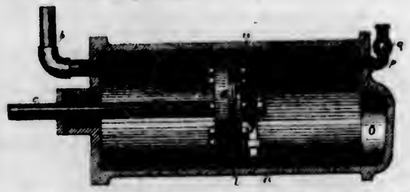
3. The combination, with the handle A, having the usual fixed back spring and pivot, and a slot or slots in the side or sides of the handle extending from the back edge of the handle to a point inside of the handle beyond the back spring, of the removable blade having a curved slot in its heel, substantially as set forth.

333,467. **ROOFING COMPOUND.** CARLETON B. HUTCHINS, Detroit, Mich. Filed Sept. 21, 1885. (No specimens.)

Claim.—1. The improved roofing compound consisting in slickens or the above-described waste material from salt-works, combined with other roofing-compound ingredients, substantially as specified.

2. The roofing compound consisting of slickens or waste material from salt-works, tar, rosin, oil of rosin, oil of pine, and hair, combined substantially in the proportions described.

333,468. **ELEVATOR.** MERRILL N. HUTCHINSON, New York, N. Y. Filed Nov. 5, 1883. (No model.)



Claim.—1. In combination with the piston-head and the cylinder, the pipe or passage *p*, leading from said cylinder to the open air, and a double-acting valve located in said pipe or passage and normally held from both its seats, substantially as described, whereby said passage will be open when the speed of the piston is normal, but closed whenever its speed is abnormally accelerated in either direction.

2. In combination with the cylinder *a* and its piston, the pipe *b*, for admitting water or other fluid for driving said piston, and the pipe or passage *p*, a double-acting valve, *q*, located therein and normally held clear of both its seats, substantially as described, whereby the passage is kept open under ordinary conditions, but closed when the speed of the piston is abnormally accelerated, as set forth.

3. In combination with the piston-head, the carriage *f* and the legs *n*, for retaining the same in position, and the roller *g*, substantially as described.

333,469. **PROCESS OF AND MEANS FOR COATING HANDLES, &c.** EMIL KIPPER, Adams, Mass. Filed June 18, 1885. (Specimens.)

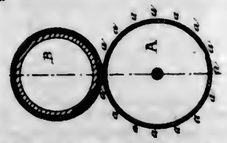


Claim.—1. The combination of a two-part mold or die, each part provided with shoulders *a a*, with a mandrel and hollow core, substantially as described, and for the purpose set forth.

2. The combination of a two-part mold or die, each part provided with shoulders or rests, and a solid core whose ends are supported in said shoulders or rests, substantially as described, and for the purposes set forth.

3. The process herein described of making handles for various articles, which consists in providing a core with a mandrel projecting from the opposite ends thereof, supporting said core by said mandrel in a die or mold, and covering or inclosing the core with a sheet or sheets or tube of plastic material, substantially as described.

333,470. **METHOD OF PREPARING SURFACES FOR PRINTING BY PHOTOGRAPHY.** EDWARD KUNKLER, St. Gall, and JACQUES BRENNER, Kusnacht, Zurich, Switzerland. Filed July 10, 1884. (No model.) Patented in France Jan. 29, 1884, No. 159,994, and in Belgium Jan. 29, 1884, No. 63,992.

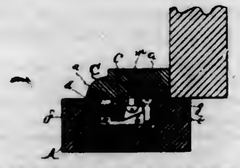


Claim.—1. The method of preparing surfaces for printing by photography, which consists in combining into one plate or sheet two layers of transparent or diaphanous paper, the first or under one of which has the grain or hatching made or printed thereon and is then covered with a sensitive material, and after exposure and development applying the other sheet of diaphanous paper, pressed onto the finished negative, the combined sheet being adapted to be copied from either side of the same.

2. The described method of preparing the first or under layer of the subsequently combined sheet with the desired hatching, marking, or graining, which consists in providing it with the isolating solution or composition, and next the sensitive layer or film thereon, next the exposure, developments, fixing, and other manipulations of the images on the lower sheet being completed, and then applying the second transparent preserving-sheet, so as to form one combined sheet or plate, as and for the purposes set forth.

3. The described method of applying firm styles, trade-marks, or names or other indications to the combined plates herein described, consisting in applying them to the margins or other parts of the plates between the first and second emulsion film or layers prior to the exposure and development, as set forth.

333,471. **WINDOW-STOP FASTENER.** AUGUST LIEBICH, Syracuse, N. Y., assignor to J. Richard Clancy, same place. Filed Aug. 6, 1885. (No model.)

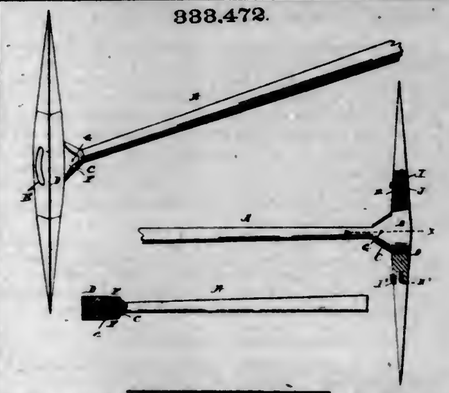


Claim.—A window-stop fastener inserted in stile of frame A, composed of spring *d* and curved body *b*, with tongues and beveled edges, attached to the casing, as shown, and curved body *c*, with grooves and with beveled edges, so constructed as to receive the screw *m* in window-stop rail, and constructed substantially as shown, and for the purposes specified.

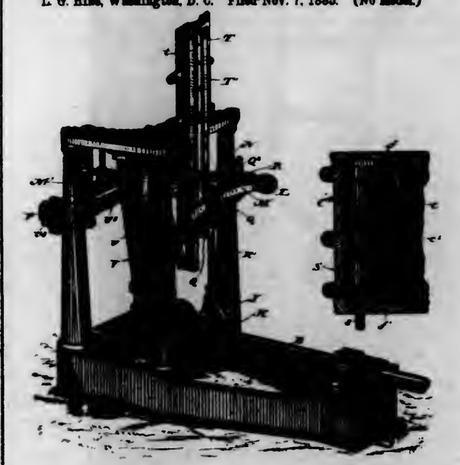
333,472. **MINING-TOOL.** JOHN J. LLOYD, Streator, Ill. Filed Apr 13, 1885. (No model.)

Claim.—In a mining tool or drill, the combination, with a handle having an enlarged flattened tapering end, of a separate metallic collar or sleeve surrounding a portion of said flattened end, and a tool-head provided with wings extending over said sleeve and secured to the handle, substantially as shown and described.

333,472.



333,473. **REVERSING-VALVE GEAR.** PHILO MALTBY, Cleveland, Ohio, assignor of two-thirds to Frank D. Maltby, New York, N. Y., and L. G. Hine, Washington, D. C. Filed Nov. 7, 1885. (No model.)



Claim.—1. In a steam-engine substantially as described, the combination, with a reversing-valve, as E, and with shifting-valves operating in chests upon opposite sides of the main cylinder, of radius-arms, and adjustable connections between said arms and valves, whereby both the throw of the valves and the amount of feed and exhaust may be regulated at will, and the stroke of the piston may be cushioned with exhaust-steam, as specified.

2. The combination, with the cylinder C, chests C^2, C', and D, and the reversing and throttle valve F, of valves, as S S', radius-arms, and adjustable connection, whereby both the throw of the valves and the amount of feed and exhaust may be regulated at will while the engine is running, as set forth.

3. The combination, with a cylinder and two valves, as described, of a single eccentric upon the main shaft, a radius-arm connected with said eccentric and rigidly hung upon a rock-shaft, two radius-arms, and sliding connections with said arms, whereby the throw of either valve may be independently adjusted at will, as set forth.

4. In an engine as described, the combination, with a rock-shaft operated by a single eccentric, of loose radius-arms, connections between said arms and the valves, as S S', and means, as described, for adjusting said radius-arms independently, to regulate the throw of the valves at will, as set forth.

5. In an engine as described, the combination, with a rock-shaft, as N, operated by a single eccentric and carrying rigid arms M M', of loose radius-arms independently adjustable upon said rigid arms, and having adjustable connection with the valves S S', as specified.

6. The arms M M', having slotted plates V V', and carried rigidly upon a rock-shaft operated by a single eccentric, of valve radius-arms, as Q U^3, having adjustable connections with the valves, and clamps or screws v' v^2, as specified.

7. In an engine substantially as described, the combination, with the piston, cylinder, valves, and valve-chests, as shown, of the arms M M', for giving to both valves simultaneous motion in the same direction,

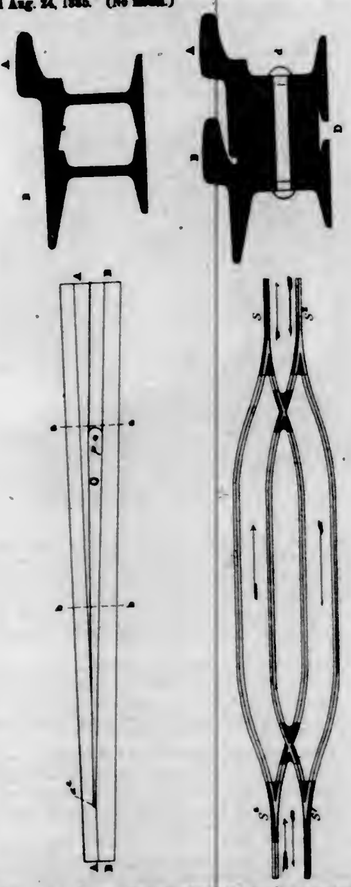
and connections for adjusting the throw of either valve at will, as set forth.

8. In a steam-engine as described, a radius-arm, as M, and adjustable connections with a main eccentric, combined with a slotted plate, V, carried on said arm, a valve-radius having adjustable connection with the valve, and means, as v, for changing the lead of the valve, as set forth.

9. In a reversing steam-engine substantially as described, two feed and exhaust valves arranged on either side of the main cylinder, operated from a single eccentric, and set correspondingly at the commencement of each stroke, combined with connections between said shaft and valve to move the exhaust-valve at a greater rate of speed in the same direction than the feed-valve, to allow for prompt exhaust without setting the exhaust-valve at a lead, as set forth.

10. In an engine substantially as described, the combination, with the cylinder and valve-chests C^3 C^4, arranged as shown, of the valves S S', and mechanism, as described, for adjusting the lead of either valve while the engine is running, and steam-spaces c^3 c^4, formed in the valve-chests opposite the ports c^2 of the cylinder, to balance the valves, as set forth.

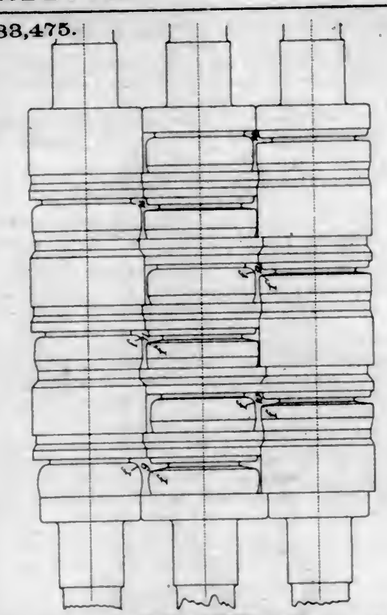
333,474. RAILROAD-SWITCH. Arthur J. Moxham, Johnstown, Pa. Filed Aug. 24, 1885. (No model.)



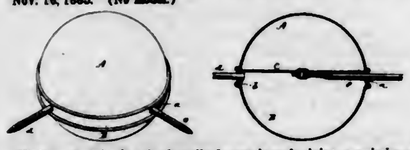
Claim.—A railway-switch for street-car tracks, composed of two rolled side-bearing girder-rails, of similar forms, devoid of guards, cut and fitted together at the necessary angle to deflect the car, secured together at their junction, and at their divergent ends to the main rails of the track, substantially as and for the purposes set forth.

333,475. ROLLS FOR ROLLING GIRDER-RAILS. Arthur J. Moxham, Johnstown, Pa. Filed Nov. 3, 1885. (No model.)

Claim.—A set of rolls for rolling girder-rails devoid of lower flanges, provided with passes of the respective shapes shown in the accompanying drawings, and therein numbered from 1 to 14, inclusive, substantially as described, for the purposes set forth.



333,476. CURTAIN-POLE JOINT. Joseph Munger, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Nov. 16, 1885. (No model.)



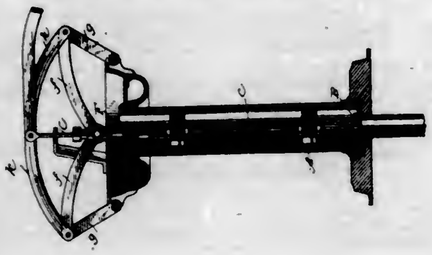
Claim.—1. The herein-described curtain-pole joint, consisting of a shell constructed with a circumferential slot, and a plate, C, rigidly fixed within said shell in a plane parallel with the said slot, and constructed with a rim, said rim cut away corresponding to the length of the slot, combined with one shank fixed to said rim and projecting radially through the shell in a plane parallel to the plane of the plate, and a second shank pivoted to the said plate and extending radially through the slot in the same plane as the fixed shank, substantially as described.

2. A curtain-pole joint consisting of a shell constructed with a circumferential slot and a plate, C, rigidly fixed within said shell in a plane parallel with said slot, combined with one shank fixed to said plate and projecting radially through the shell in a plane parallel to the plane of the plate, and a second shank pivoted to the said plate and extending radially through the slot in the same plane as the fixed shank, substantially as described.

333,477. MECHANICAL MOVEMENT. Philip A. Myers, Ashland, Ohio, assignor of one-half to Francis E. Myers, same place. Filed Oct. 6, 1885. (No model.)

Claim.—1. The combination of the double pistons and rods centrally located, the combined links connected at their inner ends with the pistons, the standards supporting the outer ends of the said links and the operating-lever, substantially as described.

2. The combination of the central shaft connected with the upper



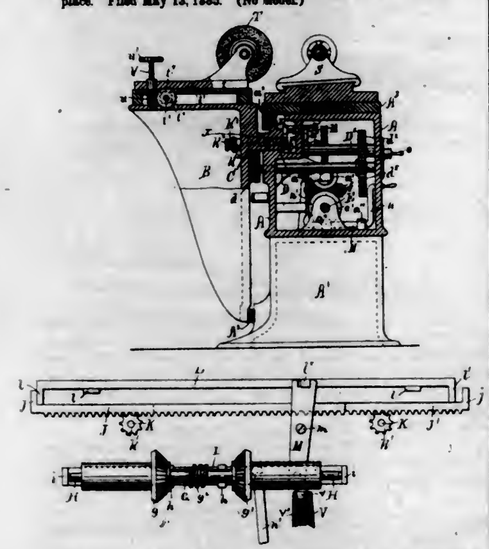
333,477.



links, the sleeve surrounding said shaft, connected to the lower links, the standards, and operating-lever, as set forth

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333,478. GRINDING-MACHINE. Edward H. Parks, Providence, R. I., assignor to the Brown & Sharpe Manufacturing Company, same place. Filed May 13, 1885. (No model.)



Claim.—1. In a grinding-machine, a grinder-carriage reciprocating upon the machine-frame and provided with a rack, in combination with gearing-pinions operating and meshing with said rack to increase the length of travel of the carriage beyond the length of the rack, substantially as described.

2. The combination, with a reciprocating carriage mounted upon the machine-frame and provided with a rack, and with gearing-pinions operating and meshing with said rack to increase the travel of the carriage beyond the length of the rack, of extensible rack-bars provided with adjustable pinions for limiting and reversing the movements of the carriage, substantially as set forth.

3. The combination, with the machine-frame and a carriage reciprocating upon said frame and provided with a rack, of a power-shaft, a reversible clutch geared with said shaft, a shifting-lever operating said clutch, and an extensible rack operating said lever and operated by the carriage, substantially as specified.

4. The combination, with the machine-frame, of a grinder-carriage having covered bearings upon said frame and reciprocating longitudinally upon said bearings and reversible thereon, substantially as and for the purposes specified.

5. The combination, with a reciprocating carriage mounted upon the machine-frame and provided with a rack and with gearing-pinions operating and meshing with said rack to increase the travel of the carriage beyond the length of the rack, of extensible rack-bars provided with adjustable pinions for limiting the movements of the carriage, and a rod, a lever, a shifting-bar, and a locking-bar engaging a reversible clutch-gearing, all substantially as described, and all operated by the said rack-bars for changing the direction of the clutch-gearing to accord with changes in movement of the carriage, as set forth.

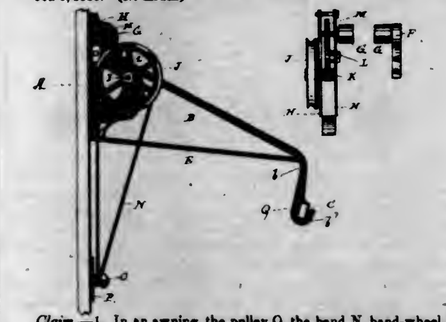
6. The combination, with the frame A, supports A', brace A^2, and carriage B, of the shafts E F D D' D^2 D^3 D^4, the clutch G H I, the lever M, and the gears d d' d^2 d^3 d^4 d^5 d^6, as set forth.

7. The combination, with the gearing, clutch, and driving-shaft, of the carriage B, the rack C, and the pinions d d', as described.

8. The combination, with the carriage having the rack, the gearing, the clutch, and the power-shaft, substantially as set forth, of the hand-bar for reversing the machine and the hand-shaft for operating the gearing, as specified.

9. The combination, with the carriage B, reciprocating longitudinally and carrying the sliding bed t, having the rack t' and grinding-disk T, of the shaft t^2, having the gears t^3 t^4, and the shaft U, having the worm u, as described.

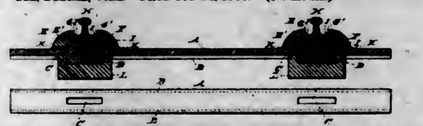
333,479. AWNING. Richard J. Powell, Evansville, Ind., assignor to himself, William F. Nolan, and John Rohrsenbergur, same place. Filed Oct. 9, 1885. (No model.)



Claim.—1. In an awning, the pulley O, the band N, band-wheel J, pinion K, spur-wheels L M, and roller G, in combination with an awning having a pole, C, provided with grooved anti-friction rollers Q, adapted to fit over and travel upon the metallic rods B, forming part of the awning-frame, substantially as described, and for the purposes set forth.

2. In an awning, the supporting-frame consisting of the rods B, having their inner ends adapted to be attached to the wall of a building and to project therefrom in a downward direction, and provided with a downward curve, b, near their lower ends, and upwardly-turned hooks b' at their lower extremities, the horizontal bar D, and the braces E, in combination with an awning provided with a pole, C, having anti-friction grooved rollers Q, adapted to fit over and to ride upon the rods B, the outer portion of said awning and pole C being adapted to hang over the downwardly-curved portion b of the rods B, and to be held in place by means of the upwardly-turned hooks b' at the lower ends of the said rods B, as described, and for the purposes set forth.

333,480. METALLIC RAILWAY TIE AND CHAIR. Lyman B. Primm, Bantam, Conn. Filed Oct. 24, 1885. (No model.)

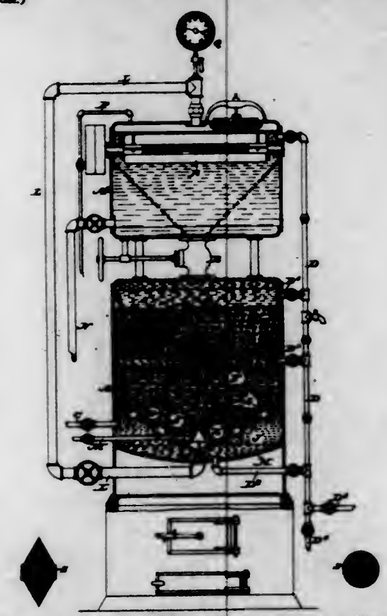


Claim.—1. The combination, with the flanged and slotted steel tie, of the railroad-chair having its inner opposed faces provided with dovetail grooves and its base with a tenon, the flanged rail, and the dovetail keys for locking the rail in the chair, substantially as specified.

2. The combination, with the slotted and flanged steel tie and the slotted re-enforcing-block, of the railroad-chair having grooves in the inner faces of its side lugs, the slotted felt interposed between the tie and the chair, the flanged rail, and the keys for clamping the rail in place, substantially as specified.

3. The combination, with the railway-chair having the grooved lugs, of the wooden strip resting in the bottom of the chair between the lugs, the flanged rail, and the keys for locking the rail in the chair, substantially as specified.

333,481. FILTER. HENRY ROSSER, Philadelphia, Pa., assignor of one-half to Manoel J. Nascimento, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. A filter consisting of the tank A, having within the same hollow diaphragm F, forming chambers, the lowest chamber, J, being free from filtering material and having an inlet-pipe opening into the same, strainers covering the openings between the chambers J and the adjacent chamber containing filtering material, a steam-pipe opening into the filtering-chamber below the filtering material, and the reservoir A', placed above said tank A and having communication therewith both at bottom and top thereof, all of said parts being arranged and combined substantially as and for the purpose set forth.

2. The tank A, having a diaphragm provided with strainers S, consisting of sacks of gauze fabric attached to hollow screw-plugs, substantially as and for the purpose set forth.

333,482. BUTTON. HENRI ROUSE, Fils, and GUSTAVE ROUSE, Paris, France. Filed Apr. 27, 1885. (No model.) Patented in France Dec. 18, 1884, No. 153,468.



Claim.—The combination of the head constructed with the neck *b*, having a T-shaped head and provided with projections *d d*, the supporting-plates *f f* and springs *g g*, rigidly attached, respectively, to the two faces of the neck *b*, between the projections *d d*, and the wings *h h*, constructed with mortises *i*, the said wings being to the said head, all substantially as described.

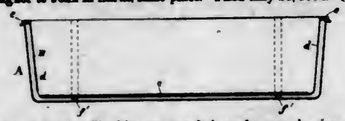
333,483. SCHOOL-SLATE. EDWARD J. STEWART, New York, N. Y., assignor of one-half to Robert A. Wood, Newark, N. J. Filed Dec. 16, 1884. (No model.)



Claim.—1. A transparent and writing slate consisting of a frame having a mortise through one edge and an encircling band of veneer, transparent and writing slates and picture-sheets adapted to be passed through said opening, and a fastening device for securing said slates and sheets in place, substantially as set forth.

2. A transparent and writing slate consisting of a frame having mortise-and-tenon joints near its corners on its inner side, a mortise through one edge, and an encircling band of veneer, transparent and writing slates and picture-sheets adapted to be passed through the said opening, and a fastening device for securing said slates and sheets in place, all substantially as hereinbefore set forth.

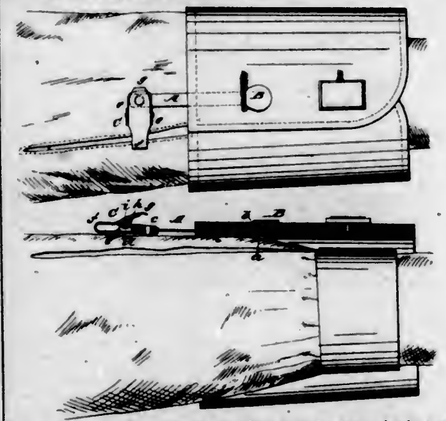
333,484. MILK-SKIMMER. ROBERT H. STEWART, Baltimore, Md., assignor to John R. Large, same place. Filed May 28, 1884. (No model.)



Claim.—1. A milk-skimmer consisting of a pan having walls *d*, a perforated bottom, *c*, attached to the said walls, and vertical rib-guards *f*, projecting on the exterior of the walls, as set forth.

2. A milk-skimmer consisting of a pan having a wall, *d*, and a perforated bottom, c, the exterior of the wall being provided with vertical rib-guards *f*, the lower ends of which turn under the pan-bottom and form feet *f'*, as shown and described.

333,485. CUFF-ADJUSTER. LUKEN A. STILLWAGON, Greencastle, Ind. Filed Apr. 23, 1885. (No model.)

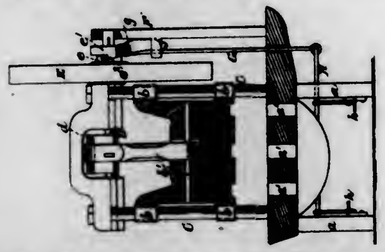


Claim.—1. In a cuff-adjuster, the bar A, having a shank at one end, a button on said shank, and an extension below the button approximately in the plane of the said bar, the said extension forming a lever to assist in removing the button from the cuff, as set forth.

2. The combination, with the bar A, provided with a button, B, of a spring-acted clamp, C, pivoted thereto and capable of turning, so as to form a right or left hand adjuster, as herein specified.

3. In a cuff-adjuster, a pivoted joint formed by a tongue taken from the plate *d* and bent over the end of the bar A, and an eyelet or rivet, *c*, passing through the tongue, the bar A, and the plate *d*, as herein described.

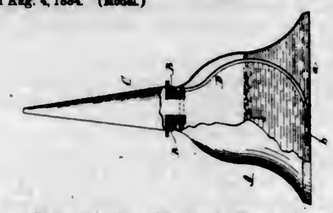
333,486. FORGING-MACHINE. HENRY ST. LAWRENCE, Northampton, Mass. Filed June 12, 1885. (No model.)



Claim.—The combination, with a stationary die-block, A, and rod G, passing up through it, of an upright, F, having a projection through which passes the upper end of said rod, and is rigidly held to overcome

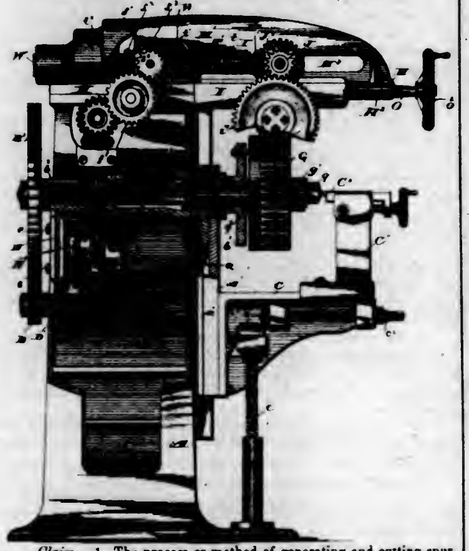
the resistance of the sleeve-spring at each revolution of shaft, as and for the purpose specified.

333,487. BENCH-OILER. JOHN H. STONE, Hamilton, Ontario, Canada. Filed Aug. 4, 1884. (Model.)



Claim.—The combination, with a bench-oiler, A, of a spring, D, secured to the inside top of the body A, bent to correspond generally to the sides of the oiler, and terminating in an eye, *b*, or plate, and made to press against the flexible bottom *a* of the oiler, substantially as and for the purpose specified.

333,488. PROCESS OF CUTTING TEETH OF GEAR-WHEELS. A. SWASEY, Cleveland, Ohio. Filed Mar. 27, 1885. (No model.)



Claim.—1. The process or method of generating and cutting spur-gear wheels herein described, consisting in revolving the blank while its teeth are being cut, and at the same time moving the cutters bodily in the direction that the blank is revolving while said cutters are performing their cutting function, substantially as set forth.

2. The process or method of generating and cutting spur-gear wheels herein described, and consisting, essentially, in simultaneously revolving a blank on its axis and feeding a series of cutters across the face of the blank to cut the teeth, and moving the cutters longitudinally in unison with the blank, substantially as set forth.

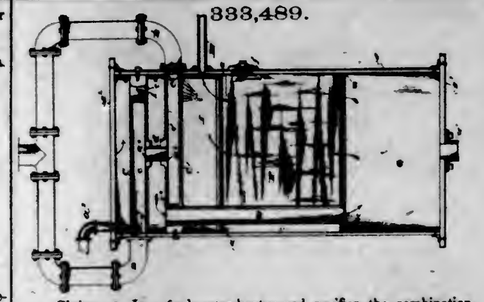
3. The process or method of generating and cutting spur-gear wheels herein described, and consisting, essentially, in simultaneously revolving a blank on its axis and feeding a series of revolving cutters across the face of the blank to cut the teeth, and moving the cutters longitudinally in unison with the blank, substantially as set forth.

4. The process or method of generating and cutting spur-gear wheels herein described, consisting, essentially, in cutting teeth in a revolving blank with a series of cutters revolving on an axis substantially at right angles to the axis of the blank, and causing the said cutters, while cutting, to move longitudinally at substantially the same speed as the pitch-line of the aforesaid blank, and in the same direction, substantially as set forth.

5. The process or method of cutting spur-gear wheels herein described, consisting, essentially, in feeding across the face of a revolving blank a series of cutters revolving on an axis substantially at right angles to the axis of the blank, and causing the said cutters, while cutting, to move endwise at substantially the same speed as the pitch-line of the aforesaid blank, and in the same direction, substantially as set forth.

333,489. FEED-WATER HEATER AND PURIFIER. WILLIAM W. TYLER, Cleveland, Ohio. Filed Oct. 22, 1885. (No model.)

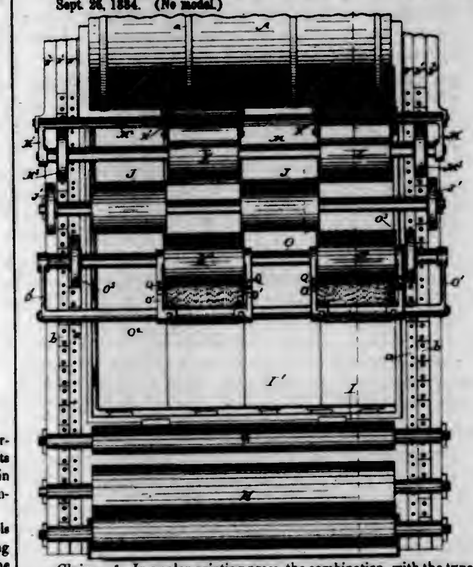
333,489.



Claim.—1. In a feed-water heater and purifier, the combination, with a container having a sediment-chamber below and a filtering-chamber next above the sediment-chamber, of the hollow disks C and C', the parts being arranged substantially as set forth.

2. In a feed-water heater and purifier, the combination, with the hollow disks C and C', said disks having side openings connecting, respectively, with steam-pipes, and a pipe connecting the chambers of said disks, of an induction feed-water pipe arranged to discharge upon the upper disk, vertical openings through the respective disks, and a pipe for conducting the heated water to the sediment-chamber, the parts being arranged substantially as set forth.

333,490. CHROMATIC-PRINTING MACHINE. JOSEPH B. UNDERWOOD, Fayetteville, N. C., assignor to Wm. A. Guthrie, same place. Filed Sept. 26, 1884. (No model.)



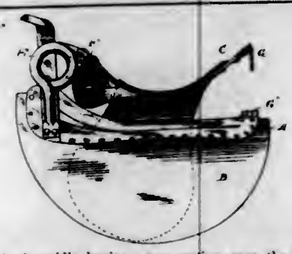
Claim.—1. In a color-printing press, the combination, with the type-bed and the color-inking rollers, one being arranged to traverse the other, of a set of wheels on the ends of the rollers, and a corresponding set of tracks in line with the wheels, and constructed of a bed with screw-holes *a* and equal track-sections *b*, having screw-holes adapted in spacing to the screw-holes of the bed, and arranged as described, to be transferred from one track to the other, as and for the purpose set forth.

2. The combination, with the press having frame E and cylinder A, of the sliding type-bed F, having on a level with its type an ink-transferring table, I, color-fountains arranged upon the frame E, and the final inking-rolls, of which the roll of one color derives its ink direct from its fountain, and the other of which final inking-rolls derives its ink from the other fountain through the transfer-table I, substantially as shown and described.

333,491. RIDING-SADDLE. ALFRED M. WALLACE, Globe, Ariz. Filed Oct. 3, 1885. (No model.)



333,491.



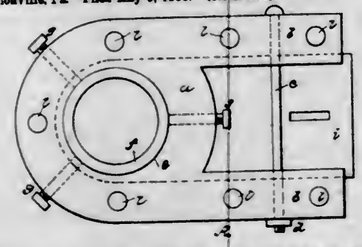
Claim.—1. A saddle having a tree resting upon the back of the animal, a tree separated therefrom and raised from said first-mentioned tree and forming a seat for the rider, and a spring attached to the front end of the seat portion and resting upon the said lower portion of the said trees and constituting the sole connection between them, substantially as described.

2. The combination, with the tree A, resting upon the horse's back, of the seat-tree C and a spring, E, secured to and uniting both of said trees and supporting the tree C at its front end only, substantially as described.

3. The combination, with the tree A, resting upon the horse's back, of the tree C, constituting the seat for the rider, and the spring E, detachably secured to the front end of both trees A and C, and adapted to flexibly support the tree C in the desired position and at its front end only, as set forth.

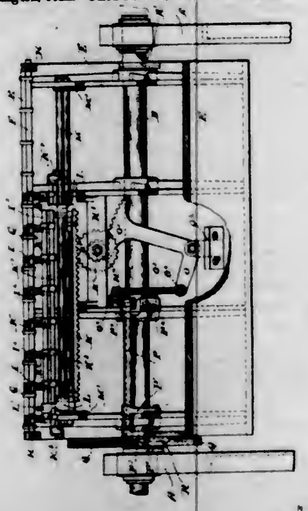
4. The combination, with the fixed tree A, of a saddle-seat, C, and spring E, attached to the front end of said seat and supporting it by its front end only, and latching devices extending between the free end of the saddle-seat and the fixed tree, substantially as and for the purpose set forth.

333,492. SLIDE-VALVE FOR OIL-WELLS. JAMES B. WATSON, Marionville, Pa. Filed May 5, 1885. (No model.)



Claim.—The combination, with the frame consisting of the twin plates having the slideway, branch arms *b*, and slide *i*, of the securing-screws *g* and *c*, substantially as described, and for the purpose set forth.

333,493. CHROMATIC-PRINTING MACHINE. WILLIAM WHEELER, Jr., Stonington, Conn. Filed Feb. 28, 1885. (No model.)



Claim.—1. The combination, with the cylinder and ordinary grippers of a printing-press, of auxiliary grippers, carriers therefor, mechanism—for example, a cam, rock-shaft, bell-crank lever, and gearing—for moving the carriers backward and forward at predetermined times, and mechanism—for example, cranks and cams—for opening and closing the auxiliary grippers at predetermined times, substantially as and for the purpose set forth.

2. The combination, with the cylinder and grippers of a printing-press, of auxiliary grippers, carriers therefor, and mechanism—for example, a cam, rock-shaft, bell-crank lever, and gearing—for moving the carriers backward and forward at predetermined times.

3. In a printing-press, auxiliary grippers consisting of rests secured to a rod which is rigidly secured to carriers, and gripper-fingers secured to a rod which is free to turn in the carriers, in combination with mechanism—as cranks at the ends of the rod, and stationary cams engaged by the cranks—whereby the grippers are caused to open and close at predetermined times.

4. Rests I, secured to rigid rod I′, in combination with fingers K, held in sleeves I^3, and pivoted at their lower ends to lugs projecting from a loose shaft, and springs K^3 upon the finger-shanks, whereby when thrown past the center the fingers are held to either their open or closed positions.

5. Rod I′, having rests I, with pivoted sleeves I^3, secured thereto, in combination with rod K′, having sleeves with projecting lugs, and gripper-fingers K, held in said sleeves and pivoted to the sliding blocks.

6. The auxiliary grippers, carriers, and rack, in combination with fixed cam Q, and intermediate mechanism—as a rock-shaft having a crank at each end, connecting-rod, bell-crank lever, and gearing—whereby the carriers with the auxiliary grippers are caused to move backward and forward during each revolution of the cylinder.

7. Cam Q, having outwardly-curved flange Q′ and inwardly-curved flange Q^2, rock-shaft P, having a crank which engages the cam, and at its opposite end a crank with an eye for one end of the connecting-rod, in combination with a bell-crank lever having at one end an eye for the other end of the connecting-rod, and at its other end a segment-gear which imparts through intermediate gearing backward and forward movement to the carriers and auxiliary grippers.

8. The cylinder-plates M′, and rods M, secured therein, in combination with the auxiliary grippers, carriers therefor, which move on the rods, and mechanism—as the rock-shaft having cranks, bell-crank lever, and gearing, and a stationary cam—whereby the carriers are moved backward and forward at predetermined times.

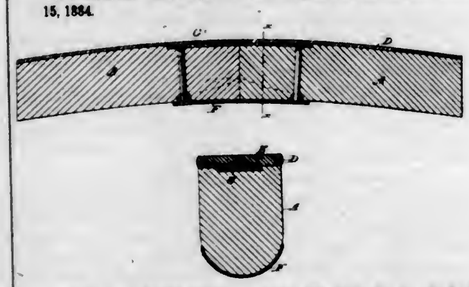
9. The cylinder, and rods M, secured thereto, in combination with the carriers supported on said rods, the gripper-rods I′ and K′, supported in the carriers, and stationary cams at opposite ends of the cylinder, which are engaged by cranks upon rod K′ to open and close the grippers at predetermined times.

10. In a printing-press, the combination, with the cylinder and the main grippers, of auxiliary grippers, which seize the sheet before it is released by the main grippers, and when it is released carry it forward a predetermined distance before the main grippers again close upon it.

11. In a printing-press, the combination, with the cylinder, the main grippers, and the auxiliary grippers, of a reel for removing the sheets, which is provided with a reduced portion, S^3, substantially as and for the purpose set forth.

REISSUES.

10,676. TIRE AND FELLY FOR WHEELS. PATRICK W. MCGUIRE, South Bend, Ind. Filed Sept. 15, 1884. Original No. 292,028, dated Jan. 15, 1884.



Claim.—1. The combination, with the fellies having a central raised rib, B, of the tire D, having a central channel or groove, E, formed below the contact-face of the tire and corresponding in form to the rib B, substantially as and for the purpose set forth.

2. The combination, with the felly A, having the curved central rib, B, the metallic rib G, adapted to form a continuation of the rib B, and the tire D, provided with the central groove corresponding to the rib B of the felly, substantially as and for the purpose set forth.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

THE CONSOLIDATED ELECTRIC LIGHT COMPANY *v.* THE EDISON ELECTRIC LIGHT COMPANY *et al.*

Decided December 4, 1885.

1. ON DEMURRER.

The inventors A assigned the whole of their invention before a patent therefor was granted to B, who subsequently assigned it to C. C in turn assigned it to D. All these assignments were executed and were duly recorded in the Patent Office more than two years before the patent was granted. The patent was granted to B, the immediate assignee of the inventors, who at the time the patent was issued had no interest of record in the invention. *Held*, that the patent so granted is valid.

2. The title to a patent so granted by operation of law instantly vests in the ultimate assignee.

3. A patent is valid when granted to any assignee of record.

4. The words "assignee of the inventor or discoverer" in section 4895 United States Revised Statutes construed.

Mr. E. A. Dickerson, Mr. Amos Broadnax, and *Mr. J. Edgar Bull* for the complainant.

Mr. William M. Evarts, Mr. J. C. Tomlinson, and *Mr. R. N. Dyer* for the defendants.

WALLACE, *J.*

The bill of complaint alleges infringement by the defendant of letters patent for a new and useful improvement in electric lights, of which Sawyer and Man were the inventors, bearing date May 12, 1885, granted to the Electro Dynamic Light Company, its successors and assigns, as assignee of Sawyer and Man. It appears by the bill that the application for the patent was filed by the inventors in January, 1880; that in January, 1880, they assigned their whole interest in the invention to the Electro Dynamic Light Company; that in April, 1881, that company assigned the invention to the Eastern Electric Manufacturing Company, and that the Eastern Electric Manufacturing Company in September, 1882, assigned the invention to the complainant. It further appears that all of these assignments were duly recorded in the Patent Office more than two years before the patent was granted.

The defendant has demurred to the bill, and the point raised by the demurrer is that the patent is void, because the Electro Dynamic Light Company, the grantee named in the patent, had assigned its interest to the complainant before the patent issued, and had no interest of record in the patent at the time the same was issued. The demurrer admits the validity of the assignments made by the Electro Dynamic Light Company to the Eastern Manufacturing Company and by the latter company to the complainant, and no question is made, or can be made, respecting their efficacy to invest complainant with the title of the Electro Dynamic Light Company to the invention. The title thus acquired by the complainant is as effectual to protect the defendant against any claims of the Electro Dynamic Light Company as if the assignment had been made by that company to the complainant after the patent had issued.

If the demurrer is good, the complainant, although the owner of the invention and the sole party entitled to enjoy the monopoly conferred by the patent, will be defeated, because of the inadvertence or erroneous action of the Patent Office in issuing the patent to a corporation which cannot challenge the complainant's rights or assert any adverse claim against the defendant. It may well happen occasionally in the pressure of business at the Patent Office that an assignment made during the pendency of an application may be overlooked, although duly recorded, and the patent be issued to the inventor, or to an intermediate assignee whose assignment is on record. If whenever this happens the patent is to be deemed void, notwithstanding the title of the grantee named in it is instantly vested in the true owner by operation of law, and, notwithstanding no possible injury or inconvenience can be occasioned to third persons or to the public, the result would be one of such unnecessary hardship that it is not reasonable to suppose that it could have been contemplated by Congress while framing the provisions of the patent laws. The person entitled to the benefit of the monopoly might not ultimately lose his property; he might be able to induce the proper authorities of the Government to file a bill in equity in the name of the United States to repeal the patent because granted by mistake; (*U. S. v. Stone*, 2 Wall., 525; *Mowry v. Whitney*, 14 Wall., 434;) but he would lose it in the meantime.

As the property in the monopoly is the creature of statute, the defendant properly asserts that no title was acquired by the complainant unless it has devolved pursuant to the statutory provisions which authorize patents to be issued to the assignees of inventor. These provisions are found in section 4895 United States Revised Statutes, which declares that—

> patents may be granted and issued or reissued to the assignee of the inventor or discoverer, but the assignment must first be entered of record in the Patent Office.

This section is a reproduction of section 33 of the patent law of 1870, and there is no other section and no other language in the act which bears upon the present question. The section originated in section 6 of the act of 1837. (5 Stats. at Large, 191.) Prior to that act there was no provision of law for issuing a patent to any person except the inventor. That section employed the language of the present section. The question then is what is meant by the term "the assignee of the inventor or discoverer." In one sense the as-

signee of the inventor can be no other than the person or corporation to whom the inventor or discoverer has executed an assignment. The grantee in the present case, the Electro Dynamic Light Company, did not cease to be "the assignee of the inventor" because it became an assignor to the complainant, athough it did cease to have any legal or equitable interest in the invention after executing the assignment to the complainant. The language of the section is as literally and accurately satisfied when the patent is issued to the inventor's assignee as it is when it is issued to the assignee's assignee. The latter is an assignee of the patent, but not strictly the assignee of the inventor. Congress recognized this distinction in section 4 of the patent law of 1793, which was the earliest provision for the protection of assignees, and authorized their assignments to be recorded in the Patent Office. That section, after providing that any inventor might assign his invention, declared that—

the assignee, having recorded the said assignment in the office of the Secretary of State, shall thereafter stand in the place of the original inventor both as to right and responsibility, and so the assignee of assigns to any degree.

It would seem, therefore, that the term "assignee" as first used in the patent laws was used in its most strict and literal sense, and was understood to refer to the inventor's assignee, and that, in order to extend the benefits of the provision to subsequent assignees, it was deemed proper to designate them as "assignees of assigns to any degree." It is undoubtedly a fair and reasonable interpretation of the section in question to hold that the patent may issue to the person who by the records of the Office is assignee of the patent, although not technically the assignee of the inventor. Such was the ruling in *Selden* v. *Stockwell Gas Burner Company*, (19 Blatch., 544.) The purpose of the section is to permit a patent to issue to the person who has the title to the invention upon the records of the Patent Office. This purpose is attained when the patent runs to the ultimate assignee of the invention. It is equally well attained when the patent runs to the inventor, or to the inventor's assignee, if by force of an assignment on record at the time the grant inures, as soon as the patent issues, to the ultimate assignee. That the legal title vests at once in the person who by the records is entitled to it was held in *Gaylor* v. *Wilder*, (10 How., 477.) That case is also authority for the proposition that it is not mandatory under the language of the section that the patent run in form to the person who is the owner of the invention according to the records of the Office at the time when the patent issues. In *Gaylor* v. *Wilder* the patent was issued to the inventor after the act of 1837, notwithstanding he had assigned his whole invention to another whose assignment was duly recorded before the patent issued; and it was held that the legal title to the invention was notwithstanding in the assignee and not in the inventor. The plaintiff in that case could have acquired no legal—that is no statutory—title if the patent could only issue lawfully to the person who was the owner of the invention at the time.

Nothing in the language of the section or in the other sections of the patent laws implies that a patent cannot be properly issued to any assignee whose assignment is duly recorded when it can be done without impairing the rights of any other person having a paramount title to the invention.

Inasmuch as the grant runs to the grantee named in the patent and his assigns, and operates, therefore, in favor of the ultimate assignee to convey him a record title as completely as if he had been named in the patent, and, as it is not essential that the grantee named be one who owns the invention when the patent issues, it should be held that a patent is valid when issued to any assignee of record.

The demurrer is overruled.

U. S. Circuit Court—District of Vermont.

AMERICAN DIAMOND ROCK BORING COMPANY v. SHELDON *et al.* SAME v. SUTHERLAND FALLS MARBLE COMPANY. SAME v. GILSON *et al.*

Decided December 9, 1885.

1. An arrangement of devices was described in an original patent, although it was not called a combination. *Held*, that a reissue calling it a combination, and containing a statement that the invention consisted also in this combination, does not appear to vary the prior description in effect.
2. If separable claims of the reissue cover the same invention as the original, and no more, such claims would seem to be as valid as the original, and would be infringed by whatever would infringe that.
3. The enlargement of the scope of a claim six years after the original patent is not valid according to the series of later decisions upon reissued patents.
4. The act of 1837 and the present statutes carefully limit the right of a party in an action to such material and substantial parts of the thing patented as could be definitely distinguished from the parts claimed without right.
5. The parts of the claims in this reissue which might cover the infringement are so blended with the other parts that they cannot be distinguished therefrom, and the bill must thereupon be dismissed.

Mr. Edward C. Thompson and *Mr. Benjamin F. Thurston* for the plaintiff.

Mr. Edwin T. Rice and *Mr. Aldace F. Walker* for the defendants.

WHEELER, *J.*:

These causes have been reheard pursuant to the granting of the motion for that purpose. (24 Fed. Rep., 374.) It still appears that Leschot made a valuable invention, which he patented in original Letters Patent No. 39,235, dated July 14, 1863, the substance and principle of which the defendants have made use of, as has been before held in these cases. (17 Blatchf. 208, 303; 2 Fed. Rep. 353.) The patent was reissued in No. 3,609, dated October 26, 1869, to his assignee. The material question now is whether the reissue or any part of it is valid to cover this infringement. The original had a single claim for a tool for boring or cutting rock or other hard substances composed of an annular or tubular stock or crown armed with a series of diamonds and operating substantially as in the specification specified. It was there described as operating by being fastened to a tubular boring-bar having a rotary and a direct forward motion, through which a stream of water could be injected to wash out and carry away the detritus produced. The specification is not added to in the reissue except to state in the description of what the invention consists in; that it consists also in the combination, with the described boring-tool, of the tubular boring-bar, whereby motion is imparted to the boring-head, and through which a stream of water is forced. This combination was described before when the description of the tool and of its connection with and operation by the boring-bar was given, although it was not called a combination; and the calling it a combination, or the statement that the invention consisted also in this combination does not appear to vary the prior description in effect. The reissue has four claims, and the claim of the original is not in terms reproduced in either. The first is for a continuously revolving and progressing boring-head having projecting diamond points in combination with a tubular boring-bar, substantially as and for the purposes specified. The second is for the row of cutting-edges when attached to a revolving boring-head so as to project beyond the circumference thereof, for the purposes specified. The third is for a revolving and progressing boring-head having cutting-points projecting beyond the periphery thereof, in combination a hollow central drill-rod through which water is forced or passed. The fourth is for a series of cutting-edges arranged in the face and upon the outer and inner peripheries, respectively, of a tubular or annular bit or boring-head, substantially as and for the purposes specified. The defendants have used during the life of the reissue a conical boring-head armed with diamonds set flush with the periphery and in various places on the conical surface, so as to cut away the whole core formed upon an annular stock connected with and operated by a tubular boring-bar, through which and through the annular stock and holes in the boring head water was passed to wash out and carry away the detritus produced by a rotary and a direct forward motion given to the boring-head by the boring-bar. This was Leschot's invention without the diamonds projecting circumferentially beyond the periphery, and with the addition of the central portion armed with diamonds for cutting away the whole core.

A substantial part of Leschot's invention as patented in his original patent appears to have been taken by this use, and, although taken to be improved upon, the taking would nevertheless appear to have been an infringement of the original patent, if in force. It is argued that separable claims of the reissue cover the same invention as the original and no more. If so, such claims would seem to be as valid as the original, and would be infringed by whatever would infringe that. (*Gage* v. *Herring*, 107 U. S 640; *Reed* v. *Chase*, 25 Fed. Rep., 94.) As the second claim is limited to a row of cutting-edges when attached to a revolving boring-head, so as to project beyond the circumference, and the third to a combination of a hollow drill-rod with a boring-head having cutting-points projecting beyond the periphery, and the fourth to a series of cutting-edges arranged upon a tubular or annular boring-head, and the defendants have not used cutting edges or points projecting beyond the circumference or periphery of a boring-head, nor a tubular or annular boring-head, the defendants have not infringed either of those claims as they are made, and they may be laid out of further consideration. The first claim is not for a tool operating substantially as specified, as the claim of the original patent is, and does not therefore take in the operation including the means of operation, as that claim might, but is for the combination of any boring-head having projecting diamond points with merely a tubular boring-bar. It leaves out the injection of water through the boring-bar from the combination which the claim of the original might cover, and leaves out the limitation of that claim to an annular boring-head, and extends the combination to that extent beyond what the original would cover. This enlargement of the claim so long after the original is not valid according to the series of later decisions upon reissued patents as now understood.

The combination is an entirety, not separable from what the original would cover. The statute in force when this patent was first granted giving patentees the right to maintain an action for infringement of such parts of their inventions as were *bona fide* their own, as well as that in force when the reissue was granted and now carefully limited the right to such material and substantial parts of the thing patented as could be definitely distinguished from the parts claimed without right. (Act of 1837, Chap. 45, 5 Stat. at Large, 191, sec. 9; Rev. Stat., secs. 4922; *Gage* v. *Herring*, 107 U. S., 640.) The part of this claim that might cover the infringement is blended with and not separable or distingnishable from the rest. There is no claim in the reissue, or set of claims, that covers the same invention as the original and no more, and no claim of the reissue that is within the claim of the orginal and covers the infringement. These considerations lead to the same result that was reached upon the same patent in *American Diamond Drill Co.* v. *Sullivan Machine Co.*, (21 Fed. Rep., 74.) A decree dismissing the bill of complaint necessarily follows, but upon the conditions as to saving what has been done upon the accounting in case of an appeal and reversal which were made on granting the rehearing.

Let a decree be entered dismissing the bill of complaint without prejudice to the accounting had in case of reversal on appeal.

DECISIONS OF CANADIAN COURTS.

High Court of Justice—Chancery Division.

BALL *et al* v. THE CROMPTON CORSET COMPANY *et al.*

Decided June 25, 1884.

1. Parties having been in interference in the United States Patent Office, and after consideration of a large amount of evidence judgment having been then rendered against the defendant, the court here upon this evidence reaches the same conclusion.
2. In regard to the question as to what constitutes invention, the court adopts the language employed in *Penn* v. *Bibby*, (2 Ch'y App., 127, 135, 136,) that "it is very difficult to extract any principle from the various decisions on this subject which can be applied with certainty to every case, nor indeed is it easy to reconcile them with each other. * * * In every case of this description our main consideration seems to be whether the new application is so much out of the track of the former use as not naturally to suggest itself to a person turning his mind to the subject, but to require some application of thought and study."

PROUDFOOT, *J.*:

The plaintiffs are several persons, (including Simon Florsheim, the patentee,) trading under the style of "The Chicago Corset Company," and Messrs Brush & Bro., licensees for Canada of the patent in question. The defendants are the Crompton Corset Company and some persons who have purchased from them and sold by retail articles alleged to be an infringement of the plaintiffs' patent. On the 29th of April, 1881, the Government of Canada, by letters patent, granted to Simon Florsheim, his executors, administrators, and assigns, for five years, the exclusive right, privilege, and liberty of making, constructing, and using, and vending to others to be used, his invention, known by the name of "Florsheim Gore," being a new and useful improvement on elastic gores, gussets, &c., for wearing-apparel, a short description of which is as follows:

It consists, first, in an elastic gore, gusset, or section for wearing-apparel, composed of a covering material, having tubes, spiral metal springs inclosed by such tubes, and not extending to the edges of the covering material, and stayed at their ends by such covering material, and inelastic margins outside of the springs; second, in an elastic gore, gusset, or section of the character described, the springs arranged in groups and made of a continuous length of coiled wire; third, in an elastic gore, gusset, or section of the character described, the metal fastenings C extending across the ends of the tubes between the thicknesses of the covering material.

The defenses set up were that Florsheim was not, and that Gustav Schilling was, the first inventor, and that the defendants had not infringed. Both of these I find upon the evidence in favor of the plaintiffs.

It was attempted to prove the first by Schilling himself, and he certainly swore that he was the inventor and had communicated it to Florsheim. They had

been concerned in several applications for patents of a kind similar to this, but when they applied to a solicitor of patents in Washington to get a joint patent in the United States for the present invention, he both told them it was Florsheim's invention, and he informed them it could not be the subject of a joint patent; and thereupon the invention was patented in the United States in Florsheim's name alone. Schilling afterward "interfered," as it is termed, with regard to that patent, and a great deal of evidence was taken, and Schilling abandoned his claim, as he says, from want of means to prosecute it. I think, upon this evidence, I must prefer Florsheim to Schilling as the inventor.

As to the second issue, it was shown that the only variation between the plaintiffs' gore or gusset and that made by the defendants is that, instead of continuing the coiled spring from group to group of the springs as the plaintiffs do, the defendants sever the wire and connect the groups with a string or cord. This I consider to be merely an attempt to evade the patent, and that it is an infringement of the invention.

Other defenses (3) deny the invention to be useful, and (4) deny that the alleged invention was one for which a patent could be granted, and (5) say that the invention was used by others before the alleged invention by Florsheim, (6) and that the patents for the invention were in existence in the United Kingdom of Great Britain and Ireland and in the United States of America more than twelve months prior to the application in Canada for a patent. It was clearly established that the invention is useful.

As to the other defenses, I think I must find in favor of the defendants.

To constitute the subject of a patent there must be some real novelty in the invention, either by a new combination of old existing materials or else by the discovery of something that did not exist before. (Per the master's report in *Thompson* v. *James*, 32 Beaven, 570, 573.)

It was shown that a patent was granted in England in 1815, No. 3,894, to one John Mills for an improvement on elastic stays, which consisted in an elastic portion or slip down the middle composed of springs either of brass, copper, or iron wire, but the inventor recommended

small brass wire worm-springs, placed close together in runners or spaces stitched in between two pieces or layers of silk, satin, or other fit material, puckered or quilted loosely to give room for expansion, the ends of the springs and their covering of silk, satin, or other material on them sewed or otherwise fastened to and between the two half-pieces of the stay.

In this the puckered cloth, stitched tubes, and coiled brass wire for springs are similar to the plaintiffs', but it has not the continuous spring nor the inelastic margin, and is not sufficient to invalidate the plaintiffs' patent. Several other English patents were produced anticipating different parts of combination of the plaintiffs', but, except one, I do not think any of them embraces the whole of plaintiffs' invention. That one is the patent to the Millers, of December 31, 1866, No. 3,451, for improvements in the manufacture of elastic gussets. That invention, as stated in the specification, had for its object

improvements in the manufacture of gussets suitable for use in boots and stays, and for other purposes. In the manufacture of gussets it had been usual to weave the vulcanized india-rubber springs into the fabric in the process of manufacture, the india-rubber forming a part of the warp of the fabric; or, where the gussets were of leather, the vulcanized india-rubber springs were commonly attached to the leather by means of cement, and in either case each line or spring of india-rubber was a separate piece.

But in the invention of the Millers they

secured the vulcanized india-rubber springs between two pieces of woven fabric, leather, or other material by stitching with a sewing-machine, the stitches running in parallel lines and passing through the two pieces of fabric or material between the india-rubber springs, and the springs, in place of being each a separate piece, were in one piece, the length of the vulcanized india-rubber cord at the end of each traverse across the gusset being turned round and caused to return parallel to itself. Thus the liability of the india-rubber to slip and work out of the gusset was much reduced. When gussets made in this manner are worked into boots or other articles, the stitches by which they are secured are passed through a margin on each side of the gusset, and not through the india-rubber part of the gusset, as heretofore.

And in describing the mode of making their gusset they describe a process of crimping or puckering, and also a mode of making an extra strong margin of inelastic material. So that in this patent there is a combination of puckered or crimped cloth for the gusset, tubes formed by stitching the double thickness of cloth, and the employment of a continuous spring.

The only question, then, is whether the substitution of a coiled spring for india-rubber and the arrangement of the tubes into groups are sufficiently novel and display enough invention to entitle the plaintiffs to a patent. I think they are not. Mr. Powers, one of the plaintiffs' witnesses, thought it did require inventive genius to substitute continous wire for rubber. Mr. Smith, another of plaintiffs' witnesses, says that substitution of wire for rubber would not be patentable of itself; the manner of substitution was the invention. In ordinary use rubber is frequently used as an equivalent for metal springs; in many cases they are interchangeable. He thinks Miller's patent distinguishable, as it did not group the springs. Mr. Ridout, also a witness for the plaintiffs, while speaking of Miller's patent, says that if the plaintiffs' wire springs were only a substitute for rubber, the one would be an equivalent for the other; but if, in addition, it supplies a defect in the rubber material, then it is not an equivalent. Mr. Grist, called for the defendants, says that the rubber and coiled wire are mere mechanical equivalents, and in 1866 both were known as elastic equivalents.

From this evidence I think the plain result is that the coiled wire is only a mechanical equivalent for the india-rubber spring, and that it does not possess any element of invention.

The arrangement of the tubes in groups was not new, though it does not seem to have been so used in connection with a continuous spring until the present patent. But it does not seem to me to be a patentable invention. The only use of the arrangement is to increase or diminish the stiffness of the gusset, some groups having more springs than others, according to the stiffness required at any particular point. But this is not an invention. It is only a mode of applying the invention to suit particular cases, and according to the stiffness required. There might be no groups at all, when it would be simply the Miller arrangement. Leaving out a spring here and there to diminish the tension of the gusset has no element of invention.

In *Thompson* v. *James* (32 Beav., 570) the substitution of hoops made of steel watch-springs instead of hoops made of whalebone, cane, and other substances was held not to be the subject of a patent.

What combinations of old inventions will sustain a patent was discussed at considerable length in *Smith* v. *Goldie* in the court of appeal, and in the Supreme Court I adopt the language of Lord Chelmsford in *Penn* v. *Bibby* (2 Ch'y App., 127, 135, 136) quoted by Ritchie, C. J., that—

it is very difficult to extract any principle from the various decisions on this subject which can be applied with certainty to every case, nor indeed is it easy to reconcile them with each other. * * * In every case of this description our main consideration seems to be whether the new application is so much out of the track of the former use as not naturally to suggest itself to a person turning his mind to the subject, but to require some application of thought and study.

In *Smith* v. *Goldie* the Supreme Court came to the conclusion that the result in that case was produced by the combined and simultaneous action of the draft upward, created by the fan, and the continuous operation of the brush or brushes worked by the machinery. It was the simultaneous action of both which produced the result. It would not have been obtained by the independent action of either. It was, therefore, to all intents and purposes a combination that produced simultaneous results, this simultaneous action not having been previously obtained. I do not see in that case, much relied on by the plaintiffs' counsel, or in the numerous cases referred to in it, anything to lead one to the conclusion that in the present case there was any such novel combination as is necessary to support a patent.

I have not thought it necessary to refer to the other patents in the United States, nor to quote minutely the numerous cases cited to me. None of them seem to me to affect the decision that ought to be arrived at in this case.

The action is dismissed, with costs.

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OFFICIAL GAZETTE—October—December, 1885.

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ABANDONMENT.

ABANDONMENT—POVERTY—SICKNESS—INSANITY.

Continued poverty, sickness, and mental alienation are sufficient excuses for delay in procuring a patent. Abandonment to public *held* not shown.

[*Celluloid Manufacturing Company v. Crofut *et al.*, 235.

AMENDMENTS.

(See Interference, 1, 2; Oath.)

1. AMENDING AND ENLARGING CLAIMS BEFORE ISSUE.

An inventor may amend or enlarge his claims from time to time before the issue of his patent, in order to embrace everything which was specified at the start.

[*Railway Register Manufacturing Company v. North Hudson Railway Company *et al.*, 355.

2. SAME—BY ATTORNEY.

On examination of the original specification of Patent No. 223,915, dated November 2, 1880, for a fare-register, *held* that the invention for which the patent was issued was sufficiently shown and described therein, and that the attorneys of the inventor had authority to insert amended claims in consonance with said specification without having them verified by the oath and signature of the patentee.

[*Id.

ANALOGOUS DEVICES.

(See Particular Patents, 11.)

ANTICIPATION.

(See Double Use; Particular Patents, 10.)

APPEALS.

(See Examination of Applications for Reissue, 4.)

APPLICATIONS FOR REISSUES.

(See Examination of Applications for Reissue, 1, 2, 3, 4.)

ASSIGNEES.

(See Parties to Suit, 4; Title to Patent, 6, 7, 8.)

ASSIGNMENTS.

(See Parties to Suit, 1, 2; Title to Patent, 5, 6, 7, 8; Use of Patented Articles, 1, 2.)

ATTORNEYS.

(See Amendments, 2.)

BILL IN EQUITY.

(See Infringement, 1; Parties to Suit, 3.)

BURDEN OF PROOF.

(See Infringement, 2.)

CANADIAN COURTS.

1. Parties having been in interference in the United States Patent Office, and after consideration of a large amount of evidence judgment having been then rendered against the defendant, the court here upon this evidence reaches the same conclusion.

[§Ball *et al. v.* The Crompton Corset Company *et al.*, 1599.

2. In regard to the question as to what constitutes invention, the court adopts the language employed in *Penn* v. *Bibby*, (2 Ch'y App., 127, 135, 136,) that "it is very difficult to extract any principle from the various decisions on this subject which can be applied with certainty to every case, nor indeed is it easy to reconcile them with each other. * * * In every case of this description our main consideration seems to be whether the new application is so much out of the track of the former use as not naturally to suggest itself to a person turning his mind to the subject, but to require some application of thought and study."

[§Id.

CLAIMS.

(See Reissues, 1, 4, 9, 10, 11.)

COMBINATION.

(See Dedication to the Public, 1, 2; Reissues, 8.)

ANTICIPATION—COMBINATION.

A combination is patentable only when the several elements of which it is composed produce by their joint action a new and useful result, or an old result in a cheaper or otherwise more advantageous manner.

[*Railway Register Manufacturing Company v. North Hudson Railway Company *et al.*, 355.

COMMISSIONER OF PATENTS.

(See Examination of Applications for Reissue, 2; Parties to Suit, 3; Reissues, 2.)

CONSTRUCTION OF RULES.

(See Interference, 3, 4, 5; Oath.)

The purpose of Rule 35 is to secure the verification of each and every part of the invention claimed by applicant.

[*Ex parte* Foster, 113.

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Parties to Suit, 1, 2; Public Use; Reissues, 3, 4, 5, 7, 8, 9.)

The act of 1837 and the present statutes carefully limit the right of a party in an action to such material and substantial parts of the thing patented as could be definitely distinguished from the parts claimed without right.

[*American Diamond Rock Boring Company v. Sheldon *et al.*, 1598.

CONSTRUCTION OF STATUTES.

(See Construction of Specifications and Patents; Division of Application, 1; Title to Patent, 4, 8.)

DAMAGES AND PROFITS.

(See Infringement; Injunction; Parties to Suit; Reissues, 2.)

DEDICATION TO THE PUBLIC.

1. The claim of a specific device or combination in a patent and the omission to claim other devices or combinations apparent on its face are in law a dedication to the public of that which is not claimed.
[*Hill *et al.* *v.* The Commissioner of Patents, 757.

2. When such omission arose from inadvertence, accident, or mistake, the appropriate remedy is by reissue, and a second patent may not be granted for the devices or combinations so omitted.
[*Id.

DEFENSE.

(See Infringement, 2.)

DELAY.

(See Abandonment, 1.)

DELIVERY OF A PATENT.

(See Title to Patent, 1, 2, 3, 4.)

DEMURRER.

(See Practice in the Courts.)

DIVISION OF APPLICATION.

1. The statute does not forbid the joinder in one patent of claims for method and apparatus.
[*Ex parte* Young *et al.*, 1390.

2. If an applicant comes to the Office alleging a "unitary invention consisting of the process and the product thereof," which are shown to be novel and useful, and are "in their nature and operation connected together," such invention may be, and ordinarily should be, included in one patent.
[Id.

3. Two or more inventions which are distinct and disconnected should not be included in one patent. Where, however, two or more inventions are "kindred and auxiliary," or "in their nature or operation connected together," or "connected in their design and operation," they may be included in one patent.
[Id.

4. Upon receipt of an application the Examiner should determine whether or not two or more independent and separate inventions are included, and if so a division should be required.
[Id.

5. If not so independent and separate, but are only distinct, but still 'kindred and auxiliary,' or connected in their design and operation, or in their nature or operation connected together, then ordinarily a division should not be required.
[Id.

DOUBLE USE.

Since a double use is forbidden as a patentable invention, a roller-frame for casters in trunks must be regarded as anticipated by roller-frames for other purposes.
[*Sessions *v.* Gould *et al.*, 1139.

EMPLOYER RESPONSIBLE FOR THE ACT OF HIS EMPLOYÉ.

(See Fraudulently Marking Goods "Patented," 3; Penalty for Improperly Marking Goods "Patented," &c., 2.)

ENLARGEMENT OF CLAIMS.

(See Reissues, 1, 3, 7, 10.)

ESTOPPEL.

(See Reissues, 2.)

EVIDENCE.

(See Priority of Invention; Fraudulently Marking Goods "Patented," 2.)

EXAMINERS-IN-CHIEF.

(See Examination of Applications for Reissue, 4.)

EXAMINATION OF APPLICATIONS FOR REISSUE.

1. In the examination of applications for reissue the primary examiner should first examine and determine the sufficiency of such reissue application itself.
[*Ex parte* Ernst, 235.

2. If such reissue application fails to exhibit and state all the facts which, if true, would entitle applicant to reissue, the examiner need proceed no further, but may decline so to do, whereupon a review by the Commissioner can be had by applicant.
[Id.

3. If, on the other hand, such reissue application and all parts thereof be in proper form and exhibit all the facts which would, if true, entitle applicant to reissue, the examination will proceed upon the merits.
[Id.

4. If upon such examination upon the merits it should be determined that the original patent is not "inoperative or invalid," or that even if it be so inoperative or invalid the error which renders it so did not "arise from inadvertence, accident, or mistake, and without any fraudulent or deceptive intention" on the part of applicant, or should references be found which preclude such reissue, the examiner will reject, assigning all his reasons therefor; whereupon an appeal will lie to the Examiners-in-Chief.
[Id.

EXAMINERS.

(See Division of Application, 4; Examination of Applications for Reissues.)

EXPIRATION OF PATENT BEFORE SUIT.

(See Infringement, 1.)

FOREIGN PATENT NOT A BAR TO ANOTHER APPLICATION.

(See Interference, 5.)

FRAUDULENTLY MARKING GOODS "PATENTED," &c.

(See Penalty for Improperly Marking Goods "Patented," &c.)

1. Under the statute anybody is privileged to bring an action against persons who falsely and designedly mark articles with the word "patented."
[*Kass *v.* Hawlowetz, 1135.

2. If the jury find that the person marking articles in that manner did it with the intention to deceive the public, then all other questions are impertinent, and it is the duty of the jury to find a verdict of guilty.
[*Id.

3. Where a man is carrying on a manufacture, and necessarily employs various persons, the acts of the persons that he employs, if done according to his direction or with his sanction, are in law his acts.
[*Id.

4. The jury have a right to infer from the evidence whether this is a patented or unpatented article, and the fact that there is no evidence of a patent is to be taken into consideration.
[*Id.

IMPROVEMENTS.

(See Subsequent Patents.)

INFRINGEMENT.

(See Injunction, 1; Particular Patents, 6, 9, 11; Parties to Suit, 1, 2, 5; State Statutes; Trade-Marks.)

1. EQUITY JURISDICTION — INFRINGEMENT — EXPIRATION OF PATENT — DISCOVERY — ACCOUNT — REMEDY AT LAW.
A bill in equity brought for the infringement of a patent which has expired previous to the bringing of the suit will be dismissed for want of jurisdiction, notwithstanding it avers that defendants manufacture and use the infringing machines secretly, and that complainant is ignorant of the number of machines so used and unable to estimate the amount of damages, and prays for an account of profits, the damages to complainant from said infringement, other than the profits, being sued for in a pending action at law.
[*Lord *et al.*, executors, *v.* Whitehead & Atherton Machine Company *et al.*, 499.

2. EVIDENCE — ORIGINALITY OF INVENTIONS.
When, in a suit for infringement of a patent, it is set up as a defense that complainant derived his idea of the patented invention from some third party who first conceived it, the burden of proof is on defendant, and any doubt respecting the evidence is fatal to the defense.
[*Duffy *v.* Reynolds *et al.*, 621.

INJUNCTION.

(See Trade-Marks.)

1. Although the validity of the patent has been established in another court on the merits, an injunction *simpliciter* is refused, for the reason that on the *ex parte* showing here it does not satisfactorily appear that the defendant should be stopped from doing what is a clear and positive infringement.
[*Steam Gage and Lantern Company *et al.* *v.* St. Louis Railway Supplies Manufacturing Company, 889.

2. The case being before the court on final hearing, and the proofs showing that the defendant put up the oven and controlled and managed it, and impliedly, if not directly, acknowledged that it was his work, injunction is granted, and the case sent to the master to assess damages.
[*Petersen *et al.* *v.* Simpkins, 1392.

INSANITY.

(See Abandonment.)

INTERFERENCE.

1. Where a party to an interference in the preparation of his preliminary statement has in good faith and without negligence or carelessness on his part incorrectly stated a material date, he should be permitted, upon a proper reasonable showing of what he alleges the truth to be, and upon a clear and satisfactory showing of the manner in which the mistake occurred, to file an amended statement to conform to the facts.
[Robinson *v.* Seymour, 113.

2. The fact of such amendment, however, that such party did so amend, that he once testified to a certain date and afterward changed it, will all be regarded upon the hearing upon the merits in determining what the truth really was.
[Id.

3. In interference proceedings, where neither applicant files a preliminary statement, the senior applicant will, under Rule 111, be *presumed* the first inventor, and priority awarded him.
[Sellon *v.* Hochhausen, 995.

4. In such cases where the invention in controversy is disclosed in the application of the senior applicant priority cannot be awarded the junior applicant, even though such senior applicant expressly disclaims, for the present, any claim to a patent for such disputed invention.
[Id.

5. In such interference cases priority must also be awarded such senior applicant, notwithstanding the oath of the junior applicant discloses the fact that he has received British patent for his invention which antedates the time of the filing of either application.
[Id.

INVENTION DESCRIBED BUT NOT CLAIMED.

(See Dedication to the Public, 1, 2; Subsequent Patents.)

JOINDER OF INVENTIONS.

(See Division of Application.)

LABELS.

1. Applicant presents for registration as a print a sheet containing a representation of thirty-six playing-cards, constituting an entire pack. His petition asks that his "title of the said print, 'Lutz Advertising Cards,'" be registered. *Held* that there is no objection to the registration of such title, but that the sheet alone, and without title, being the merchandise itself, is not entitled to be registered.
[*Ex parte* Lutz, 1389.

2. *Held*, *further*, that "a label, or print, or legend which shall contain the title 'Lutz Advertising Cards,' and be illustrated as a part thereof by a picture or cut of proper size of one or even all the cards proposed to be described and covered thereby, carefully and properly guarded, so that the public could not be misled into the belief that such registration constituted a protection to the party in the manufacture and sale of such cards, would probably not be objectionable."
[Id.

3. Prior to the act of August 1, 1874, the Librarian of Congress uniformly registered trade-marks, labels, and prints. Since such act such librarian has not registered trade-marks or labels, and registers a print only when it is in fact a "pictorial illustration or some work connected with the fine arts."
[Id.

4. The term "print," as applied to articles "other than pictorial illustrations or works connected with the fine arts," is used synonymously with the word "label," and which prints should be presented to the Commissioner of Patents for registration.
[Id.

5. Such print or label which is really a "device, picture, word or words, figure or figures (not a trade-mark) impressed or stamped directly upon the articles of manufacture," must be registered upon presentation to the Commissioner of Patents.
[Id.

LICENSE.

(See Parties to Suit, 5, 6.)

LIMITATION.

(See State Statutes.)

MACHINE AND PROCESS.

(See Reissues, 7.)

MARKING UNPATENTED GOODS "PATENTED."

(See Fraudulently Marking Goods "Patented;" Penalty for Improperly Marking Goods "Patented," &c.)

METHOD AND APPARATUS.

(See Division of Application, 1.)

OATH.

(See Construction of Rules.)

An applicant who files an amendment to his claims, which amendment is not fairly covered by the original oath, will be required to verify the same by supplemental oath, as provided in Rule 47.
[*Ex parte* Foster, 113.

OLD DEVICES.

(See Double Use.)

OLD PROCESS.

PROCESS.
Application of old process to same material at a different stage *held* not patentable.
[*Miller *et al.* *v.* Force *et al.*, 1497.

OMISSION TO CLAIM.

(See Dedication to the Public.)

PARTICULAR PATENTS.

1. BENTON—FARE-REGISTER.
Patent No. 233,915 for a fare-register, granted November 2, 1880, is not void for want of novelty.
[*Railway Register Manufacturing Company v. North Hudson Railway Company *et al.*, 355.

2. DUFFY—APPARATUS FOR DRYING HIDES.
On examination of the evidence, *held* that James N. Duffy must be considered as the original and first inventor of the combined mechanism of the second, third, and fourth claims of Patent No. 184,352, granted to him November 14, 1876, for improvement for apparatus for drying hides.
[*Duffy v. Reynolds *et al.*, 621.

3. EACHUS—PROCESS OF CUTTING WET PAPER.
Reissued Patent No. 6,315, March 2, 1875, compared with the original and found to be not the same invention and void.
[*Eachus v. Broomall, 1265.

4. GARVER—HARROW.
Reissue No. 9,148, dated April 13, 1880, given on original Patent No. 95,458, dated October 5, 1869, considered and *held* to be valid.
[*Reed *et al.* v. Chase *et al.*, 996.

5. JOHNSON—CUTTING-PLIERS.
Letters Patent No. 232,975, dated October 5, 1880, issued to Henry G. Thompson, as assignee of Moses C. Johnson, for improvements in cutting pliers, examined, and, upon full consideration of all the evidence adduced, *held* that Moses C. Johnson was not the first and original inventor of the improvements claimed by the patent.
[*Thompson v. Hall *et al.*, 1140.

6. LEACH—TABLES FOR TILE-MACHINES.
The fourth, fifth, and seventh claims of Patent No. 279,259, granted to William F. Leach on June 12, 1883, for improvement in tables for tile-machines, construed, and *held* not infringed by machines made under Patent No. 243,867, issued July 5, 1881, to Elihu Dodds.
[*Leach v. Chandler *et al.*, 237

7. MILLER AND WORLEY—FINISHING TOBACCO-PLUGS.
Patent to Miller and Worley for alleged improvements in finishing tobacco-plugs, granted December 5, 1876, and reissued January 29, 1878, declared void.
[*Miller *et al.* v. Foree *et al.*, 1497.

8. PARMELEE—AUTOMATIC FIRE-EXTINGUISHER.
Letters Patent No. 218,564, granted August 12, 1879, to Henry S. Parmelee, for an improved automatic fire-extinguisher, wherein the inventor made a sensitive extinguisher by placing the seal at the extreme outer end of the water-pipe, and so near the distributer that when the joint of the seal was melted the seal itself was forced into the distributer and the water was left unobstructed, describe a patentable invention, and are valid.
[*Pamelee *et al.* v. A. Burritt Hardware Company, 237.

9. SAME—INFRINGEMENT.
The defendant's extinguisher is an infringement, it not being imperative that the seal should be so constructed that the water should be below the joint.
[*Id.

10. PIERSON—PLASTIC COMPOUND MADE FROM VEGETABLE FIBER.
Patent No. 65,267, dated May 28, 1867, and granted to William Hugh Pierson, for an improved plastic material made from vegetable fibers, was not anticipated by the English letters patent granted to Alexander Parkes, upon a specification enrolled in the British office, on April 17, 1856.
[*Celluloid Manufacturing Company v. Crofut *et al.*, 235.

11. SESSIONS—CASTERS FOR TRUNKS.
If Patent No. 108,300, dated October 11, 1870, can be sustained, it is not infringed by a party who makes a device slightly different therefrom.
[*Sessions v. Gould *et al.*, 1139.

PARTIES TO SUIT.

(See Fraudulently Marking Goods "Patented.")

1. In suits at law, under section 4919, for infringements of an expired patent, where assignments of the patent do not include claims for past infringements, the owners of the patent at the date of such infringements should be joined as parties plaintiff, because the assignment of a patent does not carry with it claims for past infringements.
[*Adams v. Bellaire Stamping Company, 623.

2. If such assignments contain claims for past infringements, then the assignee becomes "the party interested" under section 4919 and has the right to sue in his own name for such infringements.
[*Id.

3. To a bill in equity filed under section 4915 of the Revised Statutes by an applicant for a patent the Commissioner of Patents is not a necessary party where there is an opposing party to the bill.
[*Graham v. Teter, 758.

4. Where the opposing patentee has transferred his interest in the invention, the assignee of that interest should be made a co-defendant.
[*Id.

5. A transfer of a right to use a certain invention for only a specific purpose constitutes a mere license, and a suit for infringement of that right must be brought in the name of the legal owner of the patent, and not in the name of the licensee.
[*Bogart *et al.* v. Hinds, 1268.

6. An objection that a certain company through which complainant derived title ever existed cannot be made by the latter; and, moreover, if they proposed to rely upon such a proposition, they should have introduced it by proper averments in the complaint.
[*Id.

PATENTABILITY.

(See Combination; Double Use; Old Process; Particular Patents, 8.)

PATENTS.

(See Construction of Specifications and Patents; Title to Patent, 8.)

PENALTY FOR IMPROPERLY MARKING GOODS "PATENTED," &c.

(See Fraudulently Marking Goods "Patented.")

The superintendent of the Suffolk Iron Company, a corporation, marked upon certain saddle-trees manufactured by said company the words "Patented June 9, 1874." In an action against them to recover the penalty provided for in section 4901 Revised Statutes the company set up that said saddle-trees were manufactured under a patent issued to one George Theobald on June 9, 1874. The court instructed the jury as follows:

1. That, as matter of law, the said saddle-trees were not manufactured under said patent.
[*Tompkins v. Butterfield *et al.*, 758.

2. That the corporation is responsible for the conduct of its superintendent in affixing said marks to them.
[*Id.

3. That the action is criminal, and that they must be satisfied beyond a reasonable doubt that there was an intent to deceive the public in affixing said marks.
[*Id.

4. That if the marks were affixed by the superintendent with the knowledge and belief that in point of fact and law the saddle-trees were not manufactured under said patent, or without knowing whether they were manufactured under this or any other patent, the corporation is liable; but that if he honestly believed, though his belief may have been mistaken, that the saddle-trees were covered by said patent, the corporation is not liable.
[*Id.

5. MARKING ARTICLES "PATENTED"—PENAL STATUTE—CASE STATED.
In an action brought, under the provisions of section 4901 United States Revised Statutes, to recover penalties for marking unpatented articles as patented with intent to deceive the public, wherein on trial the judge instructed the jury "that the defendant's patent did not embrace the article stamped," and refused to instruct "that the plaintiff was required to prove his case with the same particularity and exactness as on trial of an indictment."
[*Hawlowetz v. Kass, 1499.

6. CONSTRUCTION OF THE PATENT FOR THE COURT.
Held, as to the instruction in reference to the defendant's patent, "it is clearly the duty of the trial judge to construe the patent and determine its scope and effect," there being not the slightest room for doubt upon the evidence that the patent did not cover articles such as was alleged had been stamped as patented by the defendant, and no question of the fact upon this point which could have been properly submitted to the jury.
[*Id.

7. EVIDENCE—CHARACTER OF PROOF.
Held, as to instructions denied, "the instructions asked for in reference to the exactness and particularity of the proof required upon the trial of such an action called for the statement of a mere abstract proposition, and if it had been given by the judge would not have enlightened the jury without a further explanation respecting the practical application of the case in hand, assuming, however, as has been assumed by counsel on argument, that the request and refusal was in effect a refusal to charge the jury that the defendant's evidence must prove his case beyond a reasonable doubt, and should be held that the instruction was properly refused."
[*Id.

8. CASE OF CHAFFEE V. UNITED STATES (18 WALL., 516) COMMENTED ON AND EXPLAINED.
Commenting upon the case of *Chaffee* v. *United States* (18 Wall., 516) the Court says such case "is sometimes cited by the text-writers as an authority, that in an action brought by the Government to make out its case beyond a reasonable doubt." (Wharton E. V., sec. 371.) The syllabus in the report of that case is to this effect; but an examination of the opinion shows that no such point was considered by the Court. The only point decided was that the instructions in the court below were erroneous, because they were in substance "that the Government need only prove that the defendants were presumably guilty, and the duty thereupon devolved upon them be to establish their innocence, and if they did not they were guilty beyond a reasonable doubt."
[*Id.

9. EVIDENCE—RULE OF EVIDENCE IN QUI TAM ACTION.
Commenting upon the effect of the evidence in suits for penalties, the Court says: "It is consonant with good sense to hold that in suits for penalties, as in all other civil actions, the effect of the evidence should be considered with reference to the character of the act with which the defendant is charged; that the gravity of the charge and the legal presumption of innocence be considered together, and that in analogy to the rule now more generally sanctioned in civil actions where an act of grave misconduct is imputed to a party, it should be deemed enough that the jury are reasonably satisfied upon the evidence as to all material facts."
[*Id.

POWER OF ATTORNEY TO AMEND.

(See Amendments, 2.)

PRACTICE IN CANADIAN COURTS.

(See Canadian Courts, 1, 2.)

PRACTICE IN THE COURTS.

(See Infringement, 1, 2; Injunction, 1; Parties to Suit, 1, 5, 6; Penalty for Improperly Marking Goods "Patented," 7, 8, 9; Reissues, 2, 6.)

The weight of authority is in favor of the proposition that where profert is made of a paper in the complaint it is for all purposes presented to the court as part of the pleading, and objection may be taken by demurrer.
[*Bogart *et al.* v. Hinds, 1268.

PRACTICE IN THE PATENT OFFICE.

(See Construction of Rules; Examination of Applications for Reissues; Interference; Oath; Subsequent Patents.)

PRELIMINARY STATEMENT.

(See Interference.)

PRIORITY OF INVENTION.

(See Interference, 3, 4, 5.)

PRIOR INVENTION.
Prior invention made out where a sample of the prior device is produced and identified by several witnesses whose characters for truth and veracity complainants have failed to substantially affect.
[*Miller *et al.* v. Foree *et al.*, 1497.

PROCESS.

(See Old Process.)

PROCESS AND MACHINE.

(See Reissues, 7.)

PROCESS AND PRODUCT.

(See Division of Application, 2, 3, 4, 5.)

PUBLIC USE.

INFRINGEMENT—PUBLIC USE—CONSTRUCTION OF PURCHASE OF MACHINE WITH KNOWLEDGE OF INVENTOR—REVISED STATUTES, SECTIONS 4886, 4899.
Revised Statutes, section 4899, must be construed in connection with section 4886, and it may be said generally that, while section 4886 makes void every patent where it is shown that the invention was in public use or on sale for the period of two years before the application for the patent, section 4899, although allowing the letters patent to stand, excepts from liability to the inventor all persons who have used for less than two years any patented machine or article that has been purchased or constructed with the knowledge and consent of the inventor prior to his application for the patent. Infringement not shown.
[*Duffy v. Reynolds *et al.*, 621.

PURCHASER'S RIGHT TO USE.

(See Use of Patented Articles.)

RECORD OF A PATENT.

(See Title to Patents, 1, 2, 3, 4.)

REHEARING.

Motion for a rehearing is overruled.
[Petersen *et al.* v. Simpkins, 1392.

REISSUES.

(See Construction of Specifications and Patents; Dedication to the Public, 2; Examination of Applications for Reissue, 1, 2 3, 4.)

1. When a patent has been judicially declared void for the reason that its claim is too broad, the defect may be corrected by a reissue of it.
[*Mathews *et al.* v. Flower *et al.*, 887.

2. The action of the Commissioner of Patents in rejecting an application for reissue on a reference to a prior patent, or because it covered a different invention from that disclosed in the original patent, though unreversed, does not operate as an estoppel or as *res adjudicata* upon the parties in a judicial proceeding under the patent afterward reissued.
[*Id.

3. REISSUES—EXPANSION OF CLAIM—VALIDITY.
Where the reissue of letters patent covers anything not embraced within the original patent, the reissue is to that extent void.
[Reed *et al.* v. Chase *et al.*, 996.

4. SAME—EXPANSION OF DESCRIPTION—EFFECT.
The insertion in a reissued patent of the inventor's opinion that his invention is one of a certain class and reduced into form, accomplishing a successful result, where it does not in any way affect or enlarge the claim of the original, does not invalidate the reissue.
[*Id.

5. REISSUED PATENT—HOW COMPARED WITH THE ORIGINAL.
A comparison of the original and reissued patents for the purpose of determining the question as to the identity of inventions described in them, requires an interpretation of the original patent in the light of the state of the art at the date when the application for it was filed.
[*Eachus v. Broomall, 1265.

6. SAME—STATE OF THE ART—PLEADINGS.
Although the prior use or knowledge of the invention claimed in a reissued patent is not specifically set up in the answer as a defense, it is nevertheless admissible to consult the evidence on that point contained in the record for the purpose of defining the limits of the grant in the original patent and the scope of the invention described in the specification.
[*Id.

7. SAME—CASE STATED.
Where the original patent was for the particular organization of a *machine* for cutting paper-boards whereby the various parts were combined and adjusted so as to fit it to accomplish the specific result of cutting heavy paper in large sheets, and in a wet condition, as received from a paper-making machine, and the reissued patent was for the *process* of sawing paper-boards, consisting in sawing the paper-board in the wet state in which it was taken from the paper-making machine, *held* that the reissued patent was not for the same invention as the original, and was therefore void even when restrained by construction to include only the process described when performed by means of the particular devices described, as it would still be broad enough to cover every arrangement, combination, and adjustment in which these devices may be found, and that is not the same invention which was described in the original patent.
[*Id.

8. An arrangement of devices was described in an original patent, although it was not called a combination. *Held* that a reissue calling it a combination, and containing a statement that the invention consisted also in this combination, does not appear to vary the prior description in effect.
[*American Diamond Rock Boring Company v. Sheldon *et al.*, 1598.

9. If separable claims of the reissue cover the same invention as the original, and no more, such claims would seem to be as valid as the original, and would be infringed by whatever would infringe that.
[*Id.

10. The enlargement of the scope of a claim six years after the original patent is not valid according to the series of later decisions upon reissued patents.
[*Id.

11. The parts of the claims in this reissue which might cover the infringement are so blended with the other parts that they cannot be distinguished therefrom, and the bill must thereupon be dismissed.
[*Id.

REJECTED APPLICATIONS.

(See Reissues, 2.)

RES ADJUDICATA.

(See Reissues, 2.)

RESULTS.

(See Combination.)

RIGHT TO USE.

(See Use of Patented Articles, 1, 2.)

RULES OF PRACTICE.

(See Construction of Rules; Practice in the Patent Office.)

STATE OF THE ART.

(See Reissues, 5, 6, 7.)

STATE STATUES.

State statutes of limitation do not apply in suits at law for the infringement of patents. The question, however, is considered so doubtful that the court indicates a course by which it may be submitted most speedily to the appellate court.
[*Adams *v.* Bellaire Stamping Company. Same *v.* Baron *et al.*, 623.

SUBSEQUENT PATENTS.

(See Dedication to the Public, 1, 2.)

An inventor may not patent that which is either claimed or described as his invention in a prior patent granted to himself; but he may patent an improvement upon it.
[*Mathews *et al. v.* Flower *et al.*, 887.

SUITS AT LAW.

(See Parties to Suit, 1, 2; State Statutes.)

SUITS FOR DAMAGES.

(See Infringement; Injunction; Parties to Suit; Reissues, 2.)

SUPPLEMENTAL OATH.

(See Oath.)

TITLE TO PATENT.

1. Title by grant of letters patent for inventions is title by matter of record, and requires no delivery of the instrument to perfect the grant.
[†*Ex parte* Osgood, 1265.

2. The grant of letters patent for inventions is not complete, nor does the title pass, until the instrument has been fully recorded.
[†Id.

3. Although the grant has been executed in due form, the instrument signed, sealed, countersigned, and passed to the recording-clerk and partially entered on the record, it does not pass title, nor does it become a patent, until the recording has been completed.
[†Id.

4. Until the title to the grant of letters patent for inventions has been invested in the grantee by the recording of the instrument the application is a "pending application" within the meaning of section 4904 Revised Statutes, and may be withdrawn from the issue and placed in interference with an application filed before the recording of the grant had been perfected.
[†Id.

5. ON DEMURRER.
The inventors A assigned the whole of their invention before a patent therefor was granted to B, who subsequently assigned it to C. C in turn assigned it to D. All these assignments were executed and were duly recorded in the Patent Office more than two years before the patent was granted. The patent was granted to B, the immediate assignee of the inventors, who at the time the patent was issued had no interest of record in the invention. *Held* that the patent so granted is valid.
[*The Consoldated Electric Light Company *v.* The Edison Electric Light Company *et al.*, 1597.

6. The title to a patent so granted by operation of law instantly vests in the ultimate assignee.
[*Id.

7. A patent is valid when granted to any assignee of record.
[*Id.

8. The words "assignee of the inventor or discoverer" in section 4895 United States Revised Statutes construed.
[*Id.

USE OF PATENTED ARTICLES.

1. When a patentee has assigned his right to manufacture, sell, and use within a limited district an instrument, machine, or other manufactured product, a purchaser of such instrument or machine, when rightfully bought within the prescribed limits, acquires by such purchase the right to use it anywhere without reference to other assignments of territorial rights by the same patentee.
[*Adams *v.* Burks, 114.

2. The right to the use of such machine or instrument stands on a different ground from the right to make and sell them, and inheres in the nature of a contract of purchase, which carries no implied limitation of the right of use within a given locality.
[*Id.

UNITARY INVENTIONS.

(See Division of Application, 1, 2, 3, 4, 5.)

TRADE-MARKS.

(See Labels.)

1. TRADE-MARKS—INFRINGEMENT OF.
The complainant in a trade-mark suit is entitled to relief if the marks or brands used by the defendants sufficiently resemble the complainant's marks or brands to be mistaken for them.
[*The Southern White Lead Company *v.* Carey *et al.*, 624.

2. SAME.
An injunction should be granted if the defendants adopt their brand for the purpose of selling their goods as and for the goods of the complainant, or for the purpose of enabling others to do so, and the complainant has been injured, or is likely to be injured, thereby. In such case it will not be sufficient for the defendants to show that no deception is in fact practiced on those with whom they deal personally, but an injunction will be granted if consumers to whom the goods are intended to be resold are or may be deceived.
[*Id.

3. SAME.
Where manufacturers at one place falsely mark or brand their goods as manufactured at another for the purpose of inducing trade which would otherwise go to manufacturers at such other place, such false marking will be considered as fraudulent and a "resort to a palpable trick," and, the complainant being injured thereby, the infringing manufacturers will be enjoined from thus using the name of the place where the complainant carries on its business.
[*Id.

4. Although the use of the words "Coral Baking Powder" is not in itself an infringement of the trade-mark "The Royal Baking Powder," yet when the cans upon which they are used are similar and the labels of the same color and general appearance, a liability exists to deceive purchasers into buying one for the other, and injunction will be granted.
[*The Royal Baking Powder Company *v.* Davis *et al.*, 1391

5. Such injunction does not extend to the use of the words "Coral Baking Powder," but to their use in connection with cans and labels of the same general appearance as those of the plaintiff.
[*Id.

USE OF WORDS "PATENTED," &c., IMPROPERLY.

(See Fraudulently Marking Goods "Patented;" Penalty for Improperly Marking Goods "Patented," &c.)

VALIDITY OF PATENTS.

(See Title to Patent, 1, 2, 3, 4.)

VALID PATENTS.

(See Particular Patents, 1, 2, 4, 8, 10.)

VOID PATENTS.

(See Particular Patents, 3, 5, 7; Reissues, 3, 10.)

VOID PATENTS MAY BE REISSUED.

(See Reissues, 1.)

WITNESSES.

(See Priority of Invention.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING DECEMBER 31, 1885.

[Claims and drawings of Designs do not appear in the Monthly Volumes or the Gazette. Separate indexes for Designs, Trade-Marks, Labels, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
Aaron, Charles H., Nogales, Ariz. Ter. Precipitating nickel and cobalt from solutions containing the same	330,454	Nov. 17	1389	.....	33	785
Abbercrombie, Henry M., Kelly's Creek, Ala. Cultivator	330,864	Nov. 24	1913	519	33	893
Abbett, Leon. (See White, Lewis B., assignor.)						
Abbott, Arthur A., Chicago, Ill. Side-bar vehicle	333,271	Dec. 29	2922	764	33	1547
Abbott, Fred. N., Lawrence, Mass. Presser-clamp	330,363	Nov. 17	1269	337	33	763
Abbott, George W., and G. S. Forrest, Concord, N. H. Countersink	327,641	Oct. 6	189	46	33	34
Abbott, Levi, assignor of one-half to G. C. Barney, Boston, Mass. Valve or cock for liquid-receptacles	330,766	Nov. 17	1785	480	33	862
Abbott, Warren N., *et al.* (See Green, Albert, assignor.)						
Abel, August, Chicago, Ill. Combined baby carriage and cradle	333,189	Dec. 29	2802	723	33	1524
Abell, Clara, Geddes, N. Y. Hat and bonnet fastener	332,031	Dec. 8	1167	305	33	1215
Abercrombie, Alexander V., Bridgeport, Conn. Bobbin-winder	332,771	Dec. 22	2220	585	33	1415
Aberlin, Henry W., Bayswater, county of Middlesex, England. Combined scarf ring, band, and collar-stud	333,272	Dec. 29	2922	765	33	1547
Abraham, Robert. (See Gribble and Abraham.)						
Abrams, Gustav, and N. Nilson, Dassel, Minn. Valve-gear	329,525	Nov. 3	141	36	33	531
Achenbach, Philip P., Camden, N. J. Folding chair	333,273	Dec. 29	2923	765	33	1547
Acker, Charles W., Watertown, N. Y. Can-opener	333,190	Dec. 29	2803	734	33	1524
Acker, Conrad, and G. Michler, St. Louis, Mo. Rotary brush	327,851	Oct. 6	447	116	33	78
Ackerman, John. (See Wanamaker, Daniel S., assignor.)						
Actien Gesellschaft zur Einführung Technischer Neuheiten. (See Zimmer, Conrad, assignor.)						
Adam, Alexander C., and D. Stewart, Glasgow, county of Lanark, Scotland Apparatus for scouring and washing fabrics, &c	328,271	Oct. 13	985	256	33	186
Adams, Albert L., Cedar Rapids, Iowa. Hammock	333,277	Dec. 29	3057	797	33	1570
Adams, David O., Columbus, Ind. Camera-shutter	327,980	Oct. 13	619	163	33	119
Adams, H. Raymond, Marseilles, Ill. Regulator for pumping-windmills	331,363	Dec. 1	149	38	33	1024
Adams, H. Raymond, Marseilles, Ill. Windmill-regulator	331,364	Dec. 1	151	39	33	1025
Adams, John Q., Marseilles, Ill. Cultivator	331,365	Dec. 1	153	39	33	1026
Adams, Joseph D., Marshall, Ind. Road-grading machine. (Reissue)	10,666	Dec. 1	757	191 192	33	1133
Adams, Peter, Jr. (See Shepard and Adams.)						
Adams, Thomas F., New York, N. Y. Street-sign	331,019	Nov. 24	2108	570	33	930
Adams & Westlake Manufacturing Company. (See Clark and Briggs, assignors.)						
Adams, William P., Brooklyn, N. Y. Non-conducting fabric	332,371	Dec. 15	1651	433	33	1307
Addis, John W. (See Lewis, Wallace J., assignor.)						
Addy, Charles J., Malden, assignor to Tapley Machine Company, Boston, Mass. Heel-burnishing machine	328,371	Oct. 13	1125	290	33	213
Adgate, Joseph J., assignor to Adgate Rotary Loom Company, New York, N. Y. Cam-cylinder for knitting-machines	332,373	Dec. 15	1653	433 434	33	1307
Adgate, Joseph J., assignor to Adgate Rotary Loom Company, New York, N. Y. Weft-thread knitting-machine	332,374	Dec. 15	1654	434	33	1308
Adgate, Joseph J., and S. P. Kittle, assignors to Adgate Rotary Loom Company, New York, N. Y. Knitting-machine needle	332,372	Dec. 15	1652	433	33	1307
Adgate Rotary Loom Company. (See Adgate, Joseph J., assignor.)						
Adgate Rotary Loom Company. (See Adgate and Kittle, assignors.)						
Adkins, William W. (See Swann and Adkins.)						
Adlam, Samuel, Boston, Mass. Sheet-metal screw cap or cover	332,772	Dec. 22	2221	585	33	1415
Adler, I. Richard. (See Cassidy, Patrick, assignor.)						
Adt, John, New Haven, Conn. Staple-machine	330,364	Nov. 17	1270	337	33	763
Adt, John, New Haven, Conn. Making cotter-pins	330,660	Nov. 17	1638	440	33	835
Adt, John, New Haven, Conn. Machine for making cotter-pins	330,661	Nov. 17	1639	440 441	33	835
Adt, John B., Baltimore, Md. Mash-machine	327,751	Oct. 6	324	83	33	57
Aeby, Léo, Madretsch, near Bienne, Switzerland. Stem-winding watch	329,611	Nov. 3	258	66, 67	33	554
Agnew, Franklin H., and R. R. Hice, Beaver, Pa. Automatic car-brake	328,372	Oct. 13	1126	290 291	33	213
Agnew, George. (See Joslin, Henry W., assignor.)						
Agnew, William C., assignor of one-half to W. F. Holland, Creston, Ill. Combined horse-collar and hame	331,750	Dec. 8	765	193	33	1143
Ahearn, Thomas, Ottawa, Ontario, Canada. Electric time-detector	329,874	Nov. 10	617	157	33	627
Aiken, Henry, Pittsburg, Pa. Blade for shears	331,934	Dec. 8	1025	266	33	1191
Aikman, James, Glasgow, county of Lanark, Scotland. Tobacco-pipe	332,858	Dec. 22	2335	617	33	1435

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Alkman, Peter A., Windsor, Ontario, Canada, assignor of one-fourth to W. R. Merwin, J. Booth, and W. Robinson, Detroit, Mich. Car-coupling	331,467	Dec. 1	307	82	33	1052
Ainslie, Archibald K. M. (See Ainslie, James, Jr., and A. K. M.)						
Ainslie, James, Jr., and A. K. M., Brooklyn, N. Y. Spring bed-bottom	332,471	Dec. 15	1779	466	33	1329
Ajax Forge Company. (See Alkins, Charles, assignor.)						
Akin, William, New York, N. Y. Railway-train indicator	331,859	Dec. 8	911	235	33	1169
Akin, William, New York, N. Y. Programme-clock	332,694	Dec. 22	2119	559	33	1395
Akron Iron Company. (See Allderdice, Winslow, assignor.)						
Albert, Eugene J., Philadelphia, Pa. Tail-piece for violins	330,185	Nov. 10	1029	269	33	709
Albert, Henry, Crescent City, Cal. Saf-ty-catch for elevators	331,269	Dec. 1	1	1	33	1001
Albin, Elmer E., Springfield, Ohio. Table-fork	331,177	Nov. 24	2325	630	33	969
Albizitti, John, *et al.* (See Martin, William F., assignor.)						
Albright, Andrew. (See Widmer, Frank, assignor.)						
Alden, Rinaldo, Chicago, Ill. Stop-knob for organs	328,448	Oct. 20	1237	321	33	241
Aldrich, Charles L. (See Young, Jesse R., assignor.)						
Aldrich, Hosea P., Boston, Mass. Sewing-machine	332,317	Dec. 15	1571	413	33	1293
Aldrich, Seward B., Thurston, N. Y. Belt shortener and tightener for thrashing-machines	330,542	Nov. 17	1499	401	33	805
Aldridge, Albert E., Chicago, Ill. Bushing and bung	327,509	Oct. 6	325	83	33	57
Alexander, C. Madison, Brightwood, D. C. Horseshoe	327,752	Oct. 6	1	1	33	3
Alexander, John E., Bridgeport, N. J. Sash-fastener	332,472	Dec. 15	1780	466	33	1329
Alexander, Julius A., Monticello, Ark. Adjustable trace-connection for hames	332,859	Dec. 22	2335	617	33	1435
Alexander, Julius A., Monticello, Ark. Hame-fastener	332,860	Dec. 22	2336	618	33	1435
Alexander, Julius A., Monticello, Ark. Adjustable trace-fastener	332,861	Dec. 22	2337	618	33	1435
Alexander, Winston B. (See Durham and Alexander.)						
Alkins, Charles, assignor to Ajax Forge Company, Chicago, Ill. Rail-brace	329,991	Nov. 10	770	197	33	656
Allderdice, Winslow, Akron, Ohio. Die for drawing and compressing tubes	329,612	Nov. 3	259	67	33	554
Allderdice, Winslow, assignor to Akron Iron Company, Akron, Ohio. Machine for drawing cold metal bars	329,800	Nov. 3	501	127, 128	33	600
Allderdice, Winslow, assignor to Akron Iron Company, Akron, Ohio. Die	329,801	Nov. 3	504	128	33	600
Allen, Daniel M., Fort Wayne, Ind. Ointment	328,631	Oct. 20	1490	.....	33	286
Allen, Edward B., Portland, Me., assignor to J. W. Brooks, trustee, Cambridge, Mass. Nailing-machine for boots and shoes	332,032	Dec. 8	1167	305, 306	33	1215
Allen, Edward B., Portland, Me., assignor to J. W. Brooks, trustee, Boston, Mass. Heel-trimming machine	332,984	Dec. 22	2505	662	33	1467
Allen, George, Franklin, Pa. Device for converting motion in oil-pumping apparatus	328,099	Oct. 13	773	202	33	146
Allen, George, Franklin, Pa. Device for transmitting motion in oil-pumping apparatus	332,318	Dec. 15	1573	413	33	1294
Allen, Horace R., Indianapolis, Ind. Syringe attachment	330,081	Nov. 10	899	233	33	682
Allen, Horace R., Indianapolis, Ind. Syringe attachment	330,082	Nov. 10	901	233	33	683
Allen, Horace R., Indianapolis, Ind. Syringe attachment	330,083	Nov. 10	902	233	33	683
Allen, Horace R., Indianapolis, Ind. Syringe attachment	330,084	Nov. 10	903	234	33	683
Allen, Horace R., Indianapolis, Ind. Syringe, &c.	331,601	Dec. 1	536	130	33	1091
Allen, James W., St. Louis, Mo. Portable seal-press	329,691	Nov. 3	358	91	33	573
Allen, John F., Martinsdale, Mont. Ter. Castrating-instrument	327,852	Oct. 6	447	116	33	78
Allen, Judson, assignor of one-half to J. O. Hogg, Hannibal, Mo. Hay ricker and loader	328,171	Oct. 13	868	225	33	164
Allen, William O. (See Hamilton, Clarence J., assignor.)						
Allen, William P., Wyoming, Ohio. Calendar	329,251	Oct. 27	2354	610	33	450
Alley, John O., assignor to Peninsular Stove Company, Detroit, Mich. Vapor-burner for stoves	328,373	Oct. 13	1129	291	33	214
Allfree, James B., assignor of one-half to R. Shriver and H. Swartzwelder, Cumberland, Md. Belt-tightener	328,743	Oct. 20	1633	425	33	312
Allin, Samuel, New York, N. Y. Sponge-cup	331,602	Dec. 1	537	131	33	1092
Allis & Co., Edward P. (See Little, Samuel W., assignor.)						
Allison, Benjamin A., Decatur, Ill. Washing-machine	331,270	Dec. 1	2	1	33	1001
Allyn, Isaac W., Philadelphia, Pa. Pen wiper and holder						
Allyn, Richard J. (See Lord, Henry S., assignor.)						
Allyn, Richard J. (See Stearns, George F., assignor.)						
Altlee, S. H. (See Kerstetter, James L., assignor.)						
Altick, William, Dayton, Ohio. Sash-cord fastener	332,773	Dec. 22	2223	586	33	1415
Alvord, Williston I., Bridgeport, Conn. Knob attachment	330,186	Nov. 10	1030	269	33	709
Alvord, Williston I., Bridgeport, Conn. Knob attachment	330,187	Nov. 10	1031	269	33	709
Alvord, Williston I., Bridgeport, Conn. Knob attachment	330,188	Nov. 10	1032	269	33	709
Alvord, Williston I., Bridgeport, Conn. Knob attachment	330,189	Nov. 10	1033	270	33	709
Ambler, Russell P., Medford, Mass., assignor of one-half to H. Deitz, Albany, N. Y. Apparatus for making and burning gaseous fuel	330,280	Nov. 10	1142	304	33	731
Ambler, Russell P., Medford, Mass., and H. Deitz, Albany, N. Y. Apparatus for making and burning gaseous fuel	330,190	Nov. 10	1034	270	33	710
American Automatic Lightning Arrester Company of New York. (See Drake, Charles C., assignor.) (Reissue.)						
American Ballot Box Association. (See Howell, Silas J., assignor.)						
American Bell Telephone Company. (See Elden, Charles F., assignor.)						
American Bell Telephone Company. (See Farnham, Isaiah H., assignor.)						
American Bell Telephone Company. (See Vail, Theodore N., assignor.)						
American Button Fastener Company. (See Kempshall, Eleazer, assignor.)						
American Button Fastener Company. (See Richards, Francis H., assignor.)						
American Buttonhole, Overseaming and Sewing Machine Company. (See Pratt, Erastus S., assignor.)						
American Electric Headlight Company. (See Lynn, Mirabeau N., assignor.)						
American Electric Headlight Company. (See Pyle, George C., assignor.)						
American Electric Manufacturing Company. (See Foote, Delavan S., assignor.)						
American Hand Sewing Machine Company. (See Barber, Adin M., assignor.)						
American Machinery Company. (See Bush, Lewis, Jr., assignor.)						
American Manufacturing Company. (See Brann, John, assignor.)						
American Marble Cutting Company. (See Maloy, James W., assignor.)						
American Milk Sugar Company. (See Sabin, Alvah H., assignor.)						
American Optical Company. (See Bausch, Henry, assignor.)						
American Press Association. (See Cummings, John R., assignor.)						
American Rock and Track Lifter Company. (See Badger, Lewis D., assignor.)						
American Rock and Track Lifter Company. (See White, William O., assignor.)						
American Trades Agency Company. (See White, Lewis B., assignor.)						
American Writing Machine Company. (See Barrow, Walter J., assignor.)						
American Zylonite Company. (See Chickering, Charles C., assignor.)						
American Zylonite Company. (See Jarvis, J. George, assignor.)						
Ames & Frost. (See Bryant, Fred L., assignor.)						
Ames & Frost. (See Frost and Bryant, assignors.)						
Ames, George E. (See Wild, William E., assignor.)						
Ames, John H., St. Paul, Minn. Railway-signal	328,913	Oct. 27	1857	485	33	361

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Amet, Edward H., assignor to H. A. Streeter, Chicago, Ill. Electric governor for water-wheels	328,556	Oct. 20	1374	358	33	265
Amick, Myron J., Portland, Oreg. Amalgamator	332,473	Dec. 15	1781	466	33	1329
Ammon, James S., Reading, Pa. Railway-tie	328,632	Oct. 20	1491	388	33	286
Andersen, Christian, New York, N. Y. Mashing apparatus	332,774	Dec. 22	2223	586	33	1415
Andersen, Christian, and S. Willjelm, Brooklyn, N. Y. Music-leaf turner	332,579	Dec. 15	1947	510	33	1357
Anderson, Archie, assignor of two-thirds to F. A. Wert and E. P. Boden, San José, Cal. Machine for exterminating ground-burrowing animals	329,252	Oct. 27	2355	610	33	451
Anderson, Edwin S. (See Forbes, John A., assignor.)						
Anderson, George, New York, N. Y. Plant-protector	327,510	Oct. 6	2	1	33	3
Anderson, George P. (See Hogeland, Israel, assignor.)						
Anderson, Hugh J. (See Johnstone, John F., assignor.)						
Anderson, Ingvar, Perham, Minn. Plow	332,862	Dec. 22	2337	618	33	1435
Anderson, Isaac N. (See Shackelford, Samuel, assignor.)						
Anderson, James C., Highland Park, Ill. Preventing saltpeter exudatione from forming on the face of walls of buildings	332,580	Dec. 15	1949	510	33	1357
Anderson, James O., Oqnawka, Ill. Inkstand	330,455	Nov. 17	1390	370	33	785
Anderson, John, *et al.* (See McGregor, Montagne M., assignor.)						
Anderson, John A. E., Lebanon, assignor to himself and J. Gnahwa, Lafayette, Ind. Lock and latch combined	331,671	Dec. 1	641	158	33	1110
Anderson, Millard F., and W. H. Wilcox; said Anderson assignor to Columbia City Manufacturing Company, Columbia City, Ind. Hame-tug	328,557	Oct. 20	1377	358	33	265
Anderson, Remus, Urbana, Ohio. Chill-mold for sash-weights	333,191	Dec. 29	2805	734	33	1525
Anderson, Thomas A., assignor of one-half to J. A. Burger, Lancaster, Pa. Picker-staff check for looms	330,191	Nov. 10	1036	270	33	710
Anderson, William H., Brooklyn, N. Y. Toy figure	328,272	Oct. 13	986	257	33	187
Andrews, Albert F., Avon, Conn., assignor to Climax Fuse Company. Fuse for exploding gunpowder and other explosives	328,172	Oct. 13	869	225	33	164
Andrews Bros. & Co. (See Haas, Philip M., assignor.)						
Andrews, Charles A., Lynn, Mass. Carrying-tray	330,662	Nov. 17	1643	441	33	835
Andrews, Edwin W., Elmira, N. Y. Incubator	332,033	Dec. 8	1171	306	33	1216
Andrews, Edwin W., Elmira, N. Y. Antomatic heat-regulator for incubators	333,097	Dec. 29	2673	701	33	1503
Andrews, Emery, assignor to Leatheroid Manufacturing Company, Kennebunk, Me. Bending-machine	329,613	Nov. 3	260	67	33	554
Andrews, Emery, assignor to Leatheroid Manufacturing Company, Kennebunk, Me. Box-fastener	329,614	Nov. 3	261	67	33	555
Andrews, Emery, assignor to Leatheroid Manufacturing Company, Kennebunk, Me. Nut-locking washer	329,615	Nov. 3	262	68	33	555
Andrews, Emery, assignor to Leatheroid Manufacturing Company, Kennebunk, Me. Box-Trunk	329,675	Nov. 10	620	157	33	627
Andrews, Harrison A., Conneaut, Ohio. Lubricator	332,034	Dec. 8	1172	307	33	1216
Andrews, Joseph H., *et al.* (See Andrews, Oscar, assignor.)	330,192	Nov. 10	1037	271	33	710
Andrews, Oscar, assignor of three-fourths to J. H. Andrews, W. S. Moses, Gloucester, and G. Tucker, Rockport, Mass. Fish-cutting board	328,995	Oct. 27	1986	517	33	384
Andrus, Carlos F., assignor of one-half to C. M. Fulkerson, Cleveland, Ohio. Carburetor	327,981	Oct. 13	620	163	33	119
Anesiaengel, Charles. (See Strong, William, assignor.)						
Angell, Albert, East Orange, N. J., assignor of one-half to I. Teichman, New York, N. Y. Combined cigar cutter and perforator	331,366	Dec. 1	156	40	33	1026
Angell, Edmund R., Derry, N. H. Machine for removing snow and ice from sidewalks	328,633	Oct. 20	1492	388	33	296
Angus, James W., Macon City, Mo. Rosin-holder for violins	331,751	Dec. 8	766	193	33	1143
Annin, Joseph. (See Huckins, Daniel J., assignor.)						
Anson, Henry C., Derby, Ind. Steam-engine valve	332,863	Dec. 22	2338	618	33	1435
Anson, William, Small Heath, Birmingham, county of Warwick, England. Breech-loading fire-arm	327,914	Oct. 6	529	138	33	85
Anthes, John S., Berlin, Ontario, Canada. Child's vehicle	332,131	Dec. 8	1321	343	33	1242
Anthoine, J. W., *et al.* (See Gladish, William J., assignor.)						
Anthoine, James W., Enfaula, Ala. Cotton-seed and grain crusher	328,996	Oct. 27	1987	517	33	384
Anthony, Benjamin F. (See Kelleher, William H., assignor.)						
Anthony, Benjamin F., Boston, Mass. Shovel	332,132	Dec. 8	1321	343	33	1242
Anthony, Benjamin F., and J. Coron, Boston, Mass. Pipe-coupling	327,982	Oct. 13	621	163	33	119
Anthony & Co., E. & H. T. (See Lewis, William H., assignor.)						
Anthony & Co., E. & H. T. (See Roche, Thomas C., assignor.)						
Anthony & Co., E. & H. T. (See Wilcox, Vincent M., assignor.)						
Appel, Daniel, Cleveland, Ohio, assignor to Eastern Paper Bag Company, Hartford, Conn. Paper-bag machine	332,631	Dec. 15	2011	527, 528	33	1370
Appell, John F., Chicago, Ill. Desk	329,992	Nov. 10	771	197	33	656
Appleby, John F., assignor to Minneapolis Harvester Works, Minneapolis, Minn. Grain-binder	332,985	Dec. 22	2506	663	33	1467
Appleby, John F., assignor to Minneapolis Harvester Works, Minneapolis, Minn. Grain-binder	332,986	Dec. 22	2508	663	33	1467
Appleton, Henry P., Norwich, Conn. Knob attachment	331,752	Dec. 8	767	193	33	1143
Archambault, Jules N., Willimantic, Conn. Dumping-wagon	333,048	Dec. 29	2600	681	33	1483
Archibald, Isaac W., Elgin, Ill. Vehicle-axle	332,049	Dec. 22	2602	681	33	1484
Arentz, Hjalmar, Copenhagen, Denmark. Apparatus for cleaning the sides and bottoms of ships	328,744	Oct. 20	1633	425	33	312
Arment, Isaac N., Dayton, Wash. Ter. Can-opener	327,983	Oct. 13	621	163	33	119
Armington, Pardon, assignor to Armington & Sims Engine Company, Providence, R. I. Lubricator	330,767	Nov. 17	1786	481	33	862
Armington, Pardon, assignor to Armington & Sims Engine Company, Providence, R. I. Lubricator	330,768	Nov. 17	1786	481	33	862
Armington, Pardon, assignor to Armington & Sims Engine Company, Providence, R. I. Piston-valve	332,632	Dec. 15	2014	528	33	1370
Armington & Sims Engine Company. (See Armington, Pardon, assignor.)						
Arms, Harrison, Toledo, Ohio. Stock-car	328,745	Oct. 20	1635	426	33	313
Arms, Harrison, Toledo, Ohio. Stock-car	328,746	Oct. 20	1635	426	33	313
Arms, Harrison, Toledo, Ohio. Stock-car	328,747	Oct. 20	1636	426	33	313
Armstrong, Elvin, Jerseyville, Ill. Bee-hive	330,365	Nov. 17	1271	337	33	763
Armstrong, Frank. (See Vandegrift, Nathaniel W., assignor.)						
Armstrong, Frank. (See Vandegrift and Armstrong.)						
Armstrong, Geneva, Elmira, N. Y. Stock-car	333,378	Dec. 29	3056	797	33	1570
Armstrong, George S., Denver, Colo. Concentrator	327,915	Oct. 6	530	138	33	95
Armstrong, John B., assignor of one-half to F. E. Beane and R. Carter & Co., Augusta, Ga. Shutter-worker	330,085	Nov. 10	905	234	33	683

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Armstrong, Samuel, assignor to A. D. Campbell, Newark, N. J. Toy revolving detonator	330,086	Nov. 10	906	234, 235	33	683
Armstrong, William T., and R. H. Thomas, Chartiers, Pa. Glass-furnace	328,173	Oct. 13	870	226	33	164
Armytage, John E. B., Victoria Foundry, Stanningley, county of York, England. Chair used for fixing lines of railways	333,437	Dec. 29	3133	819	33	1583
Arndt, Daniel, assignor to A. Romean, Cleveland, Ohio. Lawn-mower	328,374	Oct. 13	1130	291	33	214
Arnett, William D., near Morrison, Colo. Seeding-machine	331,753	Dec. 8	768	193	33	1143
Arnold, Anna M. (See Arnold, Satterlee, assignor.)						
Arnold, Benjamin F. (See Bates, Daniel L., assignor.)						
Arnold, Craig R., Philadelphia, Pa. Incandescent electric-lamp switch	328,831	Oct. 20	1735	451	33	332
Arnold, Craig R., Philadelphia, Pa. Automatic switch-board for electric lamps	328,832	Oct. 20	1736	451	33	332
Arnold, D. J. C. (See Juil, Samuel T., assignor.)						
Arnold, Edward, *et al.* (See Cuming, Alfred A., assignor.)						
Arnold, Edward F., North Abington, Mass. Machine for sewing welts to shoe insoles and uppers	329,426	Nov. 3	1	1	33	505
Arnold, Louis L., Buffalo, N. Y. Window-sash	333,438	Dec. 29	3134	819	33	1583
Arnold, Satterlee, assignor to A. M. Arnold, Brooklyn, N. Y. Sewing-machine	331,106	Nov. 24	2216	600, 601, 602	33	950
Arnold, Satterlee, assignor to A. M. Arnold, Brooklyn, N. Y. Sewing-machine	331,107	Nov. 24	2223	603	33	951
Arnold, Satterlee, assignor to A. M. Arnold, Brooklyn, N. Y. Feeding mechanism for sewing-machines	331,108	Nov. 24	2226	604	33	951
Arnold, Saxton J., Hubbardston, Mass. Horse hay-rake	328,833	Oct. 20	1736	451, 452	33	332
Arnold, William, Pawtucket, assignor to R. N. Colvin, Providence, R. I. Washing-machine	333,050	Dec. 22	2603	682	33	1484
Arthur, Thomas, assignor to himself and R. J. Nagle, Bangor, Pa. Combined air-exhauster and water-elevator	330,306	Nov. 17	1272	338	33	763
Ashcroft, John, New York, N. Y. Glass-furnace	327,964	Oct. 13	693	164	33	120
Ashcroft, John, New York, N. Y. Gas-furnace	328,914	Oct. 27	1858	485	33	361
Ashcroft, John, New York, N. Y. Device for burning gas in furnaces	332,223	Dec. 15	1447	375	33	1271
Ashcroft Manufacturing Company. (See Calkins, Almon B., assignor.)						
Asher, George, Balsall Heath, and J. Buttress, Sparkbrook, county of Worcester, England. Explosive engine	329,354	Oct. 27	2507	645, 646, 647	33	478
Asher, William, Cleveland, Ohio. Paraffine-oil freezing-machine	327,985	Oct. 13	634	164	33	120
Ashford, Thomas B., Clinton, N. C. Metal eyelet or button-hole	329,692	Nov. 3	359	91	33	573
Ashton, James S., assignor of one-half to C. L. Bartels, Rochester, N. Y. Automatic elevator-stop	331,672	Dec. 1	642	158	33	1110
Ashworth, Charles, Grosvenor Dale, Conn. Revolving sweeping attachment for spinning-mules	329,117	Oct. 27	2166	561	33	415
Asper, Benjamin F., Pittsburg, assignor to J. C. Grady, trustee, Philadelphia, Pa. Coal-mining machine	329,526	Nov. 3	142	36 37	33	532
Atha, Benjamin, Newark, N. J. Ingot-mold	330,281	Nov. 10	1145	304	33	731
Atkin, Samuel T., and W. L. Steele, assignors of one-third to O. Steele, Georgetown, Tex. Cuff-holder	330,282	Nov. 10	1147	305	33	732
Atkins, Sullivan H., Lynn, Mass., assignor to Globe Thill Coupling Company, Saco, Me. Thill-coupling	328,558	Oct. 20	1377	359	33	266
Atkinson, Mary C., Baltimore, Md. Milk-skimmer	333,098	Dec. 29	2674	701	33	1503
Atkinson, Philip, Chicago, Ill. Frictional electrical generator	331,754	Dec. 8	768	194, 195	33	1143
Atlantic and Pacific Telephone Company. (See Gillett, Webster, assignor.)						
Atlantic Dynamite Company *et al.* (See Penniman, Russell S., assignor.)						
Atlantic Dynamite Company *et al.* (See Penniman and Schrader, assignors.)						
Atterbury, William T., Donnellson, Ill. Box-ventilator	332,633	Dec. 15	2015	528	33	1370
Atwood, George F., Swanton, Vt. Tub-fastener	330,814	Nov. 17	1843	497	33	872
Atwood, George F., Swanton, Vt., assignor of one-half to J. D. Beeman, Moriah, N. Y. Suspender-buckle	332,177	Dec. 8	1382	357	33	1252
Atwood, George F., Swanton, Vt., assignor of one-half to J. D. Beeman, Moriah, N. Y. Wire tubular bearing for suspender-ends	332,178	Dec. 8	1383	357	33	1252
Atwood, Horace F., and E. Wallis, Jr., Rochester, N. Y. Pen-holder	327,642	Oct. 6	190	47	33	34
Atwood, James M., Plymouth, Mass. Sash-fastener	330,367	Nov. 17	1273	338	33	764
Aughe, Silas S., Dayton, Ohio. Device for loosening sugar, &c	332,179	Dec. 8	1383	357	33	1252
Austin, Josiah, and R. Chamberlain, East Liberty, Ohio. Gate	331,673	Dec. 1	644	159	33	1111
Austin, William P., New York, N. Y. Bath-tub and wash-tub combined	331,271	Dec. 1	3	1	33	1001
Austman, Paul, Louisville, Ky. Transposition key-board	330,253	Nov. 10	1148	305	33	732
Autley, John D. (See Zeigler and Autley.)						
Automatic Fire Alarm and Extinguisher Company. (See Bulen, George F., assignor.)						
Averill, John W., Wilton, Me. Hay-knife grinder	328,375	Oct. 13	1131	292	33	214
Avery, Charles E., Boston, Mass., assignor to Avery Lactate Company, Portsmouth, N. H. Manufacture of lactates	330,815	Nov. 17	1844		33	873
Avery, James R., Louisville, Ky. Car-coupling	330,284	Nov. 10	1149	305, 306	33	732
Avery Lactate Company. (See Avery, Charles E., assignor.)						
Avery Lactate Company. (See Underwood, Harold G., assignor.)						
Avery Lactate Company. (See Waite, Charles N., assignor.)						
Avery Planter Company. (See Avery and Berrien, assignors.)						
Avery, Robert H., and L. B. Berrien, assignors to Avery Planter Company, Peoria, Ill. Cultivator	329,802	Nov. 3	505	129	33	601
Avery, William C., Providence, R. I. Making ingots for plated wire	328,871	Oct. 20	1782	465	33	340
Ayers, Albert, Rahway, assignor to himself and W. R. Wilson, Elizabeth, N. J. Sash-holder	329,803	Nov. 3	507	129	33	601
Ayers, Albert, Rahway, assignor to himself and W. R. Wilson, Elizabeth, N. J. Sash-frame holder and casing for carriages, cars, and other uses	332,180	Dec. 8	1384	357	33	1252
Ayres, James, *et al.* (See Decker, Alexander C., assignor.)						
Ayres, Jared A., Groton, assignor to Pneumatic Engine Company, Hartford, Conn. Automatic valve	327,986	Oct. 13	625	165	33	120
Ayres Manufacturing Company. (See Ayres, Samuel, assignor.)						
Ayres, Peter, *et al.* (See Decker, Alexander C., assignor.)						
Ayres, Ruben B., St. Louis, Mo. Elevator hoisting device	330,865	Nov. 24	1914	519	33	893
Ayres, Samuel, assignor to Ayres Manufacturing Company, Worcester, Mass. Wire show-stand	331,222	Nov. 24	2397	648	33	981
Ayres, Samuel, assignor to Ayres Manufacturing Company, Worcester, Mass. Lock for traps	331,223	Nov. 24	2398	648	33	982

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Babbitt, Benjamin T., New York, N. Y. Apparatus for boiling soap under pressure	330,663	Nov. 17	1643	442	33	836
Babbitt, S. William, Meriden, Conn. Butter-dish	330,193	Nov. 10	1038	271	33	710
Babbott, William M. (See Banker and Roberts, assignors.)						
Babcock, E. Stillman, assignor to himself and H. F. Clark, Milton, Wis. Pipe holder and lifter	328,174	Oct. 13	871	226	33	165
Babcock, Erskine L. (See Long and Babcock.)						
Babcock, Henry D., Leonardsville, N. Y. Horse hay-fork	328,997	Oct. 27	1988	517	33	384
Babcock, William H., Washington, D. C. Suspension device for lamps	332,695	Dec. 22	2121	559	33	1395
Babcock, William H., Washington, D. C. Device for measuring liquids	329,427	Nov. 3	2	1	33	505
Bach, Fred, Carlton, Wis. Device for measuring liquids	329,253	Oct. 27	2356	610	33	451
Bachelder, Cyrus P., Pawtucket, R. I. Burglar-alarm						
Bachman, Joseph A. (See Clark and Bachman.)						
Bachtell, Lewis H. (See Griffin and Bachtell.)						
Back, John R. (See Reed and Back.)						
Bacon, Charlotte A., Charlton Depot, Mass. Detachable spout for milk-pails	330,003	Nov. 10	789	202	33	659
Bacon, Ebenezer S. (See Bacon and Secord.)						
Bacon, Joseph H. and E. S., and V. Secord, Detroit, Mich. Automatic waste-cock	330,664	Nov. 17	1645	442	33	836
Badger, Gardner F., Brooklyn, N. Y. Apparatus for dredging	329,428	Nov. 3	3	1	33	505
Badger, Lewis D., Lake Village, assignor to American Rock and Track Lifter Company, Gilford, N. H. Track-lifter	328,376	Oct. 13	1133	292	33	214
Badische Anilin und Soda Fabrik. (See Kern and Müller, assignors.)						
Bagaley, Ralph. (See Bole, William A., assignor.)						
Bagaley, Ralph, assignor of one-half to W. A. Bole, Pittsburg, Pa. Pipe-coupling	332,035	Dec. 8	1174	307	33	1216
Bagnall & Loud Manufacturing Company. (See Ferrall, Thomas R., assignor.)						
Bailey, Augustus O. (See Ingalls, Wellington, assignor.)						
Bailey, Ephraim, West Newbury, assignor to himself and T. S. Bailey, Haverhill, Mass. Wash-board	328,175	Oct. 13	872	226	33	165
Bailey, Everett E., and M. E. Buckingham, Brooklyn, N. Y., assignors to H. E. Buckingham, Deep River, Conn. Spring bed-bottom	329,876	Nov. 10	621	158	33	628
Bailey, Fred A., assignor to Oakland Roller Skate Company, Oakland, Me. Roller-skate	332,181	Dec. 8	1385	358	33	1253
Bailey, Henry L., Brooklyn, assignor to Telegraphic Time Company, New York, N. Y. Electric synchronizing device for clock-pendulums	332,987	Dec. 22	2510	664	33	1468
Bailey, Hezekiah, St. Thomas, Ontario, Canada. Grain-separator	331,468	Dec. 1	308	82	33	1053
Bailey, Howard S., Denver, Colo. Anti-friction bearing	328,176	Oct. 13	873	227	33	165
Bailey, James H., Leading Creek, W. Va. Corn-house	331,755	Dec. 8	772	195	33	1144
Bailey, James M., and R. A. Carter, Pittsburg, Pa. Flanging-machine	328,274	Oct. 13	990	258	33	187
Bailey, James M., and R. A. Carter, Pittsburg, Pa. Flanging-machine	329,694	Nov. 3	361	92	33	573
Bailey, John W., Denver, Colo. Ore-concentrating mill						
Bailey, Joseph A. (See Workman, Thomas M., assignor.)						
Bailey, Leonard, Hartford, Conn. Blotter-bath	328,634	Oct. 20	1494	389	33	286
Bailey, Richard A., Providence, R. I. Electro-magnetic cut-off for engines	331,674	Dec. 1	645	159, 160	33	1111
Bailey, Selden A., New York, N. Y. Vehicle-spring	328,100	Oct. 13	774	202	33	147
Bailey, Thomas S. (See Bailey, Ephraim, assignor.)						
Bailey, William, New Hartford, N. Y. Whiffletree-circle	328,998	Oct. 27	1989	517	33	385
Baillie, John, Salem, Ohio. Brick-machine	332,474	Dec. 15	1782	467, 468	33	1390
Baily, John. (See McIntyre, Elmer E., assignor.)						
Baird, Frederick C. (See Prindle and Baird.)						
Baird, James J. (See Oviatt, Solomon E., assignor.)						
Baker, Allen S., Evansville, Wis. Millstone-dress	330,665	Nov. 17	1646	442, 443	33	836
Baker, Christian E., Chicago, Ill. Propeller for vessels	328,559	Oct. 20	1378	359	33	266
Baker, David A., Philadelphia, Pa. Metallic sign	333,274	Dec. 29	2924	765	33	1547
Baker, Delos R., Ludlow, Ky. Machine for the reduction of solids	328,635	Oct. 20	1495	389	33	286
Baker, Franklin P., Chelsea, Mass. Polo-goal	331,756	Dec. 8	773	195	33	1144
Baker, G. Henry, Morenci, Mich. Fabric-turfing implement	333,379	Dec. 29	3059	798	33	1571
Baker, George W., Cleveland, Ohio. Skate	330,543	Nov. 17	1500	401	33	806
Baker, Henry B., Hulls, Ohio. Steam-boiler cleaner	332,036	Dec. 8	1174	307	33	1217
Baker, Henry M. (See Vandercook, Smith, and Baker.)						
Baker, Jackson R., and J. Craig, Jersey City, N. J. Slate-pencil sharpener	330,666	Nov. 17	1648	443	33	837
Baker, Jacob M., Boston, Mass. Material for the decoration of the interior walls and ceilings of buildings	331,469	Dec. 1	309	83	33	1053
Baker, John, Salt Lake City, Utah Ter. Oil-filter	328,872	Oct. 20	1784	465	33	341
Baker, John T., Lee's Summit, Mo. Adjusting device for harvesters	328,273	Oct. 13	987	257	33	187
Baker, John W., Bunker Hill, Ind. Fire-door for furnaces	329,693	Nov. 3	360	92	33	573
Baker Lime Company. (See Hunt, Joshua, assignor.)						
Baker, Mifflin J., Philadelphia, Pa. Device for sewing books, pamphlets, &c	329,254	Oct. 27	2358	610	33	451
Baker, Sanford J., Oakland, Me. Lawn-mower	327,967	Oct. 13	626	165	33	120
Baker, William C., New York, N. Y. Car-heater	331,367	Dec. 1	157	40	33	1026
Bakewell, Paul. (See Ramel and Dean, assignors.)						
Balder, William, Chicago, assignor of one-half to G. H. Webster, Cook County, Ill. Apparatus for preserving meats, &c	332,988	Dec. 22	2513	664	33	1468
Baldwin, Eben A., assignor to Davis & Furber Machine Company, North Andover, Mass. Spinning-mule	331,272	Dec. 1	4	2	33	1001
Baldwin, Eben A., assignor to Davis & Furber Machine Company, North Andover, Mass. Mule for spinning	331,368	Dec. 1	158	40, 41	33	1026
Baldwin, Eben R., Cortland, N. Y. Rotary motor	330,194	Nov. 10	1039	271	33	710
Baldwin, Fred C. (See Freese and Baldwin.)						
Baldwin, George, Willimantic, Conn. Thread-guide and tension-regulator for loom-shuttles	330,544	Nov. 17	1501	401	33	806
Baldwin, George E., Philadelphia, Pa. Railway	329,429	Nov. 3	5	1	33	506
Baldwin, John R., Montgomery, Ala. Flooring-board	329,616	Nov. 3	262	68	33	555
Baldwin & Lamkin. (See Whittlesey, Samuel F., assignor.)						
Baldwin, Luther C., Manchester, N. H. Apparatus for painting bobbins	331,757	Dec. 8	774	196	33	1144
Baldwin, Mortimer S. (See Sweeney, John M., assignor.)						
Ball, Clinton M., assignor to J. A. Powers, Troy, N. Y. Dynamo-electric machine	329,118	Oct. 27	2167	561	33	415
Ball, Frederick W. (See Brooks, Ball, and Brooks.)						
Ball, James A. (See Moore and Ball.)						
Ball, Lorenzo D., and J. T. Bender, Canton, Ohio. Rolling colter	331,935	Dec. 8	1026	267	33	1190
Ball, Phinehas, Worcester, and J. R. Smith, Springfield, assignors to Union Water Meter Company, Worcester, Mass. Pressure-regulator	329,119	Oct. 27	2169	562	33	415
Ballard, Clarence W. (See Thompson, Jesse B., assignor.)						
Ballard, Clarence W. (See Thompson, Jesse B., assignor.)						
Ballmann, J. Henry, Indianapolis, Ind. Scaffold-bracket	328,999	Oct. 27	1991	518	33	385
Ballou, George B., Milford, Mass. Automatic bail-lock	330,816	Nov. 17	1845	497	33	873
Baloun, Ignatius, Canton, Ohio. Tug-fastener	329,449	Oct. 20	1237	321	33	241

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Baltimore and Ohio Telegraph Company. (See Larish, Joseph W., assignor.)						
Baltzley, Edwin, Washington, D. C. Culinary beater	332,375	Dec. 15	1655	434	33	1308
Balz, John, assignor to T. Hooker, Syracuse, N. Y. Tool-handle	333,192	Dec. 29	2806	734	33	1525
Bamberger, Gabriel, *et al.* (See Loeser, Lazarus, assignor.)						
Bancroft, J. Sellers, assignor to W. Sellers, Philadelphia, Pa. Injector	331,178	Nov. 24	2325	630	33	969
Bangs, Charles H., Boston, Mass. Bottle-sheath	328,450	Oct. 20	1238	321	33	241
Banker, Christ. and J. H. Roberts, assignors to W. M. Babbott, Pittsburg, Pa. Machine for making elevator-buckets	331,109	Nov. 24	2229	605 606	33	952
Banks, George C. (See Johnstone, William, assignor.)						
Banks, William H., *et al.* (See Cross, Christopher G., assignor.)						
Bankwitz, Ernest C., Bridgeport, Conn. Weighing-scale	331,020	Nov. 24	2109	571	33	930
Banta, Ira S., Kansas City, Mo. Baggage-elevator	329,695	Nov. 3	362	92	33	574
Barbe, Joseph, Saint-Amand, Nord, France. Safety-valve	328,451	Oct. 20	1239	321	33	241
Barbean, Alfred, Ware, Mass. Washing-machine	327,988	Oct. 13	627	165 166	33	120
Barber, Adin M., Bridgeport, Conn., assignor to American Hand Sewing Machine Company, New York, N. Y. Sewing-machine	330,195	Nov. 10	1040	271	33	711
Barber, Amos P., Jr., assignor of one-fourth to C. S. Barber, Rahway, N. J. Hemmer	331,021	Nov. 24	2111	571	33	931
Barber, Amos P., Jr., assignor of one-fourth to C. S. Barber, Rahway, N. J. Folding-guide	331,022	Nov. 24	2112	572	33	931
Barber, Amzi L., assignor to Barber Asphalt Paving Company, Washington, D. C. Asphaltic mastic	330,196	Nov. 10	1041	.....	33	711
Barber, Amzi L., assignor to Barber Asphalt Paving Company, Washington, D. C. Asphaltic cement for paving, roofing, &c	330,197	Nov. 10	1042	.....	33	711
Barber Asphalt Paving Company. (See Barber, Amzi L., assignor.)						
Barber, Charles S. (See Barber, Amos P., Jr., assignor.)						
Barber, Emmet N., Kent, Ohio. Lumber-measure	332,864	Dec. 22	2339	619	33	1435
Barber, Frank H., assignor of one-half to G. R. Dickinson Paper Company, Holyoke, Mass. Spool-winder	327,511	Oct. 6	2	1	33	3
Barber, Jackson A., North Adams, Mich. Stanchion	327,753	Oct. 6	326	84	33	57
Barber, Richard H., Galena, Kans. Automatic stock water-tank	330,667	Nov. 17	1648	443	33	837
Barber, Vincent S., and S. D. Reynolds, Rochelle, Ill. Combined collar and hame	330,456	Nov. 17	1590	370	33	785
Barber, William E., Wyoming, R. I. Stone lifting and carrying machine	327,969	Oct. 13	628	166	33	121
Barber, William H., Ward, Ohio. Automatic registering-machine	329,120	Oct. 27	2171	562	33	415
Barber, William W., Ruthven, Iowa. Dust-protector for thrashing-machines	332,224	Dec. 15	1448	375	33	1271
Barbier, Robert P., Paris, France. Telephone system	330,368	Nov. 17	1274	338	33	764
Barclift, Willis A., *et al.* (See Schnell, Adam, assignor.)						
Bardin, James, Jr., Salinas, Cal. Gate	328,560	Oct. 20	1379	359	33	266
Bardsley, Joseph, Newark, N. J. Door spring and check	329,000	Oct. 27	1992	518	33	385
Bare, John, Mount Union, Pa., assignor to R. B. Bare, Washington, D. C. Nut-lock	333,380	Dec. 29	3060	798	33	1571
Bare, Robert B. (See Bare, John, assignor.)						
Barker, David, assignor to Canton Glass Company, Canton, Ohio. Mold for forming screw-caps	330,545	Nov. 17	1501	402	33	806
Barker, Irving, Braidwood, assignor of one-half to J. D. Bennett, Wilmington, Ill. Chimney-top	329,993	Nov. 10	773	198	33	656
Barker, J. S., *et al.* (See Houlehan, James, assignor.)						
Barkis, William, *et al.* (See McMurtrie, James E., assignor.)						
Barkley, Charles W., Seward, Nebr. Animal-trap	330,668	Nov. 17	1649	444	33	837
Barlow, Aurelius T., Marshfield, Oreg. Clamp for roof-scaffolds, &c	330,546	Nov. 17	1503	402	33	806
Barlow, Joseph C., Quincy, Ill. Corn-planter	328,101	Oct. 13	775	202 203	33	147
Barlow, Joseph C., Quincy, Ill. Wire for check-row corn-planters	328,452	Oct. 20	1239	322	33	241
Barlow, Joseph C., Quincy, Ill. Anchor for check-row planters	329,255	Oct. 27	2359	611	33	451
Barlow, Joseph C., Quincy, Ill. Corn-planter	329,994	Nov. 10	773	198 199	33	656
Barlow, Orrin G. (See Walker and Barlow.)						
Barlow, Samuel, Castleton, near Manchester, England. Manufacture of compound fabric for book-binding	332,778	Dec. 22	2227	587	33	1416
Barnard, Charles L., Byhalia, Miss. Portable hay and cotton press	332,077	Dec. 8	1176	308	33	1217
Barnard, George D. (See Knapp, Edward, assignor.)						
Barnard, James E., and P. Geary, Sterling, Ohio. Harrow	332,581	Dec. 15	1950	510	33	1357
Barnekov, Jennie M., *et al.* (See Barnekov, Kiel V., assignor.)						
Barnekov, Kiel V., assignor to C. R. Irwin and J. M. Barnekov, Newburg, N. Y. Square piano	332,182	Dec. 8	1386	358	33	1253
Barnes, Avon. (See Cunningham and Barnes.)						
Barnes, Charles E., Paterson, N. J. Braid-board	332,038	Dec. 8	1177	308	33	1217
Barnes Company, W. F. & John. (See Barnes, William F., assignor.)						
Barnes, David J., Fort Atkinson, Wis. Cattle-stanchion	333,275	Dec. 29	2925	765	33	1547
Barnes, George A., New Haven, Conn. Wrench	330,369	Nov. 17	1276	339	33	764
Barnes, George A., New Haven, Conn. Lathe-chuck	331,663	Dec. 1	539	131	33	1092
Barnes, Marion M., Weller, Iowa. Sickle-bar	329,696	Nov. 3	365	36, 37	33	574
Barnes, Robert A., Berry, Ill. Flood-gate	332,039	Dec. 8	1178	308	33	1217
Barnes, William F., assignor to W. F. & J. Barnes Company, Rockford, Ill. Scroll-sawing machine	328,377	Oct. 13	1134	283	33	214
Barney, George C. (See Abbott, Levi, assignor.)						
Barney, George W. (See Lowe, Austin, assignor.)						
Barney, Richard W. (See Van Winkle, George H., assignor.)						
Barnhart, Irving W., Flint, Mich. Crayon and eraser holder for blackboards	328,177	Oct. 13	874	227	33	165
Barr, John R., Union Star, Ky. Remedy for rheumatism	329,697	Nov. 3	365	.....	33	574
Barr, William H., Conway, Mo. Fire-escape step-rod attachment	328,636	Oct. 20	1498	390	33	287
Barr, William H., Grove Spring, Mo. Fire-escape	328,637	Oct. 20	1499	390	33	287
Barrett, Albert. (See Price and Barrett.)						
Barrett, Henry, London, England. Stopper for bottles	331,023	Nov. 24	2112	572	33	931
Barrett, John A., Brooklyn, N. Y. Conduit for subterranean electrical conductors	332,319	Dec. 15	1574	413 414	33	1294
Barrett, John L., *et al.* (See MacLean, Daniel J., assignor.)						
Barrett, Josiah, assignor to Duff Manufacturing Company, (limited,) Allegheny, Pa. Lifting-jack. (Reissue)	10,651	Oct. 13	1234	320	33	234
Barrett, Richard, Newark, N. J. Traveler for carrying carcasses	331,758	Dec. 8	775	196	33	1144
Barron, Thomas J., Newnan, Ga. Leveling-instrument	331,604	Dec. 1	540	131	33	1092
Barron, Walter J., assignor to American Writing Machine Company, New York, N. Y. Type-writing machine	330,198	Nov. 10	1043	272	33	711
Barrow, Thomas E., Mansfield, Ohio. Cash-carrier	331,936	Dec. 8	1028	267	33	1191
Barrows, Frederick, Haverhill, Mass. Shade-holder	328,275	Oct. 13	992	258	33	188
Barry, John, New York, N. Y. Thermometric electric alarm	329,698	Nov. 3	366	93	33	574

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Barry, Robert. (See Trout, John F., assignor.)						
Bartels, Charles L. (See Ashton, James S., assignor.)						
Barter, Thomas D., assignor to C. A. Shaw, Boston, Mass. Circular-cloak	331,179	Nov. 24	2330	631	33	970
Bartlett, Henry M., Boston, Mass. Piston-meter for fluids	331,605	Dec. 1	541	132	33	1092
Bartlett, Henry M., Somerville, Mass. Piston-meter for fluids	333,099	Dec. 29	2675	701 702	33	1503
Bartlett, Marcus J. (See Wilkins and Bartlett.)						
Bartlett, William W., Salt Lake City, Utah Ter. Bed-spring	329,121	Oct. 27	2173	562	33	416
Bartley, Harvey, Pittsburg, Pa. Detecting leakage in gas-mains	330,199	Nov. 10	1043	272	33	711
Barton, Edward F., assignor of one-half to T. Grundel, Ravenna, Ohio. Crate	332,376	Dec. 15	1658	435	33	1308
Barton, Elijah C., East Hampton, Conn. Door-plate	332,775	Dec. 22	2223	586	33	1415
Barton, George T., Englewood, assignor to S. Smith, Chicago, Ill. Index	330,365	Nov. 10	1153	306	33	733
Bartram, Charles E., Fredonia, N. Y. Sidewalk-cleaner	327,990	Oct. 13	629	166	33	121
Bash, David W., Chatsworth, Ill. Cultivator	327,754	Oct. 6	327	84	33	57
Basnett, Philip S., Basnettville, W. Va. Gate	328,748	Oct. 20	1637	426	33	313
Bassell, John Y., assignor to R. G. Bassell, Leesburg, Va. Sash-fastener	329,804	Nov. 3	507	130	33	601
Bassell, John Y., assignor to R. G. Bassell, Leesburg, Va. Weather-strip	330,709	Nov. 17	1787	481	33	862
Bassell, John Y., assignor to R. G. Bassell, Leesburg, Va. Weather-strip	330,866	Nov. 24	1914	519	33	893
Bassell, Rebecca G. (See Bassell, John Y., assignor.)						
Bassemir, John, and G. Humel, Brooklyn, N. Y.; said Humel assignor to said Bassemir. Lamp	328,276	Oct. 13	993	258	33	188
Bassett, James S. (See Westervelt, Douglas, assignor.)						
Bassett, Norman C., assignor to Crane Brothers Manufacturing Company, Chicago, Ill. Hydraulic elevator	331,273	Dec. 1	6	2	33	1002
Bassett, Norman C., assignor to Hydraulic Elevator Company, Chicago, Ill. Operating mechanism for elevators	332,776	Dec. 22	2224	586 587	33	1415
Bassini, Charles, Irvington, and A. Heyden, Newark, N. J. Incubator	330,457	Nov. 17	1391	370 371	33	785
Bate, William T., Conshohocken, Pa. Relief-valve for gas-generators	331,024	Nov. 24	2113	572	33	931
Bates, Albert J., Joliet, Ill. Wire-barbing machine	329,355	Oct. 27	2511	647	33	478
Bates, Albert J., assignor of one-half to H. C. Knowlton and B. H. King, Joliet, Ill. Door-hanger	330,286	Nov. 10	1154	306	33	733
Bates, Alexander K., Weymouth, Mass. Drinking-fountain for poultry	328,749	Oct. 20	1638	427	33	313
Bates, Daniel L., assignor of one-half to B. F. Arnold, Dayton, Ohio. Washing-machine	331,675	Dec. 1	650	160	33	1112
Bates, George M., Tipton, Ind. Gate	331,110	Nov. 24	2232	606	33	953
Bates, Lafayette, assignor of one-half to L. Eaves, St. Louis, Mo. Car-coupling	333,051	Dec. 22	2604	682	33	1484
Battershall, Joseph W., Attleborough, Mass. Manufacture of surgical corsets	328,638	Oct. 20	1499	390	33	287
Batton, John H., Selma, Ala. Convertible chair	331,111	Nov. 24	2233	606 607	33	953
Bauer, Charles F., Newark, N. J. Watch-guard	329,122	Oct. 27	2174	563	33	416
Bauer, John C., Brockley, county of Kent, England. Pipe-vise	328,102	Oct. 13	778	203	33	147
Bauer, John C., Brockley, county of Kent, England. Lathe-chuck	330,867	Nov. 24	1915	519	33	893
Bauer, John C., London, England. Die-stock	330,868	Nov. 24	1916	520	33	893
Baughman, George T., *et al.* (See Clark, Levi S., assignor.)						
Baum, Albert B., Grantville, Pa. Meat-chopper	333,381	Dec. 29	3061	798	33	1571
Baumann, Erhard, Dayton, Ohio. Wash-basin holder and attachment	327,091	Oct. 13	630	166	33	121
Baumer, Anton F., Syracuse, N. Y. Apparatus for shaping and finishing candles	330,200	Nov. 10	1045	272	33	712
Baumgartner, George W., New Orleans, La. Rotary egg-preserver	333,100	Dec. 29	2676	702	33	1503
Bausch, Edward, Rochester, N. Y. Microscope	332,277	Oct. 13	994	259	33	188
Baxter, Charles M., Lebanon, N. H. Hot-air furnace	331,025	Nov. 24	2115	572	33	931
Baxter, Charles O. (See Johnson and Kozisek, assignors.)						
Baxter, Charles O., St. Louis, Mo. Machine for making picture-frame moldings	329,877	Nov. 10	622	158	33	628
Baxter, Charles O., St. Louis, Mo., assignor of one-half to H. C. Johnson and J. Kozisek, Chicago, Ill. Making picture-frame molding	327,643	Oct. 6	191	47	33	34
Baxter, George W., Jr., *et al.* (See Baxter, Hamilton, assignor.)						
Baxter, Hamilton, assignor of two-thirds to G. W. Baxter, Jr., and C. W. Smith, Syracuse, N. Y. Cartridge-loading implement	328,750	Oct. 20	1639	427	33	313
Bayley, George B., Oakland, Cal. Brooder for chickens	330,547	Nov. 17	1503	402	33	806
Bayley, William. (See Whiteley and Bayley.)						
Baylis, Benjamin, Jr., Beltzhoover, Pa. Apparatus for manufacturing iron and steel	332,475	Dec. 15	1786	468 469	33	1330
Baynes, William, and A. R. Clark, Buffalo, N. Y. Ash or garbage receptacle	330,201	Nov. 10	1047	273	33	712
Bayrhoffer, Theodore, Shelby, Nebr. Scissors	330,287	Nov. 10	1155	306	33	734
Beach, Clifton B., Cleveland, Ohio. Manufacture of car-wheels	329,617	Nov. 3	263	68	33	555
Beachman, Robert, Lyons, N. Y. Automatic damper-regulator	329,995	Nov. 10	776	159	33	657
Beacock, George, and T. Sparham, Brockville, Ontario, Canada. Artificial arm and hand	329,878	Nov. 10	624	158	33	628
Beacock, George, and T. Sparham, Brockville, Ontario, Canada. Artificial limb	329,879	Nov. 10	625	158	33	628
Beacock, George, and T. Sparham, Brockville, Ontario, Canada. Artificial limb	329,880	Nov. 10	626	159	33	628
Beadle, Edward, *et al.* (See Martinez, Rafael, assignor.)						
Beal, Sarah V., Ann Arbor, Mich. Bed-pan	330,548	Nov. 17	1505	402	33	807
Beal, Thomas W., Venice, Ill. Land-marker	328,561	Oct. 20	1389	359 360	33	266
Beale, Joseph H., Boston, Mass. Paper-calendering roll	328,639	Oct. 20	1500	390	33	287
Beall, Augustus W., Dayton, Ohio. Burner for gas-stoves	329,527	Nov. 3	146	37	33	533
Beals, Ebenezer, Norwich, N. Y. Ash-pan for locomotives	328,751	Oct. 20	1640	427	33	314
Bean, Edward D., Boston, Mass. Cane-gun	329,430	Nov. 3	6	2	33	506
Beane, Frank E., *et al.* (See Armstrong, John B., assignor.)						
Beard, Horace, Wilton, N. H. Register or counter for machines, steam-engines, pumps, &c	329,996	Nov. 10	777	200	33	657
Beard, Robert R., and W. H. Oakley, Bermondsey, county of Surrey, England. Fluid-pressure regulator	330,549	Nov. 17	1506	403	33	807
Beard, William W., Sterling, Ohio. Harrow	333,198	Dec. 29	2807	734	33	1525
Beardsly, Morison. (See French, Carmi M., assignor.)						
Beatty, Dempster, Mishawaka, Ind. Manufacture of felted mittens and gloves	333,101	Dec. 29	2677	702	33	1504
Beatty, Dempster, Mishawaka, Ind. Making printing rollers or blocks	332,377	Dec. 15	1659	.....	33	1308
Beck, Frederick, New York, N. Y. Making printing rollers or blocks	332,183	Dec. 8	1386	358	33	1253
Becker, George, assignor to Hancock, Becker & Co., Providence, R. I. Jewel-setting	327,853	Oct. 6	448	117	33	79
Becker, Henry L., assignor of one-half to F. Will, Rochester, N. Y. Fruit-jar						
Beckman, Charles J., Council Bluffs, Iowa. Locking-bracket for curtain and other rods and rails	332,562	Oct. 20	1382	360	33	267
Bedell, George E., Herkimer, N. Y. Mattress-rack	330,370	Nov. 17	1276	339	33	764
Bedinger, Daniel E., Richwood, Ky. Ruling apparatus	329,699	Nov. 3	367	93	33	574
Beebe, Charles H., Norwich, Conn. Knob attachment	331,112	Nov. 24	2237	608	33	953
Beebe, Oscar, assignor of one-third to S. Mitchell, Hornellsville, N. Y. Sash-balance	330,371	Nov. 17	1277	339	33	765

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Beecher, George B. (See Grosinski and Beecher.)						
Beedy, Seth E., Farmington, Me. Telephonic transmitter	329,001	Oct. 27	1994	518, 519	33	385
Beekman, Gerard, New York, N. Y. Device for picking cotton	332,865	Dec. 22	2342	619	33	1436
Beeman, Jedediah D. (See Atwood, George F., assignor.)						
Beerbower, George M., Cherry Vale, Kans. Barbed fence	327,755	Oct. 6	398	84	33	58
Beetchenow, William C., Newark, N. J. Safety-pocket for watches	327,854	Oct. 6	449	117	33	79
Beghtel, Eli, Huntington, Ind. Portable sawing-machine	329,002	Oct. 27	1996	519	33	386
Bégin, Louis N., Faribault, Minn. Rotary steam-engine	332,040	Dec. 8	1178	309	33	1217
Beidler, Theodore F. (See Phillips, Edward, assignor.)						
Beimling, Henry, assignor of two-thirds to L. Krantter and G. H. Orcutt, Philadelphia, Pa. Centrifugal creamer	327,756	Oct. 6	398	84, 5	33	58
Bekofsky, Vladimir S., Jenchnan, Corea. Hair-cutting machine	327,512	Oct. 6	4	1	33	3
Belden Company, R. A. (See Belden, Russell A., assignor.)						
Belden, Russell A., Danbury, Conn., assignor to R. A. Belden Company. Turn-table for hat-forming machines	331,180	Nov. 24	2331	631	33	970
Belden, Russell A., Danbury, Conn., assignor to R. A. Belden Company. Bearing for fur-blowing machines	331,181	Nov. 24	2333	631, 632	33	970
Belding, William R., Mountain View, Ark. Fire-place grate	333,382	Dec. 29	3062	798	33	1571
Beldnke, Joseph, San Francisco, Cal. Screw-propeller	329,598	Nov. 3	146	37	33	533
Bell, C. M., *et al.* (See Cathcart, James L., assignor.)						
Bell, J. Wood, *et al.* (See Cathcart, James L., assignor.)						
Bell, James E., *et al.* (See Cathcart, James L., assignor.)						
Bell, John H., Mount Ephraim, N. J. Steam-boiler	330,458	Nov. 17	1393	371	33	786
Bellamy, Luther H., Brockville, Ontario, Canada. Horseshoe	329,700	Nov. 3	368	93	33	575
Belter, F. Samuel, Burlington, Vt. Planing-machine	331,606	Dec. 1	543	132	33	1093
Beltz, William, Denver, Dak. Ter. Bundle-carrier for harvesters	330,459	Nov. 17	1395	371	33	786
Bemis Car Box Company. (See Bemis, Sumner A., assignor.)						
Bemis, Sumner A. (See Emory, Paschal P., assignor.)						
Bemis, Sumner A., assignor to Bemis Car Box Company, Springfield, Mass. Car-wheel and axle-box	330,372	Nov. 17	1279	340	33	765
Bender, Albert N., Manhattan, Kans. Stove-polish	329,529	Nov. 3	148	.....	33	533
Bender, John T. (See Ball and Bender.)						
Bender, Randolph E. (See Garrison, Samuel R., assignor.)						
Benedict, George H., Chicago, Ill. Cabinet exercising apparatus	332,989	Dec. 22	2515	664, 665	33	1468
Benjamin, Edson M., Hartford, Conn. Step-ladder	327,513	Oct. 6	5	2	33	3
Benjamin, George V., Ithaca, N. Y. Snow-plow with snow-cutters	328,640	Oct. 20	1501	391	33	287
Benjamin, John C., Bridgeport, Conn. Tubular boiler	330,202	Nov. 10	1048	273	33	712
Bennett, George H., Cincinnati, Ohio. Pump	330,669	Nov. 17	1651	444	33	837
Bennett, Jackson W., Carthage, Mo. Farm-gate	327,992	Oct. 13	631	167	33	121
Bennett, James D. (See Barker, Irving, assignor.)						
Bennett, John B. (See Gilliland, James F., assignor.)						
Benson, B. D. (See Warren, Benjamin F., assignor.)						
Benson, Benjamin S., Baltimore, Md. Surface-condenser	328,752	Oct. 20	1641	428	33	314
Benton, Charles H., Cleveland, Ohio. Holder for incandescent lamps	329,618	Nov. 3	266	68	33	555
Benton, Fred H. (See Scott, James A., assignor.)						
Benton, John B., Roselle, N. J., assignor to Standard Cancelling Ballot Box Company, Boston, Mass. Registering and canceling ballot-box	327,644	Oct. 6	191	47, 8	33	35
Benton, John B., Roselle, N. J., assignor to Standard Cancelling Ballot Box Company, Boston, Mass. Registering and canceling ballot-box	327,645	Oct. 6	196	48, 9	33	35
Benton, John B., New York, assignor to Railway Register Manufacturing Company, Buffalo, N. Y. Fare-registering machine	332,866	Dec. 22	2343	619, 620, 621	33	1436
Benton, Linn B., assignor to Benton, Waldo & Co., Milwaukee, Wis. Punch-cutting machine	327,855	Oct. 6	450	117, 118	33	79
Benton, Linn B., assignor to Benton, Waldo & Co., Milwaukee, Wis. Punch-cutting machine	332,990	Dec. 22	2518	665	33	1469
Benton, Russell O., Buffalo, N. Y. Thawing hydrants or water-pipes	329,881	Nov. 10	628	159	33	629
Benton, Waldo & Co. (See Benton, Linn B., assignor.)						
Bergan, John A., Holden, assignor of one-half to C. W. Gilbert, Worcester, Mass. Let-off mechanism for looms	331,274	Dec. 1	8	2	33	1002
Berghelm, George L. (See König, August, assignor.)						
Bergmann & Co. (See Kidder, Charles L., assignor.)						
Bergmann & Co. (See Lange, Philipp, assignor.)						
Berman, Elias, Los Angeles, Cal. Watchman's time-detector	331,759	Dec. 8	776	196	33	1145
Bernard, George, *et al.* (See Larkin, John C., assignor.)						
Bernard, Lambert. (See Lemperenr and Bernard.)						
Bernardin, Alfred L., Evansville, Ind. Bottle-washing apparatus	332,582	Dec. 15	1951	511	33	1358
Berrell, George B., Willow Grove, Pa. Spring-propelled vehicle	329,003	Oct. 27	1997	519, 520	33	386
Berrens, Hippolite, Barcelona, Spain. Apparatus for extracting mercury from its ores	331,860	Dec. 8	913	236	33	1169
Berrien, Leonard B. (See Avery and Berrien.)						
Berry, Thomas H., Philadelphia, Pa. Apparatus for distilling wood	332,320	Dec. 15	1577	414	33	1204
Berteaux, Georges, assignor to G. W. Ennis & Co., Philadelphia, Pa. Woven fabric	333,276	Dec. 29	2926	766	33	1548
Bettendorf, William P., Peru, Ill. Hub	329,004	Oct. 27	2001	520	33	387
Bettendorf, William P., assignor to himself and Peru City Plow Company, Peru, Ill. Plow and planter	329,123	Oct. 27	2175	563, 564	33	416
Beverstein, Daniel E., Middlebury, Ind. Sash-balance	328,563	Oct. 20	1384	360	33	267
Bex, Frederick, and E. F. Heunach, Washington, D. C. Two-wheeled vehicle	332,777	Dec. 22	2227	587	33	1416
Beyerlen, Angelo, Chicago, Ill. Steno-typograph	331,275	Dec. 1	10	3	33	1002
Beyerly, William G., Portsmouth, Ohio. Button	328,753	Oct. 20	1642	428	33	314
Beyrich, Richard W. (See Schmidt, John J. G. C., assignor.)						
Bianchi, Gerolamo, Genoa, Italy. Rigging for sails of vessels	332,583	Dec. 15	1952	511	33	1358
Bibb, William C., Atlanta, Ga. Machine for crushing ores, phosphates, &c	333,383	Dec. 29	3063	799	33	1571
Bickel, John F. (See McCarty, Harry C., assignor.)						
Bickner, Samuel R., Dedham, Mass. Window-blind	330,203	Nov. 10	1049	274	33	712
Bierbach, Albert G., Milwaukee, Wis. Fire-escape	329,956	Oct. 27	2363	611	33	452
Bige'ow, John, Philadelphia, Pa. Sewing-machine	331,026	Nov. 24	2116	573	33	931
Bigelow, John, Philadelphia, Pa. Sewing-machine	331,027	Nov. 24	2118	573	33	932
Bigelow, Nicholas V., and A. Whitbeck, Wolcott, N. Y. Hay elevator and conveyer	328,453	Oct. 20	1240	322	33	241
Bigelow, William P., Natick, Mass., assignor to Merchants' Store Service Company, Portland, Me. Cash and package carrier	330,869	Nov. 24	1917	520	33	894

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Bihn, George F., assignor to Pennsylvania Salt Manufacturing Company, Philadelphia, Pa. Obtaining hydrate of alumina for paper-makers' use from bauxite, &c	331,182	Nov. 24	2334	.....	33	971
Billingham, Philip, Trenton, N. J. Meat-mincing machine	328,641	Oct. 20	1502	391	33	288
Billings, Henry A. (See Tesseyman and Billings.)						
Billings, John D., and D. Mueller, assignors of one-half to F. Fuller, New York, N. Y. Horseshoe-machine	330,670	Nov. 17	1653	444, 445, 446	33	838
Billingsley, James. (See Burr, George S., assignor.)						
Billmeyer, William D. (See Coles, Erskine A., assignor.)						
Bills, Elias, Macy, Ind. Mole-trap	332,133	Dec. 8	1322	343	33	1242
Binder, Hermann, St. Louis, Mo. Keg-washing machine	330,550	Nov. 17	1507	403	33	807
Bindseil, Hermann F., New York, N. Y. Button for fur garments	327,757	Oct. 6	330	85	33	58
Binet, Philias H., East Brighton, Vt. Belt-tightener	332,867	Dec. 22	2351	621	33	1438
Bingham, Charles W., Jr., Boston, assignor to C. H. Kelley, Revere, and F. C. Perkins, Somerville, Mass. Filter	327,646	Oct. 6	199	49	33	36
Binns, Leedham, Philadelphia, Pa. Endless band or cord	330,087	Nov. 10	908	235	33	684
Binns, Robert, South Windham, Conn. Machine for sewing in a spiral or helical path	331,607	Dec. 1	544	133	33	1093
Bird, Charles S., Elyria, Ohio. Rotary engine	331,224	Nov. 24	2398	648, 649	33	982
Bird, Charles S., East Walpole, Mass. Composition of matter for waterproofing paper	332,988	Dec. 22	2352	.....	33	1438
Birdsall, Samuel, Susquehanna, Pa. Hitching-strap	332,779	Dec. 22	2329	588	33	1416
Birdsell, J. Ben. (See Wetmore and Bratt, assignors.)						
Birge, Walter F., Buffalo, N. Y. Manufacture of starch	329,701	Nov. 3	369	93	33	575
Birge, William H., Franklin, Pa. Perfumer	331,937	Dec. 8	1029	267	33	1192
Birkenhead, John, Mansfield, Mass. Mechanism for supporting and guiding drills while being ground	327,758	Oct. 6	330	85	33	58
Birkett, B. Frank., Burlington, N. J. Combined cultivator and land-marker	331,028	Nov. 24	2119	574	33	932
Bishop, Calvin W., Verona, N. Y. Device for attaching milk-cans to wagons	329,431	Nov. 3	7	2	33	506
Bishop, John W., New Haven, Conn. Fire-extinguisher	332,041	Dec. 8	1179	309	33	1218
Bishop, Samuel, Bloomington, Ill. Invalid-bed	331,608	Dec. 1	545	133	33	1093
Bissell Carpet Sweeper Company. (See Drew, Walter J., assignor.)						
Bissell, John H. (See Cope, Henry P., assignor.)						
Bissell, Melville R., Grand Rapids, Mich. Carpet-sweeper	329,257	Oct. 27	2364	611, 612	33	452
Black, Abraham B., *et al.* (See Jerrold, John E., assignor.)						
Black & Germer. (See Marquardt, J. George, assignor.)						
Black, Henry A. (See Jordan and Curry, assignors.)						
Black, James W., Berwick, Nova Scotia, Canada. Ice-cream soda	332,134	Dec. 8	1323	.....	33	1242
Black, Joseph P., assignor to Hapgood Plow Company, Alton, Ill. Sulky-plow	329,432	Nov. 3	8	2	33	506
Black, Joseph P., assignor to Hapgood Plow Company, Alton, Ill. Listing-cultivator	329,530	Nov. 3	148	37	33	533
Black, Joseph P., assignor to Hapgood Plow Company, Alton, Ill. Planting-plow	331,938	Dec. 8	1030	268	33	1192
Black, William T., Graham, Mo. Pastry-board	331,029	Nov. 24	2121	574	33	932
Blackburn, David, Montreal, Quebec, Canada. Waterproofing compound	326,514	Oct. 6	6	.....	33	3
Blackmore, John E., assignor of one-half to O. M. Bruce, Walnut, Iowa. Fence-wire carrier and stretcher	333,277	Dec. 29	2928	766	33	1548
Blair, James H. (See Buttler, William, assignor.)						
Blair, John, New York, N. Y. Fountain-pen	328,454	Oct. 20	1242	322	33	242
Blair, John J., Cincinnati, Ohio. Letter-box	331,760	Dec. 8	777	196	33	1145
Blair, John J., Cincinnati, Ohio. Revolving-cylinder engine	331,939	Dec. 8	1031	268	33	1192
Blake, Edward A., Chicago, Ill. Machine for trimming stereotype-plates	327,856	Oct. 6	455	118	33	80
Blake, Edward A., Chicago, Ill. Machine for shaving stereotype-plates	327,857	Oct. 6	456	118	33	80
Blake, George H., Portland, Me. Ore-separator	332,696	Dec. 22	2123	560	33	1395
Blake & Johnson. (See King and Lester, assignors.)						
Blake, Luther. (See Simonds and Blake.)						
Blakeley, Francis A. (See Hawley, William G., assignor.)						
Blakeslee, Harvey D., *et al.* (See Latta, Emmit G., assignor.)						
Blakeslee, Jared, Story City, Iowa. Wagon-seat lock	328,178	Oct. 13	875	227	33	166
Blakeslee, John R., Cleveland, Ohio. Bolt-blank machine	333,369	Dec. 22	2352	621, 622	33	1438
Blakesley, Gilbert H. (See Newman and Blakesley.)						
Blanchard, Albert M., Ellington, N. Y. Refrigerating-vessel for cold storage	332,584	Dec. 15	1954	511	33	1358
Blanchard, Forrest S. (See Smith, Orson W., assignor.)						
Blanchard, George, New York, N. Y. Compass-needle	332,780	Dec. 22	2231	588	33	1417
Blanchard, George T. (See Gordon and Blanchard.)						
Blessing, Charles A., Philadelphia, Pa. Basin or tub	330,204	Nov. 10	1050	274	33	713
Blessing, James H., Albany, N. Y. Device for preventing incrustation	330,460	Nov. 17	1396	371	33	786
Blickensderfer, George C., Erie, Pa. Excavating-machine	332,042	Dec. 8	1181	309	33	1218
Bliesner, William, St. Louis, Mo. Vapor-burner stove	327,647	Oct. 6	200	49	33	36
Bliss, Anthony H., North Attleborough, Mass. Burnishing-machine	332,476	Dec. 15	1788	469, 470	33	1339
Bliss, E. W. (See Jordan, Edmund, assignor.)						
Bliss, Elphalet W. (See Leavitt, Frank M., assignor.)						
Bliss, George H. (See Bliss, John and G. H.)						
Bliss, John and G. H., Brooklyn, N. Y. Rotator for ships' logs	331,369	Dec. 1	160	41	33	1097
Bliss Manufacturing Company, R. (See Tingley, George S., assignor.)						
Blocher, John C., Lima, Ohio. Two-wheeled vehicle	329,124	Oct. 27	2178	564, 565	33	417
Blocher, John C., Lima, Ohio. Car-coupling	333,439	Dec. 29	3136	800	33	1583
Blodgett, Henry L., Chicago, Ill. Sash-cord guide	329,005	Oct. 27	2001	521	33	387
Blodgett, Henry L., Chicago, Ill. Sash-pulley	329,006	Oct. 27	2003	521	33	387
Bloodworth, Augustus R. (See McMullen and Bloodworth.)						
Blnett, William H., Watertown, N. Y. Atomizer	327,977	Oct. 6	612	160	33	111
Blumenberg, Abraham L. (See Friedmann and Blumenberg.)						
Blyth, Frederick D. (See Southby, A. Gapper, assignor.)						
Boardman, Frederick, Mansfield, Mass. Pivoting-chuck	330,551	Nov. 17	1508	404	33	807
Boardman, Lorenzo M., assignor of one-half to S. Ladd, Minneapolis, Minn. Amalgamator and concentrator for stamp-mills	330,817	Nov. 17	1846	497	33	873
Bock, Anton H., Meissen, Saxony, Germany. Velocipede	331,113	Nov. 24	2237	608	33	954
Boden, Edmond P., *et al.* (See Anderson, Archie, assignor.)						
Bodenstein, Henry. (See Bodenstein, John G and H.)						
Bodenstein, John G. and H., Staatsburg, N. Y. Ice-plow	332,477	Dec. 15	1789	470	33	1330
Bodine, J Nixon, Bridgeton, N. J. Dirt-cart	329,702	Nov. 3	370	94	33	575
Bodine, J. Nixon, and O. Smith, Bridgeton, N. J.; said Smith assignor to said Bodine. Dirt-cart	329,703	Nov. 3	373	95	33	576

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Boelling, Lewis, receiver, *et al.* (See Loeser, Lazarus, assignor.)						
Boese, William, Newark, N. J. Harness-trimming	332,634	Dec. 15	2016	529	33	1370
Bogan, James F., assignor to Flinn & Co., Boston, Mass. Game-counter for cribbage	332,135	Dec. 8	1324	343	33	1242
Boggs, John M., *et al.* (See Williams, Thomas D., assignor.)						
Bogle, Walter S., Chicago, Ill. Locking device for coal-handling apparatus	333,278	Dec. 29	2928	766	33	1548
Bohlinger, Alfred P., St. Louis, Mo. Curtain-stretcher	328,278	Oct. 13	906	259	33	188
Böhme, Adolf T., Dresden, Saxony, Germany. Making coloring-matter	329,125	Oct. 27	2180	.....	33	417
Boies, Thaddeus W., Beloit, Kans. Stock-watering trough	330,088	Nov. 10	909	235	33	684
Boilean, Etienne, St. Louis, Mo. Furnace	329,997	Nov. 10	780	200	33	657
Boissier, Herman R., New York, N. Y. Apparatus for electroplating	331,609	Dec. 1	546	133	33	1093
Boker & Co., Herman. (See Röder, Carl A., assignor.)						
Bole, William A. (See Bagaley, Ralph, assignor.)						
Bole, William A. (See Westinghouse and Bole.)						
Bole, William A., assignor of one-half to R. Bagaley, Pittsburg, Pa. Coupling pipes	331,940	Dec. 8	1033	268	33	1192
Bole, William A., assignor of one-half to R. Bagaley, Pittsburg, Pa. Pipe-coupling	332,184	Dec. 8	1387	359	33	1253
Bolles, John H. (See Williams, John N. S., assignor.)						
Bolles, John H., assignor of one-third to J. N. S. Williams, San Francisco, Cal. Rotary cutter for dredgers	331,861	Dec. 8	914	236	33	1169
Bollinger, Harry S., Chicago, Ill., and C. C. Schwaner, Winterset, Iowa. Trace-supporter	331,761	Dec. 8	778	197	33	1145
Bolte, Frank H., and H. G. Thede, assignors of one-third to J. W. Thede, Milwaukee, Wis. Roller-mill	330,288	Nov. 10	1156	307	33	734
Bolton, George W. (See Tillmeyer and Bolton.)						
Bond, Charles T., Webster, Ind. Gate-latch	329,260	Oct. 27	2368	613	33	453
Bond, George M. (See Rogers and Bond.)						
Bond, H. G. (See Mathey, Henry, assignor.)						
Bond, John M. (See Delaney and Bond.)						
Bond, John T., Little Lot, Tenn. Device for loading logs on wagons	329,704	Nov. 3	377	96	33	577
Bond, John T., Bond's Mill, Ga. Cultivator-tooth	332,585	Dec. 15	1955	512	33	1359
Bonehill, Christopher G., Birmingham, county of Warwick, England. Double-barreled gun	329,705	Nov. 3	378	96	33	577
Bonner, Andrew J., Jr., Philadelphia, Pa. Awning	328,279	Oct. 13	907	259	33	188
Bonzano, Maximilian F., Philadelphia, Pa. Device for arresting locomotives and cars	330,671	Nov. 17	1657	446	33	849
Boot and Shoe Sole Laying Machine Company. (See Wood, Charles D., assignor.)						
Booth, Albert T., Meriden, Conn. Turning-machine	329,126	Oct. 27	2181	565	33	417
Booth, Charles, and R. W. Ney, Worcester, Mass. Preparing wire for drawing	332,321	Dec. 15	1579	.....	33	1294
Booth, E. Rutledge, St. Louis, Mo. Stereotype-plate and holder	327,648	Oct. 6	201	49	33	36
Booth, Edwin H., Preston, county of Lancaster, and F. N. Dyer, Macclesfield, county of Chester, England. Sanitary appliance for children, &c	329,127	Oct. 27	2182	{565 / 566	33	417
Booth, Henry D., Elmira, N. Y. Vise	332,478	Dec. 15	1790	470	33	1331
Booth, Isaac E., Jr. (See Stever, Jeremiah, assignor.)						
Booth, Joseph, *et al.* (See Aikman, Peter A., assignor.)						
Booth, William, Newark, N. J. Brush back or stock of plastic material	329,128	Oct. 27	2183	566	33	417
Borgfeldt, Nicholas H., and A. C. Schutz, New York, N. Y. Cigar-bunching machine	331,676	Dec. 1	651	{160 / 161	33	1112
Borie, Hiram R., New Castle, Del., assignor of one-half to S. P. M. Tasker, Philadelphia, Pa. Tap for screw-threading sockets	332,781	Dec. 22	2232	588	33	1417
Bornarth, Daniel M., Shakopee, and T. W. Heintzelman, Minneapolis, Minn. Feed-water heater	327,994	Oct. 13	633	167	33	122
Borntraeger, Frederick H. (See Sieber and Borntraeger.)						
Borsch, Henry, Chicago, Ill., assignor to American Optical Company, Southbridge, Mass. Eyeglasses	329,883	Nov. 10	630	160	33	629
Borst, Valentin, New York, N. Y. Elevator	329,129	Oct. 27	2184	{566 / 567	33	417
Boscawen, William, New York, N. Y., assignor to D. L. Thompson, C. A. Perley, and G. Waite, Baldwinsville, Mass. Chair	329,805	Nov. 3	511	130	33	602
Bosler, Nick, *et al.* (See Tompkins, John J., assignor.)						
Bosler, William, *et al.* (See Tompkins, John J., assignor.)						
Bossert, Friedrich W., Offenbach-on-the-Main, Hesse, Germany. Saving-box	329,706	Nov. 3	379	96	33	577
Bostedo, Louis G., Atlantic, Iowa. Store-service apparatus	330,552	Nov. 17	1509	404	33	808
Bostedo, Louis G., Atlantic, Iowa. Store-service apparatus	330,553	Nov. 17	1511	{404 / 405	33	808
Boston, Arnet P., Eureka, Tex. Drag-saw	329,531	Nov. 3	149	38	33	533
Bostwick, Charles F., and H. N. Thayer, Erie, Pa. Child's carriage	328,564	Oct. 20	1385	361	33	267
Bostwick, Jabez A., New York, N. Y., assignor to McMurray, Lang & Burnham. Soldering-iron. (Reissue)	10,672	Dec. 15	2107	556	33	1387
Boswell, George G. F., Indianapolis, Ind. Stalk-harvester	327,649	Oct. 6	201	50	33	36
Bosworth, Charles F., Milford, Conn. Insole for boots or shoes	330,289	Nov. 10	1158	308	33	734
Bosworth, George P., Pawtucket, R. I. Roller-skate	331,470	Dec. 1	309	83	33	1053
Bouck, John M., Gouverneur, N. Y. Running-gear for vehicles	331,471	Dec. 1	310	83	33	1053
Boulton, Arthur H. (See Hansen, Andrew P., assignor.)						
Bourdon, Ernest, Paris, France. Moderator-lamp	332,392	Dec. 15	1580	414	33	1295
Bourke, Martin, Youngstown, Ohio. Sash-fastener	331,370	Dec. 1	162	41	33	1027
Bourke, Martin, Youngstown, Ohio. Combination-tool	331,371	Dec. 1	163	41	33	1027
Bourry, Ernest A., Horn, assignor to J. Bourry-Séquin, Zurich, Switzerland. Dynamometer or motive-power balance	332,697	Dec. 22	2124	560	33	1396
Bourry-Séquin, J. (See Bourry, Ernest A., assignor.)						
Bousfield, Edward T. (See Howard and Bousfield.)						
Bousiog, W. H. (See Mellette and Harris, assignors.)						
Bouton, George. (See De Diom, Bouton, and Trépardoux.)						
Bouton, Nathaniel S., Hyde Park, Ill. Lumber-drying platen	332,991	Dec. 22	2223	666	33	1470
Bovee, David W., Richland Centre, Wis. Cultivator	329,707	Nov. 3	380	97	33	577
Bowen, Ansley F., Maeppa, Minn. Bridle	331,030	Nov. 24	2121	574	33	932
Bowen, Ephraim N., assignor of one-half to W. S. Bull, Buffalo, N. Y. Bicycle-wheel	328,280	Oct. 13	907	259	33	189
Bowen, George W., Fort Wayne, Ind. Machine for bending horseshoe-blanks	329,998	Nov. 10	781	200	33	658
Bowen, Henry S. (See Utley and Bowen.)						
Bowen, Herbert A. (See Nicholson and Bowen.)						
Bower, George E., assignor to himself and C. Breese, Auburn, N. Y. Lock and latch combined	333,440	Dec. 29	3137	820	33	1584
Bower, William W., Romulus, assignor to J. H. Rogers, Wayne, Mich. Hay-carrier	330,290	Nov. 10	1159	308	33	734
Bowerman, George H., Newark, N. J. Button or stud	328,565	Oct. 20	1385	361	33	267
Bowers, Edward L. (See Grout and Bowers.)						
Bowles, James W., Louisville, Ky. Attachment for bedsteads	329,261	Oct. 27	2368	613	33	453
Bowman, Charles, *et al.* (See Weaver, Isaac D., assignor.)						
Bowman, Edmund Q., Philadelphia, Pa. Car-strap	330,461	Nov. 17	1397	372	33	786

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Bowman, Henry N., Springfield, Mass. Addressing-machine	327,993	Oct. 13	631	167	33	121
Bowman, Jeffry E., Norwich, Conn. Knob attachment	329,130	Oct. 27	2186	567	33	418
Bowman, John E., Boonsborough, Md. Machine for cutting fat	331,902	Dec. 8	915	236	33	1170
Bowman, William R., Danville, Ky. Car-coupling	329,982	Oct. 27	2370	613	33	454
Boyce, John H., Brooklyn, N. Y. Neckscarf-exhibitor	329,258	Oct. 27	2366	612	33	453
Boyd, Carrie C., Fruitport, Mich. Handle for package-carriers	329,131	Oct. 27	2186	567	33	418
Boyd, George H., Marysville, Cal. Suspenders	332,479	Dec. 15	1791	470	33	1331
Boyd, James, St. Paul, Minn. Heating-stove	327,650	Oct. 6	203	50	33	36
Boyd, James A., Minneapolis, Minn. Device for disintegrating clay and separating the stones therefrom	328,756	Oct. 20	1643	428	33	314
Boyd, James A., Minneapolis, Minn. Clay-pulverizer	329,708	Nov. 3	380	97	33	577
Boyd, John W., Vevay, Ind. Churn-dasher	329,259	Oct. 27	2367	612	33	453
Boyd, Robert M., Racine, Wis. Railway-spike	328,103	Oct. 13	778	203	33	147
Boyer, Dayton H. (See Rohrer and Boyer.)						
Boyington, Levi C., Chicago, Ill. Folding bedstead	330,373	Nov. 17	1279	340	33	765
Boyle, James E., Brooklyn, N. Y. Tank valve and lever	328,873	Oct. 20	1785	466	33	341
Boyle, James E., Brooklyn, N. Y. Urinal	329,806	Nov. 3	512	{130 / 131	33	602
Boyle, James E., Brooklyn, N. Y. Self-closing cock	329,807	Nov. 3	514	131	33	602
Boyle, Jeffrey C., Brooklyn, N. Y. Magneto-electric indicator	332,480	Dec. 15	1791	471	33	1331
Boyle, John. (See Brass, Robert, assignor.)						
Boyle, Peter, Chicago, Ill. Holder for tablets and pencils	327,759	Oct. 6	332	86	33	58
Boyle, Thaddeus W., Augusta, Ga. Plow-stock	332,225	Dec. 15	1449	375	33	1271
Boyne, Michael, and A. E. Smith, Watertown, Wis. Rotary engine	329,619	Nov. 3	267	69	33	556
Boynton, Andrew J., Malden, Mass. Type-form for printing paper-bag tubes	331,372	Dec. 1	163	42	33	1027
Boynton, George O., Boston, assignor to S. Moore, trustee, Newton, Mass. Roller-skate wheel	330,554	Nov. 17	1516	405	33	809
Boynton, Horace S., Oshkosh, Wis. Tenoning-machine	329,007	Oct. 27	2004	{521 / 522	33	387
Bracken, Edward J., Columbus, Ohio. Lath attachment	332,481	Dec. 15	1792	471	33	1331
Brackett, Cephas W., Jordan, N. Y. Protractor	328,281	Oct. 13	908	260	33	189
Brackett, John W., Boston, Mass. Piano string plate	328,455	Oct. 20	1242	322	33	242
Bradbury, Benjamin B., New York, N. Y. Piano	328,566	Oct. 20	1386	361	33	268
Bradford, J. P., *et al.* (See Johns, Frank L., assignor.)						
Bradford, John B., San Marcos, assignor of one-half to S. F. McAllister, B. F. Donalson, and H. E. Runnels, Hays County, Tex. Packing attachment for cotton-presses	327,858	Oct. 6	457	{118 / 119	33	81
Bradford, Lemuel, 2d, Plymouth, Mass. Nail-machine	333,103	Dec. 29	3083	704	33	1504
Bradford, Walter C., Germantown, Cal. Two-wheeled vehicle	329,132	Oct. 27	2187	{567 / 568	33	418
Bradley, Benjamin H., Philadelphia, Pa., assignor to C. V. Stoddard, Brooklyn, N. Y. Button	327,515	Oct. 6	6	2	33	3
Bradley, Christoper C., Syracuse, N. Y. Mowing-machine	329,709	Nov. 3	382	97, 98	33	578
Bradley & Hubbard Manufacturing Company. (See McMahon, Dennis, assignor.)						
Bradley, Joseph D. (See Brown and Bradley.)						
Bradley, Lewis A. (See Post, William W., assignor.)						
Bradley, Stephen, New Haven, Conn. Heating apparatus for buildings	330,462	Nov. 17	1397	372	33	786
Bradshaw, Ira H., Sacramento, Cal. Car-coupling	332,870	Dec. 22	2355	622	33	1438
Bradshaw, J. W. (See Weeden, Alfred, assignor.)						
Bradshaw, John A., assignor to D. Walker, trustee, Lowell, Mass. Carding-engine	329,356	Oct. 27	2514	648	33	478
Bradshaw, Joseph D., Providence, R. I. Saw-table gage	327,651	Oct. 6	204	51	33	37
Bradshaw, Silas S., assignor to S. S. Chisholm, Chicago, Ill. Folding bed	327,760	Oct. 6	333	86	33	59
Bradt, Charles M., Newton, Kans. Calculating device	327,761	Oct. 6	337	86	33	59
Bradway, Charles P., Stafford, Conn. Turbine water-wheel	328,179	Oct. 13	876	227	33	166
Brady, Edwin L., Stamford, Conn., assignor to River and Rail Electric Light Company, Ohio County, W. Va. Apparatus for utilizing the current force of water	328,447	Oct. 13	1231	319	33	233
Brady, James. (See Willson, Thomas L., assignor.)						
Brady, James T. (See Shehan, Thomas, assignor.)						
Brady, Philip, New York, N. Y. Water-closet	328,180	Oct. 13	177	228	33	166
Bragg, Thomas P. (See Brown and Bragg.)						
Brailey, James S., Wanseon, Ohio. Bag-holder	332,226	Dec. 15	1450	376	33	1271
Brainard, Adelbert M., Chicago, Ill. Hydrocarbon vapor or gas burner	332,871	Dec. 22	2356	{622 / 623	33	1438
Brainard, Morris F., Brooklyn, N. Y. Excavator	332,227	Dec. 15	1451	{376 / 377	33	1271
Brainard, Morris F., Brooklyn, N. Y. Universal swivel and pipe connection for excavators	332,228	Dec. 15	1452	377	33	1272
Brainard, William S., Brockton, Mass. Tack-pulling mechanism for boot and shoe sewing machines	329,357	Oct. 27	2516	649	33	479
Brainerd, George B., Brooklyn, N. Y. Photographic camera	331,677	Dec. 1	654	{161 / 162	33	1113
Brand, Henry, Sheboygan, Wis. Adjustable gage for supporting clapboards	332,323	Dec. 15	1581	415	33	1295
Brandenberger, Frederick, deceased, Danville, Ill.; F. Brandenberger executrix. Paint-mixer	330,555	Nov. 17	1517	405	33	809
Brandenberger, Frederika, executrix. (See Brandenberger, Frederick.)						
Brandenburg, Edward A., Cedar Rapids, Iowa. Fountain attachment for pens	333,104	Dec. 29	2685	704	33	1505
Brandt, Christian H., and C. J. Werth, Loganville, Wis. Portable fence	328,104	Oct. 13	780	203	33	148
Branford Lock Works. (See Morton, Henry, assignor.)						
Bransford, George W. (See Pnetz, Tillman, Jr., assignor.)						
Branson, Edwin R., Chicago, Ill. Knitting-machine	333,102	Dec. 29	2678	703	33	1504
Brant, William I., Covington, Ohio. Machine for making combined slat and wire fences	327,859	Oct. 6	458	119	33	81
Brass, Robert, assignor to J. Boyle, Brooklyn, N. Y. Machine for riveting staples to mail-bags	331,373	Dec. 1	164	42	33	1027
Bratt, Levi H. (See Wetmore and Bratt.)						
Brauch, Joseph W. (See Schulte, Authony, assignor.)						
Braun, John, assignor to American Manufacturing Company, Philadelphia, Pa. Door-hanger	332,185	Dec. 8	1388	359	33	1253
Braun, Wunibald. (See Voigt, Heinrich, assignor.)						
Bray, Mellen. (See Meade, George H., assignor.)						
Bray, Mellen, Newton, Mass. Making tubular rivets	328,757	Oct. 20	1644	428	33	315
Bray, Mellen, Newton, Mass. Lacing-stud	329,263	Oct. 27	2371	613	33	454
Bray, Mellen, Newton, Mass. Device for setting lacing-studs	329,264	Oct. 27	2372	614	33	454
Bray, Mellen, Newton, Mass. Fly-book for anglers	333,384	Dec. 29	3063	799	33	1572
Bray, Morris P., Ansonia, Conn., assignor, by mesne assignments, to Godfrey Seamless Pocket Company, Boston, Mass. Pocket for garments	328,378	Oct. 13	1135	293	33	215
Bray, Morris P., Ansonia, Conn., assignor, by mesne assignments, to Godfrey Seamless Pocket Company, Boston, Mass. Pocket for garments	328,379	Oct. 13	1136	293	33	215

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Breese, Christopher. (See Bower, George E., assignor.)						
Breitenmoser, Joseph, St. Louis, Mo., assignor of one-third to W. H. Doolittle, Washington, D. C. Cleaning, hulling, and grinding mill	328,105	Oct. 13	781	204	33	148
Brélaz, Georges L. (See Pictet and Brélaz.)						
Bremaker, Charles, Louisville, Ky., and M. Zier, Sr., New Albany, Ind. Paper-pulp digester	333,105	Dec. 29	2686	704, 705	33	1505
Brengel, Jacob, Jersey City, N. J. Damping-roller for lithographic presses	327,995	Oct. 13	634	168	33	122
Brenner, Francis X., Philadelphia, Pa. Awning	330,956	Nov. 24	2037	551	33	916
Breslauer, Eduard. (See Schlickeysen and Breslauer.)						
Bresse, Guillaume, Quebec, Quebec, Canada. Heel-machine	327,672	Oct. 6	206	51, 52	33	37
Bretzfield, Samuel, New York, N. Y. Bodice-belt	330,089	Nov. 10	910	236	33	684
Brenx, Joseph F., Philadelphia, Pa. Rotary pump	332,586	Dec. 15	1956	512	33	1350
Brewer, Russell, Newark, N. J. Car-axle box	327,916	Oct. 6	531	138	33	95
Brice, Jonathan K. (See Henderson, James, assignor.)						
Brick, James, Clifton, N. J. Horse-blindfold	327,762	Oct. 6	337	87	33	59
Brick, Samuel R., Stapleton, N. Y. Gas-condnit	327,996	Oct. 13	635	168	33	122
Brickell, William S., Olean, N. Y. Sliding door	330,080	Nov. 10	911	236	33	684
Bricker, George S., Newville, Pa. Grain-elevator	329,710	Nov. 3	394	98	33	578
Brickman, Philip, Cleveland, Ohio. Feed-water heater and filter	329,265	Oct. 27	2373	614	33	454
Bridge, Lewis, Philadelphia, Pa. Bracket	330,672	Nov. 17	1658	446	33	839
Brien, James T., Hoosick Falls, N. Y. Paint-pail	332,043	Dec. 8	1184	310	33	1218
Briggs, Alfred, assignor to J. T. Hackworth, A. Johnston, W. T. Major, and A. G. Harrow, Ottumwa, Iowa. Friction-drum	327,516	Oct. 6	7	2	33	4
Briggs, Arthur E., Bond Hill, Ohio. Electric annunciator	327,997	Oct. 13	636	168	33	122
Briggs, Charles H., Chicago, Ill. Line-reel brake	329,711	Nov. 3	385	98	33	578
Briggs, Elias, Coleman, Tex. Apparatus for irrigating land	330,576	Nov. 17	1518	406	33	909
Briggs, George D., Providence, R. I. Eyeglass-hook	330,673	Nov. 17	1658	447	33	839
Briggs, Henry, Philadelphia, Pa. Breech-loading fire-arm	327,860	Oct. 6	459	119, 120	33	81
Briggs, Joshua, Peterborough, N. H. Folding chair	328,181	Oct. 13	878	228	33	166
Briggs, Orlando P., *et al.* (See Cross, Christopher G., assignor.)						
Briggs, Thomas, Darwen, county of Lancaster, England. Brake for vehicles	332,482	Dec. 15	1793	471	33	1331
Briggs, William H. (See Clark and Briggs.)						
Brightmore, Samuel, and A. Dixon, Philadelphia, Pa. Machine for molding plastic materials into bricks, &c	330,291	Nov. 10	1160	308, 309	33	735
Briles, Thomas F., Brownsville, Mo. Hinge for gates	328,282	Oct. 13	999	260	33	189
Brinkerhoff, Milford H., Upper Sandusky, Ohio. Manufacture of rugs	328,283	Oct. 13	1000	260	33	189
Brinkerhoff, Parcel, Battle Creek, Mich. Car-coupling	329,266	Oct. 27	2374	614	33	454
Brintnall, Thomas M., Maryville, assignor to himself and R. U. Hendrick, St. Joseph, Mo. Nail-extractor	331,678	Dec. 1	659	162	33	1114
Briaben, William M., Philadelphia, Pa. Car-brake	332,324	Dec. 15	1582	415	33	1295
Britt, Lucas P., Jr., New York, N. Y. Roller-skate	327,517	Oct. 6	9	2, 3	33	4
Britto, John, South Norwalk, Conn. Chemical fire-extinguishing apparatus	332,229	Dec. 15	1453	377	33	1272
Broadbooks, Peter, Batavia, N. Y. Cutting-nippers	329,133	Oct. 27	2188	568	33	419
Brock, Louis M., and M. Wiener, Buffalo, N. Y. Storm-collar for overcoats	332,230	Dec. 15	1454	377	33	1272
Brock, Matthias, Boston, Mass., assignor to McKay & Copeland Lasting Machine Company, Portland, Me. Machine for shaping comb tack-strips	329,009	Oct. 27	2010	522	33	388
Brock, Matthias, Boston, Mass., assignor to McKay & Copeland Lasting Machine Company, Portland, Me. Machine for making comb tack-strips	329,267	Oct. 27	2375	614	33	455
Brolin, Peter, assignor of one-half to M. C. Shelter, West Unity, Ohio. Ditching-machine	333,441	Dec. 29	3139	920, 921	33	1584
Bronson, John G., Chicago, Ill. Window-ventilator	328,182	Oct. 13	879	228	33	166
Brooke, Isaac, Pottstown, Pa. Nut-lock	330,674	Nov. 17	1659	447	33	839
Brooke, Isaac, Pittstown, assignor to himself, C. S. Francis, Spring City, and S. B. Shalkop, Rover's Ford, Pa. Window-grating	332,186	Dec. 8	1389	359	33	1254
Brooks & Co., E. J. (See Brooks, Edward J., assignor.)						
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal-press	328,106	Oct. 13	783	204	33	148
Brooks, Edward J., Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Hair-crimper	332,483	Dec. 15	1794	472	33	1332
Brooks, Eldridge H., *et al.* (See Weaver, Isaac D., assignor.)						
Brooks, Frederick W., Cleveland, Ohio. Reclining-chair	333,052	Dec. 22	2605	682	33	1486
Brooks, Frederick W., assignor to F. H. Morris, Cleveland, Ohio. Reclining-chair	329,884	Nov. 10	631	160	33	620
Brooks, Harry. (See Brooks, Ball, and Brooks.)						
Brooks, James F. (See Brooks, Ball, and Brooks.)						
Brooks, James W., trustee. (See Allen, Edward B., assignor.)						
Brooks, James W., trustee. (See Goodin, Louis, assignor.)						
Brooks, James W., trustee. (See Leavitt, John S., assignor.)						
Brooks, James W., trustee. (See Ross, John G., assignor.)						
Brooks, John, Plainfield, N. J. Apparatus for drying paper matrices	330,091	Nov. 10	911	236	33	685
Brooks, John C. and J. F., F. W. Ball, Paterson, N. J., and H. Brooks, Fall River, Mass. Take-up mechanism for looms	332,782	Dec. 22	2233	588, 589	33	1417
Brooks, John S., assignor to F. A. Estabrook, Brooklyn, and W. T. Merserean & Co., New York, N. Y. Sheet-metal stove-pipe	330,770	Nov. 17	1788	481	33	862
Brooks, Theodore L., Port Byron, N. Y. Cultivator	332,044	Dec. 8	1185	310	33	1219
Brophy, Dennis P., Nokomis, Ill. Mail-bag	331,472	Dec. 1	311	83	33	1053
Brophy, Dennis P., Nokomis, Ill. Bag-lock	331,473	Dec. 1	312	84	33	1053
Brophy, Dennis P., Nokomis, Ill. Mail-bag lock	331,474	Dec. 1	313	84	33	1054
Broman, Cornelius J., assignor of two-thirds to W. E. Wright and H. A. Gibbs, Springfield, Mass. Machine for attaching buttons	327,917	Oct. 6	532	139	33	95
Broman, Cornelius J., assignor of two-thirds to W. E. Wright and H. A. Gibbs, Springfield, Mass. Tack-feeding device	329,268	Oct. 27	2377	615	33	455
Brotherhood, James, Stratford, Ontario, Canada. Exercising device for musicians	327,918	Oct. 6	534	139	33	96
Brotherhood, Peter, Lambeth, county of Surrey, England. Compound engine	332,484	Dec. 15	1796	472	33	1332
Brotz, Robert, assignor to Caterson & Brotz Company, Philadelphia, Pa. Paper box	329,134	Oct. 27	2189	568	33	419
Brougham, Stephen M., Brooklyn, assignor to Standard Pencil Company, New York County, N. Y. Drop-movement for pocket utensils	331,941	Dec. 8	1034	268	33	1193
Brower, Henry J., assignor to T. H. McAllister, Brooklyn, N. Y. Dissolving-key for oxy-hydrogen lights	330,092	Nov. 10	912	237	33	685
Brown, Addison P., New York, N. Y. Toy	329,269	Oct. 27	2378	615	33	455
Brown, Addison P., and M. D. Stern, New York, N. Y.; said Brown assignor to said Stern. Ticket-reel	331,863	Dec. 8	916	236, 237	33	1170
Brown, Albert, Mendocino, Cal. Combined paper cutter and stamp	327,998	Oct. 13	637	168	33	122
Brown, Alfred, Hellertown, and W. R. Clark, Bethlehem Pa. Furnace-tuyere	328,284	Oct. 13	1001	260	33	190

Alphabetical list of patentees, October to December, inclusive—Continued.

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Brown, Alson L., *et al.* (See Larkin, John C., assignor.)						
Brown, Artemas M., Ottawa, Ohio. Hub	330,771	Nov. 17	1789	482	33	862
Brown & Brothers. (See Rais, Adrian, assignor.)						
Brown, C. Cortland. (See Le Clair, George, assignor.)						
Brown, Caleb E., Jackson, Mich. Bustle	329,270	Oct. 27	2379	615	33	455
Brown, Caleb E., Jackson, Mich. Hoop-skirt	329,271	Oct. 27	2380	615	33	455
Brown, Charles M., Rockford, Ill. Power-hammer	327,999	Oct. 13	638	169	33	123
Brown, Daniel, Johnston, R. I. Cartridge-reloading implement	329,135	Oct. 27	2190	568	33	419
Brown, David, and J. D. Bradley, assignors to R. O. Dorman, New Haven, Conn. Buckboard-wagon	333,053	Dec. 22	2606	682	33	1484
Brown Folding Machine Company. (See Brown, Richard T., assignor.)						
Brown Folding Machine Company. (See Downing, Wellington, assignor.)						
Brown Folding Machine Company. (See Hirt, Charles F. and J. L., assignors.)						
Brown, Frank, *et al.* (See Dunbar, Junius H., assignor.)						
Brown, Frank E., Webster City, Iowa. Shutter-worker	333,442	Dec. 29	3141	821	33	1584
Brown, Fred. H., assignor of one-half to W. E. Kaye, Fort Worth, Tex. Rocking-chair	328,000	Oct. 13	642	169	33	123
Brown, Frederick H., Buffalo, N. Y. Machine for rolling nut-blanks	333,106	Dec. 29	2689	705	33	1505
Brown, George T., Belton, S. C. Combined envelope-opener and paper-knife	330,557	Nov. 17	1519	406	33	909
Brown, Harold P., Chicago, Ill. Electro-magnet	330,463	Nov. 17	1399	372	33	787
Brown, Harold P., Chicago, Ill. Incandescent electric lighting	330,464	Nov. 17	1400	372, 373	33	787
Brown, Harold P., Chicago, Ill. System of electric lighting	330,465	Nov. 17	1401	373	33	787
Brown, Harold P., Chicago, Ill. Device for making and breaking electric circuits	330,466	Nov. 17	1407	374	33	788
Brown, Henry, and A. Bushnell, Lamar, Mo. Churn	332,485	Dec. 15	1797	472	33	1332
Brown, Henry M., Seattle, Wash. Ter. Dirt-scraper and carrier	332,572	Dec. 22	2358	623	33	1439
Brown, Israel F. (See Smith, Peter E., assignor.)						
Brown, James B., New York, J. W. Douglass, Brooklyn, and J. Pentreath, Yonkers, N. Y. Ensilage and fodder cutter	332,698	Dec. 22	2126	561	33	1396
Brown, John H., Bay View, Wis. Roll for reducing old rails	333,395	Dec. 29	3065	799	33	1572
Brown, John K., Worcester, Mass. Boot or shoe stretcher	328,642	Oct. 20	1505	392	33	288
Brown, Louis, Rye, N. Y. Mixed paint	328,643	Oct. 20	1505	.....	33	288
Brown, Louis, Rye, N. Y. Powder for roofing and other purposes	328,644	Oct. 20	1506	.....	33	288
Brown, Peter C., and T. P. Bragg, Ennis, Tex. Cultivator	330,467	Nov. 17	1409	374	33	789
Brown, Richard T., assignor, by mesne assignments, to Brown Folding Machine Company, (limited,) Erie, Pa. Carrier attachment for folding machines	331,762	Dec. 8	779	197	33	1145
Brown & Sharpe Manufacturing Company. (See Parks, Edward H., assignor.)						
Brown & Sharpe Manufacturing Company. (See Smith, George H., assignor.)						
Brown & Sharpe Manufacturing Company. (See Spaulding, Frank, assignor.)						
Brown, Warren G., *et al.* (See Larkin, John C., assignor.)						
Brown, William A., assignor of one-half to J. A. Hicks and J. S. Wyche, Terrell, Tex. Motive power	332,231	Dec. 15	1454	378	33	1272
Browne, William F., Jersey City, N. J. Apparatus for generating gas	328,634	Oct. 20	1737	452, 453	33	333
Brown, William P., Zanesville, Ohio. Roller-skate	330,093	Nov. 10	913	237	33	685
Brown, William P., Zanesville, Ohio. Tongue-chain for wagons	333,386	Dec. 29	3066	800	33	1572
Brown, William S., Pine Hill, Ky. Swing	333,054	Dec. 22	2606	683	33	1484
Browne, John X., Brooklyn, N. Y. Apparatus for making stereotype-matrices	332,873	Dec. 22	2359	624	33	1439
Browne, William F., New York, N. Y. Treating heating and illuminating gases	331,225	Nov. 24	2400	649, 650	33	982
Browne, William H., Brooklyn, N. Y. Grate	331,031	Nov. 24	2122	575	33	932
Browne, William T., Stockton, Cal. Car-truck	332,378	Dec. 15	1660	435	33	1308
Brownson, Ralph, assignor of one-half to P. R. L. Hardenbergh, St. Paul, Minn. Sweat-pad fastener for harness	330,772	Nov. 17	1790	482	33	862
Brownson, Ralph, assignor of one-half to P. R. L. Hardenberg, St. Paul, Minn. Horse-collar housing	331,763	Dec. 8	780	197	33	1145
Broxton, John F. (See Burgess and Broxton.)						
Bruce, H. C., *et al.* (See Harker, Henry K., assignor.)						
Bruce, O. M. (See Blackmore, John E., assignor.)						
Bruce, W. P., *et al.* (See Harker, Henry K., assignor.)						
Brückner, John and J. J., Philadelphia, Pa. Fire-escape	329,359	Oct. 27	2519	649	33	479
Brückner, John J. (See Brückner, John, and J. J.)						
Bruegger, Abraham, Jr., Chicago, Ill. Rubber hose	331,374	Dec. 1	166	42	33	1028
Brumby, Robert W., and S. Clarke, Hull, county of York, England. Folding box	332,486	Dec. 15	1798	472	33	1332
Brunck, Samuel U., and G. A. Marsh, Jr., assignors, by mesne assignments, to H. W. and J. H. Wagenet and E. Pusch, Sandusky, Ohio. Calcimine compound	328,645	Oct. 20	1507	.....	33	288
Brundage, William T., Brooklyn, N. Y. Artist's sketch-box	332,045	Dec. 8	1187	310	33	1219
Brunner, Jacques. (See Kunkler and Brunner.)						
Bruns, Christopher L., Bergen Point, N. J. Electric circuit-breaker	329,808	Nov. 3	516	131, 132	33	602
Brush, Charles F., Cleveland, Ohio. Preparing glass for cementation	331,764	Dec. 8	781	198	33	1146
Brush, Hannah M., Manistee, Mich. Stove-hood	333,055	Dec. 22	2607	683	33	1485
Brütsch, Carl, New York, N. Y. Machine for ornamenting picture-frame moldings	328,835	Oct. 20	1740	453, 454	33	333
Bryan, James G., Philadelphia, Pa. Wash-pave	331,032	Nov. 24	2123	575	33	933
Bryan, Joseph A., and J. B. Fielding, Prescott, Ark. Cattle-car	328,915	Oct. 27	1859	485	33	361
Bryan, Joseph A., and J. B. Fielding, Prescott, Ark. Stock-car	328,916	Oct. 27	1860	486	33	361
Bryant, Fred L. (See Frost and Bryant.)						
Bryant, Fred L., assignor to Ames & Frost, Chicago, Ill. Machine for making coiled-wire springs	328,360	Oct. 13	1137	293, 294	33	215
Buch, Henry G., Oregon, Pa. Nut-lock	328,456	Oct. 20	1243	329	33	242
Buchanan, Alexander F., Montrose, N. Y. Bracket for hand-grenades	328,874	Oct. 20	1787	466	33	341
Bucher, Gibbs & Co. (See Gibbs, Lewis, assignor.)						
Buchholtz, John P., Philadelphia, Pa. Vehicle-spring	327,518	Oct. 6	10	3	33	4
Buck, Joseph. (See Wommer and Buck.)						
Buckelew, Ansel S., Jersey City, N. J. Balance-wheel for watches	330,558	Nov. 17	1520	406	33	810
Buckeye Iron and Brass Works. (See Krutzsch, William, assignor.)						
Buckingham, Henry E. (See Bailey and Buckingham, assignors.)						
Buckingham, Millard E. (See Bailey and Buckingham.)						
Buckley, Wade, Easton, Pa. Tuning attachment for cornets	331,679	Dec. 1	660	163	33	1114
Buckman, Thomas E., Jacksonville, Fla. Car-coupling	329,358	Oct. 27	2518	649	33	479
Buckner, James N., Windsor, Ontario, Canada. Gate	327,653	Oct. 6	210	52	33	37
Budd, Henry. (See Budd, Samuel W., assignor.)						
Budd, J. Talman, Buffalo, N. Y. Suspenders	329,433	Nov. 3	9	3	33	506
Budd, J. Talman, Buffalo, N. Y. Clasp for suspenders and other articles	329,434	Nov. 3	11	3	33	507

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Budd, John C., Defiance, Ohio. Farm-gate	327,654	Oct. 6	211	52	33	38
Budd, Samuel W., assignor to himself and H. Budd, Philadelphia, Pa. Latch-lock	328,875	Oct. 20	1788	467	33	341
Buehler, Charles F., Spencerville, Ohio. Clothes-drier	331,864	Dec. 8	920	237	33	1170
Buel, James, Woburn, Mass. Automatic fire-extinguisher	329,360	Oct. 27	2320	649	33	479
Buell, Charles E., Springfield, Mass., assignor of one-third to W. B. Cooley, Easton, Pa. Velocipede	331,276	Dec. 1	14	4	33	1003
Buffett, Jules, assignor to J. Fontenelle, Paris, France. Cock or valve	329,809	Nov. 3	518	132	33	603
Buford, Jefferson L., Albany, Tex. Distance-instrument	330,818	Nov. 17	1847	407 408	33	873
Bugbee, Philetus F., Chazy, N. Y. Mechanical motor	332,046	Dec. 8	1188	311	33	1219
Bugg, Owen T., New York, N. Y. Cotton-harvester	329,810	Nov. 3	519	132	33	603
Bugg, Owen T., Newark, N. J. Forming teeth upon cylinders	329,811	Nov. 3	521	133	33	603
Bugg, Owen T., Newark, N. J. Cotton-gin	333,387	Dec. 29	3067	800	33	1572
Buleu, George F., Jersey City, N. J., assignor to Automatic Fire Alarm and Extinguisher Company, (limited,) New York, N. Y. Thermostatic circuit-closer	333,443	Dec. 29	3142	821	33	1584
Bulkley, Worthington, Cleveland, Ohio. Clothes-wringer	333,107	Dec. 29	2690	705	33	1505
Bulkley, Frank M., Bridgeport, Conn. Marking-stamp	331,475	Dec. 1	314	84	33	1054
Bull, William S. (See Bowen, Ephraim N., assignor.)						
Bullard, F. F. (See Tucker, William, assignor.)						
Bullock, Chester, New York, N. Y. Car for cable railways	328,917	Oct. 27	1861	486	33	362
Bullock, William R. (See Wiard and Bullock.)						
Bunten, Samuel H. (See Calkins and Bunten.)						
Bunting, William, Jr., Boston, Mass., assignor to Meyer-Sniffen Company, (limited,) New York, N. Y. Supply-tank for water-closets	329,361	Oct. 27	2321	650	33	480
Bunting, William, Jr., Boston, Mass., assignor to Meyer-Sniffen Company, (limited,) New York, N. Y. Supply-tank for water-closets	329,885	Nov. 10	632	160	33	630
Bunting, William, Jr., Boston, Mass., assignor to Meyer-Sniffen Company, (limited,) New York, N. Y. Water-closet	331,610	Dec. 1	548	134	33	1094
Bunting, William, Jr., Boston, Mass., assignor to Meyer-Sniffen Company, (limited,) New York, N. Y. Valve for water-closet supply-tanks	332,635	Dec. 15	2016	529	33	1370
Bunton, William A., *et al.* (See Houlehan, James, assignor.)						
Burchard, Charles E., Martinsburg, Mo. Automatic grain-weigher	333,444	Dec. 29	3144	821 822	33	1585
Burden, Fredrick C. (See Burden, William H. and F. C.)						
Burden, William H. and F. C., Cleveland, Ohio. Journal-lubricator	327,519	Oct. 6	12	3	33	4
Burdick, John R., assignor of one-half to D. H. Dorsett, Chicago, Ill. Apparatus for molding the sections of conduits for underground conductors	332,047	Dec. 8	1188	311	33	1219
Burdon, Levi L., Providence, R. I. Ingot for plated wire	327,655	Oct. 6	212	53	33	38
Burger, Charles J. (See Stewart, William H., assignor.)						
Burger, John A. (See Anderson, Thomas A., assignor.)						
Burgess, Daniel, New York, N. Y. Ventilator for cooking and other apartments	332,379	Dec. 15	1662	435	33	1309
Burgess, Dudley L., and J. F. Broxton, Dallas, Tex. Washing-machine	330,292	Nov. 10	1162	309	33	735
Burgess, Gardner N., Jr., Providence, R. I. Heeling-jack	331,476	Dec. 1	315	85	33	1054
Burgett, Erastus G., Wabash, Ind. Kitchen-cabinet	331,611	Dec. 1	550	134	33	1094
Burghoff, Augustus C., *et al.* (See Donovan, George L., assignor.)						
Borgtorf, Charles W., Petaluma, Cal. Seat for two-wheeled vehicles	330,559	Nov. 17	1521	406	33	810
Burhans, Lorenzo. (See Fish, John, assignor.)						
Burk, B. F. (See Rook, John H., assignor.)						
Burk, Hiram C., assignor of one-half to J. W. Chesnut, Cleveland, Ohio. Machine for making miners' needles	328,107	Oct. 13	785	205	33	149
Burke, Edwin R. (See Craven, Edward T., assignor.)						
Burke, James, Springfield, Mass. Repairing-last	331,765	Dec. 8	782	198	33	1146
Burkett, James, assignor of two-thirds to N. Slingland, Falls Village, Conn. Locomotive-furnace	330,819	Nov. 17	1849	498	33	873
Burkhead, Henry C., Hardin Springs, Ky. Coupling for railway-rails	331,612	Dec. 1	551	134	33	1094
Burkholder, Edward, Glendale, Ky. Corn-planter	332,874	Dec. 22	2360	624	33	1439
Burmann, Jacob, Bienne, Switzerland. Watch-stand alarm	327,919	Oct. 6	536	140	33	96
Burnham, Andrew W., Boston, Mass. Clothes-horse	328,103	Oct. 13	809	228	33	166
Burnham, Charles, Philadelphia, Pa. Railway-torpedo	327,520	Oct. 6	12	4	33	4
Burns, James, Chicago, Ill. Drag-saw	329,886	Nov. 10	633	161	33	630
Burns, Philip, Norwich, Conn. Knob attachment	328,184	Oct. 13	881	229	33	167
Burns, William J., Sterling, Ill. Washing-machine	328,001	Oct. 13	642	170	33	123
Burr Bed Company. (See Burr, Sanford S., assignor.)						
Burr, George S., Evergreen, Colo., assignor of one-half to J. Billingsley, Baltimore, Md. Buoyant screw-propeller	333,445	Dec. 29	3145	822	33	1585
Burr, Sanford S., Winnetka, assignor to Burr Bed Company, Chicago, Ill. Spring bed-bottom	330,293	Nov. 10	1163	310	33	735
Burrows, John W., White Mills, Ky. Plow	329,008	Oct. 27	9099	522	33	388
Burry, John, Fort Reno, Indian Ter. Motor	332,048	Dec. 8	1194	312	33	1220
Burry, William C., Allegheny City, Pa. Egg-beater	328,457	Oct. 20	1944	323	33	242
Burt, Henry A., Jr., *et al.* (See Quaid, Harrison, assignor.)						
Burt, Lon, Detroit, Mich., assignor to J. King, Cleveland, Ohio. Pupilometer	331,296	Nov. 24	2402	650	33	992
Burton, Augustus G., Chicago, Ill. Perforating-machine. (Reissue)	10,652	Oct. 20	1846	482 483	33	352
Burton, Charles C., Samaria, Mich., assignor of one-half to A. L. Holden, Utica, N. Y. Car-coupling	328,458	Oct. 20	1245	323	33	242
Burton, George D., Boston, Mass. Anti-friction bearing for roller-skates	329,435	Nov. 3	13	4	33	507
Burton, George D., Boston, Mass. Roller-skate	329,532	Nov. 3	151	38	33	534
Busacker, John, assignor to Tucker, Calder & Co., Utica, N. Y. Double flat binder	328,646	Oct. 20	1507	392	33	288
Busey, Jerome F., Venice, Pa. Link-machine	329,010	Oct. 27	2011	523	33	388
Bush, Lewis, Jr., assignor, by mesne assignments, to American Machinery Company, Chicago, Ill. Machine for sawing, tenoning, and boring chair-legs, &c	332,699	Dec. 22	2128	561 562	33	1306
Busha, Joseph, Pittsburg, Pa. Coupling for gas-pipes	333,446	Dec. 29	3146	822	33	1585
Bushnell, Andrew. (See Brown and Bushnell.)						
Bushnell, Joseph P., *et al.* (See Springer, Stephen H., assignor.)						
Bussard, Felix R., and M. Gates, Hays City, Kans. Tidal power	332,875	Dec. 22	2363	625	33	1440
Butcher, Charles, Boston, Mass. Floor and ceiling	328,185	Oct. 13	882	229	33	167
Butler, H. S. (See Terman, James W., assignor.)						
Butler, Hiram E. (See Smith and Butler.)						
Butler, John N., Kingsley, Iowa. Railway snow-excavator	332,876	Dec. 22	2364	625	33	1440
Butler, Sarah M., Haverhill, Mass. Toy animal	328,436	Nov. 3	14	4	33	507
Butler, William J., Salinas, Cal. Device for taking up lost motion in pitmen	331,865	Dec. 8	921	237	33	1170
Butman, William H. (See Jenks and Butman.)						
Butterbaugh, Eli H. (See Dice, Peter M., assignor.)						
Butterfield, Henry W., Griggsville, Ill. Portable fence	333,279	Dec. 29	2990	766	33	1548

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Butterfield, William, assignor to D. M. Osborne & Co., Auburn, N. Y. Cord-holder for self-binders	328,918	Oct. 27	1862	486 487	33	362
Butterworth, Robert, Boston, Mass., assignor, by mesne assignments, to Fiberlene Collar Company, Portland, Me. Collar	329,812	Nov. 3	521	133	33	603
Butterworth, Robert, Boston, Mass., assignor, by mesne assignments, to Fiberlene Collar Company, Portland, Me. Cuff	329,813	Nov. 3	523	133	33	603
Buttler, William, assignor of one-half to J. H. Blair, Pittsburg, Pa. Glass or vitreous facing for brick fronts	330,957	Nov. 24	2038	551	33	916
Button, Convers, *et al.* (See Goodman, Samuel N., assignor.)						
Button, John, Jr., *et al.* (See Goodman, Samuel N., assignor.)						
Button, Joseph, assignor of one-half to W. Windus, Baltimore, Md. Car-coupling	330,820	Nov. 17	1850	499	33	874
Buttress, John. (See Asher and Buttress.)						
Butz, Edward M., Allegheny, Pa. Converter for the manufacture of iron and steel	332,636	Dec. 15	2018	530	33	1371
Buxton, Benjamin F., Brookfield, Vt. Clothes-drier	329,690	Nov. 3	269	69	33	556
Buzard, Sam. W., Jamesport, Mo. Check-stamp	331,227	Nov. 24	2403	650	33	992
Buzzell, Freeman P., Toledo, Ohio. Shoe or gaiter	329,533	Nov. 3	152	38	33	534
Byam, George A. (See Longmore, Lewis F., assignor.)						
Bye, Martin, Worcester, Mass. Roller-skate	332,049	Dec. 8	1195	312	33	1220
Byfield, John, assignor to Byfield Manufacturing Company, Lowell, Mass. Stop-motion mechanism for knitting-machines	328,876	Oct. 20	1789	467	33	342
Byfield Manufacturing Company. (See Byfield, John, assignor.)						
Byllesby, Henry M., New York, N. Y. System of electrical distribution	329,621	Nov. 3	269	70	33	556
Byrd, Thomas E., *et al.* (See Nutting, Adrain, assignor.)						
Byrne, Joseph W., Boston, Mass. Oscillating water-meter	332,637	Dec. 15	2020	530	33	1371
Byrne, Samuel H., Brighouse, county of York, England. Apparatus for drawing wire	331,080	Dec. 1	661	163	33	1114
Cables, Hartley A. (See Oehrle, William E. and A. C., assignors.)						
Cadden, Anthony P., Baltimore, Md. Adjustable derrick	330,374	Nov. 17	1284	341	33	766
Caddick, Edward, *et al.* (See Tickle and Leonardt, assignors.)						
Cadman, Alexander W., Sterrett, Pa. Gas-regulator	329,011	Oct. 27	2014	523	33	388
Cadman, George L. (See Cadman, Isaac P., assignor.)						
Cadman, Isaac P., assignor of one-half to G. L. Cadman, Beloit, Wis. Wind-wheel	328,836	Oct. 20	1741	454	33	333
Cadwell, Marvin S., assignor to M. Cadwell, Lansing, Mich. Handle for pitchforks, &c	327,522	Oct. 6	16	4	33	5
Cadwell, Mary. (See Cadwell, Marvin S., assignor.)						
Cadwell, Warren W., *et al.* (See Cadwell, William H., assignor.)						
Cadwell, William H., assignor to himself, W. W. Cadwell, and L. C. Riggs, Chicago, Ill. Folding crate	328,381	Oct. 13	1145	295	33	216
Cady, Henry G., Pine Bluff, Ark. Wagon-jack	329,999	Nov. 10	782	201	33	658
Cahoone, Charles E. (See Cahoone, Raymond W., assignor.)						
Cahoone, Raymond W., Philadelphia, Pa., assignor to C. E. Cahoone, Newark, N. J. Harness-saddle	331,681	Dec. 1	662	164	33	1114
Cailleaux, Charles. (See Cailleaux, Paul and C.)						
Cailleaux, Paul and C., Gironville, Seine-et-Oise, France. Apparatus for filling sacks and weighing the contents thereof	329,712	Nov. 3	386	99	33	579
Cain, Cornelius H., St. Louis, Mo. Vehicle-spring	332,677	Dec. 22	2365	625	33	1440
Cain, Jacob, assignor to Fort Wayne Electric Light Company, Fort Wayne, Ind. Electric-arc-lamp regulator	333,194	Dec. 29	2808	735	33	1525
Cain Tap, Die, and Bolt Company, Tubal. (See Patten, Jefferson, assignor.)						
Caldwell, Benjamin F., Wheeling, W. Va. Device for bending roofing-plates	329,713	Nov. 3	388	99	33	579
Caldwell, William D., and J. C. Hendricks, Crawfordsville, assignors of one-half to M. A. McCold, Fairfield, Iowa. Harrow	328,108	Oct. 13	786	205	33	149
Calkins, Almon B., Medford, assignor to Ashcroft Manufacturing Company, Boston, Mass. Steam-engine indicator	330,958	Nov. 24	2039	551	33	917
Calkins, Henry, and S. H. Bunten, Bradshaw, Nebr. Washing-machine	328,285	Oct. 13	1002	261	33	190
Callander, Austin, Clinton, Ontario, Canada. Iron harrow	330,675	Nov. 17	1660	447	33	839
Calnan, James P., Clinton, Iowa. Two-wheeled vehicle	331,375	Dec. 1	168	43	33	1028
Calverley, Joseph, *et al.* (See Marion, Joseph, assignor.)						
Cambridge, William J., assignor to J. C. Chapman, Boston, Mass. Valve	330,676	Nov. 17	1661	447	33	839
Cameron, Ezra G., assignor of one-half to A. L. Hines and D. B. Green, Charlotte, Mich. Reclining-chair	329,272	Oct. 27	2381	616	33	456
Cameron, Joseph, Cynthiana, Ohio. Dumping-wagon	329,714	Nov. 3	389	99	33	579
Cameron, William D. (See Rice, W. Billings and M. H., assignors.)						
Camp, Cyrus L., Tremont, Ill. Carpet-stretcher	329,136	Oct. 27	2191	569	33	419
Camp, David C. and H. P., Gainesville, Ga. Churn-motor	333,388	Dec. 29	3068	800	33	1572
Camp, Henry P. (See Camp, David C. and H. P.)						
Campbell, Andrew C., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Feeding mechanism for sewing-machines	331,183	Nov. 24	2335	632	33	971
Campbell, Andrew D. (See Armstrong, Samuel, assignor.)						
Campbell, Angus. (See Durkee and Campbell.)						
Campbell, Charles B. and W. H., Buffalo, N. Y. Machine for grooving metal rolls	331,613	Dec. 1	551	135 136 137	33	1004
Campbell, Henry F. (See Mills, George H., assignor.)						
Campbell, John D., New York, N. Y. Saddle for locomotive-engines	328,002	Oct. 13	643	170	33	123
Campbell, John T., Rockville, Ind. Revolving cultivator	329,137	Oct. 27	2193	569	33	420
Campbell, Malcolm, Amesbury, Mass. Hinge	332,487	Dec. 15	1799	473	33	1332
Campbell, William H. (See Campbell, Charles B. and W. H.)						
Canaday, W. Scott, assignor of one-half to R. B. Carson, New Castle, Ind. Roller-skate	327,523	Oct. 6	17	4	33	5
Canning, Emile C. (See Papineau, Frank J., Jr., assignor.)						
Cannon, Alfred, High Spire, Pa. Vegetable-cutter	330,560	Nov. 17	1522	407	33	810
Cannon, Edward A., Ponsankee, Wis. Label-holder	327,763	Oct. 6	338	87	33	59
Canterbury, Richard A. (See Leager, Pierce, and Canterbury.)						
Canton Glass Company. (See Barker, David, assignor.)						
Caples, Henry L., and W. W. Lewis, Kansas City, Mo. Conduit for electrical conductors	329,887	Nov. 10	635	161	33	630
Car-Skaden, Delos, Chicago, Ill. Separator	329,964	Nov. 10	731	187	33	648
Card, Miles H., and J. Place, Freeport, Ill. Kitchen-cabinet	331,766	Dec. 8	783	198	33	1146
Cardell, Morton L., Hancock, Mich. Bouquet-holder	331,614	Dec. 1	563	137	33	1006
Cargill, Frank R., and W. V. Kent, Chicago, Ill. Metallic floor and surface	329,012	Oct. 27	2017	523	33	389
Carhart, Edwin M., Providence, R. I. Ore-crushing machine	332,488	Dec. 15	1800	473	33	1332
Carlile, William S. (See Shaw, Carlile, and Dann.)						
Carlin, Thomas H. (See Cridge and Carlin.)						
Carlin, Thomas H., Allegheny, Pa. Grinding or crushing mill	333,389	Dec. 29	3009	800 801	33	1579

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Carlough, Daniel. (See Cooke and Carlough.)						
Carmont, William H. (See McOueen and Carmont.)						
Carney, Francis J., assignor to himself and J. Reid. New York, N. Y. Water-tank	332,489	Dec. 15	1802	473	34	1333
Carpenter, Clara J., administratrix. (See Carpenter, James H.)						
Carpenter, Edwin P., Brattleborough, Vt. Reed-organ stop-action	328,647	Oct. 20	1510	392	33	289
Carpenter, George O., *et al.* (See Tirrell, Jacob P., assignor.)						
Carpenter, James H., deceased, Hyndman, Pa.; C. J. Carpenter administratrix. Gate	328,186	Oct. 13	883	229	33	167
Carpenter, Rolla C., Lansing, Mich. Furnace for steam-boilers	331,277	Dec. 1	16	4	33	1003
Carpenter, Steven L., Moscow, Tenn. Bale-tie	329,013	Oct. 27	2019	524	33	380
Carr, Charles and G., Sugar Tree Ridge, Ohio. Truss-bridge	328,758	Oct. 20	1645	429	33	315
Carr, George. (See Carr, Charles and G.)						
Carr, James, Manchester, county of Lancaster, England. Woven-tape ladder for Venetian blinds	328,286	Oct. 13	1003	261	33	190
Carr, Joseph J., Wilkes-Barré, Pa. Machine for molding wheels	329,814	Nov. 3	524	133 / 134	33	603
Carr, Robert S., Hamilton, Ohio. Horse hay-rake	327,764	Oct. 6	339	87	33	59
Carr, Robert S., Hamilton, Ohio. Wrench	333,108	Dec. 29	2692	706	33	1505
Carrico, Thomas W., San Antonio, Tex. Mold for building concrete walls	331,114	Nov. 24	2239	609	33	954
Carroll, Charles D. (See Strickland, Morgan D., assignor.)						
Carroll, Daniel E., New Orleans, La. Flexible match-lighting device	327,656	Oct. 6	213	53	33	38
Carroll, Edward, and P. Ryan, Guelph, Ontario, Canada. Buggy-top	332,878	Dec. 22	2366	626	33	1440
Carroll, William, and J. Mecklem, Columbus, Ohio. Shoulder-brace	330,094	Nov. 10	915	237	33	685
Carroll, William T., Worcester, Mass. Spindle-bolster	333,056	Dec. 22	2608	683	33	1485
Carroll, William T., Worcester, assignor to G. Draper & Sons, Hopedale, Mass. Spindle-support for spinning-machines	329,014	Oct. 27	2020	524	33	390
Carroll, William T., Worcester, assignor to Sawyer Spindle Company, Boston, Mass. Spindle and bearing	332,992	Dec. 22	2525	666	33	1470
Carrothers, George, Piedmont, Ohio. Cultivator	330,677	Nov. 17	1662	448	33	840
Carry, Clément. (See Pilet and Carry.)						
Carson, Robert B. (See Canaday, W. Scott, assignor.)						
Carter, Albert S. (See Disston, Thomas S., assignor.)						
Carter & Co., Rufus, *et al.* (See Armstrong, John B., assignor.)						
Carter, Daniel A., Camden, N. J. Child's nursery-commode	331,866	Dec. 8	922	237 / 238	33	1170
Carter, Ell C., New York, N. Y. Decorated slate	332,050	Dec. 8	1196	312	33	1221
Carter, John R., Niagara Falls, N. Y. Machine for numbering paper	329,715	Nov. 3	390	100	33	579
Carter, John R., Niagara Falls, N. Y. Sales-book	333,390	Dec. 29	3071	801	33	1573
Carter, John W., *et al.* (See Tirrell, Jacob P., assignor.)						
Carter, Robert A. (See Bailey and Carter.)						
Cary, Samuel, Centreville, La. Earth-auger	331,767	Dec. 8	784	198	33	1146
Casaday, William L., South Bend, Ind. Boat	333,391	Dec. 29	3073	802	33	1573
Case, Calvin S., Jackson, Mich. Artificial tooth-crown and its attachments	328,837	Oct. 20	1744	455	33	334
Case, George F., Denver, Colo. Core-lifter for rock-drills	332,587	Dec. 15	1957	512	33	1539
Case, Henry, Brooklyn, N. Y. Traveling derrick	330,870	Nov. 24	1920	501	33	894
Case, Joel T., Bristol, Conn. Vertical disk grinding-mill	332,233	Dec. 15	1457	378 / 379	33	1273
Case, Joel T., Bristol, Conn. Vertical disk grinding-mill	332,234	Dec. 15	1459	379 / 380	33	1273
Case, Lewis F., Jr., Goshen, Ind. Vehicle-spring	328,287	Oct. 13	1004	261	33	190
Case Threshing Machine Company, J. I. (See Walrath, Jesse, assignor.)						
Casey, David F., assignor to A. I. Hutchinson, Harrisonville, Ohio. Washing-machine pounder	328,603	Oct. 13	645	170	33	124
Casey, William. (See Davis and Casey.)						
Casgrain, William T., Milwaukee, Wis. Hood or cap for piles	333,302	Dec. 29	3074	802	33	1574
Cass, William M., Carlock, Tenn. Car brake and starter	333,109	Dec. 29	2693	706	33	1506
Cassella & Co., Leopold. (See Hoffmann, Meinhard, assignor.)						
Cassidy, Patrick, assignor of one-half to I. R. Adler, New York, N. Y. Privy-sink	331,662	Dec. 1	662	164	33	1115
Caterson & Brotz Company. (See Brotz, Robert, assignor.)						
Cathcart, James L., Alexandria, Va., assignor to M. J. Colley, J. E., C. M., and J. W. Bell, Washington, D. C. Railway fish-plate	329,622	Nov. 3	271	70	33	557
Catlin, Abel D. (See Garland and Catlin.)						
Cato, Quintus, and C. A. Spaulding, Estes Park, Colo. Harness-ring	331,477	Dec. 1	316	85	33	1054
Celluloid Manufacturing Company. (See Pool, Frank V., assignor.) (Reissue.)						
Celluloid Manufacturing Company. (See Stevens and Wood, assignors.)						
Chace, A. H. (See Chace, Edward, assignor.)						
Chace, Edward, assignor to himself and A. H. Chace, Washington, D. C. Destroying insects	327,861	Oct. 6	461	120	33	82
Chadsey, John N., Valatie, N. Y. Folding and pasting machine for forming cornucopia paper bags	328,459	Oct. 20	1346	323 / 324	33	913
Chadsey, William R., St. Louis, Mo. Tobacco-pipe	327,920	Oct. 6	537	140	33	96
Chadwick, Charles N., Brooklyn, N. Y. Underwaist	330,205	Nov. 10	1051	274	33	713
Chadwick, Horace E., Providence, R. I. Bracelet	331,033	Nov. 24	2124	575	33	933
Chadwick, Loren, Battle Creek, Mich. Blackboard composition	330,375	Nov. 17	1286	.....	33	766
Chamberlain, Courtland A., Canton, N. Y. Car-coupling	332,380	Dec. 15	1663	435 / 436	33	1309
Chamberlain, James M., Winfield, Kans. Machine for cleansing clothes	332,588	Dec. 15	1957	512 / 513	33	1539
Chamberlain, Roesco. (See Austin and Chamberlain.)						
Chamberlin, Addison J., *et al.* (See Evans, John C., assignor.)						
Chamberlin, John H., St. Paul, Minn. Stock-car	329,716	Nov. 3	393	100	33	580
Chamberlin, Lucian C., Lathrop, Mo. Cultivator	333,220	Dec. 29	2931	767	33	1542
Chamberlin, Thomas C., *et al.* (See Evans, John C., assignor.)						
Chambers, Edward. (See Chambers, George J. and E.)						
Chambers, George J. and E., Springfield, Ill. Tailor's measure	332,783	Dec. 22	2234	589	33	1417
Chambers, S. (See Depp, William F., assignor.)						
Chambers, Washington I., Kingston, N. Y. Marine torpedo	328,919	Oct. 27	1864	487	33	362
Chambers, Zabina E. (See Martin, Samuel, assignor.)						
Chandler, Adoniram J., Cincinnati, Ohio. Movable dressing-closet for sleeping-cars	331,634	Nov. 24	2125	575	33	933
Chandler, Theophilus P., Jr., Philadelphia, Pa. Utilizing wave-power	328,759	Oct. 20	1646	429	33	315
Chandler, William H., *et al.* (See Robinson, William, assignor.)						
Chantrell, John, Bridgeport, Conn. Brace-chuck	328,648	Oct. 20	1511	393	33	289
Chantrell, John, Bridgeport, Conn. Bit-brace	328,649	Oct. 20	1512	393	33	290
Chapin, Lucius E., Jefferson, Mich. Cultivator	329,888	Nov. 10	636	162	33	631
Chapin, Samuel N., New Britain, Conn. Sash-fastener	332,325	Dec. 15	1583	415	33	1295

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Chapman, Charles H., Groton, assignor to Eureka Spindle Company, Ayer, Mass. Ring-spinning frame	327,862	Oct. 6	462	120	33	82
Chapman, Charles H., Groton, assignor to Eureka Spindle Company, Ayer, Mass. Bolster for spinning-spindles	327,863	Oct. 6	463	120	33	82
Chapman, Eugene M., Holyoke, Mass. Glove-fastener	330,871	Nov. 24	1922	521	33	895
Chapman, Frank R. (See Wells, George H., assignor.)						
Chapman, Herman L., Marcellus, Mich. Velocipede	329,362	Oct. 27	2023	650	33	480
Chapman, John C. (See Cambridge, William J., assignor.)						
Chapman, Joseph L., Haddonfield, N. J. Gas-mixer	329,717	Nov. 3	394	101	33	580
Chapman, William D., Theresa, N. Y. Rotary escape-movement	332,879	Dec. 22	2367	626	33	1440
Chase, Frank, Boston, Mass. Machine for grinding drills	331,115	Nov. 24	2240	609	33	954
Chase, John B., Aurora, Ill. Adjustable stop for sliding doors	333,281	Dec. 29	2932	767	33	1549
Chase, Sidney A., assignor of one-half to W. R. Mapes, Evart, Mich. Electric fire-alarm	332,638	Dec. 15	2021	531	33	1371
Chase, William M., New Haven, Conn. Seal-press	328,288	Oct. 13	1005	261	33	190
Cheesman, James I., Altoona, Pa. Link-making machine	332,993	Dec. 22	2526	666 / 667	33	1470
Cheever & Co., G. W. (See Pardee, Charles F., assignor.)						
Chegwin, William, and W. A. Eldredge, Fond du Lac, Wis. Holdback for vehicles	329,015	Oct. 27	2021	524	33	390
Cheney, Frederick P., Glover, Vt. Shuttle	330,362	Nov. 10	1263	335	33	755
Cheney, John L., Lowell, Mass. Dynamometer	328,650	Oct. 20	1514	393	33	290
Cherry, William S., Streator, Ill. Coal-hoist	333,195	Dec. 29	2809	735	33	1526
Chesnut, James W. (See Burk, Hiram C., assignor.)						
Chesnut, Robert, Richmond, Ind. Roller-skate	329,534	Nov. 3	153	38	33	534
Chess, Harvey B., Pittsburg, Pa. Apparatus for grinding rolls	330,561	Nov. 17	1522	407	33	810
Chesterman, Edwin, Philadelphia, Pa. Hernial-truss pad	328,109	Oct. 13	787	205	33	149
Chicago Coffin Company. (See Richards, John T., assignor.)						
Chicago Liquid Sack Company. (See Hollett, Ira W., assignor.)						
Chicago Sewing Machine Company. (See Hall and Tripp, assignors.)						
Chichester Chair Company. (See Chichester, Lemuel A., assignor.)						
Chichester, Franklin, Poughkeepsie, N. Y. Chair	333,393	Dec. 29	3075	802	33	1574
Chichester, Lemuel A., Phœnicia, N. Y. Chair	328,838	Oct. 20	1746	455	33	334
Chichester, Lemuel A., assignor to Chichester Chair Company, Phœnicia, N. Y. Chair	328,760	Oct. 20	1647	429	33	315
Chichester, Lemuel A., assignor to Chichester Chair Company, Phœnicia, N. Y. Chair	330,206	Nov. 10	1052	274	33	713
Chickering, Charles C., New York, N. Y., assignor to American Zylonite Company, Adams, Mass. Manufacture of articles from celluloid and other plastic materials	329,273	Oct. 27	2382	616	33	456
Chickering, Samuel G., Boston, Mass. Music-desk for pianos and organs	332,326	Dec. 15	1585	415	33	1295
Childs, W. H. H. (See Endemann, Herman, assignor.)						
Childs, Walter C., *et al.* (See Cooley, Earl K., assignor.)						
Chilton, Franklin H., New Rochelle, assignor to Empress Embroiderer Company, New York, N. Y. Embroidering attachment for sewing-machines	330,678	Nov. 17	1663	448	33	840
Chilton, J. L., *et al.* (See Osborn, James F., assignor.)						
Chinnick, James T., Elk Grove, Cal. Windmill-head	328,187	Oct. 13	885	230	33	167
Chisholm, Samuel S. (See Bradshaw, Silas S., assignor.)						
Chiswell, George. (See Nugent, William, assignor.)						
Chivill, John, assignor to Webster & Comstock Manufacturing Company, Chicago, Ill. Shaft-hanger	327,524	Oct. 6	18	5	33	5
Christa, Philip, Detroit, Mich. Stone-working machine	329,274	Oct. 27	2384	616 / 617	33	456
Christenson, Hans, and W. Timmers, Grand Rapids, Mich. Potato-planter	331,278	Dec. 1	16	4	33	1003
Christy, James, Jr., Akron, Ohio. Button-fastener	329,437	Nov. 3	15	4	33	507
Chrystal, William J., Glasgow, county of Lanark, Scotland. Manufacture of chromates and bichromates	329,138	Oct. 27	2194	.....	33	420
Church, Arthur L., Philadelphia, Pa. Steam reversing-gear	330,959	Nov. 24	2041	551 / 552	33	917
Church, Duane H., Waltham, Mass. Pendant for watch-cases	328,289	Oct. 13	1006	262	33	191
Church, Dwight M., Baltimore, Md. Polishing or emery cord	328,004	Oct. 13	646	170	33	124
Church, Eben E., Beddington, Me. Leather-rolling machine	333,196	Dec. 29	2811	736	33	1526
Chute, Richard B., New London, Conn. Withe-band stay for masts	332,232	Dec. 15	1456	378	33	1272
Cilley, John H., Lebanon, Pa. Tricycle	328,761	Oct. 20	1648	429 / 430	33	316
Cissel, Richard S. T., *et al.* (See Murray, Peter, Jr., assignor.)						
Cissel, Robert B., *et al.* (See Murray, Peter, Jr., assignor.)						
Cité, Joseph D., assignor to Fishkill Landing Machine Company, Fishkill-on-the-Hudson, N. Y. Cut-off-valve gear	332,381	Dec. 15	1664	436	33	1309
Claes, August. (See Pohl and Claes.)						
Clancy, J. Richard. (See Liesche, August, assignor.)						
Clancy, Patrick J., assignor to himself and J. J. Kanavan, Danvers, Mass. Plumber's trap	330,679	Nov. 17	1665	448	33	840
Clapp, George. (See Marston and Clapp.)						
Clapp, Julius M., Boston, Mass. Pen-holder	332,880	Dec. 22	2368	626	33	1441
Clark, A. Ralph. (See Baynes and Clark.)						
Clark, Edward, Jersey City, N. J. Conductor	333,111	Dec. 29	2695	707	33	1506
Clark, Edward, Newburg, N. Y. Electrical conductor	333,110	Dec. 29	2694	706	33	1506
Clark, Edward, Newburg, and T. A. Richards, Brooklyn, N. Y. Electrical conductor	333,394	Dec. 29	3076	803	33	1574
Clark, Elijah, Louisville, Ky. Micrometer-gage for watch-makers	331,116	Nov. 24	2242	610	33	954
Clark, Ernest P., Owego, N. Y. Dynamo-electric machine	330,095	Nov. 10	916	238	33	686
Clark, Frank S., and J. A. Bachman, Austin, Tex. Baling-press	331,035	Nov. 24	2125	576	33	933
Clark, Frank W., Granville, Mass. Crib	329,016	Oct. 27	2022	524	33	390
Clark, Franklin A., Milford, Conn. Making spectacle-temples	328,920	Oct. 27	1867	487	33	362
Clark, Franklin H., Cleveland, Ohio. Table for gynecological and surgical purposes	328,460	Oct. 20	1249	324	33	243
Clark, George J., Aversville, Ohio. Churn	328,188	Oct. 13	886	230	33	168
Clark, George M., Higganum, Conn. Cultivator	330,980	Nov. 24	2042	552	33	917
Clark, George M., and W. H. Briggs, assignors to Adams & Westlake Manufacturing Company, Chicago, Ill. Car-lamp	329,535	Nov. 3	154	39	33	534
Clark, George M., and W. H. Briggs, assignors to Adams & Westlake Manufacturing Company, Chicago, Ill. Car-lamp	329,718	Nov. 3	395	101	33	580
Clark, Has. (See Vanorman, Oliver, assignor.)						
Clark, Henry, assignor of one-half to F. W. Erbacher, Milwaukee, Wis. Caster	329,275	Oct. 27	2386	617	33	457
Clark, Henry F. (See Babcock, E. Stillman, assignor.)						
Clark, Henry F., Poughkeepsie, N. Y. Breech-loading fire-arm	328,005	Oct. 13	647	171	33	124
Clark, Henry F., Poughkeepsie, N. Y. Torpedo-signal	330,502	Nov. 17	1523	407	33	810
Clark, Henry F., Poughkeepsie, N. Y., assignor to Palmer Torpedo Railway Signal Company, Plainfield, N. J. Railway signal-torpedo	332,784	Dec. 22	2235	589	33	1417
Clark, Jacob M., Elizabeth, N. J., and C. A. L. Totten, U. S. Army. Graduating-arcs upon mathematical and other instruments	329,139	Oct. 27	2195	569	33	420

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Clark, Joshua L. (See Fairfield, Clark, and Hughes.)						
Clark, Levi S., assignor to himself, O. G. Franks, G. T. Baughman, Doylestown, and J. H. Warren, Lodi, Ohio. Two-wheeled vehicle	330,468	Nov. 17	1410	375	33	789
Clark, Lewis M., Harper, Kans. Railway-tie	332,490	Dec. 15	1802	473	33	1333
Clark, Mary E. (See Shively and Clark.)						
Clark, Mary E., Fairville, N. Y. Fruit-drier	331,768	Dec. 8	785	199	33	1146
Clark, Matthew J., Clermontville, Ohio. Coffee-roaster	331,615	Dec. 1	564	137	33	1096
Clark, Muirhead & Co., Latimer. (See Gibbins, Joseph P., assignor.)						
Clark, Norman, assignor to J. H. and R. F. Lawrence, Sterling, Ill. Door-hanger	328,382	Oct. 13	1148	295	33	217
Clark, Thomas R., New York, N. Y. Tanning hides and skins	331,942	Dec. 8	1035	.....	33	1193
Clark, Thomas S., San Francisco, Cal. Bedstead for wire mattresses	328,762	Oct. 20	1049	430	33	316
Clark, Truman S., San Francisco, Cal. Bedstead for wire mattresses	330,563	Nov. 17	1525	408	33	811
Clark, William, Lincoln, Nebr. Door-strip						
Clark, William D. (See Wenigmann, Paul, assignor.)						
Clark, William F., assignor of one-half to F. M. Dickerhoff, San Francisco, Cal. Book-mark	332,327	Dec. 15	1585	416	33	1295
Clark, William H., What Cheer, Iowa. Rock-drilling machine	330,376	Nov. 17	1287	341	33	766
Clark, William R. (See Brown and Clark.)						
Clark, William R., Detroit, Mich., assignor to Singer Manufacturing Company of New Jersey. Combined hemmer and lace-guide for sewing-machines	332,700	Dec. 22	2130	502	33	1397
Clarke, Alexander D., New York, N. Y. Ore-concentrator	328,006	Oct. 13	650	171	33	125
Clarke, Almon, Sheboygan, Wis. Book-support	329,719	Nov. 3	397	101	33	581
Clarke, Charles L., New York, N. Y. Electric valve-operator	327,525	Oct. 6	18	5	33	5
Clarke, Charles L., New York, N. Y. Telemeter system	327,526	Oct. 6	22	6	33	6
Clarke, Charles L., New York, N. Y. Telemetry	327,527	Oct. 6	29	7	33	7
Clarke, Charles L., New York, N. Y. Operating circuits in telemeter systems	327,657	Oct. 6	214	53	33	38
Clarke, David W., Tidioute, Pa. Neck-yoke	331,376	Dec. 1	169	43	33	1092
Clarke, George H. (See Kenyon, John W., assignor.)						
Clarke, Joseph H., Springfield, Ohio. Arm-rest for embalming-tables	329,140	Oct. 27	2198	569	33	420
Clarke, Samuel, Child's Hill Works, county of Middlesex, England. Manufacture of night-lights	329,536	Nov. 3	155	39	33	535
Clarke, Simpson. (See Brumby and Clarke.)						
Clarke, William E., Providence, R. I. Device for attaching suspender-ends	332,785	Dec. 22	2236	589	33	1417
Clarke, William H., Brooklyn, N. Y. Steam and air brake system	333,197	Dec. 29	2412	736	33	1529
Clarkson, Edward H. N., Baltimore, Md. Planing and matching machine	330,564	Nov. 17	1526	408	33	811
Clarkson, Frank S., assignor of one-half to F. B. Sloan, Baltimore County, Md. Lubricating flanges and treads of car-wheels	332,994	Dec. 22	2530	667	33	1471
Class, William F., and A. J. Weatherhead, assignors of one-third to G. Collins, and said Class assignor, by meane assignments, of his remaining right to J. J. Mayer, Cleveland, Ohio. Faucet	328,651	Oct. 20	1515	394	33	290
Class, William F., A. J. Weatherhead, and G. Collins; said Class assignor, by mesne assignments, to J. J. Mayer, Cleveland, Ohio. Force and drain faucet	328,877	Oct. 20	1791	467	33	342
Clande, Louis G., assignor, by mesne assignments, to Russell Horseshoe Company, New York, N. Y. Horseshoe-machine	328,401	Oct. 20	1250	325	33	243
Clande, Louis G., assignor, by meane assignments, to Russell Horseshoe Company, New York, N. Y. Combined iron and steel bar	328,652	Oct. 20	1516	394	33	290
Clande, Louis G., assignor, by meane assignments, to Russell Horseshoe Company, New York, N. Y. Horseshoe	329,141	Oct. 27	2199	570	33	420
Clausen, Siegfried E., Portland, Oreg. Extension-table	332,590	Dec. 15	1959	513	33	1379
Clay, Frank P., Jr. (See Clay, William H., assignor.)						
Clay, William H., Paris, Ky. Split link	329,142	Oct. 27	2201	570	33	421
Clay, William H., assignor to himself and F. P. Clay, Jr., Paris, Ky. Marking attachment for corn-planters	329,143	Oct. 27	2202	570	33	421
Clay, William W., Chicago, Ill. Device for preventing drafts beneath floors	332,491	Dec. 15	1803	474	33	1333
Clayton, Joshua E., and S. F. Mackie, Salt Lake City, Utah Ter. Metallurgical apparatus	330,961	Nov. 24	2043	{ 552 / 553	33	917
Clementsen, Knud, Chicago, Ill. Latch	332,573	Oct. 20	1650	430	33	316
Clifford, Henry A., Allegheny, Pa. Covering for gas, water, and oil pipes	329,720	Nov. 3	398	102	33	581
Climax Fuse Company. (See Andrews, Albert F., assignor.)						
Clinch, Andrew F., York, Pa. Boiler	328,189	Oct. 13	856	220	33	108
Cline, George J., Goshen, Ind. Wrench	332,051	Dec. 8	1197	312	33	1221
Cline, Leon, assignor of one-fourth to S. W. Cline, Chicago, Ill. Composition fuel	330,060	Nov. 10	783	.....	33	658
Cline, Samuel W. (See Cline, Leon, assignor.)						
Cline, William G., Gallatin, Mo. Door-latch	332,095	Dec. 22	2531	667	33	1471
Clingman, Francis, Albany, Oreg. Apple paring and coring machine	329,303	Oct. 27	2525	{ 650 / 651	33	459
Clink, Charles W. (See Kizer and Clink.)						
Clond, Silas, Huntington, Ind. Dust-pan	332,591	Dec. 15	1960	513	33	1380
Cloudman, Francis A., Cumberland Mills, Me. Centrifugal machine	328,109	Oct. 13	887	231	33	168
Clough, Francis W., Springfield, Mass. Gearing	329,721	Nov. 3	399	102	33	581
Clough, William R., Brooklyn, N. Y. Capsule for bottles	332,382	Dec. 15	1668	437	33	1310
Clow, James B. (See Jewell, Omar H., assignor.)						
Clowers, William B., Decatur, Tex. Bedstead	329,672	Nov. 24	1923	501	33	895
Clyne, James B., assignor of one-half to White Sewing Machine Company, Cleveland, Ohio. Metal-screw machine	333,108	Dec. 29	2813	{ 736 / 737	33	1527
Coates, Abraham, Watertown, N. Y. Bobbin-winder	329,144	Oct. 27	2203	571	33	421
Coates, Henry, Newark, N. J. Safety-stirrup	332,052	Dec. 8	1198	313	33	1221
Coates, Joseph H. (See Potts, Joseph C., assignor.)						
Coats, Milo L., assignor of one-half to E. W. J. Hawkins, Starksborough, Vt. Tool-handle	329,815	Nov. 3	597	151	33	664
Cobb, Daniel L., Ypsilanti, Mich. Gate	329,576	Oct. 27	2317	617	33	457
Cobb, Henry B. (See Cobb, Sam B., assignor.)						
Cobb, Henry B., Wilmington, Del. Insulating-tube for electric wires	330,773	Nov. 24	1924	502	33	895
Cobb, Sam B., Chicago, Ill., assignor to H. B. Cobb, Wilmington, Del. Insulating-tube for electric wires	329,574	Nov. 24	1905	502	33	895
Coble, Albert H., Frankfort, Ind. Carpet-stretcher	329,659	Oct. 20	1748	394	33	290
Coburn, Henry W., and D. B. Van Fleit, Newville, Ind. Ribbon-holder	331,046	Dec. 1	565	147	33	1096
Coburn, Samuel, Altoona, Pa. Pipe-coupling machine	327,765	Oct. 6	340	87	33	59
Cochran, Rufus M., Jacinto, Cal. Grain-separator	332,786	Dec. 22	2236	590	33	1419
Cochrane, Charles, Stourbridge, county of Worcester, England. Apparatus for drying air for furnaces and other purposes	331,395	Dec. 29	2677	693	33	1574
Cochrane, Richard. (See Crossley and Cochrane.)						
Cody, Elmore D., assignor of one-half to J. W. Hoys, Erie, Pa. Steam car-heater	328,017	Oct. 27	2023	525	33	109
Coe, Henry I. (See Thackston, Richard D., assignor.)	331,270	Dec. 1	17	5	33	1091
Coffey, Robert S., Waco, Tex. Necktie and collar fastener	332,067	Oct. 13	673	171	33	125
Coffin, Galen, Boston, Mass. Christmas-tree holder	329,018	Oct. 27	2025	525	33	396
Coffin, Thaddeus S., Boston, Mass. Finger-ring tray						

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Coffin, Zebulon E., Boston, Mass. Hydrant	330,377	Nov. 17	1288	341	33	766
Cohee, John D., and G. R. Gamble, Frankfort, Ind. Washing-machine	327,528	Oct. 6	33	7	33	8
Cohn, Moritz, New York, N. Y. Elastic gore for wearing-apparel	332,492	Dec. 15	1804	474	33	1333
Colby, Caleb K., Brooklyn, N. Y. Watch-case	333,057	Dec. 22	2609	{ 683 / 684	33	1485
Colby, George H., Boston, Mass. Car-coupling	329,537	Nov. 3	156	39	33	535
Colby, John N., assignor of one-half to S. E. Sullivan, New London, Conn. Window-awning	328,567	Oct. 20	1388	362	33	268
Colby Wringer Company. (See Kirby, James L., assignor.)						
Cole, C. O., *et al.* (See Shiek, Daniel W., assignor.)						
Cole, E. C. (See Tyler, Aaron J., assignor.)						
Cole, Isaac, Brooklyn, N. Y. Chain for bracelets	332,053	Dec. 8	1199	313	33	1221
Cole, James W., assignor of one-half to G. T. Moore, Westfield, Mass. Combined ripper and cutter	329,019	Oct. 27	2026	525	33	391
Cole, James W., and H. Knudsen, Greencastle, Ind.; said Knudsen assignor to said Cole. Lightning-rod standard	332,383	Dec. 15	1669	437	33	1310
Cole, Winant B., Brooklyn, N. Y. Gas-burner	328,939	Oct. 20	1747	455	33	334
Coleman, Ezra, New York, N. Y. Ore-separator	327,766	Oct. 6	341	88	33	60
Coleman, James H., Montrose, Mo. Axle-lubricator	329,816	Nov. 3	528	134	33	604
Coleman, John A., Providence, R. I. Horseshoe-nail	333,396	Dec. 29	3079	804	33	1574
Coleman, Joseph W., Schooley's Mountain, N. J. Folding barrow-truck	329,623	Nov. 3	272	70	33	557
Coles, Charles N. (See Sandy and Coles.)						
Coles, Derrick L., Brooklyn, N. Y. Anchor	327,767	Oct. 6	343	88	33	60
Coles, Erskine A., Philadelphia, assignor of one-half to W. D. Billmeyer, York, Pa. Pill-machine	332,493	Dec. 15	1805	474	33	1333
Coles, Erskine A., Philadelphia, assignor of one-half to W. D. Billmeyer, York, Pa. Machine for making pills, lozenges, &c	332,494	Dec. 15	1807	{ 474 / 475	33	1334
Coles, Henri H., assignor to H. Troemner, Philadelphia, Pa. Grinding-mill	331,683	Dec. 1	663	164	33	1115
Colley, M. J., *et al.* (See Cathcart, James L., assignor.)						
Collie, Wesley F., Barren Fork, Ark. Gin-saw gummer	328,654	Oct. 20	1520	395	33	291
Collins, Alexander, Tarkio, Mo. Wall-paper	332,054	Dec. 8	1199	.....	33	1221
Collins, Benjamin, Oakland, Cal. Machine for cutting corn from the cob	327,864	Oct. 6	464	121	33	82
Collins, Byron, Galion, Ohio. Revolving sulky hay-rake	332,055	Dec. 8	1200	313	33	1221
Collins, Charles M., South Bend, Ind. Machine for welding tires	330,875	Nov. 24	1927	522	33	895
Collins, George. (See Class, Weatherhead, and Collins.)						
Collins, George, *et al.* (See Class and Weatherhead, assignors.)						
Collins, James P., New London, Conn. Water-wheel	331,184	Nov. 24	2336	632	33	971
Collins, John H., Parma, N. Y. Fruit-drier	328,462	Oct. 20	1251	325	33	244
Collins, Major, Brazil, assignor of one-half to D. W. Minshall, Terre Haute, Ind. Machine for making car-coupling pins	330,207	Nov. 10	1053	275	33	713
Collins, Michael T., Oil City, Pa. Machine for shaping the ends of sucker-rods	328,383	Oct. 13	1149	{ 295 / 296	33	217
Collins, Samuel B., Galion, Ohio. Revolving sulky hay-rake	331,478	Dec. 1	317	85	33	1054
Collins, Sylvester S., Walker, Mo. Machine for working well-augers	331,617	Dec. 1	566	138	33	1096
Collins, Wallace G. (See Sloan, Leander E., assignor.)						
Collins, William F., *et al.* (See Wohlfarth and Wakefield, assignors.) (Reissue.)						
Collins, William I., Jackson, Ga. Fertilizer-distributer	329,020	Oct. 27	2027	525	33	391
Colnon, George A. (See McChesney, Reuben, assignor.)						
Colony, Frank H., Wilton, N. H. Setting spindle-steps	332,328	Dec. 15	1586	416	33	1296
Colony, Josiah D., Philadelphia, Pa. Refrigerator	330,208	Nov. 10	1055	275	33	714
Colt, Samuel S., Orange, N. J. Combined bevel, miter, and try-square	330,378	Nov. 17	1289	342	33	767
Colton, Albert R. (See Gilbert, Thomas S., assignor.)						
Colton, Arthur L., Milwaukee, Wis. Letter-file	331,185	Nov. 24	2338	633	33	971
Colts Patent Fire Arms Manufacturing Company. (See Knous, Franklin F., assignor.)						
Columbia City Manufacturing Company. (See Anderson and Wilcox, assignors.)						
Colvin, Raymond N. (See Arnold, William, assignor.)						
Colwell, Augustus W., New York, N. Y. Vacuum-pan	330,209	Nov. 10	1056	276	33	714
Combes, Frank A., Cleveland, Ohio. Roller-skate	330,096	Nov. 10	917	238	33	686
Combs, Charles P., Newark, N. J. Fastening for doors	329,624	Nov. 3	273	71	33	557
Combs, George E., Utica, N. Y. Button-hole cutter	330,773	Nov. 17	1790	482	33	863
Comegys, Edward W., Edesville, Md. Corn-harvester	329,438	Nov. 3	16	4, 5	33	507
Comer, John B., Viola, Tenn. Hay elevator and carrier	329,021	Oct. 27	2028	526	33	391
Comins, Thomas B., Jr., New York, N. Y. Door check and closer	332,056	Dec. 8	1201	313	33	1221
Commercial Telegram Company. (See Dyer, Richard N., assignor.)						
Compagnie de Fives Lille. (See Dumoulin, Adrien J. A., assignor.)						
Compressed Paper Box Company. (See Hosse, Henry A., assignor.)						
Compressed Steel Company. (See Hinsdale, William B., assignor.)						
Compton, Porter C., Ames, Iowa. Automatic railway-track inspector	331,684	Dec. 1	664	165	33	1115
Compton, William A., Liberty Corner, N. J. Wood-embossing machine	331,769	Dec. 8	786	199	33	1146
Compton, William A., Liberty Corner, N. J. Wood-embossing	331,770	Dec. 8	789	200	33	1147
Comstock, Asa M. (See Spruce and Comstock.)						
Comstock, Philo E., Ascutneyville, Vt., assignor of one-half to J. G. Pollard, Worcester, Mass. Tool-sharpener	332,187	Dec. 8	1389	359	33	1254
Comstock, William H., Norwich, Conn. Knob attachment	328,191	Oct. 13	889	231	33	168
Conard, Léon P., assignor of one-half to C. F. Veit and G. Dickman, London, England. Button	327,768	Oct. 6	344	89	33	60
Cone, Jonathan, *et al.* (See Parry, George T., assignor.)						
Cones, Charles B., assignor to C. B. Cones' Son & Co., Indianapolis, Ind. Pantaloons	328,384	Oct. 13	1151	296	33	217
Cones' Son & Co., C. B. (See Cones, Charles B., assignor.)						
Congdon, J. H. (See Mertsheimer, Frederick, assignor.)						
Congdon, Isaac H., Omaha, Nebr. Device for operating rear signal-lights of railway-trains	329,439	Nov. 3	16	5	33	508
Conine, Anthony, Coxsackie, N. Y. Wheel step-ladder	331,685	Dec. 1	666	165	33	1115
Conklin, Theodore F., Fond du Lac, Wis. Box-fastener	328,463	Oct. 20	1252	326	33	244
Conley, John, Grand Rapids, Mich. Fastening rails to metal sleepers	332,384	Dec. 15	1670	437	33	1310
Connelly, Hugh, Colton, N. Y. Hay-rack	330,565	Nov. 17	1527	408	33	811
Conner, Joseph, and G. Matthews, Jr., assignors to J. Matthews, New York, N. Y. Safety-cap for gas-generators for soda-water machines	328,008	Oct. 13	654	172	33	125
Conner, William P., Bloomsburg, Pa. Umbrella and parasol frame	330,566	Nov. 17	1528	409	33	812
Connett, Matthew F., Jr., Springfield, Ill. Machine for turfing fabrics	332,639	Dec. 15	2022	531	33	1371
Connolly, Anthony A. (See Connolly, Thomas A. and A. A.)						
Connolly, Thomas. (See Fowkes and Connolly.)						
Connolly, Thomas A. and A. A., Washington, D. C. Main for conveying gas under pressure	330,294	Nov. 10	1165	310	33	736
Connolly, Thomas A. and A. A., Washington, D. C. Gas-conveying apparatus	331,686	Dec. 1	667	165	33	1115
Conover, James F., New York, N. Y. Stringing pianos	329,277	Oct. 27	2388	618	33	457

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Conrad, Martin, Chicago, Ill. Wagon-brake	327,921	Oct. 6	538	140	33	96
Conrad, Max, Aschaffenburg, assignor to Farbwerke, vormals Meister, Lucius & Brüning. Hochst-on-the-Main, Germany. Mordant	328,464	Oct. 20	1253	.....	33	244
Conrad, Max, Aschaffenburg, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Hochst-on-the-Main, Germany. Printing textile fabrics	328,465	Oct. 20	1254	.....	33	244
Conroy, Patrick J., Philadelphia, Pa. Door or shutter fastener	332,495	Dec. 15	1809	475	33	1334
Consolidated Telephone Company. (See Moore and Culbertson, assignors.)						
Continental Store Service Company. (See Hinton, Joseph R. H., assignor.)						
Conver, William H., and G. M. Sheffer, Emlenton, Pa. Rotary engine	330,001	Nov. 10	784	201	33	658
Converse, Edmund C. (See Manby, Charles E., assignor.)						
Cook, Benjamin F., Santa Maria, Cal. Buck-pole	327,529	Oct. 6	34	7	33	8
Cook, Egbert C., Chicago, Ill. Awning	328,921	Oct. 27	1868	488	33	363
Cook, Frank T., West Springfield, Mass. Pail-holding device for milking purposes	329,889	Nov. 10	636	162	33	631
Cook, Moses G., Lynn, Mass. Weighing-scale	327,530	Oct. 6	35	8	33	8
Cook, Stephen W., and H. Summers, Bozeman, Mont. Ter. Dumping-car	327,769	Oct. 6	345	89	33	61
Cooke, Charles F. and T., York, England. Engineer's reversible level	330,210	Nov. 10	1057	276	33	714
Cooke, Thomas. (See Cooke, Charles F. and T.)						
Cooke, Watts, and D Carlongh, Paterson, N. J. Machine for upsetting eye-bars	328,290	Oct. 13	1007	262	33	191
Cooley, Earl K., assignor of one-half to J. H. Gillespy and W. C. Childs, San Francisco, Cal. Machine for the manufacture of bottle-covers from tule	332,640	Dec. 15	2026	531 / 532	33	1372
Cooley, Henry W. (See Loomis and Cooley.)						
Cooley, Wilking B. (See Buell, Charles E., assignor.)						
Coon, Willard W., Palisade, assignor of one-third to T. F. Leavitt, Sioux Falls, Dak. Ter. Shaft for grindstones	332,996	Dec. 22	2532	667	33	1471
Cooper, Albert. (See Metzger and Cooper.)						
Cooper, David G., Dover, N. H. Oven-thermometer	328,878	Oct. 20	1793	467	33	342
Cooper, George B., *et al.* (See Hillman, William, assignor.)						
Cooper, Harvey, Westfield, Mass. Water-wheel	332,057	Dec. 8	1203	314	33	1222
Cooper, Isaac W., Apollo, Pa. Whip and line holder	328,466	Oct. 20	1254	326	33	244
Cooper, John, Mount Vernon, Ohio. Burial casket, vault, &c	328,291	Oct. 13	1009	262	33	191
Cooper, Leven W., Smith's Mills, Ky. Evaporator	331,867	Dec. 8	923	238	33	1171
Cope, Henry P., assignor of one-half to J. H. Bissell, Detroit, Mich. Hose-truck	332,589	Dec. 15	1959	513	33	1359
Copeland, George W. (See Crisp and Copeland.)						
Copeland, George W., Malden, Mass. Boot and shoe lasting tool	329,278	Oct. 27	2389	618	33	457
Copeland, George W., Malden, Mass. Heel-lasting machine	329,279	Oct. 27	2390	619	33	457
Copeland, George W., Malden, Mass. Boot and shoe lasting machine	329,280	Oct. 27	2392	620	33	458
Copeland, George W., Malden, Mass. Heel-lasting machine	329,281	Oct. 27	2393	620 / 621	33	458
Copeland, George W., Malden, and J. E. Crisp, Boston, Mass. Lasting-machine	329,282	Oct. 27	2395	621	33	458
Copeland, George W., Malden, and J. E. Crisp, Boston, Mass. Lasting-machine	329,283	Oct. 27	2397	622	33	459
Copes, Robert. (See Zeigler, Daniel G., assignor.)						
Copper, Luther S., Cleveland, Ohio. Bicycle-saddle	327,770	Oct. 6	346	89	33	61
Coquillard, Alexis. (See Fisher and Coquillard.)						
Corbett, John T., Aurora, Ill. Magazine-boiler	329,890	Nov. 10	637	162	33	631
Corbin Cabinet Lock Company. (See Mix, Frank W., assignor.)						
Corbin Cabinet Lock Company. (See Mix and Cowles, assignors.)						
Corcoran, Newton C., and R. J. Thompson, Doniphan, Mo. Boat-propelling device	327,771	Oct. 6	347	89	33	61
Corcoran, Richard B., Fort Custer, Mont. Ter. Horseshoe	327,772	Oct. 6	348	90	33	61
Cordery, John T., Absecon, N. J. Running-gear for vehicles	329,817	Nov. 3	529	135	33	604
Cordrey, Francis, Fort Wayne, Ind. Harvester	332,136	Dec. 8	1325	344	33	1242
Corell, John, St. Louis, Mo. Steam-trap	332,997	Dec. 22	2533	668	33	1471
Corey, George, Brooklyn, N. Y. Cigar-holder	328,009	Oct. 13	654	172	33	125
Corey, John A., *et al.* (See Taber, William D., assignor.)						
Corey, Willard L., Cincinnati, Ohio. Axle	328,010	Oct. 13	655	172	33	125
Corey, William. (See Dow, George B. N., assignor.)						
Corliss, Maitland A., Flint, Mich. Double-clinching carriage-knob	332,787	Dec. 22	2237	590	33	1418
Cornelius, Wilbur F., Indianapolis, Ind. Caster for roller-skates	330,097	Nov. 10	918	238	33	686
Cornell, George, Crystal Run, N. Y. Electric time-signal for railways	332,496	Dec. 15	1809	475	33	1334
Corning, David, and R. J. Stackhouse, Danbury, Conn. Nail-extractor	328,655	Oct. 20	1520	395	33	291
Cornish, Oscar S., *et al.* (See Curtis, David W., assignor.)						
Corneg, Isaac P., Philadelphia, Pa. Ratchet-wrench	333,199	Dec. 29	2817	737	33	1527
Coron, Joseph. (See Anthony and Coron.)						
Corscaden, Robert, Providence, R. I. Apparatus for collecting and drying sedimentary matter of sewage	331,943	Dec. 8	1037	269	33	1193
Corson, William P., New York, N. Y. Cutter-head for heel-trimming machines	331,771	Dec. 8	790	200	33	1147
Cort, Nevin, New Florence, Pa. Cross-over switch	332,641	Dec. 15	2028	532	33	1372
Corteen, William, Sheffield, county of York, England. Chair or rail-fastener for railways and tramways	331,868	Dec. 8	924	238	33	1171
Cory Artificial Fuel Company. (See Cory, William H., assignor.)						
Cory, William H., New York, N. Y., assignor to Cory Artificial Fuel Company. Artificial fuel and making the same	332,497	Dec. 15	1810	.....	33	1335
Cory, William H., New York, N. Y., assignor to Cory Artificial Fuel Company. Carbonaceous fuel and making the same	332,498	Dec. 15	1811	.....	33	1335
Costello, Thomas H., Englewood, Ill. Hinge	328,568	Oct. 20	1390	362	33	268
Costigan, Richard, *et al.* (See Kerr, Alexander, assignor.)						
Cottrell, George, San Francisco, Cal. Mill-stock feeder	329,364	Oct. 27	2522	651	33	481
Couch, Burt F., Garrettsville, Ohio. Fastener for sap-bucket covers	332,788	Dec. 22	2238	590	33	1418
Couch, John O. (See Smith and Couch.)						
Couch, John O., Middlefield, Conn., assignor to J. I. Holly, New York, N. Y. Cap for carriage-axles	327,658	Oct. 6	217	54	33	38
Coultana, Joseph A., assignor to himself, D. M. Rollins, Brooklyn, and P. R. Day, New York, N. Y. Door-check	328,192	Oct. 13	890	231	33	168
Coupal, Joseph. (See Coupal, Peter A. and J.)						
Coupal, Peter A., Boston, and J. Coupal, Quincy, Mass. Sewing-machine for connecting soles and uppers of turned shoes	332,642	Dec. 15	2029	532 / 533	33	1373
Coupland, Charles, Seymour, Conn. Roll for drawing and spinning machines	332,998	Dec. 22	2534	668	33	1472
Courtney, John C., and J. W. Nelson, Streator, Ill. Spark-arrester	327,531	Oct. 6	36	8	33	8
Courtney, John F., *et al.* (See Mattinez, Rafael, assignor.)						
Courtney, William, Richview, Ill. Brooder	328,011	Oct. 13	657	173	33	126
Courtright, Benjamin F., East Saginaw, Mich. Hydrant and street-washer	332,137	Dec. 8	1327	344	33	1243
Cousins, Jason L., Kane, Pa. Heat-regulating mechanism for incubators	330,379	Nov. 17	1290	342	33	767
Covell, Edgar C. (See Cram and Covell.)						
Covert, Enoch, Farmer Village, N. Y. Meat-slicer	329,818	Nov. 3	530	135	33	605
Covington, Philip A., assignor of one-half to A. H. Iverson, Fort Worth, Tex. Coffee-pot	333,282	Dec. 29	2934	767	33	1549

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cowell, John J., Newark, N. J. Trunk-catch	329,625	Nov. 3	274	71	33	557
Cowell, Julius J., assignor of one-half to S. W. Young, Weedsport, N. Y. Machine for edging and seaming tin roofings	332,643	Dec. 15	2031	533 / 534	33	1373
Cowell, Newell P., Cleveland, Ohio. Car-bumper	333,447	Dec. 29	3148	822	33	1585
Cowles, George B. (See Mix and Cowles.)						
Cox, Albert W., Hastings, Nebr. Spring-link for chains	327,865	Oct. 6	465	121	33	82
Cox, Albert W., Hastings, Nebr. Attachment for harness or chains	328,292	Oct. 13	1010	263	33	191
Cox, Alfred, Julinstown, N. J. Cultivator	330,211	Nov. 10	1059	276	33	715
Cox, Charles F. (See Hardgrave, Cager, assignor.)						
Cox, Henry F., Philadelphia, Pa. Conduit for wires	328,012	Oct. 13	657	173	33	126
Cox, J. M. (See De La Vega, Miguel, assignor.)						
Cox, John M. (See Pearson, Joseph J., assignor.)						
Cox, Joseph L., Lafayette, Ind., assignor to Duplex Printing Press Company, Battle Creek, Mich. Cylinder printing-machine	332,138	Dec. 8	1329	344 / 345	33	1243
Cox, Joseph L., Lafayette, Ind., assignor to Duplex Printing Press Company, Battle Creek, Mich. Cylinder printing-machine	332,139	Dec. 8	1332	345	33	1243
Cox, Stephen J. (See Stewart, George W., assignor.)						
Cox, Stephen J., New York, N. Y. Calendar	327,532	Oct. 6	38	8	33	8
Cox, Sylvanus, Indianapolis, Ind. Machine for making conveyer-flights	328,013	Oct. 13	659	173 / 174	33	126
Cox, William, Tallokas, Ga. Cultivator	328,193	Oct. 13	891	231	33	169
Cox, William S. (See Topliff, Cross, Cox, and McCollum.)						
Coy, Frederick W., assignor to Mansell Heel Machine Company, Boston, Mass. Heel-machine	329,022	Oct. 27	2029	526 / 527	33	391
Coyne, John, Allegheny, Pa. Nail-plate	331,944	Dec. 8	1040	269	33	1194
Craig, Daniel H., agent. (See Evans, Charles H., assignor.)						
Craig, James. (See Baker and Craig.)						
Craig, Warren H., Lawrence, Mass. Steam-engine lubricator	331,772	Dec. 8	791	200	33	1147
Craig, William, Brooklyn, N. Y. Getting up steam in steam-boilers	327,659	Oct. 6	217	54	33	38
Craig, William S., Springfield, Ohio. Anchor-bolt	332,701	Dec. 22	2131	562	33	1397
Cram, Elisha S., and E. C. Covell, Laconia, N. H. Sewing-machine	328,293	Oct. 13	1011	263	33	191
Cram, Madison H., Pawtucket, R. I. Entering-guide for calendering-rolls	333,283	Dec. 29	2934	767 / 768	33	1549
Crampton, Harry I., assignor to Goodyear's Metallic Rubber Shoe Company, Naugatuck, Conn. Overshoe	331,036	Nov. 24	2127	577	33	934
Crandall, Jesse A., Brooklyn, N. Y. Support for carriage-tops	329,023	Oct. 27	2033	527	33	392
Crane Brothers Manufacturing Company. (See Bassett, Norman C., assignor.)						
Crane Brothers Manufacturing Company. (See Reynolds, George H., assignor.)						
Crane, Edward Q., New York, assignor of one-half to R. Hampton, Brewster, N. Y. Soldering-forceps	328,467	Oct. 20	1255	326	33	244
Crane, Moses G., Newton, Mass. Lock-nut	327,773	Oct. 6	349	90	33	61
Crane, Moses G., Newton, Mass. Gas-engine	327,866	Oct. 6	465	121	33	82
Crane, Thomas R., Heathsville, Va. Combined grain-drill, seed-sower, fertilizer-distributer, and roller	331,687	Dec. 1	668	165	33	1116
Cranson, Giles S., Silver Creek, N. Y. Grain scourer and separator	328,385	Oct. 13	1151	297	33	217
Cranson, Giles S., Silver Creek, N. Y. Grain-scourer	329,365	Oct. 27	2529	652	33	481
Craven, Edward T., assignor of one-half to E. R. Burke, Easton, Pa. Shirt	330,295	Nov. 10	1166	310	33	736
Crawford, Charles H., New York, N. Y. Overseaming-machine	330,469	Nov. 17	1411	375 / 376	33	789
Crawford, Charles W., Brazil, Ind. Cut-off table for tile-machines	328,194	Oct. 13	891	232	33	169
Crawford, James G. (See Poland and Crawford.)						
Crawshaw, Thomas. (See Nelmes and Crawshaw.)						
Creed, William, *et al.* (See Tickle and Leonardt, assignors.)						
Cregmile, Crittenden, assignor of one-half to E. E. Neff, Delaware, Ohio. Extension-door for holland-cases	330,380	Nov. 17	1291	342	33	767
Creighton, James M., *et al.* (See McCarty, William F. M., assignor.)						
Cremer, John H., Braddock, Pa. Drying air for metallurgic operations	330,381	Nov. 17	1292	343	33	767
Cress, Daniel N. (See Nixon and Cress.)						
Crenzbaur, Robert, Brooklyn, N. Y., assignor to Westinghouse Machine Company, Pittsburg, Pa. Steam-engine	332,499	Dec. 15	1812	475 / 476	33	1335
Crenzbaur, Robert, Brooklyn, N. Y., assignor to Westinghouse Machine Company, Pittsburg, Pa. Steam-engine	332,500	Dec. 15	1815	476	33	1335
Crenzbaur, Robert, Brooklyn, N. Y., assignor to Westinghouse Machine Company, Pittsburg, Pa. Steam-engine	332,501	Dec. 15	1818	476 / 477	33	1336
Crenzbaur, Robert, Brooklyn, N. Y., assignor to Westinghouse Machine Company, Pittsburg, Pa. Steam-engine	332,502	Dec. 15	1820	477	33	1336
Creviston, John R., Unionville, assignor to T. W. Frasier, Pollock, Mo. Buggy-top-bow protector	333,058	Dec. 22	2011	684	33	1485
Crew, Alfred, Paterson, N. J. Machine for finishing silk fabrics	332,235	Dec. 15	1460	380 / 381	33	1273
Cridge, Matthew, and T. H. Carlin, Allegheny, Pa., assignors to T. H. Carlin. Upright boiler	332,188	Dec. 8	1390	360	33	1254
Crippen, Henry M. and J. M., Big Run, Ohio. Wagon-brake	332,789	Dec. 22	2239	590 / 591	33	1418
Crippen, John M. (See Crippen, Henry M. and J. M.)						
Crisle, Michael. (See Sceets, George N., assignor.)						
Crisman, George T. (See Crisman, Virgil H. and G. T.)						
Crisman, Virgil H. and G. T., Branchville, N. J. Flume-rack cleaner	332,790	Dec. 22	2241	591	33	1419
Crisp, Joseph E. (See Copeland and Crisp.)						
Crisp, Joseph E., Boston, Mass. Tacking-machine	329,366	Oct. 27	2531	652	33	481
Crisp, Joseph E., Boston, and G. W. Copeland, Malden, Mass. Machine for lasting boots or shoes	329,367	Oct. 27	2533	653	33	482
Crisp, Walter H. (See Fowler and Crisp.)						
Crispin, Thomas, Detroit, Mich. Centricycle or bicycle	333,448	Dec. 29	3149	823	33	1586
Critchfield, Calvin, Shields, Ind. Pounder or washing machine	330,296	Nov. 10	1167	310	33	736
Crocker, Benjamin S., Topeka, Kans. Hoisting and carrying machine	331,773	Dec. 8	792	200 / 201	33	1147
Crocker, Charles T., *et al.* (See Hodges, Horace F., assignor.)						
Crocker, John H., Brussels, assignor to P. J. Edmunds, London, Ontario, Canada. Bath	333,200	Dec. 29	2818	737	33	1527
Croft, Edward, deceased, Waterbury; M. Croft administratrix, and assignor to J. Shepard, New Britain, Conn. Machine for finishing horseshoe-nails	329,538	Nov. 3	157	40 / 41 / 42 / 43	33	535
Croft, Margaret, administratrix. (See Croft, Edward.)						
Crombie, William A., *et al.* (See Sabin, Alvah H., assignor.)						
Cronin, Frank, Deming, N. Mex. Ter. Tool-handle	330,774	Nov. 17	1791	482	33	863

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Crooks, Thomas H., Newberry County, S. C. Cultivator	329,819	Nov. 3	530	135	33	605
Cropper, Joseph C., Cedar Falls, Iowa. Roller-skate	332,189	Dec. 8	1391	360	33	1254
Crosby, George S., Bridgeport, Conn. Toy	330,297	Nov. 10	1167	311	33	736
Crosby, George S., Bridgeport, Conn. Toy locomotive	330,299	Nov. 10	1168	311	33	737
Crosby, George S., Brooklyn, N. Y. Toy vehicle-team	330,298	Nov. 10	1168	311	33	736
Crosby, George W., Good Hope, Ark. Clothes-washer	331,037	Nov. 24	2128	577	33	964
Cross, Christopher G., assignor to W. H. Banks and O. P. Briggs, Chicago, Ill. Nut-tapping machine	327,533	Oct. 6	38	8, 9	33	9
Cross, Edward S. (See Topliff, Cross, Cox, and McCollum.)						
Cross, Frank W., Washington, D. C. Power-press	327,660	Oct. 6	220	54	33	39
Cross, Frederick E., Waterbury, Conn. Divided pulley	328,386	Oct. 13	1153	297	33	218
Cross, Parmer R., Lowell, Ind. Cider-press	330,470	Nov. 17	1414	377	33	790
Crossley, Edward, and R. Cochrane, Halifax, county of York, England. Pile wire for looms	330,821	Nov. 17	1851	499	33	874
Crotty, John S., Chicago, Ill. Corset	329,368	Oct. 27	2535	653	33	482
Crow, Abijah T., Clarinda, Iowa. Check-rower wire anchor or equalizer	328,879	Oct. 20	1794	468	33	342
Crowe, Charles M., Chicago, Ill. Animal-trap	331,945	Dec. 8	1041	270	33	1194
Crowell, Hilen C., Erie, Pa. Universal shaft-coupling	333,449	Dec. 29	3150	823, 824	33	1586
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Sheet-superimposing mechanism	328,880	Oct. 20	1795	468, 469	33	343
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Folding-machine	331,280	Dec. 1	18	5, 6	33	1004
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Folding apparatus	331,281	Dec. 1	26	6, 7	33	1005
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Counting mechaniam for sheet-delivery apparatus	331,282	Dec. 1	32	7, 8	33	1006
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Web-threading apparatus	331,283	Dec. 1	37	8, 9	33	1006
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Sheet-delivery apparatus	332,236	Dec. 15	1462	381, 382, 383	33	1274
Croxton, Samuel W. (See Deis and Croxton.)						
Cruger, James H., Cruger, N. Y. Folding car-step	329,440	Nov. 3	19	6	33	508
Crum, James C., Ladiesburg, Md. Washing-machine	327,922	Oct. 6	539	141	33	96
Culbertson, John N. (See Moore and Culbertson.)						
Cullen, Charles S., *et al.* (See Yeutzer, Enoch S., assignor.)						
Cullen, Michael, Hartford, Conn. Sheet-metal-bending machine	328,387	Oct. 13	1154	297, 298	33	218
Cullen, Thomas, deceased; P. Kerrin, New York, N. Y., executor. Magazine fire-arm	333,307	Dec. 29	2971	777, 778	33	1556
Cullingworth, George R., New York, N. Y. Rock-drill tripod	327,923	Oct. 6	540	141	33	97
Cullingworth, George R., New York, N. Y. Rock-drill	328,195	Oct. 13	893	232	33	169
Cullingworth, George R., New York, N. Y. Rock-drilling machine	328,196	Oct. 13	894	232	33	169
Cullingworth, George R., New York, N. Y. Machine for cutting, chipping, &c	328,197	Oct. 13	895	232	33	170
Culmer, John W., assignor to Logan & Strobridge, New Brighton, Pa. Bracket for lamps	328,922	Oct. 27	1870	488	33	363
Cuming, Alfred A., Hingham, assignor of one-half to E. Arnold, Marblehead, and F. S. Whitman, Cambridge, Mass. Sewing-machine	333,201	Dec. 29	2819	736	33	1528
Cummings, Charles J., Preble, N. Y. Potato-digger	332,644	Dec. 15	2037	534	33	1374
Cummings, Eustace, Woburn, Mass. Leather-splitting machine	332,385	Dec. 15	1671	437, 438	33	1310
Cummings, John R., assignor to American Press Association, Chicago, Ill. Printer's dash	329,309	Oct. 27	2536	653	33	482
Cuneo, John, Vicksburg, Miss. Car-coupling	328,388	Oct. 13	1155	298	33	218
Cunningham, Hermon E., Philadelphia, Pa. Machine for inserting and clinching staples in shoes	333,284	Dec. 29	2935	768	33	1549
Cunningham, Peter B., and A. Barnes, Allentown, Pa. Platform-gear for vehicles	331,688	Dec. 1	669	166	33	1116
Curley, Terence F., Brooklyn, N. Y. Nail-cleaner	331,889	Dec. 8	925	248	33	1171
Curlin, Seth, Covington, Tenn., assignor to Curlin Switch and Crossing Company, of Kentucky. Automatic switch-signal	331,870	Dec. 8	926	239	33	1171
Curlin Switch and Crossing Company. (See Curlin, Seth, assignor.)						
Curry, Burwell J., Huntsville, Ala. Portable hay-press	331,059	Dec. 22	2612	684	33	1486
Curry, John, Peoria, Ill. Low-pressure steam-boiler	330,300	Nov. 10	1169	311	33	737
Curry, Lewis M. (See Jordan and Curry.)						
Curtis, David W., assignor of two-thirds to O. S. Cornish and W. S. Greene, Fort Atkinson, Wis. Refrigerator-tank	329,626	Nov. 3	275	71	33	557
Curtis, George W., Philadelphia, Pa. Car-coupling	327,534	Oct. 6	43	9	33	9
Curtis, George W., Philadelphia, Pa., A. G. Darwin, Glen Ridge, N. J., and C. C. Davis, Philadelphia, Pa.; said Darwin and Curtis assignors to said Davis, trustee. Car-coupling	327,661	Oct. 6	221	55	33	39
Curtis, John, North Dorset, Vt. Steam-engine	333,060	Dec. 22	2614	685	33	1486
Curtis, William W., Stanberry, Mo. Earth-anger	331,228	Nov. 24	2404	651	33	983
Curtiss & Co., William B. (See Curtiss, William B., assignor.)						
Curtiss, Marshall S., Chicago, Ill. Reclining-chair	332,237	Dec. 15	1468	383	33	1274
Curtiss, William B., assignor to W. B. Curtiss & Co., Danbury, Conn. Machine for bending and forming wire	333,112	Dec. 29	2696	707, 708	33	1506
Cushing, George S., *et al.* (See Cushman, George F., assignor.)						
Cushing, George W., St. Paul, Minn. Arch for locomotive fire-boxes	333,202	Dec. 29	2922	738	33	1523
Cushman, Abe L., Concord, N. H. Mechanical movement	328,014	Oct. 13	662	174	33	127
Cushman, Francis A., *et al.* (See Cushman, George F., assignor.)						
Cushman, George F., Barnet, Vt., assignor to himself, F. A. Cushman, Lebanon, N. H., A. C. Russell, and G. S. Cushing, Lowell, Mass. Making paper-pulp from wooden blocks	329,370	Oct. 27	2537	.....	33	482
Cutler, Abner, Buffalo, N. Y. Desk-chair	330,382	Nov. 17	1224	343	33	758
Cutler, Henry, North Wilbraham, Mass. Grinding-mill	328,656	Oct. 20	1521	395, 396	33	291
Cutter, Martin A., Galveston, Tex. Street-car	333,450	Dec. 29	3151	824	33	1586
Cutter, Norman W., Cleveland, Ohio. Car-axle box	330,822	Nov. 17	1852	499	33	874
Czvetkovics, Mitar D., assignor of two-thirds to E. Horbaczewski and W. von Kopal, Vienna, Austria-Hungary. Weir and sluice	331,038	Nov. 24	2129	577, 578	33	934
Dabns, John, Piqua, Ohio. Detachable heel-calk and hoof-pad	329,627	Nov. 3	278	72	33	558
Dahn, John, East Toledo, Ohio. Sprinkling-machine	332,329	Dec. 15	1587	416	33	1296
Daigle, Marcelin, Honma, La. Bridge	332,058	Dec. 8	1203	314	33	1222
Dale, George L., assignor to H. B. Dale, Minneapolis, Minn. Automatic egg-boiler	328,110	Oct. 13	789	205	33	149
Dale, Harriette B. (See Dale, George L., assignor.)						
Dale, James W., assignor of one-third to G. B. McClelland, Du Bois, Pa. Saw-filing machine	327,774	Oct. 6	350	90	33	61
Dalton, Charles and E. J., Oshkosh, Wis. Skate-roller	328,111	Oct. 13	790	206	33	149

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Dalton, Edward J. (See Dalton, Charles and E. J.)						
Dalton, John C. (See Stinebring, George W., assignor.)						
Dalton, John R., Burkhardt, Wis. Neck-yoke adjuster	331,377	Dec. 1	170	43	33	1028
Dalton, Milton A., Cincinnati, Ohio. Permutation-lock	329,820	Nov. 3	531	136, 137	33	605
Daly, Samuel, assignor of one-half to W. O. Towle, Metropolis City, Ill. Brick-machine	330,002	Nov. 10	787	201, 202	33	658
Dalzell, Allan C., Newport, Ky. Apparatus for making cores for watch-crowns	329,284	Oct. 27	2400	622, 623	33	459
Dalzell, Allan C., Newport, Ky. Apparatus for corrugating cores for watch-crowns	329,285	Oct. 27	2402	623	33	460
Dalzell, Allan C., Newport, Ky. Apparatus for making pinions	329,286	Oct. 27	2403	623	33	460
Dalzell, Robert, Waddington, N. Y. Rock-drilling and tunneling machine	332,592	Dec. 15	1961	514	33	1360
Dalzell, Robert H., *et al.* (See Schmitz, Ernst, assignor.)						
Damm, Fredrick C., Peoria, Ill. Target-trap	328,569	Oct. 20	1391	362, 363	33	268
Damm, Fredrick C., Peoria, Ill. Apparatus for manufacturing flying targets	328,570	Oct. 20	1393	363	33	269
Damry, Walter, and A. Leduc, Lillie, France. Instantaneous shutter for photography	330,775	Nov. 17	1792	483	33	863
Dana, William M., Ripon, Wis. Window-screen	329,287	Oct. 27	2405	623	33	460
Danaher, Michael, Buffalo, Ill. Corn-planter	328,764	Oct. 20	1651	431	33	316
Danford, Ebenezer, Geneva, Ill. Felly for vehicle-wheels	332,593	Dec. 15	1961	514	33	1360
Danforth, George E., Boston, Mass. Fastening device for gloves, &c	331,946	Dec. 8	1041	270	33	1194
Daniel, Thomas I., Jackson, Mich. Ink-ribbon annunciator for type-writing machines	332,791	Dec. 22	2243	591	33	1419
Daniels, Lonis. (See Hood, Benjamin L., assignor.)						
Dann, Jesse W. (See Shaw, Carlile, and Dann.)						
Dannmeyer, Martin F. D. C., San Francisco, Cal. Wash-boiler	329,628	Nov. 3	279	72	33	558
Darling, Alpheus, Petrolia, Pa. Governor for supplying gaseous fuel	328,468	Oct. 20	1256	326	33	244
Darling, Henry M. and R. F., Linwood, Ohio. Elevator	328,294	Oct. 13	1012	263	33	192
Darling, Robert F. (See Darling, Henry M. and R. F.)						
Darr, Emory Q., Shelbyville, Ind. End-gate for wagons	328,295	Oct. 13	1014	264	33	192
Darr, Emory Q., Shelbyville, Ind. Bridle-blind	328,657	Oct. 20	1525	396	33	292
Darr, Emry Q., Shelbyville, Ind. Bridle-bit	329,629	Nov. 3	280	72	33	558
Darwin, Asahel G. (See Curtis, Darwin, and Davis.)						
Daub, Adolph, Milwaukee, Wis. Ventilator	332,059	Dec. 8	1205	314	33	1222
Davey, Petherick, assignor to A. Rex, Philadelphia, Pa. Railway tie and chair	329,821	Nov. 3	539	137	33	605
Davies, John R., Chicago, assignor of one-half to W. W. Flinn, Highland Park, Ill. Mold for casting	332,503	Dec. 15	1823	478	33	1337
Davies, John R., Chicago, assignor of one-half to W. W. Flinn, Highland Park, Ill. Mold for casting	332,504	Dec. 15	1825	479	33	1337
Davies, Joseph D., Natchez, Miss. Equalizer for duplex steam pumping-engines	327,535	Oct. 6	44	10	33	9
Davies, Thomas A., New York, N. Y. Spike	330,567	Nov. 17	1529	409	33	812
Davies, Thomas A., New York, N. Y. Stay-plate for railway-rail spikes	330,568	Nov. 17	1530	409	33	812
Davies, Thomas A., New York, N. Y. Center fastening for railway-rails	330,569	Nov. 17	1531	409	33	812
Davies, Thomas A., New York, N. Y. Railway-rail spike	330,570	Nov. 17	1531	410	33	812
Davis, Arthur W. (See Davis, Robert W. and A. W.)						
Davis, Arthur W. S., assignor to F. Taylor, Lowell, Mass. Mechanical telephone	333,285	Dec. 29	2938	768	33	1550
Davis, Charles C. (See Curtis, Darwin, and Davis.)						
Davis, Daniel L., *et al.* (See Komp, John F., assignor.)						
Davis, David W., and W. G. Latimer, Detroit, Mich. Beer-registering faucet	327,662	Oct. 6	224	55	33	39
Davis, David W., and W. G. Latimer, Detroit, Mich. Registering attachment for faucets	327,663	Oct. 6	224	55	33	40
Davis, Edwin S., Winona, Minn. Seat-fastener for vehicles	330,876	Nov. 24	1928	522	33	896
Davis, Francis M., Denver, Colo. Valve-gear	328,288	Oct. 27	2406	624	33	460
Davis, Frank M., New York, N. Y. Fountain syringe	331,039	Nov. 24	2130	578	33	934
Davis, Franklin T., Mount Vernon, N. Y. Check-book for harness	331,040	Nov. 24	2131	578	33	935
Davis, Franklin T., Mount Vernon, N. Y. Sash-fastener	331,041	Nov. 24	2131	578	33	935
Davis & Farber Machine Company. (See Baldwin, Eb A., assignor.)						
Davis, George N. (See Miller, Matthias, assignor.)						
Davis, Henry T., New York, N. Y. Quilting-frame for sewing-machines	328,923	Oct. 27	1871	488	33	363
Davis, Isaac, Perin's Mills, Ohio. Plow-fender	328,924	Oct. 27	1872	489	33	363
Davis, James F., Marshall, Tex. Table	328,015	Oct. 13	662	174	33	127
Davis, John, Charleston, S. C. Press-box for extracting oil from seed	327,664	Oct. 6	226	55	33	40
Davis, John, Charleston, S. C. Device for extracting and refining crude oil	328,925	Oct. 27	1874	489	33	364
Davis, John H., Covington, Ky. Roller-skate	328,198	Oct. 13	896	233	33	170
Davis, John R., Bristol, Wis. Clevis	331,284	Dec. 1	42	9	33	1007
Davis, John S. (See Troy and Davis.)						
Davis, John T., New York, N. Y. Vacuum-pump	328,469	Oct. 20	1258	327	33	245
Davis, Joseph I., Mount Hamill, Iowa. Hay raker and loader	328,658	Oct. 20	1526	396, 397	33	292
Davis, Joseph M., *et al.* (See Field, Edwin S., assignor.)						
Davis, Joseph P., New York, N. Y. Telephone-exchange system	331,186	Nov. 24	2340	633, 634	33	972
Davis, Lucien C., Colorado Springs, Colo. Safety device for mainsprings	331,774	Dec. 8	793	201	33	1147
Davis, Nathaniel S., Brockport, N. Y. Joint for rafters	332,060	Dec. 8	1206	315	33	1223
Davis, Robert W. and A. W., Elmira, assignors to S. Sweet, Dansville, N. Y. Roller spring-tooth harrow and cultivator	329,371	Oct. 27	2538	654	33	293
Davis, Sylvester B., Eureka, Cal. Horse-collar	331,871	Dec. 8	927	239	33	1171
Davis, Theodore D., Williamsport, Pa. Skate	332,881	Dec. 22	2369	626	33	1441
Davis, Wilbur G., Cambridge, assignor of one-half to W. M. Hinman, Boston, Mass. Pneumatic cash-carrier	333,113	Dec. 29	2700	708	33	1507
Davis, Wilbur G., and W. M. Hinman, Boston, Mass. Pneumatic cash-carrier	333,397	Dec. 29	3081	804	33	1575
Davis, William E., Jersey City, N. J. Electro-magnet for signals	327,536	Oct. 6	46	10	33	10
Davis, Wilson, and W. Casey, Southington, Conn. Square-headed bolt	330,962	Nov. 24	2045	553	33	918
Davison, Charles B., Ann Arbor, Mich. Boiler-furnace	329,530	Nov. 3	163	43	33	536
Davison, John S., Cranbury, N. J. Cover for chamber-vessels	329,441	Nov. 3	20	6	33	508
Davy, Alfred, Sheffield, county of York, England. Apparatus for making steel	333,286	Dec. 29	2939	768	33	1550
Davy, Charles, Sheffield, county of York, England. Hydraulic forging-machine	332,594	Dec. 15	1964	514, 515	33	1361
Dawes, Alfred, Boston, Mass. Machine for grinding metal surfaces	329,289	Oct. 27	2407	625	33	461
Dawes, Joseph M., Owego, N. Y. Skid	328,571	Oct. 20	1395	363	33	269
Dawson, Belvidere C., Bloomington, Ill. Ironing-table	332,140	Dec. 8	1335	345	33	1244
Dawson, Benjamin, Leonardtown, Md. Pen for live stock	327,665	Oct. 6	226	56	33	40
Dax, Johann, Cologne, Germany. Pyrotechnic signal-torch	329,442	Nov. 3	21	6	33	508
Day, George F., Shubenacadie, Nova Scotia, Canada. Churn	329,443	Nov. 3	21	6	33	508
Day, George W., Haverhill, Mass. Boot or shoe	329,630	Nov. 3	281	73	33	558

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Day, Philemon R., *et al.* (See Coultas, Joseph A., assignor.)						
Day, William, Buffalo, N. Y. Needle-threader	328,296	Oct. 13	1015	264	33	192
Dayton, Charles A., Rochester, N. H. Warp-beam for looms	328,297	Oct. 13	1016	264	33	192
De Bange, Charles T. M. V., Paris, France. Gun-carriage	331,618	Dec. 1	567	139	33	1096
De Beaumont, Alexandre, Philadelphia, Pa. Sewing-machine attachment for stitching buttons to fabrics	328,298	Oct. 13	1017	264	33	193
De Bourbon d'Este Paleologus Gonzaga, Ann and C., 18 Elgin Road, St. Peter's Park, county of Middlesex, England. Applying wood veneer	331,232	Nov. 24	2408	.....	33	954
De Bourbon d'Este Paleologus Gonzaga, Charles. (See De Bourbon d'Este Paleologus Gonzaga, Ann and C.)						
De Bruignac, Albert D., Versailles, France. Screw-propeller	329,822	Nov. 3	539	137 138	33	605
De Cernea, Albert, *et al.* (See Trego, A. Homer, assignor.)						
De Dion, Albert, G. Bouton, and C. Trépardoux, Luteaux, Seine, France. Feeding water to boilers	329,722	Nov. 3	400	102	33	581
De Golyer, Watts. (See Fuller, David S., assignor.)						
De La Matyr, Elias B., Cleveland, Ohio. Petroleum-burner	330,212	Nov. 10	1059	276 277	33	715
De Lamater & Co., C. H. (See Rathbun, John H., assignor.)						
De La Vega, Miguel, New York, assignor of one-half to J. M. Cox, Brooklyn, N. Y. Manufacture of sugar	330,098	Nov. 10	918	.....	33	686
De la Vergne, Cornelius B., Jr., Glen Ridge, N. J. Oil-tank	329,026	Oct. 27	2036	528	33	393
De Ledochowski, Zénone N., assignor of one-half to E. L. Zimmermann, La Salle, Ill. Carpet-cleaner	328,199	Oct. 13	898	233	33	170
De Mier, John R., Chester, Ill. Electric signal for railway-cars	331,042	Nov. 24	2132	579	33	935
De Mill, Peter E., Jr., Detroit, Mich. Apparatus for making water-gas	329,290	Oct. 27	2409	625	33	461
De Mill, Peter E., Jr., Detroit, Mich. Device for holding writing-paper	329,291	Oct. 27	2411	625	33	461
De Pew, John F., Denver, Colo. Fluid-pressure regulator	332,645	Dec. 15	2038	535	33	1374
De Puy, Anson A., San Francisco, Cal. Food compound	331,775	Dec. 8	794	.....	33	1147
De Snaini, Joseph, New York, N. Y. Manufacture of cigarette-wrappers, &c	328,300	Oct. 13	1021	.....	33	193
De Vérèz, R. Onffroy. (See Martin, Abel J., assignor.)						
De Witt, Charles H., Weatherly, Pa. Pop-valve and muffler	328,840	Oct. 20	1748	455	33	334
De Wolf, Orin B. (See Smith and Heck, assignors.)						
De Wolf, Wallace L., Chicago, Ill. Wash-basin and trap	331,947	Dec. 8	1042	270	33	1195
Deal, Josiah J., Wilmot, assignor to E. Ross and J. L. Parks, Toledo, Ohio. Fabric-turfing implement	330,301	Nov. 10	1171	312	33	737
Dean, Charles W., South Wareham, assignor of one-half to E. Robinson, Wareham, Mass. Flat-wire nail	332,702	Dec. 22	2132	562	33	1397
Dean, John A., Worcester, Mass., assignor of one-half to C. Richardson, Newark, N. J. Saw-tooth	330,680	Nov. 17	1666	448	33	840
Dean, Samuel, North Ogden, Utah Ter. Fruit-drier	332,595	Dec. 15	1968	515	33	1361
Dean, William W. (See Ramel and Dean.)						
Deane, Royal E., New York, N. Y. Steam-cooking apparatus	329,024	Oct. 27	2034	528	33	392
Dearden, John R., Saxonville, Mass. Machinery for drying skeins of yarn	328,470	Oct. 20	1259	327	33	245
Debliemx, Benjamin N., Bay St. Louis, Miss. Telegraph-insulator	332,061	Dec. 8	1207	315	33	1223
Deckard, Stephen J., assignor of one-half to J. J. Puterbaugh, Logansport, Ind. Pendulum-level	328,881	Oct. 20	1800	469	33	343
Decker, Alexander C., assignor of one-half to J. and P. Ayres, Keokuk, Iowa. Curry-comb	333,451	Dec. 29	3154	825	33	1586
Dederick, Ezra, Milwaukee, Wis. Car-coupler	329,025	Oct. 27	2035	528	33	392
Dederick, Peter K., Londonville, N. Y. Baling-press	330,877	Nov. 24	1928	523	33	896
Deering, William. (See Jackman, Joseph O., assignor.)						
Deering, William. (See Noyes, La Verne W., assignor.)						
Dehler, Frank, Denver, Colo. Saddle-horn	329,540	Nov. 3	165	43	33	536
Dehnel, Louis O., Sandusky, Ohio. Hydraulic engine or motor	328,299	Oct. 13	1019	265	33	193
Deimel & Brothers, R. (See Kanmacher, George H., assignor.)						
Deis, Philip H., and S. W. Croxton, Canal Dover, Ohio. Cuspidor and dust-trap	332,330	Dec. 15	1588	417	33	1296
Deitz, Henry. (See Ambler, Russell P., assignor.)						
Deitz, Henry. (See Ambler and Deitz.)						
Delagnean, George, assignor to J. H. Graham, Hastings, Nebr. Piston-packing	327,666	Oct. 6	227	56	33	40
Delaney, Alexander, and J. M. Bond, Richmond, Va. Saw-mill dog	331,619	Dec. 1	570	139	33	1097
Delapiere, Charles B. (See Frazier, Alexander, assignor.)						
Delerac, Alexander. (See Tynan, John A., assignor.)						
Dellenbeck, Caleb, Portland, Oreg. Window-hanging	333,287	Dec. 29	2940	769	33	1550
Deming, Ernest, Middletown, Conn. Surcingle-buckle	328,765	Oct. 20	1652	431	33	316
Dennings, William, National Military Home, Dayton, Ohio. Game-wheel	329,372	Oct. 27	2540	654	33	483
Dennis, Thomas J., Newark, N. J. Stair-carpet covering	330,963	Nov. 24	2046	553	33	918
Dennis, William F., London, England. Wire-netting machine	327,924	Oct. 6	541	141 142	33	97
Denton, Daniel D., trustee. (See Hamilton, Wesley W., assignor.)						
Denton, Whitley, Little Falls, N. Y. Cabinet for boots and shoes	332,238	Dec. 15	1470	383	33	1275
Denton, Winfield S., Dallas, Tex. Oil-can	332,239	Dec. 15	1471	383	33	1275
Depp, William E., Brookville, Pa. Toy	330,681	Nov. 17	1667	449	33	840
Depp, William E., assignor of one-half to S. Chambers, Brookville, Pa. Spading-machine	332,703	Dec. 22	2133	563	33	1397
Derby & Ball. (See Thompson, Daniel, assignor.)						
Derby, Scott B., Utica, Nebr. Measuring-faucet	332,882	Dec. 22	2370	627	33	1441
Dernelle, Louis, Cheltenham, Mo. Brick-machine	327,867	Oct. 6	467	121 122	33	83
Desjardins Télesphore, Burlington, Vt. Rein-support	331,479	Dec. 1	318	85	33	1055
Desmond, George W., Venice, N. Y. Nut-lock	330,471	Nov. 17	1415	377	33	790
Desmond, John, Cleveland, assignor to A. Noteman, Toledo, Ohio. Steam-boiler injector	330,302	Nov. 10	1172	312	33	737
Desmond, John, assignor of one-half to W. R. Gerrard, Cleveland, Ohio. Injector	330,964	Nov. 24	2047	554	33	918
Desmond, John, Cleveland, Ohio, assignor to R. Stephens, Detroit, Mich. Steam-injector	332,386	Dec. 15	1673	438	33	1311
Desmond, John, Toledo, assignor, by mesne assignments, of two-thirds to J. V. Kennedy, Cleveland, Ohio. Steam-injector	330,682	Nov. 17	1668	449	33	841
Detroit Casket Company. (See Holdsworth, William, assignor.)						
Detroit Machine Screw Works. (See Taylor, Harrison H., assignor.)						
Detwiler, Emanuel, Milwaukee, Wis. Kiln for firing decorated china	329,373	Oct. 27	2541	655	33	483
Deuscher, Henry P. (See Solder, Worthington J., assignor.)						
Deuscher, Henry P. (See South, Edward M., assignor.)						
Devine, Charles E., assignor of one-half to C. Paxton, Plattsburg, N. Y. Thread-releaser for sewing-machines	327,925	Oct. 6	545	142	33	98
Devore, Levi M., Freeport, Ill. Tool-handle	330,383	Nov. 17	1295	343	33	768
Dew, Joseph R., Knoxville, Tenn. Fruit-drier	332,596	Dec. 15	1969	515	33	1361

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Dewees Fabric Trimmer Company. (See Sweeney and Rehfuss, assignors.)						
Dewees, Levi L., Canton, Ohio. Hitching-strap clamp	330,213	Nov. 10	1061	277	33	715
Dewey, Charles M., Jersey City, N. J. Puzzle	328,766	Oct. 20	1653	431	33	317
Dexter, Talbot C., Des Moines, Iowa. Paper-folding machine	332,331	Dec. 15	1589	417	33	1296
Dexter, Talbot C., Des Moines, Iowa. Sheet-switching device for paper-folding machines	332,332	Dec. 15	1590	417	33	1296
Dexter, William A., Dayton, N. Y. Log-boat	329,145	Oct. 27	2204	571	33	422
Dezendorf, John F., *et al.* (See Warner, John P., assignor.)						
Dial, Robert C., *et al.* (See Nutting, Adrain, assignor.)						
Dial, Wilbur F. (See Wheeler and Dial.)						
Dibble, Horace V. (See Lawrence and Dibble.)						
Dice, Peter M., assignor of one-half to E. H. Butterbaugh, North Manchester, Ind. Land-marker	332,792	Dec. 22	2245	592	33	1419
Dick, Dundas, New York, N. Y. Easel	333,203	Dec. 29	2923	739	33	1522
Dick, Frank W., and J. Riley, near Glasgow, county of Lanark, Scotland. Regenerative furnace for steel-making	328,389	Oct. 13	1156	298	33	218
Dick, Frank W., and J. Fleming, Glasgow, county of Lanark, Scotland. Valve	328,390	Oct. 13	1157	298	33	219
Dick, James S., Crete, Nebr. Trace-carrier	331,620	Dec. 1	571	139	33	1098
Dick, John, Meadville, Pa. Valve-gear	329,891	Nov. 10	638	162 163	33	631
Dick, Robert B., Philadelphia, Pa. Trap for wash-basins, &c	330,683	Nov. 17	1669	449 450	33	841
Dickenson, William, Heart's Content, Newfoundland. Siphon recording-instrument for cables	329,723	Nov. 3	401	103	33	581
Dickerhoff, Frederic M. (See Clark, William F., assignor.)						
Dickerson, Samuel H., assignor of one-half to L. Hillman, Dayton, Ohio. Thill-coupling	327,868	Oct. 6	468	122	33	83
Dickhut, Henry E., Quincy, Ill. Tape-line box	332,505	Dec. 15	1828	479	33	1338
Dickinson, Dudley H., Philadelphia, Pa. Apparatus for preserving by vacuum and pressure	328,016	Oct. 13	663	174	33	127
Dickinson Paper Company, George R. (See Barber, Frank H., assignor.)						
Dickison, William F., Peoria, Ill. Apron-slat fastening	331,948	Dec. 8	1042	270	33	1195
Dickman, George, *et al.* (See Conard, Léon P., assignor.)						
Dickson, George H. and J., Brooklyn, N. Y. Packing for piston-rods	332,793	Dec. 22	2246	592	33	1419
Dickson, Gilbert J., Albany, N. Y. Transom-lifter	332,794	Dec. 22	2246	592	33	1420
Dickson, John. (See Dickson, George H. and J.)						
Dickson, John S., Pittsburg, assignor to Pittsburgh Hob Nail Manufacturing Company, Bridgewater Pa. Nail-machine	332,062	Dec. 8	1207	315 316	33	1223
Dickson, John S., Pittsburg, assignor to Pittsburgh Hob Nail Manufacturing Company, Bridgewater, Pa. Manufacture of nails	332,190	Dec. 8	1393	360	33	1254
Diebold, Carl, Canton, Ohio. Safe attachment	331,480	Dec. 1	318	86	33	1055
Diebold Safe and Lock Company. (See Kirks, Albert, assignor.)						
Dieckmann, George F., assignor of one-fourth to Paul Gmehlin, New York, N. Y. Electric earth-battery	329,724	Nov. 3	403	103	33	582
Diefendorf, Emma G. (See Dunham, Charles L., assignor.)						
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company of New Jersey. Shuttle-operating mechanism for sewing-machines	330,384	Nov. 17	1296	344	33	768
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company of New Jersey. Feeding mechanism for sewing-machines	330,385	Nov. 17	1297	344	33	768
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company of New Jersey. Sewing machine shuttle	330,386	Nov. 17	1299	344	33	769
Dieter, Louis F. (See Kelly and Dieter.)						
Dietz, Christoph F., New Orleans, La. Time-piece dial	328,112	Oct. 13	791	206	33	149
Dietz, R. E. (See Wood, Joseph S., assignor.)						
Diez, Eugen, Weinsberg, Germany. Apparatus for protecting windows	330,965	Nov. 24	2048	554	33	918
Dilg, Henry W. (See Thielsen and Dilg.)						
Dillard, Robert M., Geneva, Nebr. Buckle	331,378	Dec. 1	171	44	33	1028
Dille, George A., Athens, Ohio. Attachment for dental chairs	328,659	Oct. 20	1527	397	33	292
Dillman, Augustus C., Bryan, Ohio. Hammock	329,631	Nov. 3	282	73	33	559
Dillon, William S. F., Cincinnati, Ohio. Fluid-discharge and vent faucet	331,379	Dec. 1	172	44	33	1029
Dinkelbihler, John G. (See Feinthel and Dinkelbihler.)						
Dinkelmeier, Wilhelm G., Nuremberg, Bavaria, Germany. Pen and pencil case	329,541	Nov. 3	165	43	33	537
Dissosway, Crowel M., Philadelphia, Pa., assignor to W. R. Pitt, Richmond Hills, N. Y. Folding gate and window-guard	330,966	Nov. 24	2049	554	33	918
Disston, Hamilton, *et al.* (See Disston, Thomas S., assignor.)						
Disston, Hamilton, *et al.* (See Eisenhardt, Christopher, assignor.)						
Disston, Hamilton, *et al.* (See Williams, Samuel T., assignor.)						
Disston, Horace C., *et al.* (See Disston, Thomas S., assignor.)						
Disston, Horace C., *et al.* (See Eisenhardt, Christopher, assignor.)						
Disston, Horace C., *et al.* (See Williams, Samuel T., assignor.)						
Disston, Jacob S., *et al.* (See Disston, Thomas S., assignor.)						
Disston, Jacob S., *et al.* (See Eisenhardt, Christopher, assignor.)						
Disston, Jacob S., *et al.* (See Williams, Samuel T., assignor.)						
Disston, Thomas S., assignor of one-half to A. S. Carter, Philadelphia, Pa. Convertible skate	329,146	Oct. 27	2205	571	33	422
Disston, Thomas S., assignor to H., H. C., W., and J. S. Disston, Philadelphia, Pa. Post-hole-digging implement	333,452	Dec. 29	3155	825	33	1587
Disston, William, *et al.* (See Disston, Thomas S., assignor.)						
Disston, William, *et al.* (See Eisenhardt, Christopher, assignor.)						
Disston, William, *et al.* (See Williams, Samuel T., assignor.)						
Dittenhoefer, Myer, New York, N. Y. Ruler	331,481	Dec. 1	320	86	33	1055
Dittmar, Max. (See Ostermayer and Dittmar.)						
Divine, Frederick D., Utica, assignor of one-half to W. D. Edmonds, New York, N. Y. Reel-holder and fastening for fishing rods	331,380	Dec. 1	174	44	33	1029
Dixon, Allen. (See Brightmore and Dixon.)						
Dixon, Henry M., New York, N. Y. Toy cap-exploder	332,063	Dec. 8	1211	316	33	1224
Dixon, Rufus E., assignor to F. Foster, New York, N. Y. Safe-deposite vault	329,147	Oct. 27	2206	572	33	422
Dixon, Thomas I. (See Vogelsang, Alexander, assignor.)						
Dixon, William C. (See Hayden and Dixon.)						
Doan, Wallace. (See Doan, William S., assignor.)						
Doan, William S., Sacramento, assignor of one-half to W. Doan, San Francisco, Cal. Crane and derrick	329,148	Oct. 27	2208	572	33	422
Doane, William H., Cincinnati, Ohio. Centering device for tenoning and other machines	328,391	Oct. 13	1158	299	33	219
Dobbins, Edwin A., Middletown, N. Y. Lamp-burner	331,381	Dec. 1	175	44	33	1029
Dodd, Robert H. C., *et al.* (See Miller, William C., assignor.)						
Dodge, Albert J., Peterborough, N. H. Fruit-drier	331,382	Dec. 1	176	45	33	1029
Dodge, Alfred C., Charlotte, Mich. Combined truck and bag-holder	330,684	Nov. 17	1670	450	33	841

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Dodge, Frederick T., Carleton, New Brunswick, Canada. Combined adjustable chair, invalid-bed rest, and stretcher	327,775	Oct. 6	351	90, 91	33	62
Dodge, James M., Philadelphia, Pa., assignor to Ewart Manufacturing Company, Chicago, Ill. Drive-chain	330,004	Nov. 10	790	203	33	659
Dods, John C., Philadelphia, assignor to H. W. Oliver, Jr., and J. P. Witherow, Pittsburg, Pa. Converter	328,841	Oct. 20	1749	456	33	335
Dodsworth, David, assignor of two-thirds to W. Legg and E. W. McMillen, Springfield, Ohio. Staple-driver	327,537	Oct. 6	47	10	33	10
Dodsworth, David, assignor of two-thirds to W. Legg and E. W. McMillen, Springfield, Ohio. Adjustable last	327,538	Oct. 6	48	11	33	10
Doe, Albin K. (See Durkee and Campbell, assignors.)						
Doerfel, Max, assignor to C. F. Doerfel, Steinfelse, & Co., Klingenthal, Germany. Harmonica	331,949	Dec. 8	1043	271	33	1195
Doerfel, Steinfelse, & Co., C. F. (See Doerfel, Max, assignor.)						
Doerr, Joseph C., St. Louis, Mo. Car-coupling	327,869	Oct. 6	469	122	33	83
Doherty, Henry. (See Talks, Henry, assignor.)						
Dolbeer, John, San Francisco, Cal. Apparatus for steaming piles	333,204	Dec. 29	2824	739	33	1528
Dolby, Thomas G. F., London, England. Sheet-metal can	331,482	Dec. 1	321	86, 87	33	1055
Dom, Alexander, Mount Healthy, assignor to Globe Files Company, Cincinnati, Ohio. Temporary binder	329,444	Nov. 3	22	7	33	509
Dom, Alexander, Mount Healthy, assignor to Globe Files Company, Cincinnati, Ohio. Newspaper-file	331,872	Dec. 8	928	240	33	1172
Donaghy, Charles, Philadelphia, Pa. Brush-handle	330,005	Nov. 10	791	203	33	659
Donaldson, John E., Montezuma, Ind. Fence-post	332,141	Dec. 8	1336	346	33	1244
Donalson, B. F., *et al.* (See Bradford, John B., assignor.)						
Donlon, John H. (See Whittier and Donlon.)						
Donnelly, Henry, Sutherland Falls, Vt. Stone-dressing machine	332,999	Dec. 22	2735	668	33	1472
Donohue, Jerry. (See Reed and Donohue.)						
Donovan, George L., Meriden, assignor to A. C. Burghoff and G. S. Wilcox, Wallingford, Conn. Cutting-nippers	332,597	Dec. 15	1972	516	33	1362
Donovan, George L., Meriden, assignor to A. C. Burghoff and G. S. Wilcox, Wallingford, Conn. Nail-drawer	332,598	Dec. 15	1972	516	33	1362
Donovan, John, Boston, Mass. Smoke-consumer for furnaces	329,027	Oct. 27	2037	529	33	393
Donovan, Patrick C. (See Nelson and Donovan.)						
Doolittle, George. (See Laws, Albert D., assignor.)						
Doolittle, William H. (See Breitenmoser, Joseph, assignor.)						
Doring, Ernst N., New York, N. Y. Folding bed	328,200	Oct. 13	899	233	33	171
Doriot, Victor, assignor of one-third to W. Webb, Bristol, Tenn. Brick-machine	333,288	Dec. 29	2941	{769 770}	33	1550
Dorman, Royal O. (See Brown and Bradley, assignors.)						
Dorr, Herbert C., assignor to Dorr Paint Company, San Francisco, Cal. Mixed paint	331,383	Dec. 1	178	.....	33	1029
Dorr Paint Company. (See Dorr, Herbert C., assignor.)						
Dorrance, John, and G. L. Ebersole, Canton, Ohio. Subsoil-plow	329,028	Oct. 27	2038	529	33	393
Dorsett, Daniel H. (See Burdick, John R., assignor.)						
Dost, Carl O., Ravensburg, Germany. Centrifugal reel	333,398	Dec. 29	3063	{804 805}	33	1575
Doty, Albert J., assignor to Goodwin Gas Stove and Meter Company, Philadelphia, Pa. Heating gas-stove	331,950	Dec. 8	1044	271	33	1195
Doty, Charles W., *et al.* (See Waterman, Lyman, Jr., assignor.)						
Doty, William H., *et al.* (See Waterman, Lyman, Jr., assignor.)						
Doubleday, William C., Lima, Ohio. Folding crate	333,000	Dec. 22	2536	668	33	1472
Dougherty, Edward D., Philadelphia, Pa. Slot-iron for cable railways	333,205	Dec. 29	2825	739	33	1529
Dougherty, Michael, Sedalia, Mo. Car-axle box	332,646	Dec. 15	2040	535	33	1375
Dougine, James T., Chicago, Ill. Ditching and tile-laying machine	333,114	Dec. 29	2701	{708 709}	33	1507
Douglass, George, Sioux City, Iowa. Vapor-generator for baths and bath apparatus	327,539	Oct. 6	49	11	33	10
Douglass, John W. (See Brown, Douglass, and Pentreath.)						
Dow & Co., Braman. (See Jordan, William S., assignor.)						
Dow, George B. N., assignor of one-half to W. Corey, Manchester, N. H. Bracket	331,187	Nov. 24	2346	635	33	973
Dow, George E., San Francisco, Cal. Valve-gear for compound engines	330,387	Nov. 17	1301	345	33	769
Dow, George E., San Francisco, Cal. Compound steam-engine	330,388	Nov. 17	1303	346	33	769
Dow, Henry M. (See Griffiths, William H., assignor.)						
Dowling, John, and J. Lee, Jr., Plymouth, Pa. Self-closing hydrant	330,776	Nov. 17	1793	483	33	863
Downing, Jerome F., Erie, Pa. Carrier apparatus	328,660	Oct. 20	1528	397	33	292
Downing, Wellington, assignor to Brown Folding Machine Company, (limited,) Erie, Pa. Paper-folding machine	330,777	Nov. 17	1795	{483 484}	33	863
Dowse, W. B. H., trustee. (See Kauffer, Theodore L., assignor.)						
Doyle, Charles E., Peru, Ind. Press-copying book	333,061	Dec. 22	2615	685	33	1486
Doyle, John A., and T. L. Scanrman, Philipsburg, Pa. Car-step	331,776	Dec. 8	794	201	33	1147
Drader, Joseph, London, Ontario, Canada. Double-action hay-car	332,704	Dec. 22	2136	563	33	1397
Drake, Charles C., Trenton, N. J., assignor to American Automatic Lightning Arrester Company of New York. Telephone and telegraph protector. (Reissue)	10,663	Nov. 24	2468	666	33	994
Drake, Edward F., Miller's Falls, Mass. Milk bucket and stool	332,142	Dec. 8	1338	346	33	1244
Drake, Lorenzo D., Nashville, Tenn. Wire-stretcher	332,240	Dec. 15	1472	384	33	1275
Drake, Nathan, and S. Feather, Bradford, county of York, England. Shuttle-guard for looms	331,117	Nov. 24	2244	610	33	955
Draper, Edward P. (See Pattee, Richard, assignor.)						
Draper & Sons, George. (See Carroll, William T., assignor.)						
Draper & Sons, George. (See Fay, Rimmon C., assignor.)						
Draper & Sons, George. (See Roper, Charles F., assignor.)						
Draper & Sons, George. (See Thomas, Edward W., assignor.)						
Draper, William F., Hopedale, Mass. Spindle and bearing	328,201	Oct. 13	900	234	33	171
Dredge, John A. (See Morningstar, Andrew, assignor.)						
Dreher, Baptist, Cleveland, Ohio. Rack or holder for music and books	332,647	Dec. 15	2041	535	33	1375
Drew, James W., Nichols, Conn. Fork-guard	330,824	Nov. 17	1853	500	33	874
Drew, Walter J., assignor to Bissell Carpet Sweeper Company, Grand Rapids, Mich. Carpet-sweeper	329,374	Oct. 27	2542	655	33	483
Driggs, Arthur W., Brooklyn, N. Y. Railway-car	330,825	Nov. 17	1855	500	33	874
Drown, William A., Weldon, Pa. Parasol	333,062	Dec. 22	2616	686	33	1486
Drummond, Willis, Jr. (See Lindsley, Aaron L., assignor.)						
Du Bois, Joseph, Waverly, N. Y. Fence	331,285	Dec. 1	43	10	33	1007
Du Bois, N. Greenard, assignor of one-half to F. R. Maloney, Brooklyn, N. Y. Railway-switch	330,826	Nov. 17	1856	501	33	875
Du Bose, Benjamin J., Lisbon, Ga. Grinding-mill	332,143	Dec. 8	1339	346	33	1244

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Du Shane, James, South Bend, Ind. Wrench	331,188	Nov. 24	2347	635	33	973
Du Shane, James, South Bend, Ind. Rapid-transit wrench	331,189	Nov. 24	2348	635	33	973
Dubois, Alexandre N., Philadelphia, Pa. Dyeing aniline-black	331,777	Dec. 8	795	.....	33	1148
Ducker, William M., New York, N. Y. Cigar-cutter	331,384	Dec. 1	179	45	33	1029
Dudgeon, Richard. (See Weeks, John, assignor.)						
Dudgeon, Richard. (See Weeks and Traver, assignors.)						
Dudley, Charles, Linwood, N. J. Tube-expander	333,906	Dec. 29	2826	739	33	1529
Dudley, Ellwood F., Philadelphia, Pa. Hay-rack	327,926	Oct. 6	546	143	33	98
Dudley, Martin, Marion, Ohio. Panel picket-fence	328,392	Oct. 13	1159	299	33	219
Dudley, Plimmon H., New York, N. Y. Railway-sleeper	327,667	Oct. 6	228	56	33	41
Duell, Frank S., Abington, Mass. Wrench	331,951	Dec. 8	1045	271	33	1195
Duennisch, Louis, Sandusky, Ohio. Flue-cleaner	331,691	Dec. 1	673	166	33	1117
Duff Manufacturing Company. (See Barrett, Josiah, assignor.) (Reissue.)						
Duffy, James, Quincy, Ill. Grate	329,375	Oct. 27	2544	656	33	484
Dugdale, James K., Richmond, Ind. Washing-machine	328,471	Oct. 20	1961	328	33	245
Duggan, John A., Quincy, Mass. Railway-switch	330,878	Nov. 24	1929	523	33	896
Duisberg, Carl, Barmen, Prussia, Germany. Coloring-matter obtained from tetrazo-ditolyl	329,632	Nov. 3	283	.....	33	559
Duisberg, Carl, Barmen, Prussia, Germany. Coloring-matter obtained from tetrazo-ditolyl.	329,633	Nov. 3	284	.....	33	559
Duke, Orman A., Clanton, Ala. Lumber-drier	332,241	Dec. 15	1473	384	33	1275
Dulaney, Henry S. (See Lindsey, George M., assignor.)						
Dull, Daniel. (See Keys, Frank W., assignor.)						
Dumke, August C. and A. F., Manitowoc, Wis. Automatic safety stop-motion	331,689	Dec. 1	670	166	33	1116
Dumke, August F. (See Dumke, August C and A. F.)						
Dumoulin, Adrien J. A., assignor to Compagnie de Fives Lille, Paris, France. Apparatus for kneading and elevating donghlike, &c., matter	329,376	Oct. 27	2545	656	33	484
Dunbar, Camillus, Glenwood, and J. A. Rector, Lancaster, Mo. Weather-boarding gage	328,661	Oct. 20	1529	398	33	293
Dunbar, Frank M., Titusville, Pa. Hektograph-gage	333,115	Dec. 29	2704	709	33	1508
Dunbar, Junius H., assignor of one-half to A. Welsh, H. W. Squire, and F. Brown, Youngstown, Ohio. Nail-plate feeder	328,882	Oct. 20	1801	{469 470}	33	343
Dunbar, R. R. (See Wilcox, William R., assignor.)						
Dunham, Charles L., assignor of one-third to E. G. Diefendorf, Union City, Pa. Pipe-wrench	332,191	Dec. 8	1394	360	33	1254
Dunham, Joseph T., Brooklyn, N. Y. Envelope	331,118	Nov. 24	2244	610	33	955
Dunlap, John S., assignor to E. Gale, Peoria, Ill. Show-case stand	332,192	Dec. 8	1395	361	33	1255
Dunlap, Thomas, Toledo, Ohio. Propulsion of vessels	327,927	Oct. 6	547	143	33	98
Dunn, George H., Greensburg, Ind. Bill-file	331,043	Nov. 24	2135	579	33	935
Dunn, George W. (See Watts, Daniel B., assignor.)						
Dunn, Henry F., Eagle Lake, Tex. Gate	331,778	Dec. 8	796	201	33	1148
Dunn, Michael F., Pullman, Ill. Folding and portable wardrobe	329,445	Nov. 3	23	7	33	509
Dunn, Sola B., Chicago, Ill. Temporary binder	330,967	Nov. 24	2050	554	33	919
Dunten, Edgar H. (See Insley and Dunten.)						
Duperow, Mortimer, Washington, D. C. Telegraphic service system	332,193	Dec. 8	1396	361	33	1255
Duplex Printing Press Company. (See Cox, Joseph L., assignor.)						
Duprat, Dosithée, Ste. Scholastique, Quebec, Canada. Car-axle lubricator	330,968	Nov. 24	2051	555	33	919
Durand, Albert A., New York, N. Y. Breast-pump	331,952	Dec. 8	1046	271	33	1195
Durand, David L., Derby, Conn. Suspender-buckle	330,827	Nov. 17	1858	501	33	875
Durand, David L., Derby, assignor to Osborne & Cheesman Company, Ansonia, Conn. Suspender-buckle	331,690	Dec. 1	672	166	33	1116
Durand, Wallace, Newark, N. J. Button	328,662	Oct. 20	1531	398	33	293
Durborow, Henry C., Indianapolis, Ind. Supporting-bracket for spouts, pipes, &c	329,823	Nov. 3	542	138	33	606
Durham, John H., assignor of one-half to L. C. Moore, Chicago, Ill. Shipping-case for photographic dry-plates	331,385	Dec. 1	180	45	33	1030
Durham, John W., and W. B. Alexander, Decatur, Tex. Bedstead-brace	333,453	Dec. 29	3156	825	33	1587
Durkee, George B., Chicago, Ill., and A. Campbell, Hamilton, Ontario, Canada, assignors of one-third to A. K. Doe, Chicago, Ill.; said Durkee assignor remaining right to said Campbell and Doe. Book-binding machine	330,303	Nov. 10	1173	{312 313 314}	33	738
Durr, John F., Green Island, N. Y. Spring-bed	333,116	Dec. 29	2705	709	33	1508
Durst, Murray H., Wheatland, Cal. Baling-press	331,873	Dec. 8	929	240	33	1172
Dutcher, Frank J., assignor to Hopedale Machine Company, Hopedale, Mass. Speeder for spinning	332,194	Dec. 8	1398	361	33	1255
Dutton, James H. (See Dutton, Joseph and J. H.)						
Dutton, Joseph and J. H., San Francisco, Cal. Safety-key for gas-burners	332,648	Dec. 15	2042	536	33	1375
Dwight, E. E., *et al.* (See Honlehan, James, assignor.)						
Dwight, George S. (See Lilienberg and Dwight.)						
Dwight, William M., Detroit, Mich. Planing and matching machine	329,824	Nov. 3	544	138	33	606
Dwyer, Patrick V., St. Paul, Minn. Furnace	330,969	Nov. 24	2052	555	33	919
Dye, Robert W., Oskaloosa, Iowa. Combined feed rack and trough	329,029	Oct. 27	2039	529	33	393
Dyer, Frederick N. (See Booth and Dyer.)						
Dyer, Richard N., assignor to Commercial Telegram Company, New York, N. Y. Printing-telegraph	332,649	Dec. 15	2043	536	33	1375
Dyer, Samuel J., Brooklyn, N. Y. Razor	328,202	Oct. 13	901	234	33	171
Dysinger, William H., Royalton, N. Y. Grain-drill	331,220	Nov. 24	2405	651	33	983
Eager, Henry. (See Eager, James W. and H.)						
Eager, James W. and H., Syracuse, N. Y. Four-edge-tin-folding machine	329,149	Oct. 27	2209	572	33	423
Eagle Cotton Gin Company. (See Gammons, Ferdinand C., assignor.)						
Eagle Lock Company. (See Plumb, Henry B., assignor.)						
Eagle Pencil Company. (See Walpuski, Charles, assignor.)						
Eames, Alfred W., *et al.* (See Kizer, Isaac H., assignor.)						
Eames, Charles J., New York, N. Y. Cremation-furnace	331,779	Dec. 8	797	202	33	1148
Eames, George M., Bridgeport, Conn. Straightening needles, wire, &c	331,386	Dec. 1	181	45, 46	33	1030
Eames, Henry H., Philadelphia, Pa. Apparatus for chloridizing gold, silver, and other ores	332,705	Dec. 22	2137	{563 564}	33	1398
Eames, Hiram W., Milford, Mass. Glazier's point	330,828	Nov. 17	1859	502	33	875
Earl, Jesse P. (See Myers, George A., assignor.)						
Eastern Paper Bag Company. (See Appel, Daniel, assignor.)						
Eastman, George H. (See Grime, John, assignor.)						
Eastman, Jerome B., Cleveland, Ohio. Combined railway signal and alarm	328,301	Oct. 13	1023	265	33	194
Eastman, Rufus M., assignor of one-half to C. H. Wilder, Boston, Mass. Mixer for creams, eggs, and liquors	330,829	Nov. 17	1860	502	33	876
Eaton, Charles. (See White, George, assignor.)						
Eaton, George H., North Middleborough, Mass. Apparatus for detecting the presence of gas	331,119	Nov. 24	2246	610	33	955
Eaton, Fred, Conway, N. H. Folding dish-drainer	329,150	Oct. 27	2210	573	33	423
Eaton, John F. (See Eaton, Thomas W., assignor.)						
Eaton, Thomas W., Chicago, assignor of one-half to J. F. Eaton, Cambridge, Ill. Opera-chair	329,151	Oct. 27	2211	573	33	423

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Eaton, Thomas W., Chicago, assignor of one-half to J. F. Eaton, Cambridge, Ill. Operachair	329,292	Oct. 27	2411	626	33	462
Eaton, William A. (See Slater and Eaton.)						
Eaves, Lewis. (See Bates, Lafayette, assignor.)						
Ebaugh, Charles S., St. Louis, assignor of one-tenth to C. D. Moody, Webster Groves, Mo. Treating steam-boilers for preventing fractures and explosions	329,446	Nov. 3	24	7	33	509
Eberhard, George F., Cleveland, Ohio. Harness-terret	330,685	Nov. 17	1672	450	33	841
Eberhardt, Henry E. (See Eberhardt, Ulrich and H. E.)						
Eberhardt, Ulrich and H. E., Newark, N. J. Gear-cutter	332,064	Dec. 8	1212	316, 317	33	1224
Eberhart, Lloyd, and I. D. Stevens, Joliet, Ill. Check-rower attaching-iron	329,725	Nov. 3	404	103, 104	33	582
Eberhart, Lloyd, assignor of one-half to I. D. Stevens, Joliet, Ill. Seeding-machine	332,506	Dec. 15	1899	480	33	1338
Ebersole, George L. (See Dorrance and Ebersole.)						
Ebersole, John M., Canton, Ohio. Flag	330,099	Nov. 10	919	238	33	686
Ebneter, John J., St. Gall, Switzerland. Embroidering-machine	331,953	Dec. 8	1047	272	33	1195
Eby, Walton E., Franklin, Ohio. Steam-pump	330,571	Nov. 17	1532	410	33	813
Echols, James L., *et al.* (See Schnell, Adam, assignor.)						
Echols, James M. (See Rogers, John A., assignor.)						
Eckert, John C., Dayton, Ohio. Combined gage and center-square	329,892	Nov. 10	639	163	33	631
Eckles, James, and J. P. Frow, Butler, Mo. Churn	327,928	Oct. 6	548	143	33	98
Economy Halter and Bridle Trimming Company. (See Simpson, Hatcher, and Wildermuth, assignors.)						
Eddington, William R., Woodburn, Ill. Mole-trap	331,463	Dec. 1	322	87	33	1055
Eddison, George W., New York, N. Y. Fire-extinguishing compound	327,929	Oct. 6	549	.....	33	98
Eddy, Frank N., *et al.* (See Westgate, Joseph D., assignor.)						
Eddy, Oscar H., Greenwich, N. Y. Harrow	332,706	Dec. 22	2138	564, 565	33	1398
Eden, John T., Odell, Nebr. Wind-wheel	330,304	Nov. 10	1177	314	33	738
Edenborn, William, St. Louis, Mo. Barb-wire machine	330,686	Nov. 17	1672	451, 452	33	841
Edge, William C., Newark, N. J. Metallic fabric	331,044	Nov. 24	2136	579	33	935
Edison, Thomas A., Menlo Park, N. J. Commutator for dynamo-electric machines	328,572	Oct. 20	1396	363	33	269
Edison, Thomas A., Menlo Park, N. J. System of electric lighting	328,573	Oct. 20	1397	364	33	270
Edison, Thomas A., Menlo Park, N. J. System of electric lighting	328,574	Oct. 20	1399	364	33	270
Edison, Thomas A., Menlo Park, N. J. System of electric lighting	328,575	Oct. 20	1400	364	33	270
Edison, Thomas A., Menlo Park, N. J. Telephone	329,030	Oct. 27	2040	530	33	393
Edison, Thomas A., Menlo Park, N. J. Telegraphy	333,289	Dec. 29	2945	770	33	1551
Edison, Thomas A., Menlo Park, N. J. Duplex telegraphy	333,290	Dec. 29	2948	770	33	1551
Edison, Thomas A., Menlo Park, N. J. Way-station quadruplex telegraph	333,291	Dec. 29	2950	771	33	1552
Edmonds, Walter D. (See Divine, Frederick D., assignor.)						
Edmunds, P. J. (See Crocker, John H., assignor.)						
Edwards, Charles H., Quincy, Mass. Dumping-scow	327,870	Oct. 6	470	123	33	83
Edwards, Eugene M., Hancock, N. Y. Bamboo fishing-rod	330,572	Nov. 17	1534	410	33	813
Edwards, William R., *et al.* (See Jertold, John E., assignor.)						
Effertz, Peter, Chemnitz, Saxony, Germany. Gas-compressor	329,726	Nov. 3	405	104	33	582
Ege, Alexander H. (See Richardson, John T., assignor.)						
Egge, Frederick, assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Metal chain	330,214	Nov. 10	1062	277	33	715
Egner, Frederic, St. Louis, Mo. Apparatus for making illuminating-gas	331,621	Dec. 1	571	139, 140	33	1098
Ehrenfenchter, Julius. (See Schilling and Ehrenfenchter.)						
Ehrlich, Leo, St. Louis, Mo. Chair	327,668	Oct. 6	231	56	33	41
Ehrlich, Leo, St. Louis, Mo. Bicycle	327,669	Oct. 6	231	57	33	41
Ehrlich, Leo, St. Louis, Mo. Letter-box	329,293	Oct. 27	2416	626	33	402
Ehrlich, Leo, St. Louis, Mo. Electrical alarm for letter-boxes	329,294	Oct. 27	2417	627	33	402
Ehrman, Samuel, assignor of one-half to H. C. Huston, Connellsville, Pa. Combined latch and lock	328,393	Oct. 13	1160	299	33	919
Eichler, John H. (See Regan, Daniel S., assignor.)						
Eickemeyer, Rudolf, Yonkers, N. Y. Machine for setting the folded or curled edges of hat-brims	331,286	Dec. 1	44	10	33	1007
Eickemeyer, Rudolf, Yonkers, N. Y. Setting the folded or curled edges of hat-brims	332,599	Dec. 15	1973	516, 517	33	1362
Eisenbach, Albert, Philadelphia, Pa. Commode	331,120	Nov. 24	2247	611	33	955
Eisenhardt, Christopher, assignor to H., H. C., W., and J. S. Disston, Philadelphia, Pa. Handle for crossent-saws	327,776	Oct. 6	353	91	33	62
Eisenhart, Charles A., York, Pa. Electrical apparatus for dental operations	331,121	Nov. 24	2248	611	33	955
Eisenhart, Edward H., New York, N. Y. Apparatus for measuring the length of fabrics	327,540	Oct. 6	49	11, 12	33	10
Elsing, Max, New York, N. Y. Ring-holder	331,760	Dec. 8	799	202	33	1148
Ela, Edgar W. (See Ela, Jonathan C. and E. W.)						
Ela, Jonathan C. and E. W., Boston, Mass. Screen	329,893	Nov. 10	639	163	33	632
Elam, William E., Americus, Ga. Ticket-case	331,484	Dec. 1	323	87	33	1055
Elam, William E., Americus, Ga. Ticket-case	331,485	Dec. 1	324	88	33	1056
Elcock, Alfred, *et al.* (See Westgate, Joseph D., assignor.)						
Elden, Charles E., Malden, assignor to American Bell Telephone Company, Boston, Mass. Electrical apparatus protector	329,152	Oct. 27	2213	573	33	423
Eldredge, William A. (See Chegwin and Eldredge.)						
Electric Fare Register Company. (See Scales, Edward A., assignor.)						
Electrical Appliance Manufacturing Company. (See White, Le Roy S., assignor.)						
Elford, Alfred T., San Francisco, Cal. Paving-block	329,825	Nov. 3	545	138	33	606
Elford, Alfred T., San Francisco, Cal. Device for flushing sewers	332,333	Dec. 15	1591	417	33	1297
Ellinwood, Augustus E. (See Miller and Ellinwood.)						
Elliot, Matthew P., Crystal City, Mo. Furnace for heating steam-boilers	331,287	Dec. 1	47	11	33	1007
Elliott, George S., Mobile, Ala. Motor	329,295	Oct. 27	2418	627	33	462
Elliott, Gilbert R., Boston, Mass. Pneumatic door-check	329,296	Oct. 27	2419	628	33	463
Elliott, Gilbert R., Boston, Mass. Door-spring	329,297	Oct. 27	2421	628	33	463
Elliott, Gilbert R., Boston, Mass. Door-check	329,298	Oct. 27	2422	628	33	463
Elliott, James, Newton, Iowa. Harrow	328,576	Oct. 20	1401	364	33	271
Elliott, Sarah A., Norfolk, Va. Flower-frame	328,926	Oct. 27	1874	489	33	364
Elliott, Walter P., New Brunswick, N. J. Making illuminating-gas	327,741	Oct. 6	52	12	33	11
Elliott, Walter P., New Brunswick, N. J. Apparatus for making gas	330,778	Nov. 17	1797	484	33	864
Ellis, Clifford C., assignor to C. A. Shaw, Boston, Mass. Inhaler	330,970	Nov. 24	2053	555	33	919
Ellis, Isaac and M. I., Norwood, Mass. Coloring, embellishing, and discharging color in the manufacture of paper	330,215	Nov. 10	1062	277	33	715

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ellis, John M., *et al.* (See Nutting, Adrain, assignor.)						
Ellis, Melvin I. (See Ellis, Isaac and M. I.)						
Ellis, William C., Marshalltown, Iowa. Anti-freezing non-exploding cut-off for bath-boilers	332,387	Dec. 15	1673	438	33	1311
Ellsworth, Amos C., Jay, Vt. Windmill	331,288	Dec. 1	49	11	33	1006
Ellsworth, Dewitt, and M. Rogers, Riverdale, Mich. Vehicle-shaft support	327,930	Oct. 6	549	143	33	98
Ellwood, Abram. (See Upham, Andrew J., assignor.)						
Ellyson, Robert S., Danville, Va. Attaching writing-desks to sewing-machines	330,100	Nov. 10	919	239	33	687
Elmer, Edwin R., Buckland, Mass. Shingle or roof bracket	330,971	Nov. 24	2054	556	33	919
Elsaesser, Emil, Barmen, Prussia, Germany. Red dye-stuff or coloring-matter	329,634	Nov. 3	284	.....	33	559
Elsom, Benjamin F. (See Goodsell and Elsom.)						
Eltonhead, Alfred L., Denver, Colo. Cable railway	329,826	Nov. 3	546	139	33	606
Elward, John H., assignor to M. Elward, Polo, Ill. Traction-engine	329,153	Oct. 27	2215	574	33	424
Elward, John H., assignor to M. Elward, Polo, Ill. Traction-engine	329,154	Oct. 27	2217	574	33	424
Elward, Mary. (See Elward, John H., assignor.)						
Ely, Charles M., assignor to W. C. Goodloe, Lexington, Ky. Compound for harness-oil	327,871	Oct. 6	471	.....	33	84
Ely, James L., Jersey City, N. J., assignor of three-fourths to W. C. Spelman and G. E. Stevens, New York, N. Y. Grenade	333,117	Dec. 29	2706	710	33	1508
Ely & Ramsay. (See Farrell, Charles, assignor.)						
Emanuel, Henry, assignor to Standard Oiled Clothing Co., New York, N. Y. Pommel-coat	329,299	Oct. 27	2423	628	33	463
Emerson, James F., *et al.* (See Tirrell, Jacob P., assignor.)						
Emerson, Loender C., assignor of one-half to C. H. Nelson, North Grafton, Mass. Eyeleting-machine	332,334	Dec. 15	1592	418	33	1297
Emerson, Talcott & Co. (See Jones, James H., assignor.)						
Emerson, William A., Leominster, Mass. Combined blackboard and drawing-case	329,300	Oct. 27	2424	629	33	463
Emig, George, Cincinnati, Ohio. Metal-punching machine	327,777	Oct. 6	354	91, 92	33	63
Emmerich, Rudolph F., and F. Vonderlehr, New York, N. Y. Bronzing and dusting machine	333,207	Dec. 29	2937	740	33	1529
Emmett, William, Logansport, Ind. Rail-friction clamp	328,927	Oct. 27	1875	490	33	364
Emmett, William, Logansport, Ind. Car-coupling	328,928	Oct. 27	1876	490	33	364
Emmner, Julius, Jr., Washington, D. C. Telephone-transmitter	330,879	Nov. 24	1930	523	33	896
Emory, Paschal P., assignor of one-half to S. A. Bemis, Springfield, Mass. Journal-brass	330,389	Nov. 17	1305	346, 347	33	770
Empire Refrigerating Company. (See Jungenfeld and Rassbach, assignors.)						
Empress Embroiderer Company. (See Chilton, Franklin H., assignor.)						
Emry, David L., Carthage, Mo. Line-support for harness	331,781	Dec. 8	799	202	33	1148
Endemann, Herman, Brooklyn, assignor to W. H. H. Childs, New York, N. Y. Disinfectant and cleansing-liquid for animals, &c.	331,190	Nov. 24	2349	.....	33	973
Engert, Charles, Brooklyn, N. Y. Tobacco-hanger	329,301	Oct. 27	2425	629	33	464
Engle, Alfred, West Amboy, N. Y. Hop-box shade	332,883	Dec. 22	2371	627	33	1441
Engle, Andrew, Metz, Iowa. Consuming night-soil, offal, &c	329,302	Oct. 27	2426	629	33	464
English, Arthur, Chicago, Ill. Transom-lifter	331,289	Dec. 1	50	11	33	1008
Ennis & Co., George W. (See Berteaux, Georges, assignor.)						
Enos, John A., Peabody, assignor of two-thirds to M. H. Robinson, Quincy, and O. A. Foster, Salem, Mass. Suspension-railway and car-hanger	331,387	Dec. 1	182	46, 47	33	1030
Enos, John A., Peabody, assignor of two-thirds to M. H. Robinson, Quincy, and O. A. Foster, Salem, Mass. Railway-car	331,388	Dec. 1	184	47, 48	33	1031
Enos, John A., Peabody, assignor of two-thirds to M. H. Robinson, Quincy, and O. A. Foster, Salem, Mass. Truck for elevated cars	331,389	Dec. 1	185	48	33	1031
Enright, John J., and D. J. May, Detroit, Mich. Cuspidor for railway-cars	331,692	Dec. 1	674	167	33	1117
Ensley, Marshall N., Drain, Oreg. Washing-machine	328,663	Oct. 20	1532	398, 399	33	293
Eusworth, Porter S., Waterford, Pa. Embalming apparatus	328,577	Oct. 20	1402	365	33	271
Entrekin, William G., Philadelphia, Pa. Photograph-burnishing machine	327,778	Oct. 6	356	92	33	63
Entwistle, Thomas C., Melrose, Mass. Expansion drop-wire for warping-machines	333,118	Dec. 29	2707	710	33	1508
Entwistle, Thomas C., Melrose, Mass. Comb for warping and beaming machines	333,399	Dec. 29	3085	805	33	1575
Eperts, August, and H. Perk, St. Louis, Mo. Grater	331,874	Dec. 8	931	240, 241	33	1172
Ephraim, Ferdinand, San Francisco, Cal. Pipe for floorings, ceilings, and other building purposes	333,119	Dec. 29	2709	710	33	1508
Eppelsheimer, Henry, New York, N. Y. Ice-cream and pudding mold	330,305	Nov. 10	1179	315	33	739
Equitable Electric Company. (See Holcombe, Alfred G., assignor.)						
Equity Gas Saving Company. (See Olds, Alonzo F., assignor.)						
Erbacher, Frank W. (See Clark, Henry, assignor.)						
Erikson, Lars, Chicago, Ill. Clock-pendulum protector	333,120	Dec. 29	2710	710	33	1509
Erlanger, Charles, Baltimore, Md. Button-fastener	333,400	Dec. 29	3087	805	33	1576
Ernst, John H. (See Silver, William H., assignor.)						
Ernst, William M., New York, N. Y. Disinfecting water-closets	331,693	Dec. 1	675	167	33	1117
Erskine, Milton J., Omaha, Nebr. Water-power	331,694	Dec. 1	678	167	33	1117
Erwin, James B., Milwaukee, Wis. Air-compressor	329,377	Oct. 27	2546	656	33	484
Erwin, James B., Milwaukee, Wis. Hydraulic air-compressor	333,208	Dec. 29	2828	740	33	1529
Escherwyss & Co. (See Kron, Rudolf, assignor.)						
Esco, Joseph A., Crawford, and E. G. Roane, Athens, Ga. Seed-planter and fertilizer-distributer	329,378	Oct. 27	2547	656	33	484
Eshelman, Benjamin F., Harlan, Iowa. Pencil-holder	328,767	Oct. 20	1653	431	33	317
Essig, Ozia A., Canton, Ohio. Colter for plows	327,872	Oct. 6	471	123	33	84
Estabrook, Frances A., *et al.* (See Brooks, John S., assignor.)						
Esterly, George, assignor of one-fourth to G. W. Esterly, Whitewater, Wis. Grain-binding machine	327,931	Oct. 6	550	144	33	99
Esterly, George, assignor of one-fourth to G. W. Esterly, Whitewater, Wis. Adjustable seat for grain harvesting and binding machines	327,932	Oct. 6	553	144	33	99
Esterly, George W. (See Esterly, George, assignor.)						
Esterly Harvesting Machine Company. (See Preston, David R., assignor.)						
Estes, Elihu B., assignor of one-half to D. D. Hamlin, Flatbush, N. Y. Wardrobe	330,830	Nov. 17	1860	502	33	876
Estey, David M. (See Osborn and Estey.)						
Esty, William, Laconia, N. H. Steam-boiler	329,379	Oct. 27	2548	657	33	385
Ethridge, Martin V. B., Boston, assignor to H. E. Waite, West Newton, Mass. Making tapering washers	331,045	Nov. 24	2137	579	33	936
Evans, Martin V. B., Portsmouth, Ohio. Jar protector and sealer	333,455	Dec. 29	3158	826	33	1587
Eureka Mower Company. (See Markham, Dewitt C., assignor.)						
Eureka Patent Glass Mold Company. (See Haley, Jonathan, assignor.)						
Eureka Spindle Company. (See Chapman, Charles H.)						
Evans, Charles H., assignor to D. H. Craig, agent, New York, N. Y. Refrigerating apparatus	329,380	Oct. 27	2550	657, 658	33	485
Evans, David, Sharpsburg, Pa. Boring-tool for lathes	332,065	Dec. 8	1216	317	33	1224

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Evans, John C., Denver, Colo., assignor to T. C. and A. J. Chamberlin, Ogden City, Utah Ter. Blind, shutter, or door stop	329,894	Nov. 10	641	163	33	632
Evans, John H., *et al.* (See Evans, William, assignor.)						
Evans, Plyna. (See Gibson, Lyman B., assignor.)						
Evans, Robert, *et al.* (See Evans, William, assignor.)						
Evans, William, assignor of two-thirds to J. H. and R. Evans, Philadelphia, Pa. Drill-press	332,242	Dec. 15	1474	384, 385	33	1275
Everitt, Elisha E., Philadelphia, Pa. Wardrobe or folding bedstead	332,144	Dec. 8	1340	346, 347	33	1244
Evers, Charles H., Cleveland, Ohio. Cigar-bunching machine	328,203	Oct. 13	902	234, 235	33	172
Ewart Manufacturing Company. (See Dodge, James M., assignor.)						
Ewart Manufacturing Company. (See Weaver, James H., assignor.)						
Ewing, Harriet N., Philadelphia, Pa. Game apparatus	330,972	Nov. 24	2056	556	33	920
Excelsior Gas Machine Company. (See McNett, Lyman F., assignor.)						
Eyermann, Christian H., assignor of two-thirds to H. C. G. Luyties and J. H. Zwarts, St. Louis, Mo. Lotion	327,933	Oct. 6	554	.....	33	99
Eynon, William D., Philadelphia, Pa. Machine for rolling flat and nut bars	331,230	Nov. 24	2406	651	33	983
Facer, Wilson E., assignor to himself, T. and P. Malley, Cleveland, Ohio. Electric regulator for dampers	332,066	Dec. 8	1218	318	33	1224
Fagerberg, Charles E., Rockford, Ill. Combined table and desk	328,302	Oct. 13	1025	266	33	194
Fahlberg, Constantin, New York, N. Y., assignor one-half to A. List, Leipsic, Germany. Manufacture of saccharine compounds. (Reissue)	10,667	Dec. 1	759	.....	33	1134
Fahnehjelm, Otto B., New York, N. Y. Support for holding and adjusting incandescing bodies in a gas-flame	332,650	Dec. 15	2044	536, 537	33	1376
Fahys Watch Case Company. (See Lamont, James, assignor.)						
Fairbanks, Albert C., Boston, Mass. Banjo	327,779	Oct. 6	357	92	33	63
Fairbanks, James A., Augusta, Me. Wrench	329,542	Nov. 3	166	44	33	537
Fairburn, James T., Morrillton, Ark. Fence-building machine	332,600	Dec. 15	1975	517	33	1362
Fairfield, Hadley P., West Medford, Mass. Machine for uniting the soles and uppers of boots or shoes	329,031	Oct. 27	2041	530	33	393
Fairfield, Thomas D., J. L. Clark, and R. Hughes, Cleveland, Ohio. Apparatus for chilling paraffine and other oils	333,209	Dec. 29	2929	740, 741	33	1530
Fales, Samuel H., New Haven, Conn. Coal-stove	331,622	Dec. 1	573	140	33	1098
Falkner, John, Orange, N. J. Refrigerator	332,884	Dec. 22	2372	627	33	1441
Faller, Jacob, Covington, Ky. Pump	328,472	Oct. 20	1261	328	33	245
Fallon, William, Newburg, N. Y. Dumping car and scow	330,101	Nov. 10	921	239	31	687
Falls Automatic Door Spring and Check Company. (See Falls, William F., assignor.)						
Falls, William F., Boston, Mass., assignor to Falls Automatic Door Spring and Check Company. Combined door spring and check	329,032	Oct. 27	2044	530	33	394
Fancher, Ward I. (See Grimm and Fancher.)						
Farbenfabriken, vormals Friedr. Bayer & Co. (See Frank, Eugen, assignor.)						
Farbfabrik, vormals Brönner. (See Prinz, Hugo, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Conrad, Max, assignor.)						
Faries, Robert, Decatur, Ill. Twister-head for machines for forming interlocking eyes	333,121	Dec. 29	2711	711	33	1509
Farley, John C., Hearne, Tex. Stalk and clod cutter	332,601	Dec. 15	1977	517	33	1363
Farmer, David J., Penn Yan, assignor of one-half to R. N. Gere, Syracuse, N. Y. Horse-shoe-machine	331,623	Dec. 1	574	140, 141	33	1098
Farmer, David J., Penn Yan, assignor of one-half to R. N. Gere, Syracuse, N. Y. Horse-shoe-machine	331,624	Dec. 1	578	141, 142	33	1099
Farmer, David J., Penn Yan, assignor of one-half to R. N. Gere, Syracuse, N. Y. Horse-shoe-swaging machine	331,625	Dec. 1	581	143	33	1099
Farmer, David J., Penn Yan, assignor of one-half to R. N. Gere, Syracuse, N. Y. Horse-shoe-swaging machine	331,626	Dec. 1	583	143, 144	33	1099
Farnham, Isaiah H., Deering, Me., assignor to American Bell Telephone Company, Boston, Mass. Electric signaling apparatus	328,578	Oct. 20	1403	365	33	271
Farnsworth, George. (See Ladd, Dennis O., assignor.)						
Farquhar, Arthur B., York, Pa. Power hay-press	330,472	Nov. 17	1416	377	33	790
Farrar, Frederick, Boston, Mass. Wrench	331,627	Dec. 1	585	144	33	1100
Farrel, John, New York, N. Y. Fire-proof safe	328,113	Oct. 13	792	206	33	150
Farrell, Charles, Peekskill, assignor to Ely & Ramsay, New York, N. Y. Frame for stove-doors	333,401	Dec. 29	3088	805	33	1576
Faul, William J., New York, N. Y. Making lubricating-cartridges	330,102	Nov. 10	922	239	33	687
Faulhaber, George, Cleveland, Ohio. Seat-back	331,122	Nov. 24	2249	611	33	955
Faulkner, Densmore R. (See Tebbets and Faulkner.)						
Faulkner, Eliza T. (See Faulkner, James J. and E. T.)						
Faulkner, James J. and E. T., McMinnville, Tenn. Grinding-mill	336,880	Nov. 24	1933	523, 524	33	896
Faulkner, Thomas H., McMinnville, Tenn. Wool burring and picking machine	332,651	Dec. 15	2047	537, 538	33	1376
Fawcett, William N., and G. F. Huntley, Brooklyn, N. Y. Electric-wire insulator and supporter	328,929	Oct. 27	1877	490	33	364
Fay, Rimmon C. (See Northrop and Fay.)						
Fay, Rimmon C., Hopedale, Mass. Lathe	329,381	Oct. 27	2552	658, 659	33	485
Fay, Rimmon C., Hopedale, Mass. Lathe	332,335	Dec. 15	1595	419	33	1298
Fay, Rimmon C., assignor to G. Draper & Sons, Hopedale, Mass. Spindle-bolster	332,067	Dec. 8	1220	318	33	1225
Fay, Rimmon C., assignor to Hopedale Machine Company, Hopedale, Mass. Spindle-support	332,068	Dec. 8	1221	319	33	1225
Feather, Smith. (See Drake and Feather.)						
Fechteler, Henry, New York, N. Y. Bas-relief advertising-sign	331,290	Dec. 1	50	12	33	1008
Fee, John D., Chicago, Ill. Signaling device	332,336	Dec. 15	1598	420	33	1298
Feinthel, Frederich J., and J. G. Dinkelbihler, Cincinnati, Ohio. Mail-bag	329,155	Oct. 27	2219	574	33	424
Felbel, Jacob, assignor to L. Lawrence, New York, N. Y. Pen-holder	330,881	Nov. 24	1934	524	33	897
Felker, Henry, Verona, assignor to Monroe & Co., Dunbarton, N. Y. Glass-furnace stone	330,473	Nov. 17	1417	378	33	791
Fellers, Noah, McComb, Ohio. Screw-driver	327,780	Oct. 6	358	93	33	63
Fellows, Henry, Wichita, Kans. Swing	330,306	Nov. 10	1180	315	33	739
Felton, Hamlet S., Chester, Ill. Adjustable chair	328,883	Oct. 20	1806	470	33	344
Felton, Walter S., assignor to North Fairfield Plow Company, North Fairfield, Ohio. Plow attachment	332,652	Dec. 15	2048	538	33	1376
Fenn, Wallace T., Wethersfield, assignor to Kellogg & Bulkley Company, Hartford, Conn. Calendar	328,768	Oct. 20	1654	433	33	317
Fenner, Birdie L. (See Leeds, Lodowick, assignor.)						
Fenton, John H., Chicago, Ill. Roller-skate	331,291	Dec. 1	51	12	33	1008

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Ferguson, Arthur C., assignor to Ferguson Platform and Life-Bridge Company, Saratoga Springs, N. Y. Freight-car platform	330,216	Nov. 10	1063	278	33	715
Ferguson, Charles M., Charles City, Iowa. Railway-track gage, level, and gradient	329,895	Nov. 10	641	164	33	632
Fergnson, James. (See Rice, David H., assignor.)						
Ferguson, James, Bridgewater, Mass. Car-wheel	331,292	Dec. 1	52	12	33	1009
Ferguson, James M., New Orleans, La. Boiler-flue cleaner	331,782	Dec. 8	800	202	33	1148
Ferguson Platform and Life-Bridge Company. (See Ferguson, Arthur C., assignor.)						
Ferrall, Thomas R., assignor to Bagnall & Loud Manufacturing Company, Boston, Mass. Anti-friction bearing	328,394	Oct. 13	1161	300	33	219
Ferrari, Andrew, assignor to Whitney Brothers, Glassborough, N. J. Glass-furnace	330,307	Nov. 10	1161	315	33	739
Ferris, George D., Springfield, Ill. Mechanical movement	331,695	Dec. 1	679	168	33	1118
Ferris, George L., Mexico, Mo. Washing-machine	330,573	Nov. 17	1535	411	33	813
Ferris, Sherwood B., Lakewood, N. J. Corset	327,781	Oct. 6	359	93	33	63
Ferris, Sherwood B., Lakewood, N. J. Working button-holes	329,635	Nov. 3	286	73	33	559
Fenchter, Christian. (See Wiehle, Lorey, and Feuchter.)						
Fiberlene Collar Company. (See Butterworth, Robert, assignor.)						
Fiberlene Collar Company. (See March, George N., assignor.)						
Fichtenberg, Werner, New York, N. Y. Pin-fastener for neckties	327,782	Oct. 6	360	93	33	64
Field, Cyrus W., Jr., New York, N. Y. Screw-propelled vessel	332,243	Dec. 15	1475	385	33	1275
Field, Edwin S., Springfield, assignor of one-half to J. M. Davis and J. G. Soderberg, Worcester, Mass. Spring-calipers	332,244	Dec. 15	1477	386	33	1276
Field, Frank R., Greenfield, Mass. Electric clock	328,769	Oct. 20	1655	432	33	317
Field, Stephen D. (See Healy, Clarence L., assignor.)						
Field, William R., New York, N. Y. Book-holder	330,882	Nov. 24	1935	524	33	897
Fielding, James B. (See Bryan and Fielding.)						
Fifield, John W. D., and W. H. Holt, North Brookfield, Mass. Crimping-machine for boots and shoes	329,033	Oct. 27	2046	531	33	394
Filly, Albert, New York, N. Y. Printer's rule-mitering machine	328,017	Oct. 13	664	175	33	127
Finck, Julius, assignor to Will & Finck, San Francisco, Cal. Door-operating device	328,114	Oct. 13	793	207	33	150
Fink, Henry I., Nebraska, Ind. Car-coupling	328,303	Oct. 13	1026	266	33	194
Finkelson, Andrew. (See Hendryx, Samuel V., assignor.)						
Finkle, Charles E., Rochester, N. Y. Button-hole finishing, cording, and staying device	328,304	Oct. 13	1027	266	33	195
Finnerty, Thomas, Baltimore, Md. Coal-cart	330,217	Nov. 10	1064	278	33	716
Finney, Henry E., Chicago, Ill. Spring-seated butt-cap for guns	328,930	Oct. 27	1878	490, 491	33	365
Firman, Leroy B., assignor to Western Electric Manufacturing Company, Chicago, Ill. Telephone-exchange system and apparatus	328,305	Oct. 13	1028	267	33	195
Fischbeck, Frederick, Chicago, Ill. Sofa-bed	329,543	Nov. 3	167	44	33	537
Fischer, Benedict, *et al.* (See Marion, Joseph, assignor.)						
Fischer, Emil, Calliope, Iowa. Gate	330,474	Nov. 17	1418	378	33	791
Fischer, Friedrich, Barmen, Prussia, Germany. Production of new violet dye-stuffs	329,636	Nov. 3	287	.....	33	559
Fischer, Friedrich, Barmen, Prussia, Germany. Violet coloring-matter	329,637	Nov. 3	288	.....	33	559
Fischer, George, Quincy, Ill. Chimney cowl and ventilator	330,881	Nov. 24	1936	525	33	897
Fischer, John J. (See Wostenholm, George, assignor.)						
Fischer, Joseph, Elizabeth, N. J. Car-axle box	328,204	Oct. 13	904	235	33	172
Fiset, Michel, Albany, N. Y. Device for securing a series of drawers	332,337	Dec. 15	1600	420, 421	33	1298
Fish, George M. (See Hill, Christian C., assignor.)						
Fish, John, Summit, N. J. Single-rail elevated-railway girder	328,395	Oct. 13	1162	300	33	220
Fish, John, Summit, N. J., assignor of one-third to L. Burliaus, Brooklyn, N. Y. Steam-generator	331,783	Dec. 8	801	203	33	1149
Fish, Sidell E., and C. G. King, Greenport, N. Y. Poker, tongs, and stove-lid lifter	331,954	Dec. 8	1050	273	33	1196
Fisher, Daniel, Oil City, Pa. Expansion joint or coupling for pipes	328,579	Oct. 20	1406	365	33	271
Fisher, David, Gear, Iowa. Ditching-machine	331,875	Dec. 8	931	241	33	1172
Fisher, Jacob, and A. Coquillard, South Bend, Ind. Fire-escape	331,123	Nov. 24	2250	612	33	956
Fisher, Thomas J., Carthage, Tenn. Book-case	333,210	Dec. 29	2931	741	33	1530
Fisher, William H. (See Raabe and Fisher.)						
Fisher, William H., Cincinnati, Ohio. Holder for supporting cartridge-shells	328,018	Oct. 13	666	175	33	128
Fishkill Landing Machine Company. (See Cité, Joseph D., assignor.)						
Fishwick, James, Mason, Ohio. Vehicle-wheel	333,402	Dec. 29	3089	806	33	1576
Fiske, Estelle, San Francisco, Cal. Lady's collar	332,507	Dec. 15	1832	480	33	1338
Fitch, Asa M., Seymour, Ind. Plow	330,475	Nov. 17	1419	379	33	791
Fitch, Eugene, Des Moines, Iowa. Pencil-sharpener	328,473	Oct. 20	1962	348	33	245
Fitch, W. & E. T. (See Hubbard, George M., assignor.)						
Fitts, Benaiah, Worcester, Mass. Fluid-pressure regulator	333,408	Dec. 29	3090	806	33	1576
Fitz Gerald, Desmond G., Brixton, county of Surrey, and T. J. Jones, Princes Street, Hanover Square, county of Middlesex, assignors to Primary Battery Company, (limited,) Hanover Square, London, England. Voltaic battery	333,292	Dec. 29	2951	.....	33	1552
Fitzgerald, James, Providence, R. I. Slide-rest	331,046	Nov. 24	2138	580	33	936
Fitzgerald, Peter I. (See Weaver, Ephraim E., assignor.)						
Fitzgerald, Peter J., Philadelphia, Pa. Portable furnace for tinners	330,218	Nov. 10	1064	278	33	716
Fitzpatrick, James B., St. Albans, and A. Lewis, Wheeling, W. Va. Garden-rake	332,885	Dec. 22	2373	627	33	1441
Fitz Simons, Frank P., Clark's Mills, N. Y. Stop-motion for coloring-machines	331,486	Dec. 1	326	88	33	1056
Fitzsimons, Michael, Lake, Ill. Self-adjusting sewer-scraper	329,034	Oct. 27	2049	531	33	395
Fixary, Edouard, Paris, France. Apparatus for freezing liquids	330,884	Nov. 24	1937	525	33	897
Flack, Robert W., Toronto, Ontario, Canada. Passenger-register	331,784	Dec. 8	802	203	33	1149
Flagg, Elisha, New York, N. Y. Button	331,124	Nov. 24	2251	612	33	956
Flagg, George H. P., and G. A. Fullerton, Boston, Mass. Lasting tack-strip	329,544	Nov. 3	168	44	33	537
Flagg, James H., New York, N. Y. Shaving-case	333,273	Dec. 29	2952	771	33	1552
Flammang, Mathias, Newark, N. J. Photographic camera	328,664	Oct. 20	1533	399	33	293
Fleischman, Requia, *et al.* (See Meissner, John, assignor.)						
Fleming, James. (See Dick and Fleming.)						
Fleming, John, Calais, Me. Fire-escape	331,191	Nov. 24	2350	635, 636	33	973
Fleming, Randall W. (See Street and Fleming.)						
Flersheim, Lemuel H. (See Potter, James, assignor.)						
Fletcher, Frank A., Watertown, N. Y. Device for supporting hammocks	328,474	Oct. 20	1263	328	33	246
Fletcher, Joseph E., assignor of one-half to R. Mitchell, Montreal, Quebec, Canada. Automatic lubricator	333,404	Dec. 29	3093	806	33	1576
Flietner, John, Brooklyn, N. Y. Fire-escape	330,103	Nov. 10	923	240	33	687
Flinn & Co. (See Bogan, James F., assignor.)						
Flinn, William W. (See Davies, John R., assignor.)						
Flint, Frederick W., Atlanta, Ga. Electric telethermoscope	328,205	Oct. 13	906	235	33	172
Flintom, Samuel G., Orange Factory, N. C. Apparatus for steaming tobacco	331,696	Dec. 1	680	168	33	1118

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Flora, Ellsworth E. (See Flora, Orlando V. and E. E.)						
Flora, Orlando V. and E. E., Madison, Ind. Roller-skate	331,192	Nov. 24	2351	636	33	974
Florance, John B. (See Montress, Samuel D., assignor.)						
Flournoy, C. H. (See Huffaker, Miles W., assignor.)						
Flowers, Martin L. (See Gibbons and Flowers.)						
Floyd, Charles A., Eastbourne, county of Sussex, England. Horseshoe	330,006	Nov. 10	792	203	33	659
Floyd, John J., assignor of one-half to E. J. Reddican, Boston, Mass. Printer's gage-clamp	329,896	Nov. 10	645	164	33	632
Flynn, Owen J. (See Shelley, Robert, assignor.)						
Foley, Patrick H., Clinton, N. Y. Rock-drill	329,545	Nov. 3	169	44	33	537
Folger, Rowland, assignor of one-half to W. H. Gile, Milford, Mass. Umbrella	331,231	Nov. 24	2407	651	33	983
Follansbee, John S., Bridgeport, Conn., assignor to New York City Wire Nail Company. Wire-nail machine	330,219	Nov. 10	1065	278, 279	33	716
Follett, Charles J., Galveston, Tex. Beer-cooler	328,396	Oct. 13	1163	300	33	220
Folsom, Henry P., Brooklyn, N. Y. Sput for boilers	332,338	Dec. 15	1602	421	33	1239
Folsom, Nehemiah T., Boston, Mass. Dust-pan	329,382	Oct. 27	2555	659	33	486
Fontaine, Eugene, Toledo, assignor of one-half to W. A. Kettenring, Defiance, Ohio. Railway-crossing	327,670	Oct. 6	232	57	33	41
Fontaine, Louis A., Toledo, Ohio. Pin-machine	330,220	Nov. 10	1068	280	33	716
Fontenelle, Jules. (See Buffet, Jules, assignor.)						
Foote, Charles W., Youngstown, Ohio. Roller-skate	330,007	Nov. 10	793	203	33	659
Foote, Delavan S., assignor to American Electric Manufacturing Company, Chicago, Ill. Annunciator	333,063	Dec. 22	2616	686	33	1486
Foote, Edward N., Northampton, Mass. Metallic-button shank	327,873	Oct. 6	472	123	33	84
Foote, Lewis A., Lansing, Minn. Seal for railway-cars, &c.	327,783	Oct. 6	361	93	33	64
Forbes, Alexander D., Rockford, Ill. Plow-clevis	332,145	Dec. 8	1341	347	33	1245
Forbes, Edward P., Hartford, Conn. Automatic alarm-bell	331,697	Dec. 1	681	168	33	1118
Forbes, George, New York, N. Y. Car-coupling	328,931	Oct. 27	1982	491	33	365
Forbes, Henery, Franklin, Pa. Pumping oil-wells	330,973	Nov. 24	2056	556	33	920
Forbes, John, San Francisco, Cal. Top-plate for cooking stoves and ranges	328,580	Oct. 20	1407	366	33	271
Forbes, John A. (See Wilson and Forbes.)						
Forbes, John A., assignor of one-half to E. S. Anderson, Dover, Del. Corn-cutting attachment for mowing-machines	328,770	Oct. 20	1657	432	33	317
Forbis, John C., Ashland, Mo. Harrow-tooth	329,035	Oct. 27	2050	532	33	395
Ford, Herbert L., assignor of one-half to W. Turnbull, Aiken, S. C. Railway-switch	328,842	Oct. 20	1750	456	33	335
Ford, Jesse S., Owensborough, Ky. Elevating and carrying apparatus	333,456	Dec. 29	3158	826	33	1587
Ford, Thomas J., Geneva, Ohio. Combined table and desk	328,475	Oct. 20	1264	329	33	246
Ford, William, Birmingham, Conn. Combination square and gage	329,156	Oct. 27	2220	575	33	425
Ford, William N., Indianapolis, Ind. Cover for tobacco-pails	327,784	Oct. 6	361	94	33	64
Ford, William S., Denver, Colo. Telephone-exchange	331,955	Dec. 8	1051	273, 274	33	1196
Ford, William W., Elmira, N. Y. Bobbin for sewing-machines	331,956	Dec. 8	1054	274	33	1196
Forehand, Sullivan. (See Gates, Charles H., assignor.)						
Foreman, Milton, Philadelphia, Pa. Steam-generator	333,001	Dec. 22	2537	669	33	1472
Fornander, Alfred, Brooklyn, N. Y., assignor to Miller's Falls Company, Miller's Falls, Mass. Hand-saw	330,104	Nov. 10	994	240	33	687
Forrest, George S. (See Abbott and Forrest.)						
Forrester, Isaac N., Camden, N. J. Child's carriage	330,308	Nov. 10	1182	316	33	740
Forrester, Samuel, Allegheny, Pa. Pencil-sharpener	332,146	Dec. 8	1342	348	33	1245
Forst, Michael, assignor to Southern White Lead Company, St. Louis, Mo. Apparatus for feeding white lead	331,698	Dec. 1	683	169	33	1118
Fort Wayne Electric Light Company. (See Cain, Jacob, assignor.)						
Forth, John F., Nottingham, England. Lace curtain	333,002	Dec. 22	2539	669	33	1473
Fosbery, George V., Liege, Belgium. Gun-barrel	329,363	Oct. 27	2498	630	33	404
Foster, Abraham G. W., Newnan, Ga. Leveling-instrument	328,665	Oct. 20	1531	399	33	294
Foster, Benjamin E., Stockwell, county of Surrey, England. Decorating or ornamenting glass	333,457	Dec. 29	3160	.....	33	1588
Foster, Frank P., assignor to L. Myers & Son, Milwaukee, Wis. Paint-remover	328,666	Oct. 20	1535	.....	33	294
Foster, Frederick. (See Dixon, Rufus E., assignor.)						
Foster, James L., *et al.* (See Thompson, George C., assignor.)						
Foster, Julius T. (See Robbins and Foster.)						
Foster, Michael A., St. Louis, Mo. Steam-boiler furnace	331,699	Dec. 1	684	169	33	1119
Foster, Michael A., St. Louis, Mo. Grate for steam-boiler furnaces	331,700	Dec. 1	685	169	33	1119
Foster, Orlando A., *et al.* (See Enos, John A., assignor.)						
Foster, Theodore W. Providence, R. I. Button	328,021	Oct. 13	669	176	33	128
Foster, Theodore W., Providence, R. I. Button or stud	330,330	Nov. 17	1306	347	33	770
Foulis, William, Glasgow, county of Lanark, Scotland. Retort-furnace	333,122	Dec. 29	2712	711, 712	33	1509
Foulks, John W., Brooklyn, N. Y. Roll for forming toe-calk bars	333,003	Dec. 22	2539	669	33	1473
Fonshee, Fountaine L., Batesville, Ark. Churning device	331,487	Dec. 1	327	88	33	1056
Foust, James W., Rock Falls, assignor to T. A. Galt and G. S. Tracy, Sterling, Ill. Hay-loader	329,383	Oct. 27	2555	659	33	486
Fowkes, Alfred, Philadelphia, Pa., and T. Connolly, Trenton, N. J. Single-piece porcelain washout water-closet	330,574	Nov. 17	1736	411	33	814
Fowler, Charles W., and A. O. Nepil, Des Moines, Iowa. Boiler-furnace	330,825	Nov. 24	1939	525	33	897
Fowler, Elbert W., Chicago, Ill. Device for operating safe bolt-work	331,390	Dec. 1	186	48, 49	33	1031
Fowler, John G., and W. H. Crisp, Mankato, Minn. Sash-holder	330,105	Nov. 10	925	240	33	688
Fowler, Thaddeus, Bridgeport, assignor to H. G. Thompson, Milford, H. G. Thompson, New Haven, Conn., and A. G. Thompson, New York, N. Y. Saw	328,619	Oct. 13	668	175	33	128
Fowler, William R., assignor to L. J. Myers, Philadelphia, Pa. Rope railway	330,106	Nov. 10	926	240, 241	33	688
Fowles, James H., Orangeburg Court-House, S. C. Cotton-cultivator	328,397	Oct. 13	1164	300	33	220
Fox, George H., Boston, Mass. Piston water-meter	327,671	Oct. 6	234	57	33	41
Fox, George H., Boston, Mass. Piston water-meter	327,672	Oct. 6	235	58	33	42
Fox, John S., assignor of one-half to J. P. Garlick, Oakland, Cal. Standard for maps and charts	333,211	Dec. 29	2832	741	33	1580
Fox, Joshua D., Frankfort, Ind. Gate	330,575	Nov. 17	1536	411	33	814
Fox, Philo L., Bridgeport, Conn. Combined square and miter	331,047	Nov. 24	2139	580	33	936
Fraikin, John J., Fort Wayne, Ind. Cultivator	330,687	Nov. 17	1675	452	33	842
France, Joseph R., Newark, N. J. Roller-skate wheel	328,476	Oct. 20	1265	329	33	246
France, Joseph R., Newark, N. J. Cellonite or nitro cellulose article	328,843	Oct. 20	1751	456	33	335
Francia, Casper S., *et al.* (See Brooke, Isaac, assignor.)						
Frank, Eugen, Elberfeld, Prussia, Germany. Production of new yellow coloring-matter	329,639	Nov. 3	289	.....	33	559
Frank, Eugen, assignor to Farbenfabriken, vormals Friedr. Bayer & Co., Elberfeld, Prussia, Germany. Yellow coloring-matter	329,638	Nov. 3	288	.....	33	559

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Frank, Himan, New York, N. Y. Box-strap	332,795	Dec. 22	2248	592	33	1420
Franke, Ernst, Paterson, N. J. Machine for covering cords with silk-threads	328,884	Oct. 20	1608	471	33	345
Frankel, Alexander C., assignor to J. Lagowitz, Newark, N. J. Trunk	330,886	Nov. 24	1941	525, 526	33	895
Franks, Orrin G., *et al.* (See Clark, Levi S., assignor.)						
Fraser, Harry T. O., Clerkenwell, county of Middlesex, England. Magneto-electric call-bell	332,398	Dec. 15	1675	438, 439	33	1311
Frasier, Thomas W. (See Creviston, John R., assignor.)						
Frazee, James H., Rushville, Ind. Cultivator	331,048	Nov. 24	2140	580	33	936
Frazier, Alexander, West Haven, Conn., assignor of one-half to C. B. Delapiere, Brooklyn, N. Y. Machine for making brushes	330,688	Nov. 17	1676	452, 453	33	842
Frazier, William H., Oswego, N. Y. Saw-mill dog	330,309	Nov. 10	1183	316	33	740
Frech, William, Chicago, Ill. Tool-holding attachment for lathes	329,447	Nov. 3	25	7, 8	33	509
Frech, William, Chicago, Ill., assignor to A. French Spring Company, (limited,) Pittsburg, Pa. Grinding-machine	327,934	Oct. 6	554	144	33	99
Frederiksen, John D., Little Falls, N. Y., and P. Rasch, Philadelphia, Pa. Centrifugal machine for testing milk and cream	330,779	Nov. 17	1799	485	33	864
Frederiksen, John D., Little Falls, N. Y. and P. Rasch, Philadelphia, Pa. Centrifugal machine for testing milk and cream	330,780	Nov. 17	1800	485	33	865
Freeland, Robert. (See Ralston, John C., assignor.)						
Freeman, Augustus M., Ocean Grove, assignor to himself, A. C. Kelly, Metuchen, N. J., and J. I. Holly, New York, N. Y. Toy	328,206	Oct. 13	907	235	33	172
Freeman, Augustus M., Ocean Grove, assignor to himself, A. C. Kelly, Metuchen, N. J., and J. I. Holly, New York, N. Y. Toy	328,398	Oct. 13	1165	301	33	220
Freese, Francis J., and F. C. Baldwin, Manchester, N. H. Necktie or cravat	327,542	Oct. 6	54	12	33	11
Freese, William L., Mohawk Village, Ohio. Meat crusher or tenderer	330,310	Nov. 10	1194	316	33	740
Freidenrich, Leon, New York, N. Y. Supplementary waistband for pants	333,064	Dec. 22	2618	686	33	1487
Freiat, Henry C., assignor to Harrison Brothers & Co., Philadelphia, Pa. Manufacture of crystal alum	328,477	Oct. 20	1267	.....	33	246
Freiat, Henry C., assignor to Harrison Brothers & Co., Philadelphia, Pa. Manufacture of hydrate of alumina	328,478	Oct. 20	1268	.....	33	246
Fremont Cultivator Company. (See Rosebaugh, John C., assignor.)						
Fremont Cultivator Company. (See Stahl, Harlow C., assignor.)						
French, Albert E., East Tawas, Mich. Fire-screen and ventilator	328,932	Oct. 27	1885	491	33	366
French, Carmi M., assignor of one-half to M. Beardsly, Waterford, Mich. Wheel-plow	333,065	Dec. 22	2619	686, 687	33	1487
French, Charles W., *et al.* (See Gleason, Rollin H., assignor.)						
French, H. Palmer, *et al.* (See Gleason, Rollin H., assignor.)						
French, Howard B., *et al.* (See Longstreth, John L., assignor.)						
French, John M. (See Gill, James C., assignor.)						
French, Josiah F., Philadelphia, Pa. File-cutting machine	333,458	Dec. 29	3163	826, 827	33	1589
French, Samuel H., *et al.* (See Longstreth, John L., assignor.)						
French Spring Company, A. (See French, William, assignor.)						
French, William A., *et al.* (See Longstreth, John L., assignor.)						
Frenzel, Franz J., Jr., New York, N. Y. Encaustic tile	332,389	Dec. 15	1676	439	33	1311
Frick, Abraham O., Waynesborough, Pa. Steam-boiler	331,488	Dec. 1	328	89	33	1057
Frick Company. (See Richey, James N., assignor.)						
Friedmann, Albert, Milwaukee, Wis., and A. L. Blumenberg, Kalamazoo, Mich. Corkscrew	330,974	Nov. 24	2057	556	33	920
Friend, Jesse L., Perrysburg, Ind. Brick or tile die	331,391	Dec. 1	192	50	33	1032
Froehlick, Ernest H. (See Turner, Clayton A., assignor.)						
Frost, Abel H., and F. L. Bryant, assignors to Ames & Frost, Chicago, Ill. Cot-bed	329,384	Oct. 27	2557	659, 660	33	486
Frost, George S. (See Hayes, Joseph, assignor.)						
Frost & Son, M. S. (See Smith, Carlos A., assignor.)						
Frost, Stiles. (See Newell, George F., assignor.)						
Frost, Warren H., Cleveland, Ohio. Garment-supporter	331,392	Dec. 1	193	50	33	1032
Frow, James P. (See Eckles and Frow.)						
Fry, Abraham B., Pottstown, Pa. Hoop-coiling machine	327,935	Oct. 6	558	145	33	100
Fry, John M., Rothsville, Pa. Nut-lock	333,212	Dec. 29	2833	741	33	1530
Fry, William A., Washington, D. C. Hoisting, carrying, and delivering apparatus	329,546	Nov. 3	170	45	33	538
Fryainger, Jacob, Rock Island, Ill. Railway-track	332,707	Dec. 22	2139	565	33	1398
Fuchs, Johann, and J. Schweickert, Stuttgart, Würtemberg, Germany. Shaving-cup	328,020	Oct. 13	668	176	33	128
Fulgham, Jesse P., assignor of one-half to Wayne Agricultural Company, Richmond, Ind. Fence-machine	330,887	Nov. 24	1942	526	33	898
Fulkerson, Charles M. (See Andrus, Carlos F., assignor.)						
Fulle, Diederich F., New York, N. Y. Pillow-sham support	332,195	Dec. 8	1309	361	33	1255
Fuller, David S., assignor or one-half to W. De Golyer, Chicago, Ill. Goose-call	333,394	Dec. 22	2666	699	33	1495
Fuller, Frank. (See Billings and Mueller, assignors.)						
Fuller, Jennie R., Toledo, Ohio. Fire-escape	331,489	Dec. 1	330	89	33	1057
Fullerton, George A. (See Flagg and Fullerton.)						
Fulmer, R. A. (See Winfield, Charles G., assignor.)						
Fulmer, Wilson A., Harlemsville, Pa. Coat	328,207	Oct. 13	907	236	33	172
Fulton, Louis B. (See Robertson and Fulton.)						
Funk, Isaac K. (See Ludlow, Funk, and Wagnalls.)						
Funk, John, Menlo, Iowa. Hay rake and loader	330,311	Nov. 10	1185	316	33	740
Funk, Solomon, Spirit Lake, Iowa. Weather-strip	328,479	Oct. 20	1269	329	33	246
Furbush, Charles A., *et al.* (See Meyer, Benjamin F., assignor.)						
Furbush, Merrill A., *et al.* (See Meyer, Benjamin F., assignor.)						
Furlong, James M., Rochester, N. Y. Machine for producing rectilinear reciprocating motion	332,708	Dec. 22	2140	565	33	1398
Furman, Fredric J., Geneva, N. Y. Steam-generator	332,196	Dec. 8	1400	362	33	1256
Furney, Elliott E., St. Louis, Mo. Apparatus for checking the waste of water	331,490	Dec. 1	331	90	33	1057
Fustier, Henry, Lyons, France. Manufacture of furs	327,543	Oct. 6	55	12	33	11
Fyfe, Alexander L., and J. Main, Brixton, county of Surrey, England. Electric-arc lamp	328,022	Oct. 13	670	176	33	128
Gaillard, Ella N., New York, N. Y. Fountain	327,673	Oct. 6	237	58	33	42
Galbreath, Charles E., Osage Mission, Kans. Thill-support	330,888	Nov. 24	1944	526	33	898
Gale, Edward. (See Dunlap, John S., assignor.)						
Gale, Henry F., Syracuse, N. Y. Cable-coupling	329,727	Nov. 3	407	104	33	563
Gale, Morgan, Corozal, San Salvador, Central America. Wrench	332,896	Dec. 22	2374	628	33	1442
Gallagher, Bernard, Lynn, Mass. Cutter-head for trimming the heels of boots or shoes	330,008	Nov. 10	794	204	33	659
Gallagher, Christopher. (See Johnston, William, assignor.)						
Gallagher, John A., Stockton, Cal. Two-wheeled vehicle	331,957	Dec. 8	1055	274	33	1197
Galloupe, Francis E., Lynn, Mass. Steam or other hot gas cylinder	333,294	Dec. 29	2953	771	33	1553

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Galloway, James A., Spring Hill, assignor to E. J. and E. E. Rembert, Rembert, S. C. Flood gate	329,728	Nov. 3	408	105	33	583
Gally, Merritt, New York, N. Y. Mechanical musical instrument	329,304	Oct. 27	2429	630	33	464
Gally, Merritt, New York, N. Y. Mechanical musical instrument	331,747	Dec. 1	753	190	33	1132
Galt, Thomas A., *et al.* (See Foust, James W., assignor.)						
Gamble, George R. (See Cohee and Gamble.)						
Gambrill, William B., and P. Russel, Woodberry, Md. Let-off mechanism for looms	332,887	Dec. 22	2374	628	33	1442
Gammons, Ferdinand C., assignor to Eagle Cotton Gin Company, Bridgewater, Mass. Cotton-gin	327,936	Oct. 6	559	145	33	100
Gammons, Ferdinand C., assignor to Eagle Cotton Gin Company, Bridgewater, Mass. Cotton-gin	327,937	Oct. 6	560	145	33	100
Gammons, Ferdinand C., assignor to Eagle Cotton Gin Company, Bridgewater, Mass. Rib for cotton-gins	332,069	Dec. 8	1221	319	33	1225
Gamper, Franz, Salzburg, Austria-Hungary. Apparatus for lowering coffins into graves	327,785	Oct. 6	362	94	33	64
Gandee, Abraham C., Syracuse, Ohio. Churn	327,938	Oct. 6	561	145	33	100
Gandy, Maurice, Liverpool, England. Manufacturing textile belts	331,958	Dec. 8	1057	{274 / 275}	33	1197
Ganse, Hervey D., Lake View, Ill. Device for operating a set of levers	331,629	Dec. 1	588	145	33	1100
Garcin, Leonpaul P., San Francisco, Cal. Dovetailing-machine	331,491	Dec. 1	333	90	33	1057
Gard, William E., Meriden, Conn. Door-check	333,405	Dec. 29	3094	807	33	1577
Gardner, Ernest M., assignor to J. L. Little, Jr., Boston, Mass. Galvanic cell	328,208	Oct. 13	908	236	33	153
Gardner, Frank B., Columbus Grove, Ohio. Horseshoe	331,628	Dec. 1	586	144	33	1100
Gardner, George F., *et al.* (See Winchell, Addison H., assignor.)						
Gardner, James W., Whitaker's, N. C. Back-band	332,888	Dec. 22	2375	628	33	1442
Gardner, Pliny F., Hill's Ferry, Cal. Apparatus for cooling and drawing beer	332,508	Dec. 15	1852	481	33	1339
Gardner, Robert J., Lovelady, Tex. Planter	328,306	Oct. 13	1032	267	33	195
Gardner, Wilson, Washington Court-House, Ohio. Baling-press	331,049	Nov. 24	2141	580	33	936
Garff, Christian, Logan, Utah Ter. Automatic switch for dovetailing-machines	333,295	Dec. 29	3054	771	33	1553
Garfield, Joel. (See Nutting, Rich, and Garfield.)						
Garland, Michael, and A. D. Catlin, assignors to Standard Machinery Company, Bay City, Mich. Circular sawing machine	328,771	Oct. 20	1659	432	33	318
Garlick, J. P. (See Fox, John S., assignor.)						
Garlington, Thomas C., Lafayette, Ala. Planter	330,975	Nov. 24	2058	557	33	920
Garretson, George E., Russellville, Ky. Running-gear for vehicles	328,933	Oct. 27	1885	{491 / 492}	33	364
Garrett, Henry H. (See Westinghouse and Garrett.)						
Garrett, Henry H., Pittsburg, Pa. Gas-furnace	329,827	Nov. 3	547	139	33	607
Garrett, Sidney, Mexico, Mo. Washing-machine	329,157	Oct. 27	2222	575	33	425
Garrigues, David W., Woodbury, N. J. Bill-file	331,125	Nov. 24	2252	612	33	956
Garrison, Samuel R., Camden, N. J., assignor of one-half to R. E. Bender, Philadelphia, Pa. Detachable suspension-hook	327,939	Oct. 6	562	146	33	101
Garrison, Walter S., Baltimore, Md. Molding-machine	331,050	Nov. 24	2142	581	33	936
Garsed, Robert P., Norristown, Pa. Baffer	330,009	Nov. 10	795	204	33	600
Garsed, Robert P., Norristown, Pa. Pump	330,221	Nov. 10	1070	280	33	717
Garvey, Aaron A. E. (See Keeley and Garvey.)						
Garvin & Co., E. E. (See Hadley, Charles E., assignor.)						
Gaskill, Roland R., Topeka, Kans. Sulky-plow	330,889	Nov. 24	1945	527	33	899
Gassett, Oscar. (See Lane, Frederick, assignor.)						
Gassinger, August and A., Jr., Baltimore, Md. Many-spindle lathe	332,509	Dec. 15	1833	481	33	1339
Gassinger, August, Sr., and A., Jr., Baltimore, Md. Lathe for turning spirals	332,510	Dec. 15	1835	{481 / 482}	33	1339
Gaston, George, Baltimore, Md. Overalls	332,070	Dec. 8	1222	319	33	1227
Gates, Alfred B., assignor of one-half to S. Mawhinney, Worcester, Mass. Slate-cleaner	330,312	Nov. 10	1166	317	33	749
Gates, Alma F. (See Gates, Ryerson D., assignor.)						
Gates, Charles H., assignor of one-half to S. Forehand, Worcester, Mass. Pedal for velocipedes	327,786	Oct. 6	364	95	33	64
Gates, Frank W., New York, N. Y. Sectional ladder	331,876	Dec. 8	933	241	33	1173
Gates, Martin. (See Bussard and Gates.)						
Gates, Matthias, Kansas City, Mo. Safety harness-hitch	333,406	Dec. 29	3096	807	33	1577
Gates, Ryerson D., assignor to A. F. Gates, Chicago, Ill. Dust-guard for pulverizing-machines, &c	331,393	Dec. 1	193	50	33	1032
Gathmann, Louis, Chicago, Ill. Grinding-mill for reducing grain, &c	329,729	Nov. 3	409	105	33	583
Gatti, John L. (See Lott, Adrian T., assignor.)						
Gaunt, Thomas, Cold Spring, N. Y. Bone-black discharger for continuous filters	329,305	Oct. 27	2433	{630 / 631}	33	465
Gaunt, Thomas, Cold Spring, N. Y. Bone-black filter for filtering saccharine liquids	329,306	Oct 27	2424	631	33	465
Gavitt, James K. G., Philadelphia, Pa. Electric fire-arm	332,071	Dec. 8	1223	{319 / 320}	33	1226
Gaylord, Edward L., Bridgeport, Conn. Folding chair	330,222	Nov. 10	1071	{280 / 281}	33	717
Gaylord, Edward L., Bridgeport, Conn. Folding chair	330,223	Nov. 10	1072	{281 / 282}	33	717
Gaylord, Edward L., Bridgeport, Conn. Folding chair	330,224	Nov. 10	1074	282	33	717
Gaylord, Edward L., Bridgeport, Conn. Folding chair	330,225	Nov. 10	1075	283	33	718
Gazette, Frank L., *et al.* (See Nutting, Adrain, assignor.)						
Geary, John, Philadelphia, Pa. Electric gas-lighter	331,630	Dec. 1	589	145	33	1100
Geary, Peter. (See Barnard and Geary.)						
Geisler, Robert, Leipsic, Germany. Umbrella	330,010	Nov. 10	798	204	33	600
Geiss, Adolph, Chicago, Ill. Lamp	329,897	Nov. 10	645	164	33	632
Geissenhainer, George W., Pittsburg, Pa. Fire-place blower	332,072	Dec. 8	1224	320	33	1226
Gemmill, John B., Red Bluff, Cal. Harvester	329,158	Oct. 27	2223	575	33	425
Genese, David, Baltimore, Md. Dental appliance for mixing amalgam	330,011	Nov. 10	799	205	33	601
Genin, John B., assignor to E. H. Towne, N. P. Hunt, and G. M. Woodward, Worcester, Mass. Hose-coupling	333,066	Dec. 22	2620	687	33	1487
George, James A., assignor of one-half to T. Harrington, Southbridge, Mass. Implement for straightening axles	327,787	Oct. 6	365	95	33	64
Geraldi, Du Bois F., Clintondale, N. Y. Refrigerator-house	333,407	Dec. 29	3097	807	33	1577
Gerdom, Andrew H. (See Strasser and Gerdom.)						
Gere, R. Nelson. (See Farmer, David J., assignor.)						
Gerhard, Charles, assignor to Unexcelled Fireworks Company, New York, N. Y. Bengal-light book	329,307	Oct. 27	2437	632	33	466
Gerrard, William R. (See Desmond, John, assignor.)						
Gerrish, John J. (See Lidback, John A., assignor.)						
Gerry, James H., Brooklyn, N. Y. Wire-feeding machine	332,889	Dec. 22	2376	628	33	146

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gessler, John M., and J. McAfee, Philadelphia, Pa. Carpet-cleaning machine	330,107	Nov. 10	928	{241 / 242}	33	689
Gesetner, David, London, England. Transfer or reproducing paper	332,890	Dec. 22	2379	629	33	1443
Getzschmann, Amandus, Omaha, Nebr. Shaft-holder	328,209	Oct. 13	909	236	33	173
Gevelin, Emile C., Philadelphia, Pa. Gate for turbine wheels	331,051	Nov. 24	2143	581	33	937
Gibbens, William H., Watson, N. Y. Ox-yoke	331,631	Dec. 1	591	146	33	1101
Gibbins, Joseph P., 4 Osborne Terrace, Coombe Farm Lane, Westcombe Park, county of Kent, assignor to L. Clark Muirhead & Company, (limited,) 23 Regency Street, Westminster, England. Testing and firing apparatus for submarine mines	330,226	Nov. 10	1076	{283 / 284}	33	718
Gibbins, Joseph P., 4 Osborne Terrace, Coombe Farm Lane, Westcombe Park, county of Kent, assignor to L. Clark Muirhead & Company, (limited,) 23 Regency Street, Westminster, England. Case for submarine mines	330,227	Nov. 10	1077	284	33	718
Gibbons, John, assignor to Meneely Hardware Company, West Troy, N. Y. Car-axle oiler	329,730	Nov. 3	410	105	33	583
Gibbons, John R., and M. L. Flowers, Rome, Ga. Combined pulverizer, harrow, and cultivator	330,689	Nov. 17	1680	{453 / 454}	33	843
Gibbs, H. A., *et al.* (See Brosnan, Cornelius J., assignor.)						
Gibbs, John, Brooklyn, N. Y. Horseshoer's box	333,213	Dec. 29	2834	742	33	1590
Gibbs, Lewis, assignor to Bucher, Gibbs & Co., Canton, Ohio. Sulky-plow	329,731	Nov. 3	411	106	33	583
Gibbs, Reuben F., San Francisco, Cal. Saw-set	331,877	Dec. 8	935	{241 / 242}	33	1173
Gibson, Lyman B., Addison, assignor of one-half to P. Evans, Campbell, N. Y. Weighing and price scale	330,690	Nov. 17	1681	454	33	843
Gibson, Murray, Philadelphia, Pa. Decorating walls and ceilings	333,459	Dec. 29	3167	827	33	1588
Giddings, Charles M., Massillon, Ohio. Traction-engine	330,576	Nov. 17	1537	411	33	814
Gidley, Michael. (See Johnson, Joseph W., assignor.)						
Gidley, Robert, Washington, N. Y. Endless-chain-railway curve	328,210	Oct. 13	910	236	33	173
Gifford, Alenza T., Hopedale, Mass. Milling-machine	330,391	Nov. 17	1307	347	33	770
Gilberds, James, Jamestown, N. Y. Fruit-jar cover	328,115	Oct. 13	794	207	33	150
Gilbert, Charles W. (See Bergan, John A., assignor.)						
Gilbert, James M., Putney, Vt. Polishing mechanism for turning-lathes	330,890	Nov. 24	1947	527	33	899
Gilbert, Thomas S., assignor to Mayer, Strouse, & Co., New Haven, Conn. Machine for shaping corsets	331,701	Dec. 1	686	{169 / 170}	33	1119
Gilbert, Thomas S., New Haven, Conn., assignor to A. R. Colton, New York, N. Y. Corset	332,245	Dec. 15	1477	386	33	1276
Gilbert, William H., Philadelphia, Pa. Button-hole attachment for sewing-machines	332,511	Dec. 15	1837	482	33	1339
Gilchrist, Percy C. (See Murisier and Gilchrist.)						
Gile, William H. (See Folger, Rowland, assignor.)						
Giles, Albion P. (See Loring and Giles.)						
Giles, Charles K., Chicago, Ill. Watch-case	330,228	Nov. 10	1078	285	33	719
Giles, Charles K., Chicago, Ill. Watch-case	330,229	Nov. 10	1079	285	33	719
Giles, Edwin L., Lowell, Mass. Switch for store-service apparatus	332,339	Dec. 15	1603	421	33	1299
Giles, Harvey A., Dows, Iowa. Car-coupling	331,126	Nov. 24	2253	612	33	956
Gill, Albert L., Allentown, N. J. Potato-planter	333,460	Dec. 29	3168	828	33	1589
Gill, James C., Boston, assignor of one-half to J. M. French, Chelsea, Mass. Device for controlling horses	329,448	Nov. 3	26	8	33	510
Gillespie, Alfred J., Atlantic, Iowa. Harrow-tooth holder	328,211	Oct. 13	911	237	33	173
Gilleapy, John H., *et al.* (See Cooley, Earl K., assignor.)						
Gillett, Webster, New York, N. Y., assignor to Atlantic and Pacific Telephone Company, Saco, Me. Telephone	331,052	Nov. 24	2144	581	33	937
Gillette, George H., New York, N. Y. Keg or barrel	330,012	Nov. 10	800	205	33	661
Gillette, George W., New York, N. Y. Vent	327,674	Oct. 6	239	58	33	42
Gillham, Robert. Kansas City, Mo. Mold for concrete tubes for cable railways	330,013	Nov. 10	802	205	33	661
Gilliam, Algernon, Canton, Ohio. Harness-saddle tree	330,313	Nov. 10	1167	317	33	740
Gilliam, Algernon, Canton, Ohio. Harness-saddle	332,340	Dec. 15	1605	421	33	1299
Gilliland, James F., assignor to J. B. Bennett, Indianaplis, Ind. Line-wire for mechanical telephones	327,940	Oct. 6	563	146	33	101
Gillman, Alexander W., and S. Spencer, Southwark, county of Surrey, England. Preparing flaked cereals	332,073	Dec. 8	1225	.....	33	1226
Gilman, Charles C., Eldora, Iowa. Boiler-covering	328,581	Oct. 20	1408	366	33	271
Gilman, Charles C., Eldora, Iowa. Fire-proof safe and vault	332,246	Dec. 15	1478	386	33	1276
Gilman, Charles C., Eldora, Iowa. Fire-proof vault	332,247	Dec. 15	1480	386	33	1276
Gilman, Edward, Oakland, Cal. Windmill	330,014	Nov. 10	803	205	33	661
Gilman, John H. (See King and Gilman.)						
Gingras, Timothy, Buffalo, N. Y. Leather washer	331,293	Dec. 1	53	13	33	1009
Gironard, David, Spencer, Mass. Baker's oven	329,898	Nov. 10	646	165	33	633
Gjers, John. (See Riley, James, assignor.)						
Gladish, William J., Chattanooga, Tenn., assignor of one-half to J. W. Love, Fort Valley, Ga., and J. W. Anthoine, Eufaula, Ala. Nail-plate-feeding machine	328,399	Oct. 13	1166	{301 / 302 / 303}	33	220
Glaesline, John A. (See Henderson and Glaesline.)						
Glashan, John H., New York, N. Y. Clothes-line fastener	328,023	Oct. 13	671	176	33	128
Gleason, Franklin A., Brooklyn, N. Y. Nail-machine	327,544	Oct. 6	55	13	33	11
Gleason, Rollin H., assignor to himself, H. P. and C. W. French, Egan, Dak. Ter. Adjustable-panel snow-fence	329,640	Nov. 3	289	73	33	559
Gleason, William B., and M. J. Harrington, Albion, Pa. Ribbon and lace exhibitor and measurer	332,074	Dec. 8	1227	320	33	1226
Glidden, Joseph F., De Kalb, Ill. Gate	328,772	Oct. 20	1661	433	33	318
Glisson, Abram, Rutherford, Tenn. Corn-planter	332,602	Dec. 15	1977	518	33	1363
Globe Drug and Capsule Company. (See Kiehbiel, John, assignor.)						
Globe Files Company. (See Dom, Alexander, assignor.)						
Globe Thill Coupling Company. (See Atkins, Sullivan H., assignor.)						
Gloekler, Bernard, Pittsburg, Pa. Pork-fat-cutting machine	328,667	Oct. 20	1535	{399 / 400}	33	294
Gloekler, John, Chicago, Ill. Reclining-chair	332,603	Dec. 15	1979	518	33	1363
Gmehlin, Paul. (See Dieckmann, George F., assignor.)						
Goddard, Elijah M., Holyoke, Mass. Gas-regulator	328,480	Oct. 20	1270	329	33	247
Goddu, Louis, Winchester, assignor to J. W. Brooks, trustee, Cambridge, Mass. Nailing-machine	329,449	Nov. 3	27	8	33	510
Godfrey, James, Pittsburg, Pa. Sound-concentrator for telephonic instruments	329,732	Nov. 3	414	106	33	584
Godfrey Seamless Pocket Company. (See Bray, Morris P., assignor.)						
Goering, Jacob, New York, N. Y. Hot-water boiler	332,147	Dec. 8	1345	346	33	1345
Goettmann, Frederick G., Sr., Allegheny, Pa. Rake-tooth	330,108	Nov. 10	929	242	33	669
Gogerty, John, Decatur, Ill. Soot-consumer and spark-arrester	331,785	Dec. 8	803	204	33	1149
Golding, William H., Boston, Mass. Printer's galley	329,159	Oct. 27	2224	576	33	425

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Goldsmith, Edwin M., and E. Reizenstein, Philadelphia, Pa. Device for laying off geometric figures	332,148	Dec. 8	1345	348	33	1245
Goldsmith, Gustavus A. (See Hoffman, Joseph, assignor.)						
Goldsmith, James, New York, N. Y. Portable meat and fruit preserver	333,123	Dec. 29	2713	712	33	1509
Goldsmith, Levi, Baltimore, Md. Drawers and overalls	331,959	Dec. 8	1058	275	33	1197
Goldsmith, Louis. (See Hamilton, Emery M., assignor.)						
Goldsmith, Philipp, Covington, Ky. Doll-body with corsets	332,948	Dec. 15	1480	387	33	1276
Goldsmith, Thomas B., Simpsonville, S. C. Cotton chopper and cultivator	330,314	Nov. 10	1188	317	33	741
Good, John, Brooklyn, N. Y. Machine for spreading and drawing hemp, &c	328,582	Oct. 20	1409	{366 367}	33	272
Good, John, Brooklyn, N. Y. Manufacturing cordage	330,315	Nov. 10	1189	318	33	741
Good, Martin R., New Holland, Pa. Harness-bridle	328,773	Oct. 20	1661	433	33	318
Goodale, John, Cambridge, Mass. Store-service apparatus	327,788	Oct. 6	367	95	33	65
Goodchild, Henry, Cincinnati, Ohio. Temporary binder	332,390	Dec. 15	1677	439	33	1312
Goodell, Albert D., assignor to Miller's Falls Company, Miller's Falls, Mass. Scroll-sawing machine	332,391	Dec. 15	1678	440	33	1312
Goodhue, George J., assignor of one-third to H. M. Wadleigh, Stevens Point, Wis. Engine-starter	332,197	Dec. 8	1401	362	33	1256
Goodin, William I., Cincinnati, Ohio. Window-shade roller	330,015	Nov. 10	804	206	33	661
Gooding, Charles S., Boston, Mass. Parallel and radial ruler and linear-spacer	328,668	Oct. 20	1537	400	33	294
Goodloe, William C. (See Ely, Charles M., assignor.)						
Goodman, Samuel N., assignor to C. and J. Button, Jr., Philadelphia, Pa. Mold for casting	330,109	Nov. 10	930	242	33	689
Goodrich, Andrew S., Clifton, assignor to himself and O. F. Shaw, Brooklyn, N. Y. Nut-lock	329,547	Nov. 3	172	45	33	538
Goodrich, George L., assignor to E. Ingraham Company, Bristol, Conn. Regulator for clocks	332,891	Dec. 22	2379	629	33	1443
Goodrich, Harry C., Chicago, Ill. Refilling attachment for sewing-machines	329,548	Nov. 3	173	45, 46	33	538
Goodrich, Harry C., Chicago, Ill. Device for attaching presser-feet and other attachments to sewing-machines	333,004	Dec. 22	2540	670	33	1473
Goodridge, John C., Jr., New York, N. Y. Constructing jetties	331,127	Nov. 24	2255	613	33	956
Goodsell, Byron W., Chicago, Ill., and B. F. Elsom, Boston, Mass. Packing for pistons, journal-bearings, &c	329,160	Oct. 27	2225	576	33	426
Goolspeed, Henry C. (See Hayden, Horace L., assignor.)						
Goodwin Gas Stove and Meter Company. (See Doty, Albert J., assignor.)						
Goodwin, James, Lynn, Mass. Mosquito-net frame	330,316	Nov. 10	1190	318	33	741
Goodwin, James C., Philadelphia, Pa. Tuck-marker	330,476	Nov. 17	1420	379	33	791
Goodwin, Julius C., Philadelphia, Pa. Tuck-marker						
Goodyear's Metallic Rubber Shoe Company. (See Crampton, Harry L., assignor.)						
Goodyear, Francis W., Springfield, Mass. Toy spring-gun	332,892	Dec. 22	2380	629	33	1443
Goodyer, Frederick H., Nottingham, England. Window-curtain	332,604	Dec. 15	1980	518	33	1363
Gordon, Alexander, Detroit, Mich. Cigar-bunching machine	328,774	Oct. 20	1662	433	33	318
Gordon, James T., and J. H. Hamilton, Concord, N. H. Automatic side-door latch for cars	329,733	Nov. 3	415	107	33	584
Gordon, John W., and G. T. Blanchard, Plymouth, Me. Vaginal irrigator	331,128	Nov. 24	2257	613	33	957
Gordon, Lyman F. (See Wyman and Gordon.)						
Gordon, Solomon J., *et al.* (See Green, Albert, assignor.)						
Gore, John M. L., Raymond, Kans. Cutting apparatus for mowers and reapers	329,641	Nov. 3	290	74	33	560
Gorham, Henry A., Boston, Mass. Stop and waste cock	329,161	Oct. 27	2226	576	33	426
Gorner, August W. (See Werner, Emil, assignor.)						
Gornuch, Benjamin F., Martinsburg, Pa. Fifth-wheel	330,781	Nov. 17	1691	485	33	865
Gosling, Charles, Brooklyn, N. Y. Bangle for jewelry	328,583	Oct. 20	1411	367	33	272
Gosner, David, Philadelphia, Pa. Folding game-table	329,734	Nov. 3	416	107	33	584
Goss, Frederick L. and S. G., Englewood, Ill. Chromatic-printing machine	333,214	Dec. 29	2835	742	33	1530
Goss, Samuel G. (See Goss, Frederick L. and S. G.)						
Gould, John C., Chicago, Ill. Gripping device for nail-plate feeders	329,549	Nov. 3	176	46	33	538
Gould, William. (See Lee, Daniel, assignor.)						
Gouliloud, Louis, and C. Pagé, assignors to Union Bearing and Lubricator Company, Montreal, Quebec, Canada, and Portland, Me. Journal-bearing	327,675	Oct. 6	240	59	33	42
Gourrier, Alfred R., and J. M. Thompson, Doreyville, La. Cane-scraper	327,676	Oct. 6	241	59	33	42
Goutevenier, Peter, assignor of one-half to B. T. Voute, Chicago, Ill. Ventilated mattress	327,677	Oct. 6	243	59	33	42
Grace, Edward, and C. H. Parshall, Jr., Detroit, Mich. Lubricator	330,691	Nov. 24	1948	527	33	899
Gracey, Robert, Pittsburg, Pa. Making axle-skeins	328,481	Oct. 20	1271	330	33	247
Grady, John C., trustee. (See Aspet, Benjamin F., assignor.)						
Graf, Leopold, Newark, N. J. Last	327,789	Oct. 6	371	96	33	65
Graff, Francis A., New Albany, Ind. Car-truck. (Reissue)	10,660	Nov. 10	1264	336	33	755
Graham, John H. (See Delagnean, George, assignor.)						
Graham, Joseph S., Buffalo, N. Y., assignor to himself and G. W. Stevens, Cleveland, Ohio. Chart for railway rolling-stock	330,577	Nov. 17	1539	412	33	814
Graham, Martin F., and O. E. North, Springfield, Ohio. Motor	332,249	Dec. 15	1481	387	33	1277
Graham, Peter D., Corunna, Ind. Garden-cultivator	331,960	Dec. 8	1059	275	33	1197
Graham, William A., Carlisle, Pa. Gas-engine	330,317	Nov. 10	1191	318	33	741
Grand Rapids Electric Light and Power Company. (See Thomas, William M., assignor.)						
Granger, Almon M., Medford, Mass. Water-elevating apparatus	329,450	Nov. 3	28	8	33	510
Granger, Almon M., Medford, Mass. Automatic sprinkler for fire-extinguishers	331,394	Dec. 1	195	50	33	1032
Granger, John H., St. Louis, Mo. Adjustable window-shade attachment	333,005	Dec. 22	2541	670	33	1473
Grant, James B., New York, assignor to himself and A. Mason, Brooklyn, N. Y. Treating cotton-seed oil	328,024	Oct. 13	672	177	33	128
Grant, James B., New York, and A. Mason, Brooklyn, N. Y. Treating cotton-seed and analogous oils	331,702	Dec. 1	682	170	33	1119
Grant, John, Omaha, Nebr. Concrete pavement	330,110	Nov. 10	931	242	33	689
Grant, William A., Houston, Tex. Soap-manufacturing machine	332,605	Dec. 15	1980	518	33	1364
Grant, William A., Houston, Tex. Manufacture of soap	332,606	Dec. 15	1982	519	33	1364
Grant, William W., Brooklyn, N. Y. Camera	329,385	Oct. 27	2558	{660 661}	33	486
Grassler, William F., Williamsport, Pa. Boiler-furnace	331,492	Dec. 1	334	90, 91	33	1058
Grater, Peter, and J. Seibel, Napoleon, Ohio. Straw-carrier	331,703	Dec. 1	690	170	33	1120
Grattan, Christopher, Stockton, Cal. Harvester	333,124	Dec. 29	2715	713	33	1510
Granert, Edgar, New York, N. Y. Dynamo-electric machine	327,790	Oct. 6	373	96	33	65
Grauley, Henry B. (See Lilly, William H., assignor.)						
Graves, Willis N., assignor of one-half to Hydraulic Press Brick Company, St. Louis, Mo. Clay cutter and pulverizer	330,691	Nov. 17	1684	454	33	844
Gray, Elisha, Highland Park, Ill. Automatic harmonic recorder	329,386	Oct. 27	2561	661	33	487
Gray, George L., Chicago, Ill. Thermostat	327,941	Oct. 6	563	146	33	101
Gray, Matthew H., Pittsburg, Pa. Expansion-joint	330,302	Nov. 17	1309	348	33	770
Gray, William D., Milwaukee, Wis. Scalping-machine	332,250	Dec. 15	1482	387	33	1277

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Greaney, Michael. (See Maher and Greaney.)						
Green, Albert, assignor to W. N. Abbott and S. J. Gordon, New York, N. Y. Wooden flooring and wainscoting	329,828	Nov. 3	548	140	33	607
Green, Daniel B., *et al.* (See Cameron, Ezra G., assignor.)						
Green, David N., Commercial Point, Ohio. Grain-binder	331,493	Dec. 1	336	91	33	1058
Green, Elmer, North East, Pa., and W. K. Palmer, Cleveland, Ohio. Painting-machine	330,318	Nov. 10	1193	319	33	742
Green, Horatio, Clinton, Mo. Gate	332,341	Dec. 15	1606	422	33	1299
Green, John, Williamsburg, Ky. Log-boom	330,016	Nov. 10	805	206	33	662
Green, William C., Livingston, Mont. Ter. Brush for lining brick houses	332,392	Dec. 15	1679	440	33	1312
Green, William W. (See Wilson and Green.)						
Greenamyer, Clarence V., Western, Nebr. Car-mover	329,642	Nov. 3	292	74	33	560
Greene, Henry, Upper Thames Street, London, England. Belt-fastener	328,212	Oct. 13	912	237	33	174
Greene, John B., Ware, Mass. Link	330,892	Nov. 24	1949	528	33	899
Greene, Sylvester S., Lead City, Dak. Ter. Animal-trap	328,669	Oct. 20	1540	{400 401}	33	294
Greene, Walter S., *et al.* (See Curtis, David W., assignor.)						
Greenhoot, David, Cincinnati, Ohio. Cuff-holder	330,692	Nov. 17	1685	455	33	844
Greenlees, William A., Ottawa, Ill. Snow-clearer	333,006	Dec. 22	2542	670	33	1474
Greer, Eliza M., Stockton, Cal. Folding and adjustable window-bracket shelf	333,007	Dec. 22	2543	670	33	1474
Greer, John. (See Greer, Harper, and Greer.)						
Greer, John L., W. M. Harper, and J. Greer, Headsville, Tex. Cotton-chopper	330,477	Nov. 17	1421	379	33	792
Gregory, Arthur F., New York, N. Y. Shade-pull	327,545	Oct. 6	58	13	33	12
Gregory, Fred L., Niagara Falls, N. Y. Latbe-chuck	327,791	Oct. 6	374	97	33	66
Gregory, Henry P., *et al.* (See Orton, Gerrit V., assignor)						
Gregory, Silas W., *et al.* (See Orton, Gerrit V., assignor.)						
Gresham, James, Stretford, near Manchester, county of Lancaster, England. Injector	331,193	Nov. 24	2353	636	33	974
Gresham, James, Salford, county of Lancaster, assignor to Vacuum Brake Company, (limited,) 32 Queen Victoria Street, county of Middlesex, England. Automatic vacuum-brake apparatus	332,653	Dec. 15	2049	{538 539}	33	1376
Gribble, Thomas, and R. Abraham, Calumet, Mich.; said Abraham assignor to said Gribble. Boot or shoe protector	328,844	Oct. 20	1753	456	33	335
Gridley, Dwight, Newark, N. J. Picture-hanger	332,198	Dec. 8	1403	362	33	1256
Grier, J. S., *et al.* (See Helms, Jacob H., assignor.)						
Grier, William W., Hulton, Pa. Vehicle-spring	330,578	Nov. 17	1540	412	33	814
Griesser, William, Chicago, Ill. Conveyer	331,961	Dec. 8	1061	{275 276}	33	1198
Griest, John M., Chicago, Ill., assignor to Singer Manufacturing Company of New Jersey. Button-hole attachment for sewing-machines	332,251	Dec. 15	1483	388	33	1277
Griffin, Duane D., and L. H. Bachtell, Baltimore, Md. Metal-planer	329,550	Nov. 3	177	47	33	539
Griffin, Franklin D., Amber, N. Y. Device for preserving eggs	329,387	Oct. 27	2563	661	33	487
Griffith, Alice A., *et al.* (See Griffith, Isaac N. and C. F., assignors.)						
Griffith, Cary F. (See Griffith, Isaac N. and C. F.)						
Griffith, Isaac N. and C. F., assignors to A. A. and M. B. Griffith, Macomb, Ill. Automatic grain weigher and register	331,962	Dec. 8	1063	276	33	1198
Griffith, Mary B., *et al.* (See Griffith, Isaac N. and C. F., assignors.)						
Griffith, Nathan H., Providence, R. I. Wrench	331,053	Nov. 24	2145	582	33	937
Griffiths, William H., assignor of one-half to H. M. Dow, Medford, Mass. Roller-skate	329,829	Nov. 3	549	140	33	607
Grigga, George H., Providence, R. I. Locomotive	328,845	Oct. 20	1754	457	33	335
Grime, John, assignor of one-half to G. H. Eastman, Minneapolis, Minn. Valve-gear for engines	330,782	Nov. 17	1692	485	33	865
Grimm, Albert C. F., New York, N. Y. Curtain-fixture	330,579	Nov. 17	1541	412	33	814
Grimm, Fred., Comanche, Tex. Post-hole auger	330,580	Nov. 17	1542	413	33	815
Grimm, John T. (See Powell and Grimm.)						
Grimm, Paul H., and W. L. Fancher, Glen Cove, N. Y. Safety attachment for gas-burners	333,215	Dec. 29	2837	743	33	1531
Grinnell, Amos L., Campbell, Iowa. Portable platform dump and elevator	332,654	Dec. 15	2050	539	33	1377
Griscom, John P. (See Griscom, Lewis and J. P.)						
Griscom, John P., Pottsville, Pa. Diamond-drill core-breaker	327,942	Oct. 6	564	147	33	101
Griscom, John P., Pottsville, Pa. Diamond-drill core-breaker	327,943	Oct. 6	566	147	33	102
Griscom, John P., Pottsville, Pa. Guide-clamp for drill-rods	327,944	Oct. 6	567	147	33	102
Griscom, Lewis, Pottsville, Pa. Stub end for connecting-rods	328,885	Oct. 20	1810	471	33	345
Griscom, Lewis, Pottsville, Pa. Stub end for connecting-rods. (Reissue)	10,668	Dec. 1	702	192	33	1134
Griscom, Lewis and J. P., Pottsville, Pa. Apparatus for manipulating drill-rods	328,213	Oct. 13	912	[illegible]	33	174
Grisel, George, New York, N. Y., assignor to Singer Manufacturing Company of New Jersey. Moquette-guide for carpet-sewing machines	333,125	Dec. 29	2717	{713 714}	33	1510
Grist, Benjamin W., Reading, Pa. Hoisting-drum for elevators	328,934	Oct. 27	1868	492	33	366
Griswold, Elbridge H., Brandon, Vt. Two-wheeled vehicle	330,017	Nov. 10	807	206	33	662
Griswold, Horace P., Providence, R. I. Electro-magnetic steering and reversing mechanism for torpedo-boats	333,008	Dec. 22	2544	671	33	1474
Groebli, Joseph A., assignor to Kursheedt Manufacturing Company, New York, N. Y. Embroidering-machine	328,935	Oct. 27	1869	{492 493 494 495}	33	366
Groff, William, Rome, N. Y. Bee-hive	330,783	Nov. 17	1703	486	33	865
Grosinski, Casper, and G. B. Beecher, Morrison, Ill. Line-stretcher	333,067	Dec. 22	2621	687	33	1487
Grosjean, E. G., *et al.* (See Shiek, Daniel W., assignor.)						
Gross, Frank. (See Kubler, Johan, assignor.)						
Grout, Charles P., New York, N. Y. Artificial tooth	330,831	Nov. 17	1862	503	33	876
Grout, Charles P., New York, N. Y. Artificial tooth	333,216	Dec. 29	2839	743	33	1531
Grout, William L., and E. L. Bowers, Orange, Mass. Machine for drilling metal blanks	333,461	Dec. 29	3169	828	33	1589
Grove, J. Ross, York, Pa. Safe	333,068	Dec. 22	2622	{687 688}	33	1487
Grover, William, Holyoke, Mass. Thread-unwinder	331,194	Nov. 24	2355	637	33	974
Groves, Frederic S., *et al.* (See Parry, George T., assignor.)						
Groveteen, Milton W., New York, N. Y. Electric signaling apparatus for machinery	329,830	Nov. 3	550	140	33	607
Grundel, Theodore. (See Barton, Edward F., assignor.)						
Grüninger, Otto. (See Weidenmann and Grüninger.)						
Guerber, Frederick S., assignor to Union Switch and Signal Company, Pittsburg, Pa. Signal-compensator	330,832	Nov. 17	1863	503	33	876
Gühring, Ludwig, and W. Köhrer, Stuttgart, Würtemberg, Germany. Apparatus for warming and disinfecting closet-tubes	327,945	Oct. 6	567	147	33	102
Guilbert-Martin, Auguste, St. Denis, France. Glass tube for water-gages	332,920	Dec. 22	2417	639	33	1452
Guild & Garrison. (See Worthen, William H., assignor.)						
Guild, George M. (See Rogers, Charles E., assignor.)						
Guillaume, Henri, Washington, D. C. Sleeping-car	331,233	Nov. 24	2409	{652 653}	33	984

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Guiterman, Leopold A., St. Paul, Minn. Overalls	328,025	Oct. 13	674	177	33	129
Gummerson, Albert E. (See Riggin and Gummerson.)						
Gundlach, Hermann. (See Horn and Gundlach.)						
Gundlach, Philip M., Belleville, Ill. Grain-drill fluke	329,036	Oct. 27	2051	539	33	395
Gunn, John C., assignor of one-half to H. N. Saxton, Jr., Knoxville, Tenn. Fruit-drier	331,294	Dec. 1	54	13	33	1009
Gurney, Worth H., assignor of one-half to J. P. Rummel, Mansfield, Ohio. Suspenders	330,319	Nov. 10	1194	319	33	742
Gushwa, Jacob. (See Anderson, John A. E., assignor.)						
Gut, Felix, Hottingen, near Zurich, Switzerland. Drilling-machine	328,886	Oct. 20	1810	472	33	345
Guthrie, D. A., *et al.* (See Osborn, James F., assignor.)						
Guthrie, J. G., *et al.* (See Osborn, James F., assignor.)						
Guthrie, Lewis, Waterloo, Ind. Double plow	329,831	Nov. 3	551	141	33	607
Guthrie, William A. (See Underwood, Joseph B., assignor.)						
Gutta Percha and Rubber Manufacturing Company. (See Peare, George R., assignor.)						
Guyer, Isaac D., New York, N. Y. Apparatus for the manufacture of illuminating-gas	328,400	Oct. 13	1172	303	33	222
Haak, George E., *et al.* (See MacLean, Daniel J., assignor.)						
Haas, Harry L., assignor to Zucker & Levett Chemical Company, New York, N. Y. Polishing composition	331,632	Dec. 1	592	.....	33	1101
Haas, James M., Wabash, Ind. Tongue-support	329,899	Nov. 10	647	165	33	633
Haas, Philip M., Youngstown, Ohio. Shafting	332,076	Dec. 8	1230	321	33	1227
Haas, Philip M., assignor of one-half to Andrews Bros. & Co., Youngstown, Ohio. Manufacturing rolled and polished shafting	332,075	Dec. 8	1228	320, 321	33	1226
Hack, Ferdinand, Chicago, Ill. Bridge-gate	332,077	Dec. 8	1233	321, 322	33	1227
Hackell, George E. (See Raabe and Hackell.)						
Hackett, William H., assignor to W. S. Thomson, Atlanta, Ga. Cotton-planter	330,393	Nov. 17	1310	348	33	770
Hackworth, James T., *et al.* (See Briggs, Alfred, assignor.)						
Hadden, William C., New York, N. Y. Shutter for photographic cameras	331,494	Dec. 1	338	91, 92	33	1058
Hadley, Charles E., assignor to E. E. Garvin & Co., New York, N. Y. Compound milling-machine	330,581	Nov. 17	1543	413, 414	33	815
Hadley, Charles F., Chicopee, assignor to Overman Wheel Company, Boston, Mass. Bicycle	331,295	Dec. 1	55	13	33	1009
Hadwen, William E., *et al.* (See Westgate, Joseph D., assignor.)						
Haessler, Henry, New York, N. Y. Carriage prop-block	327,978	Oct. 6	614	160	33	111
Haff, Joel P., *et al.* (See Murphy, Daniel H., assignor.)						
Hafner, Frederick J., Philadelphia, Pa. Manufacture of imitation jewelry	330,230	Nov. 10	1080	285	33	719
Hagan, John A., deceased; J. F. Thoma administrator, and assignor to Sheffield Velocipede Car Company, Three Rivers, Mich. Car-wheel	332,119	Dec. 8	1301	337	33	1239
Hagan, William E. (See Norris and Hagan.)						
Hagan, William E., and G. E. Norris, Troy, assignors of one-third to J. K. P. Pine, Lansingburg, N. Y. Apparatus for dipping matches	331,129	Nov. 24	2258	613, 614	33	957
Hagen, Ludwig, Magdeburg, Prussia, Germany. Drier	330,018	Nov. 10	808	207	33	662
Hagenberg, William, Toledo, Ohio. Dust-arrester	333,217	Dec. 29	2841	743	33	1531
Hagerty, John C. (See Woods, William A., assignor.)						
Hagerty, John C., Santa Cruz, Cal. Bark-cutting machine	332,796	Dec. 22	2249	593	33	1420
Hagerty, John C., Santa Cruz, Cal. Bark-cutter	332,797	Dec. 22	2250	593	33	1420
Haggas, Fred, New York, N. Y. Thread-breaking attachment for doubling and twisting machines	332,512	Dec. 15	1839	482	33	1339
Hainsworth, Frederick, Chicago, Ill. Refrigerator	331,296	Dec. 1	56	13, 14	33	1009
Haish, Jacob, De Kalb, Ill. Barb fence-wire	332,252	Dec. 15	1486	388	33	1277
Haish, Jacob, De Kalb, Ill. Barbed fence	332,393	Dec. 15	1680	440	33	1312
Haithcock, John D., and W. T. Suit, Wilton, N. C. Leveling-instrument	333,009	Dec. 22	2550	671	33	1475
Hakins, George B., assignor of one-half to H. G. Pert and H. M. Kinaman, Norwood, N. Y. Apparatus for preserving eggs	333,069	Dec. 22	2624	688	33	1488
Hale, George C., Kansas City, Mo. Device for suspending harness	330,390	Nov. 10	1195	319, 320	33	742
Hale, Henry S., Philadelphia, Pa. Folding bed	330,693	Nov. 17	1686	455	33	844
Hale, Henry S., Philadelphia, Pa. Flexible curtain and material therefor	333,408	Dec. 29	3098	807, 808	33	1577
Hale, Samuel, Bloomfield, N. J. Saw-frame	327,792	Oct. 6	375	97	33	66
Hale, Willis G., Philadelphia, Pa. Window-blind	331,130	Nov. 24	2260	614	33	957
Haley, Jonathan, Ravenna, Ohio. Glass tile and making the same	331,395	Dec. 1	196	51	33	1033
Haley, Jonathan, assignor to Eureka Patent Glass Mold Company, Ravenna, Ohio. Mold for pressing glassware	328,482	Oct. 20	1272	330	33	247
Hall, Charles B., New York, N. Y. Attachment for leveling billiard-tables	331,297	Dec. 1	57	14	33	1009
Hall, Charles H., and J. E. Tripp, assignors to Chicago Sewing Machine Company, Chicago, Ill. Folding chair	330,231	Nov. 10	1081	285, 286	33	719
Hall, De Witt C., New York, N. Y. Dress-shield	331,963	Dec. 8	1064	276	33	1198
Hall, Edgar, Cambridge, Mass., assignor to Hall Roller Skate Company, Nashua, N. H. Roller-skate. (Reissue.)	10,664	Nov. 24	2470	666	33	994
Hall, Edward H., Brooklyn, N. Y. Screw-propelling apparatus for steam-vessels	332,709	Dec. 22	2143	566	33	1399
Hall, Edward H., Brooklyn, N. Y. Screw-propeller	332,710	Dec. 22	2144	566	33	1399
Hall, Edward S., New York, N. Y. Cabinet-bedstead	328,214	Oct. 13	913	238	33	174
Hall, Enos T., assignor to G. A. Highfield, Scranton, Pa. Car-coupling	328,584	Oct. 20	1411	367, 368	33	272
Hall, George F., and G. M. Lane, Asbury Park, N. J. Washing-machine	331,633	Dec. 1	593	146	33	1101
Hall, George F., and G. M. Lane, Asbury Park, N. J. Chair	331,634	Dec. 1	595	147	33	1101
Hall, Harvey B., Homer, Ill., and F. G. Powers, South Bend, Ind. Plastering device	330,321	Nov. 10	1198	320	33	743
Hall, Henry, assignor to Rensselaer Manufacturing Company, Lansingburg, N. Y. Straight-way stop-valve	330,322	Nov. 10	1198	320	33	743
Hall, Henry M., Philadelphia, Pa. Joint for pipes, &c	327,793	Oct. 6	376	97	33	66
Hall, Moses L., Leon, Iowa. Buckle	330,232	Nov. 10	1082	286	33	719
Hall, Osborn B., Malden, assignor of one-half to C. C. Walworth, Boston, Mass. Valve	327,875	Oct. 6	474	124	33	84
Hall, Osborn B., Malden, assignor of one-half to C. C. Walworth, Boston, Mass. Automatic fire-extinguishing apparatus	327,876	Oct. 6	475	124	33	84
Hall Roller Skate Company. (See Hall, Edgar, assignor.) (Reissue.)						
Hall, Thomas, Lawrence, Mass. Bobbin	330,784	Nov. 17	1804	486	33	865
Hall, Thursten G., Niagara Falls, N. Y. Steam-boiler	331,495	Dec. 1	340	92	33	1059
Hall, Walter F., Clinton, Mo. Car-coupling	330,233	Nov. 10	1083	286	33	720
Hall, William, *et al.* (See Midgley, John, assignor.)						
Hall, William, Waterbury, Conn. Buoyant propeller for steamboats	331,496	Dec. 1	341	92	33	1059
Hall, William H., Tiffin, Ohio. Sulky-rake	328,670	Oct. 20	1542	401	33	295
Hall, William H., Tiffin, Ohio. Horse-rake	333,218	Dec. 29	2843	743, 744	33	1532
Hall, William H., Battle Creek, Mich. Stump-extractor	328,775	Oct. 20	1663	433	33	319
Hall, William H., West Brighton, county of Sussex, England. Mechanical toy animal figure	328,912	Oct. 20	1844	481, 482	33	352
Hall, William L., Troy, N. Y. Bosom-shirt	331,786	Dec. 8	804	204	33	1149
Hallam, A. C. (See Tillion, William R. R., assignor.)						
Halliburton, Martin J., Portage-ville, Mo. Combined seeder and cart	331,131	Nov. 24	2261	614	33	958
Hallidie, Andrew S., San Francisco, Cal. Tramway for curves and cable-grips	330,976	Nov. 24	2059	537	33	920
Halstenbach, August, Buffalo, N. Y. Self-acting gate	333,409	Dec. 29	3099	808	33	1577
Halterman, Andrew C. (See Roush and Halterman.)						
Halterman, Andrew C., New Haven, W. Va. Scaffold	332,893	Dec. 22	2381	629	33	1444
Ham, Henry H., Jr., Portsmouth, N. H. Nut-lock	330,394	Nov. 17	1311	348	33	771
Ham, John, New York, N. Y. Boiler-furnace	331,635	Dec. 1	596	147	33	1102
Ham, John, New York, N. Y. Steam-boiler furnace	331,636	Dec. 1	597	147	33	1102
Hamaker, Aaron W., and J. E. Peck, Moundsville, W. Va. Horseshoe-blank	329,451	Nov. 3	29	9	33	510
Hamaker, Aaron W., and J. E. Peck, Moundsville, W. Va. Lifting-jack	330,582	Nov. 17	1546	414	33	815
Hamann, Adolph, Grossenhain, Saxony, Germany. Rendering billiard and writing chalk unbreakable	330,019	Nov. 10	811	.....	33	663
Hambay, James T., Allegheny, Pa. Railway switch and signaling apparatus	329,643	Nov. 3	292	74, 75	33	560
Hambay, James T., Pittsburg, Pa. Switch and signal apparatus	330,395	Nov. 17	1313	348, 349	33	771
Hambay, James T., Pittsburg, Pa. Grate-bar	330,694	Nov. 17	1689	455, 456	33	844
Hambleton, B. Franklin, Keokuk, Iowa. Furnace for roasting and smelting ores	332,894	Dec. 22	2382	630	33	1444
Hamilton, Charles S., Milwaukee, Wis. Hydraulic press	329,551	Nov. 3	179	47	33	539
Hamilton, Clarence J., assignor of one-half to W. O. Allen, Plymouth, Mich. Stove-pipe attachment	331,637	Dec. 1	598	147	33	1102
Hamilton, Emery M., assignor, by mesne assignments, to L. Goldsmith, New York, N. Y. Wire clamp and coupling	329,162	Oct. 27	2227	576	33	426
Hamilton, J. Henry. (See Gordon and Hamilton.)						
Hamilton, Jay, South Glens Falls, N. Y. Awning-support for hammocks	332,607	Dec. 15	1982	519	33	1364
Hamilton, Wesley W., assignor to D. D. Denton, trustee, Brooklyn, N. Y. Treating animal and vegetable fiber for textiles, cordage, &c	332,513	Dec. 15	1840	.....	33	1340
Hamilton, Wesley W., assignor to D. D. Denton, trustee, Brooklyn, N. Y. Treating animal and vegetable fibers for textiles, cordage, &c	332,514	Dec. 15	1842	.....	33	1340
Hamilton, Wesley W., assignor to D. D. Denton, trustee, Brooklyn, N. Y. Treatment of animal and vegetable fiber for upholstering	332,515	Dec. 15	1845	.....	33	1340
Hamlin, Denslow D. (See Estes, Elihu B., assignor.)						
Hamlin, William P., Rogers Park, Dec. Bee-hive	330,478	Nov. 17	1493	380	33	792
Hammelmann, Charles, Buffalo, N. Y. Self-lubricating pulley	330,234	Nov. 10	1084	286	33	720
Hammer, Robert E., Philadelphia, Pa. Folding couch-bed	330,479	Nov. 17	1494	380	33	792
Hammerl, Joseph, Long Island City, N. Y. Painting and graining tool	327,874	Oct. 6	473	123	33	84
Hammill, Richard, Chicago, Ill. Shutter	332,655	Dec. 15	2052	539	33	1377
Hammond, Joseph C., Jr. (See Pullman, Herbert S., assignor.)						
Hammond, Walter J., Jundiahy, San Paulo, Brazil. Locomotive steam-engine	328,215	Oct. 13	917	238	33	174
Hampden Watch Company. (See Higginbotham, Charles T., assignor.)						
Hampton, Richard. (See Crane, Edward Q., assignor.)						
Hampton, William R., assignor of one-half to T. J. Sullivan, Bowling Green, Ky. Animal-trap	330,695	Nov. 17	1690	456	33	845
Hancock, Becker & Co. (See Becker, George, assignor.)						
Handley, Abram, Acton, Mass. Combined feed-hopper and water-trough	331,132	Nov. 24	2262	614	33	958
Handwerk, F. B., *et al.* (See Quinn, Isaac T., assignor.)						
Hanika, Christian, Springfield, Ohio. Metallic fence	330,583	Nov. 17	1547	414	33	815
Hanika, Christian, Springfield, Ohio. Connection for metallic fencing	330,584	Nov. 17	1548	414	33	816
Hankins, Andrew J. (See Hankins, Fielding L., assignor.)						
Hankins, Fielding L., assignor of one-half to A. J. Hankins, Blandinsville, Ill. Riding-plow	328,026	Oct. 13	674	177	33	129
Hanley, Michael W., Chicago, Ill. Stock-releasing device	331,396	Dec. 1	197	51	33	1033
Hanna, Edgar A., Chicago, Ill. Feeding air to furnaces	329,735	Nov. 3	417	107	33	584
Hannay, James B., Cove Castle, Loch Long, county of Dumbarton, Scotland. Sounding apparatus	331,133	Nov. 24	2263	615	33	958
Hanney, David, Turner Junction, Ill. Combined belt equalizer and tightener	330,977	Nov. 24	2060	537	33	920
Hano, Samuel. (See Samuels, Samuel D., assignor.)						
Hanrahan, Joseph F., Ottawa, Ontario, Canada. Refrigerator-building	328,483	Oct. 20	1272	330	33	247
Hanse, William, assignor to J. T. Perkins, Brooklyn, N. Y. Loom-temple for tubular fabrics	329,037	Oct. 27	2052	532	33	395
Hansen, Andrew P., assignor to A. H. Bonlton, London, England. Type-writing machine	327,946	Oct. 6	569	148	33	102
Hansen, Hans C., Boston, Mass. Mold for casting printers' leads	327,546	Oct. 6	59	14	33	12
Hanson, Christian. (See Mack and Hanson.)						
Hanson, Dempsy B., Indianapolis, Ind. Saw-swage	330,396	Nov. 17	1314	349	33	771
Hapgood Plow Company. (See Black, Joseph P., assignor.)						
Hapgood Plow Company. (See Pates, William S., assignor.)						
Harbach, Daniel L., assignor to Tatum & Bowen, San Francisco, Cal. Saw-mill set-works	330,020	Nov. 10	812	208	33	663
Hardenbergh, Peter R. L. (See Brownson, Ralph, assignor.)						
Hardgrave, Cager, Clarksville, Ark., assignor of two-thirds to C. F. Cox, Bunker Hill, Ill. Peach-stoner	328,776	Oct. 20	1664	434	33	318
Hardie, Robert W., Albany, N. Y. Journal-bearing	331,497	Dec. 1	341	92	33	1059
Harding, August, Oakland, Cal. Incandescent electric lamp	333,219	Dec. 29	2845	744	33	1532
Harding, Horace, Tuscaloosa, Ala. Automatic dam	332,895	Dec. 22	2384	630	33	1444
Hardwicke, Lauriston W., assignor of one-half to F. Turek, East Saginaw, Mich. Printer's chase	332,516	Dec. 15	1847	482	33	1340
Hardwicke & Ware. (See Suckow, Edmund, assignor.)						
Hardy, Dexter D., assignor to Illinois High Speed Engine Company, Chicago, Ill. Steam-engine	331,234	Nov. 24	2414	654	33	985
Hardy, Emery E., Newark, N. J. Buckle	328,936	Oct. 27	1894	495	33	367
Hardy, Thomas P., New York, N. Y. Steam-radiator	330,696	Nov. 17	1691	456	33	845
Hare, Richard T., Springfield, Mass. Magazine for fire-arms	332,896	Dec. 22	2385	631	33	1445
Harger, Charles G., Jr., assignor to G. V. L. Mellinger, Canton, Ohio. Bed-clothing clamp or fastener	330,833	Nov. 17	1865	503	33	876
Hargreaves, George, Winton Place, Ohio. Rerolling old rails	328,937	Oct. 27	1895	495	33	367
Harker, Henry K., assignor to W. P. and H. C. Bruce, Cincinnati, Ohio. Machine for making metal seals	327,547	Oct. 6	61	14	33	12
Harlan, Charles F., Ottumwa, Iowa. Button-fastener	329,644	Nov. 3	296	75	33	561
Harlin, George C., Hayesville, Iowa. Washing-machine	330,323	Nov. 10	1200	320, 321	33	743
Harlow, Cushing C., Brockton, Mass. Pipe-cutter	331,787	Dec. 8	804	204	33	1149

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Harnish, Hugo H. (See Schmidthorn, Theodore, assignor.)						
Harper, Wiley M. (See Greer, Harper, and Greer.)						
Harral, Edward W. (See Hawley, Theodore, assignor.)						
Harrell, A. Frank, assignor of one-half to J. L. Terrell, Terrell, Tex. Motor	332,517	Dec. 15	1848	483	33	1340
Harrington, Franklin E., Syracuse, N. Y. Chair	332,711	Dec. 22	2144	566	33	1399
Harrington, John, Caldwell, Kans. Rotary engine	332,253	Dec. 15	1487	388, 389, 390	33	1278
Harrington, Milo J. (See Gleason and Harrington.)						
Harrington, Theodore. (See George, James A., assignor.)						
Harris, Charles R., assignor to himself, W. S. Harris, and A. Underwood, Jersey Shore, Pa. Suspender-strap clasp	332,897	Dec. 22	2387	631	33	1445
Harris, Elijah, Princeton, Ill. Boot-jack	330,480	Nov. 17	1425	381	33	792
Harris, Francis M. (See Mellette and Harris.)						
Harris, Hiram S., Millville, Ky. Gate	329,308	Oct. 27	2438	632	33	466
Harris, William E., New York, N. Y. Manufacture of paint from metallic lead	327,678	Oct. 6	243	.....	33	43
Harris, William E., St. Louis, Mo. Brass for rolling-mills	330,697	Nov. 17	1692	456	33	845
Harris, Winfield S., *et al.* (See Harris, Charles R., assignor.)						
Harrison, Arthur B., assignor of three-fourths to D. Veasey, Baltimore, and W. M. Harrison, Laurel, Md. Hand chemical fire-extinguisher	329,309	Oct. 27	2439	632	33	466
Harrison Brothers & Co. (See Freist, Henry C., assignor.)						
Harrison, William, Kingston, Ontario, Canada. Weather-strip	333,296	Dec. 29	2955	772	33	1553
Harrison, William C., New Orleans, La. Hand-power for sewing and other machines	330,021	Nov. 10	813	208	33	664
Harrison, William M., *et al.* (See Harrison, Arthur B., assignor.)						
Harrow, Albert G., *et al.* (See Briggs, Alfred, assignor.)						
Hart, Edwin J., Columbiana, Ohio. Thill-coupling	330,585	Nov. 17	1549	415	33	816
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Stem arbor wheel and ratchet	328,307	Oct. 13	1033	267	33	195
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Making a combined spring arbor and collet	328,308	Oct. 13	1034	267	33	196
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Watch-plate	328,401	Oct. 13	1174	303	33	222
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Making a combined wheel and pinion	328,402	Oct. 13	1175	303	33	222
Hart, Hamilton M. (See Jones and Hart.)						
Hart, Thomas F., Lynn, Mass. Presser-foot	331,788	Dec. 8	806	205	33	1149
Hart, William H., New York, N. Y. Marine drag	332,896	Dec. 22	2387	631	33	1445
Harter, Isaac. (See Kohler, Frederick E., assignor.)						
Harter, Joseph V., Denver, Ill. Seed-drill attachment	330,022	Nov. 10	815	208	33	664
Hartford Woven Wire Mattress Company. (See Pease, Robert R., assignor.)						
Hartman, John M., Philadelphia, Pa. Valve	327,548	Oct. 6	62	14	33	13
Hartshorn, Stewart, Millburn, N. J. Spring shade-roller	328,216	Oct. 13	918	239	33	175
Harvey, Felix A., McLeansborough, Ill. Gate-latch	327,679	Oct. 6	244	59	33	43
Harvey, Hayward A., Orange, N. J. Screw-swaging machine	329,737	Nov. 3	420	108	33	585
Harvey, Hayward A., Orange, N. J. Spring-washer	329,738	Nov. 3	422	108	33	585
Harvey, Hayward A., Orange, N. J. Making rolled wood-screws	329,900	Nov. 10	647	165	33	633
Harvey, Hayward A., Orange, N. J., assignor to Harvey Screw and Bolt Company, of Connecticut. Machine for rolling screw-threads	328,217	Oct. 13	919	239	33	175
Harvey, Patrick, Chicago, Ill. Stop and waste valve	329,736	Nov. 3	418	108	33	584
Harvey, Patrick, Chicago, Ill. Stop and waste valve	331,789	Dec. 8	806	205	33	1150
Harvey Screw and Bolt Company. (See Harvey, Hayward A., assignor.)						
Harwood, Herbert J., Littleton, assignor to Harwood Manufacturing Company, Leominster, Mass. Manufacture of chair-backs, &c	327,549	Oct. 6	64	14	33	13
Harwood, Herbert J., Littleton, assignor to Harwood Manufacturing Company, Leominster, Mass. Folding chair or settee	330,698	Nov. 17	1693	457	33	845
Harwood Manufacturing Company. (See Harwood, Herbert J., assignor.)						
Haselton, Daniel B., Charleston, S. C., assignor to Southern Cotton Picking Company, of South Carolina. Cotton-harvester	328,116	Oct. 13	795	207	33	150
Haskins, Charles A., Chicago, Ill. Dish-washer	329,452	Nov. 3	30	9	33	510
Haskins, Charles N., Columbus, Ohio. Vehicle-spring	330,023	Nov. 10	815	209	33	664
Haslup, William, Sidney, Ohio. Scraper	327,794	Oct. 6	376	97	33	66
Hassell, Richard L., Chicago, Ill. Scale-beam with indicating-poise	330,397	Nov. 17	1315	349, 350	33	772
Hassencamp, Hugo, Elberfeld, Prussia, Germany. Manufacture of benzylated methyl violet	331,964	Dec. 8	1064	.....	33	1198
Hassencamp, Hugo, Elberfeld, Prussia, Germany. Manufacture of benzylated acid violet	331,965	Dec. 8	1066	.....	33	1198
Hassenpflug, Henry, Huntingdon, Pa. Washing-machine	328,938	Oct. 27	1896	495, 496	33	367
Hastings, Leander A., Worcester, Mass. Harness-loop	329,038	Oct. 27	2053	533	33	395
Hastings, Louis E., Chicago, Ill. Clothes-drier	328,424	Oct. 20	1274	331	33	247
Hatch, Azel, Lexington, Ky. Pencil-sharpener	328,671	Oct. 20	1543	401	33	295
Hatch, Charles E., Vallejo, Cal. Combined blacking-brush and scraper	330,111	Nov. 10	932	243	33	689
Hatch, Charles F., Lowell, Mass. Paper box	328,485	Oct. 20	1275	331	33	248
Hatcher, Isaac M. (See Simpson, Hatcher, and Wildermuth.)						
Hatfield, Robert F., New York, N. Y. Gas-pressure regulator	329,163	Oct. 27	2228	577	33	426
Hatfield, Robert F., New York, N. Y. Gas-pressure regulator	331,878	Dec. 8	936	242	33	1173
Hathaway, George M., New York, assignor of one-half to C. D. Shepard, Mamaroneck, N. Y. Ear-ring	331,638	Dec. 1	598	148	33	1102
Hauck, Philip, Philadelphia, Pa. Paper-box-covering machine	330,235	Nov. 10	1085	257	33	726
Hauck, Philip, Philadelphia, Pa. Adjustable box-block for paper-box-covering machines	332,078	Dec. 8	1234	322	33	1227
Hawe, Matthew, New York, N. Y. Detachable sole	333,126	Dec. 29	2718	714	33	1511
Hawes, Arnold C. (See Ingersoll, Simon, assignor.)						
Hawkins, Edward V., Connersville, Ind. Bureau	331,966	Dec. 8	1067	276	33	1198
Hawkins, Eugene W. J. (See Coats, Milo L., assignor.)						
Hawkins, John G., Wigan, county of Lancaster, England. Purifying coal-gas	328,309	Oct. 13	1034	.....	33	196
Hawkins, John T., Taunton, Mass. Sheet-delivery for oscillating-cylinder printing-machines	328,939	Oct. 27	1897	496	33	368
Hawkins, John T., Taunton, Mass. Type-bed for printing-machines	328,940	Oct. 27	1899	496	33	368
Hawkins, John T., Taunton, Mass. Web-perfecting printing-machine	332,518	Dec. 15	1849	483, 484	33	1341
Hawkins, John T., Taunton, Mass. Web-perfecting printing-machine	332,519	Dec. 15	1854	485	33	1341
Hawkins, John T., Taunton, Mass. Paper-folding machine	332,520	Dec. 15	1858	486	33	1342
Hawkins, John T., Taunton, Mass. Web-perfecting printing-machine	332,521	Dec. 15	1861	486, 487	33	1342

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Hawkins, John T., Taunton, Mass. Cylinder printing-machine	333,070	Dec. 22	2625	688, 689	33	1488
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus for printing-machines	333,071	Dec. 22	2629	689	33	1488
Hawkins, John W., Monfordville, Ky. Tobacco-plant setter	331,498	Dec. 1	343	93	33	1059
Hawkins, Marcus E., Lansingburg, N. Y. Device for upsetting the ends of metal pipes	333,410	Dec. 29	3101	808	33	1578
Hawkins, Moses C., Edinborough, Pa. Pendulum engine-governor for vessels	330,699	Nov. 17	1694	457	33	846
Hawkins, William A., New York, N. Y. Deodorizing and disinfecting apparatus	329,645	Nov. 3	297	75	33	561
Hawks, George E., assignor of one-half to E. A. Hill, Highland Park, Ill. Safety-gate for draw-bridges	332,899	Dec. 22	2388	631, 632	33	1445
Hawksworth, David, Plattsmouth, Nebr. Destroying grass, weeds, &c., on railway-tracks	330,700	Nov. 17	1695	457, 458	33	846
Hawksworth, David, Plattsmouth, Nebr. Device for destroying vegetation along railway-tracks	330,701	Nov. 17	1697	458	33	846
Hawley, Andrew T., Alton, Ill. Grain-separator	331,967	Dec. 8	1068	277	33	1198
Hawley, Harry H., Malone, N. Y. Lamp-wick trimmer	332,900	Dec. 22	2393	632	33	1446
Hawley, Joseph M., Philadelphia, Pa. Cuff-retainer	333,297	Dec. 29	2956	772	33	1553
Hawley, Theodore, Fairfield, Conn. Fastening for shoes, gloves, &c	329,901	Nov. 10	649	165	33	633
Hawley, Theodore, assignor of one-half to E. W. Harral, Fairfield, Conn. Making waterproof fabrics	331,299	Dec. 1	57	14	33	1010
Hawley, William G., assignor of one-half to F. A. Blakeley, Hanford, Cal. Splitting-saw	331,195	Nov. 24	2356	637	33	975
Hawthorn, John, and J. P. Liddell, Newtown, county of Chester, England. Construction of drying-cylinders	332,901	Dec. 22	2394	632	33	1446
Haxtun, William E., Kewanee, Ill. Vertical boiler	330,024	Nov. 10	817	209	33	664
Hay, John, Tracy, Cal. Harvester	330,978	Nov. 24	2061	557, 558	33	921
Hayden, Horace L., assignor of one-half to H. C. Goodspeed, Boston, Mass. Spinning ring and traveler	327,550	Oct. 6	65	15	33	13
Hayden, Miles, and W. C. Dixon, Gay Hill, Tex. Lock for sliding doors	330,236	Nov. 10	1086	257	33	720
Hayes, Edwin P., Deer Lake, Mich. Trip-saw	328,486	Oct. 20	1276	331	33	248
Hayes, Joseph, assignor, by mesne assignments, to himself and G. S. Frost, Dover, N. H. Nut-lock	330,237	Nov. 10	1087	257	33	721
Haylock, John W. (See Haylock, Layton and J. W.)						
Haylock, Layton and J. W., Grimsby, England. Rubber sole for boots or shoes	328,777	Oct. 20	1665	434	33	319
Haynes, Carlos B., North Adams, Mass. Fender for carriage-wheels	328,941	Oct. 27	1900	496	33	368
Haynes, William, assignor of one-half to J. Tremlett and W. H. Lee, St. Louis, Mo. Apparatus for steering boats, &c	331,499	Dec. 1	345	93	33	1060
Hayward, Jacob L., Framingham, Mass., assignor of two-thirds to T. C. and T. C. Simonton, Jr., Paterson, N. J. Machine for extracting gold, &c., from pulverized ores	329,832	Nov. 3	553	141	33	608
Hayward, John W., St. John's, Newfoundland. Bottle-cork attachment	328,672	Oct. 20	1544	402	33	295
Haywood Bros. & Co. (See Piper, James S.)						
Hazard, Edward C., Shrewsbury, N. J. Preparing celery-salt	331,134	Nov. 24	2264	.....	33	958
Hazard, Henry T., Los Angeles, Cal. Cartridge-shell crimper	332,712	Dec. 22	2145	567	33	1400
Hazard, Rowland R., New York, N. Y. Structure designed to occupy the streets	328,027	Oct. 13	676	177, 178	33	129
Hazard, Rowland R., New York, N. Y. Transfer railway station or terminus	329,164	Oct. 27	2229	577	33	426
Hazel, Isaac. (See Hazelton, Elias, assignor.)						
Hazel, William M., New York, N. Y. Button-setting instrument	333,411	Dec. 29	3102	808	33	1578
Hazelton, Elias, assignor to I. Hazel, Brantford, Ontario, Canada. Cutting apparatus for reaping and mowing machines	331,968	Dec. 8	1069	277	33	1199
Heald, Leander S., Barre, Mass. Hay-tedder	330,112	Nov. 10	933	243	33	690
Healy, Clarence L., Brooklyn, assignor to S. D. Field, Yonkers, N. Y. Transmitter for printing-telegraphs	330,238	Nov. 10	1088	287, 288	33	721
Healy, Clarence L., Brooklyn, assignor to S. D. Field, Yonkers, N. Y. Transmitter for printing-telegraphs	330,239	Nov. 10	1090	288	33	721
Healy, Clarence L., Brooklyn, assignor to S. D. Field, Yonkers, N. Y. Printing-telegraph	333,298	Dec. 29	2957	772	33	1554
Heard, John B., Bowling Green, Ky. Stump-extractor	331,054	Nov. 24	2146	592	33	937
Heath, Edward H., and F. W. Moore, Waupun, Wis. Mowing-machine	328,028	Oct. 13	677	178	33	130
Heath, Edward H., and F. W. Moore, Waupun, Wis. Reaping and mowing machine	328,029	Oct. 13	678	178, 179	33	130
Hebbard, Albert H. and C. C., Knoxville, Tenn. Target-trap	332,902	Dec. 22	2395	633	33	1446
Hebbard, Charles C. (See Hebbard, Albert H. and C. C.)						
Hebel, Peter. (See Straubel and Hebel.)						
Heck, Charles H. (See Smith and Heck.)						
Hecla Electric Light Company. (See Jackson, Charles T., assignor.)						
Hegarty, Samuel. (See Stigers, John G., assignor.)						
Hegeman, W. A. Ogden. (See Monsanto, Manricio M., assignor.)						
Heimann, Frank, Buffalo, N. Y. Ash-sifter	332,394	Dec. 15	1681	440	33	1312
Hein, Christian, McKownville, N. Y. Wagon-tongue support	331,235	Nov. 24	2416	654	33	985
Heiney, Thomas B., and C. G. Lauck, Bucyrus, Ohio. Wrench	332,522	Dec. 15	1863	467	33	1342
Heinig, Friedrich W., Milwaukee, Wis. Fur-case	328,673	Oct. 20	1544	402	33	295
Heins, Charles L. (See Lieb and Heins.)						
Heintz, Philip, Unionville, assignor of one-half to W. O. Way, Newington Junction, Conn. Letter-box	331,196	Nov. 24	2356	637	33	975
Heintzelman, Taylor W. (See Bornarth and Heintzelman.)						
Heiser, Adolph T., Scranton, Pa. Handle for shovels and spades	330,481	Nov. 17	1425	381	33	792
Heisey, Augustus H. (See Ripley, Heisey, and Swift.)						
Heiskell, Daniel L. (See Faull and Heiskell.)						
Heisler, Charles, St. Louis, Mo. Incandescent electric lamp	327,795	Oct. 6	377	98	33	66
Heisler, Charles, St. Louis, Mo. Incandescent electric lamp	327,796	Oct. 6	380	98, 99	33	67
Heisler, Charles, St. Louis, Mo. Incandescent electric lamp	330,586	Nov. 17	1550	415	33	816
Heller, L. Albert, Philadelphia, Pa. Spring bed-bottom	328,117	Oct. 13	797	207, 208	33	151
Hellings, John, Philadelphia, Pa. Grib for cable railways	331,055	Nov. 24	2146	592, 593	33	937
Hellyer, Samuel S., London, county of Middlesex, England. Trap for soil and other pipes	329,388	Oct. 27	2564	661, 662	33	467
Helme, William, Philadelphia, Pa. Automatic pressure-regulator for gas-governors	328,942	Oct. 27	1901	497	33	368
Helmer, Nicolas, New York, N. Y. Air-ship	328,218	Oct. 13	922	240	33	175
Helms, Jacob H., Monroe, assignor of one-half to J. S. Grier, Matthews, and J. Stearnes, Adams' Mills, N. C. Quilting-frame	330,482	Nov. 17	1426	381	33	793
Hemenway, Nathan, Parma, Ohio. Metal packing	331,056	Nov. 24	2148	583	33	938
Hemsath, Augustus, Zehner, Pa. Rotary engine	330,324	Nov. 10	1201	321	33	743
Henderson, Duncan, Chicago, Ill. Drier	332,199	Dec. 8	1404	363	33	1256
Henderson, George R., Altoona, Pa. Locomotive smoke-box	328,674	Oct. 20	1545	402	33	295

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Henderson, Henry A., Lynn, Mass., assignor to National Heeling Machine Company, Portland, Me. Heel-nailing machine	332,798	Dec. 22	2251	593	33	1420
Henderson, Henry T., Keokuk, Iowa. Washing-machine	327,690	Oct. 6	244	60	33	43
Henderson, James, assignor of one-half to J. K. Brice, Lima, Ohio. Rotary engine and pump	330,702	Nov. 17	1698	458, 459	33	846
Henderson, John W., Philadelphia, Pa. Railway-signal	331,879	Dec. 8	938	242	33	1174
Henderson, Milton P., Stockton, Cal. Spring-vehicle	330,025	Nov. 10	818	209	33	665
Henderson, Patrick C. S., Portland, Me. Invalid's convertible chair and bed	328,944	Oct. 27	1903	497, 498	33	369
Henderson, Robert M., and J. A. Glaceline, Jackson County, Ind. Fire-escape ladder	328,943	Oct. 27	1902	497	33	368
Hendrick, Martin, Jackson, Ga. Plow	330,325	Nov. 10	1202	321	33	343
Hendrick, Robert U. (See Brintnall, Thomas M., assignor.)						
Hendricks, John C. (See Caldwell and Hendricks.)						
Hendrix, Henry F., St. Louis, Mo. Book rest and holder	331,057	Nov. 24	2149	583	33	938
Hendryx, Samuel V., Farmington, Minn., assignor of one-half to A. Finkelson, Northfield, Mass. Display-rack for umbrellas	328,487	Oct. 20	1257	331	33	248
Henis, William G., Philadelphia, Pa. Chimney cowl and ventilator	332,523	Dec. 15	1864	487	33	1342
Hemins, Max W., Bridgeport, Conn. Corset-stay	330,398	Nov. 17	1319	350	33	772
Henkels, Ernst, Langerfeld, Prussia, Germany. Machine-made lace	329,739	Nov. 3	423	109	33	585
Henriksen, Hans, Duarte, Cal. Cotton-chopper attachment for cultivators	327,681	Oct. 6	245	60	33	43
Henry, Edward P., Eagle Rock, Idaho Ter. Calf-weaner	328,675	Oct. 20	1546	402	33	296
Henry, William C., and A. Smedley, Bradford, Pa. Natural-gas-supply system	329,902	Nov. 10	650	166	33	633
Henzel, Edward F. (See Henzel, George L., assignor.)						
Henzel, George L., assignor of one-half to E. F. Henzel, San Francisco, Cal. Electric bolt-releasing device	328,030	Oct. 13	680	179	33	130
Herbert, William H., *et al.* (See Hillman, William, assignor.)						
Hercules Powder Company *et al.* (See Penniman, Russell S., assignor.)						
Hercules Powder Company *et al.* (See Penniman and Schrader, assignors.)						
Herhold, Friedrich, and J. E. Mills, Chicago, Ill.; said Mills assignor to said Herhold. Saw-gummer	330,399	Nov. 17	1319	351	33	772
Hermann, Max, assignor to Tim, Wallerstein & Co., Troy, N. Y. Securing bosoms to shirt-bodies	332,799	Dec. 22	2252	594	33	1420
Herr, Augnst W., Chicago, Ill. Vault cover and ventilator	330,400	Nov. 17	1322	351	33	773
Herrick, Frank J., New Britain, Conn. Lemon-squeezer	331,236	Nov. 24	2417	655	33	985
Herrman, Robert S. C., Garlenville, Md. Brake block	332,693	Dec. 15	2106	555	33	1387
Herrmann, John C., Cedar Rapids, Iowa. Burial apparatus	327,551	Oct. 6	66	15	33	13
Herrmann, John C., Cedar Rapids, Iowa. Burial apparatus	327,552	Oct. 6	67	15	33	13
Herron, James P. (See Morrison and Herron.)						
Hertz, Morris, New York, N. Y. Corset-fastening	330,113	Nov. 10	935	244	33	690
Hess, Alfred. (See Hess, Elmer J., assignor.)						
Hess, Elmer J., assignor of one-half to A. Hess, Cincinnati, Ohio. Vehicle-spring	329,552	Nov. 3	180	48	33	539
Hess, Jacob. (See Sutherland, John, assignor.)						
Heston, William, Mount Union, Ohio. Oil tank or can	330,483	Nov. 17	1427	381	33	793
Heunsch, Edmund F. (See Bex and Heunsch.)						
Heusch, Anton, Chicago, Ill. Meat-chopping machine	332,608	Dec. 15	1963	519, 520	33	1364
Henseer, Albert, assignor of one-half to A. J. Underhill, Taylor, Nev. Vehicle-tire and setter therefor	331,704	Dec. 1	691	170	33	1120
Hexamer, Charles J., Philadelphia, Pa. Mechanism for extinguishing fires in grain or malt mills	331,058	Nov. 24	2149	583, 584	33	938
Heyden, Adolf. (See Bassini and Heyden.)						
Heyer, Carl, Philadelphia, Pa. Horseshoe	328,676	Oct. 20	1546	403	33	296
Heysinger, Isaac W., Philadelphia, Pa. Paper-clip	327,553	Oct. 6	69	15	33	14
Hibbard, Angna S., Milwaukee, Wis. Telephone call-register	329,646	Nov. 3	298	76	33	585
Hibbard, Fredrick M., Goshen, Ind. Paint for roofing, &c	329,740	Nov. 3	424	.....	33	585
Hibbs, George W. (See Hibbs, John D. and G. W.)						
Hibbs, John D. and G. W., Fairfield, Nebr. Stocking-exhibitor	332,524	Dec. 15	1865	488	33	1343
Hice, Richard R. (See Agnew and Hice.)						
Hickok, Frank K., New York, N. Y. Harness-crupper	332,609	Dec. 15	1965	520	33	1365
Hickok, Lester E., Birmingham, Conn. Beam-compasses	328,031	Oct. 13	682	179	33	130
Hickok, W. O. (See Metzger and Cooper, assignors.)						
Hicks, Howard H., Rockford, Ill. Harvester-reel	332,079	Dec. 8	1235	322, 323	33	1227
Hicks, James A., *et al.* (See Brown, William A., assignor.)						
Hicks, James D., Lawrence, Tex. Railway-spike	330,326	Nov. 10	1203	322	33	744
Hicks, Oliver H., Chicago, Ill. Paper package for toilet and other purposes	329,039	Oct. 27	2054	533	33	396
Hicks, Samuel, Orangeville, Ind. Fence-post	331,969	Dec. 8	1070	278	33	1199
Hicks, Thomas H., Detroit, Mich. Electro-medical battery	329,310	Oct. 27	2440	632	33	466
Higel, Frank, *et al.* (See Rupertus, Jacob, assignor.)						
Higginbotham, Charles T., assignor to Hampden Watch Company, Springfield, Mass. Stem winding and setting watch	330,401	Nov. 17	1323	352	33	773
Higgins, Charles J., Hallowell, Me. Rake	333,299	Dec. 29	2958	773	33	1554
Higgins, Henry, Newport, Ky. Back-stay for carriage-tops	332,500	Dec. 22	2253	594	33	1421
Higgins, Isaac E., Etna, Pa. Machine for drawing wire	330,114	Nov. 10	936	244	33	690
Higgins, William F., San Francisco, Cal. Tile-section between walls, joists, &c	331,500	Dec. 1	346	93	33	1060
Higgs, John W. (See Kennedy and Higgs.)						
Highfield, George A. (See Hall, Enos T., assignor.)						
Highfill, Samuel G., Boston Station, Ind. Butter-cabinet	332,903	Dec. 22	2397	633	33	1447
Higley, Aaron, Cleveland, Ohio. Crushing-machine	329,553	Nov. 3	181	48	33	539
Higley, Aaron, Cleveland, Ohio. Machine for disintegrating ores	330,115	Nov. 10	938	244, 245	33	691
Hildebrand, Herman E., Chicago, Ill. Foot-rest for surgical chairs and tables	333,220	Dec. 29	2847	744	33	1533
Hildreth, George, Troy, assignor to Rensselaer Manufacturing Company, Lansingburg, N. Y. Core for straight-way stop-valves	330,327	Nov. 10	1203	322	33	744
Hill, Benjamin B., Philadelphia, Pa. Inking-pad	332,395	Dec. 15	1682	441	33	1312
Hill, Charles E. (See Temple, William J., assignor.)						
Hill, Christian C., Chicago, assignor to G. M. Fish, Oak Park, Ill. Barbed fence-wire	330,893	Nov. 24	1550	528	33	900
Hill, Christian C., assignor to Union Wire Mattress Company, Chicago, Ill. Wire-coiling machine	332,525	Dec. 15	1866	488, 489	33	1343
Hill, Edgar A. (See Hawks, George E., assignor.)						
Hill, Frederick M., Brooklyn, N. Y. Safety-paper for checks, drafts, &c	330,894	Nov. 24	1951	.....	33	900
Hill, John, Columbus, Ga. Automatic fire-extinguisher	329,311	Oct. 27	2443	633	33	467
Hill, John, Columbus, Ga. Apparatus for extinguishing fires	329,741	Nov. 3	425	109	33	585
Hill, John J., Clifton, Ohio Machine for shelling and grading peanuts, &c	328,032	Oct. 13	683	180	33	131

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Hill, John W., Sandborn, Ind. Bolting-reel	332,396	Dec. 15	1683	441	33	1313
Hill, Moses. (See Hunt, Ira J., assignor.)						
Hill, Terelius A., Richland, Iowa. Gate	328,118	Oct. 13	796	206	33	151
Hill, Thomas, Jersey City, N. J. Dumping-cart	328,219	Oct. 13	923	240	33	176
Hill, Walter, South Easton, Mass. Cartridge-loading machine	332,904	Dec. 22	2398	633, 634	33	1447
Hill, Warren, Towanda, Pa. Mowing-machine	330,116	Nov. 10	940	245	33	691
Hill, Warren S., Boston, Mass. Electric motor	331,880	Dec. 8	941	243	33	1174
Hill, Warren S., assignor to Lamson Cash Railway Company, Boston, Mass. Car for store-service	333,300	Dec. 29	2959	773	33	1554
Hill, William E., Kalamazoo, Mich. Tree and log sawing machine	329,554	Nov. 3	182	49	33	540
Hillman, Louis. (See Dickerson, Samuel H., assignor.)						
Hillman, William, assignor of five-eighths to W. H. Herbert and G. B. Cooper, Premier Works, Coventry, county of Warwick, England. Machine for making balls	333,301	Dec. 29	2961	773, 774, 775	33	1554
Hills Company. (See Marcil, Michel, assignor.)						
Hills, E. Hamilton, *et al.* (See White, Louis B., assignor.)						
Hinds, Franklin P., Boston, Mass. Chain-machine	331,397	Dec. 1	198	51, 52	33	1033
Hine, E. A., *et al.* (See Sanders, Theodore, assignor.)						
Hine, L. G., *et al.* (See Maltby, Philo, assignor.)						
Hines, Andrew L., *et al.* (See Cameron, Ezra G., assignor.)						
Hines, John, Philadelphia, Pa. Enameling	329,165	Oct. 27	2231	577	33	427
Hines, Joseph H., Calistoga, Cal. Die-stock	332,810	Dec. 22	2254	594	33	1421
Hinkley, George M., Milwaukee, Wis. Saw-mill carriage	330,484	Nov. 17	1498	382	33	793
Hinkley, Philander, Charleston, Ill. Lawn-mower	328,310	Oct. 13	1035	268	33	196
Hinman, William M. (See Davis, Wilbur G., assignor.)						
Hinman, William M. (See Davis and Hinman.)						
Hinners, John L., Pekin, Ill. Tracker-pin for organs	330,117	Nov. 10	942	245	33	691
Hinsdale, William R., Brooklyn, N. Y. Apparatus for pressing fluid metal	332,656	Dec. 15	2053	540	33	1377
Hinsdale, William R., Brooklyn, N. Y., assignor to Compressed Steel Company, Cleveland, Ohio. Fluid-metal press	330,895	Nov. 24	1951	528, 529	33	900
Hinton, John B., San Diego, Cal. Brake for vehicles	329,312	Oct. 27	2445	633	33	467
Hinton, Joseph R. H., Baltimore, Md., assignor to Continental Store Service Company, New York, N. Y. Spring-actuated drum	329,836	Nov. 3	559	142	33	609
Hinton, Joseph R. H., Baltimore, Md., assignor to Continental Store Service Company, New York, N. Y. Store-service apparatus	333,302	Dec. 29	2965	775	33	1555
Hirn, Joseph, Chillicothe, assignor of one-half to C. H. Neil, Columbus, Ohio. Car-coupling	331,639	Dec. 1	590	148	33	1102
Hirsch, Ludwig, New York, N. Y. Rule and square	329,555	Nov. 3	184	49	33	540
Hirschmann, Frederick L., *et al.* (See Lyons, James B., assignor.)						
Hirshheimer, Albert, La Crosse, Wis. Harrow	329,040	Oct. 27	2056	533	33	396
Hirt, Charles F., Erie, Pa. Roller-skate	329,556	Nov. 3	184	49	33	540
Hirt, Charles F., Erie, Pa. Roller-skate	329,557	Nov. 3	186	50	33	540
Hirt, Charles F. and J. L., assignors to Brown Folding Machine Company, (limited,) Erie, Pa. Paper-folding machine	330,485	Nov. 17	1429	382	33	793
Hirt, Jacob L. (See Hirt, Charles F. and J. L.)						
Hislop, Andrew. (See Munro, Donald, assignor.)						
Hitchcock, David S., assignor to Hitchcock Shutter Manufacturing Company, Cleveland, Ohio. Camera-shutter	328,033	Oct. 13	683	180	33	131
Hitchcock, Henry, New Haven, Conn. Sewing-machine gage	332,526	Dec. 15	1868	489	33	1343
Hitchcock Shutter Manufacturing Company. (See Hitchcock, David S., assignor.)						
Hitt, Rector C., *et al.* (See Yentzer, Enoch S., assignor.)						
Hiveley, Martin P., Van Wert, Ohio. Gate	332,802	Dec. 22	2255	594	33	1421
Hockensmith, Franklin C., Irwin's Station, Pa. Axle	329,453	Nov. 3	31	9	33	511
Hockett, Amos, Wilmington, Ohio. Book and copy holder	327,682	Oct. 6	247	60	33	43
Hodge, George W., and L. J. A. Roswall, Clarence, Mo. Device for removing wagon-bodies	328,403	Oct. 13	1176	304	33	222
Hodges, Horace F., Fitchburg, Mass. Apparatus for cooling air for refrigerating and other purposes	331,881	Dec. 8	943	243	33	1175
Hodges, Horace F., Boston, assignor to C. F. Payne, Groveland, G. H. Spencer and C. T. Crocker, Fitchburg, Mass. Universal angle coupling and union	327,877	Oct. 6	476	124	33	84
Hodges, Horace F., Boston, assignor to C. F. Payne, Groveland, G. H. Spencer and C. T. Crocker, Fitchburg, Mass. Valve-governor	329,041	Oct. 27	2057	533	33	396
Hodges, Horace F., Boston, assignor to C. F. Payne, Groveland, G. H. Spencer and C. T. Crocker, Fitchburg, Mass. Rotary automatic cut-off valve	330,328	Nov. 10	1204	322	33	744
Hodgson, William H., Winona, Minn. Plow	333,010	Dec. 22	2551	672	33	1475
Hodson, Emma E., Chicago, Ill. Bustle	329,042	Oct. 27	2058	534	33	396
Hoe & Co., R. (See Crowell, Luther C., assignor.)						
Hoeveler, William A., Springdale, Pa. System of pipes for conveying gas, water, and electricity	332,149	Dec. 8	1346	348, 349	33	1245
Hoeveler, William A., Pittsburg, Pa. Sealing the joints of gas-mains	333,011	Dec. 22	2552	672	33	1475
Hoeveler, William A., Pittsburg, Pa. Coupling for gas-pipes	333,412	Dec. 29	3104	809	33	1578
Hoeveler, William A., Pittsburg, Pa. Pipe-coupling	333,413	Dec. 29	3104	809	33	1578
Hoeveler, William A., Pittsburg, Pa. System for the distribution of gas	333,462	Dec. 29	3170	828	33	1589
Hoey, James, Brooklyn, N. Y. Hanger for pipes	330,703	Nov. 17	1700	459	33	847
Hofer, John, and G. Martin, Cincinnati, Ohio. Ash-pan	332,527	Dec. 15	1870	489	33	1344
Hoffman, Harvey H., New York, N. Y. Electric mat	332,254	Dec. 15	1493	390	33	1278
Hoffman, Joseph, assignor to G. A. Goldsmith, New York, N. Y. Pencil	331,398	Dec. 1	201	53	33	1034
Hoffmann, Alfred W. (See Hoffmann, Emil R. and A. W.)						
Hoffmann, Emil R. and A. W., New York, N. Y. Apparatus for making type-wheels	328,677	Oct. 20	1547	403	33	296
Hoffmann, Meinhard, Mainkur, assignor to L. Cassella & Co., Frankfort-on-the-Main, Germany. Manufacture of beta-naphthol sulphonic acid	331,059	Nov. 24	2151	.....	33	939
Hoffmann, Meinhard, Mainkur, assignor to L. Cassella & Co., Frankfort-on-the-Main, Germany. Dye-stuff made from diazonaphthaline	332,528	Dec. 15	1870	.....	33	1344
Hofmann, Adam, Indianapolis, Ind. Two-wheeled vehicle	331,705	Dec. 1	693	171	33	1120
Hofstatter, Theodore, Jr., New York, N. Y. Sofa-bed	331,706	Dec. 1	694	171	33	1121
Hogben, George W. (See Lampson and Hogben.)						
Hogeland, Israel, assignor of one-half to G. P. Anderson, Indianapolis, Ind. Folding camp-stool	329,903	Nov. 10	652	166	33	634
Hogg, John O. (See Allen, Judson, assignor.)						
Hogsett, Thomas W., Edray, W. Va. Motor	328,678	Oct. 20	1549	403	33	296
Hogsett, Thomas W., Edray, W. Va. Car-truck	328,679	Oct. 20	1550	403	33	296
Hogue, Lundy B., Carpenteria, Cal. Combined cultivator and weed-cutter	327,683	Oct. 6	248	61	33	43
Hohenstein, Archie G., assignor to Minor, Nichols & Co., New Britain, Conn. Paper box	329,558	Nov. 3	187	50	33	541
Hohenstein, Archie G., assignor to Minor, Nichols & Co., New Britain, Conn. Paper box	329,559	Nov. 3	187	50	33	541

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Hobly, Charles. (See Perron, Leon, assignor.)						
Holcomb, Oscar M. (See Richard and Holcomb.)						
Holcombe, Alfred G., assignor to Equitable Electric Company, New York, N. Y. Electric-arc lamp	329,166	Oct. 27	2232	578	33	427
Holden, Arthur L. (See Burton, Charles C., assignor.)						
Holden, Edward G., Oak Ridge, Mo. Bolt-fastener	330,119	Nov. 10	947	246	33	692
Holden, George R., Michigan City, Ind., assignor to Warren Featherbone Company, Chicago, Ill. Machine for removing plumage from feathers	328,404	Oct. 13	1177	304	33	223
Holden, George R., Michigan City, Ind., assignor to Warren Featherbone Company, Chicago, Ill. Machine for reducing quills, feathers, &c., to fiber	328,680	Oct. 20	1551	404	33	297
Holden, Jonas H., Michigan City, Ind., assignor to Warren Featherbone Company, Chicago, Ill. Machine for splitting quills, feathers, &c.	329,167	Oct. 27	2233	578	33	427
Holden, William, Baldwinsville, Mass. Nursery-chair	331,748	Dec. 1	754	190 / 191	33	1132
Holden, William, Baldwinsville, Mass. Convertible chair and velocipede	333,414	Dec. 29	3106	809	33	1578
Holdsworth, William, assignor to Detroit Casket Company, Detroit, Mich. Coffin	331,707	Dec. 1	695	171	33	1121
Holeman, Adam, Bronson, Kans. Gate	327,684	Oct. 6	249	61	33	43
Holland, Charles, Jr., assignor to F. L. Houghton, trustee, Boston, Mass. Apparatus for firing furnaces	331,197	Nov. 24	2357	637	33	975
Holland, Franklin, Grand Rapids, Mich. Carving-machine	329,647	Nov. 3	299	76	33	561
Holland, John J., San Francisco, Cal. Cut-off-valve gear	332,397	Dec. 15	1665	441	33	1313
Holland, William F. (See Agnew, William C., assignor.)						
Hollett, Ira W., assignor to Chicago Liquid Sack Company, Chicago, Ill. Making paper boxes	332,713	Dec. 22	2147	567	33	1400
Holley, Dwight S., assignor to Snell Manufacturing Company, Fiskdale, Mass. Die for shaping single-twist augers	331,708	Dec. 1	696	171 / 172	33	1121
Hollingsworth, Jerome, *et al.* (See Springer, Stephen H., assignor.)						
Hollweg, Carl, Barmen, Germany. Bracket-arm	330,587	Nov. 17	1551	415	33	816
Holly, John I. (See Couch, John O., assignor.)						
Holly, John I. (See Smith and Couch, assignors.)						
Holly, John I., *et al.* (See Freeman, Augustus M., assignor.)						
Holly, John I., *et al.* (See Schorb, John M., Jr., assignor.)						
Holmes, George W. (See Robinson and Holmes.)						
Holmes, Hector A. and W. M., Hoosick Falls, N. Y. Automatic grain-binder	329,560	Nov. 3	188	51	33	541
Holmes, Joseph E., Washington, D. C. Instrument for regulating the flow of gases and liquids in refrigerators and other structures	332,150	Dec. 8	1348	349	33	1246
Holmes, Kirk W., Columbus, Ohio. Vehicle-top	332,529	Dec. 15	1671	469	33	1344
Holmes, Nathan L., Racine, Wis. Wagon-gear	330,118	Nov. 10	943	246	33	692
Holmes, Watson M. (See Holmes, Hector A. and W. M.)						
Holmes, Watson M., Hoosick Falls, N. Y. Tension device for harvester-binders	328,887	Oct. 20	1611	472	33	346
Holt, Arthur J., Cleveland, Ohio. Lightning-arrester	330,486	Nov. 17	1430	382	33	794
Holt, Charles H., Philadelphia, Pa. Tube-cleaner for fuel-economizers or feed-water heaters	328,220	Oct. 13	924	240 / 241	33	176
Holt, Noah W., assignor to G. T. Smith Middlings Purifier Company, Jackson, Mich. Dust-collector	333,463	Dec. 29	3172	829	33	1590
Holt, Orrin S., Rock Island, Ill. Rift-sawing machine	331,135	Nov. 24	2265	615	33	958
Holt, Robert B., assignor of one-half to I. N. Walton, Guthrie, Ky. Circular-saw mill	332,714	Dec. 22	2149	567	33	1400
Holt, Thomas, Jr., Midland Park, and J. Mellor, Paterson, N. J.; said Mellor assignor to said Holt. Terry-loom	327,685	Oct. 6	250	61	33	43
Holt, William H. (See Fifield and Holt.)						
Holton, Francis H., assignor to F. H. Holton, Jr., Brooklyn, N. Y. Erasive rubber	328,778	Oct. 20	1666	434	33	319
Holton, Francis H., Brooklyn, N. Y. Erasive rubber	328,779	Oct. 20	1667	434	33	319
Holtzer, Charles W., Boston, Mass. Electric battery	327,878	Oct. 6	477	124	33	85
Holtzmann, Phillip, and R. Mayer, New York, N. Y. Vertical tube-boiler	333,012	Dec. 22	2553	672	33	1475
Holz, Fred. Anderson's Ferry, assignor to Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Target-trap	330,704	Nov. 17	1700	459	33	847
Homan, Louis, Cincinnati, Ohio. Candle-molding machine	333,013	Dec. 22	2554	672	33	1475
Home Vapor Bath and Disinfector Company. (See Rosenfield, William W., assignor.)						
Honeywell, Oliver O., New Baltimore, Ohio. Wagon-brake	333,221	Dec. 29	2848	745	33	1533
Honigmann, Moritz, Aix-la-Chapelle, Germany. Utilization of exhaust-steam. (Reissue)	10,675	Dec. 22	2670	700	33	1496
Honigmann, Moritz, Grevenberg, near Aix-la-Chapelle, Germany. Storing power	333,222	Dec. 29	2849	745	33	1533
Honigmann, Moritz, Aix-la-Chapelle, Germany. Production of steam at a high pressure from steam at a lower pressure	333,223	Dec. 29	2851	745	33	1533
Honiss, William H. (See Lorens and Honiss.)						
Honiss, William H., Hartford, Conn., assignor to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	329,561	Nov. 3	190	51	33	541
Hood, Benjamin L., assignor to L. Daniels, Albany, N. Y. Filter	331,790	Dec. 8	808	205 / 206	33	1150
Hood, Freeman W., and L. W. Lombard, Boston, Mass., assignors to Lang Hydraulic Machine Company, Portland, Me. Apparatus for actuating the valves of fluid-meters	331,136	Nov. 24	2267	615 / 616	33	959
Hood, Gustave, Newark, N. J., assignor to D. M. Read, New York, N. Y. Writing-pad cover	328,221	Oct. 13	926	241	33	176
Hood, Willis F., Deerfield, Mich. Rein-holder	327,879	Oct. 6	478	125	33	85
Hook, George B., Brewer, Me. Hammock-chair	330,705	Nov. 17	1701	459	33	847
Hook, William H., Springdale, Ky. Churn-dasher	331,882	Dec. 8	944	244	33	1175
Hooker, Thomas. (See Balz, John, assignor.)						
Hoover, Lorenzo D., Rock Island, Ill. Car-coupling	330,120	Nov. 10	948	246	33	692
Hope, Benjamin F., Sag Harbor, N. Y. Watch-case	330,487	Nov. 17	1431	383	33	794
Hopedale Machine Company. (See Dutcher, Frank J., assignor.)						
Hopedale Machine Company. (See Fay, Rimmon C., assignor.)						
Hopedale Machine Company. (See Northrop and Fay, assignors.)						
Hopkins, Andrew J., Rochester, N. Y. Double-acting pump	330,329	Nov. 10	1205	322	33	744
Hopkins, Cabel B., Louisville, Ky. Roller-skate	328,780	Oct. 20	1668	435	33	320
Hopkins, Henry C., Jr., assignor of one-half to H. C. Hopkins, Covington, Ky. Clothes-wringer	328,945	Oct. 27	1904	498	33	369
Hopkins, William P., Lawrence, Mass. Nailing-machine for boots or shoes	331,299	Dec. 1	58	14	33	1010
Hopper, Thomas C., Philadelphia, Pa. Automatic pressure-regulator	328,681	Oct. 20	1552	404	33	297
Hoppins, Abiram, Kingston, Ontario, Canada. Cutter-head	331,970	Dec. 8	1070	278	33	1199
Horan, Daniel, Chicago, Ill. Still	333,464	Dec. 29	3174	829	33	1590
Horbaseswski, Edmund, *et al.* (See Cavetkovics, Mitar D., assignor.)						
Horey, John, and C. Marsh, Rosendale, Wis. Bob-sleigh	332,224	Dec. 29	2852	746	33	1534
Horn, Adolph, and H. Gundlach, Chicago, Ill. Folding chair	332,342	Dec. 15	1607	422	33	1300
Horn, Adolph, and M. J. Leick, Chicago, Ill. Combined shutter-fastener and shutter-opener	332,343	Dec. 15	1608	422	33	1300

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hornbostel, Charles, Brooklyn, N. Y. Mixing, diffusing, leaching, and concentrating apparatus	328,565	Oct. 20	1412	366	33	272
Horne, Robert H., and S. C. Smith, Marion, Ind. Box for scalding poultry	329,742	Nov. 3	428	109	33	586
Horney, Charles W., Brooklyn, N. Y. Last	332,151	Dec. 8	1350	349	33	1246
Horowitz, Heinrich, New York, N. Y. Culinary grater	331,709	Dec. 1	697	172	33	1121
Horrne, Henry M., Blossom Prairie, Tex. Running-gear for wagons	331,137	Nov. 24	2270	616	33	959
Horrocks, William, Ilion, N. Y. Cabinet or case for type-writers	333,225	Dec. 29	2855	746	33	1534
Horton, Emmet, Dundee, N. Y. Combined hammer and nail-feeding device	331,060	Nov. 24	2152	584	33	939
Horton, Numon N., Kansas City, Mo. Convertible reclining-chair	327,554	Oct. 6	71	16	33	14
Horton, Numon N., Kansas City, Mo. Surgeon's or reclining chair	327,686	Oct. 6	251	62	33	44
Horton, Robert F., Walnut Lane, La. Cotton-press	331,300	Dec. 1	61	15	33	1010
Horton, Seth L., Providence, R. I. Memorandum-calendar	328,586	Oct. 20	1414	368	33	273
Hoskins, Clanmar P. (See Schartau, Ellert O., assignor.)						
Hosner, Riley J., Romeo, Mich. Stone lifter and carrier	329,389	Oct. 27	2565	662	33	487
Hotchkiss, Samuel M., Hartford, Conn. Manufacture of barrel-bodies from pulp	329,043	Oct. 27	2059	534 / 535	33	396
Hough, Edward S., Brockley, county of Kent, England. Packing for stuffing-boxes	328,846	Oct. 20	1755	457	33	336
Houghton, Frederick L., trustee. (See Holland, Charles, Jr., assignor.)						
Houk, Wilbur G., Lafayette, Ind. Hay and straw rack	332,530	Dec. 15	1672	490	33	1344
Houlehan, James, Toledo, Ohio, assignor of one-half to W. A. Bunton, Boston, Mass., and seven-sixteenths to J. S. Barker and E. E. Dwight, Toledo, Ohio. Telephone annunciator and circuit	333,014	Dec. 22	2555	673	33	1476
House, Henry A., Bridgeport, Conn. Hat-stay	330,979	Nov. 24	2063	558	33	921
House, Henry A., assignor to Compressed Paper Box Company, Bridgeport, Conn. Paper box	327,555	Oct. 6	72	16	33	14
House, Henry A. and Henry A., Jr., Bridgeport, Conn. Wheel for roller-skates	328,119	Oct. 13	799	208	33	151
House, Henry A. and Henry A., Jr., Bridgeport, Conn. Roller-skate wheel	332,072	Dec. 22	2631	690	33	1489
House, William M. (See Muegge, Carl A., assignor.)						
Houston, Samuel L., Richmond, Ind. Cotton-seed planter	331,196	Nov. 24	2379	638 / 639	33	975
Hovde, Andreas G., Hönefos, Norway. Clock striking mechanism	330,896	Nov. 24	1953	529	33	900
Howard, Edward W., Montevideo, Minn. Middlings purifier and separator	329,168	Oct. 27	2234	578	33	427
Howard, Elisha H., Providence, R. I. Letter for signs	338,308	Dec. 99	2966	776	33	1555
Howard, Hoy, Mansfield, Ohio. Suspender-end attachment	330,488	Nov. 17	1433	383	33	794
Howard, James, and E. T. Bousfield, Bedford, England. Railway sleeper and chair	333,015	Dec. 22	2556	673	33	1476
Howard, John W., *et al.* (See Solano, Renaldo, assignor.)						
Howard, Robert L., Luton, county of Bedford, England. Wiring for securing stoppers to bottles	329,169	Oct. 27	2235	579	33	427
Howard, William C. (See Thompson, Walter C., assignor.)						
Howe, Edward P., Northborough, assignor of five-eighths to C. R. Rogers and J. J. Shaw, Plymouth, Mass. Brake for velocipedes	330,026	Nov. 10	819	210	33	665
Howe, Edward P., Northborough, assignor of five-eighths to C. R. Rogers and J. J. Shaw, Plymouth, Mass. Automatic brake for velocipedes	330,027	Nov. 10	820	210	33	665
Howe, Eugene L., Chicago, Ill. Link-counting attachment for chain-machines	329,837	Nov. 3	561	142	33	609
Howe, George H., assignor to W. A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y. Harvesting-machine	330,330	Nov. 10	1206	323	33	744
Howe, Orlando B., Fair Haven, Ill. Mechanism for converting motion	333,226	Dec. 29	2857	746 / 747	33	1534
Howe, Warren B., Chicago, Ill. Paper box	329,562	Nov. 3	190	51	33	541
Howe, Warren B., Chicago, Ill. Applying paraffine and similar substances to paper and straw board	329,743	Nov. 3	429		33	586
Howell, Frederick W., assignor to M. T. Howell, Buffalo, N. Y. Cockle-separator	331,061	Nov. 24	2155	585 / 586	33	939
Howell, Henry C., Baton Rouge, La. Cotton-planter	332,152	Dec. 8	1351	350	33	1246
Howell, Henry C., Baton Rouge, La. Corn and pea planter	332,153	Dec. 8	1352	350	33	1247
Howell, Margaret T. (See Howell, Frederick W., assignor.)						
Howell, Silas J., Boston, Mass., assignor to American Ballot Box Association, of Massachusetts. Registering and canceling ballot-box	332,398	Dec. 15	1685	441 / 442	33	1313
Hoya, John W. (See Cody, Elmore D., assignor.)						
Hoyt Brothers & Co. (See Hoyt, Joseph M. and W. G., assignors.)						
Hoyt, Emily C. (See Hoyt, James T., assignor.)						
Hoyt, James T., assignor to E. C. Hoyt, New York, N. Y. Cabinet for sanitary toilet-paper	333,073	Dec. 22	2632	690	33	1489
Hoyt, James T., assignor to E. C. Hoyt, New York, N. Y. Package of sanitary or toilet paper	333,074	Dec. 22	2634	690	33	1489
Hoyt, John B., Chippewa Falls, Wis. Portable boat-boom	328,405	Oct. 13	1178	305	33	223
Hoyt, Joseph M. and W. G., assignors to Hoyt Brothers & Co., Lynn, Mass. Bottle-washer	329,390	Oct. 27	2566	662	33	498
Hoyt, Lewis S., Boston, Mass. Leveling and supporting implement	332,715	Dec. 22	2149	567	33	1400
Hoyt, William G. (See Hoyt, Joseph M. and W. G.)						
Hubbard, Fred W., assignor to Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheeled scraper	332,531	Dec. 15	1673	490	33	1344
Hubbard, Fred W., assignor to Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheeled scraper	332,532	Dec. 15	1674	490	33	1344
Hubbard, Fred W., assignor to Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheeled scraper	332,533	Dec. 15	1675	491	33	1345
Hubbard, George M., assignor to W. & E. T. Fitch, New Haven, Conn. Bridle-bit	332,200	Dec. 8	1406	362	33	1256
Hubbard, Moses G., Jr., Norristown, Pa. Grain-binder	332,534	Dec. 15	1676	491 / 492	33	1345
Hubbard, William, Odon, Ind. Chimney-protector	331,710	Dec. 1	698	172	33	1121
Hubbell, Charles H. (See Watson and Hubbell.)						
Hubbell, Charles J., Washington, D. C. Apparatus for protecting structures from lightning	329,833	Nov. 3	555	141	33	608
Hubbell, Joseph H., Dayton, Ohio. Hydraulic pump	331,711	Dec. 1	699	172 / 173	33	1122
Hubbell, Myron R., Wolcott, Vt. Plow	329,834	Nov. 3	557	142	33	608
Huber, Edward, and G. W. King, Marion, Ohio. Reversing-gear for engines	330,960	Nov. 24	2064	559	33	921
Huber, Louis C., Huber, Ky. Mail-bag	328,034	Oct. 13	686	181	33	131
Huber, Peter, New York, N. Y. Fire-escape	329,648	Nov. 3	300	76	33	561
Huckins, Daniel J., assignor to J. Annin, Brooklyn, N. Y. Wheelbarrow	331,712	Dec. 1	702	173	33	1122
Hudson, Joseph N., Boonesborough, Mo. Fence	328,120	Oct. 13	800	208	33	151
Huff, Elias. (See Lewis and Huff.)						
Huffaker, Miles W., assignor of one-half to C. H. Flournoy, Knoxville, Tenn. Fence-post	328,946	Oct. 27	1905	498	33	369
Huffman, Charles W., Richwood, Ohio. Sand-arrester for driven wells	328,222	Oct. 13	927	241	33	177
Hughes, Jason B., Greensburg, Ind. Corn-shock compressor	333,304	Dec. 29	2967	776	33	1555

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hughes, Patrick K., Auburn, N. Y. Vehicle-axle	329,835	Nov. 3	558	142	33	609
Hughes, Robert. (See Fairfield, Clark, and Hughes.)						
Hughes, Samuel R., Benton Harbor, Mich. Feed-water heater	332,387	Oct. 20	1415	368, 369	33	273
Hulbert Brothers. (See Hulbert, Orrin L., assignor.)						
Hulbert, Orrin L., assignor to Hulbert Brothers, St. Louis, Mo. Multiple photographic sheet	333,465	Dec. 29	3175	820	33	1530
Hulburd, Harriet A., Perrysburg, Ohio. Scrap-book	330,897	Nov. 24	1954	529	33	900
Hulit, David H. (See Watson and Hulit.)						
Hull, Elizabeth, New York, N. Y. Folding soap-dish	331,062	Nov. 24	2159	586	33	940
Hull, Granville H., Lafayette, Ind. Combined spectacles and watch-maker's eyeglass	331,791	Dec. 8	810	206	33	1150
Hull, John B. T., Baltimore, Md. Nut-lock	329,649	Nov. 3	301	77	33	562
Hull, John S., Baltimore, Md. Soldering-iron heater	328,406	Oct. 13	1179	305	33	223
Humel, Gustav. (See Bassemir and Humel.)						
Humphreville, Frank, Lancaster, Pa. Incubator-thermostat	333,075	Dec. 22	2635	691	33	1489
Humphrey, Dudley S., East Townsend, Ohio. Knife for cutting seed-potatoes	332,657	Dec. 15	2056	540	33	1377
Humphrey, Henry P., Lowell, Mass., assignor to Lowell Oiler Company, Nashua, N. H. Cam	329,904	Nov. 10	653	166	33	634
Humphreys, James W., Iroquois, Ill. Ditching-machine	328,407	Oct. 13	1180	305, 306	33	223
Humphreys, James W., Iroquois, Ill. Ditching-machine	330,331	Nov. 10	1208	323	33	745
Humphreys, Robert C., *et al.* (See Robinson, William, assignor.)						
Humphreys, Robert E., Irwin, Pa. Bicycle-saddle	328,682	Oct. 20	1553	404	33	297
Humphreys, Robert E., Irwin, Pa. Spring for velocipede-seats	332,658	Dec. 15	2057	540	33	1378
Humphreys, Thomas. (See Milbourne and Humphreys.)						
Hunsaker, John E., Vienna, Ill. Book and music clamp	330,402	Nov. 17	1325	352	33	773
Hunt, Charles W., West New Brighton, N. Y. Hoisting machinery	332,803	Dec. 22	2256	595	33	1421
Huot, Franklin B., assignor to Richmond Sulky Plow Company, Richmond, Ind. Plow	329,454	Nov. 3	32	9	33	511
Hunt, Franklin B., assignor to Richmond Sulky Plow Company, Richmond, Ind. Sulky-plow	329,905	Nov. 10	654	167	33	634
Hunt, Franklin B., assignor to Richmond Sulky Plow Company, Richmond, Ind. Plow	331,063	Nov. 24	2159	586	33	940
Hunt, George G., Plano, Ill. Grain-binding machine	331,883	Dec. 8	944	244	33	1175
Hunt, George G., Bristol, assignor of one-half to Plano Manufacturing Company, Plano, Ill. Wheel for harvesters	331,971	Dec. 8	1071	278	33	1199
Hunt, Ira J., assignor to M. Hill, Kalamazoo, Mich. Wheel harrow and cultivator	331,399	Dec. 1	203	53	33	1034
Hunt, James H., Chicago, Ill. Combined elevator and distributer	331,884	Dec. 8	946	244, 245, 246	33	1175
Hunt, Joshua, Catasauqua, assignor to Baker Lime Company, (limited,) Avondale, Pa., Limekiln	330,121	Nov. 10	949	246, 247	33	692
Hunt, Napoleon P., *et al.* (See Genin, John B., assignor.)						
Hunt, Willis M., Glen Gardner, N. J. Forming packages of paper bags	328,888	Oct. 20	1813	472	33	346
Huntbatch, Thomas, Geneva, Iowa. Paint or whitewash brush	327,947	Oct. 6	571	148	33	103
Hunter, Christopher C., Concordia, Kans. Cultivator	331,885	Dec. 8	951	246	33	1176
Hunter, Hiram A., Topeka, Kans. Tramway-switch	333,076	Dec. 22	2636	691	33	1489
Hunter, Robert G., Palatka, Fla. Pocket-knife	333,466	Dec. 29	3176	829	33	1590
Hunter, William H., *et al.* (See Matteson, Eugene R., assignor.)						
Hunter, William H., Farnhamville, Iowa. Cultivator	333,227	Dec. 29	2858	747	33	1535
Huntington, William H. (See Tilton, James E., assignor.)						
Huntington, William S., New York, N. Y. Railway-spike	328,889	Oct. 20	1814	472	33	346
Huntley, George F. (See Fawcett and Huntley.)						
Huntley, Perry, Bridgeport, Conn. System of communication with divers	329,391	Oct. 27	2569	662	33	488
Huntoon, Hazen P., Boston, Mass. Collar and cravat	327,687	Oct. 6	253	62	33	44
Hurd, Charles S, New York, N. Y. Apparatus for charging blast and other shaft furnaces	329,044	Oct. 27	2062	535, 536	33	396
Hurford, Oliver P., Oakdale, Nebr. Reel-bolt	331,240	Nov. 24	2421	656, 657	33	986
Hurlbut, Henry W. (See Vanorman, Oliver, assignor.)						
Hurley, John A., Erie, Pa. Flue-cleaner	329,045	Oct. 27	2066	536	33	397
Hurley, Joseph P., Philadelphia, Pa. Kitchen utensil	332,201	Dec. 8	1407	363	33	1257
Hurst, John M., Coalville, Utah Ter. Carpet-stretcher	327,688	Oct. 6	253	63	33	44
Huse, Warren D., Laconia, assignor to O. Twombly, Lake Village, N. H., and T. S. Nowell, Boston, Mass. Knitting-machine needle	329,906	Nov. 10	655	167	33	634
Huse, Warren D., Laconia, assignor to O. Twombly, Lake Village, N. H., and T. S. Nowell, Boston, Mass. Knitting-machine	331,400	Dec. 1	204	53	33	1034
Huse, Warren D., Laconia, assignor to O. Twombly, Lake Village, N. H., and T. S. Nowell, Boston, Mass. Knitting-machine	331,401	Dec. 1	205	54	33	1034
Huse, Warren D., Laconia, assignor to O. Twombly, Lake Village, N. H., and T. S. Nowell, Boston, Mass. Knitting-machine	331,402	Dec. 1	207	54	33	1035
Hussey, Charles L., Sacramento, Cal. Remedy for blackleg	332,804	Dec. 22	2257	.....	33	1421
Hussey, Frank W. (See Hussey, Isaac, assignor.)						
Hussey, Isaac, assignor to himself and F. W. Hussey, Columbus, Ohio. Wash-board	330,785	Nov. 17	1805	486	33	865
Hussey, Sylvanus, Silver Creek, N. Y. Rock-drill	330,489	Nov. 17	1434	363	33	794
Hussey, Sylvanus, Buffalo, N. Y. Rock-drill	330,981	Nov. 24	2065	559, 560	33	922
Hussong, Joseph, Camden, N. J. Ice-velocipede	330,786	Nov. 17	1805	487	33	866
Huston, Henry C. (See Ehrman, Samuel, assignor.)						
Hutchins, Carleton B., Detroit, Mich. Roofing compound	333,467	Dec. 29	3177	.....	33	1590
Hutchins, George W., assignor to W. C. Plummer, Newburyport, Mass. Key-ring	331,301	Dec. 1	61	15	33	1010
Hutchins, William J., Joliet, Ill. Wire-fence stay	328,890	Oct. 20	1814	473	33	346
Hutchinson, A. I. (See Casey, David F., assignor.)						
Hutchinson, Jesse L., Baltimore, Md. Water-closet	330,706	Nov. 17	1703	460	33	847
Hutchinson, Merrill N., New York, N. Y. Elevator	333,468	Dec. 29	3178	830	33	1590
Hutchison, William, Ottawa, Ontario, Canada. Oatmeal and grain reduction mill	331,403	Dec. 1	208	54, 55	33	1035
Huth, John, Canton, Ohio. Sash-fastener	333,228	Dec. 29	2860	747	33	1535
Huyett, Miles C., Detroit, Mich. Combined heater and fan-blower	329,838	Nov. 3	562	143	33	609
Hyatt, John W., Newark, N. J. Combining pyroxyline and its solvents in the manufacture of solid compounds	331,241	Nov. 24	2423	657	33	986
Hyatt, John W., Newark, N. J. Combining pyroxyline and its solvents in the manufacture of solid compounds	331,242	Nov. 24	2424	657	33	987
Hyatt, John W., Newark, N. J. Compounding pyroxyline with its solvents in the manufacture of solid compounds	331,713	Dec. 1	703	174	33	1122
Hyatt, Walter P., Matteawan, N. Y. Felt glove or mitten	331,501	Dec. 1	347	94	33	1060
Hyatt, Walter P., Matteawan, N. Y., assignor to New York Felting Company. Machine for hardening seamless felt boots, shoes, &c	332,659	Dec. 15	2057	540	33	1378

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hyatt, William F., Brooklyn, N. Y. Match-box	327,669	Oct. 6	254	63	33	44
Hyde, Alfred T., Oil City, Pa. Artesian-well rig	331,714	Dec. 1	704	174	33	1122
Hyde, Gustavus A., Sr., Cleveland, Ohio, and Gustavus A. Hyde, Jr., East Saginaw, Mich. Gas-pressure regulator. (Reissue)	10,656	Nov. 3	608	156	33	618
Hydraulic Elevator Company. (See Bassett, Norman C., assignor.)						
Hydraulic Press Brick Company. (See Graves, Willis N., assignor.)						
Hyland, William, New Haven, Conn. Decorating wood and other opaque bodies	333,127	Dec. 29	2719	.....	33	1511
Hynson, Augustus R., St. Louis, Mo. Safe-edge scoop	330,834	Nov. 17	1866	504	33	877
Ide, Ferdinand F., Springfield, Ill. Testing balance-wheels of watches	328,847	Oct. 20	1756	457, 458	33	336
Ide, Ferdinand F., Springfield, Ill. Device for testing balance-wheels of watches	328,848	Oct. 20	1758	458, 459	33	336
Iffland, George. (See Wolf and Iffland.)						
Ihne, William, Medford, Wis. Preserving	328,223	Oct. 13	928	.....	33	177
Illinois High Speed Engine Company. (See Hardy, Dexter D., assignor.)						
Illinois Watch Company. (See Taft, Ryland L., assignor.)						
Imhorst, Ferdinand, San Francisco, Cal. Piano-action	332,716	Dec. 22	2151	568	33	1400
Immendorf, George H., assignor to H. G. Morris, Philadelphia, Pa. Grain-drier	331,138	Nov. 24	2272	616	33	959
Immisch, Moritz, London, England. Electric motor	327,797	Oct. 6	383	99, 100	33	67
Imperial Electric Light Company. (See Perkins, Charles G., assignor.)						
Ingalls, Wellington, assignor, by mesne assignments, to himself and A. O. Bailey, Mattawamkeag, Me. Machine for sowing and harrowing seed	328,488	Oct. 20	1278	332	33	248
Ingersoll, John H., Edgewood, Iowa. Draft-equalizer	332,805	Dec. 22	2258	595	33	1421
Ingersoll, Simon, Glenbrook, Conn. Support for rock-drills	333,077	Dec. 22	2638	691	33	1490
Ingersoll, Simon, Stamford, assignor of one-half to A. C. Hawes, Noroton, Conn. Gun and projectile for throwing life-lines	331,792	Dec. 8	811	206	33	1150
Ingoldsby, Edward M., New York, N. Y. Elevator	328,311	Oct. 13	1036	268	33	196
Ingraham Company, E. (See Goodrich, George L., assignor.)						
Inman, John L., and E. H. Stevens, Putnam, Conn. Picking-shoe for looms	331,886	Dec. 8	954	247	33	1177
Insley, William E., and E. H. Dunten, Lapeer, Mich. Cotton hoe and chopper	333,305	Dec. 29	2968	776, 777	33	1556
Ireland Manufacturing Company. (See Voll, George, assignor.)						
Ireland, Thomas S. (See Voll, George, assignor.)						
Irvine, Albert G., Gloucester City, N. J. Button-fastener	330,586	Nov. 17	1552	416	33	816
Irvine, William F., Lampasas, Tex. Weighing apparatus	331,640	Dec. 1	600	148	33	1102
Irving, John, New Brighton, N. Y. Folding linings	330,707	Nov. 17	1703	460	33	847
Irwin, Corinna R., *et al.* (See Barnekov, Kiel V., assignor.)						
Irwin, Joseph I., *et al.* (See Reeves, Alfred B. M. T. and J. N. D., assignors.)						
Isbell, Charles W., New York, N. Y. Gas-scrubber	328,408	Oct. 13	1182	306	33	224
Isbell, Charles W., New York, N. Y. Apparatus for making illuminating-gas	330,122	Nov. 10	953	247	33	693
Isbell, Robert H., New York, N. Y. Button	330,403	Nov. 17	1325	352	33	773
Isherwood, Thomas, Westerly, R. I. Fabric	330,787	Nov. 17	1807	487	33	866
Ismond, Robert E., Chicago, Ill. Stock-car	332,060	Dec. 8	1237	323	33	1298
Iverson, Albert H. (See Covington, Philip A., assignor.)						
Ivins, Ellwood. (See Snyder, Daniel, assignor.)						
Ivins, Ellwood, Philadelphia, Pa., assignor to Patent Button Company, Waterbury, Conn. Button-fastener	329,744	Nov. 3	430	109	33	586
Jackman, Joseph O., assignor to W. Deering, Chicago, Ill. Cord-holder for grain-binders	331,404	Dec. 1	209	55	33	1035
Jackson, Andrew, assignor of one-half to J. E. Savage, San Francisco, Cal. Elevated electric railway	324,690	Oct. 6	254	63	33	45
Jackson, Charles T., assignor to Hecla Electric Light Company, New York, N. Y. Armature for dynamo-electric machines	331,502	Dec. 1	347	94	33	1060
Jackson, David, Pawtucket, R. I. Top roll for spinning machinery	327,691	Oct. 6	256	64	33	45
Jackson, Edgar B., assignor of one-half to L. B. Jackson, Delaware, Ohio. Wrench	330,835	Nov. 17	1867	504	33	877
Jackson, Edward W., Mount Kisco, N. Y. Bridle-bit	328,781	Oct. 20	1672	435	33	320
Jackson, Frederick W., assignor to S. C. Mendenhall, Richmond, Ind. Roller-skate	329,907	Nov. 10	655	168	33	634
Jackson, Loren G., assignor of one-half to O. M. Loomis, Woodman, Wis. Potato-digger	330,898	Nov. 24	1955	529	33	900
Jackson, Louis B. (See Jackson, Edgar B., assignor.)						
Jackson, Samuel W., Chicago, Ill. Cable-railway grip-car	329,170	Oct. 27	2235	579	33	427
Jackson, William, assignor to Specialty Manufacturing Company, (limited,) Allegheny, Pa. Balanced stop-valve	329,650	Nov. 3	302	77	33	562
Jackson, William W., Chicago, Ill. Safety device for elevators	331,405	Dec. 1	210	55	33	1035
Jacobs, Hero, *et al.* (See Kittler, Julius W., assignor.)						
Jacobson, John C., Boston, Mass. Curtain for cars	328,224	Oct. 13	929	241	33	177
Jacobus, Charles G., Cedar Grove, N. J., assignor to H. H. Jacobus, Brooklyn, N. Y. Whiffletree-hook	331,715	Dec. 1	706	174	33	1123
Jacobus, Francis B., and W. V. McKinley, Albany, N. Y. Parlor base-ball game	330,788	Nov. 17	1807	487	33	866
Jacobus, Herbert H. (See Jacobus, Charles G., assignor.)						
Jaeger, Emil, Planen, near Dresden, Saxony, Germany. Baking apparatus	333,229	Dec. 29	2861	748	33	1535
Jaeger, Gustav L., New York, N. Y. Paper box	332,535	Dec. 15	1985	492	33	1346
Jager, Frank. (See McGuire, William, assignor.)						
James, Benjamin, assignor to W. B. James, Worcester, Mass. Filter	332,610	Dec. 15	1985	520	33	1365
James, Charles C., deceased, (E. C. James administrator,) and C. W. James, Dayton, Ohio. Stock-car	327,880	Oct. 6	479	125	33	85
James, Charles W. (See James, Charles C. and C. W.)						
James, Edwin C., administrator. (See James, Charles C. and C. W.)						
James, John R., Dunkirk, N. Y. Hammer for welding locomotive-frames	332,536	Dec. 15	1866	493	33	1346
James, Thomas, Jr., Carlyle, Ill. Burglar-alarm	328,225	Oct. 13	930	242	33	177
James, Walter B. (See James, Benjamin, assignor.)						
Jan Graw, Selden A., Nashua, N. H. Bicycle	330,123	Nov. 10	955	247	33	694
Jannus, Frankland, Washington, D. C., assignor to H. B. Smith Machine Company, Smithville, N. J. Bicycle	331,199	Nov. 24	2361	639	33	976
Janaen, Franklin M., Sheldon, Iowa. Harrow	328,782	Oct. 20	1672	435	33	320
Janssen, C. Diedrich, Torrington, Conn. Combined rule, calipers, and level	330,589	Nov. 17	1552	416	33	817
Jarboe, Walter S., Allegheny City, Pa. Grate for burning gas in fire-places	329,172	Oct. 27	2237	580	33	428
Jarrett, Elisha T., Melissa, Tex. Harrow and rake attachment for plows and cultivators	329,745	Nov. 3	430	110	33	586
Jarvis, J. George, assignor to American Zylonite Company, Adams, Mass. Manufacture of pyroxyline compounds	329,313	Oct. 27	2445	.....	33	467
Jarvis, William H., assignor to Wallace & Sons, Ansonia, Conn. Guide for rolling-mills	330,708	Nov. 17	1704	460	33	847
Jeffery, Edwin A. and F. M., Jersey City, N. J. Spring bed or bed-bottom	332,061	Dec. 8	1239	323, 324	33	1298
Jeffery, Edwin A. and F. M., Jersey City, N. J. Spring bed or bed-bottom	332,062	Dec. 8	1243	324, 325	33	1298

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Jeffery, Frank M. (See Jeffery, Edwin A. and F. M.)						
Jeffery, Thomas B., Ravenswood, Ill. Bicycle	333,128	Dec. 29	2720	714	33	1511
Jeffrey, Joseph A. (See Legg, Benjamin A., assignor.)						
Jehle, Philip, assignor to M. and W. H. Nixon, Philadelphia, Pa. Former for paper bags	329,173	Oct. 27	2239	520	33	428
Jenkins, Caldwell C., Philadelphia, Pa. Car-axle box	328,312	Oct. 13	1037	268	33	196
Jenkins, William P., and J. L. Streeter, Muncie, Ind. Poultry-car	330,859	Nov. 24	1956	530	33	901
Jenks, Henry F., and W. H. Butman, Pawtucket, R. I. Saw-setting machine	328,035	Oct. 13	686	181	33	131
Jenner, Herbert W. T., Washington, D. C. Liquor-flask	330,709	Nov. 17	1705	460	33	848
Jenney, Charles D., Indianapolis, Ind. Armature for dynamo-electric machines	330,490	Nov. 17	1436	384	33	795
Jenney, Charles D., Indianapolis, Ind. Commutator for dynamo-electric machines	332,299	Dec. 15	1688	442	33	1313
Jennings, Arthur O., Southport, Conn. Alarm-clock	327,455	Nov. 3	32	10	33	511
Jennings, David, Lyons, N. Y. Chalk-holder	331,139	Nov. 24	2274	617	33	960
Jennings, Linson D. (See Tourgee and Jennings.)						
Jennings, Linson D. *et al.* (See Tourgee, Albion W., assignor.)						
Jensen, Carl L., Philadelphia, Pa. Capsule for medicines, wines, &c	330,491	Nov. 17	1437	384	33	795
Jerome, Moses J., Newburg, N. Y. Ironing-table	328,783	Oct. 20	1673	436	33	320
Jerrold, John E., assignor of one-half to W. R. Edwards and A. B. Black, Milwaukee, Wis. Joint or seam for steam-boilers	329,314	Oct. 27	2446	633	33	468
Jewell, Henry C., Washington, D. C. Ruler	330,124	Nov. 10	956	248	33	694
Jewell, Omar H., assignor to J. B. Clow, Chicago, Ill. Lubricator	328,313	Oct. 13	1038	268	33	196
Jewett, John C., Buffalo, N. Y. Combined filter and cooler	330,704	Nov. 17	1326	351	33	773
Jewett, Thomas B., assignor to W. B. Jewett, Stenbenville, Ohio. Head-rest	332,154	Dec. 8	1353	350	33	1247
Jewett, William B. (See Jewett, Thomas B., assignor.)						
Jincks, Melvin, Conesus Centre, N. Y. Wash-board	327,881	Oct. 6	480	125	33	85
Jincks, Melvin, Conesus Centre, N. Y. Potato or manure fork	329,046	Oct. 27	2066	536	33	397
John, William H. (See Skiles, Robert M., assignor.)						
Johns, David W., New Albany, Ind. Saw-sharpening machine	332,611	Dec. 15	1986	{520 521}	33	1365
Johns, Frank L., assignor of two-thirds to J. H. Modrell and J. P. Bradford, Clay City, Ind. Hay-rack	329,047	Oct. 27	2067	537	33	398
Johnsen, Alfred E., Austin, Nev. Engine	329,563	Nov. 3	193	51, 52	33	542
Johnson, Albert W., New Haven, Conn. Tuck-marking attachment for sewing-machines	329,908	Nov. 10	657	168	33	635
Johnson, Albert W., New Haven, Conn. Ruffling attachment for sewing-machines	331,793	Dec. 8	812	207	33	1151
Johnson, Albert W., New Haven, and J. P. Laviene, Wallingford, Conn. Embroidery attachment for sewing-machines	329,564	Nov. 3	194	52	33	542
Johnson, Andy B., Decatur, Mich. Platform-spring for vehicles	330,405	Nov. 17	1327	351	33	773
Johnson, Bernt M., Racine, Wis. Axle-box	328,683	Oct. 20	1554	405	33	297
Johnson, Cantwell, and L. W. Nuebling, Indianapolis, Ind. Roller-skate	331,302	Dec. 1	62	15	33	1010
Johnson, Charles C., Springfield, assignor to Moore, Arma & Thompson, Bellows Falls, Vt. Toilet-paper holder	328,409	Oct. 13	1184	307	33	224
Johnson, Charles M., Chicago, Ill. Pneumatic dispatch-tube system	332,905	Dec. 22	2460	634	34	1448
Johnson, Daniel A., Boston, Mass. Spring-washer	330,492	Nov. 17	1438	384	33	795
Johnson Electric Service Company. (See Johnson, Warren S., assignor.)						
Johnson, Frank G., New York, N. Y. Arm-rest for telephone uses	327,692	Oct. 6	257	64	33	45
Johnson, Frank G., New York, N. Y. Telephone-cabinet	329,909	Nov. 10	659	168	33	635
Johnson, George R. (See Lowe and Johnson.)						
Johnson, George W., Jr. (See Johnson, William L., assignor.)						
Johnson, Gustaf, Denver, Colo. Hay-press	330,982	Nov. 24	2068	560	33	922
Johnson, Henry C., *et al.* (See Baxter, Charles O., assignor.)						
Johnson, Henry C., Meadville, Pa. Refrigerator-car	328,684	Oct. 20	1555	405	33	297
Johnson, Henry C., Meadville, Pa. Process of and apparatus for dehydrating and refrigerating air for the preservation of meat, &c	328,685	Oct. 20	1556	405	33	297
Johnson, Henry C., Meadville, Pa. Corpse cooler and preserver	328,686	Oct. 20	1558	406	33	298
Johnson, Henry C., Meadville, Pa. Refrigerating and dehydrating apparatus for meat, &c	328,784	Oct. 20	1674	436	33	321
Johnson, Henry C., and J. B. Moore, El Dorado, Ark. Back-band hook	330,900	Nov. 24	1957	530	33	901
Johnson, Henry C., and J. Kozisek, Chicago, Ill., assignors of one-half to C. O. Baxter, St. Louis, Mo. Finishing picture-frames	327,556	Oct. 6	73	.....	33	14
Johnson, Henry J., Providence, R. I., assignor to Plumb, Burdict & Barnard, Buffalo, N. Y. Machine for forging bolt-blanks	330,901	Nov. 24	1957	530	33	901
Johnson, John B., Judsonia, Ark. Device for assorting berries, &c	329,565	Nov. 3	196	52	33	542
Johnson, John W., Pendleton, Mo. Car-coupling	328,785	Oct. 20	1676	436	33	321
Johnson, Joseph W., assignor to himself and M. Gidley, Lathrop, Mo. Harness-pad press	330,710	Nov. 17	1706	461	33	848
Johnson, Leonard A., Candor, N. Y. Clothes-drier	330,711	Nov. 17	1707	461	33	848
Johnson, Madison L., Galena, Ill. Conductor's book	329,315	Oct. 27	2447	634	33	468
Johnson, Moses C., Hartford, Conn. Twist-drill	329,154	Oct. 27	2240	580	33	428
Johnson, Nathaniel, New York, N. Y. School-desk	329,155	Oct. 27	2241	580	33	428
Johnson, Samuel H., Stratford, county of Essex, England. Filtering-paper	328,947	Oct. 27	1907	.....	33	369
Johnson, Sander, Minneapolis, Minn. Car starter and brake	329,839	Nov. 3	563	143	33	610
Johnson, Simeon S., administrator. (See McClure, Jesse D.)						
Johnson Steel Street Rail Company. (See Townsend, John, assignor.)						
Johnson, Theodore, Petersburg, Ind. Sulky attachment for plows	331,972	Dec. 8	1073	278	33	1199
Johnson, Tom L., Cleveland, Ohio. Signal for tram-cars	329,566	Nov. 3	198	52	33	542
Johnson, Tom L., Cleveland, Ohio. Cleaning cable-ways	333,306	Dec. 29	2969	777	33	1556
Johnson, Victor D., Mount Pleasant, Iowa. Sled-runner	331,303	Dec. 1	64	15, 16	33	1011
Johnson, Warren S., assignor to Johnson Electric Service Company, Whitewater, Wis. System of temperature-regulation	331,406	Dec. 1	213	56	33	1036
Johnson, William H., *et al.* (See Oliphant, Samuel C., assignor.)						
Johnson, William L., assignor to G. W. Johnson, Jr., Hackettstown, N. J. Filter	332,660	Dec. 15	2058	541	33	1378
Johnston, Allen, *et al.* (See Briggs, Alfred, assignor.)						
Johnston, David M., Stockton, Cal. Gang-plow	331,503	Dec. 1	348	94	33	1061
Johnston, George, San Francisco, and E. G. Smith, Sacramento, Cal. Grape stemmer and crusher	327,693	Oct. 6	258	64	33	45
Johnston, Robert A., Allegheny, Pa. Means for instructing beginners in roller-skating	330,493	Nov. 17	1439	384	33	795
Johnston, Samuel, and G. H. Raymond, Brockport, N. Y. Harvesting-machine	331,887	Dec. 8	955	247	33	1177
Johnston, William, Essex, Iowa. Pump	329,910	Nov. 10	660	168	33	635
Johnston, William, assignor of one-half to C. Gallagher, Philadelphia, Pa. Shaft-coupling	331,200	Nov. 24	2363	639	33	976
Johnston, William M. (See Moles, Charles E., assignor.)						
Johnstone, Francis W., Mexico, Mexico. Locomotive	331,973	Dec. 8	1074	{279 280 281}	33	1200
Johnstone, John F., Bow Common Lane, county of Middlesex, assignor to H. J. Anderson, No. 101 Leadenhall Street, London, England. Drier	327,948	Oct. 6	572	149	33	103
Johnstone, William, assignor to G. G. Banks, Edinburgh, county of Edinburgh, Scotland. Hansom-cab	331,504	Dec. 1	350	94, 95	33	1061

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Jolly, Benjamin R., Raleigh, N. C. Calendar	330,028	Nov. 10	821	211	33	666
Jones, Edward, Leeds, county of York, England. Secondary battery	331,407	Dec. 1	215	56	33	1036
Jones, Edward, Leeds, county of York, England. Manufacturing electrodes for secondary batteries	331,408	Dec. 1	217	57	33	1036
Jones, Evan W., Portland, Oreg. Rock-crusher	329,048	Oct. 27	2068	537	33	398
Jones, Florentine A., Malden, Mass. Pressure-regulator	330,240	Nov. 10	1093	{288 289}	33	721
Jones, Frank C., assignor to New York Belting and Packing Company, New York, N. Y. Vulcanized-rubber packing	331,140	Nov. 24	2275	617	33	960
Jones, Franklin D., and H. M. Hart, Burlington, Kans. Mechanical motor	330,029	Nov. 10	822	211	33	666
Jones, J. W. (See Smith, Presley S., assignor.)						
Jones, James H., assignor to Emerson, Talcott & Co., Rockford, Ill. Tubular beam	327,949	Oct. 6	574	149	33	103
Jones, James H., assignor to Emerson, Talcott & Co., Rockford, Ill. Seeding-machine	327,950	Oct. 6	575	149	33	103
Jones, James S., Crutchfield, Ky. Washing-machine	328,891	Oct. 20	1815	473	33	346
Jones, Joseph W., Somerset, Ind. Land-roller	328,469	Oct. 20	1279	332	33	248
Jones, Kasaak S., assignor to R. N. Jones, Flint, Mich. Billiard-chalk holder	333,230	Dec. 29	2962	748	33	1535
Jones, Lemuel R., Winchester, Ind. Horse-power	333,415	Dec. 29	3107	809	33	1579
Jones, Levin T., Baltimore, Md. Umbrella drip cup	330,789	Nov. 17	1809	488	33	866
Jones, Mary M., Menominee, Wis. Corset	332,202	Dec. 8	1407	363	33	1257
Jones, Ransom N. (See Jones, Kasaak S., assignor.)						
Jones, Thomas J. (See Fitz Gerald and Jones.)						
Jones, Wiley, Norfolk, Va. Station-indicator	327,951	Oct. 6	576	150	33	104
Jones, William E., Asheville, N. C. Portable fence	328,849	Oct. 20	1760	459	33	336
Jönsson, Oscar F., Stockholm, Sweden. Dynamo-electric machine	330,836	Nov. 17	1868	{504 505}	33	877
Jopson, George W. (See Mitchell, John M., assignor.)						
Jordan, Edmund, Brooklyn, N. Y. Drawing-board	329,392	Oct. 27	2570	663	33	488
Jordan, Edmund, Brooklyn, N. Y. Friction-clutch	329,393	Oct. 27	2572	663	33	489
Jordan, Edmund, assignor to E. W. Bliss, Brooklyn, N. Y. Can-cleansing machine	328,892	Oct. 20	1815	473	33	346
Jordan, Jesse, and O. F. Lagerquist, Macon, Ga. Seal-lock	328,893	Oct. 20	1817	474	33	347
Jordan, Louis, New York, N. Y. Toilet-case	328,588	Oct. 20	1417	369	33	273
Jordan, Michael, *et al.* (See King, George H., assignor.)						
Jordan, Oswald F., St. Thomas, Ontario, Canada, and L. M. Curry, Chicago; said Curry assignor to H. A. Black, Franklin Grove, Ill. Switch-lamp	328,490	Oct. 20	1280	332	33	249
Jordan, William S., Worcester, assignor to B. Dow & Co., Boston, Mass. Automatic sprinkler	330,125	Nov. 10	957	248	33	694
Joslin, Henry W., assignor to himself and G. Agnew, Titusville, N. J. Boot or shoe	329,049	Oct. 27	2070	537	33	398
Joy, William, Northfleet, England. Manufacture of cement	331,243	Nov. 24	2426	.....	33	967
Joyce, Maurice, Washington, D. C. Stereotype-block	327,798	Oct. 6	385	100	33	67
Joyce, Maurice, Washington, D. C. Producing printing-surfaces	333,129	Dec. 29	2721	714	33	1511
Judd, Henry, West Cheshire, assignor of one-half to J. Scott, Southington, Conn. Pocket-rule	330,837	Nov. 17	1870	506	33	877
Judge, George. (See Snelson and Judge.)						
Judson, Charles N., Brooklyn, N. Y. Printing-telegraph	328,491	Oct. 20	1281	333	33	249
Julinsberger, Fedor, Berlin, Germany. Fountain-pen	331,794	Dec. 8	814	207	33	1151
Jull, Samuel T., Cleveland, assignor of one-half to D. J. C. Arnold, New London, Ohio. Carpet cleaning machine	330,406	Nov. 17	1328	353	33	774
Junge, Frederick, Chicago, Ill. Velocipede	327,952	Oct. 6	577	150	33	104
Jungenfeld, Edmund, and H. Rassbach, assignors to Empire Refrigerating Company, St. Louis, Mo. Oil-drip and separating-tank for ammonia-gas pumps	332,344	Dec. 15	1609	422	33	1300
Jungenfeld, Edmund, and H. Rassbach, assignors to Empire Refrigerating Company, St. Louis, Mo. Stop-cock for ammonia-gas	332,345	Dec. 15	1610	423	33	1300
Jungenfeld, Edmund, and H. Rassbach, assignors to Empire Refrigerating Company, St. Louis, Mo. Gas-compressor	332,346	Dec. 15	1611	423	33	1300
Kabisch, Carl, Cleveland, Ohio. Wrench	331,974	Dec. 8	1082	281	33	1201
Kadel, William H., Rock Falls, Ill. Corn-planter	328,036	Oct. 13	688	182	33	132
Kaestner, Charles, Chicago, Ill. Friction clutch	328,786	Oct. 20	1677	437	33	321
Kahl, Adolph, Sorento, Ill. Blast-regulator for fans	329,567	Nov. 3	199	53	33	543
Kahler, Clarence H., Wilmington, Ill. Pocket-knife	332,537	Dec. 15	1687	493	33	1347
Kahla, Hermann, Chemnitz, Saxony, Germany. Mat-work lathing	331,888	Dec. 8	957	247	33	1177
Kailer, John N. (See Miller and Kailer.)						
Kaiser, Jacob, Cleveland, Ohio. Governor for steam-engines	333,130	Dec. 29	2722	715	33	1511
Kalling, Lewis, Jr., Baltimore, Md. Bottle-stopper fastening	330,712	Nov. 17	1708	461	33	848
Kalling, Lewis, Jr., Baltimore, Md. Bottle-stopper fastening	332,063	Dec. 8	1245	325	33	1229
Kanavan, John J. (See Clancy, Patrick J., assignor.)						
Kane, Daniel, Norwich, Conn. Belt-hole cover	327,694	Oct. 6	259	65	33	46
Kane, Daniel P., St. Louis, Mo. Reversing device for engines	328,787	Oct. 20	1678	437	33	321
Kane, Maurice, Chicago, Ill. Draft-equalizer	328,037	Oct. 13	690	182	33	132
Kaumacher, George H., Columbus, Ohio, assignor to R. Deimel & Brothers, Chicago, Ill. Folding bedstead	332,612	Dec. 15	1988	521	33	1365
Kanouse, John G., assignor of two-thirds to R. Miller and W. Polifka, Appleton, Wis. Hay-carrier	330,983	Nov. 24	2069	{560 561}	33	922
Kappenberg, Augustus W., East Hartford, Conn. Fertilizer-drill	331,201	Nov. 24	2364	640	33	976
Karp, Carl, administrator. (See Oettel, Carl.)						
Karwiese, Gustavus A., New York, N. Y. Expansion-flange connection	332,906	Dec. 22	2402	635	33	1448
Kastner, Joseph. (See Kinne and Kastner.)						
Katz, J. Harmar, Pittsburg, Pa. Apparatus for supplying natural gas to locomotives	331,716	Dec. 1	707	175	33	1123
Kauffer, Theodore L., Boston, Mass. Electric battery	328,942	Oct. 27	1907	498	33	369
Kauffer, Theodore L., Boston, assignor to W. B. H. Dowse, trustee, Newton, Mass. Electric battery	328,687	Oct. 20	1559	406	33	298
Kay, James I., Allegheny, Pa. Gas-conduit	329,568	Nov. 3	200	53	33	543
Kaye, Walter E. (See Brown, Fred. H., assignor.)						
Kayser, Isaac, *et al.* (See Meissner, John, assignor.)						
Keagle, Edward T., Marseilles, Ill. Medicament-retainer for horses' feet	330,241	Nov. 10	1094	289	33	722
Keck, Peter S., and J. J. Schadt, Allentown, Pa. Fire-escape	332,255	Dec. 15	1493	391	33	1279
Keech, Milton, and J. Laberdee, Gouverneur, N. Y. Reach for wagons	332,064	Dec. 8	1246	325	33	1229
Keeler, David L., Grand Rapids, Mich. Tension device for sewing machines	328,688	Oct. 20	1561	406	33	298
Keeler, Henry, Oskaloosa, Kans. Aggregate cube	332,256	Dec. 15	1494	391	33	1279
Keeler, Noah, Wallace, N. Y. Potato-digger	327,482	Oct. 6	481	126	33	85
Keeley, David H., Ottawa, Ontario, and A. A. E. Garvey, Montreal, Quebec, Canada. Quadruplex and duplex telegraph	331,975	Dec. 8	1083	282	33	1201
Keelyn, Peter F., Racine, Wis. Wire-clamp	332,347	Dec. 15	1612	423	33	1301
Keen, Charles P., assignor to R. J. Keen, Leesburg, Ohio. Liniment	327,993	Oct. 6	482	.....	33	85
Keen, Orlando, Allentown, Pa. Shaft-tug	329,569	Nov. 3	202	53	33	543

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Keen, Rebecca J. (See Keen, Charles P., assignor.)						
Keenan, Matthew, Armagh Works, Tredegar Road, North Bow, county of Middlesex, England. Boiler-covering	331,409	Dec. 1	219	57	33	1037
Keenan, William J., Boston, and E. M. Wilson, Worcester, Mass. Fire-alarm signal	333,131	Dec. 29	2724	715, 716	33	1511
Keene, George A., Lynn, Mass. Floor-mop	331,641	Dec. 1	601	148	33	1103
Kegler, William, Bellevue, Iowa. Chain-pump	331,889	Dec. 8	957	248	33	1177
Keith, Jeremiah, Florence, Mass. Connecting buttons to cloth or other material	330,407	Nov. 17	1329	354	33	774
Kelchner, Sylvester W., Fowlersville, Pa. Potato-digger	331,505	Dec. 1	351	95	33	1061
Kelleher, William H., assignor of one-half to B. F. Anthony, Boston, Mass. Street-car pole	328,121	Oct. 13	801	209	33	151
Keller, Ernest. (See Leger and Keller.)						
Keller, Jeremiah, Sandusky, Ohio. Lawn-mower	330,714	Nov. 17	1711	462	33	849
Keller, Jeremiah, assignor to O. Kromer, Sandusky, Ohio. Harvester	330,713	Nov. 17	1709	461, 462	33	849
Keller, John F., Shepardstown, W. Va. Boot for seeding-machines. (Reissue)	10,649	Oct. 6	616	161	33	112
Kelley, Charles H., *et al.* (See Bingham, Charles W., Jr., assignor.)						
Kelley, Charles H., Revere, assignor of one-half to F. C. Perkins, Somerville, Mass. Tool-holder for lathes	332,806	Dec. 22	2258	595	33	1422
Kelley, George W., assignor to L. H. and J. M. Noble, Goshen, Ind. Carpet-sweeper	330,500	Nov. 17	1554	416	33	817
Kelley, Isaac M., Imperial, Pa. Manufacture of coke	332,613	Dec. 15	1990	521, 522	33	1366
Kelley, Samuel. (See Turner, John W., assignor.)						
Kellner, Carl. (See Ritter and Kellner.)						
Kellner, Charles. (See Ritter and Kellner.)						
Kellogg & Bulkley Company. (See Fenn, Wallace T., assignor.)						
Kellogg, William P., Troy, N. Y. Curry-comb	327,695	Oct. 6	260	65	33	46
Kells, Edward, Cleveland, Ohio. Can-fancet	328,038	Oct. 13	691	182	33	132
Kelly, Alexander C., *et al.* (See Freeman, Augustus M., assignor.)						
Kelly, Charles J., Denver, Colo. Banjo	332,538	Dec. 15	1888	493	33	1347
Kelly, John P., Biddeford, assignor of one-half to G. Moore, Berwick, Me. Device for holding boots or shoes	330,902	Nov. 24	1960	531	33	901
Kelly, John T., Sr., Jonesborough, N. C. Turbine water-wheel	328,314	Oct. 13	1039	269	33	197
Kelly, Oliver W., and L. F. Dieter, Springfield, Ohio. Horse-power	329,394	Oct. 27	2575	663, 664	33	489
Kelly, Peter, Syracuse, N. Y. Gas-governor	331,890	Dec. 8	959	248	33	1178
Kelly, Wallace C., Hastings, Mich. Curtain-fixture	332,907	Dec. 22	2404	635	33	1448
Kelly, William A. (See Watson and Hubbell, assignors.)						
Kelly, William E., New Brunswick, N. J. Grate	331,141	Nov. 24	2276	617	33	960
Kelton, John C., San Francisco, Cal. Feed-case for magazine-guns	331,244	Nov. 24	2427	657	33	987
Kelton, John C., San Francisco, Cal. Cartridge-pack	331,891	Dec. 8	960	248	33	1178
Kelton, John C., San Francisco, Cal. Check-rein attachment	331,892	Dec. 8	961	248	33	1178
Kelton, John C., San Francisco, Cal. Safety-stop for fire-arms	333,416	Dec. 29	3108	810	33	1579
Kemp, Lewis G., and P. Ross, Frederick, Md. Grain-binder	331,142	Nov. 24	2278	618	33	960
Kempshall, Eleazer, assignor to American Button Fastener Company, New Britain, Conn. Button-fastener packing-case	328,315	Oct. 13	1040	269	33	197
Kempster, Daniel E., Boston, Mass. Copying-press	328,039	Oct. 13	692	182	33	132
Kempster, Daniel E., Boston, Mass. Thill-coupling	331,642	Dec. 1	602	149	33	1103
Kempster, Daniel E., Boston, Mass. Elevator for cash-carriers	332,085	Dec. 8	1247	325	33	1229
Kempster, Daniel E., Boston, Mass. Cash and parcel carrier	332,539	Dec. 15	1889	494	33	1347
Kengel, Joseph, Detroit, Mich. Vehicle-spring	329,316	Oct. 27	2448	634	33	468
Kenna, Thomas M., New Haven, Conn. Sash-pulley	329,317	Oct. 27	2449	634	33	468
Kennedy, Edward S. T., New York, N. Y. Steam-boiler	329,911	Nov. 10	660	169	33	636
Kennedy, Edward S. T., New York, N. Y. Marine boiler	329,912	Nov. 10	661	169	33	636
Kennedy, Hugh, and J. W. Higgs, Sharpsburg, assignors to Pittsburg Mineral Wool Company, Etna, Pa. Manufacture of mineral wool	328,226	Oct. 13	931	242	33	177
Kennedy, Hugh, and J. W. Higgs, Sharpsburg, assignors to Pittsburg Mineral Wool Company, Etna Pa. Apparatus for manufacturing mineral wool	328,227	Oct. 13	933	242, 243	33	177
Kennedy, John V. (See Desmond, John, assignor.)						
Kennedy Manufacturing Company, S. R. (See Kennedy, S. Ridgway, assignor.)						
Kennedy Manufacturing Company, S. R. (See Kennedy, Samuel R., assignor.)						
Kennedy, S. Ridgway, Philadelphia, Pa., assignor to S. R. Kennedy Manufacturing Company, Camden, N. J. Removing hair as a substitute for shaving	330,790	Nov. 17	1810	.....	33	866
Kennedy, Samuel R., Philadelphia, Pa., assignor to S. R. Kennedy Manufacturing Company, Camden, N. J. Composition for removing hair	330,715	Nov. 17	1712	.....	33	849
Kennedy, Samuel R., Philadelphia, Pa., assignor to S. R. Kennedy Manufacturing Company, Camden, N. J. Tablet for use in removing hair	330,716	Nov. 17	1714	462	33	849
Kennedy, Thomas, Philadelphia, Pa. Overflow for bath-tubs, sinks, &c	331,064	Nov. 24	2160	586	33	940
Kennedy, Thomas, Philadelphia, Pa. Pump	331,976	Dec. 8	1088	282	33	1201
Kenney Electrical Cash Carrier Company. (See Kenney, Thomas M., assignor.)						
Kenney Thomas M., Boston, Mass., assignor to Kenney Electrical Cash Carrier Company, Portland, Me. Cash system	329,050	Oct. 27	2070	538	33	398
Kenney, Thomas M., and F. E. Mason, Boston, Mass. Cash-carrier	331,245	Nov. 24	2428	658	33	987
Kensington Chair Company. (See Parks, Dana, assignor.)						
Kent, James. (See Paden, James L., assignor.)						
Kent, William, Jersey City, N. J. Steam-boiler	330,126	Nov. 10	958	248, 249	33	694
Kent, William, Jersey City, N. J. Tube-sheet for steam-boilers	330,127	Nov. 10	960	249	33	695
Kent, William, Jersey City, N. J. Connecting-box for water-tube boilers	330,128	Nov. 10	961	249	33	695
Kent, William, Jersey City, N. J. Making connecting-boxes for water-tube boilers	330,129	Nov. 10	961	249, 250	33	695
Kent, William V. (See Cargill and Kent.)						
Kenyon, John W., New York, N. Y., assignor to G. H. Clarke, Montclair, N. J. Low-water alarm	329,176	Oct. 27	2242	581	33	429
Kenyon, John W., Brooklyn, assignor to G. H. Clarke, Port Washington, N. Y. Pressure-regulator	329,177	Oct. 27	2243	581	33	429
Kenyon, John W., Brooklyn, assignor of one-third to F. Thompson, New York, N. Y. Steam-trap	331,246	Nov. 24	2430	658	33	987
Kepperling, Henry B. (See Porter and Kepperling.)						
Kern, Alfred, Basle, Switzerland, and C. L. Müller, Ludwigshafen-on-the-Rhine, assignors to Badische Anilin and Soda Fabrik, Mannheim, Germany. Production of blue dye-stuffs	327,953	Oct. 6	579	.....	33	104
Kerner, Marion H., New York, N. Y. Bottle for ink	328,122	Oct. 13	802	209	33	152
Kernodle, John W., Winston, N. C. Churn	332,614	Dec. 15	1992	522	33	1366
Kerr, Alexander, assignor of two-thirds to R. Costigan and W. Keys, Montreal, Quebec, Canada. Low-water alarm for steam-boilers	333,231	Dec. 29	2863	748	33	1535

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Kerrin, Patrick, executor. (See Cullen, Thomas.)						
Kerstetter, James L., Bradford, Pa., assignor of one-half to S. H. Altice, Bolivar, N. Y. Bread-cutter	328,228	Oct. 13	934	243	33	177
Kessel, John A., Buffalo, assignor of one-half to C. M. Van Sicklen, New York, N. Y. Device for exhibiting hosiery	331,717	Dec. 1	708	175	33	1123
Kesselring, Friedrich, Athenia, N. J., assignor to C. McCreery, New York, N. Y. Shuttle-driving mechanism for looms	332,400	Dec. 15	1689	443	33	1313
Kessler, Frederick C. and H., St. Louis, Mo. Vegetable-grater	332,908	Dec. 22	2405	635	33	1448
Kessler, Henry (See Kessler, Frederick C. and H.)						
Ketcham, Alonzo R., Buffalo, N. Y. Stop-cock box for water and gas pipes	332,401	Dec. 15	1693	443	33	1314
Kettell, James F., Worcester, Mass. Magneto call-box	331,718	Dec. 1	708	175	33	1123
Kettell, James F., deceased, Worcester, S. J. Kettell administratrix, and assignor of one-fourth to C. W. Sherburne, Boston, Mass. Electric device for setting clocks	333,132	Dec. 29	2727	716	33	1512
Kettell, James F., deceased, Worcester, S. J. Kettell administratrix, and assignor of one-fourth to C. W. Sherburne, Boston, Mass. Electric device for setting clocks	333,133	Dec. 29	2729	717	33	1512
Kettell, Sarah J., administratrix. (See Kettell, James F.)						
Kettenring, William A. (See Fontaine, Eugene, assignor.)						
Keyes, Benjamin B., Chelsea, Mass. Tool holder for lathes	332,086	Dec. 8	1250	326	33	1230
Keys, Frank W., assignor of one-half to D. Dull, New York, N. Y. Hod-elevator	333,134	Dec. 29	2731	717	33	1512
Keys, John. (See McVeety, Alexander, assignor.)						
Keys, William, *et al.* (See Kerr, Alexander, assignor.)						
Kidd, Joshua, Fern Bank, Wandsworth Common, county of Surrey, England. Apparatus for manufacturing non-luminous heating-gas	332,087	Dec. 8	1251	326	33	1230
Kidd, Walter J., Newark, N. J. Apparatus for regulating the admixture of carbureted and uncarbureted gas for illuminating purposes	332,088	Dec. 8	1254	326	33	1231
Kidder, Charles L., New Brunswick, N. J., assignor to Bergmann & Co., New York, N. Y. Exhaust-muffle	330,242	Nov. 10	1095	290	33	722
Kierulff, Charles C., Starke, Fla. Planter	332,089	Dec. 8	1255	326	33	1231
Kilbourn, S. E. (See Tourgee and Jennings, assignors.)						
Kilbourne & Jacobs Manufacturing Company. (See Hubbard, Fred W., assignor.)						
Kilbourne, S. E. (See Tourgee and Jennings, assignors.)						
Kilbourne, S. E., *et al.* (See Tourgee, Albion W., assignor.)						
Kilgore, Isaac P., West Point, Ill. Snow-plow flange	332,348	Dec. 15	1613	423	33	1301
Kimball, Charles M., Bradford, Mass. Crimping-machine	331,795	Dec. 8	816	207	33	1151
Kimball, Charles W., assignor of one-half to R. Y. Whelpley, Chicago, Ill. Machine for covering hose with wire	330,332	Nov. 10	1209	323, 324	33	745
Kimball, John, Boston, Mass. Measurement-indicator of boot and shoe lasts	331,143	Nov. 24	2279	618	33	961
Kimble, James E., assignor of one-third to R. E. Kimble, Vicksburg, Mich. Steam-engine	330,494	Nov. 17	1439	385	33	795
Kimble, Ransom E. (See Kimble, James E., assignor.)						
Kinard, Witt C., and M. J. Maddox, Towaliga, Ga. Plow	331,410	Dec. 1	220	57	33	1037
Kindblade, Bennett, Batavia, Ill. Roller-skate	329,913	Nov. 10	662	169	33	636
King, Benjamin H., *et al.* (See Bates, Albert J., assignor.)						
King, Charles F., Covington, Pa. Bolting-reel	332,090	Dec. 8	1257	327	33	1231
King, Charles G. (See Fish and King.)						
King, Charles W., Lyndhurst, N. J., assignor to himself and H. W. Sullivan, Brooklyn, N. Y. Skate	331,977	Dec. 8	1089	283	33	1202
King, Chester E., Phenix, R. I. Stop-motion for railway-heads	327,696	Oct. 6	261	65	33	46
King, Frank T., Brooklyn, N. Y. Apparatus for distilling	328,316	Oct. 13	1041	269	33	197
King, George H., Salisbury, assignor of two-thirds to W. H. H. Tainter, Kansas City, and M. Jordan, Hermann, Mo. Window	329,651	Nov. 3	303	77, 78	33	562
King, George S., Pittsburg, Pa. Device for keeping ice off the sterns of vessels	328,229	Oct. 13	935	243	33	177
King, George W. (See Huber and King.)						
King & Hamilton Co. (See King and Gilman, assignors.)						
King, Henry F., assignor to Vermont Farm Machine Company, Bellows Falls, Vt. Button-worker	329,746	Nov. 3	432	110	33	586
King, Homer A., Springfield, Mass. Velocipede	327,954	Oct. 6	580	151	33	104
King, John M., New York, N. Y. Reel seat and band	333,135	Dec. 29	2732	717	33	1513
King, Julius. (See Burt, Lon, assignor.)						
King, Molesworth, Chicago, Ill. Fire-place	329,747	Nov. 3	433	110	33	586
King, Nelson, and H. B. Lester, assignors to Blake & Johnson, Waterbury, Conn. Machine for making nails	333,417	Dec. 29	3109	810, 811	33	1579
King, Orson. (See McCandless and King.)						
King, Solomon E., and J. H. Gilman, assignors to King & Hamilton Co., Ottawa, Ill. Corn-sheller	330,495	Nov. 17	1440	385	33	795
Kingery, Samuel S., Cincinnati, Ohio. Coffee-roaster	328,940	Oct. 27	1908	499	33	370
Kingman, Roldon P. (See Robinson, Charles J., assignor.)						
Kingsland & Fergusson Manufacturing Company. (See Reeder, William S., assignor.)						
Kingston, Frank, St. Johns, county of Kent, England. Machine for cutting, bundling, and tying wool	332,155	Dec. 8	1354	350, 351	33	1247
Kingston, Paul, Hastings, Minn. Life-preserver	328,230	Oct. 13	936	244	33	178
Kinne, William, and J. Kastner, Holton, Kans. Cultivator-shovel	332,156	Dec. 8	1357	352	33	1248
Kinnear, William E., Fremont, Ohio. Combined harrow, cultivator, and clod-crusher	329,748	Nov. 3	434	110	33	587
Kinney, Isaac N., *et al.* (See Miller, Benjamin F. D., assignor.)						
Kinney, James, Woodland, Cal. Canning apparatus	331,065	Nov. 24	2162	587	33	940
Kinney, Lyman T. (See Kinney, Norman L., assignor.)						
Kinney, Norman L., Barford, Quebec, Canada, assignor to L. T. Kinney, Grand Rapids, Mich. Machine for sprinkling potato-vines	330,130	Nov. 10	962	250	33	695
Kinsman, Frank E., New York, N. Y. Combined annunciator and alarm	330,903	Nov. 24	1961	531	33	901
Kinsman, Henry M., *et al.* (See Hakins, George B., assignor.)						
Kintz, Thomas J., *et al.* (See Wheeler, Henry H., assignor.)						
Kinzer, George H., Grant's Pass, Oreg. Locomotive journal-box	332,157	Dec. 8	1358	352	33	1248
Kinzer, William P., *et al.* (See Miller, Benjamin F. D., assignor.)						
Kip, Frederick E., New York, N. Y. Railway-signal	328,950	Oct. 27	1910	499	33	370
Kipper, Emil, Adams, Mass. Collar or cuff	330,838	Nov. 17	1871	506	33	878
Kipper, Emil, Adams, Mass. Coating handles, &c	333,469	Dec. 29	3180	830	33	1591
Kirby, James L., Boston, assignor to Colby Wringer Company, Highlandville, Mass. Clothes-wringer	329,051	Oct. 27	2072	538	33	398
Kirby, James L., Boston, assignor to Colby Wringer Company, Highlandville, Mass. Clothes-wringer	330,984	Nov. 24	2071	561	33	923
Kirby, John, Jr., Dayton, Ohio. Canopy for railway-car lamps	330,030	Nov. 10	823	211	33	666
Kirby, Richard C. (See Woods, William A., assignor.)						
Kirchner, Louis, Newark, N. J. Bottle-stopper	329,652	Nov. 3	305	78	33	562
Kirkland, Austin L., Pittsburg, Pa. Car-brake	329,840	Nov. 3	565	143	33	610
Kirkpatrick, George W., Macedon, N. Y. Grain-drill tooth or hoe	332,717	Dec. 22	2152	568	33	1401

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kirkpatrick, William R., *et al.* (See Williams, Thomas D., assignor.)						
Kirks, Albert, assignor to Diebold Safe and Lock Company, Canton, Ohio. Lock	329,456	Nov. 3	34	10	33	511
Kirwan, John, New York, N. Y. Sole-skiver	328,317	Oct. 13	1043	269	33	197
Kitchen, Joseph M. W., New York, N. Y. Exercising-chair	329,570	Nov. 3	203	53, 54	33	543
Kitchen, Joseph M. W., New York, N. Y. Exercising-chair	329,653	Nov. 3	306	78	33	563
Kitselman Bros. *et al.* (See Phillips, Elwood C., assignor.)						
Kitson, John. (See Pearson and Kitson.)						
Kitson, Thomas, Stroudsburg, Pa. Cloth-guide for fulling-mills, &c	329,457	Nov. 3	36	10	33	511
Kittle, Joseph, East Bend, N. C. Fertilizer-distributer	330,333	Nov. 10	1210	324	33	745
Kittle, Samuel P. (See Adgate and Kittle.)						
Kittler, Julius W., assignor of four-fifths to C. J. Zipprich, H. Jacobs, J. Uhl, and H. Meyer, Peoria, Ill. Preparing whole grain for fermentation	330,334	Nov. 10	1212	324	33	746
Kittoe, Edmund F., Chicago, Ill. Ventilator wheel or fan	329,052	Oct. 27	2073	528	33	398
Kizer, Isaac H., assignor of two-thirds to R. P. Waite, Riverside, and A. W. Eames, Los Angeles, Cal. Nail-extractor	332,909	Dec. 22	2405	635	33	1449
Kizer, William M., and C. W. Clink, Winfield, Mich. Rope-reel	329,053	Oct. 27	2075	530	33	399
Klapper, Philipp C., Louisville, Ky. Window-ventilator	331,796	Dec. 8	817	{207 208	33	1151
Klauder, John C., Philadelphia, Pa. Grain-drier	328,788	Oct. 20	1679	437	33	321
Klein, Charles, Cape Girardeau, Mo. Motor	328,318	Oct. 13	1044	270	33	197
Klein, John S., Oil City, Pa. Pipe-line cleaner	332,910	Dec. 22	2406	636	33	1449
Klidzio, Anthony J., assignor of one-third to M. E. Sanders, Nanticoke, Pa. Supporting-case for vegetable-slicing machines	328,410	Oct. 13	1187	307	33	224
Kline, William D. (See Solt, William, Sr., assignor.) (Reissue.)						
Klinefelter & Dillman Company. (See Morrisey, James F., assignor.)						
Klostermann, William, Young America, Minn. Middlings-purifier	332,615	Dec. 15	1992	522	33	1366
Klostermann, William, Young America, Minn. Middlings-purifier	332,616	Dec. 15	1994	523	33	1366
Klughi, Lewis E., Detroit, Mich Lamp	328,492	Oct. 20	1283	333	33	249
Knapp, Edward, assignor of one-half to G. D. Barnard, St. Louis, Mo. Ruling-machine gate	329,458	Nov. 3	37	11	33	511
Knapp, George W., assignor to W., J. W., N. G., and W. N. Numsen, Baltimore, Md. Cherry-seeding machine	330,839	Nov. 17	1872	{506 507	33	878
Knapp, Thomas M., Tiffin, Ohio. Vegetable and meat slicer	331,411	Dec. 1	221	57, 58	33	1037
Kneedler, John A., Grant, Pa. Thill-coupling	327,884	Oct. 6	482	126	33	86
Knepper, Samuel L., Findlay, Ohio Fence-post	332,807	Dec. 22	2259	595	33	1422
Knickerbocker Ice Company. (See Loring and Giles, assignors.)						
Knickmann, Henry, East New York, N. Y. Jeweler's cabinet	331,719	Dec. 1	710	176	33	1124
Kniesser, Adam J., Toledo, Ohio. Mechanism for reversing rotary motion	329,318	Oct. 27	2450	634	33	468
Kniffler, Bruno, Cleveland, Ohio. Flour-bolt	328,789	Oct. 20	1680	437	33	322
Knight, William H., Portland, Oreg. Car-coupling	331,066	Nov. 24	2162	587	33	941
Knoebel, Thomas, East St. Louis, Ill Druggist's safe	332,661	Dec. 15	2060	541	33	1378
Knorp, Albert F., San Francisco, Cal. Game-board	329,395	Oct. 27	2577	664	33	489
Knous, Franklin F., assignor to Colts Patent Fire-Arms Manufacturing Company, Hartford, Conn. Magazine fire-arm	332,203	Dec. 8	1408	364	33	1257
Knowles, Francis B., *et al.*, executors. (See Knowles, Lucius J.)						
Knowles, Helen C., *et al.*, executors. (See Knowles, Lucius J.)						
Knowles, Lucius J., deceased; H. C. and F. B. Knowles and H. A. Marsh, executors, and assignors to F. B. Knowles, Worcester, Mass. Shuttle-box-operating device for looms	329,396	Oct. 27	2578	665	33	490
Knowlton, Henry C. (See McKnight and Knowlton.)						
Knowlton, Henry C., *et al.* (See Bates, Albert J., assignor.)						
Knox, Howard R., Bruce, Mich. Churn	332,349	Dec. 15	1614	424	33	1301
Knox, John L. L., Allegheny, Pa. Grate	331,067	Nov. 24	2163	587	33	941
Knudsen, Henry. (See Cole and Knudsen.)						
Koch, Julius J. (See McGregory and Koch.)						
Kock, Christian H., Avoca, Iowa, assignor of three-fourths to E. F. Mulloy, Cook County, G. A. Woolley, M. McDermott, and W. D. O'Brien, Chicago, Ill. Car-axle box	331,693	Dec. 8	902	249	33	1178
Koenig, Julian J., and A. M. Lee, Pomona, Ill. Stock-car	329,841	Nov. 3	566	144	33	610
Koethe, Henry, St. Louis, Mo. Bottle and can washer	330,335	Nov. 10	1213	325	33	746
Kohler, Frederick E., assignor of one-half to I. Harter, Canton, Ohio. Post-hole digger	327,557	Oct. 6	74	16	33	14
Kohlrieser, Athanasius, Brooklyn, N. Y. Dumping-wagon	328,790	Oct. 20	1681	438	33	322
Köhrer, Wilhelm. (See Gühring and Köhrer.)						
Kolb, Benedict J., North East, Pa. Stock and collar	330,131	Nov. 10	963	250	33	695
Komp, John F., assignor to D. J. Davis and T. Rankin, Chicago, Ill. Butter-worker	328,411	Oct. 13	1188	307	33	225
Kone, William W., Houston, Tex. Washing-machine	330,840	Nov. 17	1876	507	33	878
König, August, assignor to himself and G. L. Bergheim, Brooklyn, N. Y. Advertising-wagon	328,689	Oct. 20	1562	407	33	298
Koontz, John P., St. Louisville, Ohio. Car-coupling	328,040	Oct. 13	693	183	33	132
Koopmann, Ferdinand, Munich, Germany. Safety-belt	330,132	Nov. 10	964	250	33	695
Kopf, John, Brooklyn, N. Y. Fishing-reel	330,985	Nov. 24	2072	561	33	923
Kopf, John, assignor to T. B. Mills, Brooklyn, N. Y. Clamp for fishing-reels	333,232	Dec. 29	2864	748	33	1535
Koschel, George G., Denver, Colo. Washing-machine	332,662	Dec. 15	2061	541	33	1378
Kotrba, Joseph, St. Louis, Mo. Paint-solvent	328,589	Oct. 20	1417	.....	33	273
Kozisek, Julius. (See Johnson and Kozisek.)						
Kozisek, Julius, *et al.* (See Baxter, Charles O., assignor.)						
Kraemer & Co., T. F. (See Kraemer, Felix, assignor.)						
Kraemer, Felix, assignor to T. F. Kraemer & Co., New York, N. Y. Piano-stool	329,654	Nov. 3	307	79	33	563
Kraetzer, Edward J. (See Williams, Willard M., assignor.)						
Kramer, Heinrich E., Leipsic, Germany. Transferring patterns for embroidery, &c	333,308	Dec. 29	2973	778	33	1557
Krantz, Fredrich W., assignor to Michigan Lubricator Company, Detroit, Mich. Crank-pin oiler	330,904	Nov. 24	1963	531	33	902
Kranse, Joseph, Lebanon, Pa. Merchant's registering tag	329,054	Oct. 27	2076	539	33	399
Krausmann, Andrew J., Astoria, N. Y. Endless-chain propeller	328,123	Oct. 13	803	209	33	152
Krantter, Louis, *et al.* (See Belmling, Henry, assignor.)						
Krehbiel, John, assignor to Globe Drug and Capsule Company, Detroit, Mich. Capsule-machine	332,204	Dec. 8	1413	364	33	1258
Krejci, Joseph, Armstrong, Nebr. Key-hole guard	327,799	Oct. 6	386	100	33	67
Kretsinger, Frederick S., Fort Madison, Iowa. Hoe	332,350	Dec. 15	1615	424	33	1301
Kretsinger, William H., Fort Madison, Iowa. Making rakes	328,690	Oct. 20	1563	407	33	299
Krier, Theodore N. M., Chicago, Ill. Nursery-chair	327,955	Oct. 6	582	{151 152	33	105
Kroeger, Sabbert & Co. (See Sabbert, Henry P., assignor.)	330,408	Nov. 17	1329	354	33	774
Krom, Stephen R., Plainfield, N. J. Ore-crusher	328,850	Oct. 20	1761	459	33	336
Kromer, Otto. (See Keller, Jeremiah, assignor.)	333,016	Dec. 22	2557	673	33	1476
Kromer, Otto, Sandusky, Ohio. Wine and cider press						
Kromer, Otto, Sandusky, Ohio. Turning lathe						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kron, Charles A., New York, N. Y. Jeweler's watch-tray	332,412	Oct. 13	1189	308	33	225
Kron, Rudolf, Unterstrass, near Zurich, assignor to Escherwyss & Co., Zurich, Switzerland. Pulp-straining machine with vertical screen-plates	331,304	Dec. 1	66	16	33	1011
Kronenberg, Edward, and C. Wolters, Philadelphia, Pa. Liquid-meter	327,956	Oct. 6	583	152	33	105
Krueger, Edward, Youngsville, N. Y. Butter-worker	333,309	Dec. 29	2973	778	33	1557
Kruse, Charles. (See Weiss and Kruse.)						
Krutzsch, William, assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Roller-mill	328,413	Oct. 13	1190	308	33	225
Krutzsch, William, assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Oil-press mat	328,414	Oct. 13	1191	308	33	225
Kubler, Johan, assignor to F. Gross, Hot Springs, Ark. Car starter and brake	328,493	Oct. 20	1283	333	33	249
Kuder, August, Jersey City, N. J. Holding-tool for jewelers and engravers	327,558	Oct. 6	75	16	33	14
Kuehn, Edwin W., Milwaukee, Wis. Box-fastener	330,986	Nov. 24	2073	562	33	923
Kuhn, Edmond, Brooklyn, assignor to Manhattan Watch Company, New York, N. Y. Watch	330,905	Nov. 24	1965	{531 532	33	902
Kulich, Anton, Brooklyn, N. Y. Bed-lounge	328,894	Oct. 20	1819	474	33	347
Kulich, Anton, Brooklyn, N. Y. Bureau-bed	328,895	Oct. 20	1820	474	33	347
Kunis, Karl W., Reudnitz, Leipsic, Germany. Apparatus for testing flour	328,494	Oct. 20	1285	334	33	249
Kunkler, Edward, St. Gall, and J. Brunner, Küssnacht, Zurich, Switzerland. Preparing surfaces for printing by photography	333,470	Dec. 29	3181	830	33	1591
Kunnecke, Ernst C. L., Dayton, Ohio. Trace guide and fastener	333,136	Dec. 29	2733	718	33	1513
Kunzelman, John R. (See Schmidt and Kunzelman.)						
Kursheedt Manufacturing Company. (See Groehli, Joseph A., assignor.)						
Kurz, John, Philadelphia, Pa. Hose-bridge	333,310	Dec. 29	2975	779	33	1557
Kwarel, Jacob L., assignor to himself and L. Roth, New York, N. Y. Bow-facing oar and oar-lock	330,841	Nov. 17	1877	508	33	878
Kyte, Daniel J., Philadelphia, Pa. Bitters	330,496	Nov. 17	1442	.....	33	795
La Rue, Henry U., assignor of one-half to S. M. Warner, Topeka, Kans. Seal-lock	331,202	Nov. 24	2365	640	33	976
La Société Anonyme pour les Procédés Brevetés de Farinerie Saint Reqnier. (See Saint Requier, Henry F., assignor.)						
Laberdee, Joseph. (See Keech and Laberdee.)						
Lacasse, Henry, Auburn, N. Y. Galloping horse	327,697	Oct. 6	262	65, 66	33	46
Lacasse, Henry, Auburn, N. Y. Velocipede	327,979	Oct. 6	614	160	33	111
Lacey, Albert R. (See Ludlow, Charles A., assignor.)						
Ladd, Dennis O., assignor of one-half to G. Farnsworth, Chicago, Ill. Slide-valve	331,506	Dec. 1	353	95, 96	33	1061
Ladd, Levi. (See Stinson, Charles K., assignor.)						
Ladd, Sumner. (See Boardman, Lorenzo M., assignor.)						
Ladomus, Lewis, Chester, Pa. Crutch	332,808	Dec. 22	2260	596	33	1422
Ladue, Eugene A., Nashua, N. H. Let-off mechanism for looms	328,041	Oct. 13	694	183	33	133
Lafferty, Hugh W., Gloucester City, N. J. Press for separating liquid and solid matter	332,718	Dec. 22	2154	{568 569	33	1401
Lafferty, Louis E., Allegheny City, Pa. Curtain-stretcher	331,305	Dec. 1	67	16	33	1011
Lagerquist, Oscar F. (See Jordan and Lagerquist.)						
Lagowitz, Jacob. (See Frankel, Alexander C., assignor.)						
Lahr, Peter, Marshfield, Wis. Stove attachment	331,797	Dec. 8	818	208	33	1152
Lake, Ezra B., Ocean City, N. J. Anti-friction roller-bearing	332,091	Dec. 8	1258	327	33	1231
Lamb, Mortimer D., Butte City, Mont. Ter. Lamp-chimney cleaner	329,571	Nov. 3	206	54	33	544
Lamb, Thomas, Philadelphia, Pa. Sewing-machine	327,800	Oct. 6	387	100	33	68
Lamb, Virgil M., Racine, Wis. Press for printing on boards	330,243	Nov. 10	1096	290	33	722
Lambeth, Alexander C., Denver, Colo., assignor to S. W. Lambeth, Philadelphia, Pa. Saddle-tree	328,231	Oct. 13	937	244	33	178
Lambeth, Alexander C., Denver, Colo., assignor to S. W. Lambeth, Philadelphia, Pa. Riding-saddle	328,232	Oct. 13	938	244	33	178
Lambeth, Samuel W. (See Lambeth, Alexander C., assignor.)						
Lambert, Thompson W., Avis, Va. Horse-detacher	332,257	Dec. 15	1495	391	33	1279
Lambie, Edward L., *et al.* (See Warner, John P., assignor.)						
Lamkin, Charles, Batavia, N. Y. Steam-pipe covering	332,258	Dec. 15	1496	391	33	1279
Lamont, James, assignor to Fahys Watch Case Company, Sag Harbor, N. Y. Watch-case	328,791	Oct. 20	1682	438	33	322
Lamont, James, assignor to Fahys Watch Case Company, Sag Harbor, N. Y. Watch-case	330,717	Nov. 17	1715	463	33	849
Lamoureux, John H., assignor of one-half to W. W. Roundtree, Robinson, Ill. Gate	331,720	Dec. 1	711	176	33	1124
Lampson, Forest M., and G. W. Hogben, Ripon, Wis. Adjustable window-screen	328,691	Oct. 20	1564	407	33	299
Lamson Cash Railway Company. (See Hill, Warren S., assignor.)						
Lancaster, John, Dover, N. H. Stop-motion for spoolers, &c	330,906	Nov. 24	1966	532	33	902
Land, Benjamin H., New York, N. Y. Thill-coupling	329,572	Nov. 3	207	54	33	544
Landgrane, Frank O., and M. E. Willis, San Francisco, Cal. Fare-box	333,233	Dec. 29	2865	749	33	1536
Landgrane, Frank O., M. P. Schetzel, and M. E. Willis, San Francisco, Cal. Propulsion of vehicles or cars	333,234	Dec. 29	2866	749	33	1536
Landis, Benjamin F., St. Joseph, Mo. Wax-heater for sewing-machines	332,233	Oct. 13	938	244	33	178
Landis, Benjamin F., St. Joseph, Mo. Sewing-machine waxing device	331,306	Dec. 1	67	17	33	1011
Landis, Benjamin F., St. Joseph, Mo. Thread-waxing and heating device for sewing-machines	332,250	Dec. 15	1496	392	33	1279
Landis, Frank F., Warnesborough, Pa. Spark-arrester	332,260	Dec. 15	1498	392	33	1280
Lane, Amelia R., Brooklyn, N. Y. Elastic button-hole attachment for garments	329,055	Oct. 27	2077	539	33	399
Lane, Andrew W., Janesville, Cal. Self-regulating windmill	332,261	Dec. 15	1499	392	33	1280
Lane, Enoch J., Williams, Cal. Gate	329,056	Oct. 27	2078	539	33	399
Lane, Frank W., assignor of two-thirds to H. W. Whitney and G. A. Smythe, Waltham, Mass. Broom-holder	328,851	Oct. 20	1762	460	33	337
Lane, Frederick, assignor to O. Gassett, Boston, Mass. Apparatus for burning liquid fuel	333,311	Dec. 29	2975	779	33	1557
Lane, George M. (See Hall and Lane.)						
Lane, John A., and J. M. Thorp, Detroit, Mich. Car-starter	329,319	Oct. 27	2450	635	33	468
Lane, John C. (See Swayze and Lane.)						
Lane, Louis and W. H., Newark, Ohio. Fire-proof lathing	331,643	Dec. 1	603	149	33	1103
Lane, Stephen, Jr., New York, N. Y. Overflow-trap for wash-basins, bath-tubs, &c	332,911	Dec. 22	2408	636	33	1449
Lane, William H. (See Lane, Louis and W. H.)						
Laney, John H., Indiana, Pa. Paper-file	332,663	Dec. 15	2062	541	33	1379
Laney, John H., Indiana, Pa. Transfer-file	332,664	Dec. 15	2063	542	33	1379
Laney, John H., Indiana, Pa. Filing-case	332,665	Dec. 15	2064	542	33	1379
Laney, John H., Indiana, Pa. Punch	332,666	Dec. 15	2065	542	33	1379
Lang Hydraulic Machine Company. (See Hood and Lombard, assignors.)						
Lang Hydraulic Machine Company. (See Lombard, Levi W., assignor.)						
Lang, William, New York, N. Y. Sash-lock	330,591	Nov. 17	1555	416	33	817
Lange, Philipp, assignor to Bergmann & Co., New York, N. Y. Regulator for electric lights	330,244	Nov. 10	1097	{290 291	33	722

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Langelier, Antoine J., Providence, R. I. Heel-machine	331,412	Dec. 1	222	58, 59, 60	33	1037
Langley, William W., assignor of one-half to H. and G. W. Reitenour, Union City, Ohio. Kitchen-cabinet	327,801	Oct. 6	388	101	33	68
Langstrom, Albert, Council Bluffs, Iowa. Wrench	327,559	Oct. 6	76	17	33	15
Lanlug, George, La Salle, Ill. Feed-trough	331,507	Dec. 1	356	96	33	1062
Lanum, James L., De Graff, Ohio. Corn-planter	328,792	Oct. 20	1684	438, 439	33	322
Lapham, Edward. (See Miller and Lapham.)						
Lapp, John, Honeoye Falls, N. Y. Convertible skate	330,133	Nov. 10	964	251	33	696
Lappin, John J., Toronto, Ontario, Canada. Brake-shoe	329,459	Nov. 3	38	11	33	512
Lappin, John J., Toronto, Ontario, Canada. Brake head and shoe	331,894	Dec. 8	963	249	33	1178
Laqua, Frederick, Thielmanton, Minn. Harvester	328,234	Oct. 13	940	245	33	179
Larish, Joseph W., Buffalo, N. Y., assignor to Baltimore and Ohio Telegraph Company, Baltimore, Md. Preventing false signals on reversals in quadruplex telegraphs	329,749	Nov. 3	435	111	33	587
Larkin, John C., assignor to himself, A. L. and W. G. Brown, E. Ray, and G. Bernard, Whitefield, N. H. Railway-rail joint	328,692	Oct. 20	1564	408	33	299
Larson, Lars, assignor to himself and J. C. S. Miller, Chicago, Ill. Desk	330,409	Nov. 17	1331	354	33	774
Larson, Per E. (See Peterson and Larson.)						
Larus, John R. (See Stewart, Robert H., assignor.)						
Larzelere, Henry B., Greencastle, Pa. Traction-wheel	331,068	Nov. 24	2164	587	33	941
Larzelere, Henry B., Greencastle, Pa. Reversing-gear for engines	331,069	Nov. 24	2165	588	33	941
Lash, John F., assignor to Z. A. Lash, Toronto, Ontario, Canada. Letter-copying machine	333,312	Dec. 29	2978	779	33	1557
Lash, John S., Philadelphia, Pa. Combined clothes and hat rack	330,497	Nov. 17	1442	385	33	796
Lash, Zebulon A. (See Lash, John F., assignor.)						
Latimer, William G. (See Davis and Latimer.)						
Latta, Adrian C. (See Latta, Emmit G., assignor.)						
Latta, Adrian C., Friendship, N. Y. Gear for tricycles	331,644	Dec. 1	604	149	33	1103
Latta, Emmit G., Friendship, N. Y. Trace-buckle	330,336	Nov. 10	1213	325	33	746
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Velocipede	328,935	Oct. 13	941	245	33	179
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Velocipede	328,693	Oct. 20	1565	408	33	299
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Velocipede	332,092	Dec. 8	1259	327	33	1231
Latta, Emmit G., assignor of five-sixths to A. C. Latta, Friendship, H. D. Blakeslee and G. J. Letchworth, Buffalo, N. Y. Hame	332,262	Dec. 15	1501	393	33	1280
Lauck, Clarence G. (See Heiney and Lauck.)						
Lauer, Jean P., and A. Velders, Buffalo, N. Y. Measuring device for oil-tanks	327,560	Oct. 6	77	17	33	15
Lauer, Jean P., and A. Velders, Buffalo, N. Y. Measuring device for oil-tanks	332,263	Dec. 15	1503	393	33	1281
Laughlin, Julian, St. Louis, Mo. Bicycle	333,313	Dec. 29	2961	779	33	1558
Laundray, Adolphus J., Clyde, Kans. Stack-binder	328,590	Oct. 20	1418	.....	33	273
Lauth, Bernard, Howard, Pa. Preparing steel-nail plates						
Lauth, Bernard C., *et al.* (See McCarty, William F. M., assignor.)						
Lavallie, Victoria E., St. Albans, Vt. Shirt or dress placket	330,496	Nov. 17	1443	386	33	796
Lavey, Thomas B., Bristol, R. I. Arctic overshoe	330,592	Nov. 17	1556	417	33	817
Lavigne, Joseph P. (See Johnson and Lavigne.)						
Law, James B., Darlington, S. C. Nut-lock	332,540	Dec. 15	1891	494	33	1347
Law, James B., and C. Mooney, Darlington, S. C. Wagon-body	332,912	Dec. 22	2409	637	33	1449
Law, James B., and C. Mooney, Darlington, S. C. Wagon-body	330,410	Nov. 17	1332	355	33	774
Lawhon, George W. and W., Knoxville, Tenn. Cistern cut-off						
Lawhon, William. (See Lawhon, George W. and W.)						
Lawler, James J., Scranton, Pa. Plumb-bob for gas-fittings	331,144	Nov. 24	2283	618	33	961
Lawlor, James, Fall River, Mass. Split gear	331,978	Dec. 8	1090	283	33	1202
Lawrence, Edward F., *et al.* (See Clark, Norman, assignor.)						
Lawrence, J. Franklin, assignor to J. Lawrence, Philadelphia, Pa. Combination scale, weight-tray, and twine-box	329,655	Nov. 3	308	79	33	563
Lawrence, John. (See Lawrence, J. Franklin, assignor.)						
Lawrence, John H., *et al.* (See Clark, Norman, assignor.)						
Lawrence, Louisa. (See Felbel, Jacob, assignor.)						
Lawrence, William, and H. V. Dibble, Bethel, Conn. Detachable hat-binding	328,694	Oct. 20	1567	408	33	300
Lawrence, William E., New York, N. Y. Curry-comb	330,593	Nov. 17	1556	417	33	818
Laws, Albert D., assignor of one-half to G. Doolittle, Bridgeport, Conn. Machine for punching metallic strap-bands	330,337	Nov. 10	1215	325	33	746
Lawson, Samuel G., Portland, Oreg. Glass-tube cutter	333,285	Dec. 29	2867	749	33	1536
Lawton, Lyman T., assignor to Meriden Malleable Iron Company, Meriden, Conn. Suspension device	333,017	Dec. 22	2559	674	33	1477
Laybolt, Josiah, Wakefield, Mass. Saw-set	330,031	Nov. 10	824	211	33	666
Laybolt, Josiah, Wakefield, Mass. Machine for punching and setting saws	330,499	Nov. 17	1444	386, 387	33	796
Le Beau, John F., Toledo, Ohio. Filter	330,907	Nov. 24	1968	532	33	903
Le Clair, George, assignor of one-half to C. C. Brown, Mexico, N. Y. Tobacco-cutting machine	327,885	Oct. 6	483	126	33	86
Le Gay, Edward J., Boston, Mass. Mold for boot or shoe heels	328,124	Oct. 13	804	209	33	152
Le Moyne, William M., Chicago, Ill. Fire extinguisher	328,319	Oct. 13	1045	270	33	198
Lea, Samuel J., Chattanooga, Tenn. Wrench	330,504	Nov. 17	1557	417	33	818
Leadley, John, Detroit, Mich. Conductor-pipe	332,402	Dec. 15	1693	443	33	1314
Leager, Charles A., G. S. Pierce, and R. A. Canterbury, Franklin Grove, Ill.; said Pierce assignor to said Canterbury and Leager. Illuminating device	332,541	Dec. 15	1892	494	33	1347
Leahy, James F., *et al.* (See Wheeler, Henry H., assignor.)						
Lear, Benjamin, Woodstock, Vt. Foot-rest for shoeing horses	331,979	Dec. 8	1090	283	33	1202
Learned, Stephen D., Westerly, R. I. Automatic top-roll clearer	329,390	Oct. 27	2451	635	33	468
Leas, Asa, West Manchester, Ohio. Scoop-balance attachment for weighing-scales	330,595	Nov. 17	1558	417	33	818
Leatheroid Manufacturing Company. (See Andrews, Emery, assignor.)						
Leavitt, Frank M., Brooklyn, assignor to E. W. Bliss, New Utrecht, N. Y. Adjusting-screw for die-presses	330,791	Nov. 17	1812	488	33	867
Leavitt, John S., Boston, assignor to J. W. Brooks, trustee, Cambridge, Mass. Tool for channeling boot or shoe soles	331,145	Nov. 24	2284	619	33	961
Leavitt, T. F. (See Coon, Willard W., assignor.)						
Lebasteur, Henri, and S. H. Ronart, Paris, France. Apparatus for automatically indicating or signaling the passage of trains upon railways	332,913	Dec. 22	2410	637	33	1449
Leddell, Charles S., Morristown, N. J. Velocipede. (Reissue)	10,673	Dec. 15	2107	556, 557	33	1387
Leduc, Alfred. (See Damry and Leduc.)						
Leduc, Constant, Denver, Colo. Oyster-opening machine	332,403	Dec. 15	1694	444	33	1314
Lee, Arthur M. (See Koenig and Lee.)						
Lee, Charles H., Centralia, Kans. Sugar-cane harvester	332,411	Dec. 15	1704	446, 447	33	1316

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Lee, Daniel, Sacramento, assignor to W. Gould, San Francisco, Cal. Feed-water heater	331,307	Dec. 1	69	17	33	1013
Lee, Henry A. (See Thompson, Mark S., assignor.)						
Lee, James, Jr. (See Dowling and Lee.)						
Lee, John, San Francisco, Cal. Knit shirt	330,500	Nov. 17	1446	387	33	797
Lee, John H. (See Lieb and Heins, assignors.)						
Lee, Lewis S., Philadelphia, Pa. Hair-clipping machine	331,508	Dec. 1	357	96	33	1062
Lee, Thomas, Cincinnati, Ohio. Peanut-roaster	332,351	Dec. 15	1616	424	33	1301
Lee, W. H., *et al.* (See Haynes, William, assignor.)						
Leeds, Lodowick, New London, assignor, by mesne assignments, to B. L. Fenner, Versailles, Conn. Shuttle-planer	330,908	Nov. 24	1969	533	33	903
Leek, John W., Cincinnati, Ohio. Buggy-boot	327,802	Oct. 6	390	101	33	68
Leetham, Sidney, York, county of York, England. Feed-regulator for roller-mills, &c	329,057	Oct. 27	2079	540	33	399
Lefever Arms Company. (See Lefever, Daniel M., assignor.)						
Lefever, Daniel M., assignor to Lefever Arms Company, Syracuse, N. Y. Breech-loading fire-arm	329,397	Oct. 27	2579	665	33	490
Leger, John, and E. Keller, New York, N. Y. Combined door knob and stop	329,321	Oct. 27	2454	635	33	469
Legg, Benjamin A., assignor to J. A. Jeffrey, Columbus, Ohio. Elevator	330,792	Nov. 17	1813	488, 489	33	867
Legg, William, *et al.* (See Dodsworth, David, assignor.)						
Leggett, Stephen T., Big Rapids, Mich. Nut-lock	332,093	Dec. 8	1261	327	33	1232
Leggo, William A., New York, N. Y. Circuit-controller	329,398	Oct. 27	2582	665	33	490
Leggo, William A., New York, N. Y. Circuit-controller	329,399	Oct. 27	2583	666	33	491
Lehlbach, Gustav, Newark, N. J. Railway-crossing	333,236	Dec. 29	2868	750	33	1536
Lehmer, William, Logansport, Ind. Tire-shrinker	331,070	Nov. 24	2167	588	33	941
Leibe, Hugo, Baltimore, Md. Harness-saddle pad	331,509	Dec. 1	359	97	33	1062
Leick, Mathias J. (See Horn and Leick.)						
Leidgen, Adam, Milwaukee, Wis. Plumb-bob	329,573	Nov. 3	208	54	33	544
Leinbach, Felix W., *et al.* (See Honiss, William H., assignor.)						
Leinbach, Felix W., *et al.* (See Lorenz, William A., assignor.)						
Leinbach, Felix W., *et al.* (See Lorenz and Honiss, assignors.)						
Leirer, Lorenz, Buda-Pesth, Austria-Hungary. Axle-box	332,809	Dec. 22	2261	596	33	1422
Leland, George, Jacksonville, Fla. Combined umbrella and cane	329,656	Nov. 3	309	79	33	563
Lemay, François X., Crookston, Minn. Ditching-machine	330,909	Nov. 24	1970	533	33	903
Lemon, Sayres N., *et al.* (See Winchell, Addison H., assignor.)						
Lemp, Hermann, assignor to Schuyler Electric Light Company, Hartford, Conn. Electric switch	329,460	Nov. 3	39	11	33	512
Lemp, Hermann, assignor to Schuyler Electric Light Company, Hartford, Conn. Electric-arc lamp	329,461	Nov. 3	40	11	33	512
Lempereur, Joseph, and L. Bernard, Liege, Belgium. Lamp	333,237	Dec. 29	2869	750	33	1537
Lempert, Christian, Jacksonville, Oreg. Combined wardrobe and trunk	333,238	Dec. 29	2871	750, 751	33	1537
Lennon, William F. (See Weber, Jacob, assignor.)						
Lenox, Edwin S., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Continuous rolling-mill	328,591	Oct. 20	1419	369, 370	33	273
Leonard, Samuel S., assignor of one-half to Minnesota Brush Electric Company, Minneapolis, Minn. Electric switch	328,695	Oct. 20	1569	409	33	300
Leonard, Seth A., Ashtabula, Ohio. Lathe-dog	330,245	Nov. 10	1098	291	33	723
Leonardt, Frederick. (See Tickle and Leonardt.)						
Leonhardt, Adam, New York, N. Y. Vegetable-cutter	330,246	Nov. 10	1099	291	33	723
Leonhardt, John H. (See Leonhardt, William and J. H.)						
Leonhardt, John H., *et al.* (See Tompkins, William D., assignor.)						
Leonhardt, William, *et al.* (See Tompkins, William D., assignor.)						
Leonhardt, William and J. H., Waverly, Md. Lumber-wagon	328,793	Oct. 20	1687	439	33	323
Lerch, Felix A., Mount Carmel, Pa. Ironing-table	332,404	Dec. 15	1695	444	33	1315
Lerède, Lucien, Paris, France. Pipe-coupling	330,134	Nov. 10	965	251	33	696
Lester, Harry B. (See King and Lester.)						
Letchworth, George J., *et al.* (See Latta, Emmit G., assignor.)						
Lettré, Philipp, assignor to T. J. Smith & Co., Attleborough, Mass. Bracelet	331,798	Dec. 8	818	208	33	1152
Leu, Frederick, Brooklyn, N. Y. Countersink	328,310	Oct. 13	1046	270	33	198
Levavasseur, Eugène, assignor of one-half to H. Witzenmann, Paris, France. Metal tube	330,910	Nov. 24	1973	533	33	904
Leveille, Michael H., Worcester, Mass. Cuspidor	332,094	Dec. 8	1262	328	33	1232
Levison, Chancellor G., assignor to T. B. Mills, Brooklyn, N. Y. Fly-book	333,239	Dec. 29	2873	751	33	1537
Lewis, Albert C., Brooklyn, N. Y. Screw-swaging machine	328,951	Oct. 27	1911	499, 500	33	370
Lewis, Alfred N., *et al.* (See Murray, Peter, Jr., assignor.)						
Lewis, Alva. (See Fitzpatrick and Lewis.)						
Lewis, Anderson, and E. Huff, Kernersville, N. C. Buggy	328,321	Oct. 13	1047	270	33	198
Lewis, Andrew, Cannon Falls, Minn. Mechanism for converting rotary into reciprocating motion	330,596	Nov. 17	1559	418	33	818
Lewis, Benjamin B., West Stratford, Conn. Bottle-stopper	329,574	Nov. 3	209	55	33	544
Lewis, Edward F., Waterbury, Conn. Adjustable pitman	327,803	Oct. 6	391	101	33	68
Lewis Foundry and Machine Company. (See Lewis, John L., assignor.)						
Lewis, Jennie L. (See Lewis, Theodore A., assignor.)						
Lewis, John A., Meridian, Miss., assignor to United States Cotton Seed Cleaning Company of New York. Steam heater or kettle for oleaginous substances	331,895	Dec. 8	964	249	33	1179
Lewis, John L., assignor to Lewis Foundry and Machine Company, (limited,) Pittsburg, Pa. Sheet-metal-corrugating roll	329,322	Oct. 27	2456	636	33	469
Lewis, Lewis, Ironton, Ohio. Hitching device	332,914	Dec. 22	2411	637	33	1450
Lewis, Nathan C., assignor to C. Lovell, Boston, Mass. Wire-nail machine	328,236	Oct. 13	943	245, 246	33	179
Lewis, Nathan C., assignor to C. Lovell, Boston, Mass. Wire-nail machine	328,237	Oct. 13	946	246, 247	33	180
Lewis, Theodore A., New York, N. Y., assignor to J. L. Lewis. Shade-roller	330,987	Nov. 24	2074	562	33	923
Lewis, Wallace J., assignor of one-half to J. W. Addis, Tyler, Tex. Locomotive valve-gear	331,799	Dec. 8	819	208	33	1152
Lewis, Warren J., Leominster, Mass. Grate and coal cleaner	328,043	Oct. 13	696	183	33	133
Lewis, Wilber W. (See Caples and Lewis.)						
Lewis, William H., assignor to E. & H. T. Anthony & Co., New York, N. Y. Photographic-printing frame	331,960	Dec. 8	1091	283	33	1202
Ley, Francis, Vulcan Iron Works, county of Derby, England. Apparatus for raising and delivering grain, &c., onto an elevated platform	329,657	Nov. 3	310	79, 80	33	564
Leyshon, George. (See Taylor and Leyshon.)						
Lhote, George, New Orleans, La. Planing and resawing machine	328,794	Oct. 20	1688	439	33	323
Libbey, Ivory, Lebanon, Me. Wheel cultivator and furrower	331,413	Dec. 1	232	60, 61	33	1039

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Libby, Cyrus, Austin, Ill. Shoe	331,145	Nov. 24	2285	619	33	961
Libby, Robert H., Boston, Mass. Composite bar	332,405	Dec. 15	1696	444	33	1315
Libby, Robert H., Boston, Mass. Making composite bars	332,406	Dec. 15	1697	444	33	1315
Lidback, John A., assignor of one-half to J. J. Gerrish, Portland, Me. Hydraulic railway-gate	333,314	Dec. 29	2981	780	33	1558
Liddell, John P. (See Hawthorn and Liddell.)						
Lie, Cornelius, Trondhjem, Norway. Fish-hook	330,793	Nov. 17	1815	489	33	867
Lieb, Charles A., New York, N. Y. Paper-punching press	329,323	Oct. 27	2457	636	33	469
Lieb, Charles A., New York, N. Y. Friction-pulley	329,575	Nov. 3	209	55	33	544
Lieb, Charles A., and C. L. Heins, New York, N. Y., assignors to said Heins and J. H. Lee, Norwalk, Conn. Ironing-machine	330,032	Nov. 10	825	212	33	666
Liebel, Hugo, North Attleborough, Mass. Self-closing bracelet	332,719	Dec. 22	2156	569	33	1401
Lieberthal, Abraham, D. H., and E. H., Iron Mountain, Mich. Sample-box	329,658	Nov. 3	312	80	33	564
Lieberthal, Daniel H. (See Lieberthal, Abraham, D. H., and E. H.)						
Lieberthal, Elias H. (See Lieberthal, Abraham, D. H., and E. H.)						
Liepmann, Henry, London, county of Middlesex, England. Carbon electrode for electrolytical purposes	330,247	Nov. 10	1100	291	33	723
Lieseche, August, assignor to J. R. Clancy, Syracuse, N. Y. Window-stop fastener	333,471	Dec. 29	3184	830	33	1591
Liggett, Mary J., Wooster, Ohio. Bed-cover fastener	331,308	Dec. 1	70	17	33	1012
Lightcap, William H., Hazel Green, Wis. Band-cutter and feeder for thrashing-machines	330,718	Nov. 17	1717	463	33	856
Lighthall Manufacturing Company. (See Wheeler, Frederick M., assignor.)						
Lightwardt, Henry J., Philadelphia, Pa. Boot-jack	329,576	Nov. 3	211	55	33	545
Ligowsky Clay Pigeon Company. (See Holz, Fred, assignor.)						
Ligowsky Clay Pigeon Company. (See Teipel, Benjamin, assignor.)						
Lillenberg, Nils, and G. S. Dwight, New York, N. Y. Gas-producer for metallurgic operations	329,058	Oct. 27	2079	540	33	400
Lillie, S. Morris, Philadelphia, Pa. Bone-black drier	329,324	Oct. 27	2458	{636 / 637}	33	469
Lilly, William H., Reading, assignor to H. B. Grauley, Philadelphia, Pa. Cigar-tip cutter	330,597	Nov. 17	1560	418	33	818
Limpus, Sherman E., Olathe, Kans. Wind-engine	329,914	Nov. 10	663	{169 / 170}	33	636
Lindemann, Charles H., San Francisco, Cal. Music-leaf turner	327,698	Oct. 6	263	66	33	46
Linders, Joseph, Winfield, W. Va. Coffee-pot stand	333,315	Dec. 29	2983	781	33	1558
Lindgren, August, assignor to Moline Plow Company, Moline, Ill. Wheel-plow	328,952	Oct. 27	1913	500	33	371
Lindley, Thomas H., and F. M. Robinson, Lyons, Iowa. Device for chromatic printing	330,719	Nov. 17	1718	463	33	850
Lindner, Carl A., Louisville, Ky. Sofa-bed	332,412	Dec. 15	1707	447	33	1316
Lindsay, Samuel D. Jacksonville, Ill. Register for measuring wire fencing	333,137	Dec. 29	2734	718	33	1513
Lindsay, William, South Ashburnham, Mass. Folding chair	328,322	Oct. 13	1048	271	33	198
Lindsey, Edwin F., Bristol, R. I. Counterboring attachment for bits	333,418	Dec. 29	3112	811	33	1580
Lindsey, George M., assignor to H. S. Dulaney, Baltimore, Md. Pulley-covering	330,598	Nov. 17	1561	418	33	819
Lindsley, Aaron L., Chicago, assignor of one-half to W. Drummond, Jr., Oak Park, Ill. Roof	332,720	Dec. 22	2157	569	33	1402
Lindsley, Edward, Cleveland, O., Lio. Casing for street-cocks in gas and water service	327,561	Oct. 6	76	17	33	15
Line, Francis, Detroit, Mich. Combination of asbestus board, asbestus felt, or asbestus paper with other flexible material	333,138	Dec. 29	2735	718	33	1513
Linquist, Manrice F., New Haven, Conn. Shoulder-brace	329,659	Nov. 3	313	80	33	564
Lintner, William H. H., Little Falls, N. Y. Apparatus for moistening stamps, envelopes, &c	332,542	Dec. 15	1893	495	33	1347
Lippincott, John, Baltimore, Md. Manufacture of tubing	330,338	Nov. 10	1216	{925 / 926}	33	746
Lippy, David, and P. Ott, Mansfield, Ohio. Cash-carrier	328,323	Oct. 13	1049	271	33	199
List, Adolph. (See Fahlberg, Constantin, assignor.) (Reissue.)						
List, William A., Wheeling, W. Va. Sheet-metal roofing-anchor	332,413	Dec. 15	1708	447	33	1316
Listerud, Hans, Sacred Heart, Minn. Plow	327,562	Oct. 6	80	18	33	15
Litchman, John B., Marblehead, Mass. Shoe-maker's jack	331,414	Dec. 1	233	61	33	1039
Little, Charles E., assignor to S. Mordan & Company, London, England. Pencil-case	331,896	Dec. 8	965	249	33	1179
Little, James L., Jr. (See Gardner, Ernest M., assignor.)						
Little, Samuel W., Evansville, Ind., assignor to E. P. Allis & Co., Milwaukee, Wis. Sawmill carriage	330,720	Nov. 17	1720	464	33	850
Livermore, Charles F., trustee. (See Waite, Henry E., assignor.)						
Livingston, George, Oskaloosa, Iowa. Billiard-table leveler	330,911	Nov. 24	1973	534	33	904
Lloyd, George E., Chicago, Ill. Stereotype-plate-roughing machine	333,018	Dec. 22	2562	674	33	1477
Lloyd, John J., Streator, Ill. Mining-tool	333,472	Dec. 29	3185	831	33	1591
Lobeck, Emilio, Havana, Cuba. Sugar-cane top and leaf cutter	330,135	Nov. 10	966	{251 / 252}	33	696
Loch, Joseph, New York, N. Y. Sash-balance	328,324	Oct. 13	1052	272	33	199
Lockhart, James L., *et al.* (See Robinson, William, assignor.)						
Lockie, Peter, Rochester, N. Y. Clothes-drier	328,852	Oct. 20	1763	460	33	337
Lockwood, Charles L., Philadelphia, Pa. Paper box	331,800	Dec. 8	920	209	33	1152
Lockwood, William C., Brooklyn, assignor to T. Wallace, New York, N. Y. Telephone	331,309	Dec. 1	70	18	33	1012
Loder, John S., Leadville, Colo. Ore-concentrating jigger	331,071	Nov. 24	2167	{588 / 589}	33	942
Loeser, Lazarus, assignor to G. Bamberger and L. Boelling, receiver, New York, N. Y. Pen	331,203	Nov. 24	2366	640	33	977
Loftus, James F., Winton, Pa. Coal and rock drill	328,495	Oct. 20	1285	334	33	250
Logan, Jane, *et al.* (See McCarty, William F. M., assignor.)						
Logan, John, Waltham, Mass. Apparatus for polishing metal ribbon	328,125	Oct. 13	805	210	33	152
Logan, John, Waltham, Mass. Testing and grading balance-wheels of watches	329,915	Nov. 10	664	170	33	636
Logan, John, Waltham, Mass. Apparatus for testing and grading watch-balances	329,916	Nov. 10	666	170	33	636
Logan & Strobridge. (See Culmer, John W., assignor.)						
Logee, Henry F., Stillwater, Minn. Steam-boiler indicator and alarm	331,801	Dec. 8	821	209	33	1152
Lombard, Levi W. (See Hood and Lombard.)						
Lombard, Levi W., Boston, Mass., assignor, by mesne assignments, to Lang Hydraulic Machine Company, Portland, Me. Differential piston-meter	331,247	Nov. 24	2432	658	33	987
Long & Allstatter Company. (See Long, John M. W., assignor.)						
Long, Alpheus C., Edgar, Ill. Lifting-jack	331,415	Dec. 1	235	61	33	1039
Long, Edwin, Iowa City, Iowa. Clutch	328,126	Oct. 13	806	210	33	153
Long, George S., assignor to G. W. Williams, Hartford, Conn. Manufacture of barrels	329,059	Oct. 27	2082	541	33	400
Long, Jeremiah A., Akron, and E. L. Babcock, Cuyahoga Falls, Ohio. Wheel for agricultural implements	331,248	Nov. 24	2436	650	33	988
Long, John M., Hamilton, Ohio. Horse hay-rake	329,917	Nov. 10	667	{170 / 171}	33	637
Long, John M., Hamilton, Ohio. Punching-press	329,918	Nov. 10	668	171	33	637
Long, John M. W., assignor to Long & Allstatter Company, Hamilton, Ohio. Cultivator	329,919	Nov. 10	669	171	33	637

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Long, Thomas, Boston, Mass. Faucet	333,139	Dec. 29	2736	718	33	1513
Longbottom, Christopher, Bradford, county of York, England. Sash or door fastener	333,240	Dec. 29	2874	751	33	1538
Longley, William J., Mount Vernon, N. Y. Piston-rod	333,140	Dec. 29	2737	719	33	1513
Longmore, Lewis F., Lowell, assignor of one-half to G. A. Byam, Chelmsford, Mass. Car-replacing jack	330,842	Nov. 17	1878	508	33	879
Longstreth, John L., assignor of three-fourths to H. B. French, Philadelphia, Pa., S. H. and W. A. French, Haddon township, Camden county, N. J. Feed-water apparatus	328,127	Oct. 13	807	210	33	153
Loomer, Jasper D., Minneapolis, Minn. Revolving colter	329,577	Nov. 3	212	55	33	545
Loomis, James A., Arkansas City, Kans. Washing-machine	332,721	Dec. 22	2157	569	33	1402
Loomis, Osborn P., and H. W. Cooley, Lynn, Mass. Electric-arc-lamp cut-out						
Loomis, Oscar M. (See Jackson, Loren G., assignor.)						
Loop, A. Irwin, assignor of one-half to W. H. Stetson and C. Loop, North East, Pa. Steam-engine governor	330,411	Nov. 17	1333	355	33	775
Loop, Charles, *et al.* (See Loop, A. Irwin, assignor.)						
Loose, John, Brooklyn, N. Y. Sled-propeller	328,415	Oct. 13	1192	{308 / 309}	33	225
Lord, Henry S., Hartford, Conn. Water-closet valve	330,843	Nov. 17	1879	508	33	879
Lord, Henry S., assignor to R. J. Allyn, Hartford, Conn. Auger-bit	329,660	Nov. 3	314	80	33	564
Lord, James L., assignor of one-fourth to P. P. Sherry and H. Robinson, Lynn, Mass. Rotary heel-trimmer	328,853	Oct. 20	1763	460	33	337
Lord, James L., and N. Rose, Lynn, Mass. Heel-trimming machine	328,854	Oct. 20	1765	460	33	337
Lord, William H., New York, N. Y. Speed-clock for machinery	328,592	Oct. 20	1421	370	33	274
Lorenz, Conrad, New York, N. Y. Press-board for cigar-boxes	331,510	Dec. 1	360	97	33	1062
Lorenz, Wilhelm, Carlsruhe, Baden, Germany. Cartridge	331,511	Dec. 1	361	97	33	1063
Lorenz, William A., Hartford, Conn., assignor to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Manufacture of paper bags	329,662	Nov. 3	317	81, 82	33	565
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper bag	329,661	Nov. 3	315	81	33	565
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	331,721	Dec. 1	712	{176 / 177}	33	1124
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	331,722	Dec. 1	714	{177 / 178 / 179}	33	1124
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	331,723	Dec. 1	720	{179 / 180}	33	1125
Lorey, William, Jr. (See Wiehle, Lorey, and Feuchter.)						
Lorimer, John H., Philadelphia, Pa. Cotton-drier	332,543	Dec. 15	1895	495	33	1348
Loring, Harrison. (See McIntyre and Loring.)						
Loring, Thomas D., and A. P. Giles, Booth Bay, Me., assignors to Knickerbocker Ice Company, Philadelphia, Pa. Ice-planer	329,400	Oct. 27	2564	666	33	491
Losee, Jacob C. (See McManes and Losee.)						
Lott, Adrian T., assignor to himself and J. L. Gatti, Coldwater, Miss. Car-coupling	332,617	Dec. 15	1996	523	33	1367
Louden, William, Fairfield, Iowa. Hay elevator and carrier	328,896	Oct. 20	1821	475	33	347
Love, J. W., *et al.* (See Gladish, William J., assignor.)						
Lovejoy, Henry H., Cambridge, N. Y. Potato-digger	331,724	Dec. 1	723	{180 / 181}	33	1125
Lovelace, Walter A., assignor of one-half to D. G. Stone, Negaunee, Mich. Charcoal-kiln	327,804	Oct. 6	392	102	33	69
Lovelace, William A., Lovelaceville, Ky. Water-gate	328,697	Oct. 20	1823	475	33	348
Lovell, Clinton. (See Lewis, Nathan C., assignor.)						
Lovell, Orville D. (See Silver, Thomas, assignor.)						
Loveren, Charles I., Brooklyn, N. Y. Pin-stem	332,264	Dec. 15	1504	393	33	1281
Lovett, Arthur S., Erie, Pa. Burial-case and coffin	331,981	Dec. 8	1092	284	33	1202
Lovett, Arthur S., Erie, Pa. Coffin	331,982	Dec. 8	1093	284	33	1203
Lovett, John, Indianapolis, Ind., assignor of one-third to J. Pickering, Cincinnati, Ohio. Combined washer and linchpin	333,078	Dec. 22	2639	691	33	1490
Lovett, Joseph S. H., Trenton, N. J. Pottery-press	329,060	Oct. 27	2063	541	33	400
Low, Albert H., Denver, Colo. Magneto-call for telephones	327,896	Oct. 6	485	127	33	86
Low, Joel B., San Francisco, Cal. Ore-crushing machine	329,750	Nov. 3	437	111	33	587
Lowe, Austin, Minneapolis, Kans., assignor to G. W. Barney, Warsaw, Ind. Weather-strip	327,563	Oct. 6	81	18	33	15
Lowe, Samuel S., and G. R. Johnson, Upper Alton, Ill. Nut-lock	328,416	Oct. 13	1193	309	33	225
Lowell Oiler Company. (See Humphrey, Henry P., assignor.)						
Lowther, Benjamin F., Garrett, Ind. Flue-welding machine	330,844	Nov 17	1881	{508 / 509}	33	879
Lucas, Edwin, Kensington, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Manufacture of hinges	331,416	Dec. 1	235	61, 62	33	1039
Lucas, Eugene, New York, N. Y. Bolt	327,887	Oct. 6	487	127	33	86
Lucas, John M. (See Lucas, Josiah P. and J. M.)						
Lucas, Josiah P. and J. M., Cadiz, Ohio. Device for operating churn-dashers	329,753	Nov. 3	438	111	33	587
Lucas, Noah, Norwich, Conn. Roller for sliding doors	330,339	Nov. 10	1218	326	33	746
Lucey, James, Troy, N. Y. Roller-skate	328,417	Oct. 13	1193	309	33	226
Lucius, Rudolph W., Mascontah, Ill. Clock-frame	332,265	Dec. 15	1505	393	33	1281
Ludlow, Charles A., assignor of one-half to A. R. Lacey, Bridgeport, Conn. Apparatus for winding strips with worsted or other covering material	329,752	Nov. 3	439	112	33	588
Ludlow, Erastus D., assignor to G. M. Ludlow, Chicago, Ill. Stop mechanism for button-hole sewing-machines	329,753	Nov. 3	441	112	33	588
Ludlow, George M. (See Ludlow, Erastus D., assignor.)						
Ludlow, James M., I. K. Funk, Brooklyn, and A. W. Wagnalls, New York, N. Y. Radial folding synchronous chart	329,178	Oct. 27	2245	581	33	429
Ludwig, Oscar, Evanston, Wyo. Ter. Broom-holder	332,618	Dec. 15	1997	524	33	1367
Luedemann, Albert, New York, N. Y. Bottle-stopper	329,920	Nov. 10	671	172	33	637
Luft, Franz, New Orleans, La. Machine for disintegrating jute, &c	330,988	Nov. 24	2075	562	33	923
Luft, Franz, New Orleans, La. Roller-crusher for fibrous plants	330,989	Nov. 24	2076	562	33	924
Luger, Anton, Vienna, Austria-Hungary. Stool and seat	329,179	Oct. 27	2246	{581 / 582}	33	430
Lugrin, Henry A., assignor to himself and P. Nordmann, New York, N. Y. Stop-watch	331,417	Dec. 1	237	62	33	1039
Lumbert, Daniel, Centreville, Mass. Cranberry-gatherer	331,983	Dec. 8	1093	284	33	1203
Lumis, Thomas J., Hartford, Conn. Letter-scale	331,802	Dec. 8	822	209	33	1152
Lumsden, Alexander J., Sheboygan Falls, Wis. Reel for measuring and cutting cheese-bandages	331,803	Dec. 8	823	210	33	1152
Lundstedt, O. Emil, New York, N. Y. Toy game	330,990	Nov. 24	2077	563	33	924
Luscher, Sigmund, Frankfort, Ky. Ice-machine	329,842	Nov. 3	566	144	33	610
Luttgens, Henry A., Paterson, N. J. Locomotive	330,340	Nov. 10	1218	326	33	747

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Luxem, Jacob, Racine, Wis. Fanning-mill	329,401	Oct. 27	2585	666, 667	33	491
Luyties, Hermann C. G., *et al.* (See Evermann, Christian H., assignor.)						
Lyman, William, Middlefield, Conn. Sight for fire-arms	327,957	Oct. 6	585	152	33	105
Lynch, Edward P., Davenport, Iowa. Wheel-cultivator	329,921	Nov. 10	671	172	33	937
Lynch, Thomas J., Milford, Mass. Laced shoe	332,158	Dec. 8	1360	352	33	1248
Lynch, Thomas J., Milford, Mass. Laced shoe	332,159	Dec. 8	1360	352	33	1248
Lynds, George H., Sterling, Kans. Neck-yoke strap	327,958	Oct. 6	586	152	33	106
Lynn, Mirabeau N., Rising Sun, assignor to American Electric Headlight Company, Indianapolis, Ind. Valve-gear for steam-engines	332,205	Dec. 8	1413	365	33	1258
Lyon, Wallace, Bridgeport, Conn. Bicycle	329,402	Oct. 27	2564	667	33	491
Lyon, William M., Paola, Kans. Ladder	329,922	Nov. 10	674	172	33	638
Lyons, Albert J., Pellville, Ky. Combined harrow and sod-cutter	328,898	Oct. 20	1824	475	33	348
Lyons, James B., assignor of two-thirds to F. L. Hirschmann and F. W. Richards, Norway, Mich. Steam-pipe-joint packing	332,667	Dec. 15	2066	542	33	1379
Lyons, Laban B. (See Mosher and Lyons.)						
Lysett, Martin, Homestead, Pa. Combined cupola-furnace and converter	328,042	Oct. 13	695	183	33	133
Lytle, James P. (See Spe rry, Lyman B., assignor.)						
MacDonald, John, Norwood, Mass. Chimney-cap	332,810	Dec. 22	2361	596	33	1422
MacDonald, Thomas A., Boston, Mass. Combined water and air heating apparatus	329,923	Nov. 10	675	173	33	638
MacLean, Daniel J., assignor of two-thirds to G. E. Haak and J. L. Barrett, Reading, Pa. Fire-escape	328,953	Oct. 27	1914	500, 501	33	371
Macdonald, James, New York, N. Y. Hydrostatic leveling-instrument	327,564	Oct. 6	82	18	33	15
Macfarlane, Thomas, Montreal, Quebec, Canada. Making zinc-sulphide pigment	331,249	Nov. 24	2436	.....	33	988
Machan, Thomas, Belle Isle, N. Y. Churn	328,696	Oct. 20	1570	409	33	300
Mack, Albert G., New York, N. Y., assignor to C. B. Poor, East Orange, N. J. Necktie holder and fastener	327,565	Oct. 6	83	18	33	16
Mack, Jacob A., and C. Hanson, Madison, Wis. Vehicle-reach	331,310	Dec. 1	72	18	33	1012
Mackert, John, Springfield, Ohio. Anvil	327,566	Oct. 6	84	19	33	16
Mackie, Simon F. (See Clayton and Mackie.)						
Macphail, James, assignor to N. C. Thompson Manufacturing Company, Rockford, Ill. Cultivator	330,794	Nov. 17	1817	489, 490	33	867
Macphail, James, assignor to N. C. Thompson Manufacturing Company, Rockford, Ill. Harrow	330,795	Nov. 17	1819	490	33	868
Maddox, Martin. (See Kinard and Maddox.)						
Madlem, Daniel. (See Tippett, Robert G., assignor.)						
Mäge, Robert. (See Rusterholz, Rudolf, assignor.)						
Magner, Thomas J., Wellsville, N. Y. Vehicle-spring	328,238	Oct. 13	948	247	33	180
Maher, Ambrose, and M. Greaney, Chicago, Ill. Machine for wiring blinds	333,241	Dec. 29	2875	751, 752	33	1538
Maher, Thomas F., San Francisco, Cal. House-raising apparatus	332,811	Dec. 22	2262	596, 597	33	1422
Mahoney, Daniel H., Olney, Ill. Automatic railway-frog	328,044	Oct. 13	697	184	33	133
Mahoney, John J., *et al.* (See Martin, William F., assignor.)						
Mailer, John, San Francisco, Cal. Boiler-furnace	330,136	Nov. 10	969	252	33	697
Main, John. (See Fyfe and Main.)						
Main, William, Brooklyn, N. Y. Electric motor or dynamo-electric machine	332,668	Dec. 15	2067	543, 544	33	1379
Main, William, Brooklyn, N. Y., assignor to River and Rail Electric Light Company, Ohio County, W. Va. Floating current-motor	327,888	Oct. 6	487	127, 128	33	86
Main, William, Brooklyn, N. Y., assignor to River and Rail Electric Light Company, Ohio County, W. Va. Floating current-motor	327,889	Oct. 6	490	128	33	87
Main, William, Brooklyn, N. Y., assignor to River and Rail Electric Light Company, Ohio County, W. Va. Current-motor for dynamo-electric machines	328,418	Oct. 13	1195	309, 310	33	226
Main, William, Brooklyn, N. Y., assignor to River and Rail Electric Light Company, Ohio County, W. Va. Floating current-motor	328,496	Oct. 20	1286	334, 335	33	250
Main, William, Brooklyn, N. Y., assignor to River and Rail Electric Light Company, Ohio County, W. Va. Floating current-motor	328,497	Oct. 20	1288	335, 336	33	251
Main, William, Brooklyn, N. Y., assignor to River and Rail Electric Light Company, Ohio County, W. Va. Floating current-motor	328,593	Oct. 20	1423	370, 371	33	274
Major, Charles G. (See Stevens and Major.)						
Major, Will T., *et al.* (See Briggs, Alfred, assignor.)						
Malam, William, Edge Moor, Del. Car wheel and axle	329,180	Oct. 27	2247	582	33	430
Malbouhan, Max, Chicago, Ill. Caisson	328,498	Oct. 20	1290	336	33	251
Maldner, Charles, Chicago, Ill. Nut-lock	332,669	Dec. 15	2071	544	33	1380
Mallard, William S., *et al.* (See Thompson, George C., assignor.)						
Malley, Patrick, *et al.* (See Facer, Wilson E., assignor.)						
Malley, Thomas, *et al.* (See Facer, Wilson E., assignor.)						
Malley, Walter E., New Haven, Conn. Permutation-lock	330,137	Nov. 10	970	253	33	697
Mallinckrodt Brake Company. (See Mallinckrodt, John F., assignor.)						
Mallinckrodt, John F., Allegheny City, Pa. Car-brake	329,462	Nov. 3	42	12	33	512
Mallinckrodt, John F., Denver, Colo. Car-brake	329,464	Nov. 3	45	12	33	513
Mallinckrodt, John F., Denver, Colo. Car-brake	329,465	Nov. 3	46	13	33	513
Mallinckrodt, John F., St. Louis, Mo. Machine for inserting couplings into hose	331,147	Nov. 24	2286	619	33	961
Mallinckrodt, John F., St. Louis, Mo., assignor to Mallinckrodt Brake Company, East St. Louis, Ill. Street-car brake	329,463	Nov. 3	44	12	33	513
Mallo, John, *et al.* (See Rupertus, Jacob, assignor.)						
Mallory, Amos, Mystic Bridge, Conn. Float-detecting mechanism for looms	331,897	Dec. 8	966	250	33	1179
Maloney, F. R. (See Du Bois, N. Greenard, assignor.)						
Maloney, John W., Indianapolis, Ind. Spark-arrester	331,072	Nov. 24	2168	589	33	942
Malott, Charles A., Perin's Mills, Ohio. Plow-fender	333,141	Dec. 29	2738	719	33	1514
Malott, Frank P., Brownsville, Mo. Churn	329,924	Nov. 10	676	173	33	638
Maloy, James W., assignor, by mesne assignments, to American Marble Cutting Company, Boston, Mass. Centering device for stone-cutting machines	329,325	Oct. 27	2465	637	33	470
Maltby, Frank D., *et al.* (See Maltby, Philo, assignor.)						
Maltby, Frank D., New York, N. Y., assignor, by mesne assignments, to National Typographic Company, of West Virginia. Machine for making type-matrices	329,466	Nov. 3	48	13, 14, 15	33	514
Maltby, Frank D., assignor, by mesne assignments, to National Typographic Company, Washington, D. C. Machine for justifying matrices for producing printing-surfaces	332,352	Dec. 15	1618	425	33	1302
Maltby, Philo, Cleveland, Ohio, assignor of two-thirds to L. G. Hine, Washington, D. C., and F. D. Maltby, New York, N. Y. Reversing-valve	333,419	Dec. 29	3112	812, 813	33	1580
Maltby, Philo, Cleveland, Ohio, assignor of two-thirds to F. D. Maltby, New York, N. Y., and L. G. Hine, Washington, D. C. Reversing-valve gear	333,473	Dec. 29	3186	831, 832	33	1591

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Manby, Charles E., McKeesport, assignor to E. C. Converse, Pittsburg, Pa. Alloy for coating metals	328,239	Oct. 13	949	.....	33	180
Manchester, Thomas L. (See McHugh, Hugh, assignor.)						
Mancill, Thomas J. (See Moseley and Mancill.)						
Mandeville, Wilbur J., Rochester, N. Y. Lock	331,073	Nov. 24	2170	589	33	942
Mangan, Thomas, and J. T. Wilson, New Orleans, La. Fare-box	328,326	Oct. 13	1053	272, 273	33	200
Manger, John, London, England. School-slate	332,095	Dec. 8	1263	328	33	1232
Manhattan Watch Company. (See Kuhn, Edmond, assignor.)						
Mankey, Frederick, Williamsport, Pa. Producing open-work panels	332,722	Dec. 22	2158	570	33	1402
Mankey, Frederick, Williamsport, Pa. Cornice	332,723	Dec. 22	2159	570	33	1402
Manley, Charles G., Brockton, Mass. Milk-pail	329,467	Nov. 3	55	15	33	515
Manley, Frederick G., assignor of one-half to W. G. Manley, Syracuse, N. Y. Clothes-drier	328,855	Oct. 20	1766	461	33	337
Manley, Wilmot G. (See Manley, Frederick G., assignor.)						
Manning, Charles H., Manchester, N. H. Device for cleaning water-legs of boilers	332,266	Dec. 15	1505	394	33	1281
Manning, Dudley H., Sibley, Iowa. Insect-destroyer	330,033	Nov. 10	826	212	33	667
Manning, Frank, Ardmore, Pa. Stone-dressing machine	332,915	Dec. 22	2411	637, 638	33	1450
Manning, Frank, Ardmore, Pa. Machine for dressing stone	332,916	Dec. 22	2412	638	33	1451
Mansell Heel Machine Company. (See Coy, Frederick W., assignor.)						
Mansfeld, Christian, Reudnitz, Leipsic, Germany. Feed-motion for sewing-machines for boots and shoes	332,812	Dec. 22	2263	597	33	1423
Manual, Frank, St. Louis, Mo. Spark-arrester	332,724	Dec. 22	2160	570	33	1402
Manwaring, Morris B., Bayonne, N. J., assignor to New York and Chicago Chemical Company, of New York. Peptone-pepsin	327,567	Oct. 6	85	.....	33	16
Mapes, William R. (See Chase, Sidney A., assignor.)						
Marbea, Louis W. (See Richards, John J., assignor.)						
Marble, George W. (See Owsley and Marble.)						
Marble, George W., Chicago, Ill. Bicycle	328,499	Oct. 20	1292	336, 337	33	251
March, George N., Watertown, Mass., assignor, by mesne assignments, to Fiberlene Collar Company, Portland, Me. Stud	329,754	Nov. 3	445	112	33	568
March, William, London, England. Machinery for sweeping and conveying away refuse from streets	328,795	Oct. 20	1690	440	33	323
Marchand, Henry E., Allegheny City, Pa. Table for pumps	327,805	Oct. 6	394	102	33	69
Marchand, Henry E., Allegheny, Pa. Measuring-pump	327,890	Oct. 6	492	128, 129	33	89
Marchant, Robert M., London, England. Steam-engine	332,670	Dec. 15	2075	545	33	1380
Marcil, Michel, assignor to Hills Company, Amherst, Mass. Mechanism for actuating needle-bars	331,204	Nov. 24	2367	641	33	977
Marcil, Michel, assignor to Hills Company, Amherst, Mass. Feeding mechanism for sewing-machines	331,205	Nov. 24	2368	641	33	977
Marcil, Michel, assignor to Hills Company, Amherst, Mass. Presser-foot lifter for sewing-machines	331,206	Nov. 24	2370	642	33	977
Marcil, Michel, assignor to Hills Company, Amherst, Mass. Gage for straw-braid-sewing machines	331,207	Nov. 24	2370	642	33	977
Marion, Joseph, assignor to himself, J. Calverley, Brooklyn, B. Fischer and J. S. Valk, New York, N. Y. Hydrocarbon-burner	330,599	Nov. 17	1562	418	33	819
Mark, Charlie E., Flint, Mich. Hose-coupling	329,326	Oct. 27	2466	637	33	471
Markham, De Witt C., Towanda, Pa., assignor to Eureka Mower Company, Utica, N. Y. Finger-bar and finger for mowing-machines	332,671	Dec. 15	2079	546	33	1381
Markham, Dewitt C., assignor to Eureka Mower Company, Utica, N. Y. Umbrella-support	332,917	Dec. 22	2414	638	33	1451
Markham, Dewitt C., assignor to Eureka Mower Company, Utica, N. Y. Umbrella-top	332,918	Dec. 22	2414	638	33	1451
Markinsky, John, Winnipeg, Manitoba, Canada. Envelope or protector for cards	329,925	Nov. 10	677	173	33	639
Marks, Francis R., Ashland, Ohio. Slate-dressing machine	330,248	Nov. 10	1102	292	33	723
Marks, Jacob O., Urbana, Ill. Grain-drill	332,919	Dec. 22	2415	639	33	1451
Marlin, John M., New Haven, Conn. Ball-bearing for shafts	331,898	Dec. 8	967	250	33	1179
Marlin, John M., New Haven, Conn. Ball-bearing	331,899	Dec. 8	968	250	33	1179
Marquardt, J. George, assignor to Black & Germer, Erie, Pa. Journal-bearing	331,311	Dec. 1	73	18	33	1012
Marquart, Frederick, Cleveland, Ohio. Vapor-stove	327,568	Oct. 6	86	19	33	16
Marquis, Francis M., Zanesfield, Ohio. Ditching-machine	328,697	Oct. 20	1572	409, 410	33	301
Marquisee, Louis E. (See Parker and Marquisee.)						
Mars, John H., Albany, N. Y. Steam-boiler	332,267	Dec. 15	1506	394	33	1281
Marschner, Friedrich, St. Louis, Mo. Guard for wash-boards	333,316	Dec. 29	2984	781	33	1558
Marsh, Andrew T. (See Melhorn, William E., assignor.)						
Marsh, Canfield. (See Horey and Marsh.)						
Marsh, Edward A., Newton, Mass. Micrometer-gage	329,181	Oct. 27	2248	582, 583	33	430
Marsh, Edward A., Newton, Mass. Screw-machine	329,182	Oct. 27	2250	583, 584	33	431
Marsh, Edward A., Newton, Mass. Machine for roughing-out pinions	330,600	Nov. 17	1563	419, 420	33	810
Marsh, George A., Jr. (See Brunck and Marsh.)						
Marsh, George A., Littleton, Mass. Baking-powder	328,419	Oct. 13	1199	.....	33	227
Marsh, Henry A., *et al.*, executors. (See Knowles, Lucius J.)						
Marsh, Samuel G., Battle Creek, Mich. Car-coupling	330,601	Nov. 17	1568	421	33	820
Marshall, Charles H., Wood River, Nebr. Feed-cooker	327,806	Oct. 6	395	102	33	69
Marshall, Thomas C., assignor to L. Miller, Akron, Ohio. Grain-binding harvester	332,725	Dec. 22	2161	570, 571	33	1402
Marston, Albert J., Worcester, Mass. Surgeon's chair	327,570	Oct. 6	89	20	33	17
Marston, F. Du Pont, Philadelphia, Pa. Telephone-transmitter	329,327	Oct. 27	2468	638	33	471
Marston, James D., Englewood, and G. Clapp, Oak Park, Ill. Shrond for human bodies	333,142	Dec. 29	2739	719	33	1514
Marston, Thomas P., assignor to W. T. Salter, New York, N. Y. Folding bed	328,698	Oct. 20	1574	410	33	301
Martin, Abel J., assignor to R. O. De Vérèz, Paris, France. Composition for fireproofing and other preservative purposes	331,312	Dec. 1	74	.....	33	1013
Martin, Benjamin D., *et al.* (See Nutting, Adrain, assignor.)						
Martin, Edward L. (See O'Connor, Walsh, and Martin.)						
Martin, Edward T., Concordia, Kans. Paper-bag holder	331,512	Dec. 1	362	97	33	1063
Martin, Edwin, *et al.* (See Mitchell, Frank S., assignor.)						
Martin, Gaylord, Milwaukee, Wis. Brick-machine	327,569	Oct. 6	86	19	33	16
Martin, Godfrey. (See Hofer and Martin.)						
Martin, James P., St. Paul, Minn. Cow-milking apparatus	331,513	Dec. 1	363	99	33	1063

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Martin, Joseph C., Burlington, Vt. Automatic cash-box system	331,418	Dec. 1	238	62	33	1040
Martin, Morris, Malden, Mass. Manufacturing thermostats	329,469	Nov. 3	60	16	33	516
Martin, Morris, Malden, Mass. Thermostatic electric controlling device	329,470	Nov. 3	60	16	33	516
Martin, Morris, Malden, and J. C. Wilson, Boston, Mass. Automatic fire-alarm telegraph	329,468	Nov. 3	55	16	33	515
Martin, Robert H. (See Thompson, Mark S., assignor.)						
Martin, Samuel, assignor to himself and Z. E. Chambers, Hartland, Mich. Washing-machine	329,183	Oct. 27	2255	585	33	431
Martin, Thomas J., *et al.* (See Mitchell, Frank S., assignor.)						
Martin, Walter T., Danvers, Mass. Last	331,313	Dec. 1	76	18	33	1013
Martin, William F., assignor of three-fourths to J. Scott, J. Albizitti, and J. J. Mahoney, Philadelphia, Pa. Condensing-engine	331,984	Dec. 8	1095	284	33	1203
Martin, William L., *et al.* (See Mitchell, Frank S., assignor.)						
Martines, Rafael, New York, N. Y., assignor to E. Beadle, Cranford, N. J., and J. F. Courtney, Philadelphia, Pa. Mat or floor-covering	332,921	Dec. 22	2418	639	33	1452
Marty, John M., Cleveland, Ohio. Injector	328,594	Oct. 20	1496	371	33	275
Martyn, Albert E. P., Manchester, N. H. Loom-shuttle	333,317	Dec. 29	2984	781	33	1558
Marvin, George H., Buffalo, N. Y. Neck-wear fastener	332,922	Dec. 22	2420	640	33	1452
Marvin, George H., Buffalo, N. Y. Neck-wear fastener	332,923	Dec. 22	2420	640	33	1452
Marzari, Giuseppe, New York, N. Y. Game apparatus	331,419	Dec. 1	239	62, 63	33	1040
Marzari, Giuseppe, New York, N. Y. Winding-indicator for time-pieces	331,985	Dec. 8	1096	285	33	1203
Maschke, Samuel. (See Singer, Markus, assignor.)						
Maser, George W., *et al.* (See Miller, William C., assignor.)						
Maske, Robert W., Chicago, Ill. Double-seaming machine	327,571	Oct. 6	90	20	33	17
Maskiell, Frederick. (See Smith, William, assignor.)						
Mason, Allan. (See Grant, James B., assignor.)						
Mason, Allan. (See Grant and Mason.)						
Mason, Charles T., Jr., Sumter, S. C. Cotton-picker stem	331,514	Dec. 1	365	98	33	1064
Mason, Frank E. (See Kenney and Mason.)						
Mason, Sanders, Homer, Ohio. Traction-engine	327,607	Oct. 6	396	103	33	69
Mason, Thornton & Romanze. (See Romanze, Otto, assignor.)						
Mason, William M., Wanseon, assignor of one-half to E. Ross, Toledo, Ohio. Device for cutting the runners of strawberry-vines	331,804	Dec. 8	826	210	33	1153
Matern, William J., Bloomington, Ill. Hub-boxing gage	328,699	Oct. 20	1576	410	33	301
Mather, Alonzo C., Chicago, Ill. Glove-fastening	330,501	Nov. 17	1447	387	33	797
Mathews, Robert R., New York, N. Y. Boot or shoe	330,912	Nov. 24	1976	534	33	904
Mathews, William, Llano, Tex. Hat and towel holder	330,991	Nov. 24	2079	563	33	924
Mathews, William, Llano, Tex. Gate-latch	330,992	Nov. 24	2080	563	33	924
Mathey, Henry, New York, N. Y. Manufacture of lime	330,603	Nov. 17	1570	.....	33	820
Mathey, Henry, assignor to H. G. Bond, New York, N. Y. Manufacture of cement	330,602	Nov. 17	1570	.....	33	820
Mathey, Joseph F., Struther's Station, Ohio. Mining-drill	328,327	Oct. 13	1056	273	33	300
Mathiason, Peter B., St. Louis, Mo. Brick-machine	331,420	Dec. 1	241	63, 64	33	1040
Mathiason, Peter B., St. Louis, Mo. Cam	332,268	Dec. 15	1507	394	33	1281
Mathieu, Jean A., Detroit, Mich. Pipe-coupling for wooden tanks	332,096	Dec. 8	1264	328	33	1232
Mathieu, Jean A., Detroit, Mich. Apparatus for preserving railway-ties	332,097	Dec. 8	1265	328	33	1233
Mathushek Piano Manufacturing Company. (See Parmelee, Henry S., assignor.)						
Matteson, Eugene R., assignor to W. H. Hunter and R. E. Matteson, Joliet, Ill. Barbed wire for fences	330,993	Nov. 24	2081	563	33	924
Matteson, Rose E., *et al.* (See Matteson, Eugene R., assignor.)						
Matthews, Cranmer L., Temple, Tex. Car-brake	329,328	Oct. 27	2469	638	33	471
Matthews, George, Jr. (See Conner and Matthews.)						
Matthews, George H., Leavenworth, Kans. Reservoir-stove	327,572	Oct. 6	92	20	33	17
Matthews, John. (See Conner and Matthews, assignors.)						
Matthews, William J. (See Warner and Matthews.)						
Matthiessen, Conrad H., Odell, Ill. Adjustable bedstead	327,699	Oct. 6	264	67	33	47
Matthiessen, Franz O., Irvington, N. Y. Continnous filter for filtering sugar-liquor	329,184	Oct. 27	2255	585	33	432
Matthiessen, Franz O., Irvington, N. Y. Bone-black filter for filtering sugar-liquors	329,185	Oct. 27	2257	585	33	432
Matthiessen, Franz O., Irvington, N. Y. Bone-black filter	329,329	Oct. 27	2471	638	33	472
Matthiessen, Franz O., Irvington, N. Y. Removing the impurities of raw-sugar	329,331	Oct. 27	2476	639	33	472
Matthiessen, Franz O., Irvington, N. Y. Apparatus for decolorizing sugar-liquor by upward filtration through bone-black	329,332	Oct. 27	2478	639	33	473
Matthiessen, Franz O., Irvington, N. Y., and E. E. Quimby, Orange, assignors to F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Apparatus for decolorizing saccharine and other liquids by filtration through bone-black	329,330	Oct. 27	2473	639	33	472
Matthiessen & Wiechers Sugar Refining Company, F. O. (See Matthiessen and Quimby, assignors.)						
Matthiessen & Wiechers Sugar Refining Company, F. O. (See Quimby, Edward E., assignor.)						
Matzenbacher, John, New York, N. Y. Umbrella	328,128	Oct. 13	808	211	33	153
Maurer, Adam, San Antonio, Tex. Door-check	330,138	Nov. 10	972	253	33	697
Mawhinney, Samuel. (See Gates, Alfred B., assignor.)						
Maxfield, Charles A., assignor to J. Wallace, trustee, New York, N. Y. Preserving, strengthening, waterproofing, and glossing textile fabrics, including paper	328,956	Oct. 27	1920	.....	33	372
Maxfield, Charles A., assignor to J. Wallace, trustee, New York, N. Y. Saturating or coating textile fabrics, paper, &c	328,957	Oct. 27	1921	501	33	372
Maxfield, Charles A., assignor to J. Wallace, trustee, New York, N. Y. Apparatus for treating textile fabrics with waterproofing, &c	328,958	Oct. 27	1923	502	33	372
Maxfield, John, London, England. Machine for perforating music-sheets for mechanical musical instruments	330,913	Nov. 24	1976	534	33	904
Maxfield, Leverett L., assignor to J. Wallace, trustee, New York, N. Y. Coating or lining vessels	332,160	Dec. 8	1361	.....	33	1249
Maxim, Hiram S., London, county of Middlesex, England. Support for machine-guns	329,471	Nov. 3	63	17	33	516
Maxon, Daniel M., Bay City, Mich. Circular sawing machine	328,954	Oct. 27	1917	501	33	371
Maxon, Daniel M., assignor to McKinnon Manufacturing Company, Bay City, Mich. Furnace-door	328,955	Oct. 27	1919	501	33	371
Maxson, Stephen W., Dassel, Minn. Time-register for employés	328,045	Oct. 13	699	184	33	133
Maxwell, David, Paris, Ontario, Canada. Slat-attaching device for elevator-belts	331,515	Dec. 1	366	98	33	1064
May, John J. (See Enright and May.)						
Mayberry, James W., Marvyn, Ala. Stump-puller	330,994	Nov. 24	2082	564	33	924
Mayer, Ernest. (See Mayer, Joseph, assignor.)						
Mayer, Jacob J. (See Class, Weatherhead, and Collins, assignors.)						
Mayer, Jacob J., *et al.* (See Class and Weatherhead, assignors.)						
Mayer, Joseph, Yonkers, N. Y. Corset	328,129	Oct. 13	809	211	33	153
Mayer, Joseph, Yonkers, N. Y. Corset	328,130	Oct. 13	810	211	33	153
Mayer, Joseph, Yonkers, N. Y. Corset	328,131	Oct. 13	811	211	33	154

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Mayer, Joseph, assignor of one-half to E. Mayer, Beaver Falls, Pa. Imitation coal	332,736	Dec. 22	2163	.....	33	1403
Mayer, Rudolph. (See Holtzmann and Mayer.)						
Mayer, Strouse & Co. (See Gilbert, Thomas S., assignor.)						
Maylor, Thomas, Oak Harbor, Wash. Ter. Shaving-mug	328,240	Oct. 13	950	247	33	181
Maynard, Charles S., Paw Paw, Mich. Car-coupling	332,353	Dec. 15	1621	425	33	1302
Mayo, Virginius J., assignor to G. H. Noble, Erie, Pa. Sewing-machine shuttle	331,314	Dec. 1	77	19	33	1013
Maywood, Walter S. (See Mock and Maywood.)						
McAdams, George B. (See Walter, Willie C., assignor.)						
McAdams, John, Brooklyn, N. Y. Marine brake	330,034	Nov. 10	827	212	33	667
McAfee, John. (See Geasler and McAfee.)						
McAllister, Elbert W., South Bend, Ind. Piston for syringes	329,403	Oct. 27	2588	667	33	492
McAllister, S. F., *et al.* (See Bradford, John B., assignor.)						
McAllister, Sanders F., San Marcos, Tex. Car-coupling	332,544	Dec. 15	1696	495	33	1348
McAllister, Thomas H. (See Brower, Henry J., assignor.)						
McArthur, James W., Walton, Kans. Automatic circuit-closer for telegraph-instuments	331,148	Nov. 24	2287	619	33	902
McArthur, Warren, Chicago, Ill. Flue-stop	327,573	Oct. 6	93	20	33	17
McBlair, Augusta, Washington, D. C. Ironing-table	330,721	Nov. 17	1722	464	33	851
McCabe, Thomas, St. Joseph, Mo. Reservoir window-washing brush	332,545	Dec. 15	1897	495 / 496	33	1348
McCahey, John, assignor to New England Butt Company, Providence, R. I. Machine for covering wire	330,035	Nov. 10	829	213	33	667
McCahey, John, assignor to New England Butt Company, Providence, R. I. Spool-carrier for winding-machines	330,036	Nov. 10	830	213	33	668
McCallip, William W., Cleveland, Ohio. Overfeed-regulator for rolling-mills	331,516	Dec. 1	368	99	33	1064
McCalop, James I., Clinton, N. C. Vehicle-axle	331,805	Dec. 8	827	210	33	1153
McCambridge, Patrick C. F., St. Albans, Vt. Automatic circuit-closer	330,037	Nov. 10	831	213	33	668
McCandless, John C., and O. King, Randolph, Kans. Cultivator for listed corn	330,143	Nov. 10	977	254	33	699
McCarthy, Thomas, St. Vincent de Paul, Quebec, Canada. Calendar	330,038	Nov. 10	832	213	33	668
McCarty, Harry C., Williamsport, assignor of one-half to J. F. Bickel, Morton, Pa. Hydraulic, steam, air, and vacuum brake	330,796	Nov. 17	1820	490	33	868
McCarty, Michael, Newport, R. I. Fastening for tied packages	332,924	Dec. 22	2421	640	33	1453
McCarty, Michael, Newport, R. I. Fastening for tied packages	332,925	Dec. 22	2422	640	33	1453
McCarty, Richard J., Fort Scott, Kans. Velocimeter	331,517	Dec. 1	370	99	33	1065
McCarty, William F. M., assignor to A. Ohl, J. M. Creighton, B. C. Lauth, Philadelphia, Pa., and J. Logan, Hagerstown, Md. Manufacturing gas	330,142	Nov. 10	976	254	33	698
McCausland, William J., Philadelphia, Pa. Printing-telegraph	328,500	Oct. 20	1293	337	33	252
McCheaney, Renben, Frankfort, N. Y., assignor of one-half to G. A. Colnon, Chicago, Ill. Meat-cutting machine	331,900	Dec. 8	909	251	33	1179
McClain, Edward L., Greenfield, Ohio. Harness-saddle	332,098	Dec. 8	1266	329	33	1233
McClain, Edward L., Greenfield, Ohio. Harness-saddle	332,099	Dec. 8	1268	329	33	1233
McClain, Edward L., Greenfield, Ohio. Harness-saddle	332,100	Dec. 8	1270	330	33	1233
McCleary, James T., Neosho, Mo. Barometer	328,501	Oct. 20	1296	337	33	253
McClelland, George B. (See Dale, James W., assignor.)						
McClure, Alexander W., Chicago, Ill. Velocipede	331,518	Dec. 1	372	100	33	1065
McClure, Charles, Champaign, Ill. Cartridge-pouch	327,700	Oct. 6	265	67	33	47
McClure, Jesse D., deceased, Jeffersonville, Ind.; S. S. Johnson administrator. Book-rest for chairs	331,149	Nov. 24	2288	620	33	902
McClure, William T., Blue Ridge Springs, Va. Cupboard or kitchen cabinet	327,701	Oct. 6	266	67	33	47
McCoid, Moses A. (See Caldwell and Hendricks, assignors.)						
McCollum, John A. (See Topliff, Cross, Cox, and McCollum.)						
McConnell, David W., Buffalo, N. Y. Combined street-receiver and stench-trap	329,404	Oct. 27	2589	668	33	492
McConnell, Joseph A., Pittsburg, Pa. Cigar-bunching machine	330,604	Nov. 17	1571	421	33	820
McConnon, Thomas J. (See Potter and McConnon.)						
McCool, William A., Perryville, assignor of one-half to P. Oliver, Ashland County, Ohio. Sign	328,796	Oct. 20	1691	440	33	324
McCool, William A., Perryville, assignor of one-half to P. Oliver, Ashland County, Ohio. Forming grooved metal rods	328,797	Oct. 20	1692	440	33	324
McCormick, Junius A., Pittsburg, Pa. Device for sealing pipe-joints	329,405	Oct. 27	2590	668	33	492
McCormick, Junius A., Pittsburg, Pa. Pipe-coupling. (Reissue)	10,674	Dec. 15	2115	558	33	1388
McCreery, Crawford. (See Kesselring, Friedrich, assignor.)						
McCrolden, James, New York, N. Y. Package	328,700	Oct. 20	1577	411	33	301
McCullough, Lewis H., Richmond, Ind. Central-office apparatus for fire-alarm telegraphs	329,186	Oct. 27	2258	586	33	432
McCullough, Lewis H., Richmond, Ind. Non-interfering fire-alarm telegraph system	329,187	Oct. 27	2260	586	33	433
McCullough, Lewis H., Richmond, Ind. Testing apparatus for fire and police telegraph systems	329,188	Oct. 27	2263	586 / 587	33	433
McCullough, Lewis H., Richmond, Ind. Non-interfering fire and police telegraph system	329,189	Oct. 27	2266	587	33	433
McCullough, Lewis H., Richmond, Ind. Circuit-controller	331,986	Dec. 8	1097	285	33	1204
McCune, Charles A. (See Moore, Oliver M., assignor.)						
McDaniel, Rebecca A., Burr Oak, Kans. Preserving compound	329,578	Nov. 3	213	.....	33	545
McDermid, Henry A., and W. Williamson, Cleveland, Ohio. Die for making thill-couplings	327,702	Oct. 6	267	67	33	47
McDermott, Michael, *et al.* (See Kock, Christian H., assignor.)						
McDermott, Thomas F. (See Montague, Patrick H., assignor.)						
McDill, Thomas W., Ottumwa, Iowa. Cultivator	332,813	Dec. 22	2264	597	33	1403
McDonald, John, Central City, Nebr. Siding-rest	331,519	Dec. 1	374	100	33	1065
McDonald, John A., Sydney, New South Wales. Bearing-roller for bridges, &c	327,808	Oct. 6	398	104	33	70
McDonald, John S. (See Thoens, Burchard, assignor.)						
McDonald Machine Company. (See McDonald, William R., assignor.)						
McDonald, William R., assignor to McDonald Machine Company, Portland, Me. Friction-clutch	333,143	Dec. 29	2740	719	33	1514
McDowell, Frederick, H., Brooklyn, N. Y. Ore-crusher	328,132	Oct. 13	811	212	33	154
McElroy, John H., Pittsburg, Pa. Gas-main	327,703	Oct. 6	268	68	33	47
McEwen, George C., Newark, N. J. Ankle-support	332,727	Dec. 22	2164	571	33	1403
McEwen, George C., Newark, N. J. Ankle-support	332,728	Dec. 22	2165	571	33	1403
McFarland, James, Louisville, Ky. Dumping-wagon	332,414	Dec. 15	1709	448	33	1316
McFarland, Samuel G., assignor to Myers Sanitary Depot, New York, N. Y. Connection for pipes to closets, &c	330,502	Nov. 17	1449	387	33	797
McGahan, Fred L., Indianapolis, Ind. Pipe-coupling	331,806	Dec. 8	827	211	33	1153
McGavock, William J., Memphis, Tenn. Current-wheel	330,503	Nov. 17	1450	388	33	797
McGill, George W., New York, N. Y. Metallic fastener	330,995	Nov. 24	2083	564	33	925
McGill, James, assignor to Richmond Manufacturing Company, Lockport, N. Y. Grain-scourer	333,420	Dec. 29	3115	813	33	1580
McGillis, Henry, Darlot, Ga. Rat-trap	327,704	Oct. 6	268	68	33	47
McGoldrick, Neal, Brooklyn, N. Y. Check-book	332,269	Dec. 15	1508	395	33	1282

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
McGovern, George, Richmond, Va. Cotton-press	328,798	Oct. 20	1603	441	33	324
McGregor, Montague M., assignor of two-thirds to A. Morris and J. Anderson, Housley, Tex. Cotton-chopper	328,595	Oct. 20	1427	371	33	275
McGregory, Samuel E., and J. J. Koch, St. Louis, Mo. Hydraulic brick-machine	332,814	Dec. 22	2265	597, 598	33	1423
McGrew, William H., assignor of two-fifths to J. Myers, Peru, Ind. Snap-hook	332,415	Dec. 15	1710	448	33	1317
McGuire, Patrick W., South Bend, Ind. Tire and felly for wheels. (Reisane)	10,676	Dec. 29	3213	841	33	1596
McGuire, William, assignor to himself and F. Jager, Chicago, Ill. Grain-car door	331,315	Dec. 1	78	19	33	1013
McHenry, David A., Younger, Mo. Worm-fence	332,416	Dec. 15	1711	448	33	1317
McHugh, Hugh, assignor, by mesne assignments, to himself and T. L. Manchester, New Bedford, Mass. Manufacturing picture-frame moldings	332,815	Dec. 22	2268	.....	33	1424
McIlhenny, George A., Washington, D. C. Boiler-furnace	328,133	Oct. 13	813	212	33	154
McIlvaine, Ferree L., Gap, Pa. Rotary engine	330,504	Nov. 17	1451	388, 389	33	798
McIlvried, John, Cleveland, Ohio. Wire-nail machine	331,987	Dec. 8	1099	285, 286	33	1204
McIlvried, John, Cleveland, Ohio. Nail-machine	331,988	Dec. 8	1101	286	33	1204
McIlwain, William, Philadelphia, Pa. Chenille-cutting machine	333,319	Dec. 29	2986	782	33	1559
McIntosh, Peter E., Auburn, N. Y. Tricycle	329,755	Nov. 3	445	112	33	589
McIntyre, Elmer E., Pittsburg, assignor, by mesne assignments, to J. Baily, Economy, Pa. Spring bed-bottom	330,249	Nov. 10	1103	292	33	723
McIntyre, James, and H. Loring, Boston, Mass. Escape-hatch for railway-cars	330,039	Nov. 10	833	214	33	668
McKay & Copeland Lasting Machine Company. (See Brock, Matthias, assignor.)						
McKay, John, Titusville, Pa. Gas-scrubber	328,134	Oct. 13	814	213	33	154
McKean, Frank N., Long Branch, N. J. Wagon-jack and step-ladder combined	328,701	Oct. 20	1578	411	33	302
McKeethen, Taylor, New Orleans, La. Lemon-squeezer	330,505	Nov. 17	1454	389	33	798
McKenzie, Angus, Toronto, Ontario, Canada, assignor of one-half to S. F. Stevens, Grand Rapids, Mich. Refrigerator	332,417	Dec. 15	1712	448	33	1317
McKenzie, Winfield S., Kemp, Tex. Combination-wrench	331,520	Dec. 1	375	101	33	1065
McKinley, William V. (See Jacobus and McKinley.)						
McKinney, David P., *et al.* (See Waters, Frank M., assignor.)						
McKinney, Thomas E., *et al.* (See Waters, Frank M., assignor.)						
McKinney, Walter S., Binghamton, N. Y. Machine for making paper pails, &c	328,398	Oct. 13	1057	273, 274, 275	33	200
McKinnon Manufacturing Company. (See Maxon, Daniel M., assignor.)						
McKinnon, Murdoch M., Laurinburg, N. C. Hame	329,472	Nov. 3	65	18	33	517
McKinnon, Murdoch M., Laurinburg, N. C. Hame-fastener	332,270	Dec. 15	1509	395	33	1222
McKinzie, Thomas D., Colorado, Tex. Fire-escape	329,190	Oct. 27	2269	587	33	434
McKnight, Levi G., and H. C. Knowlton, Gardner, Mass. Boring-machine	328,966	Oct. 27	1939	505, 506	33	375
McLaughlin, James F., Philadelphia, Pa. Telephonic appliance	328,702	Oct. 20	1579	411	33	302
McLaughlin, James F., Philadelphia, Pa. Telephonic transmitter	328,703	Oct. 20	1580	412	33	302
McLaughlin, James F., assignor, by mesne assignments, to National Electric Railway System, (limited,) Philadelphia, Pa. Electric railway	328,490	Oct. 13	1200	310	33	227
McLaughlin, James F., assignor, by mesne assignments, to National Electric Railway System, (limited,) Philadelphia, Pa. Electric railway	330,605	Nov. 17	1572	421	33	820
McLaughlin, James F., assignor, by mesne assignments, to National Electric Railway System, (limited,) Philadelphia, Pa. Electrical railway	332,926	Dec. 22	2423	641	33	1453
McLaughlin, James F., assignor, by mesne assignments, to National Electric Railway System, (limited,) Philadelphia, Pa. Electrical railway	332,927	Dec. 22	2424	641	33	1453
McLaughlin, James F., assignor, by mesne assignments, to National Electric Railway System, (limited,) Philadelphia, Pa. Electric railway	332,928	Dec. 22	2425	641	33	1453
McLaughlin, James F., assignor to National Electric Railway System, (limited,) Philadelphia, Pa. Electrical railway	332,929	Dec. 22	2425	641	33	1454
McLean, Anthony, San Francisco, Cal. Extension baby-carriage	329,579	Nov. 3	214	56	33	545
McLellan, Daniel G., Rhodes, N. C. Apparatus for curing tobacco	332,739	Dec. 22	2166	572	33	1403
McLellan, Daniel M., Brooklyn, N. Y. Show-card	330,250	Nov. 10	1103	292	33	724
McLeod, Charles G., Worcester, Mass. Joint for wire, wire rods, cables, &c	328,502	Oct. 20	1298	338	33	253
McLeod, Daniel, Watertown, N. Y. Slack-adjuster for car-brakes	330,251	Nov. 10	1105	293	33	724
McLewee, Frederick, New York, N. Y. Sign	328,135	Oct. 13	815	213	33	155
McMahon, Dennis, assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Lamp-hanger	331,521	Dec. 1	376	101	33	1066
McMahon, Michael, Bucyrus, Ohio. Grain-scourer	331,074	Nov. 24	2173	590	33	942
McManes, William, and J. C. Losee, Summit, N. J. Adjustable window-curtain	331,901	Dec. 8	971	251	33	1180
McMaster, Frank, Cherryvale, Kans. Tree-protector	329,926	Nov. 10	678	174	33	639
McMenamin, Peter, Jersey City, N. J. Fire-kindler	332,816	Dec. 22	2268	598	33	1424
McMillen, Ephraim W., *et al.* (See Dodsworth, David, assignor.)						
McMullen, Joseph A., and A. R. Bloodworth, Stephens Pottery, Ga. Machine for thrashing peas	328,799	Oct. 20	1604	441	33	324
McMurray, John C., Brooklyn, N. Y. Safety attachment for beds and berths	329,663	Nov. 3	318	82	33	565
McMurray, Lang & Burnham. (See Boatwick, Jabez A., assignor.) (Reissue.)						
McMurtrie, James E., assignor to himself, W. Barkla, S. B. and D. M. Stoler, Saxton, Pa. Ribbon-reel	329,191	Oct. 27	2270	588	33	434
McNary, Isaac R., New York, N. Y., assignor to Seibert Cylinder Oil Cup Company, Hartford, Conn. Oil-cup	330,506	Nov. 17	1454	389	33	798
McNaughton, James. (See Small and McNaughton.)						
McNett, Lyman F., assignor to Excelsior Gas Machine Company, New York, N. Y. Carburetor	329,664	Nov. 3	319	82	33	565
McNiece, Thomas B., assignor to Michigan Lubricator Company, Detroit, Mich. Lubricator	330,914	Nov. 24	1978	535	33	995
McOmber, Pliny, Maple Grove, Mich. Wire fence	331,807	Dec. 8	928	211	33	1153
McPherson, Alexander, and F. P. Ramsdail, Ypsilanti, Mich. Vehicle running-gear	332,930	Dec. 22	2427	642	33	1454
McQueen, John, and W. H. Carmont, Manchester, county of Lancaster, England. Vehicle-body	330,996	Nov. 24	2084	564	33	925
McRae, William T., Philadelphia, Pa. Friction clutch and coupling	332,931	Dec. 22	2427	642	33	1454
McTammany, Alexander. (See McTammany, John, assignor.)						
McTammany, John, assignor to A. McTammany, Worcester, Mass. Automatic musical instrument	328,503	Oct. 20	1299	338	33	253
McTyeire, William C., Hatchechubbee, Ala. Piston-packing	329,665	Nov. 3	321	82	33	565
McVeety, Alexander, Howard, assignor of one-half to J. Keys, Hennepin County, Minn. Band-cutting and feeding mechanism for thrashing-machines	330,507	Nov. 17	1456	390	33	798
Mead, Jefferson, Windham, N. Y. Carpet-stretcher	327,900	Oct. 6	399	104	33	70
Meade, George H., Quincy, assignor to M. Bray, Newton, Mass. Rivet	328,704	Oct. 20	1581	412	33	302

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Meadows, Henry, Windsor, Ontario, Canada. Pipe-vise	329,406	Oct. 27	2591	668	33	492
Mealy, Michael, Cohoes, N. Y. Stove-pipe	327,705	Oct. 6	269	68	33	48
Meatyard, Edward B., Lake Geneva, Wis. Apparatus for pressing ingots	328,399	Oct. 13	1062	275, 276	33	201
Medart, Martin, Belleville, Ill. Automatic horse-check	333,421	Dec. 29	3116	814	33	1580
Meek, William E. (See Shank and Meek.)						
Meekison, John. (See Carroll and Meekison.)						
Meese, Constant, Oakland, Cal. Device for locking collars and rings to shafts	331,522	Dec. 1	377	101	33	1066
Meikle Company, Thomas. (See Meikle, Thomas, assignor.)						
Meikle, Thomas, assignor to T. Meikle Company, Louisville, Ky. Wheel-plow	330,252	Nov. 10	1106	293	33	724
Meinhold, Theodore, Klingenthal, Saxony, Germany. Mechanical musical instrument	329,473	Nov. 3	66	18	33	517
Meissner, John, assignor to himself, R. Fleischman, I. Kayser, P. L. Sondheim, L. Steckler, and J. C. Stanton, Jr., New York, N. Y. Car-brake	328,959	Oct. 27	1926	502	33	373
Mekenney, Alendo, Middleborough, Mass. Fertilizer-distributer	328,596	Oct. 20	1428	372	33	275
Mekenney, Alendo, Middleborough, Mass. Planting-machine	328,597	Oct. 20	1430	372, 373	33	276
Melançon, Egesippe D., and L. L. Savoy, Paincourtville, La. Stubble-digger	328,330	Oct. 13	1065	276	33	202
Melhorn, William E., Erie, Pa. Screw-cutting mechanism	327,959	Oct. 6	586	153	33	106
Melhorn, William E., assignor of one-half to A. T. Marsh, Erie, Pa. Pipe-cutter	330,253	Nov. 10	1107	293	33	724
Melins, Lyman B., Copake, N. Y. Load-binder	331,421	Dec. 1	243	64	33	1041
Mellette, John, and F. M. Harris, assignors of one-third to W. H. Bouslog, Winamac, Ind. Driving-belt	332,672	Dec. 15	2060	546	33	1381
Mellinger, George V. L. (See Harger, Charles G., Jr., assignor.)						
Mellon, Peter H., St. Louis, Mo. Spring-bed	331,422	Dec. 1	244	64	33	1041
Mellon, Peter H., St. Louis, Mo. Spring-bed	331,523	Dec. 1	378	102	33	1066
Mellon, Peter H., St. Louis, Mo. Spring bed-bottom	331,645	Dec. 1	605	149	33	1103
Mellon, Peter H., St. Louis, Mo. Spring-bed	331,989	Dec. 8	1102	286	33	1204
Mellor, James. (See Holt and Mellor.)						
Melvin, David N., Linolenmville, N. Y. Manufacture of floor oil-cloth	330,254	Nov. 10	1108	294	33	724
Menahan, John, New York, N. Y. Fastener for bags	329,192	Oct. 27	2271	588	33	434
Mendenhall, Stephen C. (See Jackson, Frederick W., assignor.)						
Mendenhall, Stephen C., Richmond, Ind. Roller-skate	329,927	Nov. 10	679	174	33	639
Meneely Hardware Company. (See Gibbons, John, assignor.)						
Menough, George W., Wellsville, Ohio. Sad-iron	328,800	Oct. 20	1695	441	33	325
Mensching, Carl. (See Vollbrecht and Mensching.)						
Mercer, William G., Burlington, Iowa. Hub for vehicle-wheels	329,061	Oct. 27	2084	541	33	401
Mercer, William H., Mercer, S. C. Automatic fan	328,705	Oct. 20	1582	412	33	302
Merchants' Store Service Company. (See Bigelow, William P., assignor.)						
Meredith, David, Syracuse, N. Y. Horseshoe-pad	329,193	Oct. 27	2274	588	33	434
Mergenthaler, Ottmar, Baltimore, Md., assignor to National Typographic Company, Washington, D. C. Matrix-making and printing machine	328,960	Oct. 27	1927	502, 503	33	373
Mergenthaler, Ottmar, Baltimore, Md., assignor to National Typographic Company, Washington, D. C. Machine for dressing type-bars	328,961	Oct. 27	1931	503, 504	33	373
Mergenthaler, Ottmar, Baltimore, Md., assignor, by mesne assignments, to National Typographic Company, Washington, D. C. Machine for forming type-matrices	332,354	Dec. 15	1622	426, 427	33	1303
Meriden, Malleable Iron Company. (See Lawton, Lyman T., assignor.)						
Merrism, Truman, Milwaukee, Wis. Non-conducting boiler-covering	327,810	Oct. 6	400	104	33	70
Merrick, Alva R., Blossburg, Pa. Head-rest for dental chairs	333,019	Dec. 22	2563	674	33	1478
Merrill, Calvin J., and W. Viggers, Des Moines, Iowa. Automatic cut-off and take-away for drain-tile machines	332,546	Dec. 15	1697	496	33	1348
Merrill, Edwin C., Pittsburg, Pa. Gas-pressure regulator	329,928	Nov. 10	681	174	33	639
Merrill, Joshua. (See Woodbury, Merrill, Patten, and Woodbury.)						
Merritt, Charles H., Danbury, Conn. Machine for compressing and evening felt and expelling water from the same	331,423	Dec. 1	245	65	33	1041
Merrow, Joseph M., Merrow, Conn. Machine for sewing looped fabrics	330,606	Nov. 17	1573	421, 422	33	821
Merrymon, Harry, Carbondale, Ill. Breast-strap iron	333,320	Dec. 29	2987	782	33	1559
Mersereau & Co., W. T., *et al.* (See Brooks, John S., assignor.)						
Mershon, Edward C., East Saginaw, Mich. Cutter-head	329,756	Nov. 3	447	113	33	589
Mertsheimer, Frederick, Denver, Colo., assignor of one-half to I. H. Congdon, Omaha, Nebr. Spark-arrester	328,962	Oct. 27	1933	504	33	374
Merwin, Nathan W., New Haven, Conn. Bread-cutter	331,990	Dec. 8	1103	287	33	1204
Merwin, William R., *et al.* (See Aikman, Peter A., assignor.)						
Metcalf, Elliott, Cass City, Mich. Window-shade attachment	331,150	Nov. 24	2290	620	33	992
Metzger, Amandus, New York, N. Y. Electro-medical apparatus	329,929	Nov. 10	683	175	33	640
Metzger, Hermann, North Springfield, Mo. Apparatus for drawing beer	331,424	Dec. 1	247	65	33	1042
Metzger, Martin L., and A. Cooper, assignors to W. O. Hickok, Harrisburg, Pa. Clutch	331,524	Dec. 1	379	102	33	1067
Meyer, Benjamin F., Camden, N. J., assignor to M. A. and C. A. Furbush, Philadelphia, Pa. Mechanical movement	330,255	Nov. 10	1109	294	33	725
Meyer, Curt W., New York, N. Y. Electric laryngoscope	330,139	Nov. 10	973	253	33	698
Meyer, Henry, *et al.* (See Kittler, Julius W., assignor.)						
Meyer-Sniffen Company. (See Bunting, William, Jr., assignor.)						
Meyers, Adam H., Melmore, Ohio. Slate-dressing machine	327,811	Oct. 6	401	104	33	70
Meyers, Adelbert A., St. Louis, Mo. Fifth-wheel attachment	329,194	Oct. 27	2275	589	33	435
Meyrowitz, Emil B., Ridgefield, N. J. Spectacles	329,474	Nov. 3	67	18	33	517
Michaelis, Ernest R., Sycamore, Ohio. Fence	329,930	Nov. 10	685	175	33	640
Michaelis, Ernest R., Sycamore, Ohio. Halter	332,271	Dec. 15	1511	395	33	1282
Michigan Lubricator Company. (See Parshall, Charles H., Jr., assignor.)						
Michigan Lubricator Company. (See Krantz, Fredrich W., assignor.)						
Michigan Lubricator Company. (See McNiece, Thomas B., assignor.)						
Michler, Gottlob. (See Acker and Michler.)						
Middleditch, Walter, Detroit, Mich. Lathe attachment	332,817	Dec. 22	2269	598	33	1424
Midgley, John, assignor of three-fourths to W. F. and F. C. Sayler and W. Hall, Pawtucket, R. I. Wool-combing machine	329,195	Oct. 27	2276	589	33	435
Miehle, Robert, Chicago, Ill. Device for giving positive motion to sliders of printing-presses	330,040	Nov. 10	834	214	33	668
Milbourne, John P., and T. Humphreys, Manchester, county of Lancaster, England; said Humphreys assignor to said Milbourne. Basket and skip	332,407	Dec. 15	1698	445	33	1315
Milburn, Thomas, *et al.* (See Wohlfarth and Wakefield, assignors.) (Reissue.)						
Miles Brothers & Co. (See Price, Loftus E., assignor.)						
Miles Brothers & Co. (See Vogel, Ernest, assignor.)						
Miles, Frederick B., Philadelphia, Pa. Drilling-machine	331,075	Nov. 24	2174	590	33	942
Miles, Manoah, Russell, Kans. Adjustable seat	331,991	Dec. 8	1104	287	33	1205
Miles, Oren E., Davenport, Iowa. Mail-box	328,046	Oct. 13	700	184	33	134

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Miles, Warren S., Columbus, Ohio. Tag-fastener	328,856	Oct. 20	1766	461	33	338
Milholland, William T., McKeesport, Pa. Metallic sole for boots or shoes	330,140	Nov. 10	974	253	33	698
Milles, Francis J. (See Williams and Milles.)						
Milles, John D., *et al.* (See Williams and Milles, assignors.)						
Milles, Thomas D., *et al.* (See Williams and Milles, assignors.)						
Miller, Abraham, Newark, assignor to Newark Machine Company, Columbus, Ohio. Clover-huller	331,646	Dec. 1	606	150	33	1104
Miller, Abraham, and J. N. Kailer, assignors to Newark Machine Company, Newark, Ohio. Clover-huller	327,812	Oct. 6	402	105	33	71
Miller, Alfred S., Richland, Ind. Dumping-wagon	328,504	Oct. 20	1301	338	33	253
Miller, Benjamin F. D., assignor to I. N. Kinney and W. P. Kinzer, Wooster, Ohio. Whip-socket	330,256	Nov. 10	1110	294	33	725
Miller, Charles, Ingersoll, Ontario, Canada. Mixed paint	328,857	Oct. 20	1767	.....	33	338
Miller, Daniel J., New York, N. Y. Driving mechanism for cable railways	329,757	Nov. 3	448	113	33	589
Miller, Daniel J., New York, N. Y. Grip for cable railways	332,730	Dec. 22	2167	572	33	1404
Miller, Daniel J., New York, N. Y. Switching device for cable railways	332,932	Dec. 22	2428	643	33	1454
Miller, Daniel J., New York, N. Y. Cable railway	332,933	Dec. 22	2430	644	33	1455
Miller, Daniel J., New York, N. Y. Cable railway	332,934	Dec. 22	2431	644	33	1455
Miller, Fredrick C., Newport, Ky. Cigar-mold	329,196	Oct. 27	2277	589, 590	33	435
Miller, Fredrick C., Newport, Ky. Roller-skate	329,580	Nov. 3	215	56	33	546
Miller, Fredrick C., Newport, Ky. Roller-skate	329,581	Nov. 3	216	56	33	546
Miller, Fredrick C., Newport, Ky. Roller-skate	329,582	Nov. 3	216	56, 57	33	546
Miller, Fredrick C., Newport, Ky. Roller-skate	329,583	Nov. 3	217	57	33	546
Miller, Fredrick C., Newport, Ky. Roller-skate	329,584	Nov. 3	218	57	33	546
Miller, Fredrick W., Muskegon, Mich. Straw-cutter	332,272	Dec. 15	1511	395, 396	33	1292
Miller, George W., Meriden, Conn. Box	331,076	Nov. 24	2177	591	33	943
Miller, Herbert C., St. Louis, Mo. Apparatus for vulcanizing rubber and for other purposes	332,408	Dec. 15	1500	445	33	1315
Miller, James C., Allegheny, Pa. Elevator for cash-carriers	329,475	Nov. 3	68	19	33	517
Miller, James S., assignor to Stearns Manufacturing Company, Erie, Pa. Band-saw mill	327,574	Oct. 6	94	21	33	18
Miller, James S., Erie, Pa., and E. Lapham, Cadillac, Mich., assignors to Stearns Manufacturing Company, Erie, Pa. Saw-mill	332,161	Dec. 8	1362	353	33	1249
Miller, John C. S. (See Larson, Lars, assignor.)						
Miller, John H., Philadelphia, Pa. Apparatus for purifying water	331,151	Nov. 24	2291	620, 621	33	962
Miller, Joseph A., Jr., Providence, R. I. Automatic sprinkler for extinguishing fires	329,585	Nov. 3	220	57, 58	33	547
Miller, Joseph C., Chelsea, Mass. Draft-tube for soda-water	332,731	Dec. 22	2168	572	33	1404
Miller, Lewis. (See Marshall, Thomas C., assignor.)						
Miller, Lewis, Akron, Ohio. Harvester-butter and apron belt or carrier	329,062	Oct. 27	2085	542	33	401
Miller, Lewis, Akron, Ohio. Grain-binding harvester	329,931	Nov. 10	685	175, 176	33	640
Miller, Lewis, Akron, Ohio. Grain-binding harvester	329,933	Nov. 10	692	177	33	641
Miller, Lewis, Akron, Ohio. Grain-binding harvester	331,808	Dec. 8	830	211, 212	33	1154
Miller, Lewis, and A. E. Ellinwood, Akron, Ohio. Grain-binding harvester	329,932	Nov. 10	690	176, 177	33	641
Miller, Lewis, and A. E. Ellinwood, Akron, Ohio. Reel-support for harvesters	332,732	Dec. 22	2170	572, 573	33	1405
Miller, Matthias, assignor of one-half to G. N. Davis, Grand Rapids, Mich. Coupling-belt	331,425	Dec. 1	248	65	33	1042
Miller, Minos, Knoxville, Iowa. Barrel truck and support	333,144	Dec. 29	2741	720	33	1514
Miller, Philip, Norwich, Conn. Guide-track for saws	332,273	Dec. 15	1512	396	33	1283
Miller, Philip, Norwich, Conn. Hollow auger	332,274	Dec. 15	1514	397	33	1283
Miller, Richard, *et al.* (See Kanouse, John G., assignor.)						
Miller, Samuel J., Cambridge City, Ind. Fence	329,197	Oct. 27	2278	590	33	435
Miller, William C., assignor of three-fourths to G. W. Maser and R. H. C. Dodd, Parsons, Kans. Car-axle box	330,607	Nov. 17	1575	422	33	821
Miller, William J., Aurora, Ill. Stencil-plate	329,476	Nov. 3	69	19	33	518
Miller's Falls Company. (See Fornander, Alfred, assignor.)						
Miller's Falls Company. (See Goodell, Albert D., assignor.)						
Milliken, Frank C., San Francisco, Cal. Dumping-wagon	332,818	Dec. 22	2270	598, 599	33	1424
Milliken, William H., San Francisco, Cal. Gripping device for rope railways	331,902	Dec. 8	972	252	33	1180
Mills, E. Deloss, Clinton, N. Y. Hop-stripping machine	332,275	Dec. 15	1516	397	33	1283
Mills, George H., Concord, N. H., assignor to H. F. Campbell, Boston, Mass. Planer-knife grinder	330,797	Nov. 17	1621	490	33	868
Mills, Johan E. (See Herhold and Mills.)						
Mills, Mortimer B., Chicago, Ill. Gate for railway-crossings	333,242	Dec. 29	2876	752	33	1538
Mills, Thomas B. (See Kopf, John, assignor.)						
Mills, Thomas B. (See Levison, Chancellor G., assignor.)						
Milne Brothers. (See Milne, James, assignor.)						
Milne, James, assignor to Milne Brothers, Aberdeen, Scotland. Grain-drier	329,198	Oct. 27	2279	590, 591	33	435
Milne, James and J. J., Scotch Grove, Iowa. Device for coupling rope	330,722	Nov. 17	1723	465	33	851
Milne, John, Hamilton, Ontario, Canada. Sliding top for oil-stoves	331,316	Dec. 1	81	20	33	1013
Milne, Joseph J. (See Milne, James and J. J.)						
Milwaukee Dust Collector Manufacturing Company. (See Richardson, William, assignor.)						
Minch, George, Stamford, Conn. Belt-coupling	333,422	Dec. 29	3117	814	33	1580
Miner, Oliver S., North Adams, Mass. Wagon-seat	328,505	Oct. 20	1302	338	33	253
Miner, Willard M., Thurlow, Pa. Telegraphic repeater	331,250	Nov. 24	2438	659	33	988
Mingus, William J., Augusta, Ky. Lamp shade and ornament	328,047	Oct. 13	702	184	33	134
Minier, Fred, St. Joseph, Mich. Furnace-grate	330,609	Nov. 17	1576	422	33	821
Mink, Fritz, Philadelphia, Pa. Commode	333,321	Dec. 29	2987	782	33	1559
Minneapolis Harvester Works. (See Appleby, John F., assignor.)						
Minnesota Brush Electric Company. (See Leonard, Samuel S., assignor.)						
Minnesota Brush Electric Company. (See Travis, Charles L., assignor.)						
Minor, Nichols & Co. (See Hohenstein, Archie G., assignor.)						
Minshall, Deloss W. (See Collins, Major, assignor.)						
Mintle, William C., Liberty, Ill. Nut-lock	329,063	Oct. 27	2086	542	33	401
Mitchell, Benjamin B., Buffalo, N. Y. Bed-bottom	328,241	Oct. 13	951	247	33	181
Mitchell, Edgar V. and J. V., Martinsville, Ind. Corn planter and drill	329,666	Nov. 3	322	83	33	565
Mitchell, Frank S., assignor to T. J., E. and W. L. Martin, Philadelphia, Pa. Waterproofing fabric	327,813	Oct. 6	404	.....	33	71

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mitchell, Henry, Racine, Wis. Wagon-reach coupling	328,242	Oct. 13	952	248	33	181
Mitchell, James H. and W. T., Wellington, Kans. Adjustable shade for windows	329,758	Nov. 3	449	113	33	589
Mitchell, James V. (See Mitchell, Edgar V. and J. V.)						
Mitchell, John M., Waterbury, assignor of one-half to G. W. Jopson, Meriden, Conn. Policeman's nippers	327,575	Oct. 6	95	21	33	18
Mitchell, John W., Bayonne, N. J. Manufacturing illuminating-gas	331,903	Dec. 8	974	252	33	1180
Mitchell, Robert. (See Fletcher, Joseph E., assignor.)						
Mitchell, Samuel. (See Beebe, Oscar, assignor.)						
Mitchell, William, Altoona, Pa. Slide-valve	331,992	Dec. 8	1105	287	33	1205
Mitchell, William T. (See Mitchell, James H. and W. T.)						
Mix, Frank W., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Plate and socket for trunk-locks	331,426	Dec. 1	249	65	33	1042
Mix, Frank W., and G. B. Cowles, assignors to Corbin Cabinet Lock Company, New Britain, Conn. Trunk-lock	331,427	Dec. 1	249	66	33	1042
Mock, Martin G., and W. S. Maywood, Muncie, Ind. Show-window ventilator	331,077	Nov. 24	2178	591	33	943
Modrell, J. H., *et al.* (See Johns, Frank L., assignor.)						
Moeller, Friedrich J., East Saginaw, Mich. Laundry-stove	327,706	Oct. 6	270	68	33	48
Moffet, Elliott R., Joplin, Mo. Apparatus for smelting and calcining lead and other ores	329,199	Oct. 27	2282	591	33	436
Moffitt, John R., Chinese Camp, Cal. Apparatus for mining the beds of rivers and streams	327,707	Oct. 6	271	69	33	48
Moffitt, John R., Chinese Camp, Cal. Wet-ore concentrator	327,708	Oct. 6	274	70	33	48
Moffitt, John R., Chinese Camp, Cal. Retort and crucible furnace	327,709	Oct. 6	275	70	33	48
Moffitt, John R., Chinese Camp, Cal. Heel-stiffener machine	327,710	Oct. 6	277	71	33	49
Moffitt, Ruth, Wheatland, Ill. Carpet-stretcher	328,506	Oct. 20	1303	339	33	254
Moles, Charles E., assignor of one-half to W. M. Johnston, Wilmot, Ohio. Fodder-binder. Moline Plow Company. (See Lindgren, August, assignor.)	332,619	Dec. 15	1508	524	33	1367
Monell, Ira F., Sugar Loaf, Colo. Ore separator and concentrator	333,322	Dec. 29	2968	782, 783	33	1559
Monk, Henry, Lewiston, Me. Locomotive-furnace	328,048	Oct. 13	703	185	33	134
Monroe, Daniel L., Drakeville, Iowa. Hog and cattle separating device	330,412	Nov. 17	1334	355	33	775
Monroe, Lorenzo D., and G. W. Wiggins, Morgan, Ga. Cultivator	330,341	Nov. 10	1220	326	33	747
Monroe, Lorenzo D., and G. W. Wiggins, Morgan, Ga. Combined cotton-seed planter and fertilizer-distributer	330,342	Nov. 10	1221	327	33	747
Monsanto, Mauricio M., assignor to W. A. O. Hegeman, New York, N. Y. Apparatus for filtering liquids	331,725	Dec. 1	794	181	33	1125
Monson, Charles, New Haven, Conn. Air-compressor	328,598	Oct. 20	1433	373	33	276
Montague, Patrick H., assignor of one-fourth to T. F. McDermott, St. Louis, Mo. Fire-escape	328,331	Oct. 13	1066	277	33	902
Montague, Patrick H., assignor of one-fourth to T. F. McDermott, St. Louis, Mo. Fire-escape	331,428	Dec. 1	250	66	33	1042
Montague, Patrick H., assignor of one-fourth to T. F. McDermott, St. Louis, Mo. Fire-escape	331,429	Dec. 1	251	66	33	1042
Montague, W. W. (See Richter, John L., assignor.)						
Montenegro, Antonio, Madrid, Spain. Signaling apparatus	330,723	Nov. 17	1724	465	33	851
Montgomery, James T., Deerfield, Va. Fence	327,814	Oct. 6	405	105	33	71
Montgomery, Samuel, West Toledo, Ohio. Mole-ditching, tile-forming, and wire-laying machine	330,724	Nov. 17	1725	465, 466	33	851
Montress, Samuel D., assignor to J. B. Florance, Paterson, N. J. Knob attachment	329,586	Nov. 3	221	58	33	547
Moody, Charles D. (See Ebaugh, Charles S., assignor.)						
Mooney, Charles. (See Law and Mooney.)						
Moore, Arms & Thompson. (See Johnson, Charles C., assignor.)						
Moore, Charles H., assignor of one-half to W. F. Washburn, Yonkers, N. Y. Water-closet drip-tray	331,993	Dec. 8	1106	287	33	1205
Moore, Edward Y., Evanston, Ill. Drive-chain	328,050	Oct. 13	705	186	33	134
Moore, Edward Y., Evanston, Ill. Sheave or pulley-block	329,667	Nov. 3	323	83	33	566
Moore, Frank W. (See Heath and Moore.)						
Moore, George. (See Kelly, John P., assignor.)						
Moore, George H., Norwich, Conn. Filtering apparatus	329,064	Oct. 27	2087	542, 543	33	401
Moore, George R., Jr., Philadelphia, Pa. Valve mechanism for water-closet cisterns	329,934	Nov. 10	694	178	33	641
Moore, George T. (See Cole, James W., assignor.)						
Moore, George W., Dunedin, Fla. Ladder and fruit-conveyer	329,668	Nov. 3	324	83	33	566
Moore, George W., North East, Pa., and J. N. Culbertson, Buffalo, N. Y., assignors to Consolidated Telephone Company, of New Jersey. Acoustic-telephone exchange	328,243	Oct. 13	953	248	33	181
Moore, Jesse B. (See Johnson and Moore.)						
Moore, Jonathan J., and J. A. Ball, assignors of one-half to J. C. Taylor, Thorntown, Ind. Base-pivot for straw-stackers	328,049	Oct. 13	704	185	33	134
Moore, Lawrence C. (See Durham, John H., assignor.)						
Moore, Lee E., Boston, Mass. Sole for boots or shoes	328,421	Oct. 13	1201	310	33	227
Moore, Matthew R., assignor to Pneumatic Company, Indianapolis, Ind. Machine for making molds for castings	331,208	Nov. 24	2371	642	33	978
Moore, Matthew R., assignor to Pneumatic Company, Indianapolis, Ind. Pattern-box for sand-molding machines	331,209	Nov. 24	2375	643	33	978
Moore, Oliver M., Carroll, assignor of one-half to C. A. McCune, Boone, Iowa. Adjustable foot-rest	330,343	Nov. 10	1222	327	33	747
Moore, Samuel, Providence, R. I. Machine for making twist-drills	331,904	Dec. 8	975	252	33	1181
Moore, Stephen, trustee. (See Boynton, George O., assignor.)						
Moore, Thomas M., Rusk, Tex. Plow	332,206	Dec. 8	1420	365, 366	33	1259
Moore, Walter K., Marinette, Wis. Dental plugger	329,587	Nov. 3	222	58	33	548
Moorman, George W. (See Moorman, Robert E. and G. W.)						
Moorman, Robert E., Chicago, Ill., and G. W. Moorman, Edinburg, Ind. Music-leaf turner	330,413	Nov. 17	1335	355	33	775
Moorman, Silas, Lafayette, Ala. Car-coupling	331,317	Dec. 1	82	20	33	1014
Moran, Michael, St. Louis, Mo. Box-fastener	328,422	Oct. 13	1202	311	33	227
Morlan & Company, S. (See Little, Charles E., assignor.)						
Morlen, William J., Chicago, Ill. Railway-frog	332,733	Dec. 22	2171	573	33	1405
Morden, William J., Chicago, Ill. Railway-frog	332,734	Dec. 22	2173	574	33	1405
Morehead, John, Detroit, Mich. Steam-trap	327,891	Oct. 6	403	130	33	88
Morehead, John, Detroit, Mich. Steam-trap	327,892	Oct. 6	406	129	33	88
Morehouse, Charles L., Brooklyn, N. Y. Car-truck	331,994	Dec. 8	1107	288	33	1205
Morey, Parker F., Portland, Oreg. Hydraulic elevator	332,418	Dec. 15	1713	449	33	1317
Morgan, Charles. (See Morgan, Edgar H. and C.)						
Morgan, Charles H., Buffalo, N. Y. Dust-collector	333,020	Dec. 22	2564	674, 675	33	1478
Morgan, Charles H., Buffalo, N. Y. Dust-collector	333,021	Dec. 22	2567	675	33	1478

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Morgan, Charles H., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Wire-corrugating machine	333,328	Dec. 29	2990	783	33	1559
Morgan, Edgar H. and C., assignors to New Union Manufacturing Company, Freeport, Ill. Coffee-mill	329,065	Oct. 27	2090	543	33	401
Morgan, Edgar H. and C., Freeport, Ill. Coffee-mill	333,243	Dec. 29	2878	752	33	1539
Morgan, John H., Jr., Nassau, assignor of one-half to J. H. Morgan, Sr., Yorkville, Ill. Device for operating hay-carriers	327,893	Oct. 6	497	129	33	89
Morgan, Lyman, Port Washington, Wis. Track-clearer	330,725	Nov. 17	1730	466 / 467	33	852
Morgan, William, Birmingham, county of Warwick, England. Machine-roller chain	329,407	Oct. 27	2392	668	33	492
Morningstar, Andrew, assignor to J. A. Dredge, Springfield, Ohio. Nut-lock	328,244	Oct. 13	955	248	33	182
Morrell, David B., Philadelphia, Pa. Joint-packing band	332,735	Dec. 22	2174	574 / 575	33	1406
Morris, Austin, *et al.* (See McGregor, Montague M., assignor.)						
Morris, Edward C., Boston, Mass. Combined coating and covering for sides of rooms, &c.	331,152	Nov. 24	2292	621	33	963
Morris, Edward C., assignor to Morris & Ireland, Boston, Mass. Compound plaster and sheet-metal lining for partitions, &c.	329,759	Nov. 3	451	114	33	590
Morris, Frank H. (See Brooks, Frederick W., assignor.)						
Morris, Henry G. (See Immendorf, George H., assignor.)						
Morris & Ireland. (See Morris, Edward C., assignor.)						
Morris, John E., San Marcos, Tex. Planter	327,960	Oct. 6	587	153	33	106
Morrisey, James F., assignor to Klinefelter & Dillman Company, Joliet, Ill. Hay elevator and carrier	329,935	Nov. 10	695	178	33	642
Morrison, Andrew J., Buffalo, N. Y. Aerial railway and car	328,899	Oct. 20	1825	475 / 476	33	348
Morrison, Ebenezer, and J. P. Herron, Washington, D. C. Paper holder and cutter	329,200	Oct. 27	2283	591 / 592	33	436
Morrison, Joseph B., Fort Madison, Iowa. Cultivator	332,355	Dec. 15	1630	427 / 428	33	1303
Morse, David R., *et al.* (See Solano, Renaldo, assignor.)						
Morse, Edmund A. (See Shortsleeve, David, assignor.)						
Morse, George H., *et al.* (See Sabin, Alvah H., assignor.)						
Morse, Lewis, North Attleborough, Mass. Button	332,276	Dec. 15	1517	398	33	1284
Morse Twist Drill and Machine Company. (See Stetson, George R., assignor.)						
Mortimer, Stephen C., Fort Wayne, Ind. Washing-machine	329,760	Nov. 3	452	114	33	590
Mortimer, Stephen C., Fort Wayne, Ind. Device for converting motion	329,761	Nov. 3	454	114	33	590
Morton, Henry, assignor to Branford Lock Works, Branford, Conn. Keeper for knob-latches	333,022	Dec. 22	2570	676	33	1479
Morton, Matthew, Romeo, Mich. Key-seat and gear cutting machine	333,324	Dec. 29	2992	784	33	1560
Morton, William M., Minneapolis, Minn. Lock	331,153	Nov. 24	2293	621	33	963
Moschcowitz, Schamm M., New York, N. Y. Combined pattern and fabric	327,961	Oct. 6	588	153	33	106
Moseley, Fredrick W., Poultney, Vt. Combined creamer and refrigerator	330,845	Nov. 17	1882	509	33	859
Moses, Walter S., *et al.* (See Andrews, Oscar, assignor.)						
Mosher, Samuel E., and L. B. Lyons, Chillicothe, Ohio. Car-brake	328,963	Oct. 27	1935	504	33	374
Mosley, James S., and T. J. Mancill, Atlanta, Miss. Machine for filing gin-saws	328,423	Oct. 13	1203	311	33	228
Mossberg, Emil, Elfkarleö, Sweden. Saw-sharpening machine	329,936	Nov. 10	697	178 / 179	33	642
Motherwell Iron and Steel Company. (See Motherwell, Robert B., assignor.)						
Motherwell, Robert B., assignor to Motherwell Iron and Steel Company, Logan, Ohio. Lubricator	331,809	Dec. 8	831	212	33	1154
Mott, Horace, Carroll, Iowa. Churn	329,762	Nov. 3	455	114	33	590
Mott, Samuel D., New York, N. Y., assignor, by mesne assignments, to Schuyler Electric Light Company, of New York. Electric meter	333,079	Dec. 22	2639	692	33	1490
Moulton, George W., assignor to Textile Manufacturing Company, Westfield, Mass. Casket-plate	330,846	Nov. 17	1885	509	33	880
Mower, Alfred A., trustee. (See Nicholson, Ezekiel, assignor.)						
Mowry, George W., Geneva, assignor of one-half to F. M. Smith, New York, N. Y. Blacking-brush	328,799	Oct. 20	1435	373	33	276
Moxham, Arthur J., Johnstown, Pa. Roll for rolling girder-rails	330,997	Nov. 24	2085	564	33	925
Moxham, Arthur J., Johnstown, Pa. Roll for rolling car-rails	330,998	Nov. 24	2086	565	33	925
Moxham, Arthur J., Johnstown, Pa. Railway-switch	331,525	Dec. 1	382	103	33	1067
Moxham, Arthur J., Johnstown, Pa. Railway-switch	331,526	Dec. 1	383	103	33	1068
Moxham, Arthur J., Johnstown, Pa. Railway-switch	333,474	Dec. 29	3188	832	33	1592
Moxham, Arthur J., Johnstown, Pa. Railway-switch	333,475	Dec. 29	3189	833	33	1592
Moxham, Arthur J., Johnstown, Pa. Roll for rolling girder-rails	330,414	Nov. 17	1336	356	33	775
Moyer, Aaron J., Springfield, Ohio. Clutch	328,900	Oct. 20	1827	476	33	349
Moyer, Jonah W., Philadelphia, Pa. Door						
Muegge, Carl A., New Brunswick, N. J., assignor of one-half to W. M. House, New York, N. Y. Sewing-machine	332,207	Dec. 8	1421	366 / 367	33	1259
Mueller, David. (See Billings and Mueller.)						
Mueller, George A., Anderson's Ferry, Ohio. Target-trap	328,051	Oct. 13	706	186	33	134
Mueller, Henry, Decatur, Ill. Roller-skate	330,847	Nov. 17	1886	510	33	880
Mueller, Otto E. (See Weinedel, Charles, assignor.)						
Muirhead, Alexander, Upper Norwood, county of Surrey, England. Adjusting submarine duplex telegraphs	329,477	Nov. 3	69	19	33	518
Müller, Armand. (See Waldstein and Müller.)						
Müller, Carl L. (See Kern and Müller.)						
Müller, Friedrich, New York, N. Y. Fire-grate	329,843	Nov. 3	568	145	33	610
Müller, Hermann, Zurich, assignor to Werkzeug und Maschinenfabrik Oerlikon, Oerlikon, near Zurich, Switzerland. Dynamo-electric machine	331,736	Dec. 1	727	181 / 182	33	1126
Mulligan, Bartley T., Brooklyn, N. Y. Type-writer	333,080	Dec. 22	2641	692 / 693	33	1490
Multinay, Eli S., Ganado, Tex. Wire-stretcher	331,727	Dec. 1	728	182	33	1126
Mulloy, E. F., *et al.* (See Kock, Christian, H., assignor.)						
Mulloy, John B., Lima, Peru. Injector and burner	329,844	Nov. 3	568	145	33	611
Mulvin, Thomas, Union City, Pa. Roller-skate	330,041	Nov. 10	835	214	33	668
Mulvin, Thomas, Union City, Pa. Roller-skate	332,277	Dec. 15	1519	398	33	1284
Mumma, William G., Warrensburg, Mo. Lock	331,995	Dec. 8	1108	288	33	1205
Mundy, John A., Syracuse, N. Y. Roller skate	329,845	Nov. 3	571	145	33	611
Munger, George, East River, Conn. School-desk	329,201	Oct. 27	2285	592	33	437
Munger, Joseph, assignor to Scovill Manufacturing Company, Waterbury, Conn. Curtain-pole joint	333,476	Dec. 29	3190	833	33	1592
Municipal Signal Company. (See Wilson, John C., assignor.)						
Munro, Donald, assignor of one-half to A. Hialop, Picton, Nova Scotia, Canada. Chain-link	333,095	Dec. 22	2667	700	33	1496

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Munroe & Co. (See Felker, Henry, assignor.)						
Munroe, Robert, Allegheny, Pa. Flanging-machine	330,141	Nov. 10	975	254	33	698
Munroe, William H., and T. C. Sullivan, Boston, Mass. Registering and canceling ballot-box	333,145	Dec. 29	2742	720 / 721	33	1514
Munson, Alvin J., Indianapolis, Ind. Coupling for lightning-rods	332,673	Dec. 15	2080	546	33	1381
Munson, James E., New York, N. Y. Electrical perforator	328,600	Oct. 20	1436	374 / 375	33	277
Munson, James E., New York, N. Y. Automatic perforating-telegraph	330,344	Nov. 10	1224	327 / 328	33	747
Munson, James E., New York, N. Y. Perforating-machine	332,419	Dec. 15	1715	449 / 450	33	1317
Murch, Charles S., Boston, Mass. Manufacture of blotting-paper	333,146	Dec. 29	2746	721	33	1515
Murdock, Horace B., Detroit, Mich. Injector	311,154	Nov. 24	2296	622	33	963
Murdock, Horace B., assignor of one-half to J. Trix, Detroit, Mich. Injector	328,424	Oct. 13	1204	311	33	228
Murisier, Oscar, Alexandrowsky, near St. Petersburg, Russia, and P. C. Gilchrist, Palace Chambers, Westminster, England; said Murisier assignor to said Gilchrist. Junction or separator lining for open-hearth furnaces	329,937	Nov. 10	698	.....	33	642
Murisier, Oscar, Alexandrowsky, St. Petersburg, Russia, and P. C. Gilchrist, Palace Chambers, Westminster, England; said Murisier assignor to said Gilchrist. Open-hearth furnace for iron and steel	330,415	Nov. 17	1337	356	33	775
Murphey, Frank P. (See Murphey, George W. and F. P.)						
Murphey, George W. and F. P., Decatur, Ill. Reel for check-row wire	329,066	Oct. 27	2092	543	33	402
Murphy, Daniel H., assignor to F. W. Rogers and J. P. Haff, Hartford, Conn. Towel-holder	331,728	Dec. 1	730	183	33	1126
Murphy, James S. (See True, Mark B., assignor.)						
Murphy, Thomas, Detroit, Mich. Stuffing-box	329,202	Oct. 27	2286	592	33	437
Murray, John, Pittsburg, Pa. Pendulum-level	328,052	Oct. 13	708	186	33	135
Murray, Peter, Jr., assignor to himself, A. N. Lewis, Newark, R. S. T. and R. B. Cissel, Elizabeth, N. J. Journal-bearing for shafts	332,819	Dec. 22	2272	599	33	1424
Murray, Peter, Jr., assignor to himself, A. N. Lewis, Newark, R. S. T. and R. B. Cissel, Elizabeth, N. J. Automatic fan	332,820	Dec. 22	2272	599	33	1425
Murray, Peter, Jr., assignor to himself, A. N. Lewis, Newark, R. S. T. and R. B. Cissel, Elizabeth, N. J. Combined chandelier and rotating fan	332,821	Dec. 22	2274	599	33	1425
Murray, William A., Piako, Auckland, New Zealand. Railway-signal	327,962	Oct. 6	589	154	33	106
Murrell, Rene D. (See Witte and Murrell.)						
Müssel, Christoph, South Bend, Ind. Apparatus for filling kegs with beer	331,251	Nov. 24	2440	659 / 660	33	989
Müssel, Christoph, South Bend, Ind. Filling vessels with fermented liquors	331,252	Nov. 24	2443	660	33	989
Müssel, Christoph, South Bend, Ind. Corking device for vessels	331,253	Nov. 24	2444	661	33	989
Müssel, Christoph, South Bend, Ind. Apparatus for filling vessels with fermented liquors	333,081	Dec. 22	2646	693 / 694	33	1491
Mutchler, Charles T., Ottumwa, Iowa. Cleaning-fluid	331,810	Dec. 8	832	.....	33	1154
Myers, Francis E. (See Myers, Philip A., assignor.)						
Myers, Frank I., New York, N. Y. Railway-signal	327,576	Oct. 6	97	21	33	18
Myers, Frederick, New York, N. Y. Barrel-heading machine	328,965	Oct. 27	1938	505	33	375
Myers, Frederick, New York, N. Y. Machine for trimming, chamfering, and crozing staves	329,846	Nov. 3	572	146	33	611
Myers, George A., assignor of one-half to J. P. Earl, Schoolcraft, Mich. Motor	328,964	Oct. 27	1936	505	33	374
Myers, John. (See McGrew, William H., assignor.)						
Myers, John J., Buffalo, N. Y. Trundling-wheel	327,577	Oct. 6	98	22	33	19
Myers, Lewis J. (See Fowler, William R., assignor.)						
Myers, Lewis Y., Canton, Ohio. Hay-fork	328,053	Oct. 13	709	186	33	135
Myers, M. Jervis, Syracuse, N. Y. Automatic circuit breaker and closer	332,420	Dec. 15	1718	450	33	1318
Myers, Philip A., assignor of one-half to F. E. Myers, Ashland, Ohio. Mechanical movement	333,477	Dec. 29	3191	834	33	1592
Myers Sanitary Depot. (See McFarland, Samuel G., assignor.)						
Myers, Simon S. (See Zimmerling, Charles, assignor.)						
Myers, Simon S., Philadelphia, Pa. Ironing-tablet	328,425	Oct. 13	1206	311	33	228
Myers & Son, L. (See Foster, Frank P., assignor.)						
Nadorff, Henry, Louisville, Ky. Barrel-washing machine	329,847	Nov. 3	574	146	33	612
Nadorff, Henry, Louisville, Ky. Hame-fastener	332,409	Dec. 15	1702	446	33	1315
Nagle, James, Boston, Mass. Band-trimming machine	328,245	Oct. 13	956	249	33	182
Nagle, Robert J. (See Arthur, Thomas, assignor.)						
Nascimento, Manoel J. (See Roeske, Henry, assignor.)						
Nash, Amasa W. (See Van Deusen and Nash.)						
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Explosive-vapor engine	331,078	Nov. 24	2179	591 / 592	33	943
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Explosive-vapor engine	331,079	Nov. 24	2182	592	33	944
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Operating gas-engines	331,080	Nov. 24	2185	592	33	944
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Explosive-vapor engine	331,210	Nov. 24	2378	643	33	978
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Proportional water-meter	332,935	Dec. 22	2432	645	33	1456
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Operating proportional water-meters	332,936	Dec. 22	2434	645	33	1456
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Proportional water-meter	332,937	Dec. 22	2437	645	33	1456
Nash, Samuel, Winnipeg, Manitoba, Canada. Remedy for rheumatism	328,507	Oct. 20	1304	.....	33	254
Nason, Carleton W., New York, N. Y. Machine for welding plugs in the ends of tubes	331,527	Dec. 1	384	104	33	1068
Nason, Carleton W., New York, N. Y. Closing the ends of metal tubes	331,528	Dec. 1	386	104	33	1068
Nason, Carleton W., New York, N. Y. Apparatus for centering and inserting disks in the ends of tubes	331,529	Dec. 1	387	104	33	1068
National Electric Railway System. (See McLaughlin, James F., assignor.)						
National Furniture Company. (See Welker, Louis, assignor.)						
National Heeling Machine Company. (See Henderson, Henry A., assignor.)						
National Improved Telephone Company. (See Perrin, Thomas J., assignor.)						
National Meter Company. (See Nash, Lewis H., assignor.)						
National Tube Works Company. (See Patterson, Peter, assignor.)						
National Typographic Company. (See Maltby, Frank D., assignor.)						
National Typographic Company. (See Mergenthaler, Ottmar, assignor.)						
Naughton, Michael, Philadelphia, Pa. Hoop-driver	328,706	Oct. 20	1584	412	33	302
Naylor, Arthur, Cold Spring, N. Y. Machine for sanding brick-molds	327,711	Oct. 6	279	71	33	49

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Naylor, George W., Jersey City, N. J. Sash-holder	327,712	Oct. 6	281	72	33	49
Naylor, James, Jr., Poughkeepsie, N. Y. Roller-skate	328,332	Oct. 13	1067	277	33	202
Neacy, Thomas J., Milwaukee, Wis. Set-works for saw-mills	333,244	Dec. 29	2880	752, 753	33	1589
Neale, James, Bridgeport, Conn. Reamer	330,508	Nov. 17	1457	390	33	798
Neely, Samuel M., Smith's Turn Out, S. C. Cylinder plow and pulverizer	332,421	Dec. 15	1720	451	33	1318
Neff, Edward E. (See Cregmile, Crittenden, assignor.)						
Nehrlich, Hugo, Berlin, and A. Neubecker, assignors to A. Neubecker, Offenbach-on-the-Main, Hesse, Germany. Refrigerator	331,530	Dec. 1	388	105	33	1069
Neil, Charles H. (See Hirn, Joseph, assignor.)						
Nellis, Aaron J., Pittsburg, Pa. Securing the teeth of horse hay-rakes, &c.	328,508	Oct. 20	1304	339	33	254
Nellis, Abram R., Glenn's Ferry, Idaho Ter. Current-wheel	331,996	Dec. 8	1109	288	33	1205
Nelmes, Philip N., and T. Crawshaw, Taunton, Mass. Hammock	329,763	Nov. 3	455	115	33	590
Nelson, Alfred, Rockford, Ill. Rotary cut-off valve	332,101	Dec. 8	1272	330, 331	33	1234
Nelson, August, Kent, Ohio. Bush-hammer	328,509	Oct. 20	1305	339	33	254
Nelson, Charles H. (See Emerson, Lounder, assignor.)						
Nelson, Francis J., and P. C. Donovan, Boston, Mass. Roller-skate	332,278	Dec. 15	1521	398	33	1284
Nelson, James W. (See Courtney and Nelson.)						
Nelson, John, Rockford, Ill. Incandescent electric lamp	327,578	Oct. 6	99	22, 23	33	19
Nelson, John B., Linden, Tex. Pump for oil-cans, &c.	329,067	Oct. 27	2093	543	33	402
Nelson, Philip, Las Vegas, N. Mex. Ter. Harrow	327,713	Oct. 6	282	72	33	50
Nelson, William C., Santa Rosa, Cal. Pounding and washing machine	328,136	Oct. 13	816	213	33	155
Nepil, Anton O. (See Fowler and Nepil.)						
Neracher, William, Cleveland, Ohio. Filter	331,531	Dec. 1	393	105	33	1069
Neracher, William, Cleveland, Ohio. Filter	332,422	Dec. 15	1722	451	33	1319
Nesbit, A. Walter, *et al.* (See Terry, Samuel H., assignor.)						
Nesbit, Mary A., *et al.* (See Terry, Samuel H., assignor.)						
Nesbitt, Amos K., Alton, Ill. Painting-machine	327,815	Oct. 6	406	105	33	71
Neubecker, Adam. (See Nehrlich and Neubecker.)						
Neubnrger, Isidor, New York, N. Y. Show-card for embroidery	332,102	Dec. 8	1274	331	33	1234
Neumer, Ferdinand, New York, N. Y. Attachment for bottle-wiring machines	332,547	Dec. 15	1899	496	33	1349
Neunmeyer, Horace F., Macungie, Pa. Fire-escape	331,061	Nov. 24	2188	593	33	945
Neutascher, Allise, Mendota, Ill. Folding table and seat	328,246	Oct. 13	957	249	33	182
New England Butt Company. (See McCahey, John, assignor.)						
New Haven Clock Company. (See Wood, Frank B., assignor.)						
New Union Manufacturing Company. (See Morgan, Edgar H. and C., assignors.)						
New York and Chicago Chemical Company. (See Manwaring, Morris B., assignor.)						
New York Automatic Scale Company. (See Seesale, Charles, assignor.)						
New York Belting and Packing Company. (See Jones, Frank C., assignor.)						
New York City Wire Nail Company. (See Follanabee, John S., assignor.)						
New York Felting Company. (See Hyatt, Walter P., assignor.)						
New York Fire Extinguisher Company. (See Turner, Thomas G., assignor.)						
Newark Machine Company. (See Miller, Abraham, assignor.)						
Newark Machine Company. (See Miller and Kaller, assignors.)						
Newbourg, Charles, Brooklyn, N. Y. Portable desk	327,816	Oct. 6	407	106	33	71
Newcomb, Charles N., Omaha, Nebr. Loom-shuttle	330,144	Nov. 10	978	254	33	699
Newell, George F., Boston, assignor of one-half to S. Frost, Newton, Mass. Pipe-wrench	328,601	Oct. 20	1440	375	33	277
Nowhall, George M., and J. H. Tucker, Philadelphia, Pa. Machining raw sugar	333,023	Dec. 22	2571	676	33	1479
Newlin, Woodford D., Annapolis, Ill. Kitchen-cabinet	333,245	Dec. 29	2882	753	33	1540
Newman, Henry. (See Schwarzwald, Gustav, assignor.)						
Newman, Isaac, New Haven, and G. H. Blakesley, Bristol, Conn. Stiffening-cord for corsets	327,817	Oct. 6	408	106	33	71
Newnam, Thomas G., Holden, Mo. Washing-machine	328,801	Oct. 20	1696	442	33	325
Newsom, Charles S., Gallipolis, assignor to himself and J. A. Wolfe, Athens, Ohio. Incubator	330,609	Nov. 17	1577	422	33	821
Newth, Walter S., assignor of one-half to R. H. Roberts, De Kalb, Ill. Reel device for fence-wire	330,610	Nov. 17	1578	423	33	822
Newton, James, Hanover, Mass. Folding music-stand	331,811	Dec. 8	833	212, 213	33	1154
Newton, Stephen S., Brooklyn, N. Y. Bottle-stopper	327,818	Oct. 6	408	106	33	72
Ney, Robert W. (See Booth and Ney.)						
Nichol, John C., Montreal, Quebec, Canada. Car-axle lubricator	330,257	Nov. 10	1111	294, 295	33	725
Nichols, Aaron S., Chicago, Ill. Lumber-drier	329,669	Nov. 3	325	83	33	566
Nichols, Aaron S., Chicago, Ill. Platen for drying apparatus	331,532	Dec. 1	394	106	33	1069
Nichols, David. (See Smalstig, Fredrick C., assignor.)						
Nichols, J. B., *et al.* (See Sanders, Theodore, assignor.)						
Nichols, Kate E., and E. V. Whitney, Leominster, Mass. Individual holder or rest for table-service articles	333,092	Dec. 22	2647	694	33	1401
Nichols, L. T., Ellington, Minn. Farm-gate	327,894	Oct. 6	498	130	33	80
Nichols, Oldin, Boston, Mass. Apparatus for making paste	331,647	Dec. 1	607	150	33	1104
Nichols, Oldin, Boston, Mass. Making paste	331,648	Dec. 1	608	150	33	1104
Nicholson, Ezekiel, assignor to A. A. Mower, trustee, Lynn, Mass. Knife-blade holder	332,548	Dec. 15	1901	497	33	1349
Nicholson, Granville, New York, N. Y. Band for strapping boxes, &c.	332,356	Dec. 15	1633	428	33	1304
Nicholson, Henry C., Mount Washington, Ohio. Electric railway-signal	329,478	Nov. 3	71	19, 20	33	518
Nicholson, Henry C., Kenton, Ky., assignor to Western Union Telegraph Company, New York, N. Y. Quadruplex telegraph	332,549	Dec. 15	1902	497	33	1349
Nicholson, Henry C., Kenton, Ky., assignor to Western Union Telegraph Company, New York, N. Y. Quadruplex telegraph	332,550	Dec. 15	1905	498	33	1349
Nicholson, Henry C., Mount Washington, Ohio, assignor to Western Union Telegraph Company, New York, N. Y. Quadruplex telegraph	332,551	Dec. 15	1907	499	33	1350
Nicholson, Stephen, and H. A. Bowen, Providence, R. I. Obtaining carbon for incandescents	329,670	Nov. 3	326	84	33	566
Nicolet, Albert, Newark, N. J. Stopper for hurst pipes	329,938	Nov. 10	659	179	33	642
Nielsen, Jens, and M. Pedersen, Roskilde, Denmark. Centrifugal machine	330,345	Nov. 10	1231	329	33	748
Nielson, William, New York, N. Y. Fabric for wall decorations	329,764	Nov. 3	456	115	33	591
Nielson, William, New York, N. Y. Plastic compound for wall decorations, &c.	332,162	Dec. 8	1363	.....	33	1249
Nieverth, Hermann J. F., Hanover, Prussia, Germany. Metallic alloy or compound in producing the same	332,736	Dec. 22	2175	.....	33	1406
Nightingale, John and J., Paterson, N. J. Let-off mechanism for looms	332,822	Dec. 22	2275	600	33	1425
Nightingale, Joseph. (See Nightingale, John and J.)						
Niles, Milton C., Oak Park, Ill. Disk-harrow	328,054	Oct. 13	711	187	33	135
Nilson, Nils. (See Abrams and Nilson.)						
Nimmo, Andrew and W., Boston, Mass. Line-finder for stenographers' use	332,410	Dec. 15	1703	446	33	1315

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nimmo, William. (See Nimmo, Andrew and W.)						
Nixon, John T., and D. N. Cress, Lexington, Miss. Cotton-gin	331,729	Dec. 1	730	183	33	1126
Nixon, Martin, *et al.* (See Jehle, Philip, assignor.)						
Nixon, William H., *et al.* (See Jehle, Philip, assignor.)						
Noble, George H. (See Mayo, Virginius J., assignor.)						
Noble, Joseph M., *et al.* (See Kelley, George W., assignor.)	327,895	Oct. 6	500	130	33	89
Noble, Leander, Sparta, Wis. Camera-stand						
Noble, Lewis H., *et al.* (See Kelley, George W., assignor.)	332,620	Dec. 15	1999	524	33	1367
Nock, Edward B., Brooklyn, N. Y. Cuff and collar button	332,208	Dec. 8	1423	367	33	1260
Noel, J. Snider, Washington, D. C. Time dose-indicator for bottles	330,509	Nov. 17	1459	390	33	799
Nolan, Patrick, Chattanooga, Tenn. Railway-switch						
Nolan, William F., *et al.* (See Powell, Richard J., assignor.)	328,333	Oct. 13	1068	277	33	202
Noppel, Emil, Philadelphia, Pa. Filter						
Nordenfelt, Thorsten. (See Wittenström, Carl G., assignor.)	329,588	Nov. 3	223	58	33	548
Nordin, Carl F. O., New York, N. Y. Shoe-maker pinchers						
Nordmann, Prosper. (See Lugrin, Henry A., assignor.)						
Normand, Augustin, Havre, Seine-Inférieure, France. Smoke-tube for tubular steam-boilers	329,846	Nov. 3	575	147	33	612
Norris, George E. (See Hagan and Norris.)						
Norris, George E., and W. E. Hagan, Troy, assignors of one third to J. K. P. Pine, Lansingburg, N. Y. Match-making machine	332,737	Dec. 22	2175	574, 575	33	1406
Norris, Jeremiah, Chelsea, Mass. Cushioned nippers and pliers for glass-cutters' use	331,812	Dec. 8	835	213	33	1155
North East Heading Company, *et al.* (See Peck, Henry S., assignor.)						
North Fairfield Plow Company. (See Felton, Walter S., assignor.)	333,325	Dec. 29	2994	784	33	1560
North, Jacob, Lincoln, Nebr. Machine for mending stereotype-plates						
North, Owen E. (See Graham and North.)	332,674	Dec. 15	2081	546	33	1381
North, Ralph H., Philadelphia, Pa. Store-service apparatus	331,905	Dec. 8	978	253	33	1181
Northall, William H., Bridgeport, Conn. Vise	332,209	Dec. 8	1424	367	33	1260
Northall, William H., Bridgeport, Conn. Bench-vise	330,915	Nov. 24	1979	536	33	905
Northrop, Albert, Pittsburg, Pa. Metallic ceiling	330,916	Nov. 24	1980	535, 536	33	905
Northrop, Albert, Pittsburg, Pa. Metallic ceiling	330,917	Nov. 24	1981	536	33	905
Northrop, Albert, Pittsburg, Pa. Metallic ceiling						
Northrop, James H., and R. C. Fay, assignors to Hopedale Machine Company, Hopedale, Mass. Yarn-guide for spoolers	330,042	Nov. 10	836	215	33	669
Northrup, William S. (See Polmateer, William A., assignor.)						
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Shipping-can	327,579	Oct. 6	101	23	33	19
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Shipping-can	327,580	Oct. 6	102	23	33	19
Norton, Oliver W. (See Norton, Edwin, assignor.)						
Norton, Reuben C., assignor to Union Foundry and Machine Company, Rockford, Ill. Hay-carrier	328,802	Oct. 20	1697	442	33	325
Norwood, John E., Sykesville, Md. Car-replacer	329,939	Nov. 10	700	179	33	643
Noteman, Alonzo. (See Desmond, John, assignor.)						
Nowell, Thomas S., *et al.* (See Huse, Warren D., assignor.)	328,426	Oct. 13	1207	312	33	228
Nowlin, William A., Mexia, Tex. Paint-brush	328,707	Oct. 20	1584	413	33	303
Noyes, Edward F., Hamilton, Ontario, Canada. Compound tool-holder	327,581	Oct. 6	103	23, 24	33	19
Noyes, La Verne W., assignor to W. Deering, Chicago, Ill. Harvesting-machine						
Nuebling, Louis W. (See Johnson and Nuebling.)	330,999	Nov. 24	2087	565	33	925
Nugent, Richard C., Pittsburg, Pa. Screw-tap						
Nugent, William, assignor of one-fourth to G. Chiswell, Paterson, N. J. Fire-cracker holder	329,068	Oct. 27	2094	544	33	402
Nugent, William, assignor to S. Van Winkle, trustee, Paterson, N. J. Machine for doubling and spinning silk	332,823	Dec. 22	2277	600	33	1425
Numsen, John W., *et al.* (See Knapp, George W., assignor.)						
Numsen, Nathaniel G., *et al.* (See Knapp, George W., assignor.)						
Numsen, William, *et al.* (See Knapp, George W., assignor.)						
Numsen, William N., *et al.* (See Knapp, George W., assignor.)						
Nunamacker, By, De Soto, assignor to J. R. Thomson, Earlham, Iowa. Corn-planter	329,203	Oct. 27	2288	592, 593	33	437
Nusbeck, John, assignor to B. Olney, Rome, N. Y. Hose-coupling	328,427	Oct. 13	1208	312	33	229
Nutting, Adrain, assignor of nineteen-twentieths to B. D. Martin, J. C. O'Neal, R. C. Dial, J. M. Ellis, H. Wagner, F. L. Gazette, and T. E. Byrd, Greenville, Tex. Car-coupling	330,416	Nov. 17	1339	356	33	776
Nutting, George F., Randolph, Vt., P. S. Rich and J. Garfield, Worcester, Mass. Corn-planter	330,798	Nov. 17	1822	491	33	869
Nye, Charles G., Syracuse, N. Y. Apparatus for automatically cutting off gas from burners	327,963	Oct. 6	592	154	33	106
Nye, George H., Chicago, Ill. Steam vacuum-pump	332,738	Dec. 22	2178	575	33	1407
Nye, William C., Bradford, Pa. Driven-well point	328,856	Oct. 20	1760	461	33	338
O'Boylan, Bernard M., Corning, Ohio. Candle-extinguisher	329,765	Nov. 3	457	115	33	595
O'Brien, John. (See Weaver, Samuel J., assignor.)						
O'Brien, John, and S. J. Weaver, St. Louis, Mo. Feed-water heater	330,612	Nov. 17	1580	423	33	822
O'Brien, W. D., *et al.* (See Kock, Christian H., assignor.)						
O'Connor, Michael E., Brooklyn, N. J. Pew-guard	331,533	Dec. 1	395	106	33	1069
O'Connor, Stephen, Bridgeport, Conn. Sewing-machine	331,997	Dec. 8	1110	289	33	1206
O'Connor, William J., P. Walsh, and E. L. Martin, Kansas City, Mo. Beer-still	328,709	Oct. 20	1586	413	33	303
O'Donnell, James H., Abington, Mass. Boot or shoe	332,423	Dec. 15	1723	452	33	1319
O Gorman, Michael, Jersey City, N. J. Gear-cutting machine	330,510	Nov. 17	1461	391	33	799
O'Hara, Arthur, Hawley, Pa. Railway-switch	328,903	Oct. 20	1698	442	33	325
O'Haver, E. Frank, Murphysborough, Ill. Car-coupling	333,147	Dec. 29	2747	721	33	1515
O'Lally, Patrick K., Boston, Mass. Shutter-worker	329,333	Oct. 27	2479	640	33	473
O'Neal, John C., *et al.* (See Nutting, Adrain, assignor.)						
O'Neill, Henry, Montreal, Quebec, Canada. Apparatus for operating railway-semaphores	329,671	Nov. 3	328	84	33	567
O'Neill, Robert, Leadville, Colo. Feed-water heater	327,583	Oct. 6	107	24	33	20
Oakland Roller Skate Company. (See Bailey, Fred A., assignor.)						
Oakley, Walter H. (See Beard and Oakley.)						
Oar, Sylvester, Kansas, Ill. Roll for rolling plowshares	330,611	Nov. 17	1580	423	33	822
Obenchain, William A., Bowling Green, Ky. Dip-net	333,396	Dec. 29	2995	784	33	1560
Ober, William A., Nine Mile, Ind. Truck for harvesters	330,258	Nov. 10	1112	295	33	725
Ober, William Y., Lynn, Mass. Car-ventilator	332,739	Dec. 22	2180	575	33	1407
Obermaier, Julius O., Lambrecht, Bavaria, Germany. Centrifugal machine for treating textile fabrics, &c.	329,904	Oct. 27	2291	593	33	438
Obermaier, Julius O., Lambrecht, Bavaria, Germany. Apparatus for dyeing, bleaching, &c.	332,740	Dec. 22	2181	576	33	1407
Oborn, Benjamin, Marion, Ohio. Hay-elevator	330,918	Nov. 24	1982	536	33	905
Odelga, Josef, Vienna, Austria-Hungary. Manufacture of fibrous material from wood for surgical and other purposes	331,534	Dec. 1	396	.....	33	1070

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Odell, John B., Chicago, Ill. Battery-electrode	327,582	Oct. 6	106	24	33	20
Oehlmann, Emil, Berlin, Germany. Atomizer for ventilating apparatus	330,919	Nov. 24	1984	536 537	33	906
Oehrle, Albert C. (See Oehrle, William E. and A. C.)						
Oehrle, William E. and A. C., assignors of one-half to H. A. Cables, Philadelphia, Pa. Spun chenille and manufacturing the same	332,938	Dec. 22	2440	645 646	33	1457
Oelschleger, Anton, Boston, Mass. Brush for cleaning chimneys	328,967	Oct. 27	1942	506	33	376
Oesterle, Louis, Chicago, Ill. Wind-instrument	329,940	Nov. 10	701	180	33	643
Oettel, Carl, deceased, Gohlis, near Leipsic, Saxony, Germany; C. Karp, New York, N. Y., administrator. Mechanical accordion	329,408	Oct. 27	2593	669	33	493
Offutt, Joseph E., assignor to J. W. Thomas, Springfield, Ohio. Horse hay-rake	329,766	Nov. 3	457	115 116	33	591
Offutt, Joseph E., assignor to J. W. Thomas, Springfield, Ohio. Horse hay-rake	329,767	Nov. 3	459	116	33	591
Ogilvy, David J., Cincinnati, Ohio. Manufacture of rosin compounds	330,613	Nov. 17	1582	.....	33	822
Ohl, Adolph, *et al.* (See McCarty, William F. M., assignor.)						
Okey, Joseph B., Indianapolis, Ind. Soil-pulverizer	331,318	Dec. 1	84	20	33	1014
Old, James, Allegheny, Pa. Sliding-gate valve	332,939	Dec. 22	2441	646	33	1457
Oldershaw, John B., Baltimore, Md. Heating-stove	329,069	Oct. 27	2095	544	33	402
Oldham, Walter, Manchester, county of Lancaster, England. Filtering apparatus	330,145	Nov. 10	979	255	33	699
Olds, Alonzo F., assignor to Equity Gas Saving Company, New York, N. Y. Gas-regulator	331,000	Nov. 24	2088	565	33	926
Olds, John D., Fort Wayne, Ind. Balanced slide-valve	332,279	Dec. 15	1521	398 399	33	1284
Oliphant, Samuel C., assignor to himself, S. M. Pickler, and W. H. Johnson, Novinger, Mo. Gold-separator	331,649	Dec. 1	610	151	33	1104
Oliver Brothers & Phillips. (See Sergeant, Raphael, assignor.)						
Oliver, Doctor F., Huntsville, Mo. Hay-rake	330,727	Nov. 17	1732	467	33	853
Oliver, Henry W., Jr., *et al.* (See Dodd, John C., assignor.)						
Oliver, Henry W., New York, N. Y. Dial for time-pieces	329,849	Nov. 3	576	147	33	613
Oliver, Paul. (See McCool, William A., assignor.)						
Olney, Burt. (See Nusbeck, John, assignor.)						
Olsen, Lars. A., San Francisco, Cal. Feed-water heater	332,824	Dec. 22	2278	601	33	1436
Olson, Gustav A., Albert Lea, Minn. Knitting attachment	330,728	Nov. 17	1733	467 468	33	853
Olund, Emil, Hudson, Wis. Barrel-hoop machine	330,259	Nov. 10	1114	295 296	33	725
Onderdonk, John P., Philadelphia, Pa. Paper bag	332,280	Dec. 15	1525	399	33	1285
Opdyke, Stacy B., New Haven, Conn. Nozzle for bottles	332,281	Dec. 15	1525	400	33	1285
Oppenheimer, James, Shenandoah, Iowa, assignor to Square Hole Auger Company, Wooster, Ohio. Mortising-machine. (Reissue)	10,655	Oct. 27	2626	678	33	498
Oram, John M., Boston, Mass. Time-signal transmitting system	328,055	Oct. 13	713	187	33	135
Orcutt, George H., *et al.* (See Beimling, Henry, assignor.)						
Ordway, Albert H., Melrose, Mass. Rocking-chair	329,479	Nov. 3	73	20	33	519
Ordway, Albert H., Melrose, Mass. Rocking-chair	329,480	Nov. 3	74	20	33	519
Orendorff, George B., Batavia, N. Y. Protractor	330,799	Nov. 17	1824	491	33	869
Orford, Richard, St. Joseph, Mich. Washing-machine	330,848	Nov. 17	1887	510	33	880
Orloff, Vassili P., Moscow, Russia. Steam-boiler	332,357	Dec. 15	1634	428 429	33	1304
Ormsby Sash Holder Company. (See Ormsby, William, assignor.)						
Ormsby, William, Boston, Mass., assignor to Ormsby Sash Holder Company, Portland, Me. Sash-balance	329,409	Oct. 27	2595	669 670	33	493
Ormsby, William J., Cincinnati, Ohio. Loose-pulley lubricator	332,552	Dec. 15	1908	499	33	1350
Ortmayer, Andrew, Chicago, Ill. Fastening for sweat-pads for horse-collars	331,813	Dec. 8	836	213	33	1155
Orton, Benjamin F., East Saginaw, Mich. Armature for dynamo-electric machines and motors	331,155	Nov. 24	2297	622	33	964
Orton, Benjamin F., East Saginaw, Mich. Regulator for dynamo-electric machines	331,814	Dec. 8	837	214	33	1155
Orton, Benjamin F., East Saginaw, Mich. Dynamo-electric machine	331,815	Dec. 8	839	214 215	33	1155
Orton, Benjamin F., East Saginaw, Mich. Regulator for dynamo-electric machines	331,816	Dec. 8	845	216 217	33	1156
Orton, Benjamin F., East Saginaw, Mich. Tower	331,817	Dec. 8	849	217 218	33	1156
Orton, Benjamin F., East Saginaw, Mich. Dynamo-electric machine or motor	331,818	Dec. 8	850	218	33	1157
Orton, Gerrit V., assignor to himself, H. P. and S. W. Gregory, San Francisco, Cal. Planing-machine	331,730	Dec. 1	731	183 184	33	1127
Osborn, Bennet, Newark, N. J. Paper box	333,246	Dec. 29	2883	754	33	1540
Osborn, Francis M., Port Chester, N. Y. Shoe-blacking box	330,146	Nov. 10	980	255	33	699
Osborn, Frederick G., Newark, N. J. Roller-skate	327,819	Oct. 6	410	106 107	33	72
Osborn, James F., Jeffersonville, Ind., assignor of one-half to J. L. Chilton, D. A. and J. G. Guthrie, Louisville, Ky. Trunk-top	328,602	Oct. 20	1441	375	33	277
Osborn, James F., Jeffersonville, Ind., assignor of one-half to J. L. Chilton, D. A. and J. G. Guthrie, Louisville, Ky. Veneer trunk-top	328,603	Oct. 20	1442	375	33	277
Osborn, James F., Jeffersonville, Ind., assignor of one-half to J. L. Chilton, D. A. and J. G. Guthrie, Louisville, Ky. Veneer trunk-top	328,604	Oct. 20	1443	376	33	278
Osborn, Joh, Raleigh, N. C. Tobacco-curing house	332,621	Dec. 15	2000	524	33	1368
Osborn, Walter A., and D. M. Estey, Owosso, Mich. Caster	331,211	Nov. 24	2380	644	33	978
Osborne & Cheesman Company. (See Durand, David L., assignor.)						
Osborne & Co., D. M. (See Butterfield, William, assignor.)						
Osborne, Henry F., Newark, N. J. Skate-fastener	332,424	Dec. 15	1724	452	33	1319
Osborne, Leonard E., Leominster, Mass. Fire-kindler	329,070	Oct. 27	2096	544	33	402
Osborne, Wilbur F., Ansonia, Conn. Suspender-buckle	332,425	Dec. 15	1725	452	33	1319
Osgood, Enoch, Washington, D. C. Reversible motor-wheel	342,103	Dec. 8	1275	331	33	1234
Osgood, Joseph H., Peabody, Mass. Mold for making printers' inking-rollers	328,247	Oct. 13	958	240	33	182
Osgood, Ralph R., Albany, N. Y. Dumping-scow	330,043	Nov. 10	837	215 216	33	669
Ostermayer, Eugen, Bieberath, and M. Dittmar, Königsberg, Germany. Producing chlorioduline double combinations from pyridine and chinoline bases	332,358	Dec. 15	1635	.....	33	1304
Ostrander, Charles H., Plattsburg, N. Y. Garment-sleeve	332,553	Dec. 15	1909	499	33	1350
Ostront, George, Montreal, Quebec, Canada. Ore-stamping machine	328,153	Oct. 13	839	219	33	159
Ott, George F., Philadelphia, Pa. Stuffing-box for piston-rods of ice-machines, &c.	332,675	Dec. 15	2083	547	33	1382
Ott, Peter. (See Lippy and Ott.)						
Oulton, George, Liverpool, county of Lancaster, England. Soldering-iron	327,896	Oct. 6	501	130	33	90
Overman, Albert H., Chicopee, Mass. Seat for velocipedes	329,850	Nov. 3	578	148	33	613

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Overman, Albert H., Chicopee, Mass. Pedal for velocipedes	329,851	Nov. 3	580	148	33	613
Overman, Albert H., Chicopee, Mass. Saddle for velocipedes	331,001	Nov. 24	2091	565 566	33	926
Overman Wheel Company. (See Hadley, Charles F., assignor.)						
Overman Wheel Company. (See Warwick, Thomas, assignor.)						
Oviatt, Solomon E., Detroit, Mich., assignor of one-half to J. J. Baird. Wagon	331,254	Nov. 24	2447	661	33	990
Owen, Herbert S., Washington, D. C. Velocipede	330,346	Nov. 10	1233	329	33	748
Owen, James D., Sitvara, Pa. Vehicle-spring	331,430	Dec. 1	252	67	33	1043
Owen, Joseph, Dunellen, N. J. Axle-straightener	328,137	Oct. 13	817	213	33	155
Owen, Richard W., Chicago, Ill. Check-rein hook	329,852	Nov. 3	581	148	33	613
Owen, Walter G., New York, N. Y. Sight for fire-arms	333,024	Dec. 22	2572	676	33	1479
Owen, William O., Jr., Lynchburg, Va. Rotary steam-engine	330,347	Nov. 10	1237	329 330	33	749
Owens, Samuel T., Pittsburg, Pa. Furnace for steam-boilers	330,147	Nov. 10	981	255 256	33	699
Owsley, Heaton, and G. W. Marble, Chicago, Ill. Roller-skate	328,510	Oct. 20	1306	339	33	254
Packer, Alfred W., Trenton, N. J. Hose-jacket	332,163	Dec. 8	1363	353	33	1249
Paden, James L., Lucky Valley, assignor of one-half to J. Kent, Correctionville, Iowa. Attachment for corn-planters	333,247	Dec. 29	2884	754	33	1540
Paessler, Theophilus H., Malvern, Ohio. Vehicle	328,709	Oct. 20	1587	413	33	303
Paessler, Theophilus H., Malvern, Ohio. Draft device for vehicles	331 156	Nov. 24	2299	622 623	33	964
Pagé, Charles. (See Goulliond and Pagé.)						
Page, Charlotte E., Chicago, Ill. Necktie	331,535	Dec. 1	397	106	33	1070
Page, Justin E., Rosedale, Kans., assignor of one-half to G. F. Wing, San José, Cal. Corn-planter	328,056	Oct. 13	716	187 188	33	136
Page, Louis, and L. Weber, Brooklyn, N. Y.; said Page assignor to said Weber. Curtain-fixture. (Reissue)	10,662	Nov. 17	1910	517	33	885
Page, Louis, and L. Weber, Brooklyn, N. Y.; said Page assignor to said Weber. Curtain-fixture	332,104	Dec. 8	1278	332	33	1235
Page, Samuel K., Aylesbury, county of Buckingham, C. E. Robinson, Scarborough, county of York, and W. Stevens, New Bridge Street, county of Middlesex, England. Apparatus for the treatment of sewage	328,334	Oct. 13	1069	277 278	33	203
Page, Samuel W., Jersey City, N. J. Fastening-band for packages of merchandise	329,205	Oct. 27	2292	593	33	438
Page, William H., Preston, Conn. Steam-generator	331,431	Dec. 1	252	67, 68	33	1043
Paice, Ellen M., Brighton, county of Sussex, England. Convertible garment	330,920	Nov. 24	1984	537	33	906
Paine, George W. (See Whiting, James M., assignor.)						
Paine, Halbert E., Milwaukee, Wis. Street-sweeper	328,057	Oct. 13	720	188	33	136
Paine, Howard S., Albany, N. Y. Douche apparatus	331,255	Nov. 24	2448	661	33	990
Paine, John A., Tarrytown, N. Y. Stench-trap	330,148	Nov. 10	982	256	33	700
Paine, John A., Tarrytown, N. Y. Door-knob attachment	332,350	Dec. 15	1636	429	33	1304
Paine, William H., Brooklyn, N. Y. Cable-supporting sheave for cable railways	331,237	Nov. 24	2418	655	33	985
Paine, William H., Brooklyn, N. Y. Hand mechanism for operating grippers for cable railways	331,238	Nov. 24	2419	655 656	33	986
Paine, William H., Brooklyn, N. Y. Rope-driving machinery	331,239	Nov. 24	2420	656	33	986
Painter, William, Baltimore, Md. Lamp wick and burner	329,589	Nov. 3	224	59	33	548
Palmer, Cassius C., New York, N. Y. Refrigerator-car	330,044	Nov. 10	839	216	33	670
Palmer, Cassius C., New York, N. Y. Mechanism for transferring power from the axles of railway-cars to refrigerator-cars	330,045	Nov. 10	840	216 217	33	670
Palmer, Cassius C., New York, N. Y. Controlling the speed of mechanical refrigerating apparatus on railway-cars from the outside	330,046	Nov. 10	844	217	33	671
Palmer, Charles H., New York, N. Y. Machine-gun	332,741	Dec. 22	2182	576	33	1407
Palmer & Co., N. F., Jr. (See Willson, Albert A., assignor.)						
Palmer, Isaac E., Middletown, Conn. Hitching device	329,071	Oct. 27	2096	544	33	403
Palmer, James M., Boston, Mass. Vapor-stove	328,605	Oct. 20	1444	376	33	278
Palmer, John H., Philadelphia, Pa. Button-hole attachment for sewing-machines	332,426	Dec. 15	1726	452	33	1319
Palmer, John W., Syracuse, Mo., assignor of one-half to M. E. Taylor. Scale-beam	328,804	Oct. 20	1699	442	33	325
Palmer, Joseph, Kingsley, Iowa. Snow-plow	328,805	Oct. 20	1700	443	33	325
Palmer Torpedo Railway Signal Company. (See Clark, Henry F., assignor.)						
Palmer, Warren K. (See Green and Palmer.)						
Pambla, Edward S., Chicago, Ill. Rotary engine	330,417	Nov. 17	1340	356 357	33	776
Panse, Friedrich, New York, N. Y. Plaiting-machine	331,432	Dec. 1	254	68, 69	33	1043
Papineau, Frank J., Jr., assignor of one-half to E. C. Canning, New Orleans, La. Car-coupling	333,025	Dec. 22	2573	677	33	1479
Pardee, Charles F., assignor to G. W. Cheever & Co., North Attleborough, Mass. Chain-machine	329,334	Oct. 27	2480	640	33	473
Parham, Charles, Philadelphia, Pa. Ventilating device for commutators of dynamo-electric machines	332,427	Dec. 15	1727	453	33	1320
Parham, Lewis, Palermo, Ill. Feeder for thrashing-machines	322,058	Oct. 13	721	188	33	137
Paridy, Charles, East St. Louis, Ill. Band-cutter and feeder for thrashing-machines	331,536	Dec. 1	398	106	33	1070
Paris, Daniel E., Troy, N. Y. Grate for coal-burning stoves	329,206	Oct. 27	2293	594	33	438
Parish, William F., Minneapolis, Minn. Mechanism for finishing engine bed-frames	332,742	Dec. 22	2184	576 577	33	1408
Parish, William F., Minneapolis, Minn. Mechanism for finishing engine bed-frames	332,743	Dec. 22	2186	577	33	1408
Parish, William F., Minneapolis, Minn. Mechanism for finishing engine bed-frames	332,744	Dec. 22	2187	577	33	1408
Parish, William F., Minneapolis, Minn. Machine for finishing engine bed-frames	332,745	Dec. 22	2188	577 578	33	1409
Park, James R., Lavergne, Tenn. Train-sighter	328,606	Oct. 20	1445	376	33	278
Park, Samuel M., Chicago, Ill. Machine for preparing feathers for dusters	329,672	Nov. 3	329	84	33	567
Park, Shubael, Oakland, Cal. Weighing delivery-wagon	328,138	Oct. 13	818	214	33	155
Parker, Abijah S., Cincinnati, Ohio. Vehicle-dash	332,282	Dec. 15	1526	400	33	1285
Parker, Charles F., and L. E. Marquisee, Syracuse, N. Y. Coal-oil stove	328,511	Oct. 20	1307	340	33	254
Parker, Emery, New Britain, Conn. Knob attachment	327,820	Oct. 6	411	107	33	72
Parker, Francis M., Charleston, Ill. Machine for tabling broom-corn	328,248	Oct. 13	959	249	33	182
Parker, Fred D., Denver, Colo. Core-breaker and puller for rock-drills	331,319	Dec. 1	85	21	33	1014
Parker, Harry W., assignor to himself and L. B. Wood, Omaha, Nebr. Rod and bolt clipper	328,249	Oct. 13	960	250	33	182
Parker, James B., Memphis, Ala. Seed-planter	332,746	Dec. 22	2189	578	33	1409
Parker, John H., Golden, Colo. Steam-cooker	332,283	Dec. 15	1527	400	33	1285
Parker, John W. (See Stowe, James G., assignor.)						
Parkes, Samuel H., Birmingham, county of Warwick, England. Compound magnet	329,768	Nov. 3	460	116	33	592
Parkhill, David H., Jr., Philadelphia, Pa. Door-securer	329,673	Nov. 3	331	84	33	567
Parkhill, John, Blue Lake, Dak. Ter. Sleigh-knee	331,537	Dec. 1	399	107	33	1070

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Parks, Dana, Boston, Mass., assignor to Kensington Chair Company, Portland, Me. Steamer, lawn, and invalid chair	329,941	Nov. 10	703	180	33	643
Parks, Edward H., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Grinding-machine	333,478	Dec. 29	2192	834 855	33	1593
Parks, Joseph L., *et al.* (See Deal, Josiah J., assignor.)						
Parks, Samuel R., Pawtucket, R. I. Tobacco holder and shaver	332,284	Dec. 15	1528	400	33	1285
Parmelee, Arthur W., assignor to Wire Goods Company, Worcester, Mass. Splasher-holder	332,825	Dec. 22	2280	601	33	1426
Parmelee, Henry S., assignor to Mathushek Piano Manufacturing Company, New Haven, Conn. Upright-piano case	327,714	Oct. 6	283	72	33	50
Parmerlee, James C., and A. Swift, Sedalia, Mo. Buckle	333,327	Dec. 29	2995	784	33	1561
Parrish, William N., Richmond, Ind. Fence-building machine	331,320	Dec. 1	86	21	33	1014
Parry, George T., assignor of three-fourths to F. S. Groves, Philadelphia, Pa., J. Cone, Bristol, and W. H. Wingate, Camden, N. J. Marine signal-light for vessels	328,059	Oct. 13	722	189	33	137
Parsels, William C., Ellenville, N. Y. Hose-coupling	331,998	Dec. 8	1111	289	33	1206
Parshall, Charles H., Jr. (See Grace and Parshall.)						
Parshall, Charles H., Jr., Detroit, Mich. Lubricator	328,336	Oct. 13	1072	279	33	204
Parshall, Charles H., Jr., assignor to Michigan Lubricator Company, Detroit, Mich. Lubricator	328,335	Oct. 13	1071	279	33	203
Parson, Frank, Raton, N. Mex. Ter. Attachment for leveling-instruments and transits	331,433	Dec. 1	256	69	33	1044
Parsons, Charles A., Gateshead-on-Tyne, county of Durham, England. Rotary motor	328,710	Oct. 20	1588	413 414	33	303
Parsons, Charles A., Gateshead-on-Tyne, county of Durham, England. Apparatus for lubricating rotary motors	328,711	Oct. 20	1593	415	33	304
Parsons, William B., Jr., Elmira, N. Y. Automatic flushing water-closet	332,428	Dec. 15	1729	453	33	1320
Partridge, Andrew, and D. F. Sweeney, Springfield, Mass. Razor-guard	330,418	Nov. 17	1342	357	33	776
Partz, August F. W., Philadelphia, Pa. Liquid for voltaic batteries	328,607	Oct. 20	1447	.....	33	278
Pasco, Isaac D., Belmont, Nev. Fire-escape	332,554	Dec. 15	1909	500	33	1351
Patent Button Company. (See Ivins, Ellwood, assignor.)						
Patent Button Company. (See Platt, Irving G., assignor.)						
Paterson, Ambrose, London, England. Removing stagy hairs from fur-seal and other skins	331,538	Dec. 1	399	107	33	1070
Pates, William S., assignor to Hapgood Plow Company, Alton, Ill. Cultivator	329,590	Nov. 3	227	59	33	549
Pathe, William, Worcester, Mass. Sign and door plate	330,511	Nov. 17	1462	391	33	799
Patric, Charles E., Springfield, Ohio. Seeding-machine	331,157	Nov. 24	2300	623	33	964
Pattee, Richard, assignor of one-half to E. P. Draper, Holyoke, Mass. Water-gate	330,800	Nov. 17	1824	491	33	869
Patten, Edward K., Utica, N. Y. Cutter-head	330,260	Nov. 10	1115	296 297	33	726
Patten, George. (See Woodbury, Merrill, Patten, and Woodbury.)						
Patten, George M., Jersey City, N. J. Harvester and mowing-machine	330,729	Nov. 17	1736	468	33	854
Patten, Jefferson, Brooklyn, assignor, by mesne assignments, to Tubal Cain Tap, Die, and Bolt Company, New York, N. Y. Screw-bolt	328,139	Oct. 13	819	214	33	155
Patterson, Peter, assignor of one-half to National Tube Works Company, McKeesport, Pa., and Boston, Mass. Securing rings in boiler-heads	329,335	Oct. 27	2483	640	33	474
Patterson, Thomas W., Clinton, Mo. Head-rest for barbers' chairs	328,337	Oct. 13	1073	279	33	204
Patterson, William F. (See Stillman and Patterson.)						
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Cable armoring machine	330,047	Nov. 10	845	217 218	33	671
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Testing electric cables	330,048	Nov. 10	847	218	33	671
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Splice for underground telegraph-cables	330,049	Nov. 10	848	218	33	672
Pattison, George H., Freeport, Ill. Gearing for windmills	329,769	Nov. 3	461	117	33	592
Pattison, George H., Freeport, Ill. Windmill-gearing	329,770	Nov. 3	463	118	33	592
Pattison, George H., Freeport, Ill. Gearing for windmills	330,921	Nov. 24	1986	537	33	906
Pattison, George H., Freeport, Ill. Gearing for windmills	333,026	Dec. 22	2574	677	33	1480
Pattison, George H., Freeport, Ill. Gearing for windmills	333,148	Dec. 29	2748	721	33	1515
Paul, Thomas H., Frostburg, Md. Planer-chuck	330,261	Nov. 10	1117	297	33	727
Paull, Archibald W., and D. L. Heiskell, Wheeling; said Heiskell assignor to J. Paull, Wellsburg, W. Va. Lock	327,715	Oct. 6	285	73	33	50
Paull, James. (See Paull and Heiskell, assignors.)						
Pausch, Oscar M., Newark, Ohio. Photographic-plate holder	328,512	Oct. 20	1308	340	33	254
Paxson, Charles H., Springfield, Ohio. Device for operating gates	332,940	Dec. 22	2443	646	33	1457
Paxton, Charles. (See Devine, Charles E., assignor.)						
Payne, Charles F., *et al.* (See Hodges, Horace F., assignor.)						
Payne & Co., Walter S. (See Payne, Walter S., assignor.)						
Payne, George W., Little Neck, N. Y. Vehicle-seat	327,584	Oct. 6	108	24	33	20
Payne, Walter S., assignor to W. S. Payne & Co., Fostoria, Ohio. Automatic pressure-regulator	332,747	Dec. 22	2190	578	33	1409
Payson, Joseph R., Jr., Chicago, Ill. Folding bed	329,942	Nov. 10	704	180 181	33	643
Payson, Joseph R., Jr., Chicago, Ill. Attachment for flour-barrels	332,105	Dec. 8	1280	332	33	1235
Peare, George R., Lynn, Mass. Mechanical movement	333,328	Dec. 29	2996	785	33	1561
Peare, George R., Lynn, Mass., assignor to Gutta Percha and Rubber Manufacturing Company, New York, N. Y. Machine for staying layers of flexible material	333,248	Dec. 29	2885	754 755	33	1540
Peare, George R., Lynn, Mass., assignor to Gutta Percha and Rubber Manufacturing Company, New York, N. Y. Machine for staying layers of flexible material	333,249	Dec. 29	2888	756	33	1541
Pearsall, J. Herbert, Wellsville, N. Y. Clothes-drier	328,968	Oct. 27	1942	506 507	33	376
Pearson, Doyel, Memphis, Tenn. Hot-air fire-place	332,429	Dec. 15	1730	453	33	1320
Pearson, Edward, and J. Kitson, Cadiz, Ohio. Furnace for melting glass, &c	330,050	Nov. 10	848	219	33	672
Pearson, George D., assignor of one-half to J. and P. Wallace, Montreal, Quebec, Canada. Car-coupling	332,430	Dec. 15	1731	453	33	1320
Pearson, Joseph J., assignor to himself and J. M. Cox, Batesville, Miss. Bee-hive	327,716	Oct. 6	288	73	33	50
Pearson, William E., Saugus, Mass. Heating feed-water by exhaust-steam	332,555	Dec. 15	1910	500	33	1351
Pease, Chauncey D., New York, N. Y. Ornamental panel	329,771	Nov. 3	466	118	33	594
Pease, John F., Syracuse, N. Y. Steam-boiler	332,748	Dec. 22	2192	578 579	33	1410
Pease, Robert R., assignor to Hartford Woven Wire Mattress Company, Hartford, Conn. Bedstead-frame	333,329	Dec. 29	2997	785	33	1561
Pease, William M., assignor of one-half to L. Simpson, Pittsburg, Pa. Railway-signal	332,431	Dec. 15	1732	454	33	1320
Peck, Cassius C., New York, N. Y. Apparatus for distilling and concentrating liquids	329,072	Oct. 27	2098	545	33	403
Peck, Cassius C., New York, N. Y. Distilling and concentrating liquids	329,073	Oct. 27	2102	545 546	33	403

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Peck, Cassius C., New York, N. Y. Distilling and concentrating liquids	329,074	Oct. 27	2107	546	33	404
Peck, Edmond C., Chicago, Ill. Vapor-burner	329,481	Nov. 3	75	20	33	519
Peck, Edward W., *et al.* (See Sabin, Alvah H., assignor.)						
Peck, Henry L., Newark, Ohio. Draw-bar	328,969	Oct. 27	1944	507	33	376
Peck, Henry S., assignor to A. F. Phelps, Westfield, N. Y., and North East Heading Company, North East, Pa. Baby-jumper	331,434	Dec. 1	257	69	33	1044
Peck, Homer P. K., and F. Thomassen, New York, N. Y. Coffee-tank	328,060	Oct. 13	724	189	33	137
Peck, John E. (See Hamaker and Peck.)						
Peck, Stow & Wilcox Company. (See Lucas, Edwin, assignor.)						
Peck, T. S., *et al.* (See Sabin, Alvah H., assignor.)						
Peckham, William C., Troy, Ohio. Double-tree	329,075	Oct. 27	2109	547	33	404
Peckham, William H., New York, N. Y. Spectacles	328,513	Oct. 20	1309	340	33	255
Peckover, James, Philadelphia, Pa. Machine for sawing stone	330,614	Nov. 17	1582	423 424	33	823
Pedersen, Mikael (See Nielsen and Pedersen.)						
Peebles, Charles F., Berea, Ohio. Rock-drilling machine	331,435	Dec. 1	258	69	33	1044
Peerless Manufacturing Company. (See Rice, Arthur, assignor.)						
Peets, Charles, Rochester, N. Y. Potato-digger and bean-harvester	331,321	Dec. 1	87	21	33	1014
Peirce, Maynard F. (See Wilson, Spear, and Peirce.)						
Pell, Ogden P., Brooklyn, N. Y. Combined can and ejector	333,250	Dec. 29	2890	756	33	1541
Peloubet, Jarvis, Bloomfield, N. J. Organ-action	329,674	Nov. 3	332	85	33	568
Pelton, George M., Belmont, N. Y. Valve-gearing	331,436	Dec. 1	259	70	33	1044
Pendergast, Thomas H., Louisville, Ky. Device for hanging harness	327,585	Oct. 6	110	25	33	20
Peninsular Novelty Company. (See Vinton, John H., assignor.)						
Peninsular Stove Company. (See Alley, John O., assignor.)						
Penney, Joseph, Grand Rapids, Mich. Desk, wash-stand, and other furniture	332,360	Dec. 15	1638	429	33	1304
Penniman, Russell S. (See Schrader, John C., assignor.)						
Penniman, Russell S., and J. C. Schrader, Dover, N. J., assignors to Atlantic Dynamite Company, Repanno Chemical Company, and Hercules Powder Company. Dynamite	333,149	Dec. 29	2750	.....	33	1516
Penniman, Russell S., and J. C. Schrader, Dover, N. J., assignors to Atlantic Dynamite Company, Repanno Chemical Company, and Hercules Powder Company. Dynamite	333,150	Dec. 29	2752	.....	33	1516
Penniman, Russell S., and J. C. Schrader, Dover, N. J., assignors to Atlantic Dynamite Company, Repanno Chemical Company, and Hercules Powder Company. Gelatinated explosive	333,151	Dec. 29	2754	.....	33	1516
Penniman, Russell S., Dover, N. J., assignor to Atlantic Dynamite Company, Repanno Chemical Company, and Hercules Powder Company. Explosive compound	333,152	Dec. 29	2755	.....	33	1516
Pennock, George B., Philadelphia, Pa. Underground conduit for electric wires	328,712	Oct. 20	1594	415	33	304
Pennsylvania Salt Manufacturing Company. (See Bihn, George F., assignor.)						
Penrod, John F., Blairsville Intersection, Pa. Railway-switch	328,608	Oct. 20	1447	377	33	278
Pentecost Steam Generating Company. (See Pentecost, William A., assignor.)						
Pentecost, William A., assignor to Pentecost Steam Generating Company, Worcester, Mass., and Nashua, N. H. Steam-generator	328,140	Oct. 13	820	214	33	155
Pentreath, John. (See Brown, Douglass, and Pentreath.)						
Pentreath, John, Yonkers, N. Y. Potato-digger	331,082	Nov. 24	2190	593	33	946
Pentz, Albert D., Elizabeth, N. J., assignor to Singer Manufacturing Company of New Jersey. Sewing machine	330,419	Nov. 17	1342	357 358	33	776
Pepper, De Watt, New Milford, Conn. Composition of matter for coating boxes made from paper, straw, or paste board	333,330	Dec. 29	2998	.....	33	1561
Perin, Samuel H., Jeffersonville, Ind. Sad-iron mold	329,943	Nov. 10	706	181	33	644
Perk, Herman. (See Eperts and Perk.)						
Perkins, Charles G., assignor to Imperial Electric Light Company, New York, N. Y. Clamping device for incandescent electric lamps	331,002	Nov. 24	2092	566	33	996
Perkins, Francis C., *et al.* (See Bingham, Charles W., Jr., assignor.)						
Perkins, Francis C. (See Kelley, Charles H., assignor.)						
Perkins, Joseph T. (See Hanse, William, assignor.)						
Perkins, Sidney, Stanford, Ky. Bee-hive	331,539	Dec. 1	401	108	33	1070
Perkins, William H., Owensborough, Ky. Writing-machine for the blind	329,675	Nov. 3	332	85	33	568
Perley, Charles A., *et al.* (See Boscawen, William, assignor.)						
Perley, John K., New York, N. Y. Convertible chair	332,285	Dec. 15	1529	401	33	1286
Perrin, Thomas J., New York, N. Y., assignor to National Improved Telephone Company, New Orleans, La. Induction-coil	329,772	Nov. 3	468	118	33	594
Perron, Leon, assignor of one-fourth to C. Hohly, Toledo, Ohio. Broom-winding machine	329,482	Nov. 3	77	21	33	519
Perry, Clarence E., assignor to himself, E. Smead, and J. B. Turner, Newton, Mass. Marking-brush	327,586	Oct. 6	111	25	33	21
Perry, Ebenezer S., New Bedford, Mass. Car-ventilator	329,591	Nov. 3	229	59	33	549
Perry, Edward L., Paterson, N. J., assignor to himself and H. S. Winans, New York, N. Y. Bladder-valve	329,773	Nov. 3	469	118	33	594
Perry, Frank, L., Baltimore, Md. Box-opener	327,821	Oct. 6	413	107	33	72
Perry, Frank W., Philadelphia, Pa. Sheet-metal cap	331,599	Dec. 8	1112	290	33	1206
Perry, Stuart, Newport, N. Y. Nail-feeding apparatus	332,826	Dec. 22	2281	601 602	33	1427
Perry, Stuart, Newport, and D. A. Sprague, Poland, N. Y. Three-wheeled dray	328,514	Oct. 20	1310	340	33	255
Perry, William H., Sharon, Pa. Nail	328,515	Oct. 20	1311	341	33	255
Person, Joseph E., near Fremont, N. C. Manure-distributer	331,540	Dec. 1	403	109	33	1071
Pert, Henry G., *et al.* (See Hakins, George B., assignor.)						
Pertz, John W., assignor of one-half to G. E. Williams, Pittsburg, Pa. Automatic safety regulator-valve	330,615	Nov. 17	1583	424	33	823
Pfau City Plow Company. (See Bettendorf, William P., assignor.)						
Pessenger, John S., Brooklyn, N. Y. Hydraulic stamping-press	330,730	Nov. 17	1738	468	33	854
Pessenger, John S., Brooklyn, N. Y. Air-supply apparatus for steam-boilers	332,941	Dec. 22	2444	646 647	33	1457
Peter, Fritz, and H. Ruppel, Cleveland, Ohio. Hydrant	327,822	Oct. 6	414	108	33	73
Peterhansl, Frank, New York, N. Y. Machine for plucking beaver and other skins	331,906	Dec. 8	980	253 254	33	1182
Peters, Andrew, Brooklyn, N. Y. Baking-powder	331,541	Dec. 1	404	.....	33	1071
Peters, Andrew, Brooklyn, N. Y. Baking-powder	331,542	Dec. 1	405	.....	33	1071
Peters, Gordon D., London, England. Mattress	332,432	Dec. 15	1735	454	33	1321
Petersen, Charles J., Port Chester, N. Y. Suspension device	330,616	Nov. 17	1586	424	33	822
Petersen, Peter, Fremont, Nebr. Felly boring and mortising machine combined	328,806	Oct. 20	1701	443	33	336
Petersilea, Carlyle, Boston, Mass. Mute-piano	329,502	Nov. 3	230	59	33	549
Peterson, Lars, Independence, Mo. Washing-machine	329,853	Nov. 3	581	149	33	613
Peterson, Niels C., and P. E. Larson, Minneapolis, Minn. Self-tallying pool-rack	332,827	Dec. 22	2284	602	33	1427
Pettigrew, Charles, *et al.* (See Treat, Francis H., assignor.)						
Petty, John W., Omaha, Nebr. Barrel for machine-guns	328,713	Oct. 20	1596	416	33	305

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pfaff, Ludwig, San Francisco, Cal. Apparatus for dyeing	329,483	Nov. 3	78	21, 22	33	590
Pfannkuche, Gustav, Hartford, Conn., assignor to Schuyler Electric Light Company. Electric safety-fuse	332,286	Dec. 15	1530	401	33	1286
Pfeifer, Peter, Durhamville, N. Y. Wash-board	327,823	Oct. 6	417	108	33	73
Pfeifer, Peter, Durhamville, N. Y. Device for conveying sheets of glass from the flattening-wheel through the annealing arch or tunnel	333,331	Dec. 29	2999	785	33	1561
Pfaum, Nicholas, Port Jervis, N. Y. Metallic piston-packing	332,433	Dec. 15	1735	454	33	1321
Pfleghar, Frank P., New Haven, Conn. Folding music-stand	329,503	Nov. 3	231	60	33	549
Phelps, A. F., *et al.* (See Peck, Henry S., assignor.)						
Phelps, Charles A., and W. W. Sterns, Humboldt, Iowa. Molding-clamp	332,942	Dec. 22	2445	647	33	1478
Phelps, George. (See Stockton and Phelps.)						
Phelps, Lucius J., New York, N. Y. Apparatus for maintaining electrical communication with moving vehicles	329,076	Oct. 27	2111	547	33	404
Phelps, Lucius J., New York, N. Y. Apparatus for maintaining electrical communication with moving vehicles	329,077	Oct. 27	2112	547	33	405
Phelps, Lyman E., Rochelle, Ill. Combined ash pan and sifter	331,322	Dec. 1	89	21	33	1015
Phillips, Edward, assignor of one-half to T. F. Beidler, Cleveland, Ohio. Wrench	331,158	Nov. 24	2302	623	33	965
Phillips, Elwood C., assignor to Richmond Roller Skate and Caster Company, Richmond, and Kitselman Bros., Ridgeville, Ind. Skate-clamp	329,944	Nov. 10	707	181	33	644
Phillips, Ezekiel P., assignor to H. C. Phillips, Blackstone, Mass. Device for adjusting cotton-sliver eveners	330,801	Nov. 17	1825	492	33	869
Phillips, Ezra O., Coopersville, Mich. Churn	328,807	Oct. 20	1703	443	33	326
Phillips, Henry C. (See Phillips, Ezekiel P., assignor.)						
Phillips, Henry L., New York, N. Y. Clock	329,078	Oct. 27	2114	547	33	405
Phillips, James H., Richmond, Va. Fence	327,717	Oct. 6	289	73	33	50
Phillis, Clarence, Pittsburg, assignor of one-half to T. Saw, Allegheny County, Pa. Combined wringer, washer, and mangle	328,516	Oct. 20	1312	341	33	255
Piatt, A. Sanders, Mac-o-Cheek, Ohio. Band cutting feeder for thrashers	327,587	Oct. 6	112	25	33	21
Piatt, Fredrick B., Lansing, Mich. Foot-guard for railway-frogs, &c.	332,106	Dec. 8	1281	333	33	1235
Pickering, John. (See Lovett, John, assignor.)						
Pickler, Samuel M., *et al.* (See Oliphant, Samuel C., assignor.)						
Pictet, Raoul P., Geneva, and G. L. Brélaz, Lausanne, Switzerland. Manufacture of pulp from woody matter	331,323	Dec. 1	90	.....	33	1015
Pierce, George S. (See Leager, Pierce, and Canterbury.)						
Pierce, Henry M., Nashville, Tenn. Manufacturing coke	330,731	Nov. 17	1740	469	33	854
Pierce, Henry M., Nashville, Tenn. Furnace for the manufacture of coke	330,732	Nov. 17	1742	469	33	854
Pierce, Otis B., Taunton, Mass. Music-rack and walking-cane combined	330,922	Nov. 24	1988	537	33	907
Pierson, Henry B. (See Traver and Pierson.)						
Piffard, Henry G., New York, N. Y. File	331,324	Dec. 1	91	22	33	1015
Pilcher, John V., Louisville, Ky. Cuff-fastener	329,207	Oct. 27	2295	594	33	438
Pilet, Gaston, and C. Carry, Besançon, France. Plating with palladium	330,149	Nov. 10	984	.....	33	700
Pillings, George T., Baltimore, Md. Valve-gear	331,003	Nov. 24	2093	566	33	927
Pinard, Theophile, Butteville, Oreg. Brake-lever	332,434	Dec. 15	1736	454	33	1321
Pine, Charles S., Providence, R. I. Bracelet	333,083	Dec. 22	2649	694	33	1492
Pine, James K. P. (See Hagan and Norris, assignors.)						
Pine, James K. P. (See Norris and Hagan, assignors.)						
Piper, Charles E., Moline, Ill. Commutator for dynamo-electric machines	328,859	Oct. 20	1769	{461 462}	33	338
Piper, Gustav, New Holstein, Wis. Washing-machine	328,428	Oct. 13	1209	312	33	229
Piper, James S., Gardner, Mass., assignor to Haywood Bros. & Co., New York, N. Y. Platform-rocker	329,854	Nov. 3	583	149	33	614
Pitcher, John M., Sugar Creek, Ind. Spark-arrester	330,420	Nov. 17	1344	358	33	777
Pitt, William R. (See Dinsoway, Crowel M., assignor.)						
Pittsburg Mineral Wool Company. (See Kennedy and Higgs, assignors.)						
Pittsburg Steel Fencing Company. (See Stubbs, John, assignor.)						
Pittsburg Steel Nail Company. (See Truran, William, assignor.)						
Pittsburgh Hob Nail Manufacturing Company. (See Dickson, John S., assignor.)						
Pitz, Henry W., Philadelphia, Pa. Cigar-case	330,733	Nov. 17	1745	469	33	854
Place Gas Engine Manufacturing Company. (See Place, James F., assignor.)						
Place, James F., assignor to Place Gas Engine Manufacturing Company, New York, N. Y. Gas-engine	328,970	Oct. 27	1945	{507 506}	33	376
Place, Joseph. (See Card and Place.)						
Plano Manufacturing Company. (See Hunt, George G., assignor.)						
Platt, Irving G., assignor to Patent Button Company, Waterbury, Conn. Device for attaching buttons to fabrics	329,336	Oct. 27	2484	641	33	474
Platt, Irving G., assignor to Patent Button Company, Waterbury, Conn. Button and button-fastener	329,337	Oct. 27	2485	641	33	474
Platt, James F., Sterling, Ill. Hay-tedder	333,153	Dec. 29	2756	722	33	1516
Platt, William S., Waterbury, Conn. Mold for casting metal	331,437	Dec. 1	261	71	33	1045
Pleukharp & Co., James. (See Pleukharp, James, assignor.)						
Pleukharp, James, assignor to J. Pleukharp & Co., Columbus, Ohio. Table	331,212	Nov. 24	2381	644	33	979
Plumb, Burdict & Barnard. (See Johnson, Henry J., assignor.)						
Plumb, David S., Newark, N. J. Plated hollow earthenware	332,435	Dec. 15	1737	455	33	1321
Plumb, Henry B., assignor to Eagle Lock Company, Terryville, Conn. Lock-case	331,063	Nov. 24	2192	593	33	946
Plummer, Benjamin M., Philadelphia, Pa. Belt-stretching machine	331,325	Dec. 1	91	22	33	1015
Plummer, Frank J., Boston, Mass. Planing-machine	327,588	Oct. 6	114	26	33	21
Plummer, Oliver S., and J. M. Wood, Richmond, Ind. Vehicle-spring	328,609	Oct. 20	1448	377	33	278
Plummer, Samuel A. (See Williston, Benjamin F., assignor.)						
Plummer, William C. (See Hutchins, George W., assignor.)						
Plumpton, George, Warrington, county of Lancaster, England. Combination-tool	329,208	Oct. 27	2296	595	33	439
Pneumatic Company. (See Moore, Matthew R., assignor.)						
Pneumatic Engine Company. (See Ayres, Jared A., assignor.)						
Poalk, J. Lane, Philadelphia, Pa. Stereotype or matrix making machine	331,438	Dec. 1	262	71	33	1045
Pohl, Alois, and A. Claes, St. Louis, Mo. Table-leaf support	331,084	Nov. 24	2193	594	33	946
Poist, John A., McSherrystown, Pa. Machine for treating leaf-tobacco	330,734	Nov. 17	1745	469	33	855
Poland, Edward F., and J. G. Crawford, Boston, Mass. Ticket cutter, register, and alarm	331,213	Nov. 24	2382	{644 645}	33	979
Poley, Warren H. (See Stout, George M., assignor.)						
Polhemeus, Garret A., Nyack, N. Y. Roller cable-grip	328,517	Oct. 20	1313	341	33	255
Polifka, William, *et al.* (See Kanouse, John G., assignor.)						
Pollard, John G. (See Comstock, Philo E., assignor.)						
Polleys, William H., Melrose, Wis. Fire-extinguishing compound	328,250	Oct. 13	961	.....	33	183
Polmateer, William A., assignor to W. S. Northrup, Johnstown, N. Y. Sewing machine	329,424	Nov. 3	80	22	33	590
Pollock, James R., assignor of one-half to J. P. Rummel, Mansfield, Ohio. Suspenders	330,348	Nov. 10	1239	330	33	749

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pollock, James R., assignor of one-half to J. P. Rummel, Mansfield, Ohio. Suspender-buckle	330,349	Nov. 10	1239	330	33	750
Pomeroy, Charles, New York, N. Y. Shoe-last	331,256	Nov. 24	2449	602	33	990
Pond, Charles L., Buffalo, N. Y. Metallic seal	329,209	Oct. 27	2298	595	33	439
Pond, Charles L., Buffalo, N. Y. Metallic seal	331,439	Dec. 1	264	71	33	1045
Pond, Charles L., Buffalo, N. Y. Metallic seal	332,556	Dec. 15	1912	500	33	1351
Pond, Chester H., Brooklyn, N. Y. Secondary electric-clock movement	327,897	Oct. 6	502	131	33	90
Pond, Chester H., Brooklyn, N. Y. Electrical attachment for winding clocks in series	327,898	Oct. 6	504	131	33	90
Pond, Chester H., Brooklyn, N. Y. Electrical indicator	331,650	Dec. 1	612	151	33	1105
Pool, Frank V., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Manufacture of soluble nitro-cellulose. (Reissue)	10,650	Oct. 6	617	.....	33	112
Poor, Charles B. (See Mack, Albert G., assignor.)						
Poor, James C., North Andover, Mass. Bull-tamer	330,150	Nov. 10	985	256	33	700
Pope, Frank L., Elizabeth, N. J. Multiple local circuit for telegraphs	329,410	Oct. 27	2597	670	33	494
Pope, Frank L., Elizabeth, N. J. Multiple local circuit for electric telegraphy	329,411	Oct. 27	2598	670	33	494
Pope, Frank L., Elizabeth, N. J. Multiple local circuit for electric telegraphs	329,412	Oct. 27	2600	{670 671}	33	494
Porter, Edwards W., Detroit, Mich. Brush	329,413	Oct. 27	2602	671	33	495
Porter, George A., Syracuse, N. Y. Steam-boiler	332,928	Dec. 22	2286	602	33	1427
Porter, George W. D. and L. L., Fayetteville, Tenn. Plow	329,429	Oct. 13	1210	313	33	229
Porter, John, and H. B. Kepperling, Cleveland, Ohio. Boiler washing-machine	330,735	Nov. 17	1746	470	33	855
Porter, John E., assignor of one-half to C. Wilson, Weir City, Kans. Sulky-plow	328,518	Oct. 20	1314	342	33	255
Porter, John F., Mount Washington, Ky. Grain measure, register, and sacker	327,718	Oct. 6	289	74	33	51
Porter, Lawrence L. (See Porter, George W. D. and L. L.)						
Porter, Thomas A., Cameron, Tex. Water-elevator	329,485	Nov. 3	82	22	33	590
Possons, William J., Cleveland, Ohio. Carbon-baking box	331,440	Dec. 1	264	71	33	1045
Post, Charles H., Philadelphia, Pa. Thill-coupling	328,430	Oct. 13	1211	313	33	229
Post, William W., assignor of two-thirds to L. A. Bradley, Cedar Rapids, Iowa. Baling-press	332,557	Dec. 15	1913	{500 501}	33	1351
Potter, Ainsworth & Co. (See Potter and McConnon, assignors.)						
Potter, Arthur W., and T. J. McConnon, Wilkes-Barré, Pa., assignors to Potter, Ainsworth & Co., New York, N. Y. Lesson-tablet for arithmetical work	331,907	Dec. 8	983	254	33	1182
Potter, Charles A., Providence, R. I. Locking-gear for windlasses	332,287	Dec. 15	1531	401	33	1286
Potter, James, assignor of one-half to L. H. Flersheim, Chicago, Ill. Barbed fence	331,908	Dec. 8	984	254	33	1182
Potter, John C., Providence, R. I. Picker-staff check for looms	333,332	Dec. 29	3001	786	33	1561
Potter, Stephen R., Fall River, Mass. Combination-cabinet	328,061	Oct. 13	725	189	33	137
Potter, Thomas O., Boston, Mass. Making buckle-blanks	332,622	Dec. 15	2001	525	33	1368
Potter, Wilson L., *et al.* (See White, Louis B., assignor.)						
Potts, Joseph C., assignor of one-half to J. H. Coates, Berwyn, Pa. Device for converting motion	333,333	Dec. 29	3003	786	33	1562
Pounds, Joseph E. (See Walker, Charles O. R., assignor.)						
Poundstone, Henderson W., *et al.* (See Toliver, George E., assignor.)						
Powel, Robert D., Jerseyville, Ill. Dropper for corn-planters	333,334	Dec. 29	3004	786	33	1562
Powell, David, Flemington, W. Va. Car-coupling	333,154	Dec. 29	2757	722	33	1516
Powell, James, Cincinnati, Ohio. Lubricator	332,023	Dec. 15	2002	525	33	1368
Powell, Richard J., assignor to himself, W. F. Nolan, and J. Rohsenberger, Evansville, Ind. Awning	333,479	Dec. 29	3194	835	33	1593
Powell, William H., Philadelphia, Pa. Spring-motor	332,000	Dec. 8	1113	290	33	1206
Powell, William H. H., and J. T. Grimm, West Finley, Pa. Brake-lever	328,071	Oct. 27	1952	508	33	378
Power, John W., West Bay City, Mich. Safety-valve	328,062	Oct. 13	726	190	33	138
Powers, Francis G. (See Hall and Powers.)						
Powers, Henderson M., Lancaster, Pa. Apparatus for drawing liquids	329,945	Nov. 10	708	181	33	644
Powers, Joseph A. (See Ball, Clinton M., assignor.)						
Prahar, Louis B., assignor to himself and C. S. Shepard, Brooklyn, N. Y. Handle cap-fastening for hand-bag frames	331,651	Dec. 1	615	152	33	1105
Prall, Effie L., and A. Williams, Wellington, Kans. Folding chair	332,749	Dec. 22	2191	579	33	1410
Prall, Walter P., Woodbridge, N. J. Horse hay-rake	333,084	Dec. 22	2649	{604 605}	33	1492
Pratt, Erastus S., Brooklyn, N. Y., assignor to American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Button-hole attachment for sewing-machines	332,676	Dec. 15	2084	{547 548}	33	1382
Pratt & Whitney Company. (See Richards, Francis H., assignor.)						
Preater, James H., Brooklyn, N. Y. Shipping-drum	327,589	Oct. 6	116	27	33	22
Preater, James H., Brooklyn, N. Y. Sheet-metal canister	333,423	Dec. 29	3119	814	33	1581
Prentice, George W., Providence, R. I. Button and fastener	327,719	Oct. 6	291	74	33	51
Prentis, Frank, assignor of two-thirds to J. Tallman and H. Prentis, Grand Rapids, Mich. Rolling-pin	330,421	Nov. 17	1345	358	33	777
Prentis, Herman, *et al.* (See Prentis, Frank, assignor.)						
Prescott, Edwin, Arlington, Mass. Shutter-worker	328,141	Oct. 13	921	215	33	156
Prescott, George B., Jr., Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Cut-out for secondary batteries	327,964	Oct. 6	504	154	33	107
Pressey, George W., Hammonton, N. J. Brooder	328,860	Oct. 20	1771	462	33	338
Pressley, Leonidas C., San Francisco, Cal. Motor for propelling cars and vehicles	330,151	Nov. 10	986	{256 257}	33	700
Preston, David S. (See Rust, George P., assignor.)						
Preston, David R., Whitewater, Wis., assignor to Esterly Harvesting Machine Company. Grain-binding harvester	330,422	Nov. 17	1346	359	33	777
Preston, James P., Bisbee, Ariz. Ter. Link for chains	331,326	Dec. 1	93	22	33	1015
Price, Albert H. and W. D., Newark, Ohio. Harrow	328,519	Oct. 20	1315	342	33	255
Price, Benjamin, Baltimore, Md. Machine for soldering cans	331,909	Dec. 8	985	255	33	1182
Price, Charles W., New York, N. Y., and A. Barrett, Kansas City, Mo. Automatic electric annunciator	331,237	Nov. 24	2451	602	33	990
Price, George C. and W. C., San Francisco, Cal. Pencil-sharpener	329,496	Nov. 3	83	22	33	521
Price, John A., Scranton, Pa. Furnace	331,731	Dec. 1	733	184	33	1127
Price, John W., *et al.* (See Price, Joshua C., assignor.)						
Price, Joshua C., assignor of one-half to J. W. Price, M. and A. Sattley, Taylorville, Ill. Plow-sharpener	327,590	Oct. 6	117	27	33	22
Price, Loftus E., New Lots, assignor to Miles Brothers & Co., New York, N. Y. Bristle-holder	328,063	Oct. 13	727	190	33	138
Price, Wallace C. (See Price, George C. and W. C.)						
Price, Walter D. (See Price, Albert H. and W. D.)						
Prickett, Herschel A., Columbia City, Ind. Breeching-stay for harness	328,901	Oct. 20	1928	476	33	349
Prickett, Joshua, Marinette, Wis. Device for holding circular saws	332,164	Dec. 8	1365	353	33	1249
Pride, Charles W. (See Smith and Pride.)						
Primary Battery Company. (See Fitz Gerald and Jones, assignors.)						
Prindle, Edward T., Aurora, Ill. Carpet-sweeper	328,610	Oct. 20	1449	377	33	279

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Prindle, Edward T., and F. C. Baird, Aurora, Ill. Sash-lock	330,802	Nov. 17	1827	492	33	870
Prindle, Lyman B., Litchfield, Conn. Clothes-pin	329,467	Nov. 3	83	23	33	521
Prindle, Lyman B., Bantam, Conn. Metallic railway tie and chair	333,480	Dec. 29	3195	835	33	1593
Prinz, Hugo, assignor to Farbfabrik, vormals Brönner, Frankfort-on-the-Main, Germany. Manufacture of beta-naphthylamine sulpho-acid	332,829	Dec. 22	2287	.....	33	1428
Prinz, Hugo, assignor to Farbfabrik, vormals Brönner, Frankfort-on-the-Main, Germany. Red coloring-matter from beta-naphthylamino sulpho-acid	332,830	Dec. 22	2288	.....	33	1428
Pritchard, John G., Poultney, Vt. Churn-ventilator	332,677	Dec. 15	2066	548	33	1382
Procter, Edwin R., Washington Court-House, Ohio. Nut-lock	328,972	Oct. 27	1952	508	33	378
Procter, Edwin R., Washington Court-House, Ohio. Nut-lock	333,155	Dec. 29	2758	722	33	1516
Procter, Edwin R., Washington Court-House, Ohio. Button or stud	333,156	Dec. 29	2759	722	33	1517
Progler, Charles H., Jackson Court-House, W. Va. Luminous sign	332,210	Dec. 8	1425	368	33	1260
Protheroe, Pryse, Surbiton, county of Surrey, England. Puzzle	332,211	Dec. 8	1426	368	33	1260
Prouty, Enoch, Beloit, Wis. Paper-folding machine	327,965	Oct. 6	596	155	33	107
Puetz, Tillman, Jr., assignor of one-third to G. W. Bransford, St. Louis, Mo. Plug-tobacco machine	330,849	Nov. 17	1888	510	33	880
Puetz, Tillman, Jr., St. Louis, Mo. Plug-tobacco machine	330,850	Nov. 17	1890	511	33	881
Puetz, Tillman, Jr., St. Louis, Mo. Automatic stop	330,851	Nov. 17	1891	511	33	881
Pullman, Herbert S., assignor of one-half to J. C. Hammond, Jr., Rockville, Conn. Ice-creeper	330,512	Nov. 17	1464	391	33	799
Pulver, Henry H., assignor of one-half to J. Stark, Jr., Waltham, Mass. Mainspring-winder	333,251	Dec. 29	2891	756	33	1541
Purefoy, Addison F., Wake Forest, N. C. Spring bed-bottom	333,252	Dec. 29	2893	757	33	1542
Purple, Jasper L., Owego, N. Y. Caster	331,732	Dec. 1	734	185	33	1127
Pusch, Emil, *et al.* (See Brunck and Marsh, assignors.)						
Puterbaugh, Jacob J. (See Deckard, Stephen J., assignor.)						
Putnam, John P., Boston, Mass. Set-basin	329,946	Nov. 10	710	182	33	644
Putnam, John P., Boston, Mass. Overflow-pipe for set-basins and similar fixtures	329,947	Nov. 10	711	182	33	645
Pyle, George C., Cuyahoga Falls, Ohio, assignor to American Electric Headlight Company, Indianapolis, Ind. Electric-arc lamp	329,948	Nov. 10	712	182	33	645
Pyle, George C., Cuyahoga Falls, Ohio, assignor to American Electric Headlight Company, Indianapolis, Ind. Electric lamp	331,327	Dec. 1	94	22, 23	33	1015
Quaid, Harrison, assignor of two-thirds to H. A. Burt, Jr., and W. Y. Thomson, Schenectady, N. Y. Spring bed-bottom	332,750	Dec. 22	2196	579	33	1410
Quimby, Edward E. (See Matthiessen and Quimby.)						
Quimby, Edward E., Orange, assignor to F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Apparatus for decolorizing sugar-liquor by upward filtration through bone-black	329,210	Oct. 27	2299	595, 596	33	439
Quinby, Benjamin F., Boston, Mass. Circular wire brush	327,720	Oct. 6	292	74	33	51
Quinn, Charles C., Fargo, Dak. Ter. Tunnel-excavator	330,617	Nov. 17	1588	424, 425	33	824
Quinn, Isaac T., assignor of two-thirds to F. B. Handwerk and S. C. Stough, Morris, Ill. Tank for curing flax	329,940	Nov. 10	714	182	33	645
Quinn, James B., St. Paul, Minn. Valve-gear	329,338	Oct. 27	2486	641	33	474
Quivey, Joseph M. (See Shaw, James F., assignor.)						
Raabe, Charles E., and G. E. Hackell, Milwaukee, Wis. Suspension-hook	331,819	Dec. 8	854	219	33	1157
Raabe, Julius, and W. H. Fisher, Cincinnati, Ohio; said Raabe assignor to said Fisher. Cartridge-shell holder	330,513	Nov. 17	1464	392	31	799
Race, George, Norwich, N. Y. Ironing-table	329,950	Nov. 10	715	183	33	646
Racine, Charles, Chicago, Ill. Consecutive printing attachment for printing-presses	327,591	Oct. 6	118	27	33	22
Raiffeisen, Charles J. (See Springe and Raiffeisen.)						
Railway Register Manufacturing Company. (See Benton, John B., assignor.)						
Railway Speed Recorder Company. (See Wilkins and Bartlett, assignors.)						
Rais, Adrian, assignor to Brown & Brothers, Waterbury, Conn. Mold for casting seamless tubing	331,820	Dec. 8	855	219	33	1157
Ralls, James D. (See Ralls, Robert B., assignor.)						
Ralls, Robert B., assignor of one-half to J. D. Ralls, Montrose, Mo. Combined roller and cultivator	330,514	Nov. 17	1467	392	33	800
Ralston, John C., Toledo, Ohio, assignor to R. Freeland, Boston, Mass. Remelting soap	328,611	Oct. 20	1450	378	33	279
Ralston, John C., Toledo, Ohio, assignor to R. Freeland, Boston, Mass. Apparatus for remelting soap	328,714	Oct. 20	1598	416	33	305
Ramel, Alfred, and W. W. Dean, assignors of one-half to P. Bakewell, St. Louis, Mo. Clock-synchronizer	330,923	Nov. 24	1989	538	33	907
Rammoser, Albert, Berlin, Germany. Corset-fastening	330,152	Nov. 10	987	257	33	700
Ramsay, William F. (See Wyatt, Matthew T., assignor.)						
Ramsdall, Franklin P. (See McPherson and Ramsdall.)						
Ramser, Paul, Montezuma, Iowa. Window-screen	328,064	Oct. 13	729	190	33	138
Rand, Addison C., New York, N. Y. Steam rock-drill	328,612	Oct. 20	1452	378	33	279
Randall, Nelson L., Grafton, assignor to Wright Machine Company, Worcester, Mass. Drawing-roll	331,328	Dec. 1	100	23	33	1016
Randall, Perry D. (See Webb, Carlos N., assignor.)						
Randall, Timothy P., Adrian, Mich. Anti-rattler for thill-couplings	332,943	Dec. 22	2446	647	33	1458
Randel, John N., Castle Rock, Colo. Concentrator	332,831	Dec. 22	2288	603	33	1428
Randel, William, Glens Falls, N. Y. Hood and other garments	330,515	Nov. 17	1468	392	33	800
Randolph, Richard, Rockville, Md. Automatic car-brake	332,944	Dec. 22	2447	648	33	1458
Rankin, Frank N., Shelbyville, Tenn. Hame-fastener	332,107	Dec. 8	1282	333	33	1235
Rankin, Thomas, *et al.* (See Komp, John F., assignor.)						
Rankin, Thomas L., Quenemo, Kans. Ice-machine	332,361	Dec. 15	1639	429, 430	33	1305
Rankin, William H., Lawrence, Mass. Attachment for dye-vats	333,157	Dec. 29	2760	723	33	1517
Ransom, Martin. (See Walker and Ransom.)						
Ransom, Mary, Brooklyn, N. Y. Combined ironing board and table	330,618	Nov. 17	1590	425	33	824
Rasch, Peter. (See Frederiksen and Rasch.)						
Rasmusson, Edward L., Duluth, Minn. Weed-pulling machine	328,715	Oct. 20	1600	417	33	305
Rassbach, Hermann. (See Jungenfeld and Rassbach.)						
Rathbun, John H., assignor of one-half to C. H. De Lamater & Co., New York, N. Y. Tapping device	332,436	Dec. 15	1738	455	33	1321
Rattey, Emil, New York, N. Y. Flat-wire netting	328,716	Oct. 20	1601	417	33	306
Raub, Joseph L., New London, Conn. Target-trap	329,211	Oct. 27	2301	596	33	439
Raudebaugh, Perry F., Florence, Kans. Car-coupling	328,251	Oct. 13	961	250	33	183
Raworth, John S., Manchester, county of Lancaster, assignor to Siemens Brothers & Company, (limited.) 12 Queen Anne's Gate, Westminster, county of Middlesex, England. Electric meter	332,832	Dec. 22	2290	603	33	1428
Ray, Edward, *et al.* (See Larkin, John C., assignor.)						
Ray, George W., Tarkio, Mo. Washing-machine	331,910	Dec. 8	988	256	33	1183

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Raydt, Wilhelm. (See Schmitz, Albert, assignor.)						
Raymond, Edwin W., Coupeville, Washington Ter. Clasp for ribbon-rolls	329,312	Oct. 27	2304	596	33	440
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	329,079	Oct. 27	2115	548	33	405
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	329,951	Nov. 10	717	183	33	646
Raymond, Freeborn F., 2d, Newton, Mass. Sole or heel fastening	329,952	Nov. 10	720	183	33	646
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	331,441	Dec. 1	965	72	33	1046
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	332,061	Dec. 8	1114	290, 291	33	1207
Raymond, George H. (See Johnston and Raymond.)						
Raymond, Silas H., Grand Rapids, Mich. Barrel	331,911	Dec. 8	988	256	33	1183
Read, Daniel M. (See Hood, Gustave, assignor.)						
Read, Walter G., Huey, Ill. Wind-wheel	331,543	Dec. 1	406	109	33	1071
Reade, Henry W., Chicago, Ill. Filing-case	329,676	Nov. 3	336	86	33	568
Reade, Henry W., Chicago, Ill. Filing-case	331,912	Dec. 8	989	256	33	1183
Rease, Frank P., Pittston, Pa. Extensible safety-cartridge	328,580	Oct. 20	1317	342	33	256
Reckenwalt, John, Buffalo, N. Y. Bottle-stopper						
Rector, James A. (See Dunbar and Rector.)						
Reddell, William, Denver, Colo. Bed-lounge	333,494	Dec. 29	3120	814, 815	33	1561
Reddican, Frank J. (See Floyd, John J., assignor.)						
Redding, William F., Tangerine, Fla. Crate for fruit, &c	330,620	Nov. 17	1591	426	33	825
Reed, Beverly S., Boston, Mass. Bustle	328,717	Oct. 20	1602	417	33	306
Reed, Beverly S., Boston, Mass. Bustle	331,821	Dec. 8	856	219	33	1158
Reed, Beverly S., Boston, Mass. Bustle	333,335	Dec. 29	3005	787	33	1562
Reed, David A., Shelby, Mich. Whiffletree-coupling	332,833	Dec. 22	2291	604	33	1428
Reed, Frederick E., and J. R. Back, Worcester, Mass. Metal-turning lathe						
Reed, Horatio G. H., and J. Donohue, Milwaukee, Wis. Railway track-flanger and snow-plow	328,718	Oct. 20	1603	418	33	306
Reed, Hugh T., Richmond, Ind. Shelving	327,592	Oct. 6	120	28	33	23
Reed, John C., Topeka, Kans. Car-coupling	333,253	Dec. 29	2897	758	33	1542
Reed, Lafayette H., Troy, N. Y. Holdback	328,065	Oct. 13	729	190	33	138
Reed, Lemon M., Cleveland, Ohio. Barrel-making machine	328,808	Oct. 20	1704	443, 444	33	326
Reed, Richard, *et al.* (See Zink, Harry S., assignor.)						
Reed, W. C., *et al.* (See Valentine, William P., assignor.)						
Reed, William H., Chicago, Ill. Lamp-chimney cleaner	330,619	Nov. 17	1590	425	33	824
Reeder, William S., assignor to Kingsland & Ferguson Manufacturing Company, St. Louis, Mo. Clover-hulling attachment for thrashing-machines	330,736	Nov. 17	1747	470	33	855
Reeve, Samuel, Little Marylebone Street, county of Middlesex, England. Fire-place and heating-stove	330,516	Nov. 17	1468	393	33	800
Reeves, Alfred B., M. T., and J. N. D., assignors to Reeves & Co. and J. I. Irwin, Columbus, Ind. Straw-stacker	328,252	Oct. 13	963	250, 251	33	183
Reeves & Co., *et al.* (See Reeves, Alfred B., M. T., and J. N. D., assignors.)						
Reeves, James N. D. (See Reeves, Alfred B., M. T., and J. N. D.)						
Reeves, Marshal T. (See Reeves, Alfred B., M. T., and J. N. D.)						
Regan, Daniel S., assignor to himself and J. H. Eichler, San Francisco, Cal. Gas-engine	333,336	Dec. 29	3006	787	33	1562
Rehfuss, George. (See Sweeney and Rehfuss.)						
Rehmenklau, Rudolph W. O., Minneapolis Minn. Feeding coal to furnaces	333,337	Dec. 29	3008	787	33	1563
Reichardt, Ferdinand A., Elizabeth, N. J. Syringe for hypodermic injections	330,621	Nov. 17	1592	426	33	825
Reichmann, Joseph, Chicago, Ill. Injector	332,002	Dec. 8	1116	291	33	1207
Reid, Archibald W., Ballston Spa, N. Y. Hide-fleshing machine	331,085	Nov. 24	2194	564	33	946
Reid, John. (See Carney, Francis J., assignor.)						
Reilly, Hugh and M. J., Brooklyn, N. Y. Toy	331,004	Nov. 24	2094	567	33	927
Reilly, James E., *et al.* (See Wood, Richard G., assignor.)						
Reilly, Mary J. (See Reilly, Hugh and M. J.)						
Reilly, Patrick, *et al.* (See Wood, Richard G., assignor.)						
Reilly, Patrick, Brooklyn, N. Y. Tubular steam-generator	329,677	Nov. 3	338	86	33	568
Reilly, Patrick, Brooklyn, N. Y. Tubular steam-generator	329,678	Nov. 3	340	86, 87	33	569
Reinecke, John P., Pittsburg, Pa. Gas-governor	328,338	Oct. 13	1075	279	33	201
Reinecke, John P., Pittsburg, Pa. Gas regulator and cut-off	331,544	Dec. 1	407	109	33	1071
Reinhold, Frank J., Detroit, Mich. Knife-sharpener	331,545	Dec. 1	409	109	33	1072
Reinmann, Albert L., Pittsburg, Pa. Valve-case for mercurial air-pumps	331,546	Dec. 1	410	110	33	1072
Reis, Alphonse, Antwerp, Belgium. Steam-engine	331,442	Dec. 1	268	72, 73	33	1046
Reitenour, George W., *et al.* (See Langley, William W., assignor.)						
Reitenour, Henry, *et al.* (See Langley, William W., assignor.)						
Reizenstein, Emile. (See Goldsmith and Reizenstein.)						
Rembert, Edward E., *et al.* (See Galloway, James A., assignor.)						
Rembert, Edward J., *et al.* (See Galloway, James A., assignor.)						
Remus, Carl T., assignor to J. Scherbel, Dresden, Saxony, Germany. Die for making paper boxes	329,080	Oct. 27	2118	548	33	406
Remus, Carl T., assignor of one-half to J. Scherbel, Dresden, Saxony, Germany. Corner-fastener for boxes	329,081	Oct. 27	2119	549	33	406
Rensselaer Manufacturing Company. (See Hall, Henry, assignor.)						
Rensselaer Manufacturing Company. (See Hildreth, George, assignor.)						
Renton, John B. (See Rhodes, Charles M., assignor.)						
Repanno Chemical Company *et al.* (See Penniman, Russell S., assignor.)						
Repanno Chemical Company *et al.* (See Penniman and Schrader, assignors.)						
Reuhl, Peter, Cincinnati, Ohio. Ornamental roller-die for moldings	328,339	Oct. 13	1076	220	33	204
Rew, Richard A., Pomeroy, Wash. Ter. Hot-air stove	328,809	Oct. 20	1706	444	33	327
Rex, A. (See Davey, Petherick, assignor.)						
Reyner, Francis, Lathrop, Cal. Seed-sower	331,547	Dec. 1	411	110	33	1072
Reynolds, Charles J., Boston, Mass., assignor to Reynolds Manufacturing Company, Portland, Me. Street-car	333,158	Dec. 29	2761	723	33	1517
Reynolds, George H., New York, N. Y., assignor of one-half to Crane Brothers Manufacturing Company, Chicago, Ill. Hydraulic piston	328,613	Oct. 20	1454	378, 379	33	279
Reynolds, George H., New York, N. Y., assignor of one-half to Crane Brothers Manufacturing Company, Chicago, Ill. Hydraulic elevator	328,614	Oct. 20	1456	379, 380	33	280
Reynolds, Henry S., Brooklyn, N. Y. Machine for wiring vessels	328,615	Oct. 20	1461	380	33	281
Reynolds, Joseph E. and W. S., Port Deposit, Md. Can-testing machine	330,924	Nov. 24	1991	538	33	907
Reynolds Manufacturing Company. (See Reynolds, Charles J., assignor.)						
Reynolds, Myers, Jr., Milton, Del. Fruit-drier	331,548	Dec. 1	412	110	33	1073
Reynolds, Samuel D. (See Barber and Reynolds.)						
Reynolds, Smith K., San José, Cal. Animal-trap	329,082	Oct. 27	2120	549	33	406
Reynolds, Winfield S. (See Reynolds, Joseph E. and W. S.)						
Rhind, Frank, Brooklyn, assignor of one-half to C. S. Upton, Rochester, N. Y. Central-draft lamp	333,338	Dec. 29	3009	788	33	1563

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Rhoades, Hal V. (See Rhoades, William H. and H. V.)						
Rhoades, James W., Fostoria, Ohio. Washing-machine	327,824	Oct. 6	417	108	33	73
Rhoades, William H. and H. V., Columbus, Ohio. Roller-skate	333,254	Dec. 29	2898	758	33	1542
Rhoads, Lucien B. (See Simonds, Gustavus B., assignor.)						
Rhodes, Charles M., Walden, N. Y. Clock-escapement	328,142	Oct. 13	822	215	33	156
Rhodes, Charles M., assignor to J. B. Renton, Lynn, Mass. Furniture-pad	329,213	Oct. 27	2304	596	33	440
Rhodes, Daniel H., Topeka, Kans. Combined railway track gage and level	331,329	Dec. 1	102	24	33	1017
Rhodes, Solomon C., Bradford, Pa. Mechanism for converting motion	330,622	Nov. 17	1593	426	33	825
Rice, Arthur, New Albany, Ind., assignor to Peerless Manufacturing Company, Louisville, Ky. Sand-molding machine	332,834	Dec. 22	2292	604	33	1428
Rice, David H., Lowell, Mass. Shaft-fastening device for tricycles	331,330	Dec. 1	103	24	33	1017
Rice, David H., Boston, Mass. Brace, shaft, &c., for velocipedes	331,331	Dec. 1	104	24	33	1017
Rice, David H., Lowell, assignor to J. Ferguson, Bridgewater, Mass. Car-wheel	330,423	Nov. 17	1347	359	33	777
Rice, Edwin W., Jr., Lynn, Mass. Dynamo-electric machine	328,253	Oct. 13	964	251	33	183
Rice, G. Warren, Brooklyn, Ill. Cultivator	331,913	Dec. 8	990	256	33	1163
Rice, Israel L. G., Boston, Mass. Barrel stave and hoop	330,153	Nov. 10	988	257	33	701
Rice, Martin F. B., Washington, D. C. Machine for loading and reloading cartridges	331,159	Nov. 24	2303	624	33	965
Rice, Merrit H. (See Rice, W. Billings and M. H.)						
Rice, Robert H., Fremont, Ohio. Skating appliance	332,945	Dec. 22	2453	648 649	33	1458
Rice, W. Billings and M. H., assignors of one-half to W. D. Cameron, New York, N. Y. Swaging-machine	328,143	Oct. 13	824	215	33	156
Rice, W. Billings and M. H., assignors of one-half to W. D. Cameron, New York, N. Y. Machine for crushing ore, stone, &c.	328,144	Oct. 13	826	215 216	33	157
Rich, Abraham L., Allegheny, Pa. Bustle	330,424	Nov. 17	1349	359	33	778
Rich, Augustus E., Fall River, Mass. Syrup-pump for soda-water apparatus	327,593	Oct. 6	121	28	33	23
Rich, Augustus E., Fall River, Mass. Bottle-washing machine	332,437	Dec. 15	1741	455	33	1322
Rich, Charles, Nashville, Tenn. Tabular calculator for measurement of logs	331,332	Dec. 1	105	24	33	1017
Rich, Henry M. (See Taft and Rich.)						
Rich, Pembroke S. (See Nutting, Rich, and Garfield.)						
Richard, William, assignor to J. D. Wilsey, Bloomville, Ohio. Pruning-shears	330,737	Nov. 17	1748	470	33	855
Richard, William, and O. M. Holcomb; said Richard assignor to J. D. Wilsey, Bloomville, Ohio. Shears	330,738	Nov. 17	1749	470	33	855
Richards, Francis H., Springfield, Mass. Device for converting motion	331,161	Dec. 29	2764	724	33	1518
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener rod	329,953	Nov. 10	721	183	33	646
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-setting machine	330,925	Nov. 24	1993	538 539	33	908
Richards, Francis H., Springfield, Mass., assignor of one-half to Pratt & Whitney Company, Hartford, Conn. Blank-feeding mechanism	331,443	Dec. 1	276	73, 74	33	1046
Richards, Francis H., Springfield, Mass., assignor of one-half to Pratt & Whitney Company, Hartford, Conn. Blank-picker for envelope-machines	331,444	Dec. 1	272	74	33	1047
Richards, Francis H., Springfield, Mass., assignor of one-half to Pratt & Whitney Company, Hartford, Conn. Blank-picker for envelope-machines	331,445	Dec. 1	273	74	33	1047
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Making button-fasteners	331,822	Dec. 8	857	220	33	1158
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Apparatus for packing button-fasteners	331,823	Dec. 8	858	220	33	1158
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Packing-box for button-fasteners	333,159	Dec. 29	2762	723	33	1517
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Instrument for handling button-fasteners	333,160	Dec. 29	2763	724	33	1517
Richards, Frank H., Troy, N. Y. Domino	331,652	Dec. 1	615	152	33	1105
Richards, Frederick W., *et al.* (See Lyons, James B., assignor.)						
Richards, George, Manchester, county of Lancaster, England. Grinding-machine	332,003	Dec. 8	1118	291 292	33	1207
Richards, John, San Francisco, Cal. Single-acting engine	328,521	Oct. 20	1318	343	33	256
Richards, John, San Francisco, Cal. Single-acting engine	328,522	Oct. 20	1319	343	33	256
Richards, John J., assignor of one-half to L. W. Marbee, Milwaukee, Wis. Water-purifier for boilers	328,254	Oct. 13	966	251	33	183
Richards, John T., assignor to Chicago Coffin Company, Chicago, Ill. Coffin	333,255	Dec. 29	2899	758	33	1543
Richards, Julius F. (See Richards, Marcius C. and J. F.)						
Richards, Marcius C., Aurora, and J. F. Richards, Oswego, Ill. Oil-can and pump combined	332,108	Dec. 8	1283	333	33	1236
Richards, Theron A. (See Clark and Richards.)						
Richards, William G., Providence, R. I. Calipers for measuring	328,861	Oct. 20	1772	462	33	339
Richardson, Christopher. (See Dean, John A., assignor.)						
Richardson, James F., Toledo, Ohio. Cough remedy	332,946	Dec. 22	2455	.....	33	1459
Richardson, Jeremiah J., New York, N. Y. Boiler for ranges	332,558	Dec. 15	1915	501	33	1352
Richardson, John B., Pleasant Plains, Ill. Washing-machine	328,255	Oct. 13	967	251	33	184
Richardson, John T., Harrisburg, assignor of one-half to A. H. Ege, Mechanicsburg, Pa. Railway-frog	328,810	Oct. 20	1708	445	33	327
Richardson, John W., Park City, Utah Ter. Self-holding screw-driver	332,438	Dec. 15	1742	455	33	1322
Richardson, Julius C., Ilion, N. Y. Radial forging-machine	330,262	Nov. 10	1118	297 298	33	727
Richardson, William, assignor to Milwaukee Dust Collector Manufacturing Company, Milwaukee, Wis. Dust-collector	327,925	Oct. 6	419	109	33	73
Richardson, William H., Mexia, Tex. Washing-machine	330,154	Nov. 10	989	258	33	701
Richey, James N., assignor to Frick Company, Waynesborough, Pa. Portable saw-mill	331,653	Dec. 1	617	152	33	1106
Richmond, Enos, Port Royal, Pa. Domestic and agricultural boiler	331,446	Dec. 1	274	74, 75	33	1047
Richmond Manufacturing Company. (See McGill, James, assignor.)						
Richmond Roller Skate and Caster Company *et al.* (See Phillips, Elwood C., assignor.)						
Richmond Sulky Plow Company. (See Hunt, Franklin B., assignor.)						
Richmond, William H., Providence, R. I. Finger-ring	331,086	Nov. 24	2195	594	33	946
Richter, John L., assignor to W. W. Montague, San Francisco, Cal. Tube-forming machine	327,721	Oct. 6	293	74	33	51
Riddle, George. (See Shaw, Noah T., assignor.)						
Rider, Leman P., Pittsburg, Pa. Boat-hull	332,212	Dec. 8	1428	368	33	1261
Ridgway, Joseph, Minneapolis, Minn. Street-railway switch	330,425	Nov. 17	1350	360	33	778
Riethmüller, Theodore H., Pittsburg, Pa. Composition for curing meat	329,774	Nov. 3	470	.....	33	594
Rigby, Clark F., Bradford, Pa. Pounder washing-machine	328,811	Oct. 20	1709	445	33	327
Riggin, Cornelius S., and A. E. Gummerson, Newark, N. J. Railway-gate	331,333	Dec. 1	107	25	33	1017
Riggs, L. C., *et al.* (See Cadwell, William H., assignor.)						
Riker, Carroll L., Brooklyn, assignor to L. C. Riker, Esopus, N. Y. Grate	330,739	Nov. 17	1750	471	33	855

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Riker, Lizzie C. (See Riker, Carroll L., assignor.)						
Riley, George M. D., Savannah, Ga. Locomotive head-light	331,654	Dec. 1	619	153	33	1106
Riley, James. (See Dick and Riley.)						
Riley, James, Glasgow, Scotland, assignor to J. Gjers, Middlesbrough-on-Tees, England. Soaking-pit for steel ingots	333,027	Dec. 22	2576	677	33	1480
Riley, John M., Newark, N. J. Hook	331,160	Nov. 24	2306	624	33	965
Ringen, John, St. Louis, Mo. Handle for buckets, &c.	331,447	Dec. 1	275	75	33	1047
Ripley, Daniel C., A. H. Heisey, and G. B. Swift, Pittsburg, Pa. Manufacture of ornamental glassware	331,824	Dec. 8	859	220	33	1159
Ripley, George H., Brooklyn, N. Y., assignor to Scovill Manufacturing Company, Waterbury, Conn. Photographic camera	331,448	Dec. 1	276	75	33	1048
Ritchie, David A., Boston, Mass. Tube-cutter	328,973	Oct. 27	1953	509	33	378
Ritchie, David A., Boston, Mass. Machine for making metal tubing	328,974	Oct. 27	1955	509	33	378
Ritchie, Peter C., New York, N. Y. Treating buckram and other fibrous substances with starch	332,439	Dec. 15	1743	.....	33	1322
Ritter, Eugen, and C. Kellner, Podgora, near Goerz, Austria-Hungary. Apparatus for making solutions of bisulphites	328,066	Oct. 13	731	191	33	138
Ritter, Eugen, and C. Kellner, Podgora, Austria-Hungary. Apparatus for the manufacture of cellulose or paper-pulp from woody fiber	329,214	Oct. 27	2305	597	33	440
Ritter, Eugen, and C. Kellner, Podgora, near Goerz, Austria-Hungary, assignors to W. A. Russell, trustee, Lawrence, Mass. Manufacturing cellulose or paper-pulp from wood fiber	329,215	Oct. 27	2306	597	33	441
Ritter, Eugen, and C. Kellner, Podgora, near Goerz, Austria-Hungary, assignors to W. A. Russell, trustee, Lawrence, Mass. Apparatus for the manufacture of cellulose or paper-pulp from wood fiber	328,812	Oct. 20	1710	445	33	328
Ritter, Eugen, and C. Kellner, Podgora, near Goerz, Austria-Hungary, assignors to W. A. Russell, trustee, Lawrence, Mass. Making solutions of bisulphites	329,216	Oct. 27	2308	597	33	441
Ritter, Eugen, and C. Kellner, Goerz, Austria-Hungary, assignors to W. A. Russell, trustee, Boston, Mass. Pulp-digester for paper-making	329,217	Oct. 27	2309	598	33	441
Ritter, Jerome L., Loysville, Pa. Vehicle-wheel	333,162	Dec. 29	2764	724	33	1518
Rittmann, Christian A., Sandusky, Ohio. Step-ladder	329,218	Oct. 27	2310	598	33	442
River and Rail Electric Light Company. (See Brady, Edwin L., assignor.)						
River and Rail Electric Light Company. (See Main, William, assignor.)						
Rivers, Thomas L., Montclair, N. J. Hame-tug	330,517	Nov. 17	1471	393	33	800
Rivers, Thomas L., Montclair, N. J. Trunk-catch	332,004	Dec. 8	1120	202	33	1208
Roane, Edward G. (See Esco and Roane.)						
Robbins & Appleton. (See Schmalz, François, assignor.)						
Robbins, Elisha F., Cotuit, Mass. Pulley-block	328,340	Oct. 13	1077	260	33	205
Robbins, John S., and J. T. Foster, Racine, Wis. Steam-engine	329,954	Nov. 10	721	184	33	646
Roberts, Benjamin P., Boston, Mass. Bridle-bit	328,975	Oct. 27	1957	510	33	379
Roberts, Clarence V., Philadelphia, Pa. Fishing-line reel	328,341	Oct. 13	1078	260	33	205
Roberts, Dwight, New York, N. Y. Rubber water-bag for medical treatment	329,955	Nov. 10	722	184	33	647
Roberts, George W., *et al.* (See Stover, Evan T., assignor.)						
Roberts, Henry W., Duncan City, Mich. Saw-guide	333,339	Dec. 29	3010	788	33	1563
Roberts, James, Brooklyn, N. Y. Variable feed-motion for planing-machines	331,449	Dec. 1	278	75	33	1048
Roberts, John H. (See Banker and Roberts.)						
Roberts, R. H. (See Newth, Walter S., assignor.)						
Robertson, James, Brooklyn, N. Y. Gas-regulator	330,263	Nov. 10	1121	298	33	727
Robertson, James H., Brooklyn, N. Y. Speaking-telephone receiver	329,083	Oct. 27	2121	549	33	406
Robertson, James H., Brooklyn, N. Y. Telephone	329,084	Oct. 27	2122	549	33	407
Robertson, James H., Brooklyn, N. Y. Telephone	329,085	Oct. 27	2123	550	33	407
Robertson, Richard S., and L. B. Fulton, Pittsburg, Pa. Gas-burner	329,776	Nov. 3	471	119	33	594
Robertson, William H., Toronto, Ontario, Canada. Device for stopping leaks in water-pipes	327,699	Oct. 6	507	131	33	91
Robertshaw, Frederick W., Pittsburg, Pa. Hose-nozzle	330,740	Nov. 17	1751	471	33	855
Robinson, Charles E. (See Page, Robinson, and Stevens.)						
Robinson, Charles H., St. Paul, Minn. Feed-water heater	329,488	Nov. 3	84	23	33	521
Robinson, Charles J., assignor of one-half to R. P. Kingman, Battle Creek, Mich. Machine for making dowel-pins	331,733	Dec. 1	736	185	33	1127
Robinson, Don C. B., Madison, Ind. Belt-stretcher	328,802	Oct. 20	1773	462 463	33	339
Robinson, Edgar. (See Dean, Charles W., assignor.)						
Robinson, Frank M. (See Lindley and Robinson.)						
Robinson, Fred. C., New York, N. Y. Shutter-fastener	330,741	Nov. 17	1752	471	33	855
Robinson, Fred. C., New York, N. Y. Combined shutter-fastener and shutter-bower	332,835	Dec. 22	2293	604	33	1428
Robinson, George, Chillicothe, Mo. Horse hay-rake	332,440	Dec. 15	1744	456	33	1322
Robinson, George H. (See Rossi, Auguste J., assignor.)						
Robinson, Henry, *et al.* (See Lord, James L., assignor.)						
Robinson, Henry R., Golden, Colo. Hame-fastener	329,777	Nov. 3	473	119	33	594
Robinson, Henson, Springfield, Ill. Hot-air furnace	333,425	Dec. 29	3121	815	33	1561
Robinson, James A., Nashville, Tenn. Induction-coil	332,559	Dec. 15	1916	501	33	1352
Robinson, James B., and G. W. Holmes, Boston, Mass. Operating-chair	332,836	Dec. 22	2295	605	33	1429
Robinson, James M. B., New York, N. Y. Fire-screen hinge	328,342	Oct. 13	1079	260	33	205
Robinson, John B., Wilford, Tenn. Cotton-chopper	327,594	Oct. 6	123	28	33	23
Robinson, Matthew H., *et al.* (See Enos, John A., assignor.)						
Robinson, William, *et al.* (See Aikman, Peter A., assignor.)						
Robinson, William, assignor of three-fourths to R. C. Humphreys, J. L. Lockhart, and W. H. Chandler, Bellefontaine, Ohio. Meat-tenderer	329,775	Nov. 3	470	119	33	594
Robinson, William D., Kanona, N. Y. Clothes-bar	330,926	Nov. 24	1996	539	33	908
Robison, George M., Leadville, Colo. Carpet-stretcher	328,343	Oct. 13	1079	261	33	205
Rohr, James, Detroit, Mich. Hose-manipulator	329,339	Oct. 27	2488	642	33	474
Roche, Thomas C., Brooklyn, assignor to E. & H. T. Anthony & Co., New York, N. Y. Photographic sensitive paper	328,431	Oct. 13	1211	313	33	229
Rochester Machine Company. (See Towle, Abner S., assignor.) (Reissue.)						
Rock, Daniel B., Fairfield, Pa. Egg-beater	332,837	Dec. 22	2297	605	33	1429
Rockwell, Francis S., *et al.* (See Rockwell, Warren C., assignor.)						
Rockwell, Ludlum B., *et al.* (See Rockwell, Warren C., assignor.)						
Rockwell, Warren C., Mount Carmel, assignor to himself, L. B. and F. S. Rockwell, Sunbury, Pa. Tin-roof cleat	331,655	Dec. 1	620	153	33	1107
Rodenhausen, Leonhard, Philadelphia, Pa. Dumping-wagon	332,109	Dec. 8	1284	334	33	1236
Röder, Carl A., Sollingen, Germany, assignor to H. Boker & Co., New York, N. Y. Button-hole cutter	328,813	Oct. 20	1712	445	33	328
Rodgers, Alexander, Muskegon, Mich. Card-table	327,722	Oct. 6	294	75	33	51
Rodgers, Alexander, Muskegon, Mich. Lumber-trimmer	330,803	Nov. 17	1828	493	33	870

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Rodwell, George J. B., assignor of three-fourths to T. Snell, Toronto, Ontario, and R. H. Smith & Co., St. Catherines, Canada. Hand-stamp	330,804	Nov. 17	1830	493	33	871
Roe, Daniel H. (See Sparks, Lorenzo H., assignor.)						
Roelofs, Anthony, Philadelphia, Pa. Car-door retainer	329,340	Oct. 27	2489	642	33	475
Roeske, Henry, assignor of one-half to M. J. Nascimento, Philadelphia, Pa. Alarm letter-box	331,735	Dec. 1	739	186	33	1129
Roeske, Henry, assignor of one-half to M. J. Nascimento, Philadelphia, Pa. Filter	333,481	Dec. 29	3196	835	33	1594
Rogers, Charles E., assignor to G. M. Guild, Boston, Mass. Tuning-pin for pianos	331,825	Dec. 8	860	221	33	1159
Rogers, Charles R., *et al.* (See Howe, Edward P., assignor.)						
Rogers, F. Willson, *et al.* (See Murphy, Daniel H., assignor.)						
Rogers Fence Company. (See Rogers, Timothy, assignor.)						
Rogers, Henry B., Marshall, Mo. Washing-machine	328,432	Oct. 13	1213	313, 314	33	230
Rogers, James H. (See Bower, William W., assignor.)						
Rogers, John A., assignor of one-half to J. M. Echols, Hartsell's, Ala. Sash-balance	332,363	Dec. 15	1642	430	33	1305
Rogers, Morris. (See Ellsworth and Rogers.)						
Rogers, Timothy, assignor, by mesne assignments, to Rogers Fence Company, Springfield, Ohio. Lawn-mower	328,145	Oct. 13	828	216	33	157
Rogers, William A., Boston, Mass., and G. M. Bond, Hartford, Conn. Comparator	332,110	Dec. 8	1286	334	33	1236
Rogers, William H., Williamson, N. Y. Drier	327,900	Oct. 6	507	132	33	91
Rohrer, Michael W., Jr., and D. H. Boyer, Diller, Nebr., assignors of one-third to W. W. Rohrer, Creston, Ohio. Tag	330,426	Nov. 17	1351	360	33	778
Rohrer, William W. (See Rohrer and Boyer, assignors.)						
Rohsenberger, John, *et al.* (See Powell, Richard J., assignor.)						
Rollins, Daniel M., *et al.* (See Coultas, Joseph A., assignor.)						
Rollins, George L., Bridgewater, Mass. Cotton-gin	328,067	Oct. 13	733	191	33	139
Romanze, Otto, Tonsley Hill, Wandsworth, county of Surrey, assignor to Mason, Thornton & Romanze, No. 9 North Street, Wandsworth, London, England. Electric-arc lamp	330,351	Nov. 10	1240	331	33	750
Romeau, Auguste. (See Arndt, Daniel, assignor.)						
Roncaglia, Augustine, Denver, Colo. Device for transferring loads down mountains	330,805	Nov. 17	1831	494	33	871
Rook, John H., assignor of one-half to B. F. Burk, Jonesborough, Ind. Pump	331,734	Dec. 1	738	185	33	1128
Rooney, Mary A., De Smet, Dak. Ter. Combined trunk and bed	327,595	Oct. 6	123	29	33	23
Roop, Jacob W., Harrisburg, Pa. Machine for making barbed-fence strips	330,852	Nov. 17	1892	512	33	881
Root, Dexter A., Bay City, Mich. Roller-skate	332,111	Dec. 8	1291	335	33	1237
Roots, Francis T., Connersville, Ind. Clothes-pounder	332,838	Dec. 22	2298	606	33	1429
Roper, Beverly, Atlanta, Ga. Velocipede	332,005	Dec. 8	1121	292, 293	33	1208
Roper, Charles F., assignor to G. Draper & Sons, Hopedale, Mass. Machine for making spinning-rings	333,256	Dec. 29	2900	758, 759	33	1543
Roscoe, Allison M., Du Bois, Pa. Door-sill	328,814	Oct. 20	1712	446	33	328
Rose, Alexander, Lawrence, Kans. Fire-escape ladder	331,736	Dec. 1	740	186	33	1129
Rose, Frederick F., Brooklyn, assignor to Rose Locomotive Improvement Company, New York, N. Y. Hydraulic valve-motion for locomotives	330,927	Nov. 24	1997	539, 540	33	908
Rose, George P., Fentonville, Mich. Nut-lock	332,388	Dec. 15	1533	401	33	1226
Rose, Henry, Fayette, Mo. Implement for detaching button-fasteners from shoes	332,560	Dec. 15	1916	501	33	1352
Rose Locomotive Improvement Company. (See Rose, Frederick F., assignor.)						
Rosebaugh, John C., assignor to Fremont Cultivator Company, Fremont, Ohio. Cultivator	332,165	Dec. 8	1368	354	33	1250
Rosebrooks, John M., assignor to W. A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y. Vehicle-wheel	328,068	Oct. 13	734	191	33	139
Rosebrugh, Abner M. and T. R., Toronto, Ontario, Canada. Combined telegraphic and telephonic circuit	329,956	Nov. 10	723	185	33	647
Rosebrugh, Thomas R. (See Rosebrugh, Abner M. and T. R.)						
Rosenberg, Seymour H., New Haven, Conn. Machine for shaping corsets	329,414	Oct. 27	2603	671	33	495
Rosenfield, William, Manistee, Mich. Boot or shoe calk	327,596	Oct. 6	124	29	33	24
Rosenfield, William W., assignor to Home Vapor Bath and Disinfector Company, New York, N. Y. Portable disinfecting apparatus	330,853	Nov. 17	1894	513	33	881
Rosenthal, Henry, New York, N. Y. Manufacture of flat brushes	327,723	Oct. 6	295	75	33	51
Rosewater, Andrew, Omaha, Nebr. Automatic flush-tank	330,352	Nov. 10	1241	331	33	750
Ross, Ebenezer. (See Mason, William M., assignor.)						
Ross, Ebenezer, *et al.* (See Deal, Josiah J., assignor.)						
Ross, George W. (See White, Maurice W., assignor.)						
Ross, John G., Wakefield, Mass. Manufacturing boots or shoes	332,362	Dec. 15	1641	430	33	1305
Ross, John G., Wakefield, assignor to J. W. Brooks, trustee, Cambridge, Mass. Machine for channeling the soles of boots or shoes	330,928	Nov. 24	2001	540	33	909
Ross, John G., Wakefield, assignor to J. W. Brooks, trustee, Boston, Mass. Tool for channeling soles of boots or shoes	331,214	Nov. 24	2387	645	33	979
Ross, Nelson. (See Lord and Ross.)						
Ross, Peter. (See Kemp and Ross.)						
Ross, Robert N., St. Louis, Mo. Brick-machine	329,415	Oct. 27	2604	671, 672, 673	33	495
Rossi, Auguste J., assignor to G. H. Robinson, New York, N. Y. Production of cold	332,751	Dec. 22	2197	.....	33	1410
Rossi, Auguste J., assignor to G. H. Robinson, New York, N. Y. Production of cold	332,752	Dec. 22	2198	.....	33	1410
Rossiter, Richard, Lynn, Mass. Tension attachment for sewing-machines	332,753	Dec. 22	2199	580	33	1410
Rost, Ernst, Dresden, Saxony, Germany. Lubricator	328,433	Oct. 13	1214	314	33	230
Roswall, Laree J. A. (See Hodge and Roswall.)						
Roth, J. George, South Bend, Ind. Vehicle-spring	331,215	Nov. 24	2388	646	33	980
Roth, J. George, South Bend, Ind. Vehicle-spring	333,257	Dec. 29	2903	759	33	1543
Roth, Ludwig. (See Kwarel, Jacob L., assignor.)						
Rothe, Emil, Breitenau, near Oederan, Germany. Centrifugal machine	331,450	Dec. 1	279	76	33	1048
Rothrock, Oscar, New York, N. Y. Feed-water heater	328,902	Oct. 20	1829	476, 477	33	349
Rothrock, Oscar, New York, N. Y. Feed-water heater	328,903	Oct. 20	1832	477	33	349
Rothrock, Oscar, New York, N. Y. Heater and feeder for boilers	332,561	Dec. 15	1917	502	33	1352
Rouart, Stanislas H. (See Lebastour and Rouart.)						
Roundtree, William W. (See Lamoureux, John H., assignor.)						
Roush, Allen S., and A. C. Halterman, New Haven, W. Va. Plant-bed heater	333,085	Dec. 22	2652	695	33	1492
Rousseau, David, New York, N. Y. Electric gas-lighting device	328,976	Oct. 27	1959	510	33	379
Rousseau, David, New York, N. Y. Electric gas-lighting burner	328,977	Oct. 27	1963	510	33	379
Rousselle, Moses, Chicopee, Mass. Dust-collecting attachment for carding-engines	329,060	Oct. 13	735	192	33	139
Rouzé, Gustave. (See Rouzé, Henri, fils, and G.)						
Rouzé, Henri, fils, and G. Rouzé, Paris, France. Button	333,482	Dec. 29	3197	836	33	1594
Rowell, Benton C., Boston, Mass. Railway-switch	333,258	Dec. 29	2904	759, 760	33	1543

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Rowell, John S., Beaver Dam, Wis. Harrow	332,502	Dec. 15	1918	502	33	1352
Rowlett, Jacob V., Richmond, Ind. Roller-skate	327,966	Oct. 6	598	156	33	107
Rowlett, Jacob V., Richmond, Ind. Roller-skate	328,070	Oct. 13	736	192	33	139
Rubin, Eduard, Thun, Switzerland. Mold for making compressed powder-charges for cartridges	331,737	Dec. 1	741	186	33	1129
Rubin, Max, New York, N. Y. Waist-belt	332,624	Dec. 15	2003	525	33	1368
Rubin, Max, Brooklyn, N. Y. Fastener for hand-satchels	332,625	Dec. 15	2004	525	33	1368
Rudolph, Franklin, Chicago, Ill. Ornamenting surfaces	333,259	Dec. 29	2905	.....	33	1544
Rudolph, Henry, and H. Schwenk, Rico, Colo. Combined overshoe and leggin	332,166	Dec. 8	1369	354	33	1250
Ruhl, Fred A., Stockton, Cal. Device for destroying insects on plants	329,957	Nov. 10	725	185	33	647
Ruhlman, Henry S., *et al.* (See Zink, Harry S., assignor.)						
Rumely, Meinrad and W. N., La Porte, Ind. Steam-boiler	329,469	Nov. 3	87	23	33	522
Rumely, William N. (See Rumely, Meinrad and W. N.)						
Rummel, Joseph P. (See Gurney, Worth H., assignor.)						
Rummel, Joseph P. (See Pollock, James R., assignor.)						
Rundlett, George W., Freeport, Ill. Grinding-mill	331,087	Nov. 24	2196	595	33	946
Rundquist, William, Elgin, Ill. Ruffling or gathering attachment for sewing-machines	328,904	Oct. 20	1833	478	33	350
Runnels, H. E., *et al.* (See Bradford, John B., assignor.)						
Runyan, Charles C., Manafield, Ohio. Sliding-door hanger	331,258	Nov. 24	2453	602	33	991
Runyan, Harry T., Chicago, Ill. Lumber-elevator	332,213	Dec. 8	1429	369	33	1261
Rupertus, Jacob, assignor to F. Higel, and J. Mallo, Philadelphia, Pa. Machine for oval-cutting sheet metal	332,214	Dec. 8	1430	369	33	1261
Ruppel, Heinrich. (See Peter and Ruppel.)						
Russel, Philip. (See Gambrill and Russel.)						
Russell, Abiel L., Romulus, N. Y. Pump	328,146	Oct. 13	830	216	33	157
Russell, Asa C., *et al.* (See Cushman, George F., assignor.)						
Russell, Henry T., Chicago, Ill. Making scissors	329,855	Nov. 3	583	149	33	614
Russell Horseshoe Company. (See Claude, Louis G., assignor.)						
Russell, S. Howland, New York, N. Y. Sash-balance	329,856	Nov. 3	584	150	33	614
Russell, William A., trustee. (See Ritter and Kellner, assignors.)						
Rust, George P., assignor of one-half to D. S. Presson, Gloucester, Mass. Fish-packing apparatus	330,929	Nov. 24	2002	540, 541	33	909
Rusterholz, Rudolf, New York, assignor of one-half to R. Mäge, Katona, N. Y. Insecticide	329,594	Nov. 3	233	.....	33	549
Ryan, Matthew, Washington, D. C. Heating-drum	329,857	Nov. 3	586	150	33	614
Ryan, Patrick. (See Carroll and Ryan.)						
Ryan, Thomas, Cohoes, N. Y. Machine for finishing ax-poles	332,215	Dec. 8	1432	369, 370	33	1262
Sabbert, Henry P., Oakley, assignor to Kroeger, Sabbert & Co., Cincinnati, Ohio. Table-top	329,066	Oct. 27	2124	550	33	407
Sabin, Alvah H., assignor to himself, G. H. Morse, W. A. Crombie, O. Shepard, E. W. and T. S. Peck, Burlington, Vt. Condensed milk	329,778	Nov. 3	474	.....	33	595
Sabin, Alvah H., assignor to American Milk Sugar Company, Burlington, Vt. Making lactose or milk-sugar	329,858	Nov. 3	586	.....	33	614
Sachs, William, Berlin, Germany. Gusset for the armholes of garments	329,595	Nov. 3	234	60	33	550
Sack, George F., New York, N. Y. Hair-clipping machine	333,310	Dec. 29	3011	788	33	1563
Sackett, George H., Brooklyn, N. Y. Gripping-clamp for lines or reins	331,068	Nov. 24	2197	595	33	946
Safety Steam Generator Company. (See Zell, Robert R., assignor.)						
Sagmeister, John, Omaha, Nebr. Car-axle box	332,112	Dec. 8	1292	335	33	1237
Sahr, Fredrick, Martinsville, N. Y. Window-fastener	331,005	Nov. 24	2095	567	33	927
Saint Requier, Henry F., assignor to La Société Anonyme pour les Procédés Brevetés de Farinerie Saint Requier, Paris, France. Roller-mill	330,264	Nov. 10	1123	299	33	727
Saint Requier, Henry F., Asnières, assignor to La Société Anonyme pour les Procédés Brevetés de Farinerie Saint Requier, Paris, France. Machine for the reduction of grain	332,006	Dec. 8	1123	293	33	1208
Saladee, Cyrus W., Shelton, Conn. Spring-vehicle	331,334	Dec. 1	108	25, 26	33	1018
Salter, William T. (See Marston, Thomas P., assignor.)						
Saltman, George, Bloomington, Ill. Spark-arrester	331,089	Nov. 24	2199	595	33	947
Salzgeber, John C., St. Louis, Mo. Apparatus for treating hot roasted coffee	329,490	Nov. 3	89	24	33	522
Sammis, Edward M., New York, N. Y. Thill and pole coupling	329,779	Nov. 3	475	119	33	595
Samuel, Edward, assignor to W. Wharton, Jr., & Co., (limited,) Philadelphia, Pa. Traveling crane	329,219	Oct. 27	2311	598	33	442
Samuels, Samuel D., assignor, by mesne assignments, to himself and S. Hano, Boston, Mass. Waste-cock for sinks, &c	327,597	Oct. 6	125	29	33	24
Sanders, M. E. (See Klidzio, Anthony J., assignor.)						
Sanders, Theodore, assignor of two-thirds to J. B. Nichols and E. A. Hine, Danbury, Conn. Machine for pinning out hats	328,719	Oct. 20	1605	418	33	307
Sands, Fred L., Lyndon, Ill. Seat and desk fastening	332,839	Dec. 22	2298	606	33	1429
Sandusky, David F., McLeansborough, Ill. Animal-poke	329,220	Oct. 27	2312	599	33	442
Sanford, Albert, Oshkosh, Wis. Fifth-wheel	327,598	Oct. 6	126	29, 30	33	24
Sanford, Stephen, Amsterdam, N. Y. Apparatus for dyeing and sizing	327,599	Oct. 6	127	30	33	24
Santley, William R., Wellington, Ohio. Dead-pulley	329,679	Nov. 3	342	87	33	569
Sardy, John L., and C. N. Coles, New York, N. Y. Thermometer	332,947	Dec. 22	2455	649	33	1459
Sargent, Allan C. (See Sargent, Frederick G. and A. C.)						
Sargent & Co. (See Shaw, John H., assignor.)						
Sargent & Co. (See Sparks, William E., assignor.)						
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-washing machine	330,930	Nov. 24	2004	541	33	910
Sargent, James T., Cleveland, Ohio. Wash-board	327,600	Oct. 6	128	30, 31	33	24
Sargent, James T., Cleveland, Ohio. Wash-board	327,601	Oct. 6	130	31	33	25
Sargent, John N. (See Stedman and Sargent.)						
Sargent, John N., Aurora, Ind. Railway-frog	328,815	Oct. 20	1713	446	33	328
Sargent, John W., Scranton, Pa. Piston-valve	332,113	Dec. 8	1293	335	33	1237
Sater, Hans H., Dubuque, Iowa. Cultivator	333,163	Dec. 29	2766	725	33	1518
Sathe, Ole A., Jackson, Minn. Sled-knee	327,826	Oct. 6	420	109	33	74
Sattley, Archibald, *et al.* (See Price, Joshua C., assignor.)						
Sattley, Marshall, *et al.* (See Price, Joshua C., assignor.)						
Sauder, John M., Harrisburg, Pa. School-desk	331,549	Dec. 1	413	111	33	1073
Sauder, John M., Harrisburg, Pa. School-seat	331,550	Dec. 1	415	111	33	1073
Sauder, John M., Harrisburg, Pa. Opera-chair	331,551	Dec. 1	416	112	33	1073
Sauer, Martin F., Somonauk, Ill. Horse-collar	330,623	Nov. 17	1593	426, 427	33	825
Sauermilch, Emil, New York, N. Y. Weighing and price scale	331,090	Nov. 24	2200	595, 596	33	947
Saul, Henry R., Middletown, Pa. Thill-coupling	330,051	Nov. 10	849	219	33	672
Saunders, David R., and J. E. Welling, Leesburg, Ky. Animal-poke	332,114	Dec. 8	1294	336	33	1237

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Savage, Andrew. (See Savage, John Y. and A.)						
Savage, John E. (See Jackson, Andrew, assignor.)						
Savage, John Y. and A., Scotland Neck, N. C. Combined fertilizer-distributer and stalk-breaker	333,164	Dec. 29	2768	725, 726	33	1519
Savage, Richard, San Francisco, Cal. Apparatus for forming cores or molds for castings	329,958	Nov. 10	726	185	33	647
Savage, Richard, San Francisco, Cal. Core-making machine	329,959	Nov. 10	726	186	33	648
Savage, Robert, South Melbourne, Victoria, assignor of one-half to F. Y. Wolseley, Euroka Walgett, New South Wales. Dumping-car	332,007	Dec. 8	1124	294	33	1208
Savary, Eugene A., New York, N. Y. Making crystalline glass	332,441	Dec. 15	1745	.....	33	1362
Savoy, Leo L. (See Melançon and Savoy.)						
Saw, Thomas. (See Phillis, Clarence, assignor.)						
Sawin, James J., Worcester, Mass. Treating leather-stock with naphtha to extract oils therefrom	332,840	Dec. 22	2299	606	33	1436
Sawyer, George H., La Moille, Ill. Corn knife and shield	328,344	Oct. 13	1080	281	33	205
Sawyer Leather Machinery Company. (See Sawyer, William A., assignor.)						
Sawyer Spindle Company. (See Carroll, William T., assignor.)						
Sawyer, William A., Danversport, assignor to Sawyer Leather Machinery Company, Boston, Mass. Machine for measuring the areas of surfaces	329,596	Nov. 3	235	60 61	33	550
Sawyer, William A., Danversport, assignor to Sawyer Leather Machinery Company, Boston, Mass. Machine for measuring the areas of surfaces	329,597	Nov. 3	238	62	33	551
Saxton, Henry N., Jr. (See Gunn, John C., assignor.)						
Sayler, Frederick C., *et al.* (See Midgley, John, assignor.)						
Sayler, William F., *et al.* (See Midgley, John, assignor.)						
Scaife, W. Lucien, Allegheny, Pa. Tube-joint for gas-conduits	330,624	Nov. 17	1594	427	33	825
Scales, Edward A., Lowell, Mass., assignor, by mesne assignments, to Electric Fare Register Company, Portland, Me. Electric register and recorder for fares, &c	331,826	Dec. 8	861	221	33	1158
Scanlan, Patrick, Ida Grove, Iowa. Money-envelope	332,008	Dec. 8	1126	294	33	1208
Sceets, George N., Evansville, assignor of one-half to M. Crisle, Oakland City, Ind. Steam-boiler	333,165	Dec. 29	2770	726	33	1519
Scourman, Thomas L. (See Doyle and Scourman.)						
Schadt, John J. (See Keck and Schadt.)						
Schaer, Arnold, Phenix, R. I. Stop-motion for railway-heads, &c	332,289	Dec. 15	1534	402	33	1296
Schafer, John, Marine, Ill. Wire-fence post	327,827	Oct. 6	421	109	33	74
Scharnweber, William, Jefferson, Ill. Ventilator	329,680	Nov. 3	343	87, 88	33	576
Scharpf, Frederic, assignor to C. F. Young, Rochester, N. Y. Instrument for the focal measurement of optical lenses	327,602	Oct. 6	131	31	33	25
Schartau, Eilert O., assignor of one-half to C. P. Hoskins, Philadelphia, Pa. Regenerative gas-burner	329,087	Oct. 27	2125	550	33	407
Schastey, Otto L., New York, N. Y. Sewing-machine	328,816	Oct. 20	1714	446	33	328
Schauer, Florian, Chicago, Ill. Grain-stack protector	328,071	Oct. 13	737	192	33	146
Schauman, Fridolf, Copenhagen, Denmark. Elastic rail-support	328,616	Oct. 20	1463	381	33	281
Scheidler, John, Coldwater, Mich. Self-supporting roof	332,115	Dec. 8	1295	336	33	1237
Scheidler, Reinhard, Newark, Ohio. Engine bed-plate	333,342	Dec. 29	3014	789	33	1564
Scherbel, Jean. (See Remus, Carl T., assignor.)						
Schermerhorn, George W., Philadelphia, Pa. Ballast for ships	327,724	Oct. 6	296	75	33	52
Schermerhorn, George W., Philadelphia, Pa. Ballast for boats	329,088	Oct. 27	2126	550	33	407
Schetzel, Marx P. (See Landgrane, Schetzel, and Willis.)						
Scheurman, August P., Kansas City, Mo. Exercising device for musicians	332,290	Dec. 15	1535	402	33	1296
Schild, George F., Vallejo, Cal. Attachment for maps or charts	332,167	Dec. 8	1369	354	33	1250
Schilling, William, and J. Ehrenfeuchter, New Orleans, La. Hammock	332,948	Dec. 22	2456	650	33	1450
Schilts, John M., Philadelphia, Pa. Nail-making machine	327,928	Oct. 6	422	109, 110	33	74
Schlesinger, William M., Philadelphia, Pa. Regulator for dynamo-electric machines	329,681	Nov. 3	344	88	33	576
Schlesinger, William M., Philadelphia, Pa. Regulator for dynamo-electric machines	331,552	Dec. 1	418	112	33	1074
Schlesinger, William M., Philadelphia, Pa. Electrical transmission of power	332,009	Dec. 8	1127	294	33	1209
Schlickeysen, Carl, and E. Breslauer, Berlin, Germany, assignors to said Schlickeysen. Sand-molding machine	331,533	Dec. 1	420	112	33	1074
Schmals, François, assignor, by mesne assignments, to Robbins & Appleton, New York, N. Y. Transferring letters and designs to dials	332,678	Dec. 15	2088	.....	33	1383
Schmidt, Eugene, and J. R. Kunzelman, Stillwater, Minn. Carpet stretcher and tacker	332,949	Dec. 22	2457	650	33	1450
Schmidt, Friedrich E., Brooklyn, N. Y. Cutting attachment for button-hole sewing-machines	332,950	Dec. 22	2458	650, 651	33	1450
Schmidt, John J. G. C., New York, assignor of one-half to R. W. Beyrich, Brooklyn, N. Y. Chart for laying out patterns	327,725	Oct. 6	297	75, 76	33	52
Schmidtborn, Theodore, Jersey City, N. J., assignor to himself and H. H. Harnish, New York, N. Y. Making ammonium chloride	330,155	Nov. 10	990	.....	33	701
Schmitt, Adam, New Orleans, La. Oil compound for leather	329,960	Nov. 10	728	.....	33	648
Schmitt, George, New York, N. Y. Extension-table	333,341	Dec. 29	3013	789	33	1564
Schmitt, Louis, Providence, R. I. Truss	329,682	Nov. 3	346	88	33	576
Schmitz, Albert, Essen-on-the-Ruhe, assignor to W. Raydt, Hanover, Prussia, Germany. Manufacture of ice and apparatus therefor	328,523	Oct. 20	1322	343	33	257
Schmitz, Ernst, assignor to G. B. Schoonmaker and R. H. Dalzell, Chicago, Ill. Closure for bottles, cans, &c	330,428	Nov. 17	1354	361	33	779
Schnell, Adam, assignor of two-thirds to W. A. Barclift and J. L. Echols, Hartsell's, Ala. Bed-rail fastener	332,442	Dec. 15	1746	456	33	1323
Schoellkopf Aniline and Chemical Company. (See Vollbrecht and Mensching, assignors.)						
Schoening, Herman, Antwerp, Belgium. Apparatus for taking soundings	327,726	Oct. 6	298	76	33	52
Schoonmaker, George B., *et al.* (See Schmitz, Ernst, assignor.)						
Schopf, Eli, *et al.* (See Tolliver, George E., assignor.)						
Schorb, Carrie L, *et al.* (See Schorb, John M., Jr., assignor.)						
Schorb, John M., Jr., assignor to C. L. Schorb, Plainfield, N. J., and J. I. Holly, New York, N. Y. Cap for carriage-axles	327,727	Oct. 6	299	76	33	52
Schrack, Christian H., New York, N. Y. Strainer for sinks	333,343	Dec. 29	3015	789	33	1564
Schrader, John C. (See Penniman and Schrader.)						
Schrader, John C., McCainsville, N. J., assignor of one-half to R. S. Penniman, Jenkintown, Pa. Explosive compound	333,344	Dec. 29	3016	.....	33	1564
Schrader, John C., McCainsville, N. J., assignor of one-half to R. S. Penniman, Jenkintown, Pa. Making explosive compounds	333,345	Dec. 29	3018	.....	33	1564
Schrader, John C., McCainsville, N. J., assignor of one-half to R. S. Penniman, Jenkintown, Pa. Dynamite	333,346	Dec. 29	3019	.....	33	1564
Schrader, John C., McCainsville, N. J., assignor of one-half to R. S. Penniman, Jenkintown, Pa. Dynamite	333,347	Dec. 29	3020	.....	33	1564
Schrader, John C., McCainsville, N. J., assignor of one-half to R. S. Penniman, Jenkintown, Pa. Dynamite and making the same	333,348	Dec. 29	3022	.....	33	1564

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Schramm, Franz A., Philadelphia, Pa. Pipe-wrench	329,221	Oct. 27	2313	599	33	442
Schrock, Amos, Chicago, Ill. Sofa-bed	332,010	Dec. 8	1128	295	33	1209
Schryver, Washington I., Prophetstown, Ill. Wagon-jack	329,089	Oct. 27	2127	551	33	408
Schulte, Anthony, assignor to J. W. Branch, St. Louis, Mo. Earth-auger blade	331,006	Nov. 24	2096	567	33	927
Schulte, John, Minneapolis, Minn. Bustle	333,260	Dec. 29	2906	760	33	1544
Schultz, Louis, New York, N. Y. Mechanical movement	330,156	Nov. 10	991	258	33	701
Schulz, Charles, Cleveland, Ohio. Rolling-mill	327,728	Oct. 6	300	76, 77	33	52
Schulz, Henry A., Brooklyn, N. Y. Combined truss and supporter	332,443	Dec. 15	1746	456	33	1323
Schulz, Robert, Dresden, Saxony, Germany. Petroleum heating apparatus	331,161	Nov. 24	2307	625	33	966
Schulze-Berge, Hermann, Rochester, Pa. Apparatus for containing and transferring molten metal	329,491	Nov. 3	90	24	33	522
Schupp, Fred. J., Marshall, Mo. Belt-tightener	329,492	Nov. 3	92	24	33	523
Schupp, Fred. J., Marshall, Mo. Car-coupling	329,493	Nov. 3	93	25	33	523
Schuster, Wilhelm, Medford, Wis. Stump-puller	328,720	Oct. 20	1607	418	33	307
Schutte, Louis, Philadelphia, Pa. Check-valve	328,979	Oct. 27	1967	511	33	380
Schutte, Louis, Philadelphia, Pa. Steam-jet condenser	330,157	Nov. 10	991	258	33	701
Schutz, Adolph C. (See Borgfeldt and Schutz.)						
Schuyler Electric Light Company. (See Lemp, Hermann, assignor.)						
Schuyler Electric Light Company. (See Mott, Samuel D., assignor.)						
Schuyler Electric Light Company. (See Pfannkuche, Gustav, assignor.)						
Schwaner, Christian C. (See Bollinger and Schwaner.)						
Schwaner, Christian C., Winterset, Iowa. Show-rack for harness	331,627	Dec. 8	864	221, 222	33	1160
Schwartz, Charles, Brooklyn, N. Y. Embossing plastic material	332,444	Dec. 15	1747	456	33	1323
Schwartz, Charles O., Milwaukee, Wis. Oil-stove	329,598	Nov. 3	239	62	33	551
Schwarz, Christoph M., Edwardsville, Ill. Clarifying and evaporating pan	333,166	Dec. 29	2771	726	33	1519
Schwarzwald, Gustav, assignor of two-fifths to H. Newman, New York, N. Y. Machine for making floor-cloths, &c., in various colors	328,524	Oct. 20	1323	344	33	257
Schwarzwald, Gustav, assignor of two-fifths to H. Newman, New York, N. Y. Manufacture of floor-cloth, &c	332,841	Dec. 22	2301	.....	33	1430
Schweickert, Johannes. (See Fuchs and Schweickert.)						
Schweinfurt, Augustus, Philadelphia, Pa. Bolt for door locks	329,494	Nov. 3	95	25	33	523
Schweitzer, George F., Lincoln, Nebr. Tanning	328,978	Oct. 27	1965	.....	33	380
Schwenk, Henry. (See Rudolph and Schwenk.)						
Schwind, Peter, Le Mars, Iowa. Bitters	327,603	Oct. 6	134	.....	33	25
Scofield, Charles H., Utica, N. Y. Adjustable camera and box combined	329,599	Nov. 3	241	63	33	551
Scollay, John P., Lawrence, Mass. Harness-buckle shield	330,429	Nov. 17	1356	361	33	779
Scott, George R., Washington, D. C. Pipe-joint	332,754	Dec. 22	2200	580	33	1411
Scott, Gerard C., Bradford, Pa. Sheet-music holder	331,554	Dec. 1	422	113	33	1074
Scott, Gerard C., Bradford, Pa. Back for sheet-music	331,555	Dec. 1	423	113	33	1074
Scott, Hattie, Detroit, Mich. Slate-pencil sharpener	328,256	Oct. 13	968	252	33	184
Scott, James, *et al.* (See Martin, William F., assignor.)						
Scott, James and P., Brooksville, Ala. Shovel-plow	332,563	Dec. 15	1920	502	33	1353
Scott, James A., assignor to F. H. Benton, New Haven, Conn. Paper box	332,951	Dec. 22	2460	651	33	1460
Scott, John. (See Judd, Henry, assignor.)						
Scott, Lanphear H., Newark, N. J. Ice-creeper	329,496	Nov. 3	98	26	33	524
Scott, Lanphear H., Newark, N. J. Peach-paring machine	331,451	Dec. 1	280	76	33	1048
Scott, Merritt B., Hartford, Conn. Collar-button	328,721	Oct. 20	1609	419	33	308
Scott, Patrick. (See Scott, James and P.)						
Scott, Robert P. (See Starr, Henry N., assignor.)						
Scott, Thomas E., Utica, N. Y. Drawers-support	329,961	Nov. 10	728	186	33	648
Scott, Walter, Hoosick Falls, N. Y. Pawl-and-ratchet mechanism	330,931	Nov. 24	2005	541	33	910
Scott, Walter, Plainfield, N. J. Mechanism for superimposing and folding sheets	331,091	Nov. 24	2301	596	33	947
Scott, William, Malden, Mass. Valve and operating mechanism for valves. (Reissue)	10,653	Oct. 20	1850	483	33	353
Scott, William, Malden, Mass. Valve for water-closets	331,556	Dec. 1	423	113	33	1074
Scott, William, Malden, Mass. Valve for water-closets	331,557	Dec. 1	428	113, 114	33	1075
Scott, William, Malden, Mass. Valve for water-closets	331,558	Dec. 1	433	114	33	1075
Scott, William A., Jr., Pittsburg, Pa. Thill-coupling	332,952	Dec. 22	2461	651	33	1460
Scovil, George W. and L. A., Circleville, Ohio. Reflector	330,742	Nov. 17	1752	471, 472	33	856
Scovil, Lyman A. (See Scovil, George W. and L. A.)						
Scovil, George W., assignor of one-half to C. Wondries, Jr., Chicago, Ill. Pneumatic motor	330,265	Nov. 10	1124	299	33	728
Scovill Manufacturing Company. (See Munger, Joseph, assignor.)						
Scovill Manufacturing Company. (See Ripley, George H., assignor.)						
Scovill Manufacturing Company. (See Spruce, James, assignor.)						
Scovill Manufacturing Company. (See Spruce and Comstock, assignors.)						
Scrafford, Frank M., Seneca, Kans. Device for catching hogs	328,817	Oct. 20	1715	446	33	329
Scribner, Charles E., Chicago, Ill. Signaling-circuit for telephone-exchanges	333,167	Dec. 29	2773	726	33	1519
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Electric-arc lamp	330,052	Nov. 10	850	219	33	672
Scribner, Charles E., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Regulator for dynamo-electric machines	330,053	Nov. 10	852	220	33	673
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Testing apparatus for lightning-arresters	330,054	Nov. 10	853	220	33	673
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Electric-arc lamp	330,055	Nov. 10	854	221	33	673
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Battery-circuit for telephone-exchanges	330,056	Nov. 10	855	221	33	674
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange signal	330,057	Nov. 10	857	221	33	674
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Operator's apparatus for telephone-exchanges	330,058	Nov. 10	858	221, 222	33	674
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Multiple-switch-board testing apparatus	330,059	Nov. 10	859	222	33	675
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Operator's testing apparatus for multiple switch-boards	330,060	Nov. 10	861	222	33	675
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Multiple switch-board	330,061	Nov. 10	862	222, 223	33	675
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Multiple switch-board	330,062	Nov. 10	864	223	33	676
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Operator's apparatus for telephone switch-boards	330,063	Nov. 10	865	223	33	676

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Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Gravity telephone-switch	330,064	Nov. 10	867	223 224	33	677
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange switching apparatus	330,065	Nov. 10	868	224	33	677
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Toll-line apparatus for telephone-exchanges	330,066	Nov. 10	870	224 225	33	677
Scully, Benjamin B., Lynn, Mass. Necktie-supporter	330,743	Nov. 17	1755	472	33	856
Scutt, Hiram B., Joliet, Ill. Barbed wire	332,755	Dec. 22	2201	580	33	1411
Seargeant, William F., Marshall, Mo. Square	332,011	Dec. 8	1130	295	33	1209
Searls, Henry. (See Trippett and Searls.)						
Searls, Thomas. (See Trippett and Searls.)						
Sears, Peter, Barnesville, Ohio. Automatic cut-off	331,452	Dec. 1	282	77	33	1049
Secord, Van Cortland. (See Bacon and Secord.)						
Sedgwick, Frederick, Chicago, Ill. Electrical mechanism for operating safe bolt-work	329,222	Oct. 27	2314	599	33	443
Sedgwick, Frederick, Chicago, Ill. Electric mechanism for operating safe bolt-work	329,223	Oct. 27	2315	599	33	443
Sedgwick Manufacturing Company. (See Stuart, Robert J., assignor.)						
See, William T., Meadville, Pa. Stove-polish	332,756	Dec. 22	2201	.....	33	1411
Seeger, George G., Hillsdale, Iowa. Harrow	331,749	Dec. 1	755	191	33	1133
Seel, Charles, Philadelphia, Pa. Folding baby-carriage	332,757	Dec. 22	2202	580	33	1411
Seeley, Isaac B., Philadelphia, Pa. Sleigh-shoe	333,426	Dec. 29	3122	815	33	1581
Seeley, William W., Albany, N. Y. Baling-press	332,201	Dec. 15	1536	403	33	1287
Seeley, William W., Albany, N. Y. Baling-press	332,202	Dec. 15	1537	403	33	1287
Seely, David M., Elmira, N. Y. Pocket for billiard and pool tables	327,729	Oct. 6	302	77	33	53
Seely, John A., New York, N. Y. Telephonic and telegraphic signal system	332,012	Dec. 8	1131	295 296	33	1210
Seely, John A., New York, N. Y., assignor to Western Electric Company, Chicago, Ill. Multiple switch-board for telephone-exchanges	330,067	Nov. 10	873	225	33	678
Sees, Louis, Port Elgin, Ontario, Canada. Fire-escape	328,345	Oct. 13	1081	281	33	205
Seesaie, Charles, assignor to New York Automatic Scale Company, New York, N. Y. Stop-motion for grain-weighing apparatus	332,116	Dec. 8	1296	336	33	1238
Segrove, David W., Springfield, Ohio. Tuning-fork	329,090	Oct. 27	2128	551	33	408
Seibel, Jacob. (See Grater and Seibel.)						
Seibert Cylinder Oil Cup Company. (See McNary, Isaac R., assignor.)						
Seidel, Peter F., Pine Grove, Pa. Hog scalding and scraping machine	329,683	Nov. 3	347	88	33	570
Seidel, Peter F., Pine Grove, Pa. Hog scalding and scraping machine	330,625	Nov. 17	1507	427	33	826
Seigenthaler, George B., Wooster, Ohio. Boot or shoe sole	330,430	Nov. 17	1356	361	33	770
Seiler, Albert P., Mansfield, Ohio. Bicycle-holder	328,147	Oct. 13	831	217	33	157
Seitz, Julius A., Brooklyn, N. Y. Ash-sifter	328,434	Oct. 13	1215	314	33	290
Selby, Patrick, assignor of one-half to J. H. Winn, Lee, Ohio. Clothes-pounder	332,445	Dec. 15	1748	457	33	1323
Selgrath, Lewis, New York, N. Y. Tap-bush for barrels						
Sellers, William. (See Bancroft, J. Sellers, assignor.)						
Senn, Ferdinand, New York, N. Y. Cocoanut pulp	331,559	Dec. 1	441	.....	33	1076
Senour, Faunt L., New Alexandria, Pa. Combined potato and corn planter	330,158	Nov. 10	993	258 259	33	702
Sergeant, Henry C., New York, N. Y. Steam-actuated valve	330,068	Nov. 10	875	226	33	678
Sergeant, Raphael, assignor to Oliver Brothers & Phillips, Pittsburg, Pa. Wagon-pole clip	331,007	Nov. 24	2096	567	33	928
Severance, Henry C., Phelps, N. Y. Powder-charger	328,346	Oct. 13	1062	282	33	206
Sewell, Sarah, Mark Centre, Ohio. Combined washing-machine and teeter or seesaw	330,626	Nov. 17	1508	427	33	826
Seymour, James M., Newark, N. J. Automatic fan. (Reissue)	10,657	Nov. 3	611	156	33	619
Seymour, James M., Newark, N. J. Fan	330,627	Nov. 17	1509	428	33	826
Seymour, James M., Newark, N. J. Suspended pan	331,092	Nov. 24	2203	596 597	33	948
Seymour, James M., Newark, N. J. Columnar fan	332,446	Dec. 15	1749	457	33	1323
Seymour, James M., Newark, N. J. Fan	333,349	Dec. 29	3023	789	33	1565
Shackelford, Samuel, assignor to himself and I. N. Anderson, Bellaire, Ohio. Car-mover	330,744	Nov. 17	1755	473	33	856
Shaffer, William F., Cedar Rapids, Iowa. Oil-press mat and compressor	331,162	Nov. 24	2207	625	33	966
Shaffer, William T., Evanston, Wyo. Ter. Broom-support	332,014	Dec. 8	1134	296	33	1210
Shalkop, Samuel B., *et al.* (See Brooke, Isaac, assignor.)						
Shallenberger, Frank L., Braddock, assignor to Wilson, Walker & Co., (limited,) Pittsburg, Pa. Car-axle lubricator	328,257	Oct. 13	968	252	33	184
Shals, Nickolaus J., Brown, Iowa. Boot-jack	332,015	Dec. 8	1136	296	33	1210
Shank, Henry, and W. E. Meek, Colorado Springs, Colo. Device for weaning calves	332,293	Dec. 15	1539	403	33	1287
Shannon, Frank, Middleport, Ohio. Household furniture	331,163	Nov. 24	2208	625	33	966
Shannon, James S., Chicago, Ill. Index for paper-files	331,259	Nov. 24	2454	663	33	991
Shants, Dilman B., Berlin, Ontario, Canada. Button	327,604	Oct. 6	134	31	33	25
Sharp, Dennis P., Ithaca, N. Y. Clothes-drier	330,159	Nov. 10	995	259	33	702
Sharp, Dennis P., Ithaca, N. Y. Folding ladder	331,560	Dec. 1	441	114	33	1076
Sharpe, George E., Steubenville, Ohio. Fire-place	329,224	Oct. 27	2316	600	33	443
Shatzer, Peter, New Athens, Ohio. Neck-yoke	332,013	Dec. 8	1134	296	33	1210
Shaver, Joseph, Milwaukee, Wis. Railing device for slates	328,525	Oct. 20	1328	344	33	257
Shaw, Charles A. (See Barter, Thomas D., assignor.)						
Shaw, Charles A. (See Ellis, Clifford C., assignor.)						
Shaw, Edgar, Lynn, Mass. Hand-screw or vise-jaw attachment	331,164	Nov. 24	2209	625	33	966
Shaw, Edgar, Lynn, Mass. Adjustable vise-jaw	333,261	Dec. 29	2907	760	33	1544
Shaw, Francis R., Chatham Centre, Ohio. Mechanical telephone	328,258	Oct. 13	970	252	33	184
Shaw, Henry F., Boston, Mass. Valve-gear	332,842	Dec. 22	2304	606	33	1430
Shaw, James F., assignor to himself and J. M. Quivey, Jackson, Mich. Boot	331,561	Dec. 1	442	115	33	1076
Shaw, John H., assignor to Sargent & Co., New Haven, Conn. Transom-lifter	328,722	Oct. 20	1610	419	33	308
Shaw, John J., *et al.* (See Howe, Edward P., assignor.)						
Shaw, Joshua A., Gillespie, Ill. Self-checking corn-planter	329,091	Oct. 27	2130	551	33	408
Shaw, Noah T., assignor of one-half to G. Riddle, Columbus, Ohio. Laying-out and embalming board	327,967	Oct. 6	599	156	33	108
Shaw, Noah T., W. S. Carlile, and J. W. Dann, Columbus, Ohio. Laying-out and embalming board	330,160	Nov. 10	996	259 260	33	702
Shaw, Oscar F. (See Goodrich, Andrew S., assignor.)						
Shaw, William J., Chicago, Ill. Sofa-bed	327,605	Oct. 6	135	32	33	26
Shearer, Charles J. W., Indianapolis, Ind. Coffee-roaster	331,828	Dec. 8	865	222	33	1160
Sheffer, George M. (See Conver and Sheffer.)						
Sheffield, Lucius T., New York, N. Y. Artificial tooth	330,431	Nov. 17	1357	362	33	780
Sheffield Velocipede Car Company. (See Hagan, John A., assignor.)						
Sheffler, John H., Pittsburg, Pa. Device for mixing natural gas and cold air	330,932	Nov. 24	2005	541	33	910
Shehan, Thomas, Cleveland, assignor of one-third to J. T. Brady, Columbus, Ohio. Device for locking bars	330,266	Nov. 10	1125	299	33	728
Shelburne, Cephas, Richmond, Va. Gas-engine	332,447	Dec. 15	1750	457 458	33	1324

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Shelby, Christopher C., New York, N. Y. Buckle	330,518	Nov. 17	1472	394	33	801
Sheldon, Henry H., Pawtucket, R. I. Damper-cock for atmospheric burners	332,168	Dec. 8	1370	354	33	1250
Sheldon, Thomas, Oxford, county of Oxford, England. Machine for splitting wheat	331,165	Nov. 24	2310	626	33	966
Shellabarger, Flavius W., Miami County, Ohio. Gate	327,606	Oct. 6	136	32	33	26
Shelley, Robert, New York, N. Y., assignor of one-half to O. J. Flynn. Folding chair	327,901	Oct. 6	509	132	33	91
Shelter, Milton C. (See Brolin, Peter, assignor.)						
Shenfield, Abraham, New York, N. Y. Suspenders	330,519	Nov. 17	1473	394	33	801
Shenfield, Abraham, and C. Voorhis, New York, N. Y. Suspender-buckle	332,448	Dec. 15	1752	458	33	1324
Shepard, Charles G., and P. Adame, Jr.; said Adame assignor to W. J. Shepard, Buffalo, N. Y. Toy savings-bank	328,723	Oct. 20	1611	419 420	33	308
Shepard, Charles S. (See Prahar, Louis B., assignor.)						
Shepard, James. (See Croft, Edward, assignor.)						
Shepard, Otis, *et al.* (See Sabin, Alvah H., assignor.)						
Shepard, Walter J. (See Shepard and Adams, assignors.)						
Shepard, William A., Elgin, Ill. Spirometer	331,829	Dec. 8	866	222	33	1160
Shephard, Charles D. (See Hathaway, George M., assignor.)						
Shepherd, Sarah A. Washington, D. C. Sewing-machine treadle	333,262	Dec. 29	2908	760	33	1544
Shepherd, Thomas W., assignor to E. W. Upton, Peabody, Mass. Thermometer	330,161	Nov. 10	998	260	33	702
Sherburne, Charles W. (See Kettell, James F., assignor.)						
Sherman, William G., *et al.* (See Williams and Miller, assignors.)						
Sherman, William W., Milwaukee, Wis. Producing photographs in permanent pigments	332,364	Dec. 15	1643	.....	33	1305
Sherriff, William J., Allegheny City, Pa. Injector	332,953	Dec. 22	2462	651	33	1460
Sherry, Patrick P., *et al.* (See Lord, James L., assignor.)						
Sherwood, George F., assignor to G. T. Smith Middlings Purifier Company, Jackson, Mich. Middlings-purifier	330,745	Nov. 17	1756	473	33	856
Sherwood, John W. (See Sherwood, Josiah W. and J. W.)						
Sherwood, Josiah W. and J. W., Grand Rapids, Mich. Carriage-bow slat	328,526	Oct. 20	1329	344	33	258
Shiek, Daniel W., assignor of two-thirds to C. O. Cole, Lettsville, Iowa, and E. G. Grosjean, Mount Eaton, Ohio. Mechanical automatic selling-machine	329,225	Oct. 27	2318	600	33	444
Shilling, Jesse, Sr., and Jesse, Jr., Troy, Ohio. Weather-strip	329,226	Oct. 27	2320	601	33	444
Shipps, Horatio G., Philadelphia, Pa. Feed-cutter	331,453	Dec. 1	283	77	33	1049
Shirley, Frederick S., New Bedford, Mass. Manufacture of glass and articles therefrom	332,294	Dec. 15	1540	403	33	1287
Shive, David, Philadelphia, Pa. Spring-motor	328,724	Oct. 20	1612	420	33	308
Shively, Elizabeth, and M. E. Clark, Toana, Nev. Vest-pattern	330,102	Nov. 10	999	260	33	703
Shoeninger, Adolph, Lake View, Ill. Boat-propeller	328,527	Oct. 20	1330	345	33	258
Sholes, Marion, Rochester, N. Y. Roller skate	329,072	Oct. 13	738	192	33	140
Shortess, Stephen T., Vinton, Iowa. Device for overcoming dead-centers	331,914	Dec. 8	992	257	33	1184
Shortsleeve, David, assignor to E. A. Morse, Rutland, Vt. Machine for feeding sand and water to stone-sawing machines	331,502	Dec. 1	443	115	33	1076
Shriver, Robert, *et al.* (See Allfree, James B., assignor.)						
Shuck, John M., Des Moines, Iowa. Bee-hive	329,341	Oct. 27	2490	642	33	475
Shuck, John M., Des Moines, Iowa. Bee-hive	333,168	Dec. 29	2774	727	33	1520
Shular, Lewis H., Crawfordsville, Ind. Car-coupling	328,259	Oct. 13	970	253	33	184
Shuler, Isaac C., Amsterdam, N. Y. Coffin	330,432	Nov. 17	1358	362	33	780
Shuman, George W., Pleasant Hill, Ohio. Weather-strip	329,962	Nov. 10	729	186	33	648
Shumway, Edward G. (See Starkweather, Gleason F., assignor.)						
Sieber, Charles, and F. H. Borntraeger, Waterloo, Ill. Burial-casket	329,495	Nov. 3	96	25	33	523
Sieg, John A. (See Stine, John, assignor.)						
Siegert, Amel, Grayville, Ill. Gate	331,106	Nov. 24	2311	626	33	967
Siemens Brothers & Company. (See Raworth, John S., assignor.)						
Sigerson, Ambrose W., Burlington, Iowa. Key-fastener	328,725	Oct. 20	1614	420	33	309
Sikes, Albert D., Buffalo, N. Y. Belt-fastener	332,449	Dec. 15	1753	458	33	1324
Silbernik, Joseph, New York, N. Y. Combined galley-rest, copy-holder, and copy-guide	332,954	Dec. 22	2463	652	33	1460
Silliman, Erva B., Bridgeport, Conn. Making magnets self-keeping	331,830	Dec. 8	868	222 223	33	1160
Sillman, Henry R., Brooklyn, N. Y. Sludge-box	329,227	Oct. 27	2322	601 602	33	444
Silver, Thomas, assignor to O. D. Lovell, New York, N. Y. Mechanical lamp	329,600	Nov. 3	243	63	33	551
Silver, William B., Cleveland, Ohio. Napkin-supporter	329,963	Nov. 10	730	186	33	648
Silver, William H., New York, assignor of one-half to J. H. Ernst, Brooklyn, N. Y. Egg-poacher	329,859	Nov. 3	587	150	33	615
Silver, William H., New York, assignor of one-half to J. H. Ernst, Brooklyn, N. Y. Egg-timer	333,350	Dec. 29	3025	790	33	1 1565
Simonds, George F., and L. Blake, Fitchburg, Mass. Saw-swaging machine	328,528	Oct. 20	1331	345	33	258
Simonds, Gustavus B., assignor of one-half to L. B. Rhoads, Sedalia, Mo. Cylinder-piston packing	331,454	Dec. 1	284	78	33	1049
Simonton, Thomas C., *et al.* (See Hayward, Jacob L., assignor.)						
Simpson, Alexander and E. R., Scranton, and M. Speicher, Archbald, Pa. Lubricator for pistons and cylinders	331,831	Dec. 8	870	223	33	1161
Simpson, Andrew J., Lowell, Mass. Automatic heat-regulator for cooking-vessels, &c	332,295	Dec. 15	1541	404	33	1287
Simpson, Ellis R. (See Simpson and Speicher.)						
Simpson, Henry S., Connersville, Ind. Double bed	327,929	Oct. 6	424	110	33	74
Simpson, James H., assignor to Wilson, Walker & Company, (limited,) Pittsburg, Pa. Apparatus for manufacturing draw-bars	328,435	Oct. 13	1216	315 316	33	230
Simpson, James H., assignor to Wilson, Walker & Company, (limited,) Pittsburg, Pa. Manufacturing draw-bars	328,436	Oct. 13	1220	316	33	231
Simpson, John M., assignor of one-half to S. Tome, Maitaville, N. Y. Thill-coupling	332,843	Dec. 22	2305	607	33	1430
Simpson, Joseph, I. M. Hatcher, and H. E. Wildermuth, assignors to Economy Halter and Bridle Trimming Company, Columbus, Ohio. Buckle	329,960	Nov. 3	588	151	33	615
Simpson, Lenox. (See Pease, William M., assignor.)						
Simpson, Lenox, Bellevue, Pa. Tanning apparatus	332,450	Dec. 15	1753	458 459	33	1324
Simpson, Lenox, Bellevue, Pa. Tanning apparatus	332,451	Dec. 15	1756	459	33	1325
Simpson, Thomas J., Worthington, Minn. System of ventilation	328,818	Oct. 20	1716	447	33	329
Simril, Robert E., Newnan, Ga. Corn-planter and guano-distributer	332,955	Dec. 22	2464	652	33	1460
Sims, John B., Yellville, Ark. Gear for transmitting motion	327,730	Oct. 6	303	77	33	53
Sinclair, Francis A., Mottville, N. Y. Metal splice for uniting the ends of cane strips for chair-seatings	327,731	Oct. 6	304	78	33	53
Sinclair, James E., Waverly, Md. Wool-washing machine	330,163	Nov. 10	1000	260 261 262	33	703
Sinderson, Charles H., Rockford, Ill. Middlings-purifier	327,607	Oct. 6	138	33	33	26

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Singer Manufacturing Company of New Jersey. (See Clark, William R., assignor.)						
Singer Manufacturing Company of New Jersey. (See Diehl, Philip, assignor.)						
Singer Manufacturing Company of New Jersey. (See Griest, John M., assignor.)						
Singer Manufacturing Company of New Jersey. (See Grisel, George, assignor.)						
Singer Manufacturing Company of New Jersey. (See Pentz, Albert D., assignor.)						
Singer Manufacturing Company of New Jersey. (See Spees, David F., assignor.)						
Singer, Markus, assignor to himself and S. Maschke, New York, N. Y. Beer-faucet	328,529	Oct. 20	1333	345	33	258
Sinnott, Philip, New York, N. Y. Potato-digger	329,780	Nov. 3	476	120	33	595
Sipe, William A., Monterey, Va. Adjustable rest for books	331,563	Dec. 1	445	115	33	1077
Skaggs, Newton J., Montgomery, Ala. Sash-balance	328,347	Oct. 13	1084	282	33	206
Skiles, Robert M., assignor of one-half to W. H. John, Van Orin, Ill. Wagon end-gate	327,830	Oct. 6	424	110	33	75
Skinner, Albert L., Yonkers, N. Y. Loom for weaving tufted fabrics	330,069	Nov. 10	877	226, 227, 228	33	679
Skinner, Albert L., Yonkers, N. Y. Needle-loom	330,070	Nov. 10	883	228, 229	33	679
Slater, George L., and W. A. Eaton, Buchanan, Mich. Folding bed	332,956	Dec. 22	2465	652	33	1461
Slattery, Marmaduke M. M., New York, N. Y., assignor to San Electric and Illuminating Company, Manchester, N. H. Armature-core for dynamo-electric machines	330,433	Nov. 17	1359	362	33	780
Slaybaugh, Eli H., Alliance, Ohio. Railway block-signal	329,092	Oct. 27	2131	551	33	408
Slingland, Nicholas. (See Burkett, James, assignor.)						
Sloan, Frank B. (See Clarkson, Frank S., assignor.)						
Sloan, Harvey, Kirksville, Mo. Device for feeding hogs	331,564	Dec. 1	446	115, 116	33	1077
Sloan, Leander E., assignor of one-half to W. G. Collins, Milwaukee, Wis. Air-brake valve	330,164	Nov. 10	1002	262	33	704
Sloper, Byron, New York, N. Y. Manufacturing illuminating-gas	332,957	Dec. 22	2465	653	33	1461
Slosson, Eugene, Verona Ill. Scraper attachment for wheel-plows	332,844	Dec. 22	2306	607	33	1430
Sly, Morgan H., assignor of one-half to P. F. Wood, Adrian, Mo. Curtain-fixture	327,831	Oct. 6	425	110	33	75
Small, Henry J., and J. McNaughton, Brainerd, Minn. Car-wheel lathe	330,628	Nov. 17	1600	428	33	926
Smalley, James, Factoryville, Pa. Wagon-tongue support	332,452	Dec. 15	1757	460	33	1325
Smalstig, Fredrick C., Allegheny, assignor of one-half to D. Nichols, Bradford, Pa. Cigar-box	328,617	Oct. 20	1465	381	33	281
Smead, Elihu, *et al.* (See Perry, Clarence E., assignor.)						
Smedley, Alfred. (See Henry and Smedley.)						
Smiley, James A., assignor to Smiley, Smith & Co., Memphis, Tenn. Cotton-gin rib	332,296	Dec. 15	1543	404	33	1288
Smiley, Smith & Co. (See Smiley, James A., assignor.)						
Smith, A. Beverly. (See Wilber and Smith.)						
Smith, Albert, Middleville, Mich., and P. A. Zelie, Dundee, N. Y. Composition for graining wood	328,073	Oct. 13	740	.....	33	140
Smith, Albert E. (See Boyne and Smith.)						
Smith, Azel B., Lowell, Mass. Boiler-tube scraper	331,093	Nov. 24	2305	597	33	948
Smith, Benjamin C., and C. W. Pride, Boston, Mass. Thill-coupling	328,726	Oct. 20	1615	420	33	309
Smith, Carlos A., Brooklyn, assignor of one-eighth to M. S. Frost & Son, New York, N. Y. Electric signal and call apparatus	328,148	Oct. 13	892	217	33	158
Smith, Castle, Queen Victoria Street, London, England. Electric-light attachment for speculums	332,453	Dec. 15	1758	460	33	1325
Smith, Charles, Belleville, N. J. Dandy-roll for paper-making machines	329,601	Nov. 3	244	63	33	551
Smith, Charles A., Jackson, Mich. Middlings-purifier	330,746	Nov. 17	1758	474, 475	33	857
Smith, Charles A., Pawtucket, R. I. Scale and rule holder	332,958	Dec. 22	2467	653	33	1461
Smith, Charles W., Woburn, Mass. Store-service apparatus	330,629	Nov. 17	1601	428	33	896
Smith & Co., R. H., *et al.* (See Rodwell, George J. B., assignor.)						
Smith & Co., T. I. (See Lettré, Philipp, assignor.)						
Smith, Cornelius W., *et al.* (See Baxter, Hamilton, assignor.)						
Smith, Daniel W. (See Wallis and Smith.)						
Smith, Devier J., McCook, Nebr. Harness-rack	331,565	Dec. 1	447	116	33	1077
Smith, Edward L., *et al.* (See Trego, A. Homer, assignor.)						
Smith, Edward M., and C. H. Heck, assignors of one-third to O. B. De Wolf, Tecumseh, Mich. Feeder for flouring-mills	333,351	Dec. 29	3025	790	33	1565
Smith, Edwin D., New York, N. Y. Neck-wear	331,566	Dec. 1	448	116	33	1077
Smith, Edwin G. (See Johnston and Smith.)						
Smith & Egge Manufacturing Company. (See Egge, Frederick, assignor.)						
Smith, Eliphalet W., Newark, N. J. Pole-changer	332,845	Dec. 22	2307	607, 608	33	1431
Smith, Emil, Brooklyn, N. Y. Cuff-holder	331,335	Dec. 1	109	96	33	1018
Smith, Francis M. (See Mowry, George W., assignor.)						
Smith, Fred H., Blue Earth City, Minn. Paper-folding machine	331,832	Dec. 8	871	223, 224	33	1161
Smith, Frederick H., Winchmore Hill, county of Middlesex, England. Ventilator	327,608	Oct. 6	141	34	33	96
Smith, Frederick H., Kansas City, Mo. Bucket for lift-pumps	330,933	Nov. 24	2006	542	33	910
Smith, George A., Rockland, Mass. Shoe	331,833	Dec. 8	875	225	33	1162
Smith, George H., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Grinding-machine	329,781	Nov. 3	478	120, 121	33	596
Smith, George K., Chicago, Ill. Grinding-mill	330,934	Nov. 24	2007	542	33	910
Smith, Henry G., assignor of one-fourth to C. W. Snyder, Hutchinson, Kans. Seed-planter	330,806	Nov. 17	1833	494	33	871
Smith, Hervey, Erie, Pa. Carrier apparatus	332,959	Dec. 22	2467	653, 654	33	1461
Smith, Hervey, Erie, Pa. Carrier apparatus	332,960	Dec. 22	2470	654, 655	33	1462
Smith, Hervey, Erie, Pa. Carrier apparatus	332,961	Dec. 22	2472	655	33	1462
Smith, Hervey, Erie, Pa. Conveyer apparatus	333,352	Dec. 29	3026	790, 791	33	1565
Smith, Horace S., *et al.* (See Treat, Francis H., assignor.)						
Smith, Isaac, New Haven, Conn. Roller-skate wheel	330,630	Nov. 17	1602	428	33	897
Smith, James G., and H. E. Butler, Jamestown, N. Y. Combined blackboard and desk	328,727	Oct. 20	1616	421	33	309
Smith, James H., Chicago, Ill. Hammock-frame	328,074	Oct. 13	740	193	33	140
Smith, James M., Etna, Cal. Grain-separator	329,602	Nov. 3	245	63, 64	33	552
Smith, James W., Jersey City, N. J. Pistol for shooting marbles	328,348	Oct. 13	1085	282	33	206
Smith, John R. (See Ball and Smith.)						
Smith, John T. (See Smith and Couch.)						
Smith, Joseph P., Glastonbury, Conn. Butter and cheese knife	331,915	Dec. 8	993	257	33	1184
Smith, Leonard O., Philadelphia, Pa. Insulator	328,728	Oct. 20	1617	421	33	309

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Smith Machine Company, H. B. (See Jannus, Frankland, assignor.)						
Smith, Margret, Baltimore, Md. Hat or bonnet supporter	328,729	Oct. 20	1618	421	33	309
Smith Middlings Purifier Company, George T. (See Holt, Noah W., assignor.)						
Smith Middlings Purifier Company, George T. (See Sherwood, George F., assignor.)						
Smith, Oberlin. (See Bodine and Smith.)						
Smith, Orson W., assignor of one-half to F. S. Blanchard, Charlevoix, Mich. Cuspidor	332,016	Dec. 8	1136	297	33	1210
Smith, Otis A. and J. T., and J. O. Couch, Middlefield, Conn., assignors to J. I. Holly, New York, N. Y. Cap for carriage-axles	327,732	Oct. 6	304	78	33	53
Smith, Otto E, Janesville, Wis. Washing-machine	327,832	Oct. 6	426	111	33	75
Smith, Patrick C., Indianapolis, Ind. Sand-molding machine	332,962	Dec. 22	2473	655	33	1462
Smith, Perry F., Boston, Mass. Mechanism for converting flour into dough	332,017	Dec. 8	1138	297	33	1211
Smith, Perry F., Boston, Mass. Converting flour into dough	332,018	Dec. 8	1138	297	33	1211
Smith, Peter E., Scotland Neck, N. C., assignor of one-half to I. F. Brown, New London, Conn. Spark-arrester	328,819	Oct. 20	1719	447	33	329
Smith, Peter T., Milwaukee, Wis. Machine for grooving grinding-cylinders	328,075	Oct. 13	741	193	33	140
Smith, Presley S., assignor of one-half to J. W. Jones, Knoxville, Ga. Fertilizer and seed distributer	328,349	Oct. 13	1085	283	33	206
Smith, Roland H., Pittsburg, Pa. Gas apparatus	330,165	Nov. 10	1004	262	33	704
Smith, Roland H., Pittsburg, Pa. Gas-distribution	330,267	Nov. 10	1126	299	33	758
Smith, Roland H., Pittsburg, Pa. Producing illuminating-gas	330,747	Nov. 17	1762	475	33	857
Smith, Samuel H., New York, N. Y. Envelope	332,454	Dec. 15	1759	460	33	1325
Smith, Seth W., Paris, N. Y. Farm-gate	330,631	Nov. 17	1603	429	33	897
Smith, Shea. (See Barton, George T., assignor.)						
Smith, Stephen C. (See Horne and Smith.)						
Smith, Ward P. (See Vandercook, Smith, and Baker.)						
Smith, William, Brooklyn, assignor to F. Maskiell, Astoria, N. Y. Self-adjusting chain sling	328,350	Oct. 13	1086	283	33	207
Smith, William B., Quincy, Ill. Cover-fastener for egg-cases	331,916	Dec. 8	993	257	33	1184
Smith, William B., San Francisco, Cal. Knob attachment	332,455	Dec. 15	1759	460	33	1325
Smith, William C., Warsaw, Mo. Fire-chamber for cook-stoves	330,935	Nov. 24	2008	542, 543	33	910
Smith, William C., Warsaw, Mo. Heating-stove	331,455	Dec. 1	285	76	33	1049
Smith, William F., San Francisco, Cal. Lift-handle for sashes	331,336	Dec. 1	110	26	33	1018
Smith, William F., Pittsburg, Pa. Gas-distributing pipe	333,358	Dec. 29	3029	791	33	1566
Smith, William H., La Crosse, Wis. Thrashing-machine	332,117	Dec. 8	1298	337	33	1238
Smith, William O., Boston, Mass. Saw-set	327,609	Oct. 6	142	34	33	27
Smythe, George A., *et al.* (See Lane, Frank W., assignor.)						
Snell, Daniel, Little Falls, N. Y. Gate	331,567	Dec. 1	449	116	33	1078
Snell Manufacturing Company. (See Holley, Dwight S., assignor.)						
Snell, Theodore, *et al.* (See Rodwell, George J. B., assignor.)						
Snelson, William H., and G. Judge, Chicago, Ill. Grip apparatus for traction-cables	329,965	Nov. 10	736	187, 188	33	649
Snider, Worthington J., Madison City, (Heno P. O.) assignor to H. P. Deuscher, Hamilton, Ohio. Check-rowing attachment for corn-planters	328,351	Oct. 13	1067	283	33	207
Snively, Wilmer F., Bellaire, Ohio. Covered dish	329,228	Oct. 27	2394	602	33	444
Snow, Robert F., Cincinnati, Ohio. Turner for tin roofs	329,684	Nov. 3	348	89	33	570
Snyder, Charles W. (See Smith, Henry G., assignor.)						
Snyder, Daniel, assignor of one-half to E. Ivins, Philadelphia, Pa. Hair-crimper	331,216	Nov. 24	2389	646	33	980
Soderberg, John G., *et al.* (See Field, Edwin S., assignor.)						
Sobat, Henry F. W., San Francisco, Cal. Pipe-tongs	331,456	Dec. 1	286	78	33	1049
Solano, Renaldo, Brooklyn, N. Y. Cable railway	331,838	Dec. 8	884	228	33	1164
Solano, Renaldo, assignor of two-thirds to J. W. Howard and D. R. Morse, Brooklyn, N. Y. Cable railway	331,834	Dec. 8	875	225, 226	33	1162
Solano, Renaldo, assignor of two-thirds to J. W. Howard and D. R. Morse, Brooklyn, N. Y. Curvilinear condnit for cables and cable railways	331,835	Dec. 8	880	227	33	1163
Solano, Renaldo, assignor of two-thirds to J. W. Howard and D. R. Morse, Brooklyn, N. Y. Carrying-pulley for cable railways	331,836	Dec. 8	881	227, 228	33	1163
Solano, Renaldo, assignor of two-thirds to J. W. Howard and D. R. Morse, Brooklyn, N. Y. Condnit for the cables of cable railways	331,837	Dec. 8	883	228	33	1163
Solie, Peter O., Portland, Dak. Ter. Cut-off valve	327,902	Oct. 6	509	132	33	91
Solt, William, Sr., Freeland, assignor of one-half to W. D. Kline, South Heberton, Pa. Grate-bar. (Reissue)	10,670	Dec. 8	1444	373	33	1264
Somerville, James W., Washington, D. C. Tank for water-closets	332,758	Dec. 22	2902	581	33	1411
Sondheim, Philip L., *et al.* (See Meissner, John, assignor.)						
Sonne, Carl C., Shanghai, China. Telephone switch-board	328,618	Oct. 20	1466	381, 382	33	281
Sooysmith, Charles, Chicago, Ill. Tunneling and sinking shafts	331,656	Dec. 1	621	153	33	1107
Sooysmith, Charles, Chicago, Ill. Building tunnels	331,657	Dec. 1	622	153	33	1107
Sooysmith, Charles, Chicago, Ill. Closing spaces between submerged bodies	331,658	Dec. 1	623	154	33	1107
Sorber, Charles, St. Louis, Mo. Safety-gate for elevators	328,920	Oct. 20	1720	447	33	330
Sörlie, Carl O., Christiania, Norway. Shade and blind	330,936	Nov. 24	2009	543	33	911
South, Edward M., assignor to H. P. Deuscher, Hamilton, Ohio. Corn-planter	332,679	Dec. 15	2089	548	33	1383
Southard, Abraham M., assignor to Southard Portable Gas Company, Denver, Colo. Vapor-burning lamp	333,354	Dec. 29	3030	791	33	1566
Southard Portable Gas Company. (See Southard Abraham M., assignor.)						
Southby, A. Gapper, Jersey, Channel Islands, assignor of one-half to F. D. Blyth, London, England. Mode of and apparatus for making ice, refrigerating, &c	331,457	Dec. 1	287	78	33	1050
Southern Cotton Picking Company. (See Haselton, Daniel B., assignor.)						
Southern White Lead Company. (See Forst, Michael, assignor.)						
Southworth, Charles S., Deep River, Conn. Platen-shifting attachment for type-writing machines	331,659	Dec. 1	624	154	33	1107
Sowder, Granville G., North Salem, Ind. Two-wheeled vehicle	327,733	Oct. 6	305	78	33	53
Sparham, Terence. (See Beacock and Sparham.)						
Sparks, Lorenzo H., Triumph, assignor of one-half to D. H. Roe, Madison, Ohio. Cheese-vat	328,352	Oct. 13	1069	283	33	207
Sparks, William E., assignor to Sargent & Co., New Haven, Conn. Knob-latch	327,833	Oct. 6	428	111	33	75
Sparks, William E., assignor to Sargent & Co., New Haven, Conn. Sliding-door lock	331,094	Nov. 24	2306	597	33	948
Sparks, William E., assignor to Sargent & Co., New Haven, Conn. Mortise-latch	332,456	Dec. 15	1760	461	33	1326
Spaulding, Charles A. (See Cato and Spaulding.)						
Spaulding, Frank, assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Adjustable anvil for micrometer-gages	332,118	Dec. 8	1300	337	33	1238
Spear, Edward M. (See Wilson, Spear, and Peirce.)						
Spear, Robert, New York, N. Y. Fluid-pressure regulator	331,008	Nov. 24	2097	568	33	928
Specialty Manufacturing Company. (See Jackson, William, assignor.)						
Speer, Joe T., Pittsburg, Pa. Machine for swaging bevels	330,520	Nov. 17	1474	394	33	801

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spees, David F., Vincennes, Ind., assignor to Singer Manufacturing Company of New Jersey. Thread holder and cutter for sewing-machines	332,759	Dec. 22	2204	581	33	1411
Speicher, Mathias. (See Simpson and Speicher.)						
Speicher, Samuel S., Urbana, Ind. Broadcast seed-planter	332,963	Dec. 22	2474	655	33	1462
Spellier, Louis H., Philadelphia, Pa. Contact-maker for electric clocks	330,632	Nov. 17	1604	429	33	827
Spelman, Michael, Shreveport, La. Car-coupling	330,166	Nov. 10	1005	263	33	704
Spelman, William C., *et al.* (See Ely, James L., assignor.)						
Spencer, Charles H. and J. B., Niantic, Conn. Shingle-slicing machine	331,839	Dec. 8	885	229	33	1164
Spencer, Edward, St. Louis, Mo. Verifying tally-sheet	333,427	Dec. 29	3123	816	33	1581
Spencer, George H., *et al.* (See Hodges, Horace F., assignor.)						
Spencer, George H., Chicago, Ill. Barrel-truck	328,076	Oct. 13	743	194	33	141
Spencer, John S., New York, N. Y. Nose-pad for eyeglasses	330,521	Nov. 17	1475	395	33	802
Spencer, Joseph B. (See Spencer, Charles H. and J. B.)						
Spencer, Samuel. (See Gillman and Spencer.)						
Spencer, Samuel, Radcliffe Bridge, county of Lancaster, England. Apparatus for dyeing, sizing, and wringing yarn	332,964	Dec. 22	2475	656	33	1462
Spengler, Christian G., assignor, by mesne assignments, to C. R. Spengler, Hoboken, N. J., and O. E. A. Weissner, New York, N. Y. Mechanism for driving sewing-machines	330,522	Nov. 17	1476	395	33	802
Spengler, Christiana R., *et al.* (See Spengler, Christian G., assignor.)						
Sperry, Lyman B., Bellevue, Ohio, assignor to J. P. Lytle, Tiskilwa, Ill. Rectal speculum	328,619	Oct. 20	1467	382	33	282
Spicer, Pratt A., Marshall, Mich. Self-binding grain-harvester	332,565	Dec. 15	1921	503	33	1353
Spielman, George D., Cincinnati, Ohio. Hat-holder and coat-rack	330,434	Nov. 17	1360	362, 363	33	780
Spielman, George D., Cincinnati, Ohio. Trunk fastener	330,435	Nov. 17	1362	363	33	780
Spielman, George D., Cincinnati, Ohio. Trace-fastener	330,436	Nov. 17	1364	363	33	780
Spielman, George D., Cincinnati, Ohio. Snap hook	330,437	Nov. 17	1365	363	33	780
Spiro, Charles, New York, N. Y. Type-writing machine	331,337	Dec. 1	111	26	33	1018
Spitzer, Sigmund, Vienna, Austria-Hungary. Manufacture of starch	329,229	Oct. 27	2325	602	33	445
Spitzer, Sigmund, Vienna, Austria-Hungary. Hulling-machine	329,230	Oct. 27	2326	602	33	445
Spitzer, Sigmund, Vienna, Austria-Hungary. Carrier or elevator for painters, &c.	329,497	Nov. 3	98	26	33	534
Spitzer, Sigmund, Vienna, Austria-Hungary. Flour-purifier	329,498	Nov. 3	99	26	33	534
Spivey, Thomas S., assignor of one-half to G. Webber, Cincinnati, Ohio. Fire-proof safe	333,355	Dec. 29	3031	792	33	1506
Sprague, Charles A., Minneapolis, Minn. Sash-holder	331,666	Dec. 1	625	154	33	1107
Sprague, Daniel A. (See Perry and Sprague.)						
Sprague, Dudley D., California, and P. J. Sprague, Higbee, Mo.; said Dudley D. Sprague assignor to said P. J. Sprague. Straw-elevator for thrashing-machines	330,268	Nov. 10	1128	300	33	728
Sprague, Frank J., New York, N. Y. Electric railway system	328,821	Oct. 20	1721	448	33	330
Sprague, Myron E., Plymouth, Vt. Automatic discharger for evaporating-pans	332,019	Dec. 8	1139	297	33	1211
Sprague, Pearley J. (See Sprague, Dudley D. and P. J.)						
Spring, George A., Covington, Pa. Soda-water apparatus	330,167	Nov. 10	1006	263	33	704
Springe, Christian C., and C. J. Raiffeisen, Sedalia, Mo. Self-indicating measure for dry-goods, &c.	332,965	Dec. 22	2476	656	33	1463
Springer, John, Clinton, Wis. Heating-drum and ventilator	330,633	Nov. 17	1606	429	33	827
Springer, Stephen H., assignor of one-half to J. Hollingsworth and J. P. Bushnell, Des Moines, Iowa. Car-coupling	328,620	Oct. 20	1469	382	33	282
Spruce, James, assignor to Scovill Manufacturing Company, Waterbury, Conn. Curtain-pole joint	327,834	Oct. 6	429	111	33	75
Spruce, James, assignor to Scovill Manufacturing Company, Waterbury, Conn. Belt-fastener	328,822	Oct. 20	1722	448	33	330
Spruce, James, assignor to Scovill Manufacturing Company, Waterbury, Conn. Button	328,823	Oct. 20	1724	448	33	330
Spruce, James, assignor to Scovill Manufacturing Company, Waterbury, Conn. Suspender-buckle	331,661	Dec. 1	627	154	33	1108
Spruce, James, and A. M. Comstock, assignors to Scovill Manufacturing Company, Waterbury, Conn. Pail ear	329,231	Oct. 27	2327	603	33	445
Spurr, Charles W., Boston, Mass. Veneering	329,490	Nov. 3	100	26	33	534
Spurr, Cyrus B., Columbia, Dak. Ter. Plow-carriage	332,566	Dec. 15	1923	503	33	1353
Spyer, Joseph, Santa Fé, N. Mex. Ter. Dental suction-plate former	331,840	Dec. 8	887	229	33	1164
Square Hole Anger Company. (See Oppenheimer, James, assignor.) (Reissue.)						
Squier, Horace S., Newark, N. J. Rubber-covered bit	331,009	Nov. 24	2099	568	33	928
Squire, Charles A., Bradford, Mass. Welt-trimmer	331,338	Dec. 1	114	27	33	1019
Squire, H. W., *et al.* (See Dunbar, Justus H., assignor.)						
Squires, Arthur H., Union City, Conn. Clothes-line fastener	328,824	Oct. 20	1725	449	33	331
Staats, Samuel W., Grand Bay, Ala. Joint for umbrellas	327,734	Oct. 6	306	78	33	53
Stackhouse, Joseph, Stockton, Cal. Mixed paint	333,169	Dec. 29	2776	.....	33	1520
Stackhouse, Russell J. (See Corning and Stackhouse.)						
Stackpole, Charles F., Lynn, Mass. Rod-cutter	327,610	Oct. 6	144	34	33	27
Stafford, H. B. (See Tyson, William, assignor.)						
Stahl, Harlow C., assignor to Fremont Cultivator Company, Fremont, Ohio. Cultivator	331,738	Dec. 1	742	186, 187	33	1129
Stalnaker, Lloyd C., York, Pa. Fertilizer-distributer	333,263	Dec. 29	2909	761	33	1545
Stambaugh, David F., St. Louis, Mo. Bed-bottom	327,611	Oct. 6	145	34	33	27
Standard Cancelling Ballot Box Company. (See Benton, John B., assignor.)						
Standard Machinery Company. (See Garland and Catlin, assignors.)						
Standard Oiled Clothing Company. (See Emanuel, Henry, assignor.)						
Standard Pencil Company. (See Brougham, Stephen M., assignor.)						
Stanley Rule and Level Company. (See Trout, Justus A., assignor.)						
Stanley, William, Jr., Pittsburg, Pa. Holder for incandescent electric lamps	330,269	Nov. 10	1129	300	33	729
Stanley, William, Jr., Pittsburg, Pa. Globe for incandescent electric lamps	333,028	Dec. 22	2578	678	33	1480
Stanton, John C., Jr., *et al.* (See Meissner, John, assignor.)						
Staples, Albert F., Franklin, Mass. Device for arresting the take-up mechanism of looms on breakage of the weft	333,029	Dec. 22	2579	678	33	1481
Starbuck, Calvin T., Wilmington, Ohio. Bicycle-saddle	328,863	Oct. 20	1774	463	33	339
Stark, Andrew, Topeka, Kans. Grain-binder	330,634	Nov. 17	1607	429, 430	33	827
Stark, Frank G., New York, N. Y. Nut	327,612	Oct. 6	145	35	33	27
Stark, Frank G., New York, N. Y. Nut-lock	329,861	Nov. 3	589	151	33	615
Stark, John, Jr. (See Pulver, Henry H., assignor.)						
Starkweather, Gleason F., Pullman, assignor to E. G. Shumway, Hyde Park, Ill. Lumber-drier	327,903	Oct. 6	510	132	33	91
Starkweather, Gleason F., Pullman, assignor to E. G. Shumway, Hyde Park, Ill. Lumber-drier	327,904	Oct. 6	511	133	33	92
Starr, Henry N., Rockford, Ill., assignor to R. P. Scott, Baltimore, Md. Bicycle	328,353	Oct. 13	1091	284	33	207
Starry, William H., Trenton, Ohio. Swinging gate	330,937	Nov. 24	2010	543	33	911
Staseh, Emil R., Corning, N. Y. Measuring-vessel	332,297	Dec. 15	1544	404	33	1283

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stead, James C., Brooklyn, N. Y. Steam-boiler	330,438	Nov. 17	1366	364	33	781
Stearnes, Joseph, *et al.* (See Helms, Jacob H., assignor.)						
Stearns, John F., Chester, assignor of one-half to R. J. Allyn, Hartford, Conn. Auger	333,170	Dec. 29	2777	727	33	1520
Stearns Manufacturing Company. (See Miller, James S., assignor.)						
Stearns Manufacturing Company. (See Miller and Lapham, assignors.)						
Stears, Emily A., Brooklyn, N. Y. Wash-basin or similar vessel	328,354	Oct. 13	1093	284	33	208
Steckler, Louis, *et al.* (See Meissner, John, assignor.)						
Stedman, Nathan, and J. N. Sargent, Aurora, Ind. Railway-frog	328,864	Oct. 20	1775	463	33	339
Steele, Frederick M., administrator. (See Wilkinson, Lewis.)						
Steele, Oliver. (See Atkin and Steele, assignors.)						
Steele, Walter L. (See Atkin and Steele.)						
Steelman, Jonas, Jr., *et al.* (See Trego, A. Homer, assignor.)						
Steen, James H., Canton, Ohio. Adjustable axle-nut	333,030	Dec. 22	2580	678	33	1481
Stehlin, Joseph, New York, N. Y. Clothes-brush	330,270	Nov. 10	1131	301	33	729
Steiger, John J., Peoria, Ill. Traction-increaser for locomotives	332,206	Dec. 15	1545	404	33	1288
Steinbach, George P., Baltimore, Md. Wheel-securing device	330,748	Nov. 17	1763	475	33	858
Steinberger, Louis, New York, N. Y. Oil-drip washer for roller-skates	329,232	Oct. 27	2328	603	33	445
Steinberger, Louis, New York, N. Y. Box-handle for canes or umbrellas	331,095	Nov. 24	2207	597	33	948
Steiner, Josef, Brooklyn, N. Y. Electro-magnet armature	329,782	Nov. 3	480	121	33	596
Stephen, Johnston, Edinburgh, county of Mid-Lothian, Scotland. Individual call	332,567	Dec. 15	1924	503, 504	33	1354
Stephens, Edward W., Erie, Pa. Ore-concentrator	329,862	Nov. 3	591	151, 152	33	615
Stephens, John E., Detroit, Mich. Lamp-stove	327,613	Oct. 6	147	35	33	27
Stephens, John G., Brooklyn, assignor, by mesne assignments, to D. E. Theband, New York, N. Y. Cleaning and separating the pulpy matters from the fibers and leaves of plants	332,355	Oct. 13	1094	284, 285	33	208
Stephens, John G., Brooklyn, assignor, by mesne assignments, to D. E. Theband, New York, N. Y. Apparatus for cleansing pulpy matters from fibers	332,356	Oct. 13	1097	285	33	208
Stephens, John G., Brooklyn, assignor, by mesne assignments, to D. E. Theband, New York, N. Y. Machinery for cleaning and separating the pulpy matters from fibers of leaves, &c.	332,357	Oct. 13	1099	285, 286	33	209
Stephens, Roe. (See Desmond, John, assignor.)						
Stephens, Samuel, Indianapolis, Ind. Band-saw mill	332,365	Dec. 15	1644	431	33	1305
Stephenson, John, New York, N. Y. Tram-car draw-head	327,614	Oct. 6	149	35	33	27
Stephenson, John, New York, N. Y. Change-gate for car-doors	331,010	Nov. 24	2100	568	33	928
Stephenson, Zadok, Verona, Ky. Clothes-drier	330,749	Nov. 17	1764	475	33	858
Stern, Max D. (See Brown and Stern.)						
Sterns, William W. (See Phelps and Sterns.)						
Stetson, George R., assignor to himself and Morse Twist Drill and Machine Company, New Bedford, Mass. Manufacturing twist-drills	331,739	Dec. 1	743	188	33	1130
Stetson, William H., *et al.* (See Loop, A. Irwin, assignor.)						
Stetzer, Valentine F., Toledo, Ohio. Spring piston-packing ring	331,458	Dec. 1	291	79	33	1050
Stewart, James. (See Wilson and Stewart.)						
Stenasy, David, Monticello, Wis. Harness	329,685	Nov. 3	349	89	33	571
Stevens, Andrew J., Sacramento, Cal. Deflector-plate for fire-boxes	329,603	Nov. 3	247	64	33	552
Stevens, Andrew J., Sacramento, Cal. Feed-water purifier	331,917	Dec. 8	994	257	33	1164
Stevens, Edgar H. (See Inman and Stevens.)						
Stevens, George E., *et al.* (See Ely, James L., assignor.)						
Stevens, George W. (See Graham, Joseph S., assignor.)						
Stevens, Grenville M., Deering, Me. Pulp-machine	333,428	Dec. 29	3123	816	33	1581
Stevens, Irving D. (See Eberhart, Lloyd, assignor.)						
Stevens, Irving D. (See Eberhart and Stevens.)						
Stevens, John H. and W. H. Wood, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Utilizing celluloid, &c., in the production of enameled goods or veneering	329,093	Oct. 27	2132	.....	33	406
Stevens, John S., and C. G. Major, Battersea, county of Surrey, England. Combined door spring and check	328,077	Oct. 13	744	194	33	141
Stevens, Levi, Washington, D. C. Apparatus for manufacturing gas	328,149	Oct. 13	834	217	33	158
Stevens, Levi, Washington, D. C. Apparatus for manufacturing illuminating-gas	328,150	Oct. 13	836	218	33	158
Stevens, Levi, Washington, D. C. Manufacturing illuminating-gas	328,151	Oct. 13	837	218	33	158
Stevens, Levi, Washington, D. C. Furnace for boilers	333,429	Dec. 29	3124	816, 817	33	1582
Stevens, Levi, Washington, D. C. Furnace for steam-boilers	333,430	Dec. 29	3126	817	33	1582
Stevens, Samuel A. (See Whitlesey, Charles E., assignor.)						
Stevens, Sidney F. (See McKenzie, Angus, assignor.)						
Stevens, William. (See Page, Robinson, and Stevens.)						
Stevens, William, Philadelphia, Pa. Elevator	330,750	Nov. 17	1765	476	33	858
Stevens, William C. (See Taylor, Miles D., assignor.)						
Stevens, William L., Dorchester, and E. J. Wescott, Hyde Park, Mass. Primary electric clock	330,938	Nov. 24	2012	543, 544	33	911
Stevenson, William M., Cleveland, Ohio. Non-freezing force-pump	329,233	Oct. 27	2329	603	33	445
Stevenson, William M., Cleveland, Ohio. Non-freezing force-pump	329,234	Oct. 27	2331	604	33	446
Stevenson, William M., South Cleveland, Ohio. Pump-piston	329,235	Oct. 27	2332	604	33	446
Stever, Jeremiah, Bridgeport, assignor of one-third to I. E. Booth, Jr., Trumbull, Conn. Adjustable grate for stoves and furnaces	327,615	Oct. 6	150	36	33	28
Steward, Arthur P., Washington, D. C. Portable stove and oven	329,783	Nov. 3	481	121	33	596
Stewart, Alvin J., Bluffton, Ind. Automatic gas-regulator	332,568	Dec. 15	1926	505	33	1354
Stewart, Duncan. (See Adam and Stewart.)						
Stewart, Edward J., New York, N. Y., assignor of one-half to R. A. Wood, Newark, N. J. School-slate	333,483	Dec. 29	3198	836	33	1594
Stewart, George W., assignor of one-half to S. J. Cox, New York, N. Y. Telegraph-instrument	330,271	Nov. 10	1132	301	33	729
Stewart, George W., assignor of one-half to S. J. Cox, New York, N. Y. Telegraph-sounder	330,635	Nov. 17	1609	430	33	828
Stewart, George W., assignor of two-thirds to S. J. Cox, New York, N. Y. Automatic shade-roller	332,209	Dec. 15	1546	405	33	1288
Stewart, John L., Philadelphia, Pa. Manufacturing gas	329,967	Nov. 10	740	188	33	650
Stewart, John L., Philadelphia, Pa. Apparatus for manufacturing gas	332,569	Dec. 15	1928	505	33	1354
Stewart, Linna, San Francisco, Cal. Separator	327,735	Oct. 6	307	79	33	54
Stewart, Robert H., assignor to J. R. Larus, Baltimore, Md. Milk-skimmer	333,484	Dec. 29	3199	836	33	1594
Stewart, Samuel M., McComb, Ohio. Ditching-machine	331,217	Nov. 24	2089	646	33	980
Stewart, William H., Brooklyn, N. Y. Roofing	332,570	Dec. 15	1932	505	33	1355
Stewart, William H., assignor to C. J. Burger, Boonville, Mo. Check-row attachment for corn-planters	330,523	Nov. 17	1477	395	33	802

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stewart, William J., Belleville, Ill. Sewing-machine	330,272	Nov. 10	1133	301, 302	33	730
Stewart, William T. (See Tucker, Argyle W., assignor.)						
Stigers, John G., Glen Hope, assignor of one-half to S. Hegarty, Hegarty's Cross Roads, Pa. Post-driver	331,740	Dec. 1	744	188	33	1130
Stiles, Norman C., Middletown, Conn. Power-press	329,236	Oct. 27	2332	604	33	446
Stillman, Henry B., New York, N. Y., and W. F. Patterson, Boston, Mass. Machine for interchangeably planing or turning	327,968	Oct. 6	600	156, 157	33	108
Stillson, Daniel C., Somerville, Mass. Automatic fire-extinguishing apparatus	333,171	Dec. 29	2777	727	33	1520
Stillwagon, Lucien A., Greencastle, Ind. Cuff-adjuster	333,485	Dec. 29	3200	837	33	1594
Stine, John, Marshalltown, assignor of one-half to J. A. Sieg, Marshall County, Iowa. Chimney	328,152	Oct. 13	839	218	33	159
Stinebring, George W., assignor of one-half to J. C. Dalton, Columbus, Ohio. Rotary steam-engine	332,816	Dec. 8	1433	370	33	1262
Stinson, Charles K., Boston, Mass. Machine for making springs	329,094	Oct. 27	2133	552	33	409
Stinson, Charles K., Boston, assignor to L. Ladd, Needham, Mass. Clothes-wringer	327,616	Oct. 6	152	36	33	28
St. John, George B., Boston, Mass. Indicating device for sensitive instruments	329,237	Oct. 27	2334	604	33	446
St. Lawrence, Henry, Northampton, Mass. Forging-machine	333,486	Dec. 29	3201	837	33	1594
Stöckel, Herrmann, Auerbach, Germany. Embroidering-machine	332,846	Dec. 22	2309	608, 609, 610	33	1431
Stocking, Ransler V., Morrison, Ill. Weed-puller	332,169	Dec. 8	1372	355	33	1250
Stockman, Henry, Philadelphia, Pa. Last	329,784	Nov. 3	482	122	33	596
Stockman, Henry, Philadelphia, Pa. Last	329,785	Nov. 3	483	122	33	597
Stockmann, Christopher, Brooklyn, N. Y. Stylographic pen	330,636	Nov. 17	1610	431	33	828
Stockton, William W., and G. Phelps, San José, Cal. Draft yoke or bar for double teams	332,366	Dec. 15	1646	431	33	1306
Stoddard, Charles V. (See Bradley, Benjamin H., assignor.)						
Stoler, Abraham, Philadelphia, Pa. Sash-fastener	332,170	Dec. 8	1372	355	33	1251
Stoler, David M., *et al.* (See McMurtrie, James E., assignor.)						
Stoler, Samuel B., *et al.* (See McMurtrie, James E., assignor.)						
Stollatorff, August, Chicago Ill. Branding-iron	332,300	Dec. 15	1547	405	33	1288
Stone, Cassius, Walnut Creek, Cal. Apparatus for working derrick-forks	328,530	Oct. 20	1333	346	33	258
Stone, Dudley G. (See Lovelace, Walter A., assignor.)						
Stone, George F., Medfield, Mass. Motor for sewing and other machines	331,960	Nov. 24	2456	663	33	991
Stone, John H., Hamilton, Ontario, Canada. Bench-oiler	333,467	Dec. 29	3202	837	33	1595
Stone, Reuben R., New York, N. Y. Milk-refrigerator	330,751	Nov. 17	1766	476	33	858
Stonebraker, Jeremiah, Barnesville, Ohio. Fruit-gatherer	329,095	Oct. 27	2135	552	33	409
Stopper, Michael, Cincinnati, Ohio. Apparatus for sinking wells	329,968	Nov. 10	741	189	33	650
Storrs, Fred C., Hudson, Ind. Drag-saw	327,736	Oct. 6	307	79	33	54
Stoxmeister, Albert W., Newport, Ky. Wrench	328,980	Oct. 27	1968	511	33	380
Stough, S. C., *et al.* (See Quinn, Isaac T., assignor.)						
Stout, David, Logan City, Ariz. Ter. Grip for cable railways	330,807	Nov. 17	1835	494	33	871
Stout, George M., assignor of one-half to W. H. Poley, Philadelphia, Pa. Alarm time-recorder for railways, &c	332,020	Dec. 8	1140	298	33	1211
Stoveken, Matthias, Jersey City, N. J. Purse	330,508	Nov. 17	1536	485	33	871
Stover, Atkins, Brooklyn, N. Y. Metal-shearing machine	329,096	Oct. 27	2136	552	33	409
Stover, Atkins, Brooklyn, N. Y. Water-faucet	330,724	Nov. 17	1480	396	33	802
Stover, Daniel C., Freeport, Ill. Vehicle-hub	330,809	Nov. 17	1836	495	33	872
Stover, Evan T., assignor to J. Stover and G. W. Roberts, Chicago, Ill. Face-protector	331,339	Dec. 1	115	27	33	1019
Stover, Evan T., assignor to J. Stover and G. W. Roberts, Chicago, Ill. Face-protector	331,340	Dec. 1	115	27	33	1019
Stover, George H., South Bend, Ind. Bee-hive	330,333	Nov. 10	1244	332	33	751
Stover, Joseph, *et al.* (See Stover, Evan T., assignor.)						
Stowe, Aaron F., Worcester, Mass. Racing machine for cutting leather	328,078	Oct. 13	745	194, 195	33	141
Stowe, Anson C., Paola, Kans. Tool-handle	327,969	Oct. 6	603	157	33	108
Stowe, James G., assignor of one-half to J. W. Parker, Cincinnati, Ohio. Corn harvesting and husking machine	331,459	Dec. 1	292	79, 80	33	1050
Strait, Celestia L. (See Strait, William, assignor.)						
Strait, Hiram, Troy, N. Y. Potato-digger	328,079	Oct. 13	748	195, 196	33	142
Strait, William, assignor to C. L. Strait, Elmira, N. Y. Sulky-plow	332,301	Dec. 15	1548	405, 406	33	1289
Strait, William, assignor to C. L. Strait, Elmira, N. Y. Plow	332,302	Dec. 15	1549	406	33	1289
Straker, Ernest, London, England. Machine for removing superfluous gold-leaf from book-covers	329,863	Nov. 3	592	152	33	615
Stranahan, Henry B., Cleveland, Ohio. Key-fastener	330,854	Nov. 17	1896	513	33	882
Strange, Edward M., Brooklyn, N. Y. Aero-steam engine	328,865	Oct. 20	1776	463	33	339
Strasser, David, and A. H. Gerlom, Albany, N. Y. Bottom bar for window-shades	328,905	Oct. 20	1834	479	33	350
Straubel, Conrad, and P. Hebel, Cochecton, N. Y. Adjustable back for vehicle-seats	332,303	Dec. 15	1551	406	33	1289
Streator, Henry D., Galesburg, Mich. Feeding-rack	329,500	Nov. 3	101	27	33	524
Streator, Henry D., Galesburg, Mich. Refrigerator-safe for bread, cake, &c	332,367	Dec. 15	1647	431	33	1306
Street, Eugene A., and R. W. Fleming, Kansas City, Mo. Underground conduit for electrical conductors	331,918	Dec. 8	995	258	33	1184
Streeter, Herbert A. (See Amet, Edward H., assignor.)						
Streeter, James L. (See Jenkins and Streeter.)						
Streit, Charles, Cincinnati, Ohio. Sofa-bed	330,855	Nov. 17	1897	513	33	882
Streit, Charles, Cincinnati, Ohio. Cradle	332,564	Dec. 15	1920	502	33	1353
Streitz, Emil, Freienwalde, Prussia, Germany. Centrifugal bolting-machine	329,097	Oct. 27	2137	553	33	409
Strickland, Morgan D., assignor of one-half to C. D. Carroll, St. Louis, Mo. Injector	331,086	Dec. 22	2653	695	33	1492
Stride, Hugh, Mahanoy City, Pa. Miner's squib-carrier	328,358	Oct. 13	1103	286	33	209
Strobel, Charles, Philadelphia, Pa. Anchor shuttle-box motion for looms	331,741	Dec. 1	745	189	33	1130
Strobel, Charles L., Pittsburg, Pa. Manufacture of eye-bars and similar articles	329,501	Nov. 3	102	27	33	525
Stroder, Martin, Chicago, Ill. Lubricator	329,502	Nov. 3	104	27	33	525
Strom, Axel A., Austin, Ill. Railway-frog	329,098	Oct. 27	2139	553	33	409
Strom, Axel A., Chicago, Ill. Ratchet-drill	331,341	Dec. 1	116	27, 28	33	1019
Strom, Axel A., Austin, Ill. Lifting-jack	331,910	Dec. 8	997	258	33	1185
Strom, Axel A., Austin, Ill. Chair for railway-tracks	332,770	Dec. 22	2205	581	33	1411
Strong, Francis A., Colebrook, Wis. Lubricator	330,525	Nov. 17	1480	396	33	802
Strong, Maurice H., Cincinnati, Ohio. Chicken-brooder	331,696	Nov. 24	2207	598	33	948
Strong, Maurice H., Cincinnati, Ohio. Poultry water-can	331,697	Nov. 24	2209	598	33	949
Strong, William, assignor of one-half to C. Aueshaensel, Indianapolis, Ind. Pipe or hose coupling	327,737	Oct. 6	309	79	33	54
Strößenreather, Karl, Nuremberg, Bavaria, Germany. Pencil-holder	330,526	Nov. 17	1482	396	33	803
Strowbridge, Clarence S., Cortland, N. Y. Positive shuttle-motion for looms	332,217	Dec. 8	1435	370	33	1262

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Strunk, Daniel, Minneapolis, Minn. Grain-binder	332,218	Dec. 8	1436	371, 372	33	1262
Stuart, John E., Newark, N. Y. Window-screen frame	328,080	Oct. 13	752	196	33	142
Stuart, Robert J., assignor to Sedgwick Manufacturing Company, Poughkeepsie, N. Y. Paper-feeding machine	327,617	Oct. 6	154	37, 38	33	28
Stubbe, John, assignor to Pittsburg Steel Fencing Company, Pittsburg, Pa. Machine for applying barbs to fence-wire	329,682	Oct. 20	1470	382, 383, 384	33	282
Stubbe, John, assignor to Pittsburgh Steel Fencing Company, Pittsburg, Pa. Wire-barbing machine	333,087	Dec. 22	2654	696, 697	33	1492
Stubbers, Joseph, Cincinnati, Ohio. Automatic gas-machine	328,359	Oct. 13	1104	286	33	209
Stubblefield, Nathan B., Murray, Ky. Lighting device	329,864	Nov. 3	594	152	33	616
Stuck, Levi, Hart, Mich. Lowering mechanism for dentists' chairs	332,626	Dec. 15	2005	526	33	1368
Stuckert, J. Franklin, Philadelphia, Pa. Metallic roofing	332,219	Dec. 8	1440	372	33	1263
Stuckert, J. Franklin, Philadelphia, Pa. Plate-roofing	332,220	Dec. 8	1441	372	33	1263
Stuertz, John, Philadelphia, Pa. Gas-burner	331,261	Nov. 24	2457	663	33	991
Sturgis, Samuel, Manayunk, Pa. Dumping-cart	328,981	Oct. 27	1969	511	33	387
Sturm, Wendelin, New York, N. Y. Tenement-house	332,457	Dec. 15	1761	461	33	1366
Stutaman, Henry, East Portland, Oreg. Steam-generator	328,531	Oct. 20	1335	346	33	259
Styne, Nicholas, Brooklyn, N. Y. Range-boiler spud	327,738	Oct. 6	310	79	33	54
Suckow, Edmund, assignor of one-half to Hardwicke & Ware, Buffalo, N. Y. Lifting-jack	331,460	Dec. 1	296	80	33	1051
Subers, Thomas N., Philadelphia, Pa. Scaffold-clamp	331,742	Dec. 1	748	189	33	1131
Suit, William T. (See Haithcock and Suit.)						
Sullenberger, Samuel A., assignor of two-thirds to T. Weaver and E. Z. Wallower, Harrisburg, Pa. Breech-loading fire-arm	330,354	Nov. 10	1244	332	33	751
Sullivan, Haines W. (See King, Charles W., assignor.)						
Sullivan, Samuel E. (See Colby, John N., assignor.)						
Sullivan, T. J. (See Hampton, William R., assignor.)						
Sullivan, Timothy C. (See Munroe and Sullivan.)						
Sulter, Frederick, Cincinnati, Ohio. Tube-expander	328,622	Oct. 20	1475	384	33	283
Summer, Henry H., Senoia, Ga. Compound plow-beam	331,342	Dec. 1	118	28	33	1020
Summers, Daniel J., Waynesborough, Pa. Car coupling	333,172	Dec. 29	2779	728	33	1520
Summers, Dewitt C., Summers' Mills, Tex. Device for packing cotton	332,304	Dec. 15	1552	406, 407	33	1289
Summers, Henry. (See Cook and Summers.)						
Summers, Lewis P., Peculiar, Mo. Grain-bag filler, weigher, and register	330,856	Nov. 17	1899	513, 514	33	882
Sumner, Dwight C. (See Tatemn, Thomas E., assignor.)						
Sun Electric and Illuminating Company. (See Slattery, Marmaduke M. M., assignor.)						
Sutherland, John, assignor of one-half to J. Hess, Attica, Ind. Crane	328,081	Oct. 13	753	196, 197	33	142
Sutton, George D., New York, N. Y. Street curb and gutter	329,342	Oct. 27	2492	643	33	475
Sutton, George D., New York, N. Y. Street-curb	329,343	Oct. 27	2493	643	33	475
Sutton, George D., New York, N. Y. Street curb and gutter	329,344	Oct. 27	2495	643	33	476
Sutton, William A., New York, N. Y. Skate	330,527	Nov. 17	1482	396	33	803
Swab, Joseph F., Cedar Rapids, Iowa. Transportation can	328,082	Oct. 13	754	197	33	143
Swab, Joseph F., Cedar Rapids, Iowa. Churn	328,083	Oct. 13	756	197	33	143
Swaim, John B., Newbern, Ind. Churn-dasher	332,620	Dec. 15	2090	549	33	1383
Swann, Francis M., and W. W. Adkins, Tyler Creek, W. Va. Wagon-brake	332,021	Dec. 15	2091	549	33	1383
Swanton, William H., Boston, Mass. Stove or range	329,416	Oct. 27	2607	673	33	495
Swartzwelder, Harrison, *et al.* (See Allfree, James B., assignor.)						
Swasey, Ambrose, Cleveland, Ohio. Cutting teeth of gear-wheels	333,488	Dec. 29	3202	837, 838	33	1595
Swayze, Stephen J., and J. C. Lane, Sag Harbor, N. Y. Time-signal	327,739	Oct. 6	311	80	33	54
Sweeney, Dennis, Amsterdam, N. Y., and G. Rehfuss, assignors to Dawes Fabric Trimmer Company, (limited,) Philadelphia, Pa. Machine for trimming fabrics	329,865	Nov. 3	595	153	33	616
Sweeney, Dennis F. (See Partridge and Sweeney.)						
Sweeney, James, Corning, Ohio. Churn-power and butter-worker combined	328,906	Oct. 20	1836	479	33	350
Sweeney, John M., assignor to himself and M. S. Baldwin, Monmouth, Ill. Portable hay and grain cover	328,437	Oct. 13	1222	317	33	231
Sweet, Horace E., Providence, R. I. Tool-holder	329,969	Nov. 10	742	189	33	650
Sweet, Joseph L., Attleborough Falls, Mass. Appendage for ornamental chains	331,743	Dec. 1	749	189	33	1131
Sweet, Sidney. (See Davis, Robert W. and A. W., assignors.)						
Sweetland, Alvah, Syracuse, N. Y. Plant-cutting shears	330,375	Nov. 10	1250	332	33	752
Swem, Lawrence W., West Liberty, Iowa. Adding-machine	327,970	Oct. 6	604	157	33	108
Swezey, Joseph B., East Patchogue, N. Y. Bill-file	332,221	Dec. 8	1442	372	33	1264
Swift, Albert L., Leavenworth, Kans. Oil-cup	328,907	Oct. 20	1838	479	33	350
Swift, Alonzo. (See Pa.merlee and Swift.)						
Swift, George B. (See Ripley, Heisey, and Swift.)						
Swindell, William, Allegheny, Pa. Gas-furnace	327,618	Oct. 6	158	38, 39	33	29
Swinton, David L., Port Jervis, N. Y. Grate for stoves and furnaces	328,438	Oct. 13	1223	317	33	231
Swope, John E., Elizaville, Ind. Car-coupling	332,847	Dec. 22	2311	610	33	1431
Synnott, Thomas W., Wenonah, assignor to Whitney Brothers, Glassborough, N. J. Glass-furnace	329,970	Nov. 10	743	189	33	650
Taber, Benjamin F., Buffalo, N. Y. Rotary pump	333,356	Dec. 29	3033	792	33	156
Taber, Clark A., *et al.* (See Taber, William D., assignor.)						
Taber, Loyal C., Danforth, N. Y. Traction-engine	329,238	Oct. 27	2336	605	33	447, 1481
Taber, William D., assignor to himself, C. A. Taber, Rockville, and J. A. Corey, Hope Valley, R. I. Check-rein holder	333,031	Dec. 22	2581	678	33	571
Taft, Edward L., Gardner, and H. M. Rich, Athol, Mass. Hand mailing implement	329,686	Nov. 3	350	89	33	
Taft, George W., Abington, Conn. Machine for making, repairing, and cleaning roads	331,920	Dec. 8	999	258, 259	33	1185
Taft, Lafayette, Douglass, Mass. Picker-stick for looms	329,971	Nov. 10	744	189	33	651
Taft, Ryland L., assignor to Illinois Watch Company, Springfield, Ill. Stem winding and setting watch	330,273	Nov. 10	1135	302	33	730
Taggart, Frank J., Adrian, Mich. Car-coupling	333,357	Dec. 29	3035	792	33	1567
Tahl, Isidor, New York, N. Y. Folding paper box	331,568	Dec. 1	450	117	33	1078
Tainter, William H. H., *et al.* (See King, George H., assignor.)						
Talks, Henry, assignor of one-half to H. Doherty, Paterson, N. J. Take-up mechanism for looms	329,972	Nov. 10	744	190	33	651
Tallerday, Franklin G., Poplar Grove, Ill. Wind-wheel	330,168	Nov. 10	1007	263	33	705
Tallman, James, *et al.* (See Prentis, Frank, assignor.)						
Tánczos, Rudolf, Vienna, Austria-Hungary. Fireproofing wood	329,973	Nov. 10	746	.....	33	651
Tanger, David B., near Bellefontaine, Ohio. Hay-loader	329,687	Nov. 3	353	90	33	572

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Tanner, Norman A., New Haven, Conn. Clamp for roller-skates	329,239	Oct. 27	2338	605	33	447
Tanner, William J., London, county of Middlesex, England. Electrical apparatus for separating gold from ores	329,592	Oct. 20	1335	346, 347	33	259
Tapley Machine Company. (See Addy, Charles J., assignor.)						
Tappe, August and C., Bloomington, Ill. Tobacco-pipe	331,569	Dec. 1	452	117	33	1078
Tappe, Charles. (See Tappe, August and C.)						
Tasker, Stephen P. M. (See Borie, Hiram R., assignor.)						
Tasker, Stephen P. M., Philadelphia, Pa. Mandrel	331,570	Dec. 1	453	117, 118	33	1079
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,571	Dec. 1	454	118	33	1079
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,572	Dec. 1	458	118	33	1079
Tasker, Stephen P. M., Philadelphia, Pa. Roller-mandrel	331,573	Dec. 1	463	119	33	1080
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making taper tubes from hollow ingots	331,574	Dec. 1	465	119	33	1080
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making taper tubes from hollow ingots	331,575	Dec. 1	470	119	33	1081
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making taper tubes from hollow ingots	331,576	Dec. 1	475	120	33	1082
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making taper tubes from hollow ingots	331,577	Dec. 1	480	120	33	1082
Tasker, Stephen P. M., Philadelphia, Pa. Mandrel	331,578	Dec. 1	485	120	33	1083
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,579	Dec. 1	486	121	33	1083
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,580	Dec. 1	490	121, 122	33	1084
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,581	Dec. 1	495	122, 123	33	1084
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,582	Dec. 1	500	123, 124	33	1085
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,583	Dec. 1	505	124	33	1086
Tasker, Stephen P. M., Philadelphia, Pa. Machine for making tubes from hollow ingots	331,584	Dec. 1	509	124, 125	33	1086
Tateum, Thomas E., assignor of one-half to D. C. Sumner, Worcester, Mass. Combination-tool for boot or shoe makers' use	329,503	Nov. 3	105	27	33	525
Tatham, James, Philadelphia, Pa. Attachment for lead-pipe presses	327,835	Oct. 6	430	112	33	76
Tatham, James, Philadelphia, Pa. Manufacture of sheathed and insulated electrical conductors	327,971	Oct. 6	605	158	33	109
Tatnall, Thomas, Wilmington, Del. Hay or straw cutter	331,343	Dec. 1	118	28	33	1020
Tatro, William B., Hartford, Conn. Friction-clutch	329,866	Nov. 3	597	153	33	616
Tatum & Bowen. (See Harbach, Daniel L., assignor.)						
Tatum & Bowen. (See Wheeler, Henry W., assignor.)						
Taylor, Charles B., Denver, Colo. Book-shelf	332,627	Dec. 15	2006	526	33	1369
Taylor, Charles M., assignor of one-half to A. P. Turner, London, England. Bottle-stopper	328,533	Oct. 20	1338	348	33	259
Taylor, David E., Dudley, Mass. Atmospheric washing-machine	327,619	Oct. 6	159	39	33	29
Taylor, Elbert C., Stockton, Mo. Churn	333,358	Dec. 29	3036	793	33	1567
Taylor, Franklin, assignor to Vulcanized Fibre Company, Wilmington, Del. Composite roller	329,099	Oct. 27	2140	553	33	410
Taylor, Frederick. (See Davis, Arthur W. S., assignor.)						
Taylor, George, Jersey City, N. J. Pyrotechnical toy	329,504	Nov. 3	106	28	33	525
Taylor, George C., Hicksville, Ohio. Tile-scoop	333,173	Dec. 29	2780	728	33	1521
Taylor, Harrison H., assignor to Detroit Machine Screw Works, Detroit, Mich. Machine for threading tapering bushings	331,167	Nov. 24	2312	626	33	967
Taylor, Henry F., Neath and Briton Ferry, county of Glamorgan, and G. Leyshon, Tividale, county of Stafford, assignors to Taylor, Struvé, Eaton & Price, Neath and Briton Ferry, South Wales, England. Apparatus for coating metal plates	329,240	Oct. 27	2339	605, 606	33	447
Taylor, Henry F., Neath and Briton Ferry, county of Glamorgan, and G. Leyshon, Tividale, county of Stafford, assignors to Taylor, Struvé, Eaton & Price, Neath and Briton Ferry, South Wales, England. Manufacturing fluxes	332,458	Dec. 15	1762	.....	33	1326
Taylor, J. C. (See Moore and Ball, assignors.)						
Taylor, John B., La Monte, Mo. Device for removing wagon-bodies	330,752	Nov. 17	1767	476	33	858
Taylor, John C., Niles, Mich. Lock	332,966	Dec. 22	2478	656	33	1463
Taylor, Lucius L., Seaboard, N. C. Cotton or hay press	333,359	Dec. 29	3037	793	33	1567
Taylor, M. Temple, Mobile, Ala. Combined ventilated vegetable and stock car	332,021	Dec. 8	1141	298, 299	33	1211
Taylor, Marcus E. (See Palmer, John W., assignor.)						
Taylor, Miles D., assignor of one-half to W. C. Stevens, Janesville, Wis. Self-binding harvester	331,921	Dec. 8	1002	259, 260, 261	33	1186
Taylor, Robert R., Washington, D. C. Conduit for electric wires	332,761	Dec. 22	2206	582	33	1412
Taylor, Struvé, Eaton & Price. (See Taylor and Leyshon, assignors.)						
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Street letter-box	329,688	Nov. 3	354	90	33	572
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Lock	332,459	Dec. 15	1763	461	33	1326
Teagne, Moses F., Indianapolis, Ind. Escapement-motor	328,360	Oct. 13	1107	287	33	210
Teal, Daniel E. (See Van Valkenbergh and Teal.)						
Tebbets, Paul, and D. R. Faulkner, Homer, N. Y. Manufacture of oil-cloth	328,084	Oct. 13	757	.....	33	143
Teeter, Horace H., Carbondale, Ill. Churn	327,620	Oct. 6	161	40	33	29
Teeter, Horace H., Carbondale, Ill. Filter	329,505	Nov. 3	106	28	33	525
Teichman, Isaac. (See Angell, Albert, assignor.)						
Teipel, Benjamin, Covington, Ky., assignor to Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Target-trap	329,974	Nov. 10	747	191	33	651
Telegraphic Time Company. (See Bailey, Henry L., assignor.)						
Temple, William J., Hampden, assignor of one-half to C. E. Hill, Bangor, Me. Swinging churn	329,689	Nov. 3	356	91	33	572
Terrault, Octave J., Rutland, Vt. Necktie-fastener	331,098	Nov. 24	2210	598	33	949
Terman, James W., assignor of three-fourths to H. S. Butler, Des Moines, Iowa. Traction-engine	333,360	Dec. 29	3038	793	33	1567
Terrell, John L. (See Harrell, A. Frank, assignor.)						
Terry, Hiram, Bonham, Tex. Gate	331,168	Nov. 24	2314	626, 627	33	967
Terry, Samuel H., Chicago, Ill., assignor, by mesne assignments, of one-half to A. W. and M. A. Nesbit, Fulton, Mo. Car for cable ways	329,786	Nov. 3	484	122	33	597
Tesseyman, John, and H. A. Billings, Dayton, Ohio. Railway-car	327,836	Oct. 6	432	112	33	76

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Textile Manufacturing Company. (See Moulton, George W., assignor.)						
Thackston, Richard D., assignor of one-half to H. I. Coe, St. Louis, Mo. Self-closing hatchway	328,361	Oct. 13	1109	287	33	210
Thackston, Richard D., assignor of one-half to H. I. Coe, St. Louis, Mo. Self-closing hatchway	328,362	Oct. 13	1109	287	33	210
Thayer, Horace N. (See Bostwick and Thayer.)						
Thayer, James F., Providence, R. I. Button-fastener	332,967	Dec. 22	2479	656	33	1463
Thayer, James F., Providence, R. I. Button-fastener	332,968	Dec. 22	2480	657	33	1463
Thayer, James F., Providence, R. I. Button-fastener	332,969	Dec. 22	2481	657	33	1463
Thayer, James F., Providence, R. I. Button-fastener	332,970	Dec. 22	2482	657	33	1463
Thayer Portable Refrigerator Company. (See Thayer, William C., assignor.)						
Thayer, William C., assignor to Thayer Portable Refrigerator Company, Chicago, Ill. Portable refrigerator	333,964	Dec. 29	2911	761, 762	33	1545
Thebaud, Delphis E. (See Stephens, John G., assignor.)						
Thede, Herman G. (See Bolte and Thede.)						
Thede, John W. (See Bolte and Thede, assignors.)						
Theisen, Eduard, Lindenau, near Leipsic, Saxony, Germany. Evaporating and condensing apparatus	332,848	Dec. 22	2312	611, 612, 613	33	1431
Thiel, Henry, Clinton, La. Cotton-stalk chopper	331,922	Dec. 8	1011	262	33	1187
Thielsen, Hans, and H. W. Dilg, Portland, Oreg. Divided car-axle	329,604	Nov. 3	248	64	33	552
Thies, John B., assignor of one-half to C. and H. C. Wight, Dayton, Ohio. Measuring device and register for fencing material	327,905	Oct. 6	513	131	33	92
Thissell, George W., Winters, Cal. Coddling-moth trap and tree-protector	333,265	Dec. 29	2913	762	33	1545
Thoens, Burchard, New Orleans, La. Vacuum-pump	329,241	Oct. 27	2342	606	33	448
Thoens, Burchard, assignor to J. S. McDonald, New Orleans, La. Hydraulic-pressure regulator and ram	328,730	Oct. 20	1619	421	33	309
Thoman, Henry, Leesville Cross Roads, Ohio. Scraper for wheels of wheat-drills	330,169	Nov. 10	1008	263	33	705
Thomas, Abner D., Little Rock, Ark. Cotton-elevator and cotton-gin feeder	331,841	Dec. 8	887	229	33	1164
Thomas, Arnold, *et al.* (See Tickle and Leonardt, assignors.)						
Thomas, Chauncey, Boston, Mass. Device for operating carriage-doors	328,731	Oct. 20	1619	422	33	310
Thomas, Edward W., Lowell, assignor of one-half to G. Draper & Sons, Hopedale, Mass. Device for removing pressure from rolls of spinning-frames, &c	329,975	Nov. 10	747	191	33	651
Thomas, Frank A., Cedar Rapids, Iowa. Hammock-spreader	329,690	Nov. 3	358	91	33	573
Thomas, George C., Waterbury, Conn. Nut-locking washer	331,169	Nov. 24	2315	627	33	968
Thomas, George H., Chicopee Falls, Mass. Egg-beater	331,662	Dec. 1	628	155	33	1108
Thomas, Horatio, Chicago, Ill. Roller-skate	332,460	Dec. 15	1764	462	33	1327
Thomas, John H., Springfield, Ohio. Tedder-fork	329,242	Oct. 27	2343	607	33	448
Thomas, John H., Springfield, Ohio. Hay-tedder	329,506	Nov. 3	107	28	33	525
Thomas, John H., Springfield, Ohio. Hay-tedder	329,976	Nov. 10	748	191	33	651
Thomas, John H., Springfield, Ohio. Hay-tedder	329,977	Nov. 10	749	191	33	652
Thomas, Joseph, New York, N. Y. Snipporting and guiding attachment for sewing-machines	330,170	Nov. 10	1009	264	33	705
Thomas, Joseph H., Newark, N. J. Device for severing finger-rings	328,154	Oct. 13	842	219	33	159
Thomas, Joseph W. (See Offutt, Joseph E., assignor.)						
Thomas, Levi H., Chicago, Ill. Paper package	331,842	Dec. 8	888	230	33	1165
Thomas, Levi H., Chicago, Ill. Ink-bottle	331,843	Dec. 8	890	230	33	1165
Thomas, Levi H., Chicago, Ill. Bluing-package	331,844	Dec. 8	891	230	33	1165
Thomas, Robert H. (See Armstrong and Thomas.)						
Thomas, William B., Athens, Ga. Freight-checking device	329,345	Oct. 27	2497	643	33	476
Thomas, William M., assignor of one-half to Grand Rapids Electric Light and Power Company, Grand Rapids, Mich. Electric-arc lamp	332,971	Dec. 22	2483	657	33	1464
Thomassen, François. (See Peck and Thomassen.)						
Thompson, Arthur G., *et al.* (See Fowler, Thaddeus, assignor.)						
Thompson, Charles D. (See Thompson, Mary E., assignor.)						
Thompson, Daniel, Ovid, Mich., assignor to Derby & Ball, Bellows Falls, Vt. Scythe-snath fastening	328,363	Oct. 13	1110	288	33	210
Thompson, Daniel L., *et al.* (See Boscawen, William, assignor.)						
Thompson, Edward P., Elizabeth, N. J. Carbonizing filaments for incandescent electric lamps	331,663	Dec. 1	630	155	33	1108
Thompson, Frank. (See Kenyon, John W., assignor.)						
Thompson, George A., Washington, Mo. Broom	330,439	Nov. 17	1368	364	33	781
Thompson, George C., assignor to himself, J. L. Foster, and W. S. Mallard, Darien, Ga. Car-coupling	331,218	Nov. 24	2391	647	33	980
Thompson, H. Grant, *et al.* (See Fowler, Thaddeus, assignor.)						
Thompson, Henry G., *et al.* (See Fowler, Thaddeus, assignor.)						
Thompson, Jesse, Rushville, Ind. Swinging gate	329,978	Nov. 10	751	192	33	652
Thompson, Jesse B., assignor of one-fifth to C. W. Ballard, Chicago, Ill. Nut-lock	332,972	Dec. 22	2486	658	33	1464
Thompson, Joseph M. (See Gourrier and Thompson.)						
Thompson, La Marcus A., Philadelphia, Pa. Gravity switch-back railway	332,762	Dec. 22	2207	582	33	1412
Thompson Manufacturing Company, N. C. (See Macphail, James, assignor.)						
Thompson, Mark S., assignor to R. H. Martin, New York, N. Y. Treating asbestus to form crucibles, &c	330,171	Nov. 10	1010	.....	33	705
Thompson, Mark S., assignor to H. A. Lee, New York, N. Y. Device for feeding salt or compressed feed to cattle	332,973	Dec. 22	2487	658	33	1464
Thompson, Mary E., assignor of one-half to C. D. Thompson, New York, N. Y. Portable dust hood or blower	328,087	Oct. 13	760	198	33	143
Thompson, Nathan, 21 Southampton Buildings, county of Middlesex, England. Union or coupling for pipes, hose, and other articles	331,170	Nov. 24	2316	627, 628	33	968
Thompson, Orrin B., Jersey, Ohio. Device for treadle mechanisms	328,825	Oct. 20	1726	449	33	331
Thompson, Rachel S., Hamilton, Ohio. Caster	331,461	Dec. 1	297	80	33	1051
Thompson, Ralph, assignor of one-half to H. A. Winemann, Detroit, Mich. Combined pencil and scissors holder	328,866	Oct. 20	1777	464	33	339
Thompson, Robert J. (See Corckran and Thompson.)						
Thompson, Robert S., Pine Bluff, Ark. Hoe-rack	331,011	Nov. 24	2101	568	33	928
Thompson, Silvanus P., Bristol, England. Telephonic apparatus	327,837	Oct. 6	433	113	33	76
Thompson, Walter C., Brooklyn, assignor to W. C. Howard, New York, N. Y. Show-box	327,838	Oct. 6	434	113	33	76
Thompson, William G., New York, N. Y. Sewer-gas trap	330,529	Nov. 17	1464	397	33	803
Thompson, William H., Luling, Tex. Ant-trap	331,099	Nov. 24	2211	599	33	949
Thoma, James F., administrator. (See Hagan, John A.)						
Thomson, John, Brooklyn, N. Y. Mechanical movement	331,845	Dec. 8	891	230	33	1165
Thomson, John, Brooklyn, N. Y. Mechanical movement	331,846	Dec. 8	892	231	33	1165
Thomson, John, Brooklyn, N. Y. Mechanical movement	331,847	Dec. 8	894	231	33	1166
Thomson, John R. (See Nunamacker, By, assignor.)						
Thomson, Rush, assignor to W. S. Thomson, Atlanta, Ga. Cotton-planter	330,440	Nov. 17	1369	365	33	781

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Thomson William, Glasgow, county of Lanark, Scotland. Dynamo-electric machine	333,174	Dec. 29	2781	728	33	1521
Thomson, William S. (See Hackett, William H., assignor.)						
Thomson, William S. (See Thomson, Rush, assignor.)						
Thomson, William Y., *et al.* (See Quaid, Harrison, assignor.)						
Thorn, John H., Youngstown, Ohio. Liquor-pump	332,171	Dec. 8	1373	355	33	1251
Thornburgh, George W. and J. J., Alliance, Ohio. Egg-tray for incubators	330,528	Nov. 17	1483	397	33	803
Thornburgh, John J. (See Thorobnrgh, George W. and J. J.)						
Thornton, Albert O., Olneyville, R. I. Farm-gate	330,939	Nov. 24	2014	544	33	912
Thornton, Thomas, Tidioute, Pa. Spark-arrester	332,628	Dec. 15	2007	526, 527	33	1369
Thorp, James M. (See Lane and Thorp.)						
Thurston, Robert H., Hoboken, N. J. Machine for testing lubricants	332,974	Dec. 22	2487	658	33	1464
Tibbles, Charles E., Burlington, Iowa, assignor, by mesne assignments, to Tibbles Manufacturing Company, Chicago, Ill. Sewing-machine	328,534	Oct. 20	1339	348	33	259
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Journal-bearing	328,088	Oct. 13	761	198	33	144
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Take-up mechanism for sewing-machines	328,536	Oct. 20	1312	349	33	260
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Sewing-machine shuttle	328,537	Oct. 20	1342	349	33	260
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Feed-motion for sewing-machines	328,538	Oct. 20	1343	350	33	260
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Shuttle-carrier for sewing-machines	328,539	Oct. 20	1344	350, 351	33	260
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Sewing-machine	328,535	Oct. 20	1340	348, 349	33	260
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Tension-spring for sewing-machines	328,540	Oct. 20	1346	351	33	261
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Take-up mechanism for sewing-machines	328,541	Oct. 20	1347	351	33	261
Tibbles, Charles E., assignor to Tibbles Manufacturing Company, Chicago, Ill. Feed-motion for sewing-machines	328,542	Oct. 20	1347	351, 352	33	261
Tibbles Manufacturing Company. (See Tibbles, Charles E., assignor.)						
Tichenor, Anson C., San Francisco, Cal. Electrical conductor	330,071	Nov. 10	886	229	33	680
Tichenor, Anson C., San Francisco, Cal. Alloy	330,072	Nov. 10	887	.....	33	680
Tickle, John, West Bromwich, and F. Leonardt, Handsworth, county of Stafford, assignors to E. Caddick, West Bromwich, W. Creed, Stroud, and A. Thomas, Newnham, England. Filling and compressing machinery	328,439	Oct. 13	1223	317	33	231
Tiemann, Julius H., Brooklyn, N. Y. Purifying petroleum	330,637	Nov. 17	1611	.....	33	828
Tillion, William R. R., assignor of one-half to A. C. Hallam, Brooklyn, N. Y. Thill-coupling	328,155	Oct. 13	843	219	33	150
Tillmeyer, Charles H., and G. W. Bolton, Milwaukee, Wis.; said Bolton assignor to said Tillmeyer. Portable rack for scales	329,100	Oct. 27	2141	554	33	410
Tilton, James E., Ashland, assignor to himself and W. H. Huntington, Boston, Mass. Sole for boots or shoes	331,462	Dec. 1	299	80	33	1051
Tim, Wallerstein & Co. (See Hermann, Max, assignor.)						
Timby, Theodore R., Nyack, N. Y. Revolving-tower system of fortifications	330,638	Nov. 17	1612	431	33	828
Timby, Theodore R., Nyack, N. Y. Shield and tower system of fortifications	330,639	Nov. 17	1613	431, 432	33	829
Timby, Theodore R., Nyack, N. Y. Revolving-tower fortification	330,640	Nov. 17	1614	432, 433	33	829
Timby, Theodore R., Nyack, N. Y. Revolving-tower system of fortifications	330,641	Nov. 17	1615	434	33	830
Timby, Theodore R., Nyack, N. Y. Revolving-tower system of fortifications	330,642	Nov. 17	1616	435	33	830
Timby, Theodore F., Brooklyn, N. Y. Sifter	331,344	Dec. 1	119	29	33	1020
Timermann, William, assignor to himself and J. H. Twaddell, New York, N. Y. Fastening for mail-bags, &c	327,972	Oct. 6	606	158	33	109
Timmers, William. (See Christenson and Timmers.)						
Tingley, George S., assignor to R. Bliss Manufacturing Company, Pawtucket, R. I. Toy gun	332,461	Dec. 15	1765	462	33	1327
Tippett, Robert G., assignor of one-half to D. Madlem, Reading, Pa. Can-opener	331,923	Dec. 8	1012	262	33	1188
Tirrell, Jacob P., Boston, assignor to J. F. Emerson, Wakefield, G. O. Carpenter, Boston, and J. W. Carter, Newton, Mass. Electric gong	328,982	Oct. 27	1970	512	33	381
Tirrell, Jacob P., Boston, assignor to J. F. Emerson, Wakefield, G. O. Carpenter, Boston, and J. W. Carter, Newton, Mass. Electric signaling apparatus	331,463	Dec. 1	300	81	33	1051
Titus, Charles M., Ithaca, N. Y. Dumping-wagon	329,346	Oct. 27	2498	644	33	476
Tobey, Henry A., Lima, Ohio. Steam-trap	333,032	Dec. 22	2582	679	33	1481
Tobias, Benjamin, Washington, Ill. Grading and ditching machine	327,740	Oct. 6	312	80	33	55
Tobias, Francis H., New York, N. Y. Folding bedstead	329,101	Oct. 27	2142	554	33	410
Todd, Albert M., Nottawa, Mich. Obtaining menthol	330,274	Nov. 10	1136	302	33	730
Todd, James M., Albert Lea, Minn. Wheel-fender for carriages	332,022	Dec. 8	1142	299	33	1212
Toliver, George E., assignor of two-thirds to H. W. Poundstone and E. Schopf, Newport, Mo. Rotary engine	327,621	Oct. 6	162	40	33	30
Tombly, Orison, *et al.* (See Huse, Warren D., assignor.)						
Tompkins, John J., assignor to himself, W. and N. Bosler, Louisville, Ky. Shoe	328,543	Oct. 20	1349	352	33	261
Tompkins, William D., Floyd Court-House, Va., assignor of one-half to W. and J. H. Leonhardt, Baltimore, Md. Grub-puller	328,983	Oct. 27	1972	512	33	381
Toms, Seymour. (See Simpson, John M., assignor.)						
Tondeur, Cleon, Canastota, N. Y. Glass-flattening furnace	330,172	Nov. 10	1011	264	33	705
Topliff, John A., E. S. Cross, W. S. Cox, and J. A. McCollum, Elyria, Ohio. Furnace	330,940	Nov. 24	2015	544, 545	33	912
Torrance Francis J., Allegheny, Pa. Bath-tub	327,973	Oct. 6	607	158	33	109
Torrey, Joseph R. (See Vrooman, William P., assignor.)						
Totten, Charles A. L. (See Clark and Totten.)						
Totten, Charles A. L., Garden City, N. Y. Linear or other scale	331,345	Dec. 1	121	29, 30	33	1020
Totten & Co., Thomas. (See Willis, Warren E., assignor.)						
Tourgee, Albion W., assignor to L. D. Jennings and S. E. Kilbourne, Mayville, N. Y. Horse-collar and hame	329,507	Nov. 3	109	29	33	526
Tourgee, Albion W., and L. D. Jennings, assignors to L. D. Jennings and S. E. Kilbourn, Mayville, N. Y. Buckle	327,622	Oct. 6	163	40	33	30
Tourgee, Albion W., and L. D. Jennings, assignors to said Jennings and S. E. Kilbourne, Mayville, N. Y. Bridle and bridle attachment	329,508	Nov. 3	111	29	33	526
Tourgee, Albion W., and L. D. Jennings, Mayville, N. Y. Harness	333,175	Dec. 29	2782	729	33	1521
Towle, Abner S., assignor to Rochester Machine Company, Rochester, N. H. Compound metal-working machine. (Reissue)	10,665	Nov. 24	2472	667	33	994

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Towle, William O. (See Daly, Samuel, assignor.)						
Towne, Enoch H., *et al.* (See Genin, John B., assignor.)						
Townsend, Isaac. (See Watson, Charles S., assignor.)						
Townsend, John, assignor to Johnson Steel Street Rail Company, Johnstown, Pa. Railway rail chair	331,012	Nov. 24	2102	569	33	928
Townsend, John, assignor to Johnson Steel Street Rail Company, Johnstown, Pa. Railway-frog	331,013	Nov. 24	2102	569	33	929
Tracey, James C., New York, N. Y. Cutting bifurcated garments	330,073	Nov. 10	888	230	33	680
Tracy, George S., *et al.* (See Foust, James W., assignor.)						
Tracy, John, Freeport, Ill. Nut-lock	331,848	Dec. 8	896	231	33	1166
Tracy, William A., Philadelphia, Pa. Safety device for boilers	329,509	Nov. 3	113	29	33	526
Trammell, William A. (See Williams and Trammell.)						
Traut, Justus A., assignor to Stanley Rule and Level Company, New Britain, Conn. Floor-plane	332,305	Dec. 15	1553	407	33	1290
Traver, Augustus, New York, and H. B. Pierson, Brooklyn, N. Y. Glove-fastening	332,763	Dec. 22	2209	582	33	1412
Traver, Harrison. (See Weeks and Traver.)						
Travers, Vincent P., New York, N. Y. Hammock	330,941	Nov. 24	2016	545	33	912
Traverse, James E., Cincinnati, Ohio. Machine for swaging saw-teeth	331,262	Nov. 24	2458	663, 664	33	991
Travis, Charles L., assignor of one-half to Minnesota Brush Electric Company, Minneapolis, Minn. Support for electric lights	329,510	Nov. 3	114	30	33	527
Traylor, George M., Atlanta, Ga. Traveling sign for cars	331,346	Dec. 1	124	30	33	1020
Traylor, George M., Atlanta, Ga. Traveling sign for railway-cars	332,306	Dec. 15	1554	407, 408	33	1290
Treat, Francis H., assignor of two-thirds to H. S. Smith and C. Pettigrew, Joliet, Ill. Rolling-mill	333,431	Dec. 29	3127	617, 618	33	1582
Treat, John, Eufield, Me. Rafting-pin	328,260	Oct. 13	972	253	33	184
Trego, A. Homer, assignor of three-fourths to E. L. Smith, J. Stoelman, Jr., and A. De Cernea, Philadelphia, Pa. Bridle-bit	332,571	Dec. 15	1933	506	33	1355
Trelease, Alford, Waterbury, Conn. Bustle	328,440	Oct. 13	1225	318	33	232
Tremlett, John, *et al.* (See Haynes, William, assignor.)						
Trépardoux, Charles. (See De Dion, Bouton, and Trépardoux.)						
Trimmer, Benjamin T., West Bloomfield, N. Y. Burglar-alarm	330,942	Nov. 24	2016	545	33	912
Tringham, John W., Windsor, Ontario, Canada. Supporting electrical wires	330,173	Nov. 10	1013	264	33	706
Tripp, Jay E. (See Hall and Tripp.)						
Trippett, Joseph, T. and H. Sear-s, Sheffield, county of York, England. Buffer	328,085	Oct. 13	757	197	33	143
Trippett, Joseph, T. and H. Searls, Sheffield, county of York, England. Draw-bar	328,086	Oct. 13	758	198	33	143
Trix, John. (See Murdock, Horace B., assignor.)						
Troemner, Henry. (See Coles, Henri H., assignor.)						
Trotter, Alexander P., Furnivals Inn, county of Middlesex, England. Apparatus for distributing and diffusing light	330,356	Nov. 10	1251	333	33	753
Trout, John F., Chicago, Ill. Lamp-burner	330,810	Nov. 17	1838	495, 496	33	872
Trout, John F., assignor of one-half to R. Barry, Chicago, Ill. Oil-burning stove	332,307	Dec. 15	1556	408, 409	33	1290
Troy, Daniel S., and J. S. Davis, Montgomery, Ala. Seeding-machine	331,263	Nov. 24	2461	664	33	992
Trude, Arthur M., Hartford, Conn. Railway-track fastening	329,867	Nov. 3	598	153	33	617
True, Mark B., assignor to himself and J. S. Murphy, Newburyport, Mass. Mechanical movement	327,741	Oct. 6	312	80	33	55
Truesdale, Charles, Cincinnati, Ohio. Gate for casting	332,462	Dec. 15	1766	462	33	1327
Trullinger, Delazon L., Union Mills, Oreg. Gate for water-wheels	330,753	Nov. 17	1768	477	33	859
Truran, William, assignor to Pittsburg Steel Nail Company, Allegheny City, Pa. Die for making staples	327,974	Oct. 6	608	159	33	109
Trussell, Willurt C., Boston, Mass. Street-car motor	327,623	Oct. 6	165	42	33	30
Tryon, Joseph M., West Farms, N. Y. Velocipede	329,102	Oct. 27	2143	554	33	410
Tubbs, Lilly B., Philadelphia, Pa. Cut-off for hydraulic and other engines	329,417	Oct. 27	2608	673, 674	33	496
Tuck, Josiah H. L., San Francisco, Cal. Loading and unloading platform for street use	330,754	Nov. 17	1769	477	33	859
Tucker, Argyle W., Midlothian, assignor of one-half to W. T. Stewart, Big Springs, Tex. Calculating device	331,264	Nov. 24	2462	664	33	992
Tucker, Calder & Co. (See Busacker, John, assignor.)						
Tucker, Charles A., Islip, N. Y. Electric temperature regulator	328,156	Oct. 13	844	219	33	160
Tucker, George, *et al.* (See Andrews, Oscar, assignor.)						
Tucker, Ira B., Hanford, Cal. Roller-hinge for gates	333,033	Dec. 22	2586	679	33	1482
Tucker, John H. (See Newhall and Tucker.)						
Tucker, William, East Brookfield, assignor to himself and F. F. Bullard, Palmer, Mass. Machine for reducing wire rods	332,572	Dec. 15	1934	506, 507, 508	33	1355
Tucker, William A., New York, N. Y. Capsule-machine	328,623	Oct. 20	1476	384, 385	33	283
Tuerk, Frederick W., Jr., Chicago, Ill. Rotary water-meter	328,544	Oct. 20	1350	352, 353	33	261
Tufts, Eleanor V., administratrix. (See Tufts, Otis.)						
Tufts, Otis, deceased, Boston, Mass.; E. V. Tufts administratrix. Open car curtain	333,176	Dec. 29	2785	730	33	1521
Tufts, William H., Washington, D. C. Fishing-line float	332,573	Dec. 15	1939	508	33	1356
Tumbleson, William W., Baltimore, Md. Nursing-bottle tube	329,103	Oct. 27	2144	554	33	411
Tupper, John B., Petaluma, Cal. Apple parer, slicer, and corer	329,511	Nov. 3	115	30	33	527
Turek, Frank. (See Hardwicke, Lauriston W., assignor.)						
Turnbull, William. (See Ford, Herbert L., assignor.)						
Turner, Anthony P. (See Taylor, Charles M., assignor.)						
Turner, Clayton A., assignor, by mesne assignments, of one-fourth to E. H. Froehlick, Milwaukee, Wis. Necktie-fastener	328,545	Oct. 20	1353	353	33	262
Turner, Hezekiah H., Tiskilwa, Ill. Wagon end-gate	331,744	Dec. 1	750	189	33	1131
Turner, John, Detroit, Mich. Car-truck	332,682	Dec. 15	2092	549	33	1383
Turner, John B., *et al.* (See Perry, Clarence E., assignor.)						
Turner, John W., assignor of one-third to S. Kelley, Pittsburg, Pa. Instrument of stationery	333,088	Dec. 22	2650	698	33	1493
Turner, Thomas G., New York, N. Y. Sharpening device for scissors	329,512	Nov. 3	118	31	33	528
Turner, Thomas G., New York, N. Y., assignor to New York Fire Extinguisher Company of New York. Chemical fire-extinguisher	333,177	Dec. 29	2786	730	33	1522
Tuttle, Arthur C., assignor to Tuttle & Bailey Manufacturing Company, New York, N. Y. Hot-air register	333,089	Dec. 22	2650	698	33	1494
Tuttle & Bailey Manufacturing Company. (See Tuttle, Arthur C., assignor.)						
Tuttle, Berri W., Council Hill, Ill. Flour-bolt	331,265	Nov. 24	2463	664	33	993

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tuttle, Edward D., assignor to F. J. Tuttle, Waterbury, Conn. Plater's bar	333,432	Dec. 29	3128	818	33	1582
Tuttle, Francis G., Portland, Oreg. Track and wheel cleaning and lubricating device	331,090	Dec. 22	2660	698	33	1494
Tuttle, Francis R., Salem, Mass. Suspending hides in tanning	328,984	Oct. 27	1972	512	33	381
Tuttle, Frank J. (See Tuttle, Edward D., assignor.)						
Tuttle, Hiram H., Phœnix, Ariz. Ter. Washing-machine	329,418	Oct. 27	2611	674	33	496
Tuttle, John W., Watertown, Mass. Crutch	332,684	Dec. 15	2093	550	33	1384
Tuttle, John W., Watertown, assignor, by mesne assignments, to himself and C. Woodman, Chelsea, Mass. Sewing-machine	332,693	Dec. 15	2092	550	33	1384
Tution, Anaximander B., Sioux Falls, Dak. Ter. Irrigating attachment for bottles	330,755	Nov. 17	1771	477	33	859
Twaddell, James H. (See Timermann, William, assignor.)						
Tweedy, Edmund, Danbury, Conn., and G. Yule, Newark, N. J. Hat-rounding machine	330,441	Nov. 17	1372	365	33	781
Twiname, James E., Indianapolis, Ind. Snow-plow	331,849	Dec. 8	897	231 / 232	33	1166
Twombly, Orison, *et al.* (See Huse, Warren D., assignor.)						
Tyler, Aaron J., assignor to E. C. Cole, Albion, N. Y. Saw-rise	331,745	Dec. 1	751	190	33	1131
Tyler, Frederick A., Rome, N. Y. Crib	328,157	Oct. 13	845	220	33	160
Tyler, William W., Cleveland, Ohio. Feed-water heater and purifier	333,489	Dec. 29	3205	808	33	1595
Tynan, John A., assignor of one-half to A. Delerac, Cincinnati, Ohio. Combined washing-machine and wringer	330,857	Nov. 17	1901	514 / 515	33	883
Tynan, John A., assignor of one-half to A. Delerac, Cincinnati, Ohio. Washing-machine	330,858	Nov. 17	1904	515	33	883
Tyson, Bryan, Washington, D. C. Amalgamator and concentrator	328,546	Oct. 20	1354	353 / 354	33	262
Tyson, William, assignor of one-half to H. B. Stafford, Manson, Iowa. Washing-machine	328,441	Oct. 13	1226	318	33	232
Uehling, Edward A., Bethlehem, Pa. Water-circulation for tuyeres, blast-furnaces, &c.	330,442	Nov. 17	1374	366	33	782
Uhl, Jacob, *et al.* (See Kittler, Julius W., assignor.)						
Ulmer, John D., Philadelphia, Pa. Button-hole-cutting attachment for sewing-machines	330,943	Nov. 24	2018	545	33	913
Ulrich, Max, Easthampton, Mass. Governor for steam-engines	332,704	Dec. 22	2210	582	33	1412
Ulrici, Charles J., Havana, Cuba. Medical compound	333,361	Dec. 29	3089	.....	33	1568
Umpherston, William, Leith, Scotland. Machine for preparing pulp for paper-machines. (Reissue)	10,658	Nov. 3	613	156	33	619
Umstadter, Michael, Norfolk, Va. Gingham-exhibitor	331,850	Dec. 8	898	232	33	1166
Underhill, Arthur J. (See Heusser, Albert, assignor.)						
Underwood, Anson, *et al.* (See Harris, Charles R., assignor.)						
Underwood, H. Channing, Wabash, Ind. Roof for toy houses	329,513	Nov. 3	119	31	33	528
Underwood, Harold G., Milwaukee, Wis., assignor to Avery Lactate Company, Portsmouth, N. H. Lactate baking-powder	328,364	Oct. 13	1112	.....	33	211
Underwood, Joseph B., assignor to W. A. Guthrie, Fayetteville, N. C. Chromatic-printing machine	333,490	Dec. 29	3206	809	33	1595
Unexcelled Fireworks Company. (See Gerhard, Charles, assignor.)						
Ungermann, Conrad, Dayton, Ohio. Tail-screw for carpenters' benches	330,643	Nov. 17	1617	435	33	830
Union Bearing and Lubricator Company. (See Goulliond and Pagé, assignors.)						
Union Foundry and Machine Company. (See Norton, Reuben C., assignor.)						
Union Switch and Signal Company. (See Guerber, Frederick S., assignor.)						
Union Water Meter Company. (See Ball and Smith, assignors.)						
Union Wire Mattress Company. (See Hill, Christian C., assignor.)						
United States Combination Company. (See Westlake, William, assignor.)						
United States Cotton Seed Cleaning Company of New York. (See Lewis, John A., assignor.)						
United States Electric Lighting Company. (See Prescott, George B., Jr., assignor.)						
United States Electric Lighting Company. (See Weston, Edward, assignor.)						
Upham, Andrew J., assignor to A. Ellwood, Sycamore, Ill. Wire-tightener	332,172	Dec. 8	1374	355	33	1251
Upson, Waldo L., Meriden, Conn. Call-bell	330,756	Nov. 17	1771	477	33	859
Upton, Charles S. (See Rhind, Frank, assignor.)						
Upton, Edgar W. (See Shepherd, Thomas W., assignor.)						
Uren, Stephen, Sacramento, Cal. Machine for making nuts	327,742	Oct. 6	313	80, 81	33	55
Uren, Stephen, Sacramento, Cal. Utilizing scrap for the manufacture of nuts, &c.	327,743	Oct. 6	314	81	33	55
Uren, Stephen, Sacramento, Cal. Brake-shoe	331,347	Dec. 1	126	31	33	1021
Ursbruck, Joseph B., Philadelphia, Pa. Nut-lock	333,362	Dec. 29	3040	793	33	1568
Utley, Hiram S., and H. S. Bowen, Chicago, Ill. Decorated mirror	333,433	Dec. 29	3129	.....	33	1582
Vacuum Brake Company. (See Gresham, James, assignor.)						
Vail, Jonathan H., New York, N. Y. Combined engine and dynamo-electric machine	331,924	Dec. 8	1013	262 / 263	33	1188
Vail, Theodore N., assignor to American Bell Telephone Company, Boston, Mass. Electric switch-board	330,644	Nov. 17	1618	436	33	831
Valentine, George R., New Bedford, Mass. Countersink	332,308	Dec. 15	1558	409	33	1291
Valentine, Samuel W., Boston, Mass. Feeding fuel to boilers	332,975	Dec. 22	2488	658	33	1465
Valentine, William P., Painesville, Ohio, assignor of three-fourths to E. G. Wetherbee, M. J. Wilson, and W. C. Reed. Sewing-machine	328,089	Oct. 13	762	198	33	144
Valentine, William P., Painesville, Ohio, assignor of three-fourths to E. G. Wetherbee M. J. Wilson, and W. C. Reed. Mechanical movement	328,090	Oct. 13	764	199	33	144
Valiant Button Fly Company. (See Valiant, George, assignor.)						
Valiant, George, Toronto, Ontario, Canada. Boot. (Reissue.)	10,669	Dec. 1	762	192	33	1134
Valiant, George, Toronto, Ontario, Canada, assignor to Valiant Button Fly Company, Portland, Me. Boot or shoe	330,944	Nov. 24	2019	546	33	913
Valiant, George, Toronto, Ontario, Canada, assignor to Valiant Button Fly Company, Portland, Me. Boot	330,945	Nov. 24	2020	546	33	913
Valk, James S., *et al.* (See Marion, Joseph, assignor.)						
Vallett, Bartholomew, Providence, R. I. Cabinet for curtains	330,645	Nov. 17	1620	436	33	831
Vallier, Louis E., Grenoble, France. Glove	328,261	Oct. 13	973	253	33	185
Van Alstine, Seymour M., Melrose, Mass. Truss	328,985	Oct. 27	1973	512	33	381
Van Alstyne, Lawrence, Sharon, Conn. Combined lock and latch	327,624	Oct. 6	166	41	33	30
Van Delinder, Luther J., and A. W. Nash, Garfield, Iowa. Spring-bed	333,363	Dec. 29	3041	794	33	1568
Van Denburgh, Orville W., Schuylerville, N. Y. Painter's jack	329,243	Oct. 27	2345	607	33	442
Van Depoele, Charles J., Chicago, Ill. Electric-cable conveyance	329,104	Oct. 27	2144	555	33	411
Van Depoele, Charles J., Chicago, Ill. Contact device for suspended electrical conductors	331,585	Dec. 1	515	125	33	1088
Van Depoele, Charles J., Chicago, Ill. Cable conveyance	331,851	Dec. 8	898	232 / 233	33	1167
Van Dorston, Alvin W., Portland, Oreg. Car-coupling	328,547	Oct. 20	1359	354 / 355	33	262
Van Dorston, Alvin W., East Portland, Oreg. Rotary engine	332,765	Dec. 22	2211	583	33	1413
Van Fleit, Downing B. (See Coburn and Van Fleit.)						
Van Gaasbeek, Beekman, Mount Vernon, N. Y. Distribution and delivery box for post-offices	328,826	Oct. 20	1728	449	33	331
Van Horn, Charles, Bethlehem, Pa. Spring-seat for vehicles	331,100	Nov. 24	2211	589	33	949

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Van Horn, Charles, Bethlehem, Pa. Spring-seat for wagons	331,101	Nov. 24	2212	589	33	949
Van Houten, Frank H., Matteawan, N. Y. Reflector-light for baker's ovens	330,757	Nov. 17	1772	478	33	859
Van Kirk, James A., New Brunswick, N. J. Bracket	327,739	Oct. 6	435	113	33	76
Van Leeuwen, John J., Minneapolis, Minn. Translucent picture-candy	328,867	Oct. 20	1778	.....	33	340
Van Nortwick, Samuel B., New York, N. Y. Printing-telegraph	329,515	Nov. 3	120	31, 32	33	528
Van Orden, John M., New York, N. Y. Bustle	332,130	Dec. 8	1302	338	33	1239
Van Reyper, Edwin J., Jersey City, N. J. Glazier's point	330,444	Nov. 17	1379	367	33	783
Van Sicien, Charles M. (See Kessel, John A., assignor.)						
Van Valkenbergh, Wells, Oneida, and D. E. Teal, Oneida Castle, N. Y. Castor	332,629	Dec. 15	2009	527	33	1369
Van Vleck, George H., Buffalo, N. Y. Device for removing the débris of a blast from the face of a tunnel	333,966	Dec. 29	2914	762	33	1546
Van Wagenen, Albert, Boston, Mass. Sole-fastener	331,925	Dec. 8	1015	263	33	1188
Van Wagenen, Albert, Boston, Mass. Sole-fastener	331,926	Dec. 8	1015	263	33	1188
Van Wagenen, Garrett, Chicago, Ill. Horse-collar attachment	331,348	Dec. 1	127	31, 32	33	1021
Van Winkle, George H., assignor of one-half to R. W. Barney, Hornellsville, N. Y. Rake	333,967	Dec. 29	2915	763	33	1546
Van Winkle, Stephen, trustee. (See Nugent, William, assignor.)						
Vance, Samuel J., Macomb, Ill. Window-screen	332,574	Dec. 15	1941	508	33	1356
Vandegrift, Nathaniel W., assignor to F. Armstrong, Bridgeport, Conn. Screw-cutting machine	330,174	Nov. 10	1014	265	33	706
Vandegrift, Nathaniel W., and F. Armstrong, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Pipe-cutter	330,175	Nov. 10	1015	265	33	706
Vandercook, Mark, W. P. Smith, and H. M. Baker, Manton, Mich. Pulley	328,732	Oct. 20	1622	422	33	310
Vanden Berghe, Peter, Philadelphia, Pa. Metal-seaming tool for roofers, &c	329,514	Nov. 3	119	31	33	528
Vanduzen, Ezra W., Newport, Ky. Device for purifying the water of boilers	328,548	Oct. 20	1362	356	33	263
Vanduzen, Ezra W., Newport, Ky. Boiler-tube cleaner	330,443	Nov. 17	1377	367	33	782
Vanorman, Oliver, assignor of one-half to H. Clark, Racine, Wis. Whiffletree-iron	330,530	Nov. 17	1485	397	33	803
Vanorman, Oliver, Rockford, Ill., assignor of one-half to H. W. Hurlbut, Racine, Wis. Wagon-tongue iron	332,766	Dec. 22	2213	583	33	1413
Vaughan, David F., Monongahela City, Pa. Railway-frog	329,979	Nov. 10	751	192	33	652
Vaughan, James, Danbury, Conn. Road-wagon	333,364	Dec. 29	3042	794	33	1568
Veasey, Duncan, *et al.* (See Harrison, Arthur B., assignor.)						
Veidera, Anton. (See Laner and Veideres.)						
Veit, Charles F., *et al.* (See Conard, Léon P., assignor.)						
Veit, Charles F., London, England. Button	327,906	Oct. 6	514	133	33	92
Veit, Charles F., London, England. Button	327,907	Oct. 6	514	134	33	92
Veit, Charles F., London, England. Lock	332,976	Dec. 22	2491	659	33	1465
Venable, William T., Christiansburg Precinct, Ky. Washing-machine	328,262	Oct. 13	974	254	33	185
Vermont Farm Machine Company. (See King, Henry F., assignor.)						
Vermont Farm Machine Company. (See Williams, Nathan G., assignor.)						
Vernon, Miles, Brooklyn, N. Y. Tag	329,980	Nov. 10	753	192	33	653
Vernon, Miles, Brooklyn, N. Y. Tag	329,981	Nov. 10	754	193	33	653
Vestal, James R., Cave Spring, Mo. Washing-machine	328,091	Oct. 13	765	199	33	144
Vetter, Joseph C., New York, N. Y. Induction-coil for medical use	330,531	Nov. 17	1486	397	33	803
Vezin, Oscar, Elizabeth, N. J. Ice-machine	328,624	Oct. 20	1478	398	33	283
Vickery, William P., East Auburn, Me. Car-starter	330,946	Nov. 24	2021	546	33	913
Viggers, William. (See Merrill and Viggers.)						
Viggers, William, Des Moines, Iowa. Fan for ventilating mines, &c	328,549	Oct. 20	1366	356	33	263
Vinson, Michael R., Hope, Ark. Feed-cutter	331,464	Dec. 1	303	81	33	1052
Vinton, John H., Boston, Mass., assignor to Peninsular Novelty Company, Grand Rapids, Mich. Button-setting machine	328,365	Oct. 13	1113	288	33	211
Vinton, John H., Boston, Mass., assignor to Peninsular Novelty Company, Grand Rapids, Mich. Button-setting instrument	329,977	Dec. 22	2492	659	33	1465
Vogel, Ernest, New Lots, assignor to Miles Brothers & Co., New York, N. Y. Treating fiber for the manufacture of brushes, &c	331,852	Dec. 8	901	233	33	1167
Vogel, William, assignor to A. Zeller, Chicago, Ill. Electric alarm for locomotives	330,074	Nov. 10	669	230	33	680
Vogel, William, assignor to A. Zeller, Chicago, Ill. Railway-telegraph	333,178	Dec. 29	2789	730	33	1522
Vogelsang, Alexander, Philadelphia, Pa., assignor of one-half to T. I. Dixon, Brooklyn, N. Y. Screw-propeller	332,309	Dec. 15	1558	409	33	1291
Voigt, Heinrich, Würzburg, assignor of one-half to W. Braun, Frankfort-on-the-Main, Germany. Automatic lathe	329,105	Oct. 27	2147	555 / 556	33	411
Voll, George, assignor to T. S. Ireland, Cincinnati, Ohio. Mortise-lock	332,849	Dec. 22	2316	613	33	1432
Voll, George, assignor, by mesne assignments, to Ireland Manufacturing Company, Cincinnati, Ohio. Face-plate for locks	333,434	Dec. 29	3130	818	33	1582
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Manufacture of color-producing acids	333,034	Dec. 22	2586	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Coloring-matter derived from alphanaphtholdisulphonic acid	333,035	Dec. 22	2587	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Nitronaphtholsulphonic acid	333,036	Dec. 22	2589	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Manufacture of dye-stuff from naphthol	333,037	Dec. 22	2590	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Manufacture of dye-stuff from naphthol	333,038	Dec. 22	2591	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Coloring-matter derived from diazobenzol and alphanaphtholdisulphonic acid	333,039	Dec. 22	2592	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Alphanaphtholsulphonic acid	333,040	Dec. 22	2593	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Coloring-matter derived from diazobenzol and alphanaphthol	333,041	Dec. 22	2594	.....	33	1482
Vollbrecht, Heinrich, and C. Mensching, assignors to Schoellkopf Aniline and Chemical Company, Buffalo, N. Y. Coloring-matter derived from alphanaphthol and diazotoluol	333,042	Dec. 22	2595	.....	33	1482
Vom Hofe, Julius, Brooklyn, N. Y. Fishing-reel	330,811	Nov. 17	1840	496	33	872
Von der Heydt, Hermann, Chicago, Ill. Self-winding watch	332,023	Dec. 8	1144	299 / 300	33	1212
Von Förster, Max, Berlin, Germany. Shell	333,091	Dec. 22	2602	698	33	1494
Von Kopal, Wilhelm, *et al.* (See Czvetkovics, Mitar D., assignor.)						
Von Martini, Friedrich, Frauenfeld, Switzerland. Embroidering-machine	332,024	Dec. 8	1152	300 / 301 / 302	33	1213
Von Rom, Herman, Stuttgart, Wurtemberg, Germany. Refrigerator	331,349	Dec. 1	129	32	33	1021
Vonderlehr, Frederick. (See Emmerich and Vonderlehr.)						
Voorhis, Calvin. (See Shenfield and Voorhis.)						
Voshurgh, Reuben, Oregon, Ill. Conbined anvil, vise, and drill	328,550	Oct. 20	1367	356	33	263

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Vose, Richard, New York, N. Y. Car-spring	330,445	Nov. 17	1380	367	33	783
Vose, Richard, New York, N. Y. Car-spring	330,446	Nov. 17	1381	368	33	783
Voûte, B. T. (See Goutevenier, Peter, assignor.)						
Vrooman, William P., Johnstown, N. Y., assignor to J. R. Torrey, Worcester, Mass. Combined stock and sample show-case	331,171	Nov. 24	2318	628	33	968
Vulcanized Fibre Company. (See Taylor, Franklin, assignor.)						
Wadleigh, Harvey M. (See Goodhue, George J., assignor.)						
Wagenet, Henry W., *et al.* (See Brunck and Marsh, assignors.)						
Wagenet, John H., *et al.* (See Brunk and Marsh, assignors.)						
Wagenhurst, John H., Dewart, Pa. Roof double-seaming machine	331,586	Dec. 1	517	125	33	1088
Waggoner, Benjamin F., Litchfield, assignor to himself and E. L. Waggoner, Hillsborough, Ill. Machine for packing soil beneath the surface	328,263	Oct. 13	975	254	33	185
Waggoner, Edward L. (See Waggoner, Benjamin F., assignor.)						
Waggoner, W. Preston, Decatur, Ill. Device for converting pool-tables into billiard-tables	328,052	Oct. 13	766	200	33	145
Wagnalls, Adam W. (See Ludlow, Funk, and Wagnalls.)						
Wagner, Henry, *et al.* (See Nutting, Adrain, assignor.)						
Wagner, Phil J., Eudora, Kans. Fence	332,121	Dec. 8	1303	338	33	1239
Wailes, Josiah S., Florence, Kans. Clothes-line	330,646	Nov. 17	1621	436	33	831
Waite, Benjamin C., Brooklyn, N. Y. Piston-packing	331,219	Nov. 24	2392	647	33	990
Waite, Charles N., Medford, Mass. System of inclined troughs with inclosed steam-pipes for evaporating saline or saccharine liquids	331,587	Dec. 1	518	125	33	1088
Waite, Charles N., Medford, Mass., assignor to Avery Lactate Company, Portsmouth, N. H. Laxative compound	330,532	Nov. 17	1487	.....	33	804
Waite, Gilman, *et al.* (See Boscawen, William, assignor.)						
Waite, Henry E. (See Ethridge, Martin V. B., assignor.)						
Waite, Henry E., assignor to C. F. Livermore, trustee, New York, N. Y. Telephone	327,625	Oct. 6	168	41	33	30
Waite, Russell P., *et al.* (See Kizer, Isaac H., assignor.)						
Wakefield, Clovis W. (See Wohlfarth and Wakefield.) (Reissue.)						
Walden, Joseph, Orange, N. J. Strap for boots or shoes	331,927	Dec. 8	1016	264	33	1188
Waldron, Charles F., Boston, Mass. Carriage-lamp	333,365	Dec. 29	3043	794	33	1568
Waldstein, Martin E., and A. Müller, New York, N. Y. Composition of matter to be used in dyeing	330,275	Nov. 10	1137	.....	33	730
Walker, Charles F., Oak Park, and M. Ransom, Chicago, Ill.; said Ransom assignor to said Walker. Permutation-padlock	330,647	Nov. 17	1622	436	33	831
Walker, Charles O. R., Coolart Balnaring, assignor to J. E. Pounds, Lockinge House, Kew, Victoria. Wire-strainer	328,093	Oct. 13	766	200	33	145
Walker, Daniel, trustee. (See Bradshaw, John A., assignor.)						
Walker, James F., Columbus, Kans. Gearing	329,106	Oct. 27	2150	557	33	412
Walker, Marcellus, Boston, Mass. Boot or shoe	330,176	Nov. 10	1016	265	33	706
Walker, Marcellus, Cambridge, Mass. Plow-shoe	332,463	Dec. 15	1767	462, 463	33	1327
Walker, Thomas, and O. G. Barlow, Portland, Oreg. Combined seeder, roller, and harrow	331,588	Dec. 1	519	126	33	1088
Walker, Thomas B., Minneapolis, Minn. Band-saw mill	328,094	Oct. 13	767	200	33	145
Walker, William E., and G. E. Wilbur, Taunton, Mass. Heating-stove	329,516	Nov. 3	123	32	33	528
Walker, William T., Bishopswood Road, Highgate, county of Middlesex, England. Gas-retort lid	331,102	Nov. 24	2213	599	33	949
Wall, Enos A., Bullion, Idaho Ter. Crushing-roll	332,978	Dec. 22	2493	659	33	1465
Wall, William, New York, N. Y. Bed	330,447	Nov. 17	1381	368	33	783
Wallace, Alfred M., Globe, Ariz. Ter. Riding-saddle	333,491	Dec. 29	3208	840	33	1595
Wallace, Jacob, trustee. (See Maxfield, Charles A., assignor.)						
Wallace, Jacob, trustee. (See Maxfield, Leverett L., assignor.)						
Wallace, John, *et al.* (See Pearson, George D., assignor.)						
Wallace Manufacturing Company. (See Wallace, William W., assignor.)						
Wallace, Peter, *et al.* (See Pearson, George D., assignor.)						
Wallace & Sons. (See Jarvis, William H., assignor.)						
Wallace, Thomas. (See Lockwood, William C., assignor.)						
Wallace, William W., assignor to Wallace Manufacturing Company, Frankfort, Ind. Mold for casting rolls	327,840	Oct. 6	436	114	33	76
Walley, William O., Altrincham, near Manchester, county of Chester, England. Apparatus for checking and controlling runaway horses	331,350	Dec. 1	130	32	33	1021
Walling, Mary C., Washington, D. C. Stamping-machine	332,850	Dec. 22	2317	613, 614	33	1432
Wallis, Edward, Jr. (See Atwood and Wallis.)						
Wallis, John N., and D. W. Smith, Auburn, N. Y.; said Smith assignor to said Wallis. Combined horse hay rake and tedder	333,366	Dec. 29	3044	795	33	1568
Wallower, Elias Z., *et al.* (See Sullenberger, Samuel A., assignor.)						
Walls, Dalton, Appleton City, Mo. Cultivator and harrow	331,589	Dec. 1	522	126	33	1089
Walpuski, Charles, assignor to Eagle Pencil Company, New York, N. Y. Composition for pencil-leads and crayons	328,366	Oct. 13	1114	.....	33	211
Walrath, Jesse, assignor to J. I. Case Threshing Machine Company, Racine Wis. Steam-boiler	327,841	Oct. 6	437	114	33	77
Walsh, Francis A., Chicago, Ill. Sheet-metal can	333,179	Dec. 29	2791	730	33	1522
Walsh, Francis A., Chicago, Ill. Sheet-metal can	333,180	Dec. 29	2792	731	33	1522
Walsh, John E., New York, N. Y. Submarine excavator	328,095	Oct. 13	769	201	33	145
Walsh, John L., Chicago, Ill. Button-hole sewing-machine	332,122	Dec. 8	1304	338, 339	33	1239
Walsh, Patrick. (See O'Connor, Walsh, and Martin.)						
Walsh, Robert E., New York, N. Y. Portable ventilating apparatus	330,177	Nov. 10	1018	266	33	707
Walter, Edward P. and H. C., Bridgeport, Conn. Friction-clutch	329,244	Oct. 27	2345	607	33	448
Walter, Henry C. (See Walter, Edward P. and H. C.)						
Walter, Henry C., Bridgeport, Conn. Bottling-machine	330,178	Nov. 10	1019	266	33	707
Walter, Willie C., assignor of two-thirds to G. B. McAdams, Richmond, Va. Powder-box	329,787	Nov. 3	485	123	33	597
Walton, Edward, Cartersville, Va. Tobacco-carrier	332,123	Dec. 8	1306	339	33	1239
Walton, Isaac N. (See Holt, Robert B., assignor.)						
Walworth, Caleb C. (See Hall, Osborn B., assignor.)						
Wanamaker, Daniel S., assignor to himself and J. Ackerman, Ramsey's, N. J. Wagon-jack	331,103	Nov. 24	2214	600	33	950
Ward, Aaron, Camden, N. J. Machine for making paving or building blocks	328,551	Oct. 20	1368	357	33	264
Ward, Aaron, Camden, N. J. Machine or press for pressing bricks, &c	328,552	Oct. 20	1370	357	33	264
Ward, Alexander F., Detroit, Mich. Hoop-planing machine	332,124	Dec. 8	1307	339	33	1240
Ward, Charles, Toronto, Ontario, Canada. Automatic barrel-filler	328,827	Oct. 20	1730	450	33	331
Ward, Norbert R. (See Ward, Whitfield, assignor.)						
Ward, Whitfield, assignor of one-half to N. R. Ward, New York, N. Y. Bottle-stopper	330,812	Nov. 17	1841	496	33	872
Ward, William E. (See Wilmer, Theodore J., assignor.)						
Wardman, William, Bristol, Pa. Spindle for cap spinning and twisting machines	328,733	Oct. 20	1623	423	33	310

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wardwell, Claison S., Stamford, Conn. Pulley or wheel	328,158	Oct. 13	846	220	33	160
Waring, John B., New York, N. Y. Pulverizing-machine	332,625	Oct. 20	1481	396	33	984
Waring, John T., Yonkers, N. Y. Machinery for felting hat-bodies, &c	332,851	Dec. 22	2319	614	33	1432
Warmoth, Madison M., Brandenburg, Ky. Pessary	328,553	Oct. 20	1371	357	33	264
Warner, Frank D., and W. J. Matthews, Collinsville, Ill. Whiffletree-coupling	329,788	Nov. 3	486	123	33	527
Warner, George A., Des Moines, Iowa. Hydrant and plug	328,988	Oct. 27	1976	513	33	382
Warner, John P., Philadelphia, Pa., assignor of five-eighths to E. L. Lambie, Washington, D. C., and J. F. Dezendorf, Norfolk, Va. Purifier and heater for feed-water	330,758	Nov. 17	1773	478	33	860
Warner, Samuel M. (See La Rue, Henry U., assignor.)						
Warren, Benjamin F., Philadelphia, assignor to B. D. Benson, Titusville, Pa. Apparatus for cleaning out pipe-lines	329,605	Nov. 3	250	65	33	552
Warren, Charles T., Boston, assignor of one-half to E. B. Welch, Cambridge, Mass. Rotary water-meter	328,734	Oct. 20	1624	423	33	310
Warren, Edmond A., Brooklyn, N. Y. Ink-table for printing-machines	330,533	Nov. 17	1488	398	33	804
Warren, Edward K., Three Oaks, Mich. Attaching stiffenings to dress-waists	327,696	Oct. 6	169	41	33	31
Warren Featherbone Company (See Holden, George R., assignor.)						
Warren Featherbone Company. (See Holden, Jonas H., assignor.)						
Warren, Jabez T., Le Roy, N. Y. Razor-strop	331,853	Dec. 8	903	233	33	1167
Warren, John E., Westbrook, Me. Filter	332,979	Dec. 22	2494	659	33	1465
Warren, John H., *et al.* (See Clark, Levi S., assignor.)						
Warshoar, Alexander, Boston, Mass. Detachable pocket and protector	332,310	Dec. 15	1559	410	33	1291
Warwick, George T., Springfield, Mass. Machine for bending and setting the backbones of bicycles	328,986	Oct. 27	1974	513	33	381
Warwick, George T., Springfield, Mass. Tool for making hollow rims for bicycle-wheels	328,987	Oct. 27	1975	513	33	381
Warwick, Thomas, Birmingham, county of Warwick, England, assignor to Overman Wheel Company, Chicopee, Mass. Velocipede	329,517	Nov. 3	124	32, 33	33	529
Washburn, Edwin C., Nevada, Mo. Combined gate roller and hinge	330,648	Nov. 17	1625	437	33	832
Washburn & Moen Manufacturing Company. (See Lenox, Edwin S., assignor.)						
Washburn & Moen Manufacturing Company. (See Morgan, Charles H., assignor.)						
Washburn, Wilbur F. (See Moore, Charles H., assignor.)						
Washburne, Mary E. (See Washburne, Oscar, assignor.)						
Washburne, Oscar, assignor to M. E. Washburne, Sing Sing, N. Y. Feeder for cotton-gins	328,159	Oct. 13	847	220	33	160
Waterbury, Caroline R., executrix. (See Waterbury, Charles G.)						
Waterbury, Charles G., deceased, New York, N. Y., C. R. Waterbury executrix. Snow-melting and ground-heating machine	328,367	Oct. 13	1115	288	33	211
Waterbury Watch Company. (See Hart, George E., assignor.)						
Waterhouse, Frank G., Sacramento City, Cal. Dynamo-electric machine	332,685	Dec. 15	2094	550	33	1384
Waterman, Lyman, Jr., Creston, Iowa, assignor, by mesne assignments, of one-half to W. H. and C. W. Doty, Galesburg, Ill. Combined check-rower and self-dropping corn-planter	328,160	Oct. 13	849	220, 221	33	160
Waterman, Smith A., West Troy, N. Y. Spring-clip	327,744	Oct. 6	316	81	33	55
Waters, Daniel, Wilkes-Barré, Pa. Bit-fastening for bridles	332,025	Dec. 8	1160	302	33	1214
Waters, Frank M., assignor to D. P. and T. E. McKinney, Springfield, Ohio. Lawn-mowing machine	333,181	Dec. 29	2792	731	33	1523
Watkins, Benjamin, Akron, Ohio. Horseshoe-nail	332,464	Dec. 15	1769	463	33	1327
Watson, Charles S., assignor of one-half to I. Townsend, Philadelphia, Pa. Fire-escape	331,746	Dec. 1	752	190	33	1139
Watson, Earle F., New York, N. Y. Skate-sharpener	332,465	Dec. 15	1770	463	33	1327
Watson, Henry H., Waltham, Mass. Car-starter	331,220	Nov. 24	2392	647	33	961
Watson, James B., Marionville, Pa. Slide-valve for oil-wells	333,492	Dec. 29	3209	840	33	1596
Watson, James H., Tawas City, and C. H. Hubbell, East Tawas, Mich.; said Hubbell assignor of one-half to W. A. Kelly. Feed for gang saws	331,590	Dec. 1	523	127	33	1089
Watson, Lewis H., Chicago, Ill. Burner for heating purposes	329,107	Oct. 27	2151	557	33	412
Watson, Lewis H., Chicago, Ill. Ironing-machine	332,026	Dec. 8	1161	303, 304	33	1214
Watson, Lysander E., Ocean Grove, and D. H. Hulit, Asbury Park, N. J. Railway-signal	331,854	Dec. 8	904	234	33	1167
Watson, Theodore F., New Milford, Conn. Case for cards, samples, &c	328,161	Oct. 13	851	221	33	161
Wattles, Joseph W., Canton, Mass. Traveler-clearer for ring-spinning frames	328,989	Oct. 27	1977	513	33	382
Watts, Campbell Company. (See Young, John, assignor.)						
Watts, Daniel B., assignor of one-half to G. W. Dunn, Montrose, Mo. Printer's galley	332,686	Dec. 15	2096	551	33	1384
Watts, William W., Louisville, Ky. Pocket toilet-case	330,649	Nov. 17	1625	437	33	832
Way, J. Howard, Philadelphia, Pa. Leggin	332,630	Dec. 15	2010	527	33	1369
Way, William, Wilfrid, Ontario, Canada. Lumber-transporter	328,898	Oct. 20	1731	450	33	332
Way, William O. (See Heintz, Philip, assignor.)						
Wayne Agricultural Company. (See Pugham, Jesse P., assignor.)						
Weast, George B., Newville, Pa. Sheet-metal roof	329,789	Nov. 3	487	123	33	597
Weatherhead, Albert J. (See Class and Weatherhead.)						
Weatherhead, Albert J. (See Class, Weatherhead, and Collins.)						
Weatherly, William L., Philadelphia, Pa. Cuff-retainer	328,735	Oct. 20	1625	423	33	311
Weaver, Ephraim E., assignor to P. I. Fitzgerald, Philadelphia, Pa. Electrical indicator for letter-boxes	329,245	Oct. 27	2347	607	33	449
Weaver, Isaac D., assignor to himself, C. Bowman, and E. H. Brooks, Lebanon, Pa. Ratchet-drill	329,790	Nov. 3	487	123	33	598
Weaver, James H., assignor to Ewart Manufacturing Company, Chicago, Ill. Drive-chain	332,311	Dec. 15	1560	410	33	1291
Weaver, Samuel J. (See O'Brien and Weaver.)						
Weaver, Samuel J., assignor of one-half to J. O'Brien, St. Louis, Mo. Feed-water heater	330,650	Nov. 17	1627	437	33	832
Weaver, Theophilus, *et al.* (See Sullenberger, Samuel A., assignor.)						
Webb, Charles B., Hopkinsville, Ky. Trace-hook	329,108	Oct. 27	2153	557	33	412
Webb, Charles C., New York, N. Y. Sash-cord fastener	327,627	Oct. 6	170	42	33	31
Webb, Carlos N., assignor to P. D. Randall, Lansingburg, N. Y. Whip-socket	330,448	Nov. 17	1382	368	33	783
Webb, J. Harry, Middle Settlement, Ark. Spoke-socket	331,591	Dec. 1	525	127	33	1089
Webb, Jesse G., Boston, Mass. Ice-cream freezer	332,466	Dec. 15	1770	463, 464	33	1327
Webb, William. (See Doriot, Victor, assignor.)						
Webber, Guy. (See Spivey, Thomas S., assignor.)						
Webber, Samuel S., Lawrence, Mass. Spindle	328,096	Oct. 13	770	201	33	146
Webber, William O., Lawrence, Mass. Stuffing-box	331,014	Nov. 24	2103	589	33	929
Weber, Caspar, Chicago, Ill. Velocipede	333,268	Dec. 29	2917	763	33	1546
Weber, Jacob, assignor to himself and W. F. Lennon, New York, N. Y. Sash-balance	331,592	Dec. 1	525	127	33	1089
Weber, Louis. (See Page and Weber.)						
Weber, Louis. (See Page and Weber.) (Reissue.)						
Webster & Comstock Manufacturing Company. (See Chivill, John, assignor.)						
Webster, Daniel W., Christiana, Pa. Traction-engine	331,593	Dec. 1	526	128	33	1090
Webster, Edward E., Brainerd, Minn. Paper-file	331,172	Nov. 24	2319	628, 629	33	966
Webster, Hanson S., Boonville, N. Y. Folding table	328,990	Oct. 27	1979	514	33	382

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Webster, Ivory, West Liberty, Iowa. Machine for laying drain-tile	329,246	Oct. 27	2348	608	33	449
Webster, John H. (See Balder, William, assignor.)						
Webster, Walter, Richmond, Ind. Trundle and hoop	329,518	Nov. 3	125	33, 34	33	529
Weeden, Alfred, assignor of one-half to J. W. Bradshaw, Bon, Wis. Post-driver	332,687	Dec. 15	2097	551	33	1384
Weeks, Albert W., Newton Upper Falls, Mass. Shoe tying and knotting machine	329,519	Nov. 3	126	34, 35	33	529
Weeks, Albert W., Lynn, Mass. Automatic stop-motion	329,520	Nov. 3	133	35	33	530
Weeks, Albert W., Lynn, Mass. Shoe tying and knotting machine	329,521	Nov. 3	135	35	33	530
Weeks, John, assignor to R. Dudgeon, New York, N. Y. Hydraulic-jack	330,760	Nov. 17	1777	479	33	860
Weeks, John, New York, and H. Travers, Brooklyn, assignors to R. Dudgeon, New York, N. Y. Hydraulic jack	330,759	Nov. 17	1775	479	33	860
Weidenmann, Jacob, and O. Grüninger, New York, N. Y. Apparatus for lowering coffins	329,522	Nov. 3	137	35	33	531
Weidman, George W., Washington, D. C. Treadle for bicycles	331,173	Nov. 24	2321	629	33	968
Weinedel, Charles, assignor of one-half to O. E. Mueller, Louisville, Ky. Swinging can	329,247	Oct. 27	2351	608	33	349
Weinapach, Charles, Jersey City, N. J. Apparatus for cooling air for confectioners' use	331,928	Dec. 8	1017	264	33	1182
Weinstock, Henry B., Fall Creek, Wis. Vehicle-wheel	332,027	Dec. 8	1163	304	33	1214
Weir, Fredric C., Cincinnati, Ohio. Railway-frog	331,594	Dec. 1	527	128	33	1090
Weir, Fredric C., Cincinnati, Ohio. Railway-frog	332,980	Dec. 22	2496	660	33	1466
Weir, Worthington T., Spring Hill, Ill. Key-board for musical instruments	327,628	Oct. 6	171	42	33	31
Weiss, Albert R., Brooklyn, N. Y. Bottle-washing machine	329,109	Oct. 27	2154	558	33	412
Weiss, Charles W., Brooklyn, and C. Kruse, New York, N. Y. Adding device for check-machines	329,421	Oct. 27	2615	675	33	497
Weissner, Oscar E. A., *et al.* (See Spengler, Christian G., assignor.)						
Welch, E. B. (See Warren, Charles T., assignor.)						
Weldon, Alfred, Buffalo, N. Y. Float for low-water alarms	329,248	Oct. 27	2352	609	33	450
Welford, Robert, Hunters Hall, Durham Road, Sunderland, county of Durham, England. Direct-acting engine	328,626	Oct. 20	1483	387	33	284
Welker, Louis, assignor to National Furniture Company, (limited,) Williamsport, Pa. Table-leaf support	332,125	Dec. 8	1308	340	33	1240
Welling, John E. (See Saunders and Welling.)						
Wellington, Arthur M., New York, N. Y. Car-truck	332,981	Dec. 22	2497	660	33	1466
Wells, George H., assignor of one-half to F. R. Chapman, Boston, Mass. Trunk	331,351	Dec. 1	131	32	33	1021
Wells, George W., Southbridge, Mass. Spring and nose-guard for eyeglasses	331,465	Dec. 1	303	81	33	1052
Wells, Heber, Paterson, N. J. Stand for type-cases	327,629	Oct. 6	174	43	33	31
Wells, Willet C., Tiffin, Ohio. Self pumping and expanding well-drill	332,688	Dec. 15	2098	551	33	1385
Welsh, Anthony, *et al.* (See Dunbar, Junius H., assignor.)						
Wempie, Alonzo E., Brooklyn, N. Y. Fertilizer	330,675	Nov. 10	891	.....	33	681
Wenigmann, Paul, assignor to W. D. Clark, Chicago, Ill. Electric belt	328,929	Oct. 20	1732	450	33	332
Werkzeug und Maschinenfabrik Oerlikon. (See Müller, Hermann, assignor.)						
Werner, Emil, New York, N. Y., assignor of one-half to A. W. Gorner, Philadelphia, Pa. Car starter and brake	333,367	Dec. 29	3046	795	33	1568
Werner, Emmerich A., New York, N. Y. Bridge	329,249	Oct. 27	2353	609	33	450
Werner, Gustav H., St. Louis, Mo. Ice-tonga	329,523	Nov. 3	140	36	33	531
Werner, Hermann, Cannstadt, Würtemberg, Germany. Dough-kneading machinery	329,110	Oct. 27	2156	558	33	413
Wert, Frank A., *et al.* (See Anderson, Archie, assignor.)						
Werth, Carl J. (See Brandt and Werth.)						
Wescott, Edwin J. (See Stevens and Wescott.)						
West, Charles N., San Francisco, Cal. Electrical therapeutical belt	332,467	Dec. 15	1772	464	33	1328
West, Jonathan B., Rochester, N. Y. Machine for trimming edgings	331,015	Nov. 24	2104	509	33	929
West, Judson T., Hope, Ark. Flooring-machine	327,942	Oct. 6	438	114	33	77
West, Samuel C., Elizabeth, N. J. Furnace for the manufacture of zinc-white	328,097	Oct. 13	771	201	33	146
West Telephone Company. (See West, William A., assignor.)						
West, William A., Bellefontaine, Ohio, assignor to West Telephone Company, (limited,) Kenosha, Wis. Receiver for telephonic telegraphs	329,982	Nov. 10	755	193	33	653
West, William A., Bellefontaine, Ohio, assignor to West Telephone Company, (limited,) Kenosha, Wis. Telephone	329,983	Nov. 10	756	193	33	653
West, William A., Bellefontaine, Ohio, assignor to West Telephone Company, (limited,) Kenosha, Wis. Telephonic telegraph	329,984	Nov. 10	758	194	33	653
Western Electric Company. (See Patterson, William R., assignor.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Western Electric Company. (See Seely, John A., assignor.)						
Western Electric Manufacturing Company. (See Firman, Leroy B., assignor.)						
Western Union Telegraph Company. (See Nicholson, Henry C., assignor.)						
Westervelt, Douglas, assignor to himself and J. S. Bassett, Chicago, Ill. Stop and waste cock	333,368	Dec. 29	3047	795	33	1569
Westgate, Joseph D., assignor of three-fourths to F. N. Eddy, A. Elcock, and W. E. Hadwen, Worcester, Mass. Barrel-sustaining apparatus	329,524	Nov. 3	140	36	33	531
Westinghouse, George, Jr., Pittsburg, Pa. Conveying and supplying gas	328,368	Oct. 13	1117	289	33	211
Westinghouse, George, Jr., Pittsburg, Pa. Detecting and carrying off leakage from gas-mains	330,179	Nov. 10	1020	266	33	707
Westinghouse, George, Jr., Pittsburg, Pa. Detecting and carrying off leakage from gas-mains	331,595	Dec. 1	528	128	33	1090
Westinghouse, George, Jr., Pittsburg, Pa. Detecting and closing leaks in gas-mains	331,596	Dec. 1	529	129	33	1090
Westinghouse, H. Herman, New York, N. Y., assignor to Westinghouse Machine Company, Pittsburg, Pa. Reducing clearance in steam-cylinders	327,630	Oct. 6	175	43	33	31
Westinghouse, H. Herman, New York, N. Y., and W. A. Bole, assignors to Westinghouse Machine Company, Pittsburg, Pa. Steam-engine valve	329,347	Oct. 27	2500	644	33	476
Westinghouse, H. Herman, New York, N. Y., assignor to Westinghouse Machine Company, Pittsburg, Pa. Steam-engine valve	332,689	Dec. 15	2099	551 / 552	33	1385
Westinghouse, H. Herman, New York, N. Y., and H. H. Garrett, assignors to Westinghouse Machine Company, Pittsburg, Pa. Separator for mingled oil and water	329,791	Nov. 3	489	124	33	598
Westinghouse Machine Company. (See Creuzbaur, Robert, assignor.)						
Westinghouse Machine Company. (See Westinghouse, H. Herman, assignor.)						
Westinghouse Machine Company. (See Westinghouse and Bole, assignors.)						
Westinghouse Machine Company. (See Westinghouse and Garrett, assignors.)						
Westlake, James E., Albuquerque, N. Mex. Ter. Concentrating-machine	328,627	Oct. 20	1484	387	33	284
Westlake, William, Brooklyn, N. Y. Furnace	331,597	Dec. 1	531	129	33	1091
Westlake, William, Brooklyn, N. Y., assignor to United States Combustion Company, of New York. Furnace for boilers	328,991	Oct. 27	1980	515	33	382
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical measuring-instrument	327,908	Oct. 6	516	134 / 135	33	92
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Rheostat	330,449	Nov. 17	1283	368	33	784
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric lamp	330,450	Nov. 17	1284	369	33	784

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Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical meter	330,451	Nov. 17	1386	369	33	784
Wetherbee, E. G., *et al.* (See Valentine, William P., assignor.)						
Wetherill, William H., Philadelphia, Pa. Window-seat box	330,671	Nov. 17	1628	437	33	832
Wetmore, Jerome W., Erie, Pa. Fire-escape	333,182	Dec. 29	2794	731	33	1523
Wetmore, Paul L., Boston, Mass. Car-coupling	330,647	Nov. 24	2021	546	33	913
Wetmore, William F., and L. H. Bratt, assignors of one-third to J. B. Birdsell, South Bend, Ind. Water-tube for boilers	333,043	Dec. 22	2596	680	33	1462
Wetmore, William H., Raleigh, N. C. Horse-collar	329,111	Oct. 27	2157	559	33	413
Weyman, Charles T. (See Weyman, George W., assignor.)						
Weyman, George W., Clayton, N. J., assignor of one-half to C. T. Weyman, Philadelphia, Pa. Jar-fastening	329,792	Nov. 3	490	124	33	598
Wezel, Julius, Rendnitz, Germany. Machine for making artificial lithographic stones	332,852	Dec. 22	2320	614	33	1432
Wharton & Co., William, Jr. (See Samuel, Edward, assignor.)						
Wheat, John J., Indianapolis, Ind. Feed device for sewing-machines	328,162	Oct. 13	851	221	33	161
Wheat, John J., Indianapolis, Ind. Presser-foot device for sewing-machines	328,163	Oct. 13	852	222	33	161
Wheaton, Abram W., Newark, N. J. Cartridge-loading machine	332,767	Dec. 22	2213	584	33	1413
Wheeler, Benjamin, Jr., Zanesville, Ohio. Fence-post	328,264	Oct. 13	976	254	33	185
Wheeler, Frederick M., Montclair, N. J., assignor to Lighthall Manufacturing Company, New York, N. Y. Surface-condenser	332,468	Dec. 15	1775	464 / 465	33	1328
Wheeler, Henry H., assignor of one-half to T. J. Kintz and J. F. Leahy, Tiffin, Ohio. Stove-grate	329,868	Nov. 3	600	154	33	617
Wheeler, Henry W., assignor to Tatum & Bowen, San Francisco, Cal. Saw	328,164	Oct. 13	853	222	33	161
Wheeler, Lewis E., East Hampton, Mass. Cutting appliance for lathes	330,948	Nov. 24	2023	547	33	913
Wheeler, Marshal, Creston, Iowa. Breech-loading fire-arm	329,793	Nov. 3	491	124	33	598
Wheeler, Nathaniel, and W. F. Dial, Bridgeport, Conn. Sewing-machine	328,165	Oct. 13	854	222 / 223	33	162
Wheeler, Nathaniel, and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Feeding mechanism for sewing-machines	331,174	Nov. 24	2322	629	33	969
Wheeler, Orrin A., Springfield, Mo. Coaster	332,575	Dec. 15	1942	508	33	1356
Wheeler, Seth, Albany, N. Y. Wrapping and toilet paper	333,183	Dec. 29	2794	732	33	1523
Wheeler, William, Jr., Stonington, Conn. Chromatic-printing machine	333,493	Dec. 29	3210	840	33	1596
Wheeler & Wilson Manufacturing Company. (See Campbell, Andrew C., assignor.)						
Wheeler & Wilson Manufacturing Company. (See Wheeler and Dial, assignors.)						
Whelpley, Richard Y. (See Kimball, Charles W., assignor.)						
Wherry, John, Jr., Putnam, Ill. Pulverizing-harrow	329,606	Nov. 3	251	65	33	553
Whinery, James L., Union, Iowa. Dentistry	328,442	Oct. 13	1227	318	33	232
Whipple, Leander E., Hartford, Conn. Fastening for railway-rails	327,745	Oct. 6	317	81	33	55
Whipple, Leander E., Hartford, Conn. Railway-tie	327,843	Oct. 6	438	114	33	77
Whitaker, Edwin V., Gloversville, N. Y. Roller-skate	330,659	Nov. 17	1629	438	33	833
Whitbeck, Andrew. (See Bigelow and Whitbeck.)						
Whitcomb, Marcellus L., Coldwater, Mich. Window-screen	332,965	Oct. 13	977	254	33	185
Whitcomb, Wilson W., Batavia, N. Y. Device for representing the motions of the earth and moon	327,631	Oct. 6	176	43	33	32
White, Asa F., Candor, N. Y., assignor of one-half to C. O. and E. M. White. Chair	331,352	Dec. 1	133	33	33	1021
White, Charles O., *et al.* (See White, Asa F., assignor.)						
White, Edward M., *et al.* (See White, Asa F., assignor.)						
White, Frank L., Gainesville, Tex. Churn	331,598	Dec. 1	533	130	33	1091
White, George, assignor of one-half to C. Eaton, New York, N. Y. Sewing-machine attachment for unwinding thread from spools	331,855	Dec. 8	906	234	33	1169
White, J. Claude, Swatara, Pa. Ditching and tile-laying machine	332,126	Dec. 8	1310	340	33	1240
White, Jasper, Penn, Mich. Harvester	328,266	Oct. 13	978	255	33	185
White, John B., Buffalo, N. Y. Making horseshoes	330,534	Nov. 17	1489	398	33	804
White, Le Roy S., assignor to Electrical Appliance Manufacturing Company, Waterbury, Conn. Turning on and shutting off gas by electricity	331,221	Nov. 24	2394	648	33	981
White, Lewis B., assignor to American Trades Agency Company, New York, N. Y. Automatic block-signal for railways	330,180	Nov. 10	1021	267	33	706
White, Lewis B., New York, N. Y., assignor to L. Abbett, Jersey City, N. J. Cable-grip	333,374	Dec. 29	3054	796	33	1570
White, Louis B., New York, N. Y., assignor to W. L. Potter and E. H. Hills, Hartford, Conn. Apparatus for burning hydrocarbons	329,985	Nov. 10	759	194	33	654
White, Maurice W., assignor of one-half to G. W. Ross, Boston, Mass. Violin-bridge	330,276	Nov. 10	1138	302	33	730
White, Robert J., West New Brighton, N. Y. Polishing paper	332,028	Dec. 8	1164	.....	33	1214
White Sewing Machine Company. (See Clyne, James B., assignor.)						
White, Thomas R., Philadelphia, Pa. Gas-generating apparatus	327,844	Oct. 6	439	115	33	77
White, Welcome, Baltimore, Md. Butter-package	330,653	Nov. 17	1630	438	33	833
White, William O., assignor to American Rock and Track Lifter Company, Lake Village, N. H. Stump-extractor and stone-lifter	332,368	Dec. 15	1647	439	33	1306
White, William P., Cincinnati, Ohio. Fire and burglar proof safe	333,184	Dec. 29	2795	732	33	1523
Whitehall, Curtis, Newtown, Ind. Cultivator	330,761	Nov. 17	1779	479	33	861
Whitehead, Edward W., St. Joseph, Mo. Truck for moving houses	327,632	Oct. 6	177	43	33	32
Whiteley, William N., Springfield, Ohio. Cast wheel	328,736	Oct. 20	1626	423	33	311
Whiteley, William N., Springfield, Ohio. Bearing for harvester-frames	330,181	Nov. 10	1023	267	33	706
Whiteley, William N., and W. Bayley, Springfield, Ohio. Harvester	330,654	Nov. 17	1631	438	33	833
Whiting, James M., Providence, assignor to himself and G. W. Paine, Johnson, R. I. Shears	330,813	Nov. 17	1842	496	33	872
Whitlock, Sturges, Birmingham, Conn. Gearing for printing-presses	332,576	Dec. 15	1943	509	33	1356
Whitlock, Sturges, Birmingham, Conn. Sliding bearer for printing-machines	332,577	Dec. 15	1944	509	33	1357
Whitman, Francis S., *et al.* (See Cuming, Alfred A., assignor.)						
Whitmore, James W., assignor of one-fourth to James W. Whitmore, Jr., Richmond, Va. Hinge	333,375	Dec. 29	3055	797	33	1570
Whitmore, John, Salem, Mass. Car-coupling	330,794	Nov. 3	492	124	33	598
Whitney, Arthur E., Winchester, Mass. Machine for unhairing, working, and scouring hides	330,655	Nov. 17	1632	439	33	834
Whitney Brothers. (See Ferrari, Andrew, assignor.)						
Whitney Brothers. (See Synnott, Thomas W., assignor.)						
Whitney, Catherine, Lawrence, Kans. Mangle	329,250	Oct. 27	2354	609	33	450
Whitney, Emma V. (See Nichols and Whitney.)						
Whitney, Frank H., Friendship, Me. Bench-stop	329,795	Nov. 3	493	125	33	599
Whitney, Herbert W., *et al.* (See Lane, Frank W., assignor.)						
Whitney, Howard C., Albany, N. Y. Calendar blotting-pad	329,348	Oct. 27	2501	644	33	477
Whitney, John R., Radnor, Pa. Hanging window	331,466	Dec. 1	305	82	33	1052
Whitney, Orison C., Cleveland, Ohio. Organ-coupler	329,796	Nov. 3	494	125	33	599
Whitney, Pardon A., Chagrin Falls, Ohio. Ratchet-drill	330,986	Nov. 10	761	194	33	654
Whitney, William A., Stillman Valley, Ill. Colter and jointer attachment for plows	331,175	Nov. 24	2323	630	33	969

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Whittier, Cullen K., and J. H. Domlon, San Francisco, Cal. Hair-clipping machine	330,735	Nov. 17	1490	398	33	804
Whittlesey, Charles E., assignor of one-half to S. A. Stevens, New Haven, Conn. Oscillating chair	330,762	Nov. 17	1780	479	33	861
Whittlesey, Samuel F., New Haven, assignor of one-half to Baldwin & Lamkin, Milford, Conn. Boot or shoe	329,267	Oct. 13	979	255	33	186
Whyler, Edward M., Monroeville, Ohio. Tool-standard fastening	328,737	Oct. 20	1627	424	33	311
Wiard, Edward, Litchfield, Minn. Sugar-cane cultivator	327,633	Oct. 6	179	44	33	32
Wiard, Harry, and W. R. Bullock, Syracuse, N. Y. Side-hill plow	329,607	Nov. 3	253	65	33	553
Wickham, Owen B., Cleveland, Ohio. Ironing clothes	329,797	Nov. 3	495	125	33	599
Wickizer, George C., Evergreen, Pa. Motor	328,830	Oct. 20	1733	451	33	332
Wickizer, George C., Evergreen, Pa. Motor	329,608	Nov. 3	254	66	33	553
Wicks, Edgar N., Meriden, Ill. Washing-machine	332,992	Dec. 22	2498	660	33	1466
Wicks, Loren J., Paterson, N. J. Churn	328,554	Oct. 20	1372	357	33	265
Widmer, Frank, assignor of one-half to A. Albright, Newark, N. J. Apparatus for preserving and pressing beer	328,738	Oct. 20	1627	424	33	311
Wiederer, Peter, New York, N. Y. Picture-support	328,739	Oct. 20	1628	424	33	311
Wiederer, Peter, New York, N. Y. Hand-mirror	328,740	Oct. 20	1630	424	33	311
Wiederer, Peter, New York, N. Y. Hand-mirror	328,741	Oct. 20	1630	425	33	312
Wiederer, Peter, New York, N. Y. Hand-mirror	328,742	Oct. 20	1632	425	33	312
Wiederer, Peter, New York, N. Y. Folding mirror	332,029	Dec. 8	1165	304	33	1214
Wiehle, Robert, W. Lorey, Jr., and C. Feuchter, Ironton, Ohio. Running-gear for vehicles						
Wiener, Magnus. (See Brock and Wiener.)						
Wier, Marshall A., Upper Norwood, county of Surrey, England. Mechanical musical instrument	329,419	Oct. 27	2612	674	33	496
Wier, Marshall A., Upper Norwood, county of Surrey, England. Mechanical musical instrument	329,420	Oct. 27	2613	675	33	496
Wier, Marshall A., Upper Norwood, county of Surrey, England. Corkscrew	330,357	Nov. 10	1253	333	33	753
Wiggins, George W. (See Monroe and Wiggins.)						
Wiggins, William H., Brooklyn, N. Y. Substitute for billiard-cue chalk	329,349	Oct. 27	2502	.....	33	477
Wight, C., *et al.* (See Thies, John B., assignor.)						
Wight, H. C., *et al.* (See Thies, John B., assignor.)						
Wightman, Merle J., Hartford, Conn. Electric switch or circuit controller	330,949	Nov. 24	2025	547	33	914
Wilber, James L., Farmington, Mich. Stock-rack	328,868	Oct. 20	1778	464	33	340
Wilber, John D., and A. B. Smith, Towanda, Pa. Stapling-machine	330,950	Nov. 24	2026	547, 548	33	914
Wilbur, George E. (See Walker and Wilbur.)						
Wilcox, Albert, Cedar Rapids, Iowa. Harrow	331,353	Dec. 1	134	33	33	1022
Wilcox, George E., Cedar Rapids, Iowa. Harrow-tooth and bolder	328,992	Oct. 27	1963	515	33	368
Wilcox, George S., *et al.* (See Donovan, George L., assignor.)						
Wilcox, Stephen, Brooklyn, N. Y. Air and gas engine	332,312	Dec. 15	1561	410, 411	33	1291
Wilcox, Stephen, Brooklyn, N. Y. Gas-engine	332,313	Dec. 15	1566	411	33	1292
Wilcox, Stephen, Brooklyn, N. Y. Gas-engine	332,314	Dec. 15	1568	412	33	1292
Wilcox, Stephen, Brooklyn, N. Y. Gas-engine	332,315	Dec. 15	1569	412	33	1293
Wilcox, Vincent M., assignor to E. & H. T. Anthony & Co., New York, N. Y. Photographic-plate box	330,182	Nov. 10	1024	267	33	708
Wilcox, Warren, Lake Crystal, Minn. Clasp for spectacle-holders	328,369	Oct. 13	1119	289	33	212
Wilcox, William C., San Francisco, Cal. Horse-hitching device	331,016	Nov. 24	2105	570	33	929
Wilcox, William H. (See Anderson and Wilcox.)						
Wilcox, William R., assignor of one-half to R. R. Dunbar, Mansfield, Pa. Car-brake	328,098	Oct. 13	773	202	33	146
Wild, William E., assignor of one-half to G. E. Ames, San Francisco, Cal. Ore-crushing machine	331,017	Nov. 24	2106	570	33	929
Wilde, William A., Chicago, Ill. Automatic car-brake	328,670	Oct. 20	1780	464, 465	33	340
Wilder, Charles H. (See Eastman, Rufus M., assignor.)						
Wilder, Moses G., Philadelphia, Pa. Pressure-regulator	332,768	Dec. 22	2215	584	33	1414
Wildermuth, Hilorius E. (See Simpson, Hatcher, and Wildermuth.)						
Wiler, Lucien M., Philadelphia, Pa. Stair-rod securer	330,656	Nov. 17	1634	439	33	634
Wilhjelm, Sophus. (See Andersen and Wilhjelm.)						
Wilkerson, Basil M., Baltimore, Md. Liquid-gas apparatus	328,370	Oct. 13	1120	289, 290	33	212
Wilkes, Peter, Trenton, N. J. Collapsible core-barrel	330,657	Nov. 17	1635	439	33	634
Wilkeson, William, Youngstown, N. Y. Pulp-grinder	333,369	Dec. 29	3048	796	33	1569
Wilkie, James, Detroit, Mich. Roller-skate	327,845	Oct. 6	440	115	33	77
Wilkin, George, Dundee, N. Y. Crate	332,853	Dec. 22	2321	615	33	1432
Wilkin, John H., Lovesville, Pa. Car-coupling	332,316	Dec. 15	1570	412	33	1293
Wilkins, Alexander G., Meadville, Pa., and M. J. Bartlett, Chardon, assignors to Railway Speed Recorder Company, Kent, Ohio. Button-feeder	330,951	Nov. 24	2029	548, 549	33	914
Wilkins, Timothy, Sigourney, Iowa. Type-writing machine	330,183	Nov. 10	1025	268	33	708
Wilkinson, Lewis, deceased, Chicago, Ill.: F. M. Steele administrator. Turn-buckle	328,443	Oct. 13	1228	318	33	232
Will, Frederick. (See Becker, Henry L., assignor.)						
Will & Finck. (See Finck, Julius, assignor.)						
Will, Herman, Chicago, Ill. Bottling-machine	331,354	Dec. 1	135	33	33	1022
Willans Peter W., Thames Ditton, county of Surrey, England. Electric governor for controlling steam-engines	329,112	Oct. 27	2158	559	33	413
Willans, Peter W., Thames Ditton, county of Surrey, England. Steam-engine	329,987	Nov. 10	763	195	33	654
Willard, George, Hyde Park, Ill. Oar or paddle for propelling boats	327,909	Oct. 6	519	135	33	93
Willcox, James M., Philadelphia, Pa. Manufacture of Portland cement	333,370	Dec. 29	3050	.....	33	1569
Willer, Henry E., Milwaukee, Wis. Blind-retaining way-strip for windows	333,185	Dec. 29	2798	732	33	1524
Willford, Joseph L., Minneapolis, Minn. Centrifugal double scalper	328,968	Oct. 13	980	255	33	186
Willford, Joseph L., Minneapolis, Minn. Middlings-purifier	328,969	Oct. 13	982	256	33	186
Williams, Arvilla. (See Prall and Williams.)						
Williams, Charles H., Cleveland, Ohio. Wash-board protector	327,634	Oct. 6	182	45	33	33
Williams, Charles H., Cleveland, Ohio. Die for making turn-buckles	332,127	Dec. 8	1310	340, 341	33	1240
Williams, David T., Cincinnati, Ohio. Thill-coupling	333,186	Dec. 29	2799	733	33	1524
Williams, Edward H., Dayton, Ohio. Antomatic fire-extinguisher	328,908	Oct. 20	1839	480	33	351
Williams, George E. (See Perta, John W., assignor.)						
Williams, George W. (See Long, George S., assignor.)						
Williams, Gwilyn M., Wilkes-Barré, Pa. Alarm	328,166	Oct. 13	859	223	33	162
Williams, James N., Mobile, Ala. Envelope	331,355	Dec. 1	136	33, 34	33	1022
Williams, James W., Louisville, Ky. Hand washing-rubber	329,350	Oct. 27	2502	644	33	477
Williams, John N. S. (See Bolles, John H., assignor.)						
Williams, John N. S., assignor of two-thirds to J. H. Bolles, San Francisco, Cal. Dredger	331,929	Dec. 8	1018	264, 265	33	1189

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Williams, John R., Newark, N. J. Apparatus for subdividing material in comminuted form	330,076	Nov. 10	892	230, 231	33	681
Williams, Lewis E., South Deerfield, and F. J. Miles: said Williams assignor to F. J., J. D., and T. D. Miles and W. G. Sherman, Springfield, Mass. Music-leaf turner	331,930	Dec. 8	1020	265	33	1190
Williams, Nathan G., assignor to Vermont Farm Machine Company, Bellows Falls, Vt. Butter-worker	332,128	Dec. 8	1313	341	33	1241
Williams, Richard E., Modesto, Cal. Pipe-wrench	328,167	Oct. 13	860	294	33	163
Williams, Robert E., and W. A. Trammell, Dallas, Tex.; said Trammell assignor to said Williams. Combined flour and meal bin and flour-sifter	328,444	Oct. 13	1229	319	33	233
Williams, Samuel T., Tacony, assignor of one-half to H., H. C., W., and J. S. Disston, Philadelphia, Pa. Casting steel ingots	331,856	Dec. 8	907	234	33	1188
Williams, Thomas D., Bellevue, assignor of one-fourth to J. M. Bogga and W. R. Kirkpatrick, Pittsburg, Pa. Underground conduit for electric wires	330,277	Nov. 10	1139	303	33	730
Williams, Willard M., assignor to E. J. Kraetzer, Boston, Mass. Glove-fastener	331,266	Nov. 24	2465	663	33	993
Williamson, James H., Branchville, N. J. Water-wheel	329,351	Oct. 27	2503	645	33	477
Williamson, James H., Topeka, Kans. Brick-making machine	332,129	Dec. 8	1314	341	33	1241
Williamson, John, Camden, N. J. Pipe-wrench and cutter	332,270	Oct. 13	984	256	33	186
Williamson, Moses B., Xenia, Ill. Mechanical telephone	333,044	Dec. 22	2596	680	33	1462
Williamson, Thomas, Wishaw, county of Lanark, Scotland. Apparatus for the manufacture of iron and steel	331,277	Nov. 24	2466	665, 666	33	993
Williamson, Walter. (See McDermid and Williamson.)						
Willis, John, Sheffield, county of York, England. Bearing for locomotive-engines	333,969	Dec. 29	2919	763, 764	33	1547
Willis, Milton E. (See Landgrane, Schetzel, and Willis.)						
Willis, Milton E. (See Landgrane and Willis.)						
Willis, Stephen D., Terre Haute, Ind. Medical componnd	327,847	Oct. 6	443	.....	33	78
Willis, Warren E., North Attleborough, assignor to T. Totten & Co., Attleborough, Mass. Bracelet-clasp	331,664	Dec. 1	631	155	33	1108
Williston, Benjamin F., assignor of one-half to S. A. Plummer, West Bay City, Mich. Dash-pot for steam-engines	328,909	Oct. 20	1840	480	33	351
Willmes, Nickolas, Chicago, Ill. Brace for spring-vehicles	329,798	Nov. 3	496	125	33	599
Willms, Charles, Baltimore, Md. Surgical blade and handle	327,846	Oct. 6	441	115	33	78
Willsie, Charles, Wellington, Kans. Wire support and holder	329,869	Nov. 3	601	154	33	617
Willson, Albert A., Brooklyn, assignor to himself and N. F. Palmer, Jr., & Co., New York, N. Y. Steam-engine	327,910	Oct. 6	521	135, 136	33	93
Willson, Thomas L., Ilion, assignor of one-fourth to J. Brady, Brooklyn, N. Y. Electric-arc lamp	332,173	Dec. 8	1376	356	33	1251
Wilmer, Theodore J., assignor of one-half to W. E. Ward, Cincinnati, Ohio. Illuminating-skylight	333,270	Dec. 29	2921	764	33	1547
Wilsey, John D. (See Richard, William, assignor.)						
Wilsey, John D. (See Richard and Holcomb, assignors.)						
Wilson, Charles. (See Porter, John E., assignor.)						
Wilson, Charles H., and J. Stewart, Detroit, Mich. Fusing metallic plate-joints	333,371	Dec. 29	3051	796	33	1569
Wilson, Charles M., Whitestown, N. Y. Railway-signal	330,077	Nov. 10	893	231	33	681
Wilson, Eri F., Rochester, N. Y. Mop-cloth	333,372	Dec. 29	3052	796	33	1569
Wilson, Eugene M. (See Keenan and Wilson.)						
Wilson, George A., Broad Green, near Liverpool, county of Lancaster, England. Inking apparatus for printing-machines	330,278	Nov. 10	1140	303	33	731
Wilson, James H., and J. A. Forbes, Dover, Del. Corn and cane harvester	328,910	Oct. 20	1841	480	33	351
Wilson, John C. (See Martin and Wilson.)						
Wilson, John C., Boston, Mass., assignor to Municipal Signal Company, Portsmouth, N. H. Municipal telegraph apparatus	331,356	Dec. 1	137	34	33	1022
Wilson, John S., and W. W. Green, Chicago, Ill. Ventilating sewers	328,168	Oct. 13	861	224	33	163
Wilson, John T. (See Mangan and Wilson.)						
Wilson, Lee H., Chicago, Ill. Scarf-anchor	333,187	Dec. 29	2799	733	33	1524
Wilson, M. J., *et al.* (See Valentine, William P., assignor.)						
Wilson, Martin M., Honey Grove, Tex. Automatic trip-gear for power-presses	331,665	Dec. 1	633	156	33	1109
Wilson, Nelse, Hutto, Tex. Curtain-holder	333,045	Dec. 22	2596	680	33	1463
Wilson, Robert M., E. M. Spear, and M. F. Peirce, Springfield, Mass. Whip-core	327,746	Oct. 6	318	82	33	55
Wilson, Walker & Co. (See Shallenberger, Frank L., assignor.)						
Wilson, Walker & Company. (See Simpson, James H., assignor.)						
Wilson, William, Bloomington, Ill. Car-coupling	330,279	Nov. 10	1141	303, 304	33	731
Wilson, William R. (See Ayers, Albert, assignor.)						
Winans, Henry S. (See Perry, Edward L., assignor.)						
Winburn, John T., Sumter, S. C. Sewing-machine motor	331,666	Dec. 1	634	156	33	1109
Winchell, Addison H., assignor of two-thirds to S. N. Lemon, Huron, Ohio, and G. F. Gardner, Hillsdale, Mich. Vehicle shifting top	331,667	Dec. 1	635	156	33	1109
Winder, Richard, Farningham, county of Kent, England. Nose-band for bridles or halters	329,352	Oct. 27	2505	645	33	477
Windsor, Richard S., Americus, Ga. Plow	329,609	Nov. 3	255	66	33	553
Windus, Werner. (See Button, Joseph, assignor.)						
Wineberger, William F., Quincy, Mass. Bag-fastener	331,357	Dec. 1	139	35	33	1022
Winemann, Hugo A. (See Thompson, Ralph, assignor.)						
Wines, Henry M., Centre Moriches, N. Y. Wash-board holder	327,747	Oct. 6	318	82	33	56
Winfield, Charles G., assignor to R. A. Fulmer, Conneaut, Ohio. Roller-skate	330,658	Nov. 17	1636	440	33	634
Wing, Benjamin, Vassalborough, Me. Device for centering hubs and other blocks	330,536	Nov. 17	1491	399	33	604
Wing, Daniel S., Syracuse, N. Y. Vehicle-wheel	328,565	Oct. 20	1374	368	33	265
Wing, Giles F. (See Page, Justin E., assignor.)						
Wingate, William H., *et al.* (See Parry, George T., assignor.)						
Winger, Henry, Marshallville, Ohio. Harrow	330,952	Nov. 24	2030	549	33	915
Winget, J. S. (See Winget, Marion A., assignor.)						
Winget, Marion A., assignor to J. S. Winget, Columbus, Ohio. Cigar-machine	332,174	Dec. 8	1379	356	33	1252
Winkler, Alois, Oneonta, N. Y. Device for setting, filing, and jointing circular saws	333,092	Dec. 22	2863	699	33	1494
Winn, John H. (See Selby, Patrick, assignor.)						
Winslow, Samuel, Worcester, Mass. Skate	327,848	Oct. 6	443	115	33	78
Winslow, Samuel, Worcester, Mass. Skate	327,849	Oct. 6	445	116	33	78
Winslow, William H., Brooklyn, N. Y. Covering metallic objects with an electroplating of magnetic oxide	331,104	Nov. 24	2215	.....	33	950
Winslow, William H., Brooklyn, N. Y. Magnetic-oxide-of-iron-plated ware	331,105	Nov. 24	2215	.....	33	950
Winstead, Addison R., Grafton, Va. Shifting the top-sail sheet and tack	329,988	Nov. 10	766	195, 196	33	655
Winterbottom, William S., Philadelphia, Pa. Attachment to squares	329,353	Oct. 27	2506	645	33	477

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Wire Goods Company. (See Parmelee, Arthur W., assignor.)						
Wirsching, Aloys, Brooklyn, N. Y. Printing-telegraph receiver	327,911	Oct. 6	524	136, 137	33	94
Wirt, Paul E., Bloomsburg, Pa. Fountain-pen	328,169	Oct. 13	862	224	33	163
Wirt, Paul E., Bloomsburg, Pa. Fountain-pen	330,358	Nov. 10	1253	334	33	753
Wiswell Electric Mining Machinery Company. (See Wiswell, Jacob C., assignor.) (Reissue.)						
Wiswell, Jacob C., Medford, Mass., assignor to Wiswell Electric Mining Machinery Company, Portland, Me. Ore-crusher. (Reissue)	10,659	Nov. 3	613	156	33	620
Witherow, James P., *et al.* (See Doda, John C., assignor.)						
Witmer, Horace F., Philadelphia, Pa. Apparatus for developing and washing photographs	331,668	Dec. 1	637	157	33	1109
Witt, Adam J., Rochester, N. Y. Snow-plow	328,993	Oct. 27	1984	516	33	383
Witte, George C., Covington, and R. D. Murrell, Social Circle, Ga. Churn	327,912	Oct. 6	527	137	33	94
Wittenström, Carl G., Stockholm, Sweden, assignor to T. Nordenfelt, 53 Parliament Street, Westminster, England. Manufacturing castings from wrought-iron and steel by adding aluminium	333,373	Dec. 29	3058	.....	33	1570
Wittram, Frederick, San Francisco, Cal. Siphon-pump	330,078	Nov. 10	895	231	33	681
Wittram, Frederick, San Francisco, Cal. Rotary plow	330,452	Nov. 17	1387	369	33	784
Witzenmann, Henri. (See Levavasseur, Eugène, assignor.)						
Woerd, Charles V., Waltham, Mass. Stem winding and setting mechanism for watches	330,537	Nov. 17	1492	399	33	804
Wohlfarth, Charles F., and C. W. Wakefield, Norwich, Conn., assignors to W. F. Collins and T. Milburn, Toronto, Canada. Car-brake. (Reissue)	10,671	Dec. 8	1446	373	33	1264
Wolcott, Anson, Wolcott, Ind. Grain-drier	329,492	Oct. 27	2618	675, 676	33	497
Wolcott, Henry E., Syracuse, N. Y. Oil-can	327,975	Oct. 6	610	159	33	110
Wolf, Jacob, Cutchogue, N. Y. Vehicle-spring	331,669	Dec. 1	639	157	33	1110
Wolf, John P., and G. Ifland, Chicago, Ill. Table-leaf support	331,857	Dec. 8	908	234	33	1168
Wolfe, Ferdinand, Banff, Mo. Animal-trap	332,175	Dec. 8	1380	356	33	1252
Wolfe, Jed A. (See Newsom, Charles S., assignor.)						
Wolfe, John J., West Millville, Pa. Fruit-drier	333,435	Dec. 29	3131	818	33	1582
Wolfe, Robert, Waterbury, Conn. Wrench	330,453	Nov. 17	1388	370	33	785
Wolff, Ferdinand, Hoboken, N. J. Cap for mustard-bottles	327,635	Oct. 6	184	45	33	33
Wolle, Clarence A., *et al.* (See Honiss, William H., assignor.)						
Wolle, Clarence A., *et al.* (See Lorenz, William A., assignor.)						
Wolle, Clarence A., *et al.* (See Lorenz and Honiss, assignors.)						
Wolpert, Henry R., Lancaster, Pa. Track-fastener	329,870	Nov. 3	602	154	33	617
Wolseley, Frederick Y. (See Savage, Robert, assignor.)						
Wolters, Charles. (See Kronenberg and Wolters.)						
Womack, John D., Cameron, Tex. Vermin-poison	328,445	Oct. 13	1230	.....	33	233
Wommer, Louis, and J. Buck, Minneapolis, Minn. Centrifugal bolting-reel	329,423	Oct. 27	2620	676	33	497
Wondries, Charles, Jr. (See Scovill, George W., assignor.)						
Wood, Benjamin, New York, N. Y. Butter-package	330,079	Nov. 10	897	232	33	682
Wood, Charles D., Lincoln, R. I., assignor to Boot and Shoe Sole Laying Machine Company, Portland, Me. Sole-laying machine	328,446	Oct. 13	1230	319	33	233
Wood, Frank B., New York, N. Y., assignor to New Haven Clock Company. Telegraph call-box	329,871	Nov. 3	603	154, 155	33	618
Wood, Hylas, Marysville, Ohio. Halter	331,670	Dec. 1	640	158	33	1110
Wood, Hylas, Marysville, Ohio. Kitchen-cabinet	332,222	Dec. 8	1443	353	33	1264
Wood, John B., Montreal, Quebec, Canada. Telephonic circuit and apparatus	330,763	Nov. 17	1781	480	33	861
Wood, John M. (See Plummer and Wood.)						
Wood, Joseph S., Brooklyn, assignor to R. E. Dietz, New York, N. Y. Gas-engine	328,170	Oct. 13	866	224, 225	33	164
Wood, Luther B. (See Parker, Harry W., assignor.)						
Wood Mowing and Reaping Machine Company, Walter A. (See Howe, George H., assignor.)						
Wood Mowing and Reaping Machine Company, Walter A. (See Rosebrooks, John M., assignor.)						
Wood, P. F. (See Sly, Morgan H., assignor.)						
Wood, Richard G., Cincinnati, Ohio, assignor to P. and J. E. Reilly, Newark, N. J. Dash-making machine	329,494	Oct. 27	2623	677	33	497
Wood, Robert A. (See Stewart, Edward J., assignor.)						
Wood, Thomas W., Asbury Park, N. J. Combination knife, compasses, and ruler	328,911	Oct. 20	1843	480	33	351
Wood, Valentine, Peru, Ind. Harrow attachment for plows	331,358	Dec. 1	140	35	33	1023
Wood, William H. (See Stevens and Wood.)						
Woodbury, Daniel A., Rochester, N. Y. Balanced slide-valve. (Reissue)	10,661	Nov. 10	1265	336	33	755
Woodbury, Daniel A., Rochester, N. Y. Balanced slide-valve	331,018	Nov. 24	2107	570	33	930
Woodbury, Daniel A., Rochester, N. Y. Balanced slide-valve	331,858	Dec. 8	909	235	33	1168
Woodbury, Edward F. (See Woodbury, Merrill, Patten, and Woodbury.)						
Woodbury, James A., Winchester, J. Merrill, G. Patten, and E. F. Woodbury, Boston, Mass. Hot-air engine	327,748	Oct. 6	319	82	33	56
Woodbury, James A., Winchester, J. Merrill, G. Patten, and E. F. Woodbury, Boston, Mass. Air-engine	331,359	Dec. 1	142	35, 36	33	1023
Woodbury, James A., Winchester, J. Merrill, G. Patten, and E. F. Woodbury, Boston, Mass. Piston for air-pumps	331,360	Dec. 1	143	36	33	1023
Woodbury, James A., Winchester, J. Merrill, G. Patten, and E. F. Woodbury, Boston, Mass. Air-engine	331,361	Dec. 1	144	36, 37, 38	33	1024
Woodin, Frank E., Evart, Mich. Chart for teaching and producing facial expressions	331,968	Nov. 24	2467	666	33	993
Woodman, Charles. (See Tuttle, John W., assignor.)						
Woodruff, Emma J., Chicago, Ill. Treating butter	327,636	Oct. 6	184	.....	33	33
Woodruff, John W., Mitchell, Dak. Ter. Washing-machine	331,931	Dec. 8	1021	265	33	1190
Woods, Edward G., Marcellus, N. Y. Automatic stop-motion for feeding mechanisms of carding-engines	329,425	Oct. 27	2624	677, 678	33	498
Woods, Thomas, Nicholasville, Ky. Stone-cutter's chisel	329,872	Nov. 3	606	155	33	618
Woods, William A., assignor to R. C. Kirby, Santa Cruz, Cal. Bark-mill	329,113	Oct. 27	2161	559, 560	33	414
Woods, William A., assignor to R. C. Kirby, Santa Cruz, Cal. Bark-mill	329,114	Oct. 27	2162	560	33	414
Woods, William A., assignor to J. C. Hagerty, Santa Cruz, Cal. Bark-mill	332,854	Dec. 22	2322	615	33	1433
Woodward, Abel B., Nashville, Tenn. Brick-machine	330,953	Nov. 24	2031	549, 550	33	915
Woodward, George M., *et al.* (See Gouin, John B., assignor.)						
Woodward, Theodore R., Norway, Pa. Fire-escape	327,976	Oct. 6	611	159	33	110
Woodworth, Elon G., Allegheny, Pa. Saw-mill dog	327,637	Oct. 6	185	45	33	33
Woodworth, James A., Highland Park, Ill. Hammock-support	332,369	Dec. 15	1649	432	33	1307

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Woodworth, Laurin D., Youngstown, Ohio. Skater's appliance	329,989	Nov. 10	767	196	33	655
Wooldridge, William H., Louisville, Ky. Automatic head-support for cots	329,610	Nov. 3	256	66	33	554
Woolley, Gustav A., *et al.* (See Kock, Christian H., assignor.)						
Woolsey, John S., Gilroy, Cal. Pipe-vise	330,538	Nov. 17	1493	399	33	805
Workman, Thomas M., assignor of one-half to J. A. Bailey, Clinton, S. C. Baling-press	331,932	Dec. 8	1022	265, 266	33	1190
Worley, William S., Hinesborough, Ill. Road scraper and leveler	330,764	Nov. 17	1783	480	33	861
Worrall, Thomas H., Meredith Village, N. H. Taper and pulley-turning attachment for lathes	332,578	Dec. 15	1945	509	33	1337
Worrell, Stanley E., Hannibal, Mo. Grain-drier	333,188	Dec. 29	2800	733	33	1594
Worthen, Charles H., Lawrence, Mass. Throttle-valve	332,855	Dec. 22	2323	615	33	1433
Worthen, William H., assignor to Guild & Garrison, Brooklyn, N. Y. Valve for air and gas compressors	330,539	Nov. 17	1494	399, 400	33	805
Worthen, William H., assignor to Guild & Garrison, Brooklyn, N. Y. Valve for air and gas compressors	333,096	Dec. 22	2668	700	33	1496
Worthington, Amasa, Chicago, Ill. Sectional steam-boiler	330,359	Nov. 10	1257	334, 335	33	753
Worthington, Charles C., Irvington, N. Y. Combined water-pump and air-compressor	330,540	Nov. 17	1496	400	33	805
Worthington, Charles C., Irvington, N. Y. Piston-rod packing	332,856	Dec. 22	2324	615	33	1433
Worthington, Charles C., Irvington, N. Y. Direct-acting engine	332,857	Dec. 22	2326	616, 617	33	1433
Wostenholm, George, Jeffersonville, Ill., assignor of one-half to J. J. Fischer, St. Louis, Mo. Washing-machine	330,360	Nov. 10	1260	335	33	754
Wright, Elias M., Buffalo, N. Y. Lamp	331,933	Dec. 8	1024	266	33	1191
Wright, George W., Leavenworth, Ind. Fastening for double doors	333,093	Dec. 22	2664	699	33	1495
Wright, Hugh, New Lisbon, Ohio. Portable saw-mill	332,690	Dec. 15	2101	552, 553	33	1385
Wright, Hugh, New Lisbon, Ohio. Circular-saw mill	332,691	Dec. 15	2102	553, 554, 555	33	1385
Wright, Hugh, New Lisbon, Ohio. Transmitting motion	332,692	Dec. 15	2104	555	33	1386
Wright Machine Company. (See Randall, Nelson L., assignor.)						
Wright, Thomas, Camden, N. J. Grip attachment for cable-motor cars	329,990	Nov. 10	768	196, 197	33	655
Wright, W. E., *et al.* (See Brosnan, Cornelius J., assignor.)						
Wright, William A., Centreton, N. J. Stone-cutting machine	333,436	Dec. 29	3132	819	33	1583
Wuerpel, Morris, St. Louis, Mo. Railway-signal	330,859	Nov. 17	1905	515	33	883
Wuerpel, Morris, St. Louis, Mo. Railway-signal	330,860	Nov. 17	1906	515	33	884
Wuerpel, Morris, St. Louis, Mo. Valve	330,861	Nov. 17	1907	516	33	884
Wuerpel, Morris, St. Louis, Mo. Machinery for operating railway-switches	330,862	Nov. 17	1908	516	33	885
Wulff, Henry F., San Antonio, Tex. Trunk	327,749	Oct. 6	321	82, 83	33	56
Wurster, Casimir, New York, N. Y. Apparatus for moistening and purifying air	329,115	Oct. 27	2164	560	33	414
Wurster, Christoph G., Hudson, N. Y. Hydraulic motor	330,863	Nov. 17	1909	516, 517	33	885
Wyatt, Matthew T., Quebec, Quebec, assignor of one-half to W. F. Ramsay, Montreal, Canada. Pipe-reamer	327,638	Oct. 6	186	46	33	33
Wyatt, Matthew T., Quebec, assignor of one-half to W. F. Ramsay, Montreal, Canada. Tobacco-pipe	329,873	Nov. 3	607	155	33	618
Wyatt, Matthew T., Quebec, assignor of one-half to W. F. Ramsay, Montreal, Canada. Grappling or holding device	331,362	Dec. 1	148	38	33	1024
Wyche, John S., *et al.* (See Brown, William A., assignor.)						
Wyman, Horace W., and L. F. Gordon, Worcester, Mass. Die for making shuttle binders	328,994	Oct. 27	1985	516	33	384
Wyman, Horace W., and L. F. Gordon, Worcester, Mass. Roll for making shuttle-box binders	330,954	Nov. 24	2035	550	33	916
Wyman, Richard H., Evanston, Ill. Railway-car. (Reissue)	10,654	Oct. 20	1853	483	33	354
Xiques, Frank M., Arcata, Cal. Newspaper-file	332,769	Dec. 22	2217	584, 585	33	1414
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)						
Yancey, Lee, Cincinnati, Ohio. Bathing-cabinet	328,628	Oct. 20	1487	387	33	985
Yeakle, James B., Baltimore, Md. Automatic circuit-breaker for burglar-alarms	332,130	Dec. 8	1317	342	33	1241
Yentzer, Enoch S., assignor of one-half to C. S. Cullen and R. C. Hitt, Ottawa, Ill. Horse hay-fork	327,639	Oct. 6	186	46	33	33
Yingling, George S., Tiffin, Ohio. Compound for treating tobacco	332,176	Dec. 8	1381	.....	33	1252
Yocom, James, Jr., Philadelphia, Pa. Shaft-coupling	333,376	Dec. 29	3056	797	33	1570
Yonley, Harvey W., Denver, Colo. Register for type-writers	329,116	Oct. 27	2165	560, 561	33	414
Yothers, Joseph W. (See Yothers, Walter S. and J. W.)						
Yothers, Walter S. and J. W., Karthaus, Pa. Bag-holder for trucks	327,750	Oct. 6	323	83	33	57
Young, Charles F. (See Scharpf, Frederic, assignor.)						
Young, Daniel C., Hanover, Kans. Educational device for the illustration of longitude and time	328,629	Oct. 20	1489	388	33	985
Young, Daniel M., St. Louis, Mo. Comb attachment for shears	332,030	Dec. 8	1166	304	33	1215
Young, Jesse R., assignor of one-half to C. L. Aldrich, Lincoln, Nebr. Trace-carrier	328,630	Oct. 20	1490	388	33	986
Young, David, Stockton, Cal. Harvester	330,541	Nov. 17	1498	400	33	805
Young, James H., New York, N. Y. Apparatus for impregnating wood	329,799	Nov. 3	497	126, 127	33	509
Young, John, assignor to Watts, Campbell Company, Newark, N. J. Cut-off gear for steam-engines	330,361	Nov. 10	1261	335	33	754
Young, McClintock, Frederick, Md. Making paper boxes	332,983	Dec. 22	2499	660, 661, 662	33	1466
Young, Robert C., Dun, Kans. Spring-bed	331,599	Dec. 1	534	130	33	1091
Young, Sylvester W. (See Cowell, Julina J., assignor.)						
Young, William, Easton, Pa. Water-gage	333,046	Dec. 22	2598	681	33	1483
Yount, Andrew, Denver, Ind. Corn-planter	332,469	Dec. 15	1777	465	33	1339
Yule, George. (See Tweedy and Yule.)						
Zagelmeyer, Louis, West Bay City, Mich. Safety gas-burner	332,770	Dec. 22	2218	585	33	1414
Zech, August F. (See Zech, Jacob, assignor.)						
Zech, Frederick, San Francisco, Cal. Piano-action	330,080	Nov. 10	897	232, 233	33	682
Zech, Jacob, assignor to A. F. Zech, San Francisco, Cal. Piano-action	333,047	Dec. 22	2599	681	33	1483
Zeigler, Charles F., and J. D. Antley, St. Matthew's, S. C. Combined seed-planter and fertilizer-distributer	331,600	Dec. 1	535	130	33	1091

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Zeigler, Daniel G., assignor of one-half to R. Copes, Orangeburg, S. C. Hoeing-machine	330,765	Nov. 17	1783	480	33	861
Zelie, Polly A. (See Smith and Zelie.)						
Zell, Robert R., Brooklyn, assignor to Safety Steam Generator Company, New York, N. Y. Header for sectional boilers	327,850	Oct. 6	446	116	33	78
Zeller, Adolph. (See Vogel, William, assignor.)						
Zeller, Melancthon E., Bluffton, Ohio. Buckle	331,176	Nov. 24	2324	630	33	969
Ziegler, Frank P., assignor to G. Ziegler, Milwaukee, Wis. Confection	330,659	Nov. 17	1637	440	33	835
Ziegler, George. (See Ziegler, Frank P., assignor.)						
Ziegler, John T., Santa Cruz, Cal. Sulky-plow	327,640	Oct. 6	187	46	33	34
Zier, Michael, Sr. (See Bremaker and Zier.)						
Zimmer, Conrad, Frankfort-on-the-Main, assignor to Actien Gesellschaft zur Einführung Technischer Neuheiten, Berlin, Germany. Brewing beer	330,184	Nov. 10	1027	268	33	709
Zimmerling, August F., Milwaukee, Wis. Heating-lamp	332,370	Dec. 15	1650	432	33	1307
Zimmerling, Charles, assignor to S. S. Myers, Philadelphia, Pa. Ironing-tablet	327,913	Oct. 6	529	137	33	95
Zimmermann, Emily L. (See De Ledochowski, Zénone N., assignor.)						
Zink, Harry S., assignor of two-thirds to R. Reed and H. S. Ruhlman, Sacramento, Cal. Automatic fanning-mill	332,470	Dec. 15	1778	465	33	1329
Zipf, Carl G., Cleveland, Ohio. Damper	330,955	Nov. 24	2036	550	33	916
Zipprich, Charles J., *et al.* (See Kittler, Julius W., assignor.)						
Zucker & Levett Chemical Company. (See Haas, Harry L., assignor.)						
Zwarta, John H., *et al.* (See Eyermann, Christian H., assignor.)						

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Alexander, James H., Philadelphia, Pa. Bucket-ear	16,348	Oct. 27	33	350
Arnold, Otto, Buckau, Magdeburg, Prussia, Germany. Plaque	16,309	Oct. 6	33	2
Barlow, James, Trenton, N. J. Vegetable-dish	16,310	Oct. 6	33	2
Bascom, H. Clay, Troy, N. Y. Parlor-stove	16,413	Dec. 15	33	1270
Bascom, H. Clay, Troy, N. Y. Cooking-stove	16,491 16,492	Dec. 15	33	1270
Bascom, H. Clay, Troy, N. Y. Cannon stove	16,493	Dec. 22	33	1394
Bascom, H. Clay, and A. Wemyss, Troy, N. Y., assignors to said Bascom. Cylinder-stove	16,494	Dec. 22	33	1394
Beatty, George and R. J., and G. W. Davis, Steubenville, Ohio. Glassware	16,371	Nov. 10	33	696
Beatty, Robert J. (See Beatty and Davis.)				
Becker, George, Providence, R. I. Jewel-setting	16,382	Nov. 17	33	761
Beeler, Charles H., Jr., assignor to MacKellar, Smiths & Jordan Company, Philadelphia, Pa. Type	16,425	Dec. 29	33	1501
Bement, Arthur O., M. D. Keyes, and C. E. Bement, Lansing, Mich. Heating-stove	16,372	Nov. 10	33	696
Bement, Clarence E. (See Bement, Keyes, and Bement.)				
Berry, Henry, Birmingham, Conn. Bottle	16,311	Oct. 6	33	2
Bromley & Sons, John. (See Petzold, Adolph, assignor.)				
Bruce, David W. (See Ruthven, Edwin C., assignor.)				
Buermann, August, Newark, N. J. Pattern for a spur	16,388	Nov. 24	33	892
Burr, Russell H. (See Rogers and Burr.)				
Channon, Emery & Company. (See Schermerhorn and Weller, assignors.)				
Channon, William V., *et al.* (See Schermerhorn and Weller, assignors.)				
Clark, Minford S., New York, N. Y. Card receiver and stand	16,405	Dec. 8	33	1142
Conner's Sons, James. (See Giesecke, George F., assignor.)				
Cory, Eugene A., Providence, R. I. Watch-chain	16,313	Oct. 6	33	2
Crocker, Eugene B., Pawtucket, R. I. Easel	16,312	Oct. 6	33	2
Dana, Frederic T., Wiscasset, Me. Clothes-line block	16,339	Oct. 20	33	239
Daniels, Louis. (See Selkirk, Alexander, assignor.)				
Davis, George W. (See Beatty and Davis.)				
Dominick & Haff. (See Wittstock, Charles, assignor.)				
Duffield, William, London, Ontario, Canada. Argand-lamp chimney	16,398	Dec. 1	33	1000
Edwards, John, Fenton, county of Stafford, England. Table-ware	16,318	Oct. 13	33	117
Eggers, Anton C., Astoria, N. Y. Pencil-tip	16,340	Oct. 20	33	239
Ehninger, John W., Saratoga Springs, N. Y. Statuette group	16,389	Nov. 24	33	892
Eisner, Moritz, and J. Mendelson, Philadelphia, Pa. Stand	16,359	Nov. 3	33	504
Eisner, Moritz, and J. Mendelson, Philadelphia, Pa. Stand	16,380 16,381	Nov. 10	33	696
Emery, Joseph W., *et al.* (See Schermerhorn and Weller, assignors.)				
Ennis & Co., George W. (See Hemming, R. Paul, assignor.)				
Ferguson, James H., Brooklyn, N. Y. Fan	16,360	Nov. 3	33	504
Finck, Henry, New York, N. Y. Rug	16,314	Oct. 6	33	2
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,320 to 16,329	Oct. 13	33	117
Fiske, J. W. (See Hanna, William C., Jr., assignor.)				
Franke, George, Baltimore, Md. Paper lantern	16,390	Nov. 24	33	892
Freeland, Anna C., Worcester, Mass. Panel for clock-front	16,373	Nov. 10	33	696
Gager, Oliver A. (See Gérard, Emile, assignor.)				
Gérard, Emile, Limoges, France, assignor to O. A. Gager, Brooklyn, N. Y. Dish	16,414	Dec. 15	33	1270
Giesecke, George F., Leipsic, Germany, assignor to J. Conner's Sons, New York, N. Y. Type	16,341	Oct. 20	33	239
Gould, John C., Chicago, Ill. Frame for animal-traps	16,342	Oct. 20	33	239
Graham, John, Chicago, Ill. Font of printing-type	16,374	Nov. 10	33	696
Graham, John, New York, N. Y. Gimp	16,383	Nov. 17	33	761
Hanna, William C., Jr., assignor to J. W. Fiske, New York, N. Y. Stable-hinge	16,349	Oct. 27	33	350
Hanna, William C., Jr., assignor to J. W. Fiske, New York, N. Y. Stable-hinge	16,391	Nov. 24	33	892
Hemming, R. Paul, assignor to G. W. Ennis & Co., Philadelphia, Pa. Curtain	16,315	Oct. 6	33	2
Hemming, R. Paul, assignor to G. W. Ennis & Co., Philadelphia, Pa. Rug	16,392 to 16,394	Nov. 24	33	892
Holmes, Booth & Haydens. (See Jenkins, Nicolas, assignor.)				
Holmes, Booth & Haydens. (See Noé, William R., assignor.)				
Horan, Henry, East Orange, N. J., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,329 16,330	Oct. 13	33	118
Houts, Michael L., St. Louis, Mo. Bottle	16,331	Oct. 13	33	118
Ihlenburg, Herman, assignor to MacKellar, Smiths & Jordan Company, Philadelphia, Pa. Font of type	16,343	Oct. 20	33	239
Ireland, David M., assignor of one-half to H. A. Matthews, Waterbury, Conn. Watch	16,406	Dec. 8	33	1142
Jenkins, Nicolas, assignor to Holmes, Booth & Haydens, Waterbury, Conn. Pendant for lamps, &c.	16,350	Oct. 27	33	350
Johnson, Henry C., and J. B. Moore, El Dorado, Ark. Buckle	16,347	Oct. 20	33	239
Keyes, Marquis D. (See Bement, Keyes, and Bement.)				
Knott, Joseph W., Beaver Falls, Pa. Hopper for coffee-mills	16,339	Oct. 13	33	118
Lambert, Catholina, New York, N. Y. Handkerchief	16,316	Oct. 6	33	2
Landenberger, Frederick. (See Maul and Landenberger.)				
Lowell Manufacturing Company. (See Fisher, Edwin, assignor.)				
Lowell Manufacturing Company. (See Horan, Henry, assignor.)				
Lowell Manufacturing Company. (See Sauer, Emil G., assignor.)				
Lowell Manufacturing Company. (See Swapp, Charles W., assignor.)				
Lyall, James, New York, N. Y. Carpet	16,361 16,362	Nov. 3	33	504
Lyall, James, New York, N. Y. Carpet	16,384	Nov. 17	33	761

Alphabetical list of patentees of designs, October to December, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
MacKellar, Smiths & Jordan Company. (See Beeler, Charles H., Jr., assignor.)				
MacKellar, Smiths & Jordan Company. (See Ihlenburg, Herman, assignor.)				
Mankey, Frederick, Williamsport, Pa. Panel	16,357	Oct. 27	33	360
Mankey, Frederick, Williamsport, Pa. Cornice	16,358	Oct. 27	33	360
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c.	16,364 to 16,365	Nov. 3	33	504
Mankey, Frederick, Williamsport, Pa. Surface ornamentation	16,385	Nov. 17	33	762
Mankey, Frederick, Williamsport, Pa. Panel	16,399 to 16,400	Dec. 1	33	1000
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c	16,401 to 16,402	Dec. 1	33	1000
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c	16,407	Dec. 8	33	1142
Mankey, Frederick, Williamsport, Pa. Panel	16,408	Dec. 8	33	1142
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c.	16,415	Dec. 15	33	1270
Mankey, Frederick, Williamsport, Pa. Molding	16,416	Dec. 15	33	1270
Mankey, Frederick, Williamsport, Pa. Open-work panel	16,426 to 16,428	Dec. 29	33	1501
Mankey, Frederick, Williamsport, Pa. Molding	16,429	Dec. 29	33	1501
Mantonya, Ethen D., Utica, Ohio. Rubbing-head for washing-machines	16,317	Oct. 6	33	2
Marie, Jared, Columbus, Ohio. Shell-band for hubs	16,344	Oct. 20	33	239
Maris, Jared, Columbus, Ohio. Ornamentation of wheel-hubs	16,363	Nov. 3	33	504
Maris, Jared, Columbus, Ohio. Ornamentation of flanges for hubs	16,430 to 16,432	Dec. 29	33	1501
Matthews, Henry A. (See Ireland, David M., assignor.)				
Maul, Hugo, and F. Landenberger, New York, N. Y. Chenille	16,366	Nov. 3	33	504
Mendelson, Joseph. (See Elsner and Mendelson.)				
Messinger, Charles S., Brooklyn, N. Y. Cloth fabric	16,318	Oct. 6	33	2
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	16,351 to 16,354	Oct. 27	33	359
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	16,433 to 16,447	Dec. 29	33	1501
Meyer, Victor E. (See Meyer, Charles T. and V. E.)				
Miller, John E., Pittsburg, Pa. Glassware	16,409	Dec. 8	33	1142
Miller, Lebbeus B., Elizabeth, N. J., assignor to Singer Manufacturing Company of New Jersey. Side frame for sewing-machine stands	16,378	Nov. 10	33	626
Mitchell, Herbert, assignor to M. J. Whittall, Worcester, Mass. Carpet	16,375 to 16,377	Nov. 10	33	626
Moore, Jesse B. (See Johnson and Moore.)				
Mott Iron Works, J. L. (See Shaw, Arthur, assignor.)				
Mowen, John H. (See Quint and Mowen.)				
Mowen, John H., Brooklyn, N. Y. Ornamentation of burial-caskets	16,387	Nov. 17	33	762
Noé, William R., Newark, N. J., assignor to Holmes, Booth & Haydens, Waterbury, Conn. Pendant for lamps, &c	16,355	Oct. 27	33	359
Osborn, George R., New York, N. Y. Easel	16,333	Oct. 13	33	118
Page, Charlotte E., Chicago, Ill. Knot for scarf, &c	16,417	Dec. 15	33	1270
Pakenham, John, Brooklyn, N. Y. Alto-rilievo	16,334	Oct. 13	33	118
Parker, Frank F., West Gardner, Mass. Chair-back	16,395	Nov. 24	33	892
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Carpet	16,403	Dec. 1	33	1000
Quint, Henry F., and J. H. Mowen, Brooklyn, N. Y. Ornamentation of burial-caskets	16,418	Dec. 15	33	1270
Rathbone, Clarence, Albany, N. Y. Parlor-stove	16,335	Oct. 13	33	118
Reese, Durand A., Philadelphia, Pa. Badge	16,367	Nov. 3	33	504
Robison, Charles W., Allegheny, Pa. Lock-keeper	16,410	Dec. 8	33	1142
Rogers & Bros., C. (See Rogers and Burr, assignors.)				
Rogers, Cephas B., and R. H. Barr, assignors to C. Rogers & Bros., Meriden, Conn. Coffin ornament	16,411	Dec. 8	33	1142
Rogers, John, New Canaan, Conn. Group of statuary	16,369	Nov. 3	33	504
Ruff, Gregory L., Pittsburg, Pa. Jewelry-charm	16,448	Dec. 29	33	1502
Runtiven, Edwin C., Philadelphia, Pa., assignor to D. W. Bruce, New York, N. Y. Type	16,449	Dec. 29	33	1502
Sampson, Edward C. (See Meyer, Charles T. and V. E., assignors.)				
Sauer, Emil G., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,336	Oct. 13	33	118
Saunders, Marcus L., Thomas County, Ga. Plow-hoe	16,345	Oct. 20	33	239
Schermerhorn, Rodney F., and F. S. Weller, assignors to W. V. Channon and J. W. Emery, Quincy, Ill. Heating-stove	16,346	Oct. 20	33	239
Schermerhorn, Rodney F., and F. S. Weller, assignors to Channon, Emery & Company, Quincy, Ill. Heating-stove	16,396	Nov. 24	33	892
Selkirk, Alexander, assignor to L. Daniels, Albany, N. Y. Body of water filter or cooler	16,404	Dec. 1	33	1000
Seltzer, Abram E., Lebanon, Pa. Back for paper-clips	16,386	Nov. 17	33	762
Shaw, Arthur, Hanley, county of Stafford, England, assignor to J. L. Mott Iron Works, New York, N. Y. Bowl and trap for water-closets	16,356	Oct. 27	33	359
Singer Manufacturing Company of New Jersey. (See Miller, Lebbeus B., assignor.)				
Smith, William C., Warsaw, Mo. Heating-stove	16,370	Nov. 3	33	504
Streat, George, New York, N. Y. Textile fabric	16,379	Nov. 10	33	626
Swapp, Charles W., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,321 to 16,328	Oct. 13	33	117
Vincent, Walter S., Burlington, Vt. Cake of soap	16,397	Nov. 24	33	892
Webb, Joseph, Beaver, Pa. Lamp globe or shade	16,419 to 16,420	Dec. 15	33	1270
Weller, Ferdinand S. (See Schermerhorn and Weller.)				
Wemyss, Alexander. (See Bascom and Wemyss.)				
Wheeler, Candace, Jamaica, N. Y. Hangings, &c	16,337	Oct. 13	33	118
Whittall, Matthew J. (See Mitchell, Herbert, assignor.)				
Wilkinson, William H., St. Louis, Mo. Cooking-stove	16,450	Dec. 29	33	1502
Witteck, Charles, assignor to Dominick & Haff, New York, N. Y. Fork-handle	16,412	Dec. 8	33	1142
Woolsey, William W., Aiken, S. C. Dipper or skimmer	16,338	Oct. 13	33	118

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abietine Medical Company, Oroville, Cal. Catarrh cure	12,747	Nov. 10	33	626
Abietine Medical Company, Oroville, Cal. Preparation for lung and throat diseases	12,748	Nov. 10	33	626
Abietine Medical Company, Oroville, Cal. Distillation from abietine-gum, and salves, ointments, and other compounds made therefrom	12,854	Dec. 15	33	1270
Able, James L., Little Rock, Ark. Remedy for chills and a liniment	12,789	Nov. 24	33	892
Acme Hub Company, (limited,) Dayton, Ohio. Wheel-hubs	12,790	Nov. 24	33	892
Adams, George E., Boston, Mass. Caramels	12,698	Oct. 27	33	360
Allen & Co., S. L., Philadelphia, Pa. Agricultural implements named	12,765	Nov. 17	33	762
Allen Company, Charles W., Chicago, Ill. Smoking and chewing tobacco	12,662	Oct. 20	33	239
Allen Company, Charles W., Chicago, Ill. Smoking and chewing tobacco	12,663	Oct. 20	33	239
Allen Company, Charles W., Chicago, Ill. Smoking and chewing tobacco	12,664	Oct. 20	33	240
Allen Company, Charles W., Chicago, Ill. Smoking and chewing tobacco	12,699	Oct. 27	33	360
Allen Company, Charles W., Chicago, Ill. Smoking and chewing tobacco	12,791	Nov. 24	33	892
Amato, Pietro, Dallas, Tex. Hair-dressing	12,653	Oct. 13	33	118
Amend, Bernard G., New York, N. Y. Antidote for rheumatism	12,700	Oct. 27	33	360
Amos, William L., Fallaton, Md. Evaporated sugar-corn	12,871	Dec. 22	33	1394
Andrian & Co., C., San Francisco, Cal. Native wines and brandies	12,889	Dec. 29	33	1502
Ansar, Harford & Co., London, county of Middlesex, England. Cod-liver oil	12,766	Nov. 17	33	762
Armstrong & Co., James, Baltimore, Md. Soap for laundry and general household purposes	12,701	Oct. 27	33	360
Auerbach, Louis, New York, N. Y. Gentlemen's neckscarfs	12,810	Dec. 1	33	1000
Ayres & Sons, William, Philadelphia, Pa. Blankets and lap-robes	12,635	Oct. 13	33	118
Badger State Fly Paper Company, Milwaukee, Wis. Fly-paper	12,636	Oct. 13	33	118
Baer's Sons, Simon, Wheeling, W. Va. Roasted coffee	12,723	Nov. 3	33	504
Barrett, Mary, Elgin, Ill. Salve or ointment	12,883	Dec. 29	33	1503
Bartleet & Sons, William, Redditch, county of Worcester, England. Materials for out-of-door games	12,654	Oct. 13	33	118
Bechtel, George, Edgewater, N. Y. Lager beer	12,767	Nov. 17	33	762
Beer Company, S. F., Norwich, Conn. Bottled condiment	12,869	Dec. 15	33	1270
Bennet, William J., Cleveland, Ohio. Compound for the cure of diseases of the head and throat	12,892	Dec. 29	33	1502
Berkefeld, William, Hanover, Germany. Non-conducting compound for covering heated surfaces	12,891	Dec. 29	33	1502
Bernard & Co., Beverly, Mass. Toilet-soap	12,665	Oct. 20	33	240
Best Brewing Company, Phillip, Milwaukee, Wis. Beer	12,739	Nov. 3	33	504
Best Brewing Company, Phillip, Milwaukee, Wis. Beer	12,740	Nov. 3	33	504
Blakey, John, Leeds, county of York, England. Sectional metallic protectors for the soles and heels of boots and shoes	12,666	Oct. 20	33	240
Blakey, John, Leeds, county of York, England. Sectional metallic protectors for soles and heels of boots and shoes	12,837	Dec. 15	33	1270
Bledsoe, Henry, Fort Worth, Tex. Self-spacing type	12,811	Dec. 1	33	1000
Bloomer, William J., New York, N. Y. Shirts, shirt-waists, and drawers	12,890	Dec. 29	33	1502
Blumenthal, Sigmund, New York, N. Y. Violin, guitar, and banjo strings	12,792	Nov. 24	33	892
Blumenthal, Sigmund, New York, N. Y. Violin-strings	12,793	Nov. 24	33	892
Boden Condensed Milk Company, Detroit, Mich. Condensed milk	12,855	Dec. 15	33	1270
Boott Cotton Mills, Lowell, Mass. Brown and bleached cotton sheetings	12,702	Oct. 27	33	360
Boott Cotton Mills, Lowell, Mass. Brown and bleached cotton sheetings	12,749	Nov. 10	33	626
Boott Cotton Mills, Lowell, Mass. Brown and bleached cotton sheetings	12,750	Nov. 10	33	626
Boston Rubber Company, Boston, Mass. Dental rubber	12,838	Dec. 15	33	1270
Bowers, James, Newark, N. J. Corsets	12,893	Dec. 29	33	1502
Brainerd & Armstrong Company, New London, Conn. Sewing and embroidery silk	12,894	Dec. 29	33	1502
Bravo & Son, J. R., Susquehanna Depot, Pa. Cigars	12,614	Oct. 6	33	2
Bravo & Son, J. R., Susquehanna Depot, Pa. Cigars	12,615	Oct. 6	33	2
Brenner, John, Covington, Ky. Lager-beer	12,667	Oct. 20	33	240
Burlingame, George B., Chicago, Ill. Baking-powder	12,839	Dec. 15	33	1270
Burns & Sons, Jabez, New York, N. Y. Spice-mills	12,896	Dec. 29	33	1502
Burrell & Whitman, Little Falls, N. Y. Cheese	12,724	Nov. 3	33	504
Busnits & Co., S., Richmond, Va. Smoking and chewing tobacco, cigars, cigarettes, and snuff	12,695	Oct. 20	33	240
Butler Paper Company, J. W., Chicago, Ill. Printing, writing, and wrapping paper	12,768	Nov. 17	33	762
Cammeyer, Alfred J., New York, N. Y. Boots, shoes, and slippers of all kinds	12,668	Oct. 20	33	240
Carpenter & Co., B. W., Burlington, Vt. Dentifrice	12,655	Oct. 13	33	118
Carstairs, McCall & Co., Philadelphia, Pa., and New York, N. Y. Champagne	12,794	Nov. 24	33	892
Castell, Henry. (See Castell, John and H.)				
Castell, John and H., London, England. Christmas, New-Year, Easter, birthday, Scriptural, and other cards	12,840	Dec. 15	33	1270
Chase & Sanborn, Boston, Mass. Roasted and roasted and ground coffee	12,795	Nov. 24	33	892
Chesebrough Manufacturing Company, (consolidated,) Brooklyn, N. Y. Petroleum-oil for illuminating purposes	12,876	Dec. 29	33	1502
Churchill's Inhalants Company, (limited,) J. F., London, England. Medicinal preparations for the cure of respiratory diseases	12,656	Oct. 13	33	118
Clark, Harry, trustee. (See Massam, Clark and Phillips.)				
Colburn, Birks & Company, Peoria, Ill. Whisky	12,703	Oct. 27	33	360
Colburn, Birks & Company, Peoria, Ill. Distillation from Italian juniper-berries	12,725	Nov. 3	33	504
Coleman & Co., William T., San Francisco, Cal. Raisins	12,669	Oct. 20	33	240
Colgate & Co., New York, N. Y. Toilet and laundry soap	12,704	Oct. 27	33	360
Colgate & Co., New York, N. Y. Toilet and laundry soap	12,726	Nov. 3	33	504
Conover, George W., Philadelphia, Pa. Smoking-tobacco and cigarettes	12,670	Oct. 20	33	240
Cooperative Hat Company of South Norwalk, South Norwalk, Conn. Hats	12,751	Nov. 10	33	626
Crane, Z., Jr., & Bro., Dalton, Mass. Writing-paper of all kinds	12,812	Dec. 1	33	1000
Crescent Watch Case Company, Brooklyn, N. Y. Watch-cases	12,841	Dec. 15	33	1270
Crist, Philip, Baltimore, Md. Remedy for horse-colic	12,769	Nov. 17	33	762
Crozer & Son, Samuel A., Upland, Pa. Woven cotton stripes and plaids	12,897	Dec. 29	33	1502
Crump, R. Parke, Baltimore, Md. Remedy for uterine and womb diseases	12,813	Dec. 1	33	1000
Curtis & Co., N., Boston, Mass. Shoes	12,616	Oct. 6	33	2

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Davis, Isaac, Dayton, Ohio. High-test carbon-oil	12,671	Oct. 20	33	240
Davis, Thomas E., Summit Hill, Pa. Cleansing preparation in fluid form for garments, the toilet, &c	12,796	Nov. 24	33	892
De Castro & Donner S. R. Company, New York, N. Y. Refined hard sugar	12,898	Dec. 29	33	1502
De Witt Wire Cloth Company, New York, N. Y., and Philadelphia, Pa. Wire-cloth	12,936	Dec. 8	33	1142
Dill, Joseph G., Richmond, Va. Plug-tobacco	12,705	Oct. 27	33	360
Dill, Joseph G., Richmond, Va. Chewing and smoking tobacco	12,770	Nov. 17	33	762
Dill, Joseph G., Richmond, Va. Chewing and smoking tobacco	12,771	Nov. 17	33	762
Dill, Joseph G., Richmond, Va. Chewing and smoking tobacco	12,842	Dec. 15	33	1270
East Hartford Manufacturing Company, East Hartford, Conn. Writing-paper	12,843	Dec. 15	33	1270
Eastman & Brother, Philadelphia, Pa. Essences and toilet-soap	12,617	Oct. 6	33	2
Elliman Sons & Co., Slough, county of Birmingham, England. Embrocation	12,864	Dec. 29	33	1502
Ellis Brothers, Boston, Mass. Butter	12,877	Dec. 29	33	1502
Else, Linnie C., Reading, Pa. Cosmetic	12,899	Dec. 29	33	1502
Erb, David S., Boyertown, Pa. Cigars	12,693	Oct. 20	33	240
Fahys & Co., Joseph, New York, N. Y. Watch-cases	12,814	Dec. 1	33	1000
Fairbank Canning Company, Chicago, Ill. Canned beef or cooked compressed corned beef	12,856	Dec. 15	33	1270
Fairbank & Company, N. K., Chicago, Ill. Laundry and toilet soap	12,857	Dec. 15	33	1270
Fairbank & Company, N. K., Chicago, Ill. Laundry and toilet soap	12,772	Nov. 17	33	762
Fearey Manufacturing Company, Albany, N. Y. School-shoes	12,694	Oct. 20	33	240
Felgner & Son, F. W., Baltimore, Md. Smoking and chewing tobacco, cigars, cigarettes, cheroots, and snuff	12,672	Oct. 20	33	240
Fleming, Charles F. (See Fleming, George A. and C. F.)	12,706	Oct. 27	33	360
Fleming, George A. and C. F., San José, Cal. Prunes	12,733	Nov. 17	33	762
Fleming, George H. and C. F., San José, Cal. Dried prunes	12,692	Oct. 20	33	240
Franklin Mill Company, Lockport, N. Y. Flour or meal made of the entire wheat	12,830	Dec. 8	33	1142
Gail & Ax, G. W., Baltimore, Md. Chewing-tobacco	12,900	Dec. 29	33	1502
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	12,774	Nov. 17	33	762
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	12,673	Oct. 20	33	240
Gilman, George F., near Bridgeport, Conn. Baking-powder	12,797	Nov. 24	33	892
Gogorza's Sons, F., New York, N. Y. Leaf-tobacco	12,815	Dec. 1	33	1000
Goodall, Backhouse & Co., Leeds, county of York, England. Custard-powder	12,752	Nov. 10	33	623
Gunn, Richard, Baltimore, Md., and Macon, Ga. Medicine called a blood-renewer	12,637	Oct. 13	33	118
Hall, Hugh, New York, N. Y. Ginger-ale and certain named drinks	12,638	Oct. 13	33	118
Hall, Frederick M., Chicago, Ill. Refrigerator	12,674	Oct. 20	33	240
Hamilton, Schuyler, Jr., New York and Sing Sing, N. Y. Brick	12,707	Oct. 27	33	360
Harris, James H., Citra, Fla. Oranges, lemons, and other citric fruit				
Hawkes, Charles K., San Francisco, Cal. Axes, hatchets, mattocks, adzes, picks, and grub-hoes				
Hill, Sallie. (See Jones, Hill, and Jones.)				
Holmes & Edwards Silver Company, Bridgeport, Conn. Imitation silver-ware for table use, watch-cases, &c	12,844	Dec. 15	33	1270
Hopkins, L. N. & J. S., Baltimore, Md. Guano	12,708	Oct. 27	33	360
Hoptonic Company, Grand Rapids, Mich. Liquid preparation of hops	12,727	Nov. 3	33	504
Horn, Charles W., Slatington, Pa. Liniment, cough-sirup, liver-pellets, and corn-cure	12,901	Dec. 29	33	1502
Howard Bros., Fredonia, N. Y. Medicine for the treatment of thrush or nursing sore mouth	12,775	Nov. 17	33	762
Howard, E. E., Henvelton, N. Y. Corn medicine	12,858	Dec. 15	33	1270
Howard, E. E., Henvelton, N. Y. Corn medicine	12,859	Dec. 15	33	1270
Howland, Charles W., Boston, Mass. Rum	12,872	Dec. 22	33	1394
Hoxsie, Anna P., Buffalo, N. Y. Croup cure	12,728	Nov. 3	33	504
Hyatt, Edwin F., Newark, N. J. Remedies for coughs, colds, &c	12,798	Nov. 24	33	892
Hyde & Son, S. N., Long Green, Md. Canned corn	12,639	Oct. 13	33	118
Ichthyol-Gesellschaft Cordes Hermanni & Co., Hamburg, Germany. Ointments, salves, pills, medicated liquids, and soaps	12,816	Dec. 1	33	1000
Isert, J. Theodore, Louisville, Ky. Cigars	12,709	Oct. 27	33	360
Jenkins, Joel, New York, N. Y. Safety-pins	12,675	Oct. 20	33	240
Jenkins, Joel, New York, N. Y. Safety-pins	12,676	Oct. 20	33	240
Johnson, Horatio, Fair Haven, N. J. Condition-powders	12,817	Dec. 1	33	1000
Jones, Newton T. (See Jones, Hill, and Jones.)				
Jones, Rufus G., Dawson, S. Hill and N. T. Jones, Oglethorpe, Ga. Blood-purifier and cancer-cure	12,860	Dec. 15	33	1270
Kalbfleisch's Sons, Martin, New York, N. Y. Tonics and stimulants	12,776	Nov. 17	33	762
Kansas City Soap Company, Kansas City, Mo. Toilet and laundry soap	12,777	Nov. 17	33	762
Keen, Rebecca J., Leesburg, Ohio. Liniment	12,778	Nov. 17	33	762
Keer, Jonathan, Buffalo, N. Y. Tea	12,831	Dec. 8	33	1142
Keys, Roger, Philadelphia, Pa. Proprietary remedies, medicines compounded by prescription, and official and pharmaceutical preparations	12,733	Nov. 10	33	626
Kirk & Co., James S., Chicago, Ill. Toilet-soap	12,618	Oct. 6	33	2
Kirk & Co., James S., Chicago, Ill. Toilet-soap	12,619	Oct. 6	33	2
Kirk & Co., James S., Chicago, Ill. Toilet-soap	12,620	Oct. 6	33	2
Kirk & Co., James S., Chicago, Ill. Toilet-soap	12,621	Oct. 6	33	2
Kirsch, Franzis, St. Louis, Mo. Liquid preparations for the cure of venereal and urinary diseases	12,885	Dec. 29	33	1502
Kristo, Eduard W., Dunnsville, Va. Canned fruits, vegetables, and oysters	12,678	Oct. 20	33	240
Kunkelmann & Co., Rheims, France. Champagne-wines	12,729	Nov. 3	33	504
Kunkelmann & Co., Rheims, France. Champagne-wines	12,754	Nov. 10	33	626
Kunkelmann & Co., Rheims, France. Champagne-wines	12,799	Nov. 24	33	892
Lauts Bros. & Co., Buffalo, N. Y. Laundry and toilet soap	12,710	Oct. 27	33	360
Lay, Van Densen & Co., Westfield, Mass. Driving-whips	12,711	Oct. 27	33	360
Lay, Van Densen & Co., Westfield, Mass. Driving-whips	12,658	Oct. 13	33	118
Lents, Nicholas, Waukon, Iowa. Anæsthetic	12,640	Oct. 13	33	118
Levi & Co., H., San Francisco, Cal. Plug chewing and smoking tobacco	12,641	Oct. 13	33	118
Levi & Co., H., San Francisco, Cal. Plug chewing and smoking tobacco	12,679	Oct. 20	33	240
Lewis, Charles H., New York, N. Y. Toilet-powder	12,878	Dec. 29	33	1502
Lickes, R. P., Steubenville, Ohio. Medicated toilet preparation	12,712	Oct. 27	33	360
Loomis, Laurus, New York, N. Y. Cotton goods, gray, colored, and bleached, plain or twilled	12,713	Oct. 27	33	360
Loomis, Laurus, New York, N. Y. Cotton goods, gray, colored, and bleached, plain or twilled	12,755	Nov. 10	33	626
Loomis, Laurus, Brooklyn, N. Y. Cotton goods, gray, colored, and bleached, plain or twilled	12,756	Nov. 10	33	626
Love, Thomas C., Philadelphia, Pa. Garments or articles made from Jersey cloths and stockinets	12,757	Nov. 10	33	626
Love, Thomas C., Philadelphia, Pa. Garments or articles made from Jersey cloths and stockinets				
Lucas & Son, Joseph, Birmingham, England. Lamps and lanterns for bicycles, tricycles, and other velocipedes	12,730	Nov. 3	33	504
Lynch & Co., Patrick, Philadelphia, Pa. Men's and boys' hats	12,622	Oct. 6	33	2
Macdonough, James H., New York, N. Y. Remedy for catarrh and for bronchial affections	12,623	Oct. 6	33	2
Mansfeld-Büllner, Harald V., Copenhagen, Denmark, and Washington, D. C. Elixir or bitters	12,895	Dec. 29	33	1502
March, George N., Boston, Mass. Collars, cuffs, and bosoms	12,832	Dec. 8	33	1142
Marvel, William D., New York, N. Y. Aluminum pens	12,886	Dec. 29	33	1502
Marx, Zero, Chicago, Ill. Emblematic signs	12,818	Dec. 1	33	1000
Masqueller, E., Borgerhout, Belgium. Bitters	12,800	Nov. 24	33	892

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Massam, Thomas, H. Clark, and S. Phillips, trustees, London, England. Food for curing and fattening cattle	12,787	Nov. 17	33	762
Mayer Brothers & Co., New York, N. Y. Roasted coffee	12,634	Oct. 6	33	2
Maynard & Irwin, Boston, Mass. Roasted and ground coffee	12,801	Nov. 24	33	892
McClain & Anderson, Greenfield, Ohio. Harness sweat-collars, saddle-trees, &c	12,642	Oct. 13	33	118
McConnell, John, Cleveland, Ohio. Lamp or oil stoves	12,696	Oct. 20	33	240
McDonald Drug Company, R. H., New York, N. Y., and San Francisco, Cal. Bitters	12,680	Oct. 20	33	240
McGregor, John, Mid-Street Works, Dundee, Scotland. Canvas hose	12,845	Dec. 15	33	1270
Menasha Wooden Ware Company, Menasha, Wis. Wooden pails and tubs	12,714	Oct. 27	33	360
Merino Shoe Company, Kennebunk, Me., and Boston, Mass. Foot-wear made of felt and felting material	12,737	Nov. 3	33	504
Merry, John, New York, N. Y. Best quality galvanized sheet-iron	12,625	Oct. 6	33	2
Merry, John, New York, N. Y. Galvanized sheet-iron of the second quality	12,657	Oct. 13	33	118
Metallic Cap Manufacturing Company, Enfield, Conn., and New York, N. Y. Caps or primers for blasting purposes	12,758	Nov. 10	33	626
Metallic Cap Manufacturing Company, Enfield, Conn., and New York, N. Y. Caps or primers for blasting purposes	12,779	Nov. 17	33	762
Moorman, Charles P., Louisville, Ky. Whisky	12,731	Nov. 3	33	504
Moorman, Charles P., Louisville, Ky. Whisky	12,732	Nov. 3	33	504
Moorman, Charles P., Louisville, Ky. Whisky	12,733	Nov. 3	33	504
Moorman, Charles P., Louisville, Ky. Whisky	12,734	Nov. 3	33	504
Moorman, Charles P., Louisville, Ky. Whisky	12,735	Nov. 3	33	504
Morton & Sons, A. B., Baltimore, Md. Illuminating coal or kerosene oil	12,802	Nov. 24	33	892
Muhr's Sons, H., Philadelphia, Pa. Imitation diamond jewelry	12,846	Dec. 15	33	1270
Muhr's Sons, H., Philadelphia, Pa. Filled finger-rings and thimbles	12,847	Dec. 15	33	1270
Muhr's Sons, H., Philadelphia, Pa. Gold, silver, and other solid thimbles	12,861	Dec. 15	33	1270
Muhr's Sons, H., Philadelphia, Pa. Filled watch-cases	12,862	Dec. 15	33	1270
Mülhens & Kropff, New York, N. Y. Glycerine soap	12,863	Dec. 15	33	1270
Mullen, Walter N., Charlotte, N. C. Liniment	12,736	Nov. 3	33	504
Muth, A. M., Red Bluff, Cal. Bitters	12,902	Dec. 29	33	1502
Nash & Bro., Millington, N. J. Pulverizing-harrows, clod-crushers, and levelers	12,819	Dec. 1	33	1000
New York Fire Proof Paint Company, New York, N. Y. Paint	12,715	Oct. 27	33	360
Nicolds, Joshua S., Walnut Ridge, Ark. Medicine for the cure of neuralgia and like diseases	12,716	Oct. 27	33	360
Norfolk Storage Company, Norfolk, Va. Peanuts	12,738	Nov. 3	33	504
Norfolk Storage Company, Norfolk, Va. Peanuts	12,780	Nov. 17	33	762
Norton Door Check and Spring Company, New York, N. Y. Door checks and springs	12,903	Dec. 29	33	1502
Oberne, Hosick & Co., Chicago, Ill. Laundry-soap	12,848	Dec. 15	33	1270
O'Neill, Charles B., Paterson, N. J. Vermin-exterminator	12,803	Nov. 24	33	892
Paddock, H. J., St. Louis, Mo. Baking-powder	12,759	Nov. 10	33	626
Paillard & Co., C., Ste. Croix, Switzerland. Music-boxes	12,760	Nov. 10	33	626
Palmer, Solon, Jersey City, N. J. Soap and perfumes	12,904	Dec. 29	33	1502
Payn's Son's Tobacco Company, B., Albany, N. Y. Cut smoking and cut chewing tobacco	12,849	Dec. 15	33	1270
Peabody & Co., Henry W., Boston, Mass. Illuminating, burning, and lubricating oil	12,905	Dec. 29	33	1502
Perkins & Ernst, Covington, Ky. Plug-tobacco	12,864	Dec. 15	33	1270
Peterson, Isham H., and H. Stevenins, Newark, N. J. Liniment	12,626	Oct. 6	33	2
Pfaelzer Bros. & Co., Philadelphia, Pa. Remedy for rheumatism and similar diseases	12,890	Dec. 1	33	1000
Phillips, Henry & Co., Norfolk, Va. Salt	12,850	Dec. 15	33	1270
Phillips, Seth, trustee. (See Massam, Clark, and Phillips.)				
Pillsbury & Co., Charles A., Minneapolis, Minn. Wheat-flour	12,677	Oct. 20	33	240
Pillsbury & Co., Charles A., Minneapolis, Minn. Wheat-flour	12,681	Oct. 20	33	240
Pillsbury & Co., Charles A., Minneapolis, Minn. Wheat-flour	12,697	Oct. 20	33	240
Pingel, Charles, Rochester, N. Y. Balsam for cure of gout, rheumatism, &c	12,781	Nov. 17	33	762
Pingel, Charles, Rochester, N. Y. Sirup for coughs, colds, &c	12,782	Nov. 17	33	762
Pingel, Charles, Rochester, N. Y. Bitters	12,834	Dec. 8	33	1142
Piper, Robert F., Boston, Mass. Wheaten flour	12,821	Dec. 1	33	1000
Pogue, William J., Durham, N. C. Smoking, plug chewing, and fine-cut tobacco, cigars, and cigarettes	12,822	Dec. 1	33	1000
Porter, Isabella E., Boston, Mass. Oil preparation for alleviating pain caused by nervous diseases	12,865	Dec. 15	33	1270
Porter, John M., Boston, Mass. Starch	12,887	Dec. 29	33	1502
Portuondo, Juan F., Philadelphia, Pa. Cigars	12,879	Dec. 29	33	1502
Pratt, Charles L., Minneapolis, Minn. Cigars, cigarettes, and smoking and chewing tobacco	12,906	Dec. 29	33	1502
Pratt, Charles W., New York, N. Y. Hat-polish	12,783	Nov. 17	33	762
Rae & Co., S., Leghorn, Italy. Olive-oil	12,746	Nov. 3	33	504
Ralston Ginning Company, Nashville, Tenn. Ginned cotton	12,823	Dec. 1	33	1000
Raymond, Benj. F., Essex, Mass. Cough-drops	12,804	Nov. 24	33	892
Read Brothers, London, England. Ale and stout	12,866	Dec. 15	33	1270
Reading Hardware Company, Reading, Pa. Stationers' hardware supplies, builders' hardware, furniture hardware, and miscellaneous hardware named	12,643	Oct. 13	33	118
Reading Hardware Company, Reading, Pa. Stationers' hardware supplies, builders' hardware, furniture hardware, and miscellaneous hardware named	12,762	Nov. 10	33	626
Reinhard, Dinkelmann & Co., St. Louis, Mo. Razors, scissors, shears, pocket and other knives	12,627	Oct. 6	33	2
Richardson, Gilbert M., New York, N. Y. Stove-polish	12,907	Dec. 29	33	1502
Roof, Clarence M., New York, N. Y. Wines	12,628	Oct. 6	33	2
Rosenberg & Sons, D., New York, N. Y. Wood-stains, varnishes, &c	12,867	Dec. 15	33	1270
Rosenberg & Sons, D., New York, N. Y. Varnishes, japans, wood-stains, &c	12,868	Dec. 15	33	1270
Rumford Chemical Works, East Providence, R. I. Remedy for disorders of the digestive organs and nervous system and an ingredient for a beverage	12,659	Oct. 13	33	118
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,644	Oct. 13	33	118
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,645	Oct. 13	33	118
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,646	Oct. 13	33	118
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,647	Oct. 13	33	118
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,648	Oct. 13	33	118
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,649	Oct. 13	33	118
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,682	Oct. 20	33	240
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,683	Oct. 20	33	240
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,824	Dec. 1	33	1000
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,825	Dec. 1	33	1000
Russell & Morgan Printing Company, Cincinnati, Ohio. Playing-cards	12,826	Dec. 1	33	1000
Ryle, John, Paterson, N. J. Ribbons	12,873	Dec. 22	33	1394
Sallade & Co., New York, N. Y. Lotion for exterminating insects and curing their stings and for relieving pain	12,880	Dec. 29	33	1502
Salomon & Bro., L. A., New York, N. Y. Wood-alcohol and its compounds	12,784	Nov. 17	33	762
Scanlan, Thomas F., Boston, Mass. Piano-fortes	12,629	Oct. 6	33	2
Scanlan, Thomas F., Boston, Mass. Piano-fortes	12,630	Oct. 6	33	2

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Scheidig & Co., John, New York, N. Y. Magic lanterns	12,851	Dec. 15	33	1270
Scheidig & Co., John, New York, N. Y. Opera-glasses	12,852	Dec. 15	33	1270
Schieren & Co., Charles A., New York, N. Y. Oil-dressed and waterproofed flat leather belting	12,785	Nov. 17	33	762
Scotch Oats Essence Company, New York, N. Y. Nervine	12,833	Dec. 8	33	1142
Scott & Bro., D., Elkton, Md. Manufactured fertilizer	12,632	Oct. 6	33	2
Scovill Manufacturing Company, New York, N. Y. Albumenized paper for photographic purposes	12,684	Oct. 20	33	240
Seebohm & Dieckstahl, Dannemora Steel Works, Sheffield, county of York, England. Certain manufactures of iron and steel	12,685	Oct. 20	33	240
Shaen, Robert F., South Orange, N. J. Corded-cotton pile fabrics	12,650	Oct. 13	33	118
Shuman & Co., A., Boston, Mass. Boys' clothing	12,805	Nov. 24	33	892
Shuptrine, James T., Savannah, Ga. Remedy for ringworm, tetter, and all itching eruptions of the skin	12,651	Oct. 13	33	118
Silver Lake Company, Boston, Mass. Cords, lines, twines, and ropes	12,631	Oct. 6	33	2
Silver Lake Company, Boston, Mass. Cords, lines, twines, and ropes	12,633	Oct. 6	33	2
Singer Manufacturing Company, New York, N. Y. Sewing-machines and sewing-machine attachments and supplies	12,717	Oct. 27	33	360
Six Dykstra, James J., Chicago, Ill. Medicine for the cure of diseases of the stomach and bowels	12,660	Oct. 13	33	118
Southern Chemical Company, New York, N. Y. Oil or spirit varnish	12,827	Dec. 1	33	1000
Southern Chemical Company, New York, N. Y. Distilled products of pine wood	12,828	Dec. 1	33	1000
Stadiger, C. F., Philadelphia, Pa. Bitters	12,908	Dec. 29	33	1502
Stephenson, Stanley T., Liverpool, England. Antiseptic dressing	12,786	Nov. 17	33	762
Stevenins, Hilding. (See Peterson and Stevenins.)				
Stevens, Henry R., Boston, Mass. Compound for cleaning clothing, fabrics, paint-work, &c.	12,741	Nov. 3	33	504
Stilwell & Bierce Manufacturing Company, Dayton, Ohio. Turbine water-wheels	12,661	Oct. 13	33	118
Stuart Manufacturing Company, Atlanta, Ga. Remedy for certain named diseases	12,718	Oct. 27	33	360
Taylor, Frederick G., Providence, R. I. Powdered soap	12,719	Oct. 27	33	360
Taylor, John, Toronto, Ontario, Canada, and Rochester, N. Y. Laundry-soap	12,806	Nov. 24	33	892
Teats, Herman, Indianapolis, Ind. Preparation for the skin	12,686	Oct. 20	33	240
Thomson & Taylor Spice Company, Chicago, Ill. Baking-powder	12,870	Dec. 15	33	1270
Toledo Spice Company, Toledo, Ohio. Roasted coffee	12,881	Dec. 29	33	1502
Torrey, J. H. & F. H., North Weymouth, Mass. Boots and shoes	12,687	Oct. 20	33	240
Turner, Frederick, Philadelphia, Pa. Pamphlets and books	12,652	Oct. 13	33	118
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges	12,720	Oct. 27	33	360
Upton, Charles S., New York, N. Y. Lamps	12,874	Dec. 22	33	1394
Urban & Co., Buffalo, N. Y. Flour	12,688	Oct. 20	33	240
Urban & Co., Buffalo, N. Y. Flour	12,689	Oct. 20	33	240
Vereinigte Rheinisch-Westphälische Pulver-Fabriken, Cologne, Germany. Gunpowder, explosive compounds, cartridges, &c	12,888	Dec. 29	33	1502
Vogeler, Son & Co., Baltimore, Md. Medicines containing malt	12,742	Nov. 3	33	504
Waite, Mathewson & Co., Providence, R. I. Lockets, bracelets, and lace-pins	12,807	Nov. 24	33	892
Walther, Edward, New York, N. Y. Velveteens	12,909	Dec. 29	33	1502
Warner, Hulbert H., Rochester, N. Y. Yeast	12,743	Nov. 3	33	504
Warner, Hulbert H., Rochester, N. Y. Tonic preparation for the treatment of certain diseases	12,808	Nov. 24	33	892
Waterbury & Co., L., New York, N. Y. Binders' twine	12,634	Oct. 6	33	2
Western Stove Manufacturing Company, St. Louis, Mo. Cooking stoves and ranges	12,853	Dec. 15	33	1270
Westfield Whip Company, Westfield, Mass. Gentlemen's driving-whips	12,763	Nov. 10	33	626
Weyman, B. Frank, Pittsburg, Pa. Smoking-tobacco	12,788	Nov. 17	33	762
Weyman, B. Frank, Pittsburg, Pa. Smoking-tobacco	12,809	Nov. 24	33	892
White, James R., Philadelphia, Pa. Bronze, copper, brass, Babbitt metal, and other metals	12,691	Oct. 20	33	240
Whiton, Brother & Co., Boston, Mass. Sail-cloth or duck	12,744	Nov. 3	33	504
Wigg Brothers & Steele, Runcorn, county of Chester, England. Alkalies and bleaching-powder	12,745	Nov. 3	33	504
Williams, Henry G., New York, N. Y. Cement for leather	12,875	Dec. 22	33	1394
Wilson, Annie M., Washington, D. C. Medicated astringents and sedatives	12,835	Dec. 8	33	1142
Wire Goods Company, Worcester, Mass. Nails and similar products made from wire	12,829	Dec. 1	33	1000
Woodworth & Sons, C. B., Rochester, N. Y. Perfumes	12,690	Oct. 20	33	240
Worms & Cohn, Milwaukee, Wis. Boxes for cigars	12,764	Nov. 10	33	626
Wortmann & Co., S. B., New York, N. Y. Hungarian wines	12,721	Oct. 27	33	360
Wortmann & Co., S. B., New York, N. Y. Hungarian Tokay wines	12,722	Oct. 27	33	360
Young, Richard, Flatbush, N. Y. Kid and kid-finished leather	12,882	Dec. 29	33	1502

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Able, J. L., Little Rock, Ark. "Dr. Able's Compound Honey of Tar and Lemon"	4,606	Oct. 13	33	118
Alexander, James H., Augusta, Ga. "Honey, Rum and Tar," (for a Medicine)	4,621	Nov. 10	33	626
Armstrong, Thomas L., Indianapolis, Ind. "Armstrong's Asthma and Hay Fever Remedy"	4,616	Nov. 3	33	504
Barrett, Mary, Elgin, Ill. "Dr. Perdue's Salve"	4,684	Dec. 29	33	1502
Battin, James H., Salem, Mass. "The New Discovery, Battin' Modified Extract of Denicotized Tobacco"	4,622	Nov. 10	33	626
Baxter, Samuel W., Providence, R. I. "Dr. Samuel's World's Dyspepsia Cure"	4,647	Dec. 1	33	1000
Beck, Charles, Baltimore, Md. "Iron Phosphates" (for a Beverage)	4,589	Oct. 6	33	2
Beebe, Melvin C., Columbus, Ohio. "Dr. M. C. Beebe's Reliable Catarrh Cure"	4,648	Dec. 1	33	1000
Berry, Thomas, Portland, Oreg. "Berry's Nourishing Stout"	4,667	Dec. 15	33	1270
Boston Rubber Company, Boston, Mass. "Geo. H. Hood's Imperial Flesh Color Rubber for Dental Plates"	4,668	Dec. 15	33	1270
Boston Rubber Company, Boston, Mass. "Geo. H. Hood's Imperial Gum Color Rubber for Dental Plates"	4,669	Dec. 15	33	1270
Boyd, Daniel F., Cambridge, Mass. "Boyd's Rheumatic Compound"	4,649	Dec. 1	33	1000
Brackett, David, Brooks, Me. "Brackett's Rheumatic Liniment"	4,634	Nov. 17	33	762
Brown, George S., Boston, Mass. "Silk Silver Towel." (for Toweling.)	4,617	Nov. 3	33	504
Brown, George S., Boston, Mass. "Genuine Silk Sponge Towel" (for Toweling.)	4,618	Nov. 3	33	504
Burbank, Lydia O., Worcester, Mass. "Benzoated Lotion" (for Chapped Hands)	4,609	Oct. 20	33	240
Burnham, Edwin S., Charleston, S. C. "Cleansing Cream." (for a Clothing Renovator)	4,635	Nov. 17	33	762
Buanitz & Co., S., Richmond, Va. "Old Burley Cigarettes"	4,607	Oct. 13	33	118
Buanitz & Co., S., Richmond, Va. "Shag Cigarettes"	4,608	Oct. 13	33	118
Campbell, Charles B., Newark, N. J. "Imperishable paste"	4,685	Dec. 29	33	1502
Campbell, Milton, Philadelphia, Pa. "Campbell's Tonic Wine of Coca and Celery"	4,619	Nov. 3	33	504
Colburn, Birks & Company, Peoria, Ill. "Grant's Calisaya and Iron Tonic"	4,640	Nov. 24	33	892
Coleman, Sol, Memphis, Tenn. "Sol Coleman's Original and only Genuine Ko-Ko Tulu"	4,610	Oct. 20	33	240
Coleman, Sol, Memphis, Tenn. "Sol Coleman's Original and only Genuine Ko-Ko Tulu"	4,611	Oct. 20	33	240
Coleman, Sol, Memphis, Tenn. "Sol Coleman's Ko-Ko Tulu" (for Chewing Gum)	4,650	Dec. 1	33	1000
Conover, George W., Philadelphia, Pa. "Twixt and Tween Purest Quality Smoking Tobacco"	4,613	Oct. 27	33	360
Crozer & Son, Samuel A., Upland, Pa. "These goods are Manufactured with great care from well selected Cotton and all the colors are fast." (for Cotton-goods)	4,686	Dec. 29	33	1502
Dabba Bros., New York, N. Y. "Parisian" (for Cachous)	4,663	Dec. 8	33	1142
Dexter Brothers, Boston, Mass. "Dexter's Mahogany Stain," (for Wood)	4,646	Nov. 24	33	892
Eastman Dry Plate and Film Company, Rochester, N. Y. "Permanent Argentic Bromide Paper"	4,675	Dec. 22	33	1394
Eastman Dry Plate and Film Company, Rochester, N. Y. "Permanent Gelatino-Argentic Bromide Paper"	4,676	Dec. 22	33	1394
Eastman Dry Plate and Film Company, Rochester, N. Y. "Permanent Gelatino Bromide Paper"	4,677	Dec. 22	33	1394
Eastman Dry Plate and Film Company, Rochester, N. Y. "Permanent Bromide Paper"	4,687	Dec. 29	33	1502
Evans & Krimmel, Circleville, Ohio. "Luce's Celebrated Black Liniment"	4,595	Oct. 13	33	118
Finlay & Co., G. R., New Orleans, La. "Bronswig's Orange Mint Elixir"	4,678	Dec. 22	33	1394
Fisher, Edwin, Reading, Pa. "The "Best" Stove Polish"	4,641	Nov. 24	33	892
Foster, Whildin, Philadelphia, Pa. "Prepared Invisible Patches"	4,651	Dec. 1	33	1000
Franklin, A. G., Richmond, Va. "Infallible Diarrhœa and Teething Medicine"	4,596	Oct. 13	33	118
Fraxine Manufacturing Company, Philadelphia, Pa. "Pine Pectoral" (for a Medical Compound)	4,644	Dec. 8	33	1142
Fraxine Manufacturing Company, Philadelphia, Pa. "Fraxine, the Great Remedy for Dyspepsia"	4,665	Dec. 8	33	1142
Fry, John W., Allegheny, Pa. "Fry's Great Rheumatic Cure and Blood Purifier"	4,590	Oct. 6	33	2
Fryer, Derrick F., Oroville, Cal. "Fryer's Abietene, an Extract from the Pinus Sabiniana"	4,652	Dec. 1	33	1000
Geiger, Jacob F., New York, N. Y. "Delicious Shampoo." (for a Hair Wash)	4,597	Oct. 13	33	118
Gillam's Sons, Philadelphia, Pa. "Seidlitz Powders"	4,623	Nov. 10	33	626
Gooding, Matthew S., Le Roy, N. Y. "Pearl White Tooth Paste"	4,620	Nov. 3	33	504
Grace & Co., W. R., New York, N. Y. "F Caparro Extra Refined Petroleum"	4,624	Nov. 10	33	626
Greey, Edward, New York, N. Y. "Rice and Rye" (for a Preparation of Extract of Rice with Rye Whisky)	4,591	Oct. 6	33	2
Hall, Hugh, New York, N. Y. "Hall's Ulster Ginger Ale"	4,636	Nov. 17	33	762
Hand, D. B., Scranton, Pa. "General Tonic"	4,625	Nov. 10	33	626
Hand, D. B., Scranton, Pa. "Worm Elixir"	4,626	Nov. 10	33	626
Hand, D. B., Scranton, Pa. "Colic Cure"	4,627	Nov. 10	33	626
Hand, D. B., Scranton, Pa. "Pleasant Physic"	4,628	Nov. 10	33	626
Hand, D. B., Scranton, Pa. "Teething Lotion"	4,629	Nov. 10	33	626
Haswell, William S., Denver, Colo. "London Balm." (for a Medicine)	4,598	Oct. 13	33	118
Heilner & Strauss, New York, N. Y. "Scented Corset" (for Packages Containing Corsets)	4,653	Dec. 1	33	1000
Heilner & Strauss, New York, N. Y. "Perfumed Corset" (for Packages Containing Corsets)	4,654	Dec. 1	33	1000
Heilner & Strauss, New York, N. Y. "Fragrant Corset," (for Packages Containing Corsets)	4,655	Dec. 1	33	1000
Heilner & Strauss, New York, N. Y. "Cologne Corset" (for Packages Containing Corsets)	4,656	Dec. 1	33	1000
Heilner & Strauss, New York, N. Y. "Sweet Smelling Corset" (for Packages Containing Corsets)	4,657	Dec. 1	33	1000
Heinz, Henry J., Pittsburg, Pa. "Heinz's" (for Pickles, Preserves and Condiments)	4,688	Dec. 29	33	1502
Heinz, Henry J., Pittsburg, Pa. "From F. & J. Heinz Purveyors to the Trade"	4,689	Dec. 29	33	1502
Higgins, Charles M., Brooklyn, N. Y. "General Drawing Ink"	4,690	Dec. 29	33	1502
Johnson, Sutton & Co., Baltimore, Md. "Our Own" (for Shirts.)	4,679	Dec. 22	33	1394
Joslin, Chauncey C., Johnstown, N. Y. "Dr. C. C. Joslin's Liver Pills"	4,691	Dec. 29	33	1502
Kalbfleisch's Sons, Martin, New York, N. Y. "Phosacid, a Nerve Tonic and Stimulant"	4,670	Dec. 15	33	1270
Kidney Pill Co., Wheeling, W. Va. "The Original Kidney Pills"	4,599	Oct. 13	33	118
Lavigny, Georgine S., Jersey City, N. J. "Simon's Black," (for Harness, Carriages, &c)	4,593	Oct. 6	33	2
Lichty, Norman, Des Moines, Iowa. "Cubeb Cough Cure"	4,673	Dec. 15	33	1270
Liston Beef Company, Chicago, Ill. "Prof. Liston's Fluid Extract of Beef"	4,671	Dec. 15	33	1270
Liston Beef Company, Chicago, Ill. "Liston's Extract of Chicken"	4,672	Dec. 15	33	1270
Macklin, T. L., Philadelphia, Pa. "Penetrating Oil" (for a Remedy for Rheumatism)	4,630	Nov. 10	33	626
Maher, Benedict F. (See Maher, James J. and B. F.)				
Maher, James J. and B. F., Augusta, Me. "Madam Gilmore's London Blood Syrup"	4,592	Oct. 6	33	2
Martin, John A., Philadelphia, Pa. "Kino" (for a Tooth Wash)	4,637	Nov. 17	33	762
Martinez, Albert A., New Orleans, La. "Martinez' Lubricator"	4,600	Oct. 13	33	118

Alphabetical list of registrants of labels, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Masquelier, E., Antwerp, Belgium. "A. E. Boonekamp Maag Bitter"	4,642	Nov. 24	33	892
Mitchell, G. E., Haverhill, Mass. "G. E. M. Powder or the G. E. Mitchell Tooth Powder"	4,631	Nov. 10	33	626
Mozley, H., Atlanta, Ga. "Dr. H. Mozley's Lemon Tonic Cordial"	4,643	Nov. 24	33	892
Mueller, David. (See Schloss and Mueller.)				
Meyer, Anson H., Hoboken, N. J. "Thueringer Export Beer"	4,659	Dec. 1	33	1000
Pfaelzer Bros. & Co., Philadelphia, Pa. "Strassburger Gicht & Rheumatismus Pflaster"	4,614	Oct. 27	33	360
Picherean, Arcene, Lacon, Ill. "Picherean's Universal Salve"	4,632	Nov. 10	33	626
Post, Joy, Essex, Conn. "Magnetic Tablets" (for a Medicine)	4,638	Nov. 17	33	762
Reis, Morris M., Philadelphia, Pa. "Juniper Leaf Gin"	4,660	Dec. 1	33	1000
Ridgewood Re-Di-tilling Company, New York, N. Y. "Ridgewood Re-Distilling Co's. D. D. Rye Gin"	4,692	Dec. 29	33	1502
Rogers, Philip, Baltimore, Md. "Forrest's Juniper Tar Drops." (for a Medicine for Coughs, Colds, &c)	4,601	Oct. 13	33	118
Schloss, A. S., and D. Mueller, New York, N. Y. "Dr. Tyler's Tooth Tablets"	4,644	Nov. 24	33	892
Schropshire, W. A., Rockdale, Tex. "Dr. Bell's Never Failing, Wonderful Mixture for Chills and Fevers"	4,680	Dec. 22	33	1394
Scott & Firth, Coldwater, Mich. "Scott & Firth's Tonic and Kidney Cure"	4,602	Oct. 13	33	118
Shaw, James C., Savannah, Ga. "S. A. C. Shaw's Asthma Cure"	4,661	Dec. 1	33	1000
Sherlock, Edward J., Brooklyn, N. Y. "Blood, Rye & Beef" (for a Medicine for Consumption, &c)	4,594	Oct. 6	33	2
Speicher, Charles, Scranton, Pa. "Balsetto" (for a medical Compound)	4,674	Dec. 15	33	1270
Stamets, F. T., Bloomsbury, N. J. "The F. T. S. Great Indian Cough Killer"	4,662	Dec. 1	33	1000
Steenrod, Sarah, Columbus, Ohio. "Golden's Female Elixir"	4,639	Nov. 17	33	762
Taylor, W. Scott, Trenton, N. J. "Taylor's Horehound Balsam"	4,615	Oct. 27	33	360
Thomson, Langdon & Co., New York, N. Y. "Custom Made," (for Corsets)	4,693	Dec. 29	33	1502
Thomson, Langdon & Co., New York, N. Y. "Fleece Lined" (for Corsets)	4,694	Dec. 29	33	1502
Twitchell & Bro., S., Philadelphia, Pa. "Philadelphia Lemonade"	4,603	Oct. 13	33	118
Twitchell & Bro., S., Philadelphia, Pa. "Philadelphia Lemonade Extract"	4,604	Oct. 13	33	118
Tyree, Josiah S., Washington, D. C. "Tyree's Powdered Hypophosphites Compound"	4,656	Dec. 8	33	1142
United States Medicine Company, New York, N. Y. "Dr. Dunlop's Cascara Compound"	4,681	Dec. 22	33	1394
Walton, George E., Cincinnati, Ohio. "The Famous Caraccas Herb-Tonic"	4,682	Dec. 22	33	1394
Watson, Robert, Kansas City, Mo. "Dr. Robt. Watson's Celebrated Eye Water"	4,612	Oct. 20	33	240
Whitehead, William H., Way Cross, Ga. "The Greatest Blood Purifier"	4,633	Nov. 10	33	626
Wilcox & Co., Frederick T., Le Roy, N. Y. "Atlee's London Syrup"	4,683	Dec. 22	33	1394
Woodward, Alden A., Lynn, Mass. "The Great German Rheumatism Remedy"	4,605	Oct. 13	33	118
Wyman, John C., Brooklyn, N. Y. "Dr. Wyman's Unexcelled Tooth Powder for Cleansing, Beautifying, and Preserving the Teeth, and Imparting a Delightful Fragrance to the Breath"	4,645	Nov. 24	33	892

DISCLAIMERS.

Name, residence, and invention.	No.	Filed.	Official Gazette. Vol.	Page.
Archer, Samuel B., Pittsburg, Pa., assignor to Archer Automatic Car Coupling Company, Saratoga Springs, N. Y.; disclaimer filed by assignee. Car-coupling	283,845	Nov. 11, 1885	33	762
Ehrrichson, Asmus J., Akron, Ohio, assignor to Ferdinand Schumacher; disclaimer filed by patentee and assignee. Oatmeal-machine. (Reissue)	7,542	Oct. 12, 1885	33	240
Jackson, Allen S., Kokomo, Ind.; disclaimer filed by patentee. Combined chimney and ventilator	303,288	Dec. 17, 1885	33	1394
Perkins, Willis J., Grand Rapids, Mich.; disclaimer filed by patentee. Shaft hanger	311,780	Oct. 13, 1885	33	460
Stearns, Joseph B., Boston, Mass., assignor to Western Union Telegraph Company, New York, N. Y.; disclaimer filed by assignee. Duplex-telegraph apparatus. (Reissue)	10,033	Oct. 22, 1885	33	460
Stearns, Joseph B., Boston, Mass., assignor to Western Union Telegraph Company, New York, N. Y.; disclaimer filed by assignee. Duplex-telegraph apparatus. (Reissue)	10,034	Oct. 22, 1885	33	460
Stearns, Joseph B., Boston, Mass., assignor to Western Union Telegraph Company, New York, N. Y.; disclaimer filed by assignee. Duplex-telegraph apparatus. (Reissue)	10,035	Oct. 22, 1885	33	460

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Accordion. Mechanical	C. Oettel	329,406	Oct. 27	2503	669	33	493
Acid. Alphanaphtholsulphonic	H. Vollbrecht and C. Mensching	333,040	Dec. 22	2563	.....	33	1462
Acid. Manufacture of beta-naphthylamine sulpho-	H. Prinz	332,820	Dec. 22	2287	.....	33	1038
Acid. Manufacture of beta-naphthol sulphonic	M. Hoffmann	331,059	Nov. 24	2151	.....	33	939
Acid. Nitronaphtholsulphonic	H. Vollbrecht and C. Mensching	333,036	Dec. 22	2559	.....	33	1462
Adding device for check-machines	C. W. Weise and C. Kruse	329,421	Oct. 27	2615	675	33	497
Adding-machine	L. W. Swem	327,970	Oct. 6	604	157	33	108
Addressing-machine	H. N. Bowman	327,993	Oct. 13	631	167	33	121
Adjustable chair	H. S. Felton	328,983	Oct. 20	1806	470	33	344
Adjustable chair, invalid-bed rest, and stretcher. Combined	F. T. Dodge	327,775	Oct. 6	351	90, 91	33	62
Adjustable seat	M. Miles	331,991	Dec. 8	1104	287	33	1205
Advertising-sign. Bas-relief	H. Fechteler	331,290	Dec. 1	50	13	33	1008
Advertising-wagon	A. König	328,689	Oct. 20	1562	407	33	298
Aerial railway and car	A. J. Morrison	328,899	Oct. 20	1825	475, 476	33	348
Aero-steam engine	E. M. Strange	328,865	Oct. 20	1776	463	33	339
Air and gas compressor valve	W. H. Worthen	330,539	Nov. 17	1494	399, 400	33	805
Air and gas compressor valve	W. H. Worthen	333,096	Dec. 22	2668	700	33	1496
Air and gas engine	S. Wilcox	332,312	Dec. 15	1561	410, 411	33	1291
Air-brake valve	L. E. Sloan	330,164	Nov. 10	1002	262	33	704
Air-compressor	J. B. Erwin	329,377	Oct. 27	2546	656	33	484
Air-compressor	C. Monson	328,598	Oct. 20	1433	373	33	276
Air-compressor. Hydraulic	J. B. Erwin	333,208	Dec. 29	2822	740	33	1529
Air-engine	J. A. Woodbury, J. Merrill, G. Patten, and E. F. Woodbury.	331,359	Dec. 1	142	35, 36	33	1023
Air-engine	J. A. Woodbury, J. Merrill, G. Patten, and E. F. Woodbury.	331,361	Dec. 1	144	36, 37, 38	33	1024
Air-exhauster and water-elevator. Combined	T. Arthur	330,366	Nov 17	1272	338	33	763
Air for confectioners' use. Apparatus for cooling	C. Weinspach	331,928	Dec. 8	1017	264	33	1188
Air for furnaces and other purposes. Apparatus for drying	C. Cochrane	333,395	Dec. 29	3077	803	33	1574
Air for refrigerating and other purposes. Apparatus for cooling	H. F. Hodges	331,881	Dec. 8	943	243	33	1175
Air for the preservation of meat, &c. Process of and apparatus for dehydrating and refrigerating	H. C. Johnson	328,685	Oct. 20	1556	405	33	297
Air-moistening and purifying apparatus	C. Wurster	329,115	Oct. 27	2164	560	33	414
Air-ship	N. Helmer	328,218	Oct. 13	922	240	33	175
Alarm: See Burglar-alarm. Low-water alarm. Fire-alarm. Watch-stand alarm. Locomotive-alarm.							
Alarm	G. M. Williams	328,166	Oct. 13	859	223	33	162
Alloy	A. C. Tichenor	330,072	Nov. 10	887	.....	33	680
Alloy for coating metals	C. E. Manby	328,239	Oct. 13	949	.....	33	180
Alloy or compound in producing the same. Metallic	H. J. F. Niewerth	332,736	Dec. 22	2175	.....	33	1408
Alum. Manufacture of crystal	H. C. Freist	328,477	Oct. 20	1267	.....	33	246
Alumina. Manufacture of hydrate of	H. C. Freist	328,478	Oct. 20	1268	.....	33	246
Amalgamator	M. J. Amick	332,473	Dec. 15	1781	466	33	1339
Amalgamator and concentrator	B. Tyson	328,546	Oct. 20	1354	353, 354	33	202
Ammonium chloride. Making	T. Schmidthorn	330,155	Nov. 10	990	.....	33	701
Anchor	D. L. Coles	327,767	Oct. 6	343	88	33	60
Anchor-bolt	W. S. Craig	332,701	Dec. 22	2131	562	33	1397
Animal-trap	C. W. Barkley	330,668	Nov 17	1649	444	33	837
Animal-trap	C. M. Crowe	331,945	Dec. 8	1041	270	33	1194
Animal-trap	S. S. Greene	328,669	Oct. 20	1540	400, 401	33	294
Animal-trap	W. R. Hampton	330,695	Nov. 17	1690	456	33	845
Animal-trap	S. K. Reynolds	329,092	Oct. 27	2120	549	33	406
Animal-trap	F. Wolfe	332,175	Dec. 8	1380	356	33	1252
Animals. Machine for exterminating ground-burrowing	A. Anderson	329,252	Oct. 27	2355	610	33	451
Ankle-support	G. C. McEwen	332,727	Dec. 22	2164	571	33	1403
Ankle-support	G. C. McEwen	332,728	Dec. 22	2165	571	33	1403
Annunciator	D. S. Foote	333,063	Dec. 22	2616	686	33	1486
Annunciator and alarm. Combined	F. E. Kinsman	330,903	Nov. 24	1961	531	33	901
Annunciator and circuit. Telephone	J. Houlehan	333,014	Dec. 22	2556	673	33	1476
Annunciator. Automatic electric	C. W. Price and A. Barrett	331,257	Nov. 24	2451	662	33	990
Annunciator. Electric	A. E. Briggs	327,997	Oct. 13	636	168	33	132
Ant-trap	W. H. Thompson	331,699	Nov. 24	2211	599	33	949
Anvil	J. Mackert	327,586	Oct. 6	84	19	33	16
Anvil, vise, and drill. Combined	R. Vosburgh	328,550	Oct. 20	1367	356	33	203
Apron-slat fastening	W. F. Dickison	331,948	Dec. 8	1042	270	33	1195
Arbor and collet. Making a combined spring	G. E. Hart	328,308	Oct. 13	1034	267	33	196

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Arbor wheel and ratchet. Stem	G. E. Hart	328,307	Oct. 13	1033	267	33	195
Arm and hand. Artificial	G. Beacock and T. Sparham	329,878	Nov. 10	624	158	33	628
Artist's sketch-box	W. T. Brundage	332,045	Dec. 8	1187	310	33	1219
Asbestus board, felt, or paper with other flexible material. Combination of	F. Line	333,138	Dec. 29	2735	718	33	1513
Asbestus to form crucibles, &c. Treating	M. S. Thompson	330,171	Nov. 10	1010	.....	33	705
Ash or garbage receptacle	W. Baynes and A. R. Clark	330,201	Nov. 10	1047	273	33	712
Ash-pan	J. Hofer and G. Martin	332,527	Dec. 15	1870	489	33	1344
Ash pan and sifter. Combined	L. E. Phelps	331,322	Dec. 1	89	21	33	1015
Asphaltic cement for paving, roofing, &c.	A. L. Barber	330,197	Nov. 10	1042	.....	33	711
Asphaltic mastic	A. L. Barber	330,196	Nov. 10	1041	.....	33	711
Atomizer	W. H. Bluett	327,977	Oct. 6	612	160	33	111
Auger	G. F. Stearns	333,170	Dec. 29	2777	727	33	1520
Auger-bit	H. S. Lord	329,660	Nov. 3	314	80	33	564
Auger blade. Earth-	A. Schulte	331,006	Nov. 24	2096	567	33	927
Anger. Earth-	S. Cary	331,767	Dec. 8	784	198	33	1146
Auger. Earth-	W. W. Curtis	331,928	Nov. 24	2404	651	33	963
Auger. Hollow	P. Miller	332,274	Dec. 15	1514	397	33	1283
Auger. Post-hole	F. Grimm	330,580	Nov. 17	1542	413	33	815
Augers. Die for shaping single-twist	D. S. Holley	331,708	Dec. 1	696	171 172	33	1121
Augers. Machine for working well-	S. S. Collins	331,617	Dec. 1	566	138	33	1096
Automatic lubricator	J. E. Fletcher	333,404	Dec. 29	3093	806	33	1576
Automatic sprinkler	W. S. Jordan	330,125	Nov. 10	957	248	33	694
Awning	A. J. Bonner, Jr.	328,279	Oct. 13	997	259	33	198
Awning	F. X. Brenner	330,956	Nov. 24	2037	551	33	916
Awning	E. C. Cook	328,921	Oct. 27	1808	488	33	363
Awning	R. J. Powell	333,479	Dec. 29	3194	835	33	1593
Awning	J. N. Colby	328,567	Oct. 20	1388	362	33	268
Awning. Window-	T. Ryan	332,215	Dec. 8	1432	369 370	33	1202
Ax-polls. Machine for finishing	W. I. Corey	328,010	Oct. 13	655	172	33	125
Axle	F. C. Hockenamith	329,453	Nov. 3	31	9	33	511
Axle	B. M. Johnson	328,683	Oct. 20	1554	405	33	297
Axle-box	L. Leirer	332,809	Dec. 22	2261	596	33	1422
Axle-box	R. Brewer	327,916	Oct. 6	531	138	33	95
Axle box. Car-	N. W. Cutter	330,892	Nov. 17	1652	499	33	874
Axle box. Car-	M. Dougherty	332,646	Dec. 15	2040	535	33	1375
Axle box. Car-	J. Fischer	328,204	Oct. 13	904	235	33	172
Axle box. Car-	C. C. Jenkins	328,312	Oct. 13	1037	268	33	196
Axle box. Car-	C. H. Kock	331,893	Dec. 8	962	249	33	1178
Axle box. Car-	W. C. Miller	330,607	Nov. 17	1575	422	33	821
Axle box. Car-	J. Sagmeister	332,112	Dec. 8	1292	338	33	1237
Axle box. Car-	J. O. Couch	327,658	Oct. 6	217	54	33	38
Axle cap. Carriage-	J. M. Schorb, Jr.	327,727	Oct. 6	304	78	33	53
Axle cap. Carriage-	O. A. and J. T. Smith and J. O. Couch	327,732	Nov. 3	248	64	33	552
Axle cap. Carriage-	H. Thielsen and H. W. Dilg	329,604	Nov. 3	528	134	33	604
Axle. Divided car-	J. H. Coleman	329,616	Nov. 3	2051	555	33	919
Axle-lubricator	D. Duprat	330,968	Nov. 24	1111	294 295	33	725
Axle lubricator. Car-	J. C. Nichol	330,257	Nov. 10	968	252	33	184
Axle lubricator. Car-	F. L. Shallenberger	328,257	Oct. 13	2580	678	33	1481
Axle-nut. Adjustable	J. H. Steen	333,030	Dec. 22	1271	330	33	247
Axle-skeins. Making	R. Gracey	328,481	Oct. 20	817	213	33	155
Axle-straightener	J. Owen	328,137	Oct. 13	2602	681	33	1484
Axle. Vehicle-	I. W. Archibald	333,049	Dec. 22	858	142	33	609
Axle. Vehicle-	P. K. Hughes	329,837	Nov. 3	827	210	33	1153
Axle. Vehicle-	J. I. McCalop	331,805	Dec. 8	365	95	33	64
Axles. Implement for straightening	J. A. George	327,787	Oct. 6	257	69	33	1044
Baby-jumper	H. S. Peck	331,434	Dec. 1	2375	628	33	1442
Back-band	J. W. Gardner	332,888	Dec. 22	1957	530	33	901
Back-band hook	H. C. Johnson and J. B. Moore	330,900	Nov. 24				
Bag: *See* Mail-bag. Paper bag.	J. Menahan	329,192	Oct. 27	2271	588	33	434
Bag-fastener	W. F. Wineberger	331,357	Dec. 1	139	35	33	1023
Bag-fastener	L. P. Summers	330,856	Nov. 17	1899	514 515	33	882
Bag filler, weigher, and register. Grain-	J. S. Brailey	332,226	Dec. 15	1450	376	33	1271
Bag-holder	W. S. and J. W. Yothers	327,750	Oct. 6	323	83	33	57
Bag-holder for trucks	D. P. Brophy	331,473	Dec. 1	312	84	33	1053
Bag-lock	I. S. Banta	329,695	Nov. 3	362	92	33	574
Baggage-elevator	G. B. Ballon	330,816	Nov. 17	1845	497	33	873
Ball-lock. Automatic	E. Jaeger	333,229	Dec. 29	2861	748	33	1535
Baking apparatus	G. A. Marsh	328,419	Oct. 13	1199	.....	33	227
Baking-powder	A. Peters	331,541	Dec. 1	401	.....	33	1071
Baking-powder	A. Peters	331,542	Dec. 1	405	.....	33	1071
Baking-powder	H. G. Underwood	328,364	Oct. 13	1112	.....	33	211
Baking-powder. Lactate	S. L. Carpenter	329,013	Oct. 27	2019	524	33	289
Bale-tie	F. S. Clark and J. A. Bachman	331,035	Nov. 24	2125	576	33	933
Baling-press	P. K. Dederick	330,877	Nov. 24	1928	523	33	896
Baling-press	M. H. Durst	331,573	Dec. 8	929	240	33	1172
Baling-press	W. Gardner	331,049	Nov. 24	2141	580	33	936
Baling-press	W. W. Post	332,557	Dec. 15	1913	500 501	33	1351
Baling-press	W. W. Seeley	332,291	Dec. 15	1536	402 403	33	1287
Baling-press	W. W. Seeley	332,292	Dec. 15	1537	403	33	1287
Baling-press	T. M. Workman	331,932	Dec. 8	1022	265 266	33	1190
Ballot-box. Registering and canceling	J. B. Benton	327,644	Oct. 6	191	47, 48	33	35
Ballot-box. Registering and canceling	J. B. Benton	327,645	Oct. 6	196	48, 49	33	35
Ballot-box. Registering and canceling	S. J. Howell	332,398	Dec. 15	1685	441 442	33	1313

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ballot-box. Registering and canceling	W. H. Munroe and T. C. Sullivan	333,145	Dec. 29	2742	720 721	33	1514
Balls. Machine for making	W. Hilliman	333,301	Dec. 29	2961	773 774 775	33	1554
Band for strapping boxes, &c	G. Nicholson	332,356	Dec. 15	1633	498	33	1304
Band or cord. Endless	L. Binns	330,087	Nov. 10	908	235	33	684
Bangle for jewelry	C. Gosling	328,583	Oct. 20	1411	367	33	272
Banjo	A. C. Fairbanks	327,779	Oct. 6	357	92	33	63
Banjo	C. J. Kelly	332,538	Dec. 15	1868	493	33	1347
Bar: *See* Clothes-bar. Draw-bar. Composite bar. Plater's bar.	T. W. Patterson	328,337	Oct. 13	1073	279	33	204
Barbers' chairs. Head-rest for	J. C. Hagerty	332,797	Dec. 22	2250	583	33	1490
Bark-cutter	J. C. Hagerty	332,796	Dec. 22	2249	583	33	1490
Bark-cutting machine	W. A. Woods	329,113	Oct. 27	2161	559 560	33	414
Bark-mill	W. A. Woods	332,854	Dec. 22	2292	615	33	1433
Bark-mill	W. A. Woods	329,114	Oct. 27	2162	560	33	414
Barometer	J. Y. McCleary	328,501	Oct. 20	1296	337	33	253
Barrel	S. H. Raymond	331,911	Dec. 8	988	256	33	1183
Barrel attachment. Flour-	J. R. Payson, Jr	332,105	Dec. 8	1280	332	33	1235
Barrel-filler. Automatic	C. Ward	328,827	Oct. 20	1730	450	33	331
Barrel-heading machine	F. Myers	328,965	Oct. 27	1938	505	33	375
Barrel-making machine	L. M. Reed	328,808	Oct. 20	1704	443 444	33	386
Barrel-sustaining apparatus	J. D. Westgate	329,524	Nov. 3	140	36	33	531
Barrel-washing machine	H. Nadorff	329,847	Nov. 3	574	146	33	619
Barrels. Manufacture of	G. S. Long	329,059	Oct. 27	2092	541	33	400
Basin and trap. Wash-	W. L. De Wolf	331,947	Dec. 8	1042	270	33	1195
Basin holder and attachment. Wash-	E. Baumann	327,991	Oct. 13	630	166	33	121
Basin or similar vessel. Wash-	E. A. Stearns	328,354	Oct. 13	1093	284	33	208
Basin or tub	C. A. Blessing	330,204	Nov. 10	1050	274	33	713
Basin. Set-	J. P. Putnam	329,946	Nov. 10	710	182	33	644
Basket and skip	J. P. Milbourne and T. Humphreys	332,407	Dec. 15	1698	445	33	1315
Bath: *See* Blotter-bath.	J. H. Crocker	333,200	Dec. 29	2818	737	33	1597
Bath	W. P. Austin	331,271	Dec. 1	3	1	33	1001
Bath and wash tub combined	F. J. Torrance	327,973	Oct. 6	607	158	33	109
Bath-tub	L. Yancey	328,628	Oct. 20	1487	387	33	285
Bathing-cabinet							
Battery: *See* Electric battery. Secondary battery. Electro-medical battery. Voltaic battery.	J. H. Jones	327,949	Oct. 6	574	149	33	103
Beam. Tubular	H. S. Bailey	328,176	Oct. 13	873	227	33	165
Bearing. Anti-friction	T. R. Ferrall	328,394	Oct. 13	1161	300	33	219
Bearing. Anti-friction	J. M. Marlin	331,899	Dec. 8	968	250	33	1179
Bearing. Ball-	W. Wall	330,447	Nov. 17	1381	368	33	763
Bed	B. B. Mitchell	328,241	Oct. 13	951	247	33	181
Bed-bottom	D. F. Stambaugh	327,611	Oct. 6	145	34	33	27
Bed-bottom	J., Jr., and A. K. M. Ainslie	332,471	Dec. 15	1779	466	33	1339
Bed-bottom. Spring	E. E. Bailey and M. E. Buckingham	329,876	Nov. 10	621	158	33	698
Bed-bottom. Spring	S. S. Burr	330,293	Nov. 10	1163	310	33	735
Bed-bottom. Spring	L. A. Heller	328,117	Oct. 13	797	207 208	33	151
Bed bottom. Spring	E. E. McIntyre	330,249	Nov. 10	1103	292	33	723
Bed-bottom. Spring	P. H. Mellon	328,645	Dec. 1	605	149	33	1103
Bed-bottom. Spring	A. F. Purefoy	333,252	Dec. 29	2-93	757	33	1542
Bed-bottom. Spring	H. Quaid	332,750	Dec. 22	2196	579	33	1410
Bed. Bureau-	A. Kulich	328,895	Oct. 20	1820	474	33	347
Bed-clothing clamp or fastener	C. G. Harger, Jr.	330,833	Nov. 17	1865	503	33	876
Bed. Cot-	A. H. Frost and F. L. Bryant	329,364	Oct. 27	2557	659 660	33	486
Bed-cover fastener	M. J. Liggett	331,308	Dec. 1	70	17	33	1012
Bed. Double	H. S. Simpson	327,899	Oct. 6	424	110	33	74
Bed. Folding	S. S. Bradshaw	327,760	Oct. 6	333	86	33	59
Bed. Folding	E. N. Doring	328,200	Oct. 13	899	233	33	171
Bed. Folding	H. S. Hale	330,693	Nov. 17	1686	455	33	844
Bed. Folding	T. P. Marston	328,698	Oct. 20	1574	410	33	301
Bed. Folding	J. R. Payson, Jr.	329,942	Nov. 10	704	180 181	33	643
Bed. Folding	G. L. Slater and W. A. Eaton	332,956	Dec. 22	2465	652	33	1461
Bed. Folding couch	R. E. Hammer	330,479	Nov. 17	1424	380	33	792
Bed. Invalid-	S. Bishop	331,608	Dec. 1	545	133	33	1093
Bed-lounge	A. Kulich	328,894	Oct. 20	1819	474	33	347
Bed-lounge	W. Reddell	333,424	Dec. 29	3120	814 815	33	1561
Bed or bed-bottom. Spring	E. A. and F. M. Jeffery	332,081	Dec. 8	1239	323 324	33	1236
Bed or bed-bottom. Spring	E. A. and F. M. Jeffery	332,082	Dec. 8	1243	324 325	33	1239
Bed-pan	S. V. Beal	330,548	Nov. 17	1505	402	33	807
Bed-rail fastener	A. Schnell	332,442	Dec. 15	1746	456	33	1382
Bed. Sofa-	F. Flachbeck	329,543	Nov. 3	167	44	33	537
Bed. Sofa-	T. Hofstatter, Jr	331,706	Dec. 1	694	171	33	1121
Bed. Sofa-	C. A. Lindner	332,412	Dec. 15	1707	447	33	1316
Bed. Sofa-	A. Schrock	332,010	Dec. 8	1128	295	33	1200
Bed. Sofa-	W. J. Shaw	327,605	Oct. 6	135	38	33	26
Bed. Sofa-	C. Streit	330,855	Nov. 17	1897	513 514	33	888
Bed. Spring-	J. F. Durr	333,116	Dec. 29	2705	709	33	1508

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bed. Spring	P. H. Mellon	331,422	Dec. 1	244	64	33	1041
Bed. Spring	P. H. Mellon	331,523	Dec. 1	378	102	33	1066
Bed. Spring	P. H. Mellon	331,909	Dec. 8	1102	286	33	1204
Bed. Spring	L. J. Van Delinder and A. W. Nash	333,303	Dec. 29	3041	794	33	1568
Bed. Spring	R. C. Young	331,549	Dec. 1	734	130	33	1091
Bed. Spring	W. W. Bartlett	329,121	Oct. 27	2173	502	33	416
Bed-spring	J. C. McMurray	330,663	Nov. 3	318	92	33	565
Beds and berths. Safety attachment for	W. B. Clowers	330,972	Nov. 24	1923	521	33	895
Bedstead	C. H. Matthiessen	327,699	Oct. 6	264	67	33	47
Bedstead. Adjustable	J. W. Bowles	329,251	Oct. 27	2368	613	33	453
Bedstead attachment	J. W. Durham and W. B. Alexander	333,453	Dec. 29	3156	825	33	1587
Bedstead-brace	E. S. Hall	328,214	Oct. 13	913	238	33	174
Bedstead. Cabinet	L. C. Boyington	330,373	Nov. 17	1279	340	33	765
Bedstead. Folding	G. H. Kanmacher	332,612	Dec. 15	1868	501	33	1365
Bedstead. Folding	F. H. Tobias	329,101	Oct. 27	2142	554	33	410
Bedstead. Folding	T. S. Clark	328,762	Oct. 20	1649	430	33	316
Bedstead for wire mattresses	R. R. Pease	333,329	Dec. 29	2997	785	33	1561
Bedstead-frame	E. E. Everitt	332,144	Dec. 8	1340	346 / 347	33	1244
Bedstead. Wardrobe or folding	E. Armstrong	330,365	Nov. 17	1271	337	33	763
Bee-hive	W. Groff	330,783	Nov. 17	1803	486	33	865
Bee-hive	W. P. Hamlin	330,478	Nov. 17	1423	380	33	792
Bee-hive	J. J. Pearson	327,716	Oct. 6	288	73	33	50
Bee-hive	S. Perkins	331,539	Dec. 1	401	108	33	1070
Bee-hive	J. M. Shuck	329,341	Oct. 27	2490	642	33	475
Bee-hive	J. M. Shuck	333,168	Dec. 29	2774	727	33	1520
Bee-hive	G. H. Stover	330,353	Nov. 10	1244	332	33	751
Bee-hive	H. Metzger	331,424	Dec. 1	247	65	33	1042
Beer. Apparatus for drawing	C. Müssel	331,251	Nov. 24	2440	659 / 660	33	989
Beer. Apparatus for filling kegs with	F. Widmer	328,554	Oct. 20	1372	357	33	265
Beer. Apparatus for preserving and pressing	C. J. Follett	328,386	Oct. 13	1163	300	33	220
Beer-cooler	P. F. Gardner	332,508	Dec. 15	1832	481	33	1338
Beer cooling and drawing apparatus	E. P. Forbes	331,697	Dec. 1	681	168	33	1118
Bell. Automatic alarm	W. L. Upson	330,756	Nov. 17	1771	477	33	859
Bell. Call	H. T. O. Fraser	332,388	Dec. 15	1675	438 / 439	33	1311
Bell. Magneto-electric call	S. Bretzfield	330,089	Nov. 10	910	236	33	684
Belt. Bodice	G. Minch	333,422	Dec. 29	3117	814	33	1580
Belt-coupling	J. Mellette and F. M. Harris	332,672	Dec. 15	2080	546	33	1381
Belt. Driving	P. Wenigmann	328,829	Oct. 20	1732	450	33	332
Belt. Electric	C. N. West	332,467	Dec. 15	1772	464	33	1328
Belt. Electrical therapeutical	D. Hanney	330,977	Nov. 24	2060	537	33	920
Belt equalizer and tightener. Combined	H. Greene	328,212	Oct. 13	912	237	33	174
Belt-fastener	A. D. Sikes	332,449	Dec. 15	1753	458	33	1324
Belt-fastener	J. Spruce	328,822	Oct. 20	1722	448	33	330
Belt-fastener	D. Kane	327,694	Oct. 6	259	65	33	46
Belt-hole cover	F. Koopmann	330,132	Nov. 10	964	250	33	695
Belt. Safety	D. C. B. Robinson	328,862	Oct. 20	1773	462 / 463	33	339
Belt-stretcher	B. M. Plummer	331,325	Dec. 1	91	22	33	1015
Belt-stretching machine	J. B. Allfree	328,373	Oct. 13	1129	291	33	214
Belt-tightener	P. H. Binet	332,867	Dec. 22	2351	621	33	1436
Belt-tightener	F. J. Schnpp	329,492	Nov. 3	92	24	33	523
Belt-tightener	M. Rubin	332,624	Dec. 15	2003	525	33	1368
Belts. Manufacturing textile	M. Gandy	331,958	Dec. 8	1057	274 / 275	33	1197
Bench-stop	F. H. Whitney	329,795	Nov. 3	493	125	33	599
Bending-machine	E. Andrews	329,613	Nov. 3	260	67	33	554
Bengal-light book	C. Gerhard	329,307	Oct. 27	2437	631	33	466
Benzylated acid violet. Manufacture of	H. Hassencamp	331,965	Dec. 8	1066	------	33	1196
Benzylated methyl violet. Manufacture of	H. Hassencamp	331,964	Dec. 8	1064	------	33	1196
Berries, &c. Device for assorting	J. B. Johnson	329,565	Nov. 3	196	52	33	542
Bevel, miter, and try-square. Combined	S. S. Colt	330,378	Nov. 17	1289	342	33	767
Bevel-swaging machine	J. T. Speer	330,520	Nov. 17	1474	394	33	801
Bicycle	L. Ehrlich	327,669	Oct. 6	231	57	33	41
Bicycle	C. F. Hadley	331,295	Dec. 1	55	13	33	1009
Bicycle	S. A. Jan Graw	330,123	Nov. 10	955	247	33	694
Bicycle	F. Jannus	331,199	Nov. 24	2561	639	33	976
Bicycle	T. B Jeffery	333,128	Dec. 29	2720	714	33	1511
Bicycle	J. Langhlin	332,263	Dec. 15	1503	393	33	1281
Bicycle	W. Lyon	329,402	Oct. 27	2586	667	33	491
Bicycle	G. W. Marble	328,499	Oct. 20	1292	336 / 337	33	251
Bicycle	H. N. Starr	328,353	Oct. 13	1091	284	33	207
Bicycle-holder	A. P. Seiler	330,430	Nov. 17	1356	361	33	779
Bicycle-saddle	L. S. Copper	327,770	Oct. 6	346	89	33	61
Bicycle-saddle	R. E. Humphreys	328,682	Oct. 20	1553	404	33	297
Bicycle-saddle	C. T. Starbuck	328,863	Oct. 20	1774	463	33	339
Bicycle-treadle	G. W. Weidman	331,173	Nov. 24	2321	629	33	968
Bicycle-wheel	E. N. Bowen	328,280	Oct. 13	987	259	33	189
Bicycle-wheels. Tool for making hollow rims for	G. T. Warwick	328,987	Oct. 27	1975	513	33	381
Bicycles. Machine for bending and setting the backbones of	G. T. Warwick	328,986	Oct. 27	1974	513	33	381
Billiard and pool tables. Pocket for	D. W. Seely	327,729	Oct. 6	302	77	33	53
Billiard-chalk holder	K. S. Jones	333,230	Dec. 29	2962	748	33	1535
Billiard-table leveler	G. Livingston	330,911	Nov. 24	1973	534	33	904
Billiard-tables. Attachment for leveling	C. B. Hall	331,297	Dec. 1	57	14	33	1009
Bin: *See* Flour and meal bin.							
Binder. Double-flat	J. Busacker	328,646	Oct. 20	1507	392	33	226
Binder. Temporary	A. Dorn	329,444	Nov. 3	22	7	33	509
Binder. Temporary	S. B. Dunn	330,967	Nov. 24	2050	554	33	919
Binder. Temporary	H. Goodchild	332,390	Dec. 15	1677	439	33	1312

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Binders. Cord-holder for self-	W. Butterfield	328,918	Oct. 27	1862	486 / 487	33	362
Bisulphites. Apparatus for making solutions of	E. Ritter and C. Kellner	328,066	Oct. 13	731	191	33	138
Bisulphites. Making solutions of	E. Ritter and C. Kellner	329,216	Oct. 27	2308	597	33	441
Bit: *See* Anger-bit. Bridle-bit.							
Bit-brace	J. Chantrell	328,649	Oct. 20	1512	393	33	290
Bits. Counterboring attachment for	E. F. Lindsey	333,418	Dec. 29	3112	811	33	1580
Bitters	D. J. Kyle	330,496	Nov. 17	1442	------	33	795
Bitters	P. Schwind	327,603	Oct. 6	134	------	33	25
Blackboard and desk. Combined	J. G. Smith and H. E. Butler	328,727	Oct. 20	1616	421	33	309
Blackboard and drawing case. Combined	W. A. Emerson	329,300	Oct. 27	2424	628 / 629	33	463
Blackboard composition	L. Chadwick	330,375	Nov. 17	1286	------	33	766
Blacking box Shoe	F. M. Osborn	330,146	Nov. 10	980	255	33	699
Blank-feeding mechanism	F. H. Richards	331,443	Dec. 1	270	73, 74	33	1046
Blind retaining way-strip for windows	H. E Willier	333,125	Dec. 29	2798	732	33	1594
Blind, shutter, or door stop	J. C. Evans	329,894	Nov. 10	641	163	33	632
Blind. Window	S. R. Bickner	330,203	Nov. 10	1049	274	33	712
Blind. Window	W. G. Hale	331,130	Nov. 24	2260	614	33	957
Blind-wiring machine	A. Maher and M. Greaney	333,241	Dec. 29	2875	751 / 752	33	1536
Blinds. Woven-tape ladder for Venetian	J. Carr	328,286	Oct. 13	1003	261	33	190
Block: *See* Brake-block. Pulley-block. Carriage prop-block. Stereotype-block. Paving-block.							
Blotter-bath	L. Bailey	328,634	Oct. 20	1494	389	33	286
Blotting-pad. Calendar	H. C. Whitney	329,348	Oct. 27	2501	644	33	477
Blower. Fire-place	G. W. Geissenhainer	332,072	Dec. 8	1224	320	33	1226
Bluing-package	L. H. Thomas	331,844	Dec. 8	891	230	33	1165
Board: *See* Braid-board. Game-board. Drawing-board. Laying-out and embalming board. Electric switch-board. Pastry-board. Fish-cutting board. Wash-board. Flooring-board.							
Boat: *See* Log-boat.							
Boat	W. L. Casaday	333,391	Dec. 29	3073	802	33	1578
Boat-boom. Portable	J. B. Hoyt	328,405	Oct. 13	1178	305	33	223
Boat-hull	L. P. Rider	332,212	Dec. 8	1428	368	33	1261
Boats. Ballast for	G. W. Schermerhorn	329,088	Oct. 27	2126	550	33	407
Bobbin	T. Hall	330,784	Nov. 17	1804	486	33	865
Bobbin-winder	A. V. Abercrombie	332,771	Dec. 22	2220	585	33	1415
Bobbin-winder	A. Coates	329,144	Oct. 27	2203	571	33	421
Boiler: *See* Domestic and agricultural boiler. Steam-boiler. Tubular boiler. Egg-boiler. Upright boiler. Magazine-boiler. Vertical tube-boiler. Marine boiler. Wash-boiler.							
Boiler	A. F. Clinch	328,189	Oct. 13	886	230	33	168
Boiler-covering	C. C. Gilman	328,581	Oct. 20	1408	366	33	271
Boiler-covering	M. Keenan	331,409	Dec. 1	219	57	33	1037
Boiler-covering. Non-conducting	T. Merrism	327,810	Oct. 6	400	104	33	70
Boiler-fine cleaner	J. M. Ferguson	331,782	Dec. 8	800	202	33	1148
Boiler-frinace	C. B. Davison	329,539	Nov. 3	163	43	33	536
Boiler-furnace	C. W. Fowler and A. O. Nepil	340,895	Nov. 24	1939	525	33	897
Boiler-furnace	W. F. Grasaler	331,492	Dec. 1	334	90, 91	33	1058
Boiler-furnace	J. Ham	331,635	Dec. 1	596	147	33	1102
Boiler-furnace	J. Maller	330,136	Nov. 10	969	252	33	697
Boiler-furnace	G. A. McIlhenny	328,133	Oct. 13	813	212	33	154
Boiler-furnace	L. Stevens	333,429	Dec. 29	3124	816 / 817	33	1588
Boiler-furnace	W. Westlake	328,991	Oct. 27	1980	515	33	389
Boiler-furnace grate. Steam	M. A. Foster	331,700	Dec. 1	665	169	33	1119
Boiler furnace. Steam	R. C. Carpenter	331,277	Dec. 1	16	4	33	1003
Boiler furnace. Steam	M. A. Foster	331,699	Dec. 1	664	169	33	1119
Boiler furnace. Steam	J. Ham	331,636	Dec. 1	597	147	33	1102
Boiler furnace. Steam	S. T. Owens	330,147	Nov. 10	981	255 / 256	33	699
Boiler furnace. Steam	L. Stevens	333,430	Dec. 29	3126	817	33	1582
Boiler-header. Sectional	R. R. Zell	327,850	Oct. 6	446	116	33	78
Boiler-heads. Securing rings in	P. Patterson	329,335	Oct. 27	2483	640	33	474
Boiler heater and feeder	O. Rothrock	332,561	Dec. 15	1917	502	33	1352
Boiler safety device	W. A. Tracy	329,509	Nov. 3	113	29	33	536
Boiler-sput	H. P. Folsom	332,338	Dec. 15	1602	421	33	1299
Boiler-tube cleaner	E. W. Vanduzen	330,443	Nov. 17	1377	367	33	782
Boiler-tube scraper	A. B. Smith	331,093	Nov. 24	2205	597	33	948
Boiler water-purifier	J. J. Richards	328,254	Oct. 13	966	251	33	183
Boiler water-tube	W. F. Wetmore and L. H. Bratt	333,043	Dec. 22	2596	680	33	1482
Boilers. Connecting-box for water-tube	W. Kent	330,128	Nov. 10	961	249	33	695
Boilers. Device for cleaning water legs of	C. H. Manning	332,206	Dec. 15	1505	394	33	1281
Boilers. Device for purifying the water of	E. W Vanduzen	328,548	Oct. 20	1362	356	33	263
Boilers. Feeding fuel to	S. W. Valentine	332,975	Dec. 22	2468	638	33	1465
Boilers. Feeding water to	A. De Dion, G. Bouton, and C. Trépardoux	329,722	Nov. 3	400	102	33	561
Boilers. Furnace for heating steam	M. P. Elliot	331,287	Dec. 1	47	11	33	1007
Boilers. Making connecting-boxes for	W. Kent	330,129	Nov. 10	961	249 / 250	33	695

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bolt: *See* Anchor-bolt. Reel-bolt. Flour-bolt. Screw-bolt. Lock-bolt. Square-headed bolt.							
Bolt	E. Lucas	327,887	Oct. 6	487	127	33	86
Bolt-blank machine	J. R. Blakeslee	332,869	Dec. 22	2352	621, 622	33	1438
Bolt-fastener	E. G. Holden	330,119	Nov. 10	947	246	33	692
Bolt-releasing device. Electric	G. L. Henzel	328,030	Oct. 13	780	179	33	130
Bolting-machine. Centrifugal	E. Streitz	329,097	Oct. 27	2137	553	33	409
Bolting reel	J. W. Hill	332,396	Dec. 15	1683	441	33	1313
Bolting-reel	C. F. King	332,090	Dec. 8	1257	327	33	1231
Bolting-reel. Centrifugal	L. Wommer and J. Buck	329,423	Oct. 27	2020	476	33	497
Bone-black drier	S. M. Lillie	329,324	Oct. 27	2458	636, 637	33	469
Book and copy holder	A. Hockett	327,682	Oct. 6	247	60	33	43
Book and music clamp	J. E. Hunsaker	330,402	Nov. 17	1325	252	33	773
Book-binding machine	G. B. Durkee and A. Campbell	330,303	Nov. 10	1173	312, 313, 314	33	738
Book-binding. Manufacture of compound fabric for	S. Barlow	332,778	Dec. 22	2227	587	33	1416
Book-case	T. J. Fisher	333,210	Dec. 29	2831	741	33	1530
Book. Conductor's	M. L. Johnson	329,315	Oct. 27	2447	633	33	468
Book-covers. Machine for removing superfluous gold-leaf from	E. Straker	329,863	Nov. 3	592	152	33	615
Book-holder	W. R. Field	330,882	Nov. 24	1935	524	33	897
Book-mark	W. F. Clark	332,327	Dec. 15	1585	416	33	1295
Book. Press-copying	C. E. Doyle	333,061	Dec. 22	2615	685	33	1486
Book-rest. Adjustable	W. A. Sipe	331,563	Dec. 1	445	115	33	1077
Book rest and holder	H. F. Hendrix	331,057	Nov. 24	2149	583	33	938
Book. Sales-	J. R. Carter	333,390	Dec. 29	3071	801	33	1573
Book. Scrap-	H. A. Hulburd	330,897	Nov. 24	1954	529	33	900
Book-shelf	C. B. Taylor	332,627	Dec. 15	2006	526	33	1369
Book-support	A. Clarke	329,719	Nov. 3	397	101	33	581
Boot	J. F. Shaw	331,561	Dec. 1	442	115	33	1076
Boot	G. Valiant	330,945	Nov. 24	2020	546	33	913
Boot	G. Valiant. (Reissue)	10,669	Dec. 1	762	192	33	1134
Boot and shoe cabinet	W. Denton	332,238	Dec. 15	1470	383	33	1275
Boot and shoe crimping machine	J. W. D. Fifield and W. H. Holt	329,033	Oct. 27	2046	531	33	394
Boot and shoe lasting machine	G. W. Copeland	329,280	Oct. 27	2392	619, 620	33	458
Boot and shoe lasting tool	G. W. Copeland	329,278	Oct. 27	2389	618	33	457
Boot and shoe lasts. Measurement-indicator of	J. Kimball	331,143	Nov. 24	2279	618	33	961
Boot and shoe nailing machine	E. B. Allen	332,032	Dec. 8	1167	305, 306	33	1215
Boot-jack	E. Harris	330,480	Nov. 17	1425	381	33	792
Boot-jack	H. Lightwardt, Jr.	329,576	Nov. 3	211	55	33	545
Boot-jack	N. J. Shalz	332,015	Dec. 8	1136	296	33	1210
Boot or shoe	G. W. Day	329,630	Nov. 3	281	73	33	558
Boot or shoe	H. W. Joslin	329,049	Oct. 27	2070	537	33	398
Boot or shoe	R. R. Mathews	330,912	Nov. 24	1976	534	33	904
Boot or shoe	J. H. O'Donnell	332,423	Dec. 15	1723	452	33	1319
Boot or shoe	G. Valiant	330,944	Nov. 24	2019	546	33	913
Boot or shoe	M. Walker	330,176	Nov. 10	1016	265	33	706
Boot or shoe	S. F. Whittlesey	328,267	Oct. 13	979	255	33	186
Boot or shoe calk	W. Rosenfeld	327,596	Oct. 6	124	29	33	24
Boot or shoe heel mold	E. J. Le Gay	328,124	Oct. 13	804	209	33	152
Boot or shoe heels. Cutter-head for trimming	B. Gallagher	330,008	Nov. 10	794	204	33	659
Boot or shoe insole	C. F. Bosworth	330,289	Nov. 10	1158	308	33	734
Boot or shoe lasting machine	J. E. Crisp and G. W. Copeland	329,367	Oct. 27	2533	653	33	482
Boot or shoe maker's use. Combination-tool for	T. E. Tatem	329,503	Nov. 3	105	27	33	525
Boot or shoe nailing machine	W. P. Hopkins	331,299	Dec. 1	58	14	33	1010
Boot or shoe protector	T. Gribble and R. Abraham	328,844	Oct. 20	1753	456	33	335
Boot or shoe sole	L. E. Moore	328,421	Oct. 13	1201	310	33	227
Boot or shoe sole	G. B. Seigenthaler	330,625	Nov. 17	1597	427	33	826
Boot or shoe sole	J. E. Tilton	331,462	Dec. 1	299	80	33	1051
Boot or shoe soles. Machine for channeling	J. G. Ross	330,929	Nov. 24	2001	540	33	909
Boot or shoe soles. Tool for channeling	J. S. Leavitt	331,145	Nov. 24	2284	619	33	961
Boot or shoe soles. Tool for channeling	J. G. Ross	331,214	Nov. 24	2367	645	33	979
Boot or shoe strap	J. Waldron	331,927	Dec. 8	1016	264	33	1188
Boot or shoe stretcher	J. K. Brown	328,642	Oct. 20	1505	392	33	288
Boots or shoes. Device for holding	J. P. Kelly	330,902	Nov. 24	1960	531	33	901
Boots or shoes. Machine for uniting the soles and uppers of	H. P. Fairfield	329,031	Oct. 27	2041	530	33	393
Boots or shoes. Manufacturing	J. G. Ross	332,362	Dec. 15	1641	430	33	1305
Boots or shoes. Metallic sole for	W. T. Millholland	330,140	Nov. 10	974	253	33	698
Boots or shoes. Rubber sole for	L. and J. W. Haylock	328,777	Oct. 20	1665	434	33	319
Boots, shoes, &c. Machine for hardening seamless felt	W. P. Hyatt	332,659	Dec. 15	2057	540	33	1378
Boring-machine	L. G. McKnight and H. C. Knowlton	328,966	Oct. 27	1939	505, 506	33	375
Bottle and can washer	H. Koethe	330,335	Nov. 10	1213	325	33	746
Bottle cap. Mustard-	F. Wolff	327,635	Oct. 6	184	45	33	33
Bottle-cork attachment	J. W. Hayward	328,672	Oct. 20	1544	402	33	295
Bottle-covers from tule. Machine for the manufacture of	E. K. Cooley	332,640	Dec. 15	2026	531, 532	33	1372
Bottle. Ink-	M. H. Kerner	328,122	Oct. 13	802	209	33	152
Bottle. Ink-	L. H. Thomas	331,843	Dec. 8	890	230	33	1165
Bottle irrigating attachment	A. B. Tutton	330,755	Nov. 17	1771	477	33	859
Bottle-nozzle	S. B. Opdyke	332,281	Dec. 15	1525	400	33	1285
Bottle-sheath	C. H. Bangs	328,450	Oct. 20	1238	321	33	241
Bottle-stopper	H. Barrett	331,023	Nov. 24	2112	572	33	931
Bottle-stopper	L. Kirchner	329,692	Nov. 3	305	78	33	562
Bottle-stopper	B. B. Lewis	329,574	Nov. 3	209	55	33	544

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bottle-stopper	A. Luedemann	329,920	Nov. 10	671	172	33	637
Bottle-stopper	S. S. Newton	327,818	Oct. 6	408	106	33	72
Bottle-stopper	J. Recktenwalt	328,520	Oct. 20	1317	342	33	256
Bottle-stopper	C. M. Taylor	332,533	Oct. 20	1336	348	33	259
Bottle-stopper	W. Ward	330,812	Nov. 17	1841	496	33	872
Bottle-stopper fastening	L. Kalling, Jr	330,712	Nov. 17	1708	461	33	848
Bottle-stopper fastening	L. Kalling, Jr	333,083	Dec. 8	1245	325	33	1229
Bottle tube. Nursing-	W. W. Tumbleson	329,103	Oct. 27	2144	554	33	411
Bottle-washer	J. M. and W. G. Hoyt	329,390	Oct. 27	2566	662	33	498
Bottle-washing apparatus	A. L. Bernardin	332,582	Dec. 15	1951	511	33	1356
Bottle-washing machine	A. E. Rich	332,437	Dec. 15	1741	455	33	1322
Bottle-washing machine	A. R. Weiss	329,109	Oct. 27	2154	558	33	412
Bottle-wiring-machine attachment	F. Neumer	332,547	Dec. 15	1899	496	33	1349
Bottles, cans, &c. Closure for	E. Schmitz	330,429	Nov. 17	1354	361	33	779
Bottles. Time dose-indicator for	J. S. Noel	332,906	Dec. 8	1493	367	33	1280
Bottles. Wiring for securing stoppers to	R. L. Howard	329,109	Oct. 27	2235	579	33	427
Bottling-machine	H. C. Walter	330,178	Nov. 10	1019	266	33	707
Bottling-machine	H. Will	331,354	Dec. 1	135	33	33	1022
Bouquet-holder	M. L. Cardell	331,614	Dec. 1	563	137	33	1096
Box: *See* Artist's sketch-box. Paper box. Ballot-box. Post-office distribution and delivery box. Blacking-box. Button-fastener packing-box. Poultry-scalding box. Cigar-box. Sample-box. Fare-box. Saving-box. Folding box. Show-box. Horseshoer's box. Sludge-box. Hub-boring box. Stuffing-box. Letter-box. Tape-line box. Mail-box. Telegraph call-box. Match-box. Window-seat box.							
Box	E. Andrews	329,875	Nov. 10	690	157	33	637
Box	G. W. Miller	331,076	Nov. 24	2177	591	33	943
Box-corner fastener	C. T. Remus	329,081	Oct. 27	2119	549	33	406
Box-fastener	E. Andrews	329,614	Nov. 3	961	67	33	555
Box-fastener	T. F. Conklin	328,463	Oct. 20	1252	396	33	244
Box-fastener	E. W. Kuehn	330,986	Nov. 24	2073	569	33	923
Box-fastener	M. Moran	328,422	Oct. 13	1202	311	33	227
Box-opener	F. L. Perry	327,821	Oct. 6	413	107	33	72
Box-strap	H. Frank	332,795	Dec. 22	2248	593	33	1420
Box-ventilator	W. T. Atterbury	332,633	Dec. 15	2015	529	33	1370
Brace: *See* Bedstead-brace. Rail-brace. Bit-brace. Vehicle-brace.							
Bracelet	H. E. Chadwick	331,033	Nov. 24	2124	575	33	933
Bracelet	P. Lettré	331,799	Dec. 8	818	208	33	1152
Bracelet	C. S. Pine	333,083	Dec. 22	2649	694	33	1492
Bracelet-clasp	W. E. Willis	331,664	Dec. 1	631	155	33	1106
Bracelet. Self-closing	H. Liebel	332,719	Dec. 22	2156	569	33	1401
Bracket: *See* Lamp-bracket. Scaffold-bracket. Locking-bracket. Shingle or roof bracket.							
Bracket	L. Bridge	330,672	Nov. 17	1658	446	33	839
Bracket	G. B. N. Dow	331,187	Nov. 24	2346	635	33	973
Bracket	J. A. Van Kirk	327,899	Oct. 6	435	113	33	76
Bracket-arm	C. Hollweg	330,587	Nov. 17	1551	415	33	816
Braid-board	C. E. Barnes	332,038	Dec. 8	1177	308	33	1217
Brake: *See* Car-brake. Vehicle-brake. Line-reel brake. Velocipede-brake. Marine brake. Wagon-brake.							
Brake-block	R. S. C. Herrman	332,693	Dec. 15	2106	555	33	1367
Brake head and shoe	J. J. Lappin	331,894	Dec. 8	963	249	33	1178
Brake-lever	T. Pinard	332,434	Dec. 15	1736	454	33	1321
Brake lever	W. H. H. Powell and J. T. Grimm	328,971	Oct. 27	1952	508	33	378
Brake-shoe	J. J. Lappin	329,459	Nov. 3	38	11	33	512
Brake-shoe	S. Uren	331,347	Dec. 1	126	31	33	1021
Branding-iron	A. Stollstorff	332,300	Dec. 15	1547	405	33	1298
Bread-cutter	J. L. Kerstetter	328,228	Oct. 13	934	243	33	177
Bread-cutter	N. W. Merwin	331,990	Dec. 8	1103	287	33	1204
Breast-strap iron	H. Merrymon	333,320	Dec. 29	2987	789	33	1559
Brewing beer	C. Zimmer	330,124	Nov. 10	1027	268	33	709
Brick fronts. Glass or vitreous facing for	W. Buttler	330,957	Nov. 24	2038	551	33	916
Brick-machine	J. Baillie	332,474	Dec. 15	1782	467, 468	33	1330
Brick-machine	S. Daly	330,002	Nov. 10	787	201, 202	33	656
Brick-machine	L. Dernelle	327,867	Oct. 6	467	121, 122	33	83
Brick-machine	V. Doriot	333,298	Dec. 29	2941	769, 770	33	1550
Brick-machine	G. Martin	327,569	Oct. 6	86	19	33	16
Brick-machine	P. B. Mathiason	331,490	Dec. 1	241	63, 64	33	1040
Brick-machine	R. N. Ross	329,415	Oct. 27	2604	471, 472, 473	33	495
Brick-machine	A. B. Woodward	330,963	Nov. 24	2031	549, 550	33	915
Brick-machine. Hydraulic	S. E. McGregory and J. J. Koch	332,814	Dec. 22	2365	597, 598	33	1483
Brick-making machine	J. H. Williamson	332,129	Dec. 8	1314	341	33	1241
Brick-molds. Machine for sanding	A. Naylor	327,711	Oct. 6	279	71	33	49

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brick or tile die	J. L. Friend	331,391	Dec. 1	192	50	33	1032
Bricks, &c. Machine for molding plastic materials into	S. Brightmore and A. Dixon	330,291	Nov. 10	1160	308 and 309	33	735
Bricks, &c. Machine or press for pressing	A. Ward	328,552	Oct. 20	1370	357	33	264
Bridge	M. Daigle	332,058	Dec. 8	1903	314	33	1222
Bridge	E. A. Werner	329,240	Oct. 27	2353	609	33	450
Bridge-gate	F. Hack	332,077	Dec. 8	1233	321 and 322	33	1227
Bridge safety-gate. Draw-	G. E. Hawks	332,899	Dec. 22	2388	631 and 632	33	1445
Bridge. Truss-	C. and G. Carr	328,758	Oct. 20	1645	429	33	315
Bridges, &c. Bearing-roller for	J. A. McDonald	327,606	Oct. 6	398	104	33	70
Bridle	A. F. Bowen	331,030	Nov. 24	2121	574	33	932
Bridle and bridle attachment	A. W. Tourgee and L. D. Jennings	329,508	Nov. 3	111	29	33	526
Bridle-bit	E. Q. Darr	329,629	Nov. 3	280	72	33	558
Bridle-bit	G. M. Hubbard	332,200	Dec. 8	1406	363	33	1256
Bridle-bit	E. W. Jackson	328,781	Oct. 20	1672	435	33	320
Bridle-bit	B. P. Roberts	329,975	Oct. 27	1957	510	33	349
Bridle-bit	A. H. Trego	332,571	Dec. 15	1933	506	33	1355
Bridle-bit	D. Waters	332,025	Dec. 8	1160	302	33	1214
Bridle-bit fastening	E. Q. Darr	328,657	Oct. 20	1525	396	33	292
Bridle-blind	M. R. Good	328,773	Oct. 20	1661	433	33	318
Bridle. Harness-	R. Winder	329,352	Oct. 27	2505	645	33	477
Bridles or halters. Nose-band for	L. E. Price	328,063	Oct. 13	727	190	33	138
Bristle-holder	J. J. Richardson	332,558	Dec. 15	1915	501	33	1352
Broiler for ranges	R. F. Emmerich and F. Vonderlehr	333,207	Dec. 29	2827	740	33	1529
Bronzing and dusting machine	W. Courtney	328,011	Oct. 13	657	173	33	126
Brooder	G. W. Pressey	328,860	Oct. 20	1771	462	33	338
Brooder	G. A. Thompson	330,439	Nov. 17	1368	364	33	781
Broom	F. M. Parker	328,248	Oct. 13	959	249	33	182
Broom-corn. Machine for tabling	F. W. Lane	328,851	Oct. 20	1702	460	33	337
Broom holder	O. Ludwig	332,618	Dec. 15	1997	524	33	1367
Broom-holder	W. T. Shaffer	332,014	Dec. 8	1134	296	33	1210
Broom-support	L. Perron	329,482	Nov. 3	77	21	33	519
Broom-winding machine	E. W. Porter	329,413	Oct. 27	2602	471	33	495
Brush	C. E. Hatch	330,111	Nov. 10	932	243	33	689
Brush and scraper. Combined blacking-	W. Booth	329,128	Oct. 27	2183	566	33	417
Brush back or stock of plastic material	G. W. Mowry	328,599	Oct. 20	1435	373	33	276
Brush. Blacking-	B. F. Quinby	327,720	Oct. 6	292	74	33	51
Brush. Circular wire-	J. Stehlin	330,270	Nov. 10	1131	301	33	729
Brush. Clothes-	A. Oelschleger	328,967	Oct. 27	1942	506	33	376
Brush for cleaning chimneys	W. C. Green	332,392	Dec. 15	1679	440	33	1312
Brush for lining brick houses	C. Donaghy	330,005	Nov. 10	791	203	33	650
Brush-handle	C. E. Perry	327,586	Oct. 6	111	25	33	21
Brush. Marking-	W. A. Nowlin	328,426	Oct. 13	1207	312	33	228
Brush. Paint-	T. Huntbatch	327,947	Oct. 6	571	148	33	103
Brush. Paint or whitewash	T. McCabe	332,545	Dec. 15	1897	495 and 496	33	1897
Brush. Reservoir window-washing	C. Acker and G. Michler	327,851	Oct. 6	447	116	33	78
Brush. Rotary	A. Frazier	330,688	Nov. 17	1676	452 and 453	33	842
Brushes. Machine for making	H. Rosenthal	327,723	Oct. 6	395	75	33	51
Brushes. Manufacture of flat	E. Vogel	331,852	Dec. 8	901	233	33	1167
Brushes, &c. Treating fiber for the manufacture of	B. F. Cook	327,529	Oct. 6	34	7	33	8
Buck-pole	E. F. Drake	332,142	Dec. 8	1338	346	33	1244
Bucket and stool. Milk	B. F. Couch	332,788	Dec. 22	2238	590	33	1418
Bucket covers. Fastening for sap-	R. M. Dillard	331,378	Dec. 1	171	44	33	1028
Buckle	M. L. Hall	330,232	Nov. 10	1082	286	33	719
Buckle	E. E. Hardy	328,936	Oct. 27	1894	495	33	367
Buckle	J. C. Parmerlee and A. Swift	333,327	Dec. 29	2995	784	33	1561
Buckle	C. C. Shelby	330,518	Nov. 17	1472	394	33	801
Buckle	J. Simpson, I. M. Hatcher, and H. E. Wildermuth	329,860	Nov. 3	588	151	33	615
Buckle	A. W. Tourgee and L. D. Jennings	327,622	Oct. 6	163	40	33	30
Buckle	M. E. Zeller	331,176	Nov. 24	2324	630	33	969
Buckle-blanks. Making	T. O. Potter	332,622	Dec. 15	2001	525	33	1368
Buckle shield. Harness-	J. P. Scollay	330,429	Nov. 17	1356	361	33	779
Buckle. Surcingle-	E. Deming	328,765	Oct. 20	1652	431	33	316
Buckle. Suspender-	G. F. Atwood	332,177	Dec. 8	1382	357	33	1252
Buckle. Suspender-	D. L. Durand	330,927	Nov. 17	1858	501	33	875
Buckle. Suspender-	D. L. Durand	331,690	Dec. 1	672	166	33	1116
Buckle. Suspender-	W. F. Osborne	332,425	Dec. 15	1725	452	33	1319
Buckle. Suspender-	J. R. Pollock	330,349	Nov. 10	1239	330	33	750
Buckle. Suspender-	A. Shenfield and C. Voorhis	332,448	Dec. 15	1752	458	33	1324
Buckle. Suspender-	J. Spruce	331,661	Dec. 1	627	154	33	1108
Buckle. Suspender-	E. G. Latta	330,336	Nov. 10	1213	325	33	746
Buckle. Trace-	R. P. Garsed	330,009	Nov. 10	795	204	33	660
Buffer	J. Trippett, T. and H. Searls	328,085	Oct. 13	757	197	33	143
Buffer	A. Lewis and E. Huff	328,321	Oct. 13	1047	270	33	198
Buggy	J. W. Leek	327,802	Oct. 6	390	101	33	68
Buggy-boot	E. Carroll and P. Ryan	332,878	Dec. 22	2366	626	33	1440
Buggy-top	J. R. Creviston	333,058	Dec. 22	2611	684	33	1485
Buggy-top-bow protector	J. C. Poor	330,150	Nov. 10	985	256	33	700
Bull-tamer	E. V. Hawkins	331,966	Dec. 8	1067	276	33	1198
Bureau	C. P. Bachelder	329,253	Oct. 27	2356	610	33	451
Burglar-alarm	T. James, Jr	328,225	Oct. 13	930	242	33	177
Burglar-alarm	B. T. Trimmer	330,942	Nov. 24	2016	545	33	912
Burglar-alarm	J. B. Yeakle	332,130	Dec. 8	1317	342	33	1241
Burglar-alarms. Automatic circuit-breaker for	J. C. Herrmann	327,551	Oct. 6	66	15	33	13
Burial apparatus	J. C. Herrmann	327,552	Oct. 6	67	15	33	13
Burial apparatus	A. S. Lovett	331,981	Dec. 8	1092	284	33	1202
Burial-case and coffin	C. Sieber and F. H. Borntraeger	329,495	Nov. 3	96	25	33	523
Burial-casket	J. Cooper	328,291	Oct. 13	1009	262	33	191
Burial casket, vault, &c							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Burner: *See* Gas-burner. Petroleum-burner. Hydrocarbon-burner. Vapor-burner.							
Burner for heating purposes	L. H. Watson	329,107	Oct. 27	2151	557	33	412
Burning liquid fuel. Apparatus for	F. Lane	333,311	Dec. 29	2975	779	33	1557
Burnishing-machine	A. H. Bliss	332,476	Dec. 15	1788	469 and 470	33	1330
Bush for barrels. Tap-	L. Selgrath	332,445	Dec. 15	1748	457	33	1323
Bushing and bung	A. E. Aldridge	327,509	Oct. 6	1	1	33	3
Bushings. Machine for threading tapering	H. H. Taylor	331,167	Nov. 24	2312	606	33	967
Bustle	C. E. Brown	329,270	Oct. 27	2279	615	33	455
Bustle	E. E. Hodson	329,042	Oct. 27	2058	534	33	396
Bustle	B. S. Reed	328,717	Oct. 20	1602	417	33	306
Bustle	B. S. Reed	331,821	Dec. 8	856	219	33	1158
Bustle	A. L. Rich	330,424	Nov. 17	1349	359	33	778
Bustle	J. Schulte	333,260	Dec. 29	2906	760	33	1544
Bustle	A. Trelease	328,440	Oct. 13	1225	318	33	232
Bustle	J. M. Van Orden	332,120	Dec. 8	1302	338	33	1239
Butter and cheese knife	J. P. Smith	331,915	Dec. 8	993	257	33	1184
Butter-cabinet	S. G. Highfill	332,903	Dec. 22	2397	633	33	1447
Butter-package	W. White	330,653	Nov. 17	1630	438	33	833
Butter-package	B. Wood	330,079	Nov. 10	897	232	33	682
Butter. Treating	E. J. Woodruff	327,636	Oct. 6	184	.....	33	33
Butter-worker	H. F. King	329,746	Nov. 3	432	110	33	586
Butter-worker	J. F. Komp	328,411	Oct. 13	1168	307	33	225
Butter-worker	E. Krueger	333,309	Dec. 29	2973	778	33	1557
Butter-worker	N. G. Williams	332,128	Dec. 8	1313	341	33	1241
Button	W. E. Beverly	328,753	Oct. 20	1642	428	33	314
Button	B. H. Bradley	327,515	Oct. 6	6	2	33	3
Button	L. P. Conard	327,768	Oct. 6	344	89	33	60
Button	W. Durand	328,662	Oct. 20	1531	398	33	293
Button	E. Flagg	331,124	Nov. 24	2251	612	33	956
Button	T. W. Foster	328,021	Oct. 13	660	176	33	128
Button	R. H. Isbell	330,403	Nov. 17	1325	352	33	773
Button	L. Morse	332,276	Dec. 15	1517	398	33	1284
Button	H., fils, and G. Rouzé	333,492	Dec. 29	3197	836	33	1594
Button	D. B. Shantz	327,604	Oct. 6	134	31	33	25
Button	J. Spruce	328,823	Oct. 20	1724	448	33	330
Button	C. F. Veit	327,906	Oct. 6	514	133	33	92
Button	C. F. Veit	327,907	Oct. 6	514	134	33	92
Button and button-fastener	I. G. Platt	328,337	Oct. 27	2485	641	33	474
Button and fastener	G. W. Prentice	327,719	Oct. 6	291	74	33	51
Button-attaching machine	C. J. Brosnan	327,917	Oct. 6	532	139	33	95
Button. Collar-	M. B. Scott	328,721	Oct. 20	1609	419	33	306
Button. Cuff and collar	E. B. Nock	332,620	Dec. 15	1999	524	33	1367
Button-fastener	J. Christy, Jr	329,437	Nov. 3	15	4	33	507
Button-fastener	C. Erlanger	333,400	Dec. 29	3067	805	33	1576
Button-fastener	C. F. Harlan	329,644	Nov. 3	296	75	33	561
Button-fastener	A. G. Irvine	330,568	Nov. 17	1552	416	33	816
Button-fastener	E. Ivins	329,744	Nov. 3	430	109	33	586
Button-fastener	J. F. Thayer	332,967	Dec. 22	2479	656	33	1463
Button-fastener	J. F. Thayer	332,968	Dec. 22	2480	657	33	1463
Button-fastener	J. F. Thayer	332,969	Dec. 22	2481	657	33	1463
Button-fastener	J. F. Thayer	332,970	Dec. 22	2482	657	33	1463
Button-fastener packing-box	F. H. Richards	333,159	Dec. 29	2702	723	33	1517
Button-fastener packing-case	E. Kempshall	328,315	Oct. 13	1040	269	33	197
Button-fastener rod	F. H. Richards	329,953	Nov. 10	721	183	33	646
Button-fasteners. Apparatus for packing	F. H. Richards	331,823	Dec. 8	858	220	33	1158
Button-fasteners from shoes. Implement for detaching	H. Rose	332,560	Dec. 15	1916	501	33	1352
Button-fasteners. Instrument for handling	F. H. Richards	333,160	Dec. 29	2763	724	33	1517
Button-fasteners. Making	F. H. Richards	331,822	Dec. 8	857	220	33	1158
Button-feeder	A. G. Wilkins and M. J. Bartlett	330,951	Nov. 24	2029	548 and 549	33	914
Button for fur garments	H. F. Bindseil	327,757	Oct. 6	330	85	33	58
Button-hole attachment for garments. Elastic	A. R. Lane	329,055	Oct. 27	2077	539	33	399
Button-hole cutter	G. E. Combs	330,773	Nov. 17	1790	482	33	863
Button-hole cutter	C. A. Röder	328,813	Oct. 20	1712	445	33	328
Button-hole finishing, cording, and staying device	C. E. Finkle	328,304	Oct. 13	1027	266	33	195
Button-holes. Working	S. B. Ferris	329,635	Nov. 3	286	73	33	559
Button or stud	G. H. Bowerman	328,565	Oct. 20	1385	361	33	267
Button or stud	T. W. Foster	330,390	Nov. 17	1306	347	33	770
Button or stud	E. R. Procter	333,156	Dec. 29	2759	722	33	1517
Button-setting instrument	W. M. Hazel	333,411	Dec. 29	3102	808	33	1578
Button-setting instrument	J. H. Vinton	332,977	Dec. 22	2492	649	33	1465
Button-setting machine	F. H. Richards	330,925	Nov. 24	1993	538 and 539	33	908
Button-setting machine	J. H. Vinton	328,365	Oct. 13	1113	288	33	211
Button shank. Metallic-	E. N. Foote	327,873	Oct. 6	472	123	33	84
Buttons to cloth or other material. Connecting	J. Keith	330,407	Nov. 17	1329	354	33	774
Buttons to fabrics. Device for attaching	I. G. Platt	329,336	Oct. 27	2484	641	33	474
Cab. Hansom	W. Johnstone	331,504	Dec. 1	350	94, 95	33	1061
Cabinet. Combination-	S. R. Potter	328,061	Oct. 13	725	189	33	137
Cabinet. Jeweler's	H. Knickmann	331,719	Dec. 1	710	176	33	1124
Cable-armoring machine	W. R. Patterson	330,047	Nov. 10	845	217 and 218	33	671
Cable conveyance. Electric-	C. J. Van Depoele	329,104	Oct. 27	2144	555	33	411
Cable conveyance	C. J. Van Depoele	331,851	Dec. 8	898	232 and 233	33	1167
Cable-coupling	H. F. Gale	329,727	Nov. 3	407	104	33	583
Cable-grip	L. B. White	333,374	Dec. 29	3054	796	33	1570
Cable grip attachment. Traction-	W. H. Snelson and G. Judge	329,965	Nov. 10	736	187 and 188	33	649
Cable-grip. Roller	G. A. Polhemeus	328,517	Oct. 20	1313	341	33	255

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cable-ways. Cleaning	T. L. Johnson	333,306	Dec. 29	2969	777	33	1556
Cables. Siphon recording-instrument for	W. Dickenson	329,723	Nov. 3	401	103	33	541
Caisson	M. Malbouhan	328,496	Oct. 20	1290	336	33	251
Calcimine compound	S. U. Brunck and G. A. Marsh, Jr.	328,645	Oct. 20	1507	.....	33	288
Calculating device	C. M. Bradt	327,761	Oct. 6	337	86	33	59
Calculating device	A. W. Tucker	331,264	Nov. 24	2462	664	33	992
Calculator for measurement of logs. Tabular	C. Rich	331,332	Dec. 1	105	24	33	1017
Calendar	W. P. Allen	329,171	Oct. 13	868	225	33	164
Calendar	S. J. Cox	327,532	Oct. 6	38	8	33	8
Calendar	W. T. Fenn	328,768	Oct. 20	1654	432	33	317
Calendar	B. R. Jolly	330,028	Nov. 10	821	211	33	666
Calendar	T. McCarthy	330,638	Nov. 10	832	213	33	668
Calendar. Memorandum	S. L. Horton	328,586	Oct. 20	1414	368	33	273
Calendering-rolls. Entering-guide for	M. H. Cram	333,283	Dec. 29	2934	767, 768	33	1549
Calipers for measuring	W. G. Richards	328,861	Oct. 20	1772	462	33	339
Calipers. Spring	S. J. Field	332,244	Dec. 15	1477	386	33	1276
Calk and hoof-pad. Detachable heel	J. Dabus	329,627	Nov. 3	278	72	33	558
Call. Individual	J. Stephen	332,567	Dec. 15	1924	503, 504	33	1354
Cam	H. P. Humphrey	329,904	Nov. 10	653	166	33	634
Cam	P. B. Mathiason	332,268	Dec. 15	1507	394	33	1281
Camera: *See* Photographic camera.							
Camera	W. W. Grant	329,385	Oct. 27	2558	660, 661	33	486
Camera and box combined. Adjustable	C. H. Scofield	329,599	Nov. 3	241	63	33	551
Camera-shutter	D. O. Adams	328,980	Oct. 13	619	163	33	119
Camera-shutter	D. S. Hitchcock	328,033	Oct. 13	683	180	33	131
Camera-stand	L. Noble	327,895	Oct. 6	500	130	33	89
Can: *See* Oil-can. Shipping-can. Sheet-metal can. Transportation-can.							
Can and ejector. Combined	O. P. Pell	333,250	Dec. 29	2890	756	33	1541
Can-cleansing machine	E. Jordan	328,892	Oct. 20	1815	473	33	346
Can-opener	C. W. Acker	333,190	Dec. 29	2903	734	33	1524
Can-opener	I. N. Arment	327,983	Oct. 13	621	163	33	119
Can-opener	R. G. Tippett	331,923	Dec. 8	1012	262	33	1188
Can-testing machine	J. E. and W. S. Reynolds	330,924	Nov. 24	1994	538	33	907
Canning apparatus	J. Kinney	331,065	Nov. 24	2162	567	33	940
Candle-extinguisher	B. M. O'Boylan	329,765	Nov. 3	457	115	33	591
Candle-molding machine	L. Homan	333,013	Dec. 22	2554	672	33	1475
Candles. Apparatus for shaping and finishing	A. F. Baumer	330,200	Nov. 10	1045	272	33	712
Candy. Translucent picture	J. J. Van Leeuwen	328,867	Oct. 20	1778	.....	33	340
Cane-scraper	A. R. Gourrier and J. M. Thompson	327,676	Oct. 6	241	59	33	42
Cane top and leaf cutter. Sugar	E. Lobeck	330,135	Nov. 10	966	251, 252	33	696
Canes or umbrellas. Box-handle for	L. Steinberger	331,095	Nov. 24	2207	597	33	948
Canister. Sheet-metal	J. H. Preater	333,423	Dec. 29	3119	814	33	1561
Cap or cover. Sheet-metal screw	S. Adlam	332,772	Dec. 22	2221	585	33	1415
Cap. Sheet-metal	F. W. Perry	331,999	Dec. 8	1119	290	33	1206
Capsule for bottles	W. R. Clough	332,382	Dec. 15	1666	437	33	1310
Capsule for medicines, wines, &c	C. L. Jensen	330,491	Nov. 17	1437	384	33	795
Capsule-machine	J. Krebbiel	332,204	Dec. 8	1413	364	33	1258
Capsule-machine	W. A. Tucker	328,623	Oct. 20	1476	384, 385	33	283
Car and scow. Dumping	W. Fallon	330,101	Nov. 10	921	239	33	687
Car-brake	W. M. Brisben	332,324	Dec. 15	1582	415	33	1295
Car-brake	A. L. Kirkland	329,840	Nov. 3	565	143	33	610
Car-brake	J. F. Mallinckrodt	329,462	Nov. 3	42	12	33	512
Car-brake	J. F. Mallinckrodt	329,464	Nov. 3	45	12	33	513
Car-brake	J. F. Mallinckrodt	329,465	Nov. 3	46	13	33	513
Car-brake	C. L. Matthews	329,328	Oct. 27	2469	638	33	471
Car-brake	J. Meissner	328,959	Oct. 27	1926	502	33	373
Car-brake	S. E. Mosher and L. B. Lyons	328,963	Oct. 27	1935	504	33	374
Car-brake	W. R. Wilcox	328,098	Oct. 13	773	202	33	146
Car-brake	C. F. Wohlfarth and C. W. Wakefield. (Reissue.)	10,671	Dec. 8	1446	373	33	1264
Car brake and starter	W. M. Case	333,109	Dec. 29	2893	706	33	1506
Car-brake. Automatic	F. H. Agnew and R. R. Hice	328,372	Oct. 13	1126	290, 291	33	213
Car-brake. Automatic	R. Randolph	332,944	Dec. 22	2447	648	33	1458
Car-brake. Automatic	W. A. Wilde	328,870	Oct. 20	1780	464, 465	33	340
Car brake. Street	J. F. Mallinckrodt	329,463	Nov. 3	44	12	33	513
Car-brakes. Slack-adjuster for	D. McLeod	330,251	Nov. 10	1105	283	33	724
Car-bumper	N. P. Cowell	333,447	Dec. 29	3148	822	33	1585
Car. Cable-railway grip	S. W. Jackson	329,170	Oct. 27	2235	579	33	427
Car. Cattle	J. A. Bryan and J. B. Fielding	328,915	Oct. 27	1859	485	33	361
Car. Combined ventilated vegetable and stock	M. T. Taylor	332,021	Dec. 8	1141	298, 299	33	1211
Car-coupler	E. Dederick	329,025	Oct. 27	2035	528	33	292
Car-coupling	P. A. Aikman	331,467	Dec. 1	307	82	33	1059
Car-coupling	J. R. Avery	330,284	Nov. 10	1149	305, 306	33	732
Car-coupling	L. Bates	333,051	Dec. 22	2664	692	33	1484
Car-coupling	J. C. Blocher	333,439	Dec. 29	3136	820	33	1583
Car-coupling	W. R. Bowman	329,202	Oct. 27	2370	613	33	454
Car-coupling	I. H. Bradshaw	332,870	Dec. 22	2355	622	33	1438
Car-coupling	P. Brinkerhoff	329,266	Oct. 27	2374	614	33	454
Car-coupling	T. E. Buckman	329,358	Oct. 27	2518	649	33	479
Car-coupling	C. C. Burton	328,458	Oct. 20	1245	323	33	242
Car-coupling	J. Button	330,890	Nov. 17	1850	490	33	874

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	C. A. Chamberlain	332,380	Dec. 15	1663	435, 436	33	1309
Car-coupling	G. H. Colby	329,537	Nov. 3	156	39	33	535
Car-coupling	J. Cuneo	328,398	Oct. 13	1155	298	33	218
Car-coupling	G. W. Curtis	327,534	Oct. 6	43	9	33	9
Car-coupling	G. W. Curtis, A. G. Darwin, and C. C. Davis.	327,661	Oct. 6	221	55	33	39
Car-coupling	J. C. Doerr	327,669	Oct. 6	469	123	33	83
Car-coupling	W. Emmett	328,928	Oct. 27	1876	490	33	364
Car-coupling	H. I. Fink	328,303	Oct. 13	1096	286	33	194
Car-coupling	G. Forbes	328,931	Oct. 27	1892	491	33	365
Car-coupling	H. A. Giles	331,126	Nov. 24	2253	612	33	956
Car-coupling	E. T. Hall	328,584	Oct. 20	1411	367, 368	33	273
Car-coupling	W. F. Hall	330,233	Nov. 10	1083	286	33	720
Car-coupling	J. Hirn	331,639	Dec. 1	599	148	33	1102
Car-coupling	L. D. Hoover	330,120	Nov. 10	948	246	33	692
Car-coupling	J. W. Johnson	328,785	Oct. 20	1676	436	33	321
Car-coupling	W. H. Knight	331,066	Nov. 24	2162	567	33	941
Car-coupling	J. P. Koontz	328,040	Oct. 13	693	183	33	132
Car-coupling	A. T. Lott	332,617	Dec. 15	1906	523	33	1367
Car-coupling	S. G. Marsh	330,601	Nov. 17	1568	421	33	820
Car-coupling	C. S. Maynard	332,353	Dec. 15	1621	425	33	1302
Car-coupling	S. F. McAllister	332,544	Dec. 15	1896	495	33	1348
Car-coupling	S. Moorman	331,317	Dec. 1	82	20	33	1014
Car-coupling	A. Nutting	330,416	Nov. 17	1339	356	33	776
Car-coupling	E. F. O'Haver	333,147	Dec. 29	2747	721	33	1515
Car-coupling	F. J. Papineau, Jr.	333,025	Dec. 22	2573	677	33	1479
Car-coupling	G. D. Pearson	332,430	Dec. 15	1731	453	33	1320
Car-coupling	D. Powell	333,154	Dec. 29	2757	722	33	1516
Car-coupling	P. F. Randebaugh	328,251	Oct. 13	961	250	33	183
Car-coupling	J. C. Reed	333,253	Dec. 29	2897	758	33	1542
Car-coupling	F. J. Schupp	329,493	Nov. 3	93	25	33	523
Car-coupling	L. H. Shular	328,259	Oct. 13	970	253	33	184
Car-coupling	M. Spelman	330,166	Nov. 10	1005	263	33	704
Car-coupling	S. H. Springer	328,690	Oct. 20	1469	382	33	292
Car-coupling	D. J. Summers	333,172	Dec. 29	2779	728	33	1520
Car-coupling	J. E. Swope	332,847	Dec. 22	2311	610	33	1431
Car-coupling	F. J. Taggart	333,357	Dec. 29	3035	792	33	1567
Car-coupling	G. C. Thompson	331,218	Nov. 24	2391	647	33	980
Car-coupling	A. W. Van Dorston	328,547	Oct. 20	1359	354, 355	33	262
Car-coupling	P. L. Wetmore	330,947	Nov. 24	2021	546	33	913
Car-coupling	J. Whitmore	329,794	Nov. 3	492	124	33	598
Car-coupling	J. H. Wilkin	332,316	Dec. 15	1570	412	33	1298
Car-coupling	W. Wilson	330,279	Nov. 10	1141	303, 304	33	731
Car-coupling pins. Machine for making	M. Collins	330,907	Nov. 10	1053	275	33	713
Car-curtain	J. C. Jacobson	328,944	Oct. 13	929	241	33	177
Car curtain. Open	O. Tufts	333,176	Dec. 29	2785	730	33	1521
Car-door change-gate	J. Stephenson	331,010	Nov. 24	2100	556	33	926
Car door. Grain	W. McGuire	331,315	Dec. 1	78	19	33	1013
Car-door retainer	A. Roelofs	329,340	Oct. 27	2469	642	33	475
Car. Double-action hay	J. Drader	332,704	Dec. 22	2136	563	33	1397
Car draw-head. Tram	J. Stephenson	327,614	Oct. 6	149	35	33	27
Car. Dumping	S. W. Cook and H. Summers	327,709	Oct. 6	345	89	33	61
Car. Dumping	R. Savage	332,007	Dec. 8	1194	294	33	1209
Car for cable railways	C. Bullock	328,917	Oct. 27	1861	486	33	362
Car for cable ways	S. H. Terry	329,786	Nov. 3	484	122	33	597
Car-heater	W. C. Baker	331,367	Dec. 1	157	40	33	1098
Car-heater. Steam	E. D. Cody	329,017	Oct. 27	2023	525	33	290
Car motor. Street	W. C. Trussell	327,923	Oct. 6	165	41	33	30
Car-mover	C. V. Greenamyer	329,642	Nov. 3	292	74	33	560
Car-mover	S. Shackelford	330,744	Nov. 17	1755	473	33	856
Car platform. Freight	A. C. Ferguson	330,216	Nov. 10	1063	278	33	715
Car pole. Street	W. H. Kelleher	328,121	Oct. 13	801	209	33	151
Car. Poultry	W. F. Jenkins and J. L. Streeter	330,809	Nov. 24	1956	530	33	901
Car. Railway	A. W. Driggs	330,925	Nov. 17	1855	500	33	874
Car. Railway	J. A. Enos	331,388	Dec. 1	184	47, 48	33	1031
Car. Railway	J. Tesseyman and H. A. Billings	327,836	Oct. 6	432	112	33	76
Car. Railway	R. H. Wyman. (Reissue)	10,654	Oct. 20	1853	483	33	354
Car-replacer	J. E. Norwood	329,939	Nov. 10	700	179	33	643
Car-replacing jack	L. F. Longmore	330,842	Nov. 17	1878	508	33	879
Car signal. Tram	T. L. Johnson	329,566	Nov. 3	198	52	33	542
Car. Sleeping	H. Guillaume	331,233	Nov. 24	2409	652, 653	33	964
Car-spring	R. Vose	330,445	Nov. 17	1380	367	33	783
Car-spring	R. Vose	330,446	Nov. 17	1381	368	33	783
Car-starter	J. A. Lane and J. M. Thorp	329,319	Oct. 27	2450	634	33	468
Car-starter	W. P. Vickery	330,946	Nov. 24	2021	546	33	913
Car-starter	H. H. Watson	331,220	Nov. 24	2399	647	33	981
Car starter and brake	S. Johnson	329,639	Nov. 3	563	143	33	610
Car starter and brake	J. Kubler	328,493	Oct. 20	1263	333	33	249
Car starter and brake	E. Werner	333,367	Dec. 29	3046	795	33	1568
Car-step	J. A. Doyle and T. L. Scourman	331,776	Dec. 8	794	201	33	1147
Car-steps. Folding	J. H. Cruger	329,440	Nov. 3	19	6	33	508
Car. Stock	H. Arms	328,745	Oct. 20	1635	426	33	313
Car. Stock	H. Arms	328,746	Oct. 20	1635	426	33	313
Car. Stock	H. Arms	328,747	Oct. 20	1636	426	33	313
Car. Stock	G. Armstrong	333,378	Dec. 29	3058	797	33	1570
Car. Stock	J. A. Bryan and J. B. Fielding	328,916	Oct. 27	1860	486	33	361
Car Stock	J. H. Chamberlin	329,716	Nov. 3	393	100	33	580
Car. Stock	R. E. Ismond	332,080	Dec. 8	1237	323	33	1228
Car. Stock	C. C. and C. W. James	327,880	Oct. 6	479	125	33	85

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car. Stock	J. J. Koenig and A. M. Lee	329,441	Nov. 3	566	144	33	610
Car-strap	E. O. Bowman	330,461	Nov. 17	1397	312	33	786
Car. Street	M. A. Cutter	333,450	Dec. 29	3151	824	33	1586
Car. Street	C. J. Reynolds	333,158	Dec. 29	2761	723	33	1517
Car. Street	W. Y. Ober	332,739	Dec. 22	2180	575	33	1407
Car-ventilator	E. S. Perry	329,591	Nov. 3	229	59	33	549
Car-ventilator	J. Ferguson	331,292	Dec. 1	52	12	33	1009
Car-wheel	J. A. Hagan	332,119	Dec. 8	1301	337	33	1239
Car-wheel	D. H. Rice	330,423	Nov. 17	1347	350	33	777
Car-wheel	W. Malam	329,180	Oct. 27	2247	582	33	430
Car wheel and axle	S. A. Bemis	330,372	Nov. 17	1279	340	33	765
Car-wheel and axle-box	H. J. Small and J. McNaughton	330,628	Nov. 17	1600	428	33	826
Car-wheel lathe	C. B. Beach	329,617	Nov. 3	263	68	33	555
Car-wheels. Manufacture of	L. C. Pressley	330,151	Nov. 10	986	256; 257	33	700
Cars and vehicles. Motor for propelling	J. McIntyre and H. Loring	330,039	Nov. 10	833	214	33	668
Cars. Escape-hatch for railway	T. Wright	329,990	Nov. 10	768	196; 197	33	655
Cars. Grip attachment for cable-motor	A. J. Chandler	331,034	Nov. 24	2125	575	33	993
Cars. Movable dressing-closet for sleeping	W. J. Possons	331,440	Dec. 1	264	71	33	1045
Carbon-baking box	S. Nicholson and H. A. Bowen	329,670	Nov. 3	326	84	33	566
Carbon for incandescents. Obtaining	C. F. Andrus	327,981	Oct. 13	620	163	33	119
Carburetor	L. F. McNett	329,664	Nov. 3	319	82	33	565
Carburetor	R. Barrett	331,758	Dec. 8	775	196	33	1144
Carcasses. Traveler for carrying	D. M. McLellan	330,250	Nov. 10	1103	292	33	734
Card. Show	A. Rodgers	327,722	Oct. 6	294	75	33	51
Card-table	J. A. Bradshaw	329,356	Oct. 27	2514	648	33	478
Carding-engine. Automatic stop-motion for feeding mechanisms of	E. G. Woods	329,425	Oct. 27	2624	677; 678	33	498
Carding-engines. Dust-collecting attachment for	M. Rousselle	328,069	Oct. 13	735	192	33	139
Carpet-cleaner	Z. N. De Ledochowski	328,199	Oct. 13	898	233	33	170
Carpet-cleaning machine	J. M. Gessler and J. McAfee	330,107	Nov. 10	928	241; 242	33	689
Carpet-cleaning machine	S. T. Jull	330,406	Nov. 17	1328	353	33	774
Carpet covering. Stair	T. J. Dennis	330,963	Nov. 24	2046	553	33	918
Carpet-stretcher	C. L. Camp	329,136	Oct. 27	2191	569	33	419
Carpet-stretcher	A. H. Coble	328,653	Oct. 20	1518	394	33	290
Carpet-stretcher	J. M. Hurst	327,668	Oct. 6	253	63	33	44
Carpet-stretcher	J. Mead	327,809	Oct. 6	399	104	33	70
Carpet-stretcher	R. Moffitt	328,506	Oct. 20	1303	339	33	254
Carpet-stretcher	G. M. Robison	328,343	Oct. 13	1079	281	33	205
Carpet-stretcher	E. Schmidt and J. R. Kunselman	332,949	Dec. 22	2457	650	33	1459
Carpet stretcher and tacker	M. R. Bissell	329,257	Oct. 27	2364	611; 612	33	452
Carpet-sweeper	W. J. Drew	329,374	Oct. 27	2542	655	33	493
Carpet-sweeper	G. W. Kelley	330,590	Nov. 17	1554	416	33	817
Carpet-sweeper	E. T. Prindle	328,610	Oct. 20	1449	377	33	279
Carpet-sweeper	A. Abel	333,189	Dec. 29	2892	733	33	1524
Carriage and cradle. Combined baby	J. W. and J. W. Sherwood	328,526	Oct. 20	1329	344	33	256
Carriage-bow slat	C. F. Boetwick and H. N. Thayer	328,564	Oct. 20	1385	361	33	267
Carriage. Child's	I. N. Forrester	330,308	Nov. 10	1162	316	33	740
Carriage. Child's	C. Thomas	328,731	Oct. 20	1619	422	33	310
Carriage-doors. Device for operating	A. McLean	329,579	Nov. 3	214	56	33	545
Carriage. Extension baby	C. Seel	333,757	Dec. 22	2202	580	33	1411
Carriage. Folding baby	M. A. Corliss	332,787	Dec. 22	2237	590	33	1418
Carriage-knob. Double-clinching	H. Haessler	327,978	Oct. 6	614	160	33	111
Carriage prop-block	J. A. Crandall	329,023	Oct. 27	2033	527	33	292
Carriage-top support	H. Higgins	332,800	Dec. 22	2253	594	33	1421
Carriage-tops. Back-stay for	C. B. Haynes	328,941	Oct. 27	1900	496	33	368
Carriage-wheel fender	J. M. Todd	332,022	Dec. 8	1142	299	33	1212
Carrier: *See* Cash-carrier. Cash and package carrier. Cash and parcel carrier. Fence-wire carrier. Hay-carrier. Squib-carrier. Straw-carrier. Tobacco-carrier. Trace-carrier.							
Carrier apparatus	J. F. Downing	328,660	Oct. 20	1528	397	33	292
Carrier apparatus	H. Smith	332,959	Dec. 22	2467	653; 654	33	1461
Carrier apparatus	H. Smith	332,960	Dec. 22	2470	654; 655	33	1462
Carrier apparatus	H. Smith	332,961	Dec. 22	2472	655	33	1462
Cart. Coal	T. Finnerty	330,217	Nov. 10	1064	278	33	716
Cart. Dirt	J. N. Bodine	329,702	Nov. 3	370	94	33	575
Cart. Dirt	J. N. Bodine and O. Smith	329,703	Nov. 3	373	95	33	576
Cart. Dumping	T. Hill	328,219	Oct. 13	923	240	33	176
Cart. Dumping	S. Stargis	328,961	Oct. 27	1969	511	33	380
Cartridge	W. Lorenz	331,511	Dec. 1	361	97	33	1063
Cartridge. Extensible safety	F. P. Renee	331,912	Dec. 8	989	256	33	1183
Cartridge loading and reloading machine	M. F. B. Rice	331,159	Nov. 24	2303	624	33	965
Cartridge-loading implement	H. Baxter	328,750	Oct. 20	1639	427	33	313
Cartridge-loading machine	W. Hill	332,904	Dec. 22	2398	633; 634	33	1447
Cartridge-loading machine	A. W. Wheaton	332,767	Dec. 22	2213	564	33	1413
Cartridge-pack	J. C. Kelton	331,591	Dec. 8	960	248	33	1178
Cartridge-pouch	C. McClure	327,700	Oct. 6	265	67	33	47
Cartridge-reloading implement	D. Brown	329,135	Oct. 27	2190	568	33	419
Cartridge-shell crimper	H. T. Hazard	332,712	Dec. 22	2145	567	33	1400
Cartridge-shell holder	J. Raabe and W. H. Fisher	330,513	Nov. 17	1464	392	33	799
Cartridge-shells. Holder for supporting	W. H. Fisher	328,018	Oct. 13	686	175	33	138
Cartridges. Making lubricating	W. J. Faul	330,102	Nov. 10	922	239	33	687
Cartridges. Mold for making compressed powder-charges for	E. Rubin	331,737	Dec. 1	741	186	33	1129

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Carving-machine	F. Holland	329,647	Nov. 3	299	76	33	561
Case: *See* Book-case. Burial-case. Cigar-case. Fur-case. Pencil-case. Shaving-case. Show-case. Ticket-case. Toilet-case.							
Case for cards, samples, &c	T. F. Watson	328,161	Oct. 13	851	221	33	161
Cash and package carrier	W. P. Bigelow	330,869	Nov. 24	1917	520	33	894
Cash and parcel carrier	D. E. Kempster	332,539	Dec. 15	1869	494	33	1347
Cash-box system. Automatic	J. C. Martin	331,418	Dec. 1	238	62	33	1040
Cash-carrier	T. E. Barrow	331,936	Dec. 8	1028	267	33	1191
Cash-carrier	T. M. Kenney and F. E. Mason	331,245	Nov. 24	2428	658	33	987
Cash-carrier	D. Lippy and P. Ott	328,323	Oct. 13	1049	271	33	109
Cash-carrier elevator	D. E. Kempster	332,085	Dec. 8	1247	325	33	1220
Cash-carrier elevator	J. C. Miller	329,475	Nov. 3	68	19	33	517
Cash-carrier. Pneumatic	W. G. Davis	333,113	Dec. 29	2700	708	33	1537
Cash-carrier. Pneumatic	W. G. Davis and W. M. Hinman	333,397	Dec. 29	3061	804	33	1575
Cash system	T. M. Kenney	329,050	Oct. 27	3070	538	33	398
Casket-plate	G. W. Moulton	330,846	Nov. 17	1685	509	33	880
Cast wheel	W. N. Whitely	328,736	Oct. 20	1626	423	33	311
Caster	H. Clark	329,275	Oct. 27	2386	617	33	457
Caster	W. A. Osborn and D. M. Estey	331,211	Nov. 24	2390	644	33	978
Castor	J. L. Purple	331,732	Dec. 1	734	185	33	1127
Caster	R. S. Thompson	331,461	Dec. 1	297	80	33	1051
Caster	W. Van Valkenbergh and D. E. Teal	332,629	Dec. 15	2009	527	33	1369
Casting-gate	C. Truesdale	332,462	Dec. 15	1766	462	33	1327
Casting-mold	J. R. Davies	332,503	Dec. 15	1823	478	33	1337
Casting-mold	J. R. Davies	332,504	Dec. 15	1825	479	33	1337
Casting-mold	S. N. Goodman	330,109	Nov. 10	930	242	33	689
Casting mold. Metal	W. S. Platt	331,437	Dec. 1	261	71	33	1045
Casting-molds. Machine for making	M. R. Moore	331,208	Nov. 24	2371	642	33	978
Casting printers' leads. Mold for	H. C. Hansen	327,546	Oct. 6	59	14	33	12
Casting rolls. Mold for	W. W. Wallace	327,840	Oct. 6	436	114	33	76
Casting seamless tubing. Mold for	A. Rais	331,820	Dec. 8	855	219	33	1157
Casting steel ingots	S. T. Williams	331,856	Dec. 8	907	234	33	1168
Castings. Apparatus for forming cores or molds for	R. Savage	329,958	Nov. 10	736	185	33	647
Castings from wrought-iron and steel by adding aluminium. Manufacturing	C. G. Wittenström	333,373	Dec. 29	3053	.....	33	1570
Castrating-instrument	J. F. Allen	329,601	Nov. 3	358	91	33	573
Ceiling. Metallic	A. Northrop	330,915	Nov. 24	1979	535	33	905
Ceiling. Metallic	A. Northrop	330,916	Nov. 24	1980	535; 536	33	905
Ceiling. Metallic	A. Northrop	330,917	Nov. 24	1981	536	33	905
Cellonite or nitro-cellulose article	J. R. France	328,843	Oct. 20	1751	456	33	335
Celluloid and other plastic materials. Manufacture of articles from	C. C. Chickering	329,273	Oct. 27	2382	616	33	456
Celluloid, &c., in the production of enameled goods or veneering. Utilizing	J. H. Stevens and W. H. Wood	329,093	Oct. 27	2132	.....	33	408
Cellulose or paper-pulp from wood fiber. Apparatus for the manufacture of	E. Ritter and C. Kellner	328,812	Oct. 20	1710	445	33	328
Cellulose or paper-pulp from wood fiber. Manufacturing	E. Ritter and C. Kellner	329,215	Oct. 27	2306	597	33	441
Cellulose or paper-pulp from woody fiber. Apparatus for the manufacture of	E. Ritter and C. Kellner	329,214	Oct. 27	2305	597	33	440
Cement. Manufacture of	W. Joy	331,243	Nov. 24	2426	.....	33	987
Cement. Manufacture of	H. Mathey	330,602	Nov. 17	1570	.....	33	690
Cement. Manufacture of Portland	J. M. Willcox	333,370	Dec. 29	3050	.....	33	1569
Centering device for tenoning and other machines	W. H. Doane	328,391	Oct. 13	1158	289	33	219
Centering hubs and other blocks. Device for	B. Wing	330,536	Nov. 17	1491	399	33	804
Centricycle or bicycle	T. Crispin	333,448	Dec. 29	3149	823	33	1586
Centrifugal machine	F. A. Cloudman	328,190	Oct. 13	887	231	33	168
Centrifugal machine	J. Nielsen and M. Pedersen	330,345	Nov. 10	1231	329	33	748
Centrifugal machine	E. Rothe	331,450	Dec. 1	279	76	33	1048
Centrifugal reel	C. O. Dost	333,398	Dec. 29	3063	804; 805	33	1575
Cereals. Preparing flaked	A. W. Gilman and S. Spencer	332,073	Dec. 8	1225	.....	33	1226
Chain. Drive	J. M. Dodge	330,004	Nov. 10	700	203	33	650
Chain. Drive	E. Y. Moore	328,050	Oct. 13	705	186	33	134
Chain. Drive	J. H. Weaver	332,311	Dec. 15	1560	410	33	1291
Chain for bracelets	I. Cole	332,053	Dec. 8	1199	313	33	1221
Chain for wagons. Tongue	W. P. Brown	333,386	Dec. 29	3066	800	33	1572
Chain-link	D. Munro	333,095	Dec. 22	2967	700	33	1496
Chain-link	J. P. Preston	331,326	Dec. 1	93	22	33	1015
Chain-machine	F. P. Hinds	331,397	Dec. 1	198	51, 52	33	1033
Chain-machine	C. F. Pardee	329,334	Oct. 27	2480	640	33	473
Chain. Machine-roller	W. Morgan	329,407	Oct. 27	2592	668	33	492
Chain-machines. Link-counting attachment for	E. L. Howe	329,837	Nov. 3	561	142	33	609
Chain. Metal	F. Egge	330,214	Nov. 10	1062	277	33	715
Chain spring-link	A. W. Cox	327,865	Oct. 6	465	121	33	82
Chains. Appendage for ornamental	J. L. Sweet	331,743	Dec. 1	749	189	33	1131
Chair: *See* Adjustable chair. Convertible chair. Desk-chair. Exercising-chair. Folding chair. Hammock-chair. Invalid's convertible chair. Nursery-chair. Opera-chair. Operating-chair. Oscillating chair. Reclining-chair. Rocking chair. Steamer, lawn, and invalid chair. Surgeon's chair. Surgeon's or reclining chair.							
Chair	W. Boscawen	329,805	Nov. 3	511	130	33	609
Chair	L. A. Chichester	328,760	Oct. 20	1647	429	33	315

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Chair	L. A. Chichester	328,838	Oct. 20	1746	455	33	334
Chair	L. A. Chichester	330,206	Nov. 10	1052	274	33	713
Chair	F. Chichester	333,393	Dec. 29	3075	802	33	1574
Chair	L. Ehrlich	327,668	Oct. 6	231	56	33	41
Chair	G. F. Hall and G. M. Lane	331,634	Dec. 1	595	147	33	1101
Chair	F. E. Harrington	332,711	Dec. 22	2144	566	33	1399
Chair	A. F. White	331,352	Dec. 1	133	33	33	1021
Chair	H. J. Harwood	327,549	Oct. 6	64	14	33	13
Chair-backs, &c. Manufacture of	F. A. Sinclair	327,731	Oct. 6	304	78	33	53
Chair-seatings. Metal splice for uniting the ends of cane stripe for	J. D. McClure	331,149	Nov. 24	2288	620	33	962
Chairs. Book-rest for	D. Jennings	331,139	Nov. 24	2274	617	33	960
Chalk-holder	W. H. Wiggins	329,349	Oct. 27	2502	.....	33	477
Chalk. Substitute for billiard-cue	A. Hamann	330,019	Nov. 10	811	.....	33	663
Chalk unbreakable. Rendering billiard and writing	P. Murray, Jr	332,821	Dec. 22	2274	599	33	1425
Chandelier and rotating fan. Combined	W. A. Lovelace	327,804	Oct. 6	392	102	33	69
Charcoal-kiln	J. J. G. C. Schmidt	327,725	Oct. 6	297	75, 76	33	52
Chart for laying out patterns	F. E. Woodin	331,208	Nov. 24	2467	666	33	993
Chart for teaching and producing facial expressions	J. M. Ludlow, I. K. Funk, and A. W. Wagnalls.	329,178	Oct. 27	2245	581	33	429
Chart. Radially-folding synchronous	N. McGoldrick	332,269	Dec. 15	1508	395	33	1282
Check-hook	F. T. Davis	331,040	Nov. 24	2131	578	33	935
Check-hook. Harness	R. W. Owen	329,852	Nov. 3	581	148	33	613
Check-rein hook	G. W. and F. P. Murphey	329,066	Oct. 27	2092	543	33	402
Check-row wire. Reel for	L. Eberhart and I. D. Stevens	329,725	Nov. 3	404	{103 104	33	582
Check-rower attaching-iron	A. T. Crow	328,879	Oct. 20	1794	468	33	342
Check-rower wire anchor or equalizer	W. B. Thomas	329,345	Oct. 27	2497	645	33	476
Checking device. Freight-	A. J. Lumsden	331,803	Dec. 8	823	210	33	1152
Cheese-bandages. Reel for measuring and cutting	L. H. Sparks	329,352	Oct. 13	1089	283	33	307
Cheese-vat	W. E. and A. C. Oehrle	332,938	Dec. 22	2440	{645 646	33	1457
Chenille and manufacturing the same. Spun	W. McIlwain	333,319	Dec. 29	2986	782	33	1559
Chenille-cutting machine	G. W. Knapp	330,839	Nov. 17	1872	{506 507	33	878
Cherry-seeding machine	G. B. Bayley	330,547	Nov. 17	1503	402	33	806
Chicken-brooder	M. H. Strong	331,096	Nov. 24	2207	598	33	948
Chicken-brooder	J. Stine	328,152	Oct. 13	839	218	33	159
Chimney	J. MacDonald	332,810	Dec. 22	2261	596	33	1422
Chimney-cap	G. Fischer	330,883	Nov. 24	1936	525	33	897
Chimney cowl and ventilator	W. G. Heuis	332,523	Dec. 15	1864	487	33	1342
Chimney cowl and ventilator	W. Hubbard	331,710	Dec. 1	698	173	33	1121
Chimney-protector	I. Barker	329,993	Nov. 10	773	198	33	656
Chimney-top	H. H. Eames	332,705	Dec. 22	2137	{563 564	33	1398
Chloridizing gold, silver, and other ores. Apparatus for	E. Ostermayer and M. Dittmar	332,358	Dec. 15	1635	.....	33	1304
Chloriodine double combinations from pyridine and chinoline bases. Producing							
Chopper: *See* Cotton-chopper. Meat-chopper. Cotton-stalk chopper.							
Christmas-tree holder	G. Coffin	328,007	Oct. 13	653	173	33	125
Chromates and bichromates. Manufacture of	W. J. Chrystal	329,138	Oct. 27	2194	.....	33	420
Chuck. Brace-	J. Chantrell	329,648	Oct. 20	1511	393	33	289
Chuck. Lathe-	G. A. Barnes	331,603	Dec. 1	539	131	33	1092
Chuck. Lathe-	J. C. Baner	330,867	Nov. 24	1915	519	33	893
Chuck. Lathe-	F. L. Gregory	327,791	Oct. 6	374	97	33	66
Chuck. Lathe-	F. Boardman	330,551	Nov. 17	1508	404	33	807
Chuck. Pivoting-	T. H. Paul	330,261	Nov. 10	1117	297	33	727
Chuck. Planer-	H. Brown and A. Bushnell	332,485	Dec. 15	1797	472	33	1332
Churn	G. J. Clark	328,188	Oct. 13	886	230	33	168
Churn	G. F. Day	329,443	Nov. 3	21	6	33	508
Churn	J. Eckles and J. P. Frow	327,928	Oct. 6	548	143	33	98
Churn	A. C. Gandee	327,938	Oct. 6	561	145	33	100
Churn	J. W. Kernodle	332,614	Dec. 15	1992	522	33	1366
Churn	H. R. Knox	332,349	Dec. 15	1614	424	33	1301
Churn	T. Machan	328,696	Oct. 20	1570	409	33	300
Churn	F. P. Malott	329,924	Nov. 10	676	173	33	638
Churn	H. Mott	329,762	Nov. 3	455	114	33	590
Churn	E. O Phillips	328,607	Oct. 20	1703	443	33	326
Churn	J. F. Swab	328,083	Oct. 13	756	197	33	143
Churn	E. C. Taylor	333,358	Dec. 29	3036	793	33	1567
Churn	H. H. Teeter	327,620	Oct. 6	161	40	33	29
Churn	F. L. White	331,598	Dec. 1	553	130	33	1091
Churn	L. J. Wicks	332,962	Dec. 22	2498	660	33	1466
Churn	G. C. Witte and R. D. Murrell	327,912	Oct. 6	527	137	33	94
Churn	J. W. Boyd	329,259	Oct. 27	2367	612	33	453
Churn-dasher	W. H. Hook	331,882	Dec. 8	944	244	33	1175
Churn-dasher	J. B. Swaim	332,680	Dec. 15	2090	549	33	1383
Churn-dasher	J. P. and J. M. Lucas	329,751	Nov. 3	438	111	33	587
Churn-dashers. Device for operating	D. C. and H. P. Camp	333,358	Dec. 29	3068	800	33	1572
Churn-motor	J. Sweeney	328,906	Oct. 20	1836	479	33	350
Churn-power and butter-worker combined	W. J. Temple	329,689	Nov. 3	356	91	33	572
Churn. Swinging	J. G. Pritchard	332,677	Dec. 15	2086	548	33	1382
Churn-ventilator	F. L. Fonshee	331,487	Dec. 1	327	88	33	1056
Churning device	P. R. Cross	330,470	Nov. 17	1414	377	33	790
Cider-press	F. C. Smaltig	328,617	Oct. 20	1465	381	33	281
Cigar-box	C. Lorenz	331,510	Dec. 1	360	97	33	1062
Cigar-boxes. Press-board for	N. H. Borgfeldt and A. C. Schutz	331,676	Dec. 1	651	{160 161	33	1112
Cigar-bunching machine	C. H. Evers	328,203	Oct. 13	902	{234 235	33	172
Cigar-bunching machine	A. Gordon	328,774	Oct. 20	1662	433	33	318
Cigar-bunching machine	J. A. McConnell	330,604	Nov. 17	1571	421	33	820

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cigar-case	H. W. Pitz	330,733	Nov. 17	1745	469	33	854
Cigar-cutter	W. M. Ducker	331,384	Dec. 1	179	45	33	1089
Cigar cutter and perforator. Combined	A. Angell	331,366	Dec. 1	156	40	33	1026
Cigar-holder	G. Corey	328,009	Oct. 13	654	172	33	125
Cigar-machine	M. A. Winget	332,174	Dec. 8	1379	356	33	1252
Cigar-mold	F. C. Miller	329,196	Oct. 27	2277	{589 590	33	435
Cigar-tip cutter	W. H. Lilly	330,597	Nov. 17	1560	418	33	816
Cigarette-wrappers, &c. Manufacture of	J. De Susini	328,300	Oct. 13	1021	.....	33	193
Circuit breaker and closer. Automatic	M. J. Myers	332,490	Dec. 15	1718	450	33	1316
Circuit-closer. Automatic	P. C. F. McCambridge	330,037	Nov. 10	831	213	33	668
Circuit-controller	W. A. Leggo	329,308	Oct. 27	2582	665	33	490
Circuit-controller	W. A. Leggo	329,309	Oct. 27	2583	666	33	491
Circuit controller	L. H. McCullough	331,986	Dec. 8	1097	285	33	1204
Clamp: *See* Book and music clamp. Molding-clamp. Presser-clamp. Fishing-reel clamp. Printer's gage-clamp. Gripping-clamp. Skate-clamp. Hitching-strap clamp. Wire-clamp.							
Clamp for roof-scaffolds, &c	A. T. Barlow	330,546	Nov. 17	1503	402	33	806
Clapboards. Adjustable gage for supporting	H. Brand	332,323	Dec. 15	1561	415	33	1295
Clarifying and evaporating pan	C. M. Schwarz	333,166	Dec. 29	2771	726	33	1519
Clasp: *See* Bracelet-clasp. Suspender-strap clasp. Spectacle-holder clasp.							
Clasp for ribbon-rolls	E. W. Raymond	329,212	Oct. 27	2304	596	33	440
Clasp for suspenders and other articles	J. T. Budd	329,434	Nov. 3	11	3	33	507
Clay and separating the stones therefrom. Device for disintegrating	J. A. Boyd	328,756	Oct. 20	1643	428	33	314
Clay cutter and pulverizer	W. N. Graves	330,691	Nov. 17	1684	454	33	844
Cleaner: *See* Boiler-flue cleaner. Lamp-chimney cleaner. Boiler-tube cleaner. Pipe-line cleaner. Carpet-cleaner. Slate-cleaner. Flue-cleaner. Steam-boiler cleaner. Flume-rack cleaner. Tube-cleaner.							
Cleaning-fluid	C. T. Mutchler	331,810	Dec. 8	832	.....	33	1154
Cleaning, hulling, and grinding mill	J. Breitenmoser	328,105	Oct. 13	781	204	33	148
Clevis	J. R. Davis	331,984	Dec. 1	42	9	33	1007
Clevis. Plow-	A. D. Forbes	332,145	Dec. 8	1341	347	33	1245
Clip: *See* Paper-clip. Spring-clip.							
Clipping machine. Hair-	L. S. Lee	331,508	Dec. 1	357	96	33	1062
Clipping machine. Hair-	G. F. Sack	333,340	Dec. 29	3011	788	33	1563
Clipping machine. Hair-	C. K. Whittier and J. H. Donlon	330,535	Nov. 17	1490	398	33	804
Cloak. Circular-	T. D. Barter	331,179	Nov. 24	2330	631	33	970
Clock	H. L. Phillips	329,078	Oct. 27	2114	547	33	405
Clock. Alarm-	A. O. Jennings	332,455	Nov. 3	32	10	33	511
Clock. Electric	F. R. Field	328,709	Oct. 20	1655	429	33	317
Clock-escapement	C. M. Rhodes	328,149	Oct. 13	992	215	33	156
Clock for machinery. Speed-	W. H. Lord	328,509	Oct. 20	1491	370	33	274
Clock-frame	R. W. Lucius	332,965	Dec. 15	1505	393	33	1361
Clock movement. Secondary electric-	C. H. Pond	327,897	Oct. 6	502	131	33	90
Clock-pendulum protector	L. Erikson	333,130	Dec. 29	2710	710	33	1509
Clock-pendulums. Electric synchronizing device for	H. L. Bailey	332,987	Dec. 22	2510	664	33	1468
Clock. Primary electric	W. L. Stevens and E. J. Wescott	330,938	Nov. 24	2012	{543 544	33	911
Clock. Programme-	W. Akin	332,664	Dec. 22	2119	559	33	1395
Clock-regulator	G. L. Goodrich	332,891	Dec. 22	2379	629	33	1443
Clock-setting device. Electric-	J. F. Kettell	333,132	Dec. 29	2727	716	33	1512
Clock-setting device. Electric-	J. F. Kettell	333,133	Dec. 29	2729	717	33	1512
Clock striking mechanism	A. G. Hovde	330,606	Nov. 24	1953	529	33	900
Clock-synchronizer	A. Ramel and W. W. Dean	330,923	Nov. 24	1989	538	33	907
Clocks. Contact-maker for electric-	L. H. Spellier	330,632	Nov. 17	1604	429	33	827
Clocks in series. Electrical attachment for winding	C. H. Pond	327,898	Oct. 6	504	131	33	90
Closet-tubes. Apparatus for warming and disinfecting	L. Gühring and W. Köhrer	327,945	Oct. 6	567	147	33	102
Clothes and hat rack. Combined	J. S. Lash	330,497	Nov. 17	1442	365	33	796
Clothes-bar	W. D. Robinson	330,996	Nov. 24	1996	539	33	908
Clothes-cleansing machine	J. M. Chamberlain	332,588	Dec. 15	1957	{512 513	33	1350
Clothes-drier	C. F. Buehler	331,864	Dec. 8	820	237	33	1170
Clothes-drier	B. F. Buxton	329,690	Nov. 3	269	69	33	556
Clothes-drier	L. E. Hastings	328,484	Oct. 20	1274	331	33	247
Clothes-drier	L. A. Johnson	330,711	Nov. 17	1707	461	33	848
Clothes-drier	P. Lockie	328,852	Oct. 20	1763	460	33	337
Clothes-drier	F. G. Manley	328,855	Oct. 20	1766	461	33	337
Clothes-drier	J. H. Pearsall	328,968	Oct. 27	1942	{506 507	33	376
Clothes-drier	D. P. Sharp	330,159	Nov. 10	995	259	33	702
Clothes-drier	Z. Stephenson	330,749	Nov. 17	1764	475	33	858
Clothes-horse	A. W. Burnham	328,163	Oct. 13	860	228	33	166
Clothes-line	J. S. Wailes	330,646	Nov. 17	1621	436	33	831
Clothes-line fastener	J. H. Glashan	328,023	Oct. 13	671	176	33	128
Clothes-line fastener	A. H. Squires	328,824	Oct. 20	1725	449	33	331
Clothes-pin	L. B. Prindle	329,487	Nov. 3	83	23	33	521
Clothes-pounder	F. T. Roots	332,838	Dec. 22	2298	606	33	1420
Clothes-pounder	P. Selby	328,434	Oct. 13	1215	314	33	230
Clothes-washer	G. W. Crosby	331,037	Nov. 24	2128	577	33	934
Clothes-wringer	W. Bulkeley	333,107	Dec. 29	2680	705	33	1505
Clothes-wringer	H. C. Hopkins, Jr	328,945	Oct. 27	1904	498	33	369
Clothes-wringer	J. L. Kirby	329,051	Oct. 27	2072	536	33	398

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clothes-wringer	J. L. Kirby	330,984	Nov. 24	2071	561	33	923
Clothes-wringer	C. K. Stinson	327,616	Oct. 6	152	36	33	28
Clover-huller	A. Miller	331,646	Dec. 1	606	150	33	1104
Clover-huller	A. Miller and J. N. Kaller	327,812	Oct. 6	402	105	33	71
Clutch	E. Long	328,126	Oct. 13	806	210	33	153
Clutch	M. L. Metzger and A. Cooper	331,524	Dec. 1	379	102	33	1067
Clutch	A. J. Moyer	330,414	Nov. 17	1336	356	33	775
Clutch and coupling. Friction	W. T. McRae	332,931	Dec. 22	2427	642	33	1454
Clutch. Friction	E. Jordon	329,393	Oct. 27	2572	663	33	499
Clutch. Friction	C. Kaestner	328,786	Oct. 20	1677	437	33	321
Clutch. Friction	W. R. McDonald	333,143	Dec. 29	2740	719	33	1514
Clutch. Friction	W. B. Tatro	329,960	Nov. 3	597	153	33	616
Clutch. Friction	E. P. and H. C. Walter	329,244	Oct. 27	2345	607	33	448
Clutch. Friction	J. F. Loftus	328,495	Oct. 20	1295	334	33	250
Coal and rock drill	W. S. Bogle	333,278	Dec. 29	2928	766	33	1548
Coal-handling apparatus. Locking device for	J. Mayer	332,726	Dec. 22	2163	.....	33	1403
Coal. Imitation	O. A. Wheeler	332,575	Dec. 15	1942	508	33	1356
Coaster	W. A. Fulmer	328,267	Oct. 13	907	236	33	172
Coat	H. Emanuel	329,299	Oct. 27	2423	628	33	463
Coat. Pommel	E. C. Morris	331,152	Nov. 24	2292	621	33	963
Coating and covering for sides of rooms, &c. Combined	E. Kipper	333,469	Dec. 29	3186	830	33	1591
Coating handles, &c.	A. R. Ketcham	332,401	Dec. 15	1693	443	33	1314
Cock box for water and gas pipes. Stop	E. Jungenfeld and H. Rassbach	332,345	Dec. 15	1610	423	33	1300
Cock for ammonia gas. Stop	H. H. Sheldon	332,168	Dec. 8	1370	354	33	1250
Cock for atmospheric burners. Damper	S. D. Samuels	327,597	Oct. 6	125	29	33	24
Cock for sinks, &c. Waste	J. Buffet	329,809	Nov. 3	518	132	33	603
Cock or valve	J. E. Boyle	329,807	Nov. 3	514	131	33	602
Cock. Self-closing	H. A. Gorham	329,161	Oct. 27	2226	576	33	426
Cock. Stop and waste	D. Westervelt	333,369	Dec. 29	3047	795	33	1569
Cock. Stop and waste	E. Lindsley	327,561	Oct. 6	79	17	33	15
Cocks in gas and water service. Casing for street	F. W. Howell	331,061	Nov. 24	2155	585 / 586	33	939
Cocoanut pulp	F. Senn	331,559	Dec. 1	441	.....	33	1076
Coffee. Apparatus for treating hot roasted	J. C. Salzgeber	329,490	Nov. 3	99	24	33	522
Coffee-mill	E. H. and C. Morgan	329,065	Oct. 27	2060	543	33	401
Coffee-mill	E. H. and C. Morgan	333,248	Dec. 29	2878	752	33	1539
Coffee-pot	P. A. Covington	333,292	Dec. 29	2934	767	33	1549
Coffee-pot stand	J. Linders	333,315	Dec. 29	2963	781	33	1558
Coffee-roaster	M. J. Clark	331,615	Dec. 1	564	137	33	1096
Coffee-roaster	S. S. Kingery	328,949	Oct. 27	1908	499	33	370
Coffee-roaster	C. J. W. Shearer	331,898	Dec. 8	865	222	33	1160
Coffee-roaster	H. P. K. Peck and F. Thomassen	328,060	Oct. 13	724	189	33	137
Coffee-tank	W. Holdsworth	331,707	Dec. 1	695	171	33	1121
Coffin	A. S. Lovett	331,992	Dec. 8	1093	284	33	1203
Coffin	J. T. Richards	333,255	Dec. 29	2899	758	33	1543
Coffin	I. C. Shuler	330,492	Nov. 17	1358	362	33	790
Coffin	J. Weidenmann and O. Grüninger	329,582	Nov. 3	137	35	33	531
Coffins. Apparatus for lowering	F. Gamper	327,785	Oct. 6	362	94	33	64
Coffins into graves. Apparatus for lowering	H. M. Pierce	330,732	Nov. 17	1742	469	33	954
Coke. Furnace for the manufacture of	I. M. Kelley	332,613	Dec. 15	1990	521 / 522	33	1366
Coke. Manufacture of	H. M. Pierce	330,731	Nov. 17	1740	469	33	954
Coke. Manufacturing	A. J. Rossi	332,751	Dec. 22	2197	.....	33	1410
Cold. Production of	A. J. Rossi	332,752	Dec. 22	2198	.....	33	1410
Cold. Production of	R. Butterworth	329,812	Nov. 3	521	133	33	603
Collar	H. P. Huntoon	327,687	Oct. 6	253	62	33	44
Collar and cravat	V. S. Barber and S. D. Reynolds	330,456	Nov. 17	1300	370	33	785
Collar and hame. Combined	W. C. Agnew	331,750	Dec. 8	765	193	33	1143
Collar and hame. Combined horse	A. W. Tourgee	329,507	Nov. 3	109	29	33	526
Collar and hame. Horse	G. Van Wagenen	331,348	Dec. 1	127	31, 32	33	1021
Collar attachment. Horse	L. M. Brock and M. Wiener	332,230	Dec. 15	1454	377	33	1272
Collar for overcoats. Storm	S. B. Davis	331,871	Dec. 8	927	239	33	1171
Collar. Horse	M. F. Saner	330,623	Nov. 17	1593	426 / 427	33	925
Collar. Horse	W. H. Wetmore	329,111	Oct. 27	2157	559	33	413
Collar housing. Horse	R. Brownson	331,763	Dec. 8	780	197	33	1145
Collar. Lady's	E. Fiske	332,507	Dec. 15	1832	480	33	1338
Collar or cuff	E. Kipper	330,808	Nov. 17	1671	506	33	878
Collars. Fastening for sweat pads for horse	A. Ortmayer	331,813	Dec. 8	836	213	33	1155
Color-producing acids. Manufacture of	H. Vollbrecht and C. Mensching	333,034	Dec. 22	2586	.....	33	1482
Coloring-machine stop-motion	F. P. Fitz Simons	331,486	Dec. 1	326	88	33	1056
Coloring-matter derived from alphanaphthol and diazotoluol	H. Vollbrecht and C. Mensching	333,042	Dec. 22	2595	.....	33	1482
Coloring-matter derived from alphanaphtholdisulphonic acid	K. Vollbrecht and C. Mensching	333,035	Dec. 22	2587	.....	33	1482
Coloring-matter derived from diazobenzol and alphanaphthol	H. Vollbrecht and C. Mensching	333 041	Dec. 22	2594	.....	33	1482
Coloring-matter from betanaphthylamine sulpho-acid. Red	H. Prinz	332,520	Dec. 22	2298	.....	33	1428
Coloring-matter from diazobenzol and alphanaphtholdisulphonic acid	H. Vollbrecht and C. Mensching	333,039	Dec. 22	2592	.....	33	1482
Coloring-matter. Making	A. T. Böhme	329,125	Oct. 27	2180	.....	33	417
Coloring-matter obtained from tetrazo-ditolyl	C. Duisberg	329,632	Nov. 3	283	.....	33	559
Coloring-matter obtained from tetrazo-ditolyl	C. Duisberg	329,633	Nov. 3	284	.....	33	559
Coloring-matter. Production of new yellow	E. Frank	329,639	Nov. 3	289	.....	33	559
Coloring-matter. Violet	F. Fischer	329,637	Nov. 3	288	.....	33	559
Coloring-matter. Yellow	E. Frank	329,638	Nov. 3	288	.....	33	559
Colter. Plow	O. A. Essig	327,572	Oct. 6	471	123	33	84
Colter. Revolving	J. D. Loomer	328,127	Oct. 13	807	210	33	153
Colter. Rolling	L. D. Ball and J. T. Bender	331,935	Dec. 8	1026	267	33	1191
Comb: See Curry-comb.							
Comb for warping and beaming machines	T. C. Entwistle	333,399	Dec. 29	3085	805	33	1575

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Combing machine. Wool	J. Midgley	332,195	Oct. 27	2276	589	33	435
Combination-wrench	W. S. McKenzie	331,520	Dec. 1	375	101	33	1065
Commode	A. Eisenbach	331,120	Nov. 24	2247	611	33	955
Commode	F. Mink	333,321	Dec. 29	2967	782	33	1559
Commode. Child's nursery	D. A. Carter	331,806	Dec. 8	952	237 / 238	33	1170
Comparator	W. A. Rogers and G. M. Bond	332,110	Dec. 8	1286	334	33	1236
Compass-needle	G. Blanchard	332,780	Dec. 22	2231	588	33	1417
Compasses. Beam	L. E. Hickok	328,031	Oct. 13	662	179	33	130
Composite bar	R. H. Libby	332,405	Dec. 15	1696	444	33	1315
Composite bars. Making	R. H. Libby	332,406	Dec. 15	1697	444	33	1315
Composite roller	F. Taylor	329,099	Oct. 27	2140	553	33	410
Compound engine	P. Brotherhood	332,484	Dec. 15	1796	472	33	1332
Concentrating-machine	J. F. Westlake	328,627	Oct. 20	1484	387	33	284
Concentrator	G. S. Armstrong	327,915	Oct. 6	530	138	33	95
Concentrator	J. N. Randel	332,831	Dec. 22	2288	603	33	1428
Condenser. Steam-jet	L. Schutte	330,157	Nov. 10	991	258	33	701
Condenser. Surface	B. S. Benson	328,752	Oct. 20	1641	428	33	314
Condenser. Surface	F. M. Wheeler	332,468	Dec. 15	1775	464 / 465	33	1328
Condensing-engine	W. F. Martin	331,984	Dec. 8	1095	284	33	1203
Conductor	E. Clark	333,111	Dec. 29	2695	707	33	1506
Conductor-pipe	J. Leadley	332,402	Dec. 15	1693	443	33	1314
Conduit for wires	H. F. Cox	328,012	Oct. 13	657	173	33	126
Confection	F. P. Ziegler	330,659	Nov. 17	1637	440	33	835
Connecting-rods. Stub end for	L. Griscom	328,885	Oct. 20	1810	471	33	345
Connecting-rods. Stub end for	L. Griscom. (Reissue)	10,668	Dec. 1	762	192	33	1134
Converter	J. C. Dods	328,841	Oct. 20	1749	456	33	335
Converter for the manufacture of iron and steel	E. M. Butz	332,636	Dec. 15	2018	530	33	1371
Convertible chair	J. H. Batton	331,111	Nov. 24	2233	606 / 607	33	953
Convertible chair	J. K. Perley	332,285	Dec. 15	1529	401	33	1286
Convertible chair and velocipede	W. Holden	333,414	Dec. 29	3106	809	33	1578
Conveyer	W. Griesser	331,961	Dec. 8	1061	275 / 276	33	1198
Conveyer apparatus	H. Smith	333,352	Dec. 29	3026	790 / 791	33	1565
Conveyer-flights. Machine for making	S. Cox	328,013	Oct. 13	659	173 / 174	33	126
Cooker. Feed	C. H. Marshall	327,806	Oct. 6	395	102	33	69
Cooker. Steam	J. H. Parker	332,283	Dec. 15	1527	400	33	1285
Cooking apparatus. Steam	R. E. Deane	329,024	Oct. 27	2034	528	33	392
Cooking-vessels, &c. Automatic heat-regulator for	A. J. Simpson	332,295	Dec. 15	1541	404	33	1287
Cooler: See Beer-cooler. Corpse-cooler.							
Copying machine. Letter	J. F. Lash	333,312	Dec. 29	2978	779	33	1557
Copying-press	D. E. Kempster	328,039	Oct. 13	662	182	33	132
Cordage. Manufacturing	J. Good	330,315	Nov. 10	1189	318	33	741
Cords with silk threads. Machine for covering	E. Franke	328,884	Oct. 20	1808	471	33	345
Core-barrel. Collapsible	P. Wilkes	330,657	Nov. 17	1635	439	33	834
Core-making machine	R. Savage	329,959	Nov. 10	726	186	33	648
Cooking device for vessels	C. Müssel	331,253	Nov. 24	2444	661	33	989
Corkscrew	A. Friedmann and A. L. Blumenberg.	330,974	Nov. 24	2057	556	33	920
Corkscrew	M. A. Wier	330,357	Nov. 10	1253	333	33	752
Corn from the cob. Machine for cutting	B. Collins	327,864	Oct. 6	464	121	33	82
Corn-house	J. H. Bailey	331,755	Dec. 8	772	195	33	1144
Corn knife and shield	G. H. Sawyer	328,344	Oct. 13	1080	281	33	205
Corn-sheller	S. E. King and J. H. Gilman	330,495	Nov. 17	1440	385	33	795
Corn-shock compressor	J. B. Hughes	333,304	Dec. 29	2967	776	33	1555
Corset-tuning attachment	W. Buckley	331,679	Dec. 1	660	163	33	1114
Corulce	F. Maukey	332,723	Dec. 22	2159	570	33	1402
Corpse cooler and preserver	H. C. Johnson	328,686	Oct. 20	1558	406	33	298
Corset	J. S. Crotty	329,368	Oct. 27	2335	653	33	482
Corset	S. B Ferris	327,781	Oct. 6	359	93	33	63
Corset	T. S Gilbert	332,245	Dec. 15	1477	386	33	1276
Corset	M. M. Jones	332,202	Dec. 8	1407	363	33	1257
Corset	J. Mayer	328,129	Oct. 13	809	211	33	153
Corset	J. Mayer	328,130	Oct. 13	810	211	33	153
Corset	J. Mayer	328,131	Oct. 13	811	211	33	154
Corset-fastening	M. Hertz	330,113	Nov. 10	935	244	33	690
Corset fastening	A. Rammoser	330,152	Nov. 10	987	257	33	700
Corset-shaping machine	T. S. Gilbert	331,701	Dec. 1	686	169 / 170	33	1119
Corset-stay	M W. Henius	330,398	Nov. 17	1319	350	33	772
Corsets. Machine for shaping	S. H. Rosenberg	329,414	Oct. 27	2603	471	33	495
Corsets. Manufacture of surgical	J. W. Battershall	328,638	Oct. 20	1499	390	33	287
Corsets. Stiffening cord for	I. Newman and G. H. Blakesley	327,817	Oct. 6	408	106	33	71
Cots. Automatic head-support for	W. H. Wooldridge	329,610	Nov. 3	256	66	33	554
Cotter-pins. Machine for making	J. Adt	330,661	Nov. 17	1639	440 / 441	33	835
Cotter-pins. Making	J. Adt	330,660	Nov. 17	1638	440	33	835
Cotton-chopper	J. I. Greer, W. M. Harper, and J. Greer.	330,477	Nov. 17	1421	379	33	792
Cotton-chopper	M. M. McGregor	328,595	Oct. 20	1427	372	33	275
Cotton-chopper	J. B. Robinson	327,594	Oct. 6	123	28	33	23
Cotton chopper and cultivator	T. B. Goldsmith	330,314	Nov. 10	1188	317	33	741
Cotton-drier	J. H. Lorimer	332,543	Dec. 15	1695	495	33	1348
Cotton elevator and cotton-gin feeder	A. D. Thomas	331,841	Dec. 8	887	220	33	1164
Cotton-gin	O. T. Bugg	333,387	Dec. 29	3067	800	33	1573
Cotton-gin	F. C. Gammons	327,936	Oct. 6	559	145	33	100
Cotton-gin	F. C. Gammons	327,937	Oct. 6	530	145	33	100
Cotton-gin	J. T. Nixon and D. N. Cress	331,729	Dec. 1	730	183	33	1198
Cotton-gin	G. L. Rollins	328,067	Oct. 13	733	191	33	130

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cotton-gin feeder	O. Washburne	328,159	Oct. 13	847	220	33	168
Cotton-gin rib	F. C. Gammons	332,069	Dec. 8	1221	319	33	1225
Cotton-gin rib	J. A. Smiley	332,296	Dec. 15	1543	404	33	1288
Cotton or hay press	L. L. Taylor	333,359	Dec. 29	3037	793	33	1567
Cotton-packing device	D. C. Summers	332,304	Dec. 15	1552	406, 407	33	1289
Cotton-picker stem	C. T. Mason, Jr.	331,514	Dec. 1	365	98	33	1064
Cotton-picking device	G. Beekman	332,865	Dec. 22	2342	619	33	1436
Cotton-press	R. F. Horton	331,300	Dec. 1	61	15	33	1010
Cotton-press	G. McGovern	328,798	Oct. 20	1693	441	33	324
Cotton-press packing attachment	J. B. Bradford	327,858	Oct. 6	457	118, 119	33	81
Cotton-sliver eveners. Device for adjusting	E. P. Phillips	330,601	Nov. 17	1825	492	33	869
Cotton-stalk chopper	H. Thiel	331,922	Dec. 8	1011	262	33	1167
Countersink	G. W. Abbott and G. S. Forrest	327,641	Oct. 6	189	46	33	34
Countersink	F. Leu	328,320	Oct. 13	1046	270	33	198
Countersiuk	G. R. Valentine	332,308	Dec. 15	1558	409	33	1291
Coupling: *See* Belt-coupling. Pipe-coupling. Cable-coupling. Railway-rail coupling. Car-coupling. Thill-coupling. Hose-coupling. Thill and pole coupling. Lightning-rod coupling. Wagon-reach coupling. Whiffletree-coupling.							
Coupling and union. Universal angle	H. F. Hodges	327,877	Oct. 6	476	124	33	84
Coupling-bolt	M. Miller	331,425	Dec. 1	248	65	33	1042
Cover for chamber-vessels	J. S. Davison	329,441	Nov. 3	20	6	33	508
Cradle	C. Streit	332,564	Dec. 15	1920	502	33	1353
Cranberry-gatherer	D. Lumbert	331,983	Dec. 8	1093	284	33	1203
Crane	J. Sutherland	328,081	Oct. 13	753	196, 197	33	142
Crane and derrick	W. S. Doan	329,148	Oct. 27	2208	572	33	422
Crane. Traveling	E. Samuel	329,219	Oct. 27	2311	598	33	442
Crate	E. F. Barton	332,376	Dec. 15	1658	435	33	1308
Crate	G. Wilkin	332,653	Dec. 22	2321	615	33	1432
Crate. Folding	W. H. Cadwell	328,381	Oct. 13	1145	295	33	216
Crate. Folding	W. C. Doubleday	333,000	Dec. 22	2536	668	33	1472
Crate for fruit, &c	W. F. Redding	330,620	Nov. 17	1591	426	33	825
Crayon and eraser holder for blackboards	I. W. Barnhart	328,177	Oct. 13	874	227	33	165
Cream, egg, and liquor mixer	R. M. Eastman	330,929	Nov. 17	1860	502	33	876
Creamer and refrigerator. Combined	F. W. Moseley	330,845	Nov. 17	1862	509	33	879
Creamer. Centrifugal	H. Belmling	327,756	Oct. 6	328	84, 85	33	58
Cremation-furnace	C. J. Eames	331,779	Dec. 8	797	202	33	1148
Crib	F. W. Clark	329,016	Oct. 27	2022	524	33	290
Crib	F. A. Tyler	328,157	Oct. 13	845	220	33	160
Crimping-machine	C. M. Kimball	331,795	Dec. 8	816	207	33	1151
Cross-over switch	N. Cort	332,641	Dec. 15	3028	539	33	1372
Crusher: *See* Ore-crusher. Seed and grain crusher. Rock-crusher.							
Crushing-machine	A. Higley	329,553	Nov. 3	181	48	33	539
Crushing roll	E. A. Wall	332,978	Dec. 22	2493	659	33	1465
Crutch	L. Ladomus	332,808	Dec. 22	2260	596	33	1422
Crutch	J. W. Tuttle	332,684	Dec. 15	3093	550	33	1384
Cube. Aggregate	H. Keeler	332,256	Dec. 15	1494	391	33	1279
Cuff	R. Butterworth	329,813	Nov. 3	523	133	33	603
Cuff-adjuster	L. A. Stillwagon	333,485	Dec. 29	3200	836	33	1594
Cuff-fastener	J. V. Pilcher	329,207	Oct. 27	2295	594	33	438
Cuff-holder	S. T. Atkin and W. L. Steele	330,982	Nov. 10	1147	305	33	732
Cuff holder	D. Greenhoot	330,692	Nov. 17	1685	455	33	844
Cuff-holder	E. Smith	331,335	Dec. 1	109	26	33	1018
Cuff-retainer	J. M. Hawley	333,297	Dec. 29	2956	772	33	1553
Cuff-retainer	W. L. Weatherly	328,735	Oct. 20	1625	423	33	311
Culinary beater	E. Baltzley	332,375	Dec. 15	1655	434	33	1308
Cultivator	H. M. Abbercrombie	330,864	Nov. 24	1913	519	33	893
Cultivator	J. O Adams	331,365	Dec. 1	153	39	33	1026
Cultivator	R. H. Avery and L. B. Berrien	329,802	Nov. 3	505	129	33	601
Cultivator	D. W. Bash	327,754	Oct. 6	327	84	33	57
Cultivator	D. W. Boyce	329,707	Nov. 3	380	97	33	577
Cultivator	T. L. Brooks	332,044	Dec. 8	1185	310	33	1219
Cultivator	P. C. Brown and T. P. Bragg	330,467	Nov. 17	1409	374	33	789
Cultivator	G. Carrothers	330,677	Nov. 17	1662	448	33	840
Cultivator	L. C. Chamberlin	333,280	Dec. 29	2931	767	33	1548
Cultivator	L. E. Chapin	329,868	Nov. 10	636	162	33	631
Cultivator	G. M. Clark	330,960	Nov. 24	2042	532	33	917
Cultivator	A. Cox	330,211	Nov. 10	1060	276	33	715
Cultivator	W. Cox	328,193	Oct. 13	891	231	33	169
Cultivator	T. H. Crooks	329,819	Nov. 3	530	135	33	605
Cultivator	J. J. Fraikin	330,667	Nov. 17	1675	452	33	842
Cultivator	J. H. Frazee	331,048	Nov. 24	2140	580	33	936
Cultivator	C. C. Hunter	331,885	Dec. 8	951	246	33	1176
Cultivator	W. H. Hunter	333 227	Dec. 29	2858	747	33	1585
Cultivator	J. M. W. Long	329,919	Nov. 10	669	171	33	637
Cultivator	J. Macphail	330,794	Nov. 17	1817	489, 490	33	867
Cultivator	T. W. McDill	332,813	Dec. 22	2264	597	33	1423
Cultivator	L. D. Monroe and G. W. Wiggins	330,341	Nov. 10	1220	326	33	747
Cultivator	J. B. Morrison	332,355	Dec. 15	1630	427, 428	33	1303
Cultivator	W. S. Pates	329,580	Nov. 3	227	59	33	540
Cultivator	G. W. Rice	331,913	Dec. 8	990	256	33	1183
Cultivator	J. C. Rosebaugh	332 165	Dec. 8	1368	354	33	1250
Cultivator	H. H. Sater	333,163	Dec. 29	2766	725	33	1518

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cultivator	H. C. Stahl	331,738	Dec. 1	742	186, 187	33	1129
Cultivator	C. Whitehall	330,761	Nov. 17	1779	479	33	861
Cultivator and furrower. Wheel	I. Libbey	331,413	Dec. 1	232	60, 61	33	1039
Cultivator and harrow	D. Walls	331,589	Dec. 1	592	196	33	1069
Cultivator and land-marker. Combined	B. F. Birkett	331,028	Nov. 24	2119	574	33	932
Cultivator and weed-cutter. Combined	L. B. Hogue	327,683	Oct. 6	248	61	33	43
Cultivator. Cotton-	J. H. Fowler	328,397	Oct. 13	1164	300	33	290
Cultivator cotton-chopper attachment	H. Henriksen	327,681	Oct. 6	245	60	33	43
Cultivator for listed corn	J. C. McCandless and O. King	330,143	Nov. 10	977	254	33	699
Cultivator. Garden-	P. D. Graham	331,960	Dec. 8	1059	275	33	1197
Cultivator. Listing-	J. P. Black	329,530	Nov. 3	148	37	33	533
Cultivator. Revolving	J. T. Campbell	329,137	Oct. 27	2198	569	33	490
Cultivator-shovel	W. Kinne and J. Kastner	332,156	Dec. 8	1357	352	33	1248
Cultivator. Sugar-cane	E. Wiard	327,632	Oct. 6	179	44	33	32
Cultivator-tooth	J. T. Bond	332,585	Dec. 15	1955	512	33	1359
Cultivator. Wheel-	E. P. Lynch	329,921	Nov. 10	671	172	33	637
Cup: *See* Oil-cup. Sponge-cup.							
Cupboard or kitchen-cabinet	W. T. McClure	327,701	Oct. 6	266	67	33	47
Cupola-furnace and converter. Combined	M. Lysett	328,042	Oct. 13	695	183	33	133
Curb and gutter. Street	G. D. Sutton	329,342	Oct. 27	2492	643	33	475
Curb and gutter. Street	G. D. Sutton	329,344	Oct. 27	2495	643	33	476
Curb. Street	G. D. Sutton	329,343	Oct. 27	2493	643	33	475
Current-motor. Floating	W. Main	327,888	Oct. 6	487	127, 128	33	86
Current-motor. Floating	W. Main	327,889	Oct. 6	490	128	33	87
Current-motor. Floating	W. Main	328,496	Oct. 20	1286	334, 335	33	250
Current-motor. Floating	W. Main	328,497	Oct. 20	1288	335, 336	33	251
Current-motor. Floating	W. Main	328,593	Oct. 20	1423	370, 371	33	274
Current-wheel	W. J. McGavock	330,503	Nov. 17	1450	388	33	797
Current-wheel	A. R. Nellis	331,996	Dec. 8	1109	288	33	1205
Curry-comb	A. C. Decker	333,451	Dec. 29	3154	825	33	1586
Curry-comb	W. P. Kellogg	327,695	Oct. 6	260	65	33	46
Curry-comb	W. E. Lawrence	330,593	Nov. 17	1556	417	33	818
Curtain. Adjustable window-	W. McManes and J. C. Losee	331,901	Dec. 8	971	251	33	1180
Curtain and material therefor. Flexible	H. S. Hale	333,408	Dec. 29	3098	807, 808	33	1577
Curtain-cabinet	B. Vallett	330,645	Nov. 17	1620	436	33	831
Curtain-fixture	A. C. F. Grimm	330,579	Nov. 17	1541	412	33	814
Curtain-fixture	W. C. Kelly	332,907	Dec. 22	2404	635	33	1448
Curtain-fixture	L. Page and L. Weber. (Reissue)	10,662	Nov. 17	1910	517	33	885
Curtain-fixture	L. Page and L. Weber	332,104	Dec. 8	1278	339	33	1235
Curtain-fixture	M. H. Sly	327,631	Oct. 6	425	110	33	75
Curtain-holder	N. Wilson	333,045	Dec. 22	2598	680	33	1483
Curtain. Lace	J. F. Forth	333,002	Dec. 22	2539	669	33	1473
Curtain-pole joint	J. Munger	333,476	Dec. 29	3190	833	33	1592
Curtain-pole joint	J. Spruce	327,634	Oct. 6	429	111	33	75
Curtain-stretcher	A. P. Bohlinger	328,278	Oct. 13	996	259	33	188
Curtain-stretcher	L. E. Lafferty	331,305	Dec. 1	67	16	33	1011
Curtain. Window-	F. H. Goodyer	332,604	Dec. 15	1980	518	33	1363
Cuspidor	M. H. Leveille	332,094	Dec. 8	1262	328	33	1232
Cuspidor	O. W. Smith	332,016	Dec. 8	1136	297	33	1210
Cuspidor and dust-trap	P. H. Deis and S. W. Croxton	332,330	Dec. 15	1588	417	33	1296
Cuspidor for railway-cars	J. J. Enright and D. J. May	331,692	Dec. 1	674	167	33	1117
Cut-off. Automatic	P. Sears	331,452	Dec. 1	282	77	33	1049
Cut-off. Cistern	G. W. and W. Lawhon	330,410	Nov. 17	1332	355	33	774
Cut-off for bath-boilers. Anti-freezing non-exploding	W. C. Ellis	332,387	Dec. 15	1673	438	33	1311
Cut-off for engines. Electro-magnetic	R. A. Bailey	331,674	Dec. 1	645	159, 160	33	1111
Cut-off for hydraulic and other engines	L. B. Tubbs	329,417	Oct. 27	2608	473, 474	33	496
Cut-off gear for steam-engines	J. Young	330,361	Nov. 10	1261	335	33	754
Cut-off valve	P. O. Solie	327,902	Oct. 6	509	132	33	91
Cut-off-valve gear	J. J. Holland	332,397	Dec. 15	1685	441	33	1313
Cut-off-valve gear	J. D. Cité	332,381	Dec. 15	1664	436	33	1309
Cut-off valve. Rotary	A. Nelson	332,101	Dec. 8	1272	330, 331	33	1234
Cutter: *See* Bark-cutter. Hay or straw cutter. Bread-cutter. Pipe-cutter. Button-hole cutter. Rod-cutter. Cigar-cutter. Stalk and clod cutter. Cigar-tip cutter. Straw-cutter. Clay-cutter. Ticket-cutter. Feed-cutter. Tube-cutter. Glass-tube cutter. Vegetable-cutter.							
Cutter-head	A. Hopping	331,970	Dec. 8	1070	278	33	1199
Cutter-head	E. C. Mershon	329,756	Nov. 3	447	113	33	589
Cutter-head	E. K. Patten	335,260	Nov. 10	1115	296, 297	33	726
Cutting bifurcated garments	J. C. Tracey	330,073	Nov. 10	888	230	33	680
Cutting, chipping, &c. Machine for	G. R. Cullingworth	328,197	Oct. 13	895	232	33	170
Cylinder engine. Revolving	J. J. Blair	331,939	Dec. 8	1031	268	33	1192
Cylinders. Forming teeth upon	O. T. Bugg	329,811	Nov. 3	521	133	33	603
Dam. Automatic	H. Harding	332,895	Dec. 22	2384	630	33	1444
Damper	C. G. Zipf	330,955	Nov. 24	2036	550	33	916
Damper-regulator. Automatic	R. Beachman	329,995	Nov. 10	776	199	33	657
Damper-regulator. Electric	W. E. Facer	332,066	Dec. 8	1218	318	33	1224
Dash-making machine	R. G. Wood	329,424	Oct. 27	2623	477	33	497
Dead-centers. Device for overcoming	S. T. Shortess	331,914	Dec. 8	992	257	33	1184

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dental appliance for mixing amalgam	D. Genese	330,011	Nov. 10	799	205	33	661
Dental-chair attachment	G. A. Dille	329,659	Oct. 20	1327	397	33	292
Dental-chair head-rest	A. R. Merrick	333,019	Dec. 22	2563	674	33	1479
Dental operations. Electrical apparatus for	C. A. Eisenhart	331,121	Nov. 24	2248	611	33	955
Dental plugger	W. K. Moore	329,587	Nov. 3	222	58	33	549
Dental suction-plate former	J. Spyer	331,840	Dec. 8	887	229	33	1164
Dentistry	J. L. Whinery	328,442	Oct. 13	1227	318	33	232
Dentists' chairs. Lowering mechanism for	L. Stuck	332,626	Dec. 15	2005	526	33	1368
Deodorizing and disinfecting apparatus	W. A. Hawkins	329,645	Nov. 3	297	75	33	561
Derrick. Adjustable	A. P. Cadden	330,374	Nov. 17	1294	341	33	766
Derrick. Traveling	H. Case	330,570	Nov. 24	1990	521	33	894
Desk	J. F. Appell	329,992	Nov. 10	771	197	33	656
Desk	L. Larson	330,409	Nov. 17	1331	354	33	774
Desk-chair	A. Cutler	330,392	Nov. 17	1294	343	33	768
Desk. Portable	C. Newbourg	327,816	Oct. 6	407	106	33	71
Desk. School	N. Johnson	329,175	Oct. 27	2241	580	33	428
Desk. School	G. Munger	329,201	Oct. 27	2285	592	33	437
Desk. School	J. M. Sander	331,549	Dec. 1	413	111	33	1073
Desk, wash-stand, and other furniture	J. Penney	332,360	Dec. 15	1638	429	33	1304
Detector: *See* Time-detector.							
Dials. Transferring letters and designs to	F. Schmalz	332,678	Dec. 15	2088	.....	33	1388
Die: *See* Brick or tile die.							
Die	W. Allderdice	329,801	Nov. 3	504	128	33	600
Die-presses. Adjusting-screw for	F. M. Leavitt	330,791	Nov. 17	1812	488	33	867
Die-stock	J. C. Baner	330,868	Nov. 24	1916	520	33	898
Die-stock	J. H. Hines	332,801	Dec. 22	2254	594	33	1421
Digger: *See* Post-hole digger. Stubble-digger. Potato-digger.							
Direct-acting engine	R. Welford	328,626	Oct. 20	1483	387	33	284
Direct-acting engine	C. C. Worthington	332,857	Dec. 22	2326	616, 617	33	1438
Dish. Butter	S. W. Babbitt	330,193	Nov. 10	1038	271	33	710
Dish. Covered	W. F. Snively	329,228	Oct. 27	2324	602	33	444
Dish. Folding soap	E. Hull	331,062	Nov. 24	2159	586	33	940
Dish-washer	C. A. Haskins	329,452	Nov. 3	30	9	33	510
Disinfectant and cleansing liquid for animals, &c	H. Endemann	331,190	Nov. 24	2349	.....	33	973
Disinfecting apparatus. Portable	W. W. Rosenfield	330,853	Nov. 17	1894	513	33	881
Disinfecting water-closets	W. M. Ernst	331,693	Dec. 1	675	167	33	1117
Disintegrating jute, &c. Machine for	F. Luft	330,968	Nov. 24	2075	562	33	928
Distance-instrument	J. L. Buford	330,818	Nov. 17	1847	497, 498	33	878
Distilling and concentrating liquids	C. C. Peck	329,073	Oct. 27	2102	545, 546	33	408
Distilling and concentrating liquids	C. C. Peck	329,074	Oct. 27	2107	546	33	464
Distilling and concentrating liquids. Apparatus for	C. C. Peck	329,072	Oct. 27	2098	545	33	408
Distilling apparatus	F. T. King	328,316	Oct. 13	1041	269	33	197
Distilling wood. Apparatus for	T. H. Berry	332,320	Dec. 15	1577	414	33	1294
Ditching and tile-laying machine	J. T. Dougine	333,114	Dec. 29	2701	708, 709	33	1507
Ditching and tile-laying machine	J. C. White	332,126	Dec. 8	1310	340	33	1240
Ditching-machine	P. Brolin	333,441	Dec. 29	3139	820, 821	33	1584
Ditching-machine	D. Fisher	331,875	Dec. 8	931	241	33	1178
Ditching-machine	J. W. Humphreys	328,407	Oct. 13	1180	305, 306	33	223
Ditching-machine	J. W. Humphreys	330,331	Nov. 10	1208	323	33	745
Ditching-machine	F. X. Lemay	330,909	Nov. 24	1970	533	33	903
Ditching-machine	F. M. Marquis	328,697	Oct. 20	1572	409, 410	33	301
Ditching-machine	S. M. Stewart	331,217	Nov. 24	2389	646	33	989
Ditching, tile-forming, and wire-laying machine. Mole	S. Montgomery	330,724	Nov. 17	1725	465, 466	33	851
Divers. System of communication with	P. Huntley	329,391	Oct. 27	2569	662	33	486
Doll-body with corsets	P. Goldsmith	332,248	Dec. 15	1480	387	33	1276
Domestic and agricultural boiler	E. Richmond	331,446	Dec. 1	274	74, 75	33	1047
Domino	F. H. Richards	331,652	Dec. 1	615	152	33	1105
Door	J. W. Moyer	328,900	Oct. 20	1827	476	33	349
Door-check	J. A. Coultas	328,192	Oct. 13	990	231	33	168
Door-check	G. R. Elliott	329,298	Oct. 27	2422	628	33	463
Door-check	W. E. Gard	333,405	Dec. 29	3094	807	33	1577
Door-check	A. Maurer	330,138	Nov. 10	972	253	33	697
Door-check	T. B. Comins, Jr	332,056	Dec. 8	1201	313	33	1221
Door-check and closer	G. R. Elliott	329,296	Oct. 27	2419	627	33	463
Door-check. Pneumatic	C. P. Coubs	329,624	Nov. 3	273	71	33	557
Door-fastening	G. W. Wright	333,093	Dec. 22	2664	699	33	1495
Door-fastening. Double	A. J. Bates	330,286	Nov. 10	1154	306	33	733
Door-hanger	J. Braun	332,185	Dec. 8	1388	358	33	1253
Door-hanger	N. Clark	328,382	Oct. 13	1148	295	33	217
Door-hanger	C. C. Runyan	331,258	Nov. 24	2453	662	33	991
Door-hanger. Sliding	M. Hayden and W. C. Dixon	330,236	Nov. 10	1056	287	33	720
Door-lock. Sliding	W. E. Sparks	331,094	Nov. 24	2206	597	33	948
Door-lock. Sliding	J. Finck	328,114	Oct. 13	793	207	33	156
Door-operating device	P. J. Conroy	332,495	Dec. 15	1809	475	33	1334
Door or shutter fastener	E. C. Barton	332,775	Dec. 22	2223	586	33	1415
Door-plate	N. Lucas	330,339	Nov. 10	1218	326	33	746
Door roller. Sliding	D. H. Parkhill, Jr	329,673	Nov. 3	331	84	33	567
Door-securer	A. M. Roscoe	328,814	Oct. 20	1712	446	33	328
Door-sill	W. S. Brickell	330,090	Nov. 10	911	236	33	684
Door. Sliding	G. R. Elliott	329,297	Oct. 27	2421	628	33	463
Door-spring	J. Bardsley	328,000	Oct. 27	1992	518	33	385
Door spring and check	W. F. Falls	329,032	Oct. 27	2044	530	33	394
Door spring and check. Combined	J. S. Stevens and C. G. Major	328,077	Oct. 13	744	194	33	141
Door-strip	W. Clark	330,563	Nov. 17	1505	408	33	811
Doors. Adjustable stop for sliding	J. B. Chase	333,281	Dec. 29	2982	767	33	1549
Douche apparatus	H. S. Paine	331,255	Nov. 24	2448	661	33	990
Double-tree	W. C. Peckham	329,075	Oct. 27	2109	547	33	404
Doubling and spinning silk. Machine for	W. Nugent	332,823	Dec. 22	2277	600	33	1425
Doubling and twisting machines. Thread-breaking attachment for	F. Haggas	332,512	Dec. 15	1839	482	33	1339
Dough. Converting flour into	P. F. Smith	332,018	Dec. 8	1138	297	33	1211
Dough. Mechanism for converting flour into	P. F. Smith	332,017	Dec. 8	1138	297	33	1411
Dovetailing-machine	L. P. Garcin	331,491	Dec. 1	333	90	33	1057
Dovetailing-machines. Automatic switch for	C. Garff	333,295	Dec. 29	2954	771	33	1558
Dowel-plus. Machine for making	C. J. Robinson	331,733	Dec. 1	736	185	33	1127
Draft device. Vehicle	T. H. Paessler	331,156	Nov. 24	2299	622, 623	33	964
Draft-equalizer	J. H. Ingersoll	332,805	Dec. 22	2258	595	33	1421
Draft-equalizer	M. Kano	328,037	Oct. 13	690	182	33	132
Drag. Marine	W. H. Hart	332,898	Dec. 22	2387	631	33	1445
Drainer. Folding dish	F. Eaton	329,150	Oct. 27	2210	573	33	423
Draw-bar	H. L. Peck	328,969	Oct. 27	1944	507	33	376
Draw-bar	J. Trippett, T. and H. Searls	328,696	Oct. 13	758	198	33	143
Draw-bars. Apparatus for manufacturing	J. H. Simpson	328,435	Oct. 13	1216	315, 316	33	230
Draw-bars. Manufacturing	J. H. Simpson	328,436	Oct. 13	1220	316	33	231
Drawers and overalls	L. Goldsmith	331,959	Dec. 8	1056	275	33	1197
Drawers. Device for securing a series of	M. Fiset	332,337	Dec. 15	1600	490, 491	33	1290
Drawers-support	T. E. Scott	329,961	Nov. 10	728	186	33	648
Drawing and spinning machines. Roll for	C. Coupland	332,998	Dec. 22	2534	668	33	1472
Drawing-board	E. Jordan	329,392	Oct. 27	2570	663	33	488
Drawing-roll	N. L. Randall	331,328	Dec. 1	100	23	33	1016
Dray. Three-wheeled	S. Perry and D. A. Sprague	328,514	Oct. 20	1310	340	33	255
Dredger	J. N. S. Williams	331,929	Dec. 8	1018	264, 265	33	1189
Dredges. Rotary cutter for	J. H. Bolles	331,861	Dec. 8	914	236	33	1169
Dredging apparatus	G. F. Badger	329,428	Nov. 3	3	1	33	505
Dress-shield	D. C. Hall	331,963	Dec. 8	1064	276	33	1198
Dress-waists. Attaching stiffenings to	E. K. Warren	327,626	Oct. 6	169	41	33	31
Drier: *See* Bone-black drier. Fruit-drier. Clothes-drier. Grain-drier. Cotton-drier. Lumber-drier.							
Drier	L. Hagen	330,018	Nov. 10	808	207	33	662
Drier	D. Henderson	332,199	Dec. 8	1404	363	33	1256
Drier	J. F. Johnstone	327,948	Oct. 6	572	149	33	103
Drier	W. H. Rogers	327,900	Oct. 6	507	132	33	91
Drill: *See* Coal and rock drill. Rock-drill. Fertilizer-drill. Twist-drill. Grain-drill. Well-drill. Ratchet-drill.							
Drill core-breaker. Diamond	J. P. Griscom	327,942	Oct. 6	564	147	33	101
Drill core-breaker. Diamond	J. P. Griscom	327,943	Oct. 6	566	147	33	102
Drill-press	W. Evans	332,242	Dec. 15	1474	384, 385	33	1275
Drill-rods. Apparatus for manipulating	L. and J. P. Griscom	328,213	Oct. 13	912	237	33	174
Drill-rods. Guide-clamp for	J. P. Griscom	327,944	Oct. 6	567	147	33	102
Drills. Machine for grinding	F. Chase	331,115	Nov. 24	2240	609	33	954
Drills. Scraper for wheels of wheat	H. Thoman	330,169	Nov. 10	1008	263	33	705
Drills while being ground. Mechanism for supporting and guiding	J. Birkenhead	327,758	Oct. 6	330	85	33	58
Drilling-machine	F. Gut	328,886	Oct. 20	1810	472	33	345
Drilling-machine	F. B. Miles	331,075	Nov. 24	2174	590	33	942
Drinking-fountain for poultry	A. K. Bates	328,749	Oct. 20	1638	427	33	313
Drop-movement for pocket utensils	S. M. Brougham	331,941	Dec. 8	1034	268	33	1193
Drum and ventilator. Heating	J. Springer	330,633	Nov. 17	1606	429	33	827
Drum. Friction	A. Briggs	327,510	Oct. 6	7	2	33	4
Drum. Heating	M. Ryan	329,857	Nov. 3	586	150	33	614
Drum. Shipping	J. H. Preater	327,589	Oct. 6	116	27	33	22
Drum. Spring-actuated	J. R. H. Hinton	329,836	Nov. 3	559	142	33	609
Drying apparatus. Platen for	A. S. Nichols	331,532	Dec. 1	394	106	33	1069
Drying-cylinders. Construction of	J. Hawthorn and J. P. Liddell	332,901	Dec. 22	2394	632	33	1446
Dust-arrester	W. Hagenberg	333,217	Dec. 29	2841	743	33	1531
Dust-collector	N. W. Holt	333,463	Dec. 29	3172	829	33	1590
Dust-collector	C. H. Morgan	333,020	Dec. 22	2564	674, 675	33	1478
Dust-collector	C. H. Morgan	333,021	Dec. 22	2567	675	33	1478
Dust-collector	W. Richardson	327,825	Oct. 6	419	109	33	73
Dust hood and blower. Portable	M. E. Thompson	328,067	Oct. 13	760	198	33	143
Dust-pan	S. Cloud	332,591	Dec. 15	1960	513	33	1360
Dust-pan	N. T. Folsom	329,382	Oct. 27	2555	658, 659	33	486
Dye-stuff from naphthol. Manufacture of	H. Vollbrecht and C. Mensching	333,037	Dec. 22	2590	.....	33	1482
Dye-stuff from naphthol. Manufacture of	H. Vollbrecht and C. Mensching	333,038	Dec. 22	2591	.....	33	1482
Dye-stuff made from diazo-naphthaline	M. Hoffmann	332,528	Dec. 15	1870	.....	33	1344
Dye-stuff or coloring-matter. Red	E. Elsaesser	329,634	Nov. 3	284	.....	33	559
Dye-stuffs. Production of blue	A. Kern and C. L. Müller	327,953	Oct. 6	579	.....	33	104
Dye-stuffs. Production of new violet	F. Fischer	329,636	Nov. 3	287	.....	33	559
Dye-vat attachment	W. H. Rankin	332,157	Dec. 29	2760	723	33	1517
Dyeing and sizing apparatus	S. Sanford	327,599	Oct. 6	127	30	33	24
Dyeing aniline-black	A. N. Dubois	331,777	Dec. 8	795	.....	33	1148
Dyeing apparatus	L. Pfaff	329,483	Nov. 3	78	21, 22	33	520
Dyeing, bleaching, &c. Apparatus for	J. O. Obermaier	332,740	Dec. 22	2181	576	33	1407
Dyeing. Composition of matter to be used in	M. E. Waldstein and A. Müller	330,275	Nov. 10	1137	.....	33	730

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Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dyeing, sizing, and wringing yarn. Apparatus for	S. Spencer	332,964	Dec. 22	2475	656	33	1462
Dynamite	R. S. Penniman and J. C. Schrader	333,149	Dec. 29	2750	.....	33	1516
Dynamite	R. S. Penniman and J. C. Schrader	333,150	Dec. 29	2752	.....	33	1516
Dynamite	J. C. Schrader	333,346	Dec. 29	3019	.....	33	1564
Dynamite	J. C. Schrader	333,347	Dec. 29	3020	.....	33	1564
Dynamite and making the same	J. C. Schrader	333,348	Dec. 29	3022	.....	33	1564
Dynamometer	J. L. Cheney	328,650	Oct. 20	1514	393	33	290
Dynamometer or motive-power balance	E. A. Bourry	332,697	Dec. 22	2124	560	33	1396
Ear-ring	G. M. Hathaway	331,638	Dec. 1	598	148	33	1102
Earth and moon. Device for representing the motions of the	W. W. Whitcomb	327,631	Oct. 6	176	43	33	32
Earthenware. Plated hollow	D. S. Plumb	332,435	Dec. 15	1737	455	33	1321
Easel	D. Dick	333,263	Dec. 29	2823	739	33	1528
Edging-trimming machine	J. B. West	331,015	Nov. 24	2104	569	33	929
Educational device for the illustration of longitude and time.	D. C. Young	328,629	Oct. 20	1489	388	33	285
Egg-beater	W. C. Burry	329,457	Oct. 20	1244	323	33	242
Egg-beater	D. B. Rock	332,837	Dec. 22	2297	605	33	1429
Egg-beater	G. H. Thomas	331,662	Dec. 1	628	155	33	1108
Egg-beater	G. L. Dale	328,110	Oct. 13	789	205	33	149
Egg-boiler. Automatic	W. B. Smith	331,916	Dec. 8	993	257	33	1184
Egg-case-cover fastener	W. H. Silver	329,859	Nov. 3	587	150	33	615
Egg-poacher	G. W. Baumgartner	333,100	Dec. 29	2676	702	33	1503
Egg-preserver. Rotary	G. B. Hakins	333,069	Dec. 22	2624	688	33	1488
Egg preserving apparatus	W. H. Silver	333,350	Dec. 29	3025	790	33	1565
Egg-tiner	F. D. Griffin	329,387	Oct. 27	2563	661	33	467
Egga. Device for preserving	M. Cohn	332,492	Dec. 15	1804	474	33	1333
Elastic gore for wearing-apparel	C. W. Holtzer	327,878	Oct. 6	477	124	33	85
Electric battery	T. L. Kauffer	328,687	Oct. 20	1559	406	33	298
Electric battery	T. L. Kauffer	328,948	Oct. 27	1907	498	33	369
Electric cables. Testing	W. R. Patterson	330,048	Nov. 10	847	218	33	671
Electric circuit-breaker	C. L. Bruns	329,808	Nov. 3	516	131, 132	33	602
Electric circuits. Device for making and breaking	H. P. Brown	330,466	Nov. 17	1407	374	33	788
Electric earth-battery	G. F. Dieckmann	329,724	Nov. 3	403	103	33	582
Electric-light regulator	P. Lange	330,244	Nov. 10	1097	290, 291	33	722
Electric-light support	C. L. Travis	329,510	Nov. 3	114	30	33	527
Electric lighting. Incandescent	H. P. Brown	330,464	Nov. 17	1400	372, 373	33	787
Electric lighting system	H. P. Brown	330,465	Nov. 17	1401	373	33	787
Electric lighting system	T. A. Edison	328,573	Oct. 20	1397	364	33	270
Electric lighting system	T. A. Edison	328,574	Oct. 20	1399	364	33	270
Electric lighting system	T. A. Edison	328,575	Oct. 20	1400	364	33	270
Electric machine. Dynamo-	C. M. Ball	329,118	Oct. 27	2167	561	33	415
Electric machine. Dynamo-	E. P. Clark	330,095	Nov. 10	916	238	33	696
Electric machine. Dynamo-	E. Grauert	327,790	Oct. 6	373	96	33	65
Electric machine. Dynamo-	O. F. Jönsson	330,836	Nov. 17	1868	504, 505	33	877
Electric machine. Dynamo-	H. Müller	331,726	Dec. 1	727	181, 182	33	1126
Electric machine. Dynamo-	B. F. Orton	331,815	Dec. 8	839	214, 215	33	1155
Electric machine. Dynamo-	E. W. Rice, Jr.	328,253	Oct. 13	964	251	33	183
Electric machine. Dynamo-	W. Thomson	333,174	Dec. 29	2781	728	33	1521
Electric machine. Dynamo-	F. G. Waterhouse	332,685	Dec. 15	2094	550	33	1384
Electric machine or motor. Dynamo-	B. F. Orton	331,818	Dec. 8	850	218	33	1157
Electric-machine regulator. Dynamo-	B. F. Orton	331,814	Dec. 8	837	214	33	1155
Electric-machine regulator. Dynamo-	B. F. Orton	331,816	Dec. 8	845	216, 217	33	1156
Electric-machine regulator. Dynamo-	W. M. Schlesinger	329,681	Nov. 3	344	88	33	570
Electric-machine regulator. Dynamo-	W. H. Schlesinger	331,552	Dec. 1	418	112	33	1074
Electric-machine regulator. Dynamo-	C. E. Scribner	330,053	Nov. 10	852	220	33	673
Electric machines and motors. Armature for dynamo-	B. F. Orton	331,155	Nov. 24	2297	622	33	964
Electric machines. Armature-core for dynamo-	M. M. M. Slattery	330,433	Nov. 17	1359	362	33	740
Electric machines. Armature for dynamo-	C. T. Jackson	331,502	Dec. 1	347	94	33	1060
Electric machines. Armature for dynamo-	C. D. Jenney	330,490	Nov. 17	1436	324	33	795
Electric machines. Commutator for dynamo-	T. A. Edison	328,572	Oct. 20	1396	363	33	269
Electric machines. Commutator for dynamo-	C. D. Jenney	332,399	Dec. 15	1688	442	33	1313
Electric machines. Commutator for dynamo-	C. E. Piper	328,859	Oct. 20	1769	461, 462	33	338
Electric machines. Current-motor for dynamo-	W. Main	328,418	Oct. 13	1195	309, 310	33	226
Electric machines. Ventilating device for commutators of dynamo-	C. Parham	332,427	Dec. 15	1727	453	33	1320
Electric mat	H. H. Hoffman	332,254	Dec. 15	1493	390	33	1278
Electric meter	S. D. Mott	333,079	Dec. 22	2639	692	33	1490
Electric meter	J. S. Raworth	332,832	Dec. 22	2290	603	33	1428
Electric motor	W. S. Hill	331,880	Dec. 8	941	243	33	1174
Electric motor	M. Immisch	327,797	Oct. 6	383	99, 100	33	67
Electric motor or dynamo-electric machine	W. Main	332,668	Dec. 15	2067	543, 544	33	1379
Electric register and recorder for fares, &c.	E. A. Scales	331,826	Dec. 8	861	221	33	1159
Electric signal and call apparatus	C. A. Smith	328,148	Oct. 13	832	217	33	158
Electric signaling apparatus	I. H. Farnham	328,578	Oct. 20	1403	365	33	271
Electric signaling apparatus	J. P. Tirrell	331,463	Dec. 1	300	81	33	1051
Electric switch	H. Lemp	329,460	Nov. 3	39	11	33	512
Electric switch	S. S. Leonard	328,695	Oct. 20	1569	409	33	300
Electric switch-board	T. N. Vail	330,644	Nov. 17	1618	436	33	831
Electric switch or circuit controller	M. J. Wightman	330,949	Nov. 24	2025	547	33	914
Electric-wire conduit	R. R. Taylor	332,761	Dec. 22	2206	582	33	1412
Electric wires. Underground conduit for	G. B. Pennock	328,712	Oct. 20	1594	415	33	304
Electric wires. Underground conduit for	T. D. Williams	330,277	Nov. 10	1139	303	33	730

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electrical apparatus protector	C. F. Elden	329,152	Oct. 27	2213	573	33	423
Electrical communication with moving vehicles. Apparatus for maintaining	L. J. Phelps	329,076	Oct. 27	2111	547	33	404
Electrical communication with moving vehicles. Apparatus for maintaining	L. J. Phelps	329,077	Oct. 27	2112	547	33	405
Electrical conductor	E. Clark	333,110	Dec. 29	2684	706	33	1506
Electrical conductor	E. Clark and T. A. Richards	333,394	Dec. 29	3076	803	33	1574
Electrical conductor	A. C. Tichenor	330,071	Nov. 10	896	229	33	680
Electrical-conductor conduit	H. L. Caples and W. W. Lewis	329,887	Nov. 10	635	161	33	630
Electrical conductors. Conduit for subterranean	J. A. Barrett	332,319	Dec. 15	1574	413, 414	33	1294
Electrical conductors. Contact device for suspended	C. J. Van Depoele	331,585	Dec. 1	515	125	33	1068
Electrical conductors. Manufacture of sheathed and insulated	J. Tatham	327,971	Oct. 6	605	158	33	109
Electrical conductors. Underground conduit for	E. A. Street and R. W. Fleming	331,918	Dec. 8	995	258	33	1184
Electrical distribution. System of	H. M. Byllesby	329,021	Nov. 3	269	70	33	556
Electrical generator. Frictional	P. Atkinson	331,754	Dec. 8	768	194, 195	33	1143
Electrical indicator	C. H. Pond	331,650	Dec. 1	612	151	33	1105
Electrical meter	E. Weston	330,451	Nov. 17	1386	369	33	784
Electrical transmission of power	W. M. Schlesinger	332,009	Dec. 8	1127	294	33	1209
Electrical wires. Supporting	J. W. Tringham	330,173	Nov. 10	1013	264	33	706
Electro-medical battery	T. H. Hicks	329,310	Oct. 27	2440	632	33	466
Electrode. Battery	J. B. Odell	327,582	Oct. 6	106	24	33	90
Electrode for electrolytical purposes. Carbon	H. Leipmann	330,247	Nov. 10	1100	291	33	733
Electrodes for secondary batteries. Manufacturing	E. Jones	331,408	Dec. 1	217	57	33	1036
Electroplating. Apparatus for	H. R. Boissier	331,609	Dec. 1	546	133	33	1073
Elevating and carrying apparatus	J. S. Ford	333,456	Dec. 29	3158	826	33	1567
Elevator: *See* Baggage-elevator. Hay-elevator. Cash-carrier elevator. Hod-elevator. Hydraulic elevator. Cotton-elevator. Lumber-elevator. Grain-elevator. Water-elevator.							
Elevator	V. Borst	329,129	Oct. 27	2184	566, 567	33	417
Elevator	H. M. and R. F. Darling	328,294	Oct. 13	1012	263	33	192
Elevator	M. N. Hutchinson	333,468	Dec. 29	3178	830	33	1590
Elevator	E. M. Ingoldsby	328,311	Oct. 13	1036	268	33	196
Elevator	B. A. Legg	330,792	Nov. 17	1813	488, 489	33	867
Elevator	W. Stevens	330,750	Nov. 17	1765	476	33	858
Elevator and distributer. Combined	J. H. Hunt	331,884	Dec. 8	946	244, 245, 246	33	1175
Elevator-belts. Slat-attaching device for	D. Maxwell	331,515	Dec. 1	366	98	33	1064
Elevator-buckets. Machine for making	C. Banker and J. H. Roberts	331,109	Nov. 24	2229	605, 606	33	962
Elevator-operating mechanism	N. C. Bassett	332,776	Dec. 22	2224	586, 587	33	1415
Elevator safety-catch	H. Albert	331,269	Dec. 1	1	1	33	1001
Elevator safety device	W. W. Jackson	331,405	Dec. 1	210	55	33	1035
Elevator safety-gate	C. Sorber	328,290	Oct. 20	1790	447	33	330
Elevator-stop. Automatic	J. S. Ashton	331,672	Dec. 1	642	158	33	1110
Embalming apparatus	P. S. Ensworth	328,577	Oct. 20	1402	365	33	271
Embalming-tables. Arm-rest for	J. H. Clarke	329,140	Oct. 27	2198	569	33	490
Embossing plastic material	C. Schwartz	332,444	Dec. 15	1747	456	33	1323
Embroidering-machine	J. J. Ebneter	331,953	Dec. 8	1047	272	33	1195
Embroidering-machine	J. A. Groebli	328,935	Oct. 27	1889	492, 493, 494, 495	33	366
Embroidering-machine	H. Stöckel	332,846	Dec. 22	2309	608, 609, 610	33	1431
Embroidering-machine	F. Von Martini	332,024	Dec. 8	1152	300, 301, 302	33	1213
Embroidery show-card	I. Nenburger	332,102	Dec. 8	1274	331	33	1234
Embroidery, &c. Transferring patterns for	H. E. Kramer	333,309	Dec. 29	2973	778	33	1557
Enameling	J. Hines	329,165	Oct. 27	2231	577	33	427
End-gate. Wagon	E. Q. Darr	328,295	Oct. 13	1014	264	33	192
End-gate. Wagon	R. M. Skiles	327,830	Oct. 6	424	110	33	75
End-gate. Wagon	H. H. Turner	331,744	Dec. 1	750	189	33	1131
Engine: *See* Aero-steam engine. Hot-air engine. Air-engine. Hydraulic engine. Air and gas engine. Locomotive steam-engine. Carding-engine. Rotary engine. Compound engine. Rotary steam-engine. Condensing-engine. Single-acting engine. Cylinder-engine. Steam-engine. Direct-acting engine. Traction-engine. Explosive engine. Vapor-engine. Gas-engine. Wind-engine.							
Engine	A. E. Johnson	329,563	Nov. 3	193	51, 52	33	542
Engine and dynamo-electric machine. Combined	J. H. Vail	331,924	Dec. 8	1013	262, 263	33	1188
Engine bed-frames. Machine for finishing	W. F. Parish	332,745	Dec. 22	2188	577, 578	33	1409
Engine bed-frames. Mechanism for finishing	W. F. Parish	332,742	Dec. 22	2184	576, 577	33	1408
Engine bed-frames. Mechanism for finishing	W. F. Parish	332,743	Dec. 22	2186	577	33	1408
Engine bed-frames. Mechanism for finishing	W. F. Parish	332,744	Dec. 22	2187	577	33	1408

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Pages.
Engine bed-plate	R. Scheidler	333,342	Dec. 29	3014	789	33	1564
Engine-reversing device	D. P. Kane	328,787	Oct. 20	1678	437	33	921
Engine-reversing gear	E. Huber and G. W. King	330,980	Nov. 24	2064	550	33	921
Engine-reversing gear	H. B. Larzelere	331,069	Nov. 24	2165	588	33	941
Engine-starter	G. J. Goodhue	332,197	Dec. 8	1401	362	33	1256
Ensilage and fodder cutter	J. B. Brown, J. W. Douglass, and J. Pentreath.	332,698	Dec. 22	2126	561	33	1396
Envelope	J. T. Dunham	331,118	Nov. 24	2244	610	33	955
Envelope	S. H. Smith	332,454	Dec. 15	1759	460	33	1325
Envelope	J. N. Williams	331,355	Dec. 1	136	33, 34	33	1022
Envelope-machines. Blank-picker for	F. H. Richards	331,444	Dec. 1	272	74	33	1047
Envelope-machines. Blank-picker for	F. H. Richards	331,445	Dec. 1	273	74	33	1047
Envelope. Money	P. Scanlan	332,008	Dec. 8	1126	294	33	1209
Envelope-opener and paper-knife. Combined	G. T. Brown	330,557	Nov. 17	1519	406	33	809
Envelope or protector for cards	J. Markinsky	329,925	Nov. 10	677	173	33	649
Erasive rubber	F. H. Holton	328,778	Oct. 20	1666	434	33	319
Erasive rubber	F. H. Holton	328,779	Oct. 20	1667	434	33	319
Escape-movement. Rotary	W. D. Chapman	332,579	Dec. 22	2367	626	33	1440
Escapement-motor	M. F. Teague	328,360	Oct. 13	1107	287	33	210
Evaporating and condensing apparatus	E. Theisen	332,848	Dec. 22	2312	611, 612, 613	33	1431
Evaporating-pans. Automatic discharger for	M. E. Sprague	332,019	Dec. 8	1139	297	33	1211
Evaporating saline or saccharine liquids. System of inclined troughs with inclosed steam-pipes for	C. N. Waite	331,587	Dec. 1	518	125	33	1088
Evaporator	L. W. Cooper	331,867	Dec. 8	923	238	33	1171
Excavating-machine	G. C. Blickensderfer	332,042	Dec. 8	1181	309	33	1218
Excavator	M. F. Brainard	332,227	Dec. 15	1451	376, 377	33	1271
Excavator. Submarine	J. E. Walsh	328,095	Oct. 13	769	201	33	145
Excavator. Tunnel	C. C. Quinn	330,617	Nov. 17	1588	424, 425	33	824
Excavators. Universal swivel and pipe connection for	M. F. Brainard	332,228	Dec. 15	1452	377	33	1272
Exercising apparatus. Cabinet	G. H. Benedict	332,989	Dec. 22	2515	664, 665	33	1468
Exercising-chair	J. M. W. Kitchen	329,570	Nov. 3	203	53, 54	33	543
Exercising-chair	J. M. W. Kitchen	329,653	Nov. 3	306	78	33	563
Exhaust-muffle	C. L. Kidder	330,242	Nov. 10	1095	290	33	722
Expansion-joint	M. H. Gray	330,392	Nov. 17	1309	348	33	776
Explosive compound	R. S. Penniman	333,152	Dec. 29	2785	.....	33	1516
Explosive compound	J. C. Schrader	333,344	Dec. 29	3016	.....	33	1564
Explosive compounds. Making	J. C. Schrader	333,345	Dec. 29	3018	.....	33	1564
Explosive engine	G. Asher and J. Buttress	329,354	Oct. 27	2507	645, 646, 647	33	478
Explosive. Gelatinated	R. S. Penniman and J. C. Schrader	333,151	Dec. 29	2784	.....	33	1516
Extension-table	S. E. Claussen	332,590	Dec. 15	1959	513	33	1359
Extension-table	G. Schmitt	333,341	Dec. 29	3013	789	33	1564
Extractor: *See* Nail-extractor. Stump-extractor.							
Eye-bars and similar articles. Manufacture of	C. L. Strobel	329,501	Nov. 3	102	27	33	525
Eye-bars. Machine for upsetting	W. Cooke and D. Carlough	328,290	Oct. 13	1007	262	33	191
Eyeglass-hook	G. D. Briggs	330,673	Nov. 17	1658	447	33	830
Eyeglass nose-pad	J. S. Spencer	330,521	Nov. 17	1475	395	33	802
Eyeglass spring and nose-guard	G. W. Wells	331,465	Dec. 1	303	81	33	1052
Eyeglasses	H. Borsch	329,883	Nov. 10	630	160	33	629
Eyelet or button-hole. Metal	T. B. Ashford	329,692	Nov. 3	359	91	33	573
Eyeleting-machine	L. C. Emerson	332,334	Dec. 15	1592	418	33	1297
Fabric: *See* Metallic fabric. Woven fabric. Non-conducting fabric.							
Fabric	T. Isherwood	330,787	Nov. 17	1607	487	33	866
Fabric-turfing implement	G. H. Baker	333,379	Dec. 29	3059	798	33	1571
Fabric-turfing implement	J. J. Deal	330,301	Nov. 10	1171	312	33	737
Fabric-turfing machine	M. F. Connett, Jr	332,639	Dec. 15	2022	531	33	1371
Fabrics. Machine for trimming	D. Sweeney and G. Rehfuss	329,865	Nov. 3	595	153	33	616
Face-protector	E. T. Stover	331,339	Dec. 1	115	27	33	1019
Face-protector	E. T. Stover	331,340	Dec. 1	115	27	33	1019
Fan	J. M. Seymour	330,627	Nov. 17	1599	428	33	826
Fan	J. M. Seymour	333,349	Dec. 29	3023	789	33	1565
Fan. Automatic	W. H. Mercer	328,705	Oct. 20	1582	412	33	302
Fan. Automatic	P. Murray, Jr	332,620	Dec. 22	2272	599	33	1425
Fan. Automatic	J. M. Seymour. (Reissue)	10,657	Nov. 3	611	156	33	619
Fan-blast regulator	A. Kahl	329,567	Nov. 3	199	53	33	543
Fan. Columnar	J. M. Seymour	332,446	Dec. 15	1749	457	33	1323
Fan for ventilating mines, &c	W. Viggers	328,549	Oct. 20	1366	356	33	263
Fan. Suspended	J. M. Seymour	331,092	Nov. 24	2203	596, 597	33	946
Fanning-mill	J. Luxem	329,401	Oct. 27	2585	666, 667	33	491
Fanning-mill. Automatic	H. S. Zink	332,470	Dec. 15	1778	465	33	1329
Fare-box	F. O. Landgrane and M. E. Willis	333,233	Dec. 29	2865	749	33	1536
Fare-box	T. Mangan and J. T. Wilson	328,326	Oct. 13	1053	272, 273	33	200
Fare-registering machine	J. B. Benton	332,806	Dec. 22	2343	619, 620, 621	33	1476
Farm-gate	J. W. Bennett	327,992	Oct. 13	631	167	33	121
Farm-gate	J. C. Bodd	327,654	Oct. 6	211	52	33	39
Farm-gate	L. T. Nichols	327,794	Oct. 6	498	130	33	89
Farm-gate	S. W. Smith	330,631	Nov. 17	1603	429	33	827
Farm-gate	A. O. Thornton	330,939	Nov. 24	2014	544	33	918

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Pages.
Fastener. Metallic	G. W. McGill	330,995	Nov. 24	2063	564	33	925
Fat-cutting machine	J. E. Bowman	331,862	Dec. 8	915	236	33	1170
Fat-cutting machine. Pork	B. Gloekler	328,667	Oct. 20	1535	399, 400	33	294
Faucet	W. F. Class and A. J. Weatherhead	328,651	Oct. 20	1515	394	33	290
Faucet	T. Long	333,139	Dec. 29	2736	718	33	1513
Faucet	M. Singer	328,529	Oct. 20	1333	345	33	258
Faucet. Beer	D. W. Davis and W. G. Latimer	327,662	Oct. 6	224	55	33	39
Faucet. Beer-registering	E. Kella	328,038	Oct. 13	691	182	33	132
Faucet. Can	W. S. F. Dillon	331,379	Dec. 1	172	44	33	1029
Faucet. Fluid-discharge and vent	W. F. Class, A. J. Weatherhead, and G. Collins.	328,877	Oct. 20	1791	467	33	342
Faucet. Measuring	S. B. Derby	332,882	Dec. 22	2370	627	33	1441
Faucet registering attachment	D. W. Davis and W. G. Latimer	327,663	Oct. 6	224	55	33	40
Faucet. Water	A. Stover	330,524	Nov. 17	1480	396	33	802
Feathers for dusters. Machine for preparing	S. M. Park	329,672	Nov. 3	329	84	33	567
Feathers. Machine for removing plumage from	G. R. Holden	328,404	Oct. 13	1177	304	33	223
Feed-cutter	H. G. Shipps	331,453	Dec. 1	283	77	33	1049
Feed-cutter	M. R. Vinson	331,464	Dec. 1	303	81	33	1052
Feed-hopper and water-trough. Combined	A. Handley	331,132	Nov. 24	2362	614	33	958
Feed-trough	G. Laning	331,507	Dec. 1	356	96	33	1062
Feed rack and trough. Combined	R. W. Dye	329,029	Oct. 27	2039	529	33	393
Feed-water apparatus	J. L. Longstreth	328,325	Oct. 13	1052	272	33	209
Feed-water by exhaust-steam. Heating	W. E. Pearson	332,555	Dec. 15	1910	500	33	1351
Feed-water heater	D. M. Bornarth and T. W. Heintzelman.	327,994	Oct. 13	633	167	33	122
Feed-water heater	S. R. Hughes	328,567	Oct. 20	1415	368, 369	33	272
Feed-water heater	D. Lee	331,307	Dec. 1	69	17	33	1012
Feed-water heater	J. O'Brien and S. J. Weaver	330,612	Nov. 17	1580	423	33	822
Feed-water heater	R. O'Neill	327,563	Oct. 6	107	24	33	29
Feed-water heater	L. A. Olsen	332,824	Dec. 22	2278	601	33	1426
Feed-water heater	C. H. Robinson	329,488	Nov. 3	84	23	33	521
Feed-water heater	O. Rothrock	328,902	Oct. 20	1829	476, 477	33	349
Feed-water heater	O. Rothrock	328,903	Oct. 20	1832	477	33	349
Feed-water heater	S. J. Weaver	330,650	Nov. 17	1627	437	33	832
Feed-water heater and filter	P. Brickman	329,265	Oct. 27	2373	614	33	454
Feed-water heater and purifier	W. W. Tyler	333,489	Dec. 29	3305	838	33	1595
Feed-water purifier	A. J. Stevens	331,917	Dec. 8	994	257	33	1184
Feed-water purifier and heater	J. P. Warner	330,758	Nov. 17	1773	478	33	860
Feeding hogs. Device for	H. Sloan	331,564	Dec. 1	446	115, 116	33	1077
Feeding-rack	H. D. Streator	329,500	Nov. 3	101	27	33	524
Feeding salt or compressed feed to cattle. Device for	M. S. Thompson	332,973	Dec. 22	2487	658	33	1464
Felly boring and mortising machine combined	P. Petersen	328,806	Oct. 20	1701	443	33	326
Felly. Vehicle-wheel	E. Danford	332,593	Dec. 15	1963	514	33	1360
Felt and expelling water from the same. Machine for compressing and evening	C. H. Merritt	331,423	Dec. 1	245	65	33	1041
Fence	J. Du Bois	331,285	Dec. 1	43	10	33	1007
Fence	J. N. Hudson	328,120	Oct. 13	800	208	33	151
Fence	E. R. Michaelis	329,930	Nov. 10	685	175	33	640
Fence	S. J. Miller	329,197	Oct. 27	2278	590	33	435
Fence	J. T. Montgomery	327,814	Oct. 6	405	105	33	71
Fence	J. H. Phillips	327,717	Oct. 6	249	73	33	50
Fence	P. J. Wagner	332,121	Dec. 8	1303	338	33	1230
Fence. Adjustable-panel snow	R. H. Gleason	329,640	Nov. 3	289	73	33	559
Fence. Barbed	G. M. Beerbower	327,755	Oct. 6	328	84	33	58
Fence. Barbed	J. Haish	332,393	Dec. 15	1680	440	33	1312
Fence. Barbed	J. Potter	331,908	Dec. 8	984	254	33	1182
Fence-building machine	J. T. Fairburn	332,600	Dec. 15	1975	517	33	1362
Fence-building machine	W. N. Parrish	331,320	Dec. 1	86	21	33	1014
Fence-machine	J. P. Fulgham	330,887	Nov. 24	1942	526	33	880
Fence. Metallic	C. Hanika	330,583	Nov. 17	1547	414	33	815
Fence. Panel picket	M. Dudley	328,392	Oct. 13	1159	299	33	219
Fence. Portable	C. H. Brandt and C. J. Werth	328,104	Oct. 13	780	203	33	148
Fence. Portable	H. W. Butterfield	333,279	Dec. 29	2930	766	33	1548
Fence. Portable	W. E. Jones	328,849	Oct. 20	1760	459	33	336
Fence-post	J. E. Donaldson	332,141	Dec. 8	1336	346	33	1244
Fence-post	S. Hicks	331,969	Dec. 8	1070	278	33	1199
Fence-post	M. W. Huffaker	328,946	Oct. 27	1905	498	33	369
Fence-post	S. L. Knepper	332,807	Dec. 22	2259	585	33	1422
Fence-post	B. Wheeler, Jr	328,264	Oct. 13	976	254	33	185
Fence post. Wire	J. Schafer	327,827	Oct. 6	421	109	33	74
Fence stay. Wire	W. J. Hutchins	328,890	Oct. 20	1814	473	33	346
Fence-strips. Machine for making barbed	J. W. Roop	330,852	Nov. 17	1892	512	33	881
Fence. Wire	P. McOmber	331,807	Dec. 8	924	211	33	1153
Fence-wire. Barb	J. Haish	332,252	Dec. 15	1486	388	33	1277
Fence-wire. Barbed	C. C. Hill	330,893	Nov. 24	1950	528	33	900
Fence-wire. Barbed	E. R. Matteson	330,993	Nov. 24	2061	563	33	924
Fence-wire carrier and stretcher	J. E. Blackmore	333,277	Dec. 29	2928	766	33	1548
Fence-wire. Machine for applying barbs to	J. Stubbe	328,621	Oct. 20	1470	382, 383, 384	33	282
Fence-wire reel device	W. S. Newth	330,610	Nov. 17	1578	423	33	822
Fence. Worm	D. A. McHenry	332,416	Dec. 15	1711	448	33	1317
Fences. Machine for making combined slat and wire	W. I. Brant	327,859	Oct. 6	456	119	33	81
Fencing. Connection for metallic	C. Hanika	330,584	Nov. 17	1548	414	33	816
Fencing. Register for measuring wire	S. D. Lindsay	333,137	Dec. 29	2734	718	33	1513
Fender: *See* Carriage-wheel fender. Plow-fender.							
Fertilizer	A. E. Wemple	330,075	Nov. 10	891	.....	33	681
Fertilizer and seed distributor	P. S. Smith	328,349	Oct. 13	1065	283	33	206

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Fertilizer-distributer	W. I. Collins	329,020	Oct. 27	2027	525	33	291
Fertilizer-distributer	J. Kittle	330,333	Nov. 10	1210	324	33	745
Fertilizer-distributer	A. Mckenney	328,596	Oct 20	1428	372	33	975
Fertilizer-distributer	L. C. Stalnaker	333,263	Dec. 29	2909	761	33	1545
Fertilizer-distributer and stalk-breaker. Combined	J. Y. and A. Savage	333,164	Dec. 29	2768	725, 726	33	1519
Fertilizer-drill	A. W. Kappenberg	331,201	Nov. 24	2364	640	33	976
Fiber for textiles, cordage, &c. Treating animal and vegetable	W. W. Hamilton	332,513	Dec. 15	1840	.....	33	1340
Fiber for textiles, cordage, &c. Treating animal and vegetable	W. W. Hamilton	332,514	Dec. 15	1842	.....	33	1340
Fiber for upholstering. Treatment of animal and vegetable	W. W. Hamilton	332,515	Dec. 15	1845	.....	33	1340
Fiber. Machine for reducing quills, feathers, &c., to	G. R. Holden	328,680	Oct. 20	1551	404	33	207
Fibers and leaves of plants. Cleaning and separating the pulpy matters from the	J. G. Stephens	328,355	Oct. 13	1094	284, 285	33	208
Fibers. Apparatus for cleansing pulpy matters from	J. G. Stephens	328,356	Oct. 13	1097	285	33	208
Fibers of leaves, &c. Machinery for cleaning and separating the pulpy matters from	J. G. Stephens	328,357	Oct. 13	1099	285, 286	33	209
Fibrous material from wood for surgical and other purposes. Manufacture of	J. Odelga	331,534	Dec. 1	396	.....	33	1070
Fibrous plants. Roller-crusher for	F. Luft	330,989	Nov. 24	2076	562	33	924
Fifth-wheel	B. F. Gorsuch	330,781	Nov. 17	1801	485	33	865
Fifth-wheel	A. Sanford	327,598	Oct. 6	126	29, 30	33	24
Fifth-wheel attachment	A. A. Meyers	329,194	Oct. 27	2275	589	33	435
File	H. G. Piffard	331,324	Dec. 1	91	22	33	1015
File. Bill	G. H. Dunn	331,043	Nov. 24	2135	579	33	935
File. Bill	D. W. Garrigues	331,125	Nov. 24	2252	612	33	956
File. Bill	J. B. Swezey	332,221	Dec. 8	1442	372	33	1264
File-cutting machine	J. F. French	333,458	Dec. 29	3163	826, 827	33	1588
File. Letter	A. L. Colton	331,185	Nov. 24	2338	633	33	971
File. Newspaper	A. Dom	331,872	Dec. 8	928	240	33	1172
File. Newspaper	F. M. Xiques	332,769	Dec. 22	2217	584, 585	33	1414
File. Paper	J. H. Laney	332,663	Dec. 15	2062	541	33	1379
File. Paper	E. E. Webster	331,172	Nov. 24	2319	628, 629	33	968
File. Transfer	J. H. Laney	332,664	Dec. 15	2063	542	33	1379
Filing-case	J. H. Laney	332,665	Dec. 15	2064	542	33	1379
Filing-case	H. W. Reade	329,676	Nov. 3	336	86	33	568
Filling and compressing machinery	J. Tickle and F. Leonardt	328,439	Oct. 13	1223	317	33	231
Filter	C. W. Bingham, Jr	327,646	Oct. 6	199	49	33	36
Filter	B. L. Hood	331,790	Dec. 8	808	205, 206	33	1150
Filter	B. James	332,610	Dec. 15	1985	520	33	1367
Filter	W. L. Johnson	332,660	Dec. 15	2058	541	33	1378
Filter	J. F. Le Beau	330,907	Nov. 24	1968	532	33	903
Filter	W. Neracher	331,531	Dec. 1	393	105	33	1069
Filter	W. Neracher	332,422	Dec. 15	1722	451	33	1319
Filter	E. Noppel	328,333	Oct. 13	1068	277	33	202
Filter	H. Roeske	333,481	Dec. 29	3196	835	33	1594
Filter	H. H. Teeter	329,505	Nov. 3	106	28	33	525
Filter	J. E. Warren	332,979	Dec. 22	2494	659	33	1465
Filter and cooler. Combined	J. C. Jewett	330,404	Nov. 17	1326	353	33	773
Filter. Bone-black	F. O. Matthiessen	329,329	Oct. 27	2471	638	33	472
Filter for filtering saccharine liquids. Bone-black	T. Gaunt	329,306	Oct. 27	2434	631	33	465
Filter for filtering sugar-liquor. Bone-black	F. O. Matthiessen	329,185	Oct. 27	2257	585	33	432
Filter for filtering sugar-liquor. Continuous	F. O. Matthiessen	329,184	Oct. 27	2255	585	33	432
Filter. Oil	J. Baker	328,872	Oct. 20	1784	465	33	341
Filters. Bone-black discharger for continuous	T. Gaunt	329,305	Oct. 27	2433	630, 631	33	465
Filtering apparatus	G. H. Moore	329,064	Oct. 27	2087	542, 543	33	401
Filtering apparatus	W. Oldham	330,145	Nov. 10	979	255	33	699
Filtering liquids. Apparatus for	M. M. Monsanto	331,725	Dec. 1	724	181	33	1125
Filtering-paper	S. H. Johnson	328,947	Oct. 27	1907	.....	33	369
Filtration through bone-black. Apparatus for decolorizing saccharine and other liquids by	F. O. Matthiessen and E. E. Quimby	329,330	Oct. 27	2473	638, 639	33	472
Filtration through bone-black. Apparatus for decolorizing sugar-liquor by upward	E. E. Quimby	329,210	Oct. 27	2299	595, 596	33	439
Filtration through bone-black. Apparatus for decolorizing sugar-liquor by upward	F. O. Matthiessen	329,332	Oct. 27	2478	639	33	473
Finger-ring	W. H. Richmond	331,086	Nov. 24	2195	594	33	946
Finger rings. Device for severing	J. H. Thomas	328,154	Oct. 13	842	219	33	159
Fire-alarm. Electric	S. A. Chase	332,638	Dec. 15	2021	531	33	1371
Fire-alarm signal	W. J. Keenan and E. M. Wilson	333,131	Dec. 29	2724	715, 716	33	1511
Fire-arm. Breech-loading	W. Anson	327,914	Oct. 6	529	138	33	95
Fire-arm. Breech-loading	H. Briggs	327,860	Oct. 6	459	119, 120	33	81
Fire-arm. Breech-loading	H. F. Clark	328,005	Oct. 13	647	171	33	124
Fire-arm. Breech-loading	D. M. Lefever	329,397	Oct. 27	2579	665	33	490
Fire-arm. Breech-loading	S. A. Sullenberger	330,354	Nov. 10	1244	332	33	751
Fire-arm. Breech-loading	M. Wheeler	329,793	Nov. 3	491	124	33	598
Fire-arm. Electric	J. K. G. Gavitt	332,071	Dec. 8	1223	319, 320	33	1226
Fire-arm magazine	R. T. Hare	332,896	Dec. 22	2385	631	33	1445
Fire-arm. Magazine	P. Kerrin	333,307	Dec. 29	2971	777, 778	33	1556
Fire-arm. Magazine	F. F. Knous	332,203	Dec. 8	1408	364	33	1257
Fire-arm safety-stop	J. C. Kelton	333,416	Dec. 29	3108	810	33	1579
Fire-arm sight	W. Lyman	327,957	Oct. 6	585	152	33	105
Fire-arm sight	W. G. Owen	333,094	Dec. 22	2572	676	33	1479

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Fire-boxes. Deflector-plate for	A. J. Stevens	329,603	Nov. 3	247	64	33	538
Fire-cracker holder	W. Nugent	329,088	Oct. 27	2084	544	33	403
Fire-escape	W. H. Barr	328,637	Oct. 20	1499	390	33	257
Fire-escape	A. G. Bierbach	329,256	Oct. 27	2363	611	33	458
Fire-escape	J. and J. J. Brückner	329,359	Oct. 27	2519	649	33	479
Fire-escape	J. Fisher and A. Coquillard	331,193	Nov. 24	2250	612	33	956
Fire-escape	J. Fleming	331,191	Nov. 24	2350	635, 636	33	973
Fire-escape	J. Flietner	330,103	Nov. 10	923	240	33	687
Fire-escape	J. R. Fuller	331,499	Dec. 1	330	89	33	1057
Fire-escape	P. Huber	329,648	Nov. 3	300	76	33	561
Fire-escape	P. S. Keck and J. J. Schadt	332,255	Dec. 15	1493	391	33	1279
Fire-escape	D. J. MacLean	328,953	Oct. 27	1914	500, 501	33	371
Fire-escape	T. D. McKinzie	329,190	Oct. 27	2269	587	33	434
Fire-escape	P. H. Montague	328,331	Oct. 13	1066	277	33	202
Fire-escape	P. H. Montague	331,428	Dec. 1	250	66	33	1042
Fire-escape	P. H. Montague	331,429	Dec. 1	251	66	33	1042
Fire-escape	H. F. Neumeyer	331,061	Nov. 24	2188	593	33	945
Fire-escape	I. D. Pasco	332,554	Dec. 15	1909	500	33	1351
Fire-escape	L. Sees	328,345	Oct. 13	1081	281	33	205
Fire-escape	C. S. Watson	331,746	Dec. 1	752	190	33	1132
Fire-escape	J. W. Wetmore	333,162	Dec. 29	2794	731	33	1523
Fire escape	T. B. Woodward	327,976	Oct. 6	611	159	33	110
Fire-escape ladder	R. M. Henderson and J. A. Glaesline	328,943	Oct. 27	1902	497	33	368
Fire-escape ladder	A. Rose	331,736	Dec. 1	740	186	33	1129
Fire-escape step-rod attachment	W. H. Barr	328,636	Oct. 20	1498	390	33	257
Fire-extinguisher	J. W. Bishop	332,041	Dec. 8	1179	309	33	1218
Fire-extinguisher	W. M. Le Moyne	328,319	Oct. 13	1045	270	33	198
Fire-extinguisher. Automatic	J. Buel	329,360	Oct. 27	2520	649	33	479
Fire-extinguisher. Automatic	J. Hill	329,311	Oct. 27	2443	632	33	467
Fire-extinguisher. Automatic	E. H. Williams	328,908	Oct. 20	1539	400	33	351
Fire-extinguisher. Chemical	T. G. Turner	333,177	Dec. 29	2786	730	33	1522
Fire-extinguisher. Hand chemical	A. B. Harrison	329,309	Oct. 27	2439	632	33	466
Fire-extinguishers. Automatic sprinkler for	A. M. Granger	331,394	Dec. 1	195	50	33	1032
Fire-extinguishing apparatus	J. Hill	329,741	Nov. 3	425	109	33	585
Fire-extinguishing apparatus. Automatic	O. B. Hall	327,876	Oct. 6	475	124	33	84
Fire-extinguishing apparatus. Automatic	D. C. Stillson	333,171	Dec. 29	2777	727	33	1520
Fire-extinguishing apparatus. Chemical	J. Britto	332,259	Dec. 15	1453	377	33	1272
Fire-extinguishing compound	G. W. Eddison	327,959	Oct. 6	549	.....	33	98
Fire-extinguishing compound	W. H. Polleys	328,250	Oct. 13	961	.....	33	183
Fire-kindler	P. McMenamin	332,816	Dec. 22	2266	598	33	1494
Fire-kindler	L. E. Osborne	329,070	Oct. 27	2096	544	33	402
Fire-place	M. King	329,747	Nov. 3	433	110	33	586
Fire-place	G. E. Sharpe	329,224	Oct. 27	2316	600	33	443
Fire-place and heating-stove	S. Reeve	330,516	Nov. 17	1468	393	33	800
Fire-place. Hot-air	D. Pearson	332,429	Dec. 15	1730	453	33	1320
Fireproofing and other preservative purposes. Composition for	A. J. Martin	331,312	Dec. 1	74	.....	33	1013
Fire-screen and ventilator	A. E. French	328,932	Oct. 27	1885	491	33	366
Fires. Automatic sprinkler for extinguishing	J. A. Miller, Jr	329,585	Nov. 3	220	57, 58	33	547
Fires in grain or malt mills. Mechanism for extinguishing	C. J. Hexamer	331,058	Nov. 24	2149	583, 584	33	938
Fish-cutting board	O. Andrews	328,995	Oct. 27	1986	517	33	384
Fish-hook	C. Lie	330,793	Nov. 17	1815	489	33	867
Fish-packing apparatus	G. P. Rust	330,929	Nov. 24	2002	540, 541	33	909
Fishing-line float	W. H. Tufts	332,573	Dec. 15	1939	508	33	1356
Fishing-line reel	C. V. Roberts	328,341	Oct. 13	1078	280	33	205
Fishing-reel	J. Kopf	330,985	Nov. 24	2072	561	33	923
Fishing-reel	J. Vom Hofe	330,811	Nov. 17	1840	496	33	872
Fishing-reel clamp	J. Kopf	333,232	Dec. 29	2864	748	33	1535
Fishing-rod. Bamboo	E. M. Edwards	330,572	Nov. 17	1534	410	33	813
Fishing-rods. Reel-holder and fastening for	F. D. Divine	331,380	Dec. 1	174	44	33	1029
Flag	J. M. Ebersole	330,099	Nov. 10	919	238	33	686
Flange connection. Expansion	G. A. Karwiese	332,906	Dec. 22	2402	635	33	1448
Flanging-machine	J. M. Bailey and R. A. Carter	328,274	Oct. 13	990	256	33	187
Flanging-machine	R. Munroe	330,141	Nov. 10	975	254	33	696
Flask: *See* Liquor-flask.							
Flax. Tank for curing	I. T. Quinn	329,949	Nov. 10	714	182	33	645
Flood-gate	R. A. Barnes	332,039	Dec. 8	1178	308	33	1217
Flood-gate	J. A. Galloway	329,798	Nov. 3	408	105	33	583
Floor and ceiling	C. Butcher	328,185	Oct. 13	882	229	33	167
Floor and surface. Metallic	F. R. Cargill and W. V. Kent	329,012	Oct. 27	2017	523	33	399
Floor-cloth, &c. Manufacture of	G. Schwarzwald	332,841	Dec. 22	2301	.....	33	1430
Floor-cloths, &c., in various colors. Machine for making	G. Schwarzwald	328,524	Oct. 20	1323	344	33	257
Floors. Device for preventing drafts beneath	W. W. Clay	332,491	Dec. 15	1803	474	33	1333
Flooring and wainscoting. Wooden	A. Green	329,828	Nov. 3	548	140	33	607
Flooring-board	J. R. Baldwin	329,616	Nov. 3	262	68	33	555
Flooring-machine	J. T. West	327,842	Oct. 6	438	114	33	77
Flour and meal bin and flour-sifter. Combined	R. E. Williams and W. A. Trammell	328,444	Oct. 13	1229	319	33	233
Flour-bolt	B. Kniffler	328,789	Oct. 20	1690	437	33	322
Flour-bolt	B. W. Tuttle	331,265	Nov. 24	2463	664	33	993
Flour-purifier	S. Spitzer	329,498	Nov. 3	99	26	33	524
Flour-testing apparatus	K. W. Kunis	328,494	Oct. 20	1285	334	33	249
Flouring-mill feeder	E. M. Smith and C. H. Heck	333,351	Dec. 29	3025	790	33	1565
Flower-frame	S. A. Elliott	328,926	Oct. 27	1874	489	33	364
Flue-cleaner	L. Duennisch	331,691	Dec. 1	673	166	33	1117
Flue-cleaner	J. A. Hurley	329,045	Oct. 27	2066	536	33	397
Flue-stop	W. McArthur	327,573	Oct. 6	93	20	33	17
Flue-welding machine	B. F. Lowther	330,844	Nov. 17	1881	508, 509	33	879

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fluid piston-meter	H. M. Bartlett	333,099	Dec. 29	2675	{701 702}	33	1508
Flume-rack cleaner	V. H. and G. T. Crisman	332,790	Dec. 22	2241	591	33	1419
Flush-tank. Automatic	A. Rosewater	330,352	Nov. 10	1241	331	33	750
Fluxes. Manufacturing	H. F. Taylor and G. Leyshon	332,458	Dec. 15	1762	.....	33	1326
Fly-book	C. G. Levison	333,239	Dec. 29	2873	751	33	1537
Fly-book for anglers	M. Bray	333,384	Dec. 29	3063	799	33	1572
Fodder-binder	C. E. Moles	332,619	Dec. 15	1998	524	33	1367
Folding apparatus	L. C. Crowell	331,281	Dec. 1	26	6, 7	33	1005
Folding box	R. W. Brumby and S. Clarke	332,486	Dec. 15	1798	472	33	1332
Folding chair	P. P. Achenbach	333,273	Dec. 29	2923	765	33	1547
Folding chair	J. Briggs	328,181	Oct. 13	878	228	33	166
Folding chair	E. L. Gaylord	330,222	Nov. 10	1071	{280 281}	33	717
Folding chair	E. L. Gaylord	330,223	Nov. 10	1072	{281 282}	33	717
Folding chair	E. L. Gaylord	330,224	Nov. 10	1074	282	33	717
Folding chair	E. L. Gaylord	330,225	Nov. 10	1075	283	33	718
Folding chair	C. H. Hall and J. E. Tripp	330,231	Nov. 10	1081	{285 286}	33	719
Folding chair	A. Horn and H. Gundlach	332,342	Dec. 15	1607	422	33	1300
Folding chair	W. Lindsay	328,322	Oct. 13	1048	271	33	198
Folding chair	E. L. Prall and A. Williams	332,749	Dec. 22	2194	579	33	1410
Folding chair	R. Shelley	327,901	Oct. 6	509	132	33	91
Folding chair	H. J. Harwood	330,698	Nov. 17	1693	457	33	845
Folding chair or settee	C. M. Dissosway	330,966	Nov. 24	2049	554	33	918
Folding gate and window-guard	A. P. Barber, Jr	331,022	Nov. 24	2112	572	33	931
Folding-guide	L. C. Crowell	331,280	Dec. 1	18	5, 6	33	1004
Folding-machine	R. T. Brown	331,762	Dec. 8	779	197	33	1145
Folding-machine carrier attachment	H. S. Webster	328,990	Oct. 27	1079	514	33	382
Folding table	A. Neutaacher	328,246	Oct. 13	957	249	33	182
Folding table and seat	A. A. De Puy	331,775	Dec. 8	794	.....	33	1147
Food compound	O. M. Moore	330,343	Nov. 10	1232	327	33	747
Foot-rest. Adjustable	H. J. Johnson	330,901	Nov. 24	1957	530	33	901
Forging bolt-blanks. Machine for	H. St. Lawrence	333,486	Dec. 29	3201	837	33	1594
Forging-machine	C. Davy	332,594	Dec. 15	1964	{514 515}	33	1361
Forging-machine. Hydraulic	J. C. Richardson	330,262	Nov. 10	1118	{297 298}	33	727
Forging-machine. Radial							
Fork: *See* Hay-fork. Potato or manure fork. Table-fork. Tedder-fork. Tuning-fork.							
Fork-guard	J. W. Drew	330,824	Nov. 17	1853	500	33	874
Forks. Apparatus for working derrick	C. Stone	328,530	Oct. 20	1333	346	33	258
Fortification. Revolving-tower	T. R. Timby	330,640	Nov. 17	1614	{432 433}	33	829
Fortifications. Revolving-tower system of	T. R. Timby	330,638	Nov. 17	1612	431	33	828
Fortifications. Revolving-tower system of	T. R. Timby	330,641	Nov. 17	1615	434	33	830
Fortifications. Revolving-tower system of	T. R. Timby	330,642	Nov. 17	1616	435	33	830
Fortifications. Shield and tower system of	T. R. Timby	330,639	Nov. 17	1613	{431 432}	33	829
Fountain	E. N. Gaillard	327,673	Oct. 6	237	58	33	42
Frame: *See* Clock-frame. Flower-frame. Hammock-frame. Net-frame. Quilting-frame. Umbrella and parasol frame. Window-screen frame.							
Freezing liquids. Apparatus for	E. Fixary	330,884	Nov. 24	1937	525	33	897
Fruit-drier	M. E. Clark	331,768	Dec. 8	785	199	33	1146
Fruit-drier	J. H. Collins	328,462	Oct. 20	1251	325	33	244
Fruit-drier	S. Dean	332,595	Dec. 15	1968	515	33	1361
Fruit-drier	J. R. Dew	332,596	Dec. 15	1969	515	33	1361
Fruit-drier	A. J. Dodge	331,392	Dec. 1	176	45	33	1029
Fruit-drier	J. C. Gunn	331,294	Dec. 1	54	13	33	1009
Fruit-drier	M. Reynolds, Jr	331,548	Dec. 1	412	110	33	1073
Fruit-drier	J. J. Wolfe	333,435	Dec. 29	3131	818	33	1582
Fruit-gatherer	J. Stonebraker	329,095	Oct. 27	2135	532	33	409
Fruit-jar	H. L. Becker	327,853	Oct. 6	448	117	33	79
Fruit-jar cover	J. Gilberds	328,115	Oct. 13	794	207	33	150
Fuel and making the same. Artificial	W. H. Cory	332,497	Dec. 15	1810	.....	33	1335
Fuel and making the same. Carbonaceous	W. H. Cory	332,498	Dec. 15	1811	.....	33	1335
Fuel. Composition	L. Cline	330,000	Nov. 10	783	.....	33	658
Fulling-mills, &c. Cloth-guide for	T. Kitson	329,457	Nov. 3	36	10	33	511
Fur-blowing machines. Bearing for	R. A. Belden	331,181	Nov. 24	2333	{631 632}	33	970
Fur-case	F. W. Heinig	328,673	Oct. 20	1544	402	33	295
Fur-seal and other skins. Removing stagy hairs from	A. Paterson	331,538	Dec. 1	399	107	33	1070
Furs. Manufacture of	H. Fustier	327,543	Oct. 6	55	12	33	11
Furnace: *See* Boiler-furnace. Cremation-furnace. Cupola-furnace. Gas-furnace. Glass-furnace. Glass-flattening furnace. Hot-air furnace. Locomotive-furnace. Open-hearth furnace. Ore roasting and smelting furnace. Regenerative furnace. Retort-furnace. Tinner's portable furnace.							
Furnace	E. Boileau	329,997	Nov. 10	780	200	33	657
Furnace	P. V. Dwyer	330,969	Nov. 24	2052	555	33	919
Furnace	J. A. Price	331,731	Dec. 1	733	184	33	1127
Furnace	J. A. Topliff, E. S. Cross, W. S. Cox, and J. A. McCollum.	330,940	Nov. 24	2015	{544 545}	33	918
Furnace	W. Westlake	331,597	Dec. 1	531	129	33	1091

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Furnace-door	D. M. Maxon	328,955	Oct. 27	1919	501	33	371
Furnace fire-door	J. W. Baker	329,693	Nov. 3	360	92	33	573
Furnace for melting glass, &c	E. Pearson and J. Kitson	330,050	Nov. 10	848	219	33	672
Furnace for the manufacture of zinc-white	S. C. West	328,097	Oct. 13	771	201	33	146
Furnace-grate	F. Minier	330,608	Nov. 17	1576	422	33	821
Furnaces. Apparatus for charging blast and other shaft	C. S. Hurd	329,044	Oct. 27	2062	{535 536}	33	396
Furnaces. Apparatus for firing	C. Holland, Jr	331,197	Nov. 24	2357	637	33	975
Furnaces. Device for burning gas in	J. Ashcroft	332,223	Dec. 15	1447	375	33	1271
Furnaces. Feeding air to	E. A. Hanna	329,735	Nov. 3	417	107	33	584
Furnaces. Feeding coal to	R. W. O. Rehmenklau	333,337	Dec. 29	3008	787	33	1563
Furnaces. Junction or separator lining for open-hearth	O. Murisier and P. C. Gilchrist	329,937	Nov. 10	698	.....	33	642
Furniture. Household	F. Shannon	331,163	Nov. 24	2308	625	33	966
Furniture-pad	C. M. Rhodes	329,213	Oct. 27	2304	596	33	440
Fuse. Electric safety	G. Pfannkuche	332,286	Dec. 15	1530	401	33	1286
Fuse for exploding gunpowder and other explosives	A. F. Andrews	328,172	Oct. 13	869	225	33	164
Gage: *See* Hub-boxing gage. Micrometer-gage. Railway-track gage. Saw-table gage. Sewing-machine gage. Water-gage. Weather-boarding gage.							
Gage and center-square. Combined	J. C. Eckert	329,892	Nov. 10	639	163	33	631
Galley-rest, copy-holder, and copy-guide. Combined	J. Silbernik	332,954	Dec. 22	2463	652	33	1460
Galloping horse	H. Lacaase	327,697	Oct. 6	262	65, 66	33	46
Galvanic cell	E. M. Gardner	328,208	Oct. 13	908	236	33	173
Game apparatus	H. N. Ewing	330,972	Nov. 24	2056	556	33	920
Game apparatus	G. Marzari	331,419	Dec. 1	239	62, 63	33	1040
Game-board	A. F. Knorp	329,395	Oct. 27	2577	664	33	469
Game-counter for cribbage	J. F. Bogan	332,135	Dec. 8	1324	343	33	1242
Game. Parlor base-ball	F. B. Jacobus and W. V. McKinley	330,788	Nov. 17	1607	487	33	866
Game-table. Folding	D. Gosner	329,734	Nov. 3	416	107	33	584
Game-wheel	W. Dennings	329,372	Oct. 27	2540	654	33	483
Garden-rake	J. B. Fitzpatrick and A. Lewis	332,885	Dec. 22	2373	627	33	1441
Garment. Convertible	E. M. Paice	330,920	Nov. 24	1964	537	33	906
Garment-supporter	W. H. Frost	331,392	Dec. 1	193	50	33	1032
Gas and cold air. Device for mixing natural	J. H. Sheffler	330,932	Nov. 24	2005	541	33	910
Gas apparatus	R. H. Smith	330,165	Nov. 10	1004	262	33	704
Gas. Apparatus for detecting the presence of	G. H. Eaton	331,119	Nov. 24	2246	610	33	955
Gas. Apparatus for making	W. P. Elliott	330,778	Nov. 17	1797	484	33	864
Gas. Apparatus for making illuminating	F. Egner	331,621	Dec. 1	571	{139 140}	33	1098
Gas. Apparatus for making illuminating	C. W. Isbell	330,122	Nov. 10	953	247	33	693
Gas. Apparatus for making water	P. E. De Mill, Jr	329,290	Oct. 27	2409	625	33	461
Gas. Apparatus for manufacturing	L. Stevens	328,149	Oct. 13	834	217	33	158
Gas. Apparatus for manufacturing	J. L. Stewart	332,569	Dec. 15	1928	505	33	1354
Gas. Apparatus for manufacturing illuminating	L. Stevens	328,150	Oct. 13	836	218	33	158
Gas. Apparatus for manufacturing non-luminous heating	J. Kidd	332,087	Dec. 8	1251	326	33	1230
Gas. Apparatus for the manufacture of illuminating	I. D. Guyer	328,400	Oct. 13	1172	303	33	222
Gas apparatus. Liquid	B. M. Wilkerson	328,370	Oct. 13	1120	{289 290}	33	212
Gas-burner	W. B. Cole	329,839	Oct. 20	1747	455	33	334
Gas-burner	R. S. Robertson and L. B. Fulton	329,776	Nov. 3	471	119	33	594
Gas-burner	J. Stuertz	331,261	Nov. 24	2457	663	33	991
Gas-burner. Regenerative	E. O. Schartau	329,067	Oct. 27	2125	550	33	407
Gas-burner. Safety	L. Zagelmeyer	332,770	Dec. 22	2218	585	33	1414
Gas-burner safety attachment	P. H. Grimm and W. I. Fancher	333,215	Dec. 29	2837	742	33	1531
Gas-burners. Safety-key for	J. and J. H. Dutton	332,648	Dec. 15	2042	536	33	1375
Gas by electricity. Turning on and shutting off	L. S. White	331,221	Nov. 24	2394	648	33	981
Gas-compressor	P. Effertz	329,726	Nov. 3	405	104	33	582
Gas-compressor	E. Jungenfeld and H. Rassbach	332,346	Dec. 15	1611	423	33	1300
Gas-conduit	S. R. Brick	327,996	Oct. 13	635	168	33	122
Gas-conduit	J. I. Kay	329,568	Nov. 3	200	53	33	543
Gas-conduits. Tube-joint for	W. L. Scaife	330,624	Nov. 17	1594	427	33	825
Gas. Conveying and supplying	G. Westinghouse, Jr	328,368	Oct. 13	1117	299	33	211
Gas-conveying apparatus	T. A. and A. A. Connolly	331,686	Dec. 1	667	165	33	1115
Gas-distributing pipe	W. F. Smith	333,353	Dec. 29	3029	791	33	1566
Gas-distribution	R. H. Smith	330,267	Nov. 10	1126	299	33	728
Gas-engine	M. G. Crane	327,866	Oct. 6	465	121	33	82
Gas-engine	W. A. Graham	330,317	Nov. 10	1191	318	33	741
Gas-engine	J. F. Place	328,970	Oct. 27	1945	{507 508}	33	376
Gas-engine	D. S. Regan	333,336	Dec. 29	3006	787	33	1562
Gas-engine	C. Shelburne	332,447	Dec. 15	1750	{457 458}	33	1324
Gas-engine	S. Wilcox	332,313	Dec. 15	1566	411	33	1292
Gas-engine	S. Wilcox	332,314	Dec. 15	1568	412	33	1292
Gas-engine	S. Wilcox	332,315	Dec. 15	1569	412	33	1293
Gas-engine	J. S. Wood	328,170	Oct. 13	866	{224 225}	33	164
Gas-engines. Operating	L. H. Nash	331,080	Nov. 24	2185	592	33	944
Gas-fittings. Plumb-bob for	J. J. Lawler	331,144	Nov. 24	2283	618	33	961
Gas-flame. Support for holding and adjusting incandescing bodies in a	O. B. Fahnehjelm	332,650	Dec. 15	2042	{536 537}	33	1376
Gas for illuminating purposes. Apparatus for regulating the admixture of carbureted and uncarbureted	W. J. Kidd	332,088	Dec. 8	1254	326	33	1251
Gas from burners. Apparatus for automatically cutting off	C. G. Nye	327,963	Oct. 6	502	154	33	106
Gas-furnace	J. Ashcroft	328,914	Oct. 27	1858	485	33	361
Gas-furnace	H. H. Garrett	329,927	Nov. 3	547	139	33	607
Gas-furnace	W. Swindell	327,618	Oct. 6	158	38, 39	33	29

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Gas-generating apparatus	W. F. Browne	328,834	Oct. 20	1737	458, 453	33	333
Gas-generating apparatus	T. R. White	327,844	Oct. 6	439	115	33	77
Gas-generators. Relief-valve for	W. T. Bate	331,024	Nov. 24	2113	572	33	931
Gas-governor	P. Kelly	331,890	Dec. 8	959	248	33	1178
Gas-governor	J. P. Reinecke	328,338	Oct. 13	1075	270	33	904
Gas-governors. Automatic pressure-regulator for	W. Helme	328,942	Oct. 27	1901	497	33	368
Gas-lighter. Electric	J. Geary	331,630	Dec. 1	589	145	33	1100
Gas-lighting burner. Electric	D. Rousseau	328,977	Oct. 27	1959	510	33	379
Gas-lighting device. Electric	D. Rousseau	328,976	Oct. 27	1959	510	33	379
Gas-machine. Automatic	J. Stubbers	328,359	Oct. 13	1104	286	33	209
Gas-main	J. H. McElroy	327,703	Oct. 6	268	68	33	47
Gas-mains. Detecting and carrying off leakage from	G. Westinghouse, Jr	330,179	Nov. 10	1020	266	33	707
Gas-mains. Detecting and carrying off leakage from	G. Westinghouse, Jr	331,595	Dec. 1	528	128	33	1090
Gas-mains. Detecting and closing leaks in	G. Westinghouse, Jr	331,596	Dec. 1	549	129	33	1090
Gas-mains. Detecting leakage in	H. Bartley	330,199	Nov. 10	1043	272	33	711
Gas-mains. Sealing the joints of	W. A. Hoeveler	333,011	Dec. 22	2552	672	33	1475
Gas. Making illuminating	W. P. Elliott	327,541	Oct. 6	52	12	33	47
Gas. Manufacturing	W. F. M. McCarty	330,142	Nov. 10	976	254	33	698
Gas. Manufacturing	J. L. Stewart	329,967	Nov. 10	740	188	33	650
Gas. Manufacturing illuminating	J. W. Mitchell	331,903	Dec. 8	974	252	33	1180
Gas. Manufacturing illuminating	B. Sloper	332,957	Dec. 22	2465	653	33	1461
Gas. Manufacturing illuminating	L. Stevens	329,151	Oct. 13	837	218	33	158
Gas-mixer	J. L. Chapman	329,717	Nov. 3	394	101	33	580
Gas-pressure regulator	R. F. Hatfield	329,163	Oct. 27	2228	577	33	426
Gas-pressure regulator	R. F. Hatfield	331,878	Dec. 8	936	242	33	1173
Gas-pressure regulator	G. A., Sr., and G. A. Hyde, Jr. (Reissue.)	10,656	Nov. 3	608	156	33	618
Gas-pressure regulator	E. C. Merrill	329,928	Nov. 10	681	174	33	639
Gas-reducer for metallurgic operations	N. Lillienberg and G. S. Dwight	329,058	Oct. 27	2079	540	33	400
Gas. Producing illuminating	R. H. Smith	330,747	Nov. 17	1762	475	33	857
Gas. Purifying coal	J. G. Hawkins	328,309	Oct. 13	1034	.....	33	196
Gas-regulator	A. W. Cadman	329,011	Oct. 27	2014	523	33	388
Gas-regulator	E. M. Goddard	328,480	Oct. 20	1270	329	33	247
Gas-regulator	A. F. Olds	331,000	Nov. 24	2088	585	33	926
Gas-regulator	J. Robertson	330,263	Nov. 10	1121	298	33	727
Gas-regulator	J. P. Reinecke	331,544	Dec. 1	407	109	33	1071
Gas regulator and cut-off	A. J. Stewart	332,568	Dec. 15	1926	505	33	1354
Gas-regulator. Automatic	W. T. Walker	331,102	Nov. 24	2213	599	33	949
Gas-retort lid	C. W. Isbell	328,408	Oct. 13	1182	306	33	224
Gas-scrubber	J. McKay	328,134	Oct. 13	814	213	33	154
Gas-scrubber	W. C. Henry and A. Smedley	329,902	Nov. 10	650	166	33	633
Gas-supply system. Natural	W. A. Hoeveler	333,462	Dec. 29	3170	828	33	1589
Gas. System for the distribution of	T. A. and A. A. Connolly	330,294	Nov. 10	1165	310	33	736
Gas under pressure. Main for conveying	J. E. Holmes	332,150	Dec. 8	1348	349	33	1246
Gases and liquids in refrigerators and other structures. Instrument for regulating the flow of	W. F. Browne	331,225	Nov. 24	2400	649, 650	33	982
Gases. Treating heating and illuminating	R. P. Ambler	330,280	Nov. 10	1142	304	33	731
Gaseous fuel. Apparatus for making and burning	R. P. Ambler and H. Deitz	330,190	Nov. 10	1034	270	33	710
Gaseous fuel. Apparatus for making and burning							
Gate: *See* Bridge-gate. Bridge safety-gate. Car-door change-gate. Elevator safety-gate. End-gate. Farm-gate. Flood-gate. Folding gate. Railway-gate. Railway-crossing gate. Swinging gate. Turbine-wheel gate. Water-gate. Water-wheel gate.							
Gate	J. Austin and R. Chamberlain	331,673	Dec. 1	644	159	33	1111
Gate	J. Bardin, Jr	328,560	Oct. 20	1379	359	33	266
Gate	P. S. Bassett	328,748	Oct. 20	1637	426	33	313
Gate	G. M. Bates	331,110	Nov. 24	2232	606	33	953
Gate	J. N. Buckner	327,653	Oct. 6	210	52	33	37
Gate	J. H. Carpenter	328,186	Oct. 13	883	229	33	167
Gate	D. L. Cobb	329,276	Oct. 27	2387	617	33	457
Gate	H. F. Dunn	331,778	Dec. 8	796	201	33	1148
Gate	E. Fischer	330,474	Nov. 17	1418	378	33	791
Gate	J. D. Fox	330,575	Nov. 17	1536	411	33	814
Gate	J. F. Glidden	328,772	Oct. 20	1661	433	33	318
Gate	H. Green	332,341	Dec. 15	1606	422	33	1299
Gate	H. S. Harris	329,308	Oct. 27	2438	632	33	466
Gate	T. A. Hill	328,118	Oct. 13	798	208	33	151
Gate	M. P. Hiveley	332,802	Dec. 22	2255	594	33	1421
Gate	A. Holeman	327,624	Oct. 6	249	61	33	43
Gate	J. H. Lamoureux	331,720	Dec. 1	711	176	33	1124
Gate	E. J. Lane	329,056	Oct. 27	2078	539	33	399
Gate	F. W. Shellabarger	327,606	Oct. 6	136	32	33	26
Gate	A. Siegert	331,166	Nov. 24	2311	626	33	967
Gate	D. Snell	331,567	Dec. 1	449	116	33	1078
Gate	H. Terry	331,168	Nov. 24	2314	626, 627	33	967
Gate roller and hinge. Combined	E. C. Washburn	330,648	Nov. 17	1625	437	33	832
Gates. Device for operating	C. H. Paxson	332,940	Dec. 22	2443	646	33	1457
Gear-cutter	U. and H. E. Eberhardt	332,064	Dec. 8	1212	316, 317	33	1224
Gear-cutting machine	M. O'Gorman	330,510	Nov. 17	1461	391	33	799
Gear for transmitting motion	J. B. Sims	327,730	Oct. 6	303	77	33	53
Gear. Split	J. Lawlor	331,978	Dec. 8	1090	283	33	1202
Gear-wheel teeth. Cutting	A. Swasey	333,488	Dec. 29	3202	837, 838	33	1595
Gearing	F. W. Clough	329,721	Nov. 3	399	102	33	581
Gearing	J. F. Walker	329,106	Oct. 27	2150	557	33	412

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Generator: *See* Electrical generator. Steam-generator.							
Geometric figures. Device for laying off	E. M. Goldsmith and E. Reizenstein	332,148	Dec. 8	1345	348	33	1245
Gingham-exhibitor	M. Umstadter	331,850	Dec. 8	898	232	33	1166
Glass and articles therefrom. Manufacture of	F. S. Shirley	332,294	Dec. 15	1540	403	33	1287
Glass-cutters' mac. Cushioned nippers and pliers for	J. Norris	331,812	Dec. 8	835	213	33	1155
Glass. Decorating or ornamenting	B. E. Foster	333,457	Dec. 29	3160	.....	33	1588
Glass-flattening furnace	C. Tondeur	330,172	Nov. 10	1011	264	33	705
Glass for cementation. Preparing	C. F. Brush	331,764	Dec. 8	781	198	33	1146
Glass from the flattening wheel through the annealing arch or tunnel. Device for conveying sheets of	P. Pfeifer	333,331	Dec. 29	2999	785	33	1561
Glass-furnace	W. T. Armstrong and R. H. Thomas	328,173	Oct. 13	870	226	33	164
Glass-furnace	J. Ashcroft	327,984	Oct. 13	623	164	33	120
Glass-furnace	A. Ferrari	330,307	Nov. 10	1161	315	33	739
Glass-furnace	T. W. Synnott	329,970	Nov. 10	743	189	33	650
Glass-furnace stone	H. Felker	330,473	Nov. 17	1417	378	33	791
Glass. Making crystalline	E. A. Savary	332,441	Dec. 15	1745	.....	33	1323
Glass tile and making the same	J. Haley	331,395	Dec. 1	196	51	33	1033
Glass-tube cutter	S. G. Lawson	333,235	Dec. 29	2867	749	33	1536
Glassware. Manufacture of ornamental	D. C. Ripley, A. H. Heisey, and G. B. Swift.	331,824	Dec. 8	859	220	33	1159
Glassware. Mold for pressed	J. Haley	328,482	Oct. 20	1272	330	33	247
Glazier's point	H. W. Eames	330,628	Nov. 17	1859	502	33	875
Glazier's point	E. J. Van Reyper	330,444	Nov. 17	1379	367	33	783
Glove	L. E. Vallier	328,261	Oct. 13	973	253	33	185
Glove-fastener	E. M. Chapman	330,871	Nov. 24	1922	521	33	895
Glove-fastener	W. M. Williams	331,266	Nov. 24	2465	665	33	993
Glove-fastening	A. C. Mather	330,501	Nov. 17	1447	387	33	797
Glove-fastening	A. Traver and H. B. Pierson	332,763	Dec. 22	2209	582	33	1412
Glove or mitten. Felt	W. P. Hyatt	331,501	Dec. 1	347	94	33	1060
Gloves, &c. Fastening device for	G. E. Danforth	331,940	Dec. 8	1041	270	33	1194
Gold from ores. Electrical apparatus for separating	W. J. Tanner	328,532	Oct. 20	1335	346, 347	33	259
Gold, &c., from pulverized ores. Machine for extracting	J. L. Hayward	329,532	Nov. 3	553	141	33	608
Gold separator	S. C. Olipbant	331,649	Dec. 1	610	151	33	1104
Gong. Electric	J. P. Tirrell	328,982	Oct. 27	1970	512	33	381
Goose-call	D. S. Fuller	333,094	Dec. 29	2666	699	33	1495
Governor for controlling steam-engines. Electric	P. W. Willans	329,112	Oct. 27	2158	559	33	413
Governor for supplying gaseous fuel	A. Darling	328,468	Oct. 20	1256	326	33	244
Governor for vessels. Pendulum engine	M. C. Hawkins	330,009	Nov. 17	1694	457	33	846
Governor. Steam-engine	J. Kaiser	333,190	Dec. 29	2722	715	33	1511
Governor. Steam-engine	A. I. Loop	330,411	Nov. 17	1333	355	33	775
Governor. Steam-engine	M. Ulrich	332,764	Dec. 22	2210	582	33	1412
Governor. Valve	H. F. Hodges	329,041	Oct. 27	2057	533	33	396
Grading and ditching machine	B. Tobias	327,740	Oct. 6	312	80	33	55
Grading machine. Road	J. D. Adams. (Reissue.)	10,666	Dec. 1	757	191, 192	33	1133
Gradnating arcs upon mathematical and other instruments.	J. M. Clark and C. A. L. Totten	329,139	Oct. 27	2195	569	33	420
Grain-binder	J. F. Appleby	332,985	Dec. 22	2506	663	33	1467
Grain-binder	J. F. Appleby	332,986	Dec. 22	2508	663	33	1467
Grain-binder	D. N. Green	331,493	Dec. 1	336	91	33	1058
Grain-binder	M. G. Hubbard, Jr	332,534	Dec. 15	1676	491, 492	33	1345
Grain-binder	L. G. Kemp and P. Rosa	331,142	Nov. 24	2278	618	33	960
Grain-binder	A. Stark	330,634	Nov. 17	1607	429, 430	33	827
Grain-binder	D. Strunk	332,218	Dec. 8	1436	371, 372	33	1262
Grain-binder. Automatic	H. A. and W. M. Holmes	329,560	Nov. 3	188	51	33	541
Grain-binder cord-holder	J. O. Jackman	331,404	Dec. 1	209	55	33	1035
Grain-binding machine	G. Esterly	327,931	Oct. 6	550	144	33	99
Grain-binding machine	G. G. Hunt	331,883	Dec. 8	944	244	33	1175
Grain-drier	G. H. Immendorf	331,138	Nov. 24	2272	616	33	959
Grain-drier	J. C. Klander	328,788	Oct. 20	1679	437	33	321
Grain-drier	J. Milne	329,198	Oct. 27	2279	590, 591	33	435
Grain-drier	A. Wolcott	329,422	Oct. 27	2618	475, 476	33	497
Grain-drier	S. E. Worrell	333,188	Dec. 29	2800	733	33	1524
Grain-drill	W. H. Dysinger	331,229	Nov. 24	2405	651	33	983
Grain-drill	J. O. Marks	332,019	Dec. 22	2415	639	33	1451
Grain-drill fluke	P. M. Gundlach	329,036	Oct. 27	2051	532	33	395
Grain-drill, seed-sower, fertilizer-distributer, and roller. Combined	T. R. Crane	331,687	Dec. 1	668	165	33	1116
Grain-drill tooth or hoe	G. W. Kirkpatrick	332,717	Dec. 22	2152	568	33	1401
Grain-elevator	G. S. Bricker	329,710	Nov. 3	384	98	33	578
Grain for fermentation. Preparing whole	J. W. Kittler	330,334	Nov. 10	1212	324	33	746
Grain. Machine for the reduction of	H. F. Saint Requier	332,006	Dec. 8	1123	293	33	1208
Grain, &c., on to an elevated platform. Apparatus for raising and delivering	F. Ley	329,657	Nov. 3	310	79, 80	33	564
Grain-scourer	G. S. Cranson	329,365	Oct. 27	2529	652	33	421
Grain-scourer	J. McGill	333,420	Dec. 29	3115	813	33	1580
Grain-scourer	M. McMahon	331,074	Nov. 24	2173	590	33	942
Grain scourer and separator	G. S. Cranson	328,385	Oct. 13	1151	297	33	217
Grain-separator	H. Bailey	331,468	Dec. 1	308	82	33	1053
Grain-separator	R. M. Cochran	332,786	Dec. 22	2236	580	33	1418
Grain-separator	A. T. Hawley	331,967	Dec. 8	1068	277	33	1198
Grain-separator	J. M. Smith	329,602	Nov. 3	245	63, 64	33	552
Grain-stack protector	F. Schauer	328,071	Oct. 13	737	192	33	140
Graining wood. Composition for	A. Smith and P. A. Zelie	328,073	Oct. 13	740	.....	33	140
Grape stemmer and crusher	G. Johnston and E. G. Smith	327,693	Oct. 6	258	64	33	45

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Grappling or holding device	M. T. Wyatt	331,362	Dec. 1	148	38	33	1024
Grate	W. H. Browne	331,031	Nov. 24	2122	575	33	932
Grate	J. Duffy	329,375	Oct. 27	2544	656	33	484
Grate	W. E. Kelly	331,141	Nov. 24	2276	617	33	960
Grate	J. L. L. Knox	331,067	Nov. 24	2163	587	33	941
Grate	C. L. Riker	330,739	Nov. 17	1750	471	33	855
Grate	W. J. Lewis	328,043	Oct. 13	696	183	33	133
Grate and coal cleaner	J. T. Hambay	330,694	Nov. 17	1689	455, 456	33	844
Grate-bar	W. Solt, Sr. (Reissue)	10,670	Dec. 8	1444	373	33	1264
Grate-bar	F. Müller	329,843	Nov. 3	568	145	33	610
Grate. Fire-	W. R. Belding	333,382	Dec. 29	3062	798	33	1571
Grate. Fire-place	W. S. Jarboe	329,172	Oct. 27	2237	580	33	428
Grate for burning gas in fire-places	A. Eperts and H. Perk	331,874	Dec. 8	931	240, 241	33	1172
Grater	H. Horowitz	331,709	Dec. 1	697	172	33	1121
Grater. Culinary	F. C. and H. Kessler	332,908	Dec. 22	2405	635	33	1448
Grater. Vegetable	I. Brooke	332,186	Dec. 8	1389	359	33	1254
Grating. Window	J. L. Ely	333,117	Dec. 29	2706	710	33	1508
Grenade	A. F. Buchanan	328,574	Oct. 20	1787	466	33	341
Grenades. Bracket for hand-	P. T. Smith	328,075	Oct. 13	741	193	33	140
Grinding-cylinders. Machine for grooving	W. Frech	327,934	Oct. 6	554	144	33	99
Grinding-machine	E. H. Parks	333,458	Dec. 29	3192	834, 835	33	1593
Grinding-machine	G. Richards	332,003	Dec. 8	1118	291, 292	33	1207
Grinding-machine	G. H. Smith	329,781	Nov. 3	478	120, 121	33	596
Grinding-mill	H. H. Coles	331,683	Dec. 1	663	164	33	1115
Grinding-mill	H. Cutler	328,656	Oct. 20	1521	395, 396	33	291
Grinding-mill	B. J. Du Bose	332,143	Dec. 8	1339	346	33	1244
Grinding-mill	J. J. and E. T. Faulkner	330,880	Nov. 24	1993	523, 524	33	896
Grinding-mill	G. W. Randlett	331,087	Nov. 24	2196	595	33	946
Grinding-mill	G. K. Smith	330,934	Nov. 24	2007	542	33	910
Grinding-mill for reducing grain, &c	L. Gathmann	329,729	Nov. 3	409	105	33	583
Grinding-mill. Vertical disk	J. T. Case	332,233	Dec. 15	1457	378, 379	33	1273
Grinding-mill. Vertical disk	J. T. Case	332,234	Dec. 15	1459	379, 380	33	1273
Grinding or crushing mill	T. H. Carlin	333,389	Dec. 29	3069	800, 801	33	1573
Grindstone-shaft	W. W. Coon	332,996	Dec. 22	2532	667	33	1471
Gripping-clamp for lines or reins	G. H. Sackett	331,088	Nov. 24	2197	595	33	946
Grub-puller	W. D. Tompkins	328,983	Oct. 27	1972	512	23	381
Guard: *See* Fork-guard. Razor-guard. Key-hole guard. Watch-guard. Loom-shuttle guard. Wash-board guard. Pew-guard.							
Gun and projectile for throwing life-lines	S. Ingersoll	331,792	Dec. 8	811	206	33	1150
Gun-barrel	G. V. Fosbery	329,303	Oct. 27	2428	629	33	464
Gun barrel. Machine-	J. W. Petty	328,713	Oct. 20	1596	416	33	305
Gun. Cane-	E. D. Bean	329,430	Nov. 3	6	2	33	506
Gun-carriage	C. T. M. V. De Bange	331,618	Dec. 1	567	138	33	1096
Gun. Double-barreled	C. G. Bonehill	329,705	Nov. 3	378	96	33	577
Gun. Machine-	C. H. Palmer	332,741	Dec. 22	2182	576	33	1407
Gun support. Machine-	H. S. Maxim	329,471	Nov. 3	63	17	33	516
Guns. Feed-case for magazine-	J. C. Kelton	331,244	Nov. 24	2427	657	33	967
Guns. Spring-seated butt-cap for	H. E. Finney	328,930	Oct. 27	1878	490, 491	33	365
Gusset for the armholes of garments	W. Sachs	329,595	Nov. 3	234	60	33	550
Hair. Composition for removing	S. R. Kennedy	330,715	Nov. 17	1712	.....	33	849
Hair-crimper	E. J. Brooks	332,483	Dec. 15	1794	472	33	1332
Hair-crimper	D. Snyder	331,216	Nov. 24	2380	646	33	980
Hair-cutting machine	V. S. Bekofsky	327,512	Oct. 6	4	1	33	3
Hair. Tablet for use in removing	S. R. Kennedy	330,716	Nov. 17	1714	462	33	849
Halter	E. R. Michaelis	332,271	Dec. 15	1511	395	33	1282
Halter	H. Wood	331,670	Dec. 1	640	158	33	1110
Hame	E. G. Latta	332,262	Dec. 15	1501	393	33	1802
Hame	M. M. McKinnon	329,472	Nov. 3	65	18	33	517
Hame-fastener	J. A. Alexander	332,860	Dec. 22	2376	618	33	1435
Hame fastener	M. M. McKinnon	332,270	Dec. 15	1509	395	33	1282
Hame-fastener	H. Nadorff	332,409	Dec. 15	1702	446	33	1315
Hame-fastener	F. N. Rankin	332,107	Dec. 8	1282	333	33	1235
Hame-fastener	H. R. Robinson	329,777	Nov. 3	473	119	33	594
Hammer and nail-feeding device. Combined	E. Horton	331,060	Nov. 24	2152	564	33	939
Hammer. Bush-	A. Nelson	328,509	Oct. 20	1305	339	33	274
Hammer for welding locomotive-frames	J. R. James	332,536	Dec. 15	1886	493	33	1346
Hammer. Power-	C. M. Brown	327,929	Oct. 13	638	169	33	123
Hammock	A. L. Adams	333,377	Dec. 29	3057	797	33	1570
Hammock	A. C. Dillman	329,611	Nov. 3	282	73	33	559
Hammock	P. N. Nelmes and T. Crawshaw	329,763	Nov. 3	455	115	33	590
Hammock	W. Schilling and J. Ehrenfeuchter	332,048	Dec. 22	2456	650	33	1459
Hammock	V. P. Travers	330,941	Nov. 24	2016	545	33	912
Hammock	J. Hamilton	332,607	Dec. 15	1982	519	33	1364
Hammock-awning support	G. B. Hook	330,705	Nov. 17	1701	459	33	847
Hammock-chair	J. H. Smith	328,074	Oct. 13	740	193	33	140
Hammock-frame	F. A. Thomas	329,690	Nov. 3	358	91	33	573
Hammock-spreader	J. A. Woodworth	332,369	Dec. 15	1649	432	33	1307
Hammock-support	F. A. Fletcher	328,474	Oct. 20	1263	328	33	246
Hammock-supporting device	L. B. Prahar	331,651	Dec. 1	615	152	33	1105
Hand-bag frames. Handle-cap fastening for							

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hand-power for sewing and other machines	W. C. Harrison	330,021	Nov. 10	813	208	33	664
Handle: *See* Brush-handle. Shovel and spade handle. Sash-lift handle. Tool-handle. Saw-handle.							
Handle for buckets, &c	J. Ringen	331,447	Dec. 1	275	75	33	1047
Handle for package-carriers	C. C. Boyd	329,131	Oct. 27	2186	567	33	418
Handle for pitch-forks and other implements	M. S. Cadwell	327,522	Oct. 6	16	4	33	5
Hanger: *See* Door-hanger. Pipe-hanger. Lamp-hanger. Tobacco-hanger. Picture-hanger.							
Harmonica	M. Doerfel	331,949	Dec. 8	1043	271	33	1195
Harmonic recorder. Automatic	E. Gray	329,386	Oct. 27	2561	661	33	487
Harness	D. Stenasy	329,685	Nov. 3	349	89	33	571
Harness	A. W. Tourgee and L. D. Jennings	333,175	Dec. 29	2782	729	33	1521
Harness-breeching stay	H. A. Prickett	328,901	Oct. 20	1828	476	33	349
Harness-crupper	F. K. Hickok	332,609	Dec. 15	1985	520	33	1365
Harness. Device for hanging	T. H. Pendergast	327,585	Oct. 6	110	25	33	90
Harness. Device for suspending	G. C. Hale	330,390	Nov. 10	1195	319, 320	33	742
Harness line-support	D. L. Emry	331,781	Dec. 8	799	202	33	1148
Harness-loop	L. A. Hastings	329,038	Oct. 27	2053	533	33	395
Harness or chain attachment	A. W. Cox	328,292	Oct. 13	1010	263	33	191
Harness-pad press	J. W. Johnson	330,710	Nov. 17	1706	461	33	848
Harness-rack	D. J. Smith	331,565	Dec. 1	447	116	33	1077
Harness-ring	Q. Cato and C. A. Spaulding	331,477	Dec. 1	316	85	33	1054
Harness show-rack	C. C. Schwaner	331,827	Dec. 8	864	221, 222	33	1160
Harness sweat-pad fastener	R. Brownson	330,772	Nov. 17	1790	482	33	862
Harness-trimming	W. Boese	332,634	Dec. 15	2016	529	33	1370
Harrow	J. E. Barnard and P. Geary	332,581	Dec. 15	1950	510	33	1357
Harrow	W. W. Beard	333,190	Dec. 29	2807	734	33	1525
Harrow	W. D. Caldwell and J. C. Hendricks	328,108	Oct. 13	786	205	33	149
Harrow	O. H. Eddy	332,706	Dec. 22	2138	564, 565	33	1398
Harrow	J. Elliott	328,576	Oct. 20	1401	364	33	271
Harrow	A. Hirshheimer	329,040	Oct. 27	2056	533	33	396
Harrow	F. M. Jansen	328,782	Oct. 20	1672	435	33	320
Harrow	J. Macphail	330,795	Nov. 17	1819	490	33	868
Harrow	P. Nelson	327,713	Oct. 6	282	72	33	50
Harrow	A. H. and W. D. Price	328,519	Oct. 20	1315	342	33	255
Harrow	J. S. Rowell	332,562	Dec. 15	1918	502	33	1352
Harrow	G. G. Seeger	331,749	Dec. 1	755	191	33	1133
Harrow	A. Wilcox	331,353	Dec. 1	134	33	33	1022
Harrow	H. Winger	330,952	Nov. 24	2030	549	33	915
Harrow and cultivator. Roller spring-tooth	R. W. and A. W. Davis	329,371	Oct. 27	2338	654	33	483
Harrow and cultivator. Wheel	I. J. Hunt	331,399	Dec. 1	203	53	33	1034
Harrow and sod-cutter. Combined	A. J. Lyons	328,898	Oct. 20	1824	475	33	348
Harrow, cultivator, and clod-crusher. Combined	W. E. Kinnear	329,748	Nov. 3	434	110	33	587
Harrow. Disk-	M. C. Niles	328,054	Oct. 13	711	187	33	135
Harrow. Iron	A. Callander	330,675	Nov. 17	1660	447	33	839
Harrow. Pulverizing-	J. Wherry, Jr	329,606	Nov. 3	251	65	33	553
Harrow-tooth	J. C. Forbis	329,035	Oct. 27	2050	532	33	395
Harrow-tooth and holder	G. E. Wilcox	328,992	Oct. 27	1983	515	33	383
Harrow-tooth holder	A. J. Gillespie	328,211	Oct. 13	911	237	33	173
Harvester	F. Cordrey	332,136	Dec. 8	1325	344	33	1242
Harvester	J. B. Gemmill	329,158	Oct. 27	2293	575	33	425
Harvester	C. Grattan	333,124	Dec. 29	2715	713	33	1516
Harvester	J. Hay	330,978	Nov. 24	2061	557, 558	33	921
Harvester	J. Keller	330,713	Nov. 17	1709	461, 462	33	849
Harvester	F. Lagna	328,234	Oct. 13	940	245	33	179
Harvester	J. White	328,266	Oct. 13	978	255	33	185
Harvester	W. N. Whiteley and W. Bayley	330,654	Nov. 17	1631	438	33	833
Harvester	D. Young	330,541	Nov. 17	1498	400	33	805
Harvester adjusting device	J. T. Baker	328,273	Oct. 13	987	257	33	187
Harvester and mowing-machine	G. M. Patten	330,729	Nov. 17	1736	468	33	834
Harvester-binder tension device	W. M. Holmes	328,887	Oct. 20	1811	472	33	346
Harvester bundle-carrier	W. Beltz	330,459	Nov. 17	1395	371	33	786
Harvester butter and apron belt or carrier	L. Miller	329,062	Oct. 27	2085	542	33	401
Harvester. Corn-	E. W. Comegys	329,438	Nov. 3	16	4, 5	33	507
Harvester. Corn and cane	J. H. Wilson and J. A. Forbes	328,910	Oct. 20	1841	480	33	351
Harvester. Cotton-	O. T. Bugg	329,810	Nov. 3	519	132	33	603
Harvester. Cotton-	D. B. Haselton	328,116	Oct. 13	795	207	33	150
Harvester-frame bearing	W. N. Whiteley	330,181	Nov. 10	1023	267	33	708
Harvester. Grain-binding	T. C. Marshall	332,725	Dec. 22	2161	570, 571	33	1402
Harvester. Grain-binding	L. Miller	329,931	Nov. 10	685	175, 176	33	640
Harvester. Grain-binding	L. Miller	329,933	Nov. 10	692	177	33	641
Harvester. Grain-binding	L. Miller	331,808	Dec. 8	830	211, 212	33	1154
Harvester. Grain-binding	L. Miller and A. E. Ellinwood	329,932	Nov. 10	690	176, 177	33	641
Harvester. Grain-binding	D. R. Preston	330,422	Nov. 17	1346	350	33	777
Harvester-reel	H. H. Hicks	332,079	Dec. 8	1235	322	33	1227
Harvester-reel support	L. Miller and A. E. Ellinwood	332,732	Dec. 22	2170	572, 573	33	1405
Harvester. Self-binding	M. D. Taylor	331,921	Dec. 8	1002	259, 260, 261	33	1186
Harvester. Self-binding grain-	P. A. Spicer	332,565	Dec. 15	1921	503	33	1353

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harvester. Stalk	G. G. F. Boswell	327,649	Oct. 6	201	50	33	36
Harvester. Sugar-cane	C. H. Lee	332,411	Dec. 15	1704	446, 447	33	1316
Harvester-wheel	G. G. Hunt	331,971	Dec. 8	1071	278	33	1199
Harvesting and binding machines. Adjustable seat for grain	G. Esterly	327,932	Oct. 6	553	144	33	99
Harvesting and husking machine. Corn	J. G. Stowe	331,459	Dec. 1	292	79, 80	33	1050
Harvesting-machine	G. H. Howe	330,330	Nov. 10	1206	323	33	744
Harvesting-machine	S. Johnston and G. H. Raymond	331,867	Dec. 8	955	247	33	1177
Harvesting-machine	L. W. Noyes	327,581	Oct. 6	103	23, 24	33	19
Hat and bonnet fastener	C. Abell	332,031	Dec. 8	1167	305	33	1215
Hat and towel holder	W. Mathews	330,991	Nov. 24	2079	563	33	924
Hat-binding. Detachable	W. Lawrence and H. V. Dibble	328,694	Oct. 20	1567	408	33	300
Hat-bodies, &c. Machinery for felting	J. T. Waring	332,851	Dec. 22	2319	614	33	1432
Hat-brims. Machine for setting the folded or curled edges of	R. Eickemeyer	331,286	Dec. 1	44	10	33	1007
Hat-brims. Setting the folded or curled edges of	R. Eickemeyer	332,599	Dec. 15	1973	516, 517	33	1362
Hat-forming machines. Turn-table for	R. A. Belden	331,180	Nov. 24	2231	631	33	970
Hat-holder and coat-rack	G. D. Spielman	330,434	Nov. 17	1360	362, 363	33	780
Hat or bonnet supporter	M. Smith	328,729	Oct. 20	1618	421	33	309
Hat-rounding machine	E. Tweedy and G. Yule	330,441	Nov. 17	1372	365	33	781
Hat-stay	H. A. Honse	330,979	Nov. 24	2063	558	33	921
Hats. Machine for pinning out	T. Sanders	328,719	Oct. 20	1605	418	33	307
Hatchway. Self closing	R. D. Thackston	328,361	Oct. 13	1109	287	33	210
Hatchway. Self-closing	R. D. Thackston	328,362	Oct. 13	1109	287	33	210
Hay and cotton press. Portable	C. L. Barnard	332,037	Dec. 8	1176	308	33	1217
Hay and grain cover. Portable	J. M. Sweeney	328,437	Oct. 13	1222	317	33	231
Hay and straw rack	W. G. Houk	332,530	Dec. 15	1872	490	33	1344
Hay-carrier	W. W. Bower	330,290	Nov. 10	1159	308	33	734
Hay-carrier	J. G. Kanonse	330,983	Nov. 24	2069	560, 561	33	922
Hay-carrier	R. C. Norton	328,802	Oct. 20	1697	442	33	325
Hay-carriers. Device for operating	J. H. Morgan, Jr	327,893	Oct. 6	497	129	33	89
Hay-elevator	B. Oborn	330,918	Nov. 24	1962	536	33	905
Hay elevator and carrier	J. B. Comer	329,021	Oct. 27	2028	526	33	291
Hay elevator and carrier	W. Louden	328,896	Oct. 20	1821	475	33	347
Hay elevator and carrier	J. F. Morrisey	329,935	Nov. 10	695	178	33	642
Hay elevator and conveyer	N. V. Bigelow and A. Whitbeck	328,453	Oct. 20	1242	322	33	241
Hay fork	L. Y. Myers	328,053	Oct. 13	709	186	33	135
Hay fork. Horse	H. D. Babcock	328,997	Oct. 27	1988	517	33	384
Hay fork. Horse	E. S. Yentzer	327,639	Oct. 6	186	46	33	33
Hay knife grinder	J. W. Averill	328,375	Oct. 13	1131	292	33	214
Hay-loader	J. W. Foust	329,383	Oct. 27	2555	659	33	486
Hay-loader	D. B. Tanger	329,687	Nov. 3	353	90	33	572
Hay or straw cutter	T. Tatnall	331,343	Dec. 1	118	28	33	1020
Hay-press	H. F. Blank	329,852	Nov. 10	629	159	33	629
Hay-press	G. Johnson	330,922	Nov. 24	2068	560	33	922
Hay-press. Portable	B. J. Carry	333,059	Dec. 22	2612	684	33	1486
Hay-press. Power	A. B. Farquhar	330,472	Nov. 17	1416	377	33	790
Hay-rack	H. Connelly	330,565	Nov. 17	1527	408	33	811
Hay-rack	E. F. Dudley	327,926	Oct. 6	546	143	33	98
Hay-rack	F. L. Johns	329,047	Oct. 27	2067	537	33	398
Hay-rack	D. F. Oliver	330,727	Nov. 17	1732	467	33	853
Hay rake and loader	J. Funk	330,311	Nov. 10	1185	316	33	740
Hay rake and tedder. Combined horse	J. N. Wallis and D. W. Smith	333,366	Dec. 29	3044	795	33	1568
Hay-rake. Horse	S. J. Arnold	328,833	Oct. 20	1736	451, 452	33	332
Hay-rake. Horse	R. S. Carr	327,764	Oct. 6	339	87	33	59
Hay-rake. Horse	J. M. Long	329,917	Nov. 10	667	170, 171	33	637
Hay-rake. Horse	J. E. Offutt	329,766	Nov. 3	457	115, 116	33	591
Hay-rake. Horse	J. E. Offutt	329,767	Nov. 3	459	116	33	591
Hay-rake. Horse	W. P. Prall	333,084	Dec. 22	2649	694, 695	33	1492
Hay-rake. Horse	G. Robinson	332,440	Dec. 15	1744	456	33	1322
Hay-rake. Revolving sulky	B. Collins	332,055	Dec. 8	1200	313	33	1221
Hay rake. Revolving sulky	S. B. Collins	331,478	Dec. 1	317	85	33	1054
Hay rakes, &c. Securing the teeth of horse	A. J. Nellis	328,508	Oct. 20	1304	339	33	254
Hay raker and loader	J. I. Davis	328,658	Oct. 20	1526	396, 397	33	292
Hay ricker and loader	J. Allen	327,852	Oct. 6	447	116	33	78
Hay tedder	L. S. Heald	330,112	Nov. 10	933	243	33	690
Hay-tedder	J. F. Platt	333,153	Dec. 29	2756	722	33	1516
Hay tedder	J. H. Thomas	329,506	Nov. 3	107	28	33	525
Hay tedder	J. H. Thomas	329,976	Nov. 10	748	191	33	651
Hay tedder	J. H. Thomas	329,977	Nov. 10	749	191	33	652
Hay-tedder	G. M. D. Riley	331,654	Dec. 1	619	153	33	1106
Head-light. Locomotive	T. B. Jewett	332,154	Dec. 8	1353	350	33	1247
Heater: *See* Boiler-heater. Car-heater. Feed-water heater. Plant-bed heater. Sewing-machine wax-heater. Soldering-iron heater.							
Heater and fan-blower. Combined	M. C. Huyett	329,838	Nov. 3	502	143	33	609
Heating apparatus. Combined water and air	T. A. MacDonald	329,923	Nov. 10	675	173	33	638
Heating apparatus for buildings	S. Bradley	330,462	Nov. 17	1397	372	33	786
Heel-burnishing machine	C. J. Addy	328,371	Oct. 13	1125	290	33	213
Heel-machine	G. Bresse	327,672	Oct. 6	206	51, 52	33	37
Heel-machine	F. W. Coy	329,022	Oct. 27	2029	526, 527	33	291

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Heel-machine	A. J. Langelier	331,412	Dec. 1	222	58, 59, 60	33	1037
Heel-nailing machine	H. A. Henderson	332,798	Dec. 22	2251	593	33	1420
Heel-nailing machine	F. F. Raymond, 2d	329,079	Oct. 27	2115	548	33	405
Heel-nailing machine	F. F. Raymond, 2d	329,951	Nov. 10	717	183	33	646
Heel-nailing machine	F. F. Raymond, 2d	331,441	Dec. 1	265	72	33	1046
Heel-nailing machine	F. F. Raymond, 2d	332,001	Dec. 8	1114	290, 291	33	1207
Heel-stiffener machine	J. R. Moffitt	327,710	Oct. 6	277	71	33	49
Heel-trimmer. Rotary	J. L. Lord	328,853	Oct. 20	1783	460	33	337
Heel-trimming machine	E. B. Allen	332,984	Dec. 22	2505	662	33	1467
Heel-trimming machine	J. L. Lord and N. Ross	328,854	Oct. 20	1765	460	33	337
Heel-trimming machines. Cutter-head for	W. P. Corson	331,771	Dec. 8	790	200	33	1147
Heeling-jack	G. N. Burgess, Jr	331,476	Dec. 1	315	85	33	1054
Hektograph-gage	F. M. Dunbar	333,115	Dec. 29	2704	709	33	1508
Hemmer	A. P. Barber, Jr	331,021	Nov. 24	2111	571	33	931
Hemp, &c. Machine for spreading and drawing	J. Good	328,582	Oct. 20	1409	366, 367	33	272
Hide-fleshing machine	A. W. Reid	331,085	Nov. 24	2194	594	33	946
Hides. Machine for unhairing, working, and scouring	A. E. Whitney	330,655	Nov. 17	1632	439	33	834
Hinge	M. Campbell	332,487	Dec. 15	1799	473	33	1332
Hinge	T. H. Costello	328,568	Oct. 20	1390	362	33	268
Hinge	J. W. Whitmore	333,375	Dec. 29	3055	797	33	1570
Hinge. Fire-screen	J. M. B. Robinson	328,342	Oct. 13	1079	280	33	205
Hinge for gates. Roller	I. B. Tucker	333,033	Dec. 22	2586	679	33	1462
Hinge. Gate	T. F. Briles	328,282	Oct. 13	999	260	33	189
Hinges. Manufacture of	E. Lucas	331,416	Dec. 1	235	61, 62	33	1039
Hitch. Safety harness	M. Gates	333,406	Dec. 29	3096	807	33	1576
Hitching device	L. Lewis	332,914	Dec. 22	2411	637	33	1450
Hitching device	I. E. Palmer	329,071	Oct. 27	2096	544	33	403
Hitching device. Horse	W. C. Wilcox	331,016	Nov. 24	2105	570	33	929
Hitching-strap	S. Birdsall	332,779	Dec. 22	2229	588	33	1416
Hitching-strap clamp	L. L. Dewease	330,213	Nov. 10	1061	277	33	715
Hod-elevator	F. W. Keys	333,134	Dec. 29	2731	717	33	1512
Hoe	F. S. Kretsinger	332,350	Dec. 15	1615	424	33	1301
Hoe and chopper. Cotton	W. E. Insley and E. D. Hunten	333,305	Dec. 29	2968	776, 777	33	1556
Hoe-rack	R. S. Thompson	331,011	Nov. 24	2101	568	33	928
Hoeing-machine	D. G. Zeigler	330,765	Nov. 17	1783	480	33	861
Hog and cattle separating device	D. L. Monroe	330,412	Nov. 17	1354	355	33	775
Hog-catching device	F. M. Scrafford	328,817	Oct. 20	1715	446	33	329
Hog scalding and scraping machine	P. F. Seidel	329,663	Nov. 3	347	88	33	570
Hoist. Coal	W. S. Cherry	333,195	Dec. 29	2809	735	33	1526
Hoisting and carrying machine	B. S. Crocker	331,773	Dec. 8	792	200, 201	33	1147
Hoisting, carrying, and delivering apparatus	W. A. Fry	329,546	Nov. 3	170	45	33	538
Hoisting device. Elevator	R. B. Ayres	330,865	Nov. 24	1914	519	33	893
Hoisting-drum. Elevator	B. W. Grist	328,934	Oct. 27	1886	492	33	366
Hoisting machinery	C. W. Hunt	332,803	Dec. 22	2256	595	33	1421
Holdback	L. H. Reed	328,065	Oct. 13	720	190	33	138
Holdback. Vehicle	W. Chegwin and W. A. Eldredge	329,015	Oct. 27	2021	524	33	990
Holder: *See* Bag-holder. Basin-holder. Bicycle-holder. Billiard-chalk holder. Book-holder. Book and copy holder. Bonnet-holder. Bristle-holder. Broom-holder. Chalk-holder. Christmas-tree holder. Cigar-holder. Crayon and eraser holder. Cuff-holder. Curtain-holder. Fire-cracker holder. Harrow-tooth holder. Hat-holder. Hat and towel holder. Label-holder. Lamp-holder. Music-holder. Necktie-holder. Paper-holder. Paper-bag holder. Pen-holder. Pencil-holder. Pipe-holder. Rein-holder. Ribbon-holder. Ring-holder. Sash-holder. Shade-holder. Tablet and pencil holder. Tool-holder. Towel-holder. Wash-board holder.							
Holland-cases. Extension-door for	C. Cregmile	330,380	Nov. 17	1291	342	33	767
Hood and other garments	W. Randel	330,515	Nov. 17	1468	392	33	800
Hook: *See* Back band hook. Check-hook. Check-rein hook. Eyeglass-hook. Fish-hook. Snap-hook. Suspension-hook. Trace-hook. Whiffletree-hook.							
Hook	J. M. Riley	331,160	Nov. 24	2306	624	33	965
Hoop-coiling machine	A. B. Fry	327,935	Oct. 6	558	145	33	100
Hoop-driver	M. Naughton	328,706	Oct. 20	1584	412	33	302
Hoop machine. Barrel	E. Olund	330,259	Nov. 10	1114	295, 296	33	725
Hoop-planing machine	A. F. Ward	332,124	Dec. 8	1307	339	33	1240
Hoop-skirt	C. E. Brown	329,271	Oct. 27	2380	615	33	455
Hop-box shade	A. Engle	332,883	Dec. 22	2371	627	33	1441
Hop-stripping machine	E. D. Mills	332,275	Dec. 15	1516	397	33	1283
Horse-blindfold	J. Brick	327,762	Oct. 6	337	87	33	59
Horse-check. Automatic	M. Medart	333,421	Dec. 29	3116	814	33	1580
Horse-detacher	T. W. Lambert	332,257	Dec. 15	1495	391	33	1279

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Horse-power	L. R. Jones	333,415	Dec. 29	3107	809	33	1579
Horse-power	O. W. Kelly and L. F. Dieter	329,394	Oct. 27	2575	663, 664	33	489
Horse-rake	W. H. Hall	333,218	Dec. 29	2843	743, 744	33	1582
Horses. Apparatus for checking and controlling runaway	W. O. Walley	331,350	Dec. 1	130	32	33	1021
Horses. Device for controlling	J. C. Gill	329,448	Nov. 3	26	8	33	510
Horses' feet. Medicament-retainer for	E. T. Keagle	330,241	Nov. 10	1094	289	33	722
Horses. Foot-rest for shoeing	B. Lear	331,979	Dec. 8	1090	283	33	1202
Horseshoe	C. M. Alexander	327,752	Oct. 6	325	83	33	57
Horseshoe	L. H. Bellamy	329,700	Nov. 3	368	93	33	575
Horseshoe	L. G. Claude	329,141	Oct. 27	2199	570	33	420
Horseshoe	R. B. Corcoran	327,772	Oct. 6	348	90	33	61
Horseshoe	C. A. Floyd	330,006	Nov. 10	792	203	33	659
Horseshoe	F. B. Gardner	331,628	Dec. 1	566	144	33	1100
Horseshoe	C. Heyer	328,676	Oct. 20	1546	403	33	296
Horseshoe-blank	A. W. Hamaker and J. E. Peck	329,451	Nov. 3	29	9	33	510
Horseshoe-blanks. Machine for bending	G. W. Bowen	329,998	Nov. 10	781	200	33	658
Horseshoe-machine	J. D. Billings and D. Mueller	330,670	Nov. 17	1653	444, 445, 446	33	838
Horseshoe-machine	L. G. Claude	328,461	Oct. 20	1250	325	33	243
Horseshoe-machine	D. J. Farmer	331,623	Dec. 1	574	140, 141	33	1098
Horseshoe-machine	D. J. Farmer	331,624	Dec. 1	578	141, 142	33	1099
Horseshoe-nail	J. A. Coleman	333,396	Dec. 29	3079	804	33	1574
Horseshoe-nail	B. Watkins	332,464	Dec. 15	1769	463	33	1327
Horseshoe-nails. Machine for finishing	E. Croft	329,538	Nov. 3	157	40, 41, 42, 43	33	535
Horseshoe-pad	D. Meredith	329,193	Oct. 27	2274	588	33	434
Horseshoe-swaging machine	D. J. Farmer	331,625	Dec. 1	581	143	33	1099
Horseshoe-swaging machine	D. J. Farmer	331,626	Dec. 1	583	143, 144	33	1099
Horseshoes. Making	J. B. White	330,534	Nov. 17	1489	398	33	804
Horseshoer's box	J. Gibbs	333,213	Dec. 29	2834	742	33	1530
Hose-bridge	J. Kurz	333,310	Dec. 29	2975	779	33	1557
Hose-coupling	J. B. Genin	333,066	Dec. 22	2920	687	33	1487
Hose-coupling	C. E. Mark	329,396	Oct. 27	2466	637	33	471
Hose-coupling	J. Nusbeck	328,427	Oct. 13	1208	312	33	229
Hose-coupling	W. C. Parsels	331,998	Dec. 8	1111	289	33	1206
Hose-jacket	A. W. Packer	332,163	Dec. 8	1363	353	33	1249
Hose. Machine for inserting couplings into	J. F. Mallinckrodt	331,147	Nov. 24	2286	619	33	961
Hose-manipulator	J. Roby	329,339	Oct. 27	2488	642	33	474
Hose-nozzle	F. W. Robertshaw	330,740	Nov. 17	1751	471	33	855
Hose. Rubber	A. Bruegger, Jr	331,374	Dec. 1	166	42	33	1028
Hose-truck	H. P. Cope	332,589	Dec. 15	1959	513	33	1359
Hose with wire. Machine for covering	C. W. Kimball	330,332	Nov. 10	1209	323, 324	33	745
Hosiery. Device for exhibiting	J. A. Kessel	331,717	Dec. 1	708	175	33	1123
Hot-air engine	J. A. Woodbury, J. Merrill, G. Patten, and E. F. Woodbury.	327,748	Oct. 6	319	82	33	56
Hot-air furnace	C. M. Baxter	331,925	Nov. 24	2115	572	33	931
Hot-air furnace	H. Robinson	333,425	Dec. 29	3121	815	33	1581
Hot-air register	A. C. Tuttle	333,089	Dec. 22	2660	698	33	1494
Hot-water boiler	J. Goering	332,147	Dec. 8	1345	348	33	1245
House: *See* Corn-house. Tobacco-curing house.							
House-raising apparatus	T. F. Maher	332,811	Dec. 22	2262	596, 597	33	1422
House. Tenement	W. Sturm	332,457	Dec. 15	1761	461	33	1326
Hub	W. P. Bettendorf	329,004	Oct. 27	2001	520	33	387
Hub	A. M. Brown	330,771	Nov. 17	1789	492	33	862
Hub	W. J. Matern	328,609	Oct. 20	1576	410	33	301
Hub-boxing gage	D. C. Stover	330,809	Nov. 17	1836	495	33	872
Hub. Vehicle	W. G. Mercer	329,061	Oct. 27	2084	541	33	401
Huller: *See* Clover-huller.							
Hulling-machine	S. Spitzer	329,230	Oct. 27	2326	602	33	445
Hydrant	Z. E. Coffin	330,377	Nov. 17	1288	341	33	766
Hydrant	F. Peter and H. Ruppel	327,822	Oct. 6	414	108	33	73
Hydrant and plug	G. A. Warner	328,988	Oct. 27	1976	513	33	382
Hydrant and street-washer	B. F. Courtright	332,137	Dec. 8	1327	344	33	1243
Hydrant. Self-closing	J. Dowling and J. Lee, Jr	330,776	Nov. 17	1793	483	33	863
Hydraulic elevator	N. C. Bassett	331,273	Dec. 1	6	2	33	1002
Hydraulic elevator	P. F. Morey	332,418	Dec. 15	1713	449	33	1317
Hydraulic elevator	G. H. Reynolds	328,614	Oct. 20	1456	379, 380	33	280
Hydraulic engine or motor	L. O. Dehnel	328,299	Oct. 13	1019	265	33	193
Hydraulic jack	J. Weeks	330,760	Nov. 17	1777	479	33	860
Hydraulic jack	J. Weeks and H. Traver	330,759	Nov. 17	1775	479	33	860
Hydraulic motor	C. G. Wurster	330,863	Nov. 17	1909	516, 517	33	885
Hydraulic press	C. S. Hamilton	329,551	Nov. 3	179	47	33	539
Hydraulic-pressure regulator and ram	B. Thoens	328,730	Oct. 20	1619	421	33	309
Hydraulic, steam, air, and vacuum brake	H. C. McCarty	330,796	Nov. 17	1820	490	33	868
Hydrocarbon-burner	J. Marion	330,599	Nov. 17	1562	418	33	819
Hydrocarbon-burning apparatus	L. B. White	329,985	Nov. 10	759	194	33	654
Hydrocarbon vapor or gas burner	A. M. Brainard	332,871	Dec. 22	2356	622, 623	33	1438
Ice and apparatus therefor. Manufacture of	A. Schmitz	328,523	Oct. 20	1322	343	33	257

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ice-cream and pudding mold	H. Eppelsheimer	330,305	Nov. 10	1179	315	33	730
Ice-cream freezer	J. G. Webb	332,466	Dec. 15	1770	463, 464	33	1327
Ice-creeper	H. S. Pullman	330,512	Nov. 17	1464	391	33	799
Ice-creeper	L. H. Scott	329,496	Nov. 3	98	26	33	524
Ice-machine	S. Luscher	329,842	Nov. 3	566	144	33	610
Ice-machine	T. L. Rankin	332,361	Dec. 15	1630	429, 430	33	1305
Ice-machine	O. Vezin	328,624	Oct. 20	1478	385	33	283
Ice-planer	T. D. Loring and A. P. Giles	329,400	Oct. 27	2584	666	33	491
Ice-plow	J. G. and H. Bodenstein	332,477	Dec. 15	1789	470	33	1330
Ice, refrigerating, &c. Mode of and apparatus for making	A. G. Southby	331,457	Dec. 1	287	78	33	1050
Ice-tongs	G. H. Werner	329,523	Nov. 3	140	36	33	531
Illuminating device	C. A. Leager, G. S. Pierce, and R. A. Canterbury.	332,541	Dec. 15	1802	494	33	1347
Incrustation. Device for preventing	J. H. Blessing	330,460	Nov. 17	1396	371	33	786
Incubator	E. W. Andrews	332,033	Dec. 8	1171	306	33	1216
Incubator	C. Bassini and A. Heyden	330,457	Nov. 17	1391	370, 371	33	785
Incubator	C. S. Newsom	330,609	Nov. 17	1577	422	33	821
Incubator thermostat	F. Hompbreville	333,075	Dec. 22	2635	691	33	1489
Incubators. Automatic heat-regulator for	E. W. Andrews	333,097	Dec. 29	2673	701	33	1503
Incubators. Egg-tray for	G. W. and J. J. Thornburgh	330,528	Nov. 17	1483	397	33	803
Incubators. Heat-regulating mechanism for	J. L. Cousins	330,379	Nov. 17	1290	342	33	767
Index	G. T. Barton	330,285	Nov. 10	1153	306	33	733
Index for paper-files	J. S. Shannon	331,250	Nov. 24	2454	663	33	991
Indicating device for sensitive instruments	G. B. St. John	329,237	Oct. 27	2334	604	33	446
Indicator: *See* Electrical indicator. Magneto-electric indicator. Steam-boiler indicator. Steam-engine indicator. Time-piece-winding indicator.							
Induction-coil	T. J. Perrin	329,772	Nov. 3	468	118	33	594
Induction-coil	J. A. Robinson	332,559	Dec. 15	1916	501	33	1352
Ingot-mold	B. Atha	330,281	Nov. 10	1145	304	33	731
Ingots. Apparatus for pressing	E. B. Meatyard	328,329	Oct. 13	1062	275, 276	33	901
Inhaler	C. C. Ellis	330,970	Nov. 24	2053	555	33	919
Injector	J. S. Bancroft	331,178	Nov. 24	2325	630	33	969
Injector	J. Desmond	330,964	Nov. 24	2047	554	33	918
Injector	J. Gresham	331,193	Nov. 24	2353	636	33	974
Injector	J. M. Marty	328,594	Oct. 20	1496	371	33	275
Injector	H. B. Murdock	328,424	Oct. 13	1204	311	33	228
Injector	H. B. Murdock	331,154	Nov. 24	2296	622	33	963
Injector	J. Reichmann	332,002	Dec. 8	1116	291	33	1207
Injector	W. J. Sherriff	332,953	Dec. 22	2462	651	33	1460
Injector	M. D. Strickland	333,086	Dec. 22	2653	695	33	1492
Injector and burner	J. B. Mulloy	329,844	Nov. 3	566	145	33	611
Injector. Steam-	J. Desmond	330,962	Nov. 17	1668	449	33	841
Injector. Steam-	J. Desmond	332,366	Dec. 15	1673	438	33	1311
Injector. Steam-boiler	J. Desmond	330,302	Nov. 10	1172	312	33	737
Inking-pad	B. B. Hill	332,395	Dec. 15	1692	441	33	1312
Inkstand	J. O. Anderson	330,455	Nov. 17	1390	370	33	785
Insect-destroyer	D. H. Manning	330,033	Nov. 10	926	212	33	667
Insects. Destroying	E. Chace	327,861	Oct. 6	461	120	33	82
Insects on plants. Device for destroying	F. A. Ruhl	329,957	Nov. 10	725	185	33	647
Insecticide	R. Rosterholz	328,594	Nov. 3	233		33	549
Instrument of stationery	J. W. Turner	333,068	Dec. 22	2659	698	33	1493
Insulating tube for electric wires	H. B. Cobb	330,873	Nov. 24	1924	522	33	895
Insulating-tube for electric wires	S. B. Cobb	330,874	Nov. 24	1925	522	33	895
Insulator	L. O. Smith	328,728	Oct. 20	1617	421	33	309
Insulator and supporter. Electric-wire	W. N. Fawcett and G. F. Huntley	328,929	Oct. 27	1877	490	33	364
Insulator. Telegraph	B. N. Deblieux	332,061	Dec. 8	1207	315	33	1223
Invalid's convertible chair and bed	P. C. S. Henderson	328,944	Oct. 27	1903	497, 498	33	369
Iron: *See* Branding-iron. Soldering-iron.							
Iron and steel. Apparatus for manufacturing	B. Bayliss, Jr	332,475	Dec. 15	1786	468, 469	33	1330
Iron and steel. Apparatus for the manufacture of	T. Williamson	331,267	Nov. 24	2466	665, 666	33	983
Iron and steel bar. Combined	L. G. Claude	328,572	Oct. 20	1516	304	33	292
Ironing board and table. Combined	M. Ransom	330,618	Nov. 17	1590	425	33	824
Ironing clothes	O. B. Wickham	329,797	Nov. 3	495	125	33	599
Ironing-machine	C. A. Lieb and C. L. Heins	330,032	Nov. 10	925	212	33	666
Ironing-machine	L. H. Watson	332,096	Dec. 8	1161	303, 304	33	1214
Ironing-table	B. C. Dawson	332,140	Dec. 8	1335	345	33	1244
Ironing-table	M. J. Jerome	328,783	Oct. 20	1673	436	33	320
Ironing-table	F. A. Lerch	332,404	Dec. 15	1695	444	33	1315
Ironing-table	A. McBlair	330,721	Nov. 17	1722	464	33	851
Ironing-table	G. Race	329,950	Nov. 10	715	183	33	646
Ironing-tablet	S. S. Myers	328,425	Oct. 13	1906	311	33	228
Ironing-tablet	C. Zimmerling	327,913	Oct. 6	529	137	33	95
Irrigating land. Apparatus for	E. Briggs	330,556	Nov. 17	1518	406	33	809
Jack: *See* Boot-jack. Car-replacing jack. Heeling-jack. Hydraulic jack. Lifting-jack. Painter's jack. Shoe-maker's jack. Wagon-jack.							
Jar: *See* Fruit-jar.							
Jar-fastener	G. W. Weyman	329,792	Nov. 3	490	124	33	596

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Jar protector and sealer	M. V. B. Evans	333,455	Dec. 29	3158	826	33	1587
Jetties. Constructing	J. C. Goodridge, Jr	331,127	Nov. 24	2255	613	33	956
Jewel-setting	G. Becker	332,183	Dec. 8	1386	358	33	1253
Jewelers and engravers. Holding-tool for	A. Knder	327,558	Oct. 6	75	16	33	14
Jewelry. Manufacture of imitation	F. J. Hafner	330,230	Nov. 10	1080	285	33	719
Joint:							
See Curtain-pole joint. Rafter-joint. Expansion-joint. Railway-rail joint. Pipe-joint. Steam-boiler joint.							
Joint for wire, wire rods, cables, &c	C. G. McLeod	328,302	Oct. 20	1298	338	33	253
Journal-bearing	L. Gouilliond and C. Pagé	327,675	Oct. 6	240	59	33	42
Journal-bearing	R. W. Hardie	331,497	Dec. 1	341	92	33	1059
Journal-bearing	J. G. Marquardt	331,311	Dec. 1	73	18	33	1012
Journal-bearing	C. E. Tibbles	328,088	Oct. 13	761	198	33	144
Journal-bearing for shafts	P. Murray, Jr	332,819	Dec. 22	2272	599	33	1424
Journal-brass	P. P. Emory	330,389	Nov. 17	1305	{346 {347	33	770
Journal-lubricator	W. H. and F. C. Burden	327,519	Oct. 6	12	3	33	4
Keg or barrel	G. H Gillette	330,042	Nov. 10	800	205	33	661
Keg-washing machine	H. Binder	330,550	Nov. 17	1507	403	33	807
Key-board. Transposition	P. Anstman	330,283	Nov. 10	1148	305	33	732
Key-fastener	A. W. Sigerson	328,725	Oct. 20	1614	420	33	309
Key-fastener	H. B. Stranahan	330,854	Nov. 17	1896	513	33	882
Key-hole guard	J. Krejci	327,799	Oct. 6	386	100	33	67
Key-ring	G. W. Hntchins	331,301	Dec. 1	61	15	33	1010
Key-seat and gear cutting machine	M. Morton	333,324	Dec. 29	2092	784	33	1560
Kiln:							
See Charcoal-kiln. Limekiln.							
Kiln for firing decorated china	E. Detwiler	329,373	Oct. 27	2541	655	33	483
Kitchen-cabinet	E. G. Burgett	331,611	Dec. 1	550	134	33	1094
Kitchen-cabinet	M. H. Card and J. Place	331,766	Dec. 8	783	198	33	1146
Kitchen-cabinet	W. W. Langley	327,801	Oct. 6	388	101	33	68
Kitchen-cabinet	W. D. Newlin	333,245	Dec. 29	2882	753	33	1540
Kitchen-cabinet	H. Wood	332,222	Dec. 8	1443	373	33	1264
Kitchen utensil	J. P. Hurley	332,201	Dec. 8	1407	363	33	1257
Kneading and elevating doughlike, &c., matter. Apparatus for	A. J. A. Dumoulin	329,376	Oct. 27	2545	656	33	484
Kneading machinery. Dough-	H. Werner	329,110	Oct. 27	2156	558	33	413
Knife:							
See Butter and cheese knife. Corn-knife. Pocket-knife.							
Knife-blade holder	E. Nicholson	332,548	Dec. 15	1901	497	33	1349
Knife, compasses, and ruler. Combination	T. W. Wood	328,911	Oct. 20	1843	480	33	351
Knife for cutting seed-potatoes	D. S. Humphrey	332,657	Dec. 15	2056	540	33	1377
Knife-sharpener	F. J. Reinhold	331,545	Dec. 1	409	109	33	1072
Knit shirt	J. Lee	330,500	Nov. 17	1446	387	33	797
Knitting-machine	E. R. Branson	333,102	Dec. 29	2678	703	33	1504
Knitting-machine	W. D. Huse	331,400	Dec. 1	204	53	33	1034
Knitting-machine	W. D. Huse	331,401	Dec. 1	205	54	33	1034
Knitting-machine	W. D. Huse	331,402	Dec. 1	207	54	33	1035
Knitting-machine	G. A. Olson	330,728	Nov. 17	1733	{467 {468	33	853
Knitting-machine needle	J. J. Adgate and S. P. Kittle	332,372	Dec. 15	1652	433	33	1307
Knitting-machine needle	W. D. Huse	329,906	Nov. 10	655	167	33	634
Knitting-machine stop-motion mechanism	J. Byfield	328,876	Oct. 20	1789	467	33	342
Knitting-machine. Weft-thread	J. J. Adgate	332,374	Dec. 15	1654	434	33	1308
Knitting-machines. Cam-cylinder for	J. J. Adgate	332,373	Dec. 15	1653	{433 {434	33	1307
Knob and stop. Combined door	J. Leger and E. Keller	329,321	Oct. 27	2454	635	33	469
Knob attachment	W. I. Alvord	330,186	Nov. 10	1030	269	33	709
Knob attachment	W. I. Alvord	330,187	Nov. 10	1031	269	33	709
Knob attachment	W. I. Alvord	330,188	Nov. 10	1032	269	33	709
Knob attachment	W. I. Alvord	330,189	Nov. 10	1033	270	33	709
Knob attachment	H. P. Appleton	331,752	Dec. 8	767	193	33	1143
Knob attachment	C. H. Beebe	331,112	Nov. 24	2237	608	33	953
Knob attachment	J. E. Bowman	329,130	Oct. 27	2186	567	33	418
Knob attachment	P. Burns	328,184	Oct. 13	881	229	33	167
Knob attachment	W. H. Comstock	328,191	Oct. 13	889	231	33	168
Knob attachment	E. Parker	327,820	Oct. 6	411	107	33	72
Knob attachment	S. D. Montress	329,586	Nov. 3	221	58	33	547
Knob attachment	W. B. Smith	332,455	Dec. 15	1759	460	33	1325
Knob attachment. Door-	J. A. Paine	332,359	Dec. 15	1636	429	33	1304
Label-holder	E. A. Cannon	327,763	Oct. 6	338	87	33	59
Lace. Machine-made	E. Henkels	329,739	Nov. 3	423	109	33	585
Lactates. Manufacture of	C. E. Avery	330,815	Nov. 17	1844	.....	33	873
Lactose or milk-sugar. Making	A. H. Sabin	329,858	Nov. 3	586	.....	33	614
Ladder	W. M. Lyon	329,922	Nov. 10	674	172	33	638
Ladder and fruit-conveyer	G. W. Moore	329,668	Nov. 3	324	83	33	566
Ladder. Folding	D. P. Sharp	331,560	Dec. 1	441	114	33	1076
Ladder. Sectional	F. W. Gates	331,876	Dec. 8	933	241	33	1173
Ladder. Step-	E. M. Benjamin	327,513	Oct. 6	5	2	33	3
Ladder. Step-	C. A. Rittmann	329,218	Oct. 27	2310	598	33	442
Ladder. Wheel step-	A. Conine	331,685	Dec. 1	666	165	33	1115
Lamp	J. Bassemir and G. Hunel	328,276	Oct. 13	993	258	33	188
Lamp	A. Geiss	329,897	Nov. 10	645	164	33	632
Lamp	L. E. Klugh	328,492	Oct. 20	1283	333	33	249
Lamp	J. Lemperenr and L. Bernard	333,237	Dec. 29	2869	750	33	1537
Lamp	E. M. Wright	331,933	Dec. 8	1024	266	34	1191
Lamp-bracket	J. W. Culmer	328,992	Oct. 27	1870	488	33	363
Lamp-burner	E. A. Dobbins	331,381	Dec. 1	175	44	33	1029
Lamp-burner	J. F. Trout	330,910	Nov. 17	1838	{495 {496	33	872
Lamp. Car-	G. M. Clark and W. H. Briggs	329,535	Nov. 3	154	39	33	534
Lamp. Car-	G. M. Clark and W. H. Briggs	329,718	Nov. 3	305	101	33	580
Lamp. Carriage-	C. F. Waldron	333,365	Dec. 29	3043	794	33	1568

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Lamp. Central-draft	F. Rhind	333,338	Dec. 29	3009	788	33	1563
Lamp-chimney cleaner	M. D. Lamb	329,571	Nov. 3	206	54	33	544
Lamp-chimney cleaner	W. H. Reed	330,619	Nov. 17	1590	425	33	824
Lamp cut-out. Electric-arc	O. P. Loomis and H. W. Cooley	332,721	Dec. 22	2157	569	33	1402
Lamp. Electric	G. C. Pyle	331,327	Dec. 1	94	22, 23	33	1015
Lamp. Electric	E. Weston	330,450	Nov. 17	1384	369	33	784
Lamp. Electric	A. G. Holcombe	329,166	Oct. 27	2232	578	33	427
Lamp. Electric-arc	A. L. Fyfe and J. Main	328,022	Oct. 13	670	176	33	128
Lamp. Electric-arc	H. Lemp	329,461	Nov. 3	40	11	33	512
Lamp. Electric-arc	G. C. Pyle	329,948	Nov. 10	712	182	33	645
Lamp. Electric-arc	O. Romanze	330,351	Nov. 10	1240	331	33	750
Lamp. Electric-arc	C. E. Scribner	330,052	Nov. 10	850	219	33	672
Lamp. Electric-arc	C. E. Scribner	330,055	Nov. 10	854	221	33	673
Lamp. Electric-arc	W. M. Thomas	332,971	Dec. 22	2183	657	33	1464
Lamp. Electric-arc	T. L. Willson	332,173	Dec. 8	1316	356	33	1251
Lamp Electric-arc	D. McMahon	331,521	Dec. 1	376	101	33	1066
Lamp-hanger	A. F. Zimmerling	332,370	Dec. 15	1650	432	33	1307
Lamp. Heating	C. H. Benton	329,618	Nov. 3	266	68	33	555
Lamp holder. Incandescent	W. Stanley, Jr	330,269	Nov. 10	1129	300	33	729
Lamp holder. Incandescent-electric	A. Harding	333,219	Dec. 29	2845	744	33	1582
Lamp. Incandescent electric	C. Heisler	327,795	Oct. 6	377	98	33	66
Lamp. Incandescent electric	C. Heisler	327,796	Oct. 6	380	98, 99	33	67
Lamp. Incandescent electric	C. Heisler	330,586	Nov. 17	1530	415	33	816
Lamp. Incandescent electric	J. Nelson	327,578	Oct. 6	99	22, 23	33	19
Lamp. Mechanical	T. Silver	329,600	Nov. 3	243	63	33	551
Lamp. Moderator-	E. Bourdon	332,322	Dec. 15	1580	414	33	1295
Lamp regulator. Electric-arc	J. Cain	333,194	Dec. 29	2808	735	33	1525
Lamp shade and ornament	W. J. Mingus	328,047	Oct. 13	702	184	33	134
Lamp suspension device	W. H. Babcock	332,695	Dec. 22	2121	550	33	1395
Lamp. Switch-	O. F. Jordan and L. M. Curry	328,490	Oct. 20	1220	332	33	249
Lamp switch. Incandescent-electric	C. R. Arnold	328,831	Oct. 20	1735	451	33	332
Lamp. Vapor-burning	A. M. Southard	333,354	Dec. 29	3030	791	33	1566
Lamps. Automatic switch-board for electric	C. R. Arnold	328,832	Oct. 20	1736	451	33	332
Lamps. Canopy for railway-car	J. Kirby, Jr	330,030	Nov. 10	823	211	33	666
Lamps. Carbonizing filaments for incandescent electric	E. P. Thompson	331,663	Dec. 1	630	155	33	1108
Lamps. Clamping device for incandescent electric	C. G. Perkins	331,002	Nov. 24	2092	566	33	926
Lamps. Globe for incandescent electric	W. Stanley, Jr	333,028	Dec. 22	2578	678	33	1460
Land-roller	J. W. Jones	328,489	Oct. 20	1279	332	33	248
Laryngoscope. Electric	C. W. Meyer	330,139	Nov. 10	973	253	33	698
Last	L. Graf	327,789	Oct. 6	371	96	33	65
Last	C. W. Horney	332,151	Dec. 8	1350	349	33	1246
Last	W. T. Martin	331,313	Dec. 1	76	18	33	1013
Last	H. Stockman	329,784	Nov. 3	462	122	33	596
Last	H. Stockman	329,785	Nov. 3	463	122	33	597
Last. Adjustable	D. Dodsworth	327,538	Oct. 6	48	11	33	10
Last. Repairing-	J. Burke	331,765	Dec. 8	782	198	33	1146
Lasting-machine	G. W. Copeland and J. E. Crisp	329,282	Oct. 27	2395	621	33	458
Lasting-machine	G. W. Copeland and J. E. Crisp	329,283	Oct. 27	2397	{621 {622	33	459
Lasting machine. Heel-	G. W. Copeland	329,279	Oct. 27	2390	{618 {619	33	457
Lasting machine. Heel-	G. W. Copeland	329,281	Oct. 27	2393	620	33	458
Latch	K. Clementsen	328,763	Oct. 20	1650	430	33	316
Latch and lock. Combined	S. Ehrman	328,393	Oct. 13	1160	299	33	219
Latch. Door-	W. G. Cline	332,995	Dec. 22	2531	667	33	1471
Latch for cars. Automatic side-door	J. T. Gordon and J. H. Hamilton	329,733	Nov. 3	415	107	33	564
Latch. Gate-	C. T. Bond	329,260	Oct. 27	2368	613	33	453
Latch. Gate-	F. A. Harvey	327,679	Oct. 6	244	59	33	43
Latch. Gate-	W. Mathews	330,992	Nov. 24	2060	563	33	924
Latch. Knob-	W. E. Sparks	327,833	Oct. 6	428	111	33	75
Latch. Mortise-	W. E. Sparks	332,456	Dec. 15	1760	461	33	1326
Latches. Keeper for knob-	H. Morton	331,022	Dec. 22	2570	676	33	1479
Lath attachment	E. J. Bracken	332,481	Dec. 15	1792	471	33	1331
Lathing. Fire-proof	L. and W. H. Lane	331,643	Dec. 1	603	149	33	1103
Lathing. Mat-work	H. Kahls	331,888	Dec. 8	957	247	33	1177
Lathe	R. C. Fay	332,381	Oct. 27	2552	{657 {658	33	485
Lathe	R. C. Fay	332,335	Dec. 15	1595	419	33	1298
Lathe attachment	W. Middleditch	332,817	Dec. 22	2269	593	33	1424
Lathe. Automatic	H. Voigt	329,105	Oct. 27	2147	{555 {556	33	411
Lathe boring-tool	D. Evans	332,065	Dec. 8	1216	317	33	1224
Lathe cutting appliance	L. E. Wheeler	330,948	Nov. 24	2023	547	33	913
Lathe-dog	S. A. Leonard	330,245	Nov. 10	1098	291	33	723
Lathe for turning spirals	A., Sr., and A. Gassinger, Jr	332,510	Dec. 15	1835	{481 {482	33	1339
Lathe. Many-spindle	A. and A. Gassinger, Jr	332,509	Dec. 15	1833	481	33	1339
Lathe. Metal-turning	F. E. Reed and J. R. Back	332,833	Dec. 22	2291	604	33	1428
Lathe tool-holder	C. H. Kelley	332,806	Dec. 22	2258	595	33	1422
Lathe tool-holder	B. B. Keyes	332,086	Dec. 8	1250	326	33	1230
Lathe. Turning-	O. Kromer	333,016	Dec. 22	2557	673	33	1476
Lathes. Polishing mechanism for turning	J. M. Gilbert	330,890	Nov. 24	1947	527	33	899
Lathes. Taper and pulley-turning attachment for	T. H. Worrall	332,578	Dec. 15	1945	509	33	1357
Lathes. Tool-holding attachment for	W. Frech	329,447	Nov. 3	25	7, 8	33	509
Laying-out and embalming board	N. T. Shaw	327,967	Oct. 6	599	156	33	108
Laying-out and embalming board	N. T. Shaw, W. S. Carlile, and J. W. Dann.	330,160	Nov. 10	996	{259 {260	33	702
Lead. Apparatus for feeding white	M. Forst	331,698	Dec. 1	683	169	33	1118
Lead-pipe presses. Attachment for	J. Tatham	327,835	Oct. 6	430	112	33	76
Leather. Oil compound for	A. Schmitt	329,960	Nov. 10	728	.....	33	649
Leather. Racing-machine for cutting	A. F. Stowe	328,078	Oct. 13	745	{194 {195	33	141
Leather-rolling machine	E. E. Church	333,196	Dec. 29	2811	736	33	1526

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Leather-splitting machine	E. Cummings	332,385	Dec. 15	1671	437, 438	33	1310
Leather-stock with naphtha to extract oils therefrom. Treating	J. J. Sawin	332,840	Dec. 22	2299	606	33	1430
Leather washer	T. Gingras	331,293	Dec. 1	53	13	33	1009
Leggin	J. H. Way	332,630	Dec. 15	2010	527	33	1309
Lemon-squeezer	F. J. Herrick	331,236	Nov. 24	2417	655	33	985
Lemon-squeezer	T. McKeethen	330,505	Nov. 17	1454	389	33	798
Letter-box	J. J. Blair	331,760	Dec. 8	777	196	33	1145
Letter-box	L. Ehrlich	329,293	Oct. 27	2416	626, 627	33	462
Letter-box	P. Heintz	331,196	Nov. 24	2356	637	33	975
Letter-box. Alarm	H. Roesko	331,735	Dec. 1	739	186	33	1129
Letter-box. Street	W. H. Taylor	329,688	Nov. 3	354	90	33	572
Letter-boxes. Electrical alarm for	L. Ehrlich	329,294	Oct. 27	2417	627	33	462
Letter-boxes. Electrical indicator for	E. E. Weaver	329,245	Oct. 27	2347	607	33	449
Letter for signs	E. H. Howard	333,306	Dec. 29	2906	776	33	1555
Level. Engineer's reversible	C. F. and T. Cooke	330,210	Nov. 10	1057	276	33	714
Level. Pendulum	S. J. Deckard	328,881	Oct. 20	1800	469	33	343
Level. Pendulum	J. Murray	328,052	Oct. 13	708	186	33	135
Leveling and supporting implement	L. S. Hoyt	332,715	Dec. 22	2149	567	33	1400
Leveling-instrument	T. J. Barron	331,604	Dec. 1	540	131	33	1092
Leveling-instrument	A. G. W. Foster	328,665	Oct. 20	1534	399	33	294
Leveling-instrument	J. D. Haithcock and W. T. Suit	333,009	Dec. 22	2350	671	33	1475
Leveling-instrument. Hydrostatic	J. Macdonald	327,564	Oct. 6	82	18	33	15
Leveling instruments and transits. Attachment for	F. Parson	331,433	Dec. 1	256	60	33	1044
Levers. Device for operating a set of	H. D. Ganse	331,629	Dec. 1	588	145	33	1100
Life-preserver	P. Kingston	328,230	Oct. 13	936	244	33	178
Lifter: *See* Stone-lifter. Transom-lifter. Track-lifter.							
Lifting-jack	J. Barrett. (Reissue)	10,651	Oct. 13	1234	320	33	234
Lifting-jack	A. W. Hamaker and J. E. Peck	330,592	Nov. 17	1546	414	33	815
Lifting-jack	A. C. Long	331,415	Dec. 1	235	61	33	1039
Lifting-jack	A. A. Strom	331,919	Dec. 8	997	258	33	1185
Lifting-jack	E. Suckow	331,460	Dec. 1	296	80	33	1051
Light: *See* Signal-light.							
Light. Apparatus for distributing and diffusing	A. P. Trotter	330,356	Nov. 10	1251	333	33	753
Lights. Dissolving-key for oxyhydrogen	H. J. Brower	330,092	Nov. 10	912	237	33	685
Lights. Manufacture of night-	S. Clarke	329,536	Nov. 3	155	39	33	535
Lighting device	N. B. Stubblefield	329,864	Nov. 3	504	152	33	616
Lightning. Apparatus for protecting structures from	C. J. Hubbell	329,833	Nov. 3	555	141	33	608
Lightning-arrester	A. J. Holt	330,486	Nov. 17	1430	362	33	794
Lightning-arresters. Testing apparatus for	C. E. Scribner	330,054	Nov. 10	853	220	33	673
Lightning-rod coupling	A. J. Munson	332,673	Dec. 15	2080	546	33	1381
Lightning-rod standard	J. W. Cole and H. Knudsen	332,363	Dec. 15	1669	437	33	1310
Limb. Artificial	G. Beacock and T. Sparham	329,879	Nov. 10	625	158	33	628
Limb. Artificial	G. Beacock and T. Sparham	329,880	Nov. 10	626	159	33	628
Lime. Manufacture of	H. Mathey	330,603	Nov. 17	1570	.....	33	820
Limekiln	J. Hunt	330,121	Nov. 10	949	246, 247	33	692
Line-reel brake	C. H. Briggs	329,711	Nov. 3	385	98	33	578
Line-stretcher	C. Grosinski and G. B. Beecher	333,067	Dec. 22	2021	667	33	1487
Liniment	C. P. Keen	327,883	Oct. 6	482	.....	33	85
Linings. Folding	J. Irving	330,707	Nov. 17	1703	460	33	847
Link-machine	J. F. Busey	329,010	Oct. 27	2011	523	33	388
Link-making machine	J. I. Cheesman	332,993	Dec. 22	2526	666, 667	33	1470
Link, Split	W. H. Clay	329,142	Oct. 27	2201	570	33	421
Liquid-drawing apparatus	H. M. Powers	329,945	Nov. 10	708	181	33	644
Liquid-meter	E. Kronenberg and C. Wolters	327,956	Oct. 6	583	152	33	105
Liquor-flask	H. W. T. Jenner	330,709	Nov. 17	1705	460	33	848
Liquors. Apparatus for filling vessels with fermented	C. Müssel	333,081	Dec. 22	2646	693, 694	33	1491
Liquors. Filling vessels with fermented	C. Müssel	331,252	Nov. 24	2443	660	33	989
Lithographic presses. Damping-roller for	J. Brengel	327,995	Oct. 13	634	168	33	122
Lithographic stones. Machine for making artificial	J. Wezel	332,852	Dec. 22	2320	614	33	1432
Load-binder	L. B. Melins	331,421	Dec. 1	243	64	33	1041
Loads down mountains. Device for transferring	A. Roncaglia	330,805	Nov. 17	1831	494	33	871
Loading and unloading platform for street use	J. H. L. Tuck	330,754	Nov. 17	1769	477	33	850
Lock: *See* Bag-lock. Door-lock. Mail-bag lock. Permutation-lock. Sash-lock. Seal-lock. Trap-lock. Trunk-lock. Wagon-seat lock.							
Lock	A. Kirks	329,456	Nov. 3	34	10	33	511
Lock	W. J. Mandeville	331,073	Nov. 24	2170	589	33	942
Lock	W. M. Morton	331,153	Nov. 24	2293	621	33	963
Lock	W. G. Mumma	331,995	Dec. 8	1108	288	33	1205
Lock	A. W. Paull and D. L. Heiskell	327,715	Oct. 6	285	73	33	50
Lock	J. C. Taylor	332,966	Dec. 22	2478	656	33	1463
Lock	W. H. Taylor	332,459	Dec. 15	1763	461	33	1326
Lock	C. F. Veit	332,976	Dec. 22	2491	650	33	1465
Lock	J. A. E. Anderson	331,671	Dec. 1	641	158	33	1110
Lock and latch combined	G. E. Bower	333,440	Dec. 29	3137	820	33	1584
Lock and latch. Combined	L. Van Alstyne	327,624	Oct. 6	166	41	33	30
Lock bolt. Door	A. Schweinfurt	329,494	Nov. 3	95	25	33	523
Lock-case	H. B. Plumb	331,063	Nov. 24	2192	593	33	946
Lock face-plate	G. Voll	333,434	Dec. 29	3130	818	33	1582
Lock. Latch	S. W. Budd	328,875	Oct. 20	1788	467	33	341
Locking bars. Device for	T. Shehan	330,266	Nov. 10	1125	299	33	728
Locking-bracket for curtain and other rods and rails	C. J. Beckman	328,562	Oct. 20	1392	360	33	967

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Locomotive	G. H. Griggs	328,845	Oct. 20	1754	457	33	335
Locomotive	F. W. Johnstone	331,973	Dec. 8	1074	279, 280, 281	33	1200
Locomotive	H. A. Luttgens	330,340	Nov. 10	1218	326	33	747
Locomotive-alarm. Electric	W. Vogel	330,074	Nov. 10	889	230	33	680
Locomotive ash-pan	E. Beals	328,751	Oct. 20	1640	427	33	314
Locomotive-engine bearing	J. Willis	333,269	Dec. 29	2919	763, 764	33	1547
Locomotive-engine saddle	J. D. Campbell	328,002	Oct. 13	643	170	33	133
Locomotive fire-boxes. Arch for	G. W. Cushing	303,202	Dec. 29	2892	738	33	1528
Locomotive-furnace	J. Burkett	330,819	Nov. 17	1849	498	33	873
Locomotive-furnace	H. Monk	328,048	Oct. 13	703	185	33	134
Locomotive journal-box	G. H. Kinzer	332,157	Dec. 8	1358	352	33	1248
Locomotive smoke-box	G. R. Henderson	328,674	Oct. 20	1545	402	33	295
Locomotive steam-engine	W. J. Hammond	328,215	Oct. 13	917	238	33	174
Locomotive traction-increaser	J. J. Steiger	333,298	Dec. 15	1545	404	33	1298
Locomotives and cars. Device for arresting	M. F. Bonzano	330,671	Nov. 17	1657	446	33	839
Locomotives. Apparatus for supplying natural gas to	J. H. Katz	331,716	Dec. 1	707	175	33	1123
Log-boat	W. A. Dexter	329,145	Oct. 27	2204	571	33	422
Log-boom	J. Green	330,016	Nov. 10	805	206	33	662
Logs on wagons. Device for loading	J. T. Bond	329,704	Nov. 3	377	96	33	577
Loom float-detecting mechanism	A. Mallory	331,697	Dec. 8	966	250	33	1179
Loom for weaving tufted fabrics	A. L. Skinner	330,069	Nov. 10	877	226, 227, 228	33	679
Loom let-off mechanism	J. A. Bergan	331,274	Dec. 1	8	2	33	1002
Loom let-off mechanism	W. B. Gambrill and P. Russel	332,887	Dec. 22	2374	628	33	1442
Loom let-off mechanism	E. A. Ladue	328,041	Oct. 13	694	183	33	133
Loom let-off mechanism	J. and J. Nightingale	332,822	Dec. 22	2275	600	33	1425
Loom, Needle	A. L. Skinner	330,070	Nov. 10	883	228, 229	33	679
Loom picker-staff check	T. A. Anderson	330,191	Nov. 10	1036	270	33	710
Loom picker-staff check	J. C. Potter	333,332	Dec. 29	3001	786	33	1561
Loom picker-stick	L. Taft	329,971	Nov. 10	744	189	33	651
Loom picking-shoe	J. L. Inman and E. H. Stevens	331,986	Dec. 8	954	247	33	1177
Loom pile-wire	E. Crossley and R. Cochrane	330,821	Nov. 17	1851	499	33	874
Loom positive shuttle-motion	C. S. Strowbridge	332,217	Dec. 8	1435	370	33	1202
Loom-shuttle	A. E. P. Martyn	333,317	Dec. 29	2984	781	33	1558
Loom-shuttle	C. N. Newcomb	330,144	Nov. 10	978	254	33	699
Loom shuttle-box-operating device	L. J. Knowles	329,396	Oct. 27	2578	685	33	490
Loom-shuttle-driving mechanism	F. Kesselring	332,400	Dec. 15	1689	443	33	1313
Loom-shuttle guard	N. Drake and S. Feather	331,117	Nov. 24	2244	610	33	955
Loom-shuttle thread-guide and tension-regulator	G. Baldwin	330,544	Nov. 17	1501	401	33	808
Loom take-up mechanism	J. C. and J. F. Brooks, F. W. Ball, and H. Brooks.	332,782	Dec. 22	2233	588, 589	33	1417
Loom take-up mechanism	H. Talks	329,972	Nov. 10	744	190	33	651
Loom-temple for tubular fabrics	W. Hause	329,037	Oct. 27	2052	532	33	395
Loom. Terry	T. Holt, Jr., and J. Mellor	327,685	Oct. 6	250	61	33	43
Loom warp-beam	C. A. Dayton	328,297	Oct. 13	1016	264	33	192
Looms. Anchor shuttle-box motion for	C. Strobel	331,741	Dec. 1	745	189	33	1130
Looms on breakage of the weft. Device for arresting the take-up mechanism of	A. F. Staples	333,029	Dec. 22	2579	678	33	1481
Lotion	C. H. Eyermann	327,933	Oct. 6	554	.....	33	99
Low-water alarm	J. W. Kenyon	329,176	Oct. 27	2242	581	33	429
Low-water alarm for steam-boilers	A. Kerr	333,231	Dec. 29	2963	748	33	1535
Low-water alarms. Float for	A. Weldon	329,248	Oct. 27	2352	609	33	450
Lubricants. Machine for testing	R. H. Thurston	332,974	Dec. 22	2487	658	33	1464
Lubricating flanges and treads of car-wheels	F. S. Clarkson	332,904	Dec. 22	2530	667	33	1471
Lubricating rotary motors. Apparatus for	C. A. Parsons	328,711	Oct. 20	1593	415	33	304
Lubricator: *See* Antomatic lubricator. Axle-lubricator. Journal-lubricator. Pulley-lubricator. Steam-engine lubricator.							
Lubricator	H. A. Andrews	330,192	Nov. 10	1037	271	33	710
Lubricator	P. Armington	330,767	Nov. 17	1786	481	33	862
Lubricator	P. Armington	330,768	Nov. 17	1786	481	33	862
Lubricator	E. Grace and C. H. Parshall, Jr.	330,891	Nov. 24	1948	527	33	899
Lubricator	O. H. Jewell	328,313	Oct. 13	1038	268	33	196
Lubricator	T. B. McNiece	330,914	Nov. 24	1978	535	33	905
Lubricator	R. B. Motherwell	331,809	Dec. 8	831	212	33	1154
Lubricator	C. H. Parshall, Jr.	328,335	Oct. 13	1071	279	33	203
Lubricator	C. H. Parshall, Jr.	328,336	Oct. 13	1072	279	33	204
Lubricator	J. Powell	332,623	Dec. 15	2002	525	33	1368
Lubricator	E. Rost	328,433	Oct. 13	1214	314	33	230
Lubricator	M. Stroder	329,502	Nov. 3	104	27	33	525
Lubricator	F. A. Strong	330,525	Nov. 17	1480	396	33	802
Lumber-drier	O. A. Duke	332,241	Dec. 15	1473	384	33	1275
Lumber-drier	A. S. Nichols	329,669	Nov. 3	325	83	33	566
Lumber-drier	G. F. Starkweather	327,903	Oct. 6	510	132	33	91
Lumber-drier	G. F. Starkweather	327,904	Oct. 6	511	133	33	92
Lumber-drying platen	N. S. Bonton	332,991	Dec. 22	2523	666	33	1470
Lumber-elevator	H. T. Runyan	332,213	Dec. 8	1429	369	33	1261
Lumber-transporter	W. Way	328,928	Oct. 20	1731	450	33	332
Lumber-trimmer	A. Rodgers	330,903	Nov. 17	1828	493	33	870
Machinery. Electric signaling apparatus for	M. W. Grovesteen	329,830	Nov. 3	550	140	33	607
Magazine-boiler	J. T. Corbett	329,890	Nov. 10	637	162	33	631
Magnet armature. Electro-	J. Steiner	329,782	Nov. 3	480	121	33	596
Magnet. Compound	S. H. Parkes	329,768	Nov. 3	460	116	33	592
Magnet. Electro-	H. P. Brown	330,463	Nov. 17	1399	372	33	787
Magnet for signals. Electro-	W. E. Davis	327,536	Oct. 6	46	10	33	10
Magnets self-keeping. Making	E. B. Silliman	331,630	Dec. 8	868	222, 223	33	1160

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Magnetic oxide. Covering metallic objects with an electroplating of	W. H. Winslow	331,104	Nov. 24	2215	.....	33	950
Magnetic-oxide-of-iron-plated ware	W. H. Winslow	331,105	Nov. 24	2215	.....	33	950
Magneto call-box	J. F. Kettell	331,718	Dec. 1	708	175	33	1123
Magneto-electric indicator	J. C. Boyle	332,480	Dec. 15	1791	471	33	1331
Mail-bag	D. P. Brophy	331,472	Dec. 1	311	83	33	1053
Mail-bag	F. J. Feinthel and J. G. Dinkelbiher.	329,155	Oct. 27	2219	574	33	424
Mail-bag	L. C. Huber	328,034	Oct. 13	686	181	33	131
Mail-bag lock	D. P. Brophy	331,474	Dec. 1	313	84	33	1054
Mail-bags, &c. Fastening for	W. Timermann	327,972	Oct. 6	606	158	33	109
Mail-bags. Machine for riveting staples to	R. Brass	331,573	Dec. 1	164	42	33	1027
Mail-box	O. E. Miles	328,046	Oct. 13	700	184	33	134
Mainspring safety device	L. C. Davis	331,774	Dec. 8	793	201	33	1147
Mainspring-winder	H. H. Pulver	333,251	Dec. 29	2891	756	33	1541
Mandrel	S. P. M. Tasker	331,570	Dec. 1	453	{117 118	33	1070
Mandrel	S. P. M. Tasker	331,578	Dec. 1	465	120	33	1083
Mandrel. Roller	S. P. M. Tasker	331,573	Dec. 1	463	119	33	1080
Mangle	C. Whitney	329,250	Oct. 27	2354	609	33	450
Manure-distributer	J. E. Person	331,540	Dec. 1	403	109	33	1071
Map and chart standard	J. S. Fox	333,211	Dec. 29	2832	741	33	1530
Map or chart attachment	G. F. Schild	332,167	Dec. 8	1369	354	33	1250
Marine boiler	E. S. T. Kennedy	329,912	Nov. 10	661	169	33	636
Marine brake	J. McAdams	330,034	Nov. 10	827	212	33	667
Marker. Land	T. W. Beal	328,501	Oct. 20	1380	{359 360	33	266
Marker. Land	P. M. Dice	332,792	Dec. 22	2345	592	33	1419
Mash-machine	J. B. Adt	327,751	Oct. 6	324	83	33	57
Mashing apparatus	C. Andersen	332,774	Dec. 22	2323	586	33	1415
Masts. Withe-band stay for	R. B. Chute	332,232	Dec. 15	1456	378	33	1272
Mat: *See* Electric mat. Oil-press mat.							
Mat or floor-covering	R. Martinez	332,921	Dec. 22	2418	639	33	1452
Match-box	W. F. Hyatt	327,669	Oct. 6	254	63	33	44
Match-lighting device. Flexible	D. E. Carroll	327,656	Oct. 6	213	53	33	38
Match-making machine	G. E. Norris and W. E. Hagan	332,737	Dec. 22	2175	{574 575	33	1406
Matches. Apparatus for dipping	W. E. Hagan and G. E. Norris	331,129	Nov. 24	2258	{613 614	33	957
Matrix-making and printing machine	O. Mergenthaler	328,960	Oct. 27	1927	{502 503	33	373
Mattress	G. D. Peters	332,432	Dec. 15	1735	454	33	1321
Mattress-rack	G. E. Bedell	330,370	Nov. 17	1276	339	33	764
Mattress. Ventilated	P. Gontevenier	327,677	Oct. 6	243	59	33	42
Measure for dry-goods, &c. Self-indicating	C. C. Springe and C. J. Raiffeisen	332,965	Dec. 22	2476	656	33	1465
Measure. Lumber	E. N. Barber	332,804	Dec. 22	2339	619	33	1435
Measure, register, and sacker. Grain	J. F. Porter	327,718	Oct. 6	289	74	33	51
Measure. Tailor's	G. J. and E. Chambers	332,783	Dec. 22	2234	589	33	1417
Measurement of optical lenses. Instrument for the focal	F. Scharpf	327,602	Oct. 6	131	31	33	25
Measuring device and register for fencing material	J. B. Thies	327,905	Oct. 6	513	133	33	92
Measuring device for oil-tanks	J. P. Laner and A. Veiders	327,560	Oct. 6	77	17	33	15
Measuring-instrument. Electrical	E. Weston	327,908	Oct. 6	516	{134 135	33	92
Measuring liquids. Device for	F. Bach	329,427	Nov. 3	2	1	33	605
Measuring the areas of surfaces. Machine for	W. A. Sawyer	329,596	Nov. 3	235	60, 61	33	550
Measuring the areas of surfaces. Machine for	W. A. Sawyer	329,597	Nov. 3	238	62	33	551
Measuring the length of fabrics. Apparatus for	E. H. Eisenhart	327,540	Oct. 6	49	11, 12	33	10
Measuring-vessel	E. R. Stasch	332,297	Dec. 15	1544	404	33	1288
Meat-chopper	A. B. Baum	333,381	Dec. 29	3061	798	33	1571
Meat-chopping machine	A. Heusch	332,608	Dec. 15	1983	{519 520	33	1364
Meat. Composition for curing	T. H. Riethmüller	329,774	Nov. 3	470	.....	33	594
Meat crusher or tenderer	W. L. Freese	330,310	Nov. 10	1184	316	33	740
Meat-cutting machine	R. McChesney	331,900	Dec. 8	969	251	33	1179
Meat-mincing machine	P. Billingham	328,641	Oct. 20	1502	391	33	288
Meat-slicer	E. Covert	329,818	Nov. 3	530	135	33	605
Meat-tenderer	W. Robinson	329,775	Nov. 3	470	119	33	594
Mechanical motor	P. F. Bugbee	331,046	Dec. 8	1188	311	33	1219
Mechanical motor	F. D. Jones and H. M. Hart	330,029	Nov. 10	822	211	33	668
Mechanical movement	A. L. Cushman	328,014	Oct. 13	662	174	33	127
Mechanical movement	G. D. Ferris	331,695	Dec. 1	679	168	33	1118
Mechanical movement	B. F. Meyer	330,255	Nov. 10	1109	294	33	795
Mechanical movement	P. A. Myers	333,477	Dec. 29	3191	834	33	1592
Mechanical movement	G. R. Peare	333,328	Dec. 29	2996	785	33	1561
Mechanical movement	L. Schultz	330,150	Nov. 10	991	258	33	701
Mechanical movement	J. Thomson	331,845	Dec. 8	891	230	33	1165
Mechanical movement	J. Thomson	331,846	Dec. 8	892	231	33	1165
Mechanical movement	J. Thomson	331,847	Dec. 8	894	231	33	1166
Mechanical movement	M. B. True	327,741	Oct. 6	312	80	33	55
Mechanical movement	W. P. Valentine	328,090	Oct. 13	764	199	33	144
Medical apparatus. Electro	A. Metzger	329,929	Nov. 10	653	175	33	640
Medical compound	C. J. Ulrici	333,361	Dec. 29	3039	.....	33	1568
Medical compound	S. D. Willis	327,647	Oct. 6	443	.....	33	78
Medical treatment. Rubber water-bag for	D. Roberts	329,935	Nov. 10	752	184	33	647
Medical use. Induction-coil for	J. C. Vetter	330,531	Nov. 17	1456	397	33	803
(Medicine.) Blackleg. Remedy for	C. L. Hussey	332,804	Dec. 22	2257	.....	33	1421
(Medicine.) Cough remedy	J. F. Richardson	332,046	Dec. 22	2455	.....	33	1459
(Medicine.) Laxative compound	C. N. Waite	330,532	Nov. 17	1467	.....	33	804
(Medicine.) Rheumatism remedy	J. R. Barr	329,697	Nov. 3	365	.....	33	574
(Medicine.) Rheumatism remedy	S. Nash	332,507	Oct. 20	1304	.....	33	254
Menthol. Process of obtaining	A. M. Todd	330,274	Nov. 10	1136	302	33	730
Mercury from its ores. Apparatus for extracting	H. Berrens	331,860	Dec. 8	913	236	33	1169

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Metal. Apparatus for containing and transferring molten	H. Schulze-Berge	329,491	Nov. 3	90	24	33	582
Metal bars. Machine for drawing cold	W. Allderdice	329,800	Nov. 3	501	{127 128	33	600
Metal blanks. Machine for drilling	W. L. Grout and E. L. Bowers	333,461	Dec. 29	3169	808	33	1589
Metal plates. Apparatus for coating	H. F. Taylor and G. Leyshon	329,240	Oct. 27	2339	{605 606	33	447
Metal press. Fluid	W. R. Hinsdale	330,895	Nov. 24	1951	{528 529	33	900
Metal-pressing apparatus. Fluid	W. R. Hinsdale	332,656	Dec. 15	2053	540	33	1377
Metal ribbon. Apparatus for polishing	J. Logan	328,125	Oct. 13	805	210	33	152
Metal rods. Forming grooved	W. A. McCool	328,797	Oct. 20	1692	440	33	324
Metal rolls. Machine for grooving	C. B. and W. H. Campbell	331,613	Dec. 1	551	{135 136 137	33	1094
Metal-shearing machine	A. Stover	329,096	Oct. 27	2136	552	33	409
Metal surfaces. Machine for grinding	A. Dawes	329,289	Oct. 27	2407	624	33	461
Metal tube	E. Levavasseur	330,910	Nov. 24	1973	533	33	904
Metal-working machine. Compound	A. S. Towle. (Reissue)	10,665	Nov. 24	2472	667	33	994
Metallic fabric	W. C. Edge	331,044	Nov. 24	2136	579	33	935
Metallic plate-joints. Fusing	C. H. Wilson and J. Stenart	333,371	Dec. 29	3051	796	33	1569
Metallurgic operations. Drying air for	J. H. Cremer	330,381	Nov. 17	1292	343	33	767
Metallurgical apparatus	J. E. Clayton and S. F. Mackie	330,961	Nov. 24	2043	{552 553	33	917
Meter: *See* Electric meter. Liquid-meter. Electrical meter. Piston-meter. Fluid piston-meter. Water-meter.							
Micrometer-gage	E. A. Marsh	329,181	Oct. 27	2248	{582 583	33	430
Micrometer-gage for watch-makers	E. Clark	331,116	Nov. 24	2242	610	33	954
Micrometer-gages. Adjustable anvil for	F. Spaulding	332,118	Dec. 8	1300	337	33	1238
Microscope	E. Bausch	328,277	Oct. 13	994	259	33	188
Middlings-purifier	W. Klostermann	332,615	Dec. 15	1992	522	33	1366
Middlings-purifier	W. Klostermann	332,616	Dec. 15	1994	523	33	1366
Middlings-purifier	G. F. Sherwood	330,745	Nov. 17	1756	473	33	856
Middlings-purifier	C. H. Sinderson	327,607	Oct. 6	138	33	33	26
Middlings-purifier	C. A. Smith	330,746	Nov. 17	1758	{474 475	33	857
Middlings-purifier	J. L. Willford	328,269	Oct. 13	982	256	33	186
Middlings purifier and separator	E. W. Howard	329,168	Oct. 27	2234	578	33	427
Milk and cream. Centrifugal machine for testing	J. D. Frederiksen and P. Rasch	330,779	Nov. 17	1799	485	33	864
Milk and cream. Centrifugal machine for testing	J. D. Frederiksen and P. Rasch	330,780	Nov. 17	1800	485	33	865
Milk-cans to wagons. Device for attaching	C. W. Bishop	329,431	Nov. 3	7	2	33	506
Milk. Condensed	A. H. Sabin	329,778	Nov. 3	474	.....	33	599
Milking apparatus. Cow	J. P. Martin	331,513	Dec. 1	363	98	33	1063
Mill: *See* Bark-mill. Oatmeal and grain reduction mill. Cleaning, hulling, and grinding mill. Roller-mill. Coffee-mill. Rolling-mill. Fanning-mill. Saw-mill. Grinding-mill. Windmill.							
Mill-stock feeder	G. Cottrell	329,364	Oct. 27	2528	651	33	481
Milling-machine	A. T. Gifford	330,391	Nov. 17	1307	347	33	770
Milling-machine. Compound	C. E. Hadley	330,581	Nov. 17	1543	{413 414	33	815
Millstone-dress	A. S. Baker	330,665	Nov. 17	1646	{442 443	33	836
Mineral wool. Apparatus for manufacturing	H. Kennedy and J. W. Higgs	328,227	Oct. 13	933	{242 243	33	177
Mineral wool. Manufacture of	H. Kennedy and J. W. Higgs	328,226	Oct. 13	931	242	33	177
Miners' needles. Machine for making	H. C. Burk	328,107	Oct. 13	785	205	33	149
Mines. Case for submarine	J. P. Gibbins	330,227	Nov. 10	1077	284	33	718
Mines. Testing and firing apparatus for submarine	J. P. Gibbins	330,226	Nov. 10	1076	{283 284	33	718
Mining-drill	J. F. Mathey	328,327	Oct. 13	1056	273	33	200
Mining machine. Coal	B. F. Asper	329,526	Nov. 3	552	36, 37	33	732
Mining the beds of rivers and streams. Apparatus for	J. R. Moffitt	327,707	Oct. 6	271	69	33	48
Mining-tool	J. J. Lloyd	333,472	Dec. 29	3165	831	33	1591
Mirror. Decorated	H. S. Utley and H. S. Bowen	333,433	Dec. 29	3129	.....	33	1582
Mirror. Folding	P. Wiederer	328,742	Oct. 20	1632	425	33	312
Mirror. Hand	P. Wiederer	328,739	Oct. 20	1628	424	33	311
Mirror. Hand	P. Wiederer	328,740	Oct. 20	1630	424	33	311
Mirror. Hand	P. Wiederer	328,741	Oct. 20	1630	425	33	312
Mittens and gloves. Manufacture of felted	D. Beatty	333,101	Dec. 29	2677	702	33	1504
Mixer: *See* Cream, egg, and liquor mixer. Gas-mixer. Paint-mixer.							
Mixing, diffusing, leaching, and concentrating apparatus	C. Hornbostel	328,585	Oct. 20	1412	368	33	272
Mold: *See* Boot or shoe heel mold. Ice-cream and pudding mold. Casting-mold. Ingot-mold. Cigar-mold. Sad-iron mold.							
Molding-clamp	C. A. Phelps and W. W. Sterns	332,942	Dec. 22	2445	647	33	1458
Molding-machine	W. S. Garrison	331,050	Nov. 24	2142	581	33	936
Molding machine. Sand	A. Rice	332,834	Dec. 22	2292	604	33	1428
Molding machine. Sand	C. Schlickeysen and E. Breslauer	331,553	Dec. 1	420	112	33	1074
Molding machine. Sand	P. C. Smith	332,962	Dec. 22	2473	655	33	1462
Molding machines. Pattern-box for sand	M. R. Moore	331,209	Nov. 24	2275	643	33	978
Molding the sections of conduits for underground conductors. Apparatus for	J. R. Burdick	332,047	Dec. 8	1188	311	33	1219

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Moldings. Ornamental roller-die for	P. Reuhl	328,339	Oct. 13	1076	220	33	904
Mole-trap	E. Bills	332,133	Dec. 8	1322	343	33	1242
Mole-trap	W. R. Eddington	331,483	Dec. 1	322	87	33	1055
Mop-cloth	E. F. Wilson	333,372	Dec. 29	3052	796	33	1569
Mop, Floor	G. A. Keene	331,641	Dec. 1	601	148	33	1103
Mordant	M. Conrad	328,464	Oct. 20	1253	.....	33	244
Mortise-lock	G. Voll	332,849	Dec. 22	2316	613	33	1432
Mortising-machine	J. Oppenheimer. (Reissue)	10,655	Oct. 27	2626	478	33	498
Moth trap and tree-protector. Coddling	G. W. Thissell	333,265	Dec. 29	2913	762	33	1545
Motion. Device for converting	S. C. Mortimer	329,761	Nov. 3	454	114	33	590
Motion. Device for converting	J. C. Potts	333,333	Dec. 29	3003	786	33	1562
Motion. Device for converting	F. H. Richards	333,161	Dec. 29	2764	724	33	1518
Motion. Machine for producing rectilinear reciprocating	J. M. Furlong	332,708	Dec. 22	2140	565	33	1398
Motion. Mechanism for converting	O. B. Howe	333,226	Dec. 29	2857	746, 747	33	1534
Motion. Mechanism for converting	S. C. Rhodes	330,622	Nov. 17	1593	426	33	825
Motion. Mechanism for converting rotary into reciprocating	A. Lewis	330,506	Nov. 17	1559	418	33	818
Motion. Mechanism for reversing rotary	A. J. Kniesser	329,318	Oct. 27	2450	634	33	468
Motion. Transmitting	H. Wright	332,692	Dec. 15	2104	555	33	1386
Motive power	W. A. Brown	332,231	Dec. 15	1454	378	33	1272
Motor: *See* Car-motor. Hydraulic motor. Churn-motor. Mechanical motor. Current-motor. Pneumatic motor. Electric motor. Rotary motor. Escapement-motor. Spring-motor.							
Motor	J. Burry	331,048	Dec. 8	1194	312	33	1220
Motor	G. S. Elliott	329,295	Oct. 27	2418	627	33	462
Motor	M. F. Graham and O. E. North	332,249	Dec. 15	1481	387	33	1277
Motor	A. F. Harrell	332,517	Dec. 15	1848	483	33	1340
Motor	T. W. Hogsett	328,678	Oct. 20	1519	403	33	296
Motor	C. Klein	328,318	Oct. 13	1044	270	33	197
Motor	G. A. Myers	328,964	Oct. 27	1936	505	33	374
Motor	G. C. Wicklzer	328,830	Oct. 20	1733	451	33	332
Motor for sewing and other machines	G. F. Stone	331,260	Nov. 24	2456	663	33	991
Motor-wheel. Reversible	E. Osgood	332,103	Dec. 8	1275	331	33	1234
Mower. Lawn	D. Arndt	328,374	Oct. 13	1130	291	33	214
Mower. Lawn	S. J. Baker	327,987	Oct. 13	626	165	33	120
Mower. Lawn	P. Hinkley	328,310	Oct. 13	1035	268	33	196
Mower. Lawn	J. Keller	330,714	Nov. 17	1711	462	33	849
Mower. Lawn	T. Rogers	328,145	Oct. 13	928	216	33	157
Mower. Lawn	J. M. L. Gore	329,641	Nov. 3	290	74	33	560
Mowers and reapers. Cutting apparatus for	C. C. Bradley	329,709	Nov. 3	382	97, 98	33	578
Mowing-machine	E. H. Heath and F. W. Moore	328,028	Oct. 13	677	178	33	130
Mowing-machine	W. Hill	330,116	Nov. 10	940	245	33	691
Mowing-machine	J. A. Forbes	328,770	Oct. 20	1657	432	33	317
Mowing-machine corn-cutting attachment	D. C. Markham	332,671	Dec. 15	2079	546	33	1381
Mowing-machine finger-bar and finger	F. M. Waters	333,181	Dec. 29	2792	731	33	1523
Mowing machine. Lawn	C. E. Scribner	330,061	Nov. 10	862	222, 223	33	675
Multiple switch-board	C. E. Scribner	330,062	Nov. 10	864	223	33	676
Multiple-switch-board testing apparatus	C. E. Scribner	330,059	Nov. 10	859	222	33	675
Multiple switch-boards. Operator's testing apparatus for	C. E. Scribner	330,060	Nov. 10	861	222	33	675
Music and book rack or holder	B. Dreher	332,647	Dec. 15	2041	535	33	1375
Music. Back for sheet	G. C. Scott	331,555	Dec. 1	423	113	33	1074
Music holder. Sheet	G. C. Scott	331,554	Dec. 1	422	113	33	1074
Music-leaf turner	C. Andersen and S. Wilhjelm	332,579	Dec. 15	1947	510	33	1357
Music-leaf turner	C. H. Lindeman	327,698	Oct. 6	263	66	33	46
Music-leaf turner	R. E. and G. W. Moorman	330,413	Nov. 17	1335	355	33	775
Music-leaf turner	L. E. Williams and F. J. Millea	331,930	Dec. 8	1020	265	33	1190
Music-rack and walking-cane combined	O. B. Pierce	330,922	Nov. 24	1988	537	33	907
Music-sheets for mechanical musical instruments. Machine for perforating	J. Maxfield	330,913	Nov. 24	1976	534	33	904
Music-stand. Folding	J. Newton	331,811	Dec. 8	833	212, 213	33	1154
Music-stand. Folding	F. P. Pfleghar	329,593	Nov. 3	231	60	33	549
Musical instrument. Automatic	J. McTammany	328,503	Oct. 20	1299	338	33	253
Musical-instrument key-board	W. T. Weir	327,628	Oct. 6	171	42	33	31
Musical instrument. Mechanical	M. Gally	329,304	Oct. 27	2429	630	33	464
Musical instrument. Mechanical	M. Gally	331,747	Dec. 1	753	190	33	1132
Musical instrument. Mechanical	T. Meinhold	329,473	Nov. 3	66	18	33	517
Musical instrument. Mechanical	M. A. Wier	329,419	Oct. 27	2612	474	33	496
Musical instrument. Mechanical	M. A. Wier	329,420	Oct. 27	2613	475	33	496
Musician's exercising device	A. P. Scheurman	332,290	Dec. 15	1535	402	33	1286
Musicians. Exercising device for	J. Brotherhood	327,918	Oct. 6	534	139	33	96
Nail: *See* Horseshoe-nail.							
Nail	W. H. Perry	328,515	Oct. 20	1311	341	33	255
Nail-cleaner	T. F. Curley	331,969	Dec. 8	925	238	33	1171
Nail-drawer	G. L. Donovan	332,598	Dec. 15	1972	516	33	1362
Nail-extractor	T. M. Brintnall	331,678	Dec. 1	659	162	33	1114
Nail-extractor	D. Corning and R. J. Stackhouse	328,655	Oct. 20	1520	395	33	291
Nail-extractor	I. H. Kizer	332,909	Dec. 22	2405	635	33	1449
Nail-feeding apparatus	S. Perry	332,926	Dec. 22	2281	601, 602	33	1427
Nail, Flat-wire	C. W. Dean	332,702	Dec. 22	2132	562	33	1397
Nail-machine	L. Bradford, 2d	333,103	Dec. 29	2683	704	33	1504
Nail-machine	J. S. Dickson	332,062	Dec. 8	1207	315, 316	33	1223
Nail-machine	F. A. Gleason	327,544	Oct. 6	55	13	33	11
Nail-machine	J. McIlvried	331,988	Dec. 8	1101	286	33	1204

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Nail machine. Wire	J. S. Follansbee	330,219	Nov. 10	1065	278, 279	33	716
Nail machine. Wire	N. C. Lewis	328,236	Oct. 13	943	245, 246	33	179
Nail machine. Wire	N. C. Lewis	328,237	Oct. 13	946	246, 247	33	180
Nail machine. Wire	J. McIlvried	331,987	Dec. 8	1099	285, 286	33	1204
Nail-making machine	N. King and H. B. Lester	333,417	Dec. 29	3109	810, 811	33	1579
Nail-making machine	J. M. Schiltz	327,828	Oct. 6	422	109, 110	33	74
Nail-plate	J. Coyne	331,944	Dec. 8	1040	269	33	1194
Nail-plate feeder	J. H. Dunbar	328,892	Oct. 20	1801	469, 470	33	343
Nail-plate feeders. Gripping device for	J. C. Gould	329,549	Nov. 3	176	46	33	538
Nail-plate-feeding machine	W. J. Gladish	328,399	Oct. 13	1166	301, 302, 303	33	220
Nail plates. Preparing steel	B. Lanth	328,590	Oct. 20	1418	.....	33	273
Nails. Manufacture of	J. S. Dickson	332,190	Dec. 8	1393	360	33	1254
Nailing implement. Hand	E. L. Taft and H. M. Rich	329,686	Nov. 3	350	89	33	571
Nailing-machine	L. Goddu	329,449	Nov. 3	27	8	33	510
Napkin-supporter	W. B. Silver	329,963	Nov. 10	730	186	33	648
Neck-wear	E. D. Smith	331,566	Dec. 1	448	116	33	1077
Neck-wear fastener	G. H. Marvin	332,922	Dec. 22	2420	640	33	1452
Neck-wear fastener	G. H. Marvin	332,923	Dec. 22	2420	640	33	1452
Necktie	C. E. Page	331,535	Dec. 1	397	106	33	1070
Necktie and collar fastener	R. S. Coffey	331,279	Dec. 1	17	5	33	1004
Necktie-fastener	O. J. Teriault	331,098	Nov. 24	2210	598	33	949
Necktie-fastener	C. A. Turner	328,545	Oct. 20	1353	353	33	262
Necktie holder and fastener	A. G. Mack	327,565	Oct. 6	83	18	33	10
Necktie or cravat	F. J. Freese and F. C. Baldwin	327,542	Oct. 6	54	12	33	10
Necktie pin-fastener	W. Fichtenberg	327,762	Oct. 6	360	93	33	61
Necktie-supporter	B. B. Scully	330,743	Nov. 17	1755	472	33	855
Needle-bars. Mechanism for actuating	M. Marcil	331,904	Nov. 24	2367	641	33	972
Needle-threader	W. Day	328,296	Oct. 13	1015	264	33	196
Needles, wire, &c. Straightening	G. M. Eames	331,386	Dec. 1	181	45, 46	33	1031
Net. Dip	W. A. Obenchain	333,326	Dec. 29	2995	784	33	1564
Net frame. Mosquito	J. Goodwin	330,316	Nov. 10	1190	318	33	746
Nickel and cobalt from solutions containing the same. Process of precipitating	C. H. Aaron	330,454	Nov. 17	1389	.....	33	787
Night-soil, offal, &c. Consuming	A. Engle	329,302	Oct. 27	2426	629	33	464
Nippers. Cutting	P. Broadbooks	329,133	Oct. 27	2188	568	33	419
Nippers. Cutting	G. L. Donovan	332,597	Dec. 15	1972	516	33	1362
Nippers. Policeman's	J. M. Mitchell	327,575	Oct. 6	95	21	33	18
Nitro-cellulose. Manufacture of soluble	F. V. Pool. (Reissue)	10,650	Oct. 6	617	.....	33	112
Non-conducting fabric	W. P. Adams	332,371	Dec. 15	1651	433	33	1307
Nursery-chair	W. Holden	331,748	Dec. 1	754	190, 191	33	1132
Nursery-chair	T. N. M. Krier	327,955	Oct. 6	582	151, 152	33	105
Nut	F. G. Stark	327,612	Oct. 6	145	35	33	27
Nut-lock	J. Barc	333,380	Dec. 29	3060	798	33	1571
Nut-lock	I. Brooke	330,674	Nov. 17	1659	447	33	830
Nut-lock	H. G. Buch	328,456	Oct. 20	1243	323	33	242
Nut-lock	M. G. Crane	327,773	Oct. 6	349	90	33	61
Nut-lock	G. W. Desmond	330,471	Nov. 17	1415	377	33	790
Nut-lock	J. M. Fry	333,219	Dec. 29	2833	741	33	1530
Nut-lock	A. S. Goodrich	329,547	Nov. 3	172	45	33	538
Nut-lock	H. H. Ham, Jr	330,394	Nov. 17	1311	348	33	771
Nut-lock	J. Hayes	330,237	Nov. 10	1067	287	33	721
Nut-lock	J. B. T. Hull	329,640	Nov. 3	301	77	33	562
Nut-lock	J. B. Law	332,540	Dec. 15	1891	494	33	1347
Nut-lock	S. T. Leggett	332,093	Dec. 8	1261	327	33	1232
Nut-lock	S. S. Lowe and G. R. Johnson	328,416	Oct. 13	1193	309	33	225
Nut-lock	C. Maldner	332,669	Dec. 15	2074	544	33	1380
Nut-lock	W. C. Mintie	329,063	Oct. 27	2086	542	33	401
Nut-lock	A. Morningstar	328,244	Oct. 13	955	248	33	192
Nut-lock	E. R. Proctor	328,972	Oct. 27	1952	508	33	378
Nut-lock	E. R. Procter	333,155	Dec. 29	2758	722	33	1516
Nut-lock	G. P. Rose	332,288	Dec. 15	1533	401	33	1286
Nut-lock	F. G. Stark	329,861	Nov. 3	589	151	33	615
Nut-lock	J. B. Thompson	332,952	Dec. 22	2486	656	33	1464
Nut-lock	J. Tracy	331,848	Dec. 8	876	231	33	1166
Nut-lock	J. B. Ursbruck	333,362	Dec. 29	3040	793	33	1568
Nut-locking washer	E. Andrews	329,615	Nov. 3	262	68	33	555
Nut-locking washer	G. C. Thomas	331,164	Nov. 24	2315	627	33	968
Nut-making machine	S. Uren	327,742	Oct. 6	313	80, 81	33	55
Nut-tapping machine	C. G. Cross	327,533	Oct. 6	38	8, 9	33	9
Nuts, &c. Utilizing scrap for the manufacture of	S. Uren	327,743	Oct. 6	314	81	33	55
Oar and oar-lock. Bow-facing	J. L. Kwarel	330,841	Nov. 17	1877	508	33	878
Oar or paddle for propelling boats	G. Willard	327,909	Oct. 6	519	135	33	93
Oatmeal and grain reduction mill	W. Hutchison	331,403	Dec. 1	208	54, 55	33	1035
Oil and water. Separator for mingled	H. H. Westinghouse and H. H. Garrett.	329,791	Nov. 3	469	124	33	598
Oil-can	W. S. Denton	332,239	Dec. 15	1471	383	33	1275
Oil-can	H. E. Wolcott	327,975	Oct. 6	610	159	33	110
Oil can and pump combined	M. C. and J. F. Richards	332,108	Dec. 8	1263	333	33	1236
Oil-cloth. Manufacture of	P. Tebbets and D. R. Faulkner	328,084	Oct. 13	757	.....	33	143
Oil-cloth. Manufacture of floor	D. N. Melvin	330,274	Nov. 10	1108	294	33	724
Oil. Compound for harness	C. M. Ely	327,871	Oct. 6	471	.....	33	84
Oil-cup	I. R. McNary	330,506	Nov. 17	1454	389	33	799
Oil-cup	A. L. Swift	328,907	Oct. 20	1838	479	33	530

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Oil. Device for extracting and refining crude	J. Davis	328,925	Oct. 27	1874	489	33	364
Oil-freezing machine. Paraffine	W. Asher	327,985	Oct. 13	624	164	33	120
Oil from seed. Press-box for extracting	J. Davis	327,664	Oct. 6	226	55	33	40
Oil-press mat	W. Krutzsch	328,414	Oct. 13	1191	308	33	225
Oil-press mat and compressor	W. F. Shaffer	331,162	Nov. 24	2307	625	33	966
Oil-tank	C. B. De la Vergne, Jr	329,026	Oct. 27	2036	528	33	393
Oil tank or can	W. Heston	330,483	Nov. 17	1427	381	33	793
Oil. Treating cotton-seed	J. B. Grant	328,024	Oct. 13	672	177	33	128
Oils. Apparatus for chilling paraffine and other	T. D. Fairfield, J. L. Clark, and R. Hughes.	333,209	Dec. 29	2829	{740 741	33	1530
Oils. Treating cotton-seed and analogous	J. B. Grant and A. Mason	331,702	Dec. 1	688	170	33	1119
Oiler. Bench	J. H. Stone	333,487	Dec. 29	3202	837	33	1595
Oiler. Car-axle	J. Gibbons	329,730	Nov. 3	410	105	33	583
Oiler. Crank-pin	F. W. Krantz	330,904	Nov. 24	1963	531	33	902
Ointment	D. M. Allen	328,631	Oct. 20	1490	.....	33	286
Oleaginous substances. Steam heater or kettle for	J. A. Lewis	331,895	Dec. 8	964	249	33	1179
Open-hearth furnace for iron and steel	O Murisier and P. C. Gilchrist	330,415	Nov. 17	1337	356	33	775
Opera-chair	T. W. Eaton	329,151	Oct. 27	2211	573	33	423
Opera-chair	T. W. Eaton	329,292	Oct. 27	2411	{625 626	33	462
Opera-chair	J. M. Sander	331,551	Dec. 1	416	112	33	1073
Operating-chair	J. B. Robinson and G. W. Holmes	332,836	Dec. 22	2295	605	33	1429
Ore-concentrating jigger	J. S. Loder	331,071	Nov. 24	2167	{588 589	33	942
Ore-concentrating mill	J. W. Bailey	329,694	Nov. 3	361	92	33	573
Ore-concentrator	A. D. Clarke	328,006	Oct. 13	650	171	33	125
Ore-concentrator	E. W. Stephens	329,862	Nov. 3	591	{151 152	33	615
Ore concentrator. Wet	J. R. Moffitt	327,708	Oct. 6	274	70	33	48
Ore-crusher	S. R. Krom	330,408	Nov. 17	1329	354	33	774
Ore-crusher	F. H. McDowell	328,132	Oct. 13	811	212	33	154
Ore-crusher	J. C. Wiswell. (Reissue)	10,659	Nov. 3	613	156	33	620
Ore-crushing machine	E. M. Carhart	332,488	Dec. 15	1800	473	33	1332
Ore-crushing machine	J. B. Low	329,750	Nov. 3	437	111	33	587
Ore-crushing machine	W. E. Wild	331,017	Nov. 24	2106	570	33	929
Ore-disintegrating machine	A. Higley	330,115	Nov. 10	938	{244 245	33	691
Ore roasting and smelting furnace	B. F. Hambleton	332,894	Dec. 22	2382	630	33	1444
Ore-separator	G. H. Blake	332,696	Dec. 22	2123	560	33	1395
Ore-separator	E. Coleman	327,766	Oct. 6	341	88	33	60
Ore separator and concentrator	I. F. Monell	333,322	Dec. 29	2988	{782 783	33	1559
Ore, stone, &c. Machine for crushing	W. B. and M. H. Rice	328,144	Oct. 13	826	{215 216	33	157
Ores, phosphates, &c. Machine for crushing	W. C. Bibb	333,383	Dec. 29	3063	799	33	1571
Organ-action	J. Peloubet	329,674	Nov. 3	392	85	33	568
Organ-coupler	O. C. Whitney	329,796	Nov. 3	494	125	33	599
Organ stop-action. Reed	E. P. Carpenter	328,647	Oct. 20	1510	392	33	289
Organ stop-knob	R. Alden	328,448	Oct. 20	1237	321	33	241
Organ tracker-pin	J. L. Hinners	330,117	Nov. 10	942	245	33	691
Ornamenting surfaces	F. Rudolph	333,259	Dec. 29	2905	.....	33	1544
Oscillating chair	C. E. Whittlesey	330,762	Nov. 17	1780	479	33	861
Oven. Baker's	D. Girouard	329,898	Nov. 10	646	165	33	633
Ovens. Reflector-light for baker's	F. H. Van Houten	330,757	Nov. 17	1772	478	33	859
Overalls	G. Gaston	332,070	Dec. 8	1222	319	33	1225
Overalls	L. A. Guiterman	328,025	Oct. 13	674	177	33	129
Overflow for bath-tubs, sinks, &c	T. Kennedy	331,064	Nov. 24	2160	586	33	940
Overflow-pipe for set basins and similar fixtures	J. P. Putnam	329,947	Nov. 10	711	192	33	645
Overflow-trap for wash-basins, bath-tubs, &c	S. Lane, Jr	332,911	Dec. 22	2408	636	33	1449
Overseaming-machine	C. H. Crawford	330,469	Nov. 17	1411	{375 376	33	789
Overshoe	H. I. Crampton	331,036	Nov. 24	2127	577	33	934
Overshoe and leggin. Combined	H. Rudolph and H. Schwenk	332,166	Dec. 8	1369	354	33	1250
Overshoe. Arctic	T. B. Lavey	330,592	Nov. 17	1556	417	33	817
Oyster-opening machine	C. Leduc	332,463	Dec. 15	1694	444	33	1314
Package	J. McCrodden	328,700	Oct. 20	1577	411	33	301
Packages. Fastening for tied	M. McCarty	332,924	Dec. 22	2421	640	33	1453
Packages. Fastening for tied	M. McCarty	332,925	Dec. 22	2422	640	33	1453
Packages of merchandise. Fastening-band for	S. W. Page	329,205	Oct. 27	2292	593	33	438
Packing band. Joint	D. B. Morrell	333,735	Dec. 22	2174	574	33	1406
Packing. Cylinder-piston	G. B. Simonds	331,454	Dec. 1	984	78	33	1049
Packing for pistons, journal-bearings, &c	B. W. Goodsell and B. F. Elsom	329,160	Oct. 27	2295	576	33	426
Packing for stuffing-boxes	E. S. Hough	328,846	Oct. 20	1755	457	33	336
Packing. Metal	N. Hemenway	331,056	Nov. 24	2148	583	33	938
Packing. Metallic piston	N. Pfiann	332,433	Dec. 15	1735	454	33	1321
Packing. Piston	G. Delagnean	327,666	Oct. 6	227	56	33	40
Packing. Piston	W. C. McTyeire	329,665	Nov. 3	321	82	33	565
Packing. Piston	B. C. Waite	331,219	Nov. 24	2392	647	33	980
Packing. Piston-rod	G. H. and J. Dickson	332,793	Dec. 22	2246	592	33	1419
Packing. Piston-rod	C. C. Worthington	332,856	Dec. 22	2324	615	33	1433
Packing-ring. Spring-piston	V. F. Stetzer	331,458	Dec. 1	991	79	33	1050
Packing. Steam-pipe joint	J. B. Lyons	332,667	Dec. 15	2066	542	33	1379
Packing. Vulcanized-rubber	F. C. Jones	331,140	Nov. 24	2275	617	33	960
Pad: *See* Blotting-pad. Inking-pad. Eyeglass nose-pad. Saddle-pad. Furniture-pad. Truss-pad. Horseshoe-pad.							
Padlock. Permutation	C. F. Walker and M. Ransom	330,647	Nov. 17	1622	436	33	831
Pail-ear	J. Spruce and A. M. Comstock	329,231	Oct. 27	2327	603	33	445
Pail-holding device for milking purposes	F. T. Cook	329,889	Nov. 10	636	162	33	631
Pail. Milk	C. G. Manley	329,467	Nov. 3	55	15	33	515
Pails. Detachable spout for milk	C. A. Bacon	330,003	Nov. 10	799	202	33	659
Paint for roofing, &c	F. M. Hibbard	329,740	Nov. 3	424	.....	33	585

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Paint from metallic lead. Manufacture of	W. E. Harris	327,678	Oct. 6	243	.....	33	43
Paint. Mixed	L. Brown	328,643	Oct. 20	1505	.....	33	288
Paint. Mixed	H. C. Dorr	331,383	Dec. 1	178	.....	33	1029
Paint. Mixed	C. Miller	328,957	Oct. 20	1767	.....	33	338
Paint. Mixed	J. Stackhouse	333,169	Dec. 29	2776	.....	33	1590
Paint-mixer	F. Brandenberger	330,555	Nov. 17	1517	405	33	809
Paint-pail	J. T. Brien	332,043	Dec. 8	1184	310	33	1218
Paint-remover	F. P. Foster	328,666	Oct. 20	1535	.....	33	294
Paint-solvent	J. Kotrba	328,589	Oct. 20	1417	.....	33	273
Painters, &c. Carrier or elevator for	S. Spitzer	329,497	Nov. 3	98	26	33	524
Painter's jack	O. W. Van Denburgh	329,243	Oct. 27	2345	607	33	448
Painting and graining tool	J. Hammerl	327,874	Oct. 6	473	123	33	84
Painting bobbins. Apparatus for	L. C. Baldwin	331,757	Dec. 8	774	196	33	1144
Painting-machine	E. Green and W. K. Palmer	330,318	Nov. 10	1193	319	33	742
Painting-machine	A. K. Nesbitt	327,815	Oct. 6	406	105	33	71
Pan: *See* Ash-pan. Dust-pan. Clarifying and evaporating pan. Vacuum-pan.							
Panel. Ornamental	C. D. Pease	329,771	Nov. 3	466	118	33	594
Panels. Producing open-work	F. Mankey	332,792	Dec. 22	2158	570	33	1402
Pantaloons	C. B. Cones	328,364	Oct. 13	1151	296	33	217
Pants. Supplementary waistband for	L. Freidenrich	333,064	Dec. 22	2618	686	33	1487
Paper and straw board. Applying paraffine and similar substances to	W. B. Howe	329,743	Nov. 3	429	.....	33	586
Paper bag	W. A. Lorenz and W. H. Honiss	329,661	Nov. 3	315	81	33	565
Paper bag	J. P. Onderdonk	332,280	Dec. 15	1525	399	33	1285
Paper-bag former	P. Jehlo	329,173	Oct. 27	2239	580	33	428
Paper-bag holder	E. T. Martin	331,512	Dec. 1	362	97	33	1063
Paper-bag machine	D. Appel	332,631	Dec. 15	2011	{527 528	33	1370
Paper-bag machine	W. H. Honiss	329,561	Nov. 3	190	51	33	541
Paper-bag machine	W. A. Lorenz and W. H. Honiss	331,721	Dec. 1	712	{176 177	33	1124
Paper-bag machine	W. A. Lorenz and W. H. Honiss	331,722	Dec. 1	714	{177 178 179	33	1124
Paper-bag machine	W. A. Lorenz and W. H. Honiss	331,723	Dec. 1	720	{179 180	33	1125
Paper bags. Folding and pasting machine for forming cornucopia	J. N. Chadsey	328,459	Oct. 20	1246	{323 324	33	243
Paper bags. Forming packages of	W. M. Hunt	328,888	Oct. 20	1813	472	33	346
Paper bags. Manufacture of	W. A. Lorenz	329,662	Nov. 3	317	81, 82	33	565
Paper box	R. Brotz	329,134	Oct. 27	2189	568	33	419
Paper box	C. F. Hatch	328,485	Oct. 20	1275	331	33	248
Paper box	A. G. Hohenstein	329,558	Nov. 3	187	50	33	541
Paper box	A. G. Hohenstein	329,559	Nov. 3	187	50	33	541
Paper box	H. A. House	327,555	Oct. 6	72	16	33	14
Paper box	W. B. Howe	329,562	Nov. 3	190	51	33	541
Paper box	G. L. Jaeger	332,535	Dec. 15	1885	492	33	1346
Paper box	C. L. Lockwood	331,800	Dec. 8	820	209	33	1152
Paper box	B. Osborn	333,246	Dec. 29	2883	754	33	1540
Paper box	J. A. Scott	332,951	Dec. 22	2460	651	33	1460
Paper-box-covering machine	P. Hauck	330,235	Nov. 10	1025	267	33	720
Paper-box-covering machines. Adjustable box-block for	P. Hauck	332,078	Dec. 8	1234	322	33	1227
Paper box. Folding	I. Tahl	331,568	Dec. 1	450	117	33	1078
Paper boxes. Die for making	C. T. Remus	329,080	Oct. 27	2118	548	33	406
Paper boxes. Making	I. W. Hallett	332,713	Dec. 22	2147	567	33	1400
Paper boxes. Making	M. Young	332,983	Dec. 22	2499	{660 661 662	33	1466
Paper. Cabinet for sanitary toilet	J. T. Hoyt	333,073	Dec. 22	2632	690	33	1489
Paper-calendering rolls	J. H. Beale	328,639	Oct. 20	1500	390	33	287
Paper-clip	I. W. Heysinger	327,553	Oct. 6	69	15	33	14
Paper. Coloring, embellishing, and discharging color in the manufacture of	I. and M. I. Ellis	330,215	Nov. 10	1002	277	33	715
Paper. Composition of matter for waterproofing	C. S. Bird	332,868	Dec. 22	2352	.....	33	1438
Paper cutter and stamp. Combined	A. Brown	327,998	Oct. 13	637	168	33	122
Paper. Device for holding writing	P. E. De Mill, Jr	329,291	Oct. 27	2411	625	33	461
Paper-feeding machine	R. J. Stuart	327,617	Oct. 6	154	37, 38	33	28
Paper-folding machine	T. C. Dexter	332,331	Dec. 15	1569	417	33	1296
Paper-folding machine	W. Downing	330,777	Nov. 17	1795	{483 484	33	863
Paper-folding machine	J. T. Hawkins	332,520	Dec. 15	1858	496	33	1342
Paper-folding machine	C. F. and J. L. Hirt	330,485	Nov. 17	1429	382	33	793
Paper-folding machine	E. Prouty	327,965	Oct. 6	596	155	33	107
Paper-folding machine	F. H. Smith	331,832	Dec. 8	871	{223 224	33	1161
Paper-folding machines. Sheet-switching device for	T. C. Dexter	332,332	Dec. 15	1580	417	33	1296
Paper for checks, drafts, &c. Safety	F. M. Hill	330,894	Nov. 24	1951	.....	33	900
Paper holder and cutter	E. Morrison and J. P. Herron	329,200	Oct. 27	2283	{591 592	33	436
Paper-holder. Toilet	C. C. Johnson	328,409	Oct. 13	1184	307	33	294
Paper-machines. Machine for preparing pulp for	W. Umpherston. (Reissue.)	10,658	Nov. 3	613	156	33	619
Paper. Manufacture of blotting	C. S. Murch	333,146	Dec. 29	2746	721	33	1515
Paper-makers' use. Obtaining hydrate of alumina from banxite, &c., for	G. F. Bilin	331,182	Nov. 24	2334	.....	33	971
Paper-making. Pulp-digester for	E. Ritter and C. Kellner	329,217	Oct. 27	2309	598	33	441
Paper-making machines. Dandy-roll for	C. Smith	329,601	Nov. 3	244	63	33	552
Paper matrices. Apparatus for drying	J. Brooks	330,091	Nov. 10	911	236	33	685
Paper-numbering machine	J. R. Carter	329,715	Nov. 3	390	100	33	579
Paper package	L. H. Thomas	331,842	Dec. 8	888	230	33	1165
Paper package for toilet and other purposes	O. H. Hicks	329,039	Oct. 27	2054	533	33	396

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Paper. Package of sanitary or toilet	J. T. Hoyt	333,074	Dec. 22	2634	690	33	1489
Paper pails, &c. Machine for making	W. S. McKinney	328,328	Oct. 13	1057	273, 274, 275	33	209
Paper. Photographic sensitive	T. C. Roche	328,431	Oct. 13	1211	313	33	220
Paper. Polishing	R. J. White	332,028	Dec. 8	1164	.....	33	1214
Paper-pulp digester	C. Bremaker and M. Zier, Sr	333,105	Dec. 29	2686	704, 705	33	1505
Paper-pulp from wooden blocks. Making	G. F. Cushman	329,370	Oct. 27	2537	.....	33	482
Paper-punching press	C. A. Lieb	329,323	Oct. 27	2457	636	33	469
Paper, straw, or paste board. Composition of matter for coating boxes made from	D. Pepper	333,330	Dec. 29	2998	.....	33	1561
Paper. Transfer or reproducing	D. Gestetner	332,890	Dec. 22	2379	629	33	1443
Paper. Wrapping and toilet	S. Wheeler	333,183	Dec. 29	2794	732	33	1523
Parasol	W. A. Drown	333,062	Dec. 22	2616	686	33	1486
Parer, slicer, and corer. Apple	J. B. Tupper	329,511	Nov. 3	115	30	33	527
Paring and coring machine. Apple	F. Clingman	329,363	Oct. 27	2525	650, 651	33	480
Paring machine. Peach	L. H. Scott	331,451	Dec. 1	280	76	33	1048
Passenger-register	R. W. Flack	331,784	Dec. 8	802	203	33	1149
Paste. Apparatus for making	O. Nichols	331,647	Dec. 1	607	150	33	1104
Paste. Making	O. Nichols	331,648	Dec. 1	608	150	33	1104
Pastry-board	W. T. Black	331,029	Nov. 24	2121	574	33	932
Pattern: *See* Vest-pattern.							
Pattern and fabric. Combined	S. M. Moschcowitz	327,961	Oct. 6	588	153	33	106
Pavement. Concrete	J. Grant	330,110	Nov. 10	931	242	33	689
Paving-block	A. T. Elford	329,825	Nov. 3	545	138	33	606
Paving or building blocks. Machine for making	A. Ward	328,551	Oct. 20	1368	357	33	264
Pawl-and-ratchet mechanism	W. Scott	330,931	Nov. 24	2005	541	33	910
Peach-stoner	C. Hardgrave	328,776	Oct. 20	1664	434	33	319
Peanut-roaster	T. Lee	332,351	Dec. 15	1616	424	33	1301
Peanuts, &c. Machine for shelling and grading	J. J. Hill	328,032	Oct. 13	683	180	33	131
Pen	L. Losser	331,203	Nov. 24	2366	640	33	977
Pen and pencil case	W. G. Dinkelmeier	329,541	Nov. 3	165	43	33	537
Pen for live stock	B. Dawson	327,665	Oct. 6	226	56	33	40
Pen. Fountain	J. Blair	328,454	Oct. 20	1242	322	33	242
Pen. Fountain	F. Juliusberger	331,794	Dec. 8	814	207	33	1151
Pen. Fountain	P. E. Wirt	328,169	Oct. 13	862	224	33	163
Pen. Fountain	P. E. Wirt	330,358	Nov. 10	1253	334	33	753
Pen fountain attachment	E. A. Brandenburg	333,104	Dec. 29	2685	704	33	1505
Pen-holder	H. F. Attwood and E. Wallis, Jr.	327,642	Oct. 6	190	47	33	34
Pen-holder	J. M. Clapp	332,880	Dec. 22	2368	626	33	1441
Pen-holder	J. Felbel	330,881	Nov. 24	1934	524	33	897
Pen. Stylographic	C. Stockmann	330,636	Nov. 17	1610	431	33	628
Pen wiper and holder	I. W. Allyn	331,270	Dec. 1	2	1	33	1001
Pencil	J. Hoffman	331,398	Dec. 1	201	53	33	1034
Pencil and scissors holder. Combined	R. Thompson	328,866	Oct. 20	1777	463	33	339
Pencil-case	C. E. Little	331,896	Dec. 8	965	249	33	1179
Pencil-holder	B. F. Eshelman	328,767	Oct. 20	1653	431	33	317
Pencil-holder	K. Strössenreuther	330,526	Nov. 17	1482	396	33	803
Pencil-leads and crayons. Composition for	C. Walpuski	328,366	Oct. 13	1114	.....	33	211
Pencil-sharpener	E. Fitch	328,473	Oct. 20	1262	328	33	245
Pencil-sharpener	S. Forrester	332,146	Dec. 8	1342	348	33	1245
Pencil-sharpener	A. Hatch	328,671	Oct. 20	1543	401	33	295
Pencil-sharpener	G. C. and W. C. Price	329,486	Nov. 3	83	22	33	521
Pencil sharpener. Slate	J. R. Baker and J. Craig	330,666	Nov. 17	1648	443	33	837
Pencil sharpener. Slate	H. Scott	328,256	Oct. 13	968	252	33	184
Pepsin. Peptone	M. B. Manwaring	327,567	Oct. 6	85	.....	33	16
Perforating-machine	A. G. Burton. (Reissue)	10,652	Oct. 20	1846	482, 483	33	352
Perforating-machine	J. E. Munson	332,419	Dec. 15	1715	449, 450	33	1317
Perforator. Electrical	J. E. Munson	328,600	Oct. 20	1436	374, 375	33	277
Perfumer	W. H. Birge	331,937	Dec. 8	1029	267	33	1192
Permutation-lock	M. A. Dalton	329,820	Nov. 3	531	136, 137	33	605
Permutation-lock	W. E. Malley	330,137	Nov. 10	970	253	33	697
Pessary	M. M. Warmoth	328,553	Oct. 20	1371	357	33	264
Petroleum-burner	E. B. De La Matyr	330,212	Nov. 10	1059	276, 277	33	715
Petroleum heating apparatus	R. Schulz	331,161	Nov. 24	2307	625	33	966
Petroleum. Purifying	J. H. Tiemann	330,637	Nov. 17	1611	.....	33	828
Pew-guard	M. E. O'Connor	331,533	Dec. 1	395	106	33	1069
Photograph-burnishing machine	W. G. Entrekin	327,778	Oct. 6	356	92	33	63
Photographic camera	G. B. Brainerd	331,677	Dec. 1	654	161, 162	33	1113
Photographic camera	M. Flammang	328,664	Oct. 20	1533	399	33	293
Photographic camera	G. H. Ripley	331,448	Dec. 1	276	75	33	1048
Photographic-camera shutter	W. C. Hadden	331,494	Dec. 1	338	91, 92	33	1058
Photographic dry-plates. Shipping-case for	J. H. Durham	331,385	Dec. 1	180	45	33	1039
Photographic-plate box	V. M. Wilcox	330,182	Nov. 10	1024	267	33	708
Photographic-plate holder	O. M. Pausch	328,512	Oct. 20	1308	340	33	254
Photographic-printing frame	W. H. Lewis	331,980	Dec. 8	1091	283	33	1202
Photographic sheet. Multiple	O. L. Hulbert	333,465	Dec. 29	3175	829	33	1509
Photographs. Apparatus for developing and washing	H. F. Witmer	331,668	Dec. 1	637	157	33	1109
Photographs in permanent pigments. Producing	W. W. Sherman	332,364	Dec. 15	1643	.....	33	1305
Photography. Instantaneous shutter for	W. Damry and A. Leduc	330,775	Nov. 17	1792	483	33	863
Photography. Preparing surfaces for printing by	E. Kunkler and J. Brunner	333,470	Dec. 29	3181	830	33	1591
Piano	B. B. Bradbury	328,566	Oct. 20	1386	361	33	268
Piano-action	F. Imhorst	332,716	Dec. 22	2151	568	33	1409
Piano-action	F. Zech	330,060	Nov. 10	897	232, 233	33	682

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Piano-action	J. Zech	333,047	Dec. 22	2599	681	33	1483
Piano and organ music desk	S. G. Chickering	332,396	Dec. 15	1585	415	33	1295
Piano case. Upright	H. S. Parmelee	327,714	Oct. 6	283	72	33	50
Piano. Mute	C. Petersilea	329,592	Nov. 3	230	59	33	549
Piano. Square	K. V. Barnekov	332,182	Dec. 8	1386	358	33	1253
Piano-string plate	J. W. Brackett	328,455	Oct. 20	1242	322	33	242
Piano-tuning pin	C. E. Rogers	331,825	Dec. 8	860	221	33	1150
Pianos. Stringing	J. F. Conover	329,277	Oct. 27	2388	618	33	457
Picture-frame molding. Making	C. O. Baxter	327,643	Oct. 6	191	47	33	34
Picture-frame moldings. Machine for making	C. O. Baxter	329,877	Nov. 10	622	158	33	698
Picture-frame moldings. Machine for ornamenting	C. Brütsch	328,835	Oct. 20	1740	453, 454	33	333
Picture-frame moldings. Manufacturing	H. McHugh	332,815	Dec. 22	2268	.....	33	1424
Picture-frames. Finishing	H. C. Johnson and J. Kozisek	327,556	Oct. 6	73	.....	33	14
Picture-hanger	D. Gridley	332,198	Dec. 8	1403	362	33	1256
Picture-support	P. Wiederer	328,738	Oct. 20	1627	424	33	311
Pigment. Making zinc-sulphide	T. Macfarlane	331,249	Nov. 24	2436	.....	33	988
Pile-steaming apparatus	J. Dolbeer	333,204	Dec. 29	2824	739	33	1528
Piles. Hood or cap for	W. T. Casgrain	333,392	Dec. 29	3074	802	33	1574
Pile-machine	E. A. Coles	332,493	Dec. 15	1805	474	33	1333
Pills, lozenges, &c. Machine for making	E. A. Coles	332,494	Dec. 15	1807	474, 475	33	1334
Pillow-sham support	D. F. Fulle	332,195	Dec. 8	1399	361	33	1255
Pin: *See* Clothes-pin. Rafting-pin.							
Pin-machine	L. A. Fontaine	330,220	Nov. 10	1068	280	33	716
Pin-stem	C. I. Loveren	332,264	Dec. 15	1504	393	33	1281
Pinions. Apparatus for making	A. C. Dalzell	329,286	Oct. 27	2403	623	33	460
Pinions. Machine for roughing out	E. A. Marsh	330,600	Nov. 17	1563	419, 420	33	819
Pipe: *See* Conductor-pipe. Overflow-pipe. Gas-distributing pipe. Stove-pipe. Tobacco-pipe.							
Pipe and hose coupling	W. Strong	327,737	Oct. 6	309	79	33	54
Pipe-coupling	B. F. Anthony and J. Coron	327,982	Oct. 13	621	163	33	119
Pipe-coupling	R. Bagaley	332,035	Dec. 8	1174	307	33	1216
Pipe-coupling	W. A. Bole	332,184	Dec. 8	1387	359	33	1253
Pipe-coupling	W. A. Hoeveler	333,413	Dec. 29	3104	809	33	1578
Pipe-coupling	L. Lerède	330,134	Nov. 10	965	251	33	696
Pipe-coupling	J. A. McCormick. (Reissue)	10,674	Dec. 15	2115	558	33	1389
Pipe-coupling	F. L. McGahan	331,806	Dec. 8	827	211	33	1153
Pipe-coupling for wooden tanks	J. A. Mathieu	332,096	Dec. 8	1264	328	33	1292
Pipe coupling. Gas	J. Busha	333,446	Dec. 29	3146	822	33	1585
Pipe coupling. Gas	W. A. Hoeveler	333,412	Dec. 29	3104	809	33	1578
Pipe-coupling machine	S. Coburn	327,765	Oct. 6	340	87, 88	33	59
Pipe-cutter	C. C. Harlow	331,787	Dec. 8	804	204	33	1149
Pipe-cutter	W. E. Melhorn	330,253	Nov. 10	1107	293	33	724
Pipe-cutter	N. W. Vandegrift and F. Armstrong	330,175	Nov. 10	1015	265	33	706
Pipe for floorings, ceilings, and other building purposes	F. Ephraim	333,119	Dec. 29	2709	710	33	1508
Pipe-hanger	J. Hoey	330,703	Nov. 17	1700	459	33	847
Pipe holder and lifter	E. S. Babcock	328,174	Oct. 13	871	226	33	165
Pipe-joint	G. R. Scott	332,754	Dec. 22	2200	580	33	1411
Pipe-joints. Device for sealing	J. A. McCormick	329,405	Oct. 27	2590	668	33	492
Pipe-line cleaner	J. S. Klein	332,910	Dec. 22	2406	636	33	1449
Pipe-lines. Apparatus for cleaning out	B. F. Warren	329,605	Nov. 3	250	65	33	552
Pipe-reamer	M. T. Wyatt	327,638	Oct. 6	186	46	33	33
Pipe-wrench	C. L. Dunham	332,191	Dec. 8	1394	360	33	1254
Pipe-wrench	G. F. Newell	328,601	Oct. 20	1440	375	33	277
Pipe-wrench	F. A. Schramm	329,221	Oct. 27	2313	599	33	442
Pipe-wrench	R. E. Williams	328,167	Oct. 13	860	224	33	163
Pipe wrench and cutter	J. Williamson	328,270	Oct. 13	984	256	33	186
Pipes. Coupling	W. A. Bole	331,940	Dec. 8	1033	268	33	1192
Pipes. Covering for gas, water, and oil	H. A. Clifford	329,720	Nov. 3	398	102	33	581
Pipes. Device for upsetting the ends of metal	M. E. Hawkins	333,410	Dec. 29	3101	808	33	1578
Pipes. Expansion joint or coupling for	D. Fisher	328,579	Oct. 20	1406	365	33	271
Pipes for conveying gas, water, and electricity. System of	W. A. Hoeveler	332,149	Dec. 8	1346	348, 349	33	1245
Pipes, hose, &c. Union or coupling for	N. Thompson	331,170	Nov. 24	2316	627, 628	33	968
Pipes, &c. Joint for	H. M. Hall	327,793	Oct. 6	376	97	33	66
Pipes. Stopper for burst	A. Nicolet	329,938	Nov. 10	699	179	33	642
Pipes to closets, &c. Connection for	S. G. McFarland	330,502	Nov. 17	1449	367	33	797
Pistol for shooting marbles	J. W. Smith	328,348	Oct. 13	1085	282	33	206
Piston and cylinder lubricator	A. and E. R. Simpson and M. Speicher.	331,831	Dec. 8	870	223	33	1161
Piston. Hydraulic	G. H. Reynolds	328,613	Oct. 20	1454	378, 379	33	279
Piston-meter. Differential	L. W. Lombard	331,247	Nov. 24	2432	658	33	987
Piston-meter for fluids	H. M. Bartlett	331,605	Dec. 1	541	132	33	1092
Piston-rod	W. J. Longley	333,140	Dec. 29	2737	719	33	1513
Pitman. Adjustable	E. F. Lewis	327,903	Oct. 6	391	101	33	66
Pitmen. Device for taking up lost motion in	W. J. Butler	331,965	Dec. 8	921	237	33	1170
Plaiting-machine	F. Panse	331,432	Dec. 1	254	68, 69	33	1043
Plane. Floor	J. A. Traut	332,305	Dec. 15	1553	407	33	1290
Planer-knife grinder	G. H. Mills	330,797	Nov. 17	1821	490	33	868
Planer. Metal	D. D. Griffin and L. H. Bachtell	329,550	Nov. 3	177	47	33	538
Planing and matching machine	E. H. N. Clarkson	330,564	Nov. 17	1526	408	33	811
Planing and matching machine	W. M. Dwight	329,924	Nov. 3	544	138	33	606
Planing and resawing machine	G. Lhote	328,794	Oct. 20	1688	439	33	323
Planing-machine	F. S. Belter	331,606	Dec. 1	543	132	33	1093
Planing-machine	G. V. Orton	331,730	Dec. 1	731	183, 184	33	1127

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planing-machine	F. J. Plummer	327,588	Oct. 6	114	26	33	21
Planing-machines. Variable feed-motion for	J. Roberts	331,449	Dec. 1	278	75	33	1048
Planing or turning. Machine for interchangeably	H. B. Stillman and W. F. Patterson	327,968	Oct. 6	600	156, 157	33	108
Plant-bed heater	A. S. Roush and A. C. Halterman	333,085	Dec. 22	2652	695	33	1492
Plant-cutting shears	A. Sweetland	330,355	Nov. 10	1250	392	33	752
Plant-protector	G. Anderson	327,510	Oct. 6	2	1	33	3
Planter	R. J. Gardner	328,306	Oct. 13	1032	267	33	195
Planter	T. C. Garlington	330,975	Nov. 24	2058	557	33	920
Planter	C. C. Kiernlff	332,089	Dec. 8	1255	326	33	1231
Planter	J. E. Morris	327,960	Oct. 6	587	153	33	106
Planter anchor. Check-row	J. C. Barlow	329,255	Oct. 27	2359	611	33	451
Planter and drill. Corn	E. V. and J. V. Mitchell	329,666	Nov. 3	322	83	33	565
Planter and fertilizer-distributer. Combined cotton-seed	L. D. Monroe and G. W. Wiggins	330,342	Nov. 10	1221	327	33	747
Planter and fertilizer-distributer. Combined seed	C. F. Zeigler and J. D. Antley	331,600	Dec. 1	535	130	33	1091
Planter and fertilizer-distributer. Seed	J. A. Esco and E. G. Roane	329,378	Oct. 27	2547	656	33	484
Planter and guano-distributer. Corn	R. E. Simril	332,955	Dec. 22	2464	652	33	1460
Planter attachment. Corn	J. L. Paden	333,247	Dec. 29	2884	754	33	1540
Planter. Broadcast seed	S. S. Speicher	332,963	Dec. 22	2474	655	33	1462
Planter check-row attachment. Corn	W. H. Stewart	330,523	Nov. 17	1477	395	33	802
Planter check-rowing attachment. Corn	W. J. Snider	328,351	Oct. 13	1087	283	33	207
Planter. Combined check-rower and self-dropping corn	L. Waterman, Jr	328,160	Oct. 13	849	220, 221	33	160
Planter. Combined potato and corn	F. L. Senour	330,158	Nov. 10	993	258, 259	33	702
Planter. Corn	J. C. Barlow	328,101	Oct. 13	775	202, 203	33	147
Planter. Corn	J. C. Barlow	329,994	Nov. 10	773	198, 199	33	656
Planter. Corn	E. Burkholder	332,874	Dec. 22	2360	624	33	1439
Planter. Corn	M. Danaher	328,764	Oct. 20	1651	431	33	316
Planter. Corn	A. Gliason	332,602	Dec. 15	1977	518	33	1363
Planter. Corn	W. H. Kadel	328,036	Oct. 13	688	182	33	132
Planter. Corn	J. L. Lanum	328,792	Oct. 20	1684	438, 439	33	322
Planter. Corn	B. Nunamacker	329,203	Oct. 27	2288	592, 593	33	437
Planter. Corn	G. F. Nutting, P. S. Rich, and J. Garfield.	330,798	Nov. 17	1922	491	33	869
Planter. Corn	J. E. Page	328,056	Oct. 13	716	187, 188	33	136
Planter. Corn	E. M. South	332,679	Dec. 15	2089	548	33	1363
Planter. Corn	A. Yonnt	332,469	Dec. 15	1777	465	33	1328
Planter. Corn and pea	H. C. Howell	332,153	Dec. 8	1352	350	33	1247
Planter. Cotton	W. H. Hackett	330,393	Nov. 17	1310	348	33	770
Planter. Cotton	H. C. Howell	332,152	Dec. 8	1351	350	33	1246
Planter. Cotton	R. Thomson	330,440	Nov. 17	1369	365	33	781
Planter. Cotton-seed	S. L. Honston	331,198	Nov. 24	2359	638, 639	33	975
Planter dropper. Corn	R. D. Powel	333,334	Dec. 29	3004	786	33	1502
Planter marking attachment. Corn	W. H. Clay	329,143	Oct. 27	2202	570	33	421
Planter. Potato	H. Christenson and W. Timmers	331,278	Dec. 1	16	4	33	1003
Planter. Potato	A. L. Gill	333,460	Dec. 29	3168	828	33	1589
Planter. Seed	J. B. Parker	332,746	Dec. 22	2189	578	33	1409
Planter. Seed	H. G. Smith	330,806	Nov. 17	1833	494	33	871
Planter. Self-checking corn	J. A. Shaw	329,091	Oct. 27	2130	551	33	408
Planters. Wire for check-row corn	J. C. Barlow	328,452	Oct. 20	1239	322	33	241
Planting-machine	A. Mekenney	328,597	Oct. 20	1430	372, 373	33	276
Plaster and sheet-metal lining for partitions, &c. Compound	E. C. Morris	329,759	Nov. 3	451	114	33	590
Plastering device	H. B. Hall and F. G. Powers	330,321	Nov. 10	1198	320	33	743
Plater's bar	E. D. Tuttle	333,432	Dec. 29	3128	818	33	1582
Platform: *See* Loading and unloading platform.							
Platform dump and elevator. Portable	A. L. Grinnell	332,654	Dec. 15	2050	539	33	1377
Plating with palladium	G. Pilet and C. Carry	330,149	Nov. 10	994	.....	33	700
Plow	I. Anderson	332,862	Dec. 22	2337	618	33	1435
Plow	J. W. Burrows	329,008	Oct. 27	2009	522	33	398
Plow	A. M. Fitch	330,475	Nov. 17	1419	379	33	791
Plow	M. Hendrick	330,325	Nov. 10	1202	321	33	743
Plow	W. H. Hodgson	333,010	Dec. 22	2551	672	33	1475
Plow	M. R. Hubbell	329,834	Nov. 3	557	142	33	608
Plow	F. B. Hunt	329,454	Nov. 3	32	9	33	511
Plow	F. B. Hunt	331,063	Nov. 24	2159	586	33	940
Plow	W. C. Kinard and M. J. Maddox	331,410	Dec. 1	220	57	33	1037
Plow	H. Listerud	327,562	Oct. 6	90	18	33	15
Plow	T. M. Moore	332,206	Dec. 8	1420	365, 366	33	1259
Plow	G. W. D. and L. L. Porter	328,429	Oct. 13	1210	313	33	229
Plow	W. Strait	332,302	Dec. 15	1549	406	33	1289
Plow	R. S. Windsor	329,669	Nov. 3	255	66	33	553
Plow and planter	W. P. Bettendorf	329,123	Oct. 27	2175	563, 564	33	416
Plow and pulverizer. Cylinder	S. M. Neely	332,421	Dec. 15	1720	451	33	1318
Plow attachment	W. S. Felton	332,652	Dec. 15	2048	538	33	1376
Plow-beam. Compound	H. H. Summer	331,342	Dec. 1	118	28	33	1020
Plow-carriage	C. B. Sporr	332,506	Dec. 15	1923	503	33	1353
Plow coiter and jointer attachment	W. A. Whitney	331,175	Nov. 24	2323	630	33	989
Plow-fender	I. Davis	328,924	Oct. 27	1872	489	33	363
Plow-fender	C. A. Malott	333,141	Dec. 29	2736	710	33	1514
Plow. Double	L. Guthrie	329,531	Nov. 3	551	141	33	607
Plow. Gang	D. M. Johnston	331,503	Dec. 1	348	94	33	1061

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Plow harrow attachment	V. Wood	331,358	Dec. 1	140	35	33	1023
Plow. Planting	J. P. Black	331,938	Dec. 8	1030	268	33	1192
Plow. Riding	F. L. Hankins	328,026	Oct. 13	674	177	33	129
Plow. Rotary	F. Wittram	330,452	Nov. 17	1387	369	33	784
Plow-sharpener	J. C. Price	327,590	Oct. 6	117	27	33	22
Plow. Shovel	J. and P. Scott	332,563	Dec. 15	1920	502	33	1352
Plow. Side-hill	H. Wiard and W. R. Bullock	329,607	Nov. 3	253	65	33	553
Plow. Subsoil	J. Dorrance and G. L. Ebersole	329,028	Oct. 27	2038	529	33	393
Plow-stock	T. W. Boyle	332,225	Dec. 15	1449	375	33	1271
Plow. Sulky	J. P. Black	329,432	Nov. 3	8	2	33	506
Plow. Sulky	R. R. Gaskill	330,889	Nov. 24	1945	527	33	899
Plow. Sulky	L. Gibbs	329,731	Nov. 3	411	106	33	583
Plow. Sulky	F. B. Hunt	329,905	Nov. 10	654	167	33	634
Plow. Sulky	J. E. Porter	328,518	Oct. 20	1314	342	33	255
Plow. Sulky	W. Strait	332,301	Dec. 15	1548	405, 406	33	1289
Plow. Sulky	J. T. Ziegler	327,640	Oct. 6	187	46	33	34
Plow sulky attachment	T. Johnson	331,972	Dec. 8	1073	278	33	1199
Plow. Wheel	C. M. French	333,065	Dec. 22	2619	686, 687	33	1487
Plow. Wheel	A. Lindgren	328,932	Oct. 27	1913	500	33	371
Plow. Wheel	W. Meikle	330,252	Nov. 10	1106	293	33	724
Plows and cultivators. Harrow and rake attachment for	E. T. Jarrett	329,745	Nov. 3	430	110	33	586
Plows. Scraper attachment for wheel	E. Slosson	332,844	Dec. 22	2306	607	33	1430
Plowshares. Roll for rolling	S. Oar	330,611	Nov. 17	1580	423	33	822
Plumb-bob	A. Leidgen	329,573	Nov. 3	208	54	33	544
Plumber's trap	P. J. Clancy	330,679	Nov. 17	1665	448	33	840
Pneumatic-dispatch-tube system	C. M. Johnson	332,905	Dec. 22	2400	634	33	1448
Pneumatic motor	G. W. Scovill	330,265	Nov. 10	1124	299	33	728
Pocket and protector. Detachable	A. Warshoar	332,310	Dec. 15	1559	410	33	1291
Pocket for garments	M. P. Bray	328,378	Oct. 13	1135	293	33	215
Pocket for garments	M. P. Bray	328,379	Oct. 13	1136	293	33	215
Pocket for watches. Safety	W. C. Beetchenow	327,854	Oct. 6	449	117	33	79
Pocket-knife	R. G. Hunter	333,466	Dec. 29	3176	820	33	1590
Pocket-knife	C. H. Kahler	332,537	Dec. 15	1887	493	33	1347
Poison. Vermin	J. D. Womack	328,445	Oct. 13	1230	.....	33	233
Poke. Animal	D. F. Sandusky	329,220	Oct. 27	2312	599	33	442
Poke. Animal	D. R. Saunders and J. E. Welling	332,114	Dec. 8	1294	336	33	1237
Poker, tongs, and stove-lid lifter	S. E. Fish and C. G. King	331,954	Dec. 8	1050	273	33	1196
Pole cap. Wagon	R. Sergeant	331,007	Nov. 24	2096	567	33	928
Pole-changer	E. W. Smith	332,845	Dec. 22	2307	607, 608	33	1431
Polishing composition	H. L. Haas	331,632	Dec. 1	592	.....	33	1101
Polishing or emery cord	D. M. Church	328,004	Oct. 13	646	170	33	124
Polo-goal	F. P. Baker	331,756	Dec. 8	773	195	33	1144
Pool-rack. Self-tallying	N. C. Peterson and P. E. Larson	332,827	Dec. 22	2284	602	33	1427
Pool-tables into billiard-tables. Device for converting	W. P. Waggoner	328,092	Oct. 13	766	200	33	145
Post: *See* Fence-post.							
Post-driver	J. G. Stigers	331,740	Dec. 1	744	188	33	1130
Post-driver	A. Weeden	332,687	Dec. 15	2097	551	33	1384
Post-hole digger	F. E. Kohler	327,557	Oct. 6	74	16	33	14
Post-hole-digging implement	T. S. Disston	333,452	Dec. 29	3155	825	33	1587
Post-office distribution and delivery box	B. Van Gansbeek	328,826	Oct. 20	1728	449	33	331
Pot: *See* Coffee-pot.							
Potato-digger	C. J. Cummings	332,644	Dec. 15	2037	534	33	1374
Potato-digger	L. G. Jackson	330,898	Nov. 24	1955	529	33	900
Potato-digger	N. Keeler	327,882	Oct. 6	481	126	33	85
Potato-digger	S. W. Kelchner	331,505	Dec. 1	351	95	33	1061
Potato-digger	H. H. Lovejoy	331,724	Dec. 1	723	180, 181	33	1125
Potato-digger	J. Pentreath	331,082	Nov. 24	2190	593	33	946
Potato-digger	P. Sinnott	329,780	Nov. 3	476	120	33	595
Potato-digger	H. Strait	328,079	Oct. 13	748	195, 196	33	142
Potato-digger and bean-harvester	C. Peets	331,321	Dec. 1	87	21	33	1014
Potato or manure fork	M. Jincks	329,046	Oct. 27	2066	536	33	397
Potato-vines. Machine for sprinkling	N. L. Kinney	330,130	Nov. 10	962	250	33	695
Pottery-press	J. S. H. Lovett	329,060	Oct. 27	2053	541	33	400
Poultry-scalding box	R. H. Horne and S. C. Smith	329,742	Nov. 3	428	109	33	586
Pounder or washing-machine	C. Critchfield	330,206	Nov. 10	1167	310	33	736
Pounding and washing machine	W. C. Nelson	328,136	Oct. 13	816	213	33	155
Powder: *See* Baking-powder.							
Powder-box	W. C. Walter	329,787	Nov. 3	485	123	33	597
Powder-charger	H. C. Severance	328,346	Oct. 13	1082	282	33	206
Powder for roofing and other purposes	L. Brown	328,644	Oct. 20	1506	.....	33	288
Power: *See* Churn-power. Motive power. Hand-power. Tidal power. Horse-power. Water-power.							
Power-press	F. W. Cross	327,660	Oct. 6	220	54	33	39
Power-press	N. C. Stiles	329,236	Oct. 27	2332	604	33	446
Power-presses. Automatic trip-gear for	M. M. Wilson	331,665	Dec. 1	623	156	33	1109
Power. Storing	M. Honigmann	333,222	Dec. 29	2849	745	33	1533
Preserver. Portable meat and fruit	J. Goldsmith	333,123	Dec. 29	2713	712	33	1509
Preserving	W. Ihne	328,223	Oct. 13	928	.....	33	177
Preserving by vacuum and pressure. Apparatus for	D. H. Dickinson	328,016	Oct. 13	663	174	33	127
Preserving compound	R. A. McDaniel	329,578	Nov. 3	213	.....	33	545
Preserving meats, &c. Apparatus for	W. Balder	332,988	Dec. 22	2513	664	33	1468

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Press:							
See Baling-press. Hay and cotton press.							
Cider-press. Hydraulic press.							
Copying-press. Pottery-press.							
Cotton-press. Power-press.							
Cotton and hay press. Punching-press.							
Drill-press. Seal-press.							
Harness-pad press. Stamping-press.							
Hay-press. Wine and cider press.							
Press for separating liquid and solid matter	H. W. Lafferty	332,718	Dec. 22	2154	{568 569}	{33}	1401
Presser-clamp	F. N. Abbott	330,363	Nov. 17	1269	337	33	763
Presser-foot	T. F. Hart	331,788	Dec. 8	906	205	33	1150
Pressure-regulator	P. Ball and J. R. Smith	329,119	Oct. 27	2169	562	33	415
Pressure-regulator	F. A. Jones	330,240	Nov. 10	1093	{288 289}	{33}	721
Pressure-regulator	J. W. Kenyon	329,177	Oct. 27	2243	581	33	429
Pressure-regulator	M. G. Wilder	332,768	Dec. 22	2215	584	33	1414
Pressure-regulator. Automatic	T. C. Hopper	328,681	Oct. 20	1552	404	33	297
Pressure-regulator. Automatic	W. S. Payne	332,747	Dec. 22	2190	578	33	1409
Pressure-regulator. Fluid-	R. R. Beard and W. H. Oakley	330,549	Nov. 17	1506	403	23	807
Pressure-regulator. Fluid-	J. F. De Pew	332,645	Dec. 15	2038	535	33	1374
Pressure-regulator. Fluid-	B. Fitts	333,403	Dec. 29	3090	806	33	1576
Pressure-regulator. Fluid-	R. Spear	331,008	Nov. 24	2097	568	33	928
Printer's dash	J. R. Cummings	329,369	Oct. 27	2536	653	33	482
Printer's chase	L. W. Hardwicke	332,516	Dec. 15	1847	482	33	1340
Printer's gage-clamp	J. J. Floyd	329,896	Nov. 10	645	164	33	632
Printer's galley	W. H. Golding	329,159	Oct. 27	2224	576	33	425
Printer's galley	D. B. Watts	332,686	Dec. 15	2096	551	33	1384
Printers' inking-rollers. Mold for making	J. H. Osgood	328,247	Oct. 13	958	249	33	182
Printer's rule-mitering machine	A. Filly	328,017	Oct. 13	664	175	33	127
Printing. Device for chromatic	T. H. Lindley and F. M. Robinson	330,719	Nov. 17	1718	463	33	850
Printing machine. Chromatic-	F. L. and S. G. Goss	333,214	Dec. 29	2835	742	33	1530
Printing machine. Chromatic-	J. B. Underwood	333,490	Dec. 29	3206	839	33	1595
Printing machine. Chromatic-	W. Wheeler, Jr	333,493	Dec. 29	3210	840	33	1596
Printing-machine. Cylinder	J. L. Cox	332,138	Dec. 8	1329	{344 345}	{33}	1243
Printing-machine. Cylinder	J. L. Cox	332,139	Dec. 8	1332	345	33	1243
Printing-machine. Cylinder	J. T. Hawkins	333,070	Dec. 22	2625	{688 689}	{33}	1488
Printing-machine ink-table	E. A. Warren	330,533	Nov. 17	1488	398	33	804
Printing-machine inking apparatus	G. A. Wilson	330,278	Nov. 10	1140	303	33	731
Printing-machine sheet-delivery apparatus	J. T. Hawkins	333,071	Dec. 22	2629	689	33	1488
Printing-machine sliding bearer	S. Whitlock	332,577	Dec. 15	1944	509	33	1357
Printing-machine type-bed	J. T. Hawkins	328,940	Oct. 27	1899	496	33	368
Printing-machine. Web-perfecting	J. T. Hawkins	332,518	Dec. 15	1849	{483 484}	{33}	1341
Printing-machine. Web-perfecting	J. T. Hawkins	332,519	Dec. 15	1854	485	33	1341
Printing-machine. Web-perfecting	J. T. Hawkins	332,521	Dec. 15	1861	{486 487}	{33}	1342
Printing-machines. Sheet-delivery for oscillating-cylinder	J. T. Hawkins	328,939	Oct. 27	1897	496	33	368
Printing on boards. Press for	V. M. Lamb	330,243	Nov. 10	1096	290	33	722
Printing paper-bag tubes. Type-form for	A. J. Boynton	331,372	Dec. 1	163	42	33	1027
Printing-press gearing	S. Whitlock	332,576	Dec. 15	1943	509	33	1356
Printing-presses. Consecutive printing attachment for	C. Racine	327,591	Oct. 6	118	27	33	22
Printing-presses. Device for giving positive motion to sliders of	R. Miehle	330,040	Nov. 10	834	214	33	668
Printing rollers or blocks. Making	F. Beck	332,377	Dec. 15	1659	.....	33	1308
Printing-surfaces. Machine for justifying matrices for producing	F. D. Maltby	332,359	Dec. 15	1618	425	33	1302
Printing-surfaces. Producing	M. Joyce	333,129	Dec. 29	2721	714	33	1511
Printing textile fabrics	M. Conrad	328,465	Oct. 20	1254	.....	33	244
Privy-sink	P. Cassidy	331,682	Dec. 1	662	164	33	1115
Propeller. Boat-	A. Shoeninger	328,527	Oct. 20	1330	345	33	258
Propeller. Buoyant screw-	G. S. Burr	333,445	Dec. 29	3145	822	33	1585
Propeller. Endless-chain	A. J. Kranssmann	328,123	Oct. 13	863	209	33	152
Propeller for steamboats. Buoyant	W. Hall	331,496	Dec. 1	341	92	33	1059
Propeller for vessels	C. E. Baker	328,559	Oct. 20	1378	359	33	266
Propeller. Screw-	J. Belduke	329,528	Nov. 3	146	37	33	533
Propeller. Screw-	A. D. De Bruignac	329,922	Nov. 3	539	{137 138}	{33}	605
Propeller. Screw-	E. H. Hall	332,710	Dec. 22	2144	566	33	1399
Propeller. Screw-	A. Vogelsang	332,309	Dec. 15	1558	409	33	1291
Propelling apparatus for steam-vessels. Screw-	E. H. Hall	332,709	Dec. 22	2143	566	33	1399
Propelling device. Boat-	N. C. Corckran and R. J. Thompson	327,771	Oct. 6	347	89	33	61
Propulsion of vessels	T. Dunlap	327,927	Oct. 6	547	143	33	98
Protector:							
See Boot or shoe protector. Face-protector.							
Grain-stack protector.							
Buggy-top-bow protector. Jar-protector.							
Plant-protector.							
Chimney-protector. Telephone and telegraph protecter.							
Clock-pendulum protecter. Tree-protector.							
Electrical-apparatus protector. Wash-board protector.							
Protractor	C. W. Brackett	328,281	Oct. 13	998	260	33	189
Protractor	G. B. Orendorff	330,799	Nov. 17	1824	491	33	869
Pruning-shears	W. Richard	330,737	Nov. 17	1748	470	33	855
Puller:							
See Grub-puller. Stump-puller.							
Pulley	M. Vandercook, W. P. Smith, and H. M. Baker	332,732	Oct. 20	1622	422	33	310

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pulley-block	E. F. Robbins	328,340	Oct. 13	1077	280	33	205
Pulley-covering	G. M. Lindsey	330,598	Nov. 17	1561	418	33	819
Pulley. Dead-	W. R. Santley	329,679	Nov. 3	342	87	33	569
Pulley. Divided-	F. E. Cross	328,386	Oct. 13	1153	297	33	218
Pulley. Friction-	C. A. Lieb	329,575	Nov. 3	209	55	33	544
Pulley lubricator. Loose-	W. J. Ormsby	332,552	Dec. 15	1908	492	33	1350
Pulley or wheel	C. S. Wardwell	328,158	Oct. 13	846	220	33	160
Pulley. Sash-	H. L. Blodgett	329,006	Oct. 27	2003	521	33	387
Pulley. Sash-	T. M. Kenna	329,317	Oct. 27	2449	634	33	468
Pulley. Self-lubricating	C. Hammelmann	330,234	Nov. 10	1064	286	33	720
Pulp barrel-bodies. Manufacture of	S. M. Hotchkiss	329,043	Oct. 27	2059	{534 535}	{33}	396
Pulp from woody matter. Manufacture of	R. P. Pictet and G. L. Brélaz	331,323	Dec. 1	90	.....	33	1015
Pulp-grinder	W. Wilkeson	333,369	Dec. 29	3048	796	33	1569
Pulp-machine	G. M. Stevens	333,428	Dec. 29	3123	816	33	1581
Pulp-straining machine with vertical screen-plates	R. Kron	331,304	Dec. 1	66	16	33	1011
Pulverizer. Clay-	J. A. Boyd	329,708	Nov. 3	380	97	33	577
Pulverizer, harrow, and cultivator. Combined	J. R. Gibbons and M. L. Flowers	330,689	Nov. 17	1680	{453 454}	{33}	843
Pulverizer. Soil-	J. B. Okey	331,318	Dec. 1	84	20	33	1014
Pulverizing-machine	J. B. Waring	328,625	Oct. 20	1461	386	33	284
Pulverizing-machine, &c. Dust-guard for	R. D. Gates	331,393	Dec. 1	193	50	33	1032
Pump	G. H. Bennett	330,669	Nov. 17	1651	444	33	837
Pump	J. Faller	328,472	Oct. 20	1261	328	33	245
Pump	R. P. Garsed	330,231	Nov. 10	1070	280	33	717
Pump	W. Johnston	329,910	Nov. 10	660	168	33	635
Pump	T. Kennedy	331,976	Dec. 8	1068	282	33	1201
Pump	J. H. Rook	331,734	Dec. 1	738	185	33	1128
Pump	A. L. Russell	328,146	Oct. 13	830	216	33	157
Pump and air-compressor. Combined water-	C. C. Worthington	330,540	Nov. 17	1496	400	33	805
Pump. Breast-	A. A. Durand	331,952	Dec. 8	1046	271	33	1195
Pump bucket. Lift-	F. H. Smith	330,933	Nov. 24	2006	542	33	910
Pump. Chain-	W. Kegler	331,869	Dec. 8	957	248	33	1177
Pump. Double-acting	A. J. Hopkins	330,329	Nov. 10	1205	322	33	744
Pump for oil-cans, &c	J. B. Nelson	329,067	Oct. 27	2093	543	33	402
Pump. Hydraulic	J. H. Hubbell	331,711	Dec. 1	699	{172 173}	{33}	1122
Pump. Liquor-	J. H. Thorn	332,171	Dec. 8	1373	355	33	1251
Pump. Measuring-	H. E. Marchand	327,890	Oct. 6	492	{128 129}	{33}	88
Pump. Non-freezing force-	W. M. Stevenson	329,233	Oct. 27	2329	603	33	445
Pump. Non-freezing force-	W. M. Stevenson	329,234	Oct. 27	2331	604	33	446
Pump-piston	W. M. Stevenson	329,235	Oct. 27	2332	604	33	446
Pump piston. Air-	J. A. Woodbury, J. Merrill, G. Patten, and E. F. Woodbury	331,360	Dec. 1	143	36	33	1023
Pump. Rotary	J. F. Breux	332,586	Dec. 15	1956	512	33	1359
Pump. Rotary	B. F. Taber	333,356	Dec. 29	3033	792	33	1566
Pump. Siphon-	F. Wittram	330,078	Nov. 10	895	231	33	681
Pump. Steam-	W. E. Eby	330,571	Nov. 17	1532	410	33	813
Pump. Steam vacuum-	G. H. Nye	332,738	Dec. 22	2178	575	33	1407
Pump-table	H. E. Marchand	327,905	Oct. 6	394	102	33	69
Pump. Vacuum-	J. T. Davis	328,469	Oct. 20	1256	327	33	245
Pump. Vacuum-	B. Thoens	329,241	Oct. 27	2342	606	33	448
Pumps. Oil-drip and separating-tank for ammoniа-gas	E. Jungenfeld and H. Rassbach	332,344	Dec. 15	1609	422	33	1300
Pumps. Valve-case for mercurial air-	A. L. Reinmann	331,546	Dec. 1	410	110	33	1072
Pumping apparatus. Device for converting motion in oil-	G. Allen	328,099	Oct. 13	773	202	33	146
Pumping apparatus. Device for transmitting motion in oil-	G. Allen	332,318	Dec. 15	1573	413	33	1294
Pumping-engines. Equalizer for duplex steam	J. D. Davies	327,535	Oct. 6	44	10	33	9
Pumping oil-wells	H. Forbes	330,973	Nov. 24	2056	556	33	920
Punch	J. H. Laney	332,666	Dec. 15	2065	542	33	1379
Punch-cutting machine	L. B. Benton	327,855	Oct. 6	450	{117 118}	{33}	79
Punch-cutting machine	L. B. Benton	332,990	Dec. 22	2518	665	33	1469
Punching machine. Metal-	G. Emig	327,777	Oct. 6	354	91, 92	33	63
Punching metallic strap-bands. Machine for	A. D. Laws	330,337	Nov. 10	1215	325	33	746
Punching-press	J. M. Long	329,918	Nov. 10	668	171	33	637
Pupilometer	L. Burt	331,226	Nov. 24	2402	650	33	982
Purse	M. Stoveken	330,808	Nov. 17	1836	495	33	871
Puzzle	C. M. Dewey	328,766	Oct. 20	1653	431	33	317
Puzzle	P. Protheroe	332,211	Dec. 8	1426	368	33	1260
Pyroxyline and its solvents in the manufacture of solid compounds. Combining	J. W. Hyatt	331,241	Nov. 24	2423	657	33	986
Pyroxyline and its solvents in the manufacture of solid compounds. Combining	J. W. Hyatt	331,242	Nov. 24	2424	657	33	987
Pyroxyline compounds. Manufacture of	J. G. Jarvis	329,313	Oct. 27	2445	.....	33	467
Pyroxyline with its solvents in the manufacture of solid compounds. Compounding	J. W. Hyatt	331,713	Dec. 1	703	174	33	1122
Quills, feathers, &c. Machine for splitting	J. H. Holden	329,167	Oct. 27	2233	578	33	427
Quilting-frame	J. H. Helms	330,482	Nov. 17	1426	381	33	793
Rack:							
See Clothes and hat rack. Mattress-rack.							
Music-rack.							
Feeding-rack. Music and book rack.							
Harness-rack. Pool-rack.							
Harness show-rack. Scale-rack.							
Hay-rack. Stock-rack.							
Hay and straw rack. Umbrella display-rack.							
Hob-rack.							
Radiator. Steam-	T. P. Hardy	330,696	Nov. 17	1691	456	33	845
Rafter-joint	N. S. Davis	332,060	Dec. 8	1206	315	33	1223
Rafting-pin	J. Treat	328,260	Oct. 13	972	253	33	184

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rail-brace	C. Alkins	329,991	Nov. 10	770	197	33	656
Rail friction-clamp	W. Emmett	328,927	Oct. 27	1875	489	33	364
Rail-support. Elastic	F. Schauman	328,616	Oct. 20	1463	381	33	281
Rails. Rerolling old	G. Hargreaves	328,937	Oct. 27	1895	495	33	367
Rails. Roll for reducing old	J. H. Brown	333,385	Dec. 29	3065	799	33	1572
Rails. Roll for rolling girder	A. J. Moxham	333,475	Dec. 29	3189	833	33	1592
Rails to metal sleepers. Fastening	J. Conley	332,384	Dec. 15	1670	437	33	1310
Railway	G. E. Baldwin	329,429	Nov. 3	5	1	33	506
Railway and car-hanger. Suspension	J. A. Enos	331,387	Dec. 1	192	46, 47	33	1030
Railway and tramway chair or rail-fastener	W. Corteen	331,868	Dec. 8	924	238	33	1171
Railway block-signal	E. H. Slaybaugh	329,092	Oct. 27	2131	551	33	408
Railway. Cable	A. L. Eltonhead	329,826	Nov. 3	546	139	33	606
Railway. Cable	D. J. Miller	332,933	Dec. 22	2439	644	33	1455
Railway. Cable	D. J. Miller	332,934	Dec. 22	2431	644	33	1455
Railway. Cable	R. Solano	331,834	Dec. 8	875	225, 226	33	1162
Railway. Cable	R. Solano	331,838	Dec. 8	884	228	33	1164
Railway-cars. Electric signal for	J. R. De Mier	331,042	Nov. 24	2132	579	33	935
Railway-crossing	E. Fontaine	327,670	Oct. 6	232	57	33	41
Railway-crossing	G. Lehlbach	333,236	Dec. 29	2862	750	33	1536
Railway-crossing gate	M. B. Mills	333,242	Dec. 29	2876	752	33	1538
Railway curve. Endless-chain	R. Gidley	328,210	Oct. 13	910	236	33	173
Railway. Electric	J. F. McLaughlin	328,420	Oct. 13	1300	310	33	327
Railway. Electric	J. F. McLaughlin	330,605	Nov. 17	1572	421	33	839
Railway. Electric	J. F. McLaughlin	332,928	Dec. 22	2425	641	33	1453
Railway. Electrical	J. F. McLaughlin	332,926	Dec. 22	2423	641	33	1453
Railway. Electrical	J. F. McLaughlin	332,927	Dec. 22	2424	641	33	1453
Railway. Electrical	J. F. McLaughlin	332,929	Dec. 22	2425	641	33	1454
Railway. Elevated electric	A. Jackson	327,690	Oct. 6	254	63	33	45
Railway fish-plate	J. L. Catheart	329,622	Nov. 3	271	70	33	557
Railway-frog	W. J. Morden	332,733	Dec. 22	2171	573	33	1405
Railway-frog	W. J. Morden	332,734	Dec. 22	2173	573	33	1405
Railway-frog	J. T. Richardson	328,810	Oct. 20	1708	445	33	327
Railway-frog	J. N. Sargent	328,815	Oct. 20	1713	446	33	328
Railway-frog	N. Stedman and J. N. Sargent	328,864	Oct. 20	1775	463	33	339
Railway-frog	A. A. Strom	329,098	Oct. 27	2139	553	33	409
Railway-frog	J. Townsend	331,013	Nov. 24	2102	569	33	929
Railway-frog	D. F. Vaughan	329,979	Nov. 10	751	192	33	652
Railway-frog	F. C. Weir	331,594	Dec. 1	527	128	33	1090
Railway-frog	F. C. Weir	332,980	Dec. 22	2496	660	33	1466
Railway-frog. Automatic	D. H. Mahoney	328,044	Oct. 13	697	184	33	133
Railway-frogs, &c. Foot-guard for	F. B. Piatt	332,106	Dec. 8	1281	333	33	1235
Railway-gate	C. S. Riggin and A. E. Gammerson.	331,333	Dec. 1	107	25	33	1017
Railway-gate. Hydraulic	J. A. Lidback	333,314	Dec. 29	2981	780	33	1558
Railway girder. Single-rail elevated	J. Fish	328,395	Oct. 13	1102	300	33	220
Railway. Gravity switch-back	L. A. Thompson	332,762	Dec. 22	2207	582	33	1412
Railway grip. Cable	J. Hellings	331,055	Nov. 24	2146	582, 583	33	937
Railway grip. Cable	D. J. Miller	332,730	Dec. 22	2167	572	33	1404
Railway grip. Cable	D. Stout	330,807	Nov. 17	1835	494	33	871
Railway gripping device. Rope	W. H. Milliken	331,902	Dec. 8	972	252	33	1180
Railway. Hand mechanism for operating grippers for cable	W. H. Paine	331,238	Nov. 24	2419	655, 656	33	986
Railway-head stop-motion	C. E. King	327,696	Oct. 6	261	65	33	46
Railway-heads, &c. Stop-motion for	A. Schaer	332,289	Dec. 15	1534	402	33	1286
Railway-rail chair	J. Townsend	331,012	Nov. 24	2102	569	33	928
Railway-rail coupling	H. C. Burkhead	331,612	Dec. 1	551	134	33	1094
Railway-rail fastening	L. E. Whipple	327,745	Oct. 6	317	81	33	55
Railway-rail joint	J. C. Larkin	328,092	Oct. 20	1564	408	33	299
Railway-rail spike	T. A. Davies	330,570	Nov. 17	1531	410	33	812
Railway-rail spikes. Stay-plate for	T. A. Davies	330,568	Nov. 17	1530	409	33	812
Railway-rails. Center-fastening for	T. A. Davies	330,569	Nov. 17	1531	409	33	812
Railway rolling-stock. Chart for	J. S. Graham	330,577	Nov. 17	1539	412	33	814
Railway. Rope	W. R. Fowler	330,106	Nov. 10	926	240, 241	33	688
Railway-semaphores. Apparatus for operating	H. O'Neill	329,671	Nov. 3	328	84	33	567
Railway-signal	J. H. Ames	328,913	Oct. 27	1857	485	33	361
Railway-signal	J. W. Henderson	331,879	Dec. 8	938	242	33	1174
Railway-signal	F. E. Kip	328,950	Oct. 27	1910	499	33	370
Railway-signal	W. A. Murray	327,962	Oct. 6	589	154	33	106
Railway-signal	F. I. Myers	327,576	Oct. 6	97	21	33	18
Railway-signal	W. M. Pease	332,431	Dec. 15	1732	454	33	1320
Railway-signal	L. E. Watson and D. H. Hulit	331,854	Dec. 8	904	234	33	1167
Railway-signal	C. M. Wilson	330,077	Nov. 10	893	231	33	681
Railway-signal	M. Wuerpel	330,859	Nov. 17	1905	515	33	883
Railway-signal	M. Wuerpel	330,860	Nov. 17	1906	515	33	884
Railway signal and alarm. Combined	J. B. Eastman	328,301	Oct. 13	1023	265	33	194
Railway-signal. Electric	H. C. Nicholson	329,478	Nov. 3	71	19, 20	33	518
Railway-sleeper	P. H. Dudley	327,667	Oct. 6	228	56	33	41
Railway sleeper and chair	J. Howard and E. T. Bousfield	333,015	Dec. 22	2356	673	33	1476
Railway-spike	R. M. Boyd	328,103	Oct. 13	778	203	33	147
Railway-spike	J. D. Hicks	330,326	Nov. 10	1203	322	33	744
Railway-spike	W. S. Huntington	328,889	Oct. 20	1814	472	33	346
Railway station or terminus. Transfer	R. R. Hazard	329,164	Oct. 27	2229	577	33	426
Railway-switch	N. G. Du Bois	330,928	Nov. 17	1856	501	33	875
Railway-switch	J. A. Duggan	330,878	Nov. 24	1929	523	33	896
Railway-switch	H. L. Ford	328,842	Oct. 20	1750	456	33	335
Railway-switch	A. J. Moxham	331,525	Dec. 1	762	133	33	1067
Railway-switch	A. J. Moxham	331,526	Dec. 1	383	103	33	1068
Railway-switch	A. J. Moxham	333,474	Dec. 29	3188	832	33	1592
Railway-switch	P. Nolan	330,509	Nov. 17	1459	390	33	799
Railway-switch	A. O'Hara	328,803	Oct. 20	1698	442	33	325
Railway-switch	J. F. Penrod	328,608	Oct. 20	1447	377	33	278
Railway-switch	B. C. Rowell	333,258	Dec. 29	2904	759, 760	33	1542
Railway switch and signaling apparatus	J. T. Hambay	329,643	Nov. 3	292	74, 75	33	560
Railway switch. Street	J. Ridgway	330,425	Nov. 17	1350	360	33	778
Railway-switches. Machinery for operating	M. Wuerpel	330,862	Nov. 17	1908	516	33	885
Railway switching device. Cable	D. J. Miller	332,938	Dec. 22	2428	643	33	1454
Railway system. Electric	F. J. Sprague	328,821	Oct. 20	1721	448	33	330
Railway-tie	J. S. Ammon	328,632	Oct. 20	1491	388	33	266
Railway-tie	L. M. Clark	332,490	Dec. 15	1802	473	33	1333
Railway-tie	L. E. Whipple	327,844	Oct. 6	438	114	33	77
Railway tie and chair	P. Davey	329,621	Nov. 3	539	137	33	605
Railway tie and chair. Metallic	L. B. Prindle	328,490	Dec. 29	3195	835	33	1560
Railway-ties. Apparatus for preserving	J. A. Mathieu	332,007	Dec. 8	1265	328	33	1233
Railway time-signal. Electric	G. Cornell	332,496	Dec. 15	1800	475	33	1334
Railway-track	J. Frysinger	332,707	Dec. 22	2130	565	33	1398
Railway-track chair	A. A. Strom	332,760	Dec. 22	2205	581	33	1411
Railway-track fastening	A. M. Trude	329,867	Nov. 3	598	153	33	617
Railway-track flanger and snow-plow	H. G. H. Reed and J. Donohue	328,718	Oct. 20	1603	418	33	306
Railway-track gage and level. Combined	D. H. Rhodes	331,329	Dec. 1	102	24	33	1017
Railway-track gage, level, and gradient	C. M. Ferguson	329,895	Nov. 10	641	164	33	632
Railway-track inspector. Automatic	P. C. Compton	331,684	Dec. 1	664	165	33	1115
Railway-tracks. Destroying grass, weeds, &c., on	D. Hawksworth	330,700	Nov. 17	1695	457, 458	33	846
Railway-tracks. Device for destroying vegetation along	D. Hawksworth	330,701	Nov. 17	1697	458	33	846
Railway-train indicator	W. Akin	331,859	Dec. 8	911	235	33	1169
Railway-trains. Device for operating rear signal-lights of	I. H. Congdon	329,439	Nov. 3	16	5	33	508
Railways. Apparatus for automatically indicating or signaling the passage of trains upon	H. Lebastenr and S. H. Rouart	332,913	Dec. 22	2410	637	33	1449
Railways. Automatic block-signal for	L. B. White	330,180	Nov. 10	1021	267	33	709
Railways. Cable-supporting sheave for cable	W. H. Paine	331,237	Nov. 24	2418	655	33	985
Railways. Carrying-pulley for cable	R. Solano	331,836	Dec. 8	881	227, 228	33	1163
Railways. Chair used for fixing lines of	J. E. B. Armytage	333,437	Dec. 29	3133	819	33	1583
Railways. Conduit for the cables of cable	R. Solano	331,837	Dec. 8	883	228	33	1163
Railways. Curvilinear conduit for cables of cable	R. Solano	331,835	Dec. 8	880	227	33	1163
Railways. Driving mechanism for cable	D. J. Miller	329,757	Nov. 3	448	113	33	589
Railways. Mold for concrete tubes for cable	R. Gillham	330,013	Nov. 10	802	205	33	661
Railways. Slot-iron for cable	E. D. Dougherty	333,205	Dec. 29	2925	739	33	1529
Rand-trimming machine	J. Naglo	328,245	Oct. 13	956	249	33	182
Rake: *See* Garden-rake. Hay-rake. Horse-rake. Sulky-rake.							
Rake	C. J. Higgins	333,299	Dec. 29	2958	773	33	1554
Rake	G. H. Van Winkle	333,267	Dec. 29	2915	763	33	1546
Rake-teeth	F. G. Goettmann, Sr	330,108	Nov. 10	929	242	33	689
Rakes. Making	W. H. Kretsinger	328,690	Oct. 20	1563	407	33	299
Rapid-transit wrench	J. Du Shane	331,189	Nov. 24	2348	635	33	973
Rat-trap	H. McGillis	327,704	Oct. 6	268	68	33	47
Ratchet-drill	A. A. Strom	331,341	Dec. 1	116	27, 28	33	1019
Ratchet-drill	I. D. Weaver	329,790	Nov. 3	487	123	33	598
Ratchet-drill	P. A. Whitney	329,986	Nov. 10	761	194	33	654
Ratchet-wrench	I. P. Cornog	333,199	Dec. 29	2817	737	33	1527
Razor	S. J. Dyer	328,202	Oct. 13	901	234	33	171
Razor-guard	A. Partridge and D. F. Sweeney	330,418	Nov. 17	1342	357	33	776
Razor-strop	J. T. Warren	331,853	Dec. 8	903	233	33	1167
Reamer	J. Neale	330,508	Nov. 17	1457	390	33	798
Reaping and mowing machine	E. H. Heath and F. W. Moore	328,029	Oct. 13	678	178, 179	33	130
Reaping and mowing machines. Cutting apparatus for	E. Hazelton	331,968	Dec. 8	1069	277	33	1199
Reclining-chair	F. W. Brooks	329,884	Nov. 10	631	160	33	630
Reclining-chair	F. W. Brooks	333,052	Dec. 22	2605	692	33	1484
Reclining-chair	E. G. Cameron	329,272	Oct. 27	2381	616	33	456
Reclining-chair	M. S. Curtiss	332,237	Dec. 15	1468	383	33	1274
Reclining-chair	J. Glockler	332,603	Dec. 15	1979	518	33	1363
Reclining chair. Convertible	N. N. Horton	327,554	Oct. 6	71	16	33	14
Recorder: *See* Time-recorder.							
Reduction of solids. Machine for the	D. R. Baker	328,635	Oct. 20	1495	389	33	286
Reel: *See* Bolting-reel. Centrifugal reel. Fishing-reel. Fishing-line reel. Harvester-reel. Ribbon-reel. Ticket-reel.							
Reel-bolt	O. P. Hurford	331,240	Nov. 24	2421	656, 657	33	986
Reel seat and band	J. M. King	333,135	Dec. 29	2732	717	33	1513
Reflector	G. W. and L. A. Scovil	330,742	Nov. 17	1752	471, 472	33	856
Refrigerating and dehydrating apparatus for meat, &c.	H. C. Johnson	328,784	Oct. 20	1674	436	33	321
Refrigerating apparatus	C. H. Evans	329,380	Oct. 27	2350	657	33	482
Refrigerating apparatus on railway-cars from the outside. Controlling the speed of mechanical	C. C. Palmer	330,046	Nov. 10	844	217	33	671
Refrigerating-tank	D. W. Curtis	329,626	Nov. 3	275	71	33	557
Refrigerating-vessel for cold storage	A. M. Blanchard	332,584	Dec. 15	1954	511	33	1358
Refrigerator	J. D. Colony	330,208	Nov. 10	1055	275	33	714
Refrigerator	J. Falkner	332,884	Dec. 22	2372	627	33	1441
Refrigerator	F. Hainsworth	331,296	Dec. 1	56	13, 14	33	1008
Refrigerator	A. McKenzie	332,417	Dec. 15	1712	448	33	1317
Refrigerator	H. Nehrlich and A. Nenbecker	331,530	Dec. 1	388	105	33	1060
Refrigerator	H. Von Rom	331,349	Dec. 1	129	32	33	1021
Refrigerator-building	J. F. Hanrahan	332,483	Oct. 20	1272	330	33	247

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Refrigerator-car	H. C. Johnson	328,684	Oct. 20	1555	405	33	997
Refrigerator-car	C. C. Palmer	330,044	Nov. 10	839	216	33	670
Refrigerator-cars. Mechanism for transferring power from the axles of railway-cars to	C. C. Palmer	330,045	Nov. 10	840	216, 217	33	670
Refrigerator-house	D. F. Geralds	333,407	Dec. 29	3097	807	33	1577
Refrigerator. Milk-	R. R. Stone	330,751	Nov. 17	1766	476	33	858
Refrigerator. Portable	W. C. Thayer	333,264	Dec. 29	2911	761, 762	33	1545
Refrigerator-safe for bread, cake, &c	H. D. Streator	332,367	Dec. 15	1647	431	33	1306
Regenerative furnace for steel-making	F. W. Dick and J. Riley	328,389	Oct. 13	1156	298	33	218
Register:							
See Electric register. Time-register.							
Passenger-register. Telephone call-register.							
Register or counter for machines, steam-engines, pumps, &c.	H. Beard	329,996	Nov. 10	777	200	33	657
Registering-machine. Automatic	W. H. Barber	329,120	Oct. 27	2171	562	33	415
Regulator:							
See Clock-regulator. Gas-pressure regulator.							
Damper-regulator. Hydraulic-pressure regulator.							
Electric-light regulator. Lamp-regulator.							
Electric-machine regulator. Pressure-regulator.							
Fan-blast regulator. Temperature-regulator.							
Gas-regulator. Windmill-regulator.							
Rein attachment. Check-	J. C. Kelton	331,892	Dec. 8	961	248	33	1178
Rein-holder	W. F. Hood	327,879	Oct. 6	478	125	33	85
Rein holder. Check-	W. D. Taber	333,031	Dec. 22	2581	678	33	1461
Rein-support	T. Desjardins	331,479	Dec. 1	318	85	33	1055
Retort and crucible furnace	J. R. Moffitt	327,709	Oct. 6	275	70	33	48
Retort-furnace	W. Foulis	333,122	Dec. 29	2712	711, 712	33	1509
Rheostat	E. Weston	330,449	Nov. 17	1383	368	33	784
Ribbon and lace exhibitor and measurer	W. B. Gleason and M. J. Harrington	332,074	Dec. 8	1227	320	33	1226
Ribbon-holder	H. W. Coburn and D. B. Van Fleit	331,616	Dec. 1	565	137	33	1096
Ribbon-reel	J. E. McMartrie	329,101	Oct. 27	2270	588	33	434
Ring:							
See Ear-ring. Harness-ring.							
Finger-ring. Key-ring.							
Ring-holder	M. Elsing	331,780	Dec. 8	799	202	33	1148
Ripper and cutter. Combined	J. W. Cole	329,019	Oct. 27	2026	525	33	291
Rivet	G. H. Meado	328,704	Oct. 20	1581	412	33	302
Rivets. Making tubular	M. Bray	328,757	Oct. 20	1644	428	33	315
Roads. Machine for making, repairing, and cleaning	G. W. Taft	331,920	Dec. 8	999	258, 259	33	1185
Roaster:							
See Coffee-roaster. Peanut-roaster.							
Rock-crusher	E. W. Jones	329,048	Oct. 27	2068	537	33	398
Rock-drill	G. R. Cullingworth	328,195	Oct. 13	893	232	33	169
Rock-drill	P. H. Foley	329,545	Nov. 3	169	44	33	537
Rock-drill	S. Hussey	330,489	Nov. 17	1434	383	33	794
Rock-drill	S. Hussey	330,981	Nov. 24	2065	559, 560	33	922
Rock-drill core breaker and puller	F. D. Parker	331,319	Dec. 1	85	21	33	1014
Rock-drill core-lifter	G. F. Case	332,587	Dec. 15	1957	512	33	1350
Rock-drill. Steam	A. C. Rand	328,612	Oct. 20	1452	378	33	279
Rock-drill support	S. Ingersoll	333,077	Dec. 22	2638	691	33	1490
Rock-drill tripod	G. R. Cullingworth	327,923	Oct. 6	540	141	33	97
Rock drilling and tunneling machine	R. Dalzell	332,592	Dec. 15	1961	514	33	1360
Rock-drilling machine	W. H. Clark	330,376	Nov. 17	1287	341	33	766
Rock-drilling machine	G. R. Cullingworth	328,196	Oct. 13	894	232	33	169
Rock-drilling machine	C. F. Peebles	331,435	Dec. 1	258	69	33	1044
Rocker. Platform-	J. S. Piper	329,854	Nov. 3	583	149	33	614
Rocking-chair	F. H. Brown	328,000	Oct. 13	642	169	33	123
Rocking-chair	A. H. Ordway	329,479	Nov. 3	73	20	33	519
Rocking-chair	A. H. Ordway	329,480	Nov. 3	74	20	33	519
Rod:							
See Fishing-rod.							
Rod and bolt clipper	H. W. Parker	328,249	Oct. 13	960	250	33	182
Rod-cutter	C. F. Stackpole	327,610	Oct. 6	144	34	33	27
Roll-grinding apparatus	H. B. Chess	330,561	Nov. 17	1522	407	33	810
Roller:							
See Composite roller. Land-roller.							
Door-roller. Shade-roller.							
Gate-roller. Window-shade roller.							
Roller and cultivator. Combined	R. B. Ralls	330,514	Nov. 17	1467	392	33	800
Roller-bearing. Anti-friction	E. B. Lake	332,091	Dec. 8	1258	327	33	1231
Roller-mill	F. H. Bolte and H. G. Thede	330,288	Nov. 10	1156	307	33	734
Roller-mill	W. Krutzsch	328,413	Oct. 13	1190	308	33	225
Roller-mill	H. F. Saint Requier	330,264	Nov. 10	1123	299	33	727
Roller-mills, &c. Feed-regulator for	S. Leetham	329,057	Oct. 27	2079	540	33	399
Rolling car-rails. Roll for	A. J. Moxham	330,998	Nov. 24	2086	565	33	925
Rolling flat and nut bars. Machine for	W. D. Eynon	331,230	Nov. 24	2406	651	33	983
Rolling girder-rails. Roll for	A. J. Moxham	330,997	Nov. 24	2085	564	33	925
Rolling-mill	C. Schulz	327,728	Oct. 6	300	76, 77	33	52
Rolling-mill	F. H. Treat	333,431	Dec. 29	3127	817, 818	33	1582
Rolling-mill brass	W. E. Harris	330,697	Nov. 17	1692	456	33	645
Rolling-mill. Continuous	E. S. Lenox	328,591	Oct. 20	1419	369, 370	33	273
Rolling-mill guide	W. H. Jarvis	330,708	Nov. 17	1704	460	33	847
Rolling-mill overfeed-regulator	W. W. McCallip	331,516	Dec. 1	368	99	33	1064
Rolling nut-blanks. Machine for	F. H. Brown	333,106	Dec. 29	2689	705	33	1505
Rolling-pin	F. Prentis	330,421	Nov. 17	1345	358	33	777

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Roof	A. L. Lindsley	332,790	Dec. 22	2157	569	33	1402
Roof cleat. Tin-	W. C. Rockwell	331,655	Dec. 1	620	153	33	1107
Roof. Self-supporting	J. Scheidler	332,115	Dec. 8	1295	336	33	1237
Roof. Sheet-metal	G. B. Wesst	329,780	Nov. 3	487	123	33	597
Roofs. Turner for tin	R. F. Snow	329,684	Nov. 3	348	89	33	570
Roofing	W. H. Stewart	332,570	Dec. 15	1932	505	33	1355
Roofing-anchor. Sheet-metal	W. A. List	332,432	Dec. 15	1788	447	33	1316
Roofing compound	C. B. Hutchins	333,467	Dec. 29	3177		33	1580
Roofing. Machine for edging and seaming tin	J. J. Cowell	332,643	Dec. 15	2031	533, 534	33	1373
Roofing. Metallic	J. F. Stuckert	332,219	Dec. 8	1440	372	33	1263
Roofing. Plate-	J. F. Stuckert	332,220	Dec. 8	1441	372	33	1263
Roofing-plates. Device for bending	B. F. Caldwell	329,713	Nov. 3	99	99	33	579
Rope-coupling device	J. and J. J. Milne	330,792	Nov. 17	1793	465	33	851
Rope-driving machinery	W. H. Paine	331,239	Nov. 24	2420	656	33	986
Rope-reel	W. M. Kizer and C. W. Clink	329,053	Oct. 27	2075	530	33	399
Rosin compounds. Manufacture of	D. J. Ogilvy	330,613	Nov. 17	1582		33	922
Rotary engine	C. S. Bird	331,224	Nov. 24	2398	648, 649	33	982
Rotary engine	M. Boyne and A. E. Smith	329,619	Nov. 3	967	69	33	556
Rotary engine	W. H. Conver and G. M. Sheffer	330,001	Nov. 10	784	201	33	658
Rotary engine	A. Hemsath	330,324	Nov. 10	1201	321	33	743
Rotary engine	J. Harrington	332,253	Dec. 15	1487	388, 389, 390	33	1278
Rotary engine	F. L. McIlvaine	330,504	Nov. 17	1451	388, 389	33	798
Rotary engine	E. S. Pambla	330,417	Nov. 17	1340	356, 357	33	776
Rotary engine	G. E. Toliver	327,621	Oct. 6	162	40	33	30
Rotary engine	A. W. Van Dorston	332,765	Dec. 22	2211	593	33	1413
Rotary engine and pump	J. Henderson	330,702	Nov. 17	1698	458, 459	33	846
Rotary motor	E. R. Baldwin	330,194	Nov. 10	1039	271	33	710
Rotary motor	C. A. Parsons	328,710	Oct. 20	1588	413, 414	33	303
Rotary steam-engine	L. N. Bégin	332,040	Dec. 8	1178	309	33	1217
Rotary steam-engine	W. O. Owen, Jr.	330,347	Nov. 10	1237	329, 330	33	749
Rotary steam-engine	G. W. Stinebring	332,216	Dec. 8	1433	370	33	1262
Rubber-covered bit	H. S. Squier	331,009	Nov. 24	2099	568	33	928
Rugs. Manufacture of	M. H. Brinkerhoff	328,283	Oct. 13	1000	260	33	189
Rule and square	L. Hirsch	329,555	Nov. 3	184	49	33	540
Rule, calipers, and level. Combined	C. D. Janssen	330,589	Nov. 17	1552	416	33	817
Rule. Pocket-	H. Judd	330,837	Nov. 17	1870	506	33	877
Ruler	M. Dittenhoefer	331,481	Dec. 1	320	86	33	1055
Ruler	H. C. Jewell	330,124	Nov. 10	956	248	33	694
Ruler and linear spacer. Parallel and radial	C. S. Gooding	328,668	Oct. 20	1537	400	33	294
Ruling apparatus	D. E. Bedinger	329,699	Nov. 3	367	93	33	574
Ruling-machine gate	E. Knapp	329,458	Nov. 3	37	11	33	511
Saccharine compounds. Manufacture of	C. Fahlberg. (Reissue)	10,667	Dec. 1	759		33	1134
Sack filling and weighing apparatus	P. and C. Caillcaux	329,712	Nov. 3	386	99	33	579
Sad-iron	G. W. Menough	328,800	Oct. 20	1695	441	33	325
Sad-iron mold	S. H. Perin	329,943	Nov. 10	706	181	33	644
Saddle. Harness-	R. W. Cahoone	331,681	Dec. 1	662	164	33	1114
Saddle. Harness-	A. Gilliam	332,340	Dec. 15	1605	421	33	1299
Saddle. Harness-	E. L. McClain	332,098	Dec. 8	1266	329	33	1233
Saddle. Harness-	E. L. McClain	332,099	Dec. 8	1268	329	33	1233
Saddle. Harness-	E. L. McClain	332,100	Dec. 8	1270	330	33	1233
Saddle-horn	F. Dehler	329,540	Nov. 3	165	43	33	536
Saddle pad. Harness-	H. Leibe	331,509	Dec. 1	359	97	33	1062
Saddle. Riding-	A. C. Lambeth	328,232	Oct. 13	936	244	33	178
Saddle. Riding-	A. M. Wallace	333,491	Dec. 29	3208	840	33	1595
Saddle-tree	A. C. Lambeth	328,231	Oct. 13	937	244	33	178
Saddle tree. Harness-	A. Gilliam	330,313	Nov. 10	1187	317	33	740
Safe	J. R. Grove	333,068	Dec. 22	2622	687, 688	33	1487
Safe and vault. Fire-proof	C. C. Gilman	332,246	Dec. 15	1478	386	33	1276
Safe attachment	C. Diebold	331,460	Dec. 1	318	86	33	1055
Safe bolt-work. Device for operating	E. W. Fowler	331,390	Dec. 1	186	48, 49	33	1031
Safe bolt-work. Electric mechanism for operating	F. Sedgwick	329,223	Oct. 27	2315	599	33	443
Safe bolt-work. Electrical mechanism for operating	F. Sedgwick	329,222	Oct. 27	2314	599	33	443
Safe. Druggist's	T. Knoebel	332,661	Dec. 15	2060	541	33	1378
Safe. Fire and burglar proof	W. P. White	333,184	Dec. 29	2795	732	33	1523
Safe. Fire-proof	J. Farrel	328,113	Oct. 13	792	206	33	150
Safe. Fire-proof	T. S. Spivey	333,355	Dec. 29	3031	792	33	1566
Sail sheet and tack. Shifting the top-	A. R. Winstead	329,988	Nov. 10	766	195, 196	33	655
Sails of vessels. Rigging for	G. Bianchi	332,583	Dec. 15	1952	511	33	1358
Salt. Preparing celery-	E. C. Hazard	331,134	Nov. 24	2264		33	958
Sample-box	A., D. H., and E. H. Lieberthal	329,658	Nov. 3	312	80	33	564
Sanitary appliance for children, &c	E. H. Booth and F. N. Dyer	329,127	Oct. 27	2182	565, 566	33	417
Sash-balance	O. Beebe	330,371	Nov. 17	1277	339	33	765
Sash-balance	D. E. Beverstein	328,563	Oct. 20	1384	360	33	267
Sash-balance	J. Loch	328,324	Oct. 13	1052	272	33	199
Sash-balance	W. Ormsby	329,409	Oct. 27	2595	669, 670	33	763
Sash-balance	J. A. Rogers	332,363	Dec. 15	1642	430	33	1305
Sash-balance	S. H. Russell	329,856	Nov. 3	584	150	33	614
Sash-balance	N. J. Skaggs	328,347	Oct. 13	1084	282	33	206
Sash-balance	J. Weber	331,592	Dec. 1	525	127	33	1089
Sash-cord fastener	W. Altick	332,773	Dec. 22	2222	586	33	1415
Sash-cord fastener	C. C. Webb	327,627	Oct. 6	170	42	33	31

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sash-cord guide	H. L. Blodgett	329,005	Oct. 27	2001	521	33	387
Sash-fastener	J. E. Alexander	332,472	Dec. 15	1780	466	33	1329
Sash-fastener	J. M. Atwood	330,367	Nov. 17	1273	338	33	764
Sash-fastener	J. Y. Bassell	329,804	Nov. 3	507	130	33	601
Sash-fastener	M. Bourke	331,370	Dec. 1	162	41	33	1027
Sash-fastener	S. N. Chapin	332,325	Dec. 15	1583	415	33	1295
Sash-fastener	F. T. Davis	331,041	Nov. 24	2131	578	33	935
Sash-fastener	J. Huth	333,229	Dec. 29	2860	747	33	1535
Sash-fastener	A. Stoler	332,170	Dec. 8	1372	355	33	1251
Sash-fastener	A. Ayers	332,180	Dec. 8	1384	357	33	1252
Sash frame, holder, and casing for carriages, cars, and other uses.	A. Ayers	329,803	Nov. 3	507	129	33	601
Sash-holder	J. G. Fowler and W. H. Crisp	330,105	Nov. 10	925	240	33	688
Sash-holder	G. W. Naylor	327,712	Oct. 6	281	72	33	49
Sash-holder	C. A. Sprague	331,660	Dec. 1	625	154	33	1107
Sash-holder	W. F. Smith	331,336	Dec. 1	110	26	33	1018
Sash-lift handle	W. Lang	330,591	Nov. 17	1555	416	33	817
Sash-lock	E. T. Prindle and F. C. Baird	330,602	Nov. 17	1897	492	33	870
Sash-lock	C. Longbottom	333,240	Dec. 29	2874	751	33	1538
Sash or door fastener	R. Anderson	333,191	Dec. 29	2805	734	33	1525
Sash-weights. Chill-mold for	L. L. Arnold	333,438	Dec. 29	3134	819	33	1583
Sash. Window	M. Rubin	332,625	Dec. 15	2004	525	33	1368
Satchels. Fastener for hand	F. W. Bossert	329,706	Nov. 3	379	96	33	577
Saving-box	T. Fowler	328,019	Oct. 13	668	175	33	128
Saw	H. W. Wheeler	328,164	Oct. 13	853	222	33	161
Saw	A. P. Boston	329,531	Nov. 3	149	38	33	533
Saw. Drag	J. Burns	329,886	Nov. 10	633	161	33	630
Saw. Drag	F. C. Storrs	327,736	Oct. 6	307	79	33	54
Saw. Drag	J. H. Watson and C. H. Hubbell	331,590	Dec. 1	523	127	33	1089
Saw feed. Gang	J. W. Dale	327,774	Oct. 6	350	90	33	61
Saw-filing machine	J. S. Mosley and T. J. Mancill	328,423	Oct. 13	1200	311	33	228
Saw-filing machine. Gin	S. Hale	327,792	Oct. 6	375	97	33	66
Saw-frame	H. W. Roberts	333,339	Dec. 29	3010	788	33	1563
Saw-guide	P. Miller	332,273	Dec. 15	1512	396	33	1283
Saw-guide track	F. Herhold and J. E. Mills	330,399	Nov. 17	1319	351	33	772
Saw-gummer	W. F. Collie	328,654	Oct. 20	1520	395	33	291
Saw gummer. Gin	A. Fornander	330,104	Nov. 10	924	240	33	687
Saw. Hand	C. Eisenhardt	327,776	Oct. 6	353	91	33	62
Saw handle. Crosscut	J. S. Miller and E. Lapham	332,161	Dec. 8	1362	353	33	1249
Saw-mill	J. S. Miller	327,574	Oct. 6	94	21	33	18
Saw mill. Band	S. Stephens	332,365	Dec. 15	1644	431	33	1305
Saw mill. Band	T. B. Walker	328,094	Oct. 13	767	200	33	145
Saw mill. Band	G. M. Hinkley	330,484	Nov. 17	1428	382	33	793
Saw-mill carriage	S. W. Little	330,720	Nov. 17	1720	464	33	850
Saw-mill carriage	R. B. Holt	332,714	Dec. 22	2149	567	33	1400
Saw mill. Circular	H. Wright	332,691	Dec. 15	2102	553, 554, 555	33	1385
Saw-mill dog	A. Delaney and J. M. Bond	331,619	Dec. 1	570	138, 139	33	1097
Saw-mill dog	W. H. Frazier	330,309	Nov. 10	1163	316	33	740
Saw-mill dog	E. G. Woodworth	327,637	Oct. 6	185	45	33	33
Saw-mill. Portable	J. N. Richey	331,653	Dec. 1	617	152	33	1106
Saw-mill. Portable	H. Wright	332,690	Dec. 15	2100	552, 553	33	1385
Saw-mill set-works	D. L. Harbach	330,020	Nov. 10	812	208	33	663
Saw-mill set-works	T. J. Neacy	333,244	Dec. 29	2880	752, 753	33	1539
Saw punching and setting machine	J. Laybolt	330,499	Nov. 17	1444	386, 387	33	796
Saw-set	R. F. Gibbs	331,877	Dec. 8	935	241, 242	33	1173
Saw-set	J. Laybolt	330,031	Nov. 10	824	211	33	666
Saw-set	W. O. Smith	327,609	Oct. 6	142	34	33	27
Saw-setting machine	H. F. Jenks and W. H. Butman	328,035	Oct. 13	686	181	33	131
Saw-sharpening machine	D. W. Johns	332,611	Dec. 15	1986	520, 521	33	1365
Saw-sharpening machine	E. Mossberg	329,936	Nov. 10	697	178, 179	33	642
Saw. Splitting	W. G. Hawley	331,195	Nov. 24	2356	637	33	975
Saw-swage	D. B. Hanson	330,396	Nov. 17	1314	349	33	771
Saw-swaging machine	G. F. Simonds and L. Blake	328,528	Oct. 20	1331	345	33	258
Saw-table gage	J. D. Bradshaw	327,651	Oct. 6	204	51	33	37
Saw-tooth	J. A. Dean	330,680	Nov. 17	1666	448	33	840
Saw-tooth-swaging machine	J. E. Traverse	331,262	Nov. 24	2458	663, 664	33	991
Saw. Trip	E. P. Hayes	328,466	Oct. 20	1276	331	33	248
Saws. Device for holding circular	J. Prickett	332,164	Dec. 8	1365	353	33	1249
Saws. Device for setting, filing, and jointing circular	A. Winkler	333,092	Dec. 22	2663	699	33	1494
Sawing machine. Circular	M. Garland and A. D. Catlin	328,771	Oct. 20	1659	432	33	318
Sawing machine. Circular	D. M. Maxon	328,954	Oct. 27	1917	501	33	371
Sawing-machine. Portable	E. Beghtel	329,002	Oct. 27	1996	519	33	386
Sawing machine. Rift	O. S. Holt	331,135	Nov. 24	2265	615	33	958
Sawing machine. Screll	W. F. Barnes	328,377	Oct. 13	1134	293	33	214
Sawing machine. Scroll	A. D. Goodell	332,391	Dec. 15	1678	440	33	1312
Sawing machine. Tree and log	W. E. Hill	329,554	Nov. 3	182	49	33	540
Sawing, tenoning, and boring chair-legs, &c. Machine for	L. Bush, Jr	332,699	Dec. 22	2128	561, 562	33	1396
Scaffold	A. C. Halterman	332,803	Dec. 22	2381	629	33	1444
Scaffold-clamp	T. N. Subers	331,742	Dec. 1	748	189	33	1131
Scaffold-bracket	J. H. Ballmann	328,999	Oct. 27	1991	518	33	385
Scale and rule holder	C. A. Smith	332,958	Dec. 22	2467	653	33	1461
Scale-beam	J. W. Palmer	328,804	Oct. 20	1699	442	33	325

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Scale-beam with indicating-poise	R. L. Hassell	330,397	Nov. 17	1315	349, 350	33	772
Scale. Letter	T. J. Lumis	331,802	Dec. 8	892	209	33	1152
Scale. Linear or other	C. A. L. Totten	331,345	Dec. 1	121	29, 30	33	1020
Scale-rack. Portable	C. H. Tillmeyer and G. W. Bolton	329,100	Oct. 27	2141	554	33	410
Scale. Weighing	E. C. Bankwitz	331,090	Nov. 24	2109	571	33	930
Scale. Weighing	M. G. Cook	327,530	Oct. 6	35	8	33	8
Scale. Weighing and price	L. B. Gibson	330,690	Nov. 17	1661	454	33	843
Scale. Weighing and price	E. Sauermilch	331,090	Nov. 24	2200	595, 596	33	947
Scale, weight-tray, and twine-box. Combination	J. F. Lawrence	329,655	Nov. 3	308	79	33	563
Scales. Scoop-balance attachment for weighing	A. Leas	330,595	Nov. 17	1558	417	33	818
Scalper. Centrifugal double	J. L. Willford	328,968	Oct. 13	980	255	33	196
Scalping-machine	W. D. Gray	332,950	Dec. 15	1492	387	33	1277
Scarf-anchor	L. H. Wilson	333,187	Dec. 29	2799	733	33	1524
Scarf exhibitor. Neck	J. H. Boyce	329,258	Oct. 27	2366	612	33	453
Scarf ring, band, and collar stud. Combined	H. W. Aberlin	333,272	Dec. 29	2922	765	33	1547
School-seat	J. M. Sander	331,550	Dec. 1	415	111	33	1073
Scissors	T. Bayrhoffer	330,287	Nov. 10	1155	306	33	734
Scissors. Making	H. T. Russell	329,855	Nov. 3	563	149	33	614
Scissors-sharpening device	T. G. Turner	329,512	Nov. 3	118	31	33	528
Scoop. Safe-edge	A. R. Hynson	330,634	Nov. 17	1866	504	33	877
Scoop. Tile	G. C. Taylor	333,173	Dec. 29	2780	728	33	1521
Scourer: *See* Grain-scourer.							
Scouring and washing fabrics, &c. Apparatus for	A. C. Adam and D. Stewart	328,271	Oct. 13	985	256	33	186
Scow. Dumping	C. H. Edwards	327,870	Oct. 6	470	123	33	83
Scow. Dumping	R. R. Osgood	330,043	Nov. 10	837	215, 216	33	669
Scraper	W. Haslup	327,794	Oct. 6	376	97	33	66
Scraper and carrier. Dirt	H. M. Brown	332,872	Dec. 22	2358	623	33	1430
Scraper and leveler. Road	W. S. Worley	330,764	Nov. 17	1783	480	33	861
Scraper. Wheeled	F. W. Hubbard	332,531	Dec. 15	1873	490	33	1344
Scraper. Wheeled	F. W. Hubbard	332,532	Dec. 15	1874	490	33	1344
Scraper. Wheeled	F. W. Hubbard	332,533	Dec. 15	1875	491	33	1345
Screen: *See* Fire-screen. Window-screen.							
Screen	J. C. and E. W. Ela	329,893	Nov. 10	639	163	33	632
Screw-bolt	J. Patten	328,139	Oct. 13	819	214	33	155
Screw-caps. Mold for forming	D. Barker	330,545	Nov. 17	1501	402	33	806
Screw-cutting machine	N. W. Vandegrift	330,174	Nov. 10	1014	265	33	706
Screw-cutting mechanism	W. E. Melhorn	327,959	Oct. 6	586	153	33	106
Screw-driver	N. Fellers	327,780	Oct. 6	358	93	33	63
Screw-driver. Self-holding	J. W. Richardson	332,438	Dec. 15	1742	455	33	1322
Screw for carpenters' benches. Tail	C. Ungermann	330,643	Nov. 17	1617	435	33	830
Screw-machine	E. A. Marsh	329,182	Oct. 27	2250	583, 584	33	431
Screw machine. Metal	J. B. Clyne	333,198	Dec. 29	2813	736, 737	33	1527
Screw or vise-jaw attachment. Hand	E. Shaw	331,164	Nov. 24	2309	625	33	966
Screw-swaging machine	H. A. Harvey	329,737	Nov. 3	490	108	33	585
Screw-swaging machine	A. C. Lewis	328,951	Oct. 27	1911	499, 500	33	370
Screw-tap	R. C. Nugent	330,999	Nov. 24	2087	565	33	925
Screw-threads. Machine for rolling	H. A. Harvey	328,217	Oct. 13	919	239	33	175
Screws. Making rolled wood	H. A. Harvey	329,900	Nov. 10	647	165	33	633
Scythe-snath fastening	D. Thompson	328,363	Oct. 13	1110	288	33	210
Seal for railway-cars, &c	L. A. Foote	327,783	Oct. 6	361	93	33	64
Seal-lock	J. Jordan and O. F. Lagerquist	328,893	Oct. 20	1817	474	33	347
Seal-lock	H. U. La Rue	331,202	Nov. 24	2365	640	33	976
Seal. Metallic	C. L. Pond	329,209	Oct. 27	2298	595	33	439
Seal. Metallic	C. L. Pond	331,439	Dec. 1	264	71	33	1045
Seal. Metallic	C. L. Pond	332,556	Dec. 15	1912	500	33	1351
Seal-press	E. J. Brooks	328,106	Oct. 13	783	204	33	148
Seal-press	W. M. Chase	328,288	Oct. 13	1005	261	33	190
Seal-press. Portable	J. W. Allen	331,601	Dec. 1	536	130	33	1091
Seals. Machine for making metal	H. K. Harker	327,547	Oct. 6	61	14	33	12
Seaming machine. Double	R. W. Maske	327,571	Oct. 6	90	20	33	17
Seaming machine. Roof double	J. H. Wagenhurst	331,586	Dec. 1	517	125	33	1088
Seaming tool for roofers, &c. Metal	P. Vanden Berghe	329,514	Nov. 3	119	31	33	528
Seat: *See* Adjustable seat. School-seat.							
Seat and desk fastening	F. L. Sands	332,839	Dec. 22	2293	606	33	1429
Seat-back	G. Faulhaber	331,122	Nov. 24	2349	611	33	955
Secondary batteries. Cut-out for	G. B. Prescott, Jr	327,964	Oct. 6	594	154	33	107
Secondary battery	E. Jones	331,407	Dec. 1	215	56	33	1036
Seed and grain crusher. Cotton	J. W. Anthoine	328,996	Oct. 27	1987	517	33	384
Seed-drill attachment	J. V. Harter	330,022	Nov. 10	815	208	33	664
Seeder and cart. Combined	M. J. Hallilburton	331,131	Nov. 24	2361	614	33	958
Seeder, roller, and harrow. Combined	T. Walker and O. G. Barlow	331,588	Dec. 1	519	126	33	1089
Seeding-machine	W. D. Arnett	331,753	Dec. 8	768	193	33	1143
Seeding-machine	L. Eberhart	332,506	Dec. 15	1929	480	33	1338
Seeding-machine	J. H. Jones	327,950	Oct. 6	575	149	33	103
Seeding-machine	C. E. Patric	331,157	Nov. 24	2300	623	33	964
Seeding-machine	D. S. Troy and J. S. Davis	331,263	Nov. 24	2461	664	33	992
Seeding-machine boot	J. F. Keller. (Reissue)	10,649	Oct. 6	616	161	33	112
Self-acting gate	A. Halstenbach	333,409	Dec. 29	3009	808	33	1577
Selling-machine Mechanical automatic	D. W. Shick	329,225	Oct. 27	2318	600	33	444
Separator: *See* Cockle-separator. Grain-separator. Gold-separator. Ore-separator.							
Separator	D. Car-Skaden	329,964	Nov. 10	731	187	33	648
Separator	L. Stewart	327,735	Oct. 6	307	79	33	54

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sewage. Apparatus for collecting and drying sedimentary matter of	R. Corscaden	331,943	Dec. 8	1037	969	33	1193
Sewage. Apparatus for the treatment of	S. K. Page, C. E. Robinson, and W. Stevens.	328,334	Oct. 13	1069	277, 278	33	903
Sewer-gas trap	W. G. Thompson	330,529	Nov. 17	1484	397	33	603
Sewer-scraper. Self-adjusting	M. Fitzsimons	329,034	Oct. 27	2049	531	33	395
Sewers. Device for flushing	A. T. Elford	332,333	Dec. 15	1591	417	33	1297
Sewing books, pamphlets, &c. Device for	M. J. Baker	329,254	Oct. 27	2358	610	33	451
Sewing in a spiral or helical path. Machine for	R. Binns	331,607	Dec. 1	544	133	33	1093
Sewing looped fabrics. Machine for	J. M. Merrow	330,606	Nov. 17	1573	421, 422	33	821
Sewing-machine	H. P. Aldrich	332,317	Dec. 15	1571	413	33	1293
Sewing-machine	S. Arnold	331,106	Nov. 24	2216	600, 601, 602	33	950
Sewing-machine	S. Arnold	331,107	Nov. 24	2223	603	33	951
Sewing-machine	A. M. Barber	330,195	Nov. 10	1040	271	33	711
Sewing-machine	J. Bigelow	331,026	Nov. 24	2116	573	33	931
Sewing-machine	J. Bigelow	331,027	Nov. 24	2118	573	33	932
Sewing-machine	E. S. Cram and E. C. Covell	328,293	Oct. 13	1011	263	33	191
Sewing-machine	A. A. Cuming	333,301	Dec. 29	2819	738	33	1528
Sewing-machine	T. Lamb	327,800	Oct. 6	387	100	33	68
Sewing-machine	C. A. Muegge	332,207	Dec. 8	1421	366, 367	33	1259
Sewing-machine	S. O'Connor	331,997	Dec. 8	1110	289	33	1206
Sewing-machine	A. D. Pentz	330,419	Nov. 17	1342	357, 358	33	776
Sewing-machine	W. A. Polmateer	329,484	Nov. 3	80	22	33	520
Sewing-machine	O. L. Schastey	328,816	Oct. 20	1714	446	33	328
Sewing-machine	W. J. Stewart	330,272	Nov. 10	1133	301, 302	33	730
Sewing-machine	C. E. Tibbles	328,534	Oct. 20	1339	348	33	259
Sewing-machine	C. E. Tibbles	328,535	Oct. 20	1340	348, 349	33	260
Sewing-machine	J. W. Tuttle	332,683	Dec. 15	2092	550	33	1384
Sewing-machine	W. P. Valentine	328,089	Oct. 13	762	198	33	144
Sewing-machine	N. Wheeler and W. F. Dial	328,165	Oct. 13	854	222, 223	33	162
Sewing-machine attachment for stitching buttons to fabrics.	A. De Beaumont	328,298	Oct. 13	1017	264	33	193
Sewing-machine attachment for unwinding thread from spools.	G. White	331,855	Dec. 8	906	234	33	1168
Sewing-machine bobbin	W. W. Ford	331,956	Dec. 8	1054	274	33	1196
Sewing-machine. Button-hole	J. L. Walsh	332,122	Dec. 8	1304	338, 339	33	1239
Sewing-machine button-hole attachment	W. H. Gilbert	332,511	Dec. 15	1837	482	33	1339
Sewing-machine button-hole attachment	J. M. Griest	332,251	Dec. 15	1483	388	33	1277
Sewing-machine button-hole attachment	J. H. Palmer	332,426	Dec. 15	1726	452	33	1319
Sewing-machine button-hole attachment	E. S. Pratt	332,676	Dec. 15	2084	547, 548	33	1382
Sewing-machine button-hole-cutting attachment	J. D. Ulmer	330,943	Nov. 24	2018	545	33	913
Sewing-machine cutting attachment. Button-hole	F. E. Schmidt	332,950	Dec. 22	2458	650, 651	33	1459
Sewing-machine driving mechanism	C. G. Spengler	330,522	Nov. 17	1476	395	33	802
Sewing-machine embroidering attachment	F. H. Chilton	330,678	Nov. 17	1663	448	33	840
Sewing-machine embroidery attachment	A. W. Johnson and J. P. Lavigne	329,564	Nov. 3	194	52	33	542
Sewing-machine feed device	J. J. Wheat	328,162	Oct. 13	851	221	33	161
Sewing-machine feed-motion	C. E. Tibbles	328,538	Oct. 20	1343	350	33	260
Sewing-machine feed-motion	C. E. Tibbles	328,542	Oct. 20	1347	351, 352	33	261
Sewing-machine feeding mechanism	S. Arnold	331,108	Nov. 24	2226	604	33	951
Sewing-machine feeding mechanism	A. C. Campbell	331,153	Nov. 24	2335	632	33	971
Sewing-machine feeding mechanism	P. Diehl	330,385	Nov. 17	1297	344	33	768
Sewing-machine feeding mechanism	M. Marcil	331,205	Nov. 24	2368	641	33	977
Sewing-machine feeding mechanism	N. Wheeler and W. F. Dial	331,174	Nov. 24	2322	629	33	969
Sewing-machine for connecting soles and uppers of turned shoes.	P. A. and J. Coupal	332,642	Dec. 15	2029	532, 533	33	1373
Sewing-machine gage	H. Hitchcock	332,586	Dec. 15	1868	489	33	1343
Sewing-machine gage. Straw-braid	M. Marcil	331,207	Nov. 24	2370	642	33	977
Sewing-machine hemmer and lace-guide combined	W. R. Clark	332,760	Dec. 22	2130	562	33	1397
Sewing-machine motor	J. T. Winburn	331,666	Dec. 1	634	156	33	1109
Sewing-machine presser-foot device	J. J. Wheat	328,163	Oct. 13	852	222	33	161
Sewing-machine presser-foot lifter	M. Marcil	331,206	Nov. 24	2370	642	33	977
Sewing-machine quilting-frame	H. T. Davis	328,923	Oct. 27	1871	488	33	363
Sewing-machine ruffling attachment	H. C. Goodrich	329,548	Nov. 3	173	45, 46	33	538
Sewing-machine ruffling attachment	A. W. Johnson	331,793	Dec. 8	812	207	33	1151
Sewing-machine ruffling or gathering attachment	W. Rundquist	328,904	Oct. 20	1833	478	33	350
Sewing-machine shuttle	P. Diehl	330,386	Nov. 17	1299	344	33	769
Sewing-machine shuttle	V. J. Mayo	331,314	Dec. 1	77	19	33	1013
Sewing-machine shuttle	C. E. Tibbles	328,537	Oct. 20	1342	349	33	260
Sewing-machine shuttle-carrier	C. E. Tibbles	328,539	Oct. 20	1344	350, 351	33	260
Sewing-machine shuttle-operating mechanism	P. Diehl	330,384	Nov. 17	1296	344	33	768
Sewing-machine stop mechanism. Button-hole	E. D. Ludlow	329,753	Nov. 3	441	112	33	588
Sewing-machine supporting and guiding attachment	J. Thomas	330,170	Nov. 10	1009	264	33	704
Sewing-machine take-up mechanism	C. E. Tibbles	328,536	Oct. 20	1342	349	33	260
Sewing-machine take-up mechanism	C. E. Tibbles	328,541	Oct. 20	1347	351	33	261
Sewing-machine tension attachment	R. Rossiter	332,753	Dec. 22	2199	580	33	1410
Sewing-machine tension device	D. L. Keeler	328,688	Oct. 20	1561	406	33	298
Sewing-machine tension-spring	C. E. Tibbles	328,540	Oct. 20	1346	351	33	261
Sewing-machine thread holder and cutter	D. F. Spees	332,759	Dec. 22	2204	581	33	1411
Sewing-machine thread-releaser	C. E. Devine	327,925	Oct. 6	545	142	33	98
Sewing-machine thread waxing and heating device	B. F. Landis	332,259	Dec. 15	1496	392	33	1279

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine treadle	S. A. Shepherd	333,262	Dec. 29	2908	760	33	1544
Sewing-machine tuck-marking attachment	A. W. Johnson	329,908	Nov. 10	657	168	33	635
Sewing-machine wax-heater	B. F. Landis	328,233	Oct. 13	938	244	33	178
Sewing-machine waxing device	B. F. Landis	331,306	Dec. 1	67	17	33	1011
Sewing-machines. Attaching writing-desks to	R. S. Ellyson	330,100	Nov. 10	919	239	33	687
Sewing-machines. Device for attaching presser-feet and other attachments to	H. C. Goodrich	333,004	Dec. 22	2540	670	33	1473
Sewing-machines for boots and shoes. Feed-motion for	C. Mansfield	332,812	Dec. 22	2263	597	33	1423
Sewing machines. Moquette-guide for carpet	G. Grisel	333,125	Dec. 29	2717	713, 714	33	1510
Sewing-machines. Tack-pulling mechanism for boot and shoe	W. S. Brainard	329,357	Oct. 27	2516	649	33	479
Sewing welts to shoe insoles and uppers. Machine for	E. F. Arnold	329,426	Nov. 3	1	1	33	505
Shade and blind	C. O. Sörlie	330,936	Nov. 24	2009	543	33	911
Shade-holder	F. Barrows	328,275	Oct. 13	992	258	33	188
Shade-pull	A. F. Gregory	327,545	Oct. 6	58	13	33	12
Shade-roller	T. A. Lewis	330,987	Nov. 24	2074	562	33	928
Shade-roller. Automatic	G. W. Stewart	332,299	Dec. 15	1546	405	33	1288
Shade-roller. Spring	S. Hartshorn	328,216	Oct. 13	918	239	33	175
Shaft ball-bearing	J. M. Marlin	331,898	Dec. 8	967	250	33	1179
Shaft-coupling	W. Johnston	331,200	Nov. 24	2363	639	33	976
Shaft-coupling	J. Yocom, Jr	333,376	Dec. 29	3056	797	33	1570
Shaft-coupling. Universal	H. C. Crowell	333,449	Dec. 29	3150	823, 824	33	1586
Shaft-hanger	J. Chivill	327,524	Oct. 6	18	5	33	5
Shaft-holder	A. Getzschmann	328,209	Oct. 13	909	236	33	173
Shaft support. Vehicle	D. Ellsworth and M. Rogers	327,930	Oct. 6	549	143	33	99
Shafts. Device for locking collars and rings to	C. Meese	331,522	Dec. 1	377	101	33	1066
Shafting	P. M. Haas	332,076	Dec. 8	1230	321	33	1227
Shafting. Manufacturing rolled and polished	P. M. Haas	332,075	Dec. 8	1228	320, 321	33	1226
Shaving-case	J. H. Flagg	333,293	Dec. 29	2952	771	33	1552
Shaving-cup	J. Fuchs and J. Schweickert	328,020	Oct. 13	668	176	33	128
Shaving-mug	T. Maylor	328,240	Oct. 13	950	247	33	181
Shaving. Removing hair as a substitute for	S. R. Kennedy	330,790	Nov. 17	1810	.....	33	866
Shears: *See* Plant-cutting shears. Pruning-shears.							
Shears	W. Richard and O. M. Holcomb	330,738	Nov. 17	1749	470	33	855
Shears	J. M. Whiting	330,813	Nov. 17	1842	496	33	872
Shears. Blade for	H. Aiken	331,934	Dec. 8	1025	266	33	1191
Shears. Comb attachment for	D. M. Young	332,030	Dec. 8	1166	304	33	1215
Sheave or pulley-block	E. Y. Moore	329,667	Nov. 3	323	83	33	566
Sheet-delivery apparatus	L. C. Crowell	332,236	Dec. 15	1462	381, 382, 383	33	1274
Sheet-delivery apparatus. Counting mechanism for	L. C. Crowell	331,282	Dec. 1	32	7, 8	33	1006
Sheet-metal-bending machine	M. Cullen	328,387	Oct. 13	1154	297, 298	33	218
Sheet-metal can	T. G. F. Dolby	331,482	Dec. 1	321	86, 87	33	1055
Sheet-metal can	F. A. Walsh	333,179	Dec. 29	2791	730	33	1522
Sheet-metal can	F. A. Walsh	333,180	Dec. 29	2792	731	33	1522
Sheet-metal-corrugating roll	J. L. Lewis	329,322	Oct. 27	2456	635, 636	33	469
Sheet metal. Machine for oval-cutting	J. Rupertus	332,214	Dec. 8	1430	369	33	1261
Sheet-superimposing mechanism	L. C. Crowell	328,880	Oct. 20	1795	468, 469	33	343
Shell	M. Von Förster	333,091	Dec. 22	2662	698	33	1494
Shelier: *See* Corn-sheller.							
Shelving	H. T. Reed	327,592	Oct. 6	120	28	33	23
Shingle or roof bracket	E. R. Elmer	330,971	Nov. 24	2054	556	33	919
Shingle-slicing machine	C. H. and J. B. Spencer	331,839	Dec. 8	885	229	33	1164
Ship-ballast	G. W. Schermerhorn	327,724	Oct. 6	296	75	33	52
Ships. Apparatus for cleaning the sides and bottoms of	H. Arentz	328,744	Oct. 20	1633	425	33	312
Ships' logs. Rotator for	J. and G. H. Bliss	331,369	Dec. 1	160	41	33	1027
Shipping-can	E. Norton	327,579	Oct. 6	101	23	33	19
Shipping-can	E. Norton	327,580	Oct. 6	102	23	33	19
Shirt	E. T. Craven	330,295	Nov. 10	1166	310	33	736
Shirt-bodies. Securing bosoms to	M. Hermann	332,799	Dec. 22	2252	594	33	1420
Shirt. Bosom	W. L. Hall	331,786	Dec. 8	804	204	33	1149
Shirt or dress placket	V. E. Lavallie	330,498	Nov. 17	1443	386	33	796
Shoe	C. Libby	331,146	Nov. 24	2285	619	33	961
Shoe	G. A. Smith	331,833	Dec. 8	875	225	33	1162
Shoe	J. J. Tompkins	328,543	Oct. 20	1349	352	33	261
Shoe. Laced	T. J. Lynch	332,158	Dec. 8	1360	352	33	1248
Shoe. Laced	T. J. Lynch	332,159	Dec. 8	1360	352	33	1248
Shoe-last	C. Pomeroy	331,256	Nov. 24	2449	662	33	900
Shoe-maker's jack	J. B. Litchman	331,414	Dec. 1	233	61	33	1039
Shoe-maker's pinchers	C. F. O. Nordin	329,588	Nov. 3	223	58	33	548
Shoe or gaiter	F. P. Buzzell	329,533	Nov. 3	152	38	33	534
Shoe. Plow	M. Walker	332,463	Dec. 15	1767	462, 463	33	1327
Shoe tying and knotting machine	A. W. Weeks	329,519	Nov. 3	126	34, 35	33	529
Shoe tying and knotting machine	A. W. Weeks	329,521	Nov. 3	135	35	33	530
Shoes, gloves, &c. Fastening for	T. Hawley	329,901	Nov. 10	649	165	33	633
Shoes. Machine for inserting and clinching staples in	H. E. Cunningham	333,284	Dec. 29	2935	768	33	1549
Shoulder-brace	W. Carroll and J. Meekison	330,094	Nov. 10	915	237	33	685
Shoulder-brace	M. F. Linquist	329,650	Nov. 3	313	80	33	564
Shovel	B. F. Anthony	332,132	Dec. 8	1321	343	33	1242
Shovel and spade handle	A. T. Heiser	330,481	Nov. 17	1425	381	33	792
Show-box	W. C. Thompson	327,838	Oct. 6	434	113	33	76

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Show-case. Combined stock and sample	W. P. Vrooman	331,171	Nov. 24	2318	628	33	968
Show-case stand	J. S. Dunlap	332,192	Dec. 8	1395	361	33	1255
Show-stand. Wire	S. Ayres	331,222	Nov. 24	2397	648	33	981
Shroud for human bodies	J. D. Marston and G. Clapp	333,142	Dec. 29	2739	719	33	1514
Shutter	R. Hammill	332,655	Dec. 15	2052	539	33	1377
Shutter-fastener	F. C. Robinson	330,741	Nov. 17	1752	471	33	855
Shutter fastener and bower. Combined	F. C. Robinson	332,835	Dec. 22	2293	604	33	1428
Shutter fastener and opener. Combined	A. Horn and M. J. Leick	332,343	Dec. 15	1608	422	33	1300
Shutter-worker	J. B. Armstrong	330,085	Nov. 10	905	234	33	663
Shutter-worker	F. E. Brown	333,442	Dec. 29	3141	821	33	1584
Shutter-worker	P. K. O'Leary	329,333	Oct. 27	2479	639	33	473
Shutter-worker	E. Prescott	328,141	Oct. 13	821	215	33	126
Shuttle	F. P. Cheney	330,362	Nov. 10	1303	335	33	755
Shuttle-binders. Die for making	H. W. Wyman and L. F. Gordon	328,994	Oct. 27	1985	516	33	384
Shuttle-box binders. Roll for making	H. W. Wyman and L. F. Gordon	330,954	Nov. 24	2655	550	33	916
Shuttle-planer	L. Leeds	330,908	Nov. 24	1909	533	33	903
Sickle-bar	M. M. Barnes	329,696	Nov. 3	365	92	33	574
Sidewalk-clearer	C. E. Bartram	327,990	Oct. 13	629	166	33	121
Siding-rest	J. McDonald	331,519	Dec. 1	374	100	33	1065
Sifter	T. F. Timby	331,344	Dec. 1	119	29	33	1020
Sifter. Ash-	F. Heimann	332,394	Dec. 15	1681	440	33	1312
Sifter. Ash-	J. A. Seitz	328,147	Oct. 13	831	217	33	157
Sign	W. A. McCool	328,796	Oct. 20	1691	440	33	324
Sign	F. McLewee	328,135	Oct. 13	815	213	33	155
Sign and door-plate	W. Pathle	330,511	Nov. 17	1462	391	33	799
Sign for cars. Traveling	G. M. Traylor	331,346	Dec. 1	124	30	33	1020
Sign for railway-cars. Traveling	G. M. Traylor	332,306	Dec. 15	1554	407, 408	33	1290
Sign. Luminous	C. H. Progler	332,210	Dec. 8	1425	368	33	1260
Sign. Metallic	D. A. Baker	332,274	Dec. 29	2924	765	33	1547
Sign. Street	T. F. Adams	331,019	Nov. 24	2108	570	33	930
Signal: *See* Electric signal. Fire-alarm signal. Railway-signal. Railway block-signal. Railway time-signal. Switch-signal. Telephone-exchange signal. Time-signal. Torpedo-signal.							
Signal-compensator	F. S. Gnerber	330,832	Nov. 17	1863	503	33	876
Signal-light for vessels. Marine	G. T. Parry	328,059	Oct. 13	722	189	33	137
Signaling apparatus	A. Montenegro	330,723	Nov. 17	1734	465	33	851
Signaling device	J. D. Fee	332,336	Dec. 15	1598	420	33	1298
Silk fabrics. Machine for finishing	A. Crew	332,235	Dec. 15	1460	380, 381	33	1273
Single-acting engine	J. Richards	328,521	Oct. 20	1318	343	33	256
Single-acting engine	J. Richards	328,522	Oct. 20	1319	343	33	256
Sink	J. B. Greene	330,892	Nov. 24	1949	528	33	899
Skate	G. W. Baker	330,543	Nov. 17	1500	401	33	806
Skate	T. D. Davis	332,881	Dec. 22	2369	626	33	1441
Skate	C. W. King	331,977	Dec. 8	1089	283	33	1202
Skate	W. A. Sutton	330,527	Nov. 17	1482	396	33	803
Skate	S. Winslow	327,848	Oct. 6	413	115	33	78
Skate	S. Winslow	327,849	Oct. 6	445	116	33	78
Skate caster. Roller	W. F. Cornelius	330,097	Nov. 10	918	238	33	686
Skate-clamp	E. C. Phillips	329,944	Nov. 10	707	181	33	644
Skate clamp. Roller	N. A. Tanner	329,239	Oct. 27	2338	605	33	447
Skate. Convertible	T. S. Disston	329,146	Oct. 27	2305	571	33	422
Skate. Convertible	J. Lapp	330,133	Nov. 10	964	251	33	696
Skate-fastener	H. F. Osborne	332,424	Dec. 15	1724	452	33	1319
Skate-roller	C. and E. J. Dalton	328,111	Oct. 13	790	206	33	149
Skate. Roller	F. A. Bailey	332,181	Dec. 8	1385	358	33	1253
Skate. Roller	G. P. Bosworth	331,470	Dec. 1	309	80	33	1053
Skate. Roller	L. P. Britt, Jr	327,517	Oct. 6	9	2, 3	33	4
Skate. Roller	W. P. Brown	330,093	Nov. 10	913	237	33	685
Skate. Roller	G. D. Burton	329,532	Nov. 3	151	38	33	534
Skate. Roller	M. Bye	332,049	Dec. 8	1195	312	33	1220
Skate. Roller	W. S. Canaday	327,523	Oct. 6	17	4	33	5
Skate. Roller	R. Chesnut	329,534	Nov. 3	153	38	33	534
Skate. Roller	F. A. Combes	330,096	Nov. 10	917	238	33	686
Skate. Roller	J. C. Cropper	332,189	Dec. 8	1391	360	33	1254
Skate. Roller	J. H. Davis	328,198	Oct. 13	896	233	33	170
Skate. Roller	J. H. Fenton	331,201	Dec. 1	51	12	33	1008
Skate. Roller	O. V. and E. E. Flora	331,192	Nov. 24	2351	636	33	974
Skate. Roller	C. W. Foote	330,007	Nov. 10	793	203	33	650
Skate. Roller	W. H. Griffiths	329,829	Nov. 3	549	140	33	607
Skate. Roller	E. Hall. (Reissue.)	10,664	Nov. 24	2470	666	33	994
Skate. Roller	C. F. Hirt	329,556	Nov. 3	184	49	33	540
Skate. Roller	C. F. Hirt	329,557	Nov. 3	186	50	33	540
Skate. Roller	C. B. Hopkins	328,760	Oct. 20	1668	435	33	320
Skate. Roller	F. W. Jackson	329,907	Nov. 10	655	168	33	634
Skate. Roller	C. Johnson and L. W. Nuebling	331,302	Dec. 1	62	15	33	1010
Skate. Roller	B. Kindblade	329,913	Nov. 10	662	169	33	636
Skate. Roller	J. Lucey	328,417	Oct. 13	1193	309	33	226
Skate. Roller	S. C. Mendenhall	329,927	Nov. 10	679	174	33	639
Skate. Roller	F. C. Miller	329,580	Nov. 3	215	56	33	546
Skate. Roller	F. C. Miller	329,581	Nov. 3	216	56	33	546
Skate. Roller	F. C. Miller	329,582	Nov. 3	216	56, 57	33	546
Skate. Roller	F. C. Miller	329,583	Nov. 3	217	57	33	546
Skate. Roller	F. C. Miller	329,584	Nov. 3	218	57	33	546
Skate. Roller	H. Mueller	330,847	Nov. 17	1886	510	33	880
Skate. Roller	T. Mulvin	330,041	Nov. 10	835	214	33	668
Skate. Roller	T. Mulvin	332,277	Dec. 15	1519	398	33	1284
Skate. Roller	J. A. Mundy	329,845	Nov. 3	571	145	33	611
Skate. Roller	J. Naylor, Jr	328,332	Oct. 13	1067	277	33	202

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Skate. Roller	F. J. Nelson and P. C. Donovan	332,378	Dec. 15	1521	398	33	1284
Skate. Roller	F. G. Osborn	327,819	Oct. 6	410	106, 107	33	72
Skate. Roller	H. Qwaley and G. W. Marble	328,510	Oct. 20	1306	339	33	254
Skate. Roller	W. H. and H. V. Rhoades	333,254	Dec. 29	2898	758	33	1542
Skate. Roller	D. A. Root	332,111	Dec. 8	1291	335	33	1237
Skate. Roller	J. V. Rowlett	327,966	Oct. 6	598	166	33	107
Skate. Roller	J. V. Rowlett	328,070	Oct. 13	736	192	33	139
Skate. Roller	M. Sholes	328,072	Oct. 13	738	192	33	140
Skate. Roller	H. Thomas	332,460	Dec. 15	1764	462	33	1337
Skate. Roller	E. V. Whitaker	330,652	Nov. 17	1629	438	33	833
Skate. Roller	J. Wilkie	327,845	Oct. 6	440	115	33	77
Skate. Roller	C. G. Winfield	330,658	Nov. 17	1636	440	33	834
Skate-sharpener	E. F. Watson	332,465	Dec. 15	1770	463	33	1327
Skate wheel. Roller	G. O. Boynton	330,554	Nov. 17	1516	405	33	809
Skate wheel. Roller	J. R. France	328,476	Oct. 20	1265	329	33	246
Skate wheel. Roller	H. A. and H. A. House, Jr	328,119	Oct. 13	799	208	33	151
Skate wheel. Roller	H. A. and H. A. House, Jr	333,072	Dec. 22	2631	690	33	1469
Skate wheel. Roller	I. Smith	330,630	Nov. 17	1602	428	33	827
Skates. Anti-friction bearing for roller	G. D. Burton	329,435	Nov. 3	13	4	33	507
Skates. Oil-drip washer for roller	L. Steinberger	329,232	Oct. 27	2328	603	33	445
Skater's appliance	L. D. Woodworth	329,989	Nov. 10	767	196	33	655
Skating appliance	R. H. Rice	332,945	Dec. 22	2453	648, 649	33	1458
Skating. Instructing beginners in roller	R. A. Johnston	330,493	Nov. 17	1439	384	33	795
Skid	J. M. Dawes	328,571	Oct. 20	1395	363	33	269
Skimmer. Milk	M. C. Atkinson	333,098	Dec. 29	2674	701	33	1503
Skimmer. Milk	R. H. Stewart	333,484	Dec. 29	3199	836	33	1594
Skins. Machine for plucking beaver and other	F. Peterhansl	331,906	Dec. 8	980	253, 254	33	1182
Skylight. Illuminating	T. J. Wilmer	333,270	Dec. 29	2921	764	33	1547
Slate-cleaner	A. B. Gates	330,312	Nov. 10	1186	317	33	740
Slate. Decorated	E. C. Carter	332,050	Dec. 8	1196	312	33	1221
Slate-dressing machine	F. R. Marks	330,248	Nov. 10	1102	292	33	723
Slate-dressing machine	A. H. Meyers	327,811	Oct. 6	401	105	33	70
Slate-ruling device	J. Shaver	328,525	Oct. 20	1328	344	33	257
Slate. School	J. Manger	332,095	Dec. 8	1263	328	33	1232
Slate. School	E. J. Stewart	333,483	Dec. 29	3198	836	33	1594
Sled-knee	O. A. Sathe	327,926	Oct. 6	420	109	33	74
Sled-propeller	J. Loose	328,415	Oct. 13	1192	308, 309	33	225
Sled-runner	V. D. Johnson	331,303	Dec. 1	64	15, 16	33	1011
Sleeve. Garment	C. H. Ostrander	332,553	Dec. 15	1909	499	33	1350
Sleigh. Bob	J. Horey and C. Marsh	333,224	Dec. 29	2892	746	33	1534
Sleigh-knee	J. Parkhill	331,537	Dec. 1	329	107	33	1070
Sleigh-shoe	I. B. Seeley	333,426	Dec. 29	3122	815	33	1581
Slide-rest	J. Fitzgerald	331,046	Nov. 24	2138	580	33	936
Sling. Self-adjusting chain	W. Smith	328,350	Oct. 13	1086	283	33	207
Sludge-box	H. R. Sillman	329,227	Oct. 27	2322	601, 602	33	444
Smelting and calcining lead and other ores. Apparatus for	E. R. Moffet	329,199	Oct. 27	2282	591	33	426
Smoke-consumer for furnaces	J. Donovan	329,027	Oct. 27	2037	529	33	393
Snap-hook	W. H. McGrew	332,415	Dec. 15	1710	448	33	1317
Snap-hook	G. D. Spielman	330,437	Nov. 17	1365	363	33	780
Snow and ice from sidewalks. Machine for removing	E. R. Angell	328,633	Oct. 20	1492	388	33	286
Snow-clearer	W. A. Greenlees	333,006	Dec. 22	2542	670	33	1474
Snow-excavator. Railway	J. N. Butler	332,876	Dec. 22	2364	625	33	1440
Snow-melting and ground-heating machine	C. G. Waterbury	328,367	Oct. 13	1115	288	33	211
Snow-plow	J. Palmer	328,805	Oct. 20	1700	443	33	325
Snow-plow	J. E. Twiname	331,849	Dec. 8	897	231, 232	33	1166
Snow-plow	A. J. Witt	328,993	Oct. 27	1984	516	33	383
Snow-plow flange	I. P. Kilgore	332,348	Dec. 15	1613	423	33	1301
Snow-plow with snow-cutters	G. V. Benjamin	328,640	Oct. 20	1501	391	33	287
Soap. Apparatus for remelting	J. C. Ralston	328,714	Oct. 20	1508	416	33	305
Soap. Manufacture of	W. A. Grant	332,606	Dec. 15	1982	519	33	1364
Soap-manufacturing machine	W. A. Grant	332,605	Dec. 15	1960	518	33	1364
Soap. Remelting	J. C. Ralston	328,611	Oct. 20	1450	378	33	279
Soap under pressure. Apparatus for boiling	B. T. Babbitt	330,663	Nov. 17	1643	442	33	836
Sockets. Tap for screw-threading	H. R. Borie	332,781	Dec. 22	2232	588	33	1417
Soda. Ice-cream	J. W. Black	332,134	Dec. 8	1321	.....	33	1242
Soda-water apparatus	G. A. Spring	330,167	Nov. 10	1006	263	33	734
Soda-water apparatus. Sirup-pump for	A. E. Rich	327,593	Oct. 6	121	28	33	23
Soda-water draft-tube	J. C. Miller	332,731	Dec. 22	2168	572	33	1404
Soda-water machines. Safety-cap for gas-generators for	J. Conner and G. Matthews, Jr	328,008	Oct. 13	654	172	33	125
Soil beneath the surface. Machine for packing	B. F. Waggoner	328,263	Oct. 13	975	254	33	185
Soldering cans. Machine for	B. Price	331,909	Dec. 8	985	255	33	1182
Soldering-forceps	E. Q. Crane	328,467	Oct. 20	1255	326	33	244
Soldering-iron	J. A. Bostwick. (Reissue)	10,672	Dec. 15	2107	556	33	1387
Soldering-iron	G. Oulton	327,696	Oct. 6	501	130	33	90
Soldering-iron heater	J. S. Hull	328,406	Oct. 13	1179	305	33	223
Sole. Detachable	M. Hawe	333,126	Dec. 29	2718	714	33	1511
Sole-fastener	A. Van Wagenen	331,925	Dec. 8	1015	263	33	1188
Sole-fastener	A. Van Wagenen	331,926	Dec. 8	1015	263	33	1188
Sole-laving machine	C. D. Wood	328,446	Oct. 13	1230	319	33	233
Sole or heel fastening	F. F. Raymond, 2d	329,952	Nov. 10	720	183	33	646
Sole-skiver	J. Kirwan	328,317	Oct. 13	1043	269	33	197
Soot-consumer and spark-arrester	J. Gogerty	331,785	Dec. 8	803	204	33	1149
Sounding apparatus	J. B. Hannay	331,133	Nov. 24	2263	615	33	958
Soundings. Apparatus for taking	H. Schoening	327,726	Oct. 6	298	76	33	52
Sower. Seed	F. Reyner	331,547	Dec. 1	411	110	33	1072
Sowing and harrowing seed. Machine for	W. Ingalls	328,488	Oct. 20	1278	332	33	248

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spading-machine	W. E. Depp	332,703	Dec. 22	2133	563	33	1307
Spark-arrester	J. C. Courtney and J. W. Nelson	327,531	Oct. 6	36	8	33	8
Spark-arrester	F. F. Landis	332,260	Dec. 15	1498	392	33	1280
Spark-arrester	J. W. Maloney	331,072	Nov. 24	2168	589	33	942
Spark-arrester	F. Manual	332,724	Dec. 22	2160	570	33	1402
Spark-arrester	F. Mertsheimer	328,902	Oct. 27	1933	504	33	374
Spark-arrester	J. M. Pitcher	330,420	Nov. 17	1344	358	33	777
Spark-arrester	G. Saltsman	331,089	Nov. 24	2199	595	33	947
Spark-arrester	P. E. Smith	328,819	Oct. 20	1719	447	33	329
Spark-arrester	T. Thornton	332,628	Dec. 15	2007	526; 527	33	1369
Spectacle-holder clasp	W. Wilcox	328,369	Oct. 13	1110	289	33	212
Spectacle-temples. Making	F. A. Clark	328,920	Oct. 27	1867	487	33	302
Spectacles	E. B. Meyrowitz	329,474	Nov. 3	67	18	33	517
Spectacles	W. H. Peckham	328,513	Oct. 20	1309	340	33	255
Spectacles and watch-maker's eyeglass. Combined	G. H. Hull	331,791	Dec. 8	810	206	33	1150
Speculum. Rectal	L. B. Sperry	328,619	Oct. 20	1467	382	33	282
Speculums. Electric-light attachment for	C. Smith	332,453	Dec. 15	1758	460	33	1325
Spike	T. A. Davies	330,567	Nov. 17	1529	409	33	812
Spindle	S. S. Webber	328,096	Oct. 13	770	201	33	146
Spindle and bearing	W. T. Carroll	332,992	Dec. 22	2525	666	33	1470
Spindle and bearing	W. F. Draper	328,201	Oct. 13	900	234	33	171
Spindle-bolster	W. T. Carroll	333,056	Dec. 22	2608	683	33	1485
Spindle-bolster	R. C. Fay	332,067	Dec. 8	1220	318	33	1225
Spindle-steps. Setting	F. H. Colony	332,328	Dec. 15	1586	416	33	1296
Spindle-support	R. C. Fay	332,068	Dec. 8	1221	319	33	1225
Spinning and twisting machines. Spindle for cap	W. Wardman	328,733	Oct. 20	1623	423	33	310
Spinning frame. Ring	C. H. Chapman	327,862	Oct. 6	462	120	33	82
Spinning-frames, &c. Device for removing pressure from rolls of	E. W. Thomas	329,975	Nov. 10	747	191	33	651
Spinning frames. Traveler-clearer for ring	J. W. Wattles	328,989	Oct. 27	1977	513	33	382
Spinning-machine spindle-support	W. T. Carroll	329,014	Oct. 27	2020	524	33	290
Spinning machinery. Top roll for	D. Jackson	327,691	Oct. 6	256	64	33	45
Spinning-mule	E. A. Baldwin	331,272	Dec. 1	4	2	33	1001
Spinning-mule	E. A. Baldwin	331,368	Dec. 1	158	40, 41	33	1026
Spinning-mules. Revolving sweeping attachment for	C. Ashworth	329,117	Oct. 27	2166	561	33	415
Spinning ring and traveler	H. L. Hayden	327,550	Oct. 6	65	15	33	13
Spinning-rings. Machine for making	C. F. Roper	333,256	Dec. 29	2900	758; 759	33	1543
Spinning. Speeder for	F. J. Dutcher	332,194	Dec. 8	1398	361	33	1255
Spinning-spindle bolster	C. H. Chapman	327,863	Oct. 6	463	120	33	82
Spirometer	W. A. Shepard	331,829	Dec. 8	866	222	33	1160
Splasher-holder	A. W. Parmelee	332,825	Dec. 22	2280	601	33	1426
Spoke-socket	J. H. Webb	331,501	Dec. 1	525	127	33	1089
Sponge-cup	S. Allin	328,743	Oct. 20	1633	425	33	312
Spooler yarn-guide	J. H. Northrop and R. C. Fay	330,042	Nov. 10	836	215	33	669
Spoolers, &c. Stop-motion for	J. Lancaster	330,906	Nov. 24	1966	532	33	902
Spring: *See* Bed-spring. Car-spring. Door-spring. Eyeglass-spring. Vehicle-spring. Vehicle platform-spring. Velocipede-seat spring.							
Spring-clip	S. A. Waterman	327,744	Oct. 6	316	81	33	55
Spring-motor	W. H. Powell	332,000	Dec. 8	1113	290	33	1206
Spring-motor	D. Shive	328,724	Oct. 20	1612	420	33	308
Spring-washer	H. A. Harvey	329,738	Nov. 3	422	108	33	585
Spring-washer	D. A. Johnson	330,492	Nov. 17	1438	384	33	795
Springs. Machine for making	C. K. Stinson	329,094	Oct. 27	2133	552	33	409
Springs. Machine for making coiled-wire	F. L. Bryant	328,380	Oct. 13	1137	293; 294	33	215
Sprinkler: *See* Automatic sprinkler.							
Sprinkling-machine	J. Dahn	332,329	Dec. 15	1587	416	33	1296
Spud. Range-boiler	N. Styne	327,738	Oct. 6	310	79	33	54
Square	W. F. Seargeant	332,011	Dec. 8	1130	295	33	1209
Square and gage. Combination	W. Ford	329,156	Oct. 27	2220	575	33	425
Square and miter. Combined	P. L. Fox	331,047	Nov. 24	2139	580	33	936
Square attachment	W. S. Winterbottom	329,353	Oct. 27	2506	645	33	477
Square-headed bolt	W. Davis and W. Casey	330,962	Nov. 24	2045	553	33	918
Squib-carrier. Miner's	H. Stride	328,358	Oct. 13	1163	286	33	209
Stack-binder	A. J. Laundray	333,313	Dec. 29	2981	779	33	1558
Stair-rod securer	L. M. Wiler	330,656	Nov. 17	1634	439	33	834
Stalk and clod cutter	J. C. Farley	332,601	Dec. 15	1977	517	33	1363
Stamp. Check	S. W. Enzard	331,227	Nov. 24	2403	650	33	982
Stamp. Hand	G. J. B. Rodwell	330,804	Nov. 17	1830	493	33	871
Stamp. Marking	F. M. Bulkley	331,475	Dec. 1	314	84	33	1054
Stamp-mills. Amalgamator and concentrator for	L. M. Boardman	330,917	Nov. 17	1846	497	33	873
Stamps, envelopes, &c. Apparatus for moistening	W. H. H. Lintner	332,542	Dec. 15	1893	495	33	1347
Stamping-machine	M. C. Walling	332,850	Dec. 22	2317	613; 614	33	1432
Stamping machine. Ore	G. Ostrout	328,153	Oct. 13	939	219	33	150
Stamping-press. Hydraulic	J. S. Pessenger	330,730	Nov. 17	1738	468	33	854
Stanchion	J. A. Barber	327,753	Oct. 6	326	84	33	57
Stanchion. Cattle	D. J. Barnes	333,275	Dec. 29	2925	765	33	1547
Stand: *See* Camera-stand. Coffee-pot stand. Folding stand. Show-stand. Show-case stand. Type-case stand.							
Staple-driver	D. Dodsworth	327,537	Oct. 6	47	10	33	10
Staple-machine	J. Adt	330,364	Nov. 17	1270	337	33	763
Staples. Die for making	W. Truran	327,974	Oct. 6	608	159	33	109
Stapling-machine	J. D. Wilber and A. B. Smith	330,950	Nov. 24	2026	547; 548	33	914

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Starch. Manufacture of	W. F. Birge	329,701	Nov. 3	369	93	33	575
Starch. Manufacture of	S. Spitzer	329,229	Oct. 27	2325	602	33	445
Starch. Treating buckram and other fibrous substances with	P. C. Ritchie	332,439	Dec. 15	1743	.....	33	1339
Station indicator	W. Jones	327,951	Oct. 6	576	150	33	104
Stave and hoop. Barrel	I. L. G. Rice	330,153	Nov. 10	988	257	33	701
Stave trimming, chamfering, and crozing machine	F. Myers	329,846	Nov. 3	572	146	33	611
Staying layers of flexible material. Machine for	G. R. Peare	333,248	Dec. 29	2885	754; 755	33	1540
Staying layers of flexible material. Machine for	G. R. Peare	333,249	Dec. 29	2888	756	33	1541
Steam and air brake system	W. H. Clarke	333,197	Dec. 29	2912	736	33	1526
Steam at a high pressure from steam at a lower pressure. Production of	M. Honigmann	333,223	Dec. 29	2851	745	33	1533
Steam-boiler	J. H. Bell	330,458	Nov. 17	1393	371	33	786
Steam-boiler	W. Esty	329,379	Oct. 27	2548	657	33	485
Steam-boiler	A. O. Frick	331,488	Dec. 1	328	89	33	1057
Steam-boiler	T. G. Hall	331,495	Dec. 1	340	92	33	1059
Steam-boiler	E. S. T. Kennedy	329,911	Nov. 10	660	169	33	636
Steam-boiler	W. Kent	330,126	Nov. 10	958	248; 249	33	694
Steam-boiler	J. H. Mars	332,267	Dec. 15	1506	394	33	1281
Steam-boiler	V. P. Orloff	332,357	Dec. 15	1634	428; 429	33	1304
Steam-boiler	J. F. Pease	332,748	Dec. 22	2192	578; 579	33	1410
Steam-boiler	G. A. Porter	332,928	Dec. 22	2286	602	33	1427
Steam-boiler	M. and W. N. Rumely	329,489	Nov. 3	87	23	33	522
Steam-boiler	G. N. Sceets	333,165	Dec. 29	2770	726	33	1519
Steam-boiler	J. C. Stead	330,438	Nov. 17	1366	364	33	781
Steam-boiler	J. Walrath	327,841	Oct. 6	437	114	33	77
Steam-boiler cleaner	H. B. Baker	332,036	Dec. 8	1174	307	33	1217
Steam-boiler indicator and alarm	H. F. Logee	331,901	Dec. 8	821	209	33	1159
Steam-boiler joint or seam	J. E. Jerrold	329,314	Oct. 27	2446	633	33	468
Steam-boiler. Low-pressure	J. Curry	330,300	Nov. 10	1169	311	33	737
Steam-boiler. Sectional	A. Worthington	330,359	Nov. 10	1257	334; 335	33	753
Steam-boiler tube-sheet	W. Kent	330,127	Nov. 10	960	249	33	695
Steam-boilers. Air-supply apparatus for	J. S. Pessenger	332,941	Dec. 22	2444	646; 647	33	1457
Steam-boilers for preventing fractures and explosions. Treating	C. S. Ebaugh	329,446	Nov. 3	24	7	33	509
Steam-boilers. Getting up steam in	W. Craig	327,659	Oct. 6	217	54	33	38
Steam-boilers. Smoke-tube for tubular	A. Normand	329,848	Nov. 3	575	147	33	612
Steam-cylinders. Reducing clearance in	H. H. Westinghouse	327,630	Oct. 6	175	43	33	31
Steam-engine	R. Crenzbaur	332,499	Dec. 15	1812	475; 476	33	1335
Steam-engine	R. Crenzbaur	332,500	Dec. 15	1815	476	33	1335
Steam-engine	R. Crenzbaur	332,501	Dec. 15	1818	476; 477	33	1336
Steam-engine	R. Crenzbaur	332,502	Dec. 15	1820	477	33	1339
Steam-engine	J. Curtis	333,060	Dec. 22	2614	685	33	1486
Steam-engine	D. D. Hardy	331,234	Nov. 24	2414	654	33	965
Steam-engine	J. E. Kimble	330,494	Nov. 17	1439	385	33	795
Steam-engine	R. M. Marchant	332,670	Dec. 15	2075	545	33	1380
Steam-engine	A. Reis	331,442	Dec. 1	208	72, 73	33	1046
Steam-engine	J. S. Robbins and J. T. Foster	329,954	Nov. 10	721	184	33	646
Steam-engine	P. W. Willans	329,987	Nov. 10	763	195	31	654
Steam-engine	A. A. Willson	327,910	Oct. 6	521	135; 136	33	93
Steam-engine. Compound	G. E. Dow	330,388	Nov. 17	1303	346	33	769
Steam-engine indicator	A. B. Calkins	330,958	Nov. 24	2039	551	33	917
Steam-engine lubricator	W. H. Craig	331,772	Dec. 8	791	206	33	1147
Steam-engines. Dash-pot for	B. F. Williston	328,909	Oct. 20	1840	480	33	351
Steam-generator	J. Fish	331,783	Dec. 8	801	203	33	1149
Steam-generator	M. Foreman	333,001	Dec. 22	2537	669	33	1472
Steam-generator	F. J. Furman	332,196	Dec. 8	1400	362	33	1256
Steam-generator	W. H. Page	331,431	Dec. 1	252	67, 68	33	1043
Steam-generator	W. A. Pentecost	328,140	Oct. 13	890	214	33	155
Steam-generator	H. Stutsman	328,531	Oct. 20	1335	346	33	279
Steam-generator. Tubular	P. Reilly	329,677	Nov. 3	338	86	33	508
Steam-generator. Tubular	P. Reilly	329,678	Nov. 3	340	86, 87	31	569
Steam or other hot-gas cylinder	F. E. Galloupe	333,284	Dec. 29	2953	771	33	1553
Steam-pipe covering	C. Lamkin	332,258	Dec. 15	1496	391	33	1279
Steam reversing-gear	A. L. Church	330,959	Nov. 24	2041	551; 552	33	917
Steam-trap	J. Corell	332,997	Dec. 22	2533	668	33	1471
Steam-trap	J. W. Kenyon	331,246	Nov. 24	2430	658	33	987
Steam-trap	J. Morehead	327,891	Oct. 6	493	129	33	88
Steam-trap	J. Morehead	327,892	Oct. 6	496	129	33	88
Steam-trap	H. A. Tobey	333,032	Dec. 22	2582	679	33	1481
Steam. Utilization of exhaust	M. Honigmann. (Reissue)	10,675	Dec. 22	2670	700	33	1496
Steamer, lawn, and invalid chair	D. Parks	329,941	Nov. 10	703	180	33	643
Steel. Apparatus for making	A. Davy	333,286	Dec. 29	2939	768	33	1550
Steel ingots. Soaking-pit for	J. Riley	333,027	Dec. 22	2576	677	33	1480
Steering boats, &c. Apparatus for	W. Haynes	331,499	Dec. 1	345	93	33	1060
Stench-trap	J. A. Paine	330,148	Nov. 10	982	256	33	700
Stencil-plate	W. J. Miller	329,476	Nov. 3	69	19	33	518
Stenographer's use. Line-finder for	A. and W. Nimmo	332,410	Dec. 15	1703	446	33	1315
Steno-typograph	A. Beyerlen	331,275	Dec. 1	10	3	33	1002
Stereotype-block	M. Joyce	327,798	Oct. 6	385	100	33	67
Stereotype-matrices. Apparatus for making	J. K. Browne	332,873	Dec. 22	2359	624	33	1439
Stereotype or matrix making machine	J. L. Poalk	331,438	Dec. 1	262	71	33	1045
Stereotype-plate and holder	E. R. Booth	327,648	Oct. 6	201	49	33	36
Stereotype-plate-roughing machine	G. E. Lloyd	333,018	Dec. 22	2562	674	33	1477

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stereotype-plate-shaving machine	E. A. Blake	327,857	Oct. 6	456	118	33	80
Stereotype-plate-trimming machine	E. A. Blake	327,856	Oct. 6	455	118	33	80
Stereotype-plates. Machine for mending	J. North	333,325	Dec. 29	2994	784	33	1560
Still	D. Horan	333,464	Dec. 29	3174	829	33	1590
Still. Beer	W. J. O'Connor, P. Walsh, and E. L. Martin.	328,708	Oct. 20	1586	413	33	303
Stirrup. Safety	H. Costen	332,052	Dec. 8	1198	313	33	1221
Stock and collar	B. J. Kolb	330,131	Nov. 10	963	250	33	695
Stock-rack	J. L. Wilber	328,868	Oct. 20	1778	464	33	340
Stock-releasing device	M. W. Hanley	331,396	Dec. 1	197	51	33	1033
Stocking-exhibitor	J. D. and G. W. Hibbs	332,524	Dec. 15	1665	488	33	1343
Stone-cutter's chisel	T. Woods	329,872	Nov. 3	606	155	33	618
Stone-cutting machine	W. A. Wright	333,436	Dec. 29	3132	819	33	1583
Stone-cutting machines. Centering device for	J. W. Maloy	329,325	Oct. 27	2465	637	33	470
Stone-dressing machine	H. Donnelly	332,999	Dec. 22	2535	668	33	1472
Stone-dressing machine	F. Manning	332,915	Dec. 22	2411	637, 638	33	1450
Stone-dressing machine	F. Manning	332,916	Dec. 22	2412	638	33	1451
Stone lifter and carrier	R. J. Hosner	329,389	Oct. 27	2565	662	33	487
Stone lifting and carrying machine	W. E. Barber	327,989	Oct. 13	622	166	33	121
Stone-sawing machine	J. Peckover	330,614	Nov. 17	1582	423, 424	33	823
Stone-sawing machines. Machine for feeding sand and water to	D. Shortsleeve	331,562	Dec. 1	443	115	33	1076
Stone-working machine	P. Christa	329,274	Oct. 27	2384	616, 617	33	456
Stool and seat	A. Luger	329,179	Oct. 27	2246	581, 582	33	430
Stool. Folding camp	I. Hogeland	329,903	Nov. 10	852	166	33	634
Stool. Piano	F. Kraemer	329,654	Nov. 3	307	79	33	563
Stop. Automatic	T. Puetz, Jr	330,851	Nov. 17	1891	511	33	881
Stop-motion. Automatic	A. W. Weeks	329,520	Nov. 3	133	35	33	539
Stop-motion. Automatic safety	A. C. and A. F. Dumke	331,689	Dec. 1	670	166	33	1116
Stopper: *See* Bottle-stopper.							
Store-service apparatus	L. G. Bostedo	330,552	Nov. 17	1509	404	33	808
Store-service apparatus	L. G. Bostedo	330,553	Nov. 17	1511	404, 405	33	808
Store-service apparatus	J. Goodale	327,788	Oct. 6	367	95	33	65
Store-service apparatus	J. R. H. Hinton	333,302	Dec. 29	2965	775	33	1555
Store-service apparatus	R. H. North	332,674	Dec. 15	2081	546	33	1381
Store-service apparatus	C. W. Smith	330,629	Nov. 17	1601	428	33	826
Store-service apparatus. Switch for	E. L. Giles	332,339	Dec. 15	1603	421	33	1299
Store-service car	W. S. Hill	333,300	Dec. 29	2959	773	33	1554
Stove and furnace grate	D. L. Swinton	328,438	Oct. 13	1223	317	33	231
Stove and oven. Portable	A. P. Steward	329,783	Nov. 3	481	121	33	596
Stove attachment	P. Lahr	331,797	Dec. 8	818	208	33	1152
Stove burner. Gas	A. W. Beall	329,527	Nov. 3	146	37	33	533
Stove. Coal	S. H. Fales	331,622	Dec. 1	573	140	33	1098
Stove. Coal-oil	C. F. Parker and L. E. Marquisee	328,511	Oct. 20	1307	340	33	254
Stove-door frame	C. Farrell	333,401	Dec. 29	3088	805	33	1576
Stove-grate	H. H. Wheeler	329,868	Nov. 3	600	154	33	617
Stove grate. Coal-burning	D. E. Paris	329,206	Oct. 27	2293	594	33	438
Stove. Heating	J. Boyd	327,650	Oct. 6	203	50	33	36
Stove. Heating	J. B. Oldershaw	329,069	Oct. 27	2095	544	33	402
Stove. Heating	W. C. Smith	331,455	Dec. 1	285	78	33	1049
Stove. Heating	W. E. Walker and G. E. Wilbur	329,516	Nov. 3	123	32	33	528
Stove. Heating gas	A. J. Doty	331,950	Dec. 8	1044	271	33	1195
Stove-hood	H. M. Brush	333,055	Dec. 22	2607	683	33	1485
Stove. Hot-air	R. A. Rew	328,809	Oct. 20	1706	444	33	327
Stove. Lamp	J. E. Stephens	327,613	Oct. 6	147	35	33	27
Stove. Laundry	F. J. Moeller	327,706	Oct. 6	270	68	33	48
Stove. Oil	C. O. Schwartz	329,598	Nov. 3	239	62	33	551
Stove. Oil-burning	J. F. Trout	332,307	Dec. 15	1556	408, 409	33	1290
Stove or range	W. H. Swanton	329,416	Oct. 27	2607	473	33	495
Stove-pipe	M. Mealy	327,705	Oct. 6	269	68	33	48
Stove-pipe attachment	C. J. Hamilton	331,637	Dec. 1	593	147	33	1102
Stove-pipe. Sheet-metal	J. S. Brooks	330,770	Nov. 17	1788	481	33	862
Stove-polish	A. N. Bender	329,569	Nov. 3	148	.....	33	533
Stove-polish	W. T. See	332,756	Dec. 22	2201	.....	33	1411
Stove. Reservoir	G. H. Matthews	327,572	Oct. 6	92	20	33	17
Stove. Vapor	F. Marquart	327,568	Oct. 6	86	19	33	16
Stove. Vapor	J. M. Palmer	328,605	Oct. 20	1444	376	33	278
Stove. Vapor-burner	W. Bliesner	327,647	Oct. 6	200	49	33	36
Stoves and furnaces. Adjustable grate for	J. Stever	327,615	Oct. 6	150	36	33	28
Stoves and ranges. Top plate for cooking	J. Forbes	328,580	Oct. 20	1407	366	33	271
Stoves. Fire-chamber for cook	W. C. Smith	330,935	Nov. 24	2008	542, 543	33	910
Stoves. Sliding top for oil	J. Milne	331,316	Dec. 1	81	20	33	1013
Stoves. Vapor-burner for	J. O. Alley	329,251	Oct. 27	2354	610	33	470
Strainer for sinks	C. H. Schrack	333,343	Dec. 29	3015	789	33	1564
Strap: *See* Box-strap. Hitching-strap. Car-strap. Yoke-strap.							
Strawberry-vines. Device for cutting the runners of	W. M. Mason	331,804	Dec. 8	826	210	33	1153
Straw-carrier	P. Grater and J. Seibel	331,703	Dec. 1	690	170	33	1120
Straw-cutter	F. W. Miller	332,272	Dec. 15	1511	305, 306	33	1282
Straw-stacker	A. B., M. T., and J. N. D. Reeves	328,252	Oct. 13	963	270, 271	33	183
Straw-stackers. Base-pivot for	J. J. Moore and J. A. Ball	328,049	Oct. 13	701	185	33	134
Street-receiver and stench-trap. Combined	D. W. McConnell	329,404	Oct. 27	2589	668	33	492
Street-sweeper	H. E. Paine	328,057	Oct. 13	710	188	33	136

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Streets. Machinery for sweeping and conveying away refuse from	W. March	328,795	Oct. 20	1690	440	33	323
Structure designed to occupy the streets	R. R. Hazard	328,027	Oct. 13	676	177, 178	33	129
Stubble-digger	E. D. Melançon and L. L. Savoy	328,330	Oct. 13	1065	276	33	202
Stud	G. N. March	329,754	Nov. 3	445	112	33	588
Stud. Lacing	M. Bray	329,263	Oct. 27	2371	613	33	454
Studs. Device for setting lacing	M. Bray	329,264	Oct. 27	2372	614	33	454
Stuffing-box	T. Murphy	329,202	Oct. 27	2286	592	33	437
Stuffing-box	W. O. Webber	331,014	Nov. 24	2103	569	33	929
Stuffing-box for piston-rods of ice-machines, &c	G. F. Ott	332,675	Dec. 15	2083	547	33	1382
Stump-extractor	W. H. Hall	328,775	Oct. 20	1663	433	33	319
Stump-extractor	J. B. Heard	331,054	Nov. 24	2146	582	33	937
Stump-extractor and stone-lifter	W. O. White	332,368	Dec. 15	1647	432	33	1306
Stump-puller	J. W. Mayberry	330,994	Nov. 24	2062	564	33	924
Stump-puller	W. Schuster	328,720	Oct. 20	1607	418	33	307
Subdividing material in comminuted form. Apparatus for	J. R. Williams	330,076	Nov. 10	892	230, 231	33	681
Submerged bodies. Closing spaces between	C. Sooysmith	331,658	Dec. 1	623	154	33	1107
Sucker-rods. Machine for shaping the ends of	M. T. Collins	328,383	Oct. 13	1149	295, 296	33	217
Sugar, &c. Device for loosening	S. S. Aughe	332,179	Dec. 8	1383	357	33	1252
Sugar. Machining raw	G. M. Newhall and J. H. Tucker	333,023	Dec. 22	2571	676	33	1479
Sugar. Manufacture of	M. De La Vega	330,098	Nov. 10	918	.....	33	686
Sugar. Removing the impurities of raw	F. O. Matthiessen	329,331	Oct. 27	2476	639	33	472
Sulky-rake	W. H. Hall	328,670	Oct. 20	1542	401	33	295
Superimposing and folding sheets. Mechanism for	W. Scott	331,091	Nov. 24	2201	596	33	947
Supporting-bracket for spouts, pipes, &c	H. C. Durborow	329,823	Nov. 3	542	138	33	606
Supporter: *See* Garment-supporter. Napkin-supporter. Hat or bonnet supporter.							
Surgeon's chair	A. J. Marston	327,570	Oct. 6	89	20	33	17
Surgeon's or reclining chair	N. N. Horton	327,686	Oct. 6	251	62	33	44
Surgical blade and handle	C. Willms	327,846	Oct. 6	441	115	33	78
Surgical chairs and tables. Foot-rest for	H. E. Hildebrand	333,220	Dec. 29	2947	744	33	1535
Suspender-end attachment	H. Howard	330,488	Nov. 17	1433	383	33	794
Suspender-ends. Device for attaching	W. E. Clarke	332,785	Dec. 22	2256	589	33	1417
Suspender-ends. Wire tubular bearing for	G. F. Atwood	333,178	Dec. 8	1369	357	33	1252
Suspender-strap clasp	C. R. Harris	333,897	Dec. 22	2387	631	33	1445
Suspenders	G. H. Boyd	329,479	Dec. 15	1791	470	33	1331
Suspenders	J. T. Budd	329,433	Nov. 3	9	3	33	506
Suspenders	W. H. Gurney	330,319	Nov. 10	1194	319	33	742
Suspenders	J. R. Pollock	330,348	Nov. 10	1239	330	33	749
Suspenders	A. Shenfield	330,519	Nov. 17	1473	394	33	801
Suspension device	L. T. Lawton	333,017	Dec. 22	2559	674	33	1477
Suspension device	C. J. Petersen	330,616	Nov. 17	1586	424	33	823
Suspension-hook	C. E. Raabe and G. E. Hackell	331,819	Dec. 8	854	219	33	1157
Suspension-hook. Detachable	S. R. Garrison	327,939	Oct. 6	562	146	33	101
Swaging-machine	W. B. and M. H. Rice	328,143	Oct. 13	824	215	33	156
Swing	W. S. Brown	333,054	Dec. 22	2606	683	33	1484
Swing	H. Fellows	330,306	Nov. 10	1180	315	33	739
Swinging can	C. Weinedel	329,247	Oct. 27	2351	608	33	449
Swinging gate	W. H. Starry	330,937	Nov. 24	2010	543	33	911
Swinging gate	J. Thompson	329,978	Nov. 10	751	192	33	652
Switch: *See* Cross-over switch. Tramway-switch.							
Switch and signal apparatus	J. T. Hambay	330,395	Nov. 17	1313	348, 349	33	771
Switch-signal. Automatic	S. Curlin	331,870	Dec. 8	926	239	33	1171
Syringe, &c	H. R. Allen	330,084	Nov. 10	903	234	33	683
Syringe attachment	H. R. Allen	330,081	Nov. 10	899	233	33	682
Syringe attachment	H. R. Allen	330,082	Nov. 10	901	233	33	683
Syringe attachment	H. R. Allen	330,083	Nov. 10	902	233	33	683
Syringe for hypodermic injections	F. A. Reichardt	330,621	Nov. 17	1592	426	33	825
Syringe. Fountain	F. M. Davis	331,039	Nov. 24	2130	578	33	934
Syringe-piston	E. W. McAllister	329,402	Oct. 27	2588	667	33	492
Table: *See* Extension-table. Game-table. Folding table. Ironing-table.							
Table	J. F. Davis	328,015	Oct. 13	662	174	33	127
Table	J. Plenkharp	331,212	Nov. 24	2381	644	33	979
Table and desk. Combined	C. E. Fagerberg	328,302	Oct. 13	1025	266	33	194
Table and desk. Combined	T. J. Ford	328,475	Oct. 20	1264	329	33	246
Table for gynecological and surgical purposes	F. H. Clark	328,460	Oct. 20	1249	324	33	243
Table-fork	E. E. Albin	331,177	Nov. 24	2325	630	33	989
Table-leaf support	A. Pohl and A. Claes	331,084	Nov. 24	2193	594	33	946
Table-leaf support	L. Welker	332,125	Dec. 8	1308	340	33	1240
Table-leaf support	J. P. Wolf and G. Iffland	331,857	Dec. 8	908	234	33	1168
Table-service articles. Individual holder or rest for	K. E. Nichols and E. V. Whitney	333,082	Dec. 22	2647	694	33	1491
Table-top	H. P. Sabbert	329,066	Oct. 27	2124	550	33	407
Tablet and pencil holder	P. Boyle	327,759	Oct. 6	332	86	33	58
Tablet for arithmetical work. Lesson	A. W. Potter and T. J. McConnon	331,907	Dec. 8	983	254	33	1182
Tack-feeding device	C. J. Brosnan	329,268	Oct. 27	2477	615	33	455
Tack-strip. Lasting	G. H. P. Flagg and G. A. Fullerton	329,544	Nov. 3	168	44	33	537
Tack-strips. Machine for making comb	M. Brock	329,267	Oct. 27	2375	614	33	455
Tack-strips. Machine for shaping comb	M. Brock	329,009	Oct. 27	2010	522	33	388
Tacking-machine	J. E. Crisp	329,366	Oct. 27	2531	652	33	481
Tag	M. Vernon	329,980	Nov. 10	753	192	33	653
Tag	M. Vernon	329,981	Nov. 10	754	193	33	653
Tag-fastener	W. S. Miles	328,856	Oct. 20	1766	461	33	338
Tag. Merchant's registering	J. Krause	329,054	Oct. 27	2076	539	33	399
Tally-sheet. Verifying	E. Spencer	333,427	Dec. 29	3123	816	33	1581

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tank: *See* Coffee-tank. Refrigerating-tank. Flush-tank. Water-tank. Oil-tank. Water-closet supply-tank.							
Tanning	G. F. Schweitzer	328,978	Oct. 27	1965	.....	33	380
Tanning apparatus	L. Simpson	332,450	Dec. 15	1753	458, 459	33	1324
Tanning apparatus	L. Simpson	332,451	Dec. 15	1756	459	33	1325
Tanning hides and skins	T. R. Clark	331,942	Dec. 8	1035	.....	33	1193
Tanning. Suspending hides in	F. B. Tuttle	328,984	Oct. 27	1972	512	33	381
Tape-line box	H. E. Dickhut	332,505	Dec. 15	1828	479	33	1338
Tapping device	J. H. Rathbun	332,436	Dec. 15	1738	455	33	1321
Target-trap	F. C. Damm	328,569	Oct. 20	1391	362, 363	33	268
Target-trap	A. H. and C. C. Hebbard	332,902	Dec. 22	2305	633	33	1446
Target-trap	F. Holz	330,704	Nov. 17	1700	459	33	847
Target-trap	G. A. Mueller	328,051	Oct. 13	706	186	33	134
Target-trap	J. L. Raub	329,211	Oct. 27	2301	596	33	439
Target-trap	B. Teipel	329,974	Nov. 10	747	191	33	651
Targets. Apparatus for manufacturing flying	F. C. Damm	328,570	Oct. 20	1393	363	33	269
Tedder-fork	J. H. Thomas	329,242	Oct. 27	2343	607	33	448
Telegraph apparatus. Municipal	J. C. Wilson	331,356	Dec. 1	137	34	33	1022
Telegraph. Automatic fire-alarm	M. Martin and J. C. Wilson	329,468	Nov. 3	55	16	33	515
Telegraph. Automatic perforating	J. E. Munson	330,344	Nov. 10	1224	327, 328	33	747
Telegraph-cables. Splice for underground	W. R. Patterson	330,049	Nov. 10	848	218	33	672
Telegraph call-box	F. B. Wood	329,871	Nov. 3	603	154, 155	33	618
Telegraph-instrument	G. W. Stewart	330,271	Nov. 10	1132	301	33	729
Telegraph-instruments. Automatic circuit-closer for	J. W. McArthur	331,148	Nov. 24	2287	619	33	962
Telegraph. Printing	R. N. Dyer	332,649	Dec. 15	2043	536	33	1375
Telegraph. Printing	C. L. Healy	333,298	Dec. 29	2957	772	33	1554
Telegraph. Printing	C. N. Judson	328,491	Oct. 20	1241	333	33	249
Telegraph. Printing	W. J. McCausland	328,500	Oct. 20	1293	337	33	252
Telegraph. Printing	S. B. Van Nortwick	329,515	Nov. 3	120	31, 32	33	528
Telegraph. Quadruplex	H. C. Nicholson	332,549	Dec. 15	1902	497	33	1349
Telegraph. Quadruplex	H. C. Nicholson	332,550	Dec. 15	1905	498	33	1349
Telegraph. Quadruplex	H. C. Nicholson	332,551	Dec. 15	1907	499	33	1350
Telegraph. Quadruplex and duplex	D. H. Keeley and A. A. E. Garvey	331,975	Dec. 8	1063	282	33	1201
Telegraph. Railway	W. Vogel	333,178	Dec. 29	2789	730	33	1522
Telegraph receiver. Printing	A. Wirsching	327,911	Oct. 6	524	136, 137	33	94
Telegraph-receiver. Telephonic	W. A. West	329,982	Nov. 10	755	193	33	653
Telegraph-sounder	G. W. Stewart	330,635	Nov. 17	1609	430	33	828
Telegraph system. Non-interfering fire-alarm	L. H. McCullough	329,187	Oct. 27	2260	586	33	433
Telegraph system. Non-interfering fire and police	L. H. McCullough	329,189	Oct. 27	2266	587	33	433
Telegraph systems. Testing apparatus for fire and police	L. H. McCullough	329,188	Oct. 27	2263	586, 587	33	433
Telegraph. Telephonic	W. A. West	329,984	Nov. 10	758	194	33	653
Telegraph transmitter. Printing	C. L. Healy	330,238	Nov. 10	1068	287, 288	33	721
Telegraph transmitter. Printing	C. L. Healy	330,239	Nov. 10	1090	288	33	721
Telegraph. Way-station quadruplex	T. A. Edison	333,291	Dec. 29	2950	771	33	1552
Telegraphs. Adjusting submarine duplex	A. Muirhead	329,477	Nov. 3	69	19	33	518
Telegraphs. Central-office apparatus for fire-alarm	L. H. McCullough	329,186	Oct. 27	2258	586	33	432
Telegraphs. Multiplex local circuit for	F. L. Pope	329,410	Oct. 27	2597	670	33	494
Telegraphs. Multiple local circuit for electric	F. L. Pope	329,412	Oct. 27	2600	470, 471	33	494
Telegraphs. Preventing false signals on reversals in quadruplex	J. W. Larish	329,749	Nov. 3	435	111	33	587
Telegraphic and telephonic circuit. Combined	A. M. and T. R. Rosebrugh	329,956	Nov. 10	723	185	33	647
Telegraphic repeater	W. M. Miner	331,250	Nov. 24	2438	659	33	988
Telegraphic service system	M. Duperow	332,193	Dec. 8	1306	361	33	1255
Telegraphy	T. A. Edison	333,289	Dec. 29	2945	770	33	1551
Telegraphy. Duplex	T. A. Edison	333,290	Dec. 29	2948	770	33	1551
Telegraphy. Multiple local circuit for electric	F. L. Pope	329,411	Oct. 27	2598	670	33	494
Telemeter system	C. L. Clarke	327,526	Oct. 6	22	6	33	6
Telemeter systems. Operating circuits in	C. L. Clarke	327,657	Oct. 6	214	53	33	38
Telemetry	C. L. Clarke	327,527	Oct. 6	29	7	33	7
Telephone	T. A. Edison	329,030	Oct. 27	2040	530	33	393
Telephone	W. Gillett	331,052	Nov. 24	2144	581	33	937
Telephone	W. C. Lockwood	331,309	Dec. 1	70	18	33	1012
Telephone	J. H. Robertson	329,084	Oct. 27	2122	549	33	407
Telephone	J. H. Robertson	329,085	Oct. 27	2123	550	33	407
Telephone	H. E. Waite	327,625	Oct. 6	168	41	33	30
Telephone	W. A. West	329,983	Nov. 10	756	193	33	653
Telephone and telegraph protector	C. C. Drake. (Reissue.)	10,663	Nov. 24	2468	666	33	994
Telephone-cabinet	F. G. Johnson	329,909	Nov. 10	659	168	33	635
Telephone call-register	A. S. Hibbard	329,646	Nov. 3	298	76	33	561
Telephone-exchange	W. S. Ford	331,955	Dec. 8	1051	273, 274	33	1196
Telephone exchange. Acoustic	G. W. Moore and J. N. Culbertson	328,243	Oct. 13	953	248	33	181
Telephone-exchange signal	C. E. Scribner	330,057	Nov. 10	857	221	33	674
Telephone-exchange signaling-circuit	C. E. Scribner	333,167	Dec. 29	2773	726	33	1519
Telephone-exchange switching apparatus	C. E. Scribner	330,065	Nov. 10	868	224	33	677
Telephone-exchange system	J. P. Davis	331,186	Nov. 24	2340	634	33	972
Telephone-exchange system and apparatus	L. B. Firman	328,305	Oct. 13	1028	267	33	195
Telephone-exchanges. Battery-circuit for	C. E. Scribner	330,056	Nov. 10	855	221	33	674
Telephone-exchanges. Multiple switch-board for	J. A. Seely	330,067	Nov. 10	873	225	33	678
Telephone-exchanges. Operator's apparatus for	C. E. Scribner	330,058	Nov. 10	858	221, 222	33	674
Telephone-exchanges. Toll-line apparatus for	C. E. Scribner	330,066	Nov. 10	870	224, 225	33	677
Telephone magneto-call	A. H. Low	327,886	Oct. 6	485	127	33	86

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Telephone. Mechanical	A. W. S. Davis	333,285	Dec. 29	2938	768	33	1550
Telephone. Mechanical	F. R. Shaw	328,258	Oct. 13	970	252	33	184
Telephone. Mechanical	M. B. Williamson	333,044	Dec. 22	2596	680	33	1482
Telephone receiver. Speaking	J. H. Robertson	329,083	Oct. 27	2121	540	33	406
Telephone switch-board	C. C. Sonne	328,618	Oct. 20	1466	381, 382	33	281
Telephone switch-boards. Operator's apparatus for	C. E. Scribner	330,063	Nov. 10	865	223	33	676
Telephone-switch. Gravity	C. E. Scribner	330,064	Nov. 10	867	223, 224	33	677
Telephone system	R. P. Barbier	330,368	Nov. 17	1274	338	33	764
Telephone-transmitter	J. Emmner, Jr.	330,879	Nov. 24	1930	523	33	896
Telephone-transmitter	F. D. Marston	329,327	Oct. 27	2468	637	33	471
Telephone uses. Arm-rest for	F. G. Johnson	327,692	Oct. 6	257	64	33	45
Telephones. Line-wire for mechanical	J. F. Gilliland	327,940	Oct. 6	563	146	33	101
Telephonic and telegraphic signal system	J. A. Seely	332,012	Dec. 8	1131	295, 296	33	1210
Telephonic apparatus	S. P. Thompson	327,837	Oct. 6	433	113	33	76
Telephonic appliance	J. F. McLaughlin	328,702	Oct. 20	1579	411	33	302
Telephonic circuit and apparatus	J. B. Wood	330,763	Nov. 17	1781	480	33	861
Telephonic instruments. Sound-concentrator for	J. Godfrey	329,732	Nov. 3	414	106	33	584
Telephonic transmitter	S. E. Beedy	329,001	Oct. 27	1994	518, 519	33	385
Telephonic transmitter	J. F. McLaughlin	328,703	Oct. 20	1580	412	33	302
Telethermoscope. Electric	F. W. Flint	328,205	Oct. 13	906	235	33	172
Temperature-regulation. System of	W. S. Johnson	331,406	Dec. 1	213	56	33	1036
Temperature-regulator. Electric	C. A. Tucker	328,156	Oct. 13	844	219	33	160
Tenoning-machine	H. S. Boynton	329,007	Oct. 27	2004	521, 522	33	387
Terret. Harness	G. F. Eberhard	330,685	Nov. 17	1672	450	33	841
Textile fabrics, &c. Centrifugal machine for treating	J. O. Obermaier	329,204	Oct. 27	2291	593	33	438
Textile fabrics, including paper. Preserving, strengthening, waterproofing, and glossing	C. A. Maxfield	328,956	Oct. 27	1920	.....	33	372
Textile fabrics, paper, &c. Saturating or coating	C. A. Maxfield	328,957	Oct. 27	1921	501	33	372
Textile fabrics with waterproofing, &c. Apparatus for treating	C. A. Maxfield	328,958	Oct. 27	1923	502	33	372
Thawing hydrants or water-pipes	R. O. Benton	329,881	Nov. 10	698	159	33	629
Thermometer	J. L. Sardy and C. N. Coles	332,947	Dec. 22	2455	649	33	1459
Thermometer	T. W. Shepherd	330,161	Nov. 10	998	260	33	702
Thermometer. Oven	D. G. Cooper	328,878	Oct. 20	1793	467	33	342
Thermometric electric alarm	J. Barry	329,696	Nov. 3	366	93	33	574
Thermostat	G. L. Gray	327,941	Oct. 6	563	146	33	101
Thermostats. Manufacturing	M. Martin	329,469	Nov. 3	60	16	33	516
Thermostatic circuit-closer	G. F. Bulen	333,443	Dec. 29	3142	821	33	1584
Thermostatic electric controlling device	M. Martin	329,470	Nov. 3	60	16	33	516
Thill and pole coupling	E. M. Sammis	329,779	Nov. 3	475	119	33	595
Thill-coupling	S. H. Atkins	328,556	Oct. 20	1377	359	33	266
Thill-coupling	S. H. Dickerson	327,868	Oct. 6	468	122	33	83
Thill-coupling	E. J. Hart	330,585	Nov. 17	1549	415	33	816
Thill coupling	D. E. Kempster	331,642	Dec. 1	602	149	33	1103
Thill-coupling	J. A. Kneedler	327,884	Oct. 6	482	126	33	86
Thill-coupling	B. H. Land	329,572	Nov. 3	207	54	33	544
Thill-coupling	C. H. Post	328,430	Oct. 13	1211	313	33	229
Thill-coupling	H. R. Saul	330,051	Nov. 10	849	219	33	672
Thill-coupling	W. A. Scott, Jr	332,952	Dec. 22	2461	651	33	1460
Thill coupling	J. M. Simpson	332,843	Dec. 22	2305	607	33	1430
Thill-coupling	B. C. Smith and C. W. Pride	328,726	Oct. 20	1615	420	33	309
Thill-coupling	W. R. R. Tillion	328,155	Oct. 13	843	219	33	159
Thill-coupling	D. T. Williams	333,186	Dec. 29	2799	733	33	1524
Thill-couplings. Anti-rattler for	T. P. Randall	332,943	Dec. 22	2446	647	32	1458
Thill-couplings. Die for making	H. A. McDermid and W. Williamson	327,702	Oct. 6	267	67	33	47
Thill-support	C. E. Galbreath	330,868	Nov. 24	1944	526	33	898
Thrasher band-cutting feeder	A. S. Piatt	327,587	Oct. 6	112	25	33	21
Thrashing-machine	W. H. Smith	332,117	Dec. 8	1298	337	33	1238
Thrashing-machine band-cutter and feeder	W. H. Lightcap	330,718	Nov. 17	1717	463	33	850
Thrashing-machine band-cutter and feeder	C. Paridy	331,536	Dec. 1	398	106	33	1070
Thrashing-machine band-cutting and feeding mechanism	A. McVeety	330,507	Nov. 17	1456	390	33	798
Thrashing-machine clover-hulling attachment	W. S. Reeder	330,736	Nov. 17	1747	470	33	855
Thrashing-machine dust-protector	W. W. Barber	332,294	Dec. 15	1448	375	33	1271
Thrashing-machine feeder	L. Parham	328,058	Oct. 13	721	188	33	137
Thrashing-machine straw-elevator	D. D. and P. J. Sprague	330,268	Nov. 10	1128	300	33	728
Thrashing-machines. Belt shortener and tightener for	S. B. Aldrich	330,542	Nov. 17	1499	401	33	805
Thrashing peas. Machine for	J. A. McMullen and A. R. Bloodworth.	328,799	Oct. 20	1694	441	33	324
Ticket-case	W. E. Elam	331,484	Dec. 1	323	87	33	1055
Ticket-case	W. E. Elam	331,485	Dec. 1	324	88	33	1056
Ticket cutter, register, and alarm	E. F. Poland and J. G. Crawford	331,213	Nov. 24	2382	644, 645	33	979
Ticket-reel	A. P. Brown and M. D. Stern	331,863	Dec. 8	916	236, 237	33	1170
Tidal power	F. R. Bussard and M. Gates	332,875	Dec. 22	2363	625	33	1440
Tie: *See* Bale-tie. Railway-tie.							
Tile. Encaustic	F. J. Frenzel, Jr.	332,389	Dec. 15	1676	439	33	1311
Tile. Machine for laying drain	I. Webster	329,246	Oct. 27	2348	606	33	449
Tile machines. Automatic cut-off and take-away for drain	C. J. Merrill and W. Viggers	332,546	Dec. 15	1897	496	33	1348
Tile-machines. Cut-off table for	C. W. Crawford	328,194	Oct. 13	881	232	33	169
Tile-section between walls, joists, &c	W. F. Higgins	331,500	Dec. 1	346	93	33	1060
Time-detector. Electric	T. Ahearn	329,874	Nov. 10	617	157	33	627
Time-detector. Watchman's	E. Berman	331,759	Dec. 8	776	196	33	1145
Time-piece dial	C. F. Dietz	328,112	Oct. 13	791	206	33	149

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Time-piece dial	H. W. Oliver	329,849	Nov. 3	576	147	33	613
Time-piece winding-indicator	G. Marzari	331,985	Dec. 8	1096	285	33	1203
Time-recorder for railways, &c. Alarm	G. M. Stont	332,020	Dec. 8	1140	298	33	1211
Time-register for employés	S. W. Maxson	328,045	Oct. 13	699	184	33	133
Time-signal	S. J. Swayze and J. C. Lane	327,739	Oct. 6	311	80	33	54
Time-signal transmitting system	J. M. Oram	328,055	Oct. 13	713	187	33	135
Tin-folding machine. Four-edge	J. W. and H. Eager	329,149	Oct. 27	2909	572	33	423
Tinner's portable furnace	P. J. Fitzgerald	330,218	Nov. 10	1064	278	33	716
Tire and felly. Wheel	P. W. McGuire. (Reissue)	10,676	Dec. 29	3213	841	33	1596
Tire and setter therefor. Vehicle	A. Heusser	331,704	Dec. 1	691	170	33	1130
Tire-shrinker	W. Lehmer	331,070	Nov. 24	2166	588	33	941
Tire-welding machine	C. M. Collins	330,875	Nov. 24	1927	522	33	895
Tobacco-carrier	E. Walton	332,123	Dec. 8	1306	339	33	1239
Tobacco. Compound for treating	G. S. Yingling	332,176	Dec. 8	1381	.....	33	1252
Tobacco-curing apparatus	D. G. McLellan	332,729	Dec. 22	2166	572	33	1403
Tobacco-curing house	J. Osborn	332,621	Dec. 15	2000	524	33	1368
Tobacco-cutting machine	G. Le Clair	327,885	Oct. 6	483	126	33	86
Tobacco-hanger	C. Engert	329,301	Oct. 27	2425	629	33	464
Tobacco holder and shaver	S. R. Parks	332,284	Dec. 15	1528	400	33	1285
Tobacco. Machine for treating leaf	J. A. Poist	330,734	Nov. 17	1745	469	33	855
Tobacco machine. Plug	T. Puetz, Jr	330,849	Nov. 17	1888	510	33	880
Tobacco machine. Plug	T. Puetz, Jr	330,850	Nov. 17	1890	511	33	881
Tobacco-pail cover	W. N. Ford	327,784	Oct. 6	361	94	33	64
Tobacco-pipe	J. Aikman	332,858	Dec. 22	2335	617	33	1435
Tobacco-pipe	W. R. Chadsey	327,990	Oct. 6	537	140	33	96
Tobacco-pipe	A. and C. Tappe	331,569	Dec. 1	452	117	33	1078
Tobacco-pipe	M. T. Wyatt	329,873	Nov. 3	607	155	33	618
Tobacco-plant setter	J. W. Hawkins	331,498	Dec. 1	343	93	33	1059
Tobacco-steaming apparatus	S. G. Flintom	331,696	Dec. 1	680	168	33	1118
Toe-calk bars. Roll for forming	J. W. Foulks	333,003	Dec. 22	2539	669	33	1473
Toilet-case	L. Jordan	328,588	Oct. 20	1417	369	33	273
Toilet-case. Pocket	W. W. Watts	330,649	Nov. 17	1625	437	33	892
Tongue iron. Wagon	O. Vanorman	332,766	Dec. 22	2213	583	33	1413
Tongue-support	J. M. Hass	329,899	Nov. 10	647	165	33	633
Tongue support. Wagon	C. Hein	331,235	Nov. 24	2416	654	33	985
Tongue support. Wagon	J. Smalley	332,452	Dec. 15	1757	460	33	1325
Tongs. Pipe	H. F. W. Sohst	331,456	Dec. 1	986	78	33	1049
Tool. Combination	M. Bourke	331,371	Dec. 1	163	41	33	1027
Tool. Combination	G. Plumpton	329,208	Oct. 27	2996	595	33	439
Tool-handle	J. Balz	333,192	Dec. 29	2906	734	33	1525
Tool-handle	M. L. Coats	329,815	Nov. 3	527	134	33	604
Tool-handle	F. Cronin	330,774	Nov. 17	1791	492	33	863
Tool-handle	L. M. Devore	330,383	Nov. 17	1295	343	33	768
Tool-handle	A. C. Stowe	327,969	Oct. 6	603	157	33	108
Tool-holder	H. E. Sweet	329,969	Nov. 10	742	189	33	650
Tool-holder. Compound	E. F. Noyes	328,707	Oct. 20	1584	413	33	303
Tool-sharpener	P. E. Comstock	332,187	Dec. 8	1389	359	33	1254
Tool-standard fastening	E. M. Whyler	328,737	Oct. 20	1627	424	33	311
Tooth. Artificial	C. P. Gront	330,831	Nov. 17	1802	503	33	876
Tooth. Artificial	C. P. Gront	333,216	Dec. 29	2939	743	33	1531
Tooth. Artificial	L. T. Sheffield	330,431	Nov. 17	1357	362	33	780
Tooth-crown and its attachments. Artificial	C. S. Case	328,837	Oct. 20	1744	455	33	334
Top-roll clearer. Automatic	S. D. Learned	329,320	Oct. 27	2451	635	33	468
Torch. Pyrotechnic signal	J. Dax	329,442	Nov. 3	21	6	33	508
Torpedo-boats. Electro-magnetic steering and reversing mechanism for	H. P. Griswold	333,008	Dec. 22	2544	674	33	1474
Torpedo. Marine	W. I. Chambers	328,919	Oct. 27	1864	487	33	302
Torpedo. Railway	C. Burnham	327,920	Oct. 6	12	4	33	4
Torpedo. Railway signal	H. F. Clark	332,784	Dec. 22	2235	589	33	1417
Torpedo signal	H. F. Clark	330,502	Nov. 17	1523	407	33	810
Towel-holder	D. H. Murphy	331,728	Dec. 1	730	183	33	1126
Tower	B. F. Orton	331,817	Dec. 8	849	{217 / 218}	33	1156
Toy	A. P. Brown	329,269	Oct. 27	2372	615	33	455
Toy	G. S. Crosby	330,297	Nov. 10	1167	311	33	736
Toy	W. E. Depp	330,681	Nov. 17	1667	449	33	840
Toy	A. M. Freeman	328,206	Oct. 13	907	235	33	172
Toy	A. M. Freeman	328,398	Oct. 13	1165	301	33	220
Toy	H. and M. J. Reilly	331,004	Nov. 24	2094	567	33	927
Toy animal	S. M. Butler	329,436	Nov. 3	14	4	33	507
Toy animal figure. Mechanical	W. H. Hall	328,912	Oct. 20	1844	{481 / 482}	33	332
Toy cap-exploder	H. M. Dixon	332,063	Dec. 8	1211	316	33	1224
Toy figure	W. H. Anderson	328,272	Oct. 13	986	257	33	187
Toy game	O. E. Lundstedt	330,990	Nov. 24	2077	563	33	924
Toy gun	G. S. Tingley	332,461	Dec. 15	1765	462	33	1327
Toy-house roof	H. C. Underwood	329,513	Nov. 3	119	31	33	522
Toy locomotive	G. S. Crosby	330,299	Nov. 10	1168	311	33	737
Toy. Pyrotechnical	G. Taylor	329,504	Nov. 3	106	28	33	525
Toy revolving detonator	S. Armstrong	330,086	Nov. 10	906	{234 / 235}	33	683
Toy savings-bank	E. G. Shepard and P. Adams, Jr	328,723	Oct. 20	1611	{419 / 420}	33	308
Toy spring-gun	F. W. Goodyear	332,892	Dec. 22	2380	629	33	1443
Toy-vehicle team	G. S. Crosby	330,298	Nov. 10	1168	311	33	736
Trace-carrier	J. S. Dick	331,620	Dec. 1	571	139	33	1098
Trace-carrier	J. R. Young	328,630	Oct. 20	1490	388	33	286
Trace-connection for hames. Adjustable	J. A. Alexander	332,850	Dec. 22	2335	617	33	1435
Trace fastener	G. D. Spielman	330,436	Nov. 17	1364	363	33	780
Trace fastening. Adjustable	J. A. Alexander	332,861	Dec. 22	2337	618	33	1435
Trace guide and fastener	E. C. L. Knunecke	333,136	Dec. 29	2733	718	33	1513
Trace-hook	C. B. Webb	329,108	Oct. 27	2153	557	33	412
Trace support	H. S. Bollinger and C. C. Schwaner	331,761	Dec. 8	778	197	33	1145
Track and wheel cleaning and lubricating device	F. G. Tuttle	333,090	Dec. 22	2760	698	33	1474

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Track-clearer	L. Morgan	330,725	Nov. 17	1730	{466 / 467}	33	852
Track-fastener	H. R. Wolpert	329,870	Nov. 3	602	154	33	617
Track-lifter	L. D. Badger	328,376	Oct. 13	1133	292	33	214
Traction-engine	J. H. Elward	329,153	Oct. 27	2215	574	33	424
Traction-engine	J. H. Elward	329,154	Oct. 27	2217	574	33	424
Traction-engine	C. M. Giddings	330,576	Nov. 17	1537	411	33	814
Traction-engine	S. Mason	327,807	Oct. 6	396	103	33	69
Traction-engine	L. C. Taber	329,238	Oct. 27	2330	605	33	447
Traction-engine	J. W. Terman	333,360	Dec. 29	3038	793	33	1567
Traction-engine	D. W. Webster	331,503	Dec. 1	596	128	33	1090
Traction-wheel	H. B. Larzelere	330,068	Nov. 24	2164	587	33	941
Train-sighter	J. R. Park	328,606	Oct. 20	1445	376	33	278
Tramway for curves and cable-grips	A. S. Hallidie	330,976	Nov. 24	2059	557	33	920
Tramway-switch	H. A. Hunter	333,076	Dec. 22	2636	691	33	1489
Transom-lifter	G. J. Dickson	332,794	Dec. 22	2246	592	33	1420
Transom-lifter	A. English	331,289	Dec. 1	50	11	33	1008
Transom-lifter	J. H. Shaw	328,722	Oct. 20	1610	419	33	308
Transportation-can	J. F. Swab	328,082	Oct. 13	754	197	33	143
Trap: *See* Animal-trap. Ant-trap. Mole-trap. Moth-trap. Overflow-trap. Plumber's trap. Rat-trap. Sewer-gas trap. Steam-trap. Stench-trap. Target-trap.							
Trap for soil and other pipes	S. S. Hellyer	329,388	Oct. 27	2564	{661 / 662}	33	487
Trap for wash-basins, &c	R. B. Dick	330,683	Nov. 17	1669	{449 / 450}	33	841
Trap-lock	S. Ayres	331,223	Nov. 24	2398	648	33	982
Tray. Carrying	C. A. Andrews	330,662	Nov. 17	1643	441	33	835
Tray. Finger-ring	T. S. Coffin	329,018	Oct. 27	2025	525	33	290
Tray. Jeweler's watch	C. A. Kron	328,412	Oct. 13	1189	308	33	225
Treadle mechanisms. Device for	O. B. Thompson	328,825	Oct. 20	1726	449	33	331
Tree: *See* Double-tree. Saddle-tree.							
Tree-protector	F. McMaster	329,926	Nov. 10	678	174	33	639
Tricycle	J. H. Cilley	328,761	Oct. 20	1648	{429 / 430}	33	316
Tricycle	P. E. McIntosh	329,755	Nov. 3	445	112	33	589
Tricycle-gear	A. C. Latta	331,644	Dec. 1	604	149	33	1103
Tricycle-shaft-fastening device	D. H. Rice	331,330	Dec. 1	103	24	33	1017
Trimmer: *See* Heel-trimmer. Lumber-trimmer. Welt-trimmer. Wick-trimmer.							
Trough: *See* Feed-trough. Watering-trough.							
Truck and bag-holder. Combined	A. C. Dodge	330,684	Nov. 17	1670	450	33	841
Truck and support. Barrel	M. Miller	333,144	Dec. 29	2741	720	33	1514
Truck. Barrel	G. H. Spencer	328,076	Oct. 13	743	194	33	141
Truck. Car	W. T. Browne	332,378	Dec. 15	1660	435	33	1308
Truck. Car	F. A. Graff. (Reissue)	10,660	Nov. 10	1264	336	33	755
Truck. Car	T. W. Hogsett	328,679	Oct. 20	1550	403	33	296
Truck. Car	C. L. Morehouse	331,994	Dec. 8	1107	288	33	1205
Truck. Car	J. Turner	332,682	Dec. 15	2092	549	33	1383
Truck. Car	A. M. Wellington	332,981	Dec. 22	2497	660	33	1466
Truck. Folding barrow	J. W. Coleman	329,623	Nov. 3	272	70	33	557
Truck for elevated cars	J. A. Enos	331,369	Dec. 1	185	48	33	1031
Truck for moving houses	E. W. Whitehead	327,632	Oct. 6	177	43	33	32
Truck. Harvester	W. A. Ober	330,258	Nov. 10	1112	295	33	725
Trundle and hoop	W. Webster	329,518	Nov. 3	125	33, 34	33	529
Trundling-wheel	J. J. Myers	327,577	Oct. 6	98	22	33	19
Trunk	E. Andrews	332,034	Dec. 8	1172	307	33	1216
Trunk	A. C. Frankel	330,886	Nov. 24	1941	{525 / 526}	33	898
Trunk	G. H. Wells	331,351	Dec. 1	131	32	33	1021
Trunk	H. F. Wulff	327,749	Oct. 6	321	82, 83	33	56
Trunk and bed. Combined	M. A. Rooney	327,595	Oct. 6	123	29	33	23
Trunk-catch	J. J. Cowell	329,625	Nov. 3	274	71	33	557
Trunk-catch	T. L. Rivers	332,004	Dec. 8	1120	292	33	1208
Trunk-fastener	G. D. Spielman	330,435	Nov. 17	1362	363	33	780
Trunk-lock	F. W. Mix and G. B. Cowles	331,427	Dec. 1	249	66	33	1042
Trunk-lock plate and socket	F. W. Mix	331,426	Dec. 1	249	65	33	1042
Trunk-top	J. F. Osborn	328,602	Oct. 20	1441	375	33	277
Trunk-top. Veneer	J. F. Osborn	328,603	Oct. 20	1442	375	33	277
Trunk-top. Veneer	J. F. Osborn	328,604	Oct. 20	1443	376	33	278
Trusa	L. Schmitt	329,662	Nov. 3	346	88	33	570
Truss	S. M. Van Alstine	328,985	Oct. 27	1973	519	33	381
Truss and supporter. Combined	H. A. Schulz	332,443	Dec. 15	1746	456	33	1323
Truss pad. Hernial	E. Chesterman	328,109	Oct. 13	787	205	33	149
Tub: *See* Bath-tub. Bath and wash tub.							
Tub-fastener	G. F. Atwood	330,814	Nov. 17	1843	497	33	872
Tube: *See* Bottle-tube. Metal tube. Soda-water draft-tube.							
Tube-cleaner for fuel-economizers or feed-water heaters	C. H. Holt	328,220	Oct. 13	924	{240 / 241}	33	176
Tube-cutter	D. A. Ritchie	328,973	Oct. 27	1953	509	33	378
Tube-expander	C. Dudley	333,206	Dec. 29	2826	739	33	1529
Tube-expander	F. Sniter	328,622	Oct. 20	1475	384	33	283
Tube-forming machine	J. L. Richter	327,721	Oct. 6	293	74	33	51

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tubes. Apparatus for centering and inserting disks in the ends of	C. W. Nason	331,529	Dec. 1	387	104	33	1068
Tubes. Closing the ends of metal	C. W. Nason	331,528	Dec. 1	386	104	33	1068
Tubes. Die for drawing and compressing	W. Allderdice	329,612	Nov. 3	259	67	33	554
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,571	Dec. 1	454	118	33	1079
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,572	Dec. 1	458	118	33	1079
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,579	Dec. 1	486	121	33	1083
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,580	Dec. 1	490	121, 122	33	1084
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,581	Dec. 1	495	122, 123	33	1084
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,582	Dec. 1	500	123, 124	33	1085
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,583	Dec. 1	505	124	33	1086
Tubes from hollow ingots. Machine for making	S. P. M. Tasker	331,584	Dec. 1	509	124, 125	33	1086
Tubes from hollow ingots. Machine for making taper	S. P. M. Tasker	331,574	Dec. 1	465	119	33	1080
Tubes from hollow ingots. Machine for making taper	S. P. M. Tasker	331,575	Dec. 1	470	119	33	1081
Tubes from hollow ingots. Machine for making taper	S. P. M. Tasker	331,576	Dec. 1	475	120	33	1082
Tubes from hollow ingots. Machine for making taper	S. P. M. Tasker	331,577	Dec. 1	480	120	33	1082
Tubes. Machine for welding plugs in the ends of	C. W. Nason	331,527	Dec. 1	384	104	33	1068
Tubing. Machine for making metal	D. A. Ritchie	328,974	Oct. 27	1955	509	33	378
Tubing. Manufacture of	J. Lippincott	330,338	Nov. 10	1216	325, 326	33	746
Tubular boiler	J. C. Benjamin	330,202	Nov. 10	1048	273	33	712
Tuck-marker	J. C. Goodwin	330,476	Nov. 17	1420	379	33	791
Tug	M. W. Rohrer, Jr., and D. H. Boyer	330,426	Nov. 17	1351	360	33	778
Tug-fastener	I. Baloun	328,449	Oct. 20	1237	321	33	241
Tug. Hame	M. F. Anderson and W. H. Wilcox	328,557	Oct. 20	1377	358	33	265
Tug. Hame	T. L. Rivers	330,517	Nov. 17	1471	393	33	800
Tug. Shaft	O. Keon	329,509	Nov. 3	202	53	33	543
Tuning-fork	D. W. Segrove	329,020	Oct. 27	2128	571	33	408
Tunnel. Device for removing the débris of a blast from the face of a	G. H. Van Vleck	333,266	Dec. 29	2914	762	33	1546
Tunneling and sinking shafts	C. Sooysmith	331,656	Dec. 1	621	153	33	1107
Tunnels. Building	C. Sooysmith	331,657	Dec. 1	622	153	33	1107
Turbine-wheel gate	E. C. Geyelin	331,051	Nov. 24	2143	561	33	937
Turn-buckle	L. Wilkinson	328,443	Oct. 13	1228	319	33	232
Turn-buckles. Die for making	C. H. Williams	332,127	Dec. 8	1310	340, 341	33	1240
Turning-machine	A. T. Booth	329,126	Oct. 27	2181	565	33	417
Tuyere. Furnace	A. Brown and W. R. Clark	328,284	Oct. 13	1001	260	33	190
Tuyeres, blast-furnaces, &c. Water-circulation for	E. A. Uehling	330,442	Nov. 17	1374	366	33	782
Twist-drill	M. C. Johnson	329,174	Oct. 27	2240	580	33	428
Twist-drills. Machine for making	S. Moore	331,904	Dec. 8	975	252	33	1161
Twist-drills. Manufacturing	G. R. Stetson	331,739	Dec. 1	743	188	33	1130
Twister-head for machines for forming interlocking eyes.	R. Faries	333,121	Dec. 29	2711	711	33	1569
Type-bars. Machine for dressing	O. Mergenthaler	328,961	Oct. 27	1931	503, 504	33	373
Type-case stand	H. Wells	327,629	Oct. 6	174	43	33	31
Type-matrices. Machine for forming	O. Mergenthaler	332,354	Dec. 15	1622	426, 427	33	1303
Type-matrices. Machine for making	F. D. Maltby	329,466	Nov. 3	48	13, 14, 15	33	514
Type-wheels. Apparatus for making	E. R. and A. W. Hoffmann	328,677	Oct. 20	1547	403	33	296
Type-writer	B. T. Mulligan	333,080	Dec. 22	2641	692, 693	33	1490
Type-writers. Cabinet or case for	W. Horrocks	333,225	Dec. 29	2855	746	33	1534
Type-writers. Register for	H. W. Yonley	329,116	Oct. 27	2165	560, 561	33	414
Type-writing machine	W. J. Barron	330,198	Nov. 10	1043	272	33	711
Type-writing machine	A. P. Hansen	327,946	Oct. 6	569	148	33	102
Type-writing machine	C. Spiro	331,337	Dec. 1	111	26	33	1018
Type-writing machine	T. Wilkins	330,183	Nov. 10	1025	268	33	708
Type-writing machines. Ink-ribbon annunciator for	T. I. Daniel	332,791	Dec. 22	2243	591	33	1419
Type-writing machines. Platen-shifting attachment for	C. S. Southworth	331,659	Dec. 1	624	154	33	1107
Umbrella	R. Folger	331,231	Nov. 24	2407	651	33	983
Umbrella	R. Geisler	330,010	Nov. 10	798	204	33	660
Umbrella	J. Matzenbacher	328,128	Oct. 13	808	211	33	153
Umbrella and cane. Combined	G. Leland	329,656	Nov. 3	309	79	33	563
Umbrella and parasol frame	W. B. Conner	330,566	Nov. 17	1528	409	33	812
Umbrella display-rack	S. V. Hendryx	328,487	Oct. 20	1277	331	33	248
Umbrella drip-cup	L. T. Jones	330,789	Nov. 17	1809	488	33	866
Umbrella-joint	S. W. Staats	327,734	Oct. 6	306	78	33	53
Umbrella-support	D. C. Markham	332,917	Dec. 22	2414	638	33	1451
Umbrella-top	D. C. Markham	332,918	Dec. 22	2414	638	33	1451
Underwaist	C. N. Chadwick	330,205	Nov. 10	1051	274	33	713
Unwinder. Thread	W. Grover	331,194	Nov. 24	2355	637	33	974
Upright boiler	M. Cridge and T. H. Carlin	332,188	Dec. 8	1390	366	33	1254
Urinal	J. E. Boyle	329,806	Nov. 3	512	130, 131	33	602
Vacuum-brake apparatus. Automatic	J. Gresham	332,653	Dec. 15	2049	538, 539	33	1376
Vacuum-pan	A. W. Colwell	330,209	Nov. 10	1056	276	33	714
Vaginal irrigator	J. W. Gordon and G. T. Blanchard	331,128	Nov. 24	2257	613	33	957
Valve	W. J. Cambridge	330,676	Nov. 17	1661	447	33	839

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Valve	F. W. Dick and J. Fleming	328,390	Oct. 13	1157	298	33	219
Valve	O. B. Hall	327,875	Oct. 6	474	194	33	84
Valve	J. M. Hartman	327,548	Oct. 6	62	14	33	12
Valve	M. Wuerpel	330,961	Nov. 17	1907	516	33	884
Valve and lever. Tank	J. E. Boyle	328,573	Oct. 20	1785	466	33	341
Valve and muffler. Pop	C. H. De Witt	329,240	Oct. 20	1748	455	33	334
Valve and operating mechanism for valves	W. Scott. (Reissue)	10,653	Oct. 20	1850	483	33	353
Valve. Automatic	J. A. Ayres	327,996	Oct. 13	625	165	33	120
Valve. Automatic safety regulator	J. W. Pertz	330,615	Nov. 17	1583	424	33	883
Valve. Balanced slide	J. D. Olds	332,979	Dec. 15	1591	388, 389	33	1284
Valve. Balanced slide	D. A. Woodbury. (Reissue)	10,661	Nov. 10	1965	336	33	755
Valve. Balanced slide	D. A. Woodbury	331,018	Nov. 24	2107	570	33	930
Valve. Balanced slide	D. A. Woodbury	331,858	Dec. 8	909	235	33	1168
Valve. Balanced stop	W. Jackson	329,650	Nov. 3	302	77	33	562
Valve. Bladder	E. L. Perry	329,773	Nov. 3	469	118	33	504
Valve. Check	L. Schnttle	328,979	Oct. 27	1967	511	33	380
Valve-gear	G. Abrams and N. Nilson	329,525	Nov. 3	141	36	33	531
Valve-gear	F. M. Davis	329,288	Oct. 27	2406	623, 624, 162, 163	33	460
Valve-gear	J. Dick	329,891	Nov. 10	638	163	33	631
Valve-gear	G. T. Pillings	331,003	Nov. 24	2093	566	33	927
Valve-gear	J. B. Quinn	329,338	Oct. 27	2486	641	33	474
Valve-gear	H. F. Shaw	332,842	Dec. 22	2304	606	33	1430
Valve-gear. Engine	J. Grime	330,782	Nov. 17	1802	485	33	865
Valve-gear for compound engines	G. E. Dow	330,387	Nov. 17	1301	345	33	769
Valve-gear. Locomotive	W. J. Lewis	331,799	Dec. 8	819	208	33	1152
Valve gear. Reversing	P. Maltby	333,473	Dec. 29	3186	681, 682	33	1591
Valve-gear. Steam-engine	M. N. Lyrn	332,205	Dec. 8	1415	365	33	1258
Valve-gearing	G. M. Pelton	331,436	Dec. 1	259	70	33	1044
Valve-motion for locomotives. Hydraulic	F. F. Rose	330,927	Nov. 24	1997	539, 540	33	908
Valve-operator. Electric	C. L. Clarke	327,525	Oct. 6	18	5	33	5
Valve or cock for liquid-receptacles	L. Abbott	330,766	Nov. 17	1785	480	33	862
Valve. Piston	P. Armington	332,632	Dec. 15	2014	528	33	1370
Valve. Piston	J. W. Sargent	332,113	Dec. 8	1293	335	33	1237
Valve. Reversing	P. Maltby	333,419	Dec. 29	3112	812, 813	33	1580
Valve. Rotary automatic cut-off	H. F. Hodges	330,328	Nov. 10	1204	322	33	744
Valve. Safety	J. Barbe	328,451	Oct. 20	1239	321	33	241
Valve. Safety	J. W. Powers	328,062	Oct. 13	726	190	33	138
Valve. Slide	D. O. Ladd	331,506	Dec. 1	353	95, 96	33	1061
Valve. Slide	W. Mitchell	331,992	Dec. 8	1105	287	33	1205
Valve. Sliding gate	J. Old	332,939	Dec. 22	2441	646	33	1457
Valve. Steam-actuated	H. C. Sergeant	330,068	Nov. 10	875	226	33	678
Valve. Steam-engine	H. C. Anson	332,863	Dec. 22	2338	618	33	1435
Valve. Steam-engine	H. H. Westinghouse	332,669	Dec. 15	2099	551, 552	33	1385
Valve. Steam-engine	H. H. Westinghouse and W. A. Bole	329,347	Oct. 27	2500	644	33	476
Valve. Stop and waste	P. Harvey	329,736	Nov. 3	418	108	33	584
Valve. Stop and waste	P. Harvey	331,799	Dec. 8	806	205	33	1150
Valve. Straight-way stop	H. Hall	330,322	Nov. 10	1198	320	33	743
Valve. Throttle	C. H. Worthen	332,855	Dec. 22	2321	615	33	1433
Valves. Core for straight-way stop	G. Hildreth	330,327	Nov. 10	1203	322	33	744
Valves of fluid-meters. Apparatus for actuating the	F. W. Hood and L. W. Lombard	331,136	Nov. 24	2267	615, 616	33	959
Vapor-burner	E. C. Peck	329,481	Nov. 3	75	20	33	519
Vapor engine. Explosive	L. H. Nash	331,078	Nov. 24	2179	591, 592	33	943
Vapor engine. Explosive	L. H. Nash	331,079	Nov. 24	2182	592	33	944
Vapor engine. Explosive	L. H. Nash	331,210	Nov. 24	2378	643	33	978
Vapor-generator for baths and bath apparatus	G. Douglass	327,539	Oct. 6	49	11	33	10
Vat: *See* Cheese-vat.							
Vault cover and ventilator	A. W. Herr	330,400	Nov. 17	1322	351	33	773
Vault. Fire-proof	C. C. Gilman	332,247	Dec. 15	1480	386	33	1276
Vault. Safe-deposit	R. E. Dixon	329,147	Oct. 27	2206	572	33	422
Vegetable and meat slicer	T. M. Knapp	331,411	Dec. 1	221	57, 58	33	1037
Vegetable-cutter	A. Cannon	330,560	Nov. 17	1522	407	33	810
Vegetable-cutter	A. Leonhardt	330,246	Nov. 10	1099	291	33	723
Vegetable-slicing machines. Supporting-case for	A. J. Klidzio	328,410	Oct. 13	1187	307	33	224
Vehicle	T. H. Paessler	328,709	Oct. 20	1587	413	33	303
Vehicle-body	J. McQueen and W. H. Carmont	330,906	Nov. 24	2084	564	33	925
Vehicle brace. Spring	N. Willmes	329,798	Nov. 3	496	125	33	599
Vehicle-brake	T. Briggs	332,482	Dec. 15	1793	471	33	1321
Vehicle-brake	J. B. Hinton	329,312	Oct. 27	2445	633	33	467
Vehicle. Child's	J. S. Anthes	332,131	Dec. 8	1321	343	33	1242
Vehicle-dash	A. S. Parker	332,282	Dec. 15	1526	400	33	1295
Vehicle platform-gear	P. B. Cunningham and A. Barnes	331,688	Dec. 1	669	166	33	1116
Vehicle platform-spring	A. B. Johnson	330,405	Nov. 17	1327	353	33	773
Vehicle-reach	J. A. Mack and C. Hanson	331,310	Dec. 1	72	18	33	1012
Vehicle running-gear	J. M. Bonck	331,471	Dec. 1	310	83	33	1053
Vehicle running-gear	J. T. Cordery	329,817	Nov. 3	529	135	33	604
Vehicle running-gear	G. E. Garretson	328,933	Oct. 27	1985	491, 492	33	366
Vehicle running-gear	A. McPherson and F. P. Ramsdall	332,930	Dec. 22	2427	642	33	1454
Vehicle running-gear	R. Wiehle, W. Lorey, Jr., and C. Fenchter.	332,029	Dec. 8	1165	304	33	1214
Vehicle-seat	G. W. Payne	327,584	Oct. 6	108	24	33	20
Vehicle-seat fastener	E. S. Davis	330,876	Nov. 24	1928	522	33	896
Vehicle seat. Two-wheeled	C. W. Burgtorf	330,559	Nov. 17	1521	406	33	810
Vehicle-seats. Adjustable-back for	C. Straubel and P. Hebel	332,303	Dec. 15	1551	406	33	1289

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Vehicle shifting-top	A. H. Winchell	331,667	Dec. 1	635	156	33	1109
Vehicle. Side-bar	A. A. Abbott	333,271	Dec. 29	2922	764	33	1547
Vehicle. Spring	M. P. Henderson	330,025	Nov. 10	818	209	33	665
Vehicle. Spring	C. W. Saladee	331,334	Dec. 1	108	25, 26	33	1018
Vehicle-spring	S. A. Bailey	328,100	Oct. 13	774	202	33	147
Vehicle-spring	J. P. Buchholtz	327,518	Oct. 6	10	3	33	4
Vehicle-spring	L. F. Case, Jr	328,287	Oct. 13	1004	261	33	190
Vehicle-spring	C. H. Cain	332,877	Dec. 22	2365	625	33	1440
Vehicle-spring	W. W. Grier	330,578	Nov. 17	1540	412	33	814
Vehicle-spring	C. N. Haskins	330,023	Nov. 10	815	209	33	664
Vehicle-spring	E. J. Hess	329,552	Nov. 3	180	48	33	539
Vehicle-spring	J. Kengel	329,316	Oct. 27	2448	634	33	468
Vehicle-spring	T. J. Magner	328,238	Oct. 13	948	247	33	180
Vehicle-spring	J. D. Owen	331,430	Dec. 1	252	67	33	1043
Vehicle-spring	O. S. Plummer and J. M. Wood	328,609	Oct. 20	1448	377	33	278
Vehicle-spring	J. G. Roth	331,215	Nov. 24	2388	646	33	980
Vehicle-spring	J. G. Roth	333,257	Dec. 29	2903	759	33	1543
Vehicle-spring	J. Wolf	331,669	Dec. 1	639	157	33	1110
Vehicle. Spring-propelled	G. B. Berrell	329,003	Oct. 27	1997	519, 520	33	386
Vehicle spring-seat	C. Van Horn	331,100	Nov. 24	2211	599	33	949
Vehicle-top	K. W. Holmes	332,529	Dec. 15	1871	489	33	1344
Vehicle. Two-wheeled	F. Bex and E. F. Heunsch	332,777	Dec. 22	2227	587	33	1416
Vehicle. Two-wheeled	J. C. Blocher	329,124	Oct. 27	2178	564, 565	33	417
Vehicle. Two-wheeled	W. C. Bradford	329,132	Oct. 27	2187	567, 568	33	418
Vehicle. Two-wheeled	J. P. Calnan	331,375	Dec. 1	168	43	33	1028
Vehicle. Two-wheeled	L. S. Clark	330,468	Nov. 17	1410	375	33	789
Vehicle. Two-wheeled	J. A. Gallagher	331,957	Dec. 8	1055	274	33	1197
Vehicle. Two-wheeled	E. H. Griswold	330,017	Nov. 10	807	206	33	662
Vehicle. Two-wheeled	A. Hofmann	331,705	Dec. 1	693	171	33	1120
Vehicle. Two-wheeled	G. G. Sowder	327,733	Oct. 6	305	78	33	53
Vehicle-wheel	J. Fishwick	333,402	Dec. 29	3089	806	33	1576
Vehicle-wheel	J. L. Ritter	333,162	Dec. 29	2764	724	33	1518
Vehicle-wheel	J. M. Rosebrooks	328,068	Oct. 13	734	191	33	139
Vehicle-wheel	H. B. Weinstock	332,027	Dec. 8	1163	304	33	1214
Vehicle-wheel	D. S. Wing	328,535	Oct. 20	1374	358	33	265
Vehicles or cars. Propulsion of	F. O. Landgrane, M. P. Schetzel, and M. E. Willis.	333,234	Dec. 29	2866	749	33	1536
Velocimeter	R. J. McCarty	331,517	Dec. 1	370	99	33	1065
Velocipede	A. H. Bock	331,113	Nov. 24	2227	608	33	934
Velocipede	C. E. Buell	331,276	Dec. 1	14	4	33	1003
Velocipede	H. L. Chapman	329,302	Oct. 27	2523	650	33	480
Velocipede	F. Jungo	327,952	Oct. 6	577	150	33	104
Velocipede	H. A. King	327,954	Oct. 6	580	151	33	104
Velocipede	H. Lacasse	327,979	Oct. 6	614	160	33	111
Velocipede	E. G. Latta	328,235	Oct. 13	941	245	33	179
Velocipede	E. G. Latta	328,673	Oct. 20	1505	408	33	299
Velocipede	E. G. Latta	332,092	Dec. 8	1259	327	33	1231
Velocipede	C. S. Leddell. (Reissue)	10,673	Dec. 15	2107	556, 557	33	1387
Velocipede	A. W. McClure	331,518	Dec. 1	372	100	33	1065
Velocipede	H. S. Owen	330,346	Nov. 10	1233	329	33	748
Velocipede	B. Roper	332,005	Dec. 8	1121	292, 293	33	1208
Velocipede	J. M. Tryon	329,102	Oct. 27	2143	554	33	410
Velocipede	T. Warwick	329,517	Nov. 3	124	32, 33	33	529
Velocipede	C. Weber	333,368	Dec. 29	2917	763	33	1546
Velocipede brace, shaft, &c	D. H. Rice	331,331	Dec. 1	104	24	33	1017
Velocipede-brake	E. P. Howe	330,026	Nov. 10	819	210	33	665
Velocipede-brake. Automatic	E. P. Howe	330,027	Nov. 10	820	210	33	665
Velocipede. Ice	J. Hussong	330,786	Nov. 17	1805	467	33	866
Velocipede-pedal	C. H. Gates	327,786	Oct. 6	364	95	33	64
Velocipede-pedal	A. H. Overman	329,851	Nov. 3	580	148	33	613
Velocipede-saddle	A. H. Overman	331,601	Nov. 24	2091	565, 566	33	926
Velocipede-seat	A. H. Overman	329,850	Nov. 3	578	148	33	613
Velocipede-seat spring	R. E. Humphreys	332,658	Dec. 15	2057	540	33	1378
Veneer. Applying wood	A. and C. De Burbon d'Este Paleologus Gonzaga.	331,232	Nov. 24	2408	.....	33	984
Veneering	C. W. Spurr	329,499	Nov. 3	100	26	33	524
Vent	G. W. Gillette	327,674	Oct. 6	239	58	33	42
Ventilating apparatus. Atomizer for	E. Oehlmann	330,919	Nov. 24	1984	536, 537	33	906
Ventilating apparatus. Portable	R. E. Walsh	330,177	Nov. 10	1018	266	33	707
Ventilating sewers	J. S. Wilson and W. W. Green	328,168	Oct. 13	861	224	33	163
Ventilation. System of	T. J. Simpson	328,518	Oct. 20	1716	447	33	329
Ventilator: *See* Box-ventilator. Car-ventilator. Churn-ventilator. Window-ventilator.							
Ventilator	A. Daub	332,059	Dec. 8	1205	314	33	1222
Ventilator	W. Scharnweber	329,680	Nov. 3	343	87, 88	33	570
Ventilator	F. H. Smith	327,608	Oct. 6	141	34	33	96
Ventilator for cooking and other apartments	D. Burgess	332,379	Dec. 15	1662	435	33	1309
Ventilator wheel or fan	E. F. Kittoe	329,052	Oct. 27	2073	538	33	398
Vertical boiler	W. E. Haxtun	330,024	Nov. 10	817	209	33	664
Vertical tube-boiler	P. Holtzmann and R. Mayer	333,012	Dec. 22	2553	672	33	1475
Vessel. Screw-propelled	C. W. Field, Jr	332,243	Dec. 15	1475	385	33	1275
Vessels. Coating or lining	L. L. Maxfield	332,160	Dec. 8	1361	.....	33	1249
Vessels. Device for keeping ice off the sterns of	G. S. King	328,229	Oct. 13	935	243	33	177
Vest-pattern	E. Shively and M. E. Clark	330,162	Nov. 10	999	260	33	701
Violin-bridge	M. W. White	330,276	Nov. 10	1138	302	33	730
Violin tail piece	E. J. Albert	330,185	Nov. 10	1029	269	33	709

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Violins. Rosin-holder for	J. W. Angus	331,751	Dec. 8	766	193	33	1143
Vise	H. D. Booth	332,478	Dec. 15	1790	470	33	1331
Vise	W. H. Northall	331,905	Dec. 8	978	253	33	1181
Vise. Bench	W. H. Northall	332,909	Dec. 8	1424	367	33	1280
Vise-jaw. Adjustable	E. Shaw	333,961	Dec. 29	2907	760	33	1544
Vise. Pipe	J. C. Bauer	328,102	Oct. 13	778	203	33	147
Vise. Pipe	H. Meadows	329,406	Oct. 27	2501	668	33	492
Vise. Pipe	J. S. Woolsey	330,538	Nov. 17	1493	399	33	805
Vise. Saw	A. J. Tyler	331,745	Dec. 1	751	190	33	1131
Voltaic battery	D. G. Fitz Gerald and T. J. Jones	333,292	Dec. 29	2951	.....	33	1552
Voltaic batteries. Liquid for	A. F. W. Partz	328,607	Oct. 20	1447	.....	33	278
Vulcanizing rubber and for other purposes. Apparatus for	H. C. Miller	332,408	Dec. 15	1700	445	33	1315
Wagon	S. E. Oviatt	331,254	Nov. 24	2445	661	33	990
Wagon-body	J. B. Law and C. Mooney	332,912	Dec. 22	2409	637	33	1449
Wagon-bodies. Device for removing	G. W. Hodge and L. J. A. Roswall	328,403	Oct. 13	1176	304	33	222
Wagon-bodies. Device for removing	J. B. Taylor	330,752	Nov. 17	1767	476	33	858
Wagon-brake	M. Conrad	327,921	Oct. 6	538	140	33	96
Wagon-brake	H. M. and J. M. Crippen	332,789	Dec. 22	2239	590, 591	33	1418
Wagon-brake	O. O. Honeywell	333,221	Dec. 29	2848	745	33	1533
Wagon-brake	F. M. Swann and W. W. Adkins	332,691	Dec. 15	2091	549	33	1383
Wagon. Buckboard	D. Brown and J. D. Bradley	333,053	Dec. 22	2606	682	33	1484
Wagon. Dumping	J. N. Archambault	333,048	Dec. 22	2600	681	33	1483
Wagon. Dumping	J. Cameron	329,714	Nov. 3	389	99	33	579
Wagon. Dumping	A. Kohlrieser	328,790	Oct. 20	1681	438	33	322
Wagon. Dumping	J. McFarland	332,414	Dec. 15	1709	448	33	1316
Wagon. Dumping	A. S. Miller	328,504	Oct. 20	1301	338	33	253
Wagon. Dumping	F. C. Milliken	332,818	Dec. 22	2270	598, 599	33	1424
Wagon. Dumping	L. Rodenhausen	332,109	Dec. 8	1284	334	33	1236
Wagon. Dumping	C. M. Titus	329,346	Oct. 27	2498	644	33	476
Wagon-gear	N. L. Holmes	330,118	Nov. 10	943	246	33	692
Wagon-jack	H. G. Cady	329,999	Nov. 10	782	201	33	658
Wagon-jack	W. I. Schryver	329,080	Oct. 27	2127	551	33	408
Wagon-jack	D. S. Wanamaker	331,103	Nov. 24	2214	600	33	950
Wagon-jack and step-ladder combined	F. N. McKean	328,701	Oct. 20	1578	411	33	302
Wagon. Lumber	W. and J. H. Leonhardt	328,793	Oct. 20	1687	439	33	323
Wagon-reach	M. Keech and J. Laberdee	332,084	Dec. 8	1246	325	33	1220
Wagon-reach coupling	H. Mitchell	328,242	Oct. 13	952	248	33	181
Wagon. Road	J. Vaughan	333,364	Dec. 29	3042	794	33	1568
Wagon running-gear	H. M. Horrne	331,137	Nov. 24	2270	616	33	959
Wagon-seat	O. S. Miner	328,505	Oct. 20	1302	338	33	253
Wagon-seat lock	J. Blakeslee	328,178	Oct. 13	875	227	33	166
Wagon spring-seat	C. Van Horn	331,101	Nov. 24	2212	599	33	949
Wagon. Weighing delivery	S. Park	328,138	Oct. 13	818	214	33	155
Wall decorations. Fabric for	W. Nielson	329,764	Nov. 3	456	115	33	591
Wall decorations, &c. Plastic compound for	W. Nielson	332,162	Dec. 8	1363	.....	33	1249
Wall-paper	A. Collins	332,054	Dec. 8	1199	.....	33	1221
Walls and ceilings. Decorating	M. Gibson	333,450	Dec. 29	3167	827	33	1589
Walls and ceilings of buildings. Material for the decoration of the interior	J. M. Baker	331,469	Dec. 1	309	83	33	1033
Walls. Mold for building concrete	T. W. Carrico	331,114	Nov. 24	2239	609	33	954
Walls of buildings. Preventing saltpeter exudations from forming on the faces of	J. C. Anderson	332,580	Dec. 15	1949	510	33	1357
Wardrobe	E. B. Estes	330,830	Nov. 17	1860	502	33	876
Wardrobe and trunk. Combined	C. Lempert	333,238	Dec. 29	2871	750, 751	33	1537
Wardrobe. Folding and portable	M. F. Dunn	329,445	Nov. 3	23	7	33	509
Warping-machines. Expansion drop-wire for	T. C. Entwistle	333,118	Dec. 29	2707	710	33	1508
Wash-board	E. Bailey	328,175	Oct. 13	872	226	33	165
Wash-board	I. Hussey	330,785	Nov. 17	1805	466	33	865
Wash-board	M. Jincks	327,881	Oct. 6	480	125	33	85
Wash-board	P. Pfeifer	327,823	Oct. 6	417	108	33	73
Wash-board	J. T. Sargent	327,600	Oct. 6	128	30, 31	33	24
Wash-board	J. T. Sargent	327,601	Oct. 6	130	31	33	25
Wash-board guard	F. Marsebner	333,316	Dec. 29	2984	781	33	1558
Wash-board holder	H. M. Wines	327,747	Oct. 6	318	82	33	56
Wash-board protector	C. H. Williams	327,634	Oct. 6	182	45	33	33
Wash-boiler	M. F. D. C. Dannmeyer	329,628	Nov. 3	279	72	33	558
Wash-pave	J. G. Bryan	331,032	Nov. 24	2123	575	33	933
Washer: *See* Bottle-washer. Bottle and can washer. Clothes-washer. Leather washer. Nut-locking washer. Spring-washer.							
Washer and linchpin. Combined	J. Lovett	333,078	Dec. 22	2639	691	33	1490
Washers. Making tapering	M. V. B. Ethridge	331,045	Nov. 24	2137	579	33	936
Washing-machine	B. A. Allison	331,602	Dec. 1	537	131	33	1092
Washing-machine	W. Arnold	333,050	Dec. 22	2603	682	33	1484
Washing-machine	A. Barbeau	327,998	Oct. 13	627	165, 166	33	120
Washing-machine	D. L. Bates	331,675	Dec. 1	650	160	33	1112
Washing-machine	D. L. Burgess and J. F. Broxton	330,292	Nov. 10	1102	309	33	735
Washing-machine	W. J. Burns	328,001	Oct. 13	642	170	33	121
Washing-machine	H. Calkins and S. H. Bunten	328,295	Oct. 13	1002	261	33	190
Washing-machine	J. D. Cobee and G. R. Gamble	327,528	Oct. 6	33	7	33	8
Washing-machine	J. C. Crum	327,922	Oct. 6	539	141	33	96
Washing-machine	J. K. Dugdale	328,471	Oct. 20	1261	328	33	245
Washing-machine	M. N. Ensley	328,663	Oct. 20	1532	398, 399	33	293
Washing-machine	G. L. Ferris	330,573	Nov. 17	1535	411	33	813
Washing-machine	S. Garrett	329,157	Oct. 27	2222	575	33	425
Washing-machine	G. F. Hall and G. M. Lane	331,633	Dec. 1	593	146	33	1101

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Washing-machine	G. C. Harlin	330,323	Nov. 10	1200	320, 321	33	743
Washing-machine	H. Hassenpflug	328,938	Oct. 27	1896	495, 496	33	367
Washing-machine	H. T. Henderson	327,680	Oct. 6	244	60	33	43
Washing-machine	J. S. Jones	328,891	Oct. 20	1815	473	33	346
Washing-machine	W. W. Kone	330,840	Nov. 17	1876	507	33	878
Washing-machine	G. G. Koschel	332,662	Dec. 15	2061	541	33	1378
Washing-machine	J. A. Loomis	329,577	Nov. 3	212	55	33	545
Washing-machine	S. Martin	329,183	Oct. 27	2255	585	33	431
Washing-machine	S. C. Mortimer	329,760	Nov. 3	452	114	33	590
Washing-machine	T. G. Newnam	328,801	Oct. 20	1696	442	33	325
Washing-machine	R. Orford	330,848	Nov. 17	1887	510	33	880
Washing-machine	L. Peterson	329,853	Nov. 3	501	149	33	613
Washing-machine	G. Piper	328,428	Oct. 13	1209	312	33	229
Washing-machine	G. W. Ray	331,910	Dec. 8	988	256	33	1183
Washing-machine	J. W. Rhoades	327,824	Oct. 6	417	108	33	73
Washing-machine	J. B. Richardson	328,255	Oct. 13	967	251	33	184
Washing-machine	W. H. Richardson	330,154	Nov. 10	989	258	33	701
Washing-machine	H. B. Rogers	328,432	Oct. 13	1213	313, 314	33	230
Washing-machine	O. E. Smith	327,632	Oct. 6	426	111	33	75
Washing-machine	H. H. Tuttle	329,418	Oct. 27	2611	474	23	496
Washing-machine	J. A. Tynan	330,858	Nov. 17	1904	515	33	883
Washing-machine	W. Tyson	328,441	Oct. 13	1236	318	33	232
Washing-machine	W. T. Venable	328,262	Oct. 13	974	254	33	185
Washing-machine	J. R. Vestal	328,091	Oct. 13	765	199	33	144
Washing machine	E. N. Wicks	329,608	Nov. 3	254	66	33	553
Washing-machine	J. W. Woodruff	331,931	Dec. 8	1021	265	33	1190
Washing-machine	G. Wostenholm	330,360	Nov. 10	1260	335	33	754
Washing-machine and teeter or seesaw. Combined	S. Sewell	330,626	Nov. 17	1598	427	33	826
Washing-machine and wringer. Combined	J. A. Tynan	330,857	Nov. 17	1901	515	33	883
Washing-machine. Atmospheric	D. E. Taylor	327,619	Oct. 6	159	39	33	29
Washing-machine. Boiler	J. Porter and H. B. Kepperling	330,735	Nov. 17	1746	470	33	855
Washing-machine pounder	D. F. Casey	328,003	Oct. 13	645	170	33	124
Washing-machine. Pounder	C. F. Rigby	328,611	Oct. 20	1709	445	33	327
Washing-rubber. Hand	J. W. Williams	329,350	Oct. 27	2502	644	33	477
Waste-valve. Automatic	J. H. and E. S. Bacon and V. Secord	330,664	Nov. 17	1645	442	33	836
Watch	E. Kuhn	330,905	Nov. 24	1965	531, 532	33	902
Watch balance-wheel	A. S. Buckelew	330,558	Nov. 17	1520	406	33	810
Watch-balances. Apparatus for testing and grading	J. Logan	329,916	Nov. 10	666	170	33	636
Watch-case	C. K. Colby	333,057	Dec. 22	2609	683, 684	33	1485
Watch-case	C. K. Giles	330,228	Nov. 10	1078	285	33	719
Watch-case	C. K. Giles	330,229	Nov. 10	1079	285	33	719
Watch-case	B. F. Hope	330,487	Nov. 17	1431	383	33	794
Watch-case	J. Lamont	328,791	Oct. 20	1682	438	33	322
Watch-case	J. Lamont	330,717	Nov. 17	1715	463	33	849
Watch-case pendant	D. H. Church	328,289	Oct. 13	1006	262	33	191
Watch-crowns. Apparatus for corrugating cores for	A. C. Dalzell	329,285	Oct. 27	2402	623	33	460
Watch-crowns. Apparatus for making cores for	A. C. Dalzell	329,284	Oct. 27	2400	622	33	459
Watch-guard	C. F. Bauer	329,122	Oct. 27	2174	563	33	416
Watch-plate	G. E. Hart	329,401	Oct. 13	1174	303	33	222
Watch. Self-winding	H. Von der Heydt	332,023	Dec. 8	1144	292, 300	33	1212
Watch-stand alarm	J. Burmann	327,919	Oct. 6	536	140	33	96
Watch. Stem-winding	L. Aeby	329,611	Nov. 3	258	66, 67	33	554
Watch. Stem winding and setting	C. T. Higginbotham	330,401	Nov. 17	1323	352	33	773
Watch. Stem winding and setting	R. L. Taft	330,273	Nov. 10	1135	302	33	730
Watch stem winding and setting mechanism	C. V. Woerd	330,537	Nov. 17	1492	399	33	804
Watch. Stop-	H. A. Lugrin	331,417	Dec. 1	237	62	33	1039
Watches. Device for testing balance-wheels of	F. F. Ide	328,848	Oct. 20	1758	458, 459	33	336
Watches. Testing and grading balance-wheels of	J. Logan	329,915	Nov. 10	664	170	33	636
Watches. Testing balance-wheels of	F. F. Ide	328,847	Oct. 20	1756	457, 458	33	336
Water. Apparatus for checking the waste of	E. E. Farney	331,490	Dec. 1	331	90	33	1057
Water. Apparatus for utilizing the current force of	E. L. Brady	328,447	Oct. 13	1231	319	33	233
Water-can. Poultry	M. H. Strong	331,097	Nov. 24	2209	598	33	949
Water-closet	P. Brady	328,180	Oct. 13	877	228	33	166
Water-closet	W. Bunting, Jr	331,610	Dec. 1	548	134	33	1094
Water-closet	J. L. Hutchinson	330,706	Nov. 17	1703	460	33	847
Water-closet. Automatic flushing	W. B. Parsons, Jr	332,428	Dec. 15	1729	453	33	1320
Water-closet cisterns. Valve mechanism for	G. R. Moore, Jr	329,934	Nov. 10	694	178	33	641
Water-closet drip-tray	C. H. Moore	331,993	Dec. 8	1106	287	33	1205
Water-closet. Single-piece porcelain washout	A. Fowkes and T. Connolly	330,574	Nov. 17	1536	411	33	814
Water-closet supply-tank	W. Bunting, Jr	329,361	Oct. 27	2521	650	33	480
Water-closet supply-tank	W. Bunting, Jr	329,685	Nov. 10	632	160	33	630
Water-closet supply-tanks. Valve for	W. Bunting, Jr	332,635	Dec. 15	2016	529	33	1370
Water-closet tank	J. W. Somerville	332,758	Dec. 22	2202	581	33	1511
Water-closet valve	H. S. Lord	330,843	Nov. 17	1879	508	33	879
Water-closet valve	W. Scott	331,556	Dec. 1	423	113	33	1074
Water-closet valve	W. Scott	331,557	Dec. 1	428	113, 114	33	1075
Water-closet valve	W. Scott	331,558	Dec. 1	433	114	33	1075
Water-elevating apparatus	A. M. Granger	329,450	Nov. 3	28	8	33	510
Water-elevator	T. A. Porter	329,485	Nov. 3	82	22	33	520
Water-gage	W. Young	333,046	Dec. 22	2598	681	33	1483
Water-gages. Glass tube for	A. Guilbert-Martin	332,920	Dec. 22	2417	639	33	1452
Water-gate	W. A. Lovelace	328,897	Oct. 20	1823	475	33	348
Water-gate	R. Pattee	330,800	Nov. 17	1824	491	33	869
Water-meter. Oscillating	J. W. Byrne	332,637	Dec. 15	2020	530	33	1371

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Water-meter. Piston	G. H. Fox	327,671	Oct. 6	234	57	33	41
Water-meter. Piston	G. H. Fox	327,672	Oct. 6	235	58	33	42
Water-meter. Proportional	L. H. Nash	332,935	Dec. 22	2432	645	33	1456
Water-meter. Proportional	L. H. Nash	332,937	Dec. 22	2437	645	33	1456
Water-meter. Rotary	F. W. Tuerk, Jr	328,544	Oct. 20	1350	352, 353	33	261
Water-meter. Rotary	C. T. Warren	328,734	Oct. 20	1624	423	33	310
Water-meters. Operating proportional	L. H. Nash	332,936	Dec. 22	2434	645	33	1456
Water-pipes. Device for stopping leaks in	W. H. Robertson	327,899	Oct. 6	507	131	33	91
Water-power	M. J. Erskine	331,694	Dec. 1	678	167	33	1117
Water-proof fabrics. Making	T. Hawley	331,298	Dec. 1	57	14	33	1010
Water-purifying apparatus	J. H. Miller	331,151	Nov. 24	2291	620, 621	33	962
Water-tank	F. J. Carney	332,489	Dec. 15	1802	473	33	1333
Water-tank. Automatic stock	R. H. Barber	330,667	Nov. 17	1648	443	33	837
Water-wheel	J. P. Collins	331,184	Nov. 24	2336	632	33	971
Water wheel	H. Cooper	332,057	Dec. 8	1203	314	33	1222
Water-wheel	J. H. Williamson	329,351	Oct. 27	2503	645	33	477
Water-wheel gate	D. L. Trullinger	330,753	Nov. 17	1768	477	33	859
Water-wheel governor. Electric	E. H. Amet	328,556	Oct. 20	1374	358	33	265
Water-wheel. Turbine	C. P. Bradway	328,179	Oct. 13	876	227	33	166
Water-wheel. Turbine	J. T. Kelly, Sr	328,314	Oct. 13	1039	269	33	197
Watering trough. Stock-	T. W. Boles	330,088	Nov. 10	909	235	33	684
Waterproofing compound	D. Blackburn	327,514	Oct. 6	6	.....	33	3
Waterproofing fabric	F. S. Mitchell	327,813	Oct. 6	404	.....	33	71
Wave-power. Utilizing	T. P. Chandler, Jr	328,759	Oct. 20	1646	429	33	315
Weaner. Calf-	E. P. Henry	328,675	Oct. 26	1546	402	33	296
Weaning calves. Device for	H. Shank and W. E. Meek	332,293	Dec. 15	1530	403	33	1267
Weather-boarding gage	C. Dunbar and J. A. Rector	328,661	Oct. 20	1529	398	33	293
Weather-strip	J. Y. Bassell	330,769	Nov. 17	1787	481	33	862
Weather-strip	J. Y. Bassell	330,806	Nov. 24	1914	519	33	893
Weather-strip	S. Fnnk	328,479	Oct. 20	1269	329	33	246
Weather-strip	W. Harrison	333,296	Dec. 29	2955	772	33	1553
Weather-strip	A. Lowe	327,563	Oct. 6	81	18	33	15
Weather-strip	J., Sr., and J. Shilling, Jr	329,226	Oct. 27	2320	601	33	444
Weather-strip	G. W. Shuman	329,962	Nov. 10	729	186	33	648
Web-threading apparatus	L. C. Crowell	331,283	Dec. 1	37	8, 9	33	1006
Weed-puller	R. Y. Stocking	332,169	Dec. 8	1372	355	33	1250
Weed-pulling machine	E. L. Rasmusson	328,715	Oct. 20	1600	417	33	305
Weigher and register. Automatic grain	I. N. and C. F. Griffith	331,962	Dec. 8	1063	276	33	1198
Weigher. Automatic grain-	C. E. Burchard	333,444	Dec. 29	3144	821, 822	33	1585
Weighing apparatus	W. F. Irvine	331,640	Dec. 1	600	148	33	1102
Weighing apparatus. Stop-motion for grain-	C. Scessle	332,116	Dec. 8	1296	336	33	1238
Weir and sluice	M. D. Czvetkovics	331,038	Nov. 24	2129	577, 578	33	934
Well-drill. Self pumping and expanding	W. C. Wells	332,688	Dec. 15	2098	551	33	1385
Well point. Driven-	W. C. Nye	328,858	Oct. 20	1769	461	33	338
Well rig. Artesian-	A. T. Hyde	331,714	Dec. 1	704	174	33	1122
Wells. Apparatus for sinking	M. Stopper	329,968	Nov. 10	741	189	33	650
Wells. Sand-arrester for driven	C. W. Huffman	328,222	Oct. 13	927	241	33	177
Wells. Slide-valve for oil-	J. B. Watson	333,492	Dec. 29	3209	840	33	1596
Welt-trimmer	C. A. Squire	331,338	Dec. 1	114	27	33	1019
Wheat-splitting machine	T. Sheldon	331,165	Nov. 24	2310	626	33	966
Wheel: *See* Car-wheel. Cast-wheel. Current-wheel. Fifth-wheel. Game-wheel. Harvester-wheel. Skate-wheel. Traction-wheel. Trundling-wheel. Vehicle-wheel. Ventilator-wheel. Water-wheel. Wind-wheel.							
Wheel and pinion. Making a combined	G. E. Hart	328,402	Oct. 13	1175	303	33	222
Wheel for agricultural implements	J. A. Long and E. L. Babcock	331,248	Nov. 24	2436	659	33	988
Wheel-securing device	G. P. Steinbach	330,748	Nov. 17	1763	475	33	858
Wheels. Machine for molding	J. J. Carr	329,814	Nov. 3	594	133, 134	33	603
Wheelbarrow	D. J. Huckins	331,712	Dec. 1	702	173	33	1122
Whiffletree-circle	W. Bailey	328,998	Oct. 27	1989	517	33	385
Whiffletree-coupling	D. A. Reed	333,835	Dec. 29	3005	787	33	1562
Whiffletree-coupling	F. D. Warner and W. J. Matthews	329,788	Nov. 3	486	123	33	597
Whiffletree-hook	C. G. Jacobus	331,715	Dec. 1	706	174	33	1123
Whiffletree-iron	O. Vanorman	330,530	Nov. 17	1485	397	33	803
Whip and line holder	I. W. Cooper	328,466	Oct. 20	1254	326	33	244
Whip-core	R. M. Wilson, E. M. Spear, and M. F. Peirce.	327,746	Oct. 6	318	82	33	55
Whip-socket	B. F. D. Miller	330,256	Nov. 10	1110	294	33	725
Whip-socket	C. N. Webb	330,448	Nov. 17	1382	368	33	783
Wick and burner. Lamp	W. Painter	329,589	Nov. 3	224	59	33	548
Wick trimmer. Lamp-	H. H. Hawley	332,900	Dec. 22	2393	632	33	1446
Wind-engine	S. E. Limpus	329,914	Nov. 10	663	169, 170	33	636
Wind-instrument	L. Oesterle	329,940	Nov. 10	701	180	33	643
Wind-wheel	I. P. Cadman	328,836	Oct. 20	1741	454	33	333
Wind-wheel	J. T. Eden	330,304	Nov. 10	1177	314	33	738
Wind-wheel	W. G. Read	331,543	Dec. 1	406	109	33	1071
Wind-wheel	F. G. Talleriday	330,168	Nov. 10	1007	263	33	705
Winder. Spool-	F. H Barber	327,511	Oct. 6	2	1	33	3
Winding machine spool-carrier	J. McCahey	330,036	Nov. 10	830	213	33	668
Winding strips with worsted or other covering material. Apparatus for	C. A. Ludlow	329,752	Nov. 3	439	112	33	588
Windlass locking-gear	C. A. Potter	332,287	Dec. 15	1531	401	33	1286
Windmill	A. C. Ellsworth	331,288	Dec. 1	49	11	33	1008
Windmill	E Gilman	330,014	Nov. 10	803	205	33	661

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Windmill-gearing	G. H. Pattison	329,769	Nov. 3	461	117	33	592
Windmill-gearing	G. H. Pattison	329,770	Nov. 3	463	118	33	592
Windmill-gearing	G. H. Pattison	330,921	Nov. 24	1966	537	33	906
Windmill-gearing	G. H. Pattison	333,026	Dec. 22	2574	677	33	1460
Windmill-gearing	G. H. Pattison	333,148	Dec. 29	2748	721	33	1515
Windmill-head	J. T. Chinnick	328,187	Oct. 13	885	230	33	167
Windmill-regulator	H. R. Adams	331,364	Dec. 1	151	39	33	1025
Windmill regulator. Pumping	H. R. Adams	331,363	Dec. 1	149	38	33	1024
Windmill. Self-regulating	A. W. Lane	332,261	Dec. 15	1499	392	33	1280
Window	G. H. King	329,651	Nov. 3	303	77, 78	33	562
Window-bracket shelf. Folding and adjustable	E. M. Greer	333,007	Dec. 22	2543	670	33	1474
Window-fastener	F. Sahr	331,005	Nov. 24	2095	567	33	927
Window-hanging	C. Dellenbeck	333,287	Dec. 29	2940	769	33	1550
Window. Hanging	J. R. Whitney	331,466	Dec. 1	305	82	33	1052
Window-protecting apparatus	E. Diez	330,965	Nov. 24	2048	554	33	998
Window-screen	W. M. Dana	329,287	Oct. 27	2405	623	33	460
Window-screen	P. Ramser	328,064	Oct. 13	729	190	33	138
Window-screen	S. J. Vance	332,574	Dec. 15	1941	508	33	1356
Window-screen	M. L. Whitcomb	328,265	Oct. 13	977	254	33	185
Window-screen. Adjustable	F. M. Lampson and G. W. Hogben	328,691	Oct. 20	1564	407	33	299
Window-screen frame	J. E. Stuart	328,080	Oct. 13	752	196	33	142
Window-seat box	W. H. Wetherill	330,651	Nov. 17	1628	437	33	832
Window-shade. Adjustable	J. H. and W. T. Mitchell	329,758	Nov. 3	449	113	33	589
Window-shade attachment	E. Metcalf	331,150	Nov. 24	2200	620	33	962
Window-shade attachment. Adjustable	J. H. Granger	333,005	Dec. 22	2541	670	33	1473
Window-shade roller	W. I. Goodin	330,015	Nov. 10	804	206	33	661
Window-shades. Bottom bar for	D. Strasser and A. H. Gerdom	328,905	Oct. 20	1834	479	33	350
Window-stop fastener	A. Liesche	333,471	Dec. 29	3184	830	33	1591
Window-ventilator	J. G. Bronson	328,182	Oct. 13	879	228	33	166
Window-ventilator	P. C. Klapper	331,796	Dec. 8	817	207, 208	33	1151
Window ventilator. Show-	M. G. Mock and W. S. Maywood	331,077	Nov. 24	2178	591	33	943
Wine and cider press	O. Kromer	328,850	Oct. 20	1761	459	33	336
Wire. Barbed	H. B. Scutt	332,755	Dec. 22	2201	580	33	1411
Wire-barbing machine	A. J. Bates	329,355	Oct. 27	2511	647	33	478
Wire-barbing machine	J. Stubbe	333,087	Dec. 22	2654	696, 697	33	1492
Wire-clamp	P. F. Keelyn	332,347	Dec. 15	1612	423	33	1301
Wire clamp and coupling	E. M. Hamilton	329,162	Oct. 27	2227	576	33	426
Wire-coiling machine	C. C. Hill	332,525	Dec. 15	1866	488, 489	33	1343
Wire-corrugating machine	C. H. Morgan	333,323	Dec. 29	2990	783	33	1559
Wire-covering machine	J. McCahey	330,035	Nov. 10	829	213	33	667
Wire-drawing apparatus	S. H. Byrne	331,680	Dec. 1	661	163	33	1114
Wire-drawing machine	I. E. Higgins	330,114	Nov. 10	936	244	33	680
Wire-feeding machine	J. H. Gerry	332,880	Dec. 22	2376	628	33	1442
Wire for drawing. Preparing	C. Booth and R. W. Ney	332,321	Dec. 15	1579	.....	33	1294
Wire. Ingot for plated	L. L. Burdon	327,655	Oct. 6	212	53	33	38
Wire machine. Barb-	W. Edenborn	330,686	Nov. 17	1672	451, 452	33	841
Wire. Machine for bending and forming	W. B. Curtiss	333,112	Dec. 29	2696	707, 708	33	1506
Wire. Making ingots for plated	W. C. Avery	328,871	Oct. 20	1782	465	33	340
Wire netting. Flat-	E. Rattey	328,716	Oct. 20	1601	417	33	306
Wire-netting machine	W. F. Dennis	327,924	Oct. 6	541	141, 142	33	97
Wire rods. Machine for reducing	W. Tucker	332,572	Dec. 15	1934	506, 507, 508	33	1355
Wire-strainer	C. O. R. Walker	328,093	Oct. 13	766	200	33	145
Wire-stretcher	L. D. Drake	332,240	Dec. 15	1472	384	33	1275
Wire-stretcher	E. S. Mullinax	331,727	Dec. 1	728	182	33	1126
Wire support and holder	C. Willsie	329,869	Nov. 3	601	154	33	617
Wire-tightener	A. J. Upham	332,172	Dec. 8	1374	355	33	1251
Wiring vessels. Machine for	H. S. Reynolds	328,615	Oct. 20	1461	380	33	281
Wood and other opaque bodies. Decorating	W. Hyland	333,127	Dec. 29	2719	.....	33	1511
Wood. Apparatus for impregnating	J. H. Young	329,799	Nov. 3	497	126, 127	33	599
Wood cutting, bundling, and tying machine	F. Kingston	332,155	Dec. 8	1354	350, 351	33	1247
Wood-embossing	W. A. Compton	331,770	Dec. 8	789	200	33	1147
Wood-embossing machine	W. A. Compton	331,769	Dec. 8	786	199	33	1146
Wood. Fireproofing	R. Tánczos	329,973	Nov. 10	746	.....	33	651
Wool burring and picking machine	T. H. Faulkner	332,651	Dec. 15	2047	537, 538	33	1476
Wool-washing machine	F. G. and A. C. Sargent	330,920	Nov. 24	2004	541	33	910
Wool-washing machine	J. E. Sinclair	330,163	Nov. 10	1000	260, 261, 262	33	703
Woven fabric	G. Berteaux	333,276	Dec. 29	2926	766	33	1548
Wrench: *See* Combination-wrench. Rapid-transit wrench. Pipe-wrench. Ratchet-wrench.							
Wrench	G. A. Barnes	330,369	Nov. 17	1276	339	33	764
Wrench	R. S. Carr	333,108	Dec. 29	2692	706	33	1505
Wrench	G. J. Cline	332,051	Dec. 8	1107	312	33	1221
Wrench	J. Du Shane	331,188	Nov. 24	2347	635	33	973
Wrench	F. S. Duell	331,951	Dec. 8	1045	271	33	1195
Wrench	J. A. Fairbanks	329,542	Nov. 3	166	44	33	537
Wrench	F. Farrar	331,627	Dec. 1	585	144	33	1100
Wrench	M. Gale	332,886	Dec. 22	2374	628	33	1442
Wrench	N. H. Griffith	331,053	Nov. 24	2145	582	33	937
Wrench	T. B. Heiney and C. G. Lauck	332,522	Dec. 15	1863	487	33	1342
Wrench	E. B. Jackson	330,835	Nov. 17	1867	504	33	877

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wrench	C. Kabisch	331,974	Dec. 8	1089	281	33	1201
Wrench	A. Langstrom	327,559	Oct. 6	76	17	33	15
Wrench	S. J. Lea	330,594	Nov. 17	1557	417	33	818
Wrench	E. Phillips	331,158	Nov. 24	2302	623	33	965
Wrench	A. W. Stossmeister	328,960	Oct. 27	1968	511	33	390
Wrench	R. Wolfe	330,453	Nov. 17	1388	370	33	785
Wringer: *See* Clothes-wringer.							
Wringer, washer, and mangle. Combined	C. Phillis	328,516	Oct. 20	1312	341	33	255
Writing-machine for the blind	W. H. Perkins	329,675	Nov. 3	332	85	33	568
Writing-pad cover	G. Hood	328,221	Oct. 13	926	241	33	176
Yarn. Machinery for drying skeins of	J. R. Dearden	328,470	Oct. 20	1250	327	33	945
Yoke adjuster. Neck-	J. R. Dalton	331,377	Dec. 1	170	43	33	1098
Yoke. Neck-	D. W. Clarke	331,376	Dec. 1	169	43	33	1098
Yoke. Neck-	P. Shatzer	332,013	Dec. 8	1134	296	33	1210
Yoke or bar for double teams. Draft	W. W. Stockton and G. Phelps	332,366	Dec. 15	1646	431	33	1306
Yoke. Ox-	W. H. Gibbens	331,631	Dec. 1	591	146	33	1101
Yoke strap. Neck-	G. H. Lynds	327,958	Oct. 6	586	152	33	106
Zylonite, &c. Apparatus for working	J. B. Edson	333,454	Dec. 29	3157	825	33	1587

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Design.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Alto-rilievo	J. Pakenham	16,334	Oct. 13	33	116
Animal-trap frame	J. C. Gould	16,342	Oct. 20	33	239
Badge	D. A. Reese	16,367	Nov. 3	33	504
Bottle	H. Berry	16,311	Oct. 6	33	2
Bottle	M. L. Houts	16,331	Oct. 13	33	118
Bucket-ear	J. H. Alexander	16,346	Oct. 27	33	359
Buckle	H. C. Johnson and J. B. Moore	16,347	Oct. 20	33	239
Burial-caskets. Ornamentation of	J. H. Mowen	16,367	Nov. 17	33	762
Burial-caskets. Ornamentation of	H. F. Quint and J. H. Mowen	16,418	Dec. 15	33	1270
Card receiver and stand	M. S. Clark	16,405	Dec. 8	33	1142
Carpet	E. Fisher	16,320 to 16,322	Oct. 13	33	117
Carpet	H. Horan	16,329 16,330	Oct. 13	33	118
Carpet	J. Lyall	16,361 16,362	Nov. 3	33	504
Carpet	J. Lyall	16,364	Nov. 17	33	761
Carpet	H. Mitchell	16,375 to 16,377	Nov. 10	33	636
Carpet	A. Petzold	16,403	Dec. 1	33	1000
Carpet	E. G. Sauer	16,336	Oct. 13	33	118
Carpet	C. W. Swapp	16,323 to 16,328	Oct. 13	33	117
Chain. Watch	E. A. Cory	16,313	Oct. 6	33	2
Chair-back	F. F. Parker	16,395	Nov. 24	33	892
Charm. Jewelry	G. L. Ruff	16,448	Dec. 29	33	1502
Chenille	H. Maul and F. Landenberger	16,366	Nov. 3	33	504
Cloth fabric	C. S. Messinger	16,318	Oct. 6	33	2
Clothes-line block	F. T. Dana	16,339	Oct. 20	33	239
Coffee-mill hopper	J. W. Knott	16,332	Oct. 13	33	118
Coffin ornament	C. B. Rogers and R. H. Burr	16,411	Dec. 8	33	1142
Cornice	F. Mankey	16,356	Oct. 27	33	360
Curtain	R. P. Hemming	16,315	Oct. 6	33	2
Dipper or skimmer	W. W. Woolsey	16,338	Oct. 13	33	118
Dish	E. Gérard	16,414	Dec. 15	33	1270
Dish. Vegetable	J. Barlow	16,310	Oct. 6	33	2
Easel	E. B. Crocker	16,312	Oct. 6	33	2
Easel	G. R. Osborn	16,333	Oct. 13	33	118
Fan	J. H. Ferguson	16,360	Nov. 3	33	504
Filter or cooler. Body of water	A. Selkirk	16,404	Dec. 1	33	1000
Fork-handle	C. Witteck	16,412	Dec. 8	33	1142
Gimp	J. Graham	16,363	Nov. 17	33	761
Glassware	G. and R. J. Beatty and G. W. Davis	16,371	Nov. 10	33	636
Glassware	J. E. Miller	16,409	Dec. 8	33	1142
Handkerchief	C. Lambert	16,316	Oct. 6	33	2
Hangings, &c	C. Wheeler	16,337	Oct. 13	33	118
Hinge. Stable	W. C. Hanna, Jr.	16,349	Oct. 27	33	359
Hinge. Stable	W. C. Hanna, Jr.	16,391	Nov. 24	33	892
Hub-flanges. Ornamentation of	J. Maris	16,430 to 16,432	Dec. 29	33	1501
Hub shell-band	J. Mari	16,344	Oct. 20	33	239
Hubs. Ornamentation of wheel	J. Maris	16,363	Nov. 3	33	504
Jewel-setting	G. Becker	16,362	Nov. 17	33	761
Lamp chimney. Argand	W. Duffield	16,398	Dec. 1	33	1000
Lamp globe or shade	J. Webb	16,419 16,420	Dec. 15	33	1270
Lamps, &c. Pendant for	N. Jenkins	16,350	Oct. 27	33	359
Lamps, &c. Pendant for	W. R. Noé	16,355	Oct. 27	33	359
Lock-keeper	C. W. Robison	16,410	Dec. 8	33	1142
Molding	F. Mankey	16,416	Dec. 15	33	1270
Molding	F. Mankey	16,429	Dec. 29	33	1501
Oil-cloth	C. T. and V. E. Meyer	16,351 to 16,354	Oct. 27	33	359
Oil-cloth	C. T. and V. E. Meyer	16,433 to 16,447	Dec. 29	33	1501
Ornamentation of walls, &c. Surface	F. Mankey	16,364 16,365	Nov. 3	33	504
Ornamentation of walls, &c. Surface	F. Mankey	16,401 16,402	Dec. 1	33	1000
Ornamentation of walls, &c. Surface	F. Mankey	16,407	Dec. 8	33	1142
Ornamentation of walls, &c. Surface	F. Mankey	16,415	Dec. 15	33	1270
Panel	F. Mankey	16,357	Oct. 27	33	360
Panel	F. Mankey	16,399 16,400	Dec. 1	33	1000
Panel	F. Mankey	16,408	Dec. 8	33	1142

Alphabetical list of designs, October to December, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Panel for clock-front	A. C. Freeland	16,373	Nov. 10	33	626
Panel. Open-work	F. Mankey	16,426 to 16,428	Dec. 29	33	1501
Paper-clips. Back for	A. E. Seltzer	16,386	Nov. 17	33	762
Paper lantern	G. Franke	16,390	Nov. 24	33	892
Pencil-tip	A. C. Eggers	16,340	Oct. 20	33	239
Plaque	O. Arnold	16,309	Oct. 6	33	2
Plow-hoe	M. L. Saunders	16,345	Oct. 20	33	239
Rug	H. Finck	16,314	Oct. 6	33	2
Rug	R. P. Hemming	16,392 to 16,394	Nov. 24	33	892
Scarf, &c. Knot for	C. E. Page	16,417	Dec. 15	33	1270
Sewing-machine stands. Side frame for	L. B. Miller	16,378	Nov. 10	33	626
Soap. Cake of	W. S. Vincent	16,397	Nov. 24	33	892
Spur. Pattern for a	A. Buermann	16,388	Nov. 24	33	892
Stand	M. Eisner and J. Mendelson	16,359	Nov. 3	33	504
Stand	M. Eisner and J. Mendelson	16,380 to 16,381	Nov. 10	33	626
Statuary. Group of	J. Rodgers	16,369	Nov. 3	33	504
Statuette group	J. W. Ehninger	16,389	Nov. 24	33	892
Stove. Cannon	H. C. Bascom	16,423	Dec. 22	33	1394
Stove. Cooking	H. C. Bascom	16,421 to 16,422	Dec. 15	33	1270
Stove. Cooking	W. H. Wilkinson	16,450	Dec. 29	33	1502
Stove. Cylinder	H. C. Bascom and A. Wemyss	16,424	Dec. 22	33	1394
Stove. Heating	A. O. Bement, M. D. Keyes, and C. E. Bement.	16,372	Nov. 10	33	626
Stove. Heating	R. F. Schermerhorn and F. S. Weller.	16,346	Oct. 20	33	239
Stove. Heating	R. F. Schermerhorn and F. S. Weller.	16,396	Nov. 24	33	892
Stove. Heating	W. C. Smith	16,370	Nov. 3	33	504
Stove. Parlor	H. C. Bascom	16,413	Dec. 15	33	1270
Stove. Parlor	C. Rathbone	16,335	Oct. 13	33	118
Surface ornamentation	F. Mankey	16,385	Nov. 17	33	762
Table-ware	J. Edwards	16,319	Oct. 13	33	117
Textile fabric	G. Streat	16,379	Nov. 10	33	626
Type	C. H. Beeler, Jr	16,425	Dec. 29	33	1501
Type	G. F. Giesecke	16,341	Oct. 20	33	239
Type	E. C. Ruthven	16,449	Dec. 29	33	1502
Type. Font of	H. Ihlenburg	16,343	Oct. 20	33	239
Type. Font of printing	J. Graham	16,374	Nov. 10	33	626
Waiter	D. M. Ireland	16,406	Dec. 8	33	1142
Washing-machine rubbing-head	E. D. Mantonya	16,317	Oct. 6	33	2
Water-closet bowl and trap	A. Shaw	16,356	Oct. 27	33	359

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abietine-gum, and salves, ointments, and other compounds made therefrom. Distillation from	Abietine Medical Company	12,854	Dec. 15	33	1270
Agricultural implements named	S. L. Allen & Co	12,765	Nov. 17	33	762
Alcohol and its compounds. Wood	L. A. Salomon & Bro	12,784	Nov. 17	33	763
Ale and certain named drinks. Ginger	H. Hall	12,732	Nov. 10	33	626
Ale and stout	Read Brothers	12,866	Dec. 15	33	1270
Alkalies and bleaching-powder	Wigg Brothers & Steele	12,745	Nov. 3	33	504
Anæsthetic	N. Lentz	12,638	Oct. 13	33	118
Antidote for rheumatism	B. G. Amend	12,700	Oct. 27	33	360
Antiseptic dressing	S. T. Stephenson	12,786	Nov. 17	33	762
Axes, hatchets, mattocks, adzes, picks, and grub-hoes	C. K. Hawkes	12,707	Oct. 27	33	360
Baking-powder	G. B. Burlingame	12,839	Dec. 15	33	1270
Baking-powder	G. F. Gilman	12,774	Nov. 17	33	762
Baking-powder	H. J. Paddock	12,759	Nov. 10	33	626
Baking-powder	Thomson & Taylor Spice Company	12,870	Dec. 15	33	1270
Balsam for cure of gout, rheumatism, &c	C. Pingel	12,781	Nov. 17	33	762
Beer	P. Best Brewing Company	12,739	Nov. 3	33	504
Beer	P. Best Brewing Company	12,740	Nov. 3	33	504
Beer. Lager	G. Bechtel	12,767	Nov. 17	33	762
Beer. Lager	J. Brenner	12,667	Oct. 20	33	240
Belting. Oil-dressed and waterproofed flat leather	C. A. Schieren & Co	12,785	Nov. 17	33	762
Bitters	E. Masqueller	12,809	Nov. 24	33	892
Bitters	R. H. McDonald Drug Company	12,669	Oct. 20	33	240
Bitters	A. M. Muth	12,902	Dec. 29	33	1502
Bitters	C. Pingel	12,834	Dec. 8	33	1142
Bitters	C. F. Stadiger	12,908	Dec. 29	33	1502
Blankets and lap-robes	W. Ayres & Sons	12,635	Oct. 13	33	118
Blood-purifier and cancer-cure	R. G. Jones, S. Hill, and N. T. Jones	12,860	Dec. 15	33	1270
Boots and shoes	J. H. & F. H. Torrey	12,687	Oct. 20	33	240
Boots and shoes. Sectional metallic protectors for soles and heels of	J. Blakey	12,837	Dec. 15	33	1270
Boots and shoes. Sectional metallic protectors for the soles and heels of	J. Blakey	12,666	Oct. 20	33	240
Boots, shoes, and slippers of all kinds	A. J. Cammeyer	12,668	Oct. 20	33	240
Brick	S. Hamilton, Jr	12,638	Oct. 13	33	118
Bronze, copper, brass, Babbitt metal, and other metals	J. R. White	12,691	Oct. 20	33	240
Butter	Ellis Brothers	12,884	Dec. 29	33	1502
Canned beef or cooked compressed corned beef	Fairbank Canning Company	12,814	Dec. 1	33	1000
Canned corn	S. N. Hyde & Son	12,639	Oct. 13	33	118
Canned fruits, vegetables, and oysters	E. W. Kriete	12,678	Oct. 20	33	240
Caps or primers for blasting purposes	Metallic Cap Manufacturing Company.	12,758	Nov. 10	33	626
Caps or primers for blasting purposes	Metallic Cap Manufacturing Company.	12,779	Nov. 17	33	762
Caramels	G. E. Adams	12,698	Oct. 27	33	360
Cards. Christmas, New-Year, Easter, birthday, Scriptural, and other	J. and H. Castell	12,840	Dec. 15	33	1270
Cards. Playing	Russell & Morgan Printing Company.	12,644	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,645	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,646	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,647	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,648	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,649	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,682	Oct. 20	33	240
Cards. Playing	Russell & Morgan Printing Company.	12,683	Oct. 20	33	240
Cards. Playing	Russell & Morgan Printing Company.	12,824	Dec. 1	33	1000
Cards. Playing	Russell & Morgan Printing Company.	12,825	Dec. 1	33	1000
Cards. Playing	Russell & Morgan Printing Company.	12,826	Dec. 1	33	1000
Cartridges	Union Metallic Cartridge Company	12,720	Oct. 27	33	360
Catarrh cure	Abietine Medical Company	12,747	Nov. 10	33	626
Cement for leather	H. G. Williams	12,876	Dec. 22	33	1394
Champagne	Carstairs, McCall & Co	12,794	Nov. 24	33	892
Cheese	Burrell & Whitman	12,734	Nov. 3	33	504
Cigar-boxes	Worms & Cohn	12,764	Nov. 10	33	626
Cigars	J. R. Bravo & Son	12,614	Oct. 6	33	2
Cigars	J. R. Bravo & Son	12,615	Oct. 6	33	2
Cigars	D. S. Erb	12,889	Dec. 29	33	1502
Cigars	J. T. Isert	12,709	Oct. 27	33	360
Cigars	J. F. Portuondo	12,879	Dec. 29	33	1502
Cigars, cigarettes, and smoking and chewing tobacco	C. L. Pratt	12,906	Dec. 29	33	1502

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Ale and certain named drinks. Ginger	H. Hall	12,752	Nov. 10	33	626
Ale and stout	Read Brothers	12,866	Dec. 15	33	1270
Alkalies and bleaching-powder	Wigg Brothers & Steele	12,745	Nov. 3	33	504
Anæsthetic	N. Lentz	12,658	Oct. 13	33	118
Antidote for rheumatism	B. G. Amend	12,700	Oct. 27	33	360
Antiseptic dressing	S. T. Stephenson	12,786	Nov. 17	33	762
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Baking-powder	G. F. Gilman	12,774	Nov. 17	33	762
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Beer. Lager	G. Bechtel	12,767	Nov. 17	33	762
Beer. Lager	J. Brenner	12,667	Oct. 20	33	240
Belting. Oil-dressed and waterproofed flat leather	C. A. Schieren & Co	12,785	Nov. 17	33	762
Bitters	E. Masqueller	12,800	Nov. 24	33	892
Bitters	R. H. McDonald Drug Company	12,660	Oct. 20	33	240
Bitters	A. M. Muth	12,902	Dec. 29	33	1502
Bitters	C. Pingel	12,834	Dec. 8	33	1142
Bitters	C. F. Stadiger	12,908	Dec. 29	33	1502
Blankets and lap-robes	W. Ayres & Sons	12,635	Oct. 13	33	118
Blood-purifier and cancer-cure	R. G. Jones, S. Hill, and N. T. Jones	12,860	Dec. 15	33	1270
Boots and shoes	J. H. & F. H. Torrey	12,687	Oct. 20	33	240
Boots and shoes. Sectional metallic protectors for soles and heels of	J. Blakey	12,837	Dec. 15	33	1270
Boots and shoes. Sectional metallic protectors for the soles and heels of	J. Blakey	12,666	Oct. 20	33	240
Boots, shoes, and slippers of all kinds	A. J. Cammeyer	12,668	Oct. 20	33	240
Brick	S. Hamilton, Jr	12,636	Oct. 13	33	118
Bronze, copper, brass, Babbitt metal, and other metals	J. R. White	12,691	Oct. 20	33	240
Butter	Ellis Brothers	12,884	Dec. 29	33	1502
Canned beef or cooked compressed corned beef	Fairbank Canning Company	12,614	Dec. 1	33	1000
Canned corn	S. N. Hyde & Son	12,639	Oct. 13	33	118
Canned fruits, vegetables, and oysters	E. W. Kriete	12,678	Oct. 20	33	240
Caps or primers for blasting purposes	Metallic Cap Manufacturing Company.	12,758	Nov. 10	33	626
Caps or primers for blasting purposes	Metallic Cap Manufacturing Company.	12,779	Nov. 17	33	762
Caramels	G. E. Adams	12,698	Oct. 27	33	360
Cards. Christmas, New-Year, Easter, birthday, Scriptural, and other	J. and H. Castell	12,840	Dec. 15	33	1270
Cards. Playing	Russell & Morgan Printing Company.	12,644	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,645	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,646	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,647	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,648	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,649	Oct. 13	33	118
Cards. Playing	Russell & Morgan Printing Company.	12,662	Oct. 20	33	240
Cards. Playing	Russell & Morgan Printing Company.	12,663	Oct. 20	33	240
Cards. Playing	Russell & Morgan Printing Company.	12,824	Dec. 1	33	1000
Cards. Playing	Russell & Morgan Printing Company.	12,825	Dec. 1	33	1000
Cards. Playing	Russell & Morgan Printing Company.	12,826	Dec. 1	33	1000
Cartridges	Union Metallic Cartridge Company	12,720	Oct. 27	33	360
Catarrh cure	Abietine Medical Company	12,747	Nov. 10	33	626
Cement for leather	H. G. Williams	12,875	Dec. 22	33	1394
Champagne	Carstairs, McCall & Co	12,794	Nov. 24	33	892
Cheese	Burrell & Whitman	12,724	Nov. 3	33	504
Cigar-boxes	Worms & Cohn	12,764	Nov. 10	33	626
Cigars	J. R. Bravo & Son	12,614	Oct. 6	33	2
Cigars	J. R. Bravo & Son	12,615	Oct. 6	33	2
Cigars	D. S. Erb	12,899	Dec. 29	33	1502
Cigars	J. T. Isert	12,709	Oct. 27	33	360
Cigars	J. F. Portuondo	12,879	Dec. 29	33	1502
Cigars, cigarettes, and smoking and chewing tobacco	C. L. Pratt	12,906	Dec. 29	33	1502

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cleansing preparation in fluid form for garments, the toilet, &c.	T. E. Davis	12,796	Nov. 24	33	892
Clothing. Boys'	A. Shuman & Co	12,805	Nov. 24	33	892
Cod-liver oil	Ansar, Harford & Co	12,766	Nov. 17	33	762
Coffee. Roasted	S. Bear's Sons	12,723	Nov. 3	33	504
Coffee. Roasted	Mayer Brothers & Co	12,624	Oct. 6	33	2
Coffee. Roasted	Toledo Spice Company	12,861	Dec. 29	33	1502
Coffee. Roasted and ground	Maynard & Irwin	12,801	Nov. 24	33	892
Coffee. Roasted and roasted and ground	Chase & Sanborn	12,795	Nov. 24	33	892
Collars, cuffs, and bosoms	G. N. March	12,832	Dec. 8	33	1142
Compound for cleaning clothing, fabrics, paint-work, &c	H. R. Stevens	12,741	Nov. 3	33	504
Compound for the cure of diseases of the head and throat	W. J. Bennet	12,892	Dec. 29	33	1502
Condiment. Bottled	S. F. Beer Company	12,869	Dec. 15	33	1270
Condition-powders	H. Johnson	12,817	Dec. 1	33	1000
Cords, lines, twines, and ropes	Silver Lake Company	12,631	Oct. 6	33	2
Cords, lines, twines, and ropes	Silver Lake Company	12,633	Oct. 6	33	2
Corn. Evaporated sugar	W. L. Amos	12,871	Dec. 22	33	1394
Corsets	J. Bowers	12,893	Dec. 29	33	1502
Cosmetic	L. C. Else	12,877	Dec. 29	33	1502
Cotton. Ginned	Ralston Ginning Company	12,823	Dec. 1	33	1000
Cotton goods, gray, colored, and bleached, plain or twilled	L. Loomis	12,712	Oct. 27	33	360
Cotton goods, gray, colored, and bleached, plain or twilled	L. Loomis	12,713	Oct. 27	33	360
Cotton goods, gray, colored, and bleached, plain or twilled	L. Loomis	12,755	Nov. 10	33	626
Cotton pile fabrics. Corded	R. F. Shaen	12,650	Oct. 13	33	118
Cotton sheetings. Brown and bleached	Boott Cotton Mills	12,702	Oct. 27	33	360
Cotton sheetings. Brown and bleached	Boott Cotton Mills	12,749	Nov. 10	33	626
Cotton sheetings. Brown and bleached	Boott Cotton Mills	12,750	Nov. 10	33	626
Cotton stripes and plaids. Woven	S. A. Crozer & Son	12,807	Dec. 29	33	1502
Cough-drops	B. F. Raymond	12,804	Nov. 24	33	892
Croup cure	A. P. Hoxsie	12,728	Nov. 3	33	504
Custard-powder	Goodall, Backhouse & Co	12,797	Nov. 24	33	892
Dental rubber	Boston Rubber Company	12,838	Dec. 15	33	1270
Dentifrice	B. W. Carpenter & Co	12,655	Oct. 13	33	118
Distillation from Italian juniper-berries	Colburn, Birks & Company	12,725	Nov. 3	33	504
Distilled products of pine wood	Southern Chemical Company	12,828	Dec. 1	33	1000
Door checks and springs	Norton Door Check and Spring Company.	12,903	Dec. 29	33	1502
Elixir or bitters	H. V. Mansfeld-Büllner	12,895	Dec. 29	33	1502
Embrocation	Elliman Sons & Co	12,617	Oct. 6	33	2
Essences and toilet-soap	Eastman & Brother	12,843	Dec. 15	33	1270
Fertilizer. Manufactured	D. Scott & Bro	12,632	Oct. 6	33	2
Finger-rings and thimbles. Filled	H. Muhr's Sons	12,847	Dec. 15	33	1270
Flour	Urban & Co	12,688	Oct. 20	33	240
Flour	Urban & Co	12,689	Oct. 20	33	240
Flour or meal made of the entire wheat	Franklin Mill Company	12,773	Nov. 17	33	762
Flour. Wheat	C. A. Pillsbury & Co	12,677	Oct. 20	33	240
Flour. Wheat	C. A. Pillsbury & Co	12,681	Oct. 20	33	240
Flour. Wheat	C. A. Pillsbury & Co	12,697	Oct. 20	33	240
Flour. Wheaten	R. F. Piper	12,821	Dec. 1	33	1000
Fly-paper	Badger State Fly Paper Company	12,636	Oct. 13	33	118
Food for curing and fattening cattle	T. Massam, H. Clark, and S. Phillips, trustees.	12,787	Nov. 17	33	762
Foot-wear made of felt and felting materials	Merino Shoe Company	12,737	Nov. 3	33	504
Garters. Materials for out-of-door	W. Bartleet & Sons	12,654	Oct. 13	33	118
Garments or articles made from Jersey-cloths and stockinets	T. C. Love	12,756	Nov. 10	33	626
Garments or articles made from Jersey-cloths and stockinets	T. C. Love	12,757	Nov. 10	33	626
Guano	L. N. & J. S. Hopkins	12,708	Oct. 27	33	360
Gunpowder, explosive compounds, cartridges, and the like	Vereinigte Rheinisch-Westphälische Pulver-Fabriken.	12,898	Dec. 29	33	1502
Hair-dressing	P. Amato	12,653	Oct. 13	33	118
Hardware. Stationers', builders', furniture, and miscellaneous	Reading Hardware Company	12,643	Oct. 13	33	118
Hardware. Stationers', builders', furniture, and miscellaneous	Reading Hardware Company	12,762	Nov. 10	33	626
Harness sweat-collars, saddle-trees, &c	McClain & Anderson	12,642	Oct. 13	33	118
Harrows, clod-crushers, and levelers. Pulverizing	Nash & Bro	12,819	Dec. 1	33	1000
Hat-polish	C. W. Pratt	12,783	Nov. 17	33	762
Hats	Cooperative Hat Company of South Norwalk.	12,751	Nov. 10	33	626
Hats. Men's and boys'	P. Lynch & Co	12,622	Oct. 6	33	2
Hops. Liquid preparation of	Hoptonic Company	12,727	Nov. 3	33	504
Hose. Canvas	J. McGregor	12,845	Dec. 15	33	1270
Hubs. Wheel	Acme Hub Company	12,790	Nov. 24	33	892
Iron and steel. Certain manufactures of	Seebohm & Dieckstahl	12,685	Oct. 20	33	240
Iron. Best quality galvanized sheet	J. Merry	12,625	Oct. 6	33	2
Iron of the second quality. Galvanized sheet	J. Merry	12,657	Oct. 13	33	118
Jewelry. Imitation diamond	H. Muhr's Sons	12,846	Dec. 15	33	1270
Lamps	C. S. Upton	12,874	Dec. 22	33	1394
Lamps and lanterns for bicycles, tricycles, and other velocipedes.	J. Lucas & Son	12,730	Nov. 3	33	504
Lanterns. Magic	J. Scheidig & Co	12,851	Dec. 15	33	1270
Leather. Kid and kid-finished	R. Young	12,892	Dec. 29	33	1502
Liniment	R. J. Keen	12,778	Nov. 17	33	762
Liniment	W. N. Mullen	12,736	Nov. 3	33	504
Liniment	I. H. Peterson and H. Stevenine	12,626	Oct. 6	33	2
Liniment, cough-sirup, liver-pellets, and corn-cure	C. W. Horn	12,901	Dec. 29	33	1502
Lockets, bracelets, and lace-pins	Waite, Mathewson & Co	12,807	Nov. 24	33	892
Lotion for exterminating insects and curing their stings and for relieving pain.	Sallade & Co	12,880	Dec. 29	33	1502
Medicated astringents and sedatives	A. M. Wilson	12,835	Dec. 8	33	1142
Medicated toilet preparation	R. P. Lickes	12,878	Dec. 29	33	1502
Medicinal preparations for the cure of respiratory diseases	J. F. Churchill's Inhalants Company	12,656	Oct. 13	33	118
Medicine called a blood-renewer	R. Guinn	12,815	Dec. 1	33	1000
Medicine. Corn	E. E. Howard	12,858	Dec. 15	33	1270
Medicine. Corn	E. E. Howard	12,859	Dec. 15	33	1270

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Medicine for the cure of diseases of the stomach and bowels	J. J. Six Dykstra	12,660	Oct. 13	33	118
Medicine for the cure of neuralgia and like diseases	J. S. Nicolds	12,716	Oct. 27	33	360
Medicine for the treatment of thrush or nursing sore mouth	Howard Bros	12,775	Nov. 17	33	762
Medicines containing malt	Vogeler, Son & Co	12,742	Nov. 3	33	504
Milk. Condensed	Boden Condensed Milk Company	12,855	Dec. 15	33	1270
Music-boxes	C. Paillard & Co	12,760	Nov. 10	33	626
Nails and similar products made from wire	Wire Goods Company	12,829	Dec. 1	33	1000
Nervine	Scotch Oats Essence Company	12,853	Dec. 8	33	1142
Non-conducting compound for covering heated surfaces	W. Berkefeld	12,891	Dec. 29	33	1502
Oil for illuminating purposes. Petroleum	Chesebrough Manufacturing Company.	12,876	Dec. 29	33	1502
Oil. High-test carbon	I. Davis	12,671	Oct. 20	33	240
Oil. Illuminating, burning, and lubricating	H. W. Peabody & Co	12,905	Dec. 29	33	1502
Oil. Illuminating coal or kerosene	A. B. Morton & Sons	12,802	Nov. 24	33	892
Oil. Olive	S. Rae & Co	12,746	Nov. 3	33	504
Oil preparation for alleviating pain caused by nervous diseases.	I. E. Porter	12,865	Dec. 15	33	1270
Ointments, salves, pills, medicated liquids, and soaps	Ichthyol-Gesellschaft Cordes Hermanni & Co.	12,816	Dec. 1	33	1000
Opera-glasses	J. Scheidig & Co	12,852	Dec. 15	33	1270
Oranges, lemons, and other citric fruit	J. A. Harris	12,674	Oct. 20	33	240
Pails and tubs. Wooden	Menasha Wooden Ware Company	12,714	Oct. 27	33	360
Paint	New York Fire Proof Paint Company.	12,715	Oct. 27	33	360
Pamphlets and books	F. Turner	12,652	Oct. 13	33	118
Paper for photographic purposes. Albumenized	Scovill Manufacturing Company	12,684	Oct. 20	33	240
Paper of all kinds. Writing	Z. Crane, Jr., & Bro	12,812	Dec. 1	33	1000
Paper. Printing, writing, and wrapping	J. W. Butler Paper Company	12,768	Nov. 17	33	762
Paper. Writing	East Hartford Manufacturing Company.	12,842	Dec. 15	33	1270
Peanuts	Norfolk Storage Company	12,738	Nov. 3	33	504
Peanuts	Norfolk Storage Company	12,780	Nov. 17	33	762
Pens. Aluminum	W. D. Marvel	12,886	Dec. 29	33	1502
Perfumes	C. B. Woodworth & Sons	12,680	Oct. 20	33	240
Piano-fortes	T. F. Scanlan	12,629	Oct. 6	33	2
Piano-fortes	T. F. Scanlan	12,630	Oct. 6	33	2
Preparation for lung and throat diseases	Abietine Medical Company	12,748	Nov. 10	33	626
Preparation for the skin	H. Teats	12,686	Oct. 20	33	240
Preparations for the cure of venereal and urinary diseases. Liquid	F. Kirsch	12,885	Dec. 29	33	1502
Prunes	G. A. and C. F. Fleming	12,672	Oct. 20	33	240
Prunes. Dried	G. A. and C. F. Fleming	12,706	Oct. 27	33	360
Raisins	W. T. Coleman & Co	12,669	Oct. 20	33	240
Razors, scissors, shears, pocket and other knives	Reinhard, Dinkelmann & Co	12,627	Oct. 6	33	2
Refrigerators	F. M. Hall	12,637	Oct. 13	33	118
Remedy for catarrh and for bronchial affections	J. H. Macdonough	12,623	Oct. 6	33	2
Remedy for certain named diseases	Stuart Manufacturing Company	12,718	Oct. 27	33	360
Remedy for chills and a liniment	J. L. Able	12,789	Nov. 24	33	892
Remedy for disorders of the digestive organs and nervous system and an ingredient for a beverage.	Rumford Chemical Works	12,659	Oct. 13	33	118
Remedy for horse-colic	P. Crist	12,769	Nov. 17	33	762
Remedy for rheumatism and similar diseases	Pfaelzer Bros. & Co	12,820	Dec. 1	33	1000
Remedy for ringworm, tetter, and all itching eruptions of the skin.	J. T. Shuptrine	12,651	Oct. 13	33	118
Remedy for uterine and womb diseases	R. P. Crump	12,813	Dec. 1	33	1000
Remedies, medicines compounded by prescription, and official and pharmaceutical preparations. Proprietary	R. Keys	12,753	Nov. 10	33	626
Remedies for coughs, colds, &c	E. F. Hyatt	12,798	Nov. 24	33	892
Ribbons	J. Ryle	12,873	Dec. 22	33	1394
Rum	C. W. Howland	12,872	Dec. 22	33	1394
Safety-pins	J. Jenkins	12,675	Oct. 20	33	240
Safety-pins	J. Jenkins	12,676	Oct. 20	33	240
Sail-cloth or duck	Whiton, Brother & Co	12,744	Nov. 3	33	504
Salt	Phillips, Henry & Co	12,850	Dec. 15	33	1270
Salve or ointment	M. Barrett	12,883	Dec. 29	33	1502
Scarfs. Gentlemen's neck	L. Auerbach	12,810	Dec. 1	33	1000
Sewing-machines and sewing-machine attachments and supplies	Singer Manufacturing Company	12,717	Oct. 27	33	360
Shirts, shirt-waists, and drawers	W. J. Bloomer	12,890	Dec. 29	33	1502
Shoes	N. Curtis & Co	12,616	Oct. 6	33	2
Shoes. School	Fearey Manufacturing Company	12,772	Nov. 17	33	762
Sign. Emblematic	Z. Marx	12,818	Dec. 1	33	1000
Silk. Sewing and embroidery	Brainerd & Armstrong Company	12,894	Dec. 29	33	1502
Silver-ware for table use, watch-cases, &c. Imitation	Holmes & Edwards Silver Company	12,844	Dec. 15	33	1270
Sirup for coughs, colds, &c	C. Pingel	12,782	Nov. 17	33	762
Soap and perfumes	S. Palmer	12,904	Dec. 29	33	1502
Soap for laundry and general household purposes	J. Armstrong & Co	12,701	Oct. 27	33	360
Soap. Glycerine	Mülhens & Kropff	12,863	Dec. 15	33	1270
Soap. Laundry	Oborne, Hosick & Co	12,849	Dec. 15	33	1270
Soap. Laundry	J. Taylor	12,806	Nov. 24	33	892
Soap. Laundry and toilet	N. K. Fairbank & Company	12,856	Dec. 15	33	1270
Soap. Laundry and toilet	N. K. Fairbank & Company	12,857	Dec. 15	33	1270
Soap. Laundry and toilet	Lautz Bros. & Co	12,799	Nov. 24	33	892
Soap. Powdered	F. G. Taylor	12,719	Oct. 27	33	360
Soap. Toilet	Bernard & Co	12,665	Oct. 20	33	240
Soap. Toilet	J. S. Kirk & Co	12,618	Oct. 6	33	2
Soap. Toilet	J. S. Kirk & Co	12,619	Oct. 6	33	2
Soap. Toilet	J. S. Kirk & Co	12,620	Oct. 6	33	2
Soap. Toilet	J. S. Kirk & Co	12,621	Oct. 6	33	2
Soap. Toilet and laundry	Colgate & Co	12,704	Oct. 27	33	360
Soap. Toilet and laundry	Colgate & Co	12,746	Nov. 3	33	504
Soap. Toilet and laundry	Kansas City Soap Company	12,777	Nov. 17	33	762
Spice-mills	J. Burns & Sons	12,896	Dec. 29	33	1502
Starch	J. M. Porter	12,887	Dec. 29	33	1502

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Stove-polish	G. M. Richardson	12,907	Dec. 29	33	1502
Stoves and ranges Cooking	Western Stove Manufacturing Company.	12,853	Dec. 15	33	1270
Stoves. Lamp or oil	J. McConnell	12,696	Oct. 20	33	240
Sugar. Refined hard	De Castro & Donner S. R. Company	12,898	Dec. 29	33	1502
Tea	J. Keer	12,831	Dec. 8	33	1142
Thimbles. Gold, silver, and other solid	H. Muhr's Sons	12,861	Dec. 15	33	1270
Tobacco and cigarettes. Smoking	G. W. Conover	12,670	Oct. 20	33	240
Tobacco. Chewing	G. W. Gail & Ax	12,692	Oct. 20	33	240
Tobacco. Chewing and smoking	J. G. Dill	12,770	Nov. 17	33	762
Tobacco. Chewing and smoking	J. G. Dill	12,771	Nov. 17	33	762
Tobacco, cigars, and cigarettes. Smoking, plug chewing, and fine-cut	W. J. Pogue	12,822	Dec. 1	33	1000
Tobacco, cigars, cigarettes, and snuff. Smoking and chewing	S. Busnitz & Co	12,695	Oct. 20	33	240
Tobacco, cigars, cigarettes, cheroots, and snuff. Smoking and chewing	F. W. Felgner & Son	12,694	Oct. 20	33	240
Tobacco. Cut smoking and cut chewing	B. Payn's Son's Tobacco Company	12,849	Dec. 15	33	1270
Tobacco. Leaf	F. Gegorza's Sons	12,673	Oct. 20	33	240
Tobacco. Plug	J. G. Dill	12,705	Oct. 27	33	360
Tobacco. Plug	Perkins & Ernst	12,864	Dec. 15	33	1270
Tobacco. Plug chewing and smoking	H. Levi & Co	12,640	Oct. 13	33	118
Tobacco. Plug chewing and smoking	H. Levi & Co	12,641	Oct. 13	33	118
Tobacco. Smoking	B. F. Weyman	12,788	Nov. 17	33	762
Tobacco. Smoking	B. F. Weyman	12,800	Nov. 24	33	892
Tobacco. Smoking and chewing	C. W. Allen Company	12,662	Oct. 20	33	239
Tobacco. Smoking and chewing	C. W. Allen Company	12,663	Oct. 20	33	239
Tobacco. Smoking and chewing	C. W. Allen Company	12,664	Oct. 20	33	240
Tobacco. Smoking and chewing	C. W. Allen Company	12,699	Oct. 27	33	360
Tobacco. Smoking and chewing	C. W. Allen Company	12,791	Nov. 24	33	892
Tobacco. Smoking and chewing	G. W. Gail & Ax	12,830	Dec. 8	33	1142
Tobacco. Smoking and chewing	G. W. Gail & Ax	12,900	Dec. 29	33	1502
Toilet-powder	C. A. Lewis	12,679	Oct. 20	33	240
Tonic preparation for the treatment of certain diseases	H. H. Warner	12,808	Nov. 24	33	892
Tonics and stimulants	M. Kalbfleisch's Sons	12,776	Nov. 17	33	762
Twine. Binders'	L. Waterbury & Co	12,634	Oct. 6	33	2
Type. Self-spacing	H. Bledsoe	12,811	Dec. 1	33	1000
Varnish. Oil or spirit	Southern Chemical Company	12,827	Dec. 1	33	1000
Varnishes, japans, wood-stains, &c	D. Rosenberg & Sons	12,868	Dec. 15	33	1270
Velveteens	E. Walther	12,909	Dec. 29	33	1502
Vermin-exterminator	C. B. O'Neill	12,803	Nov. 24	33	892
Violin, guitar, and banjo strings	S. Blumenthal	12,792	Nov. 24	33	892
Violin-strings	S. Blumenthal	12,793	Nov. 24	33	892
Watch-cases	Crescent Watch Case Company	12,841	Dec. 15	33	1270
Watch-cases	J. Fahys & Co	12,693	Oct. 20	33	240
Watch-cases. Filled	H. Muhr's Sons	12,862	Dec. 15	33	1270
Water wheels. Turbine	Stilwell & Bierce Manufacturing Company.	12,661	Oct. 13	33	118
Whips. Driving	Lay, Van Deusen & Co	12,710	Oct. 27	33	360
Whips. Driving	Lay, Van Deusen & Co	12,711	Oct. 27	33	360
Whips. Gentlemen's driving	Westfield Whip Company	12,763	Nov. 10	33	626
Whisky	Colburn, Birks & Company	12,703	Oct. 27	33	360
Whisky	C. P. Moorman	12,731	Nov. 3	33	504
Whisky	C. P. Moorman	12,732	Nov. 3	33	504
Whisky	C. P. Moorman	12,733	Nov. 3	33	504
Whisky	C. P. Moorman	12,734	Nov. 3	33	504
Whisky	C. P. Moorman	12,735	Nov. 3	33	504
Wines	C. M. Roof	12,628	Oct. 6	33	2
Wines and brandies. Native	C. Anduran & Co	12,889	Dec. 29	33	1502
Wines. Champagne	Kunkelmann & Co	12,729	Nov. 3	33	504
Wines. Champagne	Kunkelmann & Co	12,754	Nov. 10	33	626
Wines. Hungarian	S. B. Wortmann & Co	12,721	Oct. 27	33	360
Wines. Hungarian Tokay	S. B. Wortmann & Co	12,722	Oct. 27	33	360
Wire-cloth	De Witt Wire Cloth Company	12,836	Dec. 8	33	1142
Wood-stains, varnishes, &c	D. Rosenberg & Sons	12,867	Dec. 15	33	1270
Yeast	H. H. Warner	12,743	Nov. 3	33	504

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A. E. Boonekamp Maag Bitter"	E. Masqueller	4,642	Nov. 24	33	892
"Armstrong's Asthma and Hay Fever Remedy"	T. L. Armstrong	4,616	Nov. 3	33	504
"Atlee's London Syrup"	F. T. Wilcox & Co	4,683	Dec. 22	33	1394
"Balsetto" (for a medical Compound)	C. Spelcher	4,674	Dec. 15	33	1270
"Benzoated Lotion," (for Chapped Hands)	L. O. Burbank	4,609	Oct. 20	33	240
"Berry's Nourishing Stout"	T. Berry	4,667	Dec. 15	33	1270
"Blood, Rye & Beef" (for a Medicine for Consumption, &c)	E. J. Sherlock	4,594	Oct. 6	33	2
"Boyd's Rheumatic Compound"	D. F. Boyd	4,649	Dec. 1	33	1000
"Brackett's Rheumatic Liniment"	D. Brackett	4,634	Nov. 17	33	762
"Brunswig's Orange Mint Elixir"	G. R. Finlay & Co	4,678	Dec. 22	33	1394
"Campbell's Tonic Wine of Coca and Celery"	M. Campbell	4,619	Nov. 3	33	504
"Cleansing Cream." (for a Clothing Renovator)	E. S. Burnham	4,635	Nov. 7	33	762
"Colic Cure"	D. B. Hand	4,627	Nov. 10	33	626
"Cologne Corset" (for Packages Containing Corsets)	Heilner & Strauss	4,656	Dec. 1	33	1000
"Cubeb Cough Cure"	N. Lichty	4,673	Dec. 15	33	1270
"Custom Made," (for Corsets)	Thomson, Langdon & Co	4,693	Dec. 29	33	1502
"Delicious Shampoo." (for a Hair Wash)	J. F. Geiger	4,597	Oct. 13	33	118
"Dexter's Mahogany Stain." (for Wood)	Dexter Brothers	4,646	Nov. 24	33	892
"Dr. Able's Compound Honey of Tar and Lemon"	J. L. Able	4,606	Oct. 13	33	118
"Dr. Bell's Never-Failing, Wonderful Mixture for Chills and Fevers."	W. A. Schropshire	4,680	Dec. 22	33	1394
"Dr. C. C. Joslin's Liver Pills"	C. C. Joslin	4,691	Dec. 29	33	1502
"Dr. Dunlop's Cascara Compound"	United States Medicine Company	4,681	Dec. 22	33	1394
"Dr. H. Mozley's Lemon Tonic Cordial"	H. Mozley	4,643	Nov. 24	33	892
"Dr. M. C. Beebe's Reliable Catarrh Cure"	M. C. Beebe	4,648	Dec. 1	33	1000
"Dr. Perdue's Salve"	M. Barrett	4,684	Dec. 29	33	1502
"Dr. Robt. Watson's Celebrated Eye Water"	R. Watson	4,612	Oct. 20	33	240
"Dr. Samuel's World's Dyspepsia Cure"	S. W. Baxter	4,647	Dec. 1	33	1000
"Dr. Tyler's Tooth Tablets"	A. S. Schloss and D. Mueller	4,644	Nov. 24	33	892
"Dr. Wyman's Unexcelled Tooth Powder for Cleansing, Beautifying, and Preserving the Teeth, and Imparting a Delightful Fragrance to the Breath."	J. C. Wyman	4,645	Nov. 24	33	892
"F. Capurro Extra Refined Petroleum"	W. R. Grace & Co	4,624	Nov. 10	33	626
"Fleece Lined" (for Corsets)	Thomson, Langdon & Co	4,694	Dec. 29	33	1502
"Forrest's Juniper Tar Drops." (for a Medicine for Coughs, Colds, &c.)	P. Rogers	4,601	Oct. 13	33	118
"Fragrant Corset," (for Packages Containing Corsets)	Heilner & Strauss	4,655	Dec. 1	33	1000
"Fraxine, the Great Remedy for Dyspepsia"	Fraxine Manufacturing Company	4,665	Dec. 8	33	1142
"From F. & J. Heins Purveyors to the Trade"	H. J. Heinz	4,689	Dec. 29	33	1502
"Fry's Great Rheumatic Cure and Blood Purifier"	J. W. Fry	4,590	Oct. 6	33	2
"Fryer's Abietene, an Extract from the Pinus Sabiniana"	D. F. Fryer	4,652	Dec. 1	33	1000
"G. E. M. Powder or the G. E. Mitchell Tooth Powder"	G. E. Mitchell	4,631	Nov. 10	33	626
"General Drawing Ink"	C. M. Higgins	4,690	Dec. 29	33	1502
"General Tonic"	D. B. Hand	4,625	Nov. 10	33	626
"Genuine Silk Sponge Towel" (for Toweling.)	G. S. Brown	4,618	Nov. 3	33	504
"Geo. H. Hood's Imperial Flesh Color Rubber for Dental Plates."	Boston Rubber Company	4,668	Dec. 15	33	1270
"Geo. H. Hood's Imperial Gum Color Rubber for Dental Plates."	Boston Rubber Company	4,669	Dec. 15	33	1270
"Grant's Calisaya and Iron Tonic"	Colburn, Birks & Company	4,640	Nov. 24	33	892
"Golden's Female Elixir"	S. Steenrod	4,639	Nov. 17	33	762
"Hall's Ulster Ginger Ale"	H. Hall	4,636	Nov. 17	33	762
"Heinz's" (for Pickles, Preserves and Condiments)	H. J. Heinz	4,688	Dec. 29	33	1502
"Honey, Rum and Tar." (for a Medicine)	J. H. Alexander	4,621	Nov. 10	33	626
"Imperishable Paste"	C. B. Campbell	4,685	Dec. 29	33	1502
"Infallible Diarrhœa and Teething Medicine"	A. G. Franklin	4,596	Oct. 13	33	118
"Iron Phosphates" (for a Beverage)	C. Beck	4,589	Oct. 6	33	2
"Juniper Leaf Gin"	M. M. Reis	4,660	Dec. 1	33	1000
"Kino" (for a Tooth Wash)	J. A. Martin	4,637	Nov. 17	33	762
"Liston's Extract of Chicken"	Liston Beef Company	4,672	Dec. 15	33	1270
"London Balm." (for a Medicine)	W. S. Haswell	4,598	Oct. 13	33	118
"Luce's Celebrated Black Liniment"	Evans & Krimmel	4,595	Oct. 13	33	118
"Madam Gilmore's London Blood Syrup"	J. J. and B. F. Maher	4,592	Oct. 6	33	2
"Magnetic Tablets" (for a Medicine)	J. Post	4,638	Nov. 17	33	762
"Martinez' Lubricator"	A. A. Martinez	4,600	Oct. 13	33	118
"Old Burley Cigarettes"	S. Busnitz & Co	4,607	Oct. 13	33	118
"Our Own" (for Shirts)	Johnson, Sutton & Co	4,679	Dec. 22	33	1394
"Parisian" (for Cachous)	Dabbs Bros	4,663	Dec. 8	33	1142
"Pearl White Tooth Paste"	M. S. Gooding	4,620	Nov. 3	33	504
"Penetrating Oil" (for a Remedy for Rheumatism)	T. L. Macklin	4,630	Nov. 10	33	626
"Perfumed Corset" (for Packages Containing Corsets)	Heilner & Strauss	4,654	Dec. 1	33	1000
"Permanent Argentic Bromide Paper"	Eastman Dry Plate and Film Company.	4,675	Dec. 22	33	1394
"Permanent Bromide Paper"	Eastman Dry Plate and Film Company.	4,687	Dec. 29	33	1502
"Permanent Gelatino-Argentic Bromide Paper"	Eastman Dry Plate and Film Company.	4,676	Dec. 22	33	1394
"Permanent Gelatino Bromide Paper"	Eastman Dry Plate and Film Company.	4,677	Dec. 22	33	1394
"Philadelphia Lemonade"	S. Twitchell & Bro	4,603	Oct. 13	33	118
"Philadelphia Lemonade Extract"	S. Twitchell & Bro	4,604	Oct. 13	33	118

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Phosacid, a Nerve Tonic and Stimulant"	M. Kalbfleisch's Sons	4,670	Dec. 15	33	1270
"Picherean's Universal Salve"	A. Picherean	4,632	Nov. 10	33	626
"Pine Pectoral" (for a Medical Compound)	Fraxine Manufacturing Company	4,674	Dec. 8	33	1142
"Pleasant Physic"	D. B. Hand	4,628	Nov. 10	33	626
"Prepared Invisible Patches"	W. Foster	4,651	Dec. 1	33	1000
"Prof. Liston's Fluid Extract of Beef"	Liston Beef Company	4,671	Dec. 15	33	1270
"Rice and Rye" (for a Preparation of Extract of Rice with Rye Whisky.)	E. Greey	4,591	Oct. 3	33	2
"Ridgewood Re-Distilling Cos. D. D. Rye Gin"	Ridgewood Re-Distilling Company	4,692	Dec. 29	33	1502
"S. A. C. Shaw's Asthma Cure"	J. C. Shaw	4,661	Dec. 1	33	1000
"Scented Corset" (for Packages Containing Corsets)	Heilner & Strauss	4,653	Dec. 1	33	1000
"Scott & Firth's Tonic and Kidney Cure"	Scott & Firth	4,602	Oct. 13	33	118
"Seidlitz Powders"	Gillam's Sons	4,623	Nov. 10	33	626
"Shag Cigarettes"	S. Busnitz & Co	4,608	Oct. 13	33	118
"Silk Silver Towel." (for Toweling.)	G. S. Brown	4,617	Nov. 3	33	504
"Simon's Black." (for Harness, Carriages, &c)	E. S. Savigny	4,593	Oct. 6	33	2
"Sol. Coleman's Ko-Ko Tulu" (for Chewing Gum)	S. Coleman	4,650	Dec. 1	33	1000
"Sol. Coleman's Original and only Genuine Ko-Ko Tulu"	S. Coleman	4,610	Oct. 20	33	240
"Sol. Coleman's Original and only Genuine Ko-Ko Tulu"	S. Coleman	4,611	Oct. 20	33	240
"Strassburger Gicht & Rheumatismus Plaster"	Pfaelzer Bros. & Co	4,614	Oct. 27	33	360
"Sweet Smelling Corset" (for Packages Containing Corsets)	Heilner & Strauss	4,657	Dec. 1	33	1000
"Taylor's Horehound Balsam"	W. S. Taylor	4,615	Oct. 27	33	360
"Teething Lotion"	D. B. Hand	4,629	Nov. 10	33	626
"The "Best" Stove Polish"	E. Fisher	4,641	Nov. 24	33	892
"The F. T. S. Great Indian Cough Killer"	F. T. Stamets	4,662	Dec. 1	33	1000
"The Famous Caraccas Herb-Tonic"	G. E. Walton	4,682	Dec. 22	33	1394
"The Great German Rheumatism Remedy"	A. A. Woodward	4,605	Oct. 13	33	118
"The Greatest Blood Purifier"	W. H. Whitehead	4,633	Nov. 10	33	626
"The New Discovery, Battis' Modified Extract of Denicotized Tobacco."	J. H. Battis	4,622	Nov. 10	33	626
"The Original Kidney Pills"	Kidney Pill Co	4,599	Oct. 13	33	118
"These goods are Manufactured with great care from well-selected Cotton and all the colors are fast." (for Cotton Goods.)	S. A. Crozer & Son	4,686	Dec. 29	33	1502
"Thueringer Export Beer"	A. H. Meyer	4,650	Dec. 1	33	1000
"Twixt and Tween Purest Quality Smoking Tobacco"	G. W. Conover	4,613	Oct. 27	33	360
"Tyree's Powdered Hypophosphites Compound"	J. S. Tyree	4,666	Dec. 8	33	1142
"Worm Elixir"	D. B. Hand	4,626	Nov. 10	33	626

DISCLAIMERS.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Vol.	Page.
Car-coupling	Samuel B. Archer	2-3,845	Aug. 28, 1883	Nov. 11, 1885	33	762
Chimney and ventilator. Combined	Allen S. Jackson	303,282	Aug. 12, 1884	Dec. 17, 1885	33	1394
Oatmeal-machine	Asmus J. Ehrrichson. (Reissue)	7,542	Nov. 30, 1875	Oct. 12, 1885	33	240
Shaft-hanger	Willis J. Perkins	311,780	Feb. 3, 1885	Oct. 13, 1885	33	460
Telegraph apparatus. Duplex	Joseph B. Stearns. (Reissue)	10,033	Feb. 7, 1882	Oct. 22, 1885	33	460
Telegraph apparatus. Duplex	Joseph B. Stearns. (Reissue)	10,034	Feb. 7, 1882	Oct. 22, 1885	33	460
Telegraph apparatus. Duplex	Joseph B. Stearns. (Reissue)	10,035	Feb. 7, 1882	Oct. 22, 1885	33	460

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